REGIONAL DISTRICT NORTH OKANAGAN

Greater Vernon Water (GVW) Water Quality Report for September 2026

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. Due to low water levels in the Aberdeen Plateau, the Antwerp Deep Well was turned on June 12, 2026, to supplement the Lavington and Coldstream Areas. Tables 1-3 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	10[5]	-----	<10[6]	84	32.2
Total Coliform	RDNO Lab	MPN/100 mL	10[5]	-----	55794	11199	7701
Turbidity	Operator Grab Samples	NTU	5	-----	1.92	6.91	4.07
Turbidity	SCADA[1] Daily Average[3]	NTU	30 Days	-----	1.27	6.21	2.79

[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]Minimum is <10 MPN/100mL due to dilution factor required to achieve Total Coliform results.

Table 2 Kalamalka Lake Intake

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average[4]
E.coli[2]	RDNO Lab	MPN/100 mL	10[5]	-----	1	7.4	3.1
Total Coliform	RDNO Lab	MPN/100 mL	10[5]	-----	7.5	20.1	15.3
Turbidity	Operator Grab Samples	NTU	5	-----	0.86	1.46	1.17
Turbidity	SCADA[1] Average[3]	NTU	30 Days	-----	0.67	1.59	1.11

[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.

Table 3 Antwerp Deep Well Intake

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
Turbidity	SCADA[1] Average[2]	NTU	30 Days	-----	0.03	0.06	0.04

[1]SCADA: Supervisory Control and Data Acquisition.
[2]SCADA data for this online anazlyer is a 24 hour average with readings taken every 15 seconds.

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 4 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 4 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)	2.29	3.77	0.14	4.49
Average (ML/Day)	0.86	1.25	0.01	1.55
Monthly Total (ML)	26.61	38.65	0.18	48.07

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. The Antwerp Deep Well is a confined groundwater aquifer that isn't influenced by surface water. Because of this classification, the Antwerp Deep Well is chlorinated at the pumphouse, and no additional treatment is necessary.

Tables 5, 7, and 8 summarize results for chlorine, bacteria, turbidity, and UV Transmittance (UVT). Table 6 summarizes the log removal of viruses at the DCWTP.

Table 5 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	-----	1.84	2.01	1.90
E.coli	RDNO Lab	MPN/100 mL	6	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	6	-----	<1	<1	<1
Turbidity[2]	SCADA[1] Daily Average	NTU	30 Days	-----	0.12	0.20	0.14
Pre UVT[3]	SCADA[1] Daily Average	%	30 Days	-----	86.32	88.93	87.28

[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 6 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 7 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	-----	2.17	2.21	2.20
E.coli	RDNO Lab	MPN/100 mL	6	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	6	-----	<1	<1	<1
Turbidity[2]	SCADA[1] Daily Average	NTU	30 Days	-----	0.65	1.50	1.05
Pre UVT	SCADA[1] Daily Average	%	30 Days	-----	91.37	92.04	91.67

[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.

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

Table 8 Antwerp Pumphouse

Parameter	Laboratory	Units	# of Samples	# of Deviations	Min	Max	Average[3]
Free Chlorine[2]	SCADA[1] Daily Average	mg/L	30 Days	-----	0.67	0.77	0.72
E.coli	RDNO Lab	MPN/100 mL	5	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	5	-----	<1	<1	<1

[1]SCADA: Supervisory Control and Data Acquisition.
[2]Operation Guideline: As outlined in Deviation Response Plan, free chlorine >0..25 mg/L, turbidity <1.0 NTU.
[3]Non detect values are used at ½ the reporting limit for average calculations.
[4]Manganese Aesthtic Limit – 0.02 mg/L. Manganese Maximum Allowable Concentration – 0.12 mg/L.

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 the sources 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. When the Antwerp deep well is in use, it enters the system in Lavington.

Table 9 summarizes the daily flow for each distribution system. The Duteau, Kalamalka, and Antwerp systems have many locations where the sources meet. This means there are areas within the distribution system where there is a blend of water that can be identified by the conductivity of the water.

