

Your C.O.C. #: WI005081

**Attention: Jennifer Bradley**

North Cedar Improvement District  
PO Box 210  
2100 Yellow Point Rd  
Cedar, BC  
Canada V9X 1W1

**Report Date: 2016/06/08**

Report #: R2193335

Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B640784**

**Received: 2016/05/26, 14:20**

Sample Matrix: DRINKING WATER

# Samples Received: 3

<b>Analyses</b>	<b>Quantity</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>	<b>Laboratory Method</b>	<b>Analytical Method</b>
Alkalinity - Water (1)	3	2016/05/31	2016/05/31	BBY6SOP-00026	SM2320B
Chloride by Automated Colourimetry	3	N/A	2016/05/30	BBY6SOP-00011	SM 22 4500-Cl- E m
True Colour (Single Wavelength) (1)	3	N/A	2016/05/27	VIC SOP-00010	Based on SM-2120 C
Conductance - water (1)	3	N/A	2016/05/31	BBY6SOP-00026	SM-2510B
Fluoride	3	N/A	2016/05/30	BBY6SOP-00048	SM 22 4500-F C m
Iron Bacteria (1)	3	N/A	2016/05/27	VIC SOP-00114	SM 22 9240 m
Hardness Total (calculated as CaCO3)	3	N/A	2016/06/03	BBY WI-00033	Auto Calc
Mercury (Total) by CVAf	3	2016/06/01	2016/06/01	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Heterotropic Plate Count Water Mem. Filt (1)	3	N/A	2016/05/27	BBY4 SOP-00003	Based on SM-9215
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	N/A	2016/06/03	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Elements by CRC ICPMS (total)	3	N/A	2016/06/03	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Nitrogen (Total)	3	2016/05/31	2016/06/01	BBY6SOP-00016	SM 22 4500-N C m
Ammonia-N (Preserved)	3	N/A	2016/05/30	BBY6SOP-00009	SM 22 4500-NH3- G m
Nitrate + Nitrite (N)	3	N/A	2016/05/27	BBY6SOP-00010	SM 22 4500-NO3- I m
Nitrite (N) by CFA	3	N/A	2016/05/27	BBY6SOP-00010	SM 22 4500-NO3- I m
Nitrogen - Nitrate (as N)	3	N/A	2016/05/28	BBY6SOP-00010	SM 22 4500-NO3 I m
Nitrogen (Organic) (Cal. TKN, NH4,N/N)	3	N/A	2016/06/01	BBY WI-00033	Auto Calc
pH Water (1, 2)	3	N/A	2016/05/31	BBY6SOP-00026	SM-4500H+B
Sat. pH and Langelier Index (@ 4.4C)	3	N/A	2016/06/03	BBY WI-00033	Auto Calc
Sat. pH and Langelier Index (@ 60C)	3	N/A	2016/06/03	BBY WI-00033	Auto Calc
Sulphate by Automated Colourimetry	1	N/A	2016/05/30	BBY6SOP-00017	SM 22 4500-SO42- E m
Sulphate by Automated Colourimetry	2	N/A	2016/05/31	BBY6SOP-00017	SM 22 4500-SO42- E m
Sulphate Reducing Bacteria (1)	3	N/A	2016/06/06	VIC SOP-00114	SM 22 9240 m
Sulphide - total	1	N/A	2016/05/30	BBY6SOP-00006	SM 22 4500-S2- D m
Sulphide - total	2	N/A	2016/05/31	BBY6SOP-00006	SM 22 4500-S2- D m
Total Dissolved Solids (Filt. Residue) (1)	3	N/A	2016/05/31	VIC SOP-00008	Based on SM 2540C
Total Coliform & E.Coli by MF-Chromocult (1)	3	N/A	2016/05/27	VIC SOP 00112	Based on SM-9222
Carbon (Total Organic) (3)	3	N/A	2016/05/27	BBY6SOP-00003	SM 22 5310 C m
Turbidity (1)	3	N/A	2016/05/27	VIC SOP-00011	Based on SM - 2130

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**Received: 2016/05/26, 14:20**

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) This test was performed by Maxxam Victoria
- (2) 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.
- (3) TOC present in the sample should be considered as non-purgeable TOC.

