CERTIFICATE OF ANALYSIS

REPORTED TO	Prince George, City of - Pump Station 1100 Patricia Boulevard Prince George, BC V2L 3v9		
ATTENTION	Cheyenne Magee	**WORK ORDER**	22J2690
PO NUMBER		**RECEIVED / TEMP**	2022-10-20 09:15 / 12.2°C
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13
PROJECT INFO	[info]	**COC NUMBER**	No Number

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

By engaging our services, you are agreeing to CARO Analytical Service's Standard Terms and Conditions outlined here: https://www.caro.ca/terms-conditions

If you have any questions or concerns, please contact me at pmand@caro.ca

Authorized By:

Preena Mand
Client Service Team Lead

TEST RESULTS

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

Analyte	Result	RL	Units	Analyzed	Qualifier
WT# DBC0 - PW605 (22J2690-01) | Matrix: Water | Sampled: 2022-10-19 13:45					
Anions					
Bromide	< 0.10	0.10	mg/L	2022-10-22	
Chloride	**5.54**	0.10	mg/L	2022-10-22	
Fluoride	< 0.10	0.10	mg/L	2022-10-22	
Nitrate (as N)	**0.165**	0.010	mg/L	2022-10-22	
Nitrite (as N)	< 0.010	0.010	mg/L	2022-10-22	
Phosphate (as P)	< 0.0050	0.0050	mg/L	2022-10-22	
Sulfate	**10.1**	1.0	mg/L	2022-10-22	
Calculated Parameters					
Total Trihalomethanes	< 0.00400	0.00400	mg/L	N/A	
Hardness, Total (as CaCO3)	**107**	0.500	mg/L	N/A	
Nitrate+Nitrite (as N)	**0.165**	0.0100	mg/L	N/A	
Nitrogen, Total	**0.278**	0.0500	mg/L	N/A	
Dissolved Metals					
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2022-10-31	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2022-10-31	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2022-10-31	
Barium, dissolved	**0.0239**	0.0050	mg/L	2022-10-31	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2022-10-31	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2022-10-31	
Boron, dissolved	< 0.0500	0.0500	mg/L	2022-10-31	
Cadmium, dissolved	**0.000258**	0.000010	mg/L	2022-11-01	RE2
Calcium, dissolved	**27.1**	0.20	mg/L	2022-10-31	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2022-10-31	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2022-10-31	
Copper, dissolved	**0.00389**	0.00040	mg/L	2022-10-31	
Iron, dissolved	**0.019**	0.010	mg/L	2022-10-31	
Lead, dissolved	**0.00045**	0.00020	mg/L	2022-10-31	
Lithium, dissolved	**0.00083**	0.00010	mg/L	2022-10-31	
Magnesium, dissolved	**9.63**	0.010	mg/L	2022-10-31	
Manganese, dissolved	**0.0222**	0.00020	mg/L	2022-10-31	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2022-10-27	
Molybdenum, dissolved	**0.00154**	0.00010	mg/L	2022-10-31	
Nickel, dissolved	**0.00129**	0.00040	mg/L	2022-10-31	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2022-10-31	
Potassium, dissolved	**1.33**	0.10	mg/L	2022-10-31	
Selenium, dissolved	**0.00094**	0.00050	mg/L	2022-10-31	
Silicon, dissolved	**5.2**	1.0	mg/L	2022-10-31	
Silver, dissolved	< 0.000050	0.000050	mg/L	2022-10-31	
Sodium, dissolved	**4.77**	0.10	mg/L	2022-10-31	
Strontium, dissolved	**0.132**	0.0010	mg/L	2022-10-31	
Sulfur, dissolved	< 3.0	3.0	mg/L	2022-10-31	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2022-10-31	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

