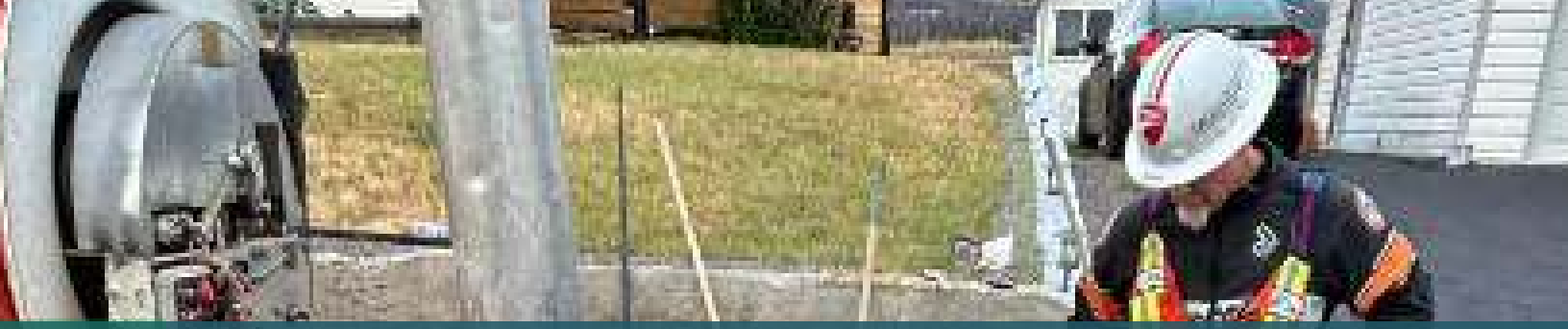

2024

DISTRICT OF LOGAN LAKE

ANNUAL WATER REPORT

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DISTRICT OF
Logan Lake
Discover Our Nature

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Director of Public Works and Recreation

1.0 Introduction

This report was prepared in compliance with the requirements under the British Columbia *Drinking Water Protection Act* (DWPA) and the District of Logan Lake Operating Permit. This report includes an overview of source water and distribution system that supplies the District, a summary of the total water consumption and water quality analysis completed, and a recap of projects and related operations. This report has been provided to Interior Health and posted on the District's website.

2.0 The District of Logan Lake Water System

The District of Logan Lake takes pride in its water source and is continually working towards improvements and operations that safely distribute that water throughout the District. For the 2024 calendar year the District had four operational wells. All four wells extract water from the Guichon Aquifer that is not under the influence of surface water. The unchlorinated groundwater is pumped up to two reservoirs which is distributed through 26.1 km of water mains throughout the community. The water utility for Logan Lake is classified by the Environmental Operators Certification Program (EOCP) as a Level II Water Distribution System.

2.1 The Wells

The District of Logan Lake's water distribution system is supplied from four deep wells located on the west side of the District. All wells draw water from the Guichon Aquifer, located within the Guichon Creek Valley immediately west of the town site. There are two main pumphouses which are situated approximately 200m apart. The first pumphouse contains Well #5 which was developed to replace production Well #1. The second pump house contains Well's #2, #3 and #4. Well #2 and #4 are the current production wells in the second pumphouse and Well 3 currently operates as backup for Well #4.

2.1.1 Well Projects and Upgrades

Security fencing was installed around the perimeter of Jasper Reservoir in November of 2024. SCADA radio system upgrades were completed to replace the existing radio and antenna configuration. Sediment removal from Jasper from the Jasper Reservoir was completed by Aquavision in June.

2.1.2 Source Water Protection

The District of Logan Lake employs a series of test wells and continuously monitors water levels within the wells used for production to monitor any changes within the source water. These measures came about through a series of reports. In 2007 the District had a study done which developed a "Framework for Wellhead Protection". This study developed from a series of tests, provided the flow rate and geotechnical profiles of each well. A further study produced in 2019 which used data from 2012 to 2015 provided "Groundwater Supply Evaluation, Monitoring and a Protection Plan." The District also registered a common groundwater license for all wells that now allows for a combined extraction volume instead of individual amounts attributed to each well.

2.2 Water Storage

The district operates two reservoirs in the Districts water system, the Jasper Reservoir and the Breccia Reservoir, have full water levels at an elevation of 1166m. The Jasper Reservoir has a total volume of 1900$m^3$and the Breccia Reservoir has a total volume of 690m^3. The Jasper Reservoir is located off Jasper drive on the east side of town, and the Breccia Reservoir is located east of Breccia Drive on the North side of town. The total water storage capacity for the Districts water distribution system is 2590m^3.

