NAIRN CENTRE WTP

SUPPLY SYSTEM

ANNUAL SUMMARY REPORT

2011

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

SECTION 1: INTRODUCTION

This report is a summary of water quality information for the Nairn Centre Water Treatment Facility, published in accordance with Schedule 22 of Ontario's Drinking-Water Systems Regulation for the reporting period of January 1, 2011 to December 31, 2011. The Nairn Centre Water Treatment Facility is categorized as a Large Municipal Residential Drinking Water System.

This report is prepared by The Ontario Clean Water Agency on behalf of the Corporation of the Township of Nairn & Hyman. A copy of the Summary Report is to be provided to the members of the municipal council by March 31, 2011.

SECTION 2: WHAT DOES THE REPORT CONTAIN

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. The report 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.

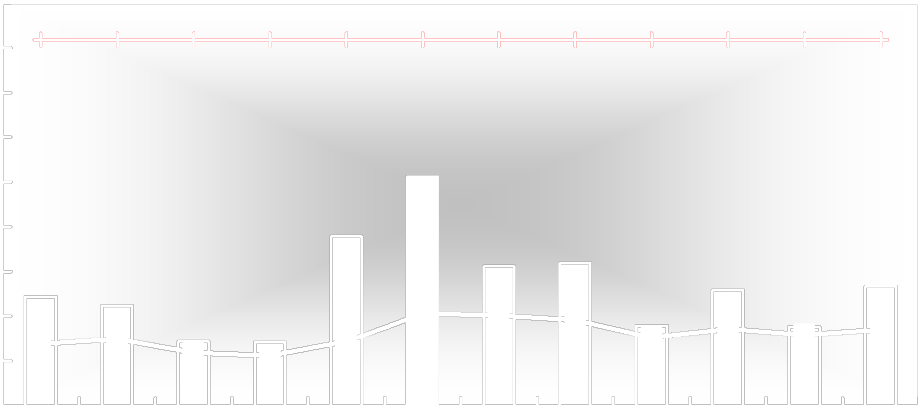
SECTION 3: DAILY FLOW RATES

In accordance with the Certificate of Approval Condition 4.1, the Nairn Centre water system shall not be operated to exceed a maximum flow of 818 m^3/d into the treatment system.

The monthly average raw water flow for this reporting period was 159.9 m^3/d and the maximum daily flow for 2011 was 512 m^3/d. Flow totals and comparison of flow rates to the rated capacity are included in the table and graph below.

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

2011	RAW WATER FLOW DATA - TOTAL ALL SOURCES					
Month	**Total Monthly Raw Flow (m3)**	**Average Raw Flow (m3/d)**	**Maximum Raw Flow (m3/d)**	**Maximum Raw Flow Rate (L/s)**	**Maximum Rated Capacity**	
					L/s	**m^3/d**
January	4288.41	138.34	244	6.3	9.5	818
February	4187.71	149.56	225	7.4	9.5	818
March	3715.74	119.86	144	12.1	9.5	818
April	3365.42	112.18	142	12.2	9.5	818
May	4476.61	144.41	378	12.1	9.5	818
June	6151.83	205.06	512	9.0	9.5	818
July	6240.23	201.3	311	6.4	9.5	818
August	5943.97	191.74	318	7.3	9.5	818
September	4605.0	153.5	179	6.5	9.5	818
October	5357.13	172.81	259	6.6	9.5	818
November	4792.48	159.75	177	6.3	9.5	818
December	5278.94	170.29	267	7.2	9.5	818
2011 Total	58,403.47					
2011 Average		159.9				
2011 Summary			512	12.2	9.5	818



Comparison of Monthly Average and Maximum Rates of Flow

In accordance with the PTTW, the allowable rate of water taking is 9.5 L/s with a maximum daily volume of 820.8 m^3/d. Attached as Appendix A, find a summary of water taking, including average and maximum flows.

SECTION 4: SYSTEM FAILURES AND CORRECTIONS

There was a Ministry of the Environment inspection conducted on September 13, 2011, Inspection # 1-9G5DN. There were no instances of Non Compliance or Required Actions.
A copy of the inspection report is attached as Appendix B, which includes the Certificate of Approval, Municipal Drinking Water Licence, Drinking Water Works Permit & Permits to Take Water

Adverse Incidents

There were 2 adverse incidents during the 2011 year.

June 1, 2011 48 Total Coliform in distribution sample – resample came back clean
June 13, 2011 Low Distribution pressure –Pressure was restored, dead ends were checked for Chlorine residuals and bacteriological samples were taken and came back clean.

SECTION 5: CONCLUSION

The Nairn Centre WTP delivers water that, in all its treated and distribution samples, indicates the water to be free of bacteriological contamination. There were two AWQI reports generated in 2011; one due to Total Coliforms being detected within the distribution system and the second for low pressure with regards to normal distribution work.

For the 2011 operating year, the Nairn Centre WTP was able to meet the demand of water use without exceeding the daily maximum allowable by the PTTW. On 3 occasions, the flow rate exceeded the 9.5L/s water taking rate. On March 23, raw flow spiked 12.1 for 6 mins; on April 2, raw flow spiked to 12.2 for 5 mins; and on May 3, raw flow spiked to 12.1 for 4 mins.

Attached as Appendix E, find the 2011 Annual Report as required by Drinking-Water System Regulation O. Reg. 170/03.

APPENDIX A

Annual Record of Water Taking

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Annual Record Of Surface Water Taking
Relevé annuel des prises d'eau de surface

Personal information contained on this form is collected under the authority of the Ontario Water Resources Act, Section 20. The Purpose of the form is to record details and information about the taking of water annually.Questions should be directed to the respective hub office in your area.
Les renseignements personnels qui figurent dans le présent formulaire sont recueillis en vertu de l'article 20 de la Loi sur les ressources en eau de l'Ontario. Ce formulaire sert à dossiers les détails et les renseignements concernant la prise d'eau annuelle. Prière d'adresser toutes questions au personnel du bureau régional de votre secteur.

Year(Année): 2011 Permit No.(N° de permis): Source: Spanish River
Location: RW - Raw Water

Name of Permittee:
Nom du titulaire du permis

Mailing Address:
Adresse postale

Location Of Taking:
Lieu de la prise d'eau

Twp. or Municipality:
Canton ou municipalité

Concession:

Lot:

	Jan/2011	Feb/2011	Mar/2011	Apr/2011	May/2011	Jun/2011	Jul/2011	Aug/2011	Sep/2011	Oct/2011	Nov/2011	Dec/2011	<-- Total -->	<-- Avg. -->	<-- Max. -->	<-- Criteria-->
Avg Daily Taking(m3)	138.34	149.56	119.86	112.18	144.41	205.06	201.3	191.74	153.5	172.81	159.75	170.29		159.9		820.8
Total Amt of Taking(m3)	4,288.41	4,187.71	3,715.74	3,365.42	4,476.61	6,151.83	6,240.23	5,943.97	4,605.0	5,357.13	4,792.48	5,278.94	58,403.47			
Max Daily Flow(m3)	244.0	225.0	144.0	142.0	378.0	512.0	311.76	318.0	179.0	259.0	177.0	267.0			512.0	820.8
Avg Daily Rate of Taking(L/sec)	2.91	2.86	2.64	2.52	2.79	3.0	3.3	3.46	3.3	3.15	3.35	2.8		3.01		

APPENDIX B

MOE Inspection
2011

Ministry of the Environment

Safe Drinking Water Branch

Sudbury District Office
Suite 1201
199 Larch St.
Sudbury ON P3E 5P9

Ministère de l'Environnement

Direction du contrôle de la qualité de l'eau potable

Bureau du district de Sudbury
Bureau 1201
199, rue Larch
Sudbury (Ontario) P3E 5P9

Ontario

October 11, 2011

Mr. Robert Deschene
CAO, Clerk Treasurer
The Corporation of the Township of Nairn and Hyman
64 McIntyre Street
Nairn Centre, Ontario
P0M 2L0

Dear Mr. Deschenes:

Re: 2011-12 Inspection Report for the Nairn Centre Water Treatment Plant & Distribution System

Please find attached the 2011-12 Annual Inspection Report for the Nairn Centre Water Treatment Plant and Distribution System. There were no issues of non compliance identified during the current inspection period.

Included with the Report is the 2011-12 Inspection Rating Record (IRR) for the Nairn Centre Water Treatment Plant and Distribution System. Please share this information with your Municipal council.

Please note that a copy of this inspection report has been provided to the Sudbury and District Health Unit, as per the Ministry's Drinking Water Inspection Protocol.

At this time I would like to thank OCWA and the Township of Nairn and Hyman for their cooperation during the inspection; it was much appreciated.

Should you have any questions regarding the attached document, please feel free to call me at 705-564-3282.

Sincerely,

Marc Chalifoux
Drinking Water Inspector
Sudbury District Office

cc: Keith Stringer, Cluster Manager, OCWA, Espanola Hub
Dan Clark, Process and Compliance Technician, OCWA, Espanola Hub
Burgess Hawkins, Manager-Environmental Health Division, SDHU

File SI DS NC FE 540

Ministry of the Environment

NAIRN CENTRE DRINKING WATER SYSTEM

Drinking Water System Inspection Report

DWS Number:	210002138
Inspection Number:	1-9G5DN
Date of Inspection:	Sep 13, 2011
Inspected By:	Marc Chalifoux

TABLE OF CONTENTS

APPENDICES

OWNER INFORMATION:

Company Name:	NAIRN AND HYMAN, THE CORPORATION OF THE TOWNSHIP		
Street Number:	64	**Unit Identifier:**	
Street Name:	MCINTYRE St		
City:	NAIRN CENTRE		
Province:	ON	**Postal Code:**	P0M 2L0

CONTACT INFORMATION

Type:	Main Contact	**Name:**	Robert Deschene
Phone:	(705) 869-4232	**Fax:**	(705) 869-5248
Email:	nairncentre@personainternet.com		
Title:	CAO, Clerk Treasurer		

Type:	Operating Authority	**Name:**	Jim Phippen
Phone:	(705) 869-5578	**Fax:**	(705) 869-4374
Email:	jphippen@ocwa.com		
Title:	Operations Manager		

Type:	Operating Authority	**Name:**	Keith Stringer
Phone:	(705) 368-0922	**Fax:**	(705) 368-0922
Email:	kstringer@ocwa.com		
Title:	Cluster Manager		

Type:	Operating Authority	**Name:**	Dan Clark
Phone:	(705) 368-0922	**Fax:**	(705) 368-0922
Email:	dclark@ocwa.com		
Title:	Process Compliance Technician		

INSPECTION DETAILS:

DWS Name:	NAIRN CENTRE DRINKING WATER SYSTEM
DWS Address:	26 FERRY ST NAIRN CENTRE ON P0M 2L0
County/District:	Nairn And Hyman
MOE District/Area Office:	Sudbury District
Health Unit:	SUDBURY AND DISTRICT HEALTH UNIT
Conservation Authority	N/A
MNR Office:	Espanola Regional Office
DWS Category:	Large Municipal Residential
DWS Number:	210002138
Inspection Type:	Unannounced
Inspection Number:	1-9G5DN
Date of Inspection:	Sep 13, 2011
Date of Previous Inspection:	Sep 28, 2010

DRINKING WATER SYSTEM COMPONENTS DESCRIPTION

Site (Name): RAW WATER
Type: Source **Sub Type:**
Comments:

The plant draws raw water from the Spanish River. Logging operations, landfilling and mining operations are all located within the overall watershed and may impact the raw water quality. Locally, residential septic beds and recreational boating may also impact raw water quality. Both the public boat launch and the plant's field bed are located very close to the low lift pumping station on the shores of the Spanish River.

A zebra mussel system is not currently in use, however a sodium hypochlorite 75mm diameter pipe is in place should such a system be required in the future.