Analyte	Result	RL	Units	Analyzed	Qualifier
WT# DBC0 - PW605 (22J2690-01) | Matrix: Water | Sampled: 2022-10-19 13:45, Continued					
Dissolved Metals, Continued					
Thallium, dissolved	< 0.000020	0.000020	mg/L	2022-10-31	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2022-10-31	
Tin, dissolved	< 0.00020	0.00020	mg/L	2022-10-31	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2022-10-31	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2022-10-31	
Uranium, dissolved	**0.000261**	0.000020	mg/L	2022-10-31	
Vanadium, dissolved	< 0.0050	0.0050	mg/L	2022-10-31	
Zinc, dissolved	**0.0141**	0.0040	mg/L	2022-10-31	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2022-10-31	
General Parameters					
Alkalinity, Total (as CaCO3)	**129**	1.0	mg/L	2022-10-26	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2022-10-26	
Alkalinity, Bicarbonate (as CaCO3)	**129**	1.0	mg/L	2022-10-26	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2022-10-26	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2022-10-26	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2022-10-21	
Carbon, Total Organic	**1.12**	0.50	mg/L	2022-10-24	
Nitrogen, Total Kjeldahl	**0.113**	0.050	mg/L	2022-10-27	
Solids, Total Suspended	< 2.0	2.0	mg/L	2022-10-26	
Microbiological Parameters					
Coliforms, Total	< 1	1	CFU/100 mL	2022-10-20	
Coliforms, Fecal	< 1	1	CFU/100 mL	2022-10-20	
E. coli	< 1	1	CFU/100 mL	2022-10-20	
Total Metals					
Aluminum, total	< 0.0050	0.0050	mg/L	2022-10-31	
Antimony, total	< 0.00020	0.00020	mg/L	2022-10-31	
Arsenic, total	< 0.00050	0.00050	mg/L	2022-10-31	
Barium, total	**0.0213**	0.0050	mg/L	2022-10-31	
Beryllium, total	< 0.00010	0.00010	mg/L	2022-10-31	
Bismuth, total	< 0.00010	0.00010	mg/L	2022-10-31	
Boron, total	< 0.0500	0.0500	mg/L	2022-10-31	
Cadmium, total	**0.000016**	0.000010	mg/L	2022-10-31	
Calcium, total	**29.9**	0.20	mg/L	2022-10-31	
Chromium, total	< 0.00050	0.00050	mg/L	2022-10-31	
Cobalt, total	< 0.00010	0.00010	mg/L	2022-10-31	
Copper, total	**0.00366**	0.00040	mg/L	2022-10-31	
Iron, total	**0.255**	0.010	mg/L	2022-10-31	
Lead, total	**0.00044**	0.00020	mg/L	2022-10-31	
Lithium, total	**0.00075**	0.00010	mg/L	2022-10-31	
Magnesium, total	**9.25**	0.010	mg/L	2022-10-31	
Manganese, total	**0.0219**	0.00020	mg/L	2022-10-31	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

Analyte	Result	RL	Units	Analyzed	Qualifier
WT# DBC0 - PW605 (22J2690-01) | Matrix: Water | Sampled: 2022-10-19 13:45, Continued					
Total Metals, Continued					
Mercury, total	< 0.000010	0.000010	mg/L	2022-10-27	
Molybdenum, total	**0.00156**	0.00010	mg/L	2022-10-31	
Nickel, total	**0.00099**	0.00040	mg/L	2022-10-31	
Phosphorus, total	< 0.050	0.050	mg/L	2022-10-31	
Potassium, total	**1.30**	0.10	mg/L	2022-10-31	
Selenium, total	**0.00091**	0.00050	mg/L	2022-10-31	
Silicon, total	**5.1**	1.0	mg/L	2022-10-31	
Silver, total	< 0.000050	0.000050	mg/L	2022-10-31	
Sodium, total	**4.43**	0.10	mg/L	2022-10-31	
Strontium, total	**0.130**	0.0010	mg/L	2022-10-31	
Sulfur, total	**3.2**	3.0	mg/L	2022-10-31	
Tellurium, total	< 0.00050	0.00050	mg/L	2022-10-31	
Thallium, total	< 0.000020	0.000020	mg/L	2022-10-31	
Thorium, total	< 0.00010	0.00010	mg/L	2022-10-31	
Tin, total	< 0.00020	0.00020	mg/L	2022-10-31	
Titanium, total	< 0.0050	0.0050	mg/L	2022-10-31	
Tungsten, total	< 0.0002	0.0002	mg/L	2022-10-31	
Uranium, total	**0.000282**	0.000020	mg/L	2022-10-31	
Vanadium, total	< 0.0050	0.0050	mg/L	2022-10-31	
Zinc, total	**0.0052**	0.0040	mg/L	2022-10-31	
Zirconium, total	< 0.00010	0.00010	mg/L	2022-10-31	
Volatile Organic Compounds (VOC)					
Bromodichloromethane	< 0.0010	0.0010	mg/L	2022-10-27	
Bromoform	< 0.0010	0.0010	mg/L	2022-10-27	
Chloroform	< 0.0010	0.0010	mg/L	2022-10-27	
Dibromochloromethane	< 0.0010	0.0010	mg/L	2022-10-27	
Surrogate: Toluene-d8	*94*	*70-130*	%	*2022-10-27*	
Surrogate: 4-Bromofluorobenzene	*87*	*70-130*	%	*2022-10-27*	

