

Silver Star Water (SSW) Water Quality Report for January 2021

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. Table 1 summarizes the results for bacterial and turbidity for the untreated water at the Mid-T which includes the blended water from the wells and surface sources, and the turbidity of the wells alone. Well 4 and Well 10 have not been used this season.

Table 1 Mid-T Raw Water Monitoring

Parameter	Laboratory		# of Samples	# of Exceedance	Min	Max	Average
E.coli	Caro	MPN/100 mL	2	-----	<1	<1	<1
Total Coliform	Caro	MPN/100 mL	2	-----	<1	<1	<1
Turbidity (blended)	grab sample	NTU	1	-----	0.26	0.26	0.26
Turbidity of the Wells	SCADA ¹ Daily Average	NTU	13 Days ²	-----	0.08	0.11	0.09

¹SCADA: Supervisory Control and Data Acquisition.

²SCADA data could not be recovered for 18 days. There was an issue that was corrected on January 20.

Table 2 Vance and Paradise Raw Water Monitoring

Parameter	Laboratory		# of Samples	# of Exceedance	Min	Max	Average
E.coli	Caro	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	Caro	MPN/100 mL	4	-----	<1	3	1
Turbidity sample site "b"	grab sample	NTU	3	-----	0.31	0.42	0.36
Turbidity of the surface sources	SCADA ¹ Daily Average	NTU	31 Days	-----	0.25	0.34	0.29

¹SCADA: Supervisory Control and Data Acquisition.

Distribution

SSW monitors contact time. Table 3 summarizes the results for chlorine, turbidity and bacterial for the distribution system from the following sites: Mid T Treated SS “c”, Pinnacles, Grandview, and Maintenance Building. Table 4 summarizes the calculated contact time. Table 5 summarizes the UVT at the Mid-T. The monthly water volume used at Silver Star was approximately 11,613 m³.

Table 3 SSW Distribution

Parameter	Laboratory		# of Samples	# of Exceedance	Min	Max	Average
Free Chlorine ¹	grab sample	mg/L	20	-----	0.56	0.64	1.60
Total Chlorine	grab sample	mg/L	20	-----	0.64	1.69	1.46
Free Chlorine ^{1,2}	SCADA Daily Average	mg/L	31 Days ³	-----	1.48	1.55	1.51
E.coli	Caro	CFU/100 mL	25	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	25	1³	<1	1	<1
Turbidity	grab sample	NTU	20	-----	0.15	0.29	0.23
Turbidity Reservoir	SCADA Daily Average	NTU	31 Days	-----	0.12	0.18	0.15
Turbidity Distribution	SCADA Daily Average	NTU	31 Days	-----	0.01	0.15	0.06

¹WQ Deviation Response Plan - Free Chlorine <0.20 mg/L or >2.20 mg/L; Turbidity >1.0 NTU

²Chlorine residual taken 10 meters after chlorination.

³One sample at Grandview has a Total Coliform of 1 counts/ 100 ml on January 18. Due to a transcription error, the wrong site was re-sampled. The Grandview was sampled again on January 25 and Total Coliform came back as <1 counts / 100 ml.

Table 4 SSW – Contact Time (CT)

Parameter	Days Monitored	Min	Max	Average
Days 99.9% achieved	27 Days	100%	100%	100%

99.9% is 3-log removal for Giardia

Table 5 Mid-T UV Transmissivity

Parameter	Laboratory		# of Samples	# of Exceedance	Min	Max	Average
UVT (unfiltered)	grab sample	%	4	-----	98.6	100.0	99.5
UVT (online)	Online Reading	%	3	-----	97.5	99.8	98.9

