CITY OF Quesnel

Annual Drinking Water Quality Monitoring Report

2024

Joseph Law, Utilities Superintendent
PUBLIC WORKS, UTILITIES DEPARTMENT | 1350 SWORD AVE

PURPOSE

The City of Quesnel Annual Drinking Water Quality Monitoring Report is intended to make public all water quality monitoring results from the 2024 calendar year. Such annual reporting is required of all water purveyors in British Columbia under the Drinking Water Protection Act and the related Drinking Water Protection Regulations.

The Drinking Water Protection Act also requires that:

- Water system construction proposals must be approved by Public Health Engineers.
- Water system operators must operate their systems in compliance with the requirements of the Act through operating permits, which may contain specific conditions and are set and approved by the Health Authority Drinking Water Officer.
- Minimum water treatment and water quality standards are met, and monitoring and testing carried out, as required.
- Water suppliers must have microbiological samples analyzed by a laboratory which has been approved by the Provincial Health Officer;
- Operators of drinking water systems serving more than 500 individuals must be certified as operators through the Environmental Operators Certification Program; and
- Public notification must be made in case of water quality problems. This ensures accountability to the community for the water service provided.

These requirements are set in place in order to ensure the delivery of safe, potable drinking water to all consumers.

WATER SYSTEM OVERVIEW

The City of Quesnel water distribution system provides untreated potable drinking water for use by approximately 10,000 residents, commercial businesses, and local industry. The water system is comprised of:

Six Groundwater Production Wells

- Well 3 – Rolph Street
- Well 6 – Rolph Street
- Well 9 – Carson Subdivision
- Well 7 – North Fraser Drive
- Well 8 – Hilborn Road
- Well 10 – Hilborn Road

Seven Reservoirs

- Sugarloaf Reservoir
- Pinecrest Reservoir
- South Quesnel Reservoir
- Shadow Heights Reservoir
- Dragon Hill Reservoir
- Abbott Heights Reservoir #1
- Abbott Heights Reservoir #2

Five Booster Pump Stations

- Northstar Booster Station
- Healy Street Booster Station
- Dawson Ave Booster Station
- Pinecrest Booster Station
- Findlay Booster Station

Three Main Pressure Reducing Valve (PRV) Stations

- Brownmiller PRV
- Johnston Ave PRV
- Lewis Drive PRV

There are approximately 114 km of water main, 460 fire hydrants, and 3642 individual service connections.

The City of Quesnel also operates one bulk water delivery site where, for a fee, customers may fill containers for personal use.

In 2024 water consumption (as metered at the source) for the City of Quesnel amounted to a total of 2,281,557 cubic meters of groundwater pumped by the production wells, a decrease of 3.18% from the 2023 total volume of 2,347,660 cubic meters. For reference, 1 cubic meter of water consists of 1000 liters.

WATER MANAGEMENT

In the interest of public health and environmental protection, the Environmental Operators Certification Program (EOCP) is tasked by the Drinking Water Protection Act with the responsibility for classification of facilities and certification of water operators to enable the prudent management of water in British Columbia and the Yukon.

The EOCP requires that all facilities have (at minimum) one operator on each shift with a level of certification matching the facility classification. Furthermore, all system operators must be certified to a level appropriate to their role and level of responsibility. A facility's classification level is determined by its size, components, and level of complexity.

The City of Quesnel water distribution system is identified as a Class III facility by the EOCP. The experience and training requirements for an operator to receive a Level III certification are:

- Operator Level II Certificate *PLUS*
- 2 years related post-secondary or 90 CEUs (continuing education unit, 1 CEU equals 10 hours approved training) *PLUS.*
- 4 years operating experience at a Class II facility (or higher)
- Including 2 years Direct Responsible Charge at a Class II facility (or higher)

In 2024, staffing of the Water Distribution System consisted of:

- 1 Level III Water Distribution Operator position
- 6 Level II Water Distribution Operator positions
- 2 Level I Water Distribution Operator positions
- 2 Labourer / Operator-in-training positions

As EOCP certified Water Distribution Operators, staff are required to achieve a minimum score of 70% on written examinations and must receive 24 hours of approved relevant training in every two-year period to maintain their certification. Operator training is critical to maintaining facility classification and ensures that current industry standards and best practices are being met. Training also provides staff with an opportunity to network with other operators over common challenges faced in field operations.

Operator duties include (but are not limited to) operating system monitoring, routine maintenance, fire hydrant maintenance and repair, water quality sampling, emergency repairs, new construction, investigation of water quality complaints, responding to calls for service from the general public, flushing of water mains, and responding to after-hours emergencies.

All operator time is also shared between duties within the City of Quesnel wastewater collection system, storm water collection system, snow removal operations, and in support provided to other departments as required.

The City of Quesnel maintains an up-to-date Emergency Response and Contingency Plan (ERCP). The ERCP is reviewed and updated annually to ensure that standard operating procedures remain applicable and up to date. An up-to-date ERCP is a requirement of the City of Quesnel water system's Permit to Operate. In response to the drought conditions experienced by our region in 2024, Northern Health instated a requirement for water systems to also include a drought-specific section in their ERCP. In Quesnel, a bylaw to regulate use of the municipal water services is in place and includes provisions for the temporary restriction of water usage in any emergency or under extraordinary circumstances. In addition to the bylaw, the City of Quesnel's official Water Conservation Strategy was adopted in 2020 to provide a solid framework toward the sustainable use of the community's water supply.

Leak detection works aimed at identifying and preventing water losses in the distribution system are undertaken each year by system Operators and private contractors specializing in the field of leak detection.

A SCADA (supervisory, control, and data acquisition) Monitoring System is utilized by the City of Quesnel, which enables staff to observe real-time data and information related to water system operating conditions, including water well operation and reservoir levels. System operators have the ability to remotely respond to system conditions and demands, which reduces equipment failure and increases pumping efficiency.

WATER QUALITY MONITORING

In order to ensure the delivery of safe drinking water, there is a program in place to monitor water quality at the source and throughout the distribution system network.

The City of Quesnel sends water samples to a laboratory approved by the Provincial Health Officer for all sampling points and is notified of results and concerns.

The sampling parameters used to monitor potability are listed in the Guidelines for Canadian Drinking Water Quality (GCDWQ) and the British Columbia Drinking Water Regulations (BCDWR). These sampling parameters are used as indicators for bacteriological, chemical and physical contaminants.

Please note that in May 2019, the Guidelines for Canadian Drinking Water Quality were revised to include a Maximum Allowable Concentration (MAC) for manganese in drinking water. The MAC for total manganese in drinking water is 0.12 mg/L (120 µg/L). The aesthetic objective (AO) for total manganese in drinking water is 0.02 mg/L (20 µg/L).

The water produced by 5 of the 6 production wells does not meet the standard set by the Guidelines for Canadian Drinking Water Quality for manganese concentrations. Although, sampling results do show that manganese levels in the distribution system vary from above to below the MAC due to mixing and settling.

On June 10, 2022, Northern Health placed a Water Quality Advisory on the City of Quesnel's water distribution system and required the City of Quesnel to issue a public notice containing information on manganese in drinking water.

In order to have the Water Quality Advisory lifted six corrective actions are needed:

1. Distribute updated notice and information to residents

2. Continue additional sampling to determine the level of manganese in the distribution system

3. Continue talks with a qualified drinking water professional to assess the water source and propose a suitable treatment system to reduce the level of manganese to below the Maximum Acceptable Concentration

4. Submit the treatment proposal to Northern Health in the form of a Construction Permit Application

5. Upon receipt of approval from a Northern Health Public Health Engineer, in the form of a Construction Permit, install the approved treatment system

6. Conduct post-treatment samples in accordance with the conditions of the Construction Permit to verify treatment efficacy

Since the inception of the MAC requirements for manganese in the GCDWQ in 2019, the City of Quesnel has been working closely with a team of qualified drinking water professionals to design a water treatment system adequate for the removal of manganese from the public drinking water. The water treatment project has completed the pre-design phase.

Further to Water Quality Advisory placed on the Water System in 2022, the 2024 Annual Routine Inspection of the water system conducted by Northern Health officials made note of the absence of a treatment system adequate to reduce manganese levels to below the MAC in the GCDWQ, as well as the long-standing water quality advisory. The 2024 Annual Routine Inspection Report included the requirement that corrective actions addressing this issue be undertaken within a designated time period. As such, new requirements were imposed upon the water system's Permit to Operate, which is reviewed and authorized by the regional health authority on an annual basis. The new conditions added to the City's Permit to Operate in 2024 include the following:

- By June 2025, propose a preliminary report for water treatment to reduce manganese to below the maximum acceptable concentrations (MAC – 0.12 mg/L) given in the Guideline for Canadian Drinking Water Quality (GCDWQ). The proposal must be in the form of a construction permit application(s) to the Public Health Engineer

- By June 2030, implement water treatment that includes corrective measures for reducing manganese to below MAC given in the GCDWQ at distribution site

- Operator must be certified to the level specified by the Environmental Operators Certification Program

The City of Quesnel continues to work with qualified drinking water professionals on this water treatment project - with the end goal being the installation of a water treatment system designed to bring the manganese levels below the MAC set forth by the GCDWQ and lifting of the water quality advisory.

The number of samples to be taken from the source and distribution system as required by provincial regulations is based upon population. The minimum number of samples to be taken for the City of Quesnel's approximately 10,000 residents is 13 per month. The City of Quesnel exceeds that number of monthly samples. Drinking water samples are collected at 16 individual sites bi-weekly, and analyzed for total coliforms, E. coli, heterotrophic plate count (HPC), manganese, and turbidity. All reservoirs and wells are tested on a monthly basis for bacterial contaminants and manganese levels. In addition to the bacteriological and manganese parameters, additional testing is done for chemical & physical parameters.

Samples are taken at the start, middle and end of the entire City water distribution system.

If it is observed during testing that certain parameters exceed the limits specified in the Guidelines for Canadian Drinking Water Quality or the British Columbia Drinking Water Regulation, a procedure is in place for re-testing and notification for any results or conditions that render or could render the water unfit to drink.

The standard protocol when a water sample is found to contain the presence of coliforms, however minute, is to resample the water immediately at the same location and resubmit for testing. The provincial Environmental Health Officer will determine if any action by the City of Quesnel is necessary only after a second test also shows the presence of coliforms.

In accordance with the regulations of our operating permit, the City has a plan in place to respond to emergencies to ensure the delivery of safe drinking water to all its residents.

Water sampling in 2024 showed:

- 341 samples tested for E. coli resulting in 0 (zero) exceedances
- 341 samples tested for Total Coliform resulting in 2 exceedances - with subsequent testing proving negative for total coliforms

In all cases of exceedance Northern Health was notified immediately and approved of the re-sampling plans.

DISTRBUTION SYSTEM PROJECTS

In 2024 an investment (ongoing from 2023) of capital funds was put toward a Supervisory Control and Data Acquisition (SCADA) System Upgrade Project. This project includes upgrades to existing communications systems, control systems modernization, new installation at additional sites, hardware improvements, and an operating software platform overhaul. The project is ongoing and also includes upgrades to the Wastewater Collection System.

The City of Quesnel also invested 2024 capital funds toward the Lewis Drive Watermain Replacement Project. Utilizing a combination of traditional open trench and directional drilling techniques, Utilities Department operators worked alongside a crew of directional drilling specialists to install 170 meters

of 250mm high density polyethylene (HDPE) watermain on Lewis Drive between the intersections of Perry Street and Pierce Street. The need for a full replacement of this section of crucial water system trunk main was sparked by multiple failures of the existing asbestos cement pipe in recent years. HDPE pipe was selected as the preferred pipe material because of its high tensile strength and resistance to deformation under tension – characteristics which will provide an extra level protection against future mainline failures caused by unfavorable ground conditions in this area of Quesnel.

Another notable capital project which moved forward in 2024 is the Pumping Well #11 Project, which, when completed, will realize a considerable increase in water production abilities and enhanced reliability of the water distribution system. Advancements made on this project in 2024 saw the actual drilling of a 400mm diameter well casing to a depth of 48.8m and the subsequent well field development works. Completion of these two stages of the PW 11 project marks a major milestone for this multiyear initiative. In addition to the well drilling and development, a well yield capacity assessment and water chemistry analysis phase of the project began.

In the interest of maintaining the current pumping capacity of the water distribution system, a redevelopment of one supply well, PW #7, was undertaken in 2024. This maintenance project was funded from the 2024 Operational Budget. PW #7 was first drilled in 1986 and is relied upon to provide approximately 20% of the water consumed by the City of Quesnel annually. Redevelopment of a water well is necessary periodically in order to remove encrustation on the well screen and sedimentation in the well field – both of which will gradually reduce the flow rate of water into the well casing over time. Pre and post redevelopment testing proved the project effectively served to restore the wells capacity by a factor of 48%. Based on these results, the City's consultants recommend planning for redevelopment to take place at this site every 4 or 5 years.

Complaints regarding water quality are addressed and followed up on a case-by-case basis. The majority of customer complaints are of "dirty" or black water. This is due to sediment, mainly comprised of manganese. found in the water which adheres to pipe walls in the distribution system until it is disturbed or breaks free. Homeowners are advised to run a cold tap until the water clears. In some cases, operators will flush the water mains through a hydrant or blowoff. All mains are flushed each fall to remove mineral scale and buildup in the lines in addition to ensuring proper operation and maintenance of all fire hydrants.

There are occasional complaints of cold water smelling like rotten eggs or sulfur. This is often caused by the water having a reaction with the small diameter "feed line" tubing which connects the household plumbing to the faucet under the sink. It is most common in homes that have new or recently upgraded taps or plumbing fixtures. A corrective measure for this is to suggest homeowners replace the feed lines with metal tubing such as copper or alternatively clean the lines with sodium hypochlorite (household bleach), then rinse and reinstall.

City of Quesnel Bylaw 1567 was adopted in 2005 to ensure provisions for the elimination of Cross Connections between potable water and any non-potable source. The City of Quesnel has two certified Backflow Assembly Testers on staff who annually test assemblies in parks and the water supply system to protect against potential backflows and cross connections. They also install backflow prevention devices, which are a secondary line of defence for backflow prevention. It is the responsibility of the owner or operator of private buildings to install and test the approved backflow assembly upon installation and annually thereafter by a certified tester. Following the test, a copy of the report is to be forwarded to the City of Quesnel. A fully realized Cross Connection Control Program has not been completely implemented as there is a lack of resources and staff to track and account

for these assemblies. What staff time is available is focused on communication with contractors, plumbers, and high-risk users. The main group addressed is industrial, commercial and institutions. Utilities Department staff communicate concerns and keep a watchful eye out for any potential cross connections.

CONCLUSION

The 2024 City of Quesnel Annual Drinking Water Quality Monitoring Report is made available to the public and presented to Council as required by the Drinking Water Protection Act and related British Columbia Drinking Water Regulations. This requirement is in place in order to ensure accountability to the community for the water service provided.

Additional information may be obtained from the City of Quesnel Public Works, Utilities Department at (250)992-6330, attention: Joseph Law, Utilities Superintendent.

Water System Inspection Report

Inspection Information	
Facility name	Quesnel CWS
Facility number	
Officer	NI EHO 9
Inspection type	Routine
Inspection date	July 15, 2024
Follow-up Inspection required	No
Hazard rating	Low

Critical Hazards - These items relate to public health or safety, and must receive immediate attention.

Operation & Maintenance - These items must be corrected within a designated time period.

313 - Inadequate treatment

Observation: No treatment available at this facility. Previous chemical testing results analysis results show manganese above maximum acceptable concentration (MAC). Facility currently on water quality advisory and the emergency response plan has already been activated.

Correction: Install adquate treatment to reducing manganese to below the maximum acceptable concentration (MAC) 0.12 mg/ L as per the Guideline for Canadian Drinking Water Quality (GCDWQ).Submit a construction permit application with a treatment proposal adquate for reducing manganese to below the MAC.

Correct By: 15-Jul-2025

316 - Source unprotected and subject to contamination

Observation: Fence open at the back of the well house #7. Operator aware and is working on closing the opening. (Public Health Significance) Although well house is always locked, unprotected water source can give easy access to unauthorised individuals or pests which may contaminate the area that may contaminate ground water and may lead to waterborne diseases.

Correction: Mend the fence or put a temporary block on the opening to ensure no unauthourized individuals or pests have access near the well surroundings.

Correct By: 15-Jul-2024

Corrected Violations
No corrections entered

Comments

Routine Inspection completed by David Creighton (Drinking Water Specialist), Viraj Chauhan (EHO), Himanshu Rawat (student EHO) and Loreen Ngwenya (EHO).

Action Required:

-Well house for Well (W) #7, fence had an opening, operator aware and working on closing it. Ensure the wells surrounding is protected at all the times.
-Ensure that there is adequate treatment, to reduce manganese to below the MAC (0.12 mg/ L).

General Comments: -

-An up-to-date emergency response and contingency plan (ERCP) available.
-Operator working on adding a drought response to the ERCP.
-Environmental Operators Certificates Program (EOCP) classifies the facility as a Level III water distribution (WD).
-EOCP Level III WD certified operator available.
-System Supervisory Control and Data Acquisition (SCADA) in place.
-Among other; check valves, control valves, pressure relief valve and wedge gate valves, are available.
-The 2023 Annual Drinking Water Monitoring Report available and published on city website.

Source: -

-Six wells in use with this facility.
-All well identification tags available and attached to each well.
-Identification numbers for well #3 -29650, #6 -29648, #7 -29647, #8 -29649, #9 -29651, and #10 -35588.
-W # 3 not often used mainly used as a backup, operator planning on decommission the well.
-W # 7 provide water for the west side of Quesnel and single project analysis done 2019 showed manganese below MAC.
-All wells are located within its own well house surrounded by concrete.
-Secure key-locked exterior doors available with a security door alarm that sends notification when door opens.
-Interior and exterior of all well houses was pest free at the time of inspection.
-All floors of the well house slope towards the drainage, disposing well discharge into the sewer.
-Back-up generator hooked for well # 8 and well # 10.

Reservoirs and Distribution: -

-The following reservoirs; Abbot 1&2, Sugar Loaf, Tatchell, Dragon Hill, Pinecrest and Shadow heights available.
-Dragon Hill capacity 539, 467 gal.
-All reservoirs are gravity fed and booster pumps available.
-The two Abbot reservoirs, Shadow Heights and Sugar Loaf reservoirs are made of concrete.
-External inspections of the reservoirs done once every three weeks.
-Internal inspections by camera done to determine the need or schedule for flushing, cleaning, and disinfecting of the reservoir.
-No evidence of pest or pests' activity observed at the time of inspection.
-All reservoirs surrounded by a fence, and the gates is always padlocked.
-Frequent and consistent water monitoring – bacteriological sampling every three weeks.
-Bacteriological sampling has been maintained and previous results have been satisfactory.

<WaterTestpH>

Loreen Ngwenya
EHO 1

Public Notice – HealthSpace Data Entry

(Water Quality Advisory, Boil Water Notice, Do Not Use Notice)

OFFICER: **Lynnette Winsor** TIME SPENT: 1hr

WATER SYSTEM NAME: Quesnel CWS		
WATER SYSTEM ADDRESS 410 Kinchant Street	CITY: Quesnel	POPULATION SERVED: 10,000
WATER SYSTEM TYPE: WS1 ☒ WS2 ☐ WS3 ☐ WS4 ☐	Reason for terminating the Public Notice:	
ADVISORY TYPE: Do Not Use ☐ Boil Water Notice ☐ Water Quality Advisory ☒		
START DATE: 2022/06/10	END DATE:	

PUBLIC NOTICE ISSUED ☒ RESCINDED ☐

***Note for rescinding notice:**

Steps Taken to Remedy:

Information packages containing information on manganese in drinking water have been distributed by the operator to the residents.

Corrective Actions Remaining:

1. Distribute updated notice and information to residents
2. Continue additional sampling to determine the level of manganese in the distribution system. Collect samples from multiple points throughout the distribution system and submit to an accredited lab for manganese testing. Provide sample results to Northern Health.
3. Continue talks with a qualified drinking water professional to assess the water source and propose a suitable treatment system to reduce the level of manganese to below the Maximum Acceptable Concentration.
4. Submit the treatment proposal to Northern Health in the form of a Construction Permit application.
5. Upon receipt of approval from a Northern Health Public Health Engineer, in the form of a Construction Permit, install the approved treatment system.
6. Conduct post-treatment samples in accordance with the conditions of the Construction Permit to verify treatment efficacy.

Underlying Problems:

Chemical sampling history shows consistent manganese concentrations above the MAC in 5 of the 6 wells. Manganese has long been considered an aesthetic concern in drinking water (e.g. causing stains on laundry, plumbing fixtures, etc.). However, new scientific studies show potential health effects from long term exposure to high levels of manganese in drinking water. This new information was used to revise the guideline for manganese in drinking water.

Health Canada has set a Maximum Acceptable Concentration (MAC) of 0.12 mg/L (120µg/L) for manganese in drinking water. The MAC is intended to protect all Canadians, but is based on the most vulnerable/sensitive population (e.g. infants and young children). If drinking water exceeds the MAC for manganese, another source of water, such as bottled water, should be used for preparing baby formula for infants and young children. Adults who drinking water with manganese levels above the MAC are at lower risk than infants and children, but may wish to consider other sources of drinking water or home treatment systems

Cause Category:

- ☐Unapproved water supply system or construction works
- ☐Untreated drinking water at risk of containing pathogens
- ☐Insufficient treatment or disinfectant residual
- ☐Source water quality deterioration or contamination
- ☐Excessive turbidity compromising distributed water quality
- ☐Unacceptable microbiological water quality results
- ☐Inadequate construction or protection of distribution, storage and other waterworks
- ☒Unacceptable chemical and physical water quality results
- ☐Surveillance data indicates drinking water linked to outbreak or illness
- ☐Inadequate operations and maintenance
- ☐Water treatment equipment failure
- ☐Distribution system integrity failure
- ☐Routine maintenance and planned works
- ☐Other cause not on this list

PERMIT
TO OPERATE

A Drinking Water System with
301-10000 Connections

System Name: **Quesnel CWS**

Physical Location: **Quesnel CWS**
410 Kinchant Street
Quesnel BC

Owner Name: **City of Quesnel - Water**

Conditions of Permit

Permitted to Operate: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec

- **Maintain a minimum of thirteen water bacteriology samples per month unless a greater frequency is requested by the Drinking Water Officer.**
- **Maintain an up-to-date Emergency Response and Contingency Plan.**
- **Submit water chemistry data once every year unless the Environmental Health Officer requests a greater frequency.**
- **Develop and implement a wellhead/aquifer protection program as well as a distribution system integrity program.**
- **Operator must be trained and certified to the level specified by the Environmental Operators Certification Program.**
- **By June 2025, propose a preliminary report for water treatment to reduce manganese to below maximum acceptable concentrations (MAC - 0.12 mg/L) given in the Guideline for Canadian Drinking Water Quality (GCDWQ). The proposal must be in form of construction permit application(s) to the Public Health Engineer.**
- **By June 2030, implement water treatment that include corrective measure(s) for reducing manganese to below MAC given in the GCDWQ at distribution site.**

29-Sep-2009
Effective Permit Date

Lynnette Winsor
Environmental Health Officer

10-Sep-2024
Permit Revised Date

northern health
Expires March 2025
01835

northern health
the northern way of caring

10-411-7011

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24A2852
PO NUMBER		**RECEIVED / TEMP**	2024-01-30 14:10 / 11.6°C
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-02-05 16:22
PROJECT 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 bwhitehead@caro.ca

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A2852
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-02-05 16:22

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E4 S Airport (24A2852-01) | Matrix: Ground Water | Sampled: 2024-01-29 10:00						
Field Parameters						
Temperature, field	**6.1**	AO ≤ 15		°C	2024-01-29	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-01-31	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-30	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Total Metals						
Manganese, total	**0.0905**	MAC = 0.12	0.00020	mg/L	2024-02-01	
94E5 S Mills Rd. (24A2852-02) | Matrix: Ground Water | Sampled: 2024-01-29 11:15						
Field Parameters						
Temperature, field	**6.2**	AO ≤ 15		°C	2024-01-29	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-01-31	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-30	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Total Metals						
Manganese, total	**0.00341**	MAC = 0.12	0.00020	mg/L	2024-02-01	
94E7 S Marsh Dr. (24A2852-03) | Matrix: Ground Water | Sampled: 2024-01-29 11:55						
Field Parameters						
Temperature, field	**6.9**	AO ≤ 15		°C	2024-01-29	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-01-31	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-30	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Total Metals						
Manganese, total	**0.0382**	MAC = 0.12	0.00020	mg/L	2024-02-01	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A2852
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-02-05 16:22

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E8 S Graham Ave. (24A2852-04) | Matrix: Ground Water | Sampled: 2024-01-29 10:45						
Field Parameters						
Temperature, field	**6.3**	AO ≤ 15		°C	2024-01-29	
General Parameters						
Turbidity	**0.14**	OG < 1	0.10	NTU	2024-01-31	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-30	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Total Metals						
Manganese, total	**0.0894**	MAC = 0.12	0.00020	mg/L	2024-02-01	
94E9 S West Fraser Rd. (24A2852-05) | Matrix: Ground Water | Sampled: 2024-01-29 13:00						
Field Parameters						
Temperature, field	**4.9**	AO ≤ 15		°C	2024-01-29	
General Parameters						
Turbidity	**0.10**	OG < 1	0.10	NTU	2024-01-31	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-30	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Total Metals						
Manganese, total	**0.0243**	MAC = 0.12	0.00020	mg/L	2024-02-01	
94F0 S Pedersen Rd. (24A2852-06) | Matrix: Ground Water | Sampled: 2024-01-29 13:45						
Field Parameters						
Temperature, field	**7.2**	AO ≤ 15		°C	2024-01-29	
General Parameters						
Turbidity	**0.15**	OG < 1	0.10	NTU	2024-01-31	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-30	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Total Metals						
Manganese, total	**0.0563**	MAC = 0.12	0.00020	mg/L	2024-02-01	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A2852
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-02-05 16:22

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
35D91 New Carson Pit (24A2852-07) | Matrix: Ground Water | Sampled: 2024-01-29 14:45						
Field Parameters						
Temperature, field	7.0	AO ≤ 15		°C	2024-01-29	
General Parameters						
Turbidity	0.16	OG < 1	0.10	NTU	2024-01-31	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Heterotrophic Plate Count	5	N/A	5	CFU/mL	2024-01-30	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Total Metals						
Manganese, total	0.00511	MAC = 0.12	0.00020	mg/L	2024-02-01	
179CA S Dennis Rd. (24A2852-08) | Matrix: Ground Water | Sampled: 2024-01-29 14:15						
Field Parameters						
Temperature, field	7.0	AO ≤ 15		°C	2024-01-29	
General Parameters						
Turbidity	0.11	OG < 1	0.10	NTU	2024-01-31	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-30	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-30	
Total Metals						
Manganese, total	0.151	MAC = 0.12	0.00020	mg/L	2024-02-01	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A2852
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-02-05 16:22

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

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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.

