REGIONAL DISTRICT NORTH OKANAGAN

Greater Vernon Water (GVW) Water Quality Report for September 2025

The following is the water quality summary for the Greater Vernon Water (GVW) utility.

1. Potable Sources

GVW has two sources that are routinely used for potable water. The two sources are Duteau Creek and Kalamalka Lake. Raw (untreated) water samples are taken at the intakes of Duteau Creek and Kalamalka Lake once per week. Two additional groundwater sources, Antwerp Deep Well and Ranch Well 3, may also be used in emergency situations or when there is additional demand to the system. Tables 1 and 2 summarize the results for bacteria and turbidity for the potable water sources in use.

Table 1 Duteau Creek Intake

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average[4]
E.coli[2]	RDNO Lab	MPN/100 mL	8[5]	-----	<10	30[6]	14.4
Total Coliform	RDNO Lab	MPN/100 mL	8[5]	-----	1169	2755[6]	1824.4
Turbidity	Operator Grab Samples	NTU	4	-----	1.63	2.40	1.95
Turbidity	SCADA[1] Daily Average[3]	NTU	30 Days	-----	1.29	1.98	1.45

[1]SCADA: Supervisory Control and Data Acquisition.
[2]Drinking Water Treatment Objectives (Microbilological) for Surface Water Supplies in British Columbia (Sec 4.3): The number of E. coli in raw water samples should not exceed 20/100 mL in at least 90% of the weekly samples from the previous six months.
[3]SCADA data for this online anazlyer is a 24 hour average of readings taken every 10 minutes
[4]Non detect values are used at ½ the reporting limit for average calculations.
[5]Each sample includes at least one duplicate sample taken for quality assurance purposes.
[6]Duteau Creek Intake sees a yearly increase in Total Coliforms and E.coli begining in middle to late spring and lasting throughout the summer. We are currently seeing Coliform counts starting to drop from their peak in August and Early September.

Table 2 Kalamalka Lake Intake

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average[4]
E.coli[2]	RDNO Lab	MPN/100 mL	8[5]	-----	<1	6.3	2.2
Total Coliform	RDNO Lab	MPN/100 mL	8[5]	-----	6.3	32.3	16.9
Turbidity	Operator Grab Samples	NTU	4	-----	1.09	1.43	1.21
Turbidity	SCADA[1] Average[3]	NTU	30 Days	-----	0.77	1.35	1.08

[1]SCADA: Supervisory Control and Data Acquisition.
[2]Drinking Water Treatment Objectives (Microbilological) for Surface Water Supplies in British Columbia (Sec 4.3): The number of E. coli in raw water samples should not exceed 20/100 mL in at least 90% of the weekly samples from the previous six months.
[3]SCADA data for this online anazlyer is a 24 hour average with readings taken every 15 seconds.
[4]Non detect values are used at ½ the reporting limit for average calculations.
[5]Each sample includes at least one duplicate sample taken for quality assurance purposes.

2. Agriculture/ Irrigation Sources

The sources used for irrigation supply include Duteau Creek, King Edward/Deer Creek, Goose Lake, Coldstream Ranch Well #2 and Well #3. Table 3 summarizes the daily flows for each irrigation system.

Duteau Creek is separated into a potable water system and a non-chlorinated, non-potable water system, the latter of which is used exclusively for irrigation purposes. The other sources are separated from the potable system and are not chlorinated.

The irrigation season is from April 15 to September 15. Irrigation water used during the off season is used mainly for livestock watering. This water comes from Ranch Well #2, Ranch Well #3, King Edward and Duteau Creek.

