

Water Testing Results for 2017 Reporting Period

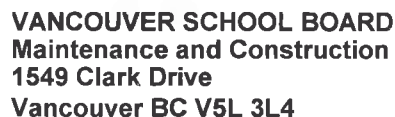
With deep gratitude and respect, we are honoured to be learning and unlearning on the ancestral and unceded lands of the xʷməθkʷəṅəm (Musqueam), Skwxwú7mesh Úxwumixw (Squamish Nation) & səlilwətał (Tsleil-Waututh Nation).

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LSD:

Project Ref:

Sample ID:

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-1

Matrix: Water

Fountain no longer in service

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-OCT-17
PO No.: 0000132962
WO No.: L1999375

LSD:

Project Ref:

Sample ID: SEYM 209 DF

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-2

Matrix: Water

Fountain no
longer in service

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000866		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

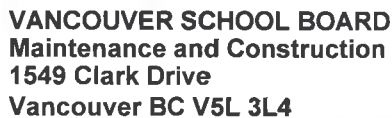
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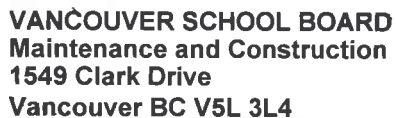
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Matrix: Water

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Matrix: Water

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1549 Clark Drive
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Date: 12-OCT-17
PO No.: 0000132962
WO No.: L1999375
LSD:

Project Ref:
Sample ID: SEYM 013 DF
Sampled By:

Date Collected: 27-SEP-17
Lab Sample ID: L1999375-5
Matrix: Water

Fountain no
longer in service

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00833		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Date: 12-OCT-17
PO No.: 0000132962
WO No.: L1999375

LSD:

Project Ref:

Sample ID: SEYM 304 DF

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-6

Matrix: Water

Fountain no
longer in service

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0243		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015						
* 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Date: 12-OCT-17
PO No.: 0000132962
WO No.: L1999375

LSD:

Project Ref:

Sample ID: SEYM 013 SS DF

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-7

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.0111		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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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.



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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date Received: 10-AUG-17
Report Date: 17-AUG-17 13:38 (MT)
Version: FINAL

Certificate of Analysis

Lab Work Order #: L1972960
Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 15-607910
Legal Site Desc:

Dean Watt, B.Sc.
Account Manager

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		Sample ID Description Sampled Date Sampled Time Client ID	L1972960-1 WATER 10-AUG-17 11:05 BAY 211 DF	L1972960-2 WATER 10-AUG-17 11:00 BAY 025 DF			
Grouping	Analyte						
WATER							
Total Metals	Lead (Pb)-Total (mg/L)		0.000613	0.000300			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)
Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

15-607910

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg ww - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

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.



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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 213 BUB

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-1

Matrix: Water

PAGE 1 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00185		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 325 SSDF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-2

Matrix: Water

PAGE 2 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00153		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 220 SSDF

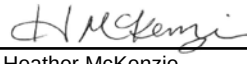
Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-3

Matrix: Water

PAGE 3 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00430		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 334 DF

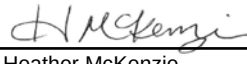
Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-4

Matrix: Water

PAGE 4 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000739		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 331 SSDF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-5

Matrix: Water

PAGE 5 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00175		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 138 SSDF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-6

Matrix: Water

PAGE 6 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00384		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 140 SSDF

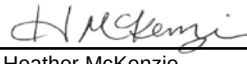
Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-7

Matrix: Water

PAGE 7 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00377		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 141 SSDF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-8

Matrix: Water

PAGE 8 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000637		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS D110 DF

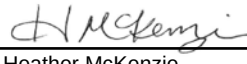
Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-9

Matrix: Water

PAGE 9 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00431		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS D107 DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-10

Matrix: Water

PAGE 10 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00130		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 204 BUB

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-11

Matrix: Water

PAGE 11 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00219		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 03-OCT-17
PO No.: 0000132962
WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 205 BUB

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-12

Matrix: Water

PAGE 12 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00523		mg/L	0.01		01-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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

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 vwt - 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.

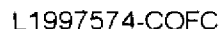
Test results reported relate only to the samples as received by the laboratory.

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



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Page / of

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions 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 CQC form.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRON



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:
Project Ref:
Sample ID: COOK 101 SS DF
Sampled By:
Date Collected: 08-SEP-17
Lab Sample ID: L1988743-29
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000474		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: COOK 107 SS DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-30

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00121		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

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Environmental

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: COOK 213 SS DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-31

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000750		mg/L	0.01		13-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

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

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< - Less than.

D.L. - The reporting limit.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:
Project Ref:

Sample ID: CARN 140 SS DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-7

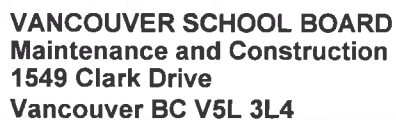
Matrix: Water

Fountain no
longer in service

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000959		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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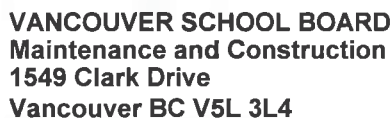
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LSD:
Project Ref:
Sample ID: CARN 101 DF

Date Collected: 08-SEP-17
Lab Sample ID: L1988743-8
Matrix: Water

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



Matrix: Water

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Guidelines & Objectives

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

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Chloride	Common major anion of water chemistry.
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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.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:
Project Ref:
Sample ID: CHAX 129-SSDF
Sampled By:
Date Collected: 30-AUG-17
Lab Sample ID: L1983979-13
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00205		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Guidelines & Objectives

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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.
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Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
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Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).
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Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:
Project Ref:
Sample ID: CHAM 240 SSDF
Sampled By:

Date Collected: 30-AUG-17
Lab Sample ID: L1983979-9
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00956		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:

Project Ref:

Sample ID: CHAM 12 SSDF

Sampled By:

Date Collected: 30-AUG-17

Lab Sample ID: L1983979-10

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00315		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:

Project Ref:

Sample ID: CHAM 123-SSDF

Sampled By:

Date Collected: 30-AUG-17

Lab Sample ID: L1983979-11

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000828		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:
Project Ref:
Sample ID: CHAM 227-SSDF

Sampled By:
Date Collected: 30-AUG-17
Lab Sample ID: L1983979-12
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00299		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

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 rationing 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 of 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.

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mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

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< - Less than.

D.L. - The reporting limit.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 01-SEP-17
PO No.: 0000132962
WO No.: L1982850

LSD:

Project Ref:

Sample ID: DICX 114 DF

Sampled By:

Date Collected: 29-AUG-17

Lab Sample ID: L1982850-6

Matrix: water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000775		mg/L	0.01		31-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Guidelines & Objectives

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

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Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
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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
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Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).
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Total Dissolved Solids	A measure of water salinity.
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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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 30-AUG-17
PO No.: 0000132962
WO No.: L1979993

LSD:
Project Ref:
Sample ID: LIVI GYM DF

Sampled By:
Date Collected: 22-AUG-17
Lab Sample ID: L1979993-3
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000755		mg/L	0.01		25-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 30-AUG-17
PO No.: 0000132962
WO No.: L1979993

LSD:

Project Ref:

Sample ID: LIVI-DF 114

Sampled By:

Date Collected: 22-AUG-17

Lab Sample ID: L1979993-4

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00152		mg/L	0.01		25-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 30-AUG-17
PO No.: 0000132962
WO No.: L1979993

LSD:

Project Ref:

Sample ID: LIVI-014-DF

Sampled By:

Date Collected: 22-AUG-17

Lab Sample ID: L1979993-5

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00860		mg/L	0.01		25-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

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.
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Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
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Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
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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.
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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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: LIYD-DF 128

Sampled By:

Date Collected: 24-AUG-17

Lab Sample ID: L1981288-2

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000306		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: LIYD-DF 202

Sampled By:

Date Collected: 24-AUG-17

Lab Sample ID: L1981288-3

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00111		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: LIYD-DF 313

Sampled By:

Date Collected: 24-AUG-17

Lab Sample ID: L1981288-4

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00144		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 05-OCT-17

PO No.: 0000132962

WO No.: L1998114

LSD:

Project Ref:

Sample ID: THOM 101 DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1998114-2

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00421		mg/L	0.01		04-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 05-OCT-17
PO No.: 0000132962
WO No.: L1998114

LSD:

Project Ref:

Sample ID: THOM 225 BOB

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1998114-4

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00510		mg/L	0.01		04-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 05-OCT-17

PO No.: 0000132962

WO No.: L1998114

LSD:

Project Ref:

Sample ID: THOM 316B DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1998114-5

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000747		mg/L	0.01		04-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 05-OCT-17
PO No.: 0000132962
WO No.: L1998114

LSD:

Project Ref:

Sample ID: THOM 109 DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1998114-6

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00110		mg/L	0.01		04-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 05-OCT-17
PO No.: 0000132962
WO No.: L1998114

LSD:

Project Ref:

Sample ID: THOM 112C DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1998114-7

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00170		mg/L	0.01		04-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 05-OCT-17
PO No.: 0000132962
WO No.: L1998114

LSD:

Project Ref:

Sample ID: THOM 310 FG DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1998114-8

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00615		mg/L	0.01		03-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 05-OCT-17

PO No.: 0000132962

WO No.: L1998114

LSD:

Project Ref:

Sample ID: THOM 277A DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1998114-9

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00166		mg/L	0.01		03-OCT-17
CDWQG = Health Canada Guideline Limits updated. DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

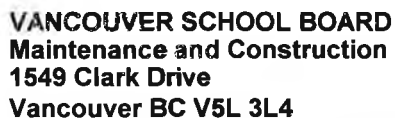
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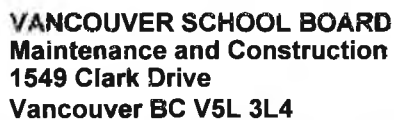
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Matrix: WATER

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Matrix: WATER

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Date: 05-OCT-17
PO No.: 0000132962
WO No.: L1998114

LSD:

Project Ref:

Sample ID: THOM 233 DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1998114-12

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00968		mg/L	0.01		03-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Date: 05-OCT-17

PO No.: 0000132962

WO No.: L1998114

LSD:

Project Ref:

Sample ID: THOM 267 DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1998114-13

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00101		mg/L	0.01		03-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 05-OCT-17
PO No.: 0000132962
WO No.: L1998114

LSD:

Project Ref:

Sample ID: THOM 301 DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1998114-14

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00738		mg/L	0.01		03-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 05-OCT-17

PO No.: 0000132962

WO No.: L1998114

LSD:

Project Ref:

Sample ID: THOM 226 BUB

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1998114-15

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000875		mg/L	0.01		03-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Date: 13-OCT-17

PO No.: 0000132962

WO No.: L2000332

LSD:

Project Ref:

Sample ID: THOM-273 SSDF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L2000332-1

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000338		mg/L	0.01		11-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332
LSD:
Project Ref:
Sample ID: THOM-269 DF
Sampled By:
Date Collected: 26-SEP-17
Lab Sample ID: L2000332-2
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00115		mg/L	0.01		11-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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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.

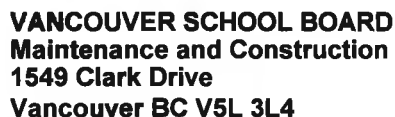
D.L. - The reporting limit.

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.



LSD:
Project Ref:

Sampled By:

Date Collected: 29-AUG-17

Lab Sample ID: L1982850-6

Matrix: water

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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.



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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-JUL-17
PO No.: 0000132962
WO No.: L1951982

LSD:
Project Ref:
Sample ID: DOUX 118 DF

Sampled By:

Date Collected: 30-JUN-17

Lab Sample ID: L1951982-7

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00102		mg/L	0.01		08-JUL-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Date: 13-JUL-17
PO No.: 0000132962
WO No.: L1951982

LSD:

Project Ref:

Sample ID: DOUX 129 DF

Sampled By:

Date Collected: 30-JUN-17

Lab Sample ID: L1951982-8

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000435		mg/L	0.01		08-JUL-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-JUL-17
PO No.: 0000132962
WO No.: L1951982

LSD:

Project Ref:

Sample ID: DOUX 126 DF

Sampled By:

Date Collected: 30-JUN-17

Lab Sample ID: L1951982-9

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00157		mg/L	0.01		08-JUL-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

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

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D.L. - The reporting limit.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:
Project Ref:
Sample ID: LORD A112 SSDF
Sampled By:
Date Collected: 12-SEP-17
Lab Sample ID: L1989913-28
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00160		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:
Project Ref:
Sample ID: LORD B202 FGDF
Sampled By:
Date Collected: 12-SEP-17
Lab Sample ID: L1989913-29
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000883		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
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Date: 19-SEP-17

PO No.: 0000132962

WO No.: L1989913

LSD:

Project Ref:

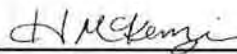
Sample ID: LORD B106 SSDF

Sampled By:

Date Collected: 12-SEP-17

Lab Sample ID: L1989913-30

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000293		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

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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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: WEIR 209 DF

Sampled By:

Date Collected: 25-AUG-17

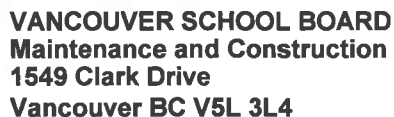
Lab Sample ID: L1981288-13

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00153		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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PO No.:
WO No.: L1981288

Matrix: WATER

Fountain no longer in service

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: WEIR 120 DF

Sampled By:

Date Collected: 25-AUG-17

Lab Sample ID: L1981288-15

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00167		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: WEIR 113 DF

Sampled By:

Date Collected: 25-AUG-17

Lab Sample ID: L1981288-16

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00813		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

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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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: MACC 131-5SDF

Sampled By:

Date Collected: 25-AUG-17

Lab Sample ID: L1981288-21

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00344		mg/L	0.01		29-AUG-17
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: MACC 119 FGDF

Sampled By:

Date Collected: 25-AUG-17

Lab Sample ID: L1981288-23

Matrix: WATER

**Fountain no
longer in service**

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0237		mg/L	0.01		29-AUG-17
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Guidelines & Objectives

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: MCKE 211 SS DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-34

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00183		mg/L	0.01		13-SEP-17
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

Environmental

www.alsglobal.com

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Guidelines & Objectives

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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.

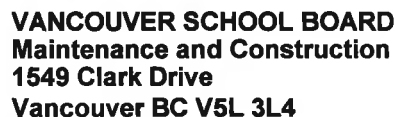
D.L. - The reporting limit.

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.



LSD:
Project Ref:
Sample ID: CAVE 002 SSDF
Sampled By:
Date Collected: 11-SEP-17
Lab Sample ID: L1989913-12
Matrix: Water

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: CAVE 031 SSDF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-13

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000610		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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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

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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.

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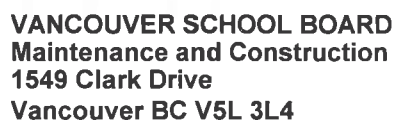


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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743
LSD:
Project Ref:
Sample ID: CARR A007 DF
Sampled By:
Date Collected: 08-SEP-17
Lab Sample ID: L1988743-1
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00363		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Matrix: Water

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17

PO No.: 0000132962

WO No.: L1988743

LSD:

Project Ref:

Sample ID: CARR 002 DF

Sampled By:

Date Collected: 08-SEP-17

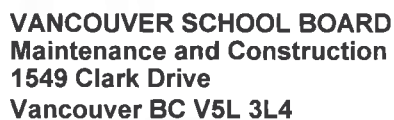
Lab Sample ID: L1988743-3

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00530		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Matrix: Water

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Date: 15-SEP-17

PO No.: 0000132962

WO No.: L1988743

LSD:

Project Ref:

Sample ID: CARR A009 SS DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-5

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000191		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: CARR B130 DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-6

Matrix: Water

Fountain no
longer in service

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00267		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

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GLOSSARY OF REPORT TERMS

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: HAMB 180 FS

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-1

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000197		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:
Project Ref:
Sample ID: HAMB 285 FS
Sampled By:

Date Collected: 29-SEP-17
Lab Sample ID: L2000092-25
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00237		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 11-OCT-17

PO No.: 0000132962

WO No.: L2000092

LSD:

Project Ref:

Sample ID: HAMB 295 SSDF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-26

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000183		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: HAMB 290 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-27

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000772		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: HAMB 220 DF

Sampled By:

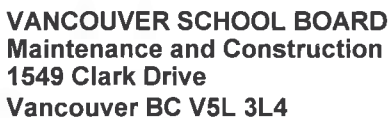
Date Collected: 29-SEP-17

Lab Sample ID: L2000092-28

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000605		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Matrix: WATER

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Date: 11-OCT-17

PO No.: 0000132962

WO No.: L2000092

LSD:

Project Ref:

Sample ID: HAMB 301 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-30

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000691		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 						
Heather McKenzie Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: HAMB 358 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-31

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: HAMB 221 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-32

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000549		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: HAMB 138 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-33

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000246		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: HAMB 144 SSDF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-34

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000671		mg/L	0.01		06-OCT-17
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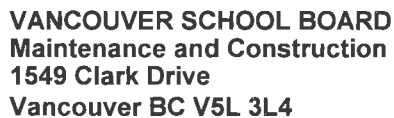


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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092
LSD:
Project Ref:
Sample ID: HAMB 149 BUB
Sampled By:
Date Collected: 29-SEP-17
Lab Sample ID: L2000092-35
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00279		mg/L	0.01		06-OCT-17
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LSD:
Project Ref:
Sample ID: HAMB 145 BUB
Sampled By:

Date Collected: 29-SEP-17
Lab Sample ID: L2000092-36
Matrix: WATER

Fountain no longer in service

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17

PO No.: 0000132962

WO No.: L2000092

LSD:

Project Ref:

Sample ID: HAMB 293 FCDF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-37

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000191		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

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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

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mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:
Project Ref:

Sample ID: FALS 122 FG DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-35

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00533		mg/L	0.01		13-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: FALS 228 FG DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-32

Matrix: Water

Fountain no
longer in service

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000793		mg/L	0.01		13-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: FALS 234 FG DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-33

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00690		mg/L	0.01		13-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

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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
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Chloride	Common major anion of water chemistry.
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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.