Site (Name): TREATED WATER
Type: Treated Water POE **Sub Type:**
Comments:

The Nairn Centre Water Treatment Plant is a Class 3 System, operating under Certificate No. 2810, issued October 27, 2005. The plant was originally commissioned in 1995, and is currently operated by the Ontario Clean Water Agency (OCWA). The raw water intake is located in the Spanish River and is comprised of a polyethylene drum weighted down with rock ballast.

The intake pipe is ~ 33 meters in length, and the raw water is gravity fed to a low lift pumping station, where two low lift pumps (alternating as duty and standby) are utilized to move water through a 150 mm supply line to the plant.

The package plant is designed to provide treatment elements in a compact setting, consisting of coagulation, flocculation, clarification and filtration through sand and anthracite dual media filters.

Liquid aluminum sulphate (alum) and soda ash (pre-filtration) are injected upstream of the static mixer, with a liquid polymer injected just downstream. The three chemical additions are injected at manually set rates based on low lift pumping rates.

Hydrofluosilic acid is injected at the filter discharge line at a manually set rate. Two pumps (one duty, one standby) and storage tank are located in a separate room.

Soda ash (post-filtration) is also injected at the filter effluent line to control pH and provide corrosion control for the distribution system components.

Chlorination is by injection of a 12% Sodium Hypochlorite solution (stored in a 200 L day tank), using two metering pumps (one duty, one standby), rated at 4 L/hr . The chlorine is injected after the filters, upstream of the clear wells.

Filter backwash is gravity fed to a surge tank. Waste from this tank is pumped via two submersible pumps to a settling chamber. Supernatant, which is tested monthly for suspended solids, flows to a ditch and then to the Spanish River. Sludge from the settling tank is pumped as required via pumper truck and sent for proper disposal.

Site (Name): DISTRIBUTION (WATER INSPECTION)

Type: Other **Sub Type:**

Comments:

The Nairn Centre Distribution System is a Class 1 system, operating under Certificate No. 3400, issued July 13, 2005. The system is operated by the Ontario Clean Water Agency (OCWA).

The distribution system serves a population of ~ 357 residents including 150 service connections. The system includes 50 hydrants and approximately 5 kilometres of PVC pipes. There are 13 dead ends within the distribution system.

INSPECTION SUMMARY

INTRODUCTION

* **The primary focus of this inspection is to confirm compliance with Ministry of the Environment legislation and authorizing documents such as Orders and Certificates of Approval, as well as evaluating conformance with Ministry drinking water related policies and guidelines during the inspection period.**

The Ministry is implementing a rigorous and comprehensive approach in the inspection of drinking water systems that keys on the source, treatment and distribution components of the system as well as management practices.

This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O.Reg.170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.

This report is based on a "focused" inspection of your system. Although the inspection involved fewer activities than those normally undertaken by a detailed inspection, it contained most of the elements required to assess key compliance issues.

Your system was chosen for a focused inspection during this inspection cycle because inspection findings over the past three years were such that the number of violations were minimal or non existent, there were few or no orders issued to you that were of significance in the maintenance of water potability and there were no deficiencies as defined in O. Reg. 172/03. The undertaking of a focused inspection at your drinking water system during this year's inspection cycle does not ensure that a similar type of inspection will be conducted at any point in the future.

SOURCE

* **Measures were in place to protect the water source in accordance with a Permit and Licence or Approval issued under Part V of the SDWA.**

The raw water source for the Nairn Centre Water Treatment Plant is identified as the Spanish River.

The facility previously operated under "Amended Certificate of Approval Municipal Drinking Water Systems Number 0091-6N5Q8P", issued August 4, 2006, and now operates under "Municipal Drinking Water License Number 281-101", dated dated December 20, 2010, and "Drinking Water Works Permit Number 281-201", dated December 20, 2010.

And although there are no Source Protection measures required under either the previous Certificate of Approval or the existing License, the raw water source is monitored on a weekly basis for turbidity, colour, pH, temperature, and alkalinity.

CAPACITY ASSESSMENT

* **There was sufficient monitoring of flow as required by the Permit and Licence or Approval issued under Part V of the SDWA**

Section 5.1 of "Amended Certificate of Approval Municipal Drinking Water Systems Number 0091-6N5Q8P", issued August 4, 2006, requires that there be a sufficient number of flow measuring devices within the drinking water system to permit the measurement and recording of: 1) the daily maximum flow rate and maximum daily volume of water conveyed into the treatment system; and

CAPACITY ASSESSMENT

2) the daily maximum flow rate and maximum daily volume of water conveyed from the treatment system to the distribution system.

This requirement is carried forward under the new "Municipal Drinking Water License Number 281-101", dated December 20, 2010.

Continuous flow measuring devices on both the raw water and treated water satisfy this requirement. No concerns were identified in this regard.

* **The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Permit and Licence or Approval issued under Part V of the SDWA.**

The Nairn Centre Water Treatment Plant operates under "Permit To Take Water, Surface Water, Number 2003-7TDPEP", issued June 26, 2009, which restricts the water takings to a total taking of 820,800 litres per day.

This volume is consistent with the rated capacity of 818 cubic meters/day, as identified under both "Amended Certificate of Approval Municipal Drinking Water Systems Number 0091-6N5Q8P", issued August 4, 2006, and the new "Municipal Drinking Water License Number 281-101", dated December 20, 2010.

Raw water flow data for the facility was reviewed for the period between September 1, 2010 and August 31, 2011, and found to be in order, averaging ~150 cubic meters/day, with a maximum taking of ~512 cubic meters/day occuring on June 17, 2011. No concerns were identified.

Treated water flow data for the facility was reviewed for the period between September 1, 2010 and August 31, 2011, and found to be in order, averaging ~100 cubic meters/day, with a maximum of ~223 cubic meters/day occuring on August 2, 2011. Treated water flows were consistently maintained below the maximum flow rate or the rated capacity of 818 cubic meters/day. No concerns were identified.

TREATMENT PROCESSES

* **The owner had ensured that all equipment was installed in accordance with the Permit and Licence or Approval issued under Part V of the SDWA.**

The Nairn Centre Water Treatment Plant previously operated under "Amended Certificate of Approval Municipal Drinking Water Systems Number 0091-6N5Q8P", issued August 4, 2006, and now operates under the new "Municipal Drinking Water License Number 281-101", dated December 20, 2010. The equipment as identified on the above noted documents was reviewed at the time of inspection, and found to be in order.

* **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Permit, Licence or Approval issued under Part V of the SDWA at all times that water was being supplied to consumers.**

The Nairn Centre Water Treatment Plant previously operated under "Amended Certificate of Approval Municipal Drinking Water Systems Number 0091-6N5Q8P", issued August 4, 2006, at a rated capacity of 818 cubic meters/day. The facility now operates under "Municipal Drinking Water License Number 281-101", dated December 20, 2010, at the same rated capacity.

The treatment process is a "prefabricated package water treatment plant" that uses conventional treatment which includes chemical addition, alkalinity adjustment, coagulation/ floculation, sedimentation, and dual media filtration, followed by pH adjustment, fluoridation, and chlorination using sodium hypochlorite.

The system is designed to meet the minimum 2-log removal of Cryptosporidium oocysts and 2.5-log removal of Giardia cysts, through chemically assisted filtration; and the minimum 0.5-log removal/inactivation of Giardia cysts and 4-log removal/inactivation of viruses, through disinfection by chlorination.

TREATMENT PROCESSES

Process data and supporting documentation provided during the course of the inspection indicates that the Nairn Centre Water Treatment Plant is operating in accordance with these requirements.

With respect to filter effluent turbidity, the Procedure for Disinfection of Drinking Water in Ontario requires, among other things, that the process meet the performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month. A review of the filter effluent data confirmed that these criteria were being met.

* **Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.**

Records provided by OCWA for the period between September 1, 2010 and August 31, 2011 were reviewed and found to be in order, indicating that the chlorine residual in the distribution system, was never less than 0.05 mg/l.

* **The Operator-in-Charge had ensured that all equipment used in the processes was monitored, inspected, and evaluated.**

According to OCWA Staff, all equipment used in the process is monitored, inspected, tested, and evaluated by OCWA using an electronic tracking system. Facility Work Order Summaries were provided in this regard. No concerns were identified.

DISTRIBUTION SYSTEM

* **Backflow preventers were not installed at each service connection to Industrial/Commercial/Institutional and agricultural process that were considered high hazard facilities.**

It was indicated at the time of inspection that there are no backflow preventers installed at service connection to either Industrial, Commercial, Institutional or Agricultural facilities.

It was however identified at the time of inspection, that the Municipality is in the process of developing a draft by-law to address this shortfall. It is recommended that the Municipality continue this process. See the "Summary of Best Practice Issues and Recommendations" section of the report.

OPERATIONS MANUALS

* **The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.**

Operations and Maintenance Manual(s) for the Water Treatment Plant were reviewed at the time of inspection and found to be in order, containing plans, drawings, and process descriptions sufficient for the safe and efficient operation of the system. The manuals are kept at the Water Treatment Plant, readily available to all OCWA staff. No concerns were identified.

* **The operations and maintenance manuals did meet the requirements of the Permit and Licence or Approval issued under Part V of the SDWA.**

Operations and Maintenance Manual(s) for the Water Treatment Plant were reviewed at the time of inspection and found to be in order, containing plans, drawings, and process descriptions sufficient for the safe and efficient operation of the system, consistent with the requirements of the Certificate of Approval. The manuals are kept at the Water Treatment Plant, readily available to all OCWA staff. No concerns were identified.

LOGBOOKS

LOGBOOKS

* **Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.**

  Logbooks were reviewed during the course of the inspection and found to be in order. No concerns were identified in this regard.

CONTINGENCY/EMERGENCY PLANNING

* **The contingency/emergency plan was available for reference by all staff as required by the Permit and Licence or Approval issued under Part V of the SDWA.**

  The Operations and Maintenance Manual(s) and Contingency/Emergency Plan for the Nairn Centre Water Treatment Plant were reviewed at the time of inspection, and found to be in order. The documents are kept on site, readily available to all staff. It was indicated at the time of inspection that all Contingencies and Emergencies for both the Water Treatment Plant and Distribution System are overseen by OCWA staff. No concerns were identified.

SECURITY

* **All storage facilities were completely covered and secure.**

  All major components of the drinking water system were found to be completely covered and secure, and under lock and key at all times.

  There are no exterior storage facilities (reservoirs or standpipes) for this drinking water system. The only storage is within the Water Treatment Plant building itself, which was found to be covered and secure, and under lock and key at all times. The Water Treatment Plant building is also equipped with an intrusion alarm, for further protection.

  The raw water wells and low lift pumps however, are located in a separate concrete pumping station located near the water intake at the river's edge. And although the pumping station is a concrete structure that is covered and secure, and under lock and key, the station is located adjacent to a public boat launch, and there is no security fencing. Security fencing to protect this component of the system is a measure that may be considered.

* **Air vents and overflows associated with reservoirs and elevated storage structures were equipped with screens.**

* **The owner had provided security measures to protect components of the drinking-water system.**

  All major components of the drinking water system were found to be completely covered and secure, and under lock and key at all times.

  There are no exterior storage facilities (reservoirs or standpipes) for this drinking water system. The only storage is within the Water Treatment Plant building itself, which was found to be covered and secure, and under lock and key at all times. The Water Treatment Plant building is also equipped with an intrusion alarm, for further protection.

  The raw water wells and low lift pumps however, are located in a separate concrete pumping station located near the water intake at the river's edge. And although the pumping station is a concrete structure that is covered and secure, and under lock and key, the station is located adjacent to a public boat launch, and there is no security fencing. Security fencing to protect this component of the system is a measure that may be considered.

CERTIFICATION AND TRAINING

CERTIFICATION AND TRAINING

* **The overall responsible operator had been designated for each subsystem.**

  The Nairn Centre Water Treatment Plant is a Class 3 facility. It was identified at the time of inspection that Keith Stringer, who holds a Class 4 License, is the Overall Responsible Operator for this facility.

