

## CERTIFICATE OF ANALYSIS



**CLIENT** Regional District of Thompson Nicola  
300 - 465 Victoria Street  
Kamloops BC TEL 1-250-377-8673  
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**ATTENTION** Denise Roberts

**RECEIVED / TEMP** Dec-02-11 09:25 / 11.0 °C  
**REPORTED** Dec-09-11  
**COC #(s)** 40837.5581

**WORK ORDER** K1L0092  
**PROJECT** Spences Bridge CWS

### General Comments:

CARO Analytical Services employs methods which are based on those found in "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, published by the American Public Health Association (APHA); US EPA protocols found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846", 3rd Edition; protocols published by the British Columbia Ministry of Environment (BCMOE); and/or CCME Canada-wide Standard Reference methods.

Methods not described in these publications are conducted according to procedures accepted by appropriate regulatory agencies, and/or are done 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 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.

- All solids results are reported on a dry weight basis unless otherwise noted
- Units:
  - mg/kg = milligrams per kilogram, equivalent to parts per million (ppm)
  - mg/L = milligrams per litre, equivalent to parts per million (ppm)
  - ug/L = micrograms per litre, equivalent to parts per billion (ppb)
  - ug/g = micrograms per gram, equivalent to parts per million (ppm)
  - ug/m<sup>3</sup> = micrograms per cubic meter of air
- "RDL" Reported detection limit
- "<" Less than reported detection limit
- "AO" Aesthetic objective
- "MAC" Maximum acceptable concentration (health-related guideline)
- "LAB" RMD = Richmond location, KEL = Kelowna location, EDM = Edmonton location, SUB = Subcontracted

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

### CARO Analytical Services

Final Review Per: Jennifer Shanko, ASCT  
Administration Coordinator

### CARO Analytical Services

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## SAMPLE DATA



**CLIENT** Regional District of Thompson Nicola  
**PROJECT** Spences Bridge CWS

**WORK ORDER #** K1L0092  
**REPORTED** Dec-09-11

Analyte	Result	RDL	Units	Prepared	Analyzed	Notes
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### General Parameters

**Spences Bridge (K1L0092-01) Matrix: Water Sampled: Nov-30-11 12:00**

Alkalinity, Total as CaCO3	177	1.0	mg/L	Dec-02-11	Dec-05-11	
Alkalinity, Carbonate as CaCO3	< 1.0	1.0	mg/L	Dec-02-11	Dec-05-11	
Alkalinity, Bicarbonate as CaCO3	177	1.0	mg/L	Dec-02-11	Dec-05-11	
Alkalinity, Hydroxide as CaCO3	< 1.0	1.0	mg/L	Dec-02-11	Dec-05-11	
Chloride	1.54	0.10	mg/L	Dec-03-11	Dec-03-11	
Colour, True	< 5	5	Color Unit	Dec-02-11	Dec-05-11	
Conductivity (EC)	362	2	uS/cm	Dec-02-11	Dec-02-11	
Fluoride	< 0.10	0.10	mg/L	Dec-03-11	Dec-03-11	
Hardness, Total (Total as CaCO3)	191	5.00	mg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	180	4.99	mg/L	N/A	N/A	
Nitrogen, Ammonia as N	0.01	0.01	mg/L	Dec-02-11	Dec-02-11	
Nitrogen, Nitrate+Nitrite as N	< 0.020	0.020	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	< 0.010	0.010	mg/L	Dec-03-11	Dec-03-11	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	Dec-03-11	Dec-03-11	
Solids, Total Dissolved	200	5	mg/L	Dec-05-11	Dec-07-11	
Sulfate	14.7	1.0	mg/L	Dec-03-11	Dec-03-11	
UV Transmittance @ 254nm	95.7	0.1	%	Dec-05-11	Dec-06-11	

