CERTIFICATE OF ANALYSIS

REPORTED TO	Regional District of Thompson Nicola 300 - 465 Victoria Street Kamloops, BC V2C 2A9	**TEL** **FAX**	1-250-377-8673 1-250-374-6489
ATTENTION	Denise Roberts	**WORK ORDER**	3051251
PO NUMBER	21379	**RECEIVED / TEMP**	May-22-13 15:15 / 12.0 °C
PROJECT	Blue River CWS	**REPORTED**	May-29-13
PROJECT INFO		**COC NUMBER**	40837.5581

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Issued By: **Jennifer Shanko, AScT**
Administration Coordinator, Kelowna

Please contact CARO if more information is needed or to provide feedback on our services.

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CARO ANALYTICAL SERVICES

ANALYSIS INFORMATION

REPORTED TO Regional District of Thompson Nicola
PROJECT Blue River CWS

WORK ORDER 3051251
REPORTED May-29-13

Analysis Description	Method Reference (* = modified from) Preparation	Analysis	Location
Alkalinity, speciated	N/A	APHA 2320 B	Kelowna
Ammonia-N, total colorimetric	N/A	APHA 4500-NH3 G	Kelowna
Chloride in Water by IC	N/A	APHA 4110 B	Kelowna
Colour, True at 410 nm	N/A	APHA 2120 C *	Kelowna
Conductivity in Water	N/A	APHA 2510 B	Kelowna
Dissolved Metals	APHA 3030 B	APHA 3125 B	Richmond
Fluoride in Water by IC	N/A	APHA 4110 B	Kelowna
Hardness as CaCO3 (CALC)	N/A	APHA 2340 B	Richmond
Nitrate-N in Water by IC	N/A	APHA 4110 B	Kelowna
Nitrite-N in Water by IC	N/A	APHA 4110 B	Kelowna
Sulfate in Water by IC	N/A	APHA 4110 B	Kelowna
Total Dissolved Solids	N/A	APHA 2540 C	Kelowna
Total Recoverable Metals	APHA 3030E *	APHA 3125 B	Richmond
Transmissivity at 254nm	N/A	APHA 5910 B	Kelowna
Trihalomethanes	EPA 5030B / 5021A	APHA 6200 B	Richmond

Note: The numbers in brackets represent the year that the method was published/approved

Method Reference Descriptions:

APHA	Standard Methods for the Examination of Water and Wastewater, American Public Health Association
EPA	United States Environmental Protection Agency Test Methods

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
AO	Aesthetic objective
MAC	Maximum acceptable concentration (health-related guideline)
%	Percent W/W
Color Unit	Colour referenced against a platinum cobalt standard
mg/L	Milligrams per litre
uS/cm	Microsiemens per centimeter