Sample Qualifiers:

RE2 Result was confirmed by re-analysis prior to reporting.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	✓	Kelowna
Ammonia, Total in Water	SM 4500-NH3 G* (2017)	Automated Colorimetry (Phenate)	✓	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Kelowna
Carbon, Total Organic in Water	SM 5310 B (2017)	Combustion, Infrared CO2 Detection	✓	Kelowna
Coliforms, Fecal in Water	SM 9222 D (2017)	Membrane Filtration / m-FC Agar	✓	Kelowna
Coliforms, Total in Water	SM 9222* (2017)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
E. coli in Water	SM 9222* (2017)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Hardness in Water	SM 2340 B (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	✓	N/A
Mercury, dissolved in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2017)	Block Digestion and Flow Injection Analysis	✓	Kelowna
Solids, Total Suspended in Water	Solids in Water, Filtered / SM 2540 D* (2017)	Solids in Water, Filtered / Gravimetry (Dried at 103-105C)	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Trihalomethanes in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	✓	Richmond

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
CFU/100 mL	Colony Forming Units per 100 millilitres
mg/L	Milligrams per litre
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

General Comments:

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 or once samples expire, whichever comes first. Longer hold is possible if agreed to in writing.

Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager:pmand@caro.ca

Please note any regulatory guidelines applied to this report are added as a convenience to the client, at their request, to help provide some initial context to analytical results obtained. Although CARO makes every effort to ensure accuracy of the associated regulatory guideline(s) applied, the guidelines applied cannot be assumed to be correct due to a variety of factors and as such CARO Analytical Services assumes no liability or responsibility for the use of those guidelines to make any decisions. The original source of the regulation should be verified and a review of the guideline (s) should be validated as correct in order to make any decisions arising from the comparison of the analytical data obtained to the relevant regulatory guideline for one's particular circumstances. Further, CARO Analytical Services assumes no liability or responsibility for any loss attributed from the use of these guidelines in any way.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

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

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 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	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B2J2409										
Blank (B2J2409-BLK1)				Prepared: 2022-10-22, Analyzed: 2022-10-22						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Phosphate (as P)	< 0.0050	0.0050	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B2J2409-BLK2)				Prepared: 2022-10-23, Analyzed: 2022-10-23						
Bromide	< 0.10	0.10	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Phosphate (as P)	< 0.0050	0.0050	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B2J2409-BS1)				Prepared: 2022-10-22, Analyzed: 2022-10-22						
Bromide	4.04	0.10	mg/L	4.00		101	85-115			
Chloride	16.2	0.10	mg/L	16.0		101	90-110			
Fluoride	4.09	0.10	mg/L	4.00		102	88-108			
Nitrate (as N)	4.02	0.010	mg/L	4.00		100	90-110			
Nitrite (as N)	1.84	0.010	mg/L	2.00		92	85-115			
Phosphate (as P)	1.06	0.0050	mg/L	1.00		106	80-120			
Sulfate	15.9	1.0	mg/L	16.0		100	90-110			
LCS (B2J2409-BS2)				Prepared: 2022-10-23, Analyzed: 2022-10-23						
Bromide	3.84	0.10	mg/L	4.00		96	85-115			
Chloride	15.8	0.10	mg/L	16.0		99	90-110			
Fluoride	4.29	0.10	mg/L	4.00		107	88-108			
Nitrate (as N)	4.13	0.010	mg/L	4.00		103	90-110			
Nitrite (as N)	1.96	0.010	mg/L	2.00		98	85-115			
Phosphate (as P)	1.07	0.0050	mg/L	1.00		107	80-120			
Sulfate	15.7	1.0	mg/L	16.0		98	90-110			
Dissolved Metals, Batch B2J3251										