2.3 Distribution System

The District's distribution system provides potable water to over 2200 residents and multiple businesses and contains approximately 1200 service connections within the District's boundaries. The distribution system extends for approximately 26.1 km, and the composition of pipe material can be seen in Figure 1.

Figure 1: District of Logan Lake Pipe Material Breakdown

Material	Total Length (m)	Total Length as %
AC	8018.7	30.76%
CMP Casing	15.0	0.06%
DI	1634.9	6.27%
HDPE	974.7	3.74%
PVC	15349.4	58.87%
STEEL	9.00	0.03%
unknown	70.0	0.27%
Grand Total	**26071.7**	**100.00%**

The system comprises of two pressure zones. Zone 1 has pressures established by 5 pressure reducing valve stations (PRVs) throughout the system. Zone 2 has pressures established by the levels of the Jasper and Breccia Reservoirs.

2.3.1 Distribution Maintenance and Events

Normal operations for the District distribution system consists of a mix of service requests for water connections and water on/offs, annual valve and hydrant maintenance, sampling events, flushing programs and response to small repairs such as curb stops and larger events such as water main breaks. The distribution system was disinfected, and Fire Hydrant flushing was completed in July of 2024.

As part of the Topaz rehabilitation project 423m of new C900 watermain was replaced as well as 3 fire hydrants and 30 lot services were installed as part of the project. The campground also completed an 80m watermain extension and installation of a fire hydrant as part of the capital projects for 2024.

Figure 2 includes a couple pictures of some of the maintenance and repairs completed within the District for 2024.

Figure 2: Water Main Repairs, Hydrant Maintenance and Flushing Program

3.0 Cross Connection Control Program (CCCP)

The District of Logan Lake has a CCCP that targets industrial, commercial, and multi-family residential buildings. The District uses a contractor to manage the program which includes processing test reports and follow up with non-compliant businesses. The District maintains 39 backflow prevention assemblies (BFA) and has one staff certified in cross connection control testing. Figure 3 provides a summary of the District CCCP at the end of 2024 calendar year.

Figure 3: Summary of District CCCP Status for 2024 Year End

Cross-Connection Control Program

District of Logan Lake

Summary Report - Jan 07, 2025

Facilities	72
Past Due BFP Test Reports	5
Total BFPs Tracked	86
Mandatory Test Required	85
Test Not Required	1

Facilities (H, M, L Classifications)

Hazards	Quantity	Not Surveyed	Surveyed	Vacant	Compliant
High	13	0	13	0	13
Medium	38	1	37	0	27
Low	20	0	20	0	12
None*	1	1	0	1	0
Totals	72	2	70	1	52

*** *Facilities without H, M, or L hazard classifications are grouped in the **None** category.*

Classifications

Below is a full breakdown of all facility classifications:

Classification	Totals
HSC *Severe / High Hazard Compliant*	13
LS *Low Hazard Surveyed*	7
LSC *Low Hazard Complinat*	12
M *Moderate Hazard*	1
MS *Moderate Hazard Surveyed*	10
MSC *Moderate Hazard Compliant*	27
V *Vacant Facility / Property*	1
Not set	1

4.0 Operator Training and Certification

The District of Logan Lake water utility is classified as a Level II system by the EOCP. As the system is classified as Level II the District must employee at least one Level II certified Operator. Currently the District has two Level II Operators and one Operator in training. Training of operators is a top priority for the District which is reflected by employees the hold a variety of EOCP certifications including a Level IV in Water Treatment and a Level III and Level I in Wastewater Treatment.

