

Nairn Centre Water Treatment

Large Municipal Residential Drinking Water System

January 1, 2016 – December 31, 2016

***Reg 170/03 Schedule 22 Summary Report
Reg 170/03 Section 11 Annual Report
&
Reg 387/04 Annual Record of Water Taking***

Prepared by the Ontario Clean Water Agency
For The Corporation of the Township of Nairn and Hyman



Ontario Clean Water Agency
Agence Ontarienne Des Eaux



Drinking-Water System Number: 210002138
Drinking-Water System Name: Nairn Centre Drinking Water System
Drinking-Water System Owner: The Corp. of the Township of Nairn and Hyman
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, 2017.

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 Nairn Centre WTP shall not be operated to exceed a maximum flow of 818 m³/d to the distribution system.

The daily treated water maximum flow was 332.1 m³ in June and represents 40.6% of capacity.

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

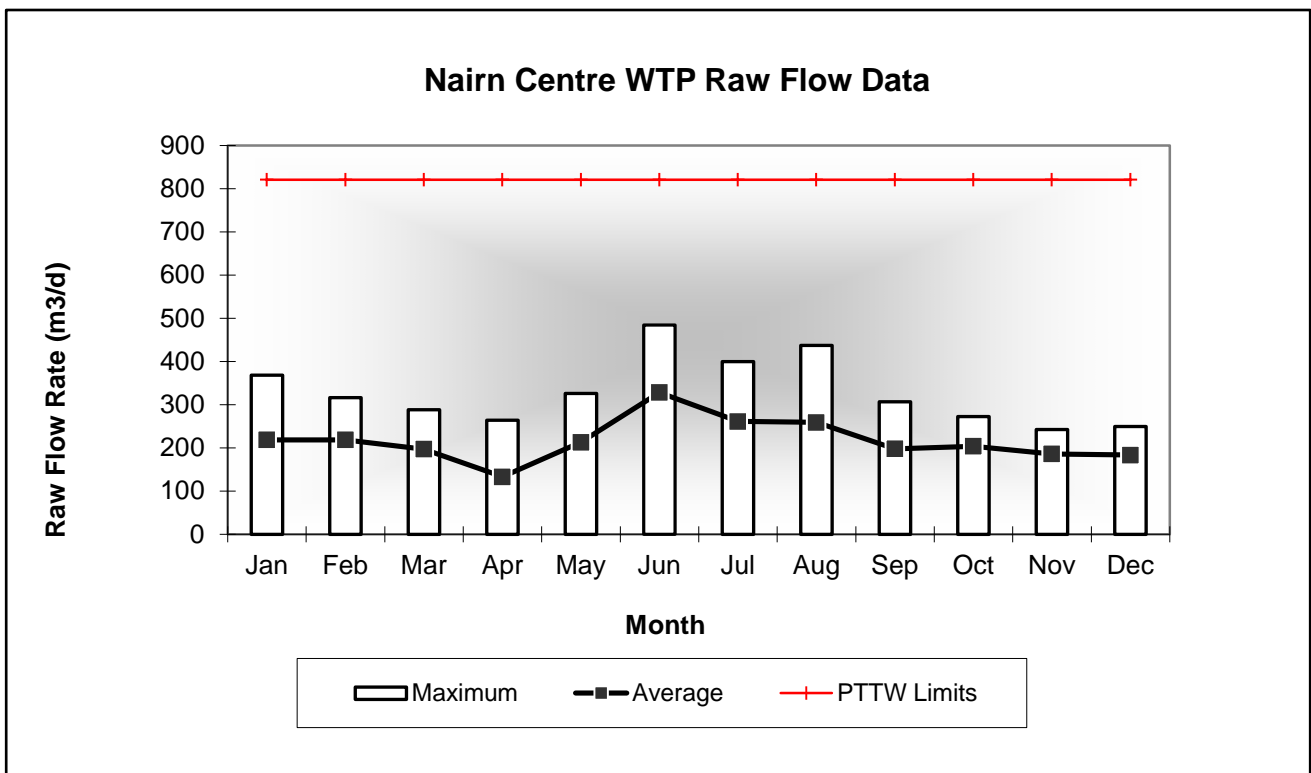
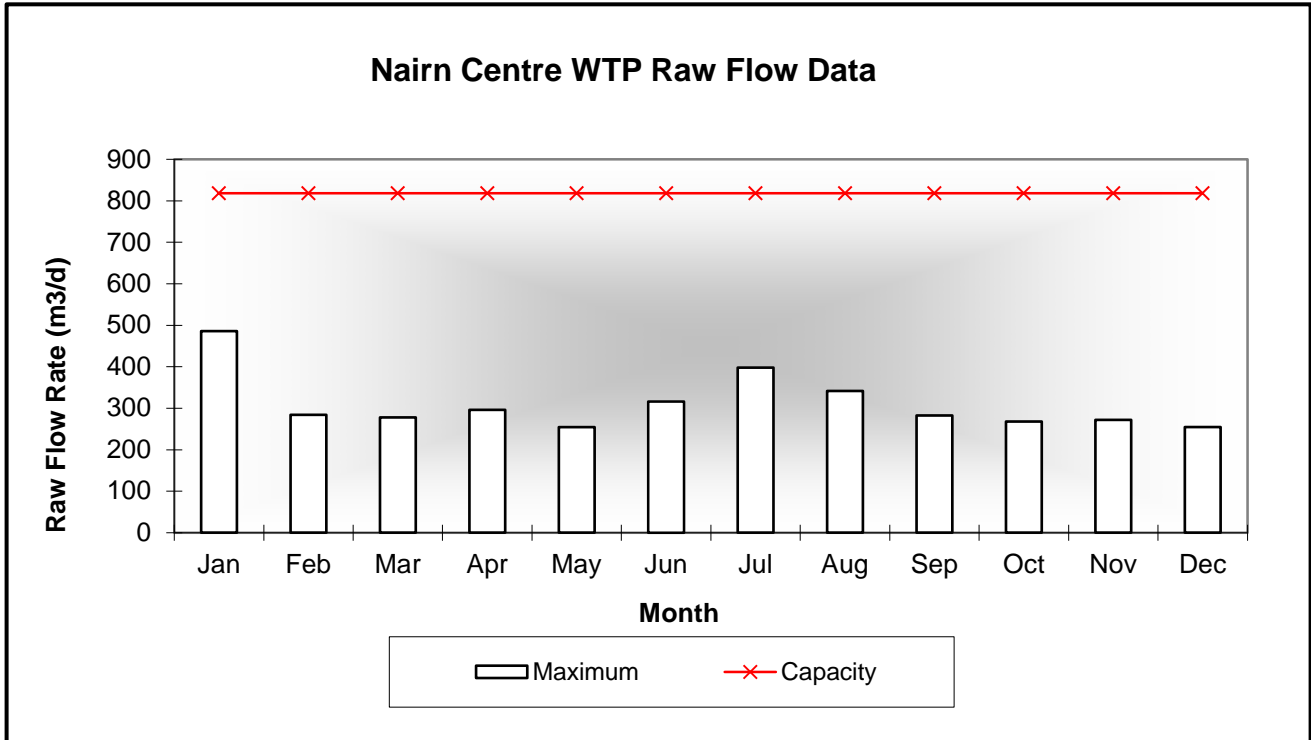
Flows - Raw