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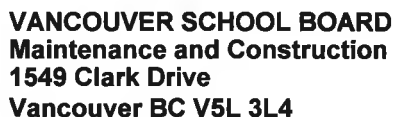
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LSD:
Project Ref:

Sample ID: GARI 113 DF
Sampled By:
Date Collected: 30-AUG-17
Lab Sample ID: L1983979-18
Matrix: Water

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:

Project Ref:

Sample ID: GARI 117 DF

Sampled By:

Date Collected: 30-AUG-17

Lab Sample ID: L1983979-19

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00215		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:

Project Ref:

Sample ID: GARI 119A-DF

Sampled By:

Date Collected: 30-AUG-17

Lab Sample ID: L1983979-20

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00132		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

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Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: BROC A 204 BUB

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-23

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00160		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-SEP-17
PO No.: 0000132962
WO No.: L1985508

LSD:
Project Ref:
Sample ID: WOLF 012 DF
Sampled By:
Date Collected: 01-SEP-17
Lab Sample ID: L1985508-10
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000677		mg/L	0.01		08-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 						
Heather McKenzie Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-SEP-17
PO No.: 0000132962
WO No.: L1985508

LSD:

Project Ref:

Sample ID: WOLF 307 DF

Sampled By:

Date Collected: 01-SEP-17

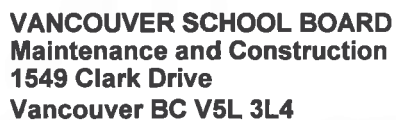
Lab Sample ID: L1985508-11

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00317		mg/L	0.01		08-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

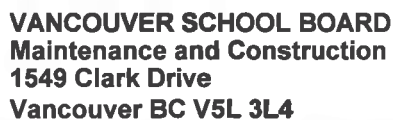
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Matrix: Water

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Matrix: Water

Fountain no longer in service

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Date: 12-SEP-17
PO No.: 0000132962
WO No.: L1985508

LSD:

Project Ref:

Sample ID: WOLF B104 DF

Sampled By:

Date Collected: 01-SEP-17

Lab Sample ID: L1985508-14

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00314		mg/L	0.01		08-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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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.



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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD B112 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-1

Matrix: WATER

PAGE 1 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000291		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD E114 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-2

Matrix: WATER

PAGE 2 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00117		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD E207 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-3

Matrix: WATER

PAGE 3 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00294		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD E007 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-4

Matrix: WATER

PAGE 4 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00162		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD E013 FS

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-5

Matrix: WATER

PAGE 5 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000401		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD B003 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-6

Matrix: WATER

PAGE 6 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000697		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD C103 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-7

Matrix: WATER

PAGE 7 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00159		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD D113 FS

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-8

Matrix: WATER

PAGE 8 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000693		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD D103 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-9

Matrix: WATER

PAGE 9 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00124		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD D103 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-10

Matrix: WATER

PAGE 10 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00445		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD B210 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-11

Matrix: WATER

PAGE 11 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00211		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD B205 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-12

Matrix: WATER

PAGE 12 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00213		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD B100 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-13

Matrix: WATER

PAGE 13 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000969		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD 102A FS

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-14

Matrix: WATER

PAGE 14 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000137		mg/L	0.01		12-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335
LSD:
Project Ref:
Sample ID: GIAD A110 DF
Sampled By:
Date Collected: 29-SEP-17
Lab Sample ID: L2000335-15
Matrix: WATER

PAGE 15 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00211		mg/L	0.01		12-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD A122 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-16

Matrix: WATER

PAGE 16 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00227		mg/L	0.01		12-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD A125 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-17

Matrix: WATER

PAGE 17 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00418		mg/L	0.01		12-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD V109 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-18

Matrix: WATER

PAGE 18 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00155		mg/L	0.01		12-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD V107 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-19

Matrix: WATER

PAGE 19 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00764		mg/L	0.01		12-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD V105 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-20

Matrix: WATER

PAGE 20 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000946		mg/L	0.01		12-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD V103 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-21

Matrix: WATER

PAGE 21 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00118		mg/L	0.01		12-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD E105 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-22

Matrix: WATER

PAGE 22 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00344		mg/L	0.01		12-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 18-OCT-17
PO No.: 0000132962
WO No.: L2000335

LSD:

Project Ref:

Sample ID: GIAD A204 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000335-23

Matrix: WATER

PAGE 23 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.01		12-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

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

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878



COC Number: 15- 604489

Page 1 of 2

L2000335-COFC

Report To Company: VANCOUVER SCHOOL BOARD Contact: STEPHEN THOMAS Phone: 604 713-5637 Company address below will appear on the final report Street: 1549 CLARK DR City/Province: VANCOUVER BC Postal Code: V5L 3L4 Invoice To: Same as Report To ☒ YES ☐ NO Copy of invoice with Report ☐ YES ☐ NO Company: Contact: 		Report Format / Distribution Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL) Quality Control (QC) Report with Report ☐ YES ☐ NO ☐ Compare Results to Criteria on Report - provide details below if box checked Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX Email 1 or Fax: STEPHEN@VSB-604-69 Email 2: Email 3: 		Select Service Level Below - Please consult all E&P TATs with your AM - surcharges will apply Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply 4 day [P4] ☐ 1 Business day [E1] ☐ 3 day [P3] ☐ Same Day, Weekend or Statutory holiday [E0] ☐ 2 day [P2] ☐ Date and Time Required for all E&P TATs: For tests that can not be performed according to the service level selected, you will be contacted.	
Project Information ALS Account # / Quote #: Job #: PO / AFE: LSD: 		Oil and Gas Required Fields (client use) AFE/Cost Center: Major/Minor Code: Requisitioner: Location: 		Analysis Request Indicate Filled (F), Preserved (P) or Filtered and Preserved (FP) below 	
ALS Lab Work Order # (lab use only) 		ALS Contact: P. NAYY 		Sampler: S. Thomas 	
ALS Sample # (lab use only) 	Sample Identification and/or Coordinates (This description will appear on the report) 	Date (dd-mm-yy) 	Time (hh:mm) 	Sample Type 	Number of Containers
GLAD B112	DF	29-09-17	15:55	WATER	
GLAD E114	DF		16:00		
GLAD E207	DF		16:08		
GLAD E007	DF		16:10		
GLAD E013	FS		16:15		
GLAD B003	DF		16:16		
GLAD C103	DF		16:28		
GLAD D113	FS		16:25		
GLAD D103	DF		16:30		
GLAD D103 BUR			16:35		
GLAD B210	BSUB		16:40		
GLAD B205	DF		16:45		
Drinking Water (DW) Samples (client use) Are samples taken from a Regulated DW System? ☐ YES ☐ NO Are samples for human drinking water use? ☐ YES ☐ NO		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only) 			
SHIPMENT RELEASE (client use) Released by: Date: 		INITIAL SHIPMENT RECEPTION (lab use only) Received by: Alex Date: 30/9/2017 Time: 10:40		FINAL SHIPMENT RECEPTION (lab use only) Received by: Date: Time: 	
SHIPPING RELEASE (client use) Released by: Date: 		INITIAL SHIPMENT RECEPTION (lab use only) Received by: Date: Time: 		FINAL SHIPMENT RECEPTION (lab use only) Received by: Date: Time: 	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
 Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of this white - report copy.
 1 If any water samples are taken from a Regulated Drinking Water (DW) system, please submit using an Authorized DW COC form.



Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2000335-COFC

COC Number: 15 - 604490

Page 2 of 2

Report To Company: VANCOUVER SCHOEN ROARD Contact: STAFFORD YHOMAS Phone: 604 213-5632 Company address below will appear on the final report		Report Format / Distribution Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL) Quality Control (QC) Report with Report ☐ YES ☐ NO ☐ Compare Results to Criteria on Report - provide details below if box checked Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX Email 1 or Fax: <u>stthomas@us6.bc.ca</u> Email 2 Email 3		Regular [R] 4 day [P4] ☐ 3 day [P3] ☐ 2 day [P2] ☐ Date and Time Required for all E&P TATs: For tests that can not be performed according to the service level selected, you will be contacted.		Emergency [E] 1 Business day [E1] ☐ Same Day, Weekend or Statutory holiday [E0] ☐ Date and Time Required for all E&P TATs: For tests that can not be performed according to the service level selected, you will be contacted.	
Project Information ALS Account # / Quote #: Job #: PO / AFE: LSD: ALS Lab Work Order # (lab use only):		Invoice Distribution Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX Email 1 or Fax Email 2 Email 3		Oil and Gas Required Fields (client use) AFE/Cost Center: Major/Minor Code: Requisitioner: Location: ALS Contact: <u>DWATT</u> Date: <u>29-09-17</u> Time (hh:mm): <u>16:50</u> Sample Type: <u>WATER</u>		Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
Drinking Water (DW) Samples (client use) Are samples taken from a Regulated DW System? ☐ YES ☐ NO Are samples for human drinking water use? ☐ YES ☐ NO		SHIPMENT RELEASE (client use) Released by: Date: Time: SHIPMENT RELEASE (client use)		SAMPLE CONDITION AS RECEIVED (lab use only) Frozen ☐ SIF Observations Yes ☐ No ☐ Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐ Cooling Initiated ☐ INITIAL COOLER TEMPERATURES °C 7-4 FINAL COOLER TEMPERATURES °C		FINAL SHIPMENT RECEPTION (lab use only) Received by: Date: Time: FINAL SHIPMENT RECEPTION (lab use only)	
Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		WHITE - LABORATORY COPY YELLOW - CLIENT COPY		Number of Containers			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions 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 COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 01-SEP-17
PO No.: 0000132962
WO No.: L1982850

LSD:

Project Ref:

Sample ID: BRUC 101 DF

Sampled By:

Date Collected: 29-AUG-17

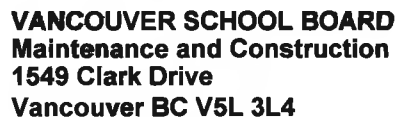
Lab Sample ID: L1982850-9

Matrix: water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00977		mg/L	0.01		31-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

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LSD:
Project Ref:
Sample ID: BRUC 024 DF

Sampled By:
Date Collected: 29-AUG-17
Lab Sample ID: L1982850-10
Matrix: water

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 01-SEP-17
PO No.: 0000132962
WO No.: L1982850

LSD:

Project Ref:

Sample ID: BRUC 010B DF

Sampled By:

Date Collected: 29-AUG-17

Lab Sample ID: L1982850-11

Matrix: water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00223		mg/L	0.01		31-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

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.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 14-SEP-17
PO No.: 0000132962
WO No.: L1988127

LSD:
Project Ref:
Sample ID: GRAN 106 DF
Sampled By:
Date Collected: 07-SEP-17
Lab Sample ID: L1988127-1
Matrix: WATER

PAGE 1

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000650		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 14-SEP-17
PO No.: 0000132962
WO No.: L1988127
LSD:

Project Ref:

Sample ID: GRAN 101 DF

Sampled By:

Date Collected: 07-SEP-17

Lab Sample ID: L1988127-2

Matrix: WATER

PAGE 2

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00432		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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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 of 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

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mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

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D.L. - The reporting limit.

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

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743
LSD:

Project Ref:

Sample ID: HUDS 104 DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-17

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00144		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17

PO No.: 0000132962

WO No.: L1988743

LSD:

Project Ref:

Sample ID: HUDS 212 DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-18

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000793		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: HUDS 206 DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-19

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00162		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:
Project Ref:
Sample ID: HUDS B101 DF
Sampled By:
Date Collected: 08-SEP-17
Lab Sample ID: L1988743-20
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00101		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743
LSD:

Project Ref:

Sample ID: HUDS 015 DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-21

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000772		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:
Project Ref:
Sample ID: HUDS 004 DF

Sampled By:
Date Collected: 08-SEP-17
Lab Sample ID: L1988743-22
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000386		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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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

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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.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-JUL-17
PO No.: 0000132962
WO No.: L1951982

LSD:
Project Ref:
Sample ID: IDEAL FS

Sampled By:
Date Collected: 30-JUN-17
Lab Sample ID: L1951982-4
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00168		mg/L	0.01		08-JUL-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17
PO No.:
WO No.: L1981288
LSD:
Project Ref:
Sample ID: NORQ 021 DF
Sampled By:
Date Collected: 25-AUG-17
Lab Sample ID: L1981288-19
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00162		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: NORQ 115 DF

Sampled By:

Date Collected: 25-AUG-17

Lab Sample ID: L1981288-20

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00347		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Heather McKenzie Account Manager						

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Guidelines & Objectives

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

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Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
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Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

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D.L. - The reporting limit.

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979
LSD:
Project Ref:
Sample ID: JOHN 315-DF
Sampled By:
Date Collected: 30-AUG-17
Lab Sample ID: L1983979-14
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00106		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:

Project Ref:

Sample ID: JOHN 149-FS

Sampled By:

Date Collected: 30-AUG-17

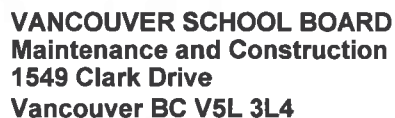
Lab Sample ID: L1983979-15

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000629		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Matrix: Water

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:

Project Ref:

Sample ID: JOHN 163-DF

Sampled By:

Date Collected: 30-AUG-17

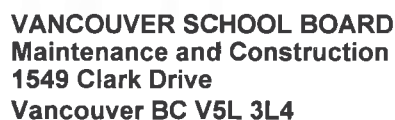
Lab Sample ID: L1983979-17

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00364		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Project Ref:
Sample ID: JOHN 149 FS
Sampled By:

Date Collected: 29-SEP-17
Lab Sample ID: L2000092-18
Matrix: WATER

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17

PO No.: 0000132962

WO No.: L2000092

LSD:

Project Ref:

Sample ID: JOHN 113 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-19

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00505		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092
LSD:

Project Ref:

Sample ID: JOHN 132 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-20

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00142		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: JOHN 157 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-21

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000345		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: JOHN 163 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-22

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00748		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: JOHN 115 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-23

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00487		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

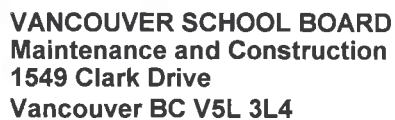
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LSD:
Project Ref:
Sample ID: JOHN 116 BUB
Sampled By:

Fountain no longer in service

Date Collected: 29-SEP-17
Lab Sample ID: L2000092-24
Matrix: WATER

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

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: JOHN 109 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-39

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000581		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: JOHN 115 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-40

Matrix: WATER

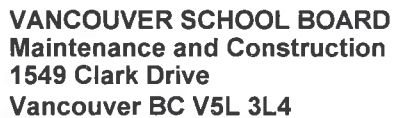
Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000605		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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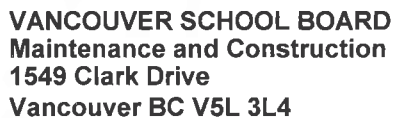
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Matrix: WATER

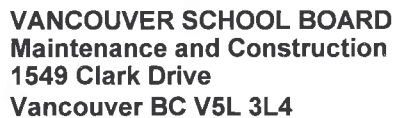
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LSD:
Project Ref:
Sample ID: JOHN 248 DF
Sampled By:

Date Collected: 29-SEP-17
Lab Sample ID: L2000092-42
Matrix: WATER

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
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LSD:
Project Ref:
Sample ID: JOHN 227 DF
Sampled By:

Date Collected: 29-SEP-17
Lab Sample ID: L2000092-43
Matrix: WATER

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: JOHN 217 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-44

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00105		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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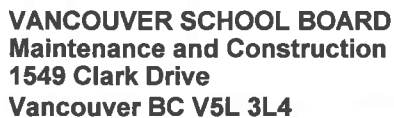


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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092
LSD:
Project Ref:
Sample ID: JOHN 303 SSDF
Sampled By:
Date Collected: 29-SEP-17
Lab Sample ID: L2000092-45
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000690		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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LSD:
Project Ref:
Sample ID: JOHN 315 DF
Sampled By:

Date Collected: 29-SEP-17
Lab Sample ID: L2000092-46
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00101		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: JOHN 101 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-38

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000759		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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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.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17
PO No.:
WO No.: L2002133
LSD:
Project Ref:
Sample ID: KILL 101 FS
Sampled By:
Date Collected: 04-OCT-17
Lab Sample ID: L2002133-6
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000331		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 						
Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL C107 BUB

Sampled By:

Date Collected: 04-OCT-17

Lab Sample ID: L2002133-7

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00305		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL C108 BUB

Sampled By:

Date Collected: 04-OCT-17

Lab Sample ID: L2002133-8

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00397		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL C111 SSDF

Sampled By:

Date Collected: 04-OCT-17

Lab Sample ID: L2002133-9

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000831		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17
PO No.:
WO No.: L2002133
LSD:
Project Ref:
Sample ID: KILL C110 SSDF
Sampled By:
Date Collected: 04-OCT-17
Lab Sample ID: L2002133-10
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000852		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL C125 DF

Sampled By:

Date Collected: 04-OCT-17

Lab Sample ID: L2002133-11

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00264		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL C127 DF

Sampled By:

Date Collected: 04-OCT-17

Lab Sample ID: L2002133-12

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00518		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
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Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL B103

Sampled By:

Date Collected: 04-OCT-17

Lab Sample ID: L2002133-13

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000705		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Vancouver BC V5L 3L4

Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL B111 SS DF

Sampled By:

Date Collected: 04-OCT-17

Lab Sample ID: L2002133-14

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00189		mg/L	0.01		12-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Vancouver BC V5L 3L4

Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL B212 DF

Sampled By:

Date Collected: 03-OCT-17

Lab Sample ID: L2002133-15

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000633		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Vancouver BC V5L 3L4

Date: 17-OCT-17
PO No.:
WO No.: L2002133
LSD:
Project Ref:
Sample ID: KILL B202 SSDF
Sampled By:
Date Collected: 03-OCT-17
Lab Sample ID: L2002133-16
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000663		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL A202 DF

Sampled By:

Date Collected: 03-OCT-17

Lab Sample ID: L2002133-17

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00181		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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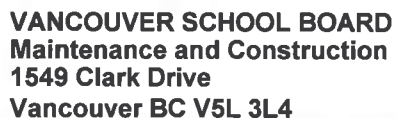
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Matrix: Water

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Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL A112 DF

Sampled By:

Date Collected: 03-OCT-17

Lab Sample ID: L2002133-19

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000668		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 						
Heather McKenzie Account Manager						

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Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL A120 SSDF

Sampled By:

Date Collected: 03-OCT-17

Lab Sample ID: L2002133-20

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00310		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 						
Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL C 308 DF

Sampled By:

Date Collected: 03-OCT-17

Lab Sample ID: L2002133-21

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00263		mg/L	0.01		14-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: KILL C 318 FS

Sampled By:

Date Collected: 03-OCT-17

Lab Sample ID: L2002133-22

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00257		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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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 of 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.



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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:
Project Ref:
Sample ID: KGEO 117 FS

Sampled By:
Date Collected: 30-AUG-17
Lab Sample ID: L1983979-8
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000326		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

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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.
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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.

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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.

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 14-SEP-17
PO No.: 0000132962
WO No.: L1988127

LSD:
Project Ref:
Sample ID: BEAC 201 DF
Sampled By:

Date Collected: 07-SEP-17
Lab Sample ID: L1988127-8
Matrix: WATER

PAGE 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000889		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 14-SEP-17
PO No.: 0000132962
WO No.: L1988127

LSD:

Project Ref:

Sample ID: BEAC 106 DF

Sampled By:

Date Collected: 07-SEP-17

Lab Sample ID: L1988127-9

Matrix: WATER

PAGE 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00102		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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1549 Clark Drive
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Date: 14-SEP-17
PO No.: 0000132962
WO No.: L1988127

LSD:

Project Ref:

Sample ID: BEAC 004 DF

Sampled By:

Date Collected: 07-SEP-17

Lab Sample ID: L1988127-10

Matrix: WATER

PAGE 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000700		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 14-SEP-17
PO No.: 0000132962
WO No.: L1988127

LSD:

Project Ref:

Sample ID: BEAC 102 DF

Sampled By:

Date Collected: 07-SEP-17

Lab Sample ID: L1988127-11

Matrix: WATER

PAGE 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00184		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 14-SEP-17
PO No.: 0000132962
WO No.: L1988127

LSD:

Project Ref:

Sample ID: BEAC 002 DF

Sampled By:

Date Collected: 07-SEP-17

Lab Sample ID: L1988127-12

Matrix: WATER

PAGE 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00367		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Vancouver BC V5L 3L4

Date: 14-SEP-17

PO No.: 0000132962

WO No.: L1988127

LSD:

Project Ref:

Sample ID: BEAC 009 DF

Sampled By:

Date Collected: 07-SEP-17

Lab Sample ID: L1988127-13

Matrix: WATER

PAGE 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00114		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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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.



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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17

PO No.: 0000132962

WO No.: L1989913

LSD:

Project Ref:

Sample ID: NELS 106 SSDF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-14

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000429		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: NELS 111A FGDF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-15

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00118		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: NELS 212 DF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-16

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00305		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: NELS 005A DF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-17

Matrix: Water

Fountain no
longer in service

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00189		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
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Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: NELS 018 DF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-18

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000686		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

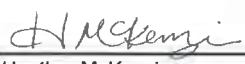
Sample ID: NELS 035 FGDF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-19

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000272		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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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 of 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.

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mg/kg wwt - milligrams per kilogram based on wet weight of sample

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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.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:

Project Ref:

Sample ID: ROBE 207B-DF

Sampled By:

Date Collected: 30-AUG-17

Lab Sample ID: L1983979-7

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000950		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Guidelines & Objectives

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-AUG-17
PO No.: 0000132962
WO No.: L1972363

LSD:
Project Ref:
Sample ID: SELK 008 FS

Sampled By:
Date Collected: 09-AUG-17
Lab Sample ID: L1972363-1
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000300		mg/L	0.01		15-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-AUG-17
PO No.: 0000132962
WO No.: L1972363

LSD:

Project Ref:

Sample ID: SELK 109A DF

Sampled By:

Date Collected: 09-AUG-17

Lab Sample ID: L1972363-2

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000361		mg/L	0.01		15-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-AUG-17
PO No.: 0000132962
WO No.: L1972363

LSD:

Project Ref:

Sample ID: SELK 101B DF

Sampled By:

Date Collected: 09-AUG-17

Lab Sample ID: L1972363-3

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00179		mg/L	0.01		15-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-SEP-17
PO No.: 0000132962
WO No.: L1985508

LSD:

Project Ref:

Sample ID: SELK 115 DF

Sampled By:

Date Collected: 01-SEP-17

Lab Sample ID: L1985508-5

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000882		mg/L	0.01		08-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-SEP-17
PO No.: 0000132962
WO No.: L1985508

LSD:

Project Ref:

Sample ID: SELK B010 DF

Sampled By:

Date Collected: 01-SEP-17

Lab Sample ID: L1985508-6

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00946		mg/L	0.01		08-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-SEP-17
PO No.: 0000132962
WO No.: L1985508

LSD:

Project Ref:

Sample ID: SELK B002 DF

Sampled By:

Date Collected: 01-SEP-17

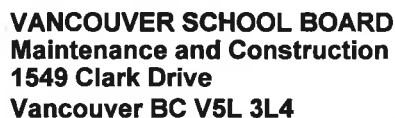
Lab Sample ID: L1985508-7

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00548		mg/L	0.01		08-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Matrix: Water

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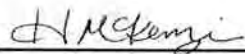


VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-SEP-17
PO No.: 0000132962
WO No.: L1985508

LSD:
Project Ref:
Sample ID: SELK 008 FS

Sampled By:
Date Collected: 01-SEP-17
Lab Sample ID: L1985508-9
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000337		mg/L	0.01		08-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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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.

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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.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-SEP-17
PO No.: 0000132962
WO No.: L1985508

LSD:
Project Ref:
Sample ID: STRA P-D 101 PF

Sampled By:
Date Collected: 31-AUG-17
Lab Sample ID: L1985508-1
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00308		mg/L	0.01		08-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-SEP-17
PO No.: 0000132962
WO No.: L1985508

LSD:

Project Ref:

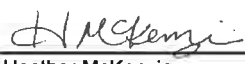
Sample ID: STRA E201 DF

Sampled By:

Date Collected: 31-AUG-17

Lab Sample ID: L1985508-2

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00248		mg/L	0.01		08-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-SEP-17
PO No.: 0000132962
WO No.: L1985508

LSD:

Project Ref:

Sample ID: STRA P002 DF

Sampled By:

Date Collected: 31-AUG-17

Lab Sample ID: L1985508-3

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00212		mg/L	0.01		08-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-SEP-17
PO No.: 0000132962
WO No.: L1985508

LSD:

Project Ref:

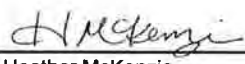
Sample ID: STRA E028 DF

Sampled By:

Date Collected: 31-AUG-17

Lab Sample ID: L1985508-4

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000321		mg/L	0.01		08-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:
Project Ref:
Sample ID: TENN 012C DF

Sampled By:
Date Collected: 30-AUG-17
Lab Sample ID: L1983979-5
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00362		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:

Project Ref:

Sample ID: TENN 003 SSDF

Sampled By:

Date Collected: 30-AUG-17

Lab Sample ID: L1983979-6

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00183		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

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

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Hydroxide	See alkalinity
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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

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mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: MAQU 107 DF

Sampled By:

Date Collected: 12-SEP-17

Lab Sample ID: L1989913-25

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00132		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: MAQU 009 DF

Sampled By:

Date Collected: 12-SEP-17

Lab Sample ID: L1989913-26

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00472		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17

PO No.: 0000132962

WO No.: L1989913

LSD:

Project Ref:

Sample ID: MAQU 118 DF

Sampled By:

Date Collected: 12-SEP-17

Lab Sample ID: L1989913-27

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00463		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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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.