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24B2150
PO NUMBER		**RECEIVED / TEMP**	2024-02-21 13:06 / 7.8°C
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-02-28 10:32
PROJECT 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 bwhitehead@caro.ca

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B2150
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-02-28 10:32

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E4 S Airport (24B2150-01) | Matrix: Ground Water | Sampled: 2024-02-20 09:40						
Field Parameters						
Temperature, field	**6.8**	AO ≤ 15		°C	2024-02-20	
General Parameters						
Turbidity	**0.18**	OG < 1	0.10	NTU	2024-02-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	HT3
Total Metals						
Manganese, total	**0.0189**	MAC = 0.12	0.00020	mg/L	2024-02-26	
94E5 S Mills Rd. (24B2150-02) | Matrix: Ground Water | Sampled: 2024-02-20 10:20						
Field Parameters						
Temperature, field	**4.4**	AO ≤ 15		°C	2024-02-20	
General Parameters						
Turbidity	**0.12**	OG < 1	0.10	NTU	2024-02-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Total Metals						
Manganese, total	**0.00277**	MAC = 0.12	0.00020	mg/L	2024-02-26	
94E7 S Marsh Dr. (24B2150-03) | Matrix: Ground Water | Sampled: 2024-02-20 11:00						
Field Parameters						
Temperature, field	**5.2**	AO ≤ 15		°C	2024-02-20	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-02-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Total Metals						
Manganese, total	**0.0765**	MAC = 0.12	0.00020	mg/L	2024-02-26	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B2150
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-02-28 10:32

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E9 S West Fraser Rd. (24B2150-04) | Matrix: Ground Water | Sampled: 2024-02-20 11:45						
Field Parameters						
Temperature, field	**3.8**	AO ≤ 15		°C	2024-02-20	
General Parameters						
Turbidity	**0.13**	OG < 1	0.10	NTU	2024-02-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Total Metals						
Manganese, total	**0.0214**	MAC = 0.12	0.00020	mg/L	2024-02-26	
94F0 S Pedersen Rd. (24B2150-05) | Matrix: Ground Water | Sampled: 2024-02-20 14:30						
Field Parameters						
Temperature, field	**5.4**	AO ≤ 15		°C	2024-02-20	
General Parameters						
Turbidity	**0.14**	OG < 1	0.10	NTU	2024-02-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Total Metals						
Manganese, total	**0.0924**	MAC = 0.12	0.00020	mg/L	2024-02-26	
35D91 New Carson Pit (24B2150-06) | Matrix: Ground Water | Sampled: 2024-02-20 12:45						
Field Parameters						
Temperature, field	**4.5**	AO ≤ 15		°C	2024-02-20	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-02-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Total Metals						
Manganese, total	**0.00060**	MAC = 0.12	0.00020	mg/L	2024-02-26	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B2150
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-02-28 10:32

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
179CA S Dennis Rd. (24B2150-07) | Matrix: Ground Water | Sampled: 2024-02-20 14:00						
Field Parameters						
Temperature, field	**6.7**	AO ≤ 15		°C	2024-02-20	
General Parameters						
Turbidity	**0.36**	OG < 1	0.10	NTU	2024-02-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Total Metals						
Manganese, total	**0.157**	MAC = 0.12	0.00020	mg/L	2024-02-26	
94E8 S Graham Ave. (24B2150-08) | Matrix: Ground Water | Sampled: 2024-02-20 13:30						
Field Parameters						
Temperature, field	**5.6**	AO ≤ 15		°C	2024-02-20	
General Parameters						
Turbidity	**0.21**	OG < 1	0.10	NTU	2024-02-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-21	
Total Metals						
Manganese, total	**0.106**	MAC = 0.12	0.00020	mg/L	2024-02-27	

Sample Qualifiers:

HT1	The sample was prepared and/or analyzed past the recommended holding time.
HT3	Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B2150
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-02-28 10:32

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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)
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°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24C2504
PO NUMBER		**RECEIVED / TEMP**	2024-03-21 14:17 / 7.6°C
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-03-28 14:41
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C2504
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-03-28 14:41

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E4 S Airport (24C2504-01) | Matrix: Ground Water | Sampled: 2024-03-20 10:10						
Field Parameters						
Temperature, field	**8.2**	AO ≤ 15		°C	2024-03-20	
General Parameters						
Turbidity	**0.31**	OG < 1	0.10	NTU	2024-03-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Total Metals						
Manganese, total	**0.0160**	MAC = 0.12	0.00020	mg/L	2024-03-25	
94E5 S Mills Rd. (24C2504-02) | Matrix: Ground Water | Sampled: 2024-03-20 11:20						
Field Parameters						
Temperature, field	**7.9**	AO ≤ 15		°C	2024-03-20	
General Parameters						
Turbidity	**0.18**	OG < 1	0.10	NTU	2024-03-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Total Metals						
Manganese, total	**0.00396**	MAC = 0.12	0.00020	mg/L	2024-03-25	
94E7 S Marsh Dr. (24C2504-03) | Matrix: Ground Water | Sampled: 2024-03-20 11:45						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-03-20	
General Parameters						
Turbidity	**0.16**	OG < 1	0.10	NTU	2024-03-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Total Metals						
Manganese, total	**0.0106**	MAC = 0.12	0.00020	mg/L	2024-03-25	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C2504
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-03-28 14:41

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E8 S Graham Ave. (24C2504-04) | Matrix: Ground Water | Sampled: 2024-03-20 10:40						
Field Parameters						
Temperature, field	**8.8**	AO ≤ 15		°C	2024-03-20	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-03-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Total Metals						
Manganese, total	**0.116**	MAC = 0.12	0.00020	mg/L	2024-03-25	
94E9 S West Fraser Rd. (24C2504-05) | Matrix: Ground Water | Sampled: 2024-03-20 13:30						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-03-20	
General Parameters						
Turbidity	**0.20**	OG < 1	0.10	NTU	2024-03-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Total Metals						
Manganese, total	**0.0303**	MAC = 0.12	0.00020	mg/L	2024-03-27	
94F0 S Pedersen Rd. (24C2504-06) | Matrix: Ground Water | Sampled: 2024-03-20 13:45						
Field Parameters						
Temperature, field	**8.2**	AO ≤ 15		°C	2024-03-20	
General Parameters						
Turbidity	**0.30**	OG < 1	0.10	NTU	2024-03-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Total Metals						
Manganese, total	**0.0386**	MAC = 0.12	0.00020	mg/L	2024-03-25	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C2504
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-03-28 14:41

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
35D91 New Carson Pit (24C2504-07) | Matrix: Ground Water | Sampled: 2024-03-20 11:00						
Field Parameters						
Temperature, field	**8.6**	AO ≤ 15		°C	2024-03-20	
General Parameters						
Turbidity	**0.25**	OG < 1	0.10	NTU	2024-03-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Total Metals						
Manganese, total	**0.0571**	MAC = 0.12	0.00020	mg/L	2024-03-25	
179CA S Dennis Rd. (24C2504-08) | Matrix: Ground Water | Sampled: 2024-03-20 14:40						
Field Parameters						
Temperature, field	**8.4**	AO ≤ 15		°C	2024-03-20	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-03-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-21	
Total Metals						
Manganese, total	**0.153**	MAC = 0.12	0.00020	mg/L	2024-03-25	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C2504
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-03-28 14:41

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24E2044
PO NUMBER		**RECEIVED / TEMP**	2024-05-15 16:23 / 16.0°C
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-05-24 13:57
PROJECT 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.

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E2044
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-05-24 13:57

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E4 S Airport (24E2044-01) | Matrix: Ground Water | Sampled: 2024-05-14 09:30						
Field Parameters						
Temperature, field	**8.7**	AO ≤ 15		°C	2024-05-14	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-05-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-05-15	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	HT3
Total Metals						
Manganese, total	**0.00298**	MAC = 0.12	0.00020	mg/L	2024-05-24	
94E5 S Mills Rd. (24E2044-02) | Matrix: Ground Water | Sampled: 2024-05-14 11:25						
Field Parameters						
Temperature, field	**9.2**	AO ≤ 15		°C	2024-05-14	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-05-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Heterotrophic Plate Count	**23**	N/A	5	CFU/mL	2024-05-15	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Total Metals						
Manganese, total	**0.00642**	MAC = 0.12	0.00020	mg/L	2024-05-20	
94E7 S Marsh Dr. (24E2044-03) | Matrix: Ground Water | Sampled: 2024-05-14 10:10						
Field Parameters						
Temperature, field	**8.9**	AO ≤ 15		°C	2024-05-14	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-05-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	HT3
Heterotrophic Plate Count	**26**	N/A	5	CFU/mL	2024-05-15	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	HT3
Total Metals						
Manganese, total	**0.00299**	MAC = 0.12	0.00020	mg/L	2024-05-24	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E2044
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-05-24 13:57

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E8 S Graham Ave. (24E2044-04) | Matrix: Ground Water | Sampled: 2024-05-14 10:40						
Field Parameters						
Temperature, field	**9.2**	AO ≤ 15		°C	2024-05-14	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-05-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Heterotrophic Plate Count	**14**	N/A	5	CFU/mL	2024-05-15	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Total Metals						
Manganese, total	**0.0682**	MAC = 0.12	0.00020	mg/L	2024-05-24	
94E9 S West Fraser Rd. (24E2044-05) | Matrix: Ground Water | Sampled: 2024-05-14 10:45						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-05-14	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-05-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Heterotrophic Plate Count	**10**	N/A	5	CFU/mL	2024-05-15	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Total Metals						
Manganese, total	**0.00273**	MAC = 0.12	0.00020	mg/L	2024-05-20	
94F0 S Pedersen Rd. (24E2044-06) | Matrix: Ground Water | Sampled: 2024-05-14 13:55						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-05-14	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-05-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Heterotrophic Plate Count	**16**	N/A	5	CFU/mL	2024-05-15	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Total Metals						
Manganese, total	**0.0334**	MAC = 0.12	0.00020	mg/L	2024-05-24	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E2044
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-05-24 13:57

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
35D91 New Carson Pit (24E2044-07) | Matrix: Ground Water | Sampled: 2024-05-14 14:20						
Field Parameters						
Temperature, field	**9.1**	AO ≤ 15		°C	2024-05-14	
General Parameters						
Turbidity	**0.17**	OG < 1	0.10	NTU	2024-05-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Heterotrophic Plate Count	**6**	N/A	5	CFU/mL	2024-05-15	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Total Metals						
Manganese, total	**0.188**	MAC = 0.12	0.00020	mg/L	2024-05-24	
179CA S Dennis Rd. (24E2044-08) | Matrix: Ground Water | Sampled: 2024-05-14 13:30						
Field Parameters						
Temperature, field	**8.7**	AO ≤ 15		°C	2024-05-14	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-05-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Heterotrophic Plate Count	**9**	N/A	5	CFU/mL	2024-05-15	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-15	
Total Metals						
Manganese, total	**0.158**	MAC = 0.12	0.00020	mg/L	2024-05-20	

Sample Qualifiers:

HT1	The sample was prepared and/or analyzed past the recommended holding time.
HT3	Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E2044
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-05-24 13:57

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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

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CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24F1525
PO NUMBER		**RECEIVED / TEMP**	2024-06-12 14:48 / 13.1°C
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-06-19 14:17
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24F1525
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-06-19 14:17

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E4 S Airport (24F1525-01) | Matrix: Ground Water | Sampled: 2024-06-11 09:30						
Field Parameters						
Temperature, field	**9.7**	AO ≤ 15		°C	2024-06-11	
General Parameters						
Turbidity	**0.12**	OG < 1	0.10	NTU	2024-06-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-06-12	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	HT3
Total Metals						
Manganese, total	**0.0947**	MAC = 0.12	0.00020	mg/L	2024-06-15	
94E5 S Mills Rd. (24F1525-02) | Matrix: Ground Water | Sampled: 2024-06-11 11:30						
Field Parameters						
Temperature, field	**9.8**	AO ≤ 15		°C	2024-06-11	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-06-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-06-12	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Total Metals						
Manganese, total	**0.00473**	MAC = 0.12	0.00020	mg/L	2024-06-15	
94E7 S Marsh Dr. (24F1525-03) | Matrix: Ground Water | Sampled: 2024-06-11 10:10						
Field Parameters						
Temperature, field	**10.2**	AO ≤ 15		°C	2024-06-11	
General Parameters						
Turbidity	**0.14**	OG < 1	0.10	NTU	2024-06-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-06-12	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Total Metals						
Manganese, total	**0.00916**	MAC = 0.12	0.00020	mg/L	2024-06-15	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24F1525
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-06-19 14:17

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E8 S Graham Ave. (24F1525-04) | Matrix: Ground Water | Sampled: 2024-06-11 13:50						
Field Parameters						
Temperature, field	**10.6**	AO ≤ 15		°C	2024-06-11	
General Parameters						
Turbidity	**0.14**	OG < 1	0.10	NTU	2024-06-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Heterotrophic Plate Count	**5**	N/A	5	CFU/mL	2024-06-12	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Total Metals						
Manganese, total	**0.0260**	MAC = 0.12	0.00020	mg/L	2024-06-15	
94E9 S West Fraser Rd. (24F1525-05) | Matrix: Ground Water | Sampled: 2024-06-11 11:00						
Field Parameters						
Temperature, field	**10.4**	AO ≤ 15		°C	2024-06-11	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-06-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-06-12	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Total Metals						
Manganese, total	**0.00473**	MAC = 0.12	0.00020	mg/L	2024-06-15	
94F0 S Pedersen Rd. (24F1525-06) | Matrix: Ground Water | Sampled: 2024-06-11 14:40						
Field Parameters						
Temperature, field	**10.4**	AO ≤ 15		°C	2024-06-11	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-06-12	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Total Metals						
Manganese, total	**0.0923**	MAC = 0.12	0.00020	mg/L	2024-06-15	
35D91 New Carson Pit (24F1525-07) | Matrix: Ground Water | Sampled: 2024-06-11 13:00						
Field Parameters						

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24F1525
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-06-19 14:17

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
35D91 New Carson Pit (24F1525-07) | Matrix: Ground Water | Sampled: 2024-06-11 13:00, Continued						
Field Parameters, Continued						
Temperature, field	**9.9**	AO ≤ 15		°C	2024-06-11	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-06-12	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Total Metals						
Manganese, total	**0.0185**	MAC = 0.12	0.00020	mg/L	2024-06-15	
179CA S Dennis Rd. (24F1525-08) | Matrix: Ground Water | Sampled: 2024-06-11 13:40						
Field Parameters						
Temperature, field	**10.2**	AO ≤ 15		°C	2024-06-11	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-06-12	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-12	
Total Metals						
Manganese, total	**0.165**	MAC = 0.12	0.00020	mg/L	2024-06-15	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24F1525
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-06-19 14:17

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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

Glossary of Terms:

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24H1030
PO NUMBER		**RECEIVED / TEMP**	2024-08-08 14:39 / 9.1°C
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-08-15 13:58
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24H1030
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-08-15 13:58

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E4 S Airport (24H1030-01) | Matrix: Ground Water | Sampled: 2024-08-07 09:30						
Field Parameters						
Temperature, field	**9.8**	AO ≤ 15		°C	2024-08-07	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-08-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-08-08	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Total Metals						
Manganese, total	**0.00170**	MAC = 0.12	0.00020	mg/L	2024-08-11	
94E5 S Mills Rd. (24H1030-02) | Matrix: Ground Water | Sampled: 2024-08-07 10:00						
Field Parameters						
Temperature, field	**10.8**	AO ≤ 15		°C	2024-08-07	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-08-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Background Colonies	**>200**	N/A	200	CFU/100 mL	2024-08-09	HT3
Heterotrophic Plate Count	**5**	N/A	5	CFU/mL	2024-08-08	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Total Metals						
Manganese, total	**0.00986**	MAC = 0.12	0.00020	mg/L	2024-08-11	
94E7 S Marsh Dr. (24H1030-03) | Matrix: Ground Water | Sampled: 2024-08-07 11:00						
Field Parameters						
Temperature, field	**14.0**	AO ≤ 15		°C	2024-08-07	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-08-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Heterotrophic Plate Count	**5**	N/A	5	CFU/mL	2024-08-08	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Total Metals						
Manganese, total	**0.00116**	MAC = 0.12	0.00020	mg/L	2024-08-11	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24H1030
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-08-15 13:58

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E8 S Graham Ave. (24H1030-04) | Matrix: Ground Water | Sampled: 2024-08-07 13:30						
Field Parameters						
Temperature, field	**13.3**	AO ≤ 15		°C	2024-08-07	
General Parameters						
Turbidity	**0.13**	OG < 1	0.10	NTU	2024-08-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-08-08	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Total Metals						
Manganese, total	**0.0704**	MAC = 0.12	0.00020	mg/L	2024-08-11	
94E9 S West Fraser Rd. (24H1030-05) | Matrix: Ground Water | Sampled: 2024-08-07 11:35						
Field Parameters						
Temperature, field	**14.7**	AO ≤ 15		°C	2024-08-07	
General Parameters						
Turbidity	**0.14**	OG < 1	0.10	NTU	2024-08-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Background Colonies	**>200**	N/A	200	CFU/100 mL	2024-08-09	HT3
Heterotrophic Plate Count	**21**	N/A	5	CFU/mL	2024-08-08	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Total Metals						
Manganese, total	**0.00162**	MAC = 0.12	0.00020	mg/L	2024-08-11	
94F0 S Pedersen Rd. (24H1030-06) | Matrix: Ground Water | Sampled: 2024-08-07 14:00						
Field Parameters						
Temperature, field	**12.5**	AO ≤ 15		°C	2024-08-07	
General Parameters						
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-08-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-08-08	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Total Metals						
Manganese, total	**0.104**	MAC = 0.12	0.00020	mg/L	2024-08-11	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24H1030
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-08-15 13:58

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
35D91 New Carson Pit (24H1030-07) | Matrix: Ground Water | Sampled: 2024-08-07 15:00						
Field Parameters						
Temperature, field	**15.0**	AO ≤ 15		°C	2024-08-07	
General Parameters						
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-08-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Heterotrophic Plate Count	**12**	N/A	5	CFU/mL	2024-08-08	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Total Metals						
Manganese, total	**0.00632**	MAC = 0.12	0.00020	mg/L	2024-08-12	
179CA S Dennis Rd. (24H1030-08) | Matrix: Ground Water | Sampled: 2024-08-07 14:30						
Field Parameters						
Temperature, field	**12.1**	AO ≤ 15		°C	2024-08-07	
General Parameters						
Turbidity	**0.64**	OG < 1	0.10	NTU	2024-08-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-08-08	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-09	HT3
Total Metals						
Manganese, total	**0.157**	MAC = 0.12	0.00020	mg/L	2024-08-11	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24H1030
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-08-15 13:58

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
>2	Greater than the specified Result
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

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CARO ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24I0448
PO NUMBER		**RECEIVED / TEMP**	2024-09-05 13:23 / 4.4°C
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-09-12 12:30
PROJECT 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.

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I0448
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-09-12 12:30

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E4 S Airport (24I0448-01) | Matrix: Ground Water | Sampled: 2024-09-04 09:10						
Field Parameters						
Temperature, field	**16.0**	AO ≤ 15		°C	2024-09-04	
General Parameters						
Turbidity	**0.20**	OG < 1	0.10	NTU	2024-09-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	HT3
Heterotrophic Plate Count	**5**	N/A	5	CFU/mL	2024-09-05	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	HT3
Total Metals						
Manganese, total	**0.00171**	MAC = 0.12	0.00020	mg/L	2024-09-09	
94E5 S Mills Rd. (24I0448-02) | Matrix: Ground Water | Sampled: 2024-09-04 09:40						
Field Parameters						
Temperature, field	**14.0**	AO ≤ 15		°C	2024-09-04	
General Parameters						
Turbidity	**0.12**	OG < 1	0.10	NTU	2024-09-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-09-05	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	HT3
Total Metals						
Manganese, total	**0.00527**	MAC = 0.12	0.00020	mg/L	2024-09-09	
94E7 S Marsh Dr. (24I0448-03) | Matrix: Ground Water | Sampled: 2024-09-04 10:00						
Field Parameters						
Temperature, field	**12.0**	AO ≤ 15		°C	2024-09-04	
General Parameters						
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-09-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Heterotrophic Plate Count	**5**	N/A	5	CFU/mL	2024-09-05	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Total Metals						
Manganese, total	**0.00372**	MAC = 0.12	0.00020	mg/L	2024-09-09	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I0448
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-09-12 12:30

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E8 S Graham Ave. (24I0448-04) | Matrix: Ground Water | Sampled: 2024-09-04 10:25						
Field Parameters						
Temperature, field	**11.0**	AO ≤ 15		°C	2024-09-04	
General Parameters						
Turbidity	**0.28**	OG < 1	0.10	NTU	2024-09-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Heterotrophic Plate Count	**11**	N/A	5	CFU/mL	2024-09-05	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Total Metals						
Manganese, total	**0.171**	MAC = 0.12	0.00020	mg/L	2024-09-09	
94E9 S West Fraser Rd. (24I0448-05) | Matrix: Ground Water | Sampled: 2024-09-04 11:45						
Field Parameters						
Temperature, field	**15.0**	AO ≤ 15		°C	2024-09-04	
General Parameters						
Turbidity	**0.12**	OG < 1	0.10	NTU	2024-09-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Heterotrophic Plate Count	**8**	N/A	5	CFU/mL	2024-09-05	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Total Metals						
Manganese, total	**0.00691**	MAC = 0.12	0.00020	mg/L	2024-09-09	
94F0 S Pedersen Rd. (24I0448-06) | Matrix: Ground Water | Sampled: 2024-09-04 13:15						
Field Parameters						
Temperature, field	**12.0**	AO ≤ 15		°C	2024-09-04	
General Parameters						
Turbidity	**0.15**	OG < 1	0.10	NTU	2024-09-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Heterotrophic Plate Count	**8**	N/A	5	CFU/mL	2024-09-05	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Total Metals						
Manganese, total	**0.0281**	MAC = 0.12	0.00020	mg/L	2024-09-09	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I0448
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-09-12 12:30

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
35D91 New Carson Pit (24I0448-07) | Matrix: Ground Water | Sampled: 2024-09-04 11:10						
Field Parameters						
Temperature, field	**14.0**	AO ≤ 15		°C	2024-09-04	
General Parameters						
Turbidity	**0.16**	OG < 1	0.10	NTU	2024-09-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Heterotrophic Plate Count	**7**	N/A	5	CFU/mL	2024-09-05	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Total Metals						
Manganese, total	**0.00728**	MAC = 0.12	0.00020	mg/L	2024-09-09	
179CA S Dennis Rd. (24I0448-08) | Matrix: Ground Water | Sampled: 2024-09-04 14:05						
Field Parameters						
Temperature, field	**13.0**	AO ≤ 15		°C	2024-09-04	
General Parameters						
Turbidity	**0.26**	OG < 1	0.10	NTU	2024-09-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-09-05	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-05	
Total Metals						
Manganese, total	**0.162**	MAC = 0.12	0.00020	mg/L	2024-09-09	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I0448
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-09-12 12:30

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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

Glossary of Terms:

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°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
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CARO ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24K0095
PO NUMBER		**RECEIVED / TEMP**	2024-11-01 13:17 / 7.1°C
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-11-06 10:50
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Hanane El Hannaoui
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K0095
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-11-06 10:50

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E4 S Airport (24K0095-01) | Matrix: Ground Water | Sampled: 2024-10-31 10:00						
Field Parameters						
Temperature, field	**12.2**	AO ≤ 15		°C	2024-10-31	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-01	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Total Metals						
Manganese, total	**0.00137**	MAC = 0.12	0.00020	mg/L	2024-11-05	
94E5 S Mills Rd. (24K0095-02) | Matrix: Ground Water | Sampled: 2024-10-31 10:30						
Field Parameters						
Temperature, field	**12.2**	AO ≤ 15		°C	2024-10-31	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-01	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Total Metals						
Manganese, total	**0.00336**	MAC = 0.12	0.00020	mg/L	2024-11-05	
94E7 S Marsh Dr. (24K0095-03) | Matrix: Ground Water | Sampled: 2024-10-31 11:00						
Field Parameters						
Temperature, field	**10.6**	AO ≤ 15		°C	2024-10-31	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-01	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Total Metals						
Manganese, total	**0.00694**	MAC = 0.12	0.00020	mg/L	2024-11-05	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K0095
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-11-06 10:50

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E8 S Graham Ave. (24K0095-04) | Matrix: Ground Water | Sampled: 2024-10-31 13:15						
Field Parameters						
Temperature, field	**11.3**	AO ≤ 15		°C	2024-10-31	
General Parameters						
Turbidity	**0.19**	OG < 1	0.10	NTU	2024-11-01	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Total Metals						
Manganese, total	**0.0328**	MAC = 0.12	0.00020	mg/L	2024-11-05	
94E9 S West Fraser Rd. (24K0095-05) | Matrix: Ground Water | Sampled: 2024-10-31 11:30						
Field Parameters						
Temperature, field	**11.5**	AO ≤ 15		°C	2024-10-31	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-01	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Total Metals						
Manganese, total	**0.00492**	MAC = 0.12	0.00020	mg/L	2024-11-05	
94F0 S Pedersen Rd. (24K0095-06) | Matrix: Ground Water | Sampled: 2024-10-31 14:30						
Field Parameters						
Temperature, field	**12.1**	AO ≤ 15		°C	2024-10-31	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-01	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-01	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Total Metals						
Manganese, total	**0.0853**	MAC = 0.12	0.00020	mg/L	2024-11-05	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K0095
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-11-06 10:50

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
35D91 New Carson Pit (24K0095-07) | Matrix: Ground Water | Sampled: 2024-10-31 13:15						
Field Parameters						
Temperature, field	**10.3**	AO ≤ 15		°C	2024-10-31	
General Parameters						
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-11-01	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Heterotrophic Plate Count	**23**	N/A	5	CFU/mL	2024-11-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Total Metals						
Manganese, total	**0.0101**	MAC = 0.12	0.00020	mg/L	2024-11-05	
179CA S Dennis Rd. (24K0095-08) | Matrix: Ground Water | Sampled: 2024-10-31 15:00						
Field Parameters						
Temperature, field	**11.5**	AO ≤ 15		°C	2024-10-31	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-01	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-01	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-01	
Total Metals						
Manganese, total	**0.162**	MAC = 0.12	0.00020	mg/L	2024-11-05	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K0095
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-11-06 10:50

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

The results in this report apply to the received 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. Caro will dispose of all samples within 30 days of sample receipt, unless otherwise agreed. The quality control (QC) data is available upon request

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:hhannaoui@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.

