

Site Location: BERWICK WELLS
 Your C.O.C. #: G030468

Attention: Bob Weir
 Town of Qualicum Beach
 201-660 Primrose St
 P.O. Box 130
 Qualicum Beach, BC
 Canada V9K 1S7

Report Date: 2012/10/18

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B292000

Received: 2012/10/12, 09:20

Sample Matrix: DRINKING WATER
 # Samples Received: 3

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
Colour (True)	3	N/A	2012/10/12	BBY6SOP-00021	SM-2120B
Hardness Total (calculated as CaCO3)	3	N/A	2012/10/18	BBY WI-00033	Calculated Parameter
ICP-AES Total Metals in Water	3	2012/10/16	2012/10/18	BBY7SOP-00018	EPA 200.7
Nitrogen (Total)	3	2012/10/17	2012/10/17	BBY6SOP-00022	SM-4500N C
Ammonia-N (Preserved)	3	N/A	2012/10/15	BBY6SOP-00009	SM-4500NH3G
Nitrate + Nitrite (N)	3	N/A	2012/10/12	BBY6SOP-00010	USEPA 353.2
Nitrite (N) by CFA	3	N/A	2012/10/12	BBY6SOP-00010	EPA 353.2
Nitrogen - Nitrate (as N)	3	N/A	2012/10/15	BBY6SOP-00010	Based on EPA 353.2
pH Water	3	N/A	2012/10/12	BBY6SOP-00026	SM-4500H+B
Total Dissolved Solids (Filt. Residue)	3	2012/10/17	2012/10/17	BBY6SOP-00033	SM 2540C
TKN (Calc. TN, N/N) total	3	N/A	2012/10/17		
Carbon (Total Organic)	3	N/A	2012/10/15	BBY6SOP-00003	SM-5310C
Total Phosphorus	3	N/A	2012/10/15	BBY6SOP-00013	SM 4500 PE
Turbidity	3	N/A	2012/10/12	BBY6SOP-00027	SM - 2130B

* Results relate only to the items tested.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Jazz Bamra, Burnaby Project Manager
 Email: JBamra@Maxxam.ca
 Phone# (604) 639-2615

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 This report has been generated and distributed using a secure automated process. Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B292000
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Town of Qualicum Beach

Site Location: BERWICK WELLS

RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER

Maxxam ID					ES1677	ES1678	ES1679	
Sampling Date					2012/10/11 09:00	2012/10/11 09:15	2012/10/11 09:30	
COC#					G030468	G030468	G030468	
	UNITS	Criteria A	Criteria B	Criteria C	BERWICK #1	BERWICK #2	BERWICK #3	RDL
ANIONS								
Nitrite (N)	mg/L	1			<0.0050	<0.0050	<0.0050	0.0050
Calculated Parameters								
Total Hardness (CaCO ₃)	mg/L				142	128	118	0.50
Nitrate (N)	mg/L	10			0.385	0.497	0.458	0.020
Misc. Inorganics								
Total Organic Carbon (C)	mg/L				1.19	0.73	<0.50	0.50
MISCELLANEOUS								
True Colour	Col. Unit		15		<5.0	5.0	5.0	5.0
Nutrients								
Ammonia (N)	mg/L				0.023	0.022	0.032	0.0050
Total Total Kjeldahl Nitrogen (Calc)	mg/L				0.083	0.110	0.088	0.020
Nitrate plus Nitrite (N)	mg/L				0.385	0.497	0.458	0.020
Total Nitrogen (N)	mg/L				0.469	0.607	0.547	0.020
Total Phosphorus (P)	mg/L				0.0150	0.0127	0.0150	0.0050
Physical Properties								
pH	pH Units		6.5:8.5		7.96	7.93	7.87	
Physical Properties								
Total Dissolved Solids	mg/L		500		192	162	154	10
Turbidity	NTU	see remark	see remark	see remark	0.28	<0.10	0.26	0.10

RDL = Reportable Detection Limit

Criteria A, Criteria B, Criteria C: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, August 2012.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)

It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.

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ELEMENTS BY ATOMIC SPECTROSCOPY (DRINKING WATER)