CARO ANALYTICAL SERVICES

SAMPLE ANALYTICAL DATA

REPORTED TO Regional District of Thompson Nicola
PROJECT Blue River CWS

WORK ORDER 3051251
REPORTED May-29-13

Analyte	Result / *Recovery*	Canadian DW Guideline	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Anions							
Sample ID: Blue River Pump Station (3051251-01) [Water] Sampled: May-20-13 15:55							F1
Alkalinity, Total as CaCO3	**68**		1	mg/L	N/A	May-23-13	
Alkalinity, Phenolphthalein as CaCO3	< 1		1	mg/L	N/A	May-23-13	
Alkalinity, Carbonate as CaCO3	< 1		1	mg/L	N/A	May-23-13	
Alkalinity, Bicarbonate as CaCO3	**68**		1	mg/L	N/A	May-23-13	
Alkalinity, Hydroxide as CaCO3	< 1		1	mg/L	N/A	May-23-13	
Chloride	**0.16**	AO ≤ 250	0.10	mg/L	N/A	May-23-13	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	N/A	May-23-13	
Nitrogen, Nitrate as N	**0.051**	MAC = 10	0.010	mg/L	N/A	May-23-13	
Nitrogen, Nitrite as N	< 0.010	MAC = 1	0.010	mg/L	N/A	May-23-13	
Sulfate	**6.9**	AO ≤ 500	1.0	mg/L	N/A	May-23-13	
General Parameters							
Sample ID: Blue River Pump Station (3051251-01) [Water] Sampled: May-20-13 15:55							F1
Colour, True	< 5	AO ≤ 15	5	Color Unit	N/A	May-23-13	
Conductivity (EC)	**143**		2	uS/cm	N/A	May-23-13	
Nitrogen, Ammonia as N, Total	< 0.020		0.020	mg/L	N/A	May-23-13	
Solids, Total Dissolved	**104**	AO ≤ 500	5	mg/L	N/A	May-23-13	
UV Transmittance @ 254nm	**100**		0.1	%	N/A	May-27-13	
Calculated Parameters							
Sample ID: Blue River Pump Station (3051251-01) [Water] Sampled: May-20-13 15:55							F1
Total Trihalomethanes	< 0.004	0.1	0.004	mg/L	N/A	N/A	
Total Trihalomethanes (as CHCl3)	< 0.003		0.003	mg/L	N/A	N/A	
Hardness, Total (Total as CaCO3)	**66.9**		5.0	mg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**64.1**		5.0	mg/L	N/A	N/A	
Nitrogen, Nitrate+Nitrite as N	**0.051**		0.020	mg/L	N/A	N/A	
Dissolved Metals							
Sample ID: Blue River Pump Station (3051251-01) [Water] Sampled: May-20-13 15:55							F1
Aluminum, dissolved	< 0.05		0.05	mg/L	N/A	May-27-13	
Antimony, dissolved	< 0.001		0.001	mg/L	N/A	May-27-13	
Arsenic, dissolved	< 0.005		0.005	mg/L	N/A	May-27-13	
Barium, dissolved	< 0.05		0.05	mg/L	N/A	May-27-13	
Beryllium, dissolved	< 0.001		0.001	mg/L	N/A	May-27-13	
Bismuth, dissolved	< 0.001		0.001	mg/L	N/A	May-27-13	
Boron, dissolved	< 0.04		0.04	mg/L	N/A	May-27-13	
Cadmium, dissolved	< 0.0001		0.0001	mg/L	N/A	May-27-13	
Calcium, dissolved	**19**		2	mg/L	N/A	May-27-13	
Chromium, dissolved	< 0.005		0.005	mg/L	N/A	May-27-13	
Cobalt, dissolved	< 0.0005		0.0005	mg/L	N/A	May-27-13	
Copper, dissolved	< 0.002		0.002	mg/L	N/A	May-27-13	
Iron, dissolved	< 0.1		0.1	mg/L	N/A	May-27-13	

CARO ANALYTICAL SERVICES

SAMPLE ANALYTICAL DATA

REPORTED TO Regional District of Thompson Nicola
PROJECT Blue River CWS

WORK ORDER 3051251
REPORTED May-29-13

Analyte	Result / *Recovery*	Canadian DW Guideline	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Dissolved Metals, Continued							
Sample ID: Blue River Pump Station (3051251-01) [Water] Sampled: May-20-13 15:55, Continued							F1
Lead, dissolved	< 0.001		0.001	mg/L	N/A	May-27-13	
Lithium, dissolved	**0.004**		0.001	mg/L	N/A	May-27-13	
Magnesium, dissolved	**3.8**		0.1	mg/L	N/A	May-27-13	
Manganese, dissolved	< 0.002		0.002	mg/L	N/A	May-27-13	
Mercury, dissolved	< 0.0002		0.0002	mg/L	N/A	May-27-13	
Molybdenum, dissolved	< 0.001		0.001	mg/L	N/A	May-27-13	
Nickel, dissolved	**0.003**		0.002	mg/L	N/A	May-27-13	
Phosphorus, dissolved	< 0.2		0.2	mg/L	N/A	May-27-13	
Potassium, dissolved	**1.3**		0.2	mg/L	N/A	May-27-13	
Selenium, dissolved	< 0.005		0.005	mg/L	N/A	May-27-13	
Silicon, dissolved	**6**		5	mg/L	N/A	May-27-13	
Silver, dissolved	< 0.0005		0.0005	mg/L	N/A	May-27-13	
Sodium, dissolved	**3.3**		0.2	mg/L	N/A	May-27-13	
Strontium, dissolved	**0.09**		0.01	mg/L	N/A	May-27-13	
Sulfur, dissolved	< 10		10	mg/L	N/A	May-27-13	
Tellurium, dissolved	< 0.002		0.002	mg/L	N/A	May-27-13	
Thallium, dissolved	< 0.0002		0.0002	mg/L	N/A	May-27-13	
Thorium, dissolved	< 0.001		0.001	mg/L	N/A	May-27-13	
Tin, dissolved	< 0.002		0.002	mg/L	N/A	May-27-13	
Titanium, dissolved	< 0.05		0.05	mg/L	N/A	May-27-13	
Uranium, dissolved	**0.0015**		0.0002	mg/L	N/A	May-27-13	
Vanadium, dissolved	< 0.01		0.01	mg/L	N/A	May-27-13	
Zinc, dissolved	< 0.04		0.04	mg/L	N/A	May-27-13	
Zirconium, dissolved	< 0.001		0.001	mg/L	N/A	May-27-13	
Total Recoverable Metals							
Sample ID: Blue River Pump Station (3051251-01) [Water] Sampled: May-20-13 15:55							F1
Aluminum, total	< 0.05	AO ≤ 0.1	0.05	mg/L	May-27-13	May-28-13	
Antimony, total	< 0.001	MAC = 0.006	0.001	mg/L	May-27-13	May-28-13	
Arsenic, total	< 0.005	MAC = 0.01	0.005	mg/L	May-27-13	May-28-13	
Barium, total	< 0.05	MAC = 1	0.05	mg/L	May-27-13	May-28-13	
Beryllium, total	< 0.001		0.001	mg/L	May-27-13	May-28-13	
Bismuth, total	< 0.001		0.001	mg/L	May-27-13	May-28-13	
Boron, total	< 0.04	MAC = 5	0.04	mg/L	May-27-13	May-28-13	
Cadmium, total	< 0.0001	MAC = 0.005	0.0001	mg/L	May-27-13	May-28-13	
Calcium, total	**20**		2	mg/L	May-27-13	May-28-13	
Chromium, total	< 0.005	MAC = 0.05	0.005	mg/L	May-27-13	May-28-13	
Cobalt, total	< 0.0005		0.0005	mg/L	May-27-13	May-28-13	
Copper, total	< 0.002	AO ≤ 1	0.002	mg/L	May-27-13	May-28-13	
Iron, total	< 0.1	AO ≤ 0.3	0.1	mg/L	May-27-13	May-28-13	
Lead, total	< 0.001	MAC = 0.01	0.001	mg/L	May-27-13	May-28-13	
Lithium, total	**0.004**		0.001	mg/L	May-27-13	May-28-13	
Magnesium, total	**3.8**		0.1	mg/L	May-27-13	May-28-13	
Manganese, total	< 0.002	AO ≤ 0.05	0.002	mg/L	May-27-13	May-28-13	