  It was further identified that Shawn Belanger and Kevin Woestenenk, who are Class 2 Operators, are the back-up Overall Responsible Operators (OROs) for the Nairn Centre Water Treatment Plant and Distribution System, whenever Keith Stringer is absent or unable to act.

  Section 23(1) of O. Reg. 128/04, states that " 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".

  Section 23(4) of O.Reg. 128/04 goes on to say that "If the overall reponsible operator designated under subsection(1) or (2) is absent or unable to act, the owner or operating authority or, if the owner or operating authority authorizes it, the overall responsible operator may designate an operator who holds a certificate that is applicable to that type of subsystem and, if applicable, that is not more than one class lower than the class of the subsystem to act in the place of the overall responsible operator".

  Section 23(6) of O.Reg. 128/04 goes on to say that this alternate designation as ORO "shall not be relied on by the owner or operating authority of a municipal residential subsystem for more than 150 days in any 12 month period".

  As such, Shawn Belanger or Kevin Woestenenk are eligible to act as ORO's on a temporary basis for up to 150 days. No concerns were identified.

* **Operators in charge had been designated for all subsystems which comprised the drinking-water system.**

  It was identified at the time of inspection that Shawn Belanger and Kevin Woestenenk were the Operators in Charge (OIC) for the Nairn Centre Water Treatment Plant and Distribution System. Both have the required certifications to be Operators in Charge. Operator Certificates were properly displayed at the plant and found to be in order.

* **Only certified operators made adjustments to the treatment equipment.**

  According to OCWA staff and operational logs, only certified operators make adjustments to the treatment equipment at the Nairn Centre Water Treatment Plant. The main operators at the Water Treatment Plant are Shawn Belanger and Kevin Woestenenk. Both have the required certifications. Operator Certificates were properly displayed at the plant. No concerns were identified.

WATER QUALITY MONITORING

* **All microbiological water quality monitoring requirements for distribution samples were being met.**

  According to information provided at the time of inspection, the total permanent residential population served by the Nairn Centre drinking water system is approximately 357. Based on that population (<1000), the total number of distribution samples required per month is 8.

  A review of the water quality monitoring data for the period in question, confirmed that the microbiological monitoring requirements for both the Nairn Centre Water Treatment Plant and Distribution System were being met.

WATER QUALITY MONITORING

* **All microbiological water quality monitoring requirements for treated samples were being met.**

  Section 10-3 of Schedule 10, O. Reg. 170/03, requires that a treated water sample be taken at least once a week and tested for the required microbiological parameters. A review of the water quality monitoring data for the period in question, confirmed that the all microbilogical monitoring requirements for the treated water were being met.

* **All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-2 of Schedule 13, O. Reg. 170/03 requires that at least one sample be taken every 12 months and tested for the required inorganic parameters identified under Schedule 23. A review of the inorganic water quality monitoring data for the period in question, confirmed that the required samples were collected on January 11, 2011 and that the monitoring requirements prescribed by the legislation were met.

* **All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-4 of Schedule 13, O. Reg. 170/03 requires that at least one sample be taken every 12 months and tested for the required organic parameters identified under Schedule 24. A review of the water quality monitoring data for the period in question, confirmed that the required samples were collected on January 11, 2011, and that the monitoring requirements prescribed by the legislation were met.

* **All trihalomethanes water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-6 of Schedule 13, O. Reg. 170/03 requires that at least one sample be taken every 3 months and tested for trihalomethanes. A review of the water quality monitoring data for the period in question, confirmed that trihalomethane samples were collected in accordance with the monitoring requirements prescribed by the legislation.

* **All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.**

  Section 13-7 of Schedule 13, O. Reg. 170/03 requires that at least one sample be taken every 3 months and tested for nitrates/nitrites. A review of the water quality monitoring data for the period in question, confirmed that the nitrate/nitrite samples were collected in accordance with the monitoring requirements prescribed by the legislation.

* **All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-8 of Schedule 13, O. Reg. 170/03 requires that at least one sample be taken every 60 months and tested for sodium. A review of the water quality monitoring data for the period in question, confirmed that the sodium samples were collected in accordance with the monitoring requirements prescribed by the legislation. The last set of sodium samples were collected on January 11, 2011 with a result of 17.7 mg/L. No concerns were identified.

* **All water quality monitoring requirements imposed by the Permit and Licence or Approval issued under Part V of the SDWA were being met.**

  The only additional monitoring requirement identified under the previous "Amended Certificate of Approval Municipal Drinking Water Systems Number 0091-6N5Q8P", issued August 4, 2006, and the new "Municipal Drinking Water License Number 281-101", dated dated December 20, 2010, is for the process wastewater effluent discharge to be sampled and analyzed on a monthly basis for

WATER QUALITY MONITORING

Suspended Solids. The Certificate and License require that the average annual concentration of suspended solids in the effluent discharge from the backwash wastewater facilities not exceed 25 mg/L.

A review of the monitoring data for the period in question confirmed that the analysis of the suspended solids in the effluent discharge was being conducted on a monthly basis, and that the above noted requirements were being met. No concerns were identified.

* **All sampling requirements for lead prescribed by schedule 15.1 of O. Reg. 170/03 were being met.**

Community lead based sampling as prescribed by Schedule 15.1 of O.Reg. 170/03 was conducted between April 7-13, 2010. All sampling requirements for lead as prescribed by the legislation were met.

* **All sampling requirements for alkalinity and pH prescribed by schedule 15.1 of O. Reg. 170/03 were being met.**

All sampling requirements for pH and Alkalinity as prescribed by the legislation were met.

* **All continuous monitoring equipment utilized for sampling and testing required by O.Reg.170/03, or approval or order, were equipped with alarms or shut-off mechanisms that satisfied the standards described in Schedule 6.**

It was indicated by OCWA staff, and noted at the time of inspection, that all continuous monitoring equipment utilized for sampling and testing, is equipped with alarms as required by O.Reg.170/03.

* **All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.**

It was indicated at the time of inspection that all continuous analyzers are calibrated, maintained, and operated in accordance with the manufacturers instructions or the Regulation. Calibration records and work order summaries were provided in this regard. No concerns were identified.

* **Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.**

Facility Log Books are maintained by OCWA staff for both the Distribution System and Water Treatment Plant. These log books were reviewed during the course of the inspection, and it was noted that Operators were reviewing the continuous monitoring data, typically within 48-72 hours of the test. OCWA staff is reminded to ensure that when they are unable to visit the plant within 72 hours, and that data is reviewed remotely, that this is documented in the "Facility Log Books".

* **Primary disinfection chlorine monitoring was being conducted at a location approved by Permit, Licence or Approval issued under Part V of the SDWA, or at/near a location where the intended CT had just been achieved.**

The Nairn Centre Water Treatment Plant previously operated under "Amended Certificate of Approval Municipal Drinking Water Systems Number 0091-6N5Q8P", issued August 4, 2006, and now operates under "Municipal Drinking Water License Number 281-101", dated December 20, 2010, at a rated capacity of 818 cubic meters/day.

The treatment process is a "prefabricated package water treatment plant" that uses conventional treatment which includes chemical addition, alkalinity adjustment, coagulation/ floculation, sedimentation, and dual media filtration, followed by pH adjustment, fluoridation, and chlorination using sodium hypochlorite.

The system is designed to meet the minimum 2-log removal of Cryptosporidium oocysts and 2.5-log removal of Giardia cysts, through chemically assisted filtration; and the minimum 0.5-log

WATER QUALITY MONITORING

removal/inactivation of Giardia cysts and 4-log removal/inactivation of viruses, through disinfection by chlorination.

Process data and supporting documentation provided during the course of the inspection indicates that the Nairn Centre Water Treatment Plant is operating in accordance with these requirements.

It was noted at the time of inspection that the primary disinfection chlorine monitoring was being conducted at or near the location where the intended CT had just been achieved.

* **The secondary disinfectant residual was measured as required for the distribution system.**

The secondary disinfectant residual in the distribution system is measured using a continous chlorine analyzer located at the Nairn Centre Community Centre. A separate "Facility Log Book" is maintained at this location, and indicates that the analyzer is typically verified three times per week during scheduled rounds. Chlorine residual data for the distribution system was reviewed for the period between September 1, 2011 and August 31, 2011, and found to be in order. No concerns were identified.

* **Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.**

A review of the microbiological water quality monitoring data for the period between September 1, 2010 and August 31, 2011, confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained. No concerns were identified.

* **Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03.**

* **All continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was recording data with the prescribed format.**

* **Continuous monitoring of each filter effluent line was being performed for turbidity.**

Filter effluent turbidity is monitored on-line via a continuous turbidity analyzer. Filter Effluent turbidity data was reviewed for the period between September 1, 2010 and August 31, 2011, and found to be in order, confirming that the process consistently met the performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month. No concerns were identified in this regard.

* **Testing for parameters required by legislation, Order, or a Permit, Licence or Approval issued under Part V of the SDWA was conducted by laboratories in Ontario licenced to test for that parameter, or by eligible laboratories outside Ontario.**

All analytical testing is conducted by SGS Lakefield Research Limited, which is a fully licensed analytical lab, located in Lakefield, Ontario.

WATER QUALITY ASSESSMENT

* **The inspector collected audit samples during the inspection.**

Treated water audit samples were collected from the drinking water system at: 1) the Nairn Centre Water Treatment Plant (SWIPTREAT); 2) the Nairn Centre Community Centre (SWIPDIST); and 3) the Esso Truck Station Gas Bar (SWIPDISTEND). All results were found to be within the acceptable range as prescribed under O.Reg. 169/03. Results are included as part of this report.

WATER QUALITY ASSESSMENT

* **Records show that all water sample results taken during the review period met the Ontario Drinking Water Quality Standards (O.Reg. 169/03).**

  Analytical results provided for the Nairn Centre Drinking Water System for the period between September 1, 2010 and August 31, 2011 were reviewed and found to be in order, meeting the requirements of the prescribed Ontario Drinking Water Standards (O.Reg. 169/03).

REPORTING & CORRECTIVE ACTIONS

* **Corrective actions (as per Schedule 17) were taken to address adverse conditions, including any other steps that were directed by the Medical Officer of Health.**

  There were 2 Incident Reports (AWQIs) identified during the review period between September 1, 2010 and August 31, 2011. They were:

  1) AWQI # 101126, dated May 30, 2011: Notification of a TC=48 from samples collected from a distribution sample. A sampling error was immediately suspected, as the Cl2 residual at the time of sampling was 0.79 mg/L, and all other distribution samples came back clear. Nevertheless, all required Notifications, both oral and written, to the Spills Action Centre and the Sudbury and District Health Unit were made; and the proper Corrective Actions were taken. All re-samples came back clear. The proper Notice of Issue Resolution was submitted.

  2) AWQI # 101341, dated June 12, 2011: A drop in pressure due to equipment failure was reported. All required Notifications, both oral and written, to the Spills Action Centre and the Sudbury and District Health Unit were made; all required Corrective Actions were taken. The system was promptly restored and the required Notice of Issue Resolution was provided.

  In all Incidents, all required Notifications were made; all required Corrective Actions were taken; and all required Notices of Issue Resolution were provided.

* **Corrective actions as directed by the Medical Officer of Health had been taken by the owner and operating authority to address exceedances of the lead standard.**

  There were 2 Incident Reports (AWQIs) identified during the review period between September 1, 2010 and August 31, 2011. They were:

  1) AWQI # 101126, dated May 30, 2011: Notification of a TC=48 from samples collected from a distribution sample. A sampling error was immediately suspected, as the Cl2 residual at the time of sampling was 0.79 mg/L, and all other distribution samples came back clear. Nevertheless, all required Notifications, both oral and written, to the Spills Action Centre and the Sudbury and District Health Unit were made; and the proper Corrective Actions were taken. All re-samples came back clear. The proper Notice of Issue Resolution was submitted.

