



North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

Certificate of Analysis

Report To: North Cedar Improvement District
cc all results here.

Lab Number: 108054
Date Reported: 5 Feb 14
Date Completed: 5 Feb 14
Date Received: 20 Jan 14 10:27

108054-01 Well #1

Raw Water

Sampled By:

Sampling Date: 20 Jan 14 9:10

Test	Result	Units	Drinking Water Guideline
Alkalinity	22	mg/L (CaCO3)	
Ammonia - N	<0.02	mg/L	
Chloride	18.0	mg/L	250 AO
Fluoride	<0.05	mg/L	1.5 MAC
Nitrate (N)	0.23	mg/L	10 MAC
Nitrite (N)	<0.05	mg/L	1 MAC
Sulphate	4.0	mg/L	500 AO
Colour - True	<5	Colour Units	15
Conductivity	115	uS/cm	
Iron Bacteria	None Detected	cfu/mL	
Sulphur Bacteria	None Detected	cfu/mL	
Corrosivity	-2.28		
T-Mercury	<0.00001	mg/L	0.001 MAC
pH at 25 C	6.7	pH Units	6.5-8.5
Sulphide	<0.002	mg/L	0.05 AO
Total Coliforms (DES)	<1.0	MPN/100mL	<1
E. coli (DES)	<1.0	MPN/100mL	<1
Total Dissolved Solids	66	mg/L dried at 180 °	500 AO
Total Organic Carbon	0.9	mg/L	
Total Organic Nitrogen	0.1	mg/L	
Total Plate Count	9	CFU/ml	
T-Aluminium	<0.005	mg/L	0.1 Operational Std
T-Antimony	<0.0001	mg/L	0.006 MAC
T-Arsenic	0.00006	mg/L	0.010 MAC
T-Barium	0.00729	mg/L	1.0 MAC
T-Beryllium	<0.00005	mg/L	

AO = Aesthetic Objective; MAC = Max. Allowable Concentration; IMAC = Interim MAC

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2/5/2014 15:23

Page 1 of 8



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108054-01 Well #1

Raw Water

Sampled By:

Sampling Date: 20 Jan 14 9:10

Test	Result	Units	Drinking Water Guideline
T-Boron	0.055	mg/L	5 MAC
T-Bismuth	<0.0001	mg/L	
T-Cadmium	0.00002	mg/L	0.005 MAC
T-Calcium	8.53	mg/L	
T-Chromium	<0.0005	mg/L	0.05 MAC
T-Cobalt	<0.0001	mg/L	
T-Copper	0.0085	mg/L	1.0 AO
T-Iron	0.008	mg/L	0.3 AO
T-Lead	0.0011	mg/L	0.010 MAC
T-Lithium	0.0028	mg/L	
T-Magnesium	1	mg/L	
T-Manganese	<0.0010	mg/L	0.05 AO
T-Molybdenum	0.00011	mg/L	
T-Nickel	<0.0002	mg/L	
T-Potassium	0.2	mg/L	
T-Selenium	<0.0001	mg/L	0.01 MAC
T-Silicon	3.26	mg/L	
T-Silver	<0.00005	mg/L	
T-Sodium	12	mg/L	200 AO
T-Strontium	0.0716	mg/L	
T-Thallium	<0.00001	mg/L	
T-Tin	<0.0001	mg/L	
T-Titanium	<0.0005	mg/L	
T-Uranium	<0.00001	mg/L	
T-Vanadium	0.0005	mg/L	
T-Zinc	0.0164	mg/L	5.0 AO
Hardness (CaCO ₃)	25	mg/L	80-100
Turbidity	<0.5	NTU's	5 AO

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2/5/2014 15:23

Page 2 of 8



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108054-02 Well #3

Raw Water

Sampled By:

Sampling Date: 20 Jan 14 8:55

Test	Result	Units	Drinking Water Guideline
Alkalinity	20	mg/L (CaCO ₃)	
Ammonia - N	<0.02	mg/L	
Chloride	17.9	mg/L	250 AO
Fluoride	<0.05	mg/L	1.5 MAC
Nitrate (N)	0.23	mg/L	10 MAC
Nitrite (N)	<0.05	mg/L	1 MAC
Sulphate	4.1	mg/L	500 AO
Colour - True	<5	Colour Units	15
Conductivity	118	uS/cm	
Iron Bacteria	None Detected	cfu/mL	
Sulphur Bacteria	None Detected	cfu/mL	
Corrosivity	-2.42		
T-Mercury	<0.00001	mg/L	0.001 MAC
pH at 25 C	6.6	pH Units	6.5-8.5
Sulphide	<0.002	mg/L	0.05 AO
Total Coliforms (DES)	<1.0	MPN/100mL	<1
E. coli (DES)	<1.0	MPN/100mL	<1
Total Dissolved Solids	72	mg/L dried at 180 °	500 AO
Total Organic Carbon	0.8	mg/L	
Total Organic Nitrogen	<0.08	mg/L	
Total Plate Count	<3	CFU/ml	
T-Aluminium	<0.005	mg/L	0.1 Operational Std
T-Antimony	<0.0001	mg/L	0.006 MAC
T-Arsenic	0.00005	mg/L	0.010 MAC
T-Barium	0.00714	mg/L	1.0 MAC
T-Beryllium	<0.00005	mg/L	
T-Boron	0.046	mg/L	5 MAC
T-Bismuth	<0.0001	mg/L	
T-Cadmium	<0.00001	mg/L	0.005 MAC
T-Calcium	8.59	mg/L	
T-Chromium	<0.0005	mg/L	0.05 MAC
T-Cobalt	<0.0001	mg/L	
T-Copper	0.0092	mg/L	1.0 AO
T-Iron	0.004	mg/L	0.3 AO