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B2J3251, Continued										
Blank (B2J3251-BLK1)				Prepared: 2022-10-27, Analyzed: 2022-10-27						
Mercury, dissolved	< 0.000010	0.000010	mg/L							
Blank (B2J3251-BLK2)				Prepared: 2022-10-27, Analyzed: 2022-10-27						
Mercury, dissolved	< 0.000010	0.000010	mg/L							
LCS (B2J3251-BS1)				Prepared: 2022-10-27, Analyzed: 2022-10-27						
Mercury, dissolved	0.000488	0.000010	mg/L	0.000500		98	80-120			
LCS (B2J3251-BS2)				Prepared: 2022-10-27, Analyzed: 2022-10-27						
Mercury, dissolved	0.000498	0.000010	mg/L	0.000500		100	80-120			
Dissolved Metals, Batch B2J3633										
Blank (B2J3633-BLK1)				Prepared: 2022-10-31, Analyzed: 2022-10-31						
Aluminum, dissolved	< 0.0050	0.0050	mg/L							
Antimony, dissolved	< 0.00020	0.00020	mg/L							
Arsenic, dissolved	< 0.00050	0.00050	mg/L							
Barium, dissolved	< 0.0050	0.0050	mg/L							
Beryllium, dissolved	< 0.00010	0.00010	mg/L							
Bismuth, dissolved	< 0.00010	0.00010	mg/L							
Boron, dissolved	< 0.0500	0.0500	mg/L							
Cadmium, dissolved	< 0.000010	0.000010	mg/L							
Calcium, dissolved, dissolved	< 0.20	0.20	mg/L							
Chromium, dissolved	< 0.00050	0.00050	mg/L							
Cobalt, dissolved	< 0.00010	0.00010	mg/L							
Copper, dissolved	< 0.00040	0.00040	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.00020	0.00020	mg/L							
Lithium, dissolved	< 0.00010	0.00010	mg/L							
Magnesium, dissolved, dissolved	< 0.010	0.010	mg/L							
Manganese, dissolved	< 0.00020	0.00020	mg/L							
Molybdenum, dissolved	< 0.00010	0.00010	mg/L							
Nickel, dissolved	< 0.00040	0.00040	mg/L							
Phosphorus, dissolved	< 0.050	0.050	mg/L							
Potassium, dissolved	< 0.10	0.10	mg/L							
Selenium, dissolved	< 0.00050	0.00050	mg/L							
Silicon, dissolved	< 1.0	1.0	mg/L							
Silver, dissolved	< 0.000050	0.000050	mg/L							
Sodium, dissolved	< 0.10	0.10	mg/L							
Strontium, dissolved	< 0.0010	0.0010	mg/L							
Sulfur, dissolved	< 3.0	3.0	mg/L							
Tellurium, dissolved	< 0.00050	0.00050	mg/L							
Thallium, dissolved	< 0.000020	0.000020	mg/L							
Thorium, dissolved	< 0.00010	0.00010	mg/L							
Tin, dissolved	< 0.00020	0.00020	mg/L							
Titanium, dissolved	< 0.0050	0.0050	mg/L							
Tungsten, dissolved	< 0.0010	0.0010	mg/L							
Uranium, dissolved	< 0.000020	0.000020	mg/L							
Vanadium, dissolved	< 0.0050	0.0050	mg/L							
Zinc, dissolved	< 0.0040	0.0040	mg/L							
Zirconium, dissolved	< 0.00010	0.00010	mg/L							
LCS (B2J3633-BS1)				Prepared: 2022-10-31, Analyzed: 2022-10-31						
Aluminum, dissolved	4.17	0.0050	mg/L	4.00		104	80-120			
Antimony, dissolved	0.0410	0.00020	mg/L	0.0400		102	80-120			
Arsenic, dissolved	0.0421	0.00050	mg/L	0.0400		105	80-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B2J3633, Continued										
LCS (B2J3633-BS1), Continued				Prepared: 2022-10-31, Analyzed: 2022-10-31						
Barium, dissolved	0.0418	0.0050	mg/L	0.0400		104	80-120			
Beryllium, dissolved	0.0405	0.00010	mg/L	0.0400		101	80-120			
Bismuth, dissolved	0.0409	0.00010	mg/L	0.0400		102	80-120			
Boron, dissolved	< 0.0500	0.0500	mg/L	0.0400		98	80-120			
Cadmium, dissolved	0.0410	0.000010	mg/L	0.0400		102	80-120			
Calcium, dissolved, dissolved	4.17	0.20	mg/L	4.00		104	80-120			
Chromium, dissolved	0.0412	0.00050	mg/L	0.0400		103	80-120			
Cobalt, dissolved	0.0402	0.00010	mg/L	0.0400		100	80-120			
Copper, dissolved	0.0411	0.00040	mg/L	0.0400		103	80-120			
Iron, dissolved	4.04	0.010	mg/L	4.00		101	80-120			
Lead, dissolved	0.0405	0.00020	mg/L	0.0400		101	80-120			
Lithium, dissolved	0.0408	0.00010	mg/L	0.0400		102	80-120			
Magnesium, dissolved, dissolved	4.16	0.010	mg/L	4.00		104	80-120			
Manganese, dissolved	0.0410	0.00020	mg/L	0.0400		103	80-120			
Molybdenum, dissolved	0.0401	0.00010	mg/L	0.0400		100	80-120			
Nickel, dissolved	0.0399	0.00040	mg/L	0.0400		100	80-120			
