



# REGIONAL DISTRICT NORTH OKANAGAN

## Silver Star Water (SSW) Water Quality Report for May 2022

The following is the water quality summary for the Silver Star Water (SSW) Utility.

### 1. Sources

Not all of Silver Star's water sources are utilized year round; the system is constructed so that the sources can be brought on line based on demand. As Silver Star is primarily a winter resort, the highest water demands occur during November to March. SSW has nine water sources used for domestic use: Well 1, Well 2, Well 3, Well 4, Well 5, Well 10, Well 12, Paradise Reservoir and Vance Reservoir.

The surface water sources, Paradise and Vance Reservoirs, are metered in the Mid T water treatment plant as one volume; it is not possible to separate the volumes of each reservoir. The surface water sources were in use for the month of May.

Table 1 summarizes the results of the raw water entering the treatment process. This is a blend of sources depending on demands in the system. This results in data variation throughout the year. Tables 2 and 3 summarize the results for the untreated water of the wells and the surface sources. Wells 4, 5, 10, and 12 have not been used this season.

**Table 1 Mid T Raw Water Monitoring**

| Parameter      | Laboratory                             |            | # of Samples | # of Deviations <sup>1</sup> | Min  | Max  | Average |
|----------------|--|------------|--------------|------------------------------|------|------|---------|
| E.coli         | Caro                                   | MPN/100 mL | 3            | -----                        | <1   | <1   | <1      |
| Total Coliform | Caro                                   | MPN/100 mL | 3            | -----                        | <1   | <1   | <1      |
| Turbidity      | Grab sample                            | NTU        | 7            | -----                        | 0.56 | 0.76 | 0.64    |
| Turbidity      | SCADA <sup>2</sup><br>Daily<br>Average | NTU        | 31           | -----                        | 0.05 | 0.69 | 0.37    |

<sup>1</sup>SSW WQ Deviation Response Plan – Free Chlorine <0.20 mg/L Turbidity >1.0 NTU

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

**Table 2 Mid T Raw Water Monitoring – Wells**

| Parameter | Laboratory                             |     | # of Samples | # of Deviations <sup>1</sup> | Min  | Max  | Average |
|-----------|--|-----|--------------|------------------------------|------|------|---------|
| Turbidity | SCADA <sup>2</sup><br>Daily<br>Average | NTU | 31           | -----                        | 0.49 | 1.66 | 0.86    |

**Table 3 Mid T Raw Water Monitoring – Surface Sources**

| Parameter           | Laboratory                             |            | # of Samples | # of Deviations <sup>1</sup> | Min  | Max  | Average |
|---------------------|--|------------|--------------|------------------------------|------|------|---------|
| E.coli              | Caro                                   | MPN/100 mL | 2            | -----                        | <1   | <1   | <1      |
| Total Coliform      | Caro                                   | MPN/100 mL | 2            | -----                        | <1   | 3    | 1.5     |
| Turbidity           | Grab sample                            | NTU        | 3            | -----                        | 0.83 | 1.29 | 1.04    |
| Turbidity           | SCADA <sup>2</sup><br>Daily<br>Average | NTU        | 31           | -----                        | 0.26 | 3.40 | 0.89    |
| UVT -<br>Unfiltered | RDNO Lab                               | %          | 3            | -----                        | 96.1 | 99.6 | 97.33   |

<sup>1</sup>SSW WQ Deviation Response Plan – Free Chlorine <0.20 mg/L Turbidity >1.0 NTU

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

## 2. Treatment Plant

SSW has a treatment plant, the Mid T Water Treatment Plant (MTWTP). The MTWTP uses a dual disinfection process of Ultra-violet (UV) disinfection and chlorine. Chlorine is added after UV treatment to ensure contact time for the removal of viruses. Tables 4, 5 and 6 summarize the results for chlorine, bacterial, turbidity, calculated contact time, and UV transmittance (UVT).