  2) AWQI # 101341, dated June 12, 2011: A drop in pressure due to equipment failure was reported. All required Notifications, both oral and written, to the Spills Action Centre and the Sudbury and District Health Unit were made; all required Corrective Actions were taken. The system was promptly restored and the required Notice of Issue Resolution was provided.

  In all Incidents, all required Notifications were made; all required Corrective Actions were taken; and all required Notices of Issue Resolution were provided.

* **All required notifications of adverse water quality incidents were immediately provided as per O.Reg. 170/03 16-6.**

  There were 2 Incident Reports (AWQIs) identified during the review period between September 1, 2010 and August 31, 2011. They were:

  1) AWQI # 101126, dated May 30, 2011: Notification of a TC=48 from samples collected from a distribution sample. A sampling error was immediately suspected, as the Cl2 residual at the time of sampling was 0.79 mg/L, and all other distribution samples came back clear. Nevertheless, all required Notifications, both oral and written, to the Spills Action Centre and the Sudbury and District Health Unit were made; and the proper Corrective Actions were taken. All re-samples came back clear. The proper Notice of Issue Resolution was submitted.

REPORTING & CORRECTIVE ACTIONS

2) AWQI # 101341, dated June 12, 2011: A drop in pressure due to equipment failure was reported. All required Notifications, both oral and written, to the Spills Action Centre and the Sudbury and District Health Unit were made; all required Corrective Actions were taken. The system was promptly restored and the required Notice of Issue Resolution was provided.

In all Incidents, all required Notifications were made; all required Corrective Actions were taken; and all required Notices of Issue Resolution were provided.

* **All reporting requirements for lead sampling were complied with as per schedule 15.1-9 of O.Reg. 170/03.**

Community lead based sampling as prescribed by Schedule 15.1 of O.Reg. 170/03 was conducted between April 7-13, 2010. All sampling and reporting requirements as prescribed by the legislation were met.

* **Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.**

NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

This section provides a summary of all non-compliance with regulatory requirements identified during the inspection period, as well as actions required to address these issues. Further details pertaining to these items can be found in the body of the inspection report.

Not Applicable

SUMMARY OF BEST PRACTICE ISSUES AND RECOMMENDATIONS

This section provides a summary of all best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. Best Management Practices are recommendations and not mandatory requirements, but may lead to safe drinking water for the consumer.

In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following practices and consider measures to implement them so that all drinking water systems continuously improve their processes.

1. **Backflow preventers were not installed at each service connection to Industrial/Commercial/Institutional and agricultural process that were considered high hazard facilities.**

   It was indicated at the time of inspection that there are no backflow preventers installed at service connection to either Industrial, Commercial, Institutional or Agricultural facilities.

   It was however identified at the time of inspection, that the Municipality is in the process of developing a draft by-law to address this shortfall.

   Recommendation:
   It is recommended that the Municipality continue its work in developing a draft by-law to address this shortfall.

SIGNATURES

Inspected By: Signature: (Provincial Officer):

Marc Chalifoux

Reviewed & Approved By: Signature: (Supervisor):

Brian McMahon on behalf of

Review & Approval Date: Oct 11/11

Note: This inspection does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they apply or may apply to this facility. It is, and remains, the responsibility of the owner and/or operating authority to ensure compliance with all applicable legislative and regulatory requirements.

APPENDIX I
Certificate of Approval

Ontario

Ministry of the Environment

Ministère de l'Environnement

AMENDED CERTIFICATE OF APPROVAL
MUNICIPAL DRINKING WATER SYSTEMS
NUMBER 0091-6N5Q8P
Issue Date: August 4, 2006

The Corporation of the Township of Nairn and Hyman
64 McIntyre Street, GD, No. 62
Nairn Centre, Ontario
P0M 2L0

Site Location: Nairn Centre Water Treatment Plant
Ferry Lane, Nairn Centre
Nairn and Hyman Township, District of Sudbury

Pursuant to the Safe Drinking Water Act, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this approval is issued under Part V of the Safe Drinking Water Act, 2002, S.O. 2002, c. 32 to:

The Corporation of the Township of Nairn and Hyman
64 McIntyre Street, GD, No. 62
Nairn Centre, Ontario
P0M 2L0

PART 1 - DRINKING-WATER SYSTEM DESCRIPTION

1.1 for a drinking-water system serving the Township of Nairn and Hyman, rated as set out in Part 4 consisting of the following:

EXISTING WATER WORKS
(as per consolidated CofA No. 5345-549MDJ, dated January 07, 2002)

Water Intake

- an intake structure, comprising a polyethylene "drum" (1.05 m diameter), weighed down with rock ballast, partially embedded into the river bottom, with its 150 mm intake ports wrapped with 9.5 mm mesh screen, with an intake pipe connecting to the raw water well, 250 mm diameter polyethylene pipe about 33 m in length, with a 75 mm diameter pipe installed alongside, for future use in chlorination for zebra mussel control;

Raw Water Well and Low Lift Pumps

- a 2.44 m diameter concrete low lift pumping station, with the intake pipe equipped with a manually operated butterfly valve to facilitate maintenance;

- two (2) low lift pumps, alternating as duty and standby, each rated at 9.5 L/s at 18.5 m total dynamic head (TDH), and equipped with a 100 mm diameter discharge pipe into a common 150 mm diameter header; operated by the treated water elevation in the clearwells, and discharging raw water into the 150 mm common header, and to the treatment plant through a 150 mm diameter PVC plant supply pipe;

Treatment Works

- a prefabricated package water treatment plant, comprising chemical addition, pre-chlorination, coagulation/flocculation, sedimentation, and dual media filtration, followed by pH adjustment and fluoridation upstream of the high lift pumps, and post-chlorination into the filter effluent line; designed for conventional operating parameters at a rated capacity of 818 m^3/day, (NAD83: UTM Zone 17: 455049.00 m E, 5131662.00 m N), with the duty low lift pump starting and stopping the operation of the water treatment plant, as follows:

- Mixing Zone, where the raw water enters from the static in-line mixer with alum, soda ash, polymer and sodium hypochlorite solutions already added;

- Flocculation Zone, providing a 30-min retention time;

- Settling Compartment, an upflow clarifier, complete with tube settlers, providing a 60-min retention time at a surface rise rate of 3.7 m/hr;

- Dual Media Filter, a two-compartment filter containing sand and anthracite, operating at a filtration rate of 6.5 m/hr, and provided with backwash at a rate of 37 m/hr for the 5-min duration of each cycle; one (1) turbidity analyzer on the filtered water discharge line;

- post chlorination injection point to the filter effluent line;

- liquid alum injection into the raw water supply pipe upstream of the static mixer, by two (2) diaphragm type metering pumps (one duty and one standby), each rated at 19 L/hr, at a manually set constant dosage rate; from an 11.4 m^3 polyethylene tank, located within a concrete containment area in the WTP building;

- soda ash solution injection into the raw water upstream of the static mixer, to increase the alkalinity for better reaction with alum in floc formation, at a manually set constant rate, and soda ash addition also to the treated water upstream of the clearwell/reservoir for pH adjustment, the soda ash system comprising a 1,400 L steel tank and three (3) 19 L/hr diaphragm metering pumps (two duty and one standby);

- pre-chlorination by the injection of 12% sodium hypochlorite solution upstream of the static mixer into the raw water to control biological growth in the water treatment plant;

- polymer solution injection downstream of the static mixer, to aid in the formation of larger floc, the polymer system comprising a 200 L polyethylene solution tank and two (2) (one duty and one standby) metering pumps, each rated at 19 L/hr, at a manually set constant rate;

- fluoridation, by the injection of hydrofluosilicic acid solution into the treated water, using two (2) metering pumps (one duty and one standby), each rated at 4 L/hr and manually set at a constant rate, from a chemical solution storage tank, all located in an isolated room, to prevent contact with the other treatment chemicals; one (1) hydrofluosilicic acid analyzer, to measure fluoride levels in the treated water;

- chlorination by injection of 12% sodium hypochlorite solution using a system of three (3) metering pumps, one for pre-chlorination, one for post chlorination and one to serve as a shared standby pump, each pump rated at 4 L/hr, from a 200 L polyethylene solution tank;

- Paperless Chart Recorder, to display and record, free chlorine residual, fluoride and turbidity readings;

Treated Water Storage

- consisting of two (2) equal-capacity clearwells (each having a maximum volume of 345 m^3, for a total treated water storage volume of 690 m^3), interconnected via an overflow wall, and provided with a 200 mm diameter overflow pipe to an adjacent creek in the event of high water level in the clearwells, each clearwell equipped with a 200 mm diameter high lift pump intake; concrete curbs and sanitary seals around clearwell access hatches;

High Lift Pumping

- comprising two (2) vertical multi-stage pumps, each rated at 6.6 L/s at 59.5 m TDH and alternating as duty and standby, with their discharges connected to a 150 mm diameter discharge header; using a vacuum priming system to prime the pump(s) based on the distribution system pressure as measured in the water treatment plant, and the fire pump with a capacity of 40.1 L/s at 61 m TDH;

- the discharge header fitted with a pressure relief valve, a pressure gauge, a chlorine injection point, a magnetic type flow

meter, with the discharge header having a system of three hydro-pneumatic (pressure) tanks, 1.6 m^3 capacity each, to supply water to the system during periods of very low water demand; discharging to a 600 mm diameter watermain dedicated for chlorine contact, connected to the 250 mm diameter PVC watermain which supplies the distribution system; one (1) free chlorine residual analyzer, with sample line tapped, downstream of the 600 mm diameter watermain dedicated for chlorine contact;

Residue Management

- a 26 m^3 surge tank, receiving sludge from the clarifiers and backwash waste from the dual media filters, equipped with two (2) (one duty, one standby) centrifugal submersible pumps each rated at 1.0 L/s at 5.0 m TDH, transferring the wastes to a 65 m^3 settling chamber (clarifier); pump operation activated by the liquid level in the surge tank;

- with clarified supernatant from the 65 m^3 settling chamber overflowing to an outfall chamber, and from there to the adjacent creek and from there to the Spanish River (downstream of the plant intake); and deposited sludge removed from the clarifier by vacuum pump truck for off-site disposal;

Control and Alarm Systems

- with a Motor Control Center providing start/stop and local/remote switches for process control items such as: high and low lift pumps, sludge pumps, vacuum priming system, and power supply to the chemical feed pumps and the central control panel; this central control panel having a programmable logic controller (PLC) for monitoring process variables and allowing the operator to adjust control equipment; generator set failure and fire alarms are also incorporated into the system;

Standby Power

- a 160 kW (200 kVA) diesel generator set, to provide emergency "back-up" power for the water treatment plant;

1.2 all in accordance with the applications and plans and other supporting documents listed in Schedule "A", and all other Schedules, which are attached to, and form part of this approval, except as specified in the conditions contained herein.

PART 2 - DEFINITIONS AND INFORMATION

2.1 In this approval, unless the context otherwise requires, words and phrases shall be given the same meaning as those set out in the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32 and any regulations made in accordance with that act.

2.2 In this approval

"approval" means this entire approval document, issued in accordance with section 36 of the *SDWA,* and includes any schedules to it

"Director" means a director appointed pursuant to s. 6 of the *SDWA* for the purposes of Part V of the *SDWA*

"drinking-water system" includes the works set out in Part 1

"provincial officer" means a provincial officer appointed pursuant to s. 8 of the *SDWA*

"rated capacity" means the maximum flow rate and maximum daily volume of water which can be treated when operating the drinking-water system under design conditions

"SDWA" means the Safe Drinking Water Act, 2002, S.O. 2002, c. 32, as amended

2.3 The following information is applicable to this approval

"owner" is the Corporation of the Township of Nairn and Hyman, its successors and assignees

"operating authority" is the Ontario Clean Water Agency, its successors and assignees.

PART 3 - GENERAL

Compliance

3.1 The owner and operating authority shall operate the drinking-water system in accordance with the *SDWA*, any applicable regulations made thereunder, and this approval.

3.2 Despite any condition of this approval to the contrary, the owner and operating authority set out in Part 2 are jointly and severally liable to comply with all conditions of this approval.