Phosphorus, dissolved	4.13	0.050	mg/L	4.00		103	80-120			
Potassium, dissolved	4.10	0.10	mg/L	4.00		102	80-120			
Selenium, dissolved	0.0404	0.00050	mg/L	0.0400		101	80-120			
Silicon, dissolved	4.2	1.0	mg/L	4.00		106	80-120			
Silver, dissolved	0.0414	0.000050	mg/L	0.0400		103	80-120			
Sodium, dissolved	4.15	0.10	mg/L	4.00		104	80-120			
Strontium, dissolved	0.0413	0.0010	mg/L	0.0400		103	80-120			
Sulfur, dissolved	40.9	3.0	mg/L	40.0		102	80-120			
Tellurium, dissolved	0.0409	0.00050	mg/L	0.0400		102	80-120			
Thallium, dissolved	0.0399	0.000020	mg/L	0.0400		100	80-120			
Thorium, dissolved	0.0403	0.00010	mg/L	0.0400		101	80-120			
Tin, dissolved	0.0419	0.00020	mg/L	0.0400		105	80-120			
Titanium, dissolved	0.0399	0.0050	mg/L	0.0400		100	80-120			
Tungsten, dissolved	0.0404	0.0010	mg/L	0.0400		101	80-120			
Uranium, dissolved	0.0398	0.000020	mg/L	0.0400		100	80-120			
Vanadium, dissolved	0.0411	0.0050	mg/L	0.0400		103	80-120			
Zinc, dissolved	0.0410	0.0040	mg/L	0.0400		102	80-120			
Zirconium, dissolved	0.0412	0.00010	mg/L	0.0400		103	80-120			
General Parameters, Batch B2J2399										
Blank (B2J2399-BLK1)				Prepared: 2022-10-24, Analyzed: 2022-10-24						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B2J2399-BLK2)				Prepared: 2022-10-24, Analyzed: 2022-10-24						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B2J2399-BLK3)				Prepared: 2022-10-24, Analyzed: 2022-10-24						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B2J2399-BLK4)				Prepared: 2022-10-24, Analyzed: 2022-10-24						
Carbon, Total Organic	< 0.50	0.50	mg/L							
LCS (B2J2399-BS1)				Prepared: 2022-10-24, Analyzed: 2022-10-24						
Carbon, Total Organic	9.01	0.50	mg/L	10.0		90	78-116			
LCS (B2J2399-BS2)				Prepared: 2022-10-24, Analyzed: 2022-10-24						
Carbon, Total Organic	9.12	0.50	mg/L	10.0		91	78-116			
LCS (B2J2399-BS3)				Prepared: 2022-10-24, Analyzed: 2022-10-24						
Carbon, Total Organic	9.34	0.50	mg/L	10.0		93	78-116			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B2J2399, Continued										
LCS (B2J2399-BS4)				Prepared: 2022-10-24, Analyzed: 2022-10-24						
Carbon, Total Organic	9.27	0.50	mg/L	10.0		93	78-116			
General Parameters, Batch B2J2525										
Blank (B2J2525-BLK1)				Prepared: 2022-10-21, Analyzed: 2022-10-21						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
Blank (B2J2525-BLK2)				Prepared: 2022-10-21, Analyzed: 2022-10-21						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
Blank (B2J2525-BLK3)				Prepared: 2022-10-21, Analyzed: 2022-10-21						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
LCS (B2J2525-BS1)				Prepared: 2022-10-21, Analyzed: 2022-10-21						
Ammonia, Total (as N)	0.949	0.050	mg/L	1.00		95	90-115			
LCS (B2J2525-BS2)				Prepared: 2022-10-21, Analyzed: 2022-10-21						
Ammonia, Total (as N)	0.942	0.050	mg/L	1.00		94	90-115			
LCS (B2J2525-BS3)				Prepared: 2022-10-21, Analyzed: 2022-10-21						
Ammonia, Total (as N)	0.965	0.050	mg/L	1.00		96	90-115			
General Parameters, Batch B2J2956										
Blank (B2J2956-BLK1)				Prepared: 2022-10-26, Analyzed: 2022-10-26						
Solids, Total Suspended	< 2.0	2.0	mg/L							
LCS (B2J2956-BS1)				Prepared: 2022-10-26, Analyzed: 2022-10-26						
Solids, Total Suspended	90.0	10.0	mg/L	100		90	85-115			
General Parameters, Batch B2J2999										
Blank (B2J2999-BLK1)				Prepared: 2022-10-26, Analyzed: 2022-10-26						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
Blank (B2J2999-BLK2)				Prepared: 2022-10-26, Analyzed: 2022-10-26						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
LCS (B2J2999-BS1)				Prepared: 2022-10-26, Analyzed: 2022-10-26						
Alkalinity, Total (as CaCO3)	104	1.0	mg/L	100		104	80-120			
LCS (B2J2999-BS2)				Prepared: 2022-10-26, Analyzed: 2022-10-26						
Alkalinity, Total (as CaCO3)	104	1.0	mg/L	100		104	80-120			
General Parameters, Batch B2J3082										