Daily raw maximum instantaneous flow is stated in the PTTW at a maximum rate of flow of 9.5 L/s and a maximum daily volume of 820.8 m³/d.

The average monthly raw water flow for this reporting period was 220.73 m³/d. The maximum daily flow was 484.4 m³/d representing 59% of water taking limits.

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

<i>RAW WATER FLOW DATA - TOTAL ALL SOURCES</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	6,773.78	218.51	368.5	7.61	9.5	818
February	6,332.69	218.37	316.5	7.07	9.5	818
March	6,109.5	197.08	288.5	6.98	9.5	818
April	5,488.51	132.95	264.2	6.69	9.5	818
May	6,604.36	213.04	326.2	7.25	9.5	818
June	9,843.00	328.1	484.4	8.27	9.5	818
July	8,089.20	260.94	399.9	8.2	9.5	818
August	8,028.20	258.97	437.4	7.38	9.5	818
September	5,936.89	197.90	306.9	7.46	9.5	818
October	6,318.70	203.83	272.7	7.1	9.5	818
November	5,581.10	186.04	242.7	8.16	9.5	818
December	5,681.50	183.27	249.7	7.62	9.5	818
Total	80,787.43					
Average		220.73				
Maximum			484.4	8.27		





Annual Raw Water Review

Raw Water Taking	Total Taking m3/d	Average Day m3/d	Max Day m3/d	Max Day % of PTTW allowable 818 m3/d
2016	80,787	221	484	59%
2015	72,001	198	486	59%
2014	65,906	161	514	63%
2013	67,512	339	524	64%

System Failures and Corrective Actions

The latest inspection of the drinking water facility took place on **June 23, 2016**. The facility scored **0/471** providing a rating of **100%**.

