

Espanola Water Treatment

Large Municipal Residential Drinking Water System

January 1, 2019 – December 31, 2019

O.Reg 170/03 Schedule 22 Summary Report

O.Reg 170/03 Section 11 Annual Report

&

O.Reg 387/04 Annual Record of Water Taking

Prepared by the Ontario Clean Water Agency
For The Corporation of the Town of Espanola



Ontario Clean Water Agency
Agence Ontarienne Des Eaux



Drinking-Water System Number: 210000746
Drinking-Water System Name: ESPANOLA DRINKING WATER SYSTEM
Drinking-Water System Owner: The Corporation of the Town of Espanola
Drinking-Water System Category: Large Municipal Residential

SECTION 1: INTRODUCTION

This document is prepared in accordance with Section 11 and Schedule 22 of O.Reg.170/03 under the Safe Drinking Water Act and with Section 9 of O.Reg.387/04 under the Ontario Water Resources Act. The reports are prepared by the Ontario Clean Water Agency. Acronyms and definitions can be found at the end of the report.

A copy of the Summary Report must be provided to the members of the municipal council by March 31, [2020](#).

SECTION 2: REQUIREMENTS OF THE REPORTS

Schedule 22 Report

The report must list the requirements of the Act, the regulations, the system's approval and any order that the system **failed to meet** at any time during the period covered by the report. It must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

For the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and future planned water uses, the following information is required to be included in this report:

- A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
- A comparison of the summary to the rated capacity and flow rates approved in the systems approval.

Section 11 Report

The annual report must contain the following:

- A brief description of the drinking water system and a list of chemicals used by the system.
- A description of any major expenses incurred during the period covered by the report to install, repair or replace required equipment.
- A summary of all adverse water quality incidents (AWQI) reported to the Ministry
- A summary of corrective actions taken in response all AWQIs
- A summary of all test results required under the regulation, under an approval, municipal drinking water licence or order, including an OWRA order.
- A statement of where a Schedule 22 report will be available for inspection.

The report must be prepared not later than February 28 of the following year.

Regulation 387 Report

On or before March 31 in every year, every holder of a permit to take water (PTTW) shall submit to a Director the data collected and recorded for the previous year.

A record of annual water taking can be found in [Appendix A](#).



SECTION 3: SCHEDULE 22 REPORT

Flows - Treated

In accordance with the Municipal Drinking Water License (MDWL), the Espanola WTP shall not be operated to exceed a maximum flow of 10,500 m³/d to the distribution system.

The daily treated water maximum flow was 5,404 m³ in July and represents 51.5% of capacity. In 2019, the total volume of water sent to the distribution system was 927,667.2 m³

The quantity of treated water supplied during the reporting period **did not** exceed the rated maximum capacity.