### Dissolved Metals

**Spences Bridge (K1L0092-01) Matrix: Water Sampled: Nov-30-11 12:00**

Aluminum, dissolved	< 0.050	0.050	mg/L	Dec-05-11	Dec-05-11	
Antimony, dissolved	< 0.0200	0.0200	mg/L	Dec-05-11	Dec-05-11	
Arsenic, dissolved	< 0.0050	0.0050	mg/L	Dec-05-11	Dec-05-11	
Barium, dissolved	< 0.050	0.050	mg/L	Dec-05-11	Dec-05-11	
Beryllium, dissolved	< 0.0010	0.0010	mg/L	Dec-05-11	Dec-05-11	
Bismuth, dissolved	< 0.0010	0.0010	mg/L	Dec-05-11	Dec-05-11	
Boron, dissolved	< 0.040	0.040	mg/L	Dec-05-11	Dec-05-11	
Cadmium, dissolved	< 0.00010	0.00010	mg/L	Dec-05-11	Dec-05-11	
Calcium, dissolved	51.8	2.0	mg/L	Dec-05-11	Dec-05-11	
Chromium, dissolved	< 0.0050	0.0050	mg/L	Dec-05-11	Dec-05-11	
Cobalt, dissolved	< 0.00050	0.00050	mg/L	Dec-05-11	Dec-05-11	
Copper, dissolved	< 0.0020	0.0020	mg/L	Dec-05-11	Dec-05-11	
Iron, dissolved	< 0.10	0.10	mg/L	Dec-05-11	Dec-05-11	
Lead, dissolved	< 0.0010	0.0010	mg/L	Dec-05-11	Dec-05-11	
Lithium, dissolved	0.0024	0.0010	mg/L	Dec-05-11	Dec-05-11	
Magnesium, dissolved	12.3	0.10	mg/L	Dec-05-11	Dec-05-11	
Manganese, dissolved	< 0.0020	0.0020	mg/L	Dec-05-11	Dec-05-11	
Mercury, dissolved	< 0.00020	0.00020	mg/L	Dec-05-11	Dec-05-11	
Molybdenum, dissolved	0.0018	0.0010	mg/L	Dec-05-11	Dec-05-11	
Nickel, dissolved	< 0.0020	0.0020	mg/L	Dec-05-11	Dec-05-11	
Phosphorus, dissolved	< 0.20	0.20	mg/L	Dec-05-11	Dec-05-11	
Potassium, dissolved	0.25	0.20	mg/L	Dec-05-11	Dec-05-11	
Selenium, dissolved	< 0.0050	0.0050	mg/L	Dec-05-11	Dec-05-11	
Silicon, dissolved	5.0	5.0	mg/L	Dec-05-11	Dec-05-11	
Silver, dissolved	< 0.00050	0.00050	mg/L	Dec-05-11	Dec-05-11	

**SAMPLE DATA**



**CLIENT** Regional District of Thompson Nicola  
**PROJECT** Spences Bridge CWS

**WORK ORDER #** K1L0092  
**REPORTED** Dec-09-11

Analyte	Result	RDL	Units	Prepared	Analyzed	Notes
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**Dissolved Metals, Continued**

**Spences Bridge (K1L0092-01) Matrix: Water Sampled: Nov-30-11 12:00, Continued**

Sodium, dissolved	11.4	0.20	mg/L	Dec-05-11	Dec-05-11	
Strontium, dissolved	0.179	0.010	mg/L	Dec-05-11	Dec-05-11	
Tellurium, dissolved	< 0.0020	0.0020	mg/L	Dec-05-11	Dec-05-11	
Thallium, dissolved	< 0.00020	0.00020	mg/L	Dec-05-11	Dec-05-11	
Thorium, dissolved	< 0.0010	0.0010	mg/L	Dec-05-11	Dec-05-11	
Tin, dissolved	< 0.0020	0.0020	mg/L	Dec-05-11	Dec-05-11	
Titanium, dissolved	< 0.050	0.050	mg/L	Dec-05-11	Dec-05-11	
Uranium, dissolved	0.00063	0.00020	mg/L	Dec-05-11	Dec-05-11	
Vanadium, dissolved	< 0.010	0.010	mg/L	Dec-05-11	Dec-05-11	
Zinc, dissolved	< 0.040	0.040	mg/L	Dec-05-11	Dec-05-11	
Zirconium, dissolved	< 0.001	0.001	mg/L	Dec-05-11	Dec-05-11	

**Total Recoverable Metals**

**Spences Bridge (K1L0092-01) Matrix: Water Sampled: Nov-30-11 12:00**

Aluminum	< 0.050	0.050	mg/L	Dec-05-11	Dec-06-11	
Antimony	< 0.0200	0.0200	mg/L	Dec-05-11	Dec-06-11	
Arsenic	< 0.0050	0.0050	mg/L	Dec-05-11	Dec-06-11	
Barium	< 0.050	0.050	mg/L	Dec-05-11	Dec-06-11	
Beryllium	< 0.0010	0.0010	mg/L	Dec-05-11	Dec-06-11	
Bismuth	< 0.0010	0.0010	mg/L	Dec-05-11	Dec-06-11	
Boron	< 0.040	0.040	mg/L	Dec-05-11	Dec-06-11	
Cadmium	< 0.00010	0.00010	mg/L	Dec-05-11	Dec-06-11	
Calcium	55.3	2.0	mg/L	Dec-05-11	Dec-06-11	
Chromium	< 0.0050	0.0050	mg/L	Dec-05-11	Dec-06-11	
Cobalt	< 0.00050	0.00050	mg/L	Dec-05-11	Dec-06-11	
Copper	< 0.0020	0.0020	mg/L	Dec-05-11	Dec-06-11	
Iron	< 0.10	0.10	mg/L	Dec-05-11	Dec-06-11	
Lead	< 0.0010	0.0010	mg/L	Dec-05-11	Dec-06-11	
Lithium	0.0025	0.0010	mg/L	Dec-05-11	Dec-06-11	
Magnesium	12.7	0.10	mg/L	Dec-05-11	Dec-06-11	
Manganese	< 0.0020	0.0020	mg/L	Dec-05-11	Dec-06-11	
Mercury	< 0.00020	0.00020	mg/L	Dec-05-11	Dec-06-11	
Molybdenum	0.0015	0.0010	mg/L	Dec-05-11	Dec-06-11	
Nickel	< 0.0020	0.0020	mg/L	Dec-05-11	Dec-06-11	
Phosphorus	< 0.20	0.20	mg/L	Dec-05-11	Dec-06-11	
Potassium	0.35	0.20	mg/L	Dec-05-11	Dec-06-11	
Selenium	< 0.0050	0.0050	mg/L	Dec-05-11	Dec-06-11	
Silicon	6.4	5.0	mg/L	Dec-05-11	Dec-06-11	
Silver	< 0.00050	0.00050	mg/L	Dec-05-11	Dec-06-11	
Sodium	11.6	0.20	mg/L	Dec-05-11	Dec-06-11	
Strontium	0.177	0.010	mg/L	Dec-05-11	Dec-06-11	
Tellurium	< 0.0020	0.0020	mg/L	Dec-05-11	Dec-06-11	
Thallium	< 0.00020	0.00020	mg/L	Dec-05-11	Dec-06-11	
Thorium	< 0.0010	0.0010	mg/L	Dec-05-11	Dec-06-11	
Tin	< 0.0020	0.0020	mg/L	Dec-05-11	Dec-06-11	