Two non compliances were noted during the review period.

The operator, Dillon Duxbury, performed his review of trends for the Nairn facility at 0939 hours on Friday, April 13th, 2016. He did not perform another review until April 17th, 2016 at 0848 hours. The review was therefore performed 23hrs 51 mins later that prescribed by legislation. There were no issues found in trends over the 4 days for any parameter and all alarming and equipment was functioning properly.

On June 1st, the operator, Dillon Duxbury, noticed an issue with the SCADA computer. The computer would not turn on which also prevented remote connection. Operators could not make any operational changes as the chemical pumps are only controlled through the SCADA computer. The operator still had access to wonderware for trending and to monitor the plant. The PLC was still running and the plant was operating as usual, all alarming was still working.

AWQIs reported to the Ministry					
Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
N/A	N/A	N/A	N/A	N/A	N/A



SECTION 4: SECTION 11 REPORT

Information to be provided

Population Served	477 (Stats Canada – 2011)
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.	Township of Nairn and Hyman, Municipal Office 64 McIntyre Street Nairn Centre, Ontario POM 2L0
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 the web
Indicate if you notified system users that your annual report is available and is free of charge using an alternate method	YES

Facility Description

A prefabricated package water treatment plant, comprising chemical addition, pre-chlorination, coagulation/flocculation, sedimentation, and dual media filtration, followed by pH adjustment, fluoridation and post chlorination, designed for conventional operating parameters at a rated capacity of 818 m³/day, with duty low lift pump starting and stopping the operation of the water treatment plant. Treated water storage consisting of two clear wells each having a capacity of 345 m³. High lift pumps comprising two vertical multistage pumps, each rated at 6.6 L/s and a fire pump with a capacity of 40.1 L/s. The discharge header fitted with pressure relief valve, a pressure gauge, a chlorine injection point, a magnetic flow meter, and sampling point for a chlorine residual analyzer with the discharge header having a system of three hydro-pneumatic tanks, each with 1.6m³ capacity. A 26m³ surge tank receives sludge from the clarifier and backwash waste from the dual media filters, equipped with two centrifugal submersible pumps each rated at 1.0 L/s with clarified supernatant from the 65 m³ settling chamber overflowing to an outfall chamber, and from there to the adjacent creek and from there to the Spanish River. Stand-by power is available from a 160 kW (200 kVa) diesel generator.



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 (dense)	Alkalinity and pH control

Significant Expenses

Significant expenses incurred to

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

Work Order	Completion Date	Comment
49065	3-Mar-16	<i>Chlorine Analyzer & Soda Ash Feed System</i> Chlorine membrane cap was purchased as well as an injection point for the soda ash feed system.
87695	30-June-16	<i>SCADA</i> SCADA tower had a redundant HDD failure in RAID5. Nor tech rebuilt drives and performed SCADA updates.
105692	26-Jul-16	<i>Low Lift Pump #2</i> LLP-120 was drawing a current of 16amps when it should have been drawing 6 to 7 amps. Boom truck was rented and with another mechanic LLP-120 was pulled out of wet well for inspection. It was found the wiring casing was not air tight and was filled with water. Casing was dried out and cleaned and resealed with marine silicone glue. Pump was tested and faulted out once again so pump was taken out of wet well and sent back to Flygt for further evaluation.
105692	8-Nov-16	<i>Low Lift Pump #2</i> Old low lift pump could not be repaired; new pump was purchased from Xylem Canada.
105999	3-Aug-16	<i>Heaters</i> Two heaters required as per the ESA inspection.
148535	Sept 2016	<i>Sludge Pit</i> Floats replaced in sludge pit.

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	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	Range of E.Coli		Range of Total Coliform Results		Number of HPC Samples	Range of HPC Results	
	Collected	Min #	Max #	Min #	Max #		Min #	Max #
Raw Water	52	0	21	9	112	0		
Treated Water	52	0	0	0	0	52	0	13
Distribution	105	0	0	0	0	52	0	11

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

	No. of Samples	Range of Results	
	Collected	Minimum	Maximum
Turbidity, On-Line (NTU) - Filt1	8760	0	5
Free Chlorine Residual, Treated (mg/L)	8760	0.38	5
Free Chlorine Residual, Distribution Location 1	105	0.67	2.12
Free Chlorine Residual, Distribution Location 2	105	0.7	1.85
Free Chlorine Residual, Distribution Location 3	103	0.68	2.13
Free Chlorine Residual, Distribution Location 4	51	0.48	1.82

