

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

Report Date: 2013/11/07

This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B393846
Received: 2013/10/11, 09:10

Sample Matrix: Water
 # Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Colour (True)	6	N/A	2013/10/11	BBY6SOP-00021	SM-2120B
Hardness Total (calculated as CaCO3)	6	N/A	2013/10/17	BBY7SOP-00002	EPA 6020A
ICP-AES Total Metals in Water	6	2013/10/17	2013/10/17	BBY7SOP-00018	EPA 6010C
Na, K, Ca, Mg, S by CRC ICPMS (total)	6	2013/11/04	2013/11/05	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total)	6	2013/11/05	2013/11/05	BBY7SOP-00002	EPA 6020A
Nitrogen (Total)	6	2013/10/15	2013/10/16	BBY6SOP-00016	SM-4500N C
Ammonia-N (Preserved)	6	N/A	2013/10/11	BBY6SOP-00009	SM-4500NH3G
Nitrate + Nitrite (N)	6	N/A	2013/10/11	BBY6SOP-00010	SM 4500NO3-I
Nitrite (N) by CFA	6	N/A	2013/10/11	BBY6SOP-00010	EPA 353.2
Nitrogen - Nitrate (as N)	6	N/A	2013/10/12	BBY6SOP-00010	SM 4500NO3-I
pH Water (1)	6	N/A	2013/10/12	BBY6SOP-00026	SM-4500H+B
Total Dissolved Solids (Filt. Residue)	6	2013/10/17	2013/10/18	BBY6SOP-00033	SM 2540C
TKN (Calc. TN, N/N) total	6	N/A	2013/10/16	BBY6SOP-00022	SM 4500N-C
Carbon (Total Organic)	6	N/A	2013/10/11	BBY6SOP-00003	SM-5310C
Total Phosphorus	6	N/A	2013/10/12	BBY6SOP-00013	SM 4500 PE
Turbidity	6	N/A	2013/10/11	BBY6SOP-00027	SM - 2130B

* Results relate only to the items tested.

(1) 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.

Encryption Key

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

Jasmeen Jatana, Project Manager
 Email: JJatana@maxxam.ca
 Phone# (604) 734 7276

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 #: B393846
 Report Date: 2013/11/07

Town of Qualicum Beach

Sampler Initials: SW

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID					HU3917	HU3918	HU3919	HU3924	HU3925	HU3926	
Sampling Date					2013/10/10 08:13	2013/10/10 08:32	2013/10/10 07:58	2013/10/10 09:13	2013/10/10 08:53	2013/10/10 09:03	
COC#					G070983	G070983	G070983	G070984	G070984	G070984	
	UNITS	Criteria A	Criteria B	Criteria C	RIVERWELL #5	RIVERWELL #6	RIVERWELL #7	BERWICK WELL #1	BERWICK WELL #2	BERWICK WELL #3	RDL
ANIONS											
Nitrite (N)	mg/L	1			<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Calculated Parameters											
Total Hardness (CaCO3)	mg/L				46.7	43.2	56.7	134	135	112	0.50
Nitrate (N)	mg/L	10			0.139	0.201	0.116	0.467	0.605	0.617	0.020
Misc. Inorganics											
Total Organic Carbon (C)	mg/L				0.56	0.56	0.60	0.67	0.54	0.64	0.50
MISCELLANEOUS											
True Colour	Col. Unit		15		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0
Nutrients											
Ammonia (N)	mg/L				0.0069	0.010	0.0061	0.0093	0.0090	0.0053	0.0050
Total Total Kjeldahl Nitrogen (Calc)	mg/L				0.064	0.044	0.055	<0.020	0.056	<0.020	0.020
Nitrate plus Nitrite (N)	mg/L				0.139	0.201	0.116	0.467	0.605	0.617	0.020
Total Nitrogen (N)	mg/L				0.203	0.245	0.171	0.484	0.661	0.629	0.020
Total Phosphorus (P)	mg/L				<0.0050	<0.0050	<0.0050	0.0175	0.0133	0.0167	0.0050
Physical Properties											
pH	pH Units		6.5:8.5		7.50	7.59	7.55	8.12	7.98	8.06	
Physical Properties											
Total Dissolved Solids	mg/L		500		74	84	100	200	186	174	10
Turbidity	NTU	see remark	see remark	see remark	<0.10	<0.10	0.16	<0.10	<0.10	<0.10	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 (WATER)