5.0 Water Consumption

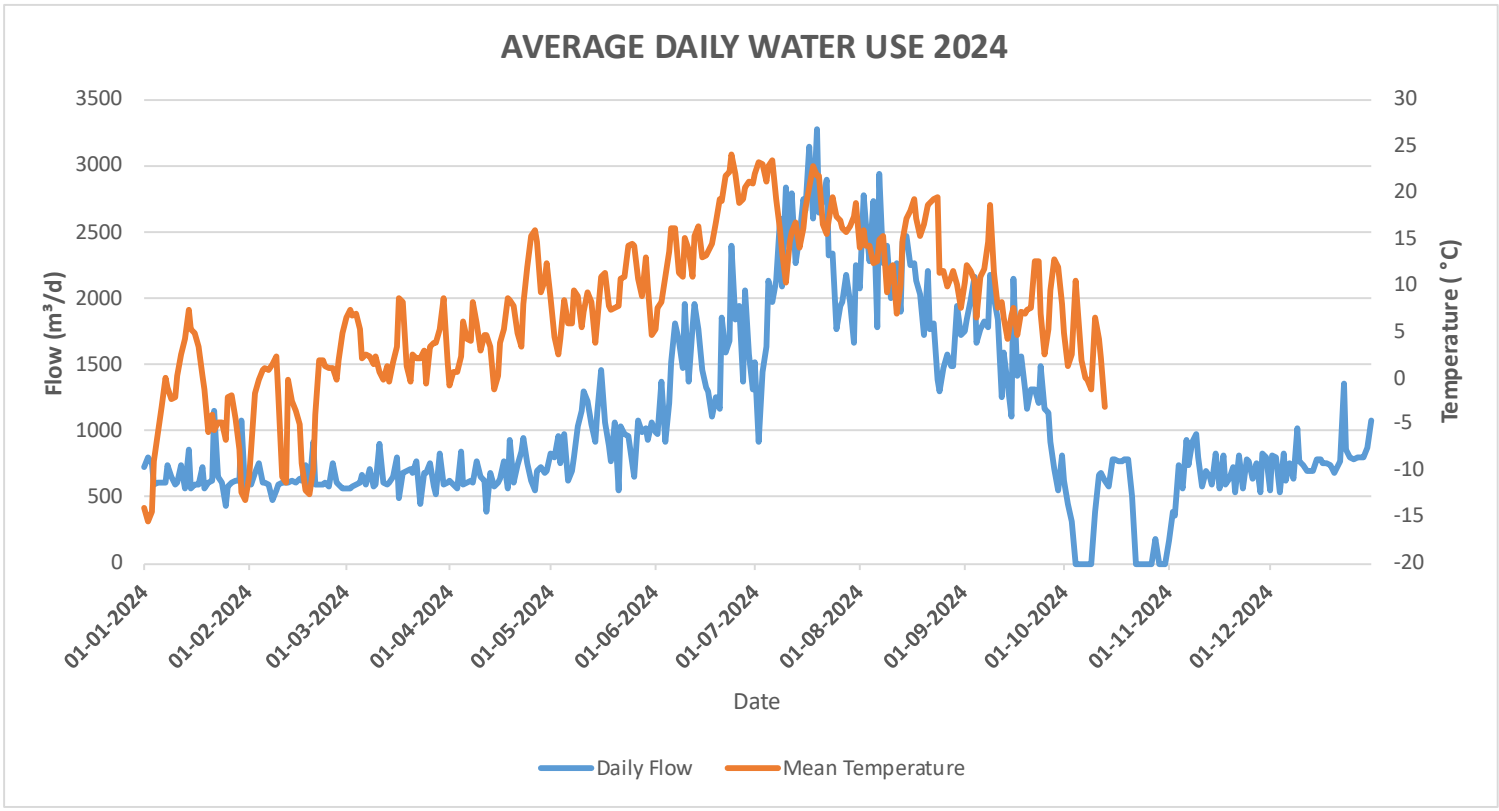
The Districts water consumption is monitored and recorded through SCADA systems for each of the supply wells. The following Figure 4 presents the total volume of water pumped in cubic meters monthly for the 2015 to 2024 calendar year.

