

Kinmount Drinking Water System

Waterworks # 260075231
System Category – Small Municipal Residential

Annual Drinking Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st 2021

Issued: February 4, 2022

Operating Authority:



This report has been prepared to satisfy the annual reporting requirements in
O. Reg. 170/03 Section 11 and Schedule 22

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Report Availability

This system does not serve more than 10,000 residences. The annual reports will be available free of charge to residents at the City of Kawartha Lakes Public Works Administration Office and on the City's website at: [the City website](#). The City of Kawartha Lakes Public Works Administration Office is located at 322 Kent Street West in Lindsay, Ontario.

Compliance Report Card

Drinking Water System Number: 260075231

Drinking Water System Name: Kinmount DWS

Drinking Water System Owner: City of Kawartha Lakes

Drinking Water System Category: Small Municipal Residential

Reporting Period: January 1, 2021 - December 31, 2021

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	June 24, 2021	Announced-Focused Drinking Water Inspection - Final Inspection Rating of 97.78%
AWQI's	1	Q4 2021	HAA Running Average for Q1 – Q4 2021 exceeded
Number of Non-Compliances	1	Nov 2021	Filter backwash suspended solids 12 month running average exceeded in Nov 2021.
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The Kinmount Water Treatment Plant is supplied with surface water from the Burnt River.

Treatment

The treatment system is a dual train conventional filtration package plant consisting of the following:

- In-line static mixer
- Coagulant feed system with SternPac addition upstream of static mixer
- Two stage variable speed flocculators located in flocculation tanks
- Coagulant aid feed system with polymer added to flocculation tanks
- Two upflow clarifier units equipped with tube settlers
- Two dual media rapid gravity filters
- Sodium hypochlorite feed system for primary disinfection
- Dual celled chlorine contact tanks located beneath the plant
- Two highlift pump chambers housing four highlift pumps
- Sodium hypochlorite feed system for post chlorination
- Online analyzers to monitor both free treated chlorine and filter effluent turbidity
- Wastewater treatment system that consists of two backwash pumps and a settling tank that receives backwash wastewater and clarifier sludge
- SCADA computer control system
- Standby power generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag Jutzi Water Technology
Polyaluminium Chloride	Flocculation	FloChem
Polymer	Flocculation	Basf
Sodium hydroxide	pH adjustment	Not required in 2021

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
Q4 2021	157537	Distribution	HAA	RAA of 80.4ug/L	O. Reg. 170/03	Additional sampling, and flushing.

RAA is the Running Annual Average of four consecutive quarterly sampling results. The RAA limit for Trihalomethanes is 100ug/L and the RAA limit for HAA is 80ug/L.

Non-Compliance

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
MDWL Schedule C 1.5 Residual Management	Suspended Solids 12 month running average limit of 25 mg/L	Nov 2021	Backwash tank level meter failed affecting the timing for the composite sampler resulting in high results which impacted running average. Replaced in Jan 2021. Reported to MECP Inspector.	Complete

Non-Compliance Identified in a Ministry Inspection:

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
O. Reg. 170/03	72 hour review	Apr 1 – 6, 2021	Notified MECP when discovered. Additional training on 72 hour review requirement.	Complete

