

Your P.O. #: 00348
 Your C.O.C. #: 32531001

Attention: Scott Churko

City of Parksville
 Engineering and Operations Dpt
 PO Box 1390
 Parksville, BC
 Canada V9P 2H3

Report Date: 2012/09/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B279455

Received: 2012/09/06, 09:15

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Alkalinity - Water	1	2012/09/07	2012/09/08	BBY6SOP-00026	SM2320B
Chloride by Automated Colourimetry	1	N/A	2012/09/07	BBY6SOP-00011	SM-4500-Cl-
Colour (True)	1	N/A	2012/09/07	BBY6SOP-00021	SM-2120B
Coliform by membrane filtration	1	N/A	2012/09/06	BRN SOP 00363 R2.0	Based on SM-9222
E.coli by membrane filtration in Water	1	N/A	2012/09/06	BRN SOP 00363 R2.0	Based on SM-9222
Conductance - water	1	N/A	2012/09/08	BBY6SOP-00026	SM-2510B
Fluoride	1	N/A	2012/09/07	BBY6SOP-00038	SM - 4500 F C
Hardness Total (calculated as CaCO3)	1	N/A	2012/09/12	BBY WI-00033	Calculated Parameter
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	N/A	2012/09/12	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total)	1	N/A	2012/09/12	BBY7SOP-00002	EPA 6020A
Nitrate + Nitrite (N)	1	N/A	2012/09/06	BBY6SOP-00010	USEPA 353.2
Nitrite (N) by CFA	1	N/A	2012/09/06	BBY6SOP-00010	EPA 353.2
Nitrogen - Nitrate (as N)	1	N/A	2012/09/07	BBY6SOP-00010	Based on EPA 353.2
pH Water	1	N/A	2012/09/08	BBY6SOP-00026	SM-4500H+B
Sulphate by Automated Colourimetry	1	N/A	2012/09/07	BBY6SOP-00017	SM4500-SO42
Total Dissolved Solids (Filt. Residue)	1	2012/09/12	2012/09/12	BBY6SOP-00033	SM 2540C
Turbidity	1	N/A	2012/09/07	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.

Dana Stevenson, Burnaby Project Manager
 Email: DStevenson@maxxam.ca
 Phone# (604) 734 7276

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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 #: B279455
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Sampler Initials: SC

MICROBIOLOGY (WATER)

Maxxam ID		EJ9248		
Sampling Date		2012/09/05 01:30		
	UNITS	NEW INTAKE	RDL	QC Batch
Microbiological Param.				
E. coli	CFU/100mL	21	1	6147360
Total Coliforms	CFU/100mL	230	1	6147362

RDL = Reportable Detection Limit

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DRINKING WATER PACKAGE (WATER)

Maxxam ID		EJ9248		
Sampling Date		2012/09/05 01:30		
	UNITS	NEW INTAKE	RDL	QC Batch
ANIONS				
Nitrite (N)	mg/L	<0.0050	0.0050	6146319
Calculated Parameters				
Total Hardness (CaCO ₃)	mg/L	28.7	0.50	6143638
Nitrate (N)	mg/L	<0.020	0.020	6143280
Misc. Inorganics				
Fluoride (F)	mg/L	0.015	0.010	6148853
Alkalinity (Total as CaCO ₃)	mg/L	22.9	0.50	6147929
Alkalinity (PP as CaCO ₃)	mg/L	<0.50	0.50	6147929
Bicarbonate (HCO ₃)	mg/L	27.9	0.50	6147929
Carbonate (CO ₃)	mg/L	<0.50	0.50	6147929
Hydroxide (OH)	mg/L	<0.50	0.50	6147929
Anions				
Dissolved Sulphate (SO ₄)	mg/L	1.68	0.50	6148585
Dissolved Chloride (Cl)	mg/L	12	0.50	6148579
MISCELLANEOUS				
True Colour	Col. Unit	<5.0	5.0	6149610
Nutrients				
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	6146316
Physical Properties				
Conductivity	uS/cm	86.4	1.0	6147966
pH	pH Units	7.55		6147968
Physical Properties				
Total Dissolved Solids	mg/L	56	10	6161241
Turbidity	NTU	0.42	0.10	6148111