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument. (Use monitoring BW TSS sheet to Paste and Copy)

Date of legal instrument issued	Parameter and limits	Month Sampled	Day Sampled	Result	Unit of Measure
MDWL 281-101 November 25, 2015	Backwash (BW) Total Suspended Solids (TSS) 25 mg/L annual average	Jan	18	6	mg/L
		Feb	22	23	mg/L
		Mar	21	2	mg/L
		Apr	18	14	mg/L
		May	24	2	mg/L
		Jun	20	17	mg/L
		Jul	18	23	mg/L
		Aug	23	26	mg/L
		Sep	22	2	mg/L
		Oct	24	2	mg/L
		Nov	29	15	mg/L
		Dec	22	14	mg/L
		Annual Average			12.17

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



	Sample Date (mm/dd/yyyy)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
TREATED WATER				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	01/26/2016	0.03	6.0	No	No
Arsenic: As (ug/L) - TW	01/26/2016	<MDL 0.2	25.0	No	No
Barium: Ba (ug/L) - TW	01/26/2016	4.41	1000.0	No	No
Boron: B (ug/L) - TW	01/26/2016	11.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	01/26/2016	0.004	5.0	No	No
Chromium: Cr (ug/L) - TW	01/26/2016	0.3	50.0	No	No
Mercury: Hg (ug/L) - TW	01/26/2016	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	01/26/2016	<MDL 0.04	10.0	No	No
Uranium: U (ug/L) - TW	01/26/2016	0.007	20.0	No	No

	Sample Date (mm/dd/yyyy)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
TREATED WATER				MAC	1/2 MAC
Fluoride (mg/L) - TW	06/30/2012	0.4	1.5	No	No
Nitrite (mg/L) - TW	01/26/2016	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	04/25/2016	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	07/25/2016	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	10/24/2016	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	01/26/2016	0.067	10.0	No	No
Nitrate (mg/L) - TW	04/25/2016	0.118	10.0	No	No
Nitrate (mg/L) - TW	07/25/2016	0.046	10.0	No	No
Nitrate (mg/L) - TW	10/24/2016	0.062	10.0	No	No
Sodium: Na (mg/L) - TW	01/09/2012	19.1	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	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
		Minimum	Maximum		
Distribution - Lead Results (ug/L)	3	0.13	1.57	10	0
Distribution - Alkalinity (mg/L)	3	11	23	n/a	n/a
Distribution - pH In-House	3	6.8	7.4	n/a	n/a
Distribution - pH Lab	0			n/a	n/a

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



	Sample Date (mm/dd/yyyy)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
TREATED WATER				MAC	1/2 MAC
Alachlor (ug/L) - TW	01/26/2016	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	01/26/2016	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	01/26/2016	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	01/26/2016	<MDL 0.32	5.00	No	No
Benzo(a)pyrene (ug/L) - TW	01/26/2016	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	01/26/2016	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	01/26/2016	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	01/26/2016	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	01/26/2016	<MDL 0.16	5.00	No	No
Chlorpyrifos (ug/L) - TW	01/26/2016	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	01/26/2016	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	01/26/2016	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	01/26/2016	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	01/26/2016	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	01/26/2016	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	01/26/2016	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	01/26/2016	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	01/26/2016	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	01/26/2016	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	01/26/2016	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	01/26/2016	<MDL 0.03	20.00	No	No
Diquat (ug/L) - TW	01/26/2016	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	01/26/2016	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	01/26/2016	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	01/26/2016	<MDL 0.02	190.00	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (mg/L) - TW	26/01/2016	<MDL0.00012	N/A	N/A	N/A
Metolachlor (ug/L) - TW	01/26/2016	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	01/26/2016	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	01/26/2016	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	01/26/2016	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	01/26/2016	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	01/26/2016	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	01/26/2016	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	01/26/2016	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	01/26/2016	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	01/26/2016	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	01/26/2016	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	01/26/2016	<MDL 0.35	30.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	01/26/2016	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	01/26/2016	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	01/26/2016	<MDL 0.44	50.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	01/26/2016	<MDL 0.25	5.00	No	No



Trifluralin (ug/L) - TW	01/26/2016	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	01/26/2016	<MDL 0.17	2.00	No	No
DISTRIBUTION WATER					
Trihalomethane: Total (ug/L) Annual Average - DW	12/31/2016	41.25	100.00	No	No

SECTION 5: RAW WATER SUBMISSIONS

Raw water flows were submitted to the MOECC on [Feb 21, 2016](#).