**Encryption Key**

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

Tanya Eugene, M.Sc., Project Manager

Email: TEugine@maxxam.ca

Phone# (604)639-2609

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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 #: B640784  
Report Date: 2016/06/08

North Cedar Improvement District

**RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER**

Maxxam ID					OR8165	OR8166		
Sampling Date					2016/05/26 11:00	2016/05/26 11:20		
COC Number					WI005081	WI005081		
	UNITS	MAC	AO	OG	NCID WELL #1	NCID WELL #3	RDL	QC Batch
<b>ANIONS</b>								
Nitrite (N)	mg/L	1	-	-	<0.0050	<0.0050	0.0050	8281597
<b>Calculated Parameters</b>								
Total Hardness (CaCO3)	mg/L	-	-	-	23.9	18.0	0.50	8280183
Nitrate (N)	mg/L	10	-	-	0.171	0.157	0.020	8279378
<b>Misc. Inorganics</b>								
Fluoride (F)	mg/L	1.5	-	-	<0.010	0.027	0.010	8284274
Alkalinity (Total as CaCO3)	mg/L	-	-	-	22.8	16.8	0.5	8283448
Total Organic Carbon (C)	mg/L	-	-	-	0.53	0.94	0.50	8282499
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<0.5	<0.5	0.5	8283448
Bicarbonate (HCO3)	mg/L	-	-	-	27.9	20.5	0.5	8283448
Carbonate (CO3)	mg/L	-	-	-	<0.5	<0.5	0.5	8283448
Hydroxide (OH)	mg/L	-	-	-	<0.5	<0.5	0.5	8283448
<b>Anions</b>								
Dissolved Sulphate (SO4)	mg/L	-	500	-	5.06	4.09	0.50	8284788
Dissolved Chloride (Cl)	mg/L	-	250	-	15	9.5	0.50	8283116
<b>MISCELLANEOUS</b>								
True Colour	Col. Unit	-	15	-	<5	<5	5	8282268
<b>Nutrients</b>								
Total Organic Nitrogen (N)	mg/L	-	-	-	0.057	0.056	0.020	8280255
Total Ammonia (N)	mg/L	-	-	-	0.010	0.016	0.0050	8283234
Nitrate plus Nitrite (N)	mg/L	-	-	-	0.171	0.157	0.020	8281596
Total Nitrogen (N)	mg/L	-	-	-	0.238	0.229	0.020	8284484
<b>Physical Properties</b>								
Conductivity	uS/cm	-	-	-	103	75	1	8283447
pH	pH	-	6.5:8.5	-	7.0	7.0		8283445
<b>Physical Properties</b>								
Total Dissolved Solids	mg/L	-	500	-	53	45	10	8282678
Turbidity	NTU	see remark	see remark	see remark	0.2	0.2	0.1	8282270
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								

**RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER**

Maxxam ID					OR8167		
Sampling Date					2016/05/26 11:45		
COC Number					WI005081		
	UNITS	MAC	AO	OG	NCID WELL #6	RDL	QC Batch
<b>ANIONS</b>							
Nitrite (N)	mg/L	1	-	-	<0.0050	0.0050	8281597
<b>Calculated Parameters</b>							
Total Hardness (CaCO3)	mg/L	-	-	-	23.0	0.50	8280183
Nitrate (N)	mg/L	10	-	-	0.194	0.020	8279378
<b>Misc. Inorganics</b>							
Fluoride (F)	mg/L	1.5	-	-	0.021	0.010	8284274
Alkalinity (Total as CaCO3)	mg/L	-	-	-	23.2	0.5	8283448
Total Organic Carbon (C)	mg/L	-	-	-	0.89	0.50	8282499
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<0.5	0.5	8283448
Bicarbonate (HCO3)	mg/L	-	-	-	28.3	0.5	8283448
Carbonate (CO3)	mg/L	-	-	-	<0.5	0.5	8283448
Hydroxide (OH)	mg/L	-	-	-	<0.5	0.5	8283448
<b>Anions</b>							
Dissolved Sulphate (SO4)	mg/L	-	500	-	4.34	0.50	8283135
Dissolved Chloride (Cl)	mg/L	-	250	-	6.5	0.50	8283116
<b>MISCELLANEOUS</b>							
True Colour	Col. Unit	-	15	-	<5	5	8282268
<b>Nutrients</b>							
Total Organic Nitrogen (N)	mg/L	-	-	-	0.121	0.020	8280255
Total Ammonia (N)	mg/L	-	-	-	0.0084	0.0050	8283235
Nitrate plus Nitrite (N)	mg/L	-	-	-	0.194	0.020	8281596
Total Nitrogen (N)	mg/L	-	-	-	0.324	0.020	8284484
<b>Physical Properties</b>							
Conductivity	uS/cm	-	-	-	71	1	8283447
pH	pH	-	6.5:8.5	-	7.0		8283445
<b>Physical Properties</b>							
Total Dissolved Solids	mg/L	-	500	-	40	10	8282678
Turbidity	NTU	see remark	see remark	see remark	0.6	0.1	8282270
No Fill	No Exceedance						
Grey	Exceeds 1 criteria policy/level						
Black	Exceeds both criteria/levels						
RDL = Reportable Detection Limit							

