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Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID: Name:

877 Keil Street

White Rock, BC, Canada V4B 4V6

Attn: Greg St Louis

Sampled By: Jun/Al Company: City of White Rock

Location:

LSD:

P.O.:

White Rock Water System

Date Received: Date Reported:

Control Number:

May 18, 2016 Report Number: 2104071

Lot ID: 1138112

C0092242

May 17, 2016

Acct code:

Reference Number

1138112-1 May 17, 2016

Sample Date Sample Time

07:18

Sample Location

Sample Description

Mann Park Stn.

Sample Matrix

Drinking Water

				Nominal Detection	Guideline	Guideline
Analyte		Units	Result	Limit	Limit	Comments
Metals Extractable						
Arsenic	Extractable	mg/L	0.0064	0.0002	0.010	Below MAC
Copper	Extractable	mg/L	0.010	0.001	1.0	Below AO
Lead	Extractable	mg/L	< 0.0001	0.0001	0.01	Below MAC
Microbiological Analy	/sis					
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
Routine Water						
Iron	Extractable	mg/L	< 0.005	0.005	0.3	Below AO
Manganese	Extractable	mg/L	0.036	0.001	0.05	Below AO

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Lot ID: 1138112

Report Number: 2104071

Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID: Control Number: C0092242

877 Keil Street Name: White Rock Water System Date Received: May 17, 2016
White Rock, BC, Canada Location: Date Reported: May 18, 2016

V4B 4V6 LSD: Attn: Greg St Louis P.O.:

Sampled By: Jun/Al Acct code:

Company: City of White Rock

Reference Number 1138112-2

Sample Date May 17, 2016

Sample Time 07:08 Sample Location

Sample Description Malabar Stn.

Sample Matrix Drinking Water

		oampic matrix	Dilliking wat	O1		
Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Metals Extractable						
Arsenic	Extractable	mg/L	0.0062	0.0002	0.010	Below MAC
Copper	Extractable	mg/L	0.003	0.001	1.0	Below AO
Lead	Extractable	mg/L	0.0001	0.0001	0.01	Below MAC
Microbiological Analys	sis					
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
Routine Water						
Iron	Extractable	mg/L	< 0.005	0.005	0.3	Below AO
Manganese	Extractable	mg/L	0.020	0.001	0.05	Below AO

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Lot ID: 1138112

Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID: Control Number: C0092242

877 Keil StreetName:White Rock Water SystemDate Received:May 17, 2016White Rock, BC, CanadaLocation:Date Reported:May 18, 2016V4B 4V6LSD:Report Number:2104071

Attn: Greg St Louis P.O.:

Sampled By: Jun/Al Acct code:

Company: City of White Rock

Reference Number 1138112-3

Sample Date May 17, 2016 Sample Time 06:56

Sample Location

Sample Description Marine Dr. Stn.
Sample Matrix Drinking Water

Nominal Detection Guideline Guideline Limit Limit Comments Analyte Units Result **Metals Extractable** Arsenic Extractable 0.0058 0.0002 0.010 Below MAC mg/L Copper Extractable mg/L 0.008 0.001 1.0 Below AO 0.0002 0.0001 Below MAC Lead Extractable mg/L 0.01 Microbiological Analysis **Total Coliforms** Enzyme Substrate MPN/100 mL <1.0 1.0 0 per 100 mL Below MAC Test Below MAC Escherichia coli Enzyme Substrate MPN/100 mL <1.0 1.0 0 per 100 mL Test **Routine Water** Below AO Iron Extractable mg/L < 0.005 0.005 0.3 Manganese Extractable mg/L 0.009 0.001 0.05 Below AO

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Lot ID: 1138112

Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID: Control Number: C0092242

877 Keil StreetName:White Rock Water SystemDate Received:May 17, 2016White Rock, BC, CanadaLocation:Date Reported:May 18, 2016V4B 4V6LSD:Report Number:2104071

Attn: Greg St Louis P.O.:

Sampled By: Jun/Al Acct code:

Company: City of White Rock

Reference Number 1138112-4 Sample Date May 17, 2016

Sample Time 07:29

Sample Location

Sample Description Everall Stn
Sample Matrix Drinking Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Metals Extractable		C ime	rtocuit	·	<u> </u>	
Arsenic	Extractable	mg/L	0.0065	0.0002	0.010	Below MAC
Copper	Extractable	mg/L	0.001	0.001	1.0	Below AO
Lead	Extractable	mg/L	< 0.0001	0.0001	0.01	Below MAC
Microbiological Analy	rsis					
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
Routine Water						
Iron	Extractable	mg/L	< 0.005	0.005	0.3	Below AO
Manganese	Extractable	mg/L	0.090	0.001	0.05	Above AO