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: 2003-7TDPEP
Permit Holder: THE CORPORATION OF THE TOWNSHIP OF NAIRN AND HYMAN.
Received on: Feb 21, 2017 9:20 AM

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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NAIRN2 HYMAN2 | 2017/02/21
version: v4.5.0.6 (build#: 16)
Last modified: 2016/12/13

SECTION 6: CONCLUSION

The [Nairn Centre WTP](#) delivers water that, in all its treated and distribution samples, indicates the water to be free of bacteriological contamination.

For the [2016](#) operating year, the [Nairn Centre 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	Groundwater Under Direct Influence – Considered to be surface water under O.Reg 170/03
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	Municipal Drinking Water Licence - relates to the operation and performance requirements
mg/L	Miligrams per Litre
Ministry	Ministry of the Environment and Climate Change
MOECC	Ministry of the Environment and Climate Change
O.Reg	Ontario Regulation
PTTW	Permit to Take Water – Permit which allows water taking from groundwater or surface water
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 01/01/2016 To 12/31/2016

Facility: NAIRN CENTRE DRINKING WATER SYSTEM-5042
 Tag: Raw Flow: Sum (m3/d)
 Tag Group: Raw Water

Permit#: 2003-7TDPEP
 Source Name: Spanish River
 Source: River
 Type:
 Purpose: Municipal

Coordinate Zone: 17
 Easting: 455049
 Northing: 5131662
 Method deter: Metered

Date Measured	Value (m³/d)	Value (Litres)
01/01/2016	185.9000	185900.0000
02/01/2016	295.0060	295006.0000
03/01/2016	151.3000	151300.0000
04/01/2016	354.3000	354300.0000
05/01/2016	135.0000	135000.0000
06/01/2016	368.5000	368500.0000
07/01/2016	364.8000	364800.0000
08/01/2016	286.2000	286200.0000
09/01/2016	133.8000	133800.0000
10/01/2016	157.1000	157100.0000
11/01/2016	212.2000	212200.0000
12/01/2016	147.9000	147900.0000
13/01/2016	278.9000	278900.0000
14/01/2016	167.7000	167700.0000
15/01/2016	150.3000	150300.0000
16/01/2016	233.6000	233600.0000
17/01/2016	197.4700	197470.0000
18/01/2016	153.3000	153300.0000
19/01/2016	266.7000	266700.0000
20/01/2016	120.5000	120500.0000
21/01/2016	154.0000	154000.0000
22/01/2016	261.5000	261500.0000
23/01/2016	143.0000	143000.0000
24/01/2016	174.7000	174700.0000
25/01/2016	192.2000	192200.0000
26/01/2016	277.8000	277800.0000
27/01/2016	194.8000	194800.0000
28/01/2016	289.3000	289300.0000
29/01/2016	232.2000	232200.0000
30/01/2016	280.1000	280100.0000
31/01/2016	213.7000	213700.0000
01/02/2016	279.7000	279700.0000
02/02/2016	214.3000	214300.0000
03/02/2016	295.8000	295800.0000
04/02/2016	189.8000	189800.0000
05/02/2016	316.5000	316500.0000
06/02/2016	274.3000	274300.0000
07/02/2016	291.0000	291000.0000
08/02/2016	281.7000	281700.0000
09/02/2016	261.2000	261200.0000
10/02/2016	282.2000	282200.0000
11/02/2016	135.3000	135300.0000

