

Greater Vernon Water (GVW) Water Quality Report for July 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.coli²	RDNO Lab	MPN/100 mL	8 ⁵	-----	10	63	37.8
Total Coliform	RDNO Lab	MPN/100 mL	8 ⁵	-----	798	3076	1912.1
Turbidity	Operator Grab Samples	NTU	4	-----	1.29	1.64	1.43
Turbidity	SCADA ¹ Daily Average ³	NTU	31 Days	-----	0.79	1.27	0.93

¹SCADA: Supervisory Control and Data Acquisition.

²Drinking Water Treatment Objectives (Microbiological) 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.

³SCADA data for this online analyzer is a 24 hour average of readings taken every 10 minutes

⁴Non detect values are used at ½ the reporting limit for average calculations.

⁵Each sample includes at least one duplicate sample taken for quality assurance purposes.

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	1.0	<1
Total Coliform	RDNO Lab	MPN/100 mL	8 ⁵	-----	1.0	12.2	6.3
Turbidity	Operator Grab Samples	NTU	4	-----	0.85	1.40	1.09
Turbidity	SCADA ¹ Average ³	NTU	31 Days	-----	0.66	1.81	1.06

¹SCADA: Supervisory Control and Data Acquisition.

²Drinking Water Treatment Objectives (Microbiological) 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.

³SCADA data for this online analyzer is a 24 hour average with readings taken every 15 seconds.

⁴Non detect values are used at ½ the reporting limit for average calculations.

⁵Each 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	31 Days	-----	0.03	0.16	0.05

¹SCADA: Supervisory Control and Data Acquisition.

²SCADA data for this online analyzer 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)	1.13	0.35	0.00	1.74
Max (ML/Day)	6.62	4.07	1.44	7.89
Average (ML/Day)	3.31	2.31	0.20	4.88
Monthly Total (ML)	102.70	71.57	6.19	151.14

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	31 Days	-----	1.85	2.01	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	31 Days	-----	0.12	0.31	0.19
Pre UVT ³	SCADA ¹ Daily Average	%	31 Days	-----	85.08	87.80	86.47

¹SCADA: Supervisory Control and Data Acquisition.

²Operation Guideline: As outlined in Deviation Response Plan, free chlorine >1.0 mg/L, turbidity <1.0 NTU.

³UVT is monitored pre-UV treatment which is used to determine UV dosage.

⁴Non detect values are used at ½ the reporting limit for average calculations.

This month, 0 m³ of off-spec water occurred at DCWTP.

Table 6 DCWTP – Log Removal of Viruses

Log Removal of Viruses ¹	
Days Monitored	31 Days
Days 4-Log Inactivation Achieved	31 Days

¹4-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	31 Days	-----	1.99	2.21	2.09
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	31 Days	-----	0.62	1.60	0.93
Pre UVT	SCADA ¹ Daily Average	%	31 Days	-----	89.74	91.61	91.06

¹SCADA: Supervisory Control and Data Acquisition.

²Operation Guideline: As outlined in Deviation Response Plan, free chlorine >0.8 mg/L, turbidity <3.0 NTU.

³Non 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	31 Days	-----	0.76	1.14	1.01
E.coli	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Manganese ⁴	CARO Lab	mg/L	4	-----	0.09	0.09	0.09

¹SCADA: Supervisory Control and Data Acquisition.

²Operation Guideline: As outlined in Deviation Response Plan, free chlorine >0.25 mg/L, turbidity <1.0 NTU.

³Non detect values are used at ½ the reporting limit for average calculations.

⁴Manganese Aesthetic 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)	15.20	29.79	----
Max (ML/Day)	33.80	34.99	----
Average (ML/Day)	25.29	32.42	----
Monthly Total (ML)	758.60	972.52	44.3

Table 10 summarizes results for chlorine, 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	117	6 ⁴	0.03	1.81	1.05
Total Chlorine	Operator Grab Samples	mg/L	117	-----	0.12	2.16	1.32
E.coli	RDNO Lab	MPN/100 mL	125 ³	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1

Total Coliform	RDNO Lab	MPN/100 mL	125 ³	1 ⁵	<1	118.4 ⁵	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1
Turbidity¹	Operator Grab Samples	NTU	118	-----	0.21	2.20	0.88

¹GVW WQ Deviation Response Plan: free chlorine >0.20 mg/L, turbidity <5 NTU.

²Non detect values are used at ½ the reporting limit for average calculations.

³Three samples per week are ran in duplicate for quality assurance purposes.

⁴Six samples were <0.2mg/L of free chlorine. Three sites are on the City of Veron low chlorine site program. One other site was sampled and flushed until adequate chlorine concentrations returned. The remaining two sites could not be flushed due to water restriction concerns. All six sites showed no bacterial contamination.

⁵One sample station had a result of 118.4 MPN/100mL. Since all other samples were <1 MPN/100mL, it was suspected that the sample station was contaminated. The sample station was cleaned and flushed and another sample taken returning a result of <1 MPN/100mL. All other samples were <1 MPN/100mL this month.