Flows

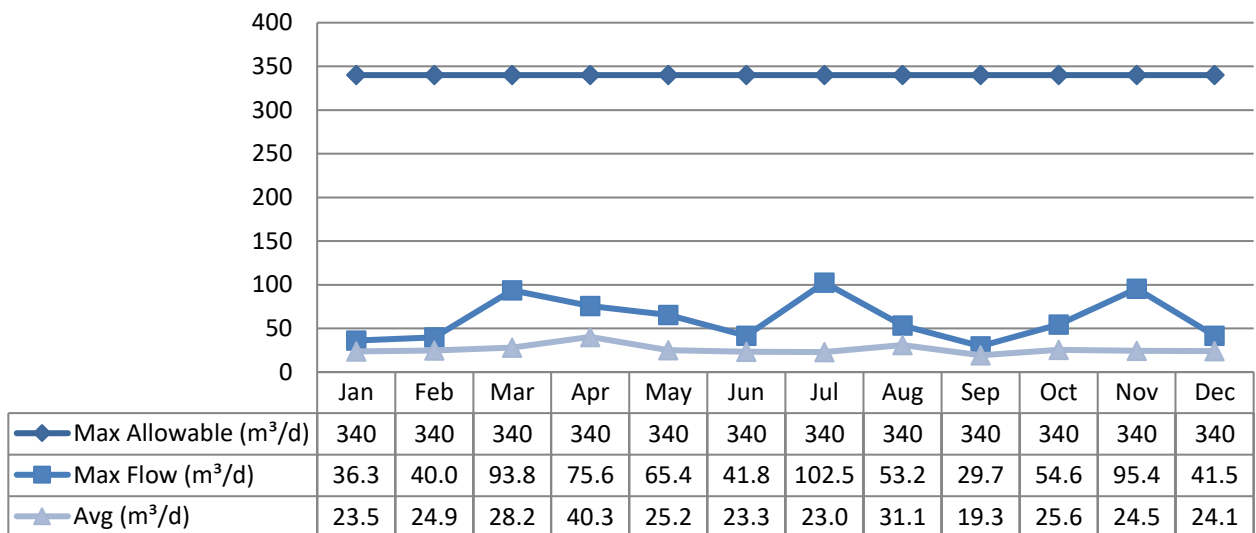
The Kinmount Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water takings are regulated by the Permit to Take Water (PTTW). 2021 Raw Flow Data was submitted to the Ministry electronically under permit #2447-AWDJEA. The confirmation for the data that was submitted is attached in Appendix A.

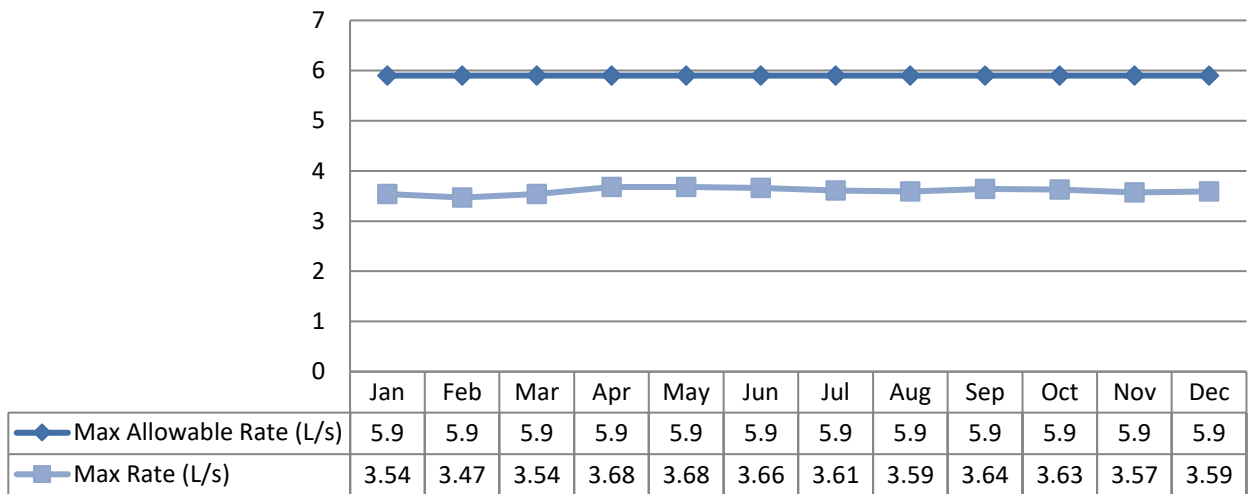
Total Monthly Flows (m³/d)

Max Allowable PTTW- Raw



Monthly Rated Flows (L/s)