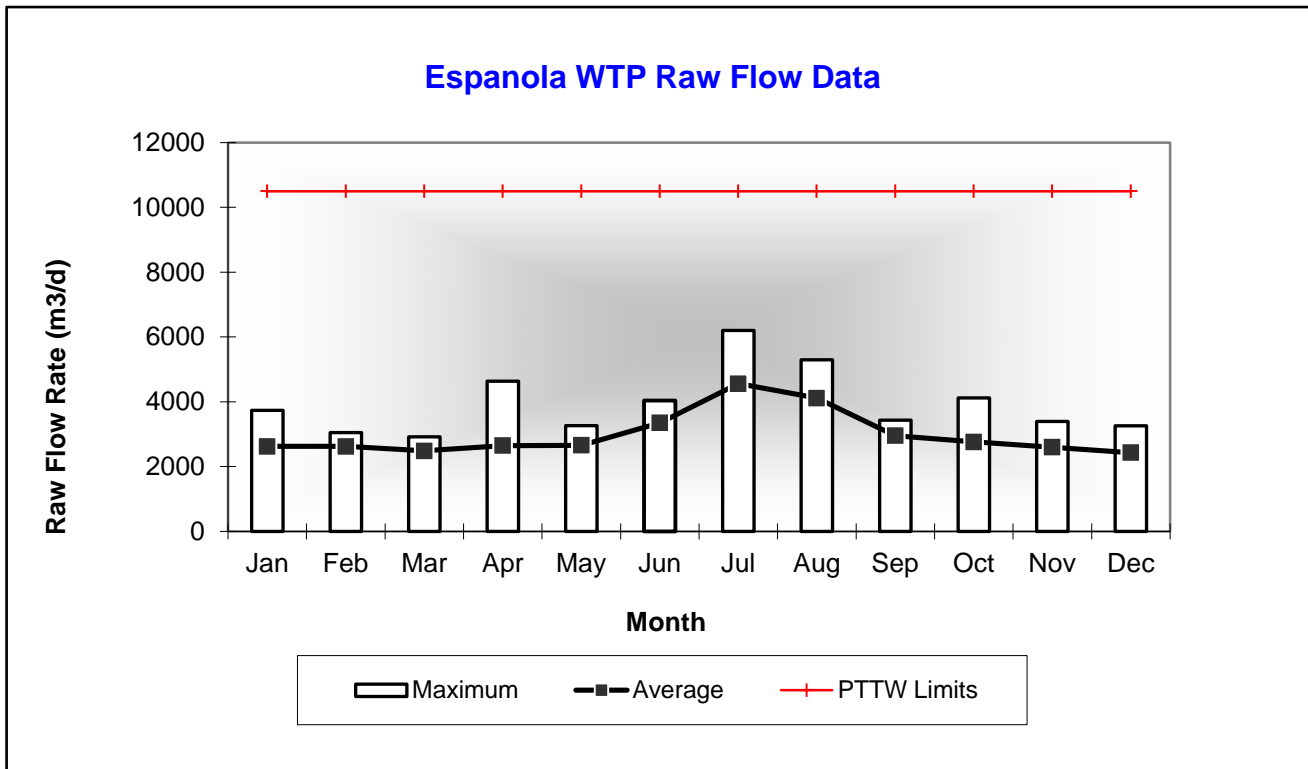
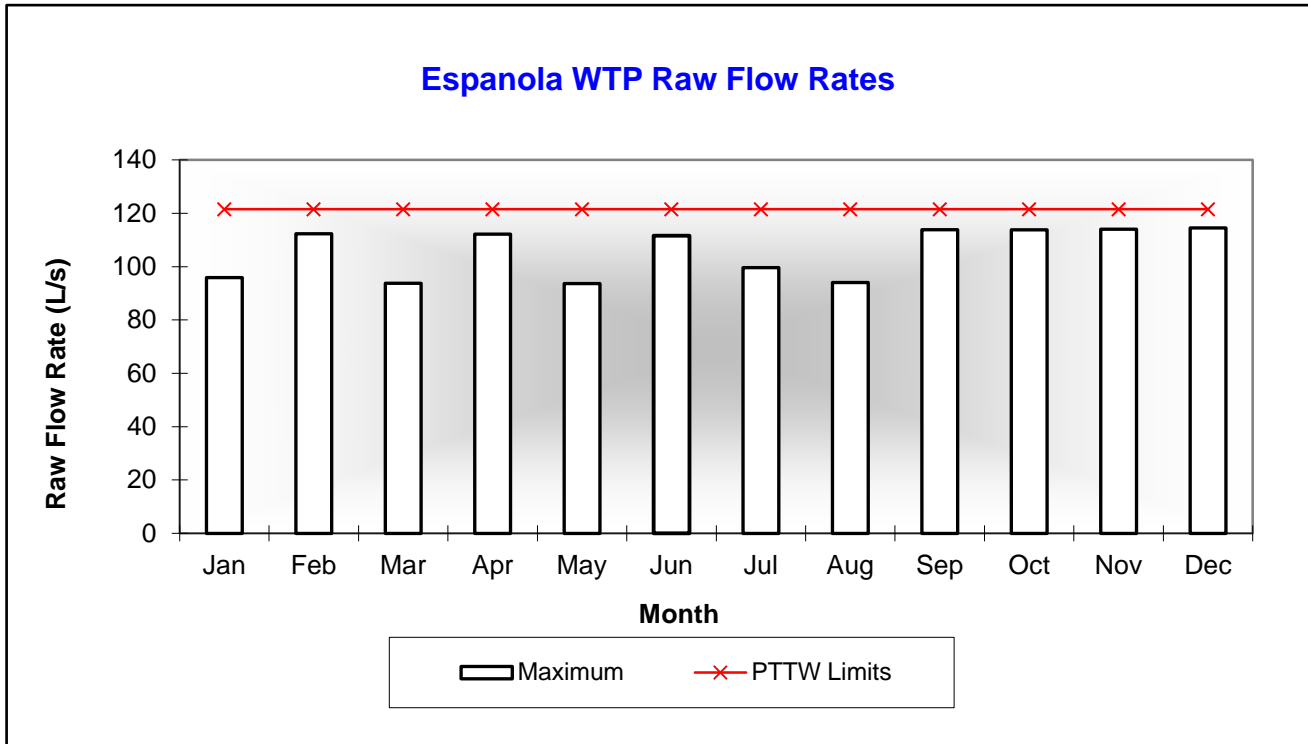
Flows - Raw

Daily raw maximum instantaneous flow is stated in the PTTW at a maximum rate of flow of 121.53 L/s and a maximum daily volume of 10,500.0 m³/d.

The average monthly raw water flow for this reporting period was 3,006.5 m³/d. The maximum daily flow was 6,203 m³/d representing 59% of water taking limits. In 2019, the total volume of water sent to the distribution system was 1,097,380 m³

The quantity of raw water taken **did not** exceed any limits stipulated within the PTTW

<i>RAW WATER FLOW DATA – Apsey Lake</i>						
Month	Total Monthly Flow (m ³)	Average Flow (m ³ /d)	Maximum Flow (m ³ /d)	Maximum Flow Rate (L/s)	Limits	
					L/s (PTTW)	m ³ /d (PTTW)
January	81,295	2,622.42	3,737	95.94	121.53	10,500.0
February	73,400	2,621.43	3,051	112.37	121.53	10,500.0
March	77,030.3	2,484.85	2,920	93.81	121.53	10,500.0
April	79,465	2,645.83	4,637	112.23	121.53	10,500.0
May	82,384	2,657.55	3,265	93.7	121.53	10,500.0
June	100,373	3,345.77	4,034	111.61	121.53	10,500.0
July	141,345	4,559.52	6,203	99.67	121.53	10,500.0
August	127,511	4,113.26	5,297	94.09	121.53	10,500.0
September	88,508	2,950.27	3,434	113.89	121.53	10,500.0
October	85,532	2,759.1	4,121	113.85	121.53	10,500.0
November	77,984	2,599.47	3,395	114.08	121.53	10,500.0
December	82,553	2,663	3,230	114.56	121.53	10,500.0
Total	1,097,380					
Average		3,006.52				
Maximum			6,203	114.56	121.53	10,500.0





Annual Raw Water Review

Raw Water Taking	Total Taking (m3/d)	Average Day (m3/d)	Max Day (m3/d)	Max Day % of PTTW allowable 10,500 (m3/d)
2019	1,097,380	3,006.52	6,203	59%
2018	1,240,053	3,397.4	6,650	63.3%
2017	1,092,559	2,993.31	5,150	49%
2016	1,214,480	3,318.3	6,784	64.9%
2015	1,251,029	3,427.5	7,187	68.4%

System Failures and Corrective Actions

The latest inspection of the drinking water facility took place on [January 22, 2020](#). Another inspection took place on [January 24, 2019](#). The facility scored [14/485](#) providing a rating of [97.11%](#)

All operators did not possess the required certification.