**SAMPLE DATA**



**CLIENT** Regional District of Thompson Nicola  
**PROJECT** Spences Bridge CWS

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Analyte	Result	RDL	Units	Prepared	Analyzed	Notes
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**Total Recoverable Metals, Continued**

**Spences Bridge (K1L0092-01) Matrix: Water Sampled: Nov-30-11 12:00, Continued**

Titanium	< 0.050	0.050	mg/L	Dec-05-11	Dec-06-11	
Uranium	<b>0.00064</b>	0.00020	mg/L	Dec-05-11	Dec-06-11	
Vanadium	< 0.010	0.010	mg/L	Dec-05-11	Dec-06-11	
Zinc	< 0.040	0.040	mg/L	Dec-05-11	Dec-06-11	
Zirconium	< 0.0010	0.0010	mg/L	Dec-05-11	Dec-06-11	

**Volatile Organic Compounds**

**Spences Bridge (K1L0092-01) Matrix: Water Sampled: Nov-30-11 12:00**

Bromodichloromethane	< 0.001	0.001	mg/L	Dec-06-11	Dec-08-11	
Bromoform	< 0.001	0.001	mg/L	Dec-06-11	Dec-08-11	
Chloroform	<b>0.008</b>	0.001	mg/L	Dec-06-11	Dec-08-11	
Dibromochloromethane	< 0.001	0.001	mg/L	Dec-06-11	Dec-08-11	
Trihalomethanes (total)	<b>0.009</b>	0.004	mg/L	Dec-06-11	Dec-08-11	
Surrogate: Toluene-d8	93 %	80-120		Dec-06-11	Dec-08-11	
Surrogate: 4-Bromofluorobenzene	79 %	80-120		Dec-06-11	Dec-08-11	S02

**Sample Qualifiers:**

- F1 The sample was not field-filtered and was therefore filtered (0.45um) in the laboratory prior to analysis.
- S02 Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate(s).

**ANALYSIS / REPORT INFORMATION**



**CLIENT** Regional District of Thompson Nicola  
**PROJECT** Spences Bridge CWS

**WORK ORDER #** K1L0092  
**REPORTED** Dec-09-11

Analysis Description	Method Reference(s) (* = modified from)		LAB
	Preparation	Analysis	
Dissolved Metals	N/A	EPA 6020A	RMD
Alkalinity, all	N/A	APHA 2320 B *	KEL
Chloride by IC	N/A	APHA 4110 B	KEL
True Colour	N/A	APHA 2120 B	KEL
Conductivity-Water	N/A	APHA 2510 B	KEL
Fluoride by IC	N/A	APHA 4110 B	KEL
Ammonia-N	N/A	APHA 4500-NH3 G *	KEL
Nitrate by IC	N/A	APHA 4110 B	KEL
Nitrate+Nitrite-N		[CALC]	KEL
Nitrite by IC	N/A	APHA 4110 B	KEL
Total Dissolved Solids (180C)	N/A	APHA 2540 C *	KEL
Sulfate by IC	N/A	APHA 4110 B	KEL
UV Transmittance at 254nm	N/A	APHA 5910 B	KEL
Total Recoverable Metals	EPA 200.2 *	EPA 6020A	RMD
Trihalomethanes	EPA 5030B	EPA 8260B	RMD

**QUALITY CONTROL DATA**



**CLIENT  
PROJECT**

Regional District of Thompson Nicola  
Spences Bridge CWS

**WORK ORDER #  
REPORTED**

K1L0092  
Dec-09-11

The following section reports quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with quality control samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- Duplicate (Dup): Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- Blank Spike (BS): A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- Standard Reference Material (SRM): A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested for.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	Reporting Limit Units	Spike Level	Source Result	% REC	% REC Limits	% RPD	% RPD Limit	Notes
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**Dissolved Metals, Batch B1L0047**

