

ANNUAL REPORT

Drinking-Water System Number: 220002743
Drinking-Water System Name: Airport Drinking Water System
Drinking-Water System Owner: County of Brant
Drinking-Water System Category: Large Municipal - Residential
Period being reported: January 1, 2021 to December 31, 2021

Complete if your Category is Large Municipal Residential or Small Municipal Residential:

Does your Drinking-Water System serve more than 10,000 people? Yes No

Is your annual report available to the public at no charge on a web site on the Internet? Yes No

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection:
County of Brant Administration Office (26 Park Ave., Burford, ON.)

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

None

Did you provide a copy of your annual report to all Drinking Water System owners that are connected to you and whom you provide all of its drinking water?

- Yes
- No
- Not applicable

Indicate how you notified system users that your annual report is available, and is free of charge:

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method: Notice in water bill.

Describe your Drinking-Water System

The Airport Drinking Water System consists of:

- a) Two drilled wells completed in the overburden equipped with vertical turbine pumps. Well #1 (existing) is capable of pumping 27.3 l/s, Well #2 (new) is capable of pumping 30.8 l/s;
- b) A sodium hypochlorite dosing system to provide disinfection via chlorination;

- c) A baffled water contact tank with a capacity of 50.6 m³ ;
- d) An elevated tank with a maximum capacity of 1600 m³;
- e) A maximum rated daily capacity of 5,020 m³/day; and
- f) The distribution system that services approx. 353 residences and 43 commercial accounts.

Emergency standby power is provided to the entire station via a diesel motor powered generator.

All equipment is located at 9 Airport Road, which is near the Brantford Airport. The surrounding land use is light industrial.

List all water treatment chemicals used over this reporting period

12 % Sodium Hypochlorite Solution

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment

Brief description and a breakdown of monetary expenses incurred:

PLC Upgrade (shared cost between all Brant water systems) – \$100K

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O. Reg. 170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2021/08/26	Total Coliform	2	CFU	Resampled and took samples from up and downstream of the initial AWQI. All samples came back showing zero Total Coliforms (as well as zero e.coli, zero BKG, and zero HPC).	2021/08/26

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period

	# of Samples	Range of E.Coli or Fecal Results (cfu/100ml)	Range of Total Coliform Results (cfu/100ml)	Range of BKG Results (cfu/100ml)	# of HPC Samples	Range of HPC Results (cfu/1ml)
Raw Well #1 ¹	45	0-0	0-0	0-27	43	0->2000
Raw Well #2	52	0-0	0-1	0-1	51	0-40
Treated	52	0-0	0-0	0-0	52	0-170

	# of Samples	Range of E.Coli or Fecal Results (cfu/100ml)	Range of Total Coliform Results (cfu/100ml)	Range of BKG Results (cfu/100ml)	# of HPC Samples	Range of HPC Results (cfu/1ml)
Distribution	161	0-0	0-2	0-4	159 ²	0-50

NOTES: 1. Well #1 out of service till February 23, 2021 for rehabilitation and upgrades.
2. The number of HPC samples is less than the total number of samples as two results reported for HPC were “NDCS = No Data: Contamination Suspected”. Reference to contamination could be to lab error as HPC is a separate test and other tests from the same sample suggested no concerns. The results were not repeated on subsequent tests.

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report

	Number of Grab Samples	Range of Results
Turbidity – Raw Manual (Well #1)¹	11	0.06-0.13 NTU
Turbidity – Raw Manual (Well #2)	12	0.06-0.14 NTU
Free Chlorine – Treated Online	8760	0.68-1.88
Free Chlorine – Daily Distribution Grab & Flushing + Bacti sampling	637	0.43-1.37
Fluoride (If the DWS provides fluoridation)	Not applicable	Not applicable

NOTE: Record the unit of measure if it is not milligrams per litre.
For continuous monitors use 8760 as the number of samples.
1. Well #1 out of service in 2021 until February 23, 2021 for rehabilitation and upgrades.