Maxxam ID					HU3917	HU3918	HU3919		HU3924		HU3925	HU3926	
Sampling Date					2013/10/10 08:13	2013/10/10 08:32	2013/10/10 07:58		2013/10/10 09:13		2013/10/10 08:53	2013/10/10 09:03	
CO#					G070983	G070983	G070983		G070984		G070984	G070984	
	UNITS	Criteria A	Criteria B	Criteria C	RIVERWELL #5	RIVERWELL #6	RIVERWELL #7	RDL	BERWICK WELL #1	RDL	BERWICK WELL #2	BERWICK WELL #3	RDL
Total Metals by ICP													
Total Iron (Fe)	mg/L		0.3		<0.010	<0.010	0.040	0.010	<0.010	0.010	<0.010	<0.010	0.010
Total Metals by ICPMS													
Total Aluminum (Al)	ug/L			100	4.6	8.9	36.2	3.0	9.2	6.0	3.7	3.5	3.0
Total Antimony (Sb)	ug/L	6			<0.50	<0.50	<0.50	0.50	<1.0	1.0	<0.50	<0.50	0.50
Total Arsenic (As)	ug/L	10			<0.10	<0.10	<0.10	0.10	0.24	0.20	0.27	0.29	0.10
Total Barium (Ba)	ug/L	1000			1.7	1.4	1.8	1.0	3.6	2.0	1.8	3.5	1.0
Total Beryllium (Be)	ug/L				<0.10	<0.10	<0.10	0.10	<0.20	0.20	<0.10	<0.10	0.10
Total Bismuth (Bi)	ug/L				<1.0	<1.0	<1.0	1.0	<2.0	2.0	<1.0	<1.0	1.0
Total Boron (B)	ug/L	5000			<50	<50	<50	50	<100	100	<50	<50	50
Total Cadmium (Cd)	ug/L	5			0.026	<0.010	<0.010	0.010	<0.020	0.020	<0.010	<0.010	0.010
Total Chromium (Cr)	ug/L	50			<1.0	<1.0	<1.0	1.0	<2.0	2.0	<1.0	<1.0	1.0
Total Cobalt (Co)	ug/L				<0.50	<0.50	<0.50	0.50	<1.0	1.0	<0.50	<0.50	0.50
Total Copper (Cu)	ug/L		1000		9.35	6.71	19.6	0.20	1.91	0.40	2.23	2.71	0.20
Total Iron (Fe)	ug/L		300		<5.0	10.1	58.6	5.0	<10	10	<5.0	5.5	5.0
Total Lead (Pb)	ug/L	10			3.78	2.40	14.1	0.20	<0.40	0.40	0.24	0.33	0.20
Total Lithium (Li)	ug/L				<5.0	<5.0	<5.0	5.0	<10	10	<5.0	<5.0	5.0
Total Manganese (Mn)	ug/L		50		<1.0	1.1	9.5	1.0	<2.0	2.0	<1.0	<1.0	1.0
Total Mercury (Hg)	ug/L	1			<0.050	<0.050	<0.050	0.050	<0.10	0.10	<0.050	<0.050	0.050
Total Molybdenum (Mo)	ug/L				<1.0	<1.0	<1.0	1.0	<2.0	2.0	<1.0	<1.0	1.0
Total Nickel (Ni)	ug/L				<1.0	<1.0	<1.0	1.0	<2.0	2.0	<1.0	<1.0	1.0
Total Selenium (Se)	ug/L	10			<0.10	<0.10	<0.10	0.10	<0.20	0.20	0.22	0.10	0.10
Total Silicon (Si)	ug/L				5370	4840	7130	100	8700	200	10700	8750	100
Total Silver (Ag)	ug/L				<0.020	<0.020	<0.020	0.020	<0.040	0.040	<0.020	<0.020	0.020
Total Strontium (Sr)	ug/L				33.7	31.2	37.4	1.0	67.6	2.0	50.1	54.8	1.0
Total Thallium (Tl)	ug/L				<0.050	<0.050	<0.050	0.050	<0.10	0.10	<0.050	<0.050	0.050