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B2J3082, Continued										
Blank (B2J3082-BLK1)				Prepared: 2022-10-26, Analyzed: 2022-10-27						
Nitrogen, Total Kjeldahl	< 0.050	0.050	mg/L							
Blank (B2J3082-BLK2)				Prepared: 2022-10-26, Analyzed: 2022-10-27						
Nitrogen, Total Kjeldahl	< 0.050	0.050	mg/L							
LCS (B2J3082-BS1)				Prepared: 2022-10-26, Analyzed: 2022-10-27						
Nitrogen, Total Kjeldahl	1.02	0.050	mg/L	1.00		102	85-115			
LCS (B2J3082-BS2)				Prepared: 2022-10-26, Analyzed: 2022-10-27						
Nitrogen, Total Kjeldahl	0.995	0.050	mg/L	1.00		100	85-115			
Microbiological Parameters, Batch B2J2336										
Blank (B2J2336-BLK1)				Prepared: 2022-10-20, Analyzed: 2022-10-20						
Coliforms, Total	< 1	1	CFU/100 mL							
E. coli	< 1	1	CFU/100 mL							
Blank (B2J2336-BLK2)				Prepared: 2022-10-20, Analyzed: 2022-10-20						
Coliforms, Total	< 1	1	CFU/100 mL							
E. coli	< 1	1	CFU/100 mL							
Blank (B2J2336-BLK3)				Prepared: 2022-10-20, Analyzed: 2022-10-20						
Coliforms, Total	< 1	1	CFU/100 mL							
E. coli	< 1	1	CFU/100 mL							
Blank (B2J2336-BLK4)				Prepared: 2022-10-20, Analyzed: 2022-10-20						
Coliforms, Total	< 1	1	CFU/100 mL							
E. coli	< 1	1	CFU/100 mL							
Blank (B2J2336-BLK5)				Prepared: 2022-10-20, Analyzed: 2022-10-20						
Coliforms, Total	< 1	1	CFU/100 mL							
E. coli	< 1	1	CFU/100 mL							
Blank (B2J2336-BLK6)				Prepared: 2022-10-20, Analyzed: 2022-10-20						
Coliforms, Total	< 1	1	CFU/100 mL							
E. coli	< 1	1	CFU/100 mL							
Microbiological Parameters, Batch B2J2417										
Blank (B2J2417-BLK1)				Prepared: 2022-10-20, Analyzed: 2022-10-20						
Coliforms, Fecal	< 1	1	CFU/100 mL							
Total Metals, Batch B2J3252										
Blank (B2J3252-BLK1)				Prepared: 2022-10-27, Analyzed: 2022-10-27						
Mercury, total	< 0.000010	0.000010	mg/L							
Blank (B2J3252-BLK2)				Prepared: 2022-10-27, Analyzed: 2022-10-27						
Mercury, total	< 0.000010	0.000010	mg/L							
LCS (B2J3252-BS1)				Prepared: 2022-10-27, Analyzed: 2022-10-27						
Mercury, total	0.000500	0.000010	mg/L	0.000500		100	80-120			
LCS (B2J3252-BS2)				Prepared: 2022-10-27, Analyzed: 2022-10-27						
Mercury, total	0.000491	0.000010	mg/L	0.000500		98	80-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B2J3638										
Blank (B2J3638-BLK1)				Prepared: 2022-10-31, Analyzed: 2022-10-31						
Aluminum, total	< 0.0050	0.0050	mg/L							
Antimony, total	< 0.00020	0.00020	mg/L							
Arsenic, total	< 0.00050	0.00050	mg/L							
Barium, total	< 0.0050	0.0050	mg/L							
Beryllium, total	< 0.00010	0.00010	mg/L							