Summary of additional testing and sampling carried out in accordance with the requirements of an approval, order or other legal instrument

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
None required				

Summary of Inorganic parameters tested during this reporting period or the most recent sample results (POE)

Parameter	Sample Date (mm/dd/yy)	Result Value	Unit of Measure	MAC	A/O	Exceedance
Antimony	01/07/21	<0.00050	mg/l	0.006	-	No
Arsenic	01/07/21	<0.0010	mg/l	0.01	-	No
Barium	01/07/21	0.15	mg/l	1.0	-	No
Boron	01/07/21	0.014	mg/l	5.0	-	No

Parameter	Sample Date (mm/dd/yy)	Result Value	Unit of Measure	MAC	A/O	Exceedance
Cadmium	01/07/21	<0.000090	mg/l	0.005	-	No
Chromium	01/07/21	<0.0050	mg/l	0.05	-	No
Mercury	01/07/21	<0.00010	mg/l	0.001	-	No
Selenium	01/07/21	<0.0020	mg/l	0.05	-	No
Uranium	01/07/21	0.00029	mg/l	0.02	-	No
Fluoride	01/07/21	<0.10	mg/l	1.5	-	No
Sodium	01/07/21	17	mg/l	20	200	No
Nitrite (as N)	02/11/21	<0.010	mg/l	1.0	-	No
	05/05/21	<0.010	mg/l	1.0	-	No
	08/04/21	<0.010	mg/l	1.0	-	No
	11/02/21	<0.010	mg/l	1.0	-	No
Nitrate (as N)	02/11/21	0.91	mg/l	10.0	-	No
	05/05/21	0.77	mg/l	10.0	-	No
	08/04/21	0.85	mg/l	10.0	-	No
	11/02/21	0.68	mg/l	10.0	-	No
Nitrate + Nitrite (as N)	02/11/21	0.91	mg/l	10.0	-	No
	05/05/21	0.77	mg/l	10.0	-	No
	08/04/21	0.85	mg/l	10.0	-	No
	11/02/21	0.68	mg/l	10.0	-	No

MAC = Maximum Acceptable Concentration, A/O = Aesthetic Objective. These thresholds are determined by the Ontario Ministry of the Environment, Conservation and Parks.

Summary of lead testing under Schedule 15.1 during this reporting period

(Applicable to the following drinking-water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Date (mm/dd/yy)	Number of Samples	Range of Lead Results (min#) – (max#)	Number of Exceedances
Plumbing	Not Required			
Distribution	Not Required			

Summary of Organic parameters sampled during this reporting period or the most recent sample results (POE)

Parameter	Sample Date (mm/dd/yy)	Result Value	Unit of Measure	MAC	A/O	Exceedance
1,1-Dichloroethylene	01/07/21	<0.10	µg/l	14	-	No
1,2-Dichlorobenzene	01/07/21	<0.20	µg/l	200	-	No
1,2-Dichloroethane	01/07/21	<0.20	µg/l	5	-	No
1,4-Dichlorobenzene	01/07/21	<0.20	µg/l	5	-	No
2,3,4,6-Tetrachlorophenol	01/07/21	<0.50	µg/l	100	-	No
2,4,6-Trichlorophenol	01/07/21	<0.50	µg/l	5	-	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/07/21	<1.0	µg/l	100	-	No
2-4 Dichlorophenol	01/07/21	<0.25	µg/l	900	-	No
Alachlor	01/07/21	<0.50	µg/l	5	-	No
Aroclor 1016	01/07/21	<0.05	µg/l	-	-	No
Aroclor 1221	01/07/21	<0.05	µg/l	-	-	No
Aroclor 1232	01/07/21	<0.05	µg/l	-	-	No
Aroclor 1242	01/07/21	<0.05	µg/l	-	-	No
Aroclor 1248	01/07/21	<0.05	µg/l	-	-	No
Aroclor 1254	01/07/21	<0.05	µg/l	-	-	No
Aroclor 1260	01/07/21	<0.05	µg/l	-	-	No
Atrazine	01/07/21	<0.50	µg/l	-	-	No
Atrazine + N-dealkylated metabolites (Atrazine+Desethyl-atrazine)	01/07/21	<1.0	µg/l	5	-	No
Benzene	01/07/21	<0.10	µg/l	1	-	No
Benzo(a)pyrene	01/07/21	<0.0050	µg/l	0.01	-	No
Bromoxynil	01/07/21	<0.50	µg/l	5	-	No
Carbaryl	01/07/21	<5.0	µg/l	90	-	No
Carbofuran	01/07/21	<5.0	µg/l	90	-	No
Carbon Tetrachloride	01/07/21	<0.10	µg/l	2	-	No