Maxxam ID					ES1677	ES1678	ES1679	
Sampling Date					2012/10/11 09:00	2012/10/11 09:15	2012/10/11 09:30	
CO#					G030468	G030468	G030468	
	UNITS	Criteria A	Criteria B	Criteria C	BERWICK #1	BERWICK #2	BERWICK #3	RDL
Total Metals by ICP								
Total Aluminum (Al)	mg/L			0.1	<0.050	<0.050	<0.050	0.050
Total Antimony (Sb)	mg/L	0.006			0.054	<0.050	<0.050	0.050
Total Arsenic (As)	mg/L	0.01			<0.030	<0.030	<0.030	0.030
Total Barium (Ba)	mg/L	1.0			0.0040	0.0019	0.0035	0.0010
Total Beryllium (Be)	mg/L				<0.0030	<0.0030	<0.0030	0.0030
Total Bismuth (Bi)	mg/L				<0.050	<0.050	<0.050	0.050
Total Boron (B)	mg/L	5			<0.010	<0.010	<0.010	0.010
Total Cadmium (Cd)	mg/L	0.005			<0.0050	<0.0050	<0.0050	0.0050
Total Chromium (Cr)	mg/L	0.05			<0.010	<0.010	<0.010	0.010
Total Cobalt (Co)	mg/L				<0.020	<0.020	<0.020	0.020
Total Copper (Cu)	mg/L		1.0		<0.020	<0.020	<0.020	0.020
Total Iron (Fe)	mg/L		0.3		0.031	<0.010	0.015	0.010
Total Lead (Pb)	mg/L	0.010			<0.030	<0.030	<0.030	0.030
Total Lithium (Li)	mg/L				<0.020	<0.020	<0.020	0.020
Total Manganese (Mn)	mg/L		0.05		<0.0030	<0.0030	<0.0030	0.0030
Total Molybdenum (Mo)	mg/L				<0.020	<0.020	<0.020	0.020
Total Nickel (Ni)	mg/L				<0.020	<0.020	<0.020	0.020
Total Phosphorus (P)	mg/L				<0.050	<0.050	<0.050	0.050
Total Selenium (Se)	mg/L	0.01			<0.10	<0.10	<0.10	0.10
Total Silicon (Si)	mg/L				7.78	9.33	8.02	0.050
Total Silver (Ag)	mg/L				<0.010	<0.010	<0.010	0.010
Total Strontium (Sr)	mg/L				0.0735	0.0483	0.0585	0.0010
Total Tin (Sn)	mg/L				<0.030	<0.030	<0.030	0.030
Total Titanium (Ti)	mg/L				<0.0050	<0.0050	<0.0050	0.0050
Total Vanadium (V)	mg/L				<0.010	<0.010	<0.010	0.010
Total Zinc (Zn)	mg/L		5.0		0.0148	0.0100	0.0119	0.0050

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COC#					G030468	G030468	G030468	
	UNITS	Criteria A	Criteria B	Criteria C	BERWICK #1	BERWICK #2	BERWICK #3	RDL
Total Zirconium (Zr)	mg/L				<0.020	<0.020	<0.020	0.020
Total Calcium (Ca)	mg/L				33.1	26.0	25.2	0.050
Total Magnesium (Mg)	mg/L				14.3	15.2	13.3	0.050
Total Potassium (K)	mg/L				<0.30	<0.30	<0.30	0.30
Total Sodium (Na)	mg/L		200		6.34	6.72	7.02	0.10
Total Sulphur (S)	mg/L				1.78	1.76	1.38	0.10

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Package 1	1.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

Sample ES1677-01: The BC-MOE and APHA Standard Method require pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the BC-MOE/APHA Standard Method holding time.


Sample ES1678-01: The BC-MOE and APHA Standard Method require pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the BC-MOE/APHA Standard Method holding time.

Sample ES1679-01: The BC-MOE and APHA Standard Method require pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the BC-MOE/APHA Standard Method holding time.

Validation Signature Page

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The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Andy Lu, Data Validation Coordinator

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G 030468

Invoice To: Require Report? Yes No

Report To: Town of Qualicum Beach, Bob Weir, #201-660 Primrose St., P.O. Box 130, PC: V9K 1S7, Ph: 250 752 6921, Fax: 250 752 1243, Bob.Weir@QualicumBeach.com

Company Name: Same as report, Contact Name: Address: PC: Phone / Fax#: Ph: Fax: E-mail:

PO #: Quotation #: Project #: Proj. Name: Location: Berwick Wells, Sampled By:

REGULATORY REQUIREMENTS SERVICE REQUESTED:

- CSR, CCME, BC Water Quality, Other, DRINKING WATER, Regular Turn Around Time (TAT) (5 days for most tests), RUSH (Please contact the lab), 1 Day, 2 Day, 3 Day, Date Required:

Special Instructions:

Return Cooler Ship Sample Bottles (please specify) Ship back same as recieved and additives

"all samples are raw water"

ANALYSIS REQUESTED

Table with columns for various chemical and physical parameters (BTEX, PCB, Phenols, TOG, Dissolved Metals, etc.) and rows for samples 1-12. Includes handwritten notes like 'AMMONIA' and 'NITRATE, NITRITE'.

Table with columns: Sample Identification, Lab Identification, Sample Type, Date/Time Sampled. Contains handwritten entries for samples 1-12.

Chain of custody signature and receipt table with columns: Relinquished by, Date, Time, Received by, Date, Time, Temperature on Receipt, Custody Seal Contact on Cooler.