**Blank (B1L0047-BLK1)**

Prepared: Dec-05-11, Analyzed: Dec-05-11

Aluminum, dissolved	< 0.050	0.050 mg/L							
Antimony, dissolved	< 0.0200	0.0200 mg/L							
Arsenic, dissolved	< 0.0050	0.0050 mg/L							
Barium, dissolved	< 0.050	0.050 mg/L							
Beryllium, dissolved	< 0.0010	0.0010 mg/L							
Bismuth, dissolved	< 0.0010	0.0010 mg/L							
Boron, dissolved	< 0.040	0.040 mg/L							
Cadmium, dissolved	< 0.00010	0.00010 mg/L							
Calcium, dissolved	< 2.0	2.0 mg/L							
Chromium, dissolved	< 0.0050	0.0050 mg/L							
Cobalt, dissolved	< 0.00050	0.00050 mg/L							
Copper, dissolved	< 0.0020	0.0020 mg/L							
Iron, dissolved	< 0.10	0.10 mg/L							
Lead, dissolved	< 0.0010	0.0010 mg/L							
Lithium, dissolved	< 0.0010	0.0010 mg/L							
Magnesium, dissolved	< 0.10	0.10 mg/L							
Manganese, dissolved	< 0.0020	0.0020 mg/L							
Mercury, dissolved	< 0.00020	0.00020 mg/L							
Molybdenum, dissolved	< 0.0010	0.0010 mg/L							
Nickel, dissolved	< 0.0020	0.0020 mg/L							
Phosphorus, dissolved	< 0.20	0.20 mg/L							
Potassium, dissolved	< 0.20	0.20 mg/L							
Selenium, dissolved	< 0.0050	0.0050 mg/L							
Silicon, dissolved	< 5.0	5.0 mg/L							
Silver, dissolved	< 0.00050	0.00050 mg/L							
Sodium, dissolved	< 0.20	0.20 mg/L							
Strontium, dissolved	< 0.010	0.010 mg/L							
Tellurium, dissolved	< 0.0020	0.0020 mg/L							
Thallium, dissolved	< 0.00020	0.00020 mg/L							
Thorium, dissolved	< 0.0010	0.0010 mg/L							
Tin, dissolved	< 0.0020	0.0020 mg/L							
Titanium, dissolved	< 0.050	0.050 mg/L							
Uranium, dissolved	< 0.00020	0.00020 mg/L							
Vanadium, dissolved	< 0.010	0.010 mg/L							
Zinc, dissolved	< 0.040	0.040 mg/L							
Zirconium, dissolved	< 0.001	0.001 mg/L							

**Reference (B1L0047-SRM1)**

Prepared: Dec-05-11, Analyzed: Dec-05-11

Aluminum, dissolved	0.211	0.050 mg/L	0.209	101	74-127
Antimony, dissolved	0.0425	0.0200 mg/L	0.0400	106	86-116
Arsenic, dissolved	0.399	0.0050 mg/L	0.404	99	84-111
Barium, dissolved	3.08	0.050 mg/L	3.12	99	87-114

**QUALITY CONTROL DATA**



**CLIENT PROJECT**

Regional District of Thompson Nicola  
Spences Bridge CWS

**WORK ORDER # REPORTED**

K1L0092  
Dec-09-11

Analyte	Result	Reporting Limit Units	Spike Level	Source Result	% REC	% REC Limits	% RPD	% RPD Limit	Notes
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**Dissolved Metals, Batch B1L0047, Continued**

Reference (B1L0047-SRM1), Continued

Prepared: Dec-05-11, Analyzed: Dec-05-11

Beryllium, dissolved	0.215	0.0010 mg/L	0.197		109	78-127			
Boron, dissolved	1.69	0.040 mg/L	1.61		105	74-117			
Cadmium, dissolved	0.194	0.00010 mg/L	0.200		97	89-110			
Calcium, dissolved	6.8	2.0 mg/L	6.50		105	83-128			
Chromium, dissolved	0.410	0.0050 mg/L	0.401		102	87-112			
Cobalt, dissolved	0.124	0.00050 mg/L	0.119		104	88-113			
Copper, dissolved	0.850	0.0020 mg/L	0.781		109	91-115			
Iron, dissolved	1.25	0.10 mg/L	1.17		107	81-117			
Lead, dissolved	0.0943	0.0010 mg/L	0.102		92	90-114			
Lithium, dissolved	0.106	0.0010 mg/L	0.0960		111	77-134			
Magnesium, dissolved	6.47	0.10 mg/L	6.11		106	79-122			
Manganese, dissolved	0.324	0.0020 mg/L	0.318		102	86-114			
Molybdenum, dissolved	0.386	0.0010 mg/L	0.387		100	92-113			
Nickel, dissolved	0.817	0.0020 mg/L	0.789		104	89-114			
Phosphorus, dissolved	0.39	0.20 mg/L	0.448		88	60-117			
Potassium, dissolved	3.00	0.20 mg/L	2.84		106	80-113			
Selenium, dissolved	0.0294	0.0050 mg/L	0.0300		98	84-120			
Sodium, dissolved	17.7	0.20 mg/L	17.4		101	78-118			
Strontium, dissolved	0.926	0.010 mg/L	0.979		95	88-113			
Thallium, dissolved	0.0366	0.00020 mg/L	0.0350		104	96-129			
Uranium, dissolved	0.175	0.00020 mg/L	0.244		72	68-95			
Vanadium, dissolved	0.782	0.010 mg/L	0.798		98	83-110			
Zinc, dissolved	0.831	0.040 mg/L	0.800		104	90-115			