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**MERCURY BY COLD VAPOR (DRINKING WATER)**

Maxxam ID			OR8165	OR8166	OR8167		
Sampling Date			2016/05/26 11:00	2016/05/26 11:20	2016/05/26 11:45		
COC Number			WI005081	WI005081	WI005081		
	UNITS	MAC	NCID WELL #1	NCID WELL #3	NCID WELL #6	RDL	QC Batch
<b>Elements</b>							
Total Mercury (Hg)	ug/L	1	<0.010	<0.010	<0.010	0.010	8284897
No Fill	No Exceedance						
Grey	Exceeds 1 criteria policy/level						
Black	Exceeds both criteria/levels						
RDL = Reportable Detection Limit							

**ELEMENTS BY ATOMIC SPECTROSCOPY (DRINKING WATER)**

Maxxam ID					OR8165	OR8166	OR8167		
Sampling Date					2016/05/26 11:00	2016/05/26 11:20	2016/05/26 11:45		
COC Number					WI005081	WI005081	WI005081		
	UNITS	MAC	AO	OG	NCID WELL #1	NCID WELL #3	NCID WELL #6	RDL	QC Batch
<b>Total Metals by ICPMS</b>									
Total Aluminum (Al)	ug/L	-	-	100	<3.0	3.5	<3.0	3.0	8283847
Total Antimony (Sb)	ug/L	6	-	-	<0.50	<0.50	<0.50	0.50	8283847
Total Arsenic (As)	ug/L	10	-	-	<0.10	<0.10	<0.10	0.10	8283847
Total Barium (Ba)	ug/L	1000	-	-	8.3	5.8	6.1	1.0	8283847
Total Beryllium (Be)	ug/L	-	-	-	<0.10	<0.10	<0.10	0.10	8283847
Total Bismuth (Bi)	ug/L	-	-	-	<1.0	<1.0	<1.0	1.0	8283847
Total Boron (B)	ug/L	5000	-	-	<50	<50	<50	50	8283847
Total Cadmium (Cd)	ug/L	5	-	-	<0.010	<0.010	<0.010	0.010	8283847
Total Chromium (Cr)	ug/L	50	-	-	<1.0	<1.0	<1.0	1.0	8283847
Total Cobalt (Co)	ug/L	-	-	-	<0.50	<0.50	<0.50	0.50	8283847
Total Copper (Cu)	ug/L	-	1000	-	3.14	1.99	1.81	0.20	8283847
Total Iron (Fe)	ug/L	-	300	-	9.1	9.3	68.1	5.0	8283847
Total Lead (Pb)	ug/L	10	-	-	<0.20	<0.20	<0.20	0.20	8283847
Total Manganese (Mn)	ug/L	-	50	-	11.2	<1.0	1.6	1.0	8283847
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	<1.0	<1.0	1.0	8283847
Total Nickel (Ni)	ug/L	-	-	-	<1.0	<1.0	<1.0	1.0	8283847
Total Selenium (Se)	ug/L	50	-	-	<0.10	<0.10	<0.10	0.10	8283847
Total Silicon (Si)	ug/L	-	-	-	3660	3110	3790	100	8283847
Total Silver (Ag)	ug/L	-	-	-	<0.020	<0.020	<0.020	0.020	8283847
Total Strontium (Sr)	ug/L	-	-	-	56.7	39.0	36.6	1.0	8283847
Total Thallium (Tl)	ug/L	-	-	-	<0.050	<0.050	<0.050	0.050	8283847
Total Tin (Sn)	ug/L	-	-	-	<5.0	<5.0	<5.0	5.0	8283847
Total Titanium (Ti)	ug/L	-	-	-	<5.0	<5.0	<5.0	5.0	8283847
Total Uranium (U)	ug/L	20	-	-	<0.10	<0.10	<0.10	0.10	8283847
Total Vanadium (V)	ug/L	-	-	-	<5.0	<5.0	<5.0	5.0	8283847
Total Zinc (Zn)	ug/L	-	5000	-	<5.0	<5.0	<5.0	5.0	8283847
Total Zirconium (Zr)	ug/L	-	-	-	<0.50	<0.50	<0.50	0.50	8283847
Total Calcium (Ca)	mg/L	-	-	-	7.52	5.88	7.50	0.050	8279377
Total Magnesium (Mg)	mg/L	-	-	-	1.24	0.806	1.04	0.050	8279377
Total Potassium (K)	mg/L	-	-	-	0.233	0.211	0.202	0.050	8279377
Total Sodium (Na)	mg/L	-	200	-	10.7	6.99	4.71	0.050	8279377
Total Sulphur (S)	mg/L	-	-	-	<3.0	<3.0	<3.0	3.0	8279377
No Fill	No Exceedance								
Grey	Exceeds 1 criteria policy/level								
Black	Exceeds both criteria/levels								
RDL = Reportable Detection Limit									