Figure 4: District of Logan Lake Water Monthly Water Use for the Past 10 Years

	Year										Year to Year Average		
Month	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	10 Year Average	10 Year Max	10 Year Min
January	21,262	22,206	24,058	25,673	22,657	21,210	22,969	20,788	19,448	20,706	22,098	25,673	19,448
February	19,999	20,343	18,910	23,225	22,057	18,574	21,136	24,130	16,600	18,225	20,320	24,130	16,600
March	20,321	20,986	22,319	25,644	24,167	21,711	23,130	38,021	19,482	20,030	23,581	38,021	19,482
April	24,171	30,969	20,700	26,214	24,562	21,122	25,588	20,632	14,986	20,185	22,913	30,969	14,986
May	45,813	42,991	29,846	60,686	39,343	34,832	38,362	28,698	39,546	29,488	38,961	60,686	28,698
June	52,752	50,682	62,299	55,350	47,460	29,152	82,856	32,746	56,685	46,031	51,601	82,856	29,152
July	56,370	46,754	95,181	71,442	43,625	46,710	84,544	65,225	65,094	70,316	64,526	95,181	43,625
August	69,975	51,920	82,229	56,664	60,430	62,427	50,012	73,985	62,118	63,623	63,338	82,229	50,012
September	48,691	29,530	42,931	30,112	26,822	47,674	30,346	45,335	38,835	44,397	38,467	48,691	26,822
October	24,161	22,176	24,222	23,022	19,767	26,588	21,396	21,131	21,107	9,710	21,328	26,588	9,710
November	20,176	22,070	23,053	22,496	19,680	25,250	20,132	17,703	20,203	20,343	21,111	25,250	17,703
December	22,720	22,984	24,975	22,342	20,661	26,876	21,871	18,700	17,686	24,345	22,316	26,876	17,686
Total Volume	426,412	383,612	470,722	442,869	371,230	382,128	442,343	407,096	391,790	387,399	410,560	470,722	371,230
Peak Day	4,218	2,431	3,739	4,368	2,497	2,764	4,178	3,574	3,248	3,276	3,429	4,368	2,431
Date	Jul-25	Jun-05	Jul-07	May-26	Aug-07	Aug-17	28-Jun	27-Jul	07-Jun	19-Jul			
Average Daily Use	1,168	1,051	1,290	1,213	1,017	1,047	1,212	1,115	1,073	1,061	1,139	1,290	1,017
Average Indoor Use	721	763	746	795	724	761	737	760	611	630	751	795	721

The 2024 Calendar year seen production levels return to similar numbers experienced in 2022 after the 2021 increase in production due to the heat dome event. The Daily Water production can be seen in Figure 5.

Figure 5: Average Daily Water Use for 2024



6.0 Water Quality Sampling and Analysis

The water quality from the source wells through to the distribution system is analyzed regularly as part of the measures to ensure safe drinking water. Samples are taken weekly from within the distribution system and the wells are sampled annually for a multitude of parameters and sent off to an accredited lab.

6.1 Distribution Water Quality

The District is committed to providing safe drinking water throughout the Distribution System. To ensure this happens two sites are sampled for bacteriological analysis weekly. The sample locations are rotated between summer and winter locations at spots on the furthest points within the distribution system. These bacteriological analyses include background bacterial counts, total coliforms, and E. coli.

6.1.1 Background Bacterial Monitoring

Background bacteria monitoring is done through what is called a heterotrophic plate count (HPC). Heterotrophic bacteria are a group of bacteria that use carbon as a food source and can be found in a variety of water sources. Most bacteria found in water are heterotrophic. In general, these bacteria are not pathogenic, and the HPC test will not tell you whether the water is bad to drink. Because of this, there is no maximum acceptable concentration (MAC), as stated in the GCDWQ. This test tells us if there are conditions within the system that bacteria can regrow or thrive in.

The District uses this test to monitor for growth within the distribution system which may indicate need for flushing.

6.1.2 Coliform Bacterial Monitoring

Coliform bacteria are a group of bacteria that is a little more of a narrow focus from the HPC test. These bacteria again represent a large group of bacteria found in water and soil, on vegetation, and in the feces of mammals. Most of these bacteria are not harmful to humans, but because of the ease of testing of these bacteria, it makes for a great indicator of contamination.

In water treatment systems, there is a zero-threshold allowance for coliforms within water samples. If a sample shows up positive for coliforms, the site is immediately resampled and, if coliforms are found again further steps are introduced which include system flushing and may lead to boil water advisories.

6.1.3 E. Coli Bacterial Monitoring

E. coli bacteria are a subsection of coliform bacteria. These bacteria may not be harmful to human health, but specific strains can cause serious health issues and even death in some instances. These bacteria are also found almost exclusively in the feces of mammals; therefore, they are a definite sign of contamination. Any positive counts for coliforms or E. coli result in an immediate boil water advisory, resampling, and cleaning of the affected area. The results for the 2023 distribution system can be seen in Figure 6 and 7.