**General Parameters, Batch K105322**

<b>Blank (K105322-BLK1)</b>		Prepared: Dec-02-11, Analyzed: Dec-05-11							
Colour, True	< 5	5 Color Unit							
<b>Blank (K105322-BLK2)</b>		Prepared: Dec-02-11, Analyzed: Dec-05-11							
Colour, True	< 5	5 Color Unit							
<b>Blank (K105322-BLK3)</b>		Prepared: Dec-02-11, Analyzed: Dec-05-11							
Colour, True	< 5	5 Color Unit							
<b>Blank (K105322-BLK4)</b>		Prepared: Dec-02-11, Analyzed: Dec-05-11							
Colour, True	< 5	5 Color Unit							
<b>LCS (K105322-BS1)</b>		Prepared: Dec-02-11, Analyzed: Dec-05-11							
Colour, True	25	5 Color Unit	25.0	100	81-118				
<b>LCS (K105322-BS2)</b>		Prepared: Dec-02-11, Analyzed: Dec-05-11							
Colour, True	25	5 Color Unit	25.0	100	81-118				
<b>LCS (K105322-BS3)</b>		Prepared: Dec-02-11, Analyzed: Dec-05-11							
Colour, True	25	5 Color Unit	25.0	100	81-118				
<b>LCS (K105322-BS4)</b>		Prepared: Dec-02-11, Analyzed: Dec-05-11							
Colour, True	25	5 Color Unit	25.0	100	81-118				

**General Parameters, Batch K105326**

<b>Blank (K105326-BLK1)</b>		Prepared: Dec-02-11, Analyzed: Dec-05-11							
Nitrogen, Ammonia as N	< 0.01	0.01 mg/L							
<b>Blank (K105326-BLK2)</b>		Prepared: Dec-02-11, Analyzed: Dec-05-11							
Nitrogen, Ammonia as N	< 0.01	0.01 mg/L							
<b>Blank (K105326-BLK3)</b>		Prepared: Dec-02-11, Analyzed: Dec-05-11							
Nitrogen, Ammonia as N	< 0.01	0.01 mg/L							

**QUALITY CONTROL DATA**



**CLIENT** Regional District of Thompson Nicola  
**PROJECT** Spences Bridge CWS

**WORK ORDER #** K1L0092  
**REPORTED** Dec-09-11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	% REC	% REC Limits	% RPD	% RPD Limit	Notes
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**General Parameters, Batch K105326, Continued**

<b>Blank (K105326-BLK4)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Nitrogen, Ammonia as N	< 0.01	0.01	mg/L							
<b>Blank (K105326-BLK5)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Nitrogen, Ammonia as N	< 0.01	0.01	mg/L							
<b>Blank (K105326-BLK6)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Nitrogen, Ammonia as N	< 0.01	0.01	mg/L							
<b>LCS (K105326-BS1)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Nitrogen, Ammonia as N	10.1	0.10	mg/L	10.0		101	86-111			
<b>LCS (K105326-BS2)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Nitrogen, Ammonia as N	9.82	0.10	mg/L	10.0		98	86-111			
<b>LCS (K105326-BS3)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Nitrogen, Ammonia as N	9.85	0.10	mg/L	10.0		98	86-111			
<b>LCS (K105326-BS4)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Nitrogen, Ammonia as N	9.75	0.10	mg/L	10.0		98	86-111			
<b>LCS (K105326-BS5)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Nitrogen, Ammonia as N	10.0	0.10	mg/L	10.0		100	86-111			
<b>LCS (K105326-BS6)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Nitrogen, Ammonia as N	9.59	0.10	mg/L	10.0		96	86-111			

**General Parameters, Batch K105339**

<b>Blank (K105339-BLK1)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Alkalinity, Total as CaCO3	< 1.0	1.0	mg/L							
Alkalinity, Carbonate as CaCO3	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1.0	1.0	mg/L							
<b>Blank (K105339-BLK2)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Alkalinity, Total as CaCO3	< 1.0	1.0	mg/L							
Alkalinity, Carbonate as CaCO3	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1.0	1.0	mg/L							
<b>LCS (K105339-BS1)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Alkalinity, Total as CaCO3	103	1.0	mg/L	100		103	97-108			
<b>LCS (K105339-BS2)</b>				Prepared: Dec-02-11, Analyzed: Dec-05-11						
Alkalinity, Total as CaCO3	102	1.0	mg/L	100		102	97-108			

**General Parameters, Batch K105340**

<b>Blank (K105340-BLK1)</b>				Prepared: Dec-02-11, Analyzed: Dec-02-11						
Conductivity (EC)	< 2	2	uS/cm							
<b>Blank (K105340-BLK2)</b>				Prepared: Dec-02-11, Analyzed: Dec-02-11						
Conductivity (EC)	< 2	2	uS/cm							
<b>Blank (K105340-BLK3)</b>				Prepared: Dec-02-11, Analyzed: Dec-02-11						
Conductivity (EC)	< 2	2	uS/cm							
<b>LCS (K105340-BS4)</b>				Prepared: Dec-02-11, Analyzed: Dec-02-11						
Conductivity (EC)	1420	2	uS/cm	1410		100	93-104			



**QUALITY CONTROL DATA**



**CLIENT** Regional District of Thompson Nicola  
**PROJECT** Spences Bridge CWS

**WORK ORDER #** K110092  
**REPORTED** Dec-09-11

Analyte	Result	Reporting Limit Units	Spike Level	Source Result	% REC	% REC Limits	% RPD	% RPD Limit	Notes
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**General Parameters, Batch K105340, Continued**