12/02/2016	213.4000	213400.0000
13/02/2016	203.5000	203500.0000
14/02/2016	150.2000	150200.0000
15/02/2016	177.0000	177000.0000
16/02/2016	176.9000	176900.0000
17/02/2016	143.3000	143300.0000
18/02/2016	175.2000	175200.0000
19/02/2016	231.4000	231400.0000
20/02/2016	229.1000	229100.0000
21/02/2016	164.8880	164888.0000
22/02/2016	206.9000	206900.0000
23/02/2016	193.4000	193400.0000
24/02/2016	199.3000	199300.0000
25/02/2016	202.8000	202800.0000
26/02/2016	214.2000	214200.0000
27/02/2016	178.2000	178200.0000
28/02/2016	178.1000	178100.0000
29/02/2016	273.1000	273100.0000
01/03/2016	165.5000	165500.0000
02/03/2016	158.7000	158700.0000
03/03/2016	224.4000	224400.0000
04/03/2016	178.0000	178000.0000
05/03/2016	197.8000	197800.0000
06/03/2016	247.9000	247900.0000
07/03/2016	152.2000	152200.0000
08/03/2016	237.9000	237900.0000
09/03/2016	210.6000	210600.0000
10/03/2016	160.3000	160300.0000
11/03/2016	159.2000	159200.0000
12/03/2016	271.1000	271100.0000
13/03/2016	213.4000	213400.0000
14/03/2016	132.6000	132600.0000
15/03/2016	288.5000	288500.0000
16/03/2016	145.2000	145200.0000
17/03/2016	268.4000	268400.0000
18/03/2016	158.3000	158300.0000
19/03/2016	264.3000	264300.0000
20/03/2016	272.0000	272000.0000
21/03/2016	116.2000	116200.0000
22/03/2016	172.7000	172700.0000
23/03/2016	228.2000	228200.0000
24/03/2016	125.3000	125300.0000
25/03/2016	250.8000	250800.0000
26/03/2016	158.8000	158800.0000
27/03/2016	164.3000	164300.0000
28/03/2016	254.4000	254400.0000
29/03/2016	148.3000	148300.0000
30/03/2016	174.9000	174900.0000
31/03/2016	209.3000	209300.0000
01/04/2016	140.1700	140170.0000
02/04/2016	198.4400	198440.0000
03/04/2016	227.0600	227060.0000
04/04/2016	121.1300	121130.0000
05/04/2016	237.4700	237470.0000
06/04/2016	116.7300	116730.0000
07/04/2016	249.4700	249470.0000
08/04/2016	133.8300	133830.0000
09/04/2016	202.9800	202980.0000
10/04/2016	155.0100	155010.0000
11/04/2016	207.2400	207240.0000
12/04/2016	171.9900	171990.0000

13/04/2016	183.9100	183910.0000
14/04/2016	191.1400	191140.0000
15/04/2016	137.0600	137060.0000
16/04/2016	226.3100	226310.0000
17/04/2016	191.8000	191800.0000
18/04/2016	132.6400	132640.0000
19/04/2016	230.5600	230560.0000
20/04/2016	145.1200	145120.0000
21/04/2016	211.4800	211480.0000
22/04/2016	140.2700	140270.0000
23/04/2016	161.6200	161620.0000
24/04/2016	264.2300	264230.0000
25/04/2016	129.7800	129780.0000
26/04/2016	225.4600	225460.0000
27/04/2016	164.4700	164470.0000
28/04/2016	208.4500	208450.0000
29/04/2016	118.6200	118620.0000
30/04/2016	264.0700	264070.0000
01/05/2016	170.5000	170500.0000
02/05/2016	231.9000	231900.0000
03/05/2016	173.6000	173600.0000
04/05/2016	295.2000	295200.0000
05/05/2016	127.6000	127600.0000
06/05/2016	228.1000	228100.0000
07/05/2016	194.0000	194000.0000
08/05/2016	176.4000	176400.0000
09/05/2016	191.7000	191700.0000
10/05/2016	180.6000	180600.0000
11/05/2016	259.4000	259400.0000
12/05/2016	212.5000	212500.0000
13/05/2016	140.8000	140800.0000
14/05/2016	258.4000	258400.0000
15/05/2016	152.5000	152500.0000
16/05/2016	177.6000	177600.0000
17/05/2016	220.3000	220300.0000
18/05/2016	232.7000	232700.0000
19/05/2016	167.4000	167400.0000
20/05/2016	200.8000	200800.0000
21/05/2016	244.5000	244500.0000
22/05/2016	180.0300	180030.0000
23/05/2016	258.1300	258130.0000
24/05/2016	265.9000	265900.0000
25/05/2016	326.2000	326200.0000
26/05/2016	213.9000	213900.0000
27/05/2016	248.8000	248800.0000
28/05/2016	151.6000	151600.0000
29/05/2016	283.4000	283400.0000
30/05/2016	232.6000	232600.0000
31/05/2016	207.3000	207300.0000
01/06/2016	240.1000	240100.0000
02/06/2016	222.7000	222700.0000
03/06/2016	267.0000	267000.0000
04/06/2016	185.1000	185100.0000
05/06/2016	239.5000	239500.0000
06/06/2016	230.7000	230700.0000
07/06/2016	351.3000	351300.0000
08/06/2016	244.5000	244500.0000
09/06/2016	279.4000	279400.0000
10/06/2016	257.5000	257500.0000
11/06/2016	169.4000	169400.0000
12/06/2016	291.7000	291700.0000