Bismuth, total	< 0.00010	0.00010	mg/L							
Boron, total	< 0.0500	0.0500	mg/L							
Cadmium, total	< 0.000010	0.000010	mg/L							
Calcium, total	< 0.20	0.20	mg/L							
Chromium, total	< 0.00050	0.00050	mg/L							
Cobalt, total	< 0.00010	0.00010	mg/L							
Copper, total	< 0.00040	0.00040	mg/L							
Iron, total	< 0.010	0.010	mg/L							
Lead, total	< 0.00020	0.00020	mg/L							
Lithium, total	< 0.00010	0.00010	mg/L							
Magnesium, total	< 0.010	0.010	mg/L							
Manganese, total	< 0.00020	0.00020	mg/L							
Molybdenum, total	< 0.00010	0.00010	mg/L							
Nickel, total	< 0.00040	0.00040	mg/L							
Phosphorus, total	< 0.050	0.050	mg/L							
Potassium, total	< 0.10	0.10	mg/L							
Selenium, total	< 0.00050	0.00050	mg/L							
Silicon, total	< 1.0	1.0	mg/L							
Silver, total	< 0.000050	0.000050	mg/L							
Sodium, total	< 0.10	0.10	mg/L							
Strontium, total	< 0.0010	0.0010	mg/L							
Sulfur, total	< 3.0	3.0	mg/L							
Tellurium, total	< 0.00050	0.00050	mg/L							
Thallium, total	< 0.000020	0.000020	mg/L							
Thorium, total	< 0.00010	0.00010	mg/L							
Tin, total	< 0.00020	0.00020	mg/L							
Titanium, total	< 0.0050	0.0050	mg/L							
Tungsten, total	< 0.0002	0.0002	mg/L							
Uranium, total	< 0.000020	0.000020	mg/L							
Vanadium, total	< 0.0050	0.0050	mg/L							
Zinc, total	< 0.0040	0.0040	mg/L							
Zirconium, total	< 0.00010	0.00010	mg/L							
LCS (B2J3638-BS1)				Prepared: 2022-10-31, Analyzed: 2022-10-31						
Aluminum, total	4.00	0.0050	mg/L	4.00		100	80-120			
Antimony, total	0.0389	0.00020	mg/L	0.0400		97	80-120			
Arsenic, total	0.0411	0.00050	mg/L	0.0400		103	80-120			
Barium, total	0.0372	0.0050	mg/L	0.0400		93	80-120			
Beryllium, total	0.0395	0.00010	mg/L	0.0400		99	80-120			
Bismuth, total	0.0390	0.00010	mg/L	0.0400		98	80-120			
Boron, total	< 0.0500	0.0500	mg/L	0.0400		101	80-120			
Cadmium, total	0.0390	0.000010	mg/L	0.0400		98	80-120			
Calcium, total	4.04	0.20	mg/L	4.00		101	80-120			
Chromium, total	0.0404	0.00050	mg/L	0.0400		101	80-120			
Cobalt, total	0.0402	0.00010	mg/L	0.0400		100	80-120			
Copper, total	0.0399	0.00040	mg/L	0.0400		100	80-120			
Iron, total	3.97	0.010	mg/L	4.00		99	80-120			
Lead, total	0.0394	0.00020	mg/L	0.0400		99	80-120			
Lithium, total	0.0390	0.00010	mg/L	0.0400		97	80-120			
Magnesium, total	4.02	0.010	mg/L	4.00		100	80-120			
Manganese, total	0.0404	0.00020	mg/L	0.0400		101	80-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Prince George, City of - Pump Station	**WORK ORDER**	22J2690
PROJECT	Raw Water - PW 605	**REPORTED**	2022-11-01 17:13