LCS (K105340-BS5)		Prepared: Dec-02-11, Analyzed: Dec-02-11							
Conductivity (EC)	1420	2 uS/cm	1410		100	93-104			
LCS (K105340-BS6)		Prepared: Dec-02-11, Analyzed: Dec-02-11							
Conductivity (EC)	1420	2 uS/cm	1410		101	93-104			

**General Parameters, Batch K105342**

Blank (K105342-BLK1)		Prepared: Dec-03-11, Analyzed: Dec-03-11							
Chloride	< 0.10	0.10 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Nitrogen, Nitrate as N	< 0.010	0.010 mg/L							
Nitrogen, Nitrite as N	< 0.01	0.01 mg/L							
Sulfate	< 1.0	1.0 mg/L							

Blank (K105342-BLK2)		Prepared: Dec-03-11, Analyzed: Dec-04-11							
Chloride	< 0.10	0.10 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Nitrogen, Nitrate as N	< 0.010	0.010 mg/L							
Nitrogen, Nitrite as N	< 0.01	0.01 mg/L							
Sulfate	< 1.0	1.0 mg/L							

LCS (K105342-BS1)		Prepared: Dec-03-11, Analyzed: Dec-03-11							
Chloride	4.10	0.10 mg/L	4.00		103	85-115			
Fluoride	4.12	0.10 mg/L	4.00		103	85-115			
Nitrogen, Nitrate as N	4.25	0.010 mg/L	4.00		106	85-115			
Nitrogen, Nitrite as N	3.98	0.01 mg/L	4.00		100	85-115			
Sulfate	4.0	1.0 mg/L	4.00		99	85-115			

LCS (K105342-BS2)		Prepared: Dec-03-11, Analyzed: Dec-03-11							
Chloride	4.11	0.10 mg/L	4.00		103	85-115			
Fluoride	4.12	0.10 mg/L	4.00		103	85-115			
Nitrogen, Nitrate as N	4.10	0.010 mg/L	4.00		103	85-115			
Nitrogen, Nitrite as N	4.02	0.01 mg/L	4.00		101	85-115			
Sulfate	4.0	1.0 mg/L	4.00		101	85-115			

Duplicate (K105342-DUP1)		Source: K110092-01		Prepared: Dec-03-11, Analyzed: Dec-03-11					
Chloride	1.51	0.10 mg/L		1.54			2	10	
Fluoride	< 0.10	0.10 mg/L		< 0.10				10	
Nitrogen, Nitrate as N	< 0.010	0.010 mg/L		< 0.010				10	
Nitrogen, Nitrite as N	< 0.01	0.01 mg/L		< 0.01				10	
Sulfate	14.6	1.0 mg/L		14.7			< 1	10	

**General Parameters, Batch K105346**

Blank (K105346-BLK1)		Prepared: Dec-05-11, Analyzed: Dec-07-11							
Solids, Total Dissolved	< 5	5 mg/L							

Reference (K105346-SRM1)		Prepared: Dec-05-11, Analyzed: Dec-07-11							
Solids, Total Dissolved	239	5 mg/L	240		100	85-115			

**General Parameters, Batch K105347**

Blank (K105347-BLK1)		Prepared: Dec-05-11, Analyzed: Dec-06-11							
UV Transmittance @ 254nm	< 0.1	0.1 %							

Blank (K105347-BLK2)		Prepared: Dec-05-11, Analyzed: Dec-06-11							
UV Transmittance @ 254nm	< 0.1	0.1 %							

Duplicate (K105347-DUP2)		Source: K110092-01		Prepared: Dec-05-11, Analyzed: Dec-06-11					
UV Transmittance @ 254nm	95.5	0.1 %		95.7			< 1	15	

**QUALITY CONTROL DATA**



**CLIENT  
PROJECT**

Regional District of Thompson Nicola  
Spences Bridge CWS

**WORK ORDER #  
REPORTED**

K1L0092  
Dec-09-11

Analyte	Result	Reporting Limit Units	Spike Level	Source Result	% REC Limits	% RPD	% RPD Limit	Notes
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**General Parameters, Batch K105347, Continued**

Reference (K105347-SRM1)			Prepared: Dec-05-11, Analyzed: Dec-06-11					
UV Transmittance @ 254nm	32.8	0.1 %	32.4	101	90-110			
Reference (K105347-SRM2)			Prepared: Dec-05-11, Analyzed: Dec-06-11					
UV Transmittance @ 254nm	32.7	0.1 %	32.4	101	90-110			