CARO ANALYTICAL SERVICES

SAMPLE ANALYTICAL DATA

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Analyte	Result / *Recovery*	Canadian DW Guideline	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Total Recoverable Metals, Continued							
Sample ID: Blue River Pump Station (3051251-01) [Water] Sampled: May-20-13 15:55, Continued							F1
Mercury, total	< 0.0002	MAC = 0.001	0.0002	mg/L	May-27-13	May-28-13	
Molybdenum, total	< 0.001		0.001	mg/L	May-27-13	May-28-13	
Nickel, total	**0.018**		0.002	mg/L	May-27-13	May-28-13	
Phosphorus, total	< 0.2		0.2	mg/L	May-27-13	May-28-13	
Potassium, total	**1.4**		0.2	mg/L	May-27-13	May-28-13	
Selenium, total	< 0.005	MAC = 0.01	0.005	mg/L	May-27-13	May-28-13	
Silicon, total	**7**		5	mg/L	May-27-13	May-28-13	
Silver, total	< 0.0005		0.0005	mg/L	May-27-13	May-28-13	
Sodium, total	**3.2**	AO ≤ 200	0.2	mg/L	May-27-13	May-28-13	
Strontium, total	**0.09**		0.01	mg/L	May-27-13	May-28-13	
Sulfur, total	< 10		10	mg/L	May-27-13	May-28-13	
Tellurium, total	< 0.002		0.002	mg/L	May-27-13	May-28-13	
Thallium, total	< 0.0002		0.0002	mg/L	May-27-13	May-28-13	
Thorium, total	< 0.001		0.001	mg/L	May-27-13	May-28-13	
Tin, total	< 0.002		0.002	mg/L	May-27-13	May-28-13	
Titanium, total	< 0.05		0.05	mg/L	May-27-13	May-28-13	
Uranium, total	**0.0014**	MAC = 0.02	0.0002	mg/L	May-27-13	May-28-13	
Vanadium, total	< 0.01		0.01	mg/L	May-27-13	May-28-13	
Zinc, total	< 0.04	AO ≤ 5	0.04	mg/L	May-27-13	May-28-13	
Zirconium, total	< 0.001		0.001	mg/L	May-27-13	May-28-13	
Volatile Organic Compounds (VOC)							
Sample ID: Blue River Pump Station (3051251-01) [Water] Sampled: May-20-13 15:55							F1
Bromodichloromethane	< 0.001		0.001	mg/L	N/A	May-28-13	
Bromoform	< 0.001		0.001	mg/L	N/A	May-28-13	
Chloroform	< 0.001		0.001	mg/L	N/A	May-28-13	
Dibromochloromethane	< 0.001		0.001	mg/L	N/A	May-28-13	
Surrogate: Toluene-d8	*90 %*		*80-120*		*N/A*	*May-28-13*	
Surrogate: 4-Bromofluorobenzene	*88 %*		*80-120*		*N/A*	*May-28-13*	

Sample / Analysis Qualifiers:

F1 The sample was not field-filtered and was therefore filtered through a 0.45 um membrane in the laboratory and preserved with HNO3 prior to analysis for dissolved metals.