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Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID: 877 Keil Street Name:

White Rock, BC, Canada V4B 4V6

Attn: Greg St Louis

Sampled By: Jun/Al

Company: City of White Rock

White Rock Water System

Date Received:

Control Number: C0092242 May 17, 2016

Lot ID: 1138112

Date Reported: May 18, 2016 Report Number: 2104071

Reference Number

Location:

Acct code:

LSD:

P.O.:

Sample Date May 17, 2016 Sample Time

Sample Location

Sample Description Sample Matrix 1138112-5

07:38

Russell Ave. Stn

Drinking Water

		Sample Matrix	Dilliking wate	71		
Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Metals Extractable						
Arsenic	Extractable	mg/L	0.0064	0.0002	0.010	Below MAC
Copper	Extractable	mg/L	0.001	0.001	1.0	Below AO
Lead	Extractable	mg/L	0.0003	0.0001	0.01	Below MAC
Microbiological Analysi	is					
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
Routine Water						
Iron	Extractable	mg/L	< 0.005	0.005	0.3	Below AO
Manganese	Extractable	mg/L	0.056	0.001	0.05	Above AO

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Lot ID: 1138112

Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID: Control Number: C0092242

877 Keil Street Name: White Rock Water System Date Received: May 17, 2016
White Rock, BC, Canada Location: Date Reported: May 18, 2016

V4B 4V6 LSD: Report Number: 2104071
Attn: Greg St Louis P.O.:

Sampled By: Jun/Al Acct code:

Company: City of White Rock

Reference Number 1138112-6 Sample Date May 17, 2016

Sample Time 08:35

Sample Location

Sample Description Stevens Stn.
Sample Matrix Drinking Water

		• • • • • • • • • • • • • • • • • • • •	=g	•.			
				Nominal Detection	Guideline	Guideline	
Analyte		Units	Result	Limit	Limit	Comments	
Metals Extractable							
Arsenic	Extractable	mg/L	0.0085	0.0002	0.010	Below MAC	
Copper	Extractable	mg/L	0.003	0.001	1.0	Below AO	
Lead	Extractable	mg/L	< 0.0001	0.0001	0.01	Below MAC	
Microbiological Analys	is						
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	
Routine Water							
Iron	Extractable	mg/L	< 0.005	0.005	0.3	Below AO	
Manganese	Extractable	mg/L	0.104	0.001	0.05	Above AO	
Manganooc	Extraotable	1119/L	J. 10 -1	3.001	0.00	710	

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Lot ID: 1138112

Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID: Control Number: C0092242

877 Keil StreetName:White Rock Water SystemDate Received:May 17, 2016White Rock, BC, CanadaLocation:Date Reported:May 18, 2016V4B 4V6LSD:Report Number:2104071

Attn: Greg St Louis P.O.:
Sampled By: Jun/Al Acct code:

Company: City of White Rock

Reference Number 1138112-7 Sample Date May 17, 2016

Sample Time 08:23

Sample Location
Sample Description

ample Description Stayte Stn.
Sample Matrix Drinking Water

				Nominal Detection	Guideline	Guideline	
Analyte		Units	Result	Limit	Limit	Comments	
Metals Extractable							
Arsenic	Extractable	mg/L	0.0088	0.0002	0.010	Below MAC	
Copper	Extractable	mg/L	0.009	0.001	1.0	Below AO	
Lead	Extractable	mg/L	0.0014	0.0001	0.01	Below MAC	
Microbiological Analysi	S						
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	
Routine Water							
Iron	Extractable	mg/L	< 0.005	0.005	0.3	Below AO	
Manganese	Extractable	mg/L	0.006	0.001	0.05	Below AO	

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Lot ID: 1138112

2104071

Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID: Control Number: C0092242

877 Keil Street Name: White Rock Water System Date Received: May 17, 2016
White Rock, BC, Canada Location: Date Reported: May 18, 2016

V4B 4V6 LSD: Report Number:
Attn: Greg St Louis P.O.:

Sampled By: Jun/Al Acct code:

Company: City of White Rock

Reference Number 1138112-8

Sample Date May 17, 2016 Sample Time 08:10

Sample Location

Sample Description City Washroom Sample Matrix Drinking Water

Nominal Detection Guideline Guideline Limit Limit Comments Analyte Units Result **Metals Extractable** 0.0091 Arsenic Extractable 0.0002 0.010 Below MAC mg/L Copper Extractable mg/L 0.077 0.001 1.0 Below AO 0.0015 0.0001 Below MAC Lead Extractable mg/L 0.01 Microbiological Analysis **Total Coliforms** Enzyme Substrate MPN/100 mL <1.0 1.0 0 per 100 mL Below MAC Test Below MAC Escherichia coli Enzyme Substrate MPN/100 mL <1.0 1.0 0 per 100 mL Test **Routine Water** Below AO Iron Extractable mg/L 0.030 0.005 0.3 Manganese Extractable mg/L 0.007 0.001 0.05 Below AO