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**MICROBIOLOGY (DRINKING WATER)**

Maxxam ID			OR8165	OR8166	OR8167		
Sampling Date			2016/05/26 11:00	2016/05/26 11:20	2016/05/26 11:45		
COC Number			WI005081	WI005081	WI005081		
	UNITS	MAC	NCID WELL #1	NCID WELL #3	NCID WELL #6	RDL	QC Batch
<b>Parameter</b>							
Iron Bacteria	CFU/mL	-	150	500	500	25	8287617
Sulphate reducing bacteria	CFU/mL	-	<75	<75	<75	75	8289645
<b>Microbiological Param.</b>							
Heterotrophic Plate Count	CFU/mL	-	13	3	3	1	8285210
Total Coliforms	CFU/100mL	<1	<1	<1	<1	1	8285200
E. coli	CFU/100mL	<1	<1	<1	<1	1	8285200
No Fill	No Exceedance						
Grey	Exceeds 1 criteria policy/level						
Black	Exceeds both criteria/levels						
RDL = Reportable Detection Limit							

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**CALCULATED PARAMETERS (DRINKING WATER)**

Maxxam ID		OR8165	OR8166	OR8167	
Sampling Date		2016/05/26 11:00	2016/05/26 11:20	2016/05/26 11:45	
COC Number		WI005081	WI005081	WI005081	
	UNITS	NCID WELL #1	NCID WELL #3	NCID WELL #6	QC Batch
Parameter					
Langelier Index (@ 4.4C)	N/A	-2.67	-2.92	-2.59	8280256
Langelier Index (@ 60C)	N/A	-1.63	-1.88	-1.55	8280257
Saturation pH (@ 4.4C)	N/A	9.64	9.87	9.62	8280256
Saturation pH (@ 60C)	N/A	8.60	8.83	8.58	8280257



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**MISCELLANEOUS (DRINKING WATER)**

<b>Maxxam ID</b>			OR8165		OR8166	OR8167		
<b>Sampling Date</b>			2016/05/26 11:00		2016/05/26 11:20	2016/05/26 11:45		
<b>COC Number</b>			WI005081		WI005081	WI005081		
	<b>UNITS</b>	<b>AO</b>	<b>NCID WELL #1</b>	<b>QC Batch</b>	<b>NCID WELL #3</b>	<b>NCID WELL #6</b>	<b>RDL</b>	<b>QC Batch</b>

<b>MISCELLANEOUS</b>									
Total Sulphide	mg/L	0.05	0.0052	8280012	0.0101	0.0065	0.0050	8283811	
No Fill	No Exceedance								
Grey	Exceeds 1 criteria policy/level								
Black	Exceeds both criteria/levels								
RDL = Reportable Detection Limit									

### GENERAL COMMENTS

MAC,AO,OG: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, October 2014.

