Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

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Report Transmission Cover Page

Bill To: City of Maple Ridge
11995 Haney Place
Maple Ridge, BC, Canada
V2X 6A9
Attn: Accounts Payable
Sampled By:
Company:

Project ID:
Project Name: Whonnock Lake Hall Well
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1475452**
Control Number:
Date Received: Feb 22, 2021
Date Reported: Feb 25, 2021
Report Number: 2596715

Contact	Company	Address
Mike Albrecht	**City of Maple Ridge**	
		Maple Ridge, BC V3S 8P8
		Phone: (604) 363-6671 Fax:
		Email: malbrecht@mapleridge.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	COA
Email - Single Report	PDF	Invoice
Email - Single Report	PDF	Test Report

Notes To Clients:

- Feb 25, 2021 - The analysis of water sample 1475452-1 is below Maximum Acceptable Concentrations for the chemical and bacteriological health related guidelines specified by the September 2020 Guidelines for Canadian Drinking Water Quality for the parameters tested.

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Analytical Report

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Reference Number	1475452-1
Sample Date	February 22, 2021
Sample Time	08:50
Sample Location	
Sample Description	Whonnock Lake Hall Well / 8.3 °C
Sample Matrix	Drinking Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Metals Extractable						
Aluminum	Extractable	mg/L	0.002	0.001	0.1	Below OG
Antimony	Extractable	mg/L	<0.00002	0.00002	0.006	Below MAC
Arsenic	Extractable	mg/L	0.0010	0.0001	0.010	Below MAC
Barium	Extractable	mg/L	0.0002	0.0001	2.0	Below MAC
Boron	Extractable	mg/L	0.012	0.002	5	Below MAC
Cadmium	Extractable	mg/L	<0.00001	0.00001	0.007	Below MAC
Chromium	Extractable	mg/L	0.00009	0.00005	0.05	Below MAC
Copper	Extractable	mg/L	0.010	0.0005	1 AO; 2 MAC	Below AO
Lead	Extractable	mg/L	0.00080	0.00001	0.005	Below MAC
Selenium	Extractable	mg/L	<0.0002	0.0002	0.05	Below MAC
Strontium	Extractable	mg/L	0.0028	0.0001	7.0	Below MAC
Uranium	Extractable	mg/L	0.00028	0.00001	0.02	Below MAC
Vanadium	Extractable	mg/L	<0.00005	0.00005		
Zinc	Extractable	mg/L	0.0026	0.0005	5.0	Below AO
Microbiological Analysis						
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Physical and Aggregate Properties						
Colour	True	Colour units	<5	5		
Turbidity		NTU	0.34	0.1	0.1	Above OG
Routine Water						
pH - Holding Time			Exceeded			
pH	at 25 °C		7.86	0.01	7.0-10.5	Within Range
Electrical Conductivity		µS/cm at 25 °C	217	1		
Calcium	Extractable	mg/L	0.91	0.01		
Iron	Extractable	mg/L	0.081	0.004	0.3	Below AO
Magnesium	Extractable	mg/L	0.34	0.02		
Manganese	Extractable	mg/L	0.006	0.001	0.02 AO; 0.12 MAC	Below AO
Potassium	Extractable	mg/L	6.3	0.04		
Silicon	Extractable	mg/L	7.9	0.005		
Sodium	Extractable	mg/L	43	0.1	200	Below AO
T-Alkalinity	as CaCO3	mg/L	102	5		
Chloride	Dissolved	mg/L	9.48	0.05	250	Below AO
Fluoride	Dissolved	mg/L	0.05	0.01	1.5	Below MAC
Nitrate - N	Dissolved	mg/L	<0.01	0.01	10	Below MAC
Nitrite - N	Dissolved	mg/L	<0.01	0.01	1	Below MAC

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Sample Location	
Sample Description	Whonnock Lake Hall Well / 8.3 °C
Sample Matrix	Drinking Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Routine Water - Continued						
Sulfate (SO4)	Dissolved	mg/L	0.5	0.1	500	Below AO
Hardness	as CaCO3 (extractable)	mg/L	3.7	1		
Total Dissolved Solids	Extractable	mg/L	143	1	500	Below AO

Approved by:

Max Hewitt
Operations Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

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Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alk, pH, EC, Turb in water (BC)	APHA	*	Alkalinity - Titration Method, 2320 B	Feb 23, 2021	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	*	Conductivity, 2510 B	Feb 23, 2021	Element Vancouver
Alk, pH, EC, Turb in water (BC)	APHA	*	pH - Electrometric Method, 4500-H+ B	Feb 23, 2021	Element Vancouver
Anions by IEC in water (VAN)	APHA	*	Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	Feb 22, 2021	Element Vancouver
Metals SemiTrace (Extractable) in water (VAN)	US EPA	*	Metals & Trace Elements by ICP-AES, 6010C	Feb 23, 2021	Element Vancouver
Total and E-Coli - Colilert - DW (VAN)	APHA		Enzyme Substrate Test, APHA 9223 B	Feb 22, 2021	Element Vancouver
Trace Metals (extractable) in Water (VAN)	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Feb 23, 2021	Element Vancouver
True Color in water (VAN)	APHA	*	Spectrophotometric - Single Wavelength Method, 2120 C	Feb 22, 2021	Element Vancouver
Turbidity - Water (VAN)	APHA	*	Turbidity - Nephelometric Method, 2130 B	Feb 22, 2021	Element Vancouver

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Guidelines

Guideline Description	Health Canada GCDWQ
Guideline Source	Guidelines for Canadian Drinking Water Quality, Health Canada, Sept 2020
Guideline Comments	MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guideline for Water Treatment Plants (does not apply to private groundwater wells). Refer to Health Canada for complete guidelines at www.hc-sc.gc.ca

Comments:

- Feb 25, 2021 - The analysis of water sample 1475452-1 is below Maximum Acceptable Concentrations for the chemical and bacteriological health related guidelines specified by the September 2020 Guidelines for Canadian Drinking Water Quality for the parameters tested.