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2/5/2014 15:23

Page 3 of 8



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108054-02 Well #3

Raw Water

Sampled By:

Sampling Date: 20 Jan 14 8:55

Test	Result	Units	Drinking Water Guideline
T-Lead	0.001	mg/L	0.010 MAC
T-Lithium	0.0029	mg/L	
T-Magnesium	1	mg/L	
T-Manganese	<0.0010	mg/L	0.05 AO
T-Molybdenum	0.00012	mg/L	
T-Nickel	<0.0002	mg/L	
T-Potassium	0.2	mg/L	
T-Selenium	<0.0001	mg/L	0.01 MAC
T-Silicon	3.29	mg/L	
T-Silver	<0.00005	mg/L	
T-Sodium	12.1	mg/L	200 AO
T-Strontium	0.0727	mg/L	
T-Thallium	<0.00001	mg/L	
T-Tin	<0.0001	mg/L	
T-Titanium	<0.0005	mg/L	
T-Uranium	<0.00001	mg/L	
T-Vanadium	0.0005	mg/L	
T-Zinc	0.0109	mg/L	5.0 AO
Hardness (CaCO ₃)	26	mg/L	80-100
Turbidity	<0.5	NTU's	5 AO

108054-03 Well #6

Raw Water

Sampled By:

Sampling Date: 20 Jan 14 8:55

Test	Result	Units	Drinking Water Guideline
Alkalinity	22	mg/L (CaCO ₃)	
Ammonia - N	<0.02	mg/L	
Chloride	6.1	mg/L	250 AO
Fluoride	<0.05	mg/L	1.5 MAC
Nitrate (N)	0.13	mg/L	10 MAC
Nitrite (N)	<0.05	mg/L	1 MAC
Sulphate	2.1	mg/L	500 AO
Colour - True	<5	Colour Units	15

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2/5/2014 15:23

Page 4 of 8



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108054-03 Well #6

Raw Water

Sampled By:

Sampling Date: 20 Jan 14 8:55

Test	Result	Units	Drinking Water Guideline
Conductivity	74	uS/cm	
Iron Bacteria	None Detected	cfu/mL	
Sulphur Bacteria	None Detected	cfu/mL	
Corrosivity	-2.49		
T-Mercury	<0.00001	mg/L	0.001 MAC
pH at 25 C	6.5	pH Units	6.5-8.5
Sulphide	<0.002	mg/L	0.05 AO
Total Coliforms (DES)	<1.0	MPN/100mL	<1
E. coli (DES)	<1.0	MPN/100mL	<1
Total Dissolved Solids	40	mg/L dried at 180 °	500 AO
Total Organic Carbon	0.7	mg/L	
Total Organic Nitrogen	<0.08	mg/L	
Total Plate Count	4	CFU/ml	
T-Aluminium	0.021	mg/L	0.1 Operational Std
T-Antimony	<0.0001	mg/L	0.006 MAC
T-Arsenic	0.0001	mg/L	0.010 MAC
T-Barium	0.00786	mg/L	1.0 MAC
T-Beryllium	<0.00005	mg/L	
T-Boron	0.023	mg/L	5 MAC
T-Bismuth	<0.0001	mg/L	
T-Cadmium	<0.00001	mg/L	0.005 MAC
T-Calcium	8.07	mg/L	
T-Chromium	<0.0005	mg/L	0.05 MAC
T-Cobalt	<0.0001	mg/L	
T-Copper	0.0233	mg/L	1.0 AO
T-Iron	0.314	mg/L	0.3 AO
T-Lead	0.0023	mg/L	0.010 MAC
T-Lithium	0.0008	mg/L	
T-Magnesium	1.09	mg/L	
T-Manganese	0.0079	mg/L	0.05 AO
T-Molybdenum	0.00009	mg/L	
T-Nickel	<0.0002	mg/L	
T-Potassium	0.2	mg/L	
T-Selenium	<0.0001	mg/L	0.01 MAC