RDL = Reportable Detection Limit



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DRINKING WATER PACKAGE (WATER)

Maxxam ID		EJ9248		
Sampling Date		2012/09/05 01:30		
	UNITS	NEW INTAKE	RDL	QC Batch
Total Metals by ICPMS				
Total Aluminum (Al)	ug/L	13.5	3.0	6156529
Total Antimony (Sb)	ug/L	<0.50	0.50	6156529
Total Arsenic (As)	ug/L	0.12	0.10	6156529
Total Barium (Ba)	ug/L	5.6	1.0	6156529
Total Boron (B)	ug/L	<50	50	6156529
Total Cadmium (Cd)	ug/L	<0.010	0.010	6156529
Total Chromium (Cr)	ug/L	<1.0	1.0	6156529
Total Cobalt (Co)	ug/L	<0.50	0.50	6156529
Total Copper (Cu)	ug/L	0.79	0.20	6156529
Total Iron (Fe)	ug/L	71.1	5.0	6156529
Total Lead (Pb)	ug/L	<0.20	0.20	6156529
Total Manganese (Mn)	ug/L	8.8	1.0	6156529
Total Mercury (Hg)	ug/L	<0.050	0.050	6156529
Total Molybdenum (Mo)	ug/L	<1.0	1.0	6156529
Total Nickel (Ni)	ug/L	<1.0	1.0	6156529
Total Selenium (Se)	ug/L	<0.10	0.10	6156529
Total Silver (Ag)	ug/L	<0.020	0.020	6156529
Total Uranium (U)	ug/L	<0.10	0.10	6156529
Total Vanadium (V)	ug/L	<5.0	5.0	6156529
Total Zinc (Zn)	ug/L	<5.0	5.0	6156529
Total Calcium (Ca)	mg/L	9.56	0.050	6144624
Total Magnesium (Mg)	mg/L	1.18	0.050	6144624
Total Potassium (K)	mg/L	0.136	0.050	6144624
Total Sodium (Na)	mg/L	4.76	0.050	6144624
Total Sulphur (S)	mg/L	<3.0	3.0	6144624

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Package 1	10.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

Sample EJ9248-01: 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.