13/06/2016	323.7000	323700.0000
14/06/2016	309.2000	309200.0000
15/06/2016	381.8000	381800.0000
16/06/2016	377.0000	377000.0000
17/06/2016	345.6000	345600.0000
18/06/2016	445.9000	445900.0000
19/06/2016	396.3000	396300.0000
20/06/2016	367.2000	367200.0000
21/06/2016	435.2000	435200.0000
22/06/2016	315.0000	315000.0000
23/06/2016	453.0000	453000.0000
24/06/2016	473.5000	473500.0000
25/06/2016	484.4000	484400.0000
26/06/2016	277.4000	277400.0000
27/06/2016	367.7000	367700.0000
28/06/2016	368.4000	368400.0000
29/06/2016	346.0000	346000.0000
30/06/2016	396.8000	396800.0000
01/07/2016	154.7000	154700.0000
02/07/2016	224.5000	224500.0000
03/07/2016	342.2000	342200.0000
04/07/2016	317.8000	317800.0000
05/07/2016	399.9000	399900.0000
06/07/2016	245.7000	245700.0000
07/07/2016	304.1000	304100.0000
08/07/2016	239.5000	239500.0000
09/07/2016	118.7000	118700.0000
10/07/2016	270.8000	270800.0000
11/07/2016	261.1000	261100.0000
12/07/2016	298.7000	298700.0000
13/07/2016	344.6000	344600.0000
14/07/2016	343.1000	343100.0000
15/07/2016	221.0000	221000.0000
16/07/2016	203.4000	203400.0000
17/07/2016	235.3000	235300.0000
18/07/2016	262.0000	262000.0000
19/07/2016	221.4000	221400.0000
20/07/2016	280.9000	280900.0000
21/07/2016	152.6000	152600.0000
22/07/2016	305.1000	305100.0000
23/07/2016	240.9000	240900.0000
24/07/2016	161.9000	161900.0000
25/07/2016	265.2000	265200.0000
26/07/2016	250.5000	250500.0000
27/07/2016	250.1000	250100.0000
28/07/2016	308.8000	308800.0000
29/07/2016	309.0000	309000.0000
30/07/2016	319.8000	319800.0000
31/07/2016	235.9000	235900.0000
01/08/2016	426.1000	426100.0000
02/08/2016	428.4000	428400.0000
03/08/2016	317.0000	317000.0000
04/08/2016	335.6000	335600.0000
05/08/2016	220.2000	220200.0000
06/08/2016	292.1000	292100.0000
07/08/2016	321.0000	321000.0000
08/08/2016	321.9000	321900.0000
09/08/2016	437.4000	437400.0000
10/08/2016	321.9000	321900.0000
11/08/2016	340.7000	340700.0000
12/08/2016	273.1000	273100.0000

13/08/2016	252.8000	252800.0000
14/08/2016	212.6000	212600.0000
15/08/2016	229.4000	229400.0000
16/08/2016	231.3000	231300.0000
17/08/2016	203.6000	203600.0000
18/08/2016	226.5000	226500.0000
19/08/2016	280.8000	280800.0000
20/08/2016	123.1000	123100.0000
21/08/2016	226.1000	226100.0000
22/08/2016	228.7000	228700.0000
23/08/2016	182.2000	182200.0000
24/08/2016	233.8000	233800.0000
25/08/2016	168.3000	168300.0000
26/08/2016	233.4000	233400.0000
27/08/2016	156.5000	156500.0000
28/08/2016	237.8000	237800.0000
29/08/2016	209.2000	209200.0000
30/08/2016	184.4000	184400.0000
31/08/2016	172.3000	172300.0000
01/09/2016	216.6000	216600.0000
02/09/2016	191.7000	191700.0000
03/09/2016	238.3920	238392.0000
04/09/2016	118.4000	118400.0000
05/09/2016	227.2000	227200.0000
06/09/2016	254.5000	254500.0000
07/09/2016	199.6000	199600.0000
08/09/2016	115.3000	115300.0000
09/09/2016	258.0000	258000.0000
10/09/2016	136.1000	136100.0000
11/09/2016	220.1000	220100.0000
12/09/2016	243.4000	243400.0000
13/09/2016	201.2000	201200.0000
14/09/2016	204.1000	204100.0000
15/09/2016	172.6000	172600.0000
16/09/2016	178.1000	178100.0000
17/09/2016	192.6000	192600.0000
18/09/2016	236.9000	236900.0000
19/09/2016	211.2000	211200.0000
20/09/2016	170.8000	170800.0000
21/09/2016	179.3000	179300.0000
22/09/2016	238.0000	238000.0000
23/09/2016	131.5000	131500.0000
24/09/2016	213.3000	213300.0000
25/09/2016	233.3000	233300.0000
26/09/2016	123.2000	123200.0000
27/09/2016	306.9000	306900.0000
28/09/2016	49.2000	49200.0000
29/09/2016	221.2000	221200.0000
30/09/2016	254.2000	254200.0000
01/10/2016	143.3000	143300.0000
02/10/2016	248.3000	248300.0000
03/10/2016	236.5000	236500.0000
04/10/2016	127.6000	127600.0000
05/10/2016	210.3000	210300.0000
06/10/2016	240.8000	240800.0000
07/10/2016	237.9000	237900.0000
08/10/2016	170.1000	170100.0000
09/10/2016	250.7000	250700.0000
10/10/2016	272.7000	272700.0000
11/10/2016	187.2000	187200.0000
12/10/2016	224.7000	224700.0000