On three separate occasions during the inspection period the logbook identified an operator with a level II certification as the overall responsible operator (ORO) for the water treatment plant. As the plant classification is IV, an operator with a level II certification cannot act as the ORO. It was indicated by the operating authority that the level II operator was not actually scheduled to act as the ORO at any time during the inspection period and it was likely logbook error. This suggests that the operator was not aware of the person assigned the ORO duties, unaware of the role and requirements of the position of ORO and/or general carelessness with regards to the information recorded in the logbook.

Action(s) Required:

In accordance with subsection 23 (1) of O. Reg. 128/04, the owner or operating authority of a municipal residential subsystem shall designate as overall responsible operator of the subsystem an operator who holds a certificate for that type of subsystem and that is of the same class as or higher than the class of that subsystem. For a maximum of 150 days during a year, an operator with a certification level one class lower than that of the plant can be assigned ORO duties.

The operating authority shall provide the operators training on the roll of the ORO, the importance of proper assignment of the ORO duties, as well as the importance of accurate documentation of information in the logbook. By April 30th, 2019, the undersigned Provincial Officer shall receive written confirmation that the operators at the Espanola WTP have received the required training.

AWQIs reported to the Ministry

Incident Date	Parameter	Result	Unit of Measure	Corrective Action/Comment	Corrective Action Date
n/a	n/a	n/a	n/a	n/a	n/a



SECTION 4: SECTION 11 REPORT

Information

Population Served	4,996 (Stats Canada 2016)
Does your Drinking-Water System serve more than 10,000 people?	No
Is your annual report available to the public at no charge on a web site on the Internet?	Yes
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	Town of Espanola, Municipal Office 100 Tudhope Street, Suite 2 Espanola, Ontario P5E 1S6
Number of Designated Facilities served:	0
Did you provide a copy of your annual report to all Designated Facilities you serve?	NA
Number of Interested Authorities you report to:	0
Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?	NA
List all Drinking-Water Systems (if any), and their DWS Number which receive all of their drinking water from your system:	N/A
Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?	NA
Indicate how you notified system users that your annual report is available, and is free of charge.	Public access/notice via a Public Library
Indicate if you notified system users that your annual report is available and is free of charge using an alternate method	Yes

Facility Description

The source of raw water for the Espanola Drinking Water System is Lake Apsey where the intake is located 135 m from shore at a depth of 12m.

The facility includes two solids contact clarifiers, three dual media filters, a clearwell, a pumping station with low lift pumps, three high lift pumps, two backwash pumps, backwash water holding tank with pumps discharging to the sanitary sewer system.

As raw water enters the facility, potassium permanganate is added to improve oxidation of iron and manganese. Alkalinity is boosted and pH is adjusted prior to coagulation and flocculation. After the water is through the reactivator clarifiers and 3 dual media filters, sodium hypochlorite is added for disinfection and hydrofluosilicic acid (fluoride) is added to the water. The water is then pushed through into the facility's reservoir. PH levels are again adjusted and then fed to the 2 clearwells. Prior to entering the distribution, polyphosphates (corrosion control) and sodium hypochlorite is added. The system is equipped with a 275KW diesel generator on site for emergency power.

The distribution includes an elevated storage tank, 5 bleeders with backflow prevention (air gap), a continuous chlorine analyzer and approximately 150 hydrants.



Chemicals Used

Poly Aluminum Chloride (PAC)	Coagulation
Magnafloc LT 27 AG (Polymer)	Coagulation aide
Sodium Hypochlorite 12%	Disinfection
Hydrofluorosilicic Acid (25% HFS)	Fluoride
Soda Ash	Alkalinity and pH control
Poly Ortho Phosphate	Corrosion control
Carbon Dioxide	Alkalinity and pH control
Potassium Permanganate	Oxidizing Agent
Sodium Hydroxide	Alkalinity and pH control

Significant Expenses

Significant expenses incurred to

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

Work Order	Completion Date	Comment
1102045	10-Oct-19	Replaced highlift pump 1
1102338	10-Apr-19	Installed new fluoride analyzer reference probe
1103064	31-Jan-19	Installed new fluoride analyzer reference probe
1176098	03-Oct-19	Removed highlift pump 1 motor and sent for repairs. A new motor was installed and the repaired motor is being kept onsite as a spare.
1342516	21-Aug-19	<i>Clarifier 1 Rebuild/Repairs</i> Replaced all bearings, replaced mixer drive gear and bearings on drive shaft
1379808	16-Dec-19	Replaced the sludge pump with a new pump
1463573	17-Dec-19	Replaced low lift pump VFD
1500262	10-Dec-19	Replaced clarifier 2 blow down valve
1500263	20-Dec-19	Replaced filter 3 backwash inlet valve actuator

Adverse Water Quality Incidents

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/Comment	Corrective Action Date
n/a	n/a	n/a	n/a	n/a	n/a



Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03.