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.

**Results relate only to the items tested.**

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**QUALITY ASSURANCE REPORT**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8280012	JSG	Matrix Spike	Total Sulphide	2016/05/30		NC	%	80 - 120
8280012	JSG	Spiked Blank	Total Sulphide	2016/05/30		106	%	80 - 120
8280012	JSG	Method Blank	Total Sulphide	2016/05/30	0.0066, RDL=0.0050		mg/L	
8280012	JSG	RPD	Total Sulphide	2016/05/30	NC		%	20
8281596	IW1	Matrix Spike	Nitrate plus Nitrite (N)	2016/05/27		NC	%	80 - 120
8281596	IW1	Spiked Blank	Nitrate plus Nitrite (N)	2016/05/27		105	%	80 - 120
8281596	IW1	Method Blank	Nitrate plus Nitrite (N)	2016/05/27	<0.020		mg/L	
8281596	IW1	RPD	Nitrate plus Nitrite (N)	2016/05/27	2.7		%	25
8281597	IW1	Spiked Blank	Nitrite (N)	2016/05/27		97	%	80 - 120
8281597	IW1	Method Blank	Nitrite (N)	2016/05/27	<0.0050		mg/L	
8282268	IBU	Spiked Blank	True Colour	2016/05/27		100	%	80 - 120
8282268	IBU	Method Blank	True Colour	2016/05/27	<5		Col. Unit	
8282268	IBU	RPD [OR8165-01]	True Colour	2016/05/27	NC		%	10
8282270	IBU	Spiked Blank	Turbidity	2016/05/27		99	%	80 - 120
8282270	IBU	Method Blank	Turbidity	2016/05/27	<0.1		NTU	
8282270	IBU	RPD [OR8165-02]	Turbidity	2016/05/27	NC		%	20
8282499	IC4	Matrix Spike	Total Organic Carbon (C)	2016/05/27		103	%	80 - 120
8282499	IC4	Spiked Blank	Total Organic Carbon (C)	2016/05/27		105	%	80 - 120
8282499	IC4	Method Blank	Total Organic Carbon (C)	2016/05/27	<0.50		mg/L	
8282499	IC4	RPD	Total Organic Carbon (C)	2016/05/27	NC		%	20
8282678	IBU	Spiked Blank	Total Dissolved Solids	2016/05/31		92	%	80 - 120
8282678	IBU	Method Blank	Total Dissolved Solids	2016/05/31	<10		mg/L	
8282678	IBU	RPD [OR8167-01]	Total Dissolved Solids	2016/05/31	NC		%	20
8283116	BB3	Matrix Spike	Dissolved Chloride (Cl)	2016/05/30		NC	%	80 - 120
8283116	BB3	Spiked Blank	Dissolved Chloride (Cl)	2016/05/30		106	%	80 - 120
8283116	BB3	Method Blank	Dissolved Chloride (Cl)	2016/05/30	<0.50		mg/L	
8283116	BB3	RPD	Dissolved Chloride (Cl)	2016/05/30	0.21		%	20
8283135	BB3	Matrix Spike	Dissolved Sulphate (SO4)	2016/05/30		NC	%	80 - 120
8283135	BB3	Spiked Blank	Dissolved Sulphate (SO4)	2016/05/30		101	%	80 - 120
8283135	BB3	Method Blank	Dissolved Sulphate (SO4)	2016/05/30	<0.50		mg/L	
8283135	BB3	RPD	Dissolved Sulphate (SO4)	2016/05/30	1.2		%	20
8283234	SF1	Matrix Spike	Total Ammonia (N)	2016/05/30		90	%	80 - 120
8283234	SF1	Spiked Blank	Total Ammonia (N)	2016/05/30		99	%	80 - 120
8283234	SF1	Method Blank	Total Ammonia (N)	2016/05/30	<0.0050		mg/L	
8283234	SF1	RPD	Total Ammonia (N)	2016/05/30	NC		%	20
8283235	SF1	Matrix Spike	Total Ammonia (N)	2016/05/30		NC	%	80 - 120
8283235	SF1	Spiked Blank	Total Ammonia (N)	2016/05/30		106	%	80 - 120
8283235	SF1	Method Blank	Total Ammonia (N)	2016/05/30	<0.0050		mg/L	
8283235	SF1	RPD	Total Ammonia (N)	2016/05/30	4.1		%	20
8283445	BH4	Spiked Blank	pH	2016/05/31		100	%	96 - 104
8283445	BH4	RPD	pH	2016/05/31	0.14		%	N/A
8283447	BH4	Spiked Blank	Conductivity	2016/05/31		103	%	90 - 110
8283447	BH4	Method Blank	Conductivity	2016/05/31	<1		uS/cm	
8283447	BH4	RPD	Conductivity	2016/05/31	0.15		%	20
8283448	BH4	Matrix Spike	Alkalinity (Total as CaCO3)	2016/05/31		NC	%	80 - 120
			Alkalinity (PP as CaCO3)	2016/05/31		15	%	N/A
8283448	BH4	Spiked Blank	Alkalinity (Total as CaCO3)	2016/05/31		88	%	80 - 120
8283448	BH4	Method Blank	Alkalinity (Total as CaCO3)	2016/05/31	<0.5		mg/L	
			Alkalinity (PP as CaCO3)	2016/05/31	<0.5		mg/L	
			Bicarbonate (HCO3)	2016/05/31	<0.5		mg/L	
			Carbonate (CO3)	2016/05/31	<0.5		mg/L	
			Hydroxide (OH)	2016/05/31	<0.5		mg/L	
8283448	BH4	RPD	Alkalinity (Total as CaCO3)	2016/05/31	4.0		%	20

