

Greater Vernon Water (GVW) Water Quality Report for June 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	10 ⁵	-----	12.1	344.8	91.2
Total Coliform	RDNO Lab	MPN/100 mL	10 ⁵	-----	461.1	2419.6	998.3
Turbidity	Operator Grab Samples	NTU	5	-----	1.24	2.39	1.88
Turbidity	SCADA ¹ Daily Average ³	NTU	30 Days	-----	0.83	1.63	1.20

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	10 ⁵	-----	<1	1.0	<1
Total Coliform	RDNO Lab	MPN/100 mL	10 ⁵	-----	<1	5.2	1.6
Turbidity	Operator Grab Samples	NTU	5	-----	0.62	1.03	0.78
Turbidity	SCADA ¹ Average ³	NTU	30 Days	-----	0.54	0.78	0.65

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	18 ³ Days	-----	0.03	0.41	0.07

¹SCADA: Supervisory Control and Data Acquisition.

²SCADA data for this online analyzer is a 24 hour average with readings taken every 15 seconds.

³Antwerp data collection started June 13, 2026.

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	0.24
Max (ML/Day)	6.97	3.05	1.35	8.08
Average (ML/Day)	2.89	0.98	0.07	2.39
Monthly Total (ML)	86.72	29.45	2.15	71.83

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	-----	1.82	1.96	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	-----	0.15	0.25	0.18
Pre UVT ³	SCADA ¹ Daily Average	%	30 Days	-----	85.92	88.10	86.87

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	30 Days
Days 4-Log Inactivation Achieved	30 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	30 Days	-----	1.89	2.19	2.00
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	-----	0.54	0.67	0.62
Pre UVT	SCADA ¹ Daily Average	%	30 Days	-----	89.89	92.16	91.66

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 Chlorine²	SCADA ¹ Daily Average	mg/L	18 ⁴ Days	-----	0.64	1.45	1.15
E.coli	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Manganese	RDNO Lab	mg/L	4	----	0.10	0.13	0.12
Manganese⁵	CARO Lab	mg/L	3	-----	0.09	0.11	0.10

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.

⁴Antwerp data collection started June 13, 2026.

⁵Manganese 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 and 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)	9.10	22.63	----
Max (ML/Day)	30.40	35.84	----
Average (ML/Day)	18.27	29.35	----
Monthly Total (ML)	548.10	880.44	28.4

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 Chlorine¹	Operator Grab Samples	mg/L	135	4 ⁴	0.06	2.05	1.06
Total Chlorine	Operator Grab Samples	mg/L	135	-----	0.10	2.11	1.35
E.coli	RDNO Lab	MPN/100 mL	144 ³	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	144 ³	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	1	-----	<1	<1	<1
Turbidity¹	Operator Grab Samples	NTU	134	-----	0.19	2.42	0.84

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.

⁴Four samples were <2.0mg/L of free chlorine. samples per week are ran in duplicate for quality assurance purposes. Two sites are on the City of Vernon low chlorine site program. The two other sites were sampled and flushed until adequate chlorine concentrations returned. All four sites showed no bacterial contamination.

Table 11 summarizes the monthly manganese results for sample sites within the Antwerp distribution area. The Antwerp deep well naturally contains manganese at concentrations above the Canadian Drinking Water Guideline Aesthetic Objective (AO) but below the Maximum Allowable Concentration (MAC). 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
9-Jun-26	Antwerp Springs PH 2	0.111	Source
23-Jun-26	Antwerp Springs PH 2	0.090	Source
23-Jun-26	Aberdeen Road SS	0.036	
23-Jun-26	Highway 6 Hydrant CB84	0.184	
23-Jun-26	Lavington Elementary Hydrant CA11	0.266	
23-Jun-26	Highway 6 SS	0.058	
23-Jun-26	Giles Drive BO	0.372	Taken right as the water was turned on at the blowoff
29-Jun-26	Brewer Road PS	0.073	
29-Jun-26	Bessette PRV	0.022	
29-Jun-26	Giles Drive BO	0.124	