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mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

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D.L. - The reporting limit.

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Guidelines & Objectives

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Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
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*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 of 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
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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.
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Manganese	Elevated levels may cause staining of laundry and porcelain.
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GLOSSARY OF REPORT TERMS

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 30-AUG-17
PO No.: 0000132962
WO No.: L1979993

LSD:
Project Ref:
Sample ID: MTPL 219-DF

Sampled By:
Date Collected: 22-AUG-17
Lab Sample ID: L1979993-1
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00112		mg/L	0.01		25-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 30-AUG-17
PO No.: 0000132962
WO No.: L1979993

LSD:

Project Ref:

Sample ID: MTPL 135-DF

Sampled By:

Date Collected: 22-AUG-17

Lab Sample ID: L1979993-2

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000449		mg/L	0.01		25-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

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

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Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
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Chloride	Common major anion of water chemistry.
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Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
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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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: NOOT 103 DF

Sampled By:

Date Collected: 25-AUG-17

Lab Sample ID: L1981288-17

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00166		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: NOOT 127 DF

Sampled By:

Date Collected: 25-AUG-17

Lab Sample ID: L1981288-18

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00244		mg/L	0.01		29-AUG-17
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Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17
PO No.:
WO No.: L1981288
LSD:
Project Ref:
Sample ID: PGRE-DF 100A
Sampled By:
Date Collected: 24-AUG-17
Lab Sample ID: L1981288-7
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00150		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: PGRE-SSDF 241

Sampled By:

Date Collected: 24-AUG-17

Lab Sample ID: L1981288-8

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00107		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: PGRE-SSDF 305

Sampled By:

Date Collected: 24-AUG-17

Lab Sample ID: L1981288-9

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000733		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: PGRE-SSDF 220

Sampled By:

Date Collected: 24-AUG-17

Lab Sample ID: L1981288-10

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00199		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: PGRE-FS 314

Sampled By:

Date Collected: 24-AUG-17

Lab Sample ID: L1981288-11

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00261		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: PGRE-DF 417

Sampled By:

Date Collected: 24-AUG-17

Lab Sample ID: L1981288-12

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00157		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17
PO No.:
WO No.: L1981288
LSD:
Project Ref:
Sample ID: PGRE-247-DF
Sampled By:
Date Collected: 24-AUG-17
Lab Sample ID: L1981288-22
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00259		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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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

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< - Less than.

D.L. - The reporting limit.

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

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



VANCOUVER SCHOOL BOARD

Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date Received: 10-AUG-17

Report Date: 17-AUG-17 13:38 (MT)

Version: FINAL

Certificate of Analysis

Lab Work Order #: L1972960

Project P.O. #: NOT SUBMITTED

Job Reference:

C of C Numbers: 15-607910

Legal Site Desc:

Dean Watt, B.Sc.
Account Manager

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			L1972960-3 WATER 10-AUG-17 10:00 QEX 105A DF	L1972960-4 WATER 10-AUG-17 10:30 QEX 109 DF	
Grouping	Analyte				
WATER					
Total Metals	Lead (Pb)-Total (mg/L)			0.00167	0.00111

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)
Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

15-607910

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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mg/kg ww - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

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[illegible]

REFER TO BACK PAGE FOR A1S LOCATIONS AND SAMPLING INFORMATION

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

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

WHITE - LABORATORY COPY	YELLOW - CLIENT COPY

SEPTEMBER 2015 FRONT

own



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:
Project Ref:
Sample ID: QELI 110 DF
Sampled By:

Date Collected: 08-SEP-17
Lab Sample ID: L1988743-13
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000689		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: QELI B121 DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-14

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00159		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: QELI 140A DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-15

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000235		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743
LSD:

Project Ref:

Sample ID: QELI 136A DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-16

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000165		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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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.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:
Project Ref:
Sample ID: QUIC 206 DF
Sampled By:
Date Collected: 11-SEP-17
Lab Sample ID: L1989913-1
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000868		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: QUIC 112 DF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-2

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00105		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

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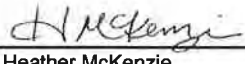
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17
PO No.:
WO No.: L1981288
LSD:
Project Ref:
Sample ID: QUIL-DF 111
Sampled By:
Date Collected: 24-AUG-17
Lab Sample ID: L1981288-1
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000491		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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Guidelines & Objectives

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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.

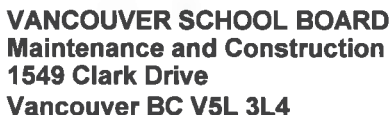
D.L. - The reporting limit.

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

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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.



LSD:
Project Ref:
Sample ID: ROBX 119-DF

Sampled By:
Date Collected: 30-AUG-17
Lab Sample ID: L1983979-2
Matrix: Water

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:

Project Ref:

Sample ID: ROBX 118 DF

Sampled By:

Date Collected: 30-AUG-17

Lab Sample ID: L1983979-3

Matrix: Water

Fountain no
longer in service

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0832		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015						
* 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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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.

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mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

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< - Less than.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:

Project Ref:

Sample ID: ROBE 207B-DF

Sampled By:

Date Collected: 30-AUG-17

Lab Sample ID: L1983979-7

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000950		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:
Project Ref:
Sample ID: SHAV 215 SS DF
Sampled By:
Date Collected: 08-SEP-17
Lab Sample ID: L1988743-24
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000427		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Environmental

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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.
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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^-
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.
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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.
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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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 01-SEP-17
PO No.: 0000132962
WO No.: L1982850

LSD:

Project Ref:

Sample ID: FRAS 134 DF

Sampled By:

Date Collected: 29-AUG-17

Lab Sample ID: L1982850-7

Matrix: water

Fountain no
longer in service

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0170		mg/L	0.01		31-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015						
* 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  Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 01-SEP-17
PO No.: 0000132962
WO No.: L1982850

LSD:

Project Ref:

Sample ID: FRAS 128 SS DF

Sampled By:

Date Collected: 29-AUG-17

Lab Sample ID: L1982850-8

Matrix: water

Fountain no
longer in service

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00233		mg/L	0.01		31-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 						
Heather McKenzie Account Manager						

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

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.
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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

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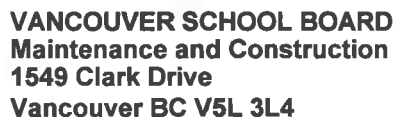
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Project Ref:
Sample ID: MACK 226 DF
Sampled By:
Date Collected: 12-SEP-17
Lab Sample ID: L1989913-20
Matrix: Water

Fountain no longer in service

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: MACK 116 DF

Sampled By:

Date Collected: 12-SEP-17

Lab Sample ID: L1989913-21

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00403		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: MACK 004 DF

Sampled By:

Date Collected: 12-SEP-17

Lab Sample ID: L1989913-22

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00177		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: MACK 003 DF

Sampled By:

Date Collected: 12-SEP-17

Lab Sample ID: L1989913-23

Matrix: Water

Fountain no
longer in service

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00603		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: MACK 006 DF

Sampled By:

Date Collected: 12-SEP-17

Lab Sample ID: L1989913-24

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00105		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

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

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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.



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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092
LSD:

Project Ref:

Sample ID: TUPP 119 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-2

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00232		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 112 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-3

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00332		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 11-OCT-17

PO No.: 0000132962

WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 108 FS

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-4

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00236		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

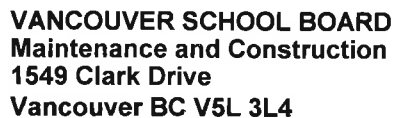
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Matrix: WATER

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Date: 11-OCT-17

PO No.: 0000132962

WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 103B DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-6

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000958		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Date: 11-OCT-17

PO No.: 0000132962

WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 115 BUB

Sampled By:

Date Collected: 29-SEP-17

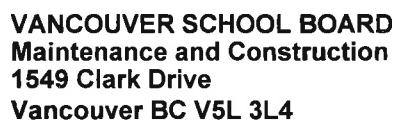
Lab Sample ID: L2000092-7

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00289		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Project Ref:
Sample ID: TUPP 100 BUB
Sampled By:

Date Collected: 29-SEP-17
Lab Sample ID: L2000092-8
Matrix: WATER

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Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 200 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-9

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00393		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 204 SS DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-10

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00151		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 11-OCT-17

PO No.: 0000132962

WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 406 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-11

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00226		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 300 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-12

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00882		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 						
Heather McKenzie Account Manager						

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Date: 11-OCT-17

PO No.: 0000132962

WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 407 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-13

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00459		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 11-OCT-17

PO No.: 0000132962

WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 416 SS DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-14

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00256		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 400 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-15

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00631		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Vancouver BC V5L 3L4

Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 307 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-16

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00109		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
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Date: 11-OCT-17
PO No.: 0000132962
WO No.: L2000092

LSD:

Project Ref:

Sample ID: TUPP 306 SS DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000092-17

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00213		mg/L	0.01		06-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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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.