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Alkalinity (PP as CaCO3)	2016/05/31	NC		%	20
			Bicarbonate (HCO3)	2016/05/31	4.0		%	20
			Carbonate (CO3)	2016/05/31	NC		%	20
			Hydroxide (OH)	2016/05/31	NC		%	20
8283811	PSA	Matrix Spike [OR8167-07]	Total Sulphide	2016/05/31		107	%	80 - 120
8283811	PSA	Spiked Blank	Total Sulphide	2016/05/31		107	%	80 - 120
8283811	PSA	Method Blank	Total Sulphide	2016/05/31	<0.0050		mg/L	
8283811	PSA	RPD [OR8166-07]	Total Sulphide	2016/05/31	NC		%	20
8283847	JT3	Matrix Spike [OR8165-04]	Total Aluminum (Al)	2016/06/03		107	%	80 - 120
			Total Antimony (Sb)	2016/06/03		102	%	80 - 120
			Total Arsenic (As)	2016/06/03		104	%	80 - 120
			Total Barium (Ba)	2016/06/03		NC	%	80 - 120
			Total Beryllium (Be)	2016/06/03		103	%	80 - 120
			Total Bismuth (Bi)	2016/06/03		109	%	80 - 120
			Total Boron (B)	2016/06/03		107	%	80 - 120
			Total Cadmium (Cd)	2016/06/03		102	%	80 - 120
			Total Chromium (Cr)	2016/06/03		104	%	80 - 120
			Total Cobalt (Co)	2016/06/03		104	%	80 - 120
			Total Copper (Cu)	2016/06/03		106	%	80 - 120
			Total Iron (Fe)	2016/06/03		108	%	80 - 120
			Total Lead (Pb)	2016/06/03		101	%	80 - 120
			Total Manganese (Mn)	2016/06/03		NC	%	80 - 120
			Total Molybdenum (Mo)	2016/06/03		106	%	80 - 120
			Total Nickel (Ni)	2016/06/03		104	%	80 - 120
			Total Selenium (Se)	2016/06/03		101	%	80 - 120
			Total Silver (Ag)	2016/06/03		109	%	80 - 120
			Total Strontium (Sr)	2016/06/03		NC	%	80 - 120
			Total Thallium (Tl)	2016/06/03		106	%	80 - 120
			Total Tin (Sn)	2016/06/03		106	%	80 - 120
			Total Titanium (Ti)	2016/06/03		108	%	80 - 120
			Total Uranium (U)	2016/06/03		105	%	80 - 120
			Total Vanadium (V)	2016/06/03		104	%	80 - 120
			Total Zinc (Zn)	2016/06/03		113	%	80 - 120
8283847	JT3	Spiked Blank	Total Aluminum (Al)	2016/06/03		111	%	80 - 120
			Total Antimony (Sb)	2016/06/03		99	%	80 - 120
			Total Arsenic (As)	2016/06/03		103	%	80 - 120
			Total Barium (Ba)	2016/06/03		105	%	80 - 120
			Total Beryllium (Be)	2016/06/03		103	%	80 - 120
			Total Bismuth (Bi)	2016/06/03		104	%	80 - 120
			Total Boron (B)	2016/06/03		103	%	80 - 120
			Total Cadmium (Cd)	2016/06/03		101	%	80 - 120
			Total Chromium (Cr)	2016/06/03		104	%	80 - 120
			Total Cobalt (Co)	2016/06/03		107	%	80 - 120
			Total Copper (Cu)	2016/06/03		106	%	80 - 120
			Total Iron (Fe)	2016/06/03		111	%	80 - 120
			Total Lead (Pb)	2016/06/03		103	%	80 - 120
			Total Manganese (Mn)	2016/06/03		106	%	80 - 120
			Total Molybdenum (Mo)	2016/06/03		100	%	80 - 120
			Total Nickel (Ni)	2016/06/03		106	%	80 - 120
			Total Selenium (Se)	2016/06/03		102	%	80 - 120
			Total Silver (Ag)	2016/06/03		109	%	80 - 120
