



# REGIONAL DISTRICT of NORTH OKANAGAN

## Water Quality Report for December 2016

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. Paradise and Vance Reservoirs are metered in the Mid-Tee station as one volume; it is not possible to separate the volumes of each reservoir. Table 1 shows the daily volumes used at each source. Well 4 and Well 10 have not been used this season. Paradise and Vance Reservoirs were brought online December 7.

**Table 1 Daily Volume used at each Source**

DATE	WELL # 1	WELL # 2	Well # 3	WELL # 5	PARADISE and VANCE	TOTAL
1	85	151		79		314.8
2	105	186		93		383.7
3	107	191		93		391.1
4	121	213		62		395.8
5	117	209		101		427.4
6	160	128		61		348.5
7	57	105		57	107	326
8	58	107		58	104	327
9	72	133		70	128	403
10	105	193		97	187	582
11	89	163		80	155	487
12	58	113		59	140	370
13	37	74		43	133	287
14	22	115		64	215	416
15	33	66		40	127	266
16	39	73		42	131	285
17	76	141		79	235	531
18	70	128		69	211	478
19	72	140		72	227	511
20	75	141		74	241	531
21	73	131		66	249	519
22	79	147		76	283	585
23	98	125		64	347	634
24	85	156		76	303	620
25	92	169		79	326	666
26	101	181		81	355	718
27	85	157		70	307	619
28	97	186		82	361	726
29	107	197		81	384	769
30	103	190		77	361	731

31	107	195		77	369	748
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## Distribution

SSW monitors contact time. Table 2 shows the chlorine residuals for the five sites that are monitored within the distribution system. Table 3 summarizes the calculated contact time. Table 4 summarizes the results for chlorine and bacterial for the distribution system.

**Table 2 Free Chlorine Residuals within the Distribution**

DATE	Firehall	Grandview	Pinnacles	Mid Tee	Maintenance
1		1.46	1.55		
2		1.48	1.59		
3		1.44	1.54		
4					
5	1.6	1.51	1.61	1.69	0.94
6		1.52	1.59		
7		1.56	1.66		
8		1.51	1.64		
9		1.48	1.59		
10		1.44	1.67		
11					
12	1.58	1.49	1.63	1.74	1.21
13		1.52	1.65		
14		1.48	1.6		
15		1.56	1.58		
16		1.57	1.68		
17		1.53	1.62		
18					
19	1.59	1.54	1.61	1.68	1.24
20		1.49	1.67		
21		1.57	1.64		
22		1.55	1.67		
23		1.49	1.64		
24		1.53	1.66		
25					
26		1.47	1.62		
27		1.51	1.65		
28		1.54	1.59		
29	1.53	1.5	1.61	1.88	1.21
30		1.53	1.67		

31		1.55	1.64		
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**Table 3 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 4 SSW Distribution**

Parameter	Laboratory		# of Samples	# of Exceedance	Min	Max	Average
Free Chlorine	grab sample	mg/L	20	-----	0.94	1.88	1.52
Total Chlorine	grab sample	mg/L	20	-----	1.08	2.06	1.64
E.coli	Caro	MPN/100 mL	19	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	19	-----	<1	<1	<1
Turbidity	grab sample	NTU	20	-----	0.21	0.57	0.41

**Table 5 Mid-T UV Transmissivity**

Parameter	Laboratory		# of Samples	# of Exceedance	Min	Max	Average
UVT (filtered)	grab sample	%	4	-----	98.1	99.6	98.6
UVT (unfiltered)	grab sample	%	4	-----	97.0	99.3	97.9
UVT (online)	Online	%	4	-----	97.3	98.1	97.8

**Table 6 Mid-T Raw Water Monitoring**

Parameter	Laboratory		# of Samples	# of Exceedance	Min	Max	Average
E.coli	Caro	Counts/100mL	3	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	3	-----	≥19*	74*	49*
Turbidity	grab sample	NTU	3	-----	0.31	0.43	0.36

\*The surface water sources were brought online December 7, this is reflected in the increase to the Total Coliform counts.

**Table 7 Vance and Paradise Raw Water Monitoring**

<b>Parameter</b>	<b>Laboratory</b>		<b># of Samples</b>	<b># of Exceedance</b>	<b>Min</b>	<b>Max</b>	<b>Average</b>
E.coli	Caro	Counts/100mL	4	-----	<1	1	<1
Total Coliform	Caro	CFU/100 mL	4	-----	5	≥240	105.5
Turbidity	grab sample	NTU	4	-----	0.37	0.56	0.48