Max allowable rate – PTTW- Raw

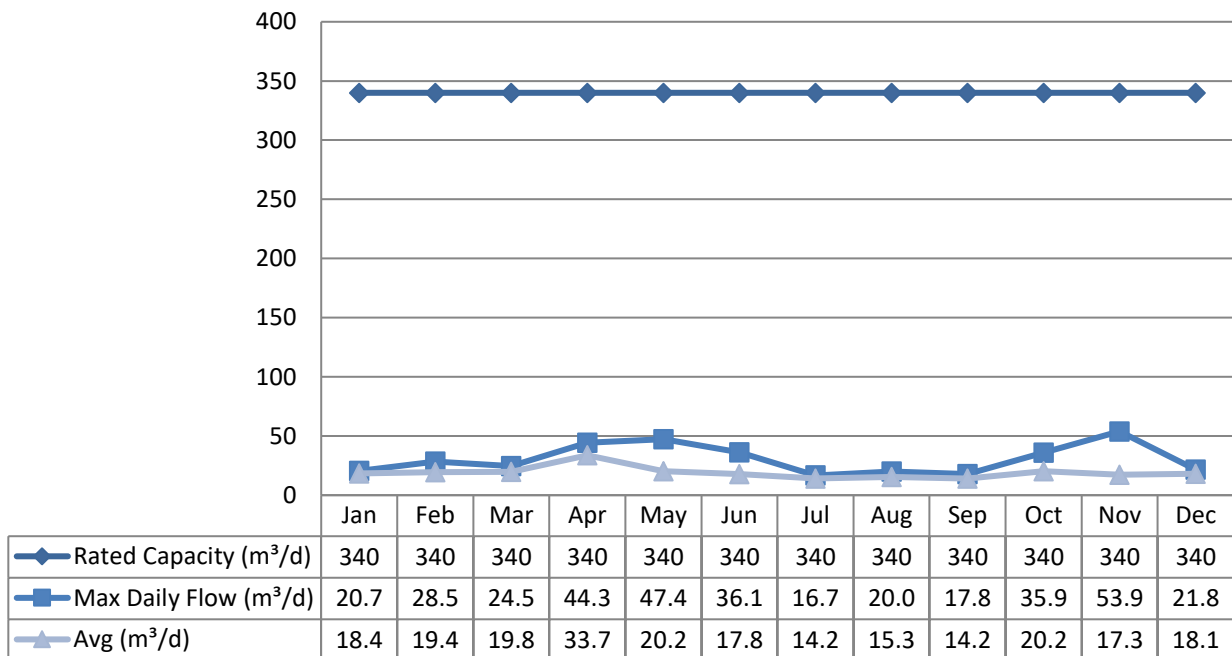


Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

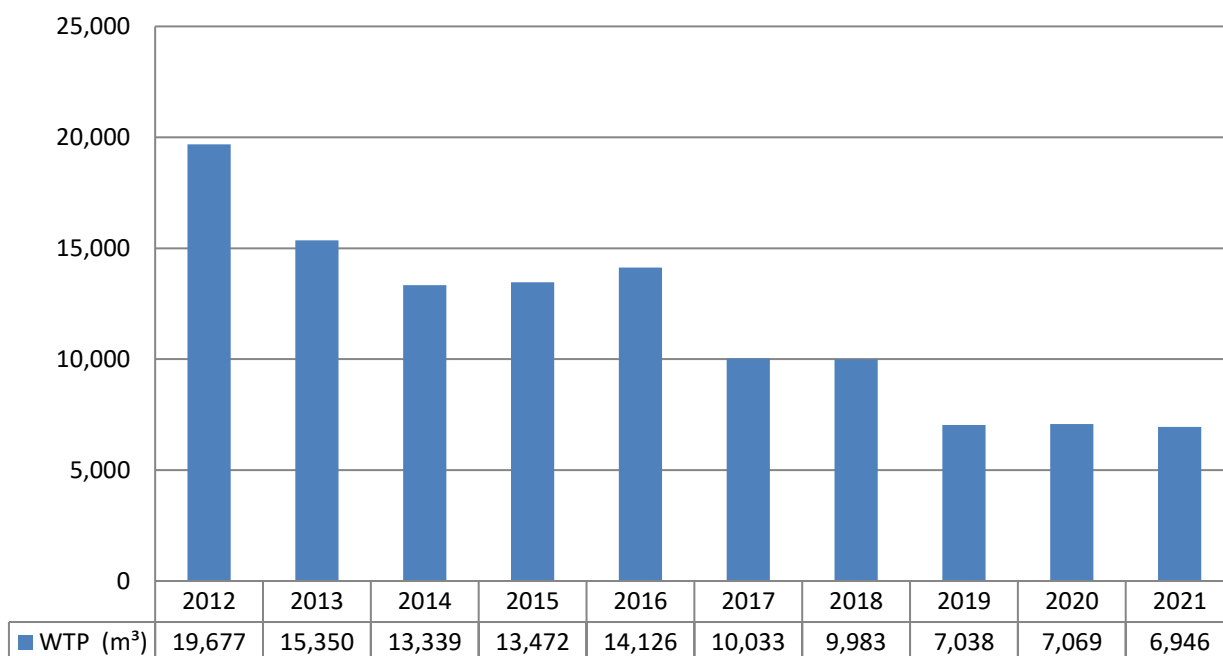
Monthly Rated Flows

Rated Capacity - MDWL



Annual Total Flow Comparison

Total Annual m³



Regulatory Sample Results Summary

Microbiological Testing

	No. of Samples Collected	Range of E. Coli Results		Range of Total Coliform Results		Range of HPC Results	
		Min	Max	Min	Max	Min	Max
Raw	26	0	31	0	260		
Distribution	52	0	0	0	0	0	2

Operational Testing

	No. of Samples Collected	Range of Results	Range of Results
		Minimum	Maximum
Turbidity Filter 1 (NTU)	8760	0.00	1.00
Turbidity Filter 2 (NTU)	8760	0.00	2.00
Chlorine	8760	0.00	3.85
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Record the unit of measure if it is **not** milligrams per litre.

Note: For continuous monitors 8760 is used as the number of samples. Spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O. Reg. 170/03.

Inorganic Parameters

These parameters are tested as a requirement under 170/03. Sodium, Fluoride and the metals are required to be tested every 5 years while Nitrate and Nitrite are tested quarterly. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O. Reg. 169/03
- MDL = Method Detection Limit

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	Exceedances
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	2020/01/06	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L) - TW	2020/01/06	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2020/01/06	18.5	1000.0	No	No
Boron: B (ug/L) - TW	2020/01/06	5.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2020/01/06	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2020/01/06	0.28	50.0	No	No
Mercury: Hg (ug/L) - TW	2020/01/06	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2020/01/06	<MDL 0.04	50.0	No	No
Uranium: U (ug/L) - TW	2020/01/06	0.029	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2020/01/06	<MDL 0.06	1.5	No	No
Nitrite (mg/L) - TW	2021/01/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2021/04/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2021/07/05	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2021/10/04	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2021/01/04	0.084	10.0	No	No
Nitrate (mg/L) - TW	2021/04/06	0.127	10.0	No	No
Nitrate (mg/L) - TW	2021/07/05	0.072	10.0	No	No
Nitrate (mg/L) - TW	2021/10/04	0.040	10.0	No	No
Sodium: Na (mg/L) - TW	2020/01/06	9.01	20*	No	No

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified mg/L when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

Schedule 15 Sampling:

The Schedule 15 Sampling is required under O. Reg. 170/03. This system is under reduced sampling. No plumbing samples were collected.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results	Range of Results	MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	2	2	25	38	N/A	N/A
pH	2	2	7.77	8.50	N/A	N/A
Lead (ug/l)	0	0	N/A	N/A	N/A	N/A