CARO ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24K3171
PO NUMBER		**RECEIVED / TEMP**	2024-11-27 14:34 / 6.1°C
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-12-03 11:33
PROJECT 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 hhannaoui@caro.ca

Authorized By:

Hanane El Hannaoui
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K3171
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-12-03 11:33

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E4 S Airport (24K3171-01) | Matrix: Ground Water | Sampled: 2024-11-26 09:15						
Field Parameters						
Temperature, field	**8.0**	AO ≤ 15		°C	2024-11-26	
General Parameters						
Turbidity	**1.33**	OG < 1	0.10	NTU	2024-11-29	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-27	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	HT3
Total Metals						
Manganese, total	**0.472**	MAC = 0.12	0.00020	mg/L	2024-12-02	
94E5 S Mills Rd. (24K3171-02) | Matrix: Ground Water | Sampled: 2024-11-26 11:40						
Field Parameters						
Temperature, field	**10.0**	AO ≤ 15		°C	2024-11-26	
General Parameters						
Turbidity	**0.16**	OG < 1	0.10	NTU	2024-11-29	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-27	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Total Metals						
Manganese, total	**0.00308**	MAC = 0.12	0.00020	mg/L	2024-12-02	
94E7 S Marsh Dr. (24K3171-03) | Matrix: Ground Water | Sampled: 2024-11-26 09:40						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-11-26	
General Parameters						
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-11-29	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-27	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Total Metals						
Manganese, total	**0.0664**	MAC = 0.12	0.00020	mg/L	2024-12-02	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K3171
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-12-03 11:33

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E8 S Graham Ave. (24K3171-04) | Matrix: Ground Water | Sampled: 2024-11-26 11:15						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-11-26	
General Parameters						
Turbidity	**0.22**	OG < 1	0.10	NTU	2024-11-29	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-27	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Total Metals						
Manganese, total	**0.0420**	MAC = 0.12	0.00020	mg/L	2024-12-02	
94E9 S West Fraser Rd. (24K3171-05) | Matrix: Ground Water | Sampled: 2024-11-26 10:00						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-11-26	
General Parameters						
Turbidity	**0.20**	OG < 1	0.10	NTU	2024-11-29	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Heterotrophic Plate Count	**25**	N/A	5	CFU/mL	2024-11-27	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Total Metals						
Manganese, total	**0.0122**	MAC = 0.12	0.00020	mg/L	2024-12-02	
35D91 New Carson Pit (24K3171-06) | Matrix: Ground Water | Sampled: 2024-11-26 13:10						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-11-26	
General Parameters						
Turbidity	**0.16**	OG < 1	0.10	NTU	2024-11-29	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-27	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Total Metals						
Manganese, total	**0.00511**	MAC = 0.12	0.00020	mg/L	2024-12-02	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K3171
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-12-03 11:33

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
179CA S Dennis Rd. (24K3171-07) | Matrix: Ground Water | Sampled: 2024-11-26 10:45						
Field Parameters						
Temperature, field	**8.0**	AO ≤ 15		°C	2024-11-26	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-29	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-27	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-27	
Total Metals						
Manganese, total	**0.165**	MAC = 0.12	0.00020	mg/L	2024-12-02	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K3171
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-12-03 11:33

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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)
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°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24A1125
PO NUMBER		**RECEIVED / TEMP**	2024-01-11 14:09 / 1.8°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-01-17 11:21
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A1125
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-01-17 11:21

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24A1125-01) | Matrix: Water | Sampled: 2024-01-10 09:20						
Field Parameters						
Temperature, field	4.7	AO ≤ 15		°C	2024-01-10	
General Parameters						
Turbidity	0.37	OG < 1	0.10	NTU	2024-01-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	HT3
Total Metals						
Manganese, total	0.197	MAC = 0.12	0.00020	mg/L	2024-01-14	
WT# 94F1 - S-Dixon St. (24A1125-02) | Matrix: Water | Sampled: 2024-01-10 10:15						
Field Parameters						
Temperature, field	7.3	AO ≤ 15		°C	2024-01-10	
General Parameters						
Turbidity	0.36	OG < 1	0.10	NTU	2024-01-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	HT3
Total Metals						
Manganese, total	0.0237	MAC = 0.12	0.00020	mg/L	2024-01-14	
WT# 94F2 - S-Hospital (24A1125-03) | Matrix: Water | Sampled: 2024-01-10 10:00						
Field Parameters						
Temperature, field	7.1	AO ≤ 15		°C	2024-01-10	
General Parameters						
Turbidity	0.31	OG < 1	0.10	NTU	2024-01-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	HT3
Total Metals						
Manganese, total	0.186	MAC = 0.12	0.00020	mg/L	2024-01-14	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A1125
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-01-17 11:21

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24A1125-04) | Matrix: Water | Sampled: 2024-01-10 11:00						
Field Parameters						
Temperature, field	7.2	AO ≤ 15		°C	2024-01-10	
General Parameters						
Turbidity	0.20	OG < 1	0.10	NTU	2024-01-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	
Total Metals						
Manganese, total	0.125	MAC = 0.12	0.00020	mg/L	2024-01-14	
WT# 94F4 - S-N Star Dragon Hill (24A1125-05) | Matrix: Water | Sampled: 2024-01-10 14:00						
Field Parameters						
Temperature, field	7.2	AO ≤ 15		°C	2024-01-10	
General Parameters						
Turbidity	0.16	OG < 1	0.10	NTU	2024-01-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	
Total Metals						
Manganese, total	0.125	MAC = 0.12	0.00020	mg/L	2024-01-14	
WT# 94F6 - S-N Star South Hill (24A1125-06) | Matrix: Water | Sampled: 2024-01-10 14:30						
Field Parameters						
Temperature, field	7.4	AO ≤ 15		°C	2024-01-10	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-01-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	
Total Metals						
Manganese, total	0.150	MAC = 0.12	0.00020	mg/L	2024-01-14	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A1125
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-01-17 11:21

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F7 - S-Chew Rd. (24A1125-07) | Matrix: Water | Sampled: 2024-01-10 13:20						
Field Parameters						
Temperature, field	8.3	AO ≤ 15		°C	2024-01-10	
General Parameters						
Turbidity	0.28	OG < 1	0.10	NTU	2024-01-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	
Heterotrophic Plate Count	89	N/A	5	CFU/mL	2024-01-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	
Total Metals						
Manganese, total	0.158	MAC = 0.12	0.00020	mg/L	2024-01-14	
WT# 21D9B - Bulk Water Site 1 (24A1125-08) | Matrix: Water | Sampled: 2024-01-10 11:30						
Field Parameters						
Temperature, field	7.1	AO ≤ 15		°C	2024-01-10	
General Parameters						
Turbidity	0.15	OG < 1	0.10	NTU	2024-01-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-01-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-11	
Total Metals						
Manganese, total	0.0255	MAC = 0.12	0.00020	mg/L	2024-01-14	

Sample Qualifiers:

HT1	The sample was prepared and/or analyzed past the recommended holding time.
HT3	Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A1125
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-01-17 11:21

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24B0769
PO NUMBER		**RECEIVED / TEMP**	2024-02-07 14:03 / 6.6°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-02-14 12:04
PROJECT 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.

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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 bwhitehead@caro.ca

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B0769
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-02-14 12:04

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24B0769-01) | Matrix: Water | Sampled: 2024-02-06 10:15						
Field Parameters						
Temperature, field	**6.7**	AO ≤ 15		°C	2024-02-06	
General Parameters						
Turbidity	**0.22**	OG < 1	0.10	NTU	2024-02-08	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-07	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	HT3
Total Metals						
Manganese, total	**0.141**	MAC = 0.12	0.00020	mg/L	2024-02-09	
WT# 94F1 - S-Dixon St. (24B0769-02) | Matrix: Water | Sampled: 2024-02-06 11:15						
Field Parameters						
Temperature, field	**5.9**	AO ≤ 15		°C	2024-02-06	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-02-08	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-07	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Total Metals						
Manganese, total	**0.00577**	MAC = 0.12	0.00020	mg/L	2024-02-09	
WT# 94F2 - S-Hospital (24B0769-03) | Matrix: Water | Sampled: 2024-02-06 10:45						
Field Parameters						
Temperature, field	**6.0**	AO ≤ 15		°C	2024-02-06	
General Parameters						
Turbidity	**0.42**	OG < 1	0.10	NTU	2024-02-08	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-07	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Total Metals						
Manganese, total	**0.0271**	MAC = 0.12	0.00020	mg/L	2024-02-09	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B0769
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-02-14 12:04

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24B0769-04) | Matrix: Water | Sampled: 2024-02-06 13:15						
Field Parameters						
Temperature, field	**5.7**	AO ≤ 15		°C	2024-02-06	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-02-08	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-07	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Total Metals						
Manganese, total	**0.137**	MAC = 0.12	0.00020	mg/L	2024-02-09	
WT# 94F4 - S-N Star Dragon Hill (24B0769-05) | Matrix: Water | Sampled: 2024-02-06 13:45						
Field Parameters						
Temperature, field	**9.1**	AO ≤ 15		°C	2024-02-06	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-02-08	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-07	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Total Metals						
Manganese, total	**0.144**	MAC = 0.12	0.00020	mg/L	2024-02-09	
WT# 94F6 - S-N Star South Hill (24B0769-06) | Matrix: Water | Sampled: 2024-02-06 14:15						
Field Parameters						
Temperature, field	**9.4**	AO ≤ 15		°C	2024-02-06	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-02-08	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-07	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Total Metals						
Manganese, total	**0.150**	MAC = 0.12	0.00020	mg/L	2024-02-09	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B0769
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-02-14 12:04

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F7 - S-Chew Rd. (24B0769-07) | Matrix: Water | Sampled: 2024-02-06 11:50						
Field Parameters						
Temperature, field	**7.7**	AO ≤ 15		°C	2024-02-06	
General Parameters						
Turbidity	**0.23**	OG < 1	0.10	NTU	2024-02-08	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-07	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Total Metals						
Manganese, total	**0.160**	MAC = 0.12	0.00020	mg/L	2024-02-09	
WT# 21D9B - Bulk Water Site 1 (24B0769-08) | Matrix: Water | Sampled: 2024-02-06 14:45						
Field Parameters						
Temperature, field	**7.9**	AO ≤ 15		°C	2024-02-06	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-02-08	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-02-07	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-07	
Total Metals						
Manganese, total	**0.0607**	MAC = 0.12	0.00020	mg/L	2024-02-09	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B0769
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-02-14 12:04

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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

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CFU/mL	Colony Forming Units per millilitre
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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24C1512
PO NUMBER		**RECEIVED / TEMP**	2024-03-13 14:27 / 5.2°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-03-20 09:36
PROJECT INFO			

Introduction:

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C1512
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-03-20 09:36

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24C1512-01) | Matrix: Water | Sampled: 2024-03-12 09:40						
Field Parameters						
Temperature, field	**7.6**	AO ≤ 15		°C	2024-03-12	
General Parameters						
Turbidity	**0.22**	OG < 1	0.10	NTU	2024-03-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	HT3
Total Metals						
Manganese, total	**0.106**	MAC = 0.12	0.00020	mg/L	2024-03-19	
WT# 94F1 - S-Dixon St. (24C1512-02) | Matrix: Water | Sampled: 2024-03-12 13:30						
Field Parameters						
Temperature, field	**7.9**	AO ≤ 15		°C	2024-03-12	
General Parameters						
Turbidity	**0.46**	OG < 1	0.10	NTU	2024-03-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Total Metals						
Manganese, total	**0.00966**	MAC = 0.12	0.00020	mg/L	2024-03-19	
WT# 94F2 - S-Hospital (24C1512-03) | Matrix: Water | Sampled: 2024-03-12 10:15						
Field Parameters						
Temperature, field	**7.5**	AO ≤ 15		°C	2024-03-12	
General Parameters						
Turbidity	**0.24**	OG < 1	0.10	NTU	2024-03-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Total Metals						
Manganese, total	**0.0386**	MAC = 0.12	0.00020	mg/L	2024-03-19	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C1512
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-03-20 09:36

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24C1512-04) | Matrix: Water | Sampled: 2024-03-12 12:00						
Field Parameters						
Temperature, field	**8.2**	AO ≤ 15		°C	2024-03-12	
General Parameters						
Turbidity	**0.34**	OG < 1	0.10	NTU	2024-03-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Total Metals						
Manganese, total	**0.145**	MAC = 0.12	0.00020	mg/L	2024-03-19	
WT# 94F4 - S-N Star Dragon Hill (24C1512-05) | Matrix: Water | Sampled: 2024-03-12 14:35						
Field Parameters						
Temperature, field	**0.0**	AO ≤ 15		°C	2024-03-12	
General Parameters						
Turbidity	**0.34**	OG < 1	0.10	NTU	2024-03-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Total Metals						
Manganese, total	**0.125**	MAC = 0.12	0.00020	mg/L	2024-03-19	
WT# 94F6 - S-N Star South Hill (24C1512-06) | Matrix: Water | Sampled: 2024-03-12 14:20						
Field Parameters						
Temperature, field	**0.0**	AO ≤ 15		°C	2024-03-12	
General Parameters						
Turbidity	**0.39**	OG < 1	0.10	NTU	2024-03-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Total Metals						
Manganese, total	**0.164**	MAC = 0.12	0.00020	mg/L	2024-03-19	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C1512
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-03-20 09:36

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F7 - S-Chew Rd. (24C1512-07) | Matrix: Water | Sampled: 2024-03-12 12:40						
Field Parameters						
Temperature, field	**8.2**	AO ≤ 15		°C	2024-03-12	
General Parameters						
Turbidity	**0.15**	OG < 1	0.10	NTU	2024-03-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Total Metals						
Manganese, total	**0.159**	MAC = 0.12	0.00020	mg/L	2024-03-19	
WT# 21D9B - Bulk Water Site 1 (24C1512-08) | Matrix: Water | Sampled: 2024-03-12 11:10						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-03-12	
General Parameters						
Turbidity	**0.29**	OG < 1	0.10	NTU	2024-03-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-03-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
Total Metals						
Manganese, total	**0.0725**	MAC = 0.12	0.00020	mg/L	2024-03-19	

Sample Qualifiers:

HT1	The sample was prepared and/or analyzed past the recommended holding time.
HT3	Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C1512
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-03-20 09:36

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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

Glossary of Terms:

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°C	Degrees Celcius
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CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24D0374
PO NUMBER		**RECEIVED / TEMP**	2024-04-03 14:52 / 7.8°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-04-10 16:51
PROJECT 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

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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 bwhitehead@caro.ca

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D0374
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-04-10 16:51

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24D0374-01) | Matrix: Water | Sampled: 2024-04-02 09:15						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-04-02	
General Parameters						
Turbidity	**0.21**	OG < 1	0.10	NTU	2024-04-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	HT3
Total Metals						
Manganese, total	**0.106**	MAC = 0.12	0.00020	mg/L	2024-04-08	
WT# 94F1 - S-Dixon St. (24D0374-02) | Matrix: Water | Sampled: 2024-04-02 10:40						
Field Parameters						
Temperature, field	**7.9**	AO ≤ 15		°C	2024-04-02	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Total Metals						
Manganese, total	**0.00943**	MAC = 0.12	0.00020	mg/L	2024-04-08	
WT# 94F2 - S-Hospital (24D0374-03) | Matrix: Water | Sampled: 2024-04-02 09:50						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-04-02	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	HT3
Total Metals						
Manganese, total	**0.0407**	MAC = 0.12	0.00020	mg/L	2024-04-08	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D0374
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-04-10 16:51

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24D0374-04) | Matrix: Water | Sampled: 2024-04-02 13:00						
Field Parameters						
Temperature, field	8.2	AO ≤ 15		°C	2024-04-02	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Total Metals						
Manganese, total	0.143	MAC = 0.12	0.00020	mg/L	2024-04-08	
WT# 94F4 - S-N Star Dragon Hill (24D0374-05) | Matrix: Water | Sampled: 2024-04-02 14:00						
Field Parameters						
Temperature, field	8.2	AO ≤ 15		°C	2024-04-02	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Total Metals						
Manganese, total	0.148	MAC = 0.12	0.00020	mg/L	2024-04-08	
WT# 94F6 - S-N Star South Hill (24D0374-06) | Matrix: Water | Sampled: 2024-04-02 13:55						
Field Parameters						
Temperature, field	8.2	AO ≤ 15		°C	2024-04-02	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Total Metals						
Manganese, total	0.152	MAC = 0.12	0.00020	mg/L	2024-04-08	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D0374
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-04-10 16:51

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F7 - S-Chew Rd. (24D0374-07) | Matrix: Water | Sampled: 2024-04-02 14:40						
Field Parameters						
Temperature, field	**8.4**	AO ≤ 15		°C	2024-04-02	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Total Metals						
Manganese, total	**0.160**	MAC = 0.12	0.00020	mg/L	2024-04-08	
WT# 21D9B - Bulk Water Site 1 (24D0374-08) | Matrix: Water | Sampled: 2024-04-02 11:30						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-04-02	
General Parameters						
Turbidity	**0.13**	OG < 1	0.10	NTU	2024-04-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-03	
Total Metals						
Manganese, total	**0.0352**	MAC = 0.12	0.00020	mg/L	2024-04-08	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D0374
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-04-10 16:51

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24E0180
PO NUMBER		**RECEIVED / TEMP**	2024-05-01 15:48 / 10.5°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-05-07 15:49
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E0180
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-05-07 15:49

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24E0180-01) | Matrix: Water | Sampled: 2024-04-30 09:20						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-04-30	
General Parameters						
Turbidity	**0.26**	OG < 1	0.10	NTU	2024-05-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-05-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	HT3
Total Metals						
Manganese, total	**0.0994**	MAC = 0.12	0.00020	mg/L	2024-05-03	
WT# 94F1 - S-Dixon St. (24E0180-02) | Matrix: Water | Sampled: 2024-04-30 10:30						
Field Parameters						
Temperature, field	**7.9**	AO ≤ 15		°C	2024-04-30	
General Parameters						
Turbidity	**0.22**	OG < 1	0.10	NTU	2024-05-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-05-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	HT3
Total Metals						
Manganese, total	**0.00506**	MAC = 0.12	0.00020	mg/L	2024-05-03	
WT# 94F2 - S-Hospital (24E0180-03) | Matrix: Water | Sampled: 2024-04-30 09:50						
Field Parameters						
Temperature, field	**8.2**	AO ≤ 15		°C	2024-04-30	
General Parameters						
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-05-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-05-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	HT3
Total Metals						
Manganese, total	**0.111**	MAC = 0.12	0.00020	mg/L	2024-05-03	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E0180
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-05-07 15:49

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24E0180-04) | Matrix: Water | Sampled: 2024-04-30 11:20						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-04-30	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-05-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-05-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	
Total Metals						
Manganese, total	**0.129**	MAC = 0.12	0.00020	mg/L	2024-05-03	
WT# 94F4 - S-N Star Dragon Hill (24E0180-05) | Matrix: Water | Sampled: 2024-04-30 13:50						
Field Parameters						
Temperature, field	**8.3**	AO ≤ 15		°C	2024-04-30	
General Parameters						
Turbidity	**0.12**	OG < 1	0.10	NTU	2024-05-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-05-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	
Total Metals						
Manganese, total	**0.165**	MAC = 0.12	0.00020	mg/L	2024-05-03	
WT# 94F6 - S-N Star South Hill (24E0180-06) | Matrix: Water | Sampled: 2024-04-30 14:00						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-04-30	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-05-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-05-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	
Total Metals						
Manganese, total	**0.157**	MAC = 0.12	0.00020	mg/L	2024-05-03	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E0180
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-05-07 15:49

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F7 - S-Chew Rd. (24E0180-07) | Matrix: Water | Sampled: 2024-04-30 12:00						
Field Parameters						
Temperature, field	8.9	AO ≤ 15		°C	2024-04-30	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-05-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-05-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	
Total Metals						
Manganese, total	0.163	MAC = 0.12	0.00020	mg/L	2024-05-03	
WT# 21D9B - Bulk Water Site 1 (24E0180-08) | Matrix: Water | Sampled: 2024-04-30 13:00						
Field Parameters						
Temperature, field	8.7	AO ≤ 15		°C	2024-04-30	
General Parameters						
Turbidity	0.32	OG < 1	0.10	NTU	2024-05-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-05-01	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-01	
Total Metals						
Manganese, total	0.0853	MAC = 0.12	0.00020	mg/L	2024-05-03	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

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CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E0180
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-05-07 15:49

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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

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°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24G0304
PO NUMBER		**RECEIVED / TEMP**	2024-07-03 14:30 / 17.1°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-07-10 10:50
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0304
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-07-10 10:50

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24G0304-01) | Matrix: Water | Sampled: 2024-07-02 11:35						
Field Parameters						
Temperature, field	**10.3**	AO ≤ 15		°C	2024-07-02	
General Parameters						
Turbidity	**0.20**	OG < 1	0.10	NTU	2024-07-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	
Total Metals						
Manganese, total	**0.0220**	MAC = 0.12	0.00020	mg/L	2024-07-05	
WT# 94F1 - S-Dixon St. (24G0304-02) | Matrix: Water | Sampled: 2024-07-02 10:45						
Field Parameters						
Temperature, field	**12.3**	AO ≤ 15		°C	2024-07-02	
General Parameters						
Turbidity	**0.19**	OG < 1	0.10	NTU	2024-07-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	
Total Metals						
Manganese, total	**0.00857**	MAC = 0.12	0.00020	mg/L	2024-07-05	
WT# 94F2 - S-Hospital (24G0304-03) | Matrix: Water | Sampled: 2024-07-02 11:10						
Field Parameters						
Temperature, field	**11.5**	AO ≤ 15		°C	2024-07-02	
General Parameters						
Turbidity	**0.44**	OG < 1	0.10	NTU	2024-07-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	
Total Metals						
Manganese, total	**0.0817**	MAC = 0.12	0.00020	mg/L	2024-07-05	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0304
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-07-10 10:50

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24G0304-04) | Matrix: Water | Sampled: 2024-07-02 10:00						
Field Parameters						
Temperature, field	**12.5**	AO ≤ 15		°C	2024-07-02	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-07-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	HT3
Total Metals						
Manganese, total	**0.133**	MAC = 0.12	0.00020	mg/L	2024-07-05	
WT# 94F4 - S-N Star Dragon Hill (24G0304-05) | Matrix: Water | Sampled: 2024-07-02 13:30						
Field Parameters						
Temperature, field	**9.7**	AO ≤ 15		°C	2024-07-02	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-07-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	
Total Metals						
Manganese, total	**0.149**	MAC = 0.12	0.00020	mg/L	2024-07-05	
WT# 94F7 - S-Chew Rd. (24G0304-06) | Matrix: Water | Sampled: 2024-07-02 09:35						
Field Parameters						
Temperature, field	**10.0**	AO ≤ 15		°C	2024-07-02	
General Parameters						
Turbidity	**0.10**	OG < 1	0.10	NTU	2024-07-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	HT3
Total Metals						
Manganese, total	**0.162**	MAC = 0.12	0.00020	mg/L	2024-07-05	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0304
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-07-10 10:50

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 21D9B - Bulk Water Site 1 (24G0304-07) | Matrix: Water | Sampled: 2024-07-02 13:50						
Field Parameters						
Temperature, field	**10.9**	AO ≤ 15		°C	2024-07-02	
General Parameters						
Turbidity	**0.29**	OG < 1	0.10	NTU	2024-07-04	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-03	
Total Metals						
Manganese, total	**0.0627**	MAC = 0.12	0.00020	mg/L	2024-07-05	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0304
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-07-10 10:50

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

The results in this report apply to the received 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. Caro will dispose of all samples within 30 days of sample receipt, unless otherwise agreed. The quality control (QC) data is available upon request

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:bwhitehead@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.

CARO ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24G3113
PO NUMBER		**RECEIVED / TEMP**	2024-07-24 14:25 / 18.5°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-07-31 11:42
PROJECT INFO		**COC NUMBER**	No Number

Introduction:

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G3113
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-07-31 11:42

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24G3113-01) | Matrix: Water | Sampled: 2024-07-23 09:30						
Field Parameters						
Temperature, field	**10.5**	AO ≤ 15		°C	2024-07-23	
General Parameters						
Turbidity	**0.16**	OG < 1	0.10	NTU	2024-07-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-24	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	HT3
Total Metals						
Manganese, total	**0.0192**	MAC = 0.12	0.00020	mg/L	2024-07-26	
WT# 94F1 - S-Dixon St. (24G3113-02) | Matrix: Water | Sampled: 2024-07-23 10:40						
Field Parameters						
Temperature, field	**12.1**	AO ≤ 15		°C	2024-07-23	
General Parameters						
Turbidity	**0.52**	OG < 1	0.10	NTU	2024-07-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-24	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	
Total Metals						
Manganese, total	**0.357**	MAC = 0.12	0.00020	mg/L	2024-07-26	
WT# 94F2 - S-Hospital (24G3113-03) | Matrix: Water | Sampled: 2024-07-23 10:00						
Field Parameters						
Temperature, field	**12.3**	AO ≤ 15		°C	2024-07-23	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-07-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-24	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	HT3
Total Metals						
Manganese, total	**0.0468**	MAC = 0.12	0.00020	mg/L	2024-07-26	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G3113
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-07-31 11:42

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24G3113-04) | Matrix: Water | Sampled: 2024-07-23 11:20						
Field Parameters						
Temperature, field	**12.2**	AO ≤ 15		°C	2024-07-23	
General Parameters						
Turbidity	**0.12**	OG < 1	0.10	NTU	2024-07-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-24	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	
Total Metals						
Manganese, total	**0.111**	MAC = 0.12	0.00020	mg/L	2024-07-26	
WT# 94F4 - S-N Star Dragon Hill (24G3113-05) | Matrix: Water | Sampled: 2024-07-23 13:20						
Field Parameters						
Temperature, field	**11.7**	AO ≤ 15		°C	2024-07-23	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-07-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-24	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	
Total Metals						
Manganese, total	**0.127**	MAC = 0.12	0.00020	mg/L	2024-07-26	
WT# 94F6 - S-N Star South Hill (24G3113-06) | Matrix: Water | Sampled: 2024-07-23 13:45						
Field Parameters						
Temperature, field	**11.9**	AO ≤ 15		°C	2024-07-23	
General Parameters						
Turbidity	**0.44**	OG < 1	0.10	NTU	2024-07-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	
Background Colonies	**>200**	N/A	200	CFU/100 mL	2024-07-24	
Heterotrophic Plate Count	**7000**	N/A	5	CFU/mL	2024-07-24	HT1, MIC15
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	
Total Metals						
Manganese, total	**0.156**	MAC = 0.12	0.00020	mg/L	2024-07-26	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G3113
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-07-31 11:42

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F7 - S-Chew Rd. (24G3113-07) | Matrix: Water | Sampled: 2024-07-23 12:00						
Field Parameters						
Temperature, field	**12.2**	AO ≤ 15		°C	2024-07-23	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-07-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-24	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	
Total Metals						
Manganese, total	**0.162**	MAC = 0.12	0.00020	mg/L	2024-07-26	
WT# 21D9B - Bulk Water Site 1 (24G3113-08) | Matrix: Water | Sampled: 2024-07-23 13:10						
Field Parameters						
Temperature, field	**12.4**	AO ≤ 15		°C	2024-07-23	
General Parameters						
Turbidity	**0.19**	OG < 1	0.10	NTU	2024-07-25	
Microbiological Parameters						
Coliforms, Total	1	MAC = 0	1	CFU/100 mL	2024-07-24	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-07-24	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-24	
Total Metals						
Manganese, total	**0.0608**	MAC = 0.12	0.00020	mg/L	2024-07-26	

Sample Qualifiers:

HT1	The sample was prepared and/or analyzed past the recommended holding time.
HT3	Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.
MIC15	The final result is estimated due to a high bacterial count.