Figure 6: Distribution Bacteriological Testing

Date	Lab	Total Coliform (cfu/100mL)	Background Coliform (cfu/100mL)	E Coli (cfu/100mL)	Location	Notes
02-Jan	ALS	<1	<1	<1	Shop	
02-Jan	ALS	<1	<1	<1	Office	
08-Jan	ALS	<1	<1	<1	Shop	
08-Jan	ALS	<1	<1	<1	Office	
15-Jan	ALS	<1	<1	<1	Shop	
15-Jan	ALS	<1	<1	<1	Office	
22-Jan	ALS	<1	<1	<1	Shop	
22-Jan	ALS	<1	<1	<1	Office	
29-Jan	ALS	<1	<1	<1	Shop	
29-Jan	ALS	<1	<1	<1	Office	
05-Feb	ALS	<1	<1	<1	Shop	
05-Feb	ALS	<1	<1	<1	Office	
12-Feb	ALS	<1	<1	<1	Shop	
12-Feb	ALS	<1	<1	<1	Office	
20-Feb	ALS	<1	<1	<1	Shop	
20-Feb	ALS	<1	<1	<1	Office	
26-Feb	ALS	<1	<1	<1	Shop	
26-Feb	ALS	<1	<1	<1	Office	
05-Mar	ALS	<1	<1	<1	Shop	
05-Mar	ALS	<1	<1	<1	Office	
11-Mar	ALS	<1	<1	<1	Shop	
11-Mar	ALS	<1	<1	<1	Office	
18-Mar	ALS	<1	<1	<1	Shop	
18-Mar	ALS	<1	<1	<1	Office	
25-Mar	ALS	<1	<1	<1	Shop	
25-Mar	ALS	<1	<1	<1	Office	
02-Apr	ALS	<1	<1	<1	Shop	
02-Apr	ALS	<1	<1	<1	Office	
08-Apr	ALS	<1	<1	<1	Shop	
08-Apr	ALS	<1	<1	<1	Office	
15-Apr	ALS	<1	<1	<1	Shop	
15-Apr	ALS	<1	<1	<1	Office	
22-Apr	ALS	<1	<1	<1	Shop	
22-Apr	ALS	<1	<1	<1	Office	
29-Apr	ALS	<1	<1	<1	Shop	
29-Apr	ALS	<1	<1	<1	Office	
06-May	ALS	<1	<1	<1	Shop	
06-May	ALS	<1	<1	<1	Office	
13-May	ALS	<1	<1	<1	Shop	
13-May	ALS	<1	<1	<1	Office	
21-May	ALS	<1	<1	<1	Shop	
21-May	ALS	<1	<1	<1	Office	
27-May	ALS	<1	<1	<1	Shop	
27-May	ALS	<1	<1	<1	Office	
04-Jun	ALS	<1	<1	<1	Office	
04-Jun	ALS	<1	<1	<1	Shop	Valve excercising Program
10-Jun	ALS	<1	<1	<1	Office	
10-Jun	ALS	<1	<1	<1	Shop	
17-Jun	ALS	<1	<1	<1	Office	
17-Jun	ALS	<1	<1	<1	Office	
24-Jun	ALS	<1	<1	<1	Shop	
24-Jun	ALS	<1	<1	<1	Office	
02-Jul	ALS	<1	<1	<1	Office	
02-Jul	ALS	<1	<1	<1	Office	
08-Jul	ALS	<1	<1	<1	Shop	Hydrant Maint
08-Jul	ALS	<1	<1	<1	Office	
15-Jul	ALS	<1	<1	<1	Office	Valve excercising program
15-Jul	ALS	<1	<1	<1	Office	
22-Jul	ALS	<1	<1	<1	Shop	
22-Jul	ALS	<1	<1	<1	Office	
29-Jul	ALS	<1	<1	<1	Office	
29-Jul	ALS	<1	<1	<1	Office	

