

## Grindrod Water (GRW) Water Quality Report for June 2023

The following is the water quality summary for the Grindrod Water (GRW) Utility.

On June 2, 2023, a water notice was issued as a reminder that outdoor water restrictions were still in effect and the GRW Treatment Plant was operating at full capacity.

On June 9, 2023, a water notice was issued stating that the GRW Treatment Plant was operating at full capacity and an excessive high and consistent flow of water was being drawn from the system, which was causing the water tank to drop significantly.

### 1. Source

The GRW system draws raw water from the Shuswap River through a screened intake line to a wet well. The raw water is pumped from the wet well through a small treatment plant referred to as a package treatment plant and into a below ground storage reservoir. There is no elevated storage in the whole system and as a result pumps run continuously to maintain pressure. This also means there is no way of supplying water during a power outage. Table 1 summarizes the bacterial and turbidity results for the untreated water at the treatment plant.

**Table 1 Grindrod Water Treatment Plant – Untreated**

Parameter	Laboratory		# of Samples	# of Deviations	Result	Min	Max	Average
E.coli <sup>1</sup>	Caro	CFU/100 mL	1 <sup>3</sup>	-----	>6.0	-----	-----	-----
Total Coliform	Caro	CFU/100 mL	1 <sup>3</sup>	-----	>240.0	-----	-----	-----
Turbidity	Operator Grab Sample	NTU	13	-----	----	1.72	11.4	4.61
Turbidity <sup>4</sup>	SCADA <sup>2</sup> Daily Average	NTU	-----	-----	-----	-----	-----	-----

<sup>1</sup>Drinking Water Treatment Objectives\_ BC (Sec 4.3): The number of E. coli in raw water should not exceed 20/100 mL in at least 90% of the weekly samples from the previous six months.

<sup>2</sup>SCADA: Supervisory Control and Data Acquisition.

<sup>3</sup>Caro Laboratory processed samples using membrane filtration method instead of the usual Q-Tray MPN method, therefore results are reported in CFU/100mL and are best values that could be reported by the membrane filtration method.

<sup>4</sup>Turbidity analyzer was not operating correctly during the month of June, therefore, no raw turbidity data is reported this month.

### 2. Treatment Plant

The Grindrod package water treatment plant was designed for a filter flow rate of 66 U.S. gpm (4.2 litres per second), but is operated at about 53 U.S. gpm (3.3 Lps). The flow rate is determined by the operating speed of the pump in the wet well, and meeting the turbidity guidelines. The treatment plant consists of a hydraulic flocculation chamber, a tube settler/clarifier and a mixed media filter. The plant discharge turbidity is typically below 0.2 NTU. Table 2 summarizes the results for chlorine and turbidity for the treated water at the treatment plant.

**Table 2 Grindrod Water Treatment Plant - Treated**

Parameter	Laboratory		# of Samples	# of Deviations	Result	Min	Max	Average
Free Chlorine <sup>2</sup>	SCADA <sup>1</sup> Daily Average	mg/L	30 Days	-----	-----	0.41	1.64	1.18
Free Chlorine <sup>2</sup>	Operator Grab Sample	mg/L	13	-----	-----	0.41	1.67	1.23
Total Chlorine	Operator Grab Sample	mg/L	13	-----	-----	0.44	1.79	1.32
E.coli	Caro	CFU/100 mL	1	-----	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	1	-----	-----	<1	<1	<1
Turbidity <sup>2</sup>	SCADA <sup>1</sup> Daily Average	NTU	30 Days	-----	-----	0.08	0.11	0.10
Turbidity <sup>2</sup>	Operator Grab Sample	NTU	13	-----	-----	0.06	0.22	0.13

<sup>1</sup>SCADA: Supervisory Control and Data Acquisition.

<sup>2</sup>WQ Deviation Response Plan - free chlorine < 0.20 mg/L; turbidity > 1.0 NTU.

### 3. Distribution

GRW provides potable water to 4 commercial, 3 institutional, 1 industrial, 1 recreational park, and 46 residential connections. The population served is approximately one hundred thirty eight (138). Table 3 summarizes the results for chlorine and turbidity for the distribution system from the following sample station locations: Fourth Ave, Mayberry and James St. The monthly water volume used at Grindrod was 5,348 m<sup>3</sup>.

**Table 3 Grindrod Distribution Parameters**

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
Free Chlorine <sup>1</sup>	Operator Grab Sample	mg/L	14	-----	0.38	1.53	1.10
Total Chlorine	Operator Grab Sample	mg/L	14	-----	0.40	1.58	1.17
E.coli	Caro <sup>2</sup>	CFU/100 mL	3	-----	<1	<1	<1
Total Coliform	Caro <sup>2</sup>	CFU/100 mL	3	-----	<1	<1	<1
Turbidity <sup>1</sup>	Operator Grab Sample	NTU	14	-----	0.06	0.34	0.18

<sup>1</sup>WQ Deviation Response Plan - free chlorine < 0.20 mg/L turbidity > 1.0 NTU.

<sup>2</sup>Treatment Plant bacterial samples are included in the required monthly bacterial sampling amounts as per Drinking Water Protection Regulations Schedule B.

**4. Water Quality Customer Calls and Notifications**

Customer calls within the Grindrod Water Utility service area are tracked and recorded. There was one customer call this month.

**Table 4 Water Quality Customer Calls for the month**

# of Calls	Type of Call	Issue/Inquiry	Investigation	Comments
1	Inquiry	Water Quality - hardness	N/A	Customer verbally told hardness level and emailed customer website link to comprehensive and monthly reports

**5. Operational or Maintenance Activity**

Operational activities within the Grindrod Water service area are tracked and recorded. There were two distribution operational activities this month.

Table 5 outlines the distribution operational and maintenance activities during the month.

**Table 5 Monthly Operational Work and Maintenance**

NUMBER OF LOCATIONS	TYPE OF WORK
0	Standpipe Maintenance
1	Water Service Locate
0	Water Main Break Repair
0	Water Service Install
0	Water Turn On/Off
0	Water Curb Stop Repair
0	Water Meter Inspection
0	Water Meter Maintenance
0	Water Meter Replacement
0	Water Meter Manual Read
1	Water Investigation