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24H2712
PO NUMBER		**RECEIVED / TEMP**	2024-08-21 14:16 / 8.8°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-08-28 09:24
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24H2712
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-08-28 09:24

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24H2712-01) | Matrix: Water | Sampled: 2024-08-20 09:20						
Field Parameters						
Temperature, field	**11.3**	AO ≤ 15		°C	2024-08-20	
General Parameters						
Turbidity	**0.12**	OG < 1	0.10	NTU	2024-08-24	HT1
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-08-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	HT3
Total Metals						
Manganese, total	**0.0143**	MAC = 0.12	0.00020	mg/L	2024-08-25	
WT# 94F1 - S-Dixon St. (24H2712-02) | Matrix: Water | Sampled: 2024-08-20 09:50						
Field Parameters						
Temperature, field	**14.0**	AO ≤ 15		°C	2024-08-20	
General Parameters						
Turbidity	**0.16**	OG < 1	0.10	NTU	2024-08-24	HT1
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	HT3
Heterotrophic Plate Count	8	N/A	5	CFU/mL	2024-08-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	HT3
Total Metals						
Manganese, total	**0.0319**	MAC = 0.12	0.00020	mg/L	2024-08-26	
WT# 94F2 - S-Hospital (24H2712-03) | Matrix: Water | Sampled: 2024-08-20 10:25						
Field Parameters						
Temperature, field	**12.3**	AO ≤ 15		°C	2024-08-20	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-08-24	HT1
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-08-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Total Metals						
Manganese, total	**0.0653**	MAC = 0.12	0.00020	mg/L	2024-08-26	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24H2712
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-08-28 09:24

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24H2712-04) | Matrix: Water | Sampled: 2024-08-20 10:50						
Field Parameters						
Temperature, field	**12.8**	AO ≤ 15		°C	2024-08-20	
General Parameters						
Turbidity	**0.10**	OG < 1	0.10	NTU	2024-08-24	HT1
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-08-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Total Metals						
Manganese, total	**0.0702**	MAC = 0.12	0.00020	mg/L	2024-08-26	
WT# 94F4 - S-N Star Dragon Hill (24H2712-05) | Matrix: Water | Sampled: 2024-08-20 13:00						
Field Parameters						
Temperature, field	**10.7**	AO ≤ 15		°C	2024-08-20	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-08-24	HT1
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-08-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Total Metals						
Manganese, total	**0.122**	MAC = 0.12	0.00020	mg/L	2024-08-26	
WT# 94F6 - S-N Star South Hill (24H2712-06) | Matrix: Water | Sampled: 2024-08-20 13:00						
Field Parameters						
Temperature, field	**10.0**	AO ≤ 15		°C	2024-08-20	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-08-24	HT1
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Heterotrophic Plate Count	**15**	N/A	5	CFU/mL	2024-08-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Total Metals						
Manganese, total	**0.154**	MAC = 0.12	0.00020	mg/L	2024-08-26	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24H2712
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-08-28 09:24

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F7 - S-Chew Rd. (24H2712-07) | Matrix: Water | Sampled: 2024-08-20 11:20						
Field Parameters						
Temperature, field	**11.3**	AO ≤ 15		°C	2024-08-20	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-08-24	HT1
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-08-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Total Metals						
Manganese, total	**0.159**	MAC = 0.12	0.00020	mg/L	2024-08-26	
WT# 21D9B - Bulk Water Site 1 (24H2712-08) | Matrix: Water | Sampled: 2024-08-20 13:30						
Field Parameters						
Temperature, field	**12.3**	AO ≤ 15		°C	2024-08-20	
General Parameters						
Turbidity	**0.23**	OG < 1	0.10	NTU	2024-08-24	HT1
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Heterotrophic Plate Count	**8**	N/A	5	CFU/mL	2024-08-21	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-21	
Total Metals						
Manganese, total	**0.0612**	MAC = 0.12	0.00020	mg/L	2024-08-26	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24H2712
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-08-28 09:24

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

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CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G3113
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-07-31 11:42

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
>2	Greater than the specified Result
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

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CARO ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24I2228
PO NUMBER		**RECEIVED / TEMP**	2024-09-18 14:43 / 15.9°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-09-25 15:07
PROJECT 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 bwhitehead@caro.ca

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I2228
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-09-25 15:07

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24I2228-01) | Matrix: Water | Sampled: 2024-09-17 08:40						
Field Parameters						
Temperature, field	**10.9**	AO ≤ 15		°C	2024-09-17	
General Parameters						
Turbidity	**0.26**	OG < 1	0.10	NTU	2024-09-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-09-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	HT3
Total Metals						
Manganese, total	**0.0550**	MAC = 0.12	0.00020	mg/L	2024-09-20	
WT# 94F1 - S-Dixon St. (24I2228-02) | Matrix: Water | Sampled: 2024-09-17 11:20						
Field Parameters						
Temperature, field	**11.4**	AO ≤ 15		°C	2024-09-17	
General Parameters						
Turbidity	**0.12**	OG < 1	0.10	NTU	2024-09-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	
Heterotrophic Plate Count	**5**	N/A	5	CFU/mL	2024-09-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	
Total Metals						
Manganese, total	**0.00227**	MAC = 0.12	0.00020	mg/L	2024-09-20	
WT# 94F2 - S-Hospital (24I2228-03) | Matrix: Water | Sampled: 2024-09-17 09:30						
Field Parameters						
Temperature, field	**11.2**	AO ≤ 15		°C	2024-09-17	
General Parameters						
Turbidity	**0.14**	OG < 1	0.10	NTU	2024-09-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-09-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	HT3
Total Metals						
Manganese, total	**0.0215**	MAC = 0.12	0.00020	mg/L	2024-09-20	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I2228
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-09-25 15:07

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24I2228-04) | Matrix: Water | Sampled: 2024-09-17 11:50						
Field Parameters						
Temperature, field	**11.7**	AO ≤ 15		°C	2024-09-17	
General Parameters						
Turbidity	**0.14**	OG < 1	0.10	NTU	2024-09-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-09-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	
Total Metals						
Manganese, total	**0.108**	MAC = 0.12	0.00020	mg/L	2024-09-20	
WT# 94F6 - S-N Star South Hill (24I2228-05) | Matrix: Water | Sampled: 2024-09-17 13:30						
Field Parameters						
Temperature, field	**12.1**	AO ≤ 15		°C	2024-09-17	
General Parameters						
Turbidity	**0.30**	OG < 1	0.10	NTU	2024-09-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	
Heterotrophic Plate Count	**10**	N/A	5	CFU/mL	2024-09-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	
Total Metals						
Manganese, total	**0.158**	MAC = 0.12	0.00020	mg/L	2024-09-20	
WT# 94F7 - S-Chew Rd. (24I2228-06) | Matrix: Water | Sampled: 2024-09-17 13:00						
Field Parameters						
Temperature, field	**12.0**	AO ≤ 15		°C	2024-09-17	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-09-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-09-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	
Total Metals						
Manganese, total	**0.167**	MAC = 0.12	0.00020	mg/L	2024-09-20	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I2228
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-09-25 15:07

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 21D9B - Bulk Water Site 1 (24I2228-07) | Matrix: Water | Sampled: 2024-09-17 10:00						
Field Parameters						
Temperature, field	**11.7**	AO ≤ 15		°C	2024-09-17	
General Parameters						
Turbidity	**0.20**	OG < 1	0.10	NTU	2024-09-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-09-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-18	HT3
Total Metals						
Manganese, total	**0.0579**	MAC = 0.12	0.00020	mg/L	2024-09-20	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I2228
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-09-25 15:07

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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

Glossary of Terms:

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°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24J0558
PO NUMBER		**RECEIVED / TEMP**	2024-10-03 14:25 / 11.3°C
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-10-09 11:18
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J0558
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-10-09 11:18

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E4 S Airport (24J0558-01) | Matrix: Ground Water | Sampled: 2024-10-02 09:50						
Field Parameters						
Temperature, field	**9.1**	AO ≤ 15		°C	2024-10-02	
General Parameters						
Turbidity	**0.17**	OG < 1	0.10	NTU	2024-10-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Heterotrophic Plate Count	**6**	N/A	5	CFU/mL	2024-10-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Total Metals						
Manganese, total	**0.00221**	MAC = 0.12	0.00020	mg/L	2024-10-07	
94E5 S Mills Rd. (24J0558-02) | Matrix: Ground Water | Sampled: 2024-10-02 10:50						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-10-02	
General Parameters						
Turbidity	**0.12**	OG < 1	0.10	NTU	2024-10-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Total Metals						
Manganese, total	**0.00231**	MAC = 0.12	0.00020	mg/L	2024-10-06	
94E7 S Marsh Dr. (24J0558-03) | Matrix: Ground Water | Sampled: 2024-10-02 11:10						
Field Parameters						
Temperature, field	**9.6**	AO ≤ 15		°C	2024-10-02	
General Parameters						
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-10-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Total Metals						
Manganese, total	**0.00647**	MAC = 0.12	0.00020	mg/L	2024-10-07	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J0558
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-10-09 11:18

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E8 S Graham Ave. (24J0558-04) | Matrix: Ground Water | Sampled: 2024-10-02 11:50						
Field Parameters						
Temperature, field	**9.6**	AO ≤ 15		°C	2024-10-02	
General Parameters						
Turbidity	**0.17**	OG < 1	0.10	NTU	2024-10-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Total Metals						
Manganese, total	**0.0197**	MAC = 0.12	0.00020	mg/L	2024-10-07	
94E9 S West Fraser Rd. (24J0558-05) | Matrix: Ground Water | Sampled: 2024-10-02 13:40						
Field Parameters						
Temperature, field	**9.1**	AO ≤ 15		°C	2024-10-02	
General Parameters						
Turbidity	**0.10**	OG < 1	0.10	NTU	2024-10-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Total Metals						
Manganese, total	**0.0150**	MAC = 0.12	0.00020	mg/L	2024-10-06	
94F0 S Pedersen Rd. (24J0558-06) | Matrix: Ground Water | Sampled: 2024-10-02 15:30						
Field Parameters						
Temperature, field	**9.3**	AO ≤ 15		°C	2024-10-02	
General Parameters						
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-10-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Total Metals						
Manganese, total	**0.0534**	MAC = 0.12	0.00020	mg/L	2024-10-07	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J0558
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-10-09 11:18

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
35D91 New Carson Pit (24J0558-07) | Matrix: Ground Water | Sampled: 2024-10-02 14:30						
Field Parameters						
Temperature, field	**9.4**	AO ≤ 15		°C	2024-10-02	
General Parameters						
Turbidity	**0.16**	OG < 1	0.10	NTU	2024-10-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Heterotrophic Plate Count	**5**	N/A	5	CFU/mL	2024-10-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Total Metals						
Manganese, total	**0.00789**	MAC = 0.12	0.00020	mg/L	2024-10-06	
179CA S Dennis Rd. (24J0558-08) | Matrix: Ground Water | Sampled: 2024-10-02 15:00						
Field Parameters						
Temperature, field	**9.7**	AO ≤ 15		°C	2024-10-02	
General Parameters						
Turbidity	**0.18**	OG < 1	0.10	NTU	2024-10-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-03	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-03	
Total Metals						
Manganese, total	**0.162**	MAC = 0.12	0.00020	mg/L	2024-10-06	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J0558
PROJECT	Bi-Weekly - First Week	**REPORTED**	2024-10-09 11:18

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24J2565
PO NUMBER		**RECEIVED / TEMP**	2024-10-18 13:15 / 7.1°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-10-24 08:59
PROJECT 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

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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 bwhitehead@caro.ca

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J2565
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-10-24 08:59

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24J2565-01) | Matrix: Water | Sampled: 2024-10-17 09:30						
Field Parameters						
Temperature, field	**8.7**	AO ≤ 15		°C	2024-10-17	
General Parameters						
Turbidity	**0.13**	OG < 1	0.10	NTU	2024-10-20	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Total Metals						
Manganese, total	**0.0222**	MAC = 0.12	0.00020	mg/L	2024-10-20	
WT# 94F1 - S-Dixon St. (24J2565-02) | Matrix: Water | Sampled: 2024-10-17 10:30						
Field Parameters						
Temperature, field	**9.9**	AO ≤ 15		°C	2024-10-17	
General Parameters						
Turbidity	**0.14**	OG < 1	0.10	NTU	2024-10-20	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Heterotrophic Plate Count	**60**	N/A	5	CFU/mL	2024-10-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Total Metals						
Manganese, total	**0.00800**	MAC = 0.12	0.00020	mg/L	2024-10-20	
WT# 94F2 - S-Hospital (24J2565-03) | Matrix: Water | Sampled: 2024-10-17 10:00						
Field Parameters						
Temperature, field	**11.1**	AO ≤ 15		°C	2024-10-17	
General Parameters						
Turbidity	**0.29**	OG < 1	0.10	NTU	2024-10-20	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Total Metals						
Manganese, total	**0.0449**	MAC = 0.12	0.00020	mg/L	2024-10-20	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J2565
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-10-24 08:59

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24J2565-04) | Matrix: Water | Sampled: 2024-10-17 11:30						
Field Parameters						
Temperature, field	**13.0**	AO ≤ 15		°C	2024-10-17	
General Parameters						
Turbidity	**0.22**	OG < 1	0.10	NTU	2024-10-20	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Total Metals						
Manganese, total	**0.108**	MAC = 0.12	0.00020	mg/L	2024-10-20	
WT# 94F4 - S-N Star Dragon Hill (24J2565-05) | Matrix: Water | Sampled: 2024-10-17 13:00						
Field Parameters						
Temperature, field	**9.3**	AO ≤ 15		°C	2024-10-17	
General Parameters						
Turbidity	**0.15**	OG < 1	0.10	NTU	2024-10-20	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Total Metals						
Manganese, total	**0.131**	MAC = 0.12	0.00020	mg/L	2024-10-20	
WT# 94F6 - S-N Star South Hill (24J2565-06) | Matrix: Water | Sampled: 2024-10-17 13:20						
Field Parameters						
Temperature, field	**10.0**	AO ≤ 15		°C	2024-10-17	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-10-20	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Total Metals						
Manganese, total	**0.149**	MAC = 0.12	0.00020	mg/L	2024-10-22	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J2565
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-10-24 08:59

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F7 - S-Chew Rd. (24J2565-07) | Matrix: Water | Sampled: 2024-10-17 14:00						
Field Parameters						
Temperature, field	**12.1**	AO ≤ 15		°C	2024-10-17	
General Parameters						
Turbidity	**0.51**	OG < 1	0.10	NTU	2024-10-20	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Total Metals						
Manganese, total	**0.157**	MAC = 0.12	0.00020	mg/L	2024-10-22	
WT# 21D9B - Bulk Water Site 1 (24J2565-08) | Matrix: Water | Sampled: 2024-10-17 14:30						
Field Parameters						
Temperature, field	**11.2**	AO ≤ 15		°C	2024-10-17	
General Parameters						
Turbidity	**0.39**	OG < 1	0.10	NTU	2024-10-20	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-10-18	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-18	
Total Metals						
Manganese, total	**0.0213**	MAC = 0.12	0.00020	mg/L	2024-10-22	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J2565
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-10-24 08:59

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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

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°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
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CARO ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24K1520
PO NUMBER		**RECEIVED / TEMP**	2024-11-13 13:00 / 6.7°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-11-19 09:04
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Hanane El Hannaoui
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K1520
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-11-19 09:04

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24K1520-01) | Matrix: Water | Sampled: 2024-11-12 09:30						
Field Parameters						
Temperature, field	**8.6**	AO ≤ 15		°C	2024-11-12	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	HT3
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	HT3
Total Metals						
Manganese, total	**0.106**	MAC = 0.12	0.00020	mg/L	2024-11-15	
WT# 94F1 - S-Dixon St. (24K1520-02) | Matrix: Water | Sampled: 2024-11-12 11:40						
Field Parameters						
Temperature, field	**8.4**	AO ≤ 15		°C	2024-11-12	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Total Metals						
Manganese, total	**0.0133**	MAC = 0.12	0.00020	mg/L	2024-11-15	
WT# 94F2 - S-Hospital (24K1520-03) | Matrix: Water | Sampled: 2024-11-12 10:00						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-11-12	
General Parameters						
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-11-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Total Metals						
Manganese, total	**0.0684**	MAC = 0.12	0.00020	mg/L	2024-11-15	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K1520
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-11-19 09:04

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24K1520-04) | Matrix: Water | Sampled: 2024-11-12 10:55						
Field Parameters						
Temperature, field	**8.4**	AO ≤ 15		°C	2024-11-12	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Total Metals						
Manganese, total	**0.0902**	MAC = 0.12	0.00020	mg/L	2024-11-15	
WT# 94F4 - S-N Star Dragon Hill (24K1520-05) | Matrix: Water | Sampled: 2024-11-12 14:20						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-11-12	
General Parameters						
Turbidity	**1.06**	OG < 1	0.10	NTU	2024-11-14	RE2
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Total Metals						
Manganese, total	**0.119**	MAC = 0.12	0.00020	mg/L	2024-11-15	
WT# 94F6 - S-N Star South Hill (24K1520-06) | Matrix: Water | Sampled: 2024-11-12 14:30						
Field Parameters						
Temperature, field	**8.2**	AO ≤ 15		°C	2024-11-12	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Total Metals						
Manganese, total	**0.155**	MAC = 0.12	0.00020	mg/L	2024-11-15	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K1520
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-11-19 09:04

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F7 - S-Chew Rd. (24K1520-07) | Matrix: Water | Sampled: 2024-11-12 12:40						
Field Parameters						
Temperature, field	**9.1**	AO ≤ 15		°C	2024-11-12	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Total Metals						
Manganese, total	**0.167**	MAC = 0.12	0.00020	mg/L	2024-11-15	
WT# 21D9B - Bulk Water Site 1 (24K1520-08) | Matrix: Water | Sampled: 2024-11-12 11:56						
Field Parameters						
Temperature, field	**8.4**	AO ≤ 15		°C	2024-11-12	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-11-14	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-11-13	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-13	
Total Metals						
Manganese, total	**0.0823**	MAC = 0.12	0.00020	mg/L	2024-11-15	

Sample Qualifiers:

HT1	The sample was prepared and/or analyzed past the recommended holding time.
HT3	Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.
RE2	Result was confirmed by re-analysis prior to reporting.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K1520
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-11-19 09:04

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24L1308
PO NUMBER		**RECEIVED / TEMP**	2024-12-11 12:30 / 4.8°C
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-12-18 10:23
PROJECT INFO		**COC NUMBER**	No Number

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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 hhannaoui@caro.ca

Authorized By:

Hanane El Hannaoui
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24L1308
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-12-18 10:23

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E6 - S-Carradice Rd. (24L1308-01) | Matrix: Water | Sampled: 2024-12-10 09:30						
Field Parameters						
Temperature, field	**7.4**	AO ≤ 15		°C	2024-12-10	
General Parameters						
Turbidity	**0.22**	OG < 1	0.10	NTU	2024-12-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-12-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Total Metals						
Manganese, total	**0.0412**	MAC = 0.12	0.00020	mg/L	2024-12-12	
WT# 94F1 - S-Dixon St. (24L1308-02) | Matrix: Water | Sampled: 2024-12-10 10:00						
Field Parameters						
Temperature, field	**7.1**	AO ≤ 15		°C	2024-12-10	
General Parameters						
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-12-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-12-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Total Metals						
Manganese, total	**0.0148**	MAC = 0.12	0.00020	mg/L	2024-12-13	
WT# 94F2 - S-Hospital (24L1308-03) | Matrix: Water | Sampled: 2024-12-10 10:38						
Field Parameters						
Temperature, field	**7.2**	AO ≤ 15		°C	2024-12-10	
General Parameters						
Turbidity	**0.18**	OG < 1	0.10	NTU	2024-12-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-12-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Total Metals						
Manganese, total	**0.103**	MAC = 0.12	0.00020	mg/L	2024-12-12	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24L1308
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-12-18 10:23

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F3 - S-Nason St. (24L1308-04) | Matrix: Water | Sampled: 2024-12-10 11:30						
Field Parameters						
Temperature, field	**7.4**	AO ≤ 15		°C	2024-12-10	
General Parameters						
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-12-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-12-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Total Metals						
Manganese, total	**0.105**	MAC = 0.12	0.00020	mg/L	2024-12-13	
WT# 94F4 - S-N Star Dragon Hill (24L1308-05) | Matrix: Water | Sampled: 2024-12-10 13:25						
Field Parameters						
Temperature, field	**7.6**	AO ≤ 15		°C	2024-12-10	
General Parameters						
Turbidity	**0.34**	OG < 1	0.10	NTU	2024-12-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-12-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Total Metals						
Manganese, total	**0.214**	MAC = 0.12	0.00020	mg/L	2024-12-12	
WT# 94F6 - S-N Star South Hill (24L1308-06) | Matrix: Water | Sampled: 2024-12-10 13:45						
Field Parameters						
Temperature, field	**7.5**	AO ≤ 15		°C	2024-12-10	
General Parameters						
Turbidity	**0.19**	OG < 1	0.10	NTU	2024-12-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-12-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Total Metals						
Manganese, total	**0.151**	MAC = 0.12	0.00020	mg/L	2024-12-13	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24L1308
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-12-18 10:23

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F7 - S-Chew Rd. (24L1308-07) | Matrix: Water | Sampled: 2024-12-10 12:00						
Field Parameters						
Temperature, field	**7.6**	AO ≤ 15		°C	2024-12-10	
General Parameters						
Turbidity	**0.13**	OG < 1	0.10	NTU	2024-12-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-12-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Total Metals						
Manganese, total	**0.160**	MAC = 0.12	0.00020	mg/L	2024-12-13	
WT# 21D9B - Bulk Water Site 1 (24L1308-08) | Matrix: Water | Sampled: 2024-12-10 13:20						
Field Parameters						
Temperature, field	**2.4**	AO ≤ 15		°C	2024-12-10	
General Parameters						
Turbidity	**0.88**	OG < 1	0.10	NTU	2024-12-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-12-11	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-11	
Total Metals						
Manganese, total	**0.514**	MAC = 0.12	0.00020	mg/L	2024-12-12	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24L1308
PROJECT	Bi-Weekly - Third Week	**REPORTED**	2024-12-18 10:23

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24D2893
PO NUMBER		**RECEIVED / TEMP**	2024-04-23 14:20 / 11.7°C
PROJECT	Semi Annually Distribution System	**REPORTED**	2024-04-30 12:58
PROJECT INFO		**COC NUMBER**	No Number

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(resample from 2024-04-16)

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D2893
PROJECT	Semi Annually Distribution System	**REPORTED**	2024-04-30 12:58

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E4 - Airport (24D2893-01) | Matrix: Water | Sampled: 2024-04-22 10:00						
Field Parameters						
Temperature, field	**6.5**	AO ≤ 15		°C	2024-04-22	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-23	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
WT# 94E5 - S Mills Rd (24D2893-02) | Matrix: Water | Sampled: 2024-04-22 10:30						
Field Parameters						
Temperature, field	**6.3**	AO ≤ 15		°C	2024-04-22	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-23	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
Total Metals						
Copper, total	**0.00875**	MAC = 2	0.00040	mg/L	2024-04-26	
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2024-04-26	
Lead, total	**0.00020**	MAC = 0.005	0.00020	mg/L	2024-04-26	
Manganese, total	**0.00549**	MAC = 0.12	0.00020	mg/L	2024-04-26	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2024-04-26	
Volatile Organic Compounds (VOC)						
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2024-04-26	
Surrogate: Toluene-d8	*82*		*70-130*	%	*2024-04-26*	
WT# 94E7 - Marsh Dr (24D2893-03) | Matrix: Water | Sampled: 2024-04-22 11:00						
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-04-22	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-23	HT1

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D2893
PROJECT	Semi Annually Distribution System	**REPORTED**	2024-04-30 12:58

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E7 - Marsh Dr (24D2893-03) | Matrix: Water | Sampled: 2024-04-22 11:00, Continued						
Microbiological Parameters, Continued						
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
WT# 94E8 - S Graham Dr (24D2893-04) | Matrix: Water | Sampled: 2024-04-22 13:30						
Field Parameters						
Temperature, field	**7.4**	AO ≤ 15		°C	2024-04-22	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-23	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
WT# 94E9 - S West Fraser (24D2893-05) | Matrix: Water | Sampled: 2024-04-22 11:40						
Field Parameters						
Temperature, field	**6.1**	AO ≤ 15		°C	2024-04-22	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-23	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
WT# 94F0 - S Pederson (24D2893-06) | Matrix: Water | Sampled: 2024-04-22 14:20						
Field Parameters						
Temperature, field	**7.2**	AO ≤ 15		°C	2024-04-22	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-23	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
Total Metals						
Copper, total	**0.00274**	MAC = 2	0.00040	mg/L	2024-04-26	
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2024-04-26	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D2893
PROJECT	Semi Annually Distribution System	**REPORTED**	2024-04-30 12:58

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94F0 - S Pederson (24D2893-06) | Matrix: Water | Sampled: 2024-04-22 14:20, Continued						
Total Metals, Continued						
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2024-04-26	
Manganese, total	**0.00570**	MAC = 0.12	0.00020	mg/L	2024-04-26	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2024-04-26	
Volatile Organic Compounds (VOC)						
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2024-04-26	
Surrogate: Toluene-d8	*83*		*70-130*	%	*2024-04-26*	
WT# 35D91 - New Caron Pit (24D2893-07) | Matrix: Water | Sampled: 2024-04-22 12:45						
Field Parameters						
Temperature, field	**6.1**	AO ≤ 15		°C	2024-04-22	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
Heterotrophic Plate Count	**9**	N/A	5	CFU/mL	2024-04-23	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
Total Metals						
Copper, total	**0.00272**	MAC = 2	0.00040	mg/L	2024-04-26	
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2024-04-26	
Lead, total	**0.00023**	MAC = 0.005	0.00020	mg/L	2024-04-26	
Manganese, total	**0.0103**	MAC = 0.12	0.00020	mg/L	2024-04-26	
Zinc, total	**0.0199**	AO ≤ 5	0.0040	mg/L	2024-04-26	
Volatile Organic Compounds (VOC)						
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2024-04-26	
Surrogate: Toluene-d8	*81*		*70-130*	%	*2024-04-26*	
WT# 179CA - S Dennis Rd (24D2893-08) | Matrix: Water | Sampled: 2024-04-22 13:55						
Field Parameters						
Temperature, field	**7.4**	AO ≤ 15		°C	2024-04-22	
General Parameters						
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-04-25	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	
Heterotrophic Plate Count	< 5	N/A	5	CFU/mL	2024-04-23	HT1
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-23	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D2893
PROJECT	Semi Annually Distribution System	**REPORTED**	2024-04-30 12:58

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D2893
PROJECT	Semi Annually Distribution System	**REPORTED**	2024-04-30 12:58

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Heterotrophic Plate Count in Water	SM 9215 D (2022)	Membrane Filtration / Membrane Filtration	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna
Volatile Organic Compounds 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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CFU/mL	Colony Forming Units per millilitre
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
µg/L	Micrograms per litre
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24A0228
PO NUMBER		**RECEIVED / TEMP**	2024-01-03 14:33 / 5.6°C
PROJECT	Monthly Reservoirs	**REPORTED**	2024-01-10 09:34
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A0228
PROJECT	Monthly Reservoirs	**REPORTED**	2024-01-10 09:34

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24A0228-01) | Matrix: Water | Sampled: 2024-01-02 09:30						
Field Parameters						
Temperature, field	7.3	AO ≤ 15		°C	2024-01-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	HT3
Total Metals						
Manganese, total	0.0531	MAC = 0.12	0.00020	mg/L	2024-01-06	
WT# 94F9 - R-2 Pinecrest (24A0228-02) | Matrix: Water | Sampled: 2024-01-02 10:00						
Field Parameters						
Temperature, field	8.1	AO ≤ 15		°C	2024-01-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	HT3
Total Metals						
Manganese, total	0.320	MAC = 0.12	0.00020	mg/L	2024-01-06	
WT# 94FA R-3 Sugar Loaf (24A0228-03) | Matrix: Water | Sampled: 2024-01-02 11:30						
Field Parameters						
Temperature, field	7.2	AO ≤ 15		°C	2024-01-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	
Total Metals						
Manganese, total	0.0108	MAC = 0.12	0.00020	mg/L	2024-01-06	
WT# 94EB R-4 Abbott Dr 1 (24A0228-04) | Matrix: Water | Sampled: 2024-01-02 10:30						
Field Parameters						
Temperature, field	6.7	AO ≤ 15		°C	2024-01-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	
Total Metals						
Manganese, total	0.00328	MAC = 0.12	0.00020	mg/L	2024-01-06	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A0228
PROJECT	Monthly Reservoirs	**REPORTED**	2024-01-10 09:34

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24A0228-05) | Matrix: Water | Sampled: 2024-01-02 10:40						
Field Parameters						
Temperature, field	**7.1**	AO ≤ 15		°C	2024-01-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	
Total Metals						
Manganese, total	**0.00281**	MAC = 0.12	0.00020	mg/L	2024-01-06	
WT# 94FC R-5 Dragon Hill (24A0228-06) | Matrix: Water | Sampled: 2024-01-02 13:00						
Field Parameters						
Temperature, field	**7.3**	AO ≤ 15		°C	2024-01-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	
Total Metals						
Manganese, total	**0.0626**	MAC = 0.12	0.00020	mg/L	2024-01-06	
WT# 94FF - R-6 New Tatchell Reserv (24A0228-07) | Matrix: Water | Sampled: 2024-01-02 14:00						
Field Parameters						
Temperature, field	**7.4**	AO ≤ 15		°C	2024-01-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-03	
Total Metals						
Manganese, total	**0.00464**	MAC = 0.12	0.00020	mg/L	2024-01-06	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A0228
PROJECT	Monthly Reservoirs	**REPORTED**	2024-01-10 09:34