Figure 7: Distribution Bacteriological Testing Continued

06-Aug	ALS	<1	<1	<1	Shop	
06-Aug	ALS	<1	<1	<1	Office	Standpipe repairs
12-Aug	ALS	<1	<1	<1	Office	
12-Aug	ALS	<1	<1	<1	Office	
19-Aug	ALS	<1	<1	<1	Shop	
19-Aug	ALS	<1	<1	<1	Office	
26-Aug	ALS	<1	<1	<1	Shop	
26-Aug	ALS	<1	<1	<1	Office	
03-Sep	ALS	<1	<1	<1	Office	
03-Sep	ALS	<1	<1	<1	Office	
09-Sep	ALS	<1	<1	<1	Shop	
09-Sep	ALS	<1	<1	<1	Office	
16-Sep	ALS	<1	<1	<1	Shop	
16-Sep	ALS	<1	<1	<1	Office	
23-Sep	ALS	<1	<1	<1	Office	
23-Sep	ALS	<1	<1	<1	Office	
01-Oct	ALS	<1	<1	<1	Shop	
01-Oct	ALS	<1	<1	<1	Office	
07-Oct	ALS	<1	<1	<1	Shop	
07-Oct	ALS	<1	<1	<1	Office	
15-Oct	ALS	<1	<1	<1	Office	Topaz Watermain Tie in
15-Oct	ALS	<1	<1	<1	Office	
21-Oct	ALS	<1	<1	<1	Shop	
21-Oct	ALS	<1	<1	<1	Office	Parks Irrigation Shutdown
28-Oct	ALS	<1	<1	<1	Shop	
28-Oct	ALS	<1	<1	<1	Office	
04-Nov	ALS	<1	<1	<1	Office	
04-Nov	ALS	<1	<1	<1	Office	
12-Nov	ALS	<1	<1	<1	Shop	
12-Nov	ALS	<1	<1	<1	Office	
18-Nov	ALS	<1	<1	<1	Shop	
18-Nov	ALS	<1	<1	<1	Office	Campground Watermain Tie in
25-Nov	ALS	<1	<1	<1	Office	
25-Nov	ALS	<1	<1	<1	Office	
02-Dec	ALS	<1	<1	<1	Shop	
02-Dec	ALS	<1	<1	<1	Office	
09-Dec	ALS	<1	<1	<1	Office	Standpipe repairs
09-Dec	ALS	<1	<1	<1	Office	
16-Dec	ALS	<1	<1	<1	Shop	
16-Dec	ALS	<1	<1	<1	Office	
23-Dec	ALS	<1	<1	<1	Office	
23-Dec	ALS	<1	<1	<1	Office	
30-Dec	ALS	<1	<1	<1	Shop	
30-Dec	ALS	<1	<1	<1	Office	

6.2 Source Water Quality

Water quality monitoring for the wells consists of routine turbidity analysis and a yearly in depth of analysis of the wells which are in production. The results of the routine turbidity analysis can be seen in Figure 8 and 9, while the results from the annual in-depth analysis can be found in Figure 10, 11,12.

Figure 8: Turbidity Analysis For 2024

Date	Location	NTU		Date	Location	NTU
02-Jan	Shop	0.13		06-May	Shop	0.1
02-Jan	Office	0.17		06-May	Office	0.11
08-Jan	Shop	0.09		13-May	Shop	0.08
08-Jan	Office	0.11		13-May	Office	0.1
15-Jan	Shop	0.09		21-May	Shop	0.03
15-Jan	Office	0.11		21-May	Office	0.04
22-Jan	Shop	0.09		27-May	Shop	0.06
22-Jan	Office	0.11		27-May	Office	0.08
29-Jan	Shop	0.12		04-Jun	Shop	0.15
29-Jan	Office	0.13		04-Jun	Office	0.1
05-Feb	Shop	0.11		10-Jun	Shop	0.11
05-Feb	Office	0.11		10-Jun	Office	0.12
12-Feb	Shop	0.12		17-Jun	Shop	0.11
12-Feb	Office	0.09		17-Jun	Office	0.11
20-Feb	Shop	0.08		24-Jun	Shop	0.12
20-Feb	Office	0.13		24-Jun	Office	0.13
26-Feb	Shop	0.08		02-Jul	Shop	0.12
26-Feb	Office	0.07		02-Jul	Office	0.11
05-Mar	Shop	0.1		08-Jul	Shop	0.13
05-Mar	Office	0.11		08-Jul	Office	0.08
11-Mar	Shop	0.18		15-Jul	Shop	0.18
11-Mar	Office	0.09		15-Jul	Office	0.12
18-Mar	Shop	0.09		22-Jul	Shop	0.14
18-Mar	Office	0.07		22-Jul	Office	0.19
25-Mar	Shop	0.1		29-Jul	Shop	0.14
25-Mar	Office	0.11		29-Jul	Office	0.16
02-Apr	Shop	0.1		06-Aug	Shop	0.18
02-Apr	Office	0.1		06-Aug	Office	0.13
08-Apr	Shop	0.1		12-Aug	Shop	0.14
08-Apr	Office	0.1		12-Aug	Office	0.12
15-Apr	Shop	0.11		19-Aug	Shop	0.18
15-Apr	Office	0.12		19-Aug	Office	0.2
22-Apr	Shop	0.12		26-Aug	Shop	0.1
22-Apr	Office	0.15		26-Aug	Office	0.1
29-Apr	Shop	0.11		03-Sep	Shop	0.13
29-Apr	Office	0.13		03-Sep	Office	0.12