Table 3 Irrigation Volumes for Irrigation Sources over the Month

Irrigation Sources	DCWTP	Well 3	Well 2	King Edward
Min (ML/Day)	0.00	0.00	0.00	0.00
Max (ML/Day)	7.59	3.16	1.01	4.63
Average (ML/Day)	1.49	0.57	0.12	2.33
Monthly Total (ML)	44.68	17.56	3.86	72.16

3. Treatment Plants

GVW has two treatment plants: Duteau Creek Water Treatment Plant (DCWTP) and Mission Hill Water Treatment Plant (MHWTP). At the DCWTP, water is treated with a coagulant and mixed to create a floc before Dissolved Air Flotation (DAF) achieves clarification. Chlorine is added after clarification to ensure contact time for the removal of viruses, followed by Ultra-violet (UV) disinfection. Finally, an additional dose of chlorine is added before entering the distribution system to maintain residual chlorine throughout the system. MHWTP contains dual disinfection which includes UV and chlorine.

Tables 4 and 6 summarize results for chlorine, bacteria, turbidity, and UV Transmittance (UVT). Table 5 summarizes the log removal of viruses at the DCWTP.

Table 4 Duteau Creek Water Treatment Plant Reservoir

Parameter	Laboratory	Units	# of Samples	# of Deviations	Min	Max	Average[4]
Free Chlorine[2]	SCADA[1] Daily Average	mg/L	30 Days	-----	1.85	2.02	1.91
E.coli	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Turbidity[2]	SCADA[1] Daily Average	NTU	30 Days	-----	0.17	0.37	0.29
Pre UVT[3]	SCADA[1] Daily Average	%	30 Days	-----	84.68	88.68	86.43

[1]SCADA: Supervisory Control and Data Acquisition.
[2]Operation Guideline: As outlined in Deviation Response Plan, free chlorine >1.0 mg/L, turbidity <1.0 NTU.
[3]UVT is monitored pre-UV treatment which is used to determine UV dosage.
[4]Non detect values are used at ½ the reporting limit for average calculations.

This month, 0 m^3 of off-spec water occurred at DCWTP

Table 5 DCWTP – Log Removal of Viruses

Log Removal of Viruses[1]	
Days Monitored	30 Days
Days 4-Log Inactivation Achieved	30 Days

[1]4-log virus removal logged by the minute on SCADA.

Table 6 Mission Hill Water Treatment Plant

Parameter	Laboratory	Units	# of Samples	# of Deviations	Min	Max	Average[3]
Free Chlorine	SCADA[1] Daily Average	mg/L	30 Days	-----	2.12	2.22	2.19
E.coli	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Turbidity[2]	SCADA[1] Daily Average	NTU	30 Days	-----	0.75	1.43	1.08[4]
Pre UVT	SCADA[1] Daily Average	%	30 Days	-----	91.61	92.42	91.92

[1]SCADA: Supervisory Control and Data Acquisition.
[2]Operation Guideline: As outlined in Deviation Response Plan, free chlorine >0.8 mg/L, turbidity <3.0 NTU.
[3]Non detect values are used at ½ the reporting limit for average calculations.
[4]Turbidity increase in MHWTP due to Marl in Kalamalka Lake during summer months. Marl is now ending and turbidity is starting to return to normal.

This month, no off-spec water occurred at MHWTP.

4. Distribution

While the domestic GVW system has areas that are normally served by either of the two main sources (DCWTP or MHWTP), the system is interconnected with the ability to move water from each source to various parts of the system. The distribution areas from either source may change depending on water demands, source water availability or water quality, and is therefore considered a combined system for the purposes of data reporting. GVW has approximately 23,000 service connections. When possible, water source change notices may be put out to advise customers of a change.

Table 7 summarizes the daily flow for each distribution system. The Duteau and Kalamalka systems have many locations where they can be interconnected. This means there are areas where there is a blend of water quality and can be identified by the conductivity of the water.

Table 7 Volumes for GVW Distribution Systems over the Month

Volumes	DCWTP	MHWTP
Min (ML/Day)	8.40	14.83
Max (ML/Day)	61.20	25.61
Average (ML/Day)	30.32	20.29
Monthly Total (ML)	909.50	608.74

Table 8 summarizes results for chorine, bacteria, and turbidity for the combined distribution system which includes both the Duteau distribution system and the Kalamalka distribution system. These results are from grab samples taken weekly at designated spots within the distribution system.