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

Glossary of Terms:

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°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
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

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24A3019
PO NUMBER		**RECEIVED / TEMP**	2024-01-31 13:38 / 7.0°C
PROJECT	Monthly Reservoirs	**REPORTED**	2024-02-05 15:57
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A3019
PROJECT	Monthly Reservoirs	**REPORTED**	2024-02-05 15:57

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24A3019-01) | Matrix: Water | Sampled: 2024-01-30 09:30						
Field Parameters						
Temperature, field	8.2	AO ≤ 15		°C	2024-01-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
Total Metals						
Manganese, total	0.178	MAC = 0.12	0.00020	mg/L	2024-02-03	
WT# 94F9 - R-2 Pinecrest (24A3019-02) | Matrix: Water | Sampled: 2024-01-30 10:00						
Field Parameters						
Temperature, field	8.1	AO ≤ 15		°C	2024-01-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
Total Metals						
Manganese, total	0.337	MAC = 0.12	0.00020	mg/L	2024-02-03	
WT# 94FA R-3 Sugar Loaf (24A3019-03) | Matrix: Water | Sampled: 2024-01-30 11:30						
Field Parameters						
Temperature, field	7.4	AO ≤ 15		°C	2024-01-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
Total Metals						
Manganese, total	0.0150	MAC = 0.12	0.00020	mg/L	2024-02-03	
WT# 94EB R-4 Abbott Dr 1 (24A3019-04) | Matrix: Water | Sampled: 2024-01-30 10:30						
Field Parameters						
Temperature, field	6.1	AO ≤ 15		°C	2024-01-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
Total Metals						
Manganese, total	0.00678	MAC = 0.12	0.00020	mg/L	2024-02-03	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A3019
PROJECT	Monthly Reservoirs	**REPORTED**	2024-02-05 15:57

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24A3019-05) | Matrix: Water | Sampled: 2024-01-30 10:45						
Field Parameters						
Temperature, field	**6.2**	AO ≤ 15		°C	2024-01-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
Total Metals						
Manganese, total	**0.00603**	MAC = 0.12	0.00020	mg/L	2024-02-03	
WT# 94FC R-5 Dragon Hill (24A3019-06) | Matrix: Water | Sampled: 2024-01-30 14:20						
Field Parameters						
Temperature, field	**7.6**	AO ≤ 15		°C	2024-01-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
Total Metals						
Manganese, total	**0.0314**	MAC = 0.12	0.00020	mg/L	2024-02-03	
WT# 94FF - R-6 New Tatchell Reserv (24A3019-07) | Matrix: Water | Sampled: 2024-01-30 13:15						
Field Parameters						
Temperature, field	**7.2**	AO ≤ 15		°C	2024-01-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-31	
Total Metals						
Manganese, total	**0.00571**	MAC = 0.12	0.00020	mg/L	2024-02-03	

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A3019
PROJECT	Monthly Reservoirs	**REPORTED**	2024-02-05 15:57

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

Glossary of Terms:

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AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
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

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2	**WORK ORDER**	24B2906
ATTENTION	Joe Law	**RECEIVED / TEMP**	2024-02-28 14:34 / 3.2°C
PO NUMBER		**REPORTED**	2024-03-06 16:58
PROJECT	Monthly Reservoirs	**COC NUMBER**	No Number
PROJECT INFO			

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	WORK ORDER	24B2906
PROJECT	Monthly Reservoirs	REPORTED	2024-03-06 16:58

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24B2906-01) | Matrix: Water | Sampled: 2024-02-27 09:30						
Field Parameters						
Temperature, field	5.4	AO ≤ 15		°C	2024-02-27	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
Total Metals						
Manganese, total	0.0581	MAC = 0.12	0.00020	mg/L	2024-03-03	
WT# 94F9 - R-2 Pinecrest (24B2906-02) | Matrix: Water | Sampled: 2024-02-27 10:50						
Field Parameters						
Temperature, field	5.7	AO ≤ 15		°C	2024-02-27	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
Total Metals						
Manganese, total	0.342	MAC = 0.12	0.00020	mg/L	2024-03-03	
WT# 94FA R-3 Sugar Loaf (24B2906-03) | Matrix: Water | Sampled: 2024-02-27 13:30						
Field Parameters						
Temperature, field	5.8	AO ≤ 15		°C	2024-02-27	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
Total Metals						
Manganese, total	0.0209	MAC = 0.12	0.00020	mg/L	2024-03-03	
WT# 94EB R-4 Abbott Dr 1 (24B2906-04) | Matrix: Water | Sampled: 2024-02-27 11:00						
Field Parameters						
Temperature, field	5.1	AO ≤ 15		°C	2024-02-27	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
Total Metals						
Manganese, total	0.0122	MAC = 0.12	0.00020	mg/L	2024-03-03	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	WORK ORDER	24B2906
PROJECT	Monthly Reservoirs	REPORTED	2024-03-06 16:58

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24B2906-05) | Matrix: Water | Sampled: 2024-02-27 11:10						
Field Parameters						
Temperature, field	**5.1**	AO ≤ 15		°C	2024-02-27	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
Total Metals						
Manganese, total	**0.0124**	MAC = 0.12	0.00020	mg/L	2024-03-03	
WT# 94FC R-5 Dragon Hill (24B2906-06) | Matrix: Water | Sampled: 2024-02-27 11:45						
Field Parameters						
Temperature, field	**5.6**	AO ≤ 15		°C	2024-02-27	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
Total Metals						
Manganese, total	**0.0182**	MAC = 0.12	0.00020	mg/L	2024-03-03	
WT# 94FF - R-6 New Tatchell Reserv (24B2906-07) | Matrix: Water | Sampled: 2024-02-27 14:10						
Field Parameters						
Temperature, field	**5.7**	AO ≤ 15		°C	2024-02-27	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-28	
Total Metals						
Manganese, total	**0.00839**	MAC = 0.12	0.00020	mg/L	2024-03-03	

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B2906
PROJECT	Monthly Reservoirs	**REPORTED**	2024-03-06 16:58

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24C3161
PO NUMBER		**RECEIVED / TEMP**	2024-03-27 14:38 / 6.8°C
PROJECT	Monthly Reservoirs	**REPORTED**	2024-04-04 12:15
PROJECT INFO			

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C3161
PROJECT	Monthly Reservoirs	**REPORTED**	2024-04-04 12:15

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24C3161-01) | Matrix: Water | Sampled: 2024-03-26 09:15						
Field Parameters						
Temperature, field	8.6	AO ≤ 15		°C	2024-03-26	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	HT3
Total Metals						
Manganese, total	0.0852	MAC = 0.12	0.00020	mg/L	2024-04-03	
WT# 94F9 - R-2 Pinecrest (24C3161-02) | Matrix: Water | Sampled: 2024-03-26 09:45						
Field Parameters						
Temperature, field	8.9	AO ≤ 15		°C	2024-03-26	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	HT3
Total Metals						
Manganese, total	0.355	MAC = 0.12	0.00020	mg/L	2024-04-03	
WT# 94FA R-3 Sugar Loaf (24C3161-03) | Matrix: Water | Sampled: 2024-03-26 11:10						
Field Parameters						
Temperature, field	8.7	AO ≤ 15		°C	2024-03-26	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	
Total Metals						
Manganese, total	0.0176	MAC = 0.12	0.00020	mg/L	2024-04-03	
WT# 94EB R-4 Abbott Dr 1 (24C3161-04) | Matrix: Water | Sampled: 2024-03-26 10:45						
Field Parameters						
Temperature, field	7.0	AO ≤ 15		°C	2024-03-26	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	
Total Metals						
Manganese, total	0.0131	MAC = 0.12	0.00020	mg/L	2024-04-03	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C3161
PROJECT	Monthly Reservoirs	**REPORTED**	2024-04-04 12:15

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24C3161-05) | Matrix: Water | Sampled: 2024-03-26 11:00						
Field Parameters						
Temperature, field	**6.9**	AO ≤ 15		°C	2024-03-26	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	
Total Metals						
Manganese, total	**0.00901**	MAC = 0.12	0.00020	mg/L	2024-04-03	
WT# 94FC R-5 Dragon Hill (24C3161-06) | Matrix: Water | Sampled: 2024-03-26 14:10						
Field Parameters						
Temperature, field	**7.9**	AO ≤ 15		°C	2024-03-26	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	
Total Metals						
Manganese, total	**0.0314**	MAC = 0.12	0.00020	mg/L	2024-04-03	
WT# 94FF - R-6 New Tatchell Reserv (24C3161-07) | Matrix: Water | Sampled: 2024-03-26 13:20						
Field Parameters						
Temperature, field	**7.6**	AO ≤ 15		°C	2024-03-26	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-27	
Total Metals						
Manganese, total	**0.00463**	MAC = 0.12	0.00020	mg/L	2024-04-03	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C3161
PROJECT	Monthly Reservoirs	**REPORTED**	2024-04-04 12:15

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
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

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CARO ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24E1053
PO NUMBER		**RECEIVED / TEMP**	2024-05-08 15:57 / 11.3°C
PROJECT	Monthly Reservoirs	**REPORTED**	2024-05-15 14:46
PROJECT INFO		**COC NUMBER**	No Number

Introduction:

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E1053
PROJECT	Monthly Reservoirs	**REPORTED**	2024-05-15 14:46

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24E1053-01) | Matrix: Water | Sampled: 2024-05-07 09:30						
Field Parameters						
Temperature, field	**11.6**	AO ≤ 15		°C	2024-05-07	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	HT3
Total Metals						
Manganese, total	**0.0609**	MAC = 0.12	0.00020	mg/L	2024-05-12	
WT# 94F9 - R-2 Pinecrest (24E1053-02) | Matrix: Water | Sampled: 2024-05-07 10:00						
Field Parameters						
Temperature, field	**8.8**	AO ≤ 15		°C	2024-05-07	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	HT3
Total Metals						
Manganese, total	**0.355**	MAC = 0.12	0.00020	mg/L	2024-05-12	
WT# 94FA R-3 Sugar Loaf (24E1053-03) | Matrix: Water | Sampled: 2024-05-07 11:20						
Field Parameters						
Temperature, field	**9.8**	AO ≤ 15		°C	2024-05-07	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	
Total Metals						
Manganese, total	**0.0115**	MAC = 0.12	0.00020	mg/L	2024-05-12	
WT# 94EB R-4 Abbott Dr 1 (24E1053-04) | Matrix: Water | Sampled: 2024-05-07 10:45						
Field Parameters						
Temperature, field	**10.1**	AO ≤ 15		°C	2024-05-07	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	
Total Metals						
Manganese, total	**0.00518**	MAC = 0.12	0.00020	mg/L	2024-05-12	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E1053
PROJECT	Monthly Reservoirs	**REPORTED**	2024-05-15 14:46

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24E1053-05) | Matrix: Water | Sampled: 2024-05-07 11:00						
Field Parameters						
Temperature, field	**10.2**	AO ≤ 15		°C	2024-05-07	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	
Total Metals						
Manganese, total	**0.00446**	MAC = 0.12	0.00020	mg/L	2024-05-12	
WT# 94FC R-5 Dragon Hill (24E1053-06) | Matrix: Water | Sampled: 2024-05-07 13:00						
Field Parameters						
Temperature, field	**11.0**	AO ≤ 15		°C	2024-05-07	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	
Total Metals						
Manganese, total	**0.0695**	MAC = 0.12	0.00020	mg/L	2024-05-12	
WT# 94FF - R-6 New Tatchell Reserv (24E1053-07) | Matrix: Water | Sampled: 2024-05-07 14:00						
Field Parameters						
Temperature, field	**9.6**	AO ≤ 15		°C	2024-05-07	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-08	
Total Metals						
Manganese, total	**0.0177**	MAC = 0.12	0.00020	mg/L	2024-05-12	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E1053
PROJECT	Monthly Reservoirs	**REPORTED**	2024-05-15 14:46

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

Glossary of Terms:

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CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
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

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CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E2809
PROJECT	Monthly Reservoirs	**REPORTED**	2024-05-29 09:46

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

Glossary of Terms:

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<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
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

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CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E2809
PROJECT	Monthly Reservoirs	**REPORTED**	2024-05-29 09:46

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24E2809-05) | Matrix: Water | Sampled: 2024-05-21 10:30						
Field Parameters						
Temperature, field	**9.8**	AO ≤ 15		°C	2024-05-21	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	
Total Metals						
Manganese, total	**0.00144**	MAC = 0.12	0.00020	mg/L	2024-05-28	
WT# 94FC R-5 Dragon Hill (24E2809-06) | Matrix: Water | Sampled: 2024-05-21 14:20						
Field Parameters						
Temperature, field	**9.8**	AO ≤ 15		°C	2024-05-21	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	
Total Metals						
Manganese, total	**0.0763**	MAC = 0.12	0.00020	mg/L	2024-05-28	
WT# 94FF - R-6 New Tatchell Reserv (24E2809-07) | Matrix: Water | Sampled: 2024-05-21 13:28						
Field Parameters						
Temperature, field	**10.1**	AO ≤ 15		°C	2024-05-21	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	
Total Metals						
Manganese, total	**0.0135**	MAC = 0.12	0.00020	mg/L	2024-05-28	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E2809
PROJECT	Monthly Reservoirs	**REPORTED**	2024-05-29 09:46

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24E2809-01) | Matrix: Water | Sampled: 2024-05-21 09:10						
Field Parameters						
Temperature, field	**10.1**	AO ≤ 15		°C	2024-05-21	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	HT3
Total Metals						
Manganese, total	**0.0656**	MAC = 0.12	0.00020	mg/L	2024-05-28	
WT# 94F9 - R-2 Pinecrest (24E2809-02) | Matrix: Water | Sampled: 2024-05-21 09:45						
Field Parameters						
Temperature, field	**10.3**	AO ≤ 15		°C	2024-05-21	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	HT3
Total Metals						
Manganese, total	**0.348**	MAC = 0.12	0.00020	mg/L	2024-05-28	
WT# 94FA R-3 Sugar Loaf (24E2809-03) | Matrix: Water | Sampled: 2024-05-21 11:38						
Field Parameters						
Temperature, field	**9.9**	AO ≤ 15		°C	2024-05-21	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	
Total Metals						
Manganese, total	**0.00328**	MAC = 0.12	0.00020	mg/L	2024-05-28	
WT# 94EB R-4 Abbott Dr 1 (24E2809-04) | Matrix: Water | Sampled: 2024-05-21 10:20						
Field Parameters						
Temperature, field	**10.1**	AO ≤ 15		°C	2024-05-21	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-22	
Total Metals						
Manganese, total	**0.00174**	MAC = 0.12	0.00020	mg/L	2024-05-28	

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24E2809
PO NUMBER		**RECEIVED / TEMP**	2024-05-22 14:40 / 10.8°C
PROJECT	Monthly Reservoirs	**REPORTED**	2024-05-29 09:46
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Brent Whitehead
Account Manager

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24F2552
PO NUMBER		**RECEIVED / TEMP**	2024-06-20 08:27 / 18.2°C
PROJECT	Monthly Reservoirs	**REPORTED**	2024-06-27 10:17
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24F2552
PROJECT	Monthly Reservoirs	**REPORTED**	2024-06-27 10:17

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24F2552-01) | Matrix: Water | Sampled: 2024-06-18 09:10						
Field Parameters						
Temperature, field	**10.5**	AO ≤ 15		°C	2024-06-18	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
Total Metals						
Manganese, total	**0.188**	MAC = 0.12	0.00020	mg/L	2024-06-26	
WT# 94F9 R-2 Pinecrest (24F2552-02) | Matrix: Water | Sampled: 2024-06-18 09:50						
Field Parameters						
Temperature, field	**9.1**	AO ≤ 15		°C	2024-06-18	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
Total Metals						
Manganese, total	**0.433**	MAC = 0.12	0.00020	mg/L	2024-06-25	
WT# 94FA R-3 Sugar Loaf (24F2552-03) | Matrix: Water | Sampled: 2024-06-18 11:30						
Field Parameters						
Temperature, field	**10.2**	AO ≤ 15		°C	2024-06-18	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
Total Metals						
Manganese, total	**0.00343**	MAC = 0.12	0.00020	mg/L	2024-06-24	
WT# 94EB R-4 Abbott Dr 1 (24F2552-04) | Matrix: Water | Sampled: 2024-06-18 10:30						
Field Parameters						
Temperature, field	**11.0**	AO ≤ 15		°C	2024-06-18	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
Total Metals						
Manganese, total	**0.00292**	MAC = 0.12	0.00020	mg/L	2024-06-26	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24F2552
PROJECT	Monthly Reservoirs	**REPORTED**	2024-06-27 10:17

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24F2552-05) | Matrix: Water | Sampled: 2024-06-18 10:45						
Field Parameters						
Temperature, field	**11.0**	AO ≤ 15		°C	2024-06-18	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
Total Metals						
Manganese, total	**0.00368**	MAC = 0.12	0.00020	mg/L	2024-06-26	
WT# 94FF R-6 New Tatchell Reserv (24F2552-06) | Matrix: Water | Sampled: 2024-06-18 13:30						
Field Parameters						
Temperature, field	**10.6**	AO ≤ 15		°C	2024-06-18	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-06-20	HT3
Total Metals						
Manganese, total	**0.00562**	MAC = 0.12	0.00020	mg/L	2024-06-24	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24F2552
PROJECT	Monthly Reservoirs	**REPORTED**	2024-06-27 10:17

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
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

General Comments:

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CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G2169
PROJECT	Monthly Reservoirs	**REPORTED**	2024-07-23 09:23

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

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°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
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

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CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G2169
PROJECT	Monthly Reservoirs	**REPORTED**	2024-07-23 09:23

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24G2169-05) | Matrix: Water | Sampled: 2024-07-16 09:48						
Field Parameters						
Temperature, field	**12.4**	AO ≤ 15		°C	2024-07-16	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	HT3
Total Metals						
Manganese, total	**0.00284**	MAC = 0.12	0.00020	mg/L	2024-07-19	
WT# 94FC R-5 Dragon Hill (24G2169-06) | Matrix: Water | Sampled: 2024-07-16 11:40						
Field Parameters						
Temperature, field	**12.1**	AO ≤ 15		°C	2024-07-16	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	
Total Metals						
Manganese, total	**0.0324**	MAC = 0.12	0.00020	mg/L	2024-07-19	
WT# 94FF R-6 New Tatchell Reserv (24G2169-07) | Matrix: Water | Sampled: 2024-07-16 13:20						
Field Parameters						
Temperature, field	**10.4**	AO ≤ 15		°C	2024-07-16	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	
Total Metals						
Manganese, total	**0.0141**	MAC = 0.12	0.00020	mg/L	2024-07-19	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G2169
PROJECT	Monthly Reservoirs	**REPORTED**	2024-07-23 09:23

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24G2169-01) | Matrix: Water | Sampled: 2024-07-16 14:10						
Field Parameters						
Temperature, field	**10.5**	AO ≤ 15		°C	2024-07-16	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	
Total Metals						
Manganese, total	**0.328**	MAC = 0.12	0.00020	mg/L	2024-07-19	
WT# 94F9 R-2 Pinecrest (24G2169-02) | Matrix: Water | Sampled: 2024-07-16 09:10						
Field Parameters						
Temperature, field	**12.9**	AO ≤ 15		°C	2024-07-16	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	HT3
Total Metals						
Manganese, total	**0.399**	MAC = 0.12	0.00020	mg/L	2024-07-19	
WT# 94FA R-3 Sugar Loaf (24G2169-03) | Matrix: Water | Sampled: 2024-07-16 11:00						
Field Parameters						
Temperature, field	**12.1**	AO ≤ 15		°C	2024-07-16	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	
Total Metals						
Manganese, total	**0.00848**	MAC = 0.12	0.00020	mg/L	2024-07-19	
WT# 94EB R-4 Abbott Dr 1 (24G2169-04) | Matrix: Water | Sampled: 2024-07-16 09:40						
Field Parameters						
Temperature, field	**12.5**	AO ≤ 15		°C	2024-07-16	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-17	HT3
Total Metals						
Manganese, total	**0.00287**	MAC = 0.12	0.00020	mg/L	2024-07-19	

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24G2169
PO NUMBER		**RECEIVED / TEMP**	2024-07-17 13:55 / 21.9°C
PROJECT	Monthly Reservoirs	**REPORTED**	2024-07-23 09:23
PROJECT INFO		**COC NUMBER**	No Number

Introduction:

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Big Picture Sidekicks

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

Authorized By:

Brent Whitehead
Account Manager

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24H1749
PO NUMBER		**RECEIVED / TEMP**	2024-08-14 13:39 / 16.1°C
PROJECT	Monthly Reservoirs	**REPORTED**	2024-08-21 10:54
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24H1749
PROJECT	Monthly Reservoirs	**REPORTED**	2024-08-21 10:54

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24H1749-01) | Matrix: Water | Sampled: 2024-08-13 10:40						
Field Parameters						
Temperature, field	**10.9**	AO ≤ 15		°C	2024-08-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
Total Metals						
Manganese, total	**0.147**	MAC = 0.12	0.00020	mg/L	2024-08-18	
WT# 94F9 R-2 Pinecrest (24H1749-02) | Matrix: Water | Sampled: 2024-08-13 11:30						
Field Parameters						
Temperature, field	**8.9**	AO ≤ 15		°C	2024-08-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
Total Metals						
Manganese, total	**0.425**	MAC = 0.12	0.00020	mg/L	2024-08-18	
WT# 94FA R-3 Sugar Loaf (24H1749-03) | Matrix: Water | Sampled: 2024-08-13 09:55						
Field Parameters						
Temperature, field	**12.4**	AO ≤ 15		°C	2024-08-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
Total Metals						
Manganese, total	**0.00566**	MAC = 0.12	0.00020	mg/L	2024-08-18	
WT# 94EB R-4 Abbott Dr 1 (24H1749-04) | Matrix: Water | Sampled: 2024-08-13 09:20						
Field Parameters						
Temperature, field	**13.1**	AO ≤ 15		°C	2024-08-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
Total Metals						
Manganese, total	**0.0103**	MAC = 0.12	0.00020	mg/L	2024-08-18	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24H1749
PROJECT	Monthly Reservoirs	**REPORTED**	2024-08-21 10:54

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24H1749-05) | Matrix: Water | Sampled: 2024-08-13 09:30						
Field Parameters						
Temperature, field	**13.1**	AO ≤ 15		°C	2024-08-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
Total Metals						
Manganese, total	**0.00237**	MAC = 0.12	0.00020	mg/L	2024-08-19	
WT# 94FC R-5 Dragon Hill (24H1749-06) | Matrix: Water | Sampled: 2024-08-13 14:10						
Field Parameters						
Temperature, field	**12.7**	AO ≤ 15		°C	2024-08-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
Total Metals						
Manganese, total	**0.0195**	MAC = 0.12	0.00020	mg/L	2024-08-18	
WT# 94FF R-6 New Tatchell Reserv (24H1749-07) | Matrix: Water | Sampled: 2024-08-13 13:30						
Field Parameters						
Temperature, field	**12.6**	AO ≤ 15		°C	2024-08-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-08-14	
Total Metals						
Manganese, total	**0.00807**	MAC = 0.12	0.00020	mg/L	2024-08-18	

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24H1749
PROJECT	Monthly Reservoirs	**REPORTED**	2024-08-21 10:54

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24I1335
PO NUMBER		**RECEIVED / TEMP**	2024-09-11 14:38 / 11.8°C
PROJECT	Monthly Reservoirs	**REPORTED**	2024-09-18 14:51
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I1335
PROJECT	Monthly Reservoirs	**REPORTED**	2024-09-18 14:51

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24I1335-01) | Matrix: Water | Sampled: 2024-09-10 07:45						
Field Parameters						
Temperature, field	**10.2**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
Total Metals						
Manganese, total	**0.105**	MAC = 0.12	0.00020	mg/L	2024-09-14	
WT# 94F9 R-2 Pinecrest (24I1335-02) | Matrix: Water | Sampled: 2024-09-10 08:35						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
Total Metals						
Manganese, total	**0.360**	MAC = 0.12	0.00020	mg/L	2024-09-14	
WT# 94FA R-3 Sugar Loaf (24I1335-03) | Matrix: Water | Sampled: 2024-09-10 09:05						
Field Parameters						
Temperature, field	**10.9**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
Total Metals						
Manganese, total	**0.00510**	MAC = 0.12	0.00020	mg/L	2024-09-15	
WT# 94EB R-4 Abbott Dr 1 (24I1335-04) | Matrix: Water | Sampled: 2024-09-10 09:55						
Field Parameters						
Temperature, field	**12.9**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
Total Metals						
Manganese, total	**0.00078**	MAC = 0.12	0.00020	mg/L	2024-09-14	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I1335
PROJECT	Monthly Reservoirs	**REPORTED**	2024-09-18 14:51

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24I1335-05) | Matrix: Water | Sampled: 2024-09-10 16:50						
Field Parameters						
Temperature, field	**12.9**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
Total Metals						
Manganese, total	**0.00082**	MAC = 0.12	0.00020	mg/L	2024-09-14	
WT# 94FC R-5 Dragon Hill (24I1335-06) | Matrix: Water | Sampled: 2024-09-10 13:05						
Field Parameters						
Temperature, field	**12.1**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
Total Metals						
Manganese, total	**0.0614**	MAC = 0.12	0.00020	mg/L	2024-09-14	
WT# 94FF R-6 New Tatchell Reserv (24I1335-07) | Matrix: Water | Sampled: 2024-09-10 11:25						
Field Parameters						
Temperature, field	**13.0**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
Total Metals						
Manganese, total	**0.0103**	MAC = 0.12	0.00020	mg/L	2024-09-14	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I1335
PROJECT	Monthly Reservoirs	**REPORTED**	2024-09-18 **14:51**

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
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

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CARO ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24K0642
PO NUMBER		**RECEIVED / TEMP**	2024-11-06 13:37 / 8.7°C
PROJECT	Monthly Reservoirs	**REPORTED**	2024-11-13 16:54
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Hanane El Hannaoui
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K0642
PROJECT	Monthly Reservoirs	**REPORTED**	2024-11-13 16:54

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24K0642-01) | Matrix: Water | Sampled: 2024-11-05 11:00						
Field Parameters						
Temperature, field	**8.8**	AO ≤ 15		°C	2024-11-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
Total Metals						
Manganese, total	**0.0834**	MAC = 0.12	0.00020	mg/L	2024-11-09	
WT# 94F9 R-2 Pinecrest (24K0642-02) | Matrix: Water | Sampled: 2024-11-05 11:30						
Field Parameters						
Temperature, field	**8.5**	AO ≤ 15		°C	2024-11-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
Total Metals						
Manganese, total	**0.303**	MAC = 0.12	0.00020	mg/L	2024-11-08	
WT# 94FA R-3 Sugar Loaf (24K0642-03) | Matrix: Water | Sampled: 2024-11-05 12:45						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-11-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
Total Metals						
Manganese, total	**0.00820**	MAC = 0.12	0.00020	mg/L	2024-11-08	
WT# 94EB R-4 Abbott Dr 1 (24K0642-04) | Matrix: Water | Sampled: 2024-11-05 13:30						
Field Parameters						
Temperature, field	**8.0**	AO ≤ 15		°C	2024-11-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
Total Metals						
Manganese, total	**0.00184**	MAC = 0.12	0.00020	mg/L	2024-11-08	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K0642
PROJECT	Monthly Reservoirs	**REPORTED**	2024-11-13 16:54