	No. of Samples Collected	Range of E.Coli		Range of Total Coliform Results		Number of HPC Samples	Range of HPC Results	
		Min #	Max #	Min #	Max #		Min #	Max #
Raw Water	52	0	1	0	43	N/A	N/A	N/A
Treated Water	52	0	0	0	0	52	0	1
Distribution	210	0	0	0	0	51	0	880

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03

Parameter	No. of Samples Collected*	Range of Results		Units of Measure
		Minimum	Maximum	
Turbidity - Filt1	8760	0	0.29	NTU
Turbidity - Filt2	8760	0	0.31	NTU
Turbidity - Filt3	8760	0	0.44	NTU
Free Chlorine Residual - TW	8760	0.65	3.61	mg/L
Fluoride Residual - TW	8760	0	1.39	mg/L
Fluoride Residual - TW	87	0.13	0.75	mg/L
Free Chlorine Residual – DW	8760	0.233	2.04	mg/L
Free Chlorine Residual – DW 1	104	0.45	1.32	mg/L
Free Chlorine Residual – DW 2	104	0.42	1.22	mg/L
Free Chlorine Residual – DW 3	103	0.45	1.50	mg/L
Free Chlorine Residual – DW 4	54	0.61	1.42	mg/L

*8760 is used as number of samples for online data.

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

Date of legal instrument issued	Parameter and limits	Month Sampled	Day Sampled	Result	Unit of Measure
N/A	N/A	N/A	N/A	N/A	N/A
Annual Average					mg/L

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

TREATED WATER	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	2019/01/15	0.05	6.0	No	No
Arsenic: As (ug/L) - TW	2019/01/15	0.3	25.0	No	No
Barium: Ba (ug/L) - TW	2019/01/15	4.67	1000.0	No	No
Boron: B (ug/L) - TW	2019/01/15	6.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2019/01/15	0.008	5.0	No	No



Chromium: Cr (ug/L) - TW	2019/01/15	0.1	50.0	No	No
Mercury: Hg (ug/L) - TW	2019/01/15	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2019/01/15	<MDL 0.04	10.0	No	No
Uranium: U (ug/L) - TW	2019/01/15	0.021	20.0	No	No

TREATED WATER	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Fluoride (mg/L) - TW	2017/02/15	0.37	1.5	No	No
Nitrite (mg/L) - TW	2019/01/15	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2019/04/15	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2019/07/15	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2019/10/16	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2019/01/15	0.092	10.0	No	No
Nitrate (mg/L) - TW	2019/04/15	0.12	10.0	No	No
Nitrate (mg/L) - TW	2019/07/15	0.106	10.0	No	No
Nitrate (mg/L) - TW	2019/10/16	0.073	10.0	No	No
Sodium: Na (mg/L) - TW	2017/02/15	19.6	20*	No	Yes

*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 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.

Summary of Lead testing under Schedule 15.1 during this reporting period

Location Type	No. of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
		Minimum	Maximum		
Distribution - Lead Results (ug/L)	0	N/A	N/A	N/A	N/A
Distribution - Alkalinity (mg/L)	6	30	47	N/A	N/A
Distribution - pH In-House	6	6.76	7.48	N/A	N/A

Summary of Organic parameters sampled during this reporting period or the most recent results

TREATED WATER	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2019/01/15	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2019/01/15	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2019/01/15	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2019/01/15	<MDL 0.32	5.00	No	No
Benzo(a)pyrene (ug/L) - TW	2019/01/15	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2019/01/15	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2019/01/15	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2019/01/15	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2019/01/15	<MDL 0.16	5.00	No	No
Chlorpyrifos (ug/L) - TW	2019/01/15	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2019/01/15	<MDL 0.02	20.00	No	No



Dicamba (ug/L) - TW	2019/01/15	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2019/01/15	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2019/01/15	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2019/01/15	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2019/01/15	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2019/01/15	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2019/01/15	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2019/01/15	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2019/01/15	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2019/01/15	<MDL 0.06	20.00	No	No
Diquat (ug/L) - TW	2019/01/15	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2019/01/15	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2019/01/15	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2019/01/15	<MDL 0.02	190.00	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (mg/L) - TW	2019/01/15	<MDL 0.01	N/A	N/A	N/A
Metolachlor (ug/L) - TW	2019/01/15	<MDL 0.02	50.00	No	No
Metribuzin (ug/L) - TW	2019/01/15	<MDL 0.3	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2019/01/15	<MDL 1.0	80.00	No	No
Paraquat (ug/L) - TW	2019/01/15	<MDL 0.04	10.00	No	No
PCB (ug/L) - TW	2019/01/15	<MDL 0.15	3.00	No	No
Pentachlorophenol (ug/L) - TW	2019/01/15	<MDL 0.01	60.00	No	No
Phorate (ug/L) - TW	2019/01/15	<MDL 1.0	2.00	No	No
Picloram (ug/L) - TW	2019/01/15	<MDL 0.03	190.00	No	No
Prometryne (ug/L) - TW	2019/01/15	<MDL 0.01	1.00	No	No
Simazine (ug/L) - TW	2019/01/15	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2019/01/15	<MDL 0.35	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2019/01/15	<MDL 0.2	30.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2019/01/15	<MDL 0.01	100.00	No	No
Triallate (ug/L) - TW	2019/01/15	<MDL 0.44	230.00	No	No
Trichloroethylene (ug/L) - TW	2019/01/15	<MDL 0.25	50.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2019/01/15	<MDL 0.12	5.00	No	No
Trifluralin (ug/L) - TW	2019/01/15	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2019/01/15	<MDL 0.17	2.00	No	No
DISTRIBUTION WATER					
Trihalomethane: Total (ug/L) Annual Average - DW	2019/12/31	36.5	100.00	No	No
HAA Total (ug/L) Annual Average - DW	2019/12/31	30.8	80.0	N/A	N/A



SECTION 5: RAW WATER SUBMISSIONS

Raw water flows were submitted to the MOECC on [January 30, 2020](#).