3.3 The owner and operating authority shall ensure that any person authorized to carry out work on or operate any aspect of the drinking-water system has been informed of the *SDWA*, all applicable regulations made in accordance with that act, and this approval and shall take all reasonable measures to ensure any such person complies with the same.

3.4 A copy of this approval shall be kept in a conspicuous place so that it is available for reference by all persons responsible for all or part of the operation of the drinking-water system.

Build, etc. in Accordance

3.5 Except as otherwise provided by this approval, the drinking-water system shall be designed, developed, built, operated and maintained in accordance with Part 1 above and the documentation listed in Schedule "A".

Interpretation

3.6 Where there is a conflict between the provisions of this approval and any other document, the following hierarchy shall be used to determine the provision that takes precedence:

i. The *SDWA*;

ii. a condition imposed in this approval in accordance with s. 38 of the *SDWA*;

iii. any regulation made under the *SDWA*;

iv. this approval;

v. any application documents listed in Schedule "A" from most recent to earliest; and

vi. all other documents listed in Schedule "A" from most recent to earliest.

3.7 The requirements of this approval are severable. If any requirement of this approval, or the application of any requirement of this approval to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this approval shall not be affected thereby.

3.8 Nothing in this approval shall be read to provide relief from the need for strict compliance with the *Environmental Assessment Act,* R.S.O. 1990, c E.18.

Other Legal Obligations

3.9 The issuance of, and compliance with the conditions of, this approval does not:

i. relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement; or

ii. limit in any way the authority of the ministry to require certain steps be taken or to require the owner to furnish any further information related to compliance with this approval.

3.10 For greater clarity, nothing in this approval shall be read to provide relief from regulatory requirements in accordance with section 38 of the *SDWA*, except as provided in Part 9.

Adverse Effects

3.11 Nothing in this approval shall be read as to permit: i) the discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or ii) the discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.

3.12 All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking-water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

3.13 Fulfillment of one or more conditions imposed by this approval does not eliminate the requirement to fulfill any other condition of this approval or the requirements of any applicable statute, regulation, or other legal requirement resulting from any act or omission that causes or is likely to cause an adverse effect on the natural environment or the impairment of water quality.

Change of Owner

3.14 The owner or the operating authority, as the case may be, shall notify the director, in writing, of any of the following changes within 30 days of the change occurring:

i. change of owner or operating authority;

ii. change of address;

iii. change of partners where the owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c. B17; or

iv. change of name of the corporation where the owner or operating authority is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C.39.

3.15 In the event of any change in ownership of the drinking-water system, other than change to a successor municipality, the owner shall notify the successor of and provide the successor with a copy of this approval, and the owner shall provide a copy of the notification to the district manager of the local office of the ministry and the director.

Inspections

3.16 No person shall hinder or obstruct a provincial officer in the performance of their duties, including any and all inspections authorized by the *SDWA*.

Information

3.17 Any information requested, by the ministry, concerning the drinking-water system and its operation under this approval, including but not limited to any records required to be kept by this approval shall be provided to the Ministry, upon request.

3.18 Records required by or created in accordance with this approval, unless specifically referenced in s. 12 of O. Reg. 170/03, shall be retained for at least 5 years in a location where a provincial officer who is inspecting the treatment system can conveniently view them.

3.19 The receipt of any information by the ministry or the failure of the ministry to prosecute any person or to require any person to take any action, under this approval or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:

i. an approval, waiver, or justification by the ministry of any act or omission of any person that contravenes any term or

condition of this approval or any statute, regulation or other legal requirement; or

ii. acceptance by the ministry of the information's completeness or accuracy.

PART 4 - PERFORMANCE

Rated Capacity

4.1 The drinking-water system shall not be operated to exceed the rated capacity as out below:

Treatment System	Maximum Daily Volume (m^3/day)
Nairn Centre W.T.P	818

Increase to Rated Capacity

4.2 Despite condition 4.1, the drinking water system may be operated at a rate above the rated capacity set out in condition 4.1 where necessary for:

i. fighting a large fire ; or

ii. the maintenance of the drinking-water system.

4.3 Condition 4.2 shall not be construed to allow drinking-water to be supplied that does not meet all other applicable standards and legal requirements.

Management of Residue

4.4 The average annual concentration of suspended solids in the effluent discharged from the backwash wastewater facilities shall not exceed 25 mg/L.

PART 5 - MONITORING AND RECORDING

Flow measuring devices

5.1 Install a sufficient number of flow-measuring devices within the drinking-water system to permit the measurement and recording of:

i. the daily maximum flow rate and maximum daily volume of water conveyed into the treatment system; and

ii. the daily maximum flow rate and maximum daily volume of water conveyed from the treatment system to the distribution system.

5.2 Records shall be maintained that set out the parameters recorded in accordance with condition 5.1, and where the parameters measured exceed the daily peak flow rate and daily maximum volume set out in Part 1, the amount, date, time and duration of the exceedence shall also be recorded.

Calibration of flow measuring devices

5.3 All flow measuring devices must be checked and calibrated in accordance with the manufacturer's instructions.

5.4 If the manufacturer's instructions do not indicate how often to check and calibrate the flow measuring devices, the equipment must be checked and calibrated at least once every year during which the drinking-water system is in operation.

Additional Sampling - Management of Residue

5.5 In addition to any other sampling and analysis that may be required, sampling and analysis shall be undertaken for the parameters listed in Table 2 at the listed frequencies and locations.

Table 1: Management of Residue Sampling

Parameter	Frequency	Location
Suspended Solids (composite)	Monthly	Point of discharge

5.6 For the purposes of Table 1, composite means the mean of three samples taken during the discharge event, with at least one sample taken immediately following the commencement of the discharge, one sample taken approximately at the mid-point of the discharge event and one sample taken immediately before the discharge ceases.

PART 6 - OPERATIONS AND MAINTENANCE

Chemical standards

6.1 All chemicals and materials used in the operation of the drinking-water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60 and NSF/61.

6.2 The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution shall be available at all times for each chemical and material used in the operation of the drinking-water system that comes into contact with water within the system.

6.3 Condition 6.2 does not apply in the context of any particular chemical or material where the Owner has written documentation signed by the director that indicates that the Ministry is satisfied that the chemical or material is acceptable for use within the drinking-water system and that chemical or material is only used as permitted by the documentation.

Operations manual

6.4 An up-to-date operations manual shall be maintained and available for reference by all persons responsible for all or part of the operation of the drinking-water system.

6.5 The operations manual shall include at a minimum:

i. the requirements of this approval and associated procedures;

ii. the operation and maintenance recommendations from the most recent engineers' report;

iii. procedures for the monitoring and recording of in-process parameters necessary for the control of the treatment system and assessing the performance of the drinking-water system;

iv. procedures for the operation and maintenance of monitoring equipment;

v. contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset and equipment breakdown;

vi. procedures for the dealing with complaints related to the drinking-water system, including the recording of the nature of the complaint and any investigation and corrective action taken that in respect of the complaint.

6.6 Procedures necessary to the operation of any physical alterations of the drinking-water system shall be incorporated into the operations manual prior to the alterations coming into operation.

Drawings

6.7 An up-to-date Process and Instrumentation Diagram for the treatment system shall be kept on site at the drinking water

system.

6.8 All drawings and diagrams in the possession of the owner or operating authority that show the treatment system as constructed shall be retained.

6.9 An alteration to the treatment system shall be incorporated into Process and Instrumentation Diagrams (P&ID) and record drawings and diagrams within one year of the substantial completion of the alteration and shall be retained and shall be made readily available for inspection by Ministry staff.

PART 7 - FUTURE ALTERATIONS

Approved future alterations
7.1 Not Applicable

Certificate of compliance
7.2 Not Applicable

PART 8 - STUDIES AND UPGRADES REQUIRED

8.1 Not Applicable

PART 9 - RELIEF FROM REGULATORY REQUIREMENTS

Relief from regulatory requirements
9.1 Not applicable

Conditions in exchange for relief from regulatory requirements
9.2 Not applicable

SCHEDULE - A

The following supporting documents form part of this approval.

1. Application dated March 2, 2006
- Correspondence dated February 24, 2006, signed by Keith Stringer, Ontario Clean Water Agency

2. Application dated October 28, 2003
- Correspondence dated October 30, 2003, signed by April Tucker, EIT, Kresin Engineering Corporation
- Correspondence dated December 17, 2003, signed by April Tucker, EIT, Kresin Engineering Corporation

3. Application for Approval, dated July 18, 2002; supporting information and documents prepared by Kresin Engineering Corporation

4. The original applications for approval, including design calculations, engineering drawings and reports, and other supporting documents prepared in support of any previous certificate(s) of approval issued for any works now approved and replaced by this approval, unless this approval states otherwise.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 5413-5UAKS9 issued on December 18, 2003

All or part of this decision may be reviewable in accordance with the provisions of Part X of the SDWA. In accordance with Section 129(1) of the Safe Drinking Water Act, Chapter 32 Statutes of Ontario, 2002, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this notice, require a

hearing by the Tribunal. Section 129(2) sets out a procedure upon which the 15 days may be extended by the Tribunal. Section 129(3) of the Safe Drinking Water Act, Chapter 32 Statutes of Ontario, 2002, provides that the Notice requiring the hearing shall state:

1. The aspect of the decision, including the portion of the permit, licence, approval, order or notice of administrative penalty in respect of which the hearing is required; and
2. The grounds for review to be relied on by the person at the hearing.

Except with leave of the Tribunal, a person requiring a hearing in relation to a reviewable decision is not entitled to,
(a) a review of an aspect of the decision other than that stated in the notice requiring the hearing; or
(b) a review of the decision other than on the grounds stated in the notice

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., Suite 1700
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Part V, *Safe Drinking Water Act, 2002*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted water works are approved under Part V of the Safe Drinking Water Act.

DATED AT TORONTO this 4th day of August, 2006

Aziz Ahmed, P.Eng.
Director
Part V *of the Safe Drinking Water Act, 2002*

JF/
c: District Manager, MOE Sudbury District Office
Drinking Water Supervisor, Sudbury District Office
Manager, Water Standards Section
Keith Stringer, Ontario Clean Water Agency

APPENDIX II

MUNICIPAL DRINKING WATER LICENSE

Ontario

MUNICIPAL DRINKING WATER LICENCE

Licence Number: 281-101
Issue Number: 1

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this municipal drinking water licence is issued under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

The Corporation of the Township of Nairn and Hyman

64 McIntyre Street
Nairn Centre ON P0M 2L0

For the following municipal residential drinking water system:

Nairn Centre Drinking Water System

This municipal drinking water licence includes the following:

Schedule	Description
Schedule A	Drinking Water System Information
Schedule B	General Conditions
Schedule C	System-Specific Conditions
Schedule D	Conditions for Relief from Regulatory Requirements

DATED at TORONTO this 20th day of December, 2010

Signature

Indra R. Prashad, P.Eng.
Director
Part V, *Safe Drinking Water Act*, 2002

Schedule A: Drinking Water System Information

System Owner	**The Corporation of the Township of Nairn and Hyman**
Licence Number	**281-101**
Drinking Water System Name	**Nairn Centre Drinking Water System**
Schedule A Issue Date	**December 20th, 2010**

The following information is applicable to the above drinking water system and forms part of this licence:

Licence

Licence Issue Date	December 20, 2010
Licence Expiry Date	December 19, 2015
Application for Licence Renewal Date	June 19, 2015

Drinking Water Works Permit

Drinking Water System Name	Permit Number	Issue Date
Nairn Centre Drinking Water System	281-201	December 20, 2010

Permits to Take Water

Water Taking Location	Permit Number	Issue Date
Spanish River	2003-7TDPEP	June 26, 2009

Financial Plans

The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be:	281-301
Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be:	281-301A

Accredited Operating Authority

Drinking Water System or Operational Subsystems	Accredited Operating Authority	Operational Plan Number
Nairn Centre Drinking Water System	Ontario Clean Water Agency	281-401