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.

Table 11 Antwerp Manganese

Date	Site	Results (mg/L)	Additional Comments
2-Jul-26	Cousins Bay SS	0.01	
2-Jul-26	Giles Drive BO (BO 00074)	0.09	
7-Jul-26	Bessette PRV	0.07	
7-Jul-26	Giles Drive BO (BO 00074)	0.04	
7-Jul-26	Noble Canyon Road SS	0.00	
7-Jul-26	Antwerp Springs PH 2	0.09	Source
8-Jul-26	Coachwood Crescent	0.05	Customer house
8-Jul-26	Highway 6 SS	0.14	
14-Jul-26	Aberdeen Road SS	0.03	
14-Jul-26	Giles Drive BO (BO 00074)	0.03	
14-Jul-26	Antwerp Springs PH 2	0.09	Source
14-Jul-26	Brewer Road SS	0.39	
14-Jul-26	Bessette PRV	0.07	

16-Jul-26	Howe Drive	0.09	Customer house
21-Jul-26	Antwerp Springs PH 2	0.09	Source
21-Jul-26	Springfield Road SS	0.02	
21-Jul-26	Giles Drive BO (BO 00074)	0.06	
21-Jul-26	Bessette PRV	0.08	
21-Jul-26	Aberdeen Road SS	0.05	
23-Jul-26	Dejong Drive	0.04	Customer house
28-Jul-26	Bessette PRV	0.11	
28-Jul-26	Giles Drive BO (BO 00074)	0.06	
28-Jul-26	Aberdeen Road SS	0.02	
28-Jul-26	Antwerp Springs PH 2	0.09	Source
29-Jul-26	Highway 6	0.06	Customer house

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 24 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	14	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.
Issue	1	High Iron Content	No	Antwerp	The customer called stating they were changed to Antwerp water, and the iron content was making the water undrinkable. The customer was concerned about their plumbing and wanted to be hooked back up to the Duteau water. RDNO staff explained that Duteau water was temporarily unavailable in their area. The customer was in an area service by an old cast iron pipe that was being taken out of service. Staff advised District of Coldstream to prioritize this customer and move them off the cast iron water main onto the new water main due to deteriorating water quality.
Inquiry	4	Water Hardness	No	Antwerp	The customers called asking for the water hardness of the Antwerp water to set their household appliances appropriately.

					Water hardness was provided to the customers.
Inquiry	1	Pesticide and Herbicide Information	No	Kalamalka	The customer called asking if we publish the herbicide and pesticide results for Kalamalka Lake. The customer was also curious if Duteau reservoirs were also tested for these parameters. RDNO staff sent the customer the herbicide and pesticide information and noted that it will be added to the annual reports going forward. Staff also mentioned to the customer that these parameters are not tested on Duteau due to the reservoirs being upstream of all agricultural activities.
Issue	1	Chlorine Smell	Yes	Antwerp	The customer called stating they noticed a very strong chlorine smell in their water. They were also concerned about the manganese concentration. RDNO staff sampled the customers' house and noted chlorine was within normal range. The manganese guideline and current Antwerp water issues were explained to the customer.
Issue	1	White Scale Buildup	No	Antwerp	The customer called after noticing a white buildup on their kettle. RDNO explained that this was due to an increase of hardness in the Antwerp water when compared to the Duteau water. Staff assured the customer that the water is safe to drink and ongoing monitoring is occurring.
Issue	1	Taste Difference	No	Kalamalka	The customer called stating that their dogs will no longer drink the water. RDNO noticed no operational changes in the area but noted that the customer lived in an area that can be sourced from either Kalamalka Lake or Duteau Creek depending on the water demand. RDNO staff suspect that the customer was recently switched to Kalamalka Lake water.
Issue	1	Chalky Taste	No	Kalamalka	The customer called stating that the water recently started feeling chalky in their mouth when they drank. RDNO staff called the customer and confirmed that they had been switched from Duteau Creek water to Kalamalka Lake water and the chalkiness was due to the higher mineral count in Kalamalka Lake water. The customer was directed to the website so they would receive future notifications.

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 22 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
2	Water Service GIS Locate
1	Water Main Break Repair
6	Property Damage Repair
0	Water Valve Maintenance
2	Water Valve Repair
0	Water Service Install
10	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	Water Leak	Angus Dr	July 7 – July 10	30
None	Water Main Break	900 block Pottery Rd	NA	4
BWN	Planned Power Outage	Galiano Rd	July 9 – July 13	15
WQA	Planned Water Outage	Okanagan Ave at Bellevue Dr	July 28 – July 30	15
WQA	Planned Water Outage	Chinook Rd	July 29 – July 31	23
BWN	Unplanned Power Outage	Okanagan Hills Blvd	July 17 – July 21	200
BWN	Water Main Break	18 St at Pottery Rd	July 31 – August 5	19