Table 9 Volumes for GVW Distribution Systems over the Month

Volumes	DCWTP	MHWTP	Antwerp Deep Well
Min (ML/Day)	8.80	11.09	1.07
Max (ML/Day)	23.80	17.96	1.58
Average (ML/Day)	13.83	15.22	1.30
Monthly Total (ML)	414.80	456.48	38.99

Table 10 summarizes results for chorine, bacteria, and turbidity for the combined distribution system which includes the Duteau distribution system, the Kalamalka distribution system and the Antwerp Deep Well. These results are from grab samples taken weekly at designated spots within the distribution system.

Table 10 Combined Distribution

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average[2]
Free Chlorine[1]	Operator Grab Samples	mg/L	135	9[4]	0.02	2.19	0.99
Total Chlorine	Operator Grab Samples	mg/L	135	-----	0.08	2.12	1.24
E.coli	RDNO Lab	MPN/100 mL	144[3]	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	2	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	144[3]	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	2	-----	<1	<1	<1
Turbidity[1]	Operator Grab Samples	NTU	135	-----	0.17	4.50	0.88

[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]Nine samples were <0.2mg/L of free chlorine. Six sites are on the City of Veron low chlorine site program. Two sites were flushed until adequate chlorine concentrations returned and resampled. The remaining site could not be flushed due to water restriction concerns. All nine sites showed no bacterial contamination.

Table 11 summarizes the monthly manganese results for sample sites within the Antwerp distribution area. The Antwerp deep well contains manganese at concentrations above the Canadian Drinking Water Guideline Aesthetic Objective (AO) but below the Maximum Allowable All samples are tested at a laboratory that is accredited to test for manganese. Starting August 25, 2026, GVW started adding a polyphosphate compound to sequester the manganese and prevent it from precipitating out of solution within the water distribution system. This polyphosphate compound is a food safe additive as required my Health Canada.

Table 11 Antwerp Manganese

Date	Site	Results (mg/L)	Additional Comments
1-Sep-26	Antwerp Springs PH 2	0.09	Source
1-Sep-26	Giles Drive BO (BO 00074)	0.08	
1-Sep-26	Noble Canyon Road SS	0.09	
8-Sep-26	Antwerp Springs PH 2	0.09	Source
8-Sep-26	Noble Canyon Road SS	0.02	
15-Sep-26	Springfield Road SS	0.02	
15-Sep-26	Antwerp Springs PH 2	0.09	Source
22-Sep-26	Aberdeen Road SS	0.01	
22-Sep-26	Antwerp Springs PH 2	0.09	Source
28-Sep-26	Antwerp Springs PH 2	0.08	Source
29-Sep-26	Highway 6 SS	0.04	
29-Sep-26	6015 Highway 6 SS	0.05	
29-Sep-26	Noble Canyon Road SS	0.04	
29-Sep-26	Springfield Road SS	0.03	
29-Sep-26	Brewer Road SS	0.02	
29-Sep-26	Aberdeen Road SS	0.01	

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 11 customer calls this month.

Table 12 Water Quality Customer Calls for the month

Type of Call	Number of Calls	Issue/Inquiry	Investigation	Source	Comments
Issue	3	Brown/Yellow Water	Yes	Antwerp	Customers contacted the RDNO stating their water was brown/yellow/murky in color. The customers were told that they were changed to the Antwerp water source which has a different taste, odor and appearance when compared to the normal Duteau water source. Additionally, the water source contains high concentrations of manganese. When chlorinated, the manganese oxidizes and comes out of solution resulting in a muddy brown color. The customers were told that the RDNO monitors the situation and ongoing manganese testing is occurring on routine sample stations and customer homes. The results are being shared through monthly reports and non-scheduled updates on the RDNO website. The customers were also informed that the RDNO is in constant contact with Interior Health about the manganese in the drinking water. Additionally, the RDNO is exploring options to reduce the oxidization of manganese in the drinking water. The customers were told any further health-related questions about manganese should be directed to Interior Health. Customers were told that they would be switched back to the Duteau source once the upper reservoirs show signs of water recovery, most likely in the fall or winter but that may change depending on water availability.
Inquiry	1	WQA Inquiry	No	Kalamalka	The customer called noting they had a notice on their door from a contractor mentioning they were on a WQA. The customer was curious if this was the case and how long it would be for. The customer was told that lab testing was required to ensure the continued safety of the drinking water system.
Inquiry	1	Water Hardness	No	Antwerp	The customers called with concerns the hard water would stain their