Schedule B: General Conditions

System Owner	**The Corporation of the Township of Nairn and Hyman**
Licence Number	**281-101**
Drinking Water System Name	**Nairn Centre Drinking Water System**
Schedule B Issue Date	**December 20th, 2010**

1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

"**adverse effect**", "**contaminant**" and "**natural environment**" shall have the same meanings as in the EPA;

"**alteration**" may include the following in respect of this drinking water system:

(a) An addition to the system,
(b) A modification of the system,
(c) A replacement of part of the system, and
(d) An extension of the system;

"**compound of concern**" means a contaminant that, based on generally available information, may be emitted from a component of the drinking water system to the atmosphere in a quantity that is significant either in comparison to the relevant point of impingement limit or if a point of impingement limit is not available for the compound, then based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the EPA at a point of impingement;

"**Director**" means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

"**drinking water works permit**" means the drinking water works permit for the drinking water system as identified in Schedule A of this licence;

"emission summary table" means the table that was prepared by a Professional Engineer in accordance with O. Reg. 419/05 and the procedure document listing the appropriate point of impingement concentrations of each compound of concern emitted from a component of the drinking water system and providing comparison to the corresponding point of impingement limit;

"EPA" means the *Environmental Protection Act*, R.S.O. 1990, c. E.19;

"**financial plan**" means the financial plan required by O. Reg. 453/07 and the conditions of this licence;

"**licence**" means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

"**operational plan**" means an operational plan developed in accordance with the Director's Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

"**owner**" means the owner of the drinking water system as identified in Schedule A of this licence;

"**point of impingement**" means any point in the natural environment that is not on the same property as the source of the contaminant and as defined by section 2 of O. Reg. 419/05;

"**point of impingement limit**" means the appropriate standard from Schedule 1, 2 or 3 of O. Reg. 419/05 and if a standard is not provided for a compound of concern, the appropriate criteria listed in the Ministry of the Environment publication titled "Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution – Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)", dated February 2008, as amended;

"**procedure document**" means the Ministry of the Environment procedure titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated July 2005, as amended;

"**Professional Engineer**" means a Professional Engineer who has been licenced to practice in the Province of Ontario;

"**provincial officer**" means a provincial officer appointed pursuant to section 8 of the SDWA;

"**publication NPC-205**" means the Ministry of the Environment publication titled "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)" dated October 1995, as amended;

"**publication NPC-207**" means the Ministry of the Environment draft technical publication titled "Impulse Vibration in Residential Buildings" dated November 1983, supplementing the Ministry of the Environment "Model Municipal Noise Control By-law, Final Report" dated August 1978;

"**publication NPC-232**" means the Ministry of the Environment publication titled "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)" dated October 1995, as amended;

"**SDWA**" means the *Safe Drinking Water* Act, 2002, S.O. 2002, c. 32;

"**sensitive populations**" means any one or a combination of the following locations where the health effects of nitrogen oxides emissions from emergency generator(s) shall be considered using the point of impingement limit instead of the Ministry of the Environment screening level for emergency generator(s):

(a) health care units (e.g., hospitals and nursing homes),
(b) primary/junior public schools,
(c) day-care facilities, and
(d) playgrounds;

2.0 Applicability

2.1 In addition to any other requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

3.0 Licence Expiry

3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

4.0 Licence Renewal

4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

5.0 Compliance

5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

6.0 Licence and Drinking Water Works Permit Availability

6.1 At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

7.0 Permits to Take Water

7.1 A permit to take water identified in Schedule A of this licence is associated with the taking of water for purposes of the operation of the drinking water system and is the applicable permit on the date identified as the Schedule A Issue Date.

8.0 Financial Plan

8.1 The owner of the drinking water system, by the later of July 1, 2010 and the date that is six months after the date the first licence for the system is issued, shall prepare and approve financial plans for the system that satisfy the requirements prescribed under section 3 of O. Reg. 453/07.

8.2 The owner of the drinking water system shall ensure that every financial plan prepared in accordance with subsections 2 (1) and 3 (1) of O. Reg. 453/07 contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence.

9.0 Interpretation

9.1 Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:

9.1.1 The SDWA*;*

9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;

9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;

9.1.4 Any regulation made under the SDWA;

9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;

9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;

9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and

9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.

9.2 If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.

9.3 The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:

9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and

9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry of the Environment to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.

9.4 For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

10.0 Adverse Effects

10.1 Nothing in this licence or the drinking water works permit shall be read as to permit:

10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or

10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.

10.2 All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

10.3 Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

11.0 Change of Owner or Operating Authority

11.1 This licence is not transferable without the prior written consent of the Director.

11.2 The owner shall notify the Director in writing of a change of any operating authority identified in Schedule A of this licence.

12.0 Information to be Provided

12.1 Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request.

13.0 Records Retention

13.1 Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

14.0 Chemicals and Materials

14.1 All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60 and NSF/61.

14.2 The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.

14.3 Conditions 14.1 and 14.2 do not apply in the case of the following:

14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);

14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;

14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;

14.3.4 Food grade oils and lubricants; or

14.3.5 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry of the Environment is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

15.0 Drawings

15.1 All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.

15.2 Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the substantial completion of the alteration.

15.3 Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

16.0 Operations and Maintenance Manual

16.1 An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference by all persons responsible for all or part of the operation or maintenance of the drinking water system.

16.2 The operations and maintenance manual or manuals, shall include at a minimum:

16.2.1 The requirements of this licence and associated procedures;

16.2.2 The requirements of the drinking water works permit for the drinking water system;

16.2.3 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;

16.2.4 Procedures for the operation and maintenance of monitoring equipment;

16.2.5 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;

16.2.6 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;

16.3 Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.

Schedule C: System-Specific Conditions

System Owner	**The Corporation of the Township of Nairn and Hyman**
Licence Number	**281-101**
Drinking Water System Name	**Nairn Centre Drinking Water System**
Schedule C Issue Date	**December 20th, 2010**

1.0 Performance Limits

Rated Capacity

1.1 For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

Table 1: Rated Capacity

Column 1 Treatment Subsystem Name	Column 2 Rated Capacity (m^3/day)
Nairn Centre Water Treatment Plant	818

1.2 Despite condition 1.1, a treatment subsystem may be operated temporarily at a daily volume above the value set out in column 2 of Table 1 for the purposes of fighting a large fire or for the maintenance of the drinking water system.

1.3 Condition 1.2 does not authorize the discharge into the distribution system of any water that does not otherwise meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

Maximum Flow Rates

1.4 For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

Table 2: Maximum Flow Rates

Column 1 Treatment Subsystem Name	Column 2 Treatment Subsystem Component	Column 3 Maximum Flow Rate (L/s)
Not Applicable	Not Applicable	Not Applicable

Residue Management

1.5 In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:

1.5.1 The annual average concentration of a test parameter identified in column 2 shall not exceed the value in column 3 of the same row; and

1.5.2 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row.

Table 3: Residue Management

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Annual Average Concentration (mg/L)	Column 4 Maximum Concentration (mg/L)
Residue Management	Suspended Solids (composite)	25	

UV Disinfection Equipment Performance

1.6 For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, the UV disinfection equipment shall be operated such that a continuous pass-through UV dose is maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row.

Table 4: UV Disinfection Equipment Performance

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Minimum Continuous Pass-Through UV Dose (mJ/cm^2)
Not Applicable	Not Applicable

2.0 Flow Measurement and Recording Requirements

2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for:

2.1.1 The flow rate and daily volume of treated water that flows from the treatment subsystem to the distribution system.

2.1.2 The flow rate and daily volume of water that flows into the treatment subsystem.

2.2 For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.

2.3 Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:

2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;

2.3.2 The time and date of the measurement;

2.3.3 The reason for the exceedance; and

2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

3.0 Calibration of Flow Measuring Devices

3.1 All flow measuring devices must be checked and calibrated in accordance with the manufacturer's instructions.

3.2 If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment must be checked and calibrated at least once every year during which the drinking water system is in operation.

4.0 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

4.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

Table 5: Drinking Water Health Related Parameters			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	**Column 2 Test Parameter**	**Column 3 Sampling Frequency**	**Column 4 Monitoring Location**
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Table 6: Drinking Water Non-Health Related Parameters			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	**Column 2 Test Parameter**	**Column 3 Sampling Frequency**	**Column 4 Monitoring Location**
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Environmental Discharge Parameters

4.2 For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.

4.3 For the purposes of Table 7:

4.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and

4.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.

4.4 Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication “Standard Methods for the Examination of Water and Wastewater”, 21st Edition, 2005, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters				
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	**Column 2 Test Parameter**	**Column 3 Sample Type**	**Column 4 Sampling Frequency**	**Column 5 Monitoring Location**
Residue Management	Suspended Solids (composite)	Manual Composite	Monthly	Point of Discharge

UV Disinfection Equipment

4.5 For each treatment subsystem or treatment subsystem component listed in column 1 of Table 8 and in addition to any other sampling, analysis and recording that may be required, continuous monitoring and recording with a minimum testing/reading and recording frequency of every four (4) hours shall be carried out for the test parameters set out in column 3 of the same row.

Table 8: UV Disinfection Equipment		
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	**Column 2 Control Strategy**	**Column 3 Test Parameter**
Not Applicable	Not Applicable	Not Applicable

5.0 Studies Required

5.1 Not Applicable

Schedule D: Conditions for Relief from Regulatory Requirements

System Owner	**The Corporation of the Township of Nairn and Hyman**
Licence Number	**281-101**
Drinking Water System Name	**Nairn Centre Drinking Water System**
Schedule D Issue Date	**December 20th, 2010**

1.0 Lead Regulatory Relief

1.1 Any relief from regulatory requirements previously authorized by the Director in respect of the drinking water system under section 38 of the SDWA in relation to the sampling, testing or monitoring requirements contained in Schedule 15.1 of O. Reg. 170/03 shall remain in force until such time as Schedule 15.1 of O. Reg. 170/03 is amended after June 1, 2009.

2.0 Other Regulatory Relief

2.1 Not Applicable

APPENDIX III

DRINKING WATER WORKS PERMIT

Ontario

DRINKING WATER WORKS PERMIT

Permit Number: 281-201
Issue Number: 1

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this drinking water works permit is issued under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

The Corporation of the Township of Nairn and Hyman

64 McIntyre St.
Nairn Centre ON
P0M 2L0

For the following municipal residential drinking water system:

Nairn Centre Drinking Water System

This drinking water works permit includes the following:

Schedule	Description
Schedule A	Drinking Water System Description
Schedule B	General
Schedule C	All documents issued as Schedule C to this drinking water works permit which authorize alterations to the drinking water system

DATED at TORONTO this 20th day of December, 2010

Signature

Aziz Ahmed, P.Eng.
Director
Part V, *Safe Drinking Water Act*, 2002

Schedule A: Drinking Water System Description

System Owner	**The Corporation of the Township of Nairn and Hyman**
Permit Number	**281-201**
Drinking Water System Name	**Nairn Centre Drinking Water System**
Schedule A Issue Date	**December 20th, 2010**

1.0 System Description

1.1 The following is a summary description of the works comprising the above drinking water system:

Overview

The Nairn Centre Drinking Water System consists of one conventional drinking water treatment plant and approximately 6.5 kilometers distribution watermains. The water treatment plant is a prefabricated package water treatment plant comprised of chemical addition, prechlorination, coagulation/flocculation, sedimentation, and dual media filtration.