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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-JUL-17
PO No.: 0000132962
WO No.: L1951982

LSD:
Project Ref:
Sample ID: DOUX 118 DF

Sampled By:

Date Collected: 30-JUN-17

Lab Sample ID: L1951982-7

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00102		mg/L	0.01		08-JUL-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-JUL-17
PO No.: 0000132962
WO No.: L1951982

LSD:

Project Ref:

Sample ID: DOUX 129 DF

Sampled By:

Date Collected: 30-JUN-17

Lab Sample ID: L1951982-8

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000435		mg/L	0.01		08-JUL-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-JUL-17
PO No.: 0000132962
WO No.: L1951982

LSD:

Project Ref:

Sample ID: DOUX 126 DF

Sampled By:

Date Collected: 30-JUN-17

Lab Sample ID: L1951982-9

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00157		mg/L	0.01		08-JUL-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

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

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D.L. - The reporting limit.

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:
Project Ref:
Sample ID: FRAN 108 DF

Sampled By:
Date Collected: 12-SEP-17
Lab Sample ID: L1989913-31
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000780		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: FRAN 300 DF

Sampled By:

Date Collected: 12-SEP-17

Lab Sample ID: L1989913-32

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00747		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: FRAN 308 DF

Sampled By:

Date Collected: 12-SEP-17

Lab Sample ID: L1989913-33

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00108		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

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

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mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

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D.L. - The reporting limit.

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 14-SEP-17
PO No.: 0000132962
WO No.: L1988127

LSD:
Project Ref:

Sample ID: BEGB 104 DF

Sampled By:

Date Collected: 07-SEP-17

Lab Sample ID: L1988127-3

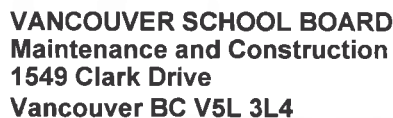
Matrix: WATER

PAGE 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000859		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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LSD:

Project Ref:

Sample ID:

Sampled By:

Date Collected: 07-SEP-17

Lab Sample ID: L1988127-4

Matrix: WATER

Fountain no longer in service

PAGE 4

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 14-SEP-17
PO No.: 0000132962
WO No.: L1988127

LSD:

Project Ref:

Sample ID: BEGB 010 DF

Sampled By:

Date Collected: 07-SEP-17

Lab Sample ID: L1988127-5

Matrix: WATER

PAGE 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000645		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 14-SEP-17
PO No.: 0000132962
WO No.: L1988127

LSD:

Project Ref:

Sample ID: BEGB 013DF

Sampled By:

Date Collected: 07-SEP-17

Lab Sample ID: L1988127-6

Matrix: WATER

PAGE 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00810		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 14-SEP-17

PO No.: 0000132962

WO No.: L1988127

LSD:

Project Ref:

Sample ID: BEGB 007 DF

Sampled By:

Date Collected: 07-SEP-17

Lab Sample ID: L1988127-7

Matrix: WATER

PAGE 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00246		mg/L	0.01		12-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

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Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
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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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
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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.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 01-SEP-17
PO No.: 0000132962
WO No.: L1982850

LSD:

Project Ref:

Sample ID: FLEM 205 DF

Sampled By:

Date Collected: 28-AUG-17

Lab Sample ID: L1982850-5

Matrix: water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000788		mg/L	0.01		31-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

Guidelines & Objectives

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 01-SEP-17
PO No.: 0000132962
WO No.: L1982850

LSD:

Project Ref:

Sample ID: OSLE 127A DFSS

Sampled By:

Date Collected: 28-AUG-17

Lab Sample ID: L1982850-1

Matrix: water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00379		mg/L	0.01		31-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 01-SEP-17
PO No.: 0000132962
WO No.: L1982850

LSD:
Project Ref:
Sample ID: OSLE 129 DF

Sampled By:
Date Collected: 28-AUG-17
Lab Sample ID: L1982850-2
Matrix: water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00419		mg/L	0.01		31-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 01-SEP-17
PO No.: 0000132962
WO No.: L1982850

LSD:

Project Ref:

Sample ID: OSLE 119 DF

Sampled By:

Date Collected: 28-AUG-17

Lab Sample ID: L1982850-3

Matrix: water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00470		mg/L	0.01		31-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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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

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mg/kg - milligrams per kilogram based on dry weight of sample

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mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

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D.L. - The reporting limit.

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

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:
Project Ref:
Sample ID: VANH 202 SSDF
Sampled By:
Date Collected: 11-SEP-17
Lab Sample ID: L1989913-6
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000333		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: VANH 102 SSDF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-7

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000335		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: VANH 001 SSDF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-8

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000180		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913
LSD:

Project Ref:

Sample ID: VANH 011 DF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-9

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000913		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
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Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913
LSD:

Project Ref:

Sample ID: VANH 010 DF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-10

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000288		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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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

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mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

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< - Less than.

D.L. - The reporting limit.

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17
PO No.:
WO No.: L2002133
LSD:
Project Ref:
Sample ID: ADED 363 DF
Sampled By:
Date Collected: 03-OCT-17
Lab Sample ID: L2002133-1
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00303		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17

PO No.:

WO No.: L2002133

LSD:

Project Ref:

Sample ID: ADED 204 DF

Sampled By:

Date Collected: 03-OCT-17

Lab Sample ID: L2002133-2

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00157		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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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.
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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
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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

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17
PO No.:
WO No.: L2002133
LSD:
Project Ref:
Sample ID: SHILL 107 SSDF
Sampled By:
Date Collected: 03-OCT-17
Lab Sample ID: L2002133-3
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00391		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Guidelines & Objectives

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Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).
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Total Dissolved Solids	A measure of water salinity.
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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

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< - Less than.

D.L. - The reporting limit.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: SOUT-DF 13

Sampled By:

Date Collected: 24-AUG-17

Lab Sample ID: L1981288-5

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00163		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 31-AUG-17

PO No.:

WO No.: L1981288

LSD:

Project Ref:

Sample ID: SOUT-DF-223C

Sampled By:

Date Collected: 24-AUG-17

Lab Sample ID: L1981288-6

Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000979		mg/L	0.01		29-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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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.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-OCT-17
PO No.: 0000132962
WO No.: L1999375

LSD:

Project Ref:

Sample ID: TEMP 171 FS

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-8

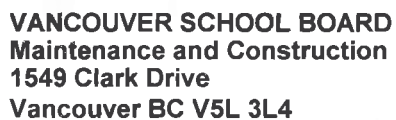
Matrix: Water

**Fountain no
longer in service**

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000628		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Matrix: Water

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-OCT-17
PO No.: 0000132962
WO No.: L1999375
LSD:

Project Ref:

Sample ID: TEMP WA

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-10

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-OCT-17
PO No.: 0000132962
WO No.: L1999375

LSD:

Project Ref:

Sample ID: TEMP 120 BOB

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-11

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00847		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-OCT-17
PO No.: 0000132962
WO No.: L1999375

LSD:

Project Ref:

Sample ID: TEMP 109 DF

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-12

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00500		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

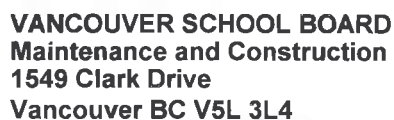
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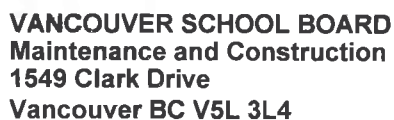
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Project Ref:
Sample ID: TEMP 137 D

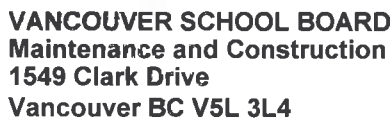
Sampled By:
Date Collected: 27-SEP-17
Lab Sample ID: L1999375-13
Matrix: Water

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Matrix: Water

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Matrix: Water

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-OCT-17

PO No.: 0000132962

WO No.: L1999375

LSD:

Project Ref:

Sample ID: TEMP 213 DF

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-16

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00285		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-OCT-17

PO No.: 0000132962

WO No.: L1999375

LSD:

Project Ref:

Sample ID: TEMP 162 DF

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-17

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00270		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 12-OCT-17

PO No.: 0000132962

WO No.: L1999375

LSD:

Project Ref:

Sample ID: TEMP 129 BUB

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-18

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00359		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

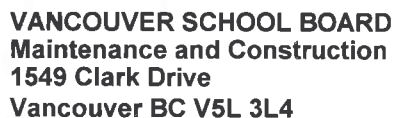
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Project Ref:
Sample ID: TEMP 185 FS
Sampled By:

Date Collected: 27-SEP-17
Lab Sample ID: L1999375-19
Matrix: Water

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Vancouver BC V5L 3L4

Date: 12-OCT-17

PO No.: 0000132962

WO No.: L1999375

LSD:

Project Ref:

Sample ID: TEMP 126 BUB

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-20

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00614		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 12-OCT-17
PO No.: 0000132962
WO No.: L1999375