Organic Parameters

These parameters are tested every 5 years as a requirement under O. Reg 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance	Exceedance
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2020/01/06	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2020/01/06	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L) - TW	2020/01/06	<MDL 0.05	20.0	No	No
Benzene (ug/L) - TW	2020/01/06	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L) - TW	2020/01/06	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2020/01/06	<MDL 0.33	5.0	No	No
Carbaryl (ug/L) - TW	2020/01/06	<MDL 0.05	90.0	No	No
Carbofuran (ug/L) - TW	2020/01/06	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L) - TW	2020/01/06	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L) - TW	2020/01/06	<MDL 0.02	90.0	No	No
Diazinon (ug/L) - TW	2020/01/06	<MDL 0.02	20.0	No	No
Dicamba (ug/L) - TW	2020/01/06	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L) - TW	2020/01/06	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L) - TW	2020/01/06	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L) - TW	2020/01/06	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L) - TW	2020/01/06	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L) – TW	2020/01/06	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L) - TW	2020/01/06	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) – TW	2020/01/06	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L) - TW	2020/01/06	<MDL 0.4	9.0	No	No
Dimethoate (ug/L) - TW	2020/01/06	<MDL 0.06	20.0	No	No
Diquat (ug/L) - TW	2020/01/06	<MDL 1.0	70.0	No	No
Diuron (ug/L) - TW	2020/01/06	<MDL 0.03	150.0	No	No
Glyphosate (ug/L) - TW	2020/01/06	<MDL 1.0	280.0	No	No

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance	Exceedance
				MAC	1/2 MAC
Malathion (ug/L) - TW	2020/01/06	<MDL 0.02	190.0	No	No
Metolachlor (ug/L) - TW	2020/01/06	<MDL 0.01	50.0	No	No
Metribuzin (ug/L) - TW	2020/01/06	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) – TW	2020/01/06	<MDL 0.3	80.0	No	No
Paraquat (ug/L) - TW	2020/01/06	<MDL 1.0	10.0	No	No
PCB (ug/L) - TW	2020/01/06	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L) - TW	2020/01/06	<MDL 0.15	60.0	No	No
Phorate (ug/L) - TW	2020/01/06	<MDL 0.01	2.0	No	No
Picloram (ug/L) - TW	2020/01/06	<MDL 1.0	190.0	No	No
Prometryne (ug/L) - TW	2020/01/06	<MDL 0.03	1.0	No	No
Simazine (ug/L) - TW	2020/01/06	<MDL 0.01	10.0	No	No
Terbufos (ug/L) - TW	2020/01/06	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L) - TW	2020/01/06	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2020/01/06	<MDL 0.2	100.0	No	No
Triallate (ug/L) - TW	2020/01/06	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L) - TW	2020/01/06	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2020/01/06	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)	2020/01/06	<MDL 0.12	100.0	No	No
Trifluralin (ug/L) - TW	2020/01/06	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L) - TW	2020/01/06	<MDL 0.17	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2021	81.2	100	No	Yes
HAA Total (ug/L) Annual Average - DW	2021	80.4	80	Yes	Yes

MAC = Maximum Allowable Concentration as per O. Reg 169/03

MDL = Method Detection Limit

Additional Legislated Samples

Municipal Drinking Water Licence	Date Collected	Suspended Solids (mg/L)	Free Chlorine Residual (mg/L)
Settling Tank Discharge Point	January	6	0.01
	February	3	0.02
	March	<2	0.02
	April	11	0.01
	May	<2	0.02
	June	<2	0.02

Municipal Drinking Water Licence	Date Collected	Suspended Solids (mg/L)	Free Chlorine Residual (mg/L)
	July	6	0.03
	August	10	0.02
	September	40	0.02
	October	89	0.02
	November	4	0.03
	December	2	0.45
	Annual Average	14.75	



Note: The Suspended Solids 12 month running average limit is 25 mg/L.

Major Maintenance Summary incurred to install, repair or replace required equipment

WO #	Description
2539816	Repaired Duct Heater
2316224	Installed New Outpost Panel
2266054	Replaced Coagulant Pumps
2091985	Installed VFDs on Remaining Two Highlift Pumps
1837265	Highlift Pump 2 Repair
1536452	Replace Lowlift Pump LLP1
2312515	Installed BTP SCADA Panel
2091984	Replaced Backwash Pump Composite Sampler

Appendix A

WTRS Data Submission Confirmation



Ministry of the Environment,
Conservation and Parks

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Location: [WTRS](#) / [WT DATA](#) / [Input WT Record](#) WTRS-WT-008

Water Taking Data submitted successfully.

Confirmation:


Thank you for submitting your water taking data online.

Permit Number: 2447-AWDJEA
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Jan 26, 2022 3:00 PM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

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version: v4.5.0.21 (build#: 22)
Last modified: 2018/09/18

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