Nairn Centre Drinking Water System

Treatment Plant

Name	Nairn Centre Water Treatment Plant
Street Address	Ferry Lane
UTM Coordinates	NAD 83, Zone 17m 455049m E, 5131662 m N
System Type	A prefabricated package surface water treatment plant
Notes	

Surface Water Supply

Intake Structure

Description	Water intake structure comprising a polyethylene “drum” (1.05 m diameter), weighed down with rock ballast, partially embedded into the river bottom
Location	
Mesh Screen	150 mm intake ports wrapped with 9.5 mm mesh screen
Intake Pipe	An intake pipe of 250mm approximately 33 m in length, connecting to the raw water well
Zebra Mussel Control	A 75 mm diameter pipe installed alongside the intake pipe, for future use in chlorination for zebra mussel control

Notes	

Low Lift Works

Wet Wells

Description	A raw water wet well
Dimensions	One (1) raw water pump wet well, 2.44 m diameter
Notes	

Low Lift Pumps

Description	Two (2) low lift pumps, alternating as duty and standby
Capacity	Each pump rated at 9.5 L/s at 18.5 m TDH
Notes	Discharging raw water into the 150 mm common header, and to the treatment plant through a 150 mm diameter PVC plant supply pipe

Mixing Zone

Description	Mixing Zone
Notes	The static in-line mixer for mixing of coagulant, soda ash and polymer added

Flocculation

Flocculation Tanks

Description	Flocculation Zone
Notes	Providing a retention time of 30 min

Clarification

Settling Compartment

Description	An upflow clarifier, complete with tube settlers
Notes	Providing a retention time of 60 min at a surface rise rate of 3.7 m/hr

Filtration

Dual Media Filter

Description	A two-compartment filter containing sand and anthracite
Notes	Operating at a filtration rate of 6.5 m/hr, and provided with backwash at a rate of 37 m/hr

Waste Residual Management

Surge Tank

Description	Surge tank receives sludge from the clarifiers and backwash waste from the dual media filters
Capacity	26 m³
Equipment	Two (2) (one duty, one standby) centrifugal submersible pumps each rated at 1.0 L/s at 5.0 m TDH
Notes	Submersible pumps transfer waste to a 65 m³ settling chamber (clarifier)

Setting Chamber (Clarifier)

Description	Setting Chamber (Clarifier) receives waste from the surge tank
Capacity	65 m³
Notes	From the settling chamber overflowing to an outfall chamber, and from there to the adjacent creek and from there to the Spanish River (downstream of the plant intake); and deposited sludge removed from the clarifier by vacuum pump truck for off-site disposal

High Lift Works

High Lift Pumps

Description	High lift pumping devices
Capacity	Two (2) vertical multi-stage pumps alternating as duty and standby, each pump rated at 6.6 L/s at 59.5 m TDH
	One (1) fire pump rated at 40.1 L/s at 61 m TDH
Notes	Having a system of three hydro-pneumatic (pressure) tanks, each 1.6 m³ capacity

On-Site Storage

Clearwells

Description	Two (2) equal-capacity clearwells, interconnected via an overflow wall

Capacity	Each clearwell has a maximum volume of 345 m³, for a total treated water storage volume of 690 m³
Notes	Each clearwell equipped with a 200 mm diameter high lift pump intake

Emergency Power

Backup Power Supply

Description	A 160 kW (200 kVA) diesel generator set
Notes	Provide emergency “back-up” power for the water treatment plant

Chemical Addition

Chlorine

Description	Pre-chlorination and post-chlorination system
Feed Point	Injection point to the upstream of the static mixer into raw water for pre-chlorination
	Injection point to the filter effluent line for post-chlorination
Equipment	Three (3) metering pumps, one for pre-chlorination, Two (2) for post chlorination, one duty, one standby each pump capable of 6.3 L/hr, complete with a solution tank
Notes	

Coagulant

Description	Coagulant injection system
Feed Point	Injection into the raw water supply pipe upstream of the static mixer
Equipment	Two (2) metering pumps (one duty and one standby), each capable of 19 L/hr
	One (1) 11.4 m³ polyethylene tank with a concrete containment
Notes	

Soda Ash System

Description	Soda ash solution injection system
Feed Point	Injection to the raw water upstream of the static mixer
	Injection also to the treated water upstream of the clearwell/reservoir
Equipment	Two (2) metering pumps (one pre and one post) each capable of 17 L/hr Both pumps can be valved to run as back up for each other.
	One (1) 1,400 L steel tank

Notes	

Polymer Solution

Description	Polymer solution injection system
Feed Point	Injection to downstream of the static mixer
Equipment	Two (2) (one duty and one standby) metering pumps, each capable of 19 L/hr,
	One (1) 200 L polyethylene solution tank
Notes	

Hydrofluosilicic Acid

Description	Fluoridation system
Feed Point	Injection of hydrofluosilicic acid solution into the treated water
Equipment	Two (2) metering pumps (one duty and one standby), each capable of 4 L/hr
	One (1) chemical solution storage tank located in an isolated room
Notes	

Instrumentation and Control

Regulatory Monitoring

Description	Process control and monitoring equipment for the Nairn Centre Drinking Water System
Notes	System control with data acquisition including various in-line analyzers and monitors

Watermains

1.2 Watermains within the distribution system comprise:

1.2.1 Watermains that have been set out in each document or file identified in column 1 of Table 1.

Table 1: Watermains

Column 1 Document or File Name	Column 2 Date
Township of Nairn, Water Distribution System Commissioned (on page 10 of the Operational Plan)	August, 1995

1.2.2 Watermains that have been added, modified, replaced or extended further to the provisions of Schedule C of this drinking water works permit on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

1.2.3 Watermains that have been added, modified, replaced or extended further to an authorization by the Director on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

Schedule B: General

System Owner	**The Corporation of the Township of Nairn and Hyman**
Permit Number	**281-201**
Drinking Water System Name	**Nairn Centre Drinking Water System**
Schedule B Issue Date	**December 20th, 2010**

1.0 Applicability

1.1 In addition to any other requirements, the drinking water system identified above shall be altered and operated in accordance with the conditions of this drinking water works permit and the licence.

1.2 The definitions and conditions of the licence shall also apply to this drinking water works permit.

2.0 Alterations to the Drinking Water System

2.1 Any document issued by the Director as a Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance, where applicable, with the conditions of this drinking water works permit and the licence.

2.2 All Schedule C documents issued by the Director for the drinking water system shall form part of this drinking water works permit.

2.3 All parts of the drinking water system in contact with drinking water which are:

2.3.1 Added, modified, replaced, extended; or

2.3.2 Taken out of service for inspection, repair or other activities that may lead to contamination,

shall be disinfected before being put into service in accordance with the provisions of the AWWA C651 – Standard for Disinfecting Water Mains; AWWA C652 – Standard for Disinfection of Water-Storage Facilities; AWWA C653 – Standard for Disinfection of Water Treatment Plants; or AWWA C654 – Standard for Disinfection of Wells; or an equivalent procedure.

2.4 The owner shall notify the Director within thirty (30) days of the placing into service or the completion of any addition, modification, replacement or extension of the drinking water system which had been authorized through:

2.4.1 Schedule B to this drinking water works permit which would require an alteration of the description of a drinking water system component described in Schedule A of this drinking water works permit;

2.4.2 Any Schedule C to this drinking water works permit respecting works other than watermains; or

2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermains which were not in service at the time of the issuance of the first drinking water works permit.

2.5 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:

2.5.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03;

2.5.2 Constitutes maintenance or repair of the drinking water system; or

2.5.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.

2.6 The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the requirements of the licence and this drinking water works permit as applicable to the prescribed system.

2.7 For greater certainty, any alteration to the drinking water system made in accordance with this drinking water works permit may only be carried out after other legal obligations have been complied with including those arising from the *Environmental Assessment Act*, *Niagara Escarpment Planning and Development Act*, *Oak Ridges Moraine Conservation Act, 2001* and *Greenbelt Act, 2005*.

3.0 Watermain Additions, Modifications, Replacements and Extensions

3.1 The drinking water system may be altered by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:

3.1.1 The design of the watermain addition, modification, replacement or extension:

a) Has been prepared by a Professional Engineer;

b) Has been designed only to transmit water and has not been designed to treat water;

c) Satisfies the design criteria set out in the Ministry of the Environment publication “Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – March 2009”, as amended from time to time; and

d) Is consistent with or otherwise addresses, the design objectives contained within the Ministry of the Environment publication “Design Guidelines for Drinking Water Systems, 2008”, as amended from time to time.

3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.

3.1.3 The watermain addition, modification, replacement or extension will not adversely affect the distribution system's ability to maintain a minimum pressure of 140 kPa at ground level at all points in the distribution system under maximum day demand plus fire flow conditions.

3.1.4 Secondary disinfection will be provided to water within the added, modified, replaced or extended watermain to meet the requirements of O. Reg. 170/03.

3.1.5 The watermain addition, modification, replacement or extension is wholly located within the municipal boundary over which the owner has jurisdiction.

3.1.6 The owner of the drinking water system consents to the watermain addition, modification, replacement or extension.

3.1.7 A Professional Engineer has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of condition 3.1.1.

3.1.8 The owner of the drinking water system has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of conditions 3.1.2 to 3.1.6.

3.2 The authorization for the addition, modification, replacement or extension of a watermain provided for in condition 3.1 does not include the addition, modification, replacement or extension of a watermain that:

3.2.1 Passes under or through a body of surface water, unless trenchless construction methods are used;

3.2.2 Has a nominal diameter greater than 900 mm;

3.2.3 Connects to another drinking water system; or

3.2.4 Results in the fragmentation of the drinking water system.

3.3 The verifications required in conditions 3.1.7 and 3.1.8 shall be:

3.3.1 Recorded on "Form 1 – Record of Watermains Authorized as a Future Alteration" as published by the Ministry of the Environment; and

3.3.2 Retained for a period of ten (10) years by the owner.

3.4 For greater certainty, the verification requirements set out in condition 3.3 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:

3.4.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or

3.4.2 Constitutes maintenance or repair of the drinking water system.

3.5 The document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension.

3.6 The updates required by condition 3.5 shall include watermain location relative to named streets or easements and watermain diameter.

4.0 Minor Modifications to the Drinking Water System

4.1 The drinking water system may be altered by modifying or replacing the following components:

4.1.1 Raw water, treatment process or treated water pumps;

4.1.2 Chemical metering or chemical handling pumps;

4.1.3 Valves;

4.1.4 Instrumentation and controls;

4.1.5 Cathodic corrosion protection; or

4.1.6 Spill containment works.

4.2 The drinking water system may be altered by replacing the following:

4.2.1 Raw water, treatment process or treated water piping within the treatment subsystem.

4.3 The modification or replacement of a drinking water system component set out in condition 4.1 or the replacement of a drinking water system component set out in condition 4.2 must not result in:

4.3.1 An exceedance of a treatment subsystem rated capacity or a treatment subsystem component maximum flow rate as specified in the licence;

4.3.2 The bypassing of any unit process within a treatment subsystem;

4.3.3 A deterioration in the quality of drinking water provided to consumers;

4.3.4 A reduction in the reliability or redundancy of any component of the drinking water system;

4.3.5 A negative impact on the ability to undertake compliance and other monitoring; or

4.3.6 An adverse effect on the environment.

4.4 The owner shall verify in writing that the modification or replacement of drinking water system components in accordance with conditions 4.1 and 4.2 has met the requirements of the conditions listed in condition 4.3.

4.5 The verifications required in condition 4.4 shall be:

4.5.1 Recorded on "Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System" as published by the Ministry of the Environment; and

4.5.2 Retained for a period of ten (10) years by the owner.

4.6 For greater certainty, the verification requirements set out in conditions 4.4 and 4.5 do not apply to any modification or replacement in respect of the drinking water system which:

4.6.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or

4.6.2 Constitutes maintenance or repair of the drinking water system.

4.7 The owner shall update any drawings maintained for the drinking water system to reflect the modification or replacement of the works, where applicable.

5.0 Equipment with Emissions to the Air

5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the atmosphere:

5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;

5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;

5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;

5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;

5.1.5 Maintenance welding stations;

5.1.6 Minor painting operations used for maintenance purposes;

5.1.7 Parts washers for maintenance shops;

5.1.8 Emergency chlorine and ammonia gas scrubbers;

5.1.9 Venting for activated carbon units for drinking water taste and odour control;

5.1.10 Venting for a stripping unit for methane removal from a groundwater supply;

5.1.11 Natural gas or propane fired boilers, water heaters, space heaters and make-up air units with a total facility-wide heat input rating of less than 20 million kilojoules per hour, and with an individual fuel energy input of less than or equal to 10.5 gigajoules per hour; and

5.1.12 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline or biofuel, and that are used for emergency duty only with periodic testing.