**Total Recoverable Metals, Batch B1L0043**

Blank (B1L0043-BLK1)			Prepared: Dec-05-11, Analyzed: Dec-05-11					
Aluminum	< 0.050	0.050 mg/L						
Antimony	< 0.0200	0.0200 mg/L						
Arsenic	< 0.0050	0.0050 mg/L						
Barium	< 0.050	0.050 mg/L						
Beryllium	< 0.0010	0.0010 mg/L						
Bismuth	< 0.0010	0.0010 mg/L						
Boron	< 0.040	0.040 mg/L						
Cadmium	< 0.00010	0.00010 mg/L						
Calcium	< 2.0	2.0 mg/L						
Chromium	< 0.0050	0.0050 mg/L						
Cobalt	< 0.00050	0.00050 mg/L						
Copper	< 0.0020	0.0020 mg/L						
Iron	< 0.10	0.10 mg/L						
Lead	< 0.0010	0.0010 mg/L						
Lithium	< 0.0010	0.0010 mg/L						
Magnesium	< 0.10	0.10 mg/L						
Manganese	< 0.0020	0.0020 mg/L						
Mercury	< 0.00020	0.00020 mg/L						
Molybdenum	< 0.0010	0.0010 mg/L						
Nickel	< 0.0020	0.0020 mg/L						
Phosphorus	< 0.20	0.20 mg/L						
Potassium	< 0.20	0.20 mg/L						
Selenium	< 0.0050	0.0050 mg/L						
Silicon	< 5.0	5.0 mg/L						
Silver	< 0.00050	0.00050 mg/L						
Sodium	< 0.20	0.20 mg/L						
Strontium	< 0.010	0.010 mg/L						
Tellurium	< 0.0020	0.0020 mg/L						
Thallium	< 0.00020	0.00020 mg/L						
Thorium	< 0.0010	0.0010 mg/L						
Tin	< 0.0020	0.0020 mg/L						
Titanium	< 0.050	0.050 mg/L						
Uranium	< 0.00020	0.00020 mg/L						
Vanadium	< 0.010	0.010 mg/L						
Zinc	< 0.040	0.040 mg/L						
Zirconium	< 0.0010	0.0010 mg/L						

Blank (B1L0043-BLK2)			Prepared: Dec-05-11, Analyzed: Dec-05-11					
Aluminum	< 0.050	0.050 mg/L						
Antimony	< 0.0200	0.0200 mg/L						
Arsenic	< 0.0050	0.0050 mg/L						
Barium	< 0.050	0.050 mg/L						
Beryllium	< 0.0010	0.0010 mg/L						
Bismuth	< 0.0010	0.0010 mg/L						
Boron	< 0.040	0.040 mg/L						
Cadmium	< 0.00010	0.00010 mg/L						
Calcium	< 2.0	2.0 mg/L						
Chromium	< 0.0050	0.0050 mg/L						
Cobalt	< 0.00050	0.00050 mg/L						
Copper	< 0.0020	0.0020 mg/L						
Iron	< 0.10	0.10 mg/L						
Lead	< 0.0010	0.0010 mg/L						
Lithium	< 0.0010	0.0010 mg/L						
Magnesium	< 0.10	0.10 mg/L						
Manganese	< 0.0020	0.0020 mg/L						

**QUALITY CONTROL DATA**



**CLIENT** Regional District of Thompson Nicola  
**PROJECT** Spences Bridge CWS

**WORK ORDER #** K1L0092  
**REPORTED** Dec-09-11

Analyte	Result	Reporting Limit Units	Spike Level	Source Result	% REC	% REC Limits	% RPD	% RPD Limit	Notes
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**Total Recoverable Metals, Batch B1L0043, Continued**

**Blank (B1L0043-BLK2), Continued** Prepared: Dec-05-11, Analyzed: Dec-05-11

Mercury	< 0.00020	0.00020 mg/L							
Molybdenum	< 0.0010	0.0010 mg/L							
Nickel	< 0.0020	0.0020 mg/L							
Phosphorus	< 0.20	0.20 mg/L							
Potassium	< 0.20	0.20 mg/L							
Selenium	< 0.0050	0.0050 mg/L							
Silicon	< 5.0	5.0 mg/L							
Silver	< 0.00050	0.00050 mg/L							
Sodium	< 0.20	0.20 mg/L							
Strontium	< 0.010	0.010 mg/L							
Tellurium	< 0.0020	0.0020 mg/L							
Thallium	< 0.00020	0.00020 mg/L							
Thorium	< 0.0010	0.0010 mg/L							
Tin	< 0.0020	0.0020 mg/L							
Titanium	< 0.050	0.050 mg/L							
Uranium	< 0.00020	0.00020 mg/L							
Vanadium	< 0.010	0.010 mg/L							
Zinc	< 0.040	0.040 mg/L							
Zirconium	< 0.0010	0.0010 mg/L							