			Total Strontium (Sr)	2016/06/03		99	%	80 - 120
			Total Thallium (Tl)	2016/06/03		107	%	80 - 120
			Total Tin (Sn)	2016/06/03		98	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8283847	JT3	Method Blank	Total Titanium (Ti)	2016/06/03		100	%	80 - 120
			Total Uranium (U)	2016/06/03		103	%	80 - 120
			Total Vanadium (V)	2016/06/03		104	%	80 - 120
			Total Zinc (Zn)	2016/06/03		105	%	80 - 120
			Total Aluminum (Al)	2016/06/03	<3.0		ug/L	
			Total Antimony (Sb)	2016/06/03	<0.50		ug/L	
			Total Arsenic (As)	2016/06/03	<0.10		ug/L	
			Total Barium (Ba)	2016/06/03	<1.0		ug/L	
			Total Beryllium (Be)	2016/06/03	<0.10		ug/L	
			Total Bismuth (Bi)	2016/06/03	<1.0		ug/L	
			Total Boron (B)	2016/06/03	<50		ug/L	
			Total Cadmium (Cd)	2016/06/03	<0.010		ug/L	
			Total Chromium (Cr)	2016/06/03	<1.0		ug/L	
			Total Cobalt (Co)	2016/06/03	<0.50		ug/L	
			Total Copper (Cu)	2016/06/03	<0.20		ug/L	
			Total Iron (Fe)	2016/06/03	<5.0		ug/L	
			Total Lead (Pb)	2016/06/03	<0.20		ug/L	
			Total Manganese (Mn)	2016/06/03	<1.0		ug/L	
			Total Molybdenum (Mo)	2016/06/03	<1.0		ug/L	
			Total Nickel (Ni)	2016/06/03	<1.0		ug/L	
			Total Selenium (Se)	2016/06/03	<0.10		ug/L	
			Total Silicon (Si)	2016/06/03	<100		ug/L	
			Total Silver (Ag)	2016/06/03	<0.020		ug/L	
			Total Strontium (Sr)	2016/06/03	<1.0		ug/L	
			Total Thallium (Tl)	2016/06/03	<0.050		ug/L	
			Total Tin (Sn)	2016/06/03	<5.0		ug/L	
Total Titanium (Ti)	2016/06/03	<5.0		ug/L				
Total Uranium (U)	2016/06/03	<0.10		ug/L				
Total Vanadium (V)	2016/06/03	<5.0		ug/L				
Total Zinc (Zn)	2016/06/03	<5.0		ug/L				
Total Zirconium (Zr)	2016/06/03	<0.50		ug/L				
8283847	JT3	RPD [OR8165-04]	Total Aluminum (Al)	2016/06/03	NC		%	20
			Total Antimony (Sb)	2016/06/03	NC		%	20
			Total Arsenic (As)	2016/06/03	NC		%	20
			Total Barium (Ba)	2016/06/03	1.8		%	20
			Total Beryllium (Be)	2016/06/03	NC		%	20
			Total Bismuth (Bi)	2016/06/03	NC		%	20
			Total Boron (B)	2016/06/03	NC		%	20
			Total Cadmium (Cd)	2016/06/03	NC		%	20
			Total Chromium (Cr)	2016/06/03	NC		%	20
			Total Cobalt (Co)	2016/06/03	NC		%	20
			Total Copper (Cu)	2016/06/03	0.48		%	20
			Total Iron (Fe)	2016/06/03	NC		%	20
			Total Lead (Pb)	2016/06/03	NC		%	20
			Total Manganese (Mn)	2016/06/03	0.74		%	20
			Total Molybdenum (Mo)	2016/06/03	NC		%	20
			Total Nickel (Ni)	2016/06/03	NC		%	20
			Total Selenium (Se)	2016/06/03	NC		%	20
			Total Silicon (Si)	2016/06/03	3.1		%	20
			Total Silver (Ag)	2016/06/03	NC		%	20
			Total Strontium (Sr)	2016/06/03	2.0		%	20
Total Thallium (Tl)	2016/06/03	NC		%	20			
Total Tin (Sn)	2016/06/03	NC		%	20			
Total Titanium (Ti)	2016/06/03	NC		%	20			