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24K0642-05) | Matrix: Water | Sampled: 2024-11-05 13:35						
Field Parameters						
Temperature, field	**8.3**	AO ≤ 15		°C	2024-11-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
Total Metals						
Manganese, total	**0.00100**	MAC = 0.12	0.00020	mg/L	2024-11-08	
WT# 94FC R-5 Dragon Hill (24K0642-06) | Matrix: Water | Sampled: 2024-11-05 09:10						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-11-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
Total Metals						
Manganese, total	**0.0528**	MAC = 0.12	0.00020	mg/L	2024-11-08	
WT# 94FF R-6 New Tatchell Reserv (24K0642-07) | Matrix: Water | Sampled: 2024-11-05 10:00						
Field Parameters						
Temperature, field	**9.6**	AO ≤ 15		°C	2024-11-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-06	
Total Metals						
Manganese, total	**0.00323**	MAC = 0.12	0.00020	mg/L	2024-11-08	

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K0642
PROJECT	Monthly Reservoirs	**REPORTED**	2024-11-13 16:54

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

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AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
EPA	United States Environmental Protection Agency Test Methods
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CARO ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24L0841
PO NUMBER		**RECEIVED / TEMP**	2024-12-06 14:34 / 3.1°C
PROJECT	Monthly Reservoirs	**REPORTED**	2024-12-10 19:38
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Hanane El Hannaoui
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24L0841
PROJECT	Monthly Reservoirs	**REPORTED**	2024-12-10 19:38

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EA R-1 Shadow Heights (24L0841-01) | Matrix: Water | Sampled: 2024-12-05 11:35						
Field Parameters						
Temperature, field	**7.2**	AO ≤ 15		°C	2024-12-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
Total Metals						
Manganese, total	**0.0990**	MAC = 0.12	0.00020	mg/L	2024-12-10	
WT# 94F9 R-2 Pinecrest (24L0841-02) | Matrix: Water | Sampled: 2024-12-05 10:00						
Field Parameters						
Temperature, field	**7.5**	AO ≤ 15		°C	2024-12-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
Total Metals						
Manganese, total	**0.398**	MAC = 0.12	0.00020	mg/L	2024-12-10	
WT# 94FA R-3 Sugar Loaf (24L0841-03) | Matrix: Water | Sampled: 2024-12-05 13:55						
Field Parameters						
Temperature, field	**7.3**	AO ≤ 15		°C	2024-12-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
Total Metals						
Manganese, total	**0.0120**	MAC = 0.12	0.00020	mg/L	2024-12-10	
WT# 94EB R-4 Abbott Dr 1 (24L0841-04) | Matrix: Water | Sampled: 2024-12-05 09:15						
Field Parameters						
Temperature, field	**7.1**	AO ≤ 15		°C	2024-12-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
Total Metals						
Manganese, total	**0.00199**	MAC = 0.12	0.00020	mg/L	2024-12-10	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24L0841
PROJECT	Monthly Reservoirs	**REPORTED**	2024-12-10 19:38

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94EC R-4 Abbott Dr 2 (24L0841-05) | Matrix: Water | Sampled: 2024-12-05 09:30						
Field Parameters						
Temperature, field	**7.1**	AO ≤ 15		°C	2024-12-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
Total Metals						
Manganese, total	**0.00224**	MAC = 0.12	0.00020	mg/L	2024-12-10	
WT# 94FC R-5 Dragon Hill (24L0841-06) | Matrix: Water | Sampled: 2024-12-05 13:00						
Field Parameters						
Temperature, field	**7.3**	AO ≤ 15		°C	2024-12-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
Total Metals						
Manganese, total	**0.0646**	MAC = 0.12	0.00020	mg/L	2024-12-10	
WT# 94FF R-6 New Tatchell Reserv (24L0841-07) | Matrix: Water | Sampled: 2024-12-05 10:45						
Field Parameters						
Temperature, field	**7.3**	AO ≤ 15		°C	2024-12-05	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-06	
Total Metals						
Manganese, total	**0.0877**	MAC = 0.12	0.00020	mg/L	2024-12-10	

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24L0841
PROJECT	Monthly Reservoirs	**REPORTED**	2024-12-10 19:38

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24G0554
PO NUMBER		**RECEIVED / TEMP**	2024-07-04 15:42 / 12.7°C
PROJECT	Annual	**REPORTED**	2024-07-12 16:08
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO Quesnel, City of
PROJECT Annual

WORK ORDER 24G0554
REPORTED 2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24G0554-01) | Matrix: Water | Sampled: 2024-07-03 10:21						
Anions						
Chloride	**8.18**	AO ≤ 250	0.10	mg/L	2024-07-06	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2024-07-06	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-07-06	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-07-06	
Sulfate	**17.0**	AO ≤ 500	1.0	mg/L	2024-07-06	
Calculated Parameters						
Aggressiveness Index	**12.0**	N/A		-	2024-07-12	CT6
Hardness, Dissolved (as CaCO3)	**218**	N/A	0.500	mg/L	N/A	
Langelier Index	**-0.03**	N/A	-5.0		2024-07-12	CT6
Dissolved Metals						
Aluminum, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Antimony, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Arsenic, dissolved	**0.00152**	N/A	0.00050	mg/L	2024-07-10	
Barium, dissolved	**0.0636**	N/A	0.0050	mg/L	2024-07-10	
Beryllium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Boron, dissolved	< 0.0500	N/A	0.0500	mg/L	2024-07-10	
Cadmium, dissolved	< 0.000010	N/A	0.000010	mg/L	2024-07-10	
Calcium, dissolved	**56.5**	N/A	0.20	mg/L	2024-07-10	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Cobalt, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Copper, dissolved	**0.00218**	N/A	0.00040	mg/L	2024-07-10	
Iron, dissolved	< 0.010	N/A	0.010	mg/L	2024-07-10	
Lead, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Lithium, dissolved	**0.00113**	N/A	0.00010	mg/L	2024-07-10	
Magnesium, dissolved	**18.6**	N/A	0.010	mg/L	2024-07-10	
Manganese, dissolved	**0.486**	N/A	0.00020	mg/L	2024-07-10	
Mercury, dissolved	< 0.000040	N/A	0.000040	mg/L	2024-07-10	HG1
Molybdenum, dissolved	**0.00196**	N/A	0.00010	mg/L	2024-07-10	
Nickel, dissolved	**0.00093**	N/A	0.00040	mg/L	2024-07-10	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2024-07-10	
Potassium, dissolved	**2.78**	N/A	0.10	mg/L	2024-07-10	
Selenium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Silicon, dissolved	**11.4**	N/A	1.0	mg/L	2024-07-10	
Silver, dissolved	< 0.000050	N/A	0.000050	mg/L	2024-07-10	
Sodium, dissolved	**9.06**	N/A	0.10	mg/L	2024-07-10	
Strontium, dissolved	**0.293**	N/A	0.0010	mg/L	2024-07-10	
Sulfur, dissolved	**6.1**	N/A	3.0	mg/L	2024-07-10	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Thallium, dissolved	< 0.000020	N/A	0.000020	mg/L	2024-07-10	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24G0554-01) | Matrix: Water | Sampled: 2024-07-03 10:21, Continued						
Dissolved Metals, Continued						
Titanium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2024-07-10	
Uranium, dissolved	**0.000482**	N/A	0.000020	mg/L	2024-07-10	
Vanadium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Zinc, dissolved	< 0.0040	N/A	0.0040	mg/L	2024-07-10	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
General Parameters						
Alkalinity, Total (as CaCO3)	**202**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Bicarbonate (as CaCO3)	**202**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2024-07-06	
Conductivity (EC)	**448**	N/A	2.0	µS/cm	2024-07-08	
pH	**7.50**	7.0-10.5	0.10	pH units	2024-07-08	HT2
Solids, Total Dissolved	**239**	AO ≤ 500	15	mg/L	2024-07-09	
Temperature, at pH	**21.4**	N/A		°C	2024-07-08	HT2
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-07-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	
Total Metals						
Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2024-07-10	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2024-07-10	
Arsenic, total	**0.00154**	MAC = 0.01	0.00050	mg/L	2024-07-10	
Barium, total	**0.0619**	MAC = 2	0.0050	mg/L	2024-07-10	
Beryllium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2024-07-10	
Cadmium, total	**0.000010**	MAC = 0.007	0.000010	mg/L	2024-07-10	
Calcium, total	**59.2**	None Required	0.20	mg/L	2024-07-10	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2024-07-10	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Copper, total	**0.00170**	MAC = 2	0.00040	mg/L	2024-07-10	
Iron, total	**0.015**	AO ≤ 0.3	0.010	mg/L	2024-07-10	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2024-07-10	
Lithium, total	**0.00115**	N/A	0.00010	mg/L	2024-07-10	
Magnesium, total	**20.2**	None Required	0.010	mg/L	2024-07-10	
Manganese, total	**0.469**	MAC = 0.12	0.00020	mg/L	2024-07-10	
Mercury, total	< 0.000040	MAC = 0.001	0.000040	mg/L	2024-07-10	HG1
Molybdenum, total	**0.00198**	N/A	0.00010	mg/L	2024-07-10	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24G0554-01) | Matrix: Water | Sampled: 2024-07-03 10:21, Continued						
Total Metals, Continued						
Nickel, total	**0.00090**	N/A	0.00040	mg/L	2024-07-10	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2024-07-10	
Potassium, total	**2.85**	N/A	0.10	mg/L	2024-07-10	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2024-07-10	
Silicon, total	**11.8**	N/A	1.0	mg/L	2024-07-10	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2024-07-10	
Sodium, total	**9.04**	AO ≤ 200	0.10	mg/L	2024-07-10	
Strontium, total	**0.279**	MAC = 7	0.0010	mg/L	2024-07-10	
Sulfur, total	**6.4**	N/A	3.0	mg/L	2024-07-10	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Thallium, total	< 0.000020	N/A	0.000020	mg/L	2024-07-10	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Tin, total	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Titanium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Tungsten, total	< 0.0010	N/A	0.0010	mg/L	2024-07-10	
Uranium, total	**0.000524**	MAC = 0.02	0.000020	mg/L	2024-07-10	
Vanadium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2024-07-10	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	MAC = 5	0.5	µg/L	2024-07-09	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Bromoform	< 1.0	N/A	1.0	µg/L	2024-07-09	
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2024-07-09	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2024-07-09	
Chloroethane	< 2.0	N/A	2.0	µg/L	2024-07-09	
Chloroform	< 1.0	N/A	1.0	µg/L	2024-07-09	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2024-07-09	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2024-07-09	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2024-07-09	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2024-07-09	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0	µg/L	2024-07-09	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-09	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-09	
Dichloromethane	< 3.0	MAC = 50	3.0	µg/L	2024-07-09	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0	µg/L	2024-07-09	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2024-07-09	

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24G0554-01) | Matrix: Water | Sampled: 2024-07-03 10:21, Continued						
Volatile Organic Compounds (VOC), Continued						
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2024-07-09	
Styrene	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2024-07-09	
Tetrachloroethylene	< 1.0	MAC = 10	1.0	µg/L	2024-07-09	
Toluene	< 1.0	MAC = 60	1.0	µg/L	2024-07-09	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Trichloroethylene	< 1.0	MAC = 5	1.0	µg/L	2024-07-09	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2024-07-09	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2024-07-09	
Surrogate: Toluene-d8	*76*		*70-130*	%	*2024-07-09*	
Surrogate: 4-Bromofluorobenzene	*72*		*70-130*	%	*2024-07-09*	
Surrogate: 1,4-Dichlorobenzene-d4	*87*		*70-130*	%	*2024-07-09*	
WT# 94DC - Well 6 Rolph/Robertson (24G0554-02) | Matrix: Water | Sampled: 2024-07-03 10:36						
Anions						
Chloride	**17.9**	AO ≤ 250	0.10	mg/L	2024-07-06	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2024-07-06	
Nitrate (as N)	**0.011**	MAC = 10	0.010	mg/L	2024-07-06	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-07-06	
Sulfate	**26.5**	AO ≤ 500	1.0	mg/L	2024-07-06	
Calculated Parameters						
Aggressiveness Index	**12.3**	N/A		-	2024-07-12	CT6
Hardness, Dissolved (as CaCO3)	**284**	N/A	0.500	mg/L	N/A	
Langelier Index	**0.3**	N/A	-5.0		2024-07-12	CT6
Dissolved Metals						
Aluminum, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Antimony, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Arsenic, dissolved	**0.00055**	N/A	0.00050	mg/L	2024-07-10	
Barium, dissolved	**0.0826**	N/A	0.0050	mg/L	2024-07-10	
Beryllium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Boron, dissolved	< 0.0500	N/A	0.0500	mg/L	2024-07-10	
Cadmium, dissolved	**0.000030**	N/A	0.000010	mg/L	2024-07-10	
Calcium, dissolved	**74.9**	N/A	0.20	mg/L	2024-07-10	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Cobalt, dissolved	**0.00011**	N/A	0.00010	mg/L	2024-07-10	
Copper, dissolved	**0.00299**	N/A	0.00040	mg/L	2024-07-10	
Iron, dissolved	< 0.010	N/A	0.010	mg/L	2024-07-10	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DC - Well 6 Rolph/Robertson (24G0554-02) | Matrix: Water | Sampled: 2024-07-03 10:36, Continued						
Dissolved Metals, Continued						
Lead, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Lithium, dissolved	**0.00184**	N/A	0.00010	mg/L	2024-07-10	
Magnesium, dissolved	**23.4**	N/A	0.010	mg/L	2024-07-10	
Manganese, dissolved	**0.202**	N/A	0.00020	mg/L	2024-07-10	
Mercury, dissolved	< 0.000040	N/A	0.000040	mg/L	2024-07-10	HG1
Molybdenum, dissolved	**0.00147**	N/A	0.00010	mg/L	2024-07-10	
Nickel, dissolved	**0.00206**	N/A	0.00040	mg/L	2024-07-10	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2024-07-10	
Potassium, dissolved	**3.86**	N/A	0.10	mg/L	2024-07-10	
Selenium, dissolved	**0.00072**	N/A	0.00050	mg/L	2024-07-10	
Silicon, dissolved	**10.7**	N/A	1.0	mg/L	2024-07-10	
Silver, dissolved	< 0.000050	N/A	0.000050	mg/L	2024-07-10	
Sodium, dissolved	**10.5**	N/A	0.10	mg/L	2024-07-10	
Strontium, dissolved	**0.358**	N/A	0.0010	mg/L	2024-07-10	
Sulfur, dissolved	**9.3**	N/A	3.0	mg/L	2024-07-10	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Thallium, dissolved	< 0.000020	N/A	0.000020	mg/L	2024-07-10	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Titanium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2024-07-10	
Uranium, dissolved	**0.00102**	N/A	0.000020	mg/L	2024-07-10	
Vanadium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Zinc, dissolved	< 0.0040	N/A	0.0040	mg/L	2024-07-10	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
General Parameters						
Alkalinity, Total (as CaCO3)	**251**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Bicarbonate (as CaCO3)	**251**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2024-07-06	
Conductivity (EC)	**583**	N/A	2.0	µS/cm	2024-07-08	
pH	**7.60**	7.0-10.5	0.10	pH units	2024-07-08	HT2
Solids, Total Dissolved	**308**	AO ≤ 500	15	mg/L	2024-07-09	
Temperature, at pH	**21.0**	N/A		°C	2024-07-08	HT2
Turbidity	**0.23**	OG < 1	0.10	NTU	2024-07-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DC - Well 6 Rolph/Robertson (24G0554-02) | Matrix: Water | Sampled: 2024-07-03 10:36, Continued						
Total Metals						
Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2024-07-10	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2024-07-10	
Arsenic, total	**0.00065**	MAC = 0.01	0.00050	mg/L	2024-07-10	
Barium, total	**0.0808**	MAC = 2	0.0050	mg/L	2024-07-10	
Beryllium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2024-07-10	
Cadmium, total	**0.000033**	MAC = 0.007	0.000010	mg/L	2024-07-10	
Calcium, total	**78.3**	None Required	0.20	mg/L	2024-07-10	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2024-07-10	
Cobalt, total	**0.00011**	N/A	0.00010	mg/L	2024-07-10	
Copper, total	**0.00272**	MAC = 2	0.00040	mg/L	2024-07-10	
Iron, total	**0.024**	AO ≤ 0.3	0.010	mg/L	2024-07-10	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2024-07-10	
Lithium, total	**0.00195**	N/A	0.00010	mg/L	2024-07-10	
Magnesium, total	**26.5**	None Required	0.010	mg/L	2024-07-10	
Manganese, total	**0.211**	MAC = 0.12	0.00020	mg/L	2024-07-10	
Mercury, total	< 0.000040	MAC = 0.001	0.000040	mg/L	2024-07-10	HG1
Molybdenum, total	**0.00145**	N/A	0.00010	mg/L	2024-07-10	
Nickel, total	**0.00227**	N/A	0.00040	mg/L	2024-07-10	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2024-07-10	
Potassium, total	**3.88**	N/A	0.10	mg/L	2024-07-10	
Selenium, total	**0.00067**	MAC = 0.05	0.00050	mg/L	2024-07-10	
Silicon, total	**11.2**	N/A	1.0	mg/L	2024-07-10	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2024-07-10	
Sodium, total	**11.0**	AO ≤ 200	0.10	mg/L	2024-07-10	
Strontium, total	**0.346**	MAC = 7	0.0010	mg/L	2024-07-10	
Sulfur, total	**9.7**	N/A	3.0	mg/L	2024-07-10	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Thallium, total	< 0.000020	N/A	0.000020	mg/L	2024-07-10	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Tin, total	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Titanium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Tungsten, total	< 0.0010	N/A	0.0010	mg/L	2024-07-10	
Uranium, total	**0.00109**	MAC = 0.02	0.000020	mg/L	2024-07-10	
Vanadium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Zinc, total	**0.0042**	AO ≤ 5	0.0040	mg/L	2024-07-10	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	MAC = 5	0.5	µg/L	2024-07-10	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2024-07-10	
Bromoform	< 1.0	N/A	1.0	µg/L	2024-07-10	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DC - Well 6 Rolph/Robertson (24G0554-02) | Matrix: Water | Sampled: 2024-07-03 10:36, Continued						
Volatile Organic Compounds (VOC), Continued						
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2024-07-10	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2024-07-10	
Chloroethane	< 2.0	N/A	2.0	µg/L	2024-07-10	
Chloroform	< 1.0	N/A	1.0	µg/L	2024-07-10	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2024-07-10	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2024-07-10	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2024-07-10	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2024-07-10	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2024-07-10	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2024-07-10	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-10	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2024-07-10	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0	µg/L	2024-07-10	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-10	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-10	
Dichloromethane	< 3.0	MAC = 50	3.0	µg/L	2024-07-10	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2024-07-10	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0	µg/L	2024-07-10	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2024-07-10	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2024-07-10	
Styrene	< 1.0	N/A	1.0	µg/L	2024-07-10	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2024-07-10	
Tetrachloroethylene	< 1.0	MAC = 10	1.0	µg/L	2024-07-10	
Toluene	< 1.0	MAC = 60	1.0	µg/L	2024-07-10	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-10	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-10	
Trichloroethylene	< 1.0	MAC = 5	1.0	µg/L	2024-07-10	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2024-07-10	
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2024-07-10	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2024-07-10	
Surrogate: Toluene-d8	*81*		*70-130*	%	*2024-07-10*	
Surrogate: 4-Bromofluorobenzene	*77*		*70-130*	%	*2024-07-10*	
Surrogate: 1,4-Dichlorobenzene-d4	*93*		*70-130*	%	*2024-07-10*	
WT# 94E0 - Well 7 N. Fraser Drive (24G0554-03) | Matrix: Water | Sampled: 2024-07-03 13:07						
Anions						
Chloride	**8.31**	AO ≤ 250	0.10	mg/L	2024-07-06	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2024-07-06	
Nitrate (as N)	**0.066**	MAC = 10	0.010	mg/L	2024-07-06	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-07-06	
Sulfate	**19.8**	AO ≤ 500	1.0	mg/L	2024-07-06	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E0 - Well 7 N. Fraser Drive (24G0554-03) | Matrix: Water | Sampled: 2024-07-03 13:07, Continued						
Calculated Parameters						
Aggressiveness Index	**11.8**	N/A		-	2024-07-12	CT6
Hardness, Dissolved (as CaCO3)	**202**	N/A	0.500	mg/L	N/A	
Langelier Index	**-0.2**	N/A	-5.0		2024-07-12	CT6
Dissolved Metals						
Aluminum, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Antimony, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Arsenic, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Barium, dissolved	**0.0344**	N/A	0.0050	mg/L	2024-07-10	
Beryllium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Boron, dissolved	< 0.0500	N/A	0.0500	mg/L	2024-07-10	
Cadmium, dissolved	< 0.000010	N/A	0.000010	mg/L	2024-07-10	
Calcium, dissolved	**55.9**	N/A	0.20	mg/L	2024-07-10	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Cobalt, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Copper, dissolved	**0.00221**	N/A	0.00040	mg/L	2024-07-10	
Iron, dissolved	< 0.010	N/A	0.010	mg/L	2024-07-10	
Lead, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Lithium, dissolved	**0.00139**	N/A	0.00010	mg/L	2024-07-10	
Magnesium, dissolved	**15.1**	N/A	0.010	mg/L	2024-07-10	
Manganese, dissolved	**0.0221**	N/A	0.00020	mg/L	2024-07-10	
Mercury, dissolved	< 0.000040	N/A	0.000040	mg/L	2024-07-10	HG1
Molybdenum, dissolved	**0.00114**	N/A	0.00010	mg/L	2024-07-10	
Nickel, dissolved	**0.00079**	N/A	0.00040	mg/L	2024-07-10	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2024-07-10	
Potassium, dissolved	**1.92**	N/A	0.10	mg/L	2024-07-10	
Selenium, dissolved	**0.00191**	N/A	0.00050	mg/L	2024-07-10	
Silicon, dissolved	**6.3**	N/A	1.0	mg/L	2024-07-10	
Silver, dissolved	< 0.000050	N/A	0.000050	mg/L	2024-07-10	
Sodium, dissolved	**6.83**	N/A	0.10	mg/L	2024-07-10	
Strontium, dissolved	**0.229**	N/A	0.0010	mg/L	2024-07-10	
Sulfur, dissolved	**7.0**	N/A	3.0	mg/L	2024-07-10	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Thallium, dissolved	< 0.000020	N/A	0.000020	mg/L	2024-07-10	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Titanium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2024-07-10	
Uranium, dissolved	**0.000861**	N/A	0.000020	mg/L	2024-07-10	
Vanadium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Zinc, dissolved	< 0.0040	N/A	0.0040	mg/L	2024-07-10	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E0 - Well 7 N. Fraser Drive (24G0554-03) | Matrix: Water | Sampled: 2024-07-03 13:07, Continued						
General Parameters						
Alkalinity, Total (as CaCO3)	**178**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Bicarbonate (as CaCO3)	**178**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2024-07-06	
Conductivity (EC)	**414**	N/A	2.0	µS/cm	2024-07-08	
pH	**7.42**	7.0-10.5	0.10	pH units	2024-07-08	HT2
Solids, Total Dissolved	**208**	AO ≤ 500	15	mg/L	2024-07-09	
Temperature, at pH	**20.9**	N/A		°C	2024-07-08	HT2
Turbidity	**0.12**	OG < 1	0.10	NTU	2024-07-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	
Background Colonies	**>200**	N/A	200	CFU/100 mL	2024-07-04	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	
Total Metals						
Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2024-07-10	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2024-07-10	
Arsenic, total	**0.00051**	MAC = 0.01	0.00050	mg/L	2024-07-10	
Barium, total	**0.0334**	MAC = 2	0.0050	mg/L	2024-07-10	
Beryllium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2024-07-10	
Cadmium, total	< 0.000010	MAC = 0.007	0.000010	mg/L	2024-07-10	
Calcium, total	**57.4**	None Required	0.20	mg/L	2024-07-10	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2024-07-10	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Copper, total	**0.00179**	MAC = 2	0.00040	mg/L	2024-07-10	
Iron, total	**0.013**	AO ≤ 0.3	0.010	mg/L	2024-07-10	
Lead, total	**0.00035**	MAC = 0.005	0.00020	mg/L	2024-07-10	
Lithium, total	**0.00153**	N/A	0.00010	mg/L	2024-07-10	
Magnesium, total	**16.7**	None Required	0.010	mg/L	2024-07-10	
Manganese, total	**0.0228**	MAC = 0.12	0.00020	mg/L	2024-07-10	
Mercury, total	< 0.000040	MAC = 0.001	0.000040	mg/L	2024-07-10	HG1
Molybdenum, total	**0.00111**	N/A	0.00010	mg/L	2024-07-10	
Nickel, total	**0.00092**	N/A	0.00040	mg/L	2024-07-10	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2024-07-10	
Potassium, total	**2.02**	N/A	0.10	mg/L	2024-07-10	
Selenium, total	**0.00172**	MAC = 0.05	0.00050	mg/L	2024-07-10	
Silicon, total	**6.9**	N/A	1.0	mg/L	2024-07-10	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2024-07-10	
Sodium, total	**6.93**	AO ≤ 200	0.10	mg/L	2024-07-10	