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2/5/2014 15:23

Page 5 of 8



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108054-03 Well #6

Raw Water

Sampled By:

Sampling Date: 20 Jan 14 8:55

Test	Result	Units	Drinking Water Guideline
T-Silicon	3.71	mg/L	
T-Silver	<0.00005	mg/L	
T-Sodium	5.1	mg/L	200 AO
T-Strontium	0.0473	mg/L	
T-Thallium	<0.00001	mg/L	
T-Tin	<0.0001	mg/L	
T-Titanium	0.0022	mg/L	
T-Uranium	<0.00001	mg/L	
T-Vanadium	0.0009	mg/L	
T-Zinc	0.0098	mg/L	5.0 AO
Hardness (CaCO ₃)	25	mg/L	80-100
Turbidity	0.5	NTU's	5 AO

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2/5/2014 15:23

Page 6 of 8



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108054-01

Test	Method	Analyst	Date
Alkalinity	Titration to 4.5, APHA 2320 B -modified	NiSL	1/21/2014
Ammonia - N	Hach 10205, Salicylate -modified	NiSL	1/22/2014
Chloride	Ion Chromatography, EPA 300.1 -modified	NiSL	1/22/2014
Colour - True	Spectrophotometer, APHA 2120 C -modified	NiSL	1/21/2014
Conductivity	Conductivity @25C, APHA 2510 B -modified	NiSL	1/21/2014
Corrosivity	Langelier Saturation Index, www.awwa.org		
Corrosivity	Langelier Saturation Index, www.awwa.org	NiSL	2/4/2014
E. coli (DES)	Enzyme Substrate, APHA 9223 B -modified	NiSL	1/20/2014
Fluoride	Ion Chromatography, EPA 300.1 -modified	NiSL	1/22/2014
Hardness (CaCO3)	Hardness by Calculation, APHA 2340 B -modified	NiSL	2/4/2014
Iron Bacteria	Subcontracted Test	MBL	1/21/2014
Nitrate (N)	Ion Chromatography, EPA 300.1 -modified	NiSL	1/22/2014
Nitrite (N)	Ion Chromatography, EPA 300.1 -modified	NiSL	1/22/2014
pH at 25 C	Electrometric, APHA 4500 B -modified	NiSL	1/21/2014
Sulphate	Ion Chromatography, EPA 300.1 -modified	NiSL	1/22/2014
Sulphide	Exova Subcontract, Gas Dialysis APHA 4500-S2-E	EXL	1/30/2014
Sulphur Bacteria	Subcontracted Test	MBL	1/21/2014
T-Aluminium	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Antimony	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Arsenic	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Barium	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Beryllium	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Bismuth	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Boron	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Cadmium	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Calcium	Exova Subcontract, ICP, APHA 3120B -modified	EXL	1/30/2014
T-Chromium	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Cobalt	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Copper	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Iron	Exova Subcontract, ICP, APHA 3120B -modified	EXL	1/30/2014
T-Lead	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Lithium	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Magnesium	Exova Subcontract, ICP, APHA 3120B-modified	EXL	1/30/2014
T-Manganese	Exova Subcontract, ICP, APHA 3120B -modified	EXL	1/30/2014
T-Mercury	Exova Subcontract, Atomic Absorb, MDMS 245.1	EXL	1/29/2014

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2/5/2014 15:23

Page 7 of 8



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T-Molybdenum	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Nickel	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Potassium	Exova Subcontract, ICP, APHA 3120B - modified	EXL	1/30/2014
T-Selenium	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Silicon	Exova Subcontract, ICP, APHA 3120B - modified	EXL	1/30/2014
T-Silver	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Sodium	Exova Subcontract, ICP, APHA 3120B - modified	EXL	1/30/2014
T-Strontium	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Thallium	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Tin	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Titanium	Exova Subcontract, ICP, APHA 3120B - modified	EXL	1/30/2014
T-Uranium	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
T-Vanadium	Exova Subcontract, ICP, APHA 3120B - modified	EXL	1/30/2014
T-Zinc	Exova Subcontract, ICP-MS,USEPA 200.8-modified	EXL	1/30/2014
Total Coliforms (DES)	Enzyme Substrate, APHA 9223 B -modified	NIsL	1/20/2014
Total Dissolved Solids	Exova Subcontract, dried @ 180C,APHA 2540C-modified	EXL	1/30/2014
Total Organic Carbon	Exova Subcontract, Ch.34 SSSA BookSeries5-modified	EXL	1/30/2014
Total Organic Nitrogen	Exova Subcontract, Ch.37 SSSA BookSeries5-modified	EXL	1/30/2014
Total Plate Count	Membrane Filtration, APHA 9215 D -modified	NIsL	1/20/2014
Turbidity	Nephelometric, APHA 2130 B -modified	NIsL	1/21/2014

Approved By:

Catherine Black, Owner/Operator

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Page 8 of 8