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Uranium (U)	2016/06/03	NC		%	20
			Total Vanadium (V)	2016/06/03	NC		%	20
			Total Zinc (Zn)	2016/06/03	NC		%	20
			Total Zirconium (Zr)	2016/06/03	NC		%	20
8284274	BB3	Matrix Spike [OR8167-03]	Fluoride (F)	2016/05/30		96	%	80 - 120
8284274	BB3	Spiked Blank	Fluoride (F)	2016/05/30		94	%	80 - 120
8284274	BB3	Method Blank	Fluoride (F)	2016/05/30	<0.010		mg/L	
8284274	BB3	RPD	Fluoride (F)	2016/05/30	1.2		%	20
8284484	CK	Matrix Spike	Total Nitrogen (N)	2016/06/01		NC	%	80 - 120
8284484	CK	Spiked Blank	Total Nitrogen (N)	2016/06/01		96	%	80 - 120
8284484	CK	Method Blank	Total Nitrogen (N)	2016/06/01	<0.020		mg/L	
8284484	CK	RPD	Total Nitrogen (N)	2016/06/01	2.8		%	20
8284788	BB3	Matrix Spike	Dissolved Sulphate (SO4)	2016/05/31		101	%	80 - 120
8284788	BB3	Spiked Blank	Dissolved Sulphate (SO4)	2016/05/31		96	%	80 - 120
8284788	BB3	Method Blank	Dissolved Sulphate (SO4)	2016/05/31	<0.50		mg/L	
8284788	BB3	RPD	Dissolved Sulphate (SO4)	2016/05/31	NC		%	20
8284897	EL2	Matrix Spike	Total Mercury (Hg)	2016/06/01		99	%	80 - 120
8284897	EL2	Spiked Blank	Total Mercury (Hg)	2016/06/01		101	%	80 - 120
8284897	EL2	Method Blank	Total Mercury (Hg)	2016/06/01	<0.010		ug/L	
8284897	EL2	RPD	Total Mercury (Hg)	2016/06/01	NC		%	20
8285200	JHW	RPD [OR8166-08]	Total Coliforms	2016/05/27	NC		%	N/A
			E. coli	2016/05/27	NC		%	N/A
8285210	OMA	RPD [OR8165-08]	Heterotrophic Plate Count	2016/05/27	8.0		%	N/A

N/A = Not Applicable

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 sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

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 too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).