Ontario  environet **WTRS** Ministry of the Environment, Conservation and Parks

| WT DATA | REPORTS | SEARCH WT DATA | ADMINISTRATION | USER PROFILE | CONTACT US | HELP | HOME | LOGOUT |

Location: [WTRS](#) / [WT DATA](#) / [Edit Submitted WT Records](#) WTRS-WT-008

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 8723-AVXQ59
Permit Holder: THE CORPORATION OF THE MUNICIPALITY OF ESPANOLA.
Received on: Jan 30, 2020 2:18 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.

SECTION 6: CONCLUSION

The Espanola WTP delivers water that, in all its treated and distribution samples, indicates the water to be free of bacteriological contamination.

For the [2019](#) operating year, the Espanola WTP was able to meet the demand of water use without exceeding the PTTW or the MDWL.



List of Acronyms and Definitions

Alkalinity	The capacity of water for neutralizing an acid solution
AWQI	Adverse Water Quality Incident- when a water sample test result exceeds the Ontario Drinking Water Quality Standards
Backwash	Water pumped backwards to clean filters
BWA	Boil Water Advisory; Issued when risk of contamination is possible in drinking water
CFU	Colony Forming Units
Chlorine Residual	A low level of chlorine remaining in water after disinfection occurs
DW	Distribution Water
DWA	Drinking Water Advisory; Issued when water cannot be consumed by any means
DWWP	Drinking Water Works Permit - provides a description of the overall system
E.Coli	Bacteria used as indicators to measure the degree of pollution and sanitary quality of water
GUDI 170/03	Groundwater Under Direct Influence – Considered to be surface water under O.Reg
HPC	Heterotrophic Plant Count
L/s	Litres per Second
m ³ /d	Cubic Metres per Day
MAC	Maximum Acceptable Concentration
MDL	Minimum Detection Level
MDWL requirements	Municipal Drinking Water Licence - relates to the operation and performance
mg/L	Milligrams per Litre
Ministry	Ministry of the Environment and Climate Change
MOECC	Ministry of the Environment and Climate Change
O.Reg	Ontario Regulation
PTTW water	Permit to Take Water – Permit which allows water taking from groundwater or surface
RW	Raw Water
TC	Total Coliforms
TSS	Total Suspended Solids
Turbidity	Cloudiness or haziness of water
TW	Treated Water



Appendix A

Raw Water Flows

Ontario Clean Water Agency
Annual Water Taking and Transfer Report
 From 01/01/2019 To 12/31/2019

Facility: ESPANOLA DRINKING WATER SYSTEM-5758
 Tag: Raw Flow: Sum (m3/d)
 Tag Group: Raw Water

Permit#: 8723-AVXQ59
 Source Name: Lake Apsey
 Source: Lake
 Type:
 Purpose: Municipal

Coordinate Zone: 17
 Easting: 439966
 Northing: 5119623
 Method deter: Metered

Date Measured	Value (m³/d)	Value (Litres)
01/01/2019	2108.0000	2108000.0000
02/01/2019	3737.0000	3737000.0000
03/01/2019	2643.0000	2643000.0000
04/01/2019	2723.0000	2723000.0000
05/01/2019	2670.0000	2670000.0000
06/01/2019	2413.0000	2413000.0000
07/01/2019	2076.0000	2076000.0000
08/01/2019	2523.0000	2523000.0000
09/01/2019	3085.0000	3085000.0000
10/01/2019	2111.0000	2111000.0000
11/01/2019	2638.0000	2638000.0000
12/01/2019	2820.0000	2820000.0000
13/01/2019	2323.0000	2323000.0000
14/01/2019	2842.0000	2842000.0000
15/01/2019	2380.0000	2380000.0000
16/01/2019	2797.0000	2797000.0000
17/01/2019	2123.0000	2123000.0000
18/01/2019	2986.0000	2986000.0000
19/01/2019	2750.0000	2750000.0000
20/01/2019	2098.0000	2098000.0000
21/01/2019	3178.0000	3178000.0000
22/01/2019	2550.0000	2550000.0000
23/01/2019	2221.0000	2221000.0000
24/01/2019	3117.0000	3117000.0000
25/01/2019	2705.0000	2705000.0000
26/01/2019	2354.0000	2354000.0000
27/01/2019	2658.0000	2658000.0000
28/01/2019	2825.0000	2825000.0000
29/01/2019	2725.0000	2725000.0000
30/01/2019	2253.0000	2253000.0000
31/01/2019	2863.0000	2863000.0000
01/02/2019	2954.0000	2954000.0000
02/02/2019	2014.0000	2014000.0000
03/02/2019	3048.0000	3048000.0000
04/02/2019	2655.0000	2655000.0000
05/02/2019	2409.0000	2409000.0000
06/02/2019	2769.0000	2769000.0000
07/02/2019	2675.0000	2675000.0000
08/02/2019	2962.0000	2962000.0000
09/02/2019	2442.0000	2442000.0000
10/02/2019	2675.0000	2675000.0000
11/02/2019	2637.0000	2637000.0000