Table 8 Duteau and Kalamalka Distribution

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average[2]
Free Chlorine[1]	Operator Grab Samples	mg/L	119	8[4]	0.05	2.02	1.10
Total Chlorine	Operator Grab Samples	mg/L	119	-----	0.17	2.30	1.35
E.coli	RDNO Lab	MPN/100 mL	121[3]	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	121[3]	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1
Turbidity[1]	Operator Grab Samples	NTU	119	-----	0.20	2.42	0.87

[1]GVW WQ Deviation Response Plan: free chlorine >0.20 mg/L, turbidity <5 NTU.
[2]Non detect values are used at ½ the reporting limit for average calculations.
[3]Three samples per week are ran in duplicate for quality assurance purposes.
[4]There were eight sample locations which had free chlorine <0.2 mg/L. Five of the sites were part of the City of Vernon monitoring of low chlorine sites program. All eight sites were sampled and bacterial testing showed <1 MPN/100mL for both E.coli and Total Coliforms.

5. Water Quality and Customer Calls and Notifications

Water Quality Customer Calls within the GVW Service area are tracked and recorded. There were a total of three (3) customer calls this month.

Table 9 Water Quality Customer Calls for the month

Type of Call	Issue/Inquiry	Investigation	Comments
Issue	White gel-like substance in water	No	The customer called stating that their downstairs tenant saw a white clumping gel-like substance in the bottom of a drinking glass. This was seen a few days prior to the call and had not been seen since. The upstairs customer did not notice anything in their water. There was an RO filter hooked up to the downstairs tenant but not the upstairs tenant. It was advised to get the RO system serviced and call the RDNO if the issue remains.
Inquiry	Water Quality Question	No	The customer called looking for the most recent water quality report and hardness in their area. The customer was directed to the website where they were able to find the most recent water quality reports.
Inquiry	Water Quality Question	No	The customer inquired about volatile compounds in the drinking water, particularly Methyl Tert-Butyl Ether (MTBE). Results for MTBE were available since 2020, and results have always been non-detect (<0.001 mg/L). The customer had additional medical questions relating to MTBE and was directed towards a health care professional for appropriate responses.

6. Operational or Maintenance Activity

Operational activity within the GVW City of Vernon service area is tracked and recorded using an online database. There was a total of 28 operational activities outlined this month in Table 10.

Table 10 Monthly operational work and maintenance for the City of Vernon

NUMBER OF LOCATIONS	TYPE OF WORK
0	Hydrant Maintenance
0	Hydrant Maintenance – Corrective
1	New Hydrant Install
5	Water Service GIS Locate
0	Water Main Break Repair
2	Property Damage Repair
0	Water Valve Maintenance
7	Water Valve Repair
4	Water Service Install
9	Water Service Repair
0	Reservoirs Cleaned

7. Localized WQA's and Other Activity

Water quality events are tracked and recorded below. The type of notices for any given event varies based on the severity of the event and the availability of water to adequately flush the area. This month, there was a total of zero Type 1 breaks where no advisory was required, fourteen (14) Water Quality Advisories (WQA), and three (3) Boil Water Notices (BWN)

Table 11 Monthly public notifications

Type of Notice	Reason	Area	Length or Time in Place	Number of Connections Affected
BWN	Water Main Break	Stepping Stones Cres, 360-380 Stepping Stones Rd	September 2 – September 5	39
BWN	Scheduled Water Outage and Upgrades	5401 – 5643 MacDonald Rd, Schram Rd, Collison Rd, 5808-6402 Rimer Rd, Herry Rd, Holbrook Rd, Sanford Rd, Carlton Rd	September 12 – September 19	130
WQA	Water Main Break	32 St and 34 Ave	September 15 – September 17	4
WQA	Scheduled Water Outage	9 St and 35 Ave	September 17 – September 19	52