Parameter	Sample Date (mm/dd/yy)	Result Value	Unit of Measure	MAC	A/O	Exceedance
Chlorobenzene	01/07/21	<0.10	µg/l	80	-	No
Chlorpyrifos	01/07/21	<1.0	µg/l	90	-	No
Desethyl-atrazine	01/07/21	<0.50	µg/l	-	-	No
Diazinon	01/07/21	<1.0	µg/l	20	-	No
Dicamba	01/07/21	<1.0	µg/l	120	-	No
Diclofop-methyl	01/07/21	<0.90	µg/l	9	-	No
Dimethoate	01/07/21	<2.5	µg/l	20	-	No
Diquat	01/07/21	<7.0	µg/l	70	-	No
Diuron	01/07/21	<10	µg/l	150	-	No
Ethylbenzene	01/07/21	<0.10	µg/l	140	2.4	No
Glyphosate	01/07/21	<10	µg/l	280	-	No
Guthion	01/07/21	<2.0	µg/l	20	-	No
Malathion	01/07/21	<5.0	µg/l	190	-	No
MCPA	01/07/21	<10	µg/l	100	-	No
Methylene Chloride	01/07/21	<0.50	µg/l	50	-	No
Metolachlor	01/07/21	<0.50	µg/l	50	-	No
Metribuzin	01/07/21	<5.0	µg/l	80	-	No
Paraquat	01/07/21	<1.0	µg/l	10	-	No
Pentachlorophenol	01/07/21	<0.50	µg/l	60	-	No
Phorate	01/07/21	<0.50	µg/l	2	-	No
Picloram	01/07/21	<5.0	µg/l	190	-	No
Total PCB	01/07/21	<0.05	µg/l	3	-	No
Prometryne	01/07/21	<0.25	µg/l	1	-	No
Simazine	01/07/21	<1.0	µg/l	10	-	No
Terbufos	01/07/21	<0.50	µg/l	1	-	No
Tetrachloroethylene	01/07/21	<0.10	µg/l	10	-	No
THM Total (distribution) 37 Isabel Dr.(sample station)	02/11/21	6.96	µg/l	100*	-	No

Parameter	Sample Date (mm/dd/yy)	Result Value	Unit of Measure	MAC	A/O	Exceedance
Greens Rd. Sample STN	05/05/21	7.63	µg/l	100*	-	No
Hyd 1-027 Dalewood Ave	08/04/21	7.42	µg/l	100*	-	No
HYD 1-038 Cox Lane	11/02/21	7.95	µg/l	100*	-	No
Total Haloacetic Acids (distribution)						
37 Isabel Dr.(sample station)	02/11/21	<5.0	µg/l	80*	-	No
Greens Rd. Sample STN	05/05/21	<5.0	µg/l	80*	-	No
HYD 1-027 Dalewood Ave	08/04/21	<5.0	µg/l	80*	-	No
HYD 1-038 Cox Lane	11/02/21	<5.0	µg/l	80*	-	No
Toluene	01/07/21	<0.20	µg/l	60	24	No
Triallate	01/07/21	<1.0	µg/l	230	-	No
Trichloroethylene	01/07/21	<0.10	µg/l	5	-	No
Trifluralin	01/07/21	<1.0	µg/l	45	-	No
Vinyl Chloride	01/07/21	<0.20	µg/l	1	-	No
o-Xylene	01/07/21	<0.10	µg/l	-	-	No
p+m-Xylene	01/07/21	<0.10	µg/l	-	-	No

*Expressed as a running average of quarterly results

MAC = Maximum Acceptable Concentration, A/O = Aesthetic Objective. These thresholds are determined by the Ontario Ministry of the Environment, Conservation and Parks

Non regulatory RAW WATER samples were taken from the Airport Wells to gain operational information and were analyzed for the parameters listed in the table below:

Parameter	Sample Date (mm/dd/yy)	Result Well #1	Result Well #2	Unit of Measure
Dissolved Chloride	02/01/21		34	mg/l
	02/18/21	31		mg/l
	05/03/21	32	38	mg/l
	08/08/21	31	35	mg/l
	11/01/21	31	35	mg/l
Nitrate (as N)	02/01/21		0.82	mg/l
	02/18/21	0.75		mg/l
	05/03/21	1.54	0.67	mg/l
	08/08/21	2.44	0.55	mg/l

Parameter	Sample Date (mm/dd/yy)	Result Well #1	Result Well #2	Unit of Measure
	11/01/21	1.13	0.72	mg/l
Sulphate	02/01/21		47	mg/l
	02/18/21	48		mg/l
	05/03/21	46	47	mg/l
	08/08/21	43	46	mg/l
	11/01/21	47	47	mg/l
pH	02/01/21		7.75	pH
	02/18/21	7.89		pH
	05/03/21	7.71	7.73	pH
	08/08/21	7.64	7.74	pH
	11/01/21	7.66	7.67	pH
Hardness (CaCO ₃)	02/01/21		280	mg/l
	05/03/21	280	270	mg/l
	08/08/21	280	260	mg/l
	11/01/21	270	270	mg/l
Dissolved Calcium	08/08/21	76	70	mg/l
	11/01/21	74	73	mg/l
Dissolved Magnesium	08/08/21	21	21	mg/l
	11/01/21	21	22	mg/l