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Analytical Report

Bill To: City of White Rock

Report To: City of White Rock ID: 877 Keil Street Name:

White Rock, BC, Canada

V4B 4V6

Attn: Greg St Louis

Sampled By: Jun/Al

Company: City of White Rock Project:

LSD:

P.O.:

Location:

Acct code:

White Rock Water System

Date Received: Date Reported:

Control Number:

C0092242 May 17, 2016 May 18, 2016

Lot ID: 1138112

Report Number: 2104071

Reference Number 1138112-9 Sample Date May 17, 2016 Sample Time 07:50

Sample Location

Sample Description

Roper Prv. **Drinking Water**

Sample Matrix **Nominal Detection** Guideline Guideline Limit Limit Comments Analyte Units Result **Metals Extractable** Arsenic Extractable 0.0065 0.0002 0.010 Below MAC mg/L Copper Extractable mg/L 0.001 0.001 1.0 Below AO <0.0001 0.0001 Below MAC Lead Extractable mg/L 0.01 Microbiological Analysis **Total Coliforms** Enzyme Substrate MPN/100 mL <1.0 1.0 0 per 100 mL Below MAC Test Below MAC Escherichia coli Enzyme Substrate MPN/100 mL <1.0 1.0 0 per 100 mL Test **Routine Water** Below AO Iron Extractable mg/L < 0.005 0.005 0.3 Manganese Extractable mg/L 0.067 0.001 0.05 Above AO

Routine Water

Manganese

Iron

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Below AO

Above AO

Lot ID: 1138112

2104071

Report Number:

Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID: Control Number: C0092242

877 Keil Street Name: White Rock Water System Date Received: May 17, 2016
White Rock, BC, Canada Location: Date Reported: May 18, 2016

V4B 4V6 LSD:
Attn: Greg St Louis P.O.:

Sampled By: Jun/Al Acct code:

Extractable

Extractable

Company: City of White Rock

Reference Number 1138112-10

Sample Date May 17, 2016

Sample Time 09:15 Sample Location

mg/L

mg/L

Sample Description Merklin Low - 25%
Sample Matrix Drinking Water

Nominal Detection Guideline Guideline Limit Limit Comments Analyte Units Result **Metals Extractable** Arsenic Extractable 0.0096 0.0002 0.010 Below MAC mg/L Copper Extractable mg/L < 0.001 0.001 1.0 Below AO 0.0008 0.0001 Below MAC Lead Extractable mg/L 0.01 Microbiological Analysis **Total Coliforms** Enzyme Substrate MPN/100 mL <1.0 1.0 0 per 100 mL Below MAC Test Below MAC Escherichia coli Enzyme Substrate MPN/100 mL <1.0 1.0 0 per 100 mL Test

< 0.005

0.117

0.005

0.001

0.3

0.05

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Lot ID: 1138112

May 17, 2016

Control Number: C0092242

Report Number: 2104071

Date Reported: May 18, 2016

Date Received:

Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID:

877 Keil Street Name: White Rock, BC, Canada Location:

V4B 4V6 LSD:

Attn: Greg St Louis P.O.:

Sampled By: Jun/Al Acct code:

Company: City of White Rock

 Reference Number
 1138112-11

 Sample Date
 May 17, 2016

White Rock Water System

Sample Time 09:20

Sample Location

Sample Description Merklin Low - 50%
Sample Matrix Drinking Water

	• • • • • • • • • • • • • • • • • • • •		•.		
			Nominal Detection	Guideline	Guideline
	Units	Result	Limit	Limit	Comments
Extractable	mg/L	0.0095	0.0002	0.010	Below MAC
Extractable	mg/L	< 0.001	0.001	1.0	Below AO
Extractable	mg/L	< 0.0001	0.0001	0.01	Below MAC
sis					
Enzyme Substrate	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL	Below MAC
Extractable	mg/L	< 0.005	0.005	0.3	Below AO
Extractable	mg/L	0.116	0.001	0.05	Above AO
	Extractable Extractable sis Enzyme Substrate Test Enzyme Substrate Test Extractable	Units Extractable mg/L Extractable mg/L Extractable mg/L Sis Enzyme Substrate MPN/100 mL Test Enzyme Substrate MPN/100 mL Test Enzyme Substrate MPN/100 mL Test Extractable mg/L	Units Result Extractable mg/L 0.0095 Extractable mg/L <0.001	Nominal Detection Limit Nominal Detection Limit	Nominal Detection Guideline Limit Limit