**Reference (B1L0043-SRM1)** Prepared: Dec-05-11, Analyzed: Dec-05-11

Aluminum	0.335	0.050 mg/L	0.296	113	81-129
Antimony	0.0477	0.0200 mg/L	0.0505	95	88-114
Arsenic	0.120	0.0050 mg/L	0.122	99	88-114
Barium	0.744	0.050 mg/L	0.777	96	72-104
Beryllium	0.0538	0.0010 mg/L	0.0488	110	76-131
Boron	3.68	0.040 mg/L	3.40	108	75-121
Cadmium	0.0485	0.00010 mg/L	0.0490	99	89-111
Calcium	10.7	2.0 mg/L	10.2	105	86-121
Chromium	0.255	0.0050 mg/L	0.242	105	89-114
Cobalt	0.0402	0.00050 mg/L	0.0366	110	91-113
Copper	0.535	0.0020 mg/L	0.487	110	91-115
Iron	0.57	0.10 mg/L	0.469	121	77-124
Lead	0.185	0.0010 mg/L	0.193	96	92-113
Lithium	0.416	0.0010 mg/L	0.390	107	85-115
Magnesium	3.66	0.10 mg/L	3.31	111	78-120
Manganese	0.112	0.0020 mg/L	0.109	103	90-114
Mercury	0.00469	0.00020 mg/L	0.00456	103	50-150
Molybdenum	0.190	0.0010 mg/L	0.197	96	90-111
Nickel	0.255	0.0020 mg/L	0.242	105	90-111
Phosphorus	0.22	0.20 mg/L	0.233	96	85-115
Potassium	6.57	0.20 mg/L	5.93	111	84-113
Selenium	0.111	0.0050 mg/L	0.115	96	85-115
Sodium	8.19	0.20 mg/L	7.64	107	82-123
Strontium	0.342	0.010 mg/L	0.363	94	88-112
Thallium	0.0735	0.00020 mg/L	0.0794	93	91-114
Uranium	0.0173	0.00020 mg/L	0.0192	90	85-120
Vanadium	0.378	0.010 mg/L	0.376	101	86-111
Zinc	2.55	0.040 mg/L	2.42	106	85-111

**Reference (B1L0043-SRM2)** Prepared: Dec-05-11, Analyzed: Dec-05-11

Aluminum	0.324	0.050 mg/L	0.296	110	81-129
Antimony	0.0453	0.0200 mg/L	0.0505	90	88-114
Arsenic	0.116	0.0050 mg/L	0.122	95	88-114
Barium	0.722	0.050 mg/L	0.777	93	72-104
Beryllium	0.0504	0.0010 mg/L	0.0488	103	76-131
Boron	3.58	0.040 mg/L	3.40	105	75-121
Cadmium	0.0479	0.00010 mg/L	0.0490	98	89-111
Calcium	10.1	2.0 mg/L	10.2	99	86-121
Chromium	0.252	0.0050 mg/L	0.242	104	89-114
Cobalt	0.0390	0.00050 mg/L	0.0366	106	91-113
Copper	0.527	0.0020 mg/L	0.487	108	91-115
Iron	0.55	0.10 mg/L	0.469	118	77-124

**QUALITY CONTROL DATA**



**CLIENT PROJECT**

Regional District of Thompson Nicola  
Spences Bridge CWS

**WORK ORDER # REPORTED**

K1L0092  
Dec-09-11

Analyte	Result	Reporting Limit Units	Spike Level	Source Result	% REC	% REC Limits	% RPD	% RPD Limit	Notes
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**Total Recoverable Metals, Batch B1L0043, Continued**

Reference (B1L0043-SRM2), Continued			Prepared: Dec-05-11, Analyzed: Dec-05-11		
Lead	0.181	0.0010 mg/L	0.193	94	92-113
Lithium	0.406	0.0010 mg/L	0.390	104	85-115
Magnesium	3.63	0.10 mg/L	3.31	110	78-120
Manganese	0.108	0.0020 mg/L	0.109	99	90-114
Mercury	0.00456	0.00020 mg/L	0.00456	100	50-150
Molybdenum	0.186	0.0010 mg/L	0.197	94	90-111
Nickel	0.248	0.0020 mg/L	0.242	102	90-111
Phosphorus	0.20	0.20 mg/L	0.233	88	85-115
Potassium	6.36	0.20 mg/L	5.93	107	84-113
Selenium	0.103	0.0050 mg/L	0.115	90	85-115
Sodium	8.04	0.20 mg/L	7.64	105	82-123
Strontium	0.328	0.010 mg/L	0.363	90	88-112
Thallium	0.0719	0.00020 mg/L	0.0794	91	91-114
Uranium	0.0169	0.00020 mg/L	0.0192	88	85-120
Vanadium	0.372	0.010 mg/L	0.376	99	86-111
Zinc	2.50	0.040 mg/L	2.42	103	85-111

**Volatile Organic Compounds, Batch B1L0075**

Blank (B1L0075-BLK1)			Prepared: Dec-06-11, Analyzed: Dec-07-11		
Bromodichloromethane	< 0.001	0.001 mg/L			
Bromoform	< 0.001	0.001 mg/L			
Chloroform	< 0.001	0.001 mg/L			
Dibromochloromethane	< 0.001	0.001 mg/L			
Trihalomethanes (total)	< 0.004	0.004 mg/L			
Surrogate: Toluene-d8	0.0264	mg/L	0.0250	106	80-120
Surrogate: 4-Bromofluorobenzene	0.0213	mg/L	0.0250	85	80-120
LCS (B1L0075-BS1)			Prepared: Dec-06-11, Analyzed: Dec-07-11		
Bromodichloromethane	0.021	0.001 mg/L	0.0200	107	80-120
Bromoform	0.021	0.001 mg/L	0.0200	106	80-120
Chloroform	0.022	0.001 mg/L	0.0200	108	80-120
Dibromochloromethane	0.021	0.001 mg/L	0.0200	104	80-120
Surrogate: Toluene-d8	0.0281	mg/L	0.0250	112	80-120
Surrogate: 4-Bromofluorobenzene	0.0280	mg/L	0.0250	112	80-120