Additional Non regulatory RAW WATER samples were taken from the Airport Wells for the 2021 year to gain operational information and were analyzed for the parameters listed in the table below:

Parameter	Sample Date (mm/dd/yy)	Result Well #1	Result Well #2	Unit of Measure
Hardness (CaCO ₃)	03/25/21	270	270	mg/l
Total Ammonia-N	03/25/21	<0.050	<0.050	mg/l
Colour	03/25/21	<2	<2	TCU
Total Dissolved Solids	03/25/21	385	320	mg/l
Fluoride (F ⁻)	03/25/21	<0.10	0.11	mg/l
Total Kjeldahl Nitrogen (TKN)	03/25/21	<0.10	<0.10	mg/l
Dissolved Organic Carbon	03/25/21	0.41	0.42	mg/l

Parameter	Sample Date (mm/dd/yy)	Result Well #1	Result Well #2	Unit of Measure
pH	03/25/21	7.95	8.16	pH
Dissolved Sulphate (SO4)	03/25/21	47	48	mg/l
Sulphide	03/25/21	<0.020	<0.020	mg/l
Total UV Transmittance	03/25/21	98	98	%T
Alkalinity (Total as CaCO3)	03/25/21	210	210	mg/l
Dissolved Chloride (Cl-)	03/25/21	32	35	mg/l
Nitrite (N)	03/25/21	<0.010	<0.010	mg/l
Nitrate (N)	03/25/21	1.20	0.58	mg/l
Nitrate + Nitrite (N)	03/25/21	1.20	0.58	mg/l
Gross Alpha	03/25/21	<0.10	<0.10	Bq/L
Gross Beta	03/25/21	<0.10	0.10	Bq/L
Aluminum (Al)	03/25/21	<0.0049	<0.0049	mg/l
Antimony (Sb)	03/25/21	<0.00050	<0.00050	mg/l
Arsenic (As)	03/25/21	<0.0010	<0.0010	mg/l
Barium (Ba)	03/25/21	0.12	0.15	mg/l
Beryllium (Be)	03/25/21	<0.00040	<0.00040	mg/l
Bismuth (Bi)	03/25/21	<0.0010	<0.0010	mg/l
Boron (B)	03/25/21	0.013	0.013	mg/l
Cadmium (Cd)	03/25/21	<0.000090	<0.000090	mg/l
Calcium (Ca)	03/25/21	74	73	mg/l
Chromium (Cr)	03/25/21	<0.0050	<0.0050	mg/l
Cobalt (Co)	03/25/21	<0.00050	<0.00050	mg/l
Copper (Cu)	03/25/21	<0.00090	<0.00090	mg/l
Iron (Fe)	03/25/21	<0.10	<0.10	mg/l
Lead (Pb)	03/25/21	<0.00050	<0.00050	mg/l
Lithium (Li)	03/25/21	<0.0050	<0.0050	mg/l

Parameter	Sample Date (mm/dd/yy)	Result Well #1	Result Well #2	Unit of Measure
Magnesium (Mg)	03/25/21	22	22	mg/l
Manganese (Mn)	03/25/21	0.016	0.013	mg/l
Molybdenum (Mo)	03/25/21	<0.00050	<0.00050	mg/l
Nickel (Ni)	03/25/21	<0.0010	<0.0010	mg/l
Phosphorus (P)	03/25/21	<0.10	<0.10	mg/l
Potassium (K)	03/25/21	1.1	1.1	mg/l
Selenium (Se)	03/25/21	<0.0020	<0.0020	mg/l
Silicon (Si)	03/25/21	4.7	4.7	mg/l
Silver (Ag)	03/25/21	<0.000090	<0.000090	mg/l
Sodium (Na)	03/25/21	13	15	mg/l
Strontium (Sr)	03/25/21	0.36	0.35	mg/l
Tellurium (Te)	03/25/21	<0.0010	<0.0010	mg/l
Thallium (Tl)	03/25/21	<0.000050	<0.000050	mg/l
Tin (Sn)	03/25/21	<0.0010	<0.0010	mg/l
Titanium (Ti)	03/25/21	<0.0050	<0.0050	mg/l
Tungsten (W)	03/25/21	<0.0010	<0.0010	mg/l
Uranium (U)	03/25/21	0.00031	0.00029	mg/l
Vanadium (V)	03/25/21	<0.00050	<0.00050	mg/l
Zinc (Zn)	03/25/21	<0.0050	<0.0050	mg/l
Zirconium (Zr)	03/25/21	<0.0010	<0.0010	mg/l

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards

Parameter	Result Value	Unit of Measure	Date of Sample (mm/dd/yy)
None			