12/02/2019	2948.0000	2948000.0000
13/02/2019	2357.0000	2357000.0000
14/02/2019	2931.0000	2931000.0000
15/02/2019	2307.0000	2307000.0000
16/02/2019	2452.0000	2452000.0000
17/02/2019	2805.0000	2805000.0000
18/02/2019	2600.0000	2600000.0000
19/02/2019	2479.0000	2479000.0000
20/02/2019	2830.0000	2830000.0000
21/02/2019	2555.0000	2555000.0000
22/02/2019	2576.0000	2576000.0000
23/02/2019	2242.0000	2242000.0000
24/02/2019	3051.0000	3051000.0000
25/02/2019	2228.0000	2228000.0000
26/02/2019	2902.0000	2902000.0000
27/02/2019	2571.0000	2571000.0000
28/02/2019	2326.0000	2326000.0000
01/03/2019	2707.0000	2707000.0000
02/03/2019	2622.0000	2622000.0000
03/03/2019	2793.0000	2793000.0000
04/03/2019	2351.0000	2351000.0000
05/03/2019	2534.0000	2534000.0000
06/03/2019	2655.0000	2655000.0000
07/03/2019	2615.0000	2615000.0000
08/03/2019	2110.0000	2110000.0000
09/03/2019	2671.0000	2671000.0000
10/03/2019	2267.0000	2267000.0000
11/03/2019	2844.0000	2844000.0000
12/03/2019	2310.0000	2310000.0000
13/03/2019	2596.0000	2596000.0000
14/03/2019	2280.0000	2280000.0000
15/03/2019	2607.0000	2607000.0000
16/03/2019	2155.0000	2155000.0000
17/03/2019	2920.0000	2920000.0000
18/03/2019	2129.0000	2129000.0000
19/03/2019	2541.0000	2541000.0000
20/03/2019	2424.0000	2424000.0000
21/03/2019	2813.0000	2813000.0000
22/03/2019	2279.0000	2279000.0000
23/03/2019	1831.0000	1831000.0000
24/03/2019	2133.3000	2133300.0000
25/03/2019	2799.0000	2799000.0000
26/03/2019	2142.0000	2142000.0000
27/03/2019	2828.0000	2828000.0000
28/03/2019	2524.0000	2524000.0000
29/03/2019	2282.0000	2282000.0000
30/03/2019	2903.0000	2903000.0000
31/03/2019	2365.0000	2365000.0000
01/04/2019	2738.0000	2738000.0000
02/04/2019	2188.0000	2188000.0000
03/04/2019	2604.0000	2604000.0000
04/04/2019	2307.0000	2307000.0000
05/04/2019	2204.0000	2204000.0000
06/04/2019	2591.0000	2591000.0000
07/04/2019	2139.0000	2139000.0000
08/04/2019	2299.0000	2299000.0000
09/04/2019	2776.0000	2776000.0000
10/04/2019	1941.0000	1941000.0000
11/04/2019	2414.0000	2414000.0000
12/04/2019	2780.0000	2780000.0000
13/04/2019	2203.0000	2203000.0000

14/04/2019	2943.0000	2943000.0000
15/04/2019	2471.0000	2471000.0000
16/04/2019	2602.0000	2602000.0000
17/04/2019	2550.0000	2550000.0000
18/04/2019	2658.0000	2658000.0000
19/04/2019	1905.0000	1905000.0000
20/04/2019	2788.0000	2788000.0000
21/04/2019	2420.0000	2420000.0000
22/04/2019	2425.0000	2425000.0000
23/04/2019	4637.0000	4637000.0000
24/04/2019	2930.0000	2930000.0000
25/04/2019	3126.0000	3126000.0000
26/04/2019	3110.0000	3110000.0000
27/04/2019	2932.0000	2932000.0000
28/04/2019	2587.0000	2587000.0000
29/04/2019	3378.0000	3378000.0000
30/04/2019	2819.0000	2819000.0000
01/05/2019	2327.0000	2327000.0000
02/05/2019	2618.0000	2618000.0000
03/05/2019	2279.0000	2279000.0000
04/05/2019	2760.0000	2760000.0000
05/05/2019	2621.0000	2621000.0000
06/05/2019	2589.0000	2589000.0000
07/05/2019	2209.0000	2209000.0000
08/05/2019	2972.0000	2972000.0000
09/05/2019	2604.0000	2604000.0000
10/05/2019	2493.0000	2493000.0000
11/05/2019	2560.0000	2560000.0000
12/05/2019	2467.0000	2467000.0000
13/05/2019	2901.0000	2901000.0000
14/05/2019	2446.0000	2446000.0000
15/05/2019	3215.0000	3215000.0000
16/05/2019	2467.0000	2467000.0000
17/05/2019	2926.0000	2926000.0000
18/05/2019	2370.0000	2370000.0000
19/05/2019	2772.0000	2772000.0000
20/05/2019	2506.0000	2506000.0000
21/05/2019	2620.0000	2620000.0000
22/05/2019	3008.0000	3008000.0000
23/05/2019	2557.0000	2557000.0000
24/05/2019	2437.0000	2437000.0000
25/05/2019	2684.0000	2684000.0000
26/05/2019	2959.0000	2959000.0000
27/05/2019	2486.0000	2486000.0000
28/05/2019	2633.0000	2633000.0000
29/05/2019	3265.0000	3265000.0000
30/05/2019	3136.0000	3136000.0000
31/05/2019	2497.0000	2497000.0000
01/06/2019	3488.0000	3488000.0000
02/06/2019	2572.0000	2572000.0000
03/06/2019	3327.0000	3327000.0000
04/06/2019	2508.0000	2508000.0000
05/06/2019	3113.0000	3113000.0000
06/06/2019	3056.0000	3056000.0000
07/06/2019	3336.0000	3336000.0000
08/06/2019	3740.0000	3740000.0000
09/06/2019	3161.0000	3161000.0000
10/06/2019	2850.0000	2850000.0000
11/06/2019	3052.0000	3052000.0000
12/06/2019	2770.0000	2770000.0000
13/06/2019	2828.0000	2828000.0000