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QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6146316	Nitrate plus Nitrite (N)	2012/09/06	104	80 - 120	105	80 - 120	<0.020	mg/L	NC	25
6146319	Nitrite (N)	2012/09/06	101	80 - 120	100	80 - 120	<0.0050	mg/L	NC	20
6147929	Alkalinity (Total as CaCO ₃)	2012/09/07	107	80 - 120	97	80 - 120	<0.50	mg/L	NC	20
6147929	Alkalinity (PP as CaCO ₃)	2012/09/07					<0.50	mg/L	NC	20
6147929	Bicarbonate (HCO ₃)	2012/09/07					<0.50	mg/L	NC	20
6147929	Carbonate (CO ₃)	2012/09/07					<0.50	mg/L	NC	20
6147929	Hydroxide (OH)	2012/09/07					<0.50	mg/L	NC	20
6147966	Conductivity	2012/09/07			99	80 - 120	<1.0	uS/cm	NC	20
6148111	Turbidity	2012/09/07			102	80 - 120	<0.10	NTU	4.6	20
6148579	Dissolved Chloride (Cl)	2012/09/07			102	80 - 120	<0.50	mg/L	2.7	20
6148585	Dissolved Sulphate (SO ₄)	2012/09/07			100	80 - 120	<0.50	mg/L	2.4	20
6148853	Fluoride (F)	2012/09/07	NC	80 - 120	104	80 - 120	<0.010	mg/L	4.2	20
6149610	True Colour	2012/09/07					<5.0	Col. Unit	NC	20
6156529	Total Aluminum (Al)	2012/09/12	100	80 - 120	105	80 - 120	<3.0	ug/L	NC	20
6156529	Total Antimony (Sb)	2012/09/12	100	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
6156529	Total Arsenic (As)	2012/09/12	NC	80 - 120	101	80 - 120	<0.10	ug/L	1.2	20
6156529	Total Barium (Ba)	2012/09/12	NC	80 - 120	99	80 - 120	<1.0	ug/L	0.8	20
6156529	Total Cadmium (Cd)	2012/09/12	97	80 - 120	99	80 - 120	<0.010	ug/L	NC	20
6156529	Total Chromium (Cr)	2012/09/12	96	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
6156529	Total Cobalt (Co)	2012/09/12	94	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
6156529	Total Copper (Cu)	2012/09/12	90	80 - 120	99	80 - 120	<0.20	ug/L	1.1	20
6156529	Total Iron (Fe)	2012/09/12	NC	80 - 120	105	80 - 120	<5.0	ug/L	1.0	20
6156529	Total Lead (Pb)	2012/09/12	90	80 - 120	95	80 - 120	<0.20	ug/L	NC	20
6156529	Total Manganese (Mn)	2012/09/12	NC	80 - 120	99	80 - 120	<1.0	ug/L	0.5	20
6156529	Total Mercury (Hg)	2012/09/12	89	80 - 120	91	80 - 120	<0.050	ug/L	NC	20
6156529	Total Molybdenum (Mo)	2012/09/12	NC	80 - 120	99	80 - 120	<1.0	ug/L	2.6	20
6156529	Total Nickel (Ni)	2012/09/12	92	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
6156529	Total Selenium (Se)	2012/09/12	105	80 - 120	102	80 - 120	<0.10	ug/L	NC	20
6156529	Total Silver (Ag)	2012/09/12	96	80 - 120	100	80 - 120	<0.020	ug/L	NC	20
6156529	Total Uranium (U)	2012/09/12	94	80 - 120	91	80 - 120	<0.10	ug/L	NC	20
6156529	Total Vanadium (V)	2012/09/12	100	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
6156529	Total Zinc (Zn)	2012/09/12	99	80 - 120	108	80 - 120	<5.0	ug/L	NC	20

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QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6156529	Total Boron (B)	2012/09/12					<50	ug/L	NC	20
6161241	Total Dissolved Solids	2012/09/12	NC	80 - 120	98	80 - 120	<10	mg/L	0.3	20

N/A = Not Applicable

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery



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calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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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INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#7634 City of Parksville	Company Name:		Quotation #:	B11293	MAXXAM JOB #:	BOTTLE ORDER #:
Contact Name:	Scott Churko	Contact Name:		P.O. #:	00348		
Address:	Engineering and Operations Dpt PO Box 1390 Parksville BC V9P 2H3	Address:		Project #:		CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(250)248-5412 Fax: (250)248-6140	Phone:		Project Name:			Dana Stevenson
Email:	schurko@parksville.ca	Email:		Site #:		0K325310-01-01	
				Sampled By:	Scott Churko		

REGULATORY CRITERIA:	SPECIAL INSTRUCTIONS:	ANALYSIS REQUESTED (Please be specific):	TURNAROUND TIME (TAT) REQUIRED:
			PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
			Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dissolved Solids are > 3 days - contact your Project Manager for details.
			Job Specific Rush TAT (if applies to entire submission)
			Days Required: _____ Time Required: _____
			Rush Confirmation Number: _____ (call us for #)

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

SAMPLES MUST BE KEPT COOL (+ 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Mixts	Regulated Drinking Water ? (Y/N)	Metallic Field Filtered ? (Y/N)	MONTHLY	# of Bottles	Comments
EJ9248	New Intake	12/09/05	1:30		Y	N	X	5	

PREPARED BY: (Signature/Print)	Date: (YYMMDD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YYMMDD)	Time:	# Jars Used and Not Submitted	Laboratory Use Only
<i>SCC/Scott Churko</i>	12/09/05	2:30	<i>Maria Laura Berthier</i>	12/09/06	09:15		Time Sensitive: <input type="checkbox"/> Temperature (°C) on Receipt: 10, 10, 10 Seal Intact on Courier? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No