Figure 9: Turbidity Analysis for 2024 Continued

Date	Location	NTU		Date	Location	NTU
09-Sep	Shop	0.16		04-Nov	Office	0.19
09-Sep	Office	0.12		12-Nov	Shop	0.09
16-Sep	Shop	0.18		12-Nov	Office	0.13
16-Sep	Office	0.12		18-Nov	Shop	0.22
23-Sep	Shop	0.17		18-Nov	Office	0.13
23-Sep	Office	0.08		25-Nov	Shop	0.09
01-Oct	Shop	0.15		25-Nov	Office	0.08
01-Oct	Office	0.16		02-Dec	Shop	0.09
07-Oct	Shop	0.1		02-Dec	Office	0.11
07-Oct	Office	0.14		09-Dec	Shop	0.08
15-Oct	Shop	0.22		09-Dec	Office	0.09
15-Oct	Office	0.1		16-Dec	Shop	0.13
21-Oct	Shop	0.09		16-Dec	Office	0.1
21-Oct	Office	0.12		23-Dec	Shop	0.14
28-Oct	Shop	0.17		23-Dec	Office	0.16
28-Oct	Office	0.31		30-Dec	Shop	0.09
04-Nov	Shop	0.12		30-Dec	Office	0.14

Figure 10: Physical Tests

Physical Tests (Matrix: Water) November 26, 2024

Parameters	Lowest Detection Limit	Units	Well # 2	Well # 3	Well # 5
Conductivity	2.0	µS/cm	527	555	2.0
Absorbance, UV (@ 254nm), unfiltered	0.0050	AU/cm	0.0280	0.0140	0.0050
Alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	242	260	1.0
Alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0	<1.0	1.0
Alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	1.0
Alkalinity, phenolphthalein (as CaCO3)	1.0	mg/L	<1.0	<1.0	1.0
Alkalinity, total (as CaCO3)	1.0	mg/L	242	260	1.0
Colour, true	5.0	CU	<5.0	<5.0	5.0
Hardness (as CaCO3), from total Ca/Mg	0.60	mg/L	249	261	0.60
Langelier index (@ 4°C)	0.010	-	0.480	0.663	0.010
Solids, total dissolved [TDS]	10	mg/L	338	361	20
Turbidity	0.10	NTU	0.25	0.46	0.10
pH	0.10	pH units	8.01	8.14	0.10
Langelier index (@ 15°C)	0.010	-	0.655	0.836	0.010
Transmittance, UV (@ 254nm), unfiltered	1.0	% T/cm	93.8	96.8	1.0
Langelier index (@ 20°C)	0.010	-	0.728	0.910	0.010
Langelier index (@ 25°C)	0.010	-	0.799	0.980	0.010
Langelier index (@ 60°C)	0.010	-	1.24	1.42	0.010
Langelier index (@ 77°C)	0.010	-	1.44	1.62	0.010
pH, saturation (@ 4°C)	0.010	pH units	7.53	7.48	0.010
pH, saturation (@ 15°C)	0.010	pH units	7.36	7.30	0.010
pH, saturation (@ 20°C)	0.010	pH units	7.28	7.23	0.010
pH, saturation (@ 25°C)	0.010	pH units	7.21	7.16	0.010
pH, saturation (@ 60°C)	0.010	pH units	6.77	6.72	0.010
pH, saturation (@ 77°C)	0.010	pH units	6.57	6.52	0.010