14/06/2019	2498.0000	2498000.0000
15/06/2019	3144.0000	3144000.0000
16/06/2019	3063.0000	3063000.0000
17/06/2019	3397.0000	3397000.0000
18/06/2019	3586.0000	3586000.0000
19/06/2019	3624.0000	3624000.0000
20/06/2019	3707.0000	3707000.0000
21/06/2019	3793.0000	3793000.0000
22/06/2019	3876.0000	3876000.0000
23/06/2019	3947.0000	3947000.0000
24/06/2019	3262.0000	3262000.0000
25/06/2019	3386.0000	3386000.0000
26/06/2019	3753.0000	3753000.0000
27/06/2019	4034.0000	4034000.0000
28/06/2019	3813.0000	3813000.0000
29/06/2019	3662.0000	3662000.0000
30/06/2019	4027.0000	4027000.0000
01/07/2019	3992.0000	3992000.0000
02/07/2019	4694.0000	4694000.0000
03/07/2019	5162.0000	5162000.0000
04/07/2019	5420.0000	5420000.0000
05/07/2019	5269.0000	5269000.0000
06/07/2019	4955.0000	4955000.0000
07/07/2019	4621.0000	4621000.0000
08/07/2019	4922.0000	4922000.0000
09/07/2019	4713.0000	4713000.0000
10/07/2019	4935.0000	4935000.0000
11/07/2019	3534.0000	3534000.0000
12/07/2019	3977.0000	3977000.0000
13/07/2019	4612.0000	4612000.0000
14/07/2019	4037.0000	4037000.0000
15/07/2019	5088.0000	5088000.0000
16/07/2019	3962.0000	3962000.0000
17/07/2019	6203.0000	6203000.0000
18/07/2019	5513.0000	5513000.0000
19/07/2019	3999.0000	3999000.0000
20/07/2019	4391.0000	4391000.0000
21/07/2019	3899.0000	3899000.0000
22/07/2019	4930.0000	4930000.0000
23/07/2019	4652.0000	4652000.0000
24/07/2019	3979.0000	3979000.0000
25/07/2019	4872.0000	4872000.0000
26/07/2019	4920.0000	4920000.0000
27/07/2019	3927.0000	3927000.0000
28/07/2019	3766.0000	3766000.0000
29/07/2019	3691.0000	3691000.0000
30/07/2019	4125.0000	4125000.0000
31/07/2019	4585.0000	4585000.0000
01/08/2019	4710.0000	4710000.0000
02/08/2019	5297.0000	5297000.0000
03/08/2019	4757.0000	4757000.0000
04/08/2019	5028.0000	5028000.0000
05/08/2019	4931.0000	4931000.0000
06/08/2019	4597.0000	4597000.0000
07/08/2019	5179.0000	5179000.0000
08/08/2019	3821.0000	3821000.0000
09/08/2019	3822.0000	3822000.0000
10/08/2019	3727.0000	3727000.0000
11/08/2019	4055.0000	4055000.0000
12/08/2019	4560.0000	4560000.0000
13/08/2019	4394.0000	4394000.0000

14/08/2019	4678.0000	4678000.0000
15/08/2019	4188.0000	4188000.0000
16/08/2019	4039.0000	4039000.0000
17/08/2019	3457.0000	3457000.0000
18/08/2019	3640.0000	3640000.0000
19/08/2019	4351.0000	4351000.0000
20/08/2019	4141.0000	4141000.0000
21/08/2019	4165.0000	4165000.0000
22/08/2019	3865.0000	3865000.0000
23/08/2019	3568.0000	3568000.0000
24/08/2019	3922.0000	3922000.0000
25/08/2019	3692.0000	3692000.0000
26/08/2019	4370.0000	4370000.0000
27/08/2019	2760.0000	2760000.0000
28/08/2019	3980.0000	3980000.0000
29/08/2019	3105.0000	3105000.0000
30/08/2019	2853.0000	2853000.0000
31/08/2019	3859.0000	3859000.0000
01/09/2019	3059.0000	3059000.0000
02/09/2019	2900.0000	2900000.0000
03/09/2019	3357.0000	3357000.0000
04/09/2019	3423.0000	3423000.0000
05/09/2019	3206.0000	3206000.0000
06/09/2019	2947.0000	2947000.0000
07/09/2019	2984.0000	2984000.0000
08/09/2019	2754.0000	2754000.0000
09/09/2019	2910.0000	2910000.0000
10/09/2019	3223.0000	3223000.0000
11/09/2019	2805.0000	2805000.0000
12/09/2019	2953.0000	2953000.0000
13/09/2019	2634.0000	2634000.0000
14/09/2019	2797.0000	2797000.0000
15/09/2019	2679.0000	2679000.0000
16/09/2019	3065.0000	3065000.0000
17/09/2019	3327.0000	3327000.0000
18/09/2019	3043.0000	3043000.0000
19/09/2019	3119.0000	3119000.0000
20/09/2019	2858.0000	2858000.0000
21/09/2019	2861.0000	2861000.0000
22/09/2019	2837.0000	2837000.0000
23/09/2019	2964.0000	2964000.0000
24/09/2019	3434.0000	3434000.0000
25/09/2019	3283.0000	3283000.0000
26/09/2019	3110.0000	3110000.0000
27/09/2019	2897.0000	2897000.0000
28/09/2019	2269.0000	2269000.0000
29/09/2019	2379.0000	2379000.0000
30/09/2019	2431.0000	2431000.0000
01/10/2019	3917.0000	3917000.0000
02/10/2019	4121.0000	4121000.0000
03/10/2019	2869.0000	2869000.0000
04/10/2019	3591.0000	3591000.0000
05/10/2019	2309.0000	2309000.0000
06/10/2019	2152.0000	2152000.0000
07/10/2019	3668.0000	3668000.0000
08/10/2019	2832.0000	2832000.0000
09/10/2019	4092.0000	4092000.0000
10/10/2019	3639.0000	3639000.0000
11/10/2019	2328.0000	2328000.0000
12/10/2019	2903.0000	2903000.0000
13/10/2019	2493.0000	2493000.0000