13/10/2016	215.4000	215400.0000
14/10/2016	214.0000	214000.0000
15/10/2016	226.1000	226100.0000
16/10/2016	218.6000	218600.0000
17/10/2016	222.4000	222400.0000
18/10/2016	181.9000	181900.0000
19/10/2016	180.7000	180700.0000
20/10/2016	227.0000	227000.0000
21/10/2016	189.9000	189900.0000
22/10/2016	186.7000	186700.0000
23/10/2016	250.1000	250100.0000
24/10/2016	160.1000	160100.0000
25/10/2016	166.9000	166900.0000
26/10/2016	186.7000	186700.0000
27/10/2016	180.8000	180800.0000
28/10/2016	210.6000	210600.0000
29/10/2016	175.7000	175700.0000
30/10/2016	240.6000	240600.0000
31/10/2016	134.4000	134400.0000
01/11/2016	215.6000	215600.0000
02/11/2016	183.2000	183200.0000
03/11/2016	143.5000	143500.0000
04/11/2016	223.1000	223100.0000
05/11/2016	141.5000	141500.0000
06/11/2016	222.4000	222400.0000
07/11/2016	221.5000	221500.0000
08/11/2016	170.7000	170700.0000
09/11/2016	153.5000	153500.0000
10/11/2016	190.3000	190300.0000
11/11/2016	205.3000	205300.0000
12/11/2016	193.3000	193300.0000
13/11/2016	192.3000	192300.0000
14/11/2016	191.2000	191200.0000
15/11/2016	182.9000	182900.0000
16/11/2016	237.2000	237200.0000
17/11/2016	120.0000	120000.0000
18/11/2016	165.7000	165700.0000
19/11/2016	242.7000	242700.0000
20/11/2016	159.6000	159600.0000
21/11/2016	183.7000	183700.0000
22/11/2016	182.4000	182400.0000
23/11/2016	179.4000	179400.0000
24/11/2016	167.9000	167900.0000
25/11/2016	171.8000	171800.0000
26/11/2016	227.2000	227200.0000
27/11/2016	147.8000	147800.0000
28/11/2016	210.0000	210000.0000
29/11/2016	181.1000	181100.0000
30/11/2016	174.3000	174300.0000
01/12/2016	231.1000	231100.0000
02/12/2016	117.5000	117500.0000
03/12/2016	214.9000	214900.0000
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08/12/2016	105.6000	105600.0000
09/12/2016	218.5000	218500.0000
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11/12/2016	222.6000	222600.0000
12/12/2016	133.5000	133500.0000

13/12/2016	199.8000	199800.0000
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15/12/2016	165.3000	165300.0000
16/12/2016	161.8000	161800.0000
17/12/2016	249.7000	249700.0000
18/12/2016	133.0000	133000.0000
19/12/2016	239.2000	239200.0000
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22/12/2016	189.4000	189400.0000
23/12/2016	186.4000	186400.0000
24/12/2016	239.1000	239100.0000
25/12/2016	132.5000	132500.0000
26/12/2016	220.1000	220100.0000
27/12/2016	150.7000	150700.0000
28/12/2016	193.9000	193900.0000
29/12/2016	227.0000	227000.0000
30/12/2016	154.9000	154900.0000
31/12/2016	206.9000	206900.0000