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E0 - Well 7 N. Fraser Drive (24G0554-03) | Matrix: Water | Sampled: 2024-07-03 13:07, Continued						
Total Metals, Continued						
Strontium, total	**0.235**	MAC = 7	0.0010	mg/L	2024-07-10	
Sulfur, total	**7.2**	N/A	3.0	mg/L	2024-07-10	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Thallium, total	< 0.000020	N/A	0.000020	mg/L	2024-07-10	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Tin, total	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Titanium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Tungsten, total	< 0.0010	N/A	0.0010	mg/L	2024-07-10	
Uranium, total	**0.000923**	MAC = 0.02	0.000020	mg/L	2024-07-10	
Vanadium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2024-07-10	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	MAC = 5	0.5	µg/L	2024-07-09	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Bromoform	< 1.0	N/A	1.0	µg/L	2024-07-09	
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2024-07-09	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2024-07-09	
Chloroethane	< 2.0	N/A	2.0	µg/L	2024-07-09	
Chloroform	< 1.0	N/A	1.0	µg/L	2024-07-09	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2024-07-09	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2024-07-09	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2024-07-09	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2024-07-09	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0	µg/L	2024-07-09	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-09	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-09	
Dichloromethane	< 3.0	MAC = 50	3.0	µg/L	2024-07-09	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0	µg/L	2024-07-09	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2024-07-09	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2024-07-09	
Styrene	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2024-07-09	
Tetrachloroethylene	< 1.0	MAC = 10	1.0	µg/L	2024-07-09	
Toluene	< 1.0	MAC = 60	1.0	µg/L	2024-07-09	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E0 - Well 7 N. Fraser Drive (24G0554-03) | Matrix: Water | Sampled: 2024-07-03 13:07, Continued						
Volatile Organic Compounds (VOC), Continued						
Trichloroethylene	< 1.0	MAC = 5	1.0	µg/L	2024-07-09	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2024-07-09	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2024-07-09	
Surrogate: Toluene-d8	*80*		*70-130*	%	*2024-07-09*	
Surrogate: 4-Bromofluorobenzene	*73*		*70-130*	%	*2024-07-09*	
Surrogate: 1,4-Dichlorobenzene-d4	*86*		*70-130*	%	*2024-07-09*	
WT# 94E1 - Well 8 Hillborn Road (24G0554-04) | Matrix: Water | Sampled: 2024-07-03 11:27						
Anions						
Chloride	**5.11**	AO ≤ 250	0.10	mg/L	2024-07-06	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2024-07-06	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-07-06	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-07-06	
Sulfate	**42.1**	AO ≤ 500	1.0	mg/L	2024-07-06	
Calculated Parameters						
Aggressiveness Index	**12.1**	N/A		-	2024-07-12	CT6
Hardness, Dissolved (as CaCO3)	**201**	N/A	0.500	mg/L	N/A	
Langelier Index	**0.08**	N/A	-5.0		2024-07-12	CT6
Dissolved Metals						
Aluminum, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Antimony, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Arsenic, dissolved	**0.00112**	N/A	0.00050	mg/L	2024-07-10	
Barium, dissolved	**0.121**	N/A	0.0050	mg/L	2024-07-10	
Beryllium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Boron, dissolved	< 0.0500	N/A	0.0500	mg/L	2024-07-10	
Cadmium, dissolved	< 0.000010	N/A	0.000010	mg/L	2024-07-10	
Calcium, dissolved	**60.5**	N/A	0.20	mg/L	2024-07-10	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Cobalt, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Copper, dissolved	**0.00087**	N/A	0.00040	mg/L	2024-07-10	
Iron, dissolved	< 0.010	N/A	0.010	mg/L	2024-07-10	
Lead, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Lithium, dissolved	**0.00069**	N/A	0.00010	mg/L	2024-07-10	
Magnesium, dissolved	**12.0**	N/A	0.010	mg/L	2024-07-10	
Manganese, dissolved	**0.246**	N/A	0.00020	mg/L	2024-07-10	
Mercury, dissolved	< 0.000040	N/A	0.000040	mg/L	2024-07-10	HG1
Molybdenum, dissolved	**0.00158**	N/A	0.00010	mg/L	2024-07-10	
Nickel, dissolved	**0.00316**	N/A	0.00040	mg/L	2024-07-10	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E1 - Well 8 Hillborn Road (24G0554-04) | Matrix: Water | Sampled: 2024-07-03 11:27, Continued						
Dissolved Metals, Continued						
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2024-07-10	
Potassium, dissolved	**1.38**	N/A	0.10	mg/L	2024-07-10	
Selenium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Silicon, dissolved	**6.2**	N/A	1.0	mg/L	2024-07-10	
Silver, dissolved	< 0.000050	N/A	0.000050	mg/L	2024-07-10	
Sodium, dissolved	**6.43**	N/A	0.10	mg/L	2024-07-10	
Strontium, dissolved	**0.390**	N/A	0.0010	mg/L	2024-07-10	
Sulfur, dissolved	**14.2**	N/A	3.0	mg/L	2024-07-10	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Thallium, dissolved	< 0.000020	N/A	0.000020	mg/L	2024-07-10	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Titanium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2024-07-10	
Uranium, dissolved	**0.00141**	N/A	0.000020	mg/L	2024-07-10	
Vanadium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Zinc, dissolved	< 0.0040	N/A	0.0040	mg/L	2024-07-10	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
General Parameters						
Alkalinity, Total (as CaCO3)	**162**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Bicarbonate (as CaCO3)	**162**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2024-07-06	
Conductivity (EC)	**412**	N/A	2.0	µS/cm	2024-07-08	
pH	**7.68**	7.0-10.5	0.10	pH units	2024-07-08	HT2
Solids, Total Dissolved	**225**	AO ≤ 500	15	mg/L	2024-07-09	
Temperature, at pH	**21.4**	N/A		°C	2024-07-08	HT2
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-07-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	
Total Metals						
Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2024-07-10	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2024-07-10	
Arsenic, total	**0.00117**	MAC = 0.01	0.00050	mg/L	2024-07-10	
Barium, total	**0.118**	MAC = 2	0.0050	mg/L	2024-07-10	
Beryllium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2024-07-10	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO Quesnel, City of
PROJECT Annual

WORK ORDER 24G0554
REPORTED 2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E1 - Well 8 Hillborn Road (24G0554-04) | Matrix: Water | Sampled: 2024-07-03 11:27, Continued						
Total Metals, Continued						
Cadmium, total	< 0.000010	MAC = 0.007	0.000010	mg/L	2024-07-10	
Calcium, total	**62.6**	None Required	0.20	mg/L	2024-07-10	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2024-07-10	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Copper, total	**0.00043**	MAC = 2	0.00040	mg/L	2024-07-10	
Iron, total	**0.011**	AO ≤ 0.3	0.010	mg/L	2024-07-10	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2024-07-10	
Lithium, total	**0.00072**	N/A	0.00010	mg/L	2024-07-10	
Magnesium, total	**13.4**	None Required	0.010	mg/L	2024-07-10	
Manganese, total	**0.254**	MAC = 0.12	0.00020	mg/L	2024-07-10	
Mercury, total	< 0.000040	MAC = 0.001	0.000040	mg/L	2024-07-10	HG1
Molybdenum, total	**0.00153**	N/A	0.00010	mg/L	2024-07-10	
Nickel, total	**0.00324**	N/A	0.00040	mg/L	2024-07-10	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2024-07-10	
Potassium, total	**1.45**	N/A	0.10	mg/L	2024-07-10	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2024-07-10	
Silicon, total	**6.9**	N/A	1.0	mg/L	2024-07-10	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2024-07-10	
Sodium, total	**6.32**	AO ≤ 200	0.10	mg/L	2024-07-10	
Strontium, total	**0.366**	MAC = 7	0.0010	mg/L	2024-07-10	
Sulfur, total	**15.4**	N/A	3.0	mg/L	2024-07-10	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Thallium, total	< 0.000020	N/A	0.000020	mg/L	2024-07-10	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Tin, total	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Titanium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Tungsten, total	< 0.0010	N/A	0.0010	mg/L	2024-07-10	
Uranium, total	**0.00153**	MAC = 0.02	0.000020	mg/L	2024-07-10	
Vanadium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2024-07-10	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	MAC = 5	0.5	µg/L	2024-07-09	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Bromoform	< 1.0	N/A	1.0	µg/L	2024-07-09	
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2024-07-09	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2024-07-09	
Chloroethane	< 2.0	N/A	2.0	µg/L	2024-07-09	
Chloroform	< 1.0	N/A	1.0	µg/L	2024-07-09	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2024-07-09	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2024-07-09	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E1 - Well 8 Hillborn Road (24G0554-04) | Matrix: Water | Sampled: 2024-07-03 11:27, Continued						
Volatile Organic Compounds (VOC), Continued						
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2024-07-09	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2024-07-09	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2024-07-09	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0	µg/L	2024-07-09	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-09	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-09	
Dichloromethane	< 3.0	MAC = 50	3.0	µg/L	2024-07-09	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0	µg/L	2024-07-09	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2024-07-09	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2024-07-09	
Styrene	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2024-07-09	
Tetrachloroethylene	< 1.0	MAC = 10	1.0	µg/L	2024-07-09	
Toluene	< 1.0	MAC = 60	1.0	µg/L	2024-07-09	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Trichloroethylene	< 1.0	MAC = 5	1.0	µg/L	2024-07-09	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2024-07-09	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2024-07-09	
Surrogate: Toluene-d8	*78*		*70-130*	%	*2024-07-09*	
Surrogate: 4-Bromofluorobenzene	*74*		*70-130*	%	*2024-07-09*	
Surrogate: 1,4-Dichlorobenzene-d4	*86*		*70-130*	%	*2024-07-09*	
WT# 94DF - Well 9 Carson Sub (24G0554-05) | Matrix: Water | Sampled: 2024-07-03 13:40						
Anions						
Chloride	**3.56**	AO ≤ 250	0.10	mg/L	2024-07-06	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2024-07-06	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-07-06	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-07-06	
Sulfate	**19.5**	AO ≤ 500	1.0	mg/L	2024-07-06	
Calculated Parameters						
Aggressiveness Index	**11.2**	N/A		-	2024-07-12	CT6
Hardness, Dissolved (as CaCO3)	**121**	N/A	0.500	mg/L	N/A	
Langelier Index	**-0.8**	N/A	-5.0		2024-07-12	CT6
Dissolved Metals						
Aluminum, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO Quesnel, City of
PROJECT Annual

WORK ORDER 24G0554
REPORTED 2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DF - Well 9 Carson Sub (24G0554-05) | Matrix: Water | Sampled: 2024-07-03 13:40, Continued						
Dissolved Metals, Continued						
Antimony, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Arsenic, dissolved	**0.00093**	N/A	0.00050	mg/L	2024-07-10	
Barium, dissolved	**0.0768**	N/A	0.0050	mg/L	2024-07-10	
Beryllium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Boron, dissolved	< 0.0500	N/A	0.0500	mg/L	2024-07-10	
Cadmium, dissolved	< 0.000010	N/A	0.000010	mg/L	2024-07-10	
Calcium, dissolved	**35.3**	N/A	0.20	mg/L	2024-07-10	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Cobalt, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Copper, dissolved	**0.00100**	N/A	0.00040	mg/L	2024-07-10	
Iron, dissolved	< 0.010	N/A	0.010	mg/L	2024-07-10	
Lead, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Lithium, dissolved	**0.00137**	N/A	0.00010	mg/L	2024-07-10	
Magnesium, dissolved	**7.89**	N/A	0.010	mg/L	2024-07-10	
Manganese, dissolved	**0.153**	N/A	0.00020	mg/L	2024-07-10	
Mercury, dissolved	< 0.000040	N/A	0.000040	mg/L	2024-07-10	HG1
Molybdenum, dissolved	**0.00161**	N/A	0.00010	mg/L	2024-07-10	
Nickel, dissolved	< 0.00040	N/A	0.00040	mg/L	2024-07-10	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2024-07-10	
Potassium, dissolved	**0.91**	N/A	0.10	mg/L	2024-07-10	
Selenium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Silicon, dissolved	**6.1**	N/A	1.0	mg/L	2024-07-10	
Silver, dissolved	< 0.000050	N/A	0.000050	mg/L	2024-07-10	
Sodium, dissolved	**4.68**	N/A	0.10	mg/L	2024-07-10	
Strontium, dissolved	**0.201**	N/A	0.0010	mg/L	2024-07-10	
Sulfur, dissolved	**6.7**	N/A	3.0	mg/L	2024-07-10	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Thallium, dissolved	< 0.000020	N/A	0.000020	mg/L	2024-07-10	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Titanium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2024-07-10	
Uranium, dissolved	**0.000368**	N/A	0.000020	mg/L	2024-07-10	
Vanadium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Zinc, dissolved	< 0.0040	N/A	0.0040	mg/L	2024-07-10	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
General Parameters						
Alkalinity, Total (as CaCO3)	**107**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Bicarbonate (as CaCO3)	**107**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DF - Well 9 Carson Sub (24G0554-05) | Matrix: Water | Sampled: 2024-07-03 13:40, Continued						
General Parameters, Continued						
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2024-07-06	
Conductivity (EC)	**257**	N/A	2.0	µS/cm	2024-07-08	
pH	**7.24**	7.0-10.5	0.10	pH units	2024-07-08	HT2
Solids, Total Dissolved	**122**	AO ≤ 500	15	mg/L	2024-07-09	
Temperature, at pH	**21.2**	N/A		°C	2024-07-08	HT2
Turbidity	**0.11**	OG < 1	0.10	NTU	2024-07-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	
Total Metals						
Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2024-07-10	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2024-07-10	
Arsenic, total	**0.00092**	MAC = 0.01	0.00050	mg/L	2024-07-10	
Barium, total	**0.0755**	MAC = 2	0.0050	mg/L	2024-07-10	
Beryllium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2024-07-10	
Cadmium, total	< 0.000010	MAC = 0.007	0.000010	mg/L	2024-07-10	
Calcium, total	**36.8**	None Required	0.20	mg/L	2024-07-10	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2024-07-10	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Copper, total	**0.00050**	MAC = 2	0.00040	mg/L	2024-07-10	
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2024-07-10	
Lead, total	**0.00032**	MAC = 0.005	0.00020	mg/L	2024-07-10	
Lithium, total	**0.00149**	N/A	0.00010	mg/L	2024-07-10	
Magnesium, total	**8.67**	None Required	0.010	mg/L	2024-07-10	
Manganese, total	**0.156**	MAC = 0.12	0.00020	mg/L	2024-07-10	
Mercury, total	< 0.000040	MAC = 0.001	0.000040	mg/L	2024-07-10	HG1
Molybdenum, total	**0.00165**	N/A	0.00010	mg/L	2024-07-10	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2024-07-10	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2024-07-10	
Potassium, total	**0.95**	N/A	0.10	mg/L	2024-07-10	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2024-07-10	
Silicon, total	**6.6**	N/A	1.0	mg/L	2024-07-10	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2024-07-10	
Sodium, total	**4.57**	AO ≤ 200	0.10	mg/L	2024-07-10	
Strontium, total	**0.205**	MAC = 7	0.0010	mg/L	2024-07-10	
Sulfur, total	**7.2**	N/A	3.0	mg/L	2024-07-10	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Thallium, total	< 0.000020	N/A	0.000020	mg/L	2024-07-10	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO Quesnel, City of
PROJECT Annual

WORK ORDER 24G0554
REPORTED 2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DF - Well 9 Carson Sub (24G0554-05) | Matrix: Water | Sampled: 2024-07-03 13:40, Continued						
Total Metals, Continued						
Tin, total	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Titanium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Tungsten, total	< 0.0010	N/A	0.0010	mg/L	2024-07-10	
Uranium, total	**0.000385**	MAC = 0.02	0.000020	mg/L	2024-07-10	
Vanadium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2024-07-10	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	MAC = 5	0.5	µg/L	2024-07-09	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Bromoform	< 1.0	N/A	1.0	µg/L	2024-07-09	
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2024-07-09	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2024-07-09	
Chloroethane	< 2.0	N/A	2.0	µg/L	2024-07-09	
Chloroform	< 1.0	N/A	1.0	µg/L	2024-07-09	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2024-07-09	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2024-07-09	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2024-07-09	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2024-07-09	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0	µg/L	2024-07-09	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-09	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-09	
Dichloromethane	< 3.0	MAC = 50	3.0	µg/L	2024-07-09	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0	µg/L	2024-07-09	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2024-07-09	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2024-07-09	
Styrene	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2024-07-09	
Tetrachloroethylene	< 1.0	MAC = 10	1.0	µg/L	2024-07-09	
Toluene	< 1.0	MAC = 60	1.0	µg/L	2024-07-09	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Trichloroethylene	< 1.0	MAC = 5	1.0	µg/L	2024-07-09	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2024-07-09	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2024-07-09	
Surrogate: Toluene-d8	*77*		*70-130*	*%*	*2024-07-09*	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DF - Well 9 Carson Sub (24G0554-05) | Matrix: Water | Sampled: 2024-07-03 13:40, Continued						
Volatile Organic Compounds (VOC), Continued						
Surrogate: 4-Bromofluorobenzene	*78*		*70-130*	*%*	*2024-07-09*	
Surrogate: 1,4-Dichlorobenzene-d4	*90*		*70-130*	*%*	*2024-07-09*	
WT# 28000 - Well 10 Hillborn Road (24G0554-06) | Matrix: Water | Sampled: 2024-07-03 11:05						
Anions						
Chloride	**15.4**	AO ≤ 250	0.10	mg/L	2024-07-06	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2024-07-06	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-07-06	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-07-06	
Sulfate	**81.7**	AO ≤ 500	1.0	mg/L	2024-07-06	
Calculated Parameters						
Aggressiveness Index	**12.7**	N/A		-	2024-07-12	CT6
Hardness, Dissolved (as CaCO3)	**344**	N/A	0.500	mg/L	N/A	
Langelier Index	**0.7**	N/A	-5.0		2024-07-12	CT6
Dissolved Metals						
Aluminum, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-09	
Antimony, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-09	
Arsenic, dissolved	**0.00128**	N/A	0.00050	mg/L	2024-07-09	
Barium, dissolved	**0.221**	N/A	0.0050	mg/L	2024-07-09	
Beryllium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-09	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-09	
Boron, dissolved	< 0.0500	N/A	0.0500	mg/L	2024-07-09	
Cadmium, dissolved	**0.000035**	N/A	0.000010	mg/L	2024-07-09	
Calcium, dissolved	**96.0**	N/A	0.20	mg/L	2024-07-09	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-09	
Cobalt, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-09	
Copper, dissolved	**0.00392**	N/A	0.00040	mg/L	2024-07-09	
Iron, dissolved	< 0.010	N/A	0.010	mg/L	2024-07-09	
Lead, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-09	
Lithium, dissolved	**0.00111**	N/A	0.00010	mg/L	2024-07-09	
Magnesium, dissolved	**25.3**	N/A	0.010	mg/L	2024-07-09	
Manganese, dissolved	**0.598**	N/A	0.00020	mg/L	2024-07-09	
Mercury, dissolved	< 0.000040	N/A	0.000040	mg/L	2024-07-11	HG1
Molybdenum, dissolved	**0.00111**	N/A	0.00010	mg/L	2024-07-09	
Nickel, dissolved	**0.00558**	N/A	0.00040	mg/L	2024-07-09	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2024-07-09	
Potassium, dissolved	**2.22**	N/A	0.10	mg/L	2024-07-09	
Selenium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-09	
Silicon, dissolved	**7.9**	N/A	1.0	mg/L	2024-07-09	
Silver, dissolved	< 0.000050	N/A	0.000050	mg/L	2024-07-09	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 28000 - Well 10 Hillborn Road (24G0554-06) | Matrix: Water | Sampled: 2024-07-03 11:05, Continued						
Dissolved Metals, Continued						
Sodium, dissolved	**17.2**	N/A	0.10	mg/L	2024-07-09	
Strontium, dissolved	**0.626**	N/A	0.0010	mg/L	2024-07-09	
Sulfur, dissolved	**30.2**	N/A	3.0	mg/L	2024-07-09	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2024-07-09	
Thallium, dissolved	< 0.000020	N/A	0.000020	mg/L	2024-07-09	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-09	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2024-07-09	
Titanium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-09	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2024-07-09	
Uranium, dissolved	**0.00262**	N/A	0.000020	mg/L	2024-07-09	
Vanadium, dissolved	< 0.0050	N/A	0.0050	mg/L	2024-07-09	
Zinc, dissolved	**0.0081**	N/A	0.0040	mg/L	2024-07-09	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2024-07-09	
General Parameters						
Alkalinity, Total (as CaCO3)	**258**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Bicarbonate (as CaCO3)	**258**	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2024-07-08	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2024-07-06	
Conductivity (EC)	**693**	N/A	2.0	µS/cm	2024-07-08	
pH	**7.89**	7.0-10.5	0.10	pH units	2024-07-08	HT2
Solids, Total Dissolved	**394**	AO ≤ 500	15	mg/L	2024-07-09	
Temperature, at pH	**21.5**	N/A		°C	2024-07-08	HT2
Turbidity	< 0.10	OG < 1	0.10	NTU	2024-07-06	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-04	
Total Metals						
Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2024-07-10	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2024-07-10	
Arsenic, total	**0.00127**	MAC = 0.01	0.00050	mg/L	2024-07-10	
Barium, total	**0.215**	MAC = 2	0.0050	mg/L	2024-07-10	
Beryllium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2024-07-10	
Cadmium, total	**0.000033**	MAC = 0.007	0.000010	mg/L	2024-07-10	
Calcium, total	**96.7**	None Required	0.20	mg/L	2024-07-10	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2024-07-10	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Copper, total	**0.00353**	MAC = 2	0.00040	mg/L	2024-07-10	

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 28000 - Well 10 Hillborn Road (24G0554-06) | Matrix: Water | Sampled: 2024-07-03 11:05, Continued						
Total Metals, Continued						
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2024-07-10	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2024-07-10	
Lithium, total	**0.00114**	N/A	0.00010	mg/L	2024-07-10	
Magnesium, total	**26.9**	None Required	0.010	mg/L	2024-07-10	
Manganese, total	**0.558**	MAC = 0.12	0.00020	mg/L	2024-07-10	
Mercury, total	< 0.000040	MAC = 0.001	0.000040	mg/L	2024-07-10	HG1
Molybdenum, total	**0.00118**	N/A	0.00010	mg/L	2024-07-10	
Nickel, total	**0.00564**	N/A	0.00040	mg/L	2024-07-10	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2024-07-10	
Potassium, total	**2.22**	N/A	0.10	mg/L	2024-07-10	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2024-07-10	
Silicon, total	**8.3**	N/A	1.0	mg/L	2024-07-10	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2024-07-10	
Sodium, total	**17.2**	AO ≤ 200	0.10	mg/L	2024-07-10	
Strontium, total	**0.584**	MAC = 7	0.0010	mg/L	2024-07-10	
Sulfur, total	**31.3**	N/A	3.0	mg/L	2024-07-10	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2024-07-10	
Thallium, total	< 0.000020	N/A	0.000020	mg/L	2024-07-10	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Tin, total	< 0.00020	N/A	0.00020	mg/L	2024-07-10	
Titanium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Tungsten, total	< 0.0010	N/A	0.0010	mg/L	2024-07-10	
Uranium, total	**0.00294**	MAC = 0.02	0.000020	mg/L	2024-07-10	
Vanadium, total	< 0.0050	N/A	0.0050	mg/L	2024-07-10	
Zinc, total	**0.0084**	AO ≤ 5	0.0040	mg/L	2024-07-10	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2024-07-10	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	MAC = 5	0.5	µg/L	2024-07-09	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Bromoform	< 1.0	N/A	1.0	µg/L	2024-07-09	
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2024-07-09	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2024-07-09	
Chloroethane	< 2.0	N/A	2.0	µg/L	2024-07-09	
Chloroform	< 1.0	N/A	1.0	µg/L	2024-07-09	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2024-07-09	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2024-07-09	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2024-07-09	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2024-07-09	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 28000 - Well 10 Hillborn Road (24G0554-06) | Matrix: Water | Sampled: 2024-07-03 11:05, Continued						
Volatile Organic Compounds (VOC), Continued						
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0	µg/L	2024-07-09	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-09	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2024-07-09	
Dichloromethane	< 3.0	MAC = 50	3.0	µg/L	2024-07-09	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0	µg/L	2024-07-09	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2024-07-09	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2024-07-09	
Styrene	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2024-07-09	
Tetrachloroethylene	< 1.0	MAC = 10	1.0	µg/L	2024-07-09	
Toluene	< 1.0	MAC = 60	1.0	µg/L	2024-07-09	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Trichloroethylene	< 1.0	MAC = 5	1.0	µg/L	2024-07-09	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2024-07-09	
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2024-07-09	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2024-07-09	
Surrogate: Toluene-d8	*79*		*70-130*	%	*2024-07-09*	
Surrogate: 4-Bromofluorobenzene	*79*		*70-130*	%	*2024-07-09*	
Surrogate: 1,4-Dichlorobenzene-d4	*93*		*70-130*	%	*2024-07-09*	

Sample Qualifiers:

CT6	Results were based on lab temperature & lab pH.
HG1	Sample bottle and preservation submitted is not suitable for Mercury analysis and analyte stability may be affected.
HT2	The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2021)	Titration with H2SO4	✓	Kelowna
Anions in Water	SM 4110 B (2020)	Ion Chromatography	✓	Kelowna
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Colour, True in Water	SM 2120 C (2021)	Spectrophotometry (456 nm)	✓	Kelowna
Conductivity in Water	SM 2510 B (2021)	Conductivity Meter	✓	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* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Hardness in Water	SM 2340 B (2021)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	✓	N/A
Langelier Index in Water	SM 2330 B (2021)	Calculation		N/A
pH in Water	SM 4500-H+ B (2021)	Electrometry	✓	Kelowna
Solids, Total Dissolved in Water	Solids in Water, Filtered / SM 2540 C* (2020)	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
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna
Volatile Organic Compounds 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
>2	Greater than the specified Result
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CU	Colour Units (referenced against a platinum cobalt standard)
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
pH units	pH < 7 = acidic, ph > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G0554
PROJECT	Annual	**REPORTED**	2024-07-12 16:08

General Comments:

The results in this report apply to the received 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. Caro will dispose of all samples within 30 days of sample receipt, unless otherwise agreed. The quality control (QC) data is available upon request

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:bwhitehead@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.