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	Issue/Inquiry	Investigation	Source	Comments
Issue	Sediment in water	No	Duteau	The customer contacted the RDNO stating they had to clean their water filters more frequently in recent months. RDNO staff spoke with the customer stating there was a recent main break that may increase their sediment loads into the residence. Additionally, there was a source change at the customers residence resulting in more sediment entering the house.
Issue	Oil Spill In Kalamalka Lake	No	Kalamalka	The customer called to state they noticed a large sludge or oil spill on Kalamalka Lake. The customer was directed to call provincial emergency spill hotline as the RDNO does not have jurisdiction on the lake,
Inquiry	Customer noticed a pH and Alkalinity drop	No	Duteau	The customer called and mentioned there was a pH and alkalinity drop in their process water. They were informed that the Kalamalka lake source was turned off for an emergency water main leak repair and the water they were receiving was from the Duteau Creek source. It was mentioned that the source would be switched back in the next couple of days when the leak was repaired.
Issue	Colored Water	No	Duteau	The customer called stating their water was tinted brown. RDNO staff explained that this was due to a water main break stirring up turbidity within the water lines. The water should return to normal shortly.
Inquiry	WQA inquiry	No		The customer called to ask about the WQA in their area. RDNO staff stated there was no WQA in the customers area and they have instead seen the water restriction signs. The RDNO staff explained the water restrictions to the customer.
Inquiry	BWN inquiry	No		The customer called the RDNO about the BWN in their area. The customer was told the BWN in their area had been rescinded.
Issue	Loss of Water	No	Kalamalka	The customer called the RDNO stating they had lost water the previous day without notification and that they are on a BWN. RDNO staff spoke to the customer and stated that there was a main break in their area the day before which caused the loss of water. As a result of the break, customers were required to be placed on a BWN until testing ensured the water parameters were acceptable. The customer was told that all notifications are posted on the RDNO website.
Inquiry	BWN inquiry	No	Kalamalka	The customer called the RDNO stating that they were the only house on their street not on a BWN. RDNO staff explained that their service was on the side street rather than the fronting street, and that street could be isolated during

				the water loss event so they would not lose water.
Issue	Orange/Brown water	Yes	Antwerp	The customer called stating their water was orange/brown. The RDNO staff sampled and noted slightly elevated iron and manganese but the majority of the color from the previous day had dissipated. RDNO staff asked operators to flush and sample some water at the blow-off at the end of the road. The first flush at the blow-off indicated very high iron and manganese levels with an appearance similar to what the customer had stated in their original complaint. Operations flushed the sample until water quality returned to acceptable parameters. This area is being continuously monitored by the RDNO.
Inquiry	Source change	No	Antwerp	The customer called and asked how long they were going to be on the Antwerp well water for. RDNO staff responded stating that they would be on the source for the foreseeable future until Duteau storage levels improve. The customer requested the hardness of the water so they could set their water softener accordingly and that number was supplied to them.
Issue	Black flakes in water	Yes	Kalamalka	The customer called stating that they had started seeing black flakes in their water for the past year since a nearby construction project had started. RDNO staff attended the house and took samples. RDNO staff disassembled the water meter to inspect the filter and the gaskets. Concluded that the meter was in good working condition and black particles of the size the customer was seeing would be able to enter the property through the screen. RDNO staff informed the customer that it appeared to be rubber pieces and is most likely coming from inside the residence. The customer was advised to call a plumber for assistance.

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 10.

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
0	New Hydrant Install
4	Water Service GIS Locate
5	Water Main Break Repair
4	Property Damage Repair
0	Water Valve Maintenance
6	Water Valve Repair
1	Water Service Install
11	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 four (4) Boil Water Notices (BWN). There were three (3) additional water notices.

Table 14 Monthly Public Notifications

Type of Notice	Reason	Area	Length or Time in Place	Number of Connections Affected
Stage 3 Water Restrictions	Reduced Water Availability	All GVW Customers	June 4	All
BWN	Planned Water Outage	Priest Valley Area	June 4 – June 9	225
None	Water Main Break	Fortress Crescent	NA	15
BWN	Water Main Break	Eastside Rd	June 9 – June 12	6
WQA	Water Main Tie In	43 Ave at Old Kamloops Rd	June 10 – June 12	7
Source Change - Antwerp	Reduced Water Availability	Lavington	June 12	460
WQA	Water Main Break	Dunsmuir Rd	June 18 – June 19	26
BWN	Unplanned Service Interruption	Aberdeen Rd Area	June 18 – June 22	54
Source Change - Antwerp	Updated Affected Area	Coldstream	June 24	929
BWN	Power Outage	Boss Creek Rd and Galiano Rd	June 25 – June 30	25
WQA	Water Main Break	Mt Baldur Dr	June 28 – June 30	6