14/10/2019	2091.0000	2091000.0000
15/10/2019	2958.0000	2958000.0000
16/10/2019	2555.0000	2555000.0000
17/10/2019	2627.0000	2627000.0000
18/10/2019	2273.0000	2273000.0000
19/10/2019	2452.0000	2452000.0000
20/10/2019	2654.0000	2654000.0000
21/10/2019	2400.0000	2400000.0000
22/10/2019	2137.0000	2137000.0000
23/10/2019	3003.0000	3003000.0000
24/10/2019	2483.0000	2483000.0000
25/10/2019	2329.0000	2329000.0000
26/10/2019	2354.0000	2354000.0000
27/10/2019	2792.0000	2792000.0000
28/10/2019	2328.0000	2328000.0000
29/10/2019	2813.0000	2813000.0000
30/10/2019	2462.0000	2462000.0000
31/10/2019	1907.0000	1907000.0000
01/11/2019	2840.0000	2840000.0000
02/11/2019	2953.0000	2953000.0000
03/11/2019	2610.0000	2610000.0000
04/11/2019	2334.0000	2334000.0000
05/11/2019	2341.0000	2341000.0000
06/11/2019	2774.0000	2774000.0000
07/11/2019	2440.0000	2440000.0000
08/11/2019	2523.0000	2523000.0000
09/11/2019	2342.0000	2342000.0000
10/11/2019	2342.0000	2342000.0000
11/11/2019	3037.0000	3037000.0000
12/11/2019	2415.0000	2415000.0000
13/11/2019	2154.0000	2154000.0000
14/11/2019	2731.0000	2731000.0000
15/11/2019	2318.0000	2318000.0000
16/11/2019	2443.0000	2443000.0000
17/11/2019	2394.0000	2394000.0000
18/11/2019	2337.0000	2337000.0000
19/11/2019	2640.0000	2640000.0000
20/11/2019	2807.0000	2807000.0000
21/11/2019	2093.0000	2093000.0000
22/11/2019	3184.0000	3184000.0000
23/11/2019	2593.0000	2593000.0000
24/11/2019	2565.0000	2565000.0000
25/11/2019	3016.0000	3016000.0000
26/11/2019	2422.0000	2422000.0000
27/11/2019	2683.0000	2683000.0000
28/11/2019	2809.0000	2809000.0000
29/11/2019	2449.0000	2449000.0000
30/11/2019	3395.0000	3395000.0000
01/12/2019	2496.0000	2496000.0000
02/12/2019	3134.0000	3134000.0000
03/12/2019	2983.0000	2983000.0000
04/12/2019	3230.0000	3230000.0000
05/12/2019	2438.0000	2438000.0000
06/12/2019	2387.0000	2387000.0000
07/12/2019	2963.0000	2963000.0000
08/12/2019	2516.0000	2516000.0000
09/12/2019	2261.0000	2261000.0000
10/12/2019	2853.0000	2853000.0000
11/12/2019	2908.0000	2908000.0000
12/12/2019	2325.0000	2325000.0000
13/12/2019	2821.0000	2821000.0000

14/12/2019	2213.0000	2213000.0000
15/12/2019	3210.0000	3210000.0000
16/12/2019	2272.0000	2272000.0000
17/12/2019	2783.0000	2783000.0000
18/12/2019	2446.0000	2446000.0000
19/12/2019	2297.0000	2297000.0000
20/12/2019	3105.0000	3105000.0000
21/12/2019	2555.0000	2555000.0000
22/12/2019	2749.0000	2749000.0000
23/12/2019	2523.0000	2523000.0000
24/12/2019	2888.0000	2888000.0000
25/12/2019	2247.0000	2247000.0000
26/12/2019	2797.0000	2797000.0000
27/12/2019	2859.0000	2859000.0000
28/12/2019	2397.0000	2397000.0000
29/12/2019	2726.0000	2726000.0000
30/12/2019	2266.0000	2266000.0000
31/12/2019	2905.0000	2905000.0000