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24A1772
PO NUMBER		**RECEIVED / TEMP**	2024-01-19 09:30 / 5.8°C
PROJECT	Monthly Wells	**REPORTED**	2024-01-25 09:53
PROJECT 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 bwhitehead@caro.ca

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A1772
PROJECT	Monthly Wells	**REPORTED**	2024-01-25 09:53

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24A1772-01) | Matrix: Water | Sampled: 2024-01-17 09:30						
Field Parameters						
Temperature, field	9.8	AO ≤ 15		°C	2024-01-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
Total Metals						
Manganese, total	**0.436**	MAC = 0.12	0.00020	mg/L	2024-01-22	
WT# 94DC - Well 6 Rolph at Robertson (24A1772-02) | Matrix: Water | Sampled: 2024-01-17 10:20						
Field Parameters						
Temperature, field	9.7	AO ≤ 15		°C	2024-01-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
Total Metals						
Manganese, total	**0.284**	MAC = 0.12	0.00020	mg/L	2024-01-22	
WT# 94E0 - Well 7 N. Fraser Drive (24A1772-03) | Matrix: Water | Sampled: 2024-01-17 11:00						
Field Parameters						
Temperature, field	8.9	AO ≤ 15		°C	2024-01-07	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
Total Metals						
Manganese, total	0.0125	MAC = 0.12	0.00020	mg/L	2024-01-22	
WT# 94E1 - Well 8 Hilborn Road (24A1772-04) | Matrix: Water | Sampled: 2024-01-17 13:30						
Field Parameters						
Temperature, field	8.9	AO ≤ 15		°C	2024-01-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
Total Metals						
Manganese, total	**0.234**	MAC = 0.12	0.00020	mg/L	2024-01-22	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A1772
PROJECT	Monthly Wells	**REPORTED**	2024-01-25 09:53

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DF - Well 9 Carson Sub (24A1772-05) | Matrix: Water | Sampled: 2024-01-17 11:50						
Field Parameters						
Temperature, field	**9.1**	AO ≤ 15		°C	2024-01-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
Total Metals						
Manganese, total	**0.146**	MAC = 0.12	0.00020	mg/L	2024-01-22	
WT# 28000 - Well 10 Hilborn Road (24A1772-06) | Matrix: Water | Sampled: 2024-01-17 14:00						
Field Parameters						
Temperature, field	**9.2**	AO ≤ 15		°C	2024-01-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-01-19	HT3
Total Metals						
Manganese, total	**0.562**	MAC = 0.12	0.00020	mg/L	2024-01-22	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24A1772
PROJECT	Monthly Wells	**REPORTED**	2024-01-25 09:53

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
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

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24B1516
PO NUMBER		**RECEIVED / TEMP**	2024-02-14 14:05 / 4.1°C
PROJECT	Monthly Wells	**REPORTED**	2024-02-22 11:30
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B1516
PROJECT	Monthly Wells	**REPORTED**	2024-02-22 11:30

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24B1516-01) | Matrix: Water | Sampled: 2024-02-13 11:30						
Field Parameters						
Temperature, field	10.3	AO ≤ 15		°C	2024-02-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
Total Metals						
Manganese, total	0.376	MAC = 0.12	0.00020	mg/L	2024-02-20	
WT# 94DC - Well 6 Rolph at Robertson (24B1516-02) | Matrix: Water | Sampled: 2024-02-13 13:45						
Field Parameters						
Temperature, field	10.3	AO ≤ 15		°C	2024-02-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
Total Metals						
Manganese, total	0.259	MAC = 0.12	0.00020	mg/L	2024-02-20	
WT# 94E0 - Well 7 N. Fraser Drive (24B1516-03) | Matrix: Water | Sampled: 2024-02-13 14:30						
Field Parameters						
Temperature, field	8.1	AO ≤ 15		°C	2024-02-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
Total Metals						
Manganese, total	0.0126	MAC = 0.12	0.00020	mg/L	2024-02-20	
WT# 94E1 - Well 8 Hilborn Road (24B1516-04) | Matrix: Water | Sampled: 2024-02-13 09:30						
Field Parameters						
Temperature, field	5.9	AO ≤ 15		°C	2024-02-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
Total Metals						
Manganese, total	0.261	MAC = 0.12	0.00020	mg/L	2024-02-20	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B1516
PROJECT	Monthly Wells	**REPORTED**	2024-02-22 11:30

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DF - Well 9 Carson Sub (24B1516-05) | Matrix: Water | Sampled: 2024-02-13 10:30						
Field Parameters						
Temperature, field	9.0	AO ≤ 15		°C	2024-02-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
Total Metals						
Manganese, total	**0.148**	MAC = 0.12	0.00020	mg/L	2024-02-20	
WT# 28000 - Well 10 Hilborn Road (24B1516-06) | Matrix: Water | Sampled: 2024-02-13 13:15						
Field Parameters						
Temperature, field	8.8	AO ≤ 15		°C	2024-02-13	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-02-14	
Total Metals						
Manganese, total	**0.488**	MAC = 0.12	0.00020	mg/L	2024-02-20	

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24B1516
PROJECT	Monthly Wells	**REPORTED**	2024-02-22 11:30

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

Glossary of Terms:

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°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24D1298
PO NUMBER		**RECEIVED / TEMP**	2024-04-10 15:30 / 7.6°C
PROJECT	Monthly Wells	**REPORTED**	2024-04-17 11:51
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D1298
PROJECT	Monthly Wells	**REPORTED**	2024-04-17 11:51

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24D1298-01) | Matrix: Water | Sampled: 2024-04-09 11:00						
Field Parameters						
Temperature, field	8.6	AO ≤ 15		°C	2024-04-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	
Total Metals						
Manganese, total	**0.447**	MAC = 0.12	0.00020	mg/L	2024-04-14	
WT# 94DC - Well 6 Rolph at Robertson (24D1298-02) | Matrix: Water | Sampled: 2024-04-09 11:40						
Field Parameters						
Temperature, field	8.7	AO ≤ 15		°C	2024-04-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	
Total Metals						
Manganese, total	**0.258**	MAC = 0.12	0.00020	mg/L	2024-04-14	
WT# 94E0 - Well 7 N. Fraser Drive (24D1298-03) | Matrix: Water | Sampled: 2024-04-09 10:00						
Field Parameters						
Temperature, field	8.4	AO ≤ 15		°C	2024-04-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	HT3
Total Metals						
Manganese, total	**0.0135**	MAC = 0.12	0.00020	mg/L	2024-04-14	
WT# 94E1 - Well 8 Hilborn Road (24D1298-04) | Matrix: Water | Sampled: 2024-04-09 13:00						
Field Parameters						
Temperature, field	8.7	AO ≤ 15		°C	2024-04-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	
Total Metals						
Manganese, total	**0.249**	MAC = 0.12	0.00020	mg/L	2024-04-14	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D1298
PROJECT	Monthly Wells	**REPORTED**	2024-04-17 11:51

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DF - Well 9 Carson Sub (24D1298-05) | Matrix: Water | Sampled: 2024-04-09 09:20						
Field Parameters						
Temperature, field	8.2	AO ≤ 15		°C	2024-04-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	HT3
Total Metals						
Manganese, total	**0.151**	MAC = 0.12	0.00020	mg/L	2024-04-14	
WT# 28000 - Well 10 Hilborn Road (24D1298-06) | Matrix: Water | Sampled: 2024-04-09 13:45						
Field Parameters						
Temperature, field	8.4	AO ≤ 15		°C	2024-04-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-04-10	
Total Metals						
Manganese, total	**0.556**	MAC = 0.12	0.00020	mg/L	2024-04-14	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24D1298
PROJECT	Monthly Wells	**REPORTED**	2024-04-17 11:51

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

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REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24E1453
PO NUMBER		**RECEIVED / TEMP**	2024-05-10 14:52 / 13.9°C
PROJECT	Monthly Wells	**REPORTED**	2024-05-17 16:16
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E1453
PROJECT	Monthly Wells	**REPORTED**	2024-05-17 16:16

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24E1453-01) | Matrix: Water | Sampled: 2024-05-09 11:00						
Field Parameters						
Temperature, field	12.3	AO ≤ 15		°C	2024-05-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
Total Metals						
Manganese, total	0.498	MAC = 0.12	0.00020	mg/L	2024-05-14	
WT# 94DC - Well 6 Rolph at Robertson (24E1453-02) | Matrix: Water | Sampled: 2024-05-09 11:45						
Field Parameters						
Temperature, field	10.9	AO ≤ 15		°C	2024-05-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
Total Metals						
Manganese, total	0.246	MAC = 0.12	0.00020	mg/L	2024-05-14	
WT# 94E0 - Well 7 N. Fraser Drive (24E1453-03) | Matrix: Water | Sampled: 2024-05-09 10:15						
Field Parameters						
Temperature, field	9.1	AO ≤ 15		°C	2024-05-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
Total Metals						
Manganese, total	0.0132	MAC = 0.12	0.00020	mg/L	2024-05-17	
WT# 94E1 - Well 8 Hilborn Road (24E1453-04) | Matrix: Water | Sampled: 2024-05-09 13:45						
Field Parameters						
Temperature, field	7.9	AO ≤ 15		°C	2024-05-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
Total Metals						
Manganese, total	0.245	MAC = 0.12	0.00020	mg/L	2024-05-14	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E1453
PROJECT	Monthly Wells	**REPORTED**	2024-05-17 16:16

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DF - Well 9 Carson Sub (24E1453-05) | Matrix: Water | Sampled: 2024-05-09 09:30						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-05-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
Total Metals						
Manganese, total	**0.155**	MAC = 0.12	0.00020	mg/L	2024-05-14	
WT# 28000 - Well 10 Hilborn Road (24E1453-06) | Matrix: Water | Sampled: 2024-05-09 13:15						
Field Parameters						
Temperature, field	**9.5**	AO ≤ 15		°C	2024-05-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-05-10	
Total Metals						
Manganese, total	**0.506**	MAC = 0.12	0.00020	mg/L	2024-05-14	

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24E1453
PROJECT	Monthly Wells	**REPORTED**	2024-05-17 16:16

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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ATTENTION	Joe Law	**WORK ORDER**	24G3945
PO NUMBER		**RECEIVED / TEMP**	2024-07-31 13:45 / 17.5°C
PROJECT	Monthly Wells	**REPORTED**	2024-08-08 11:10
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G3945
PROJECT	Monthly Wells	**REPORTED**	2024-08-08 11:10

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24G3945-01) | Matrix: Water | Sampled: 2024-07-30 11:00						
Field Parameters						
Temperature, field	12.1	AO ≤ 15		°C	2024-07-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	
Total Metals						
Manganese, total	0.600	MAC = 0.12	0.00020	mg/L	2024-08-02	
WT# 94DC - Well 6 Rolph at Robertson (24G3945-02) | Matrix: Water | Sampled: 2024-07-30 11:30						
Field Parameters						
Temperature, field	12.2	AO ≤ 15		°C	2024-07-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	
Total Metals						
Manganese, total	0.215	MAC = 0.12	0.00020	mg/L	2024-08-02	
WT# 94E0 - Well 7 N. Fraser Drive (24G3945-03) | Matrix: Water | Sampled: 2024-07-30 09:20						
Field Parameters						
Temperature, field	11.4	AO ≤ 15		°C	2024-07-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	HT3
Total Metals						
Manganese, total	0.0190	MAC = 0.12	0.00020	mg/L	2024-08-02	
WT# 94E1 - Well 8 Hilborn Road (24G3945-04) | Matrix: Water | Sampled: 2024-07-30 14:00						
Field Parameters						
Temperature, field	12.1	AO ≤ 15		°C	2024-07-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	
Total Metals						
Manganese, total	0.281	MAC = 0.12	0.00020	mg/L	2024-08-02	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G3945
PROJECT	Monthly Wells	**REPORTED**	2024-08-08 11:10

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DF - Well 9 Carson Sub (24G3945-05) | Matrix: Water | Sampled: 2024-07-30 10:00						
Field Parameters						
Temperature, field	**11.2**	AO ≤ 15		°C	2024-07-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	
Total Metals						
Manganese, total	**0.150**	MAC = 0.12	0.00020	mg/L	2024-08-02	
WT# 28000 - Well 10 Hilborn Road (24G3945-06) | Matrix: Water | Sampled: 2024-07-30 14:30						
Field Parameters						
Temperature, field	**12.0**	AO ≤ 15		°C	2024-07-30	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-07-31	
Total Metals						
Manganese, total	**0.593**	MAC = 0.12	0.00020	mg/L	2024-08-02	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24G3945
PROJECT	Monthly Wells	**REPORTED**	2024-08-08 11:10

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

Glossary of Terms:

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<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
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

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24I1333
PO NUMBER		**RECEIVED / TEMP**	2024-09-11 14:38 / 8.6°C
PROJECT	Monthly Wells	**REPORTED**	2024-09-18 14:47
PROJECT INFO		**COC NUMBER**	No Number

Introduction:

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I1333
PROJECT	Monthly Wells	**REPORTED**	2024-09-18 14:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24I1333-01) | Matrix: Water | Sampled: 2024-09-10 08:15						
Field Parameters						
Temperature, field	**10.0**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
Total Metals						
Manganese, total	**0.219**	MAC = 0.12	0.00020	mg/L	2024-09-14	
WT# 94DC - Well 6 Rolph at Robertson (24I1333-02) | Matrix: Water | Sampled: 2024-09-10 08:45						
Field Parameters						
Temperature, field	**10.0**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
Total Metals						
Manganese, total	**0.204**	MAC = 0.12	0.00020	mg/L	2024-09-14	
WT# 94E0 - Well 7 N. Fraser Drive (24I1333-03) | Matrix: Water | Sampled: 2024-09-10 11:35						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
Total Metals						
Manganese, total	**0.0174**	MAC = 0.12	0.00020	mg/L	2024-09-14	
WT# 94E1 - Well 8 Hilborn Road (24I1333-04) | Matrix: Water | Sampled: 2024-09-10 09:40						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	HT3
Total Metals						
Manganese, total	**0.254**	MAC = 0.12	0.00020	mg/L	2024-09-14	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I1333
PROJECT	Monthly Wells	**REPORTED**	2024-09-18 14:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94DF - Well 9 Carson Sub (24I1333-05) | Matrix: Water | Sampled: 2024-09-10 10:45						
Field Parameters						
Temperature, field	**9.0**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
Total Metals						
Manganese, total	**0.153**	MAC = 0.12	0.00020	mg/L	2024-09-14	
WT# 28000 - Well 10 Hilborn Road (24I1333-06) | Matrix: Water | Sampled: 2024-09-10 10:10						
Field Parameters						
Temperature, field	**8.0**	AO ≤ 15		°C	2024-09-10	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-11	
Total Metals						
Manganese, total	**0.576**	MAC = 0.12	0.00020	mg/L	2024-09-14	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I1333
PROJECT	Monthly Wells	**REPORTED**	2024-09-18 14:47

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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

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MAC	Maximum Acceptable Concentration (health based)
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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24I3176
PO NUMBER		**RECEIVED / TEMP**	2024-09-25 14:30 / 15.6°C
PROJECT	Monthly Wells	**REPORTED**	2024-10-03 15:09
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I3176
PROJECT	Monthly Wells	**REPORTED**	2024-10-03 15:09

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94D1 Well 3 Rolph at Roddis (24I3176-01) | Matrix: Water | Sampled: 2024-09-24 10:30						
Field Parameters						
Temperature, field	17.3	AO ≤ 15		°C	2024-09-24	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-25	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-25	
Total Metals						
Manganese, total	0.336	MAC = 0.12	0.00020	mg/L	2024-09-28	
94DC Well 6 Rolph/Robertson (24I3176-02) | Matrix: Water | Sampled: 2024-09-24 11:45						
Field Parameters						
Temperature, field	11.9	AO ≤ 15		°C	2024-09-24	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-25	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-25	
Total Metals						
Manganese, total	0.207	MAC = 0.12	0.00020	mg/L	2024-09-28	
94E0 Well 7 N. Fraser Drive (24I3176-03) | Matrix: Water | Sampled: 2024-09-24 09:45						
Field Parameters						
Temperature, field	12.1	AO ≤ 15		°C	2024-09-24	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-25	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-25	
Total Metals						
Manganese, total	0.0154	MAC = 0.12	0.00020	mg/L	2024-09-28	
WT# 94E1 - Well 8 Hilborn Road (24I3176-04) | Matrix: Water | Sampled: 2024-09-24 13:00						
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-25	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-25	
Total Metals						
Manganese, total	0.561	MAC = 0.12	0.00020	mg/L	2024-09-28	
94DF Well 9 Carson Sub (24I3176-05) | Matrix: Water | Sampled: 2024-09-24 13:49						

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I3176
PROJECT	Monthly Wells	**REPORTED**	2024-10-03 15:09

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94DF Well 9 Carson Sub (24I3176-05) | Matrix: Water | Sampled: 2024-09-24 13:49, Continued						
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-09-25	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-25	
Total Metals						
Manganese, total	**0.148**	MAC = 0.12	0.00020	mg/L	2024-09-28	
28000 Well 10 Hilborn Road (24I3176-06) | Matrix: Water | Sampled: 2024-09-24 14:30						
Microbiological Parameters						
Coliforms, Total	**≥ 3**	MAC = 0	1	CFU/100 mL	2024-09-25	
Background Colonies	**>200**	N/A	200	CFU/100 mL	2024-09-25	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-09-25	
Total Metals						
Manganese, total	**0.234**	MAC = 0.12	0.00020	mg/L	2024-09-28	

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24I3176
PROJECT	Monthly Wells	**REPORTED**	2024-10-03 15:09

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

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>=	Greater than or equal to the specified Result
>2	Greater than the specified Result
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
EPA	United States Environmental Protection Agency Test Methods
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CARO ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24J1316
PO NUMBER		**RECEIVED / TEMP**	2024-10-09 13:26 / 8.4°C
PROJECT	Monthly Wells	**REPORTED**	2024-10-10 14:50
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J1316
PROJECT	Monthly Wells	**REPORTED**	2024-10-10 14:50

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 28000 - Well 10 Hilborn Road (24J1316-01) | Matrix: Water | Sampled: 2024-10-08 15:16						
Field Parameters						
Temperature, field	9.1	AO ≤ 15		°C	2024-10-08	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-09	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-09	

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J1316
PROJECT	Monthly Wells	**REPORTED**	2024-10-10 14:50

Analysis Description	Method Ref.	Technique	Accredited	Location
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna

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AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24C1508
PO NUMBER		**RECEIVED / TEMP**	2024-03-13 14:27 / 4.4°C
PROJECT	Quarterly Wells	**REPORTED**	2024-03-19 12:10
PROJECT INFO			

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C1508
PROJECT	Quarterly Wells	**REPORTED**	2024-03-19 12:10

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94D1 Well 3 Rolph at Roddis (24C1508-01) | Matrix: Water | Sampled: 2024-03-12 10:35						
Anions						
Chloride	**8.62**	AO ≤ 250	0.10	mg/L	2024-03-14	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-03-14	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-03-14	
Field Parameters						
Temperature, field	**8.1**	AO ≤ 15		°C	2024-03-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
94DC Well 6 Rolph/Robertson (24C1508-02) | Matrix: Water | Sampled: 2024-03-12 11:10						
Anions						
Chloride	**17.8**	AO ≤ 250	0.10	mg/L	2024-03-14	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-03-14	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-03-14	
Field Parameters						
Temperature, field	**8.0**	AO ≤ 15		°C	2024-03-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
94E0 Well 7 N. Fraser Drive (24C1508-03) | Matrix: Water | Sampled: 2024-03-12 11:45						
Anions						
Chloride	**8.95**	AO ≤ 250	0.10	mg/L	2024-03-14	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-03-14	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-03-14	
Field Parameters						
Temperature, field	**6.8**	AO ≤ 15		°C	2024-03-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
94E1 Well 8 Hilborn Road (24C1508-04) | Matrix: Water | Sampled: 2024-03-12 10:00						
Anions						
Chloride	**5.95**	AO ≤ 250	0.10	mg/L	2024-03-15	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-03-15	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C1508
PROJECT	Quarterly Wells	**REPORTED**	2024-03-19 12:10

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
94E1 Well 8 Hilborn Road (24C1508-04) | Matrix: Water | Sampled: 2024-03-12 10:00, Continued						
Anions, Continued						
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-03-15	
Field Parameters						
Temperature, field	**6.9**	AO ≤ 15		°C	2024-03-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
94DF Well 9 Carson Sub (24C1508-05) | Matrix: Water | Sampled: 2024-03-12 09:30						
Anions						
Chloride	**2.85**	AO ≤ 250	0.10	mg/L	2024-03-15	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-03-15	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-03-15	
Field Parameters						
Temperature, field	**8.8**	AO ≤ 15		°C	2024-03-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	HT3
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	HT3
28000 Well 10 Hilborn Road (24C1508-06) | Matrix: Water | Sampled: 2024-03-12 13:15						
Anions						
Chloride	**15.1**	AO ≤ 250	0.10	mg/L	2024-03-15	
Nitrate (as N)	**0.011**	MAC = 10	0.010	mg/L	2024-03-15	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-03-15	
Field Parameters						
Temperature, field	**7.2**	AO ≤ 15		°C	2024-03-12	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-03-13	

Sample Qualifiers:

HT3 Microbiological analysis was initiated beyond the maximum holding time of 30 hours. Results may not be valid.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24C1508
PROJECT	Quarterly Wells	**REPORTED**	2024-03-19 12:10

Analysis Description	Method Ref.	Technique	Accredited	Location
Anions in Water	SM 4110 B (2020)	Ion Chromatography	✓	Kelowna
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24J3101
PO NUMBER		**RECEIVED / TEMP**	2024-10-23 12:30 / 5.7°C
PROJECT	Quarterly Wells	**REPORTED**	2024-10-28 11:07
PROJECT INFO		**COC NUMBER**	No Number

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

Authorized By:

Hanane El Hannaoui
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J3101
PROJECT	Quarterly Wells	**REPORTED**	2024-10-28 11:07

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24J3101-01) | Matrix: Water | Sampled: 2024-10-22 11:20						
Anions						
Chloride	**8.19**	AO ≤ 250	0.10	mg/L	2024-10-25	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-10-25	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-10-25	
Field Parameters						
Temperature, field	**7.4**	AO ≤ 15		°C	2024-10-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	
WT# 94DC - Well 6 Rolph at Robertson (24J3101-02) | Matrix: Water | Sampled: 2024-10-22 10:40						
Anions						
Chloride	**16.3**	AO ≤ 250	0.10	mg/L	2024-10-25	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-10-25	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-10-25	
Field Parameters						
Temperature, field	**7.6**	AO ≤ 15		°C	2024-10-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	
WT# 94E0 - Well 7 N. Fraser Drive (24J3101-03) | Matrix: Water | Sampled: 2024-10-22 13:10						
Anions						
Chloride	**7.16**	AO ≤ 250	0.10	mg/L	2024-10-25	
Nitrate (as N)	**0.028**	MAC = 10	0.010	mg/L	2024-10-25	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-10-25	
Field Parameters						
Temperature, field	**7.2**	AO ≤ 15		°C	2024-10-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	
WT# 94E1 - Well 8 Hilborn Road (24J3101-04) | Matrix: Water | Sampled: 2024-10-22 09:50						
Anions						
Chloride	**4.85**	AO ≤ 250	0.10	mg/L	2024-10-25	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-10-25	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J3101
PROJECT	Quarterly Wells	**REPORTED**	2024-10-28 11:07

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E1 - Well 8 Hilborn Road (24J3101-04) | Matrix: Water | Sampled: 2024-10-22 09:50, Continued						
Anions, Continued						
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-10-25	
Field Parameters						
Temperature, field	**7.1**	AO ≤ 15		°C	2024-10-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	
WT# 94DF - Well 9 Carson Sub (24J3101-05) | Matrix: Water | Sampled: 2024-10-22 14:00						
Anions						
Chloride	**3.24**	AO ≤ 250	0.10	mg/L	2024-10-25	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-10-25	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-10-25	
Field Parameters						
Temperature, field	**7.8**	AO ≤ 15		°C	2024-10-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	
WT# 28000 - Well 10 Hilborn Road (24J3101-06) | Matrix: Water | Sampled: 2024-10-22 09:15						
Anions						
Chloride	**16.0**	AO ≤ 250	0.10	mg/L	2024-10-25	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-10-25	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-10-25	
Field Parameters						
Temperature, field	**7.4**	AO ≤ 15		°C	2024-10-22	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-10-23	

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24J3101
PROJECT	Quarterly Wells	**REPORTED**	2024-10-28 11:07

Analysis Description	Method Ref.	Technique	Accredited	Location
Anions in Water	SM 4110 B (2020)	Ion Chromatography	✓	Kelowna
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24K2338
PO NUMBER		**RECEIVED / TEMP**	2024-11-20 13:37 / 6.0°C
PROJECT	Quarterly Wells	**REPORTED**	2024-11-25 10:57
PROJECT INFO		**COC NUMBER**	No Number

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Authorized By:

Hanane El Hannaoui
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K2338
PROJECT	Quarterly Wells	**REPORTED**	2024-11-25 10:57

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24K2338-01) | Matrix: Water | Sampled: 2024-11-19 11:00						
Anions						
Chloride	**7.95**	AO ≤ 250	0.10	mg/L	2024-11-21	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-11-21	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-11-21	
Field Parameters						
Temperature, field	**9.3**	AO ≤ 15		°C	2024-11-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	
WT# 94DC - Well 6 Rolph at Robertson (24K2338-02) | Matrix: Water | Sampled: 2024-11-19 11:50						
Anions						
Chloride	**16.2**	AO ≤ 250	0.10	mg/L	2024-11-21	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-11-21	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-11-21	
Field Parameters						
Temperature, field	**9.2**	AO ≤ 15		°C	2024-11-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	
WT# 94E0 - Well 7 N. Fraser Drive (24K2338-03) | Matrix: Water | Sampled: 2024-11-19 14:20						
Anions						
Chloride	**8.12**	AO ≤ 250	0.10	mg/L	2024-11-21	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-11-21	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-11-21	
Field Parameters						
Temperature, field	**9.4**	AO ≤ 15		°C	2024-11-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	
WT# 94E1 - Well 8 Hilborn Road (24K2338-04) | Matrix: Water | Sampled: 2024-11-19 09:30						
Anions						
Chloride	**6.45**	AO ≤ 250	0.10	mg/L	2024-11-21	
Nitrate (as N)	**0.022**	MAC = 10	0.010	mg/L	2024-11-21	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K2338
PROJECT	Quarterly Wells	**REPORTED**	2024-11-25 10:57

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E1 - Well 8 Hilborn Road (24K2338-04) | Matrix: Water | Sampled: 2024-11-19 09:30, Continued						
Anions, Continued						
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-11-21	
Field Parameters						
Temperature, field	**8.9**	AO ≤ 15		°C	2024-11-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	
WT# 94DF - Well 9 Carson Sub (24K2338-05) | Matrix: Water | Sampled: 2024-11-19 10:20						
Anions						
Chloride	**3.14**	AO ≤ 250	0.10	mg/L	2024-11-21	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-11-21	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-11-21	
Field Parameters						
Temperature, field	**9.1**	AO ≤ 15		°C	2024-11-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	
WT# 28000 - Well 10 Hilborn Road (24K2338-06) | Matrix: Water | Sampled: 2024-11-19 13:40						
Anions						
Chloride	**15.6**	AO ≤ 250	0.10	mg/L	2024-11-21	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-11-21	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-11-21	
Field Parameters						
Temperature, field	**9.2**	AO ≤ 15		°C	2024-11-19	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-11-20	

CARO ANALYTICAL SERVICES

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24K2338
PROJECT	Quarterly Wells	**REPORTED**	2024-11-25 10:57

Analysis Description	Method Ref.	Technique	Accredited	Location
Anions in Water	SM 4110 B (2020)	Ion Chromatography	✓	Kelowna
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna

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
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

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CERTIFICATE OF ANALYSIS

REPORTED TO	Quesnel, City of 1350 Sword Ave Quesnel, BC V2J 7H2		
ATTENTION	Joe Law	**WORK ORDER**	24L2142
PO NUMBER		**RECEIVED / TEMP**	2024-12-18 13:24 / 5.9°C
PROJECT	Quarterly Wells	**REPORTED**	2024-12-27 09:17
PROJECT 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 hhannaoui@caro.ca

Authorized By:

Hanane El Hannaoui
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24L2142
PROJECT	Quarterly Wells	**REPORTED**	2024-12-27 09:17

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94D1 - Well 3 Rolph at Roddis (24L2142-01) | Matrix: Water | Sampled: 2024-12-17 12:00						
Anions						
Chloride	**8.00**	AO ≤ 250	0.10	mg/L	2024-12-19	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-12-19	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-12-19	
Field Parameters						
Temperature, field	**7.5**	AO ≤ 15		°C	2024-12-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	
WT# 94DC - Well 6 Rolph at Robertson (24L2142-02) | Matrix: Water | Sampled: 2024-12-17 10:40						
Anions						
Chloride	**16.8**	AO ≤ 250	0.10	mg/L	2024-12-19	
Nitrate (as N)	**0.013**	MAC = 10	0.010	mg/L	2024-12-19	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-12-19	
Field Parameters						
Temperature, field	**7.2**	AO ≤ 15		°C	2024-12-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	
WT# 94E0 - Well 7 N. Fraser Drive (24L2142-03) | Matrix: Water | Sampled: 2024-12-17 13:40						
Anions						
Chloride	**8.02**	AO ≤ 250	0.10	mg/L	2024-12-19	
Nitrate (as N)	**0.050**	MAC = 10	0.010	mg/L	2024-12-19	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-12-19	
Field Parameters						
Temperature, field	**7.5**	AO ≤ 15		°C	2024-12-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	
WT# 94E1 - Well 8 Hilborn Road (24L2142-04) | Matrix: Water | Sampled: 2024-12-17 14:30						
Anions						
Chloride	**5.26**	AO ≤ 250	0.10	mg/L	2024-12-19	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-12-19	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Quesnel, City of	**WORK ORDER**	24L2142
PROJECT	Quarterly Wells	**REPORTED**	2024-12-27 09:17

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 94E1 - Well 8 Hilborn Road (24L2142-04) | Matrix: Water | Sampled: 2024-12-17 14:30, Continued						
Anions, Continued						
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-12-19	
Field Parameters						
Temperature, field	**7.2**	AO ≤ 15		°C	2024-12-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	
WT# 94DF - Well 9 Carson Sub (24L2142-05) | Matrix: Water | Sampled: 2024-12-17 11:30						
Anions						
Chloride	**2.32**	AO ≤ 250	0.10	mg/L	2024-12-19	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-12-19	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-12-19	
Field Parameters						
Temperature, field	**7.3**	AO ≤ 15		°C	2024-12-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	
WT# 28000 - Well 10 Hilborn Road (24L2142-06) | Matrix: Water | Sampled: 2024-12-17						
Anions						
Chloride	**16.3**	AO ≤ 250	0.10	mg/L	2024-12-19	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2024-12-19	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2024-12-19	
Field Parameters						
Temperature, field	**7.4**	AO ≤ 15		°C	2024-12-17	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	HT4
E. coli	< 1	MAC = 0	1	CFU/100 mL	2024-12-18	HT4

Sample Qualifiers:

HT4 The collection date and/or time was not provided. Therefore holding time exceedances cannot be properly identified.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Quesnel, City of	**WORK ORDER**	24L2142
PROJECT	Quarterly Wells	**REPORTED**	2024-12-27 09:17

Analysis Description	Method Ref.	Technique	Accredited	Location
Anions in Water	SM 4110 B (2020)	Ion Chromatography	✓	Kelowna
Coliforms, Total in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna
E. coli in Water	SM 9222* (2015)	Membrane Filtration / Chromocult Agar	✓	Kelowna

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