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Maxxam ID					HU3917	HU3918	HU3919		HU3924		HU3925	HU3926	
Sampling Date					2013/10/10 08:13	2013/10/10 08:32	2013/10/10 07:58		2013/10/10 09:13		2013/10/10 08:53	2013/10/10 09:03	
COC#					G070983	G070983	G070983		G070984		G070984	G070984	
	UNITS	Criteria A	Criteria B	Criteria C	RIVERWELL #5	RIVERWELL #6	RIVERWELL #7	RDL	BERWICK WELL #1	RDL	BERWICK WELL #2	BERWICK WELL #3	RDL
Total Tin (Sn)	ug/L				<5.0	<5.0	<5.0	5.0	<10	10	<5.0	<5.0	5.0
Total Titanium (Ti)	ug/L				<5.0	<5.0	<5.0	5.0	<10	10	<5.0	<5.0	5.0
Total Uranium (U)	ug/L	20			<0.10	<0.10	<0.10	0.10	<0.20	0.20	<0.10	<0.10	0.10
Total Vanadium (V)	ug/L				<5.0	<5.0	<5.0	5.0	<10	10	<5.0	<5.0	5.0
Total Zinc (Zn)	ug/L		5000		<5.0	5.1	11.5	5.0	<10	10	<5.0	9.8	5.0
Total Zirconium (Zr)	ug/L				<0.50	<0.50	<0.50	0.50	<1.0	1.0	<0.50	<0.50	0.50
Total Calcium (Ca)	mg/L				14.3	13.4	16.8	0.050	31.3	0.10	27.8	23.5	0.050
Total Magnesium (Mg)	mg/L				2.67	2.39	3.59	0.050	13.4	0.10	16.0	12.9	0.050
Total Potassium (K)	mg/L				0.162	0.166	0.177	0.050	0.56	0.10	0.506	0.502	0.050
Total Sodium (Na)	mg/L		200		2.35	2.39	3.06	0.050	6.32	0.10	7.14	6.58	0.050
Total Sulphur (S)	mg/L				<3.0	<3.0	<3.0	3.0	<6.0	6.0	<3.0	<3.0	3.0

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Package 1	5.3°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

Sample HU3917-01: 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 HU3918-01: 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 HU3919-01: 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 HU3924-01: 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 HU3925-01: 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 HU3926-01: 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.


ELEMENTS BY ATOMIC SPECTROSCOPY (WATER) Comments

Sample HU3924-03 Elements by CRC ICPMS (total): RDL raised due to sample matrix interference.

Validation Signature Page

Maxxam Job #: B393846

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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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.



Maxxam Job#: B393846

G 070983

Invoice To: Require Report? Yes No

Report To:

Company Name: _____
Contact Name: _____
Address: _____
PC: _____
Phone / Fax#: Ph: _____ Fax: _____
E-mail: _____

Company Name: TOWN OF QUALicum BEACH
Contact Name: BOB WEIR
Address: #201-660 PRIMROSE ST.
P.O. BOX 130 PO: V9K 1S7
Phone / Fax#: Ph: 250726921 Fax: 2507521243
E-mail: BOBWEIR@QUALICUMBACH.COM

PO #: _____
Quotation #: _____
Project #: _____
Proj. Name: _____
Location: _____
Sampled By: S Wood

REGULATORY REQUIREMENTS SERVICE REQUESTED:

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

Special Instructions:

Return Cooler Ship Sample Bottles (please specify)

* ALL SAMPLES ARE RAW WATER

ANALYSIS REQUESTED

Sample ID	Lab ID	Sample Type	Date/Time	MTBE	TEH	LEPHEPH	PCB	Phenols by CASP	PCOG	SPGOG	Dissolved Metals	Total Metals Field Analysis	Nitrate	Chloride	Total Suspended Solids-TSS	pH	Conductivity	Alkalinity	BOD	COD	Coliform, Total & Escol	Fecal	Adhesion	TURBIDITY	COLOUR	TKN & T.O.C.	TOTAL PHOS.	TOTAL IRON	HARDNESS	HOLD	
1 RIVERWELL #5	HU3917	H ₂ O	13/10/10 7:50												X	X								X	X						
2 " " #6	HU3918	"	13/10/10 8:30												X	X								X	X						
3 " " #7	HU3919	"	13/10/10 7:55												X	X								X	X						
4 RIVERWELL #5		"	13/10/10 8:11											X												X	X				
5 " " #6		"	13/10/10 8:31											X												X	X				
6 " " #7		"	13/10/10 7:56											X												X	X				
7 RIVERWELL #5		"	13/10/10 8:13																									X	X		
8 " " #6		"	13/10/10 8:32																								X	X			
9 " " #7		"	13/10/10 7:57																								X	X			
10 RIVERWELL #5		"	13/10/10 8:12																												
11 " " #6		"	13/10/10 7:58																												
12 " " #7		"	13/10/10 7:58																												

YES X NO
YES NO
Samples are from a Drinking Water Source? YES NO
Does source supply multiple households? YES NO

*Relinquished by: S Wood Date (YY/MM/DD): 13/10/10 Time: _____
Received by: Bob Weir Date (YY/MM/DD): 2013/10/11 Time: 09:10

Time Sensitive:
Temperature on Receipt (°C): 4.57
Custody Seal (last on Cooler): NA
Yes No



B393846