					appliances and clog their filters. The customer was also curious how long they would be on Antwerp water for. The customer was notified that it is possible that they could be changed back in October.
Issue	1	Water Odour	No	Duteau	The customer called stating the water had an odour and asked if the water could be flushed. Customer is on a dead end flow with known stagnant water. CoV crews were dispatched to flush the water.
Issue	1	Dirty Water	No	Antwerp	The customer called stating that appliances and faucets no longer worked due to the high amount of sediment in the water. The customer asked to speak to a manager. The request was forwarded to the Water Quality Manager.
Issue	1	Dirty Water	Yes	Duteau	Customer called mentioning that they have noted dirty water a couple of times over the past couple of days on their production line and campsite. RDNO staff went to investigate and noted dirty water on site. Staff took samples and samples were clear. Samples from the larger area were clear and there were no other complaints of dirty water in the area. Suspected that the dirty water originated within customers water system.
Issue	1	Mold in Water	No	Unknown	Customer called stating they were worried about mold in the water after cleaning out a black water filter. RDNO staff called the customer back and left a message but have not heard back.
Inquiry	1	BWN Inquiry	No	Kalamalka	Customer emailed saying they had been on a BWN for a number of days with no follow up from the RDNO. The customer was requesting information on how to navigate water-related activities while on the BWN and when the BWN was expected to be rescinded. RDNO staff called the customer back but have not heard back.
Inquiry	1	Water Hardness	No	Kalamalka	Customer emailed asking for water hardness information. The customer was told they were on the

					Kalamlka source and water hardness was provided.

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 31 operational activities outlined this month in Table 13.

Table 13 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
4	Water Service GIS Locate
5	Water Main Break Repair
2	Property Damage Repair
0	Water Valve Maintenance
3	Water Valve Repair
1	Water Service Install
15	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 one (1) Type 1 breaks or planned outage where no advisory was required, three (3) Water Quality Advisories (WQA), and three (3) Boil Water Notices (BWN).

Table 14 Monthly public notifications

Type of Notice	Reason	Area	Length or Time in Place	Number of Connections Affected
WQA	Planned Tie In	Giles Dr Area	September 3 – September 6	21
WQA	Water Main Break	3400 35 Ave Area	September 3 – September 4	9
WQA	Water Main Repair	De Roo Rd Area	September 10 – September 14	6
None	Water Main Break	2500 23 St Area	September 11	20
WQA	Water Main Repair	8000 Aberdeen Rd Area	September 14 – September 18	40
WQA	Planned Tie In	22 St	September 15 – September 21	34
WQA	Water Main Break	1600 38 Ave Area	September 17 -September 21	6
BWN	Water Main Break	2800 34 St Area	September 18 – September 23	5
WQA	Water Main Repair	Rendell Dr Area	September 23 – September 28	56
BWN	Scheduled Maintenance	Hawksbill Pl	September 23 – October 5	12
WQA	Scheduled Maintenance	3800 35 Ave Area	September 25 – September 27	6
WQA	Water Main Break	600 Pottery Rd Area	September 25 – October 5	59
WQA	Water Main Repair	600 Mountview Rd Area	September 28 – October 3	5
None	Water Main Break	23 St and 25 Ave	August 28	0
None	Water Main Break	Harbour Heights Rd	August 29	12
WQA	Planned Tie In	18 Stret and Pottery Rd area	August 31 – September 2	22