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B2J3638, Continued										
LCS (B2J3638-BS1), Continued				Prepared: 2022-10-31, Analyzed: 2022-10-31						
Molybdenum, total	0.0390	0.00010	mg/L	0.0400		97	80-120			
Nickel, total	0.0394	0.00040	mg/L	0.0400		98	80-120			
Phosphorus, total	4.08	0.050	mg/L	4.00		102	80-120			
Potassium, total	3.96	0.10	mg/L	4.00		99	80-120			
Selenium, total	0.0389	0.00050	mg/L	0.0400		97	80-120			
Silicon, total	4.1	1.0	mg/L	4.00		103	80-120			
Silver, total	0.0401	0.000050	mg/L	0.0400		100	80-120			
Sodium, total	4.14	0.10	mg/L	4.00		104	80-120			
Strontium, total	0.0393	0.0010	mg/L	0.0400		98	80-120			
Sulfur, total	39.7	3.0	mg/L	40.0		99	80-120			
Tellurium, total	0.0376	0.00050	mg/L	0.0400		94	80-120			
Thallium, total	0.0391	0.000020	mg/L	0.0400		98	80-120			
Thorium, total	0.0400	0.00010	mg/L	0.0400		100	80-120			
Tin, total	0.0392	0.00020	mg/L	0.0400		98	80-120			
Titanium, total	0.0390	0.0050	mg/L	0.0400		97	80-120			
Tungsten, total	0.0397	0.0002	mg/L	0.0400		99	80-120			
Uranium, total	0.0393	0.000020	mg/L	0.0400		98	80-120			
Vanadium, total	0.0411	0.0050	mg/L	0.0400		103	80-120			
Zinc, total	0.0389	0.0040	mg/L	0.0400		97	80-120			
Zirconium, total	0.0387	0.00010	mg/L	0.0400		97	80-120			
Volatile Organic Compounds (VOC), Batch B2J3019										
Blank (B2J3019-BLK1)				Prepared: 2022-10-26, Analyzed: 2022-10-27						
Bromodichloromethane	< 0.0010	0.0010	mg/L							
Bromoform	< 0.0010	0.0010	mg/L							
Chloroform	< 0.0010	0.0010	mg/L							
Dibromochloromethane	< 0.0010	0.0010	mg/L							
Surrogate: Toluene-d8	*0.0215*		*mg/L*	0.0250		*86*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0223*		*mg/L*	0.0249		*90*	*70-130*			
LCS (B2J3019-BS1)				Prepared: 2022-10-26, Analyzed: 2022-10-27						
Bromodichloromethane	0.0162	0.0010	mg/L	0.0201		81	70-130			
Bromoform	0.0113	0.0010	mg/L	0.0200		57	70-130			SPK
Chloroform	0.0198	0.0010	mg/L	0.0201		99	70-130			
Dibromochloromethane	0.0140	0.0010	mg/L	0.0200		70	70-130			
Surrogate: Toluene-d8	*0.0242*		*mg/L*	0.0250		*97*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0251*		*mg/L*	0.0249		*101*	*70-130*			

QC Qualifiers:

SPK The recovery of this analyte was outside of established control limits.