**Table 4 Mid T Water Treatment Plant**

| Parameter      | Laboratory                          |            | # of Samples | # of Deviations <sup>1</sup> | Min  | Max  | Average |
|----------------|-------------------------------------|------------|--------------|------------------------------|------|------|---------|
| Free Chlorine  | SCADA <sup>2</sup><br>Daily Average | mg/L       | 31           | -----                        | 1.41 | 1.60 | 1.49    |
| Free Chlorine  | Grab sample                         | mg/L       | 12           | -----                        | 1.32 | 1.69 | 1.55    |
| Total Chlorine | Grab sample                         | mg/L       | 12           | -----                        | 1.48 | 1.78 | 1.65    |
| E.coli         | Caro                                | CFU/100 mL | 6            | -----                        | <1   | <1   | <1      |
| Total Coliform | Caro                                | CFU/100 mL | 6            | -----                        | <1   | <1   | <1      |
| Turbidity      | SCADA <sup>2</sup><br>Daily Average | NTU        | 31           | -----                        | 0.21 | 0.51 | 0.44    |
| Turbidity      | Grab sample                         | NTU        | 12           | -----                        | 0.10 | 0.65 | 0.43    |

<sup>1</sup>SSW WQ Deviation Response Plan – Free Chlorine <0.20 mg/L Turbidity >1.0 NTU

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

**Table 5 Contact Time (CT)**

| Parameter           | Days Monitored | Min  | Max  | Average |
|---------------------|----------------|------|------|---------|
| Days 99.9% achieved | 13             | 100% | 100% | 100%    |

99.9% is 3-log removal for Giardia

**Table 6 Ultra-violet (UV) Disinfection**

| Parameter | Laboratory                          | Days Monitored | Min | Max | Average |
|-----------|-------------------------------------|----------------|-----|-----|---------|
| UVT       | SCADA <sup>1</sup><br>Daily Average | 31             | 88% | 99% | 96%     |

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

### 3. Distribution

Table 7 summarizes the results for chlorine, turbidity and bacterial for the distribution system from the following sites: Pinnacles, Grandview, Firehall, and Maintenance Building. The monthly water volume used at Silver Star was 5,651 m<sup>3</sup>.

**Table 7 Distribution**

| Parameter      | Laboratory  |            | # of Samples   | # of Deviations <sup>1</sup> | Min  | Max  | Average |
|----------------|-------------|------------|----------------|------------------------------|------|------|---------|
| Free Chlorine  | Grab sample | mg/L       | 29             | -----                        | 0.79 | 1.56 | 1.41    |
| Total Chlorine | Grab sample | mg/L       | 29             | -----                        | 0.88 | 1.64 | 1.48    |
| E.coli         | Caro        | CFU/100 mL | 6 <sup>2</sup> | -----                        | <1   | <1   | <1      |
| Total Coliform | Caro        | CFU/100 mL | 6 <sup>2</sup> | -----                        | <1   | <1   | <1      |
| Turbidity      | Grab sample | NTU        | 29             | -----                        | 0.21 | 0.55 | 0.33    |

<sup>1</sup>SSW 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. Customer Calls and Notifications

Customer calls within the Silver Star Water Utility service area are tracked and recorded. There was 2 customer calls in May. Table 8 summarizes the customer calls during the month.

**Table 8 Customer calls for the month**

| # of Calls | Type of Call | Issue/Inquiry                   | Investigation | Comments   |
|------------|--------------|---------------------------------|---------------|--|
| 1          | Inquiry      | Internal Water Connection Issue | No            | SSW Utility has no involvement in internal plumbing.                         |
| 1          | Inquiry      | Service Curb Stop Size          | No            | SSW Utility provided homeowner with curb stop size from development drawings |

#### 5. Operational or Maintenance Activity

Operational activities within the Silver Star Water service area are tracked and recorded. There was 11 distribution operational activities in May. Table 9 outlines the distribution operational and maintenance activities during the month.

**Table 9 Monthly Operational Work and Maintenance**

| NUMBER OF LOCATIONS | TYPE OF WORK            |
|---------------------|-------------------------|
| 0                   | Hydrant Maintenance     |
| 0                   | Water Service Locate    |
| 0                   | Water Main Break Repair |
| 0                   | Water Service Install   |
| 1                   | Water Turn On/Off       |
| 0                   | Water Curb Stop Repair  |
| 7                   | Water Meter Inspection  |
| 1                   | Water Meter Maintenance |
| 0                   | Water Meter Replacement |
| 2                   | Water Meter Manual Read |