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Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID:

877 Keil Street

White Rock, BC, Canada V4B 4V6

Attn: Greg St Louis

Sampled By: Jun/Al

Company: City of White Rock

LSD:

P.O.:

Location:

Acct code:

Name:

White Rock Water System

Date Reported: May 18, 2016

Control Number:

Date Received:

Report Number: 2104071

Lot ID: 1138112

C0092242

May 17, 2016

Reference Number 1138112-12 Sample Date May 17, 2016 Sample Time 09:25

Sample Location

Sample Description Sample Matrix Merklin Low - 75% **Drinking Water**

		p					
				Nominal Detection	Guideline	Guideline	
Analyte		Units	Result	Limit	Limit	Comments	
Metals Extractable							
Arsenic	Extractable	mg/L	0.0096	0.0002	0.010	Below MAC	
Copper	Extractable	mg/L	< 0.001	0.001	1.0	Below AO	
Lead	Extractable	mg/L	< 0.0001	0.0001	0.01	Below MAC	
Microbiological Analys	sis						
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	
Routine Water							
Iron	Extractable	mg/L	< 0.005	0.005	0.3	Below AO	
Manganese	Extractable	mg/L	0.117	0.001	0.05	Above AO	

Page 13 of 14

Lot ID: 1138112

Report Number: 2104071

Analytical Report

Bill To: City of White Rock Project:

Report To: City of White Rock ID:

Control Number: C0092242 877 Keil Street White Rock Water System Name: Date Received: May 17, 2016 White Rock, BC, Canada Location: May 18, 2016 Date Reported:

LSD: V4B 4V6 Attn: Greg St Louis P.O.:

Sampled By: Jun/Al Acct code:

Company: City of White Rock

Reference Number 1138112-13 Sample Date May 17, 2016

Sample Time 10:05

Sample Location Sample Description

Main Shop Sample Matrix **Drinking Water**

		p		- -			
Amalusta		Heite	Decult	Nominal Detection Limit	Guideline Limit	Guideline Comments	
Analyte		Units	Result	Lillit	Lillin	Comments	
Metals Extractable							
Arsenic	Extractable	mg/L	0.0096	0.0002	0.010	Below MAC	
Copper	Extractable	mg/L	0.013	0.001	1.0	Below AO	
Lead	Extractable	mg/L	< 0.0001	0.0001	0.01	Below MAC	
Microbiological Analy	/sis						
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	
Routine Water							
Iron	Extractable	mg/L	< 0.005	0.005	0.3	Below AO	
Manganese	Extractable	mg/L	0.009	0.001	0.05	Below AO	

Approved by:

Carol Nam, Dipl. T. **Quality Officer**



Methodology and Notes

Bill To: City of White Rock Project: Lot ID: 1138112

Report To: City of White Rock ID: Control Number: C0092242

877 Keil StreetName:White Rock Water SystemDate Received:May 17, 2016White Rock, BC, CanadaLocation:Date Reported:May 18, 2016V4B 4V6LSD:Report Number:2104071

Attn: Greg St Louis P.O.:

Sampled By: Jun/Al Acct code:

Company: City of White Rock

Method of Analysis								
Method Name	Reference	Method	Date Analysis Started	Location				
Metals SemiTrace (Extractable) in water (Surrey)	US EPA	 Metals & Trace Elements by ICP-AES, 6010C 	17-May-16	Exova Surrey				
Total and E-Coli - Colilert - DW (Surrey)	APHA	Enzyme Substrate Test, APHA 9223 B	17-May-16	Exova Surrey				
Trace Metals (extractable) in Water (Surrey)	US EPA	 Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8 	17-May-16	Exova Surrey				

^{*} 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, October 2014

Guideline Comments MAC = Maximum Acceptable Concentration

AO = Aesthetic Objective

OG = Operational Guideline for Water Treatment Plants

Refer to Health Canada GCDWQ for complete guidelines and additional drinking water information at www.hc-sc.gc.ca

Comments:

• Temperature of samples on arrival was 5.4 °C.

The comparison of test results to guideline limits is provided for information purposes only. This is not to be taken as a statement of conformance / nonconformance to any guideline, regulation or limit. The data user is responsible for all conclusions drawn with respect to the data and is advised to consult official regulatory references when evaluating compliance.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.