Figure 11: Anions and Nutrients

Anions and Nutrients (Matrix: Water) November 26, 2024

Parameters	Lowest Detection Limit	Units	Well # 2	Well # 3	Well # 5
Ammonia, total (as N)	0.0050	mg/L	<0.0050	<0.0050	0.0050
Bromide	0.050	mg/L	<0.050	<0.050	0.050
Chloride	0.50	mg/L	16.6	23.5	0.50
Fluoride	0.020	mg/L	0.102	0.113	0.020
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	0.210	0.109	0.050
Nitrate (as N)	0.0050	mg/L	0.736	1.28	0.0050
Nitrite (as N)	0.0010	mg/L	<0.0010	<0.0010	0.0010
Nitrogen, total organic	0.050	mg/L	0.210	0.109	0.050
Sulfate (as SO4)	0.30	mg/L	23.0	11.7	0.30
Cyanides (Matrix: Water)					
Cyanide, strong acid dissociable (Total)	0.0050	mg/L	<0.0050	<0.0050	0.0050
Organic / Inorganic Carbon (Matrix: Water)					
Carbon, total organic [TOC]	0.50	mg/L	2.03	1.03	0.50
Microbiological Tests (Matrix: Water)					
Coliforms, total	1	MPN/100mL	<1	<1	1
Coliforms, Escherichia coli [E. coli]	1	MPN/100mL	<1	<1	1
Ion Balance (Matrix: Water)					
Anion sum	0.10	meq/L	5.84	6.20	0.10
Cation sum (total)	0.10	meq/L	5.78	6.01	0.10
Ion balance (APHA)	0.010	%	-0.516	-1.56	0.010

Figure 12: Metals

Total Metals (Matrix: Water) November 26, 2024

Parameters	Lowest Detection Limit	Units	Well # 2	Well # 3	Well # 5
Aluminum, total	0.0030	mg/L	<0.0030	<0.0030	0.0030
Antimony, total	0.00010	mg/L	<0.00010	<0.00010	0.00010
Arsenic, total	0.00010	mg/L	0.00080	0.00074	0.00010
Barium, total	0.00010	mg/L	0.0313	0.0318	0.00010
Beryllium, total	0.000100	mg/L	<0.000100	<0.000100	0.000100
Bismuth, total	0.000050	mg/L	<0.000050	<0.000050	0.000050
Boron, total	0.010	mg/L	0.014	0.017	0.010
Cadmium, total	0.0000050	mg/L	<0.0000050	<0.0000050	0.0000050
Calcium, total	0.050	mg/L	58.9	62.9	0.050
Cesium, total	0.000010	mg/L	<0.000010	<0.000010	0.000010
Chromium, total	0.00050	mg/L	0.00169	0.00134	0.00050
Cobalt, total	0.00010	mg/L	<0.00010	<0.00010	0.00010
Copper, total	0.00050	mg/L	0.00952	0.00624	0.00050
Iron, total	0.010	mg/L	<0.010	0.034	0.010
Lead, total	0.000050	mg/L	0.000328	0.000092	0.000050
Lithium, total	0.0010	mg/L	<0.0010	<0.0010	0.0010
Magnesium, total	0.0050	mg/L	24.7	25.2	0.0050
Manganese, total	0.00010	mg/L	<0.00010	0.00041	0.00010
Mercury, total	0.0000050	mg/L	<0.0000050	<0.0000050	0.0000050
Molybdenum, total	0.000050	mg/L	0.00336	0.00260	0.000050
Nickel, total	0.00050	mg/L	<0.00050	<0.00050	0.00050
Phosphorus, total	0.050	mg/L	0.090	0.084	0.050
Potassium, total	0.050	mg/L	2.90	2.57	0.050
Rubidium, total	0.00020	mg/L	0.00123	0.00121	0.00020
Selenium, total	0.000050	mg/L	0.000798	0.000292	0.000050
Silicon, total	0.10	mg/L	12.7	9.89	0.10
Silver, total	0.000010	mg/L	<0.000010	<0.000010	0.000010
Sodium, total	0.050	mg/L	16.9	16.9	0.050
Strontium, total	0.00020	mg/L	0.289	0.308	0.00020
Sulfur, total	0.50	mg/L	8.51	4.49	0.50
Tellurium, total	0.00020	mg/L	<0.00020	<0.00020	0.00020
Thallium, total	0.000010	mg/L	<0.000010	<0.000010	0.000010
Thorium, total	0.00010	mg/L	<0.00010	<0.00015	0.00010
Tin, total	0.00010	mg/L	<0.00010	<0.00010	0.00010
Titanium, total	0.00030	mg/L	<0.00030	<0.00030	0.00030
Tungsten, total	0.00010	mg/L	<0.00010	<0.00010	0.00010
Uranium, total	0.000010	mg/L	0.00191	0.00217	0.000010
Vanadium, total	0.00050	mg/L	0.00390	0.00334	0.00050
Zinc, total	0.0030	mg/L	0.0217	0.0122	0.0030
Zirconium, total	0.00020	mg/L	<0.00020	<0.00020	0.00020

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