LSD:

Project Ref:

Sample ID: TEMP 116 DF

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-21

Matrix: Water

**Fountain no
longer in service**

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.0153		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 12-OCT-17

PO No.: 0000132962

WO No.: L1999375

LSD:

Project Ref:

Sample ID: TEMP 127 BUB

Sampled By:

Date Collected: 27-SEP-17

Lab Sample ID: L1999375-22

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000993		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

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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.
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Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
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Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
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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.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-AUG-17
PO No.: 0000132962
WO No.: L1972363

LSD:
Project Ref:
Sample ID: TBIRD 127 DF
Sampled By:
Date Collected: 09-AUG-17
Lab Sample ID: L1972363-4
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000598		mg/L	0.01		15-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-AUG-17
PO No.: 0000132962
WO No.: L1972363

LSD:

Project Ref:

Sample ID: TBIRD 026 SS

Sampled By:

Date Collected: 09-AUG-17

Lab Sample ID: L1972363-5

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000796		mg/L	0.01		15-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
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Date: 17-AUG-17
PO No.: 0000132962
WO No.: L1972363

LSD:

Project Ref:

Sample ID: TBIRD 010 SS

Sampled By:

Date Collected: 09-AUG-17

Lab Sample ID: L1972363-6

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000352		mg/L	0.01		15-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
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Vancouver BC V5L 3L4

Date: 17-AUG-17
PO No.: 0000132962
WO No.: L1972363

LSD:

Project Ref:

Sample ID: TBIRD B156 FS

Sampled By:

Date Collected: 09-AUG-17

Lab Sample ID: L1972363-7

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00135		mg/L	0.01		15-AUG-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

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

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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.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:
Project Ref:
Sample ID: TOTA 119-SSDF
Sampled By:

Date Collected: 30-AUG-17
Lab Sample ID: L1983979-1
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00250		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 07-SEP-17
PO No.: 0000132962
WO No.: L1983979

LSD:

Project Ref:

Sample ID: TOTA 103 SSDF

Sampled By:

Date Collected: 30-AUG-17

Lab Sample ID: L1983979-4

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00545		mg/L	0.01		05-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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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
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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

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mg/kg wwt - milligrams per kilogram based on wet weight of sample

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 19-SEP-17
PO No.: 0000132962
WO No.: L1989913

LSD:

Project Ref:

Sample ID: TRUE 150 DF

Sampled By:

Date Collected: 11-SEP-17

Lab Sample ID: L1989913-11

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00173		mg/L	0.01		15-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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

Aesthetic Objective Concentration Levels

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Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
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Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
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GLOSSARY OF REPORT TERMS

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-JUL-17
PO No.: 0000132962
WO No.: L1951982

LSD:

Project Ref:

Sample ID: TYEE 106 SS

Sampled By:

Date Collected: 30-JUN-17

Lab Sample ID: L1951982-12

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000387		mg/L	0.01		08-JUL-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-JUL-17
PO No.: 0000132962
WO No.: L1951982

LSD:

Project Ref:

Sample ID: TYEE 203 SS

Sampled By:

Date Collected: 30-JUN-17

Lab Sample ID: L1951982-13

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000502		mg/L	0.01		08-JUL-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Guidelines & Objectives

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 06-OCT-17
PO No.: 0000132962
WO No.: L1999378

LSD:
Project Ref:
Sample ID: TECH 602 BUB
Sampled By:

Date Collected: 28-SEP-17
Lab Sample ID: L1999378-2
Matrix: Water

PAGE 2 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00121		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 06-OCT-17
PO No.: 0000132962
WO No.: L1999378

LSD:

Project Ref:

Sample ID: TECH 311 DF

Sampled By:

Date Collected: 28-SEP-17

Lab Sample ID: L1999378-3

Matrix: Water

PAGE 3 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000264		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 06-OCT-17
PO No.: 0000132962
WO No.: L1999378

LSD:

Project Ref:

Sample ID: TECH 322 FCDF

Sampled By:

Date Collected: 28-SEP-17

Lab Sample ID: L1999378-4

Matrix: Water

PAGE 4 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000426		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 06-OCT-17
PO No.: 0000132962
WO No.: L1999378

LSD:

Project Ref:

Sample ID: TECH 421 DF

Sampled By:

Date Collected: 28-SEP-17

Lab Sample ID: L1999378-5

Matrix: Water

PAGE 5 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000443		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

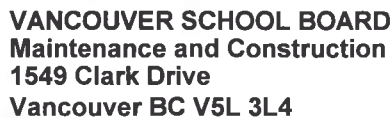
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LSD:
Project Ref:
Sample ID: TECH 411 FS
Sampled By:

Date Collected: 28-SEP-17
Lab Sample ID: L1999378-6
Matrix: Water

PAGE 6 of 11

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 06-OCT-17
PO No.: 0000132962
WO No.: L1999378

LSD:

Project Ref:

Sample ID: TECH 605 BUB

Sampled By:

Date Collected: 28-SEP-17

Lab Sample ID: L1999378-7

Matrix: Water

PAGE 7 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00596		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 06-OCT-17
PO No.: 0000132962
WO No.: L1999378

LSD:

Project Ref:

Sample ID: TECH C 808 DF

Sampled By:

Date Collected: 28-SEP-17

Lab Sample ID: L1999378-8

Matrix: Water

PAGE 8 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00147		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

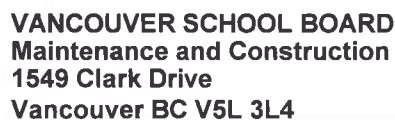
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LSD:

Date Collected: 28-SEP-17
Lab Sample ID: L1999378-9
Matrix: Water

Fountain no longer in service

PAGE 9 of 11

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 06-OCT-17
PO No.: 0000132962
WO No.: L1999378

LSD:

Project Ref:

Sample ID: TECH 700A FS

Sampled By:

Date Collected: 28-SEP-17

Lab Sample ID: L1999378-10

Matrix: Water

PAGE 10 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00249		mg/L	0.01		05-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 						
Heather McKenzie Account Manager						

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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 ww - 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.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:
Project Ref:
Sample ID: WAVE 121 SS DF
Sampled By:
Date Collected: 08-SEP-17
Lab Sample ID: L1988743-25
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00270		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:
Project Ref:
Sample ID: WAVE 159 SS DF

Sampled By:
Date Collected: 08-SEP-17
Lab Sample ID: L1988743-26
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000686		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: WAVE 102 SS DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-27

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000397		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Vancouver BC V5L 3L4

Date: 15-SEP-17
PO No.: 0000132962
WO No.: L1988743

LSD:

Project Ref:

Sample ID: WAVE 125 SS DF

Sampled By:

Date Collected: 08-SEP-17

Lab Sample ID: L1988743-28

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000826		mg/L	0.01		14-SEP-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 17-OCT-17
PO No.:
WO No.: L2002133
LSD:
Project Ref:
Sample ID: WAV 117 DF
Sampled By:
Date Collected: 03-OCT-17
Lab Sample ID: L2002133-5
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00200		mg/L	0.01		10-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Guidelines & Objectives

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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 rationing 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.
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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.

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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.

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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.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-OCT-17

PO No.: 0000132962

WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. 131 FS

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-3

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000290		mg/L	0.01		11-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-OCT-17

PO No.: 0000132962

WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. 116 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-4

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00177		mg/L	0.01		11-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Vancouver BC V5L 3L4

Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND, 118 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-5

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00179		mg/L	0.01		11-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332
LSD:

Project Ref:

Sample ID: WIND.111 FGDK

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-6

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00120		mg/L	0.01		11-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. 106 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-7

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00120		mg/L	0.01		11-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 						
Heather McKenzie Account Manager						

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1549 Clark Drive
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Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. 217 ADF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-8

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000744		mg/L	0.01		11-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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  Heather McKenzie Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. 207 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-9

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000731		mg/L	0.01		11-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 						
Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. 202 SSDF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-10

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000533		mg/L	0.01		11-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. 302 FS

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-11

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000181		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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 <u>Heather McKenzie</u> Heather McKenzie Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4

Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND 317 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-12

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000451		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Vancouver BC V5L 3L4

Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND, 328 SSDF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-13

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00120		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. 235 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-14

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00955		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND B238 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-15

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00723		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. B202 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-16

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00264		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332
LSD:
Project Ref:
Sample ID: WIND. B236 BUB
Sampled By:
Date Collected: 29-SEP-17
Lab Sample ID: L2000332-17
Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00414		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. 250 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-18

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000563		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. B237 BUB

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-19

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00345		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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Date: 13-OCT-17
PO No.: 0000132962
WO No.: L2000332

LSD:

Project Ref:

Sample ID: WIND. 246 DF

Sampled By:

Date Collected: 29-SEP-17

Lab Sample ID: L2000332-20

Matrix: Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000516		mg/L	0.01		07-OCT-17
CDWQG = Health Canada Guideline Limits updated DECEMBER 2015 * 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.						
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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.