5.2 The owner shall not add, modify or replace a drinking water system component set out in condition 5.1 for an activity that is not directly related to the treatment and distribution of drinking water.

5.3 The emergency generators identified in condition 5.1.12 shall not be used for non-emergency purposes including the generation of electricity for sale or for peak shaving purposes.

5.4 The owner shall prepare an emission summary table for nitrogen oxide emissions only, for each addition, modification or replacement of emergency generators identified in condition 5.1.12.

Performance Limits

5.5 The owner shall ensure that a drinking water system component identified in conditions 5.1.1 to 5.1.12 is operated at all times to comply with the following limits:

5.5.1 For equipment other than emergency generators, the maximum concentration of any compound of concern at a point of impingement shall not exceed the corresponding point of impingement limit;

5.5.2 For emergency generators, the maximum concentration of nitrogen oxides at sensitive populations shall not exceed the applicable point of impingement limit, and at non-sensitive populations shall not exceed the Ministry of the Environment half-hourly screening level of 1880 ug/m^3 as amended;

5.5.3 The noise emissions comply at all times with the limits set out in publication NPC-205 and/or publication NPC-232, as applicable; and

5.5.4 The vibration emissions comply at all times with the limits set out in publication NPC-207.

5.6 The owner shall verify in writing that any addition, modification or replacement of works in accordance with condition 5.1 has met the requirements of the conditions listed in condition 5.5.

5.7 The owner shall document how compliance with the performance limits outlined in 5.5.3 and 5.5.4 is being achieved, through noise abatement equipment and/or operational procedures.

5.8 The verifications required in condition 5.6 shall be:

5.8.1 Recorded on “Form 3 – Record of Addition, Modification or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere” as published by the Ministry of the Environment.

5.8.2 Retained for a period of ten (10) years by the owner.

5.9 For greater certainty, the verification requirements set out in conditions 5.6 and 5.8 do not apply to any addition, modification or replacement in respect of the drinking water system which:

5.9.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or

5.9.2 Constitutes maintenance or repair of the drinking water system.

5.10 The owner shall update any drawings maintained for the works to reflect the addition, modification or replacement of the works, where applicable.

6.0 Previously Approved Works

6.1 The owner may add, modify, replace or extend, and operate part of a municipal drinking water system if:

6.1.1 An approval was issued after January 1, 2004 under section 36 of the SDWA in respect of the addition, modification replacement or extension and operation of that part of the municipal drinking water system;

6.1.2 The approval expired by virtue of subsection 36(4) of the SDWA; and

6.1.3 The addition, modification, replacement or extension commenced within five years of the date that activity was approved by the expired approval.

7.0 System-Specific Conditions

7.1 Not Applicable

APPENDIX IV
Permit to Take Water

Ministry of the Environment
Northern Region
Technical Support Section
Water Resources
331-435 James St S
Thunder Bay ON P7E 6S7
Fax: (807)475-1754
Tel: (807)475-1734

Ministère de l'Environnement
Direction régionale du Nord
Section du Soutien Technique
Ressource en eau
331-435 rue James S
Thunder Bay ON P7E 6S7
Télécopieur: (807)475-1754
Tél: (807)475-1734

Ontario

June 26, 2009

The Corporation of the Township of Nairn and Hyman
64 McIntyre St
Nairn and Hyman, Ontario, P0M 2L0

Dear Sir/Madam,

RE: Permit to Take Water 2003-7TDPEP
Reference Number 4381-7QMHY8

Please find attached Permit to Take Water (PTTW) 2003-7TDPEP, which replaces PTTW 5675-5VVRWE and grants the taking of water from the Spanish River, in the Township of Nairn and Hyman, District of Sudbury, for the purpose of municipal supply. The rate of taking shall not exceed a maximum of 570 litres per minute and 820,800 litres per day. The Permit is valid until June 26, 2019.

The Terms and Conditions are shown on pages 2-5 of the Permit.

This Permit does not relieve you, or The Corporation of the Township of Nairn and Hyman as the proponent, from compliance with provisions of any of the applicable Federal or Provincial statutes, regulations or other legal requirements.

The Water Taking Regulation, O.Reg. 387/04, requires that permit holders track the volume of water they take daily and report these volumes to the Ministry of the Environment (MOE) the following year. Please ensure that you have familiarized yourself with the monitoring and reporting requirements related to your permit. You can find additional information on the MOE web site at www.ene.gov.on.ca or by calling the nearest MOE office.

Should you have any questions or concerns, please contact this office as soon as possible.

Yours truly,

_____

Jacinth Gilliam-Price
PTTW Evaluator
Northern Region

File Storage Number: TS 31-02 PTTW 94-P-5012 NAIRN AND HYMAN, THE CORPORATION OF TEH TOWNSHIP OF (SPANISH RIVER)

c: Angela Dubois, Ontario Clean Water Agency

bc: Brian McMahon, MOE Sudbury Safe Drinking Water Branch

Ontario

Ministry of the Environment
Ministère de l'Environnement

PERMIT TO TAKE WATER
Surface Water
NUMBER 2003-7TDPEP

Pursuant to Section 34 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:

The Corporation of the Township of Nairn and Hyman
64 McIntyre St
Nairn and Hyman, Ontario, P0M 2L0
Canada

For the water taking from: Spanish River
Located at: Ferry Lane, Nairn Ctr
Nairn and Hyman, District of Sudbury

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

(a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34, OWRA.

(b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.

(c) "Ministry" means Ontario Ministry of the Environment.

(d) "District Office" means the Sudbury District Office.

(e) "Permit" means this Permit to Take Water No. 2003-7TDPEP including its Schedules, if any, issued in accordance with Section 34 of the OWRA.

(f) "Permit Holder" means The Corporation of the Township of Nairn and Hyman.

(g) "OWRA " means the *Ontario Water Resources Act,* R.S.O. 1990, c. O. 40, as amended.

You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. Compliance with Permit

1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated March 25, 2009 and signed by Angela Dubois, and all Schedules included in this Permit.

1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.

1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.

1.4 This Permit is not transferable to another person.

1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.

1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.

1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. General Conditions and Interpretation

2.1 Inspections

The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act* , R.S.O. 1990, the *Pesticides Act* , R.S.O. 1990, or the *Safe Drinking Water Act,* S. O. 2002.

2.2 Other Approvals

The issuance of, and compliance with this Permit, does not:

(a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act* , and the *Environmental Protection Act* , and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including

the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

2.2.1 Prior to the taking of any water under the authorization of this Permit, the Permit Holder shall ensure full compliance with the *Safe Drinking Water Act* , R.S.O. 2002 and its regulations. At no time does this permit authorize the taking of water when out of compliance with the *Safe Drinking Water Act* , R.S.O. 2002 and its regulations.

2.3 Information

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

2.4 Rights of Action

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

2.5 Severability

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

2.6 Conflicts

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

3. Water Takings Authorized by This Permit

3.1 **Expiry**

This Permit expires on **June 26, 2019**. No water shall be taken under authority of this Permit after the expiry date.

3.2 Amounts of Taking Permitted

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

Table A

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Spanish River	River	Municipal	Water Supply	570	24	820,800	365	17 455049 5131662
						Total Taking:	820,800		

4. Monitoring

4.1 The Permit Holder shall maintain a record of all water takings. This record shall include the dates and times of water takings, and the total measured amounts of water pumped per day for each day that water is taken under the authorization of this Permit. The Permit Holder shall keep all required records up to date and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request.

5. Impacts of the Water Taking

5.1 Notification

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Surface-Water Takings

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act* , Section 100 (4).

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.

2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.

3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

This notice must be served upon:

The Secretary
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto ON
M5G 1E5

AND

The Director, Section 34
Ministry of the Environment
331-435 James St S
Thunder Bay ON P7E 6S7
Fax: (807)475-1754

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by telephone at (416) 314-4600 ***by fax at (416) 314-4506*** ***by e-mail at www.ert.gov.on.ca***

This Permit cancels and replaces Permit Number 5675-5VVRWE, issued on 2004/02/10.

Dated at Thunder Bay this 26th day of June, 2009.

Patrick Morash
Director, Section 34
Ontario Water Resources Act , R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 2003-7TDPEP, dated June 26, 2009.

APPENDIX V
Audit Sample Results

APPENDIX
TABLE 3
NAIRN CENTRE DRINKING WATER SYSTEM
AUDIT SAMPLE RESULTS - 13-SEP-2011
SUMMARY OF MICROBIOLOGICAL PARAMETERS - HEALTH RELATED

Sample Legend:
Sample # 1 - NAIRN CENTRE DWS
Sample # 2 - TOWN OFFICE/HALL
Sample # 3 - TRUCK STOP GAS BAR

Parameter	Units	MC [1]	SAMPLE # 1	SAMPLE # 2	SAMPLE # 3
NT: ESCHERICHIA COLI	C/100ML	0	ABSENT	ABSENT	ABSENT
NT: TOTAL COLIFORMS	C/100ML	0	ABSENT	ABSENT	ABSENT

Notes:

- Escherichia coli is a more definitive indicator of fecal contamination than fecal coliforms or total coliforms.
- At elevated levels, the general bacterial population may interfere with the detection of coliforms. This general population can be estimated from either background colony counts on the total coliform membrane filters or heterotrophic plate counts (HPC).

Shortforms:

C/100mL - Count per 100 millilitre

C/mL - Count per millilitre

Footnotes:

1 Maximum Concentration as per O.Reg 169/03.

2 Aesthetic Objective.

APPENDIX
TABLE 4
NAIRN CENTRE DRINKING WATER SYSTEM
AUDIT SAMPLE RESULTS - 13-SEP-2011
SUMMARY OF CHEMICAL / PHYSICAL PARAMETERS - HEALTH RELATED

Sample Legend:
Sample # 1 - NAIRN CENTRE DWS
Sample # 2 - TRUCK STOP GAS BAR

Parameter	Units	MC [1]	SAMPLE # 1		SAMPLE # 2	
1,1-DICHLOROETHENE	UG/L	14	.05	<=W	.05	<=W
1,2-DICHLOROBENZENE	UG/L	200	.05	<=W	.05	<=W
1,2-DICHLOROETHANE	UG/L	5	.05	<=W	.05	<=W
1,4-DICHLOROBENZENE	UG/L	5	.05	<=W	.05	<=W
ANTIMONY	UG/L	6	.7	+/-0.18		
ARSENIC	UG/L	25	.2	+/-0.27		
BARIUM	UG/L	1000	5	+/-0.80		
BENZENE	UG/L	5	.05	<=W	.05	<=W
BORON	UG/L	5000	4.1	+/-0.90		
CADMIUM	UG/L	5	0	+/-0.13		
CARBON TETRACHLORIDE	UG/L	5	.2	<=W	.2	<=W
CHLOROBENZENE	UG/L	80	.05	<=W	.05	<=W
CHLOROETHENE	UG/L	2	.05	<=W	.05	<=W
CHROMIUM	UG/L	50	.1	+/-0.34		
DICHLOROMETHANE	UG/L	50	.2	<=W	.2	<=W
FLUORIDE	MG/L	1.5 b	.67			
LEAD	UG/L	10 c	0	+/-0.16	.3	+/-0.16
MERCURY	UG/L	1	.02	<=W		
NITROGEN; NITRATE+NITRITE	MG/L	10 d	.041	<T		
NITROGEN; NITRITE	MG/L	1 d	.001	<=W		
SELENIUM	UG/L	10	0	+/-0.50		
TETRACHLOROETHENE	UG/L	30	.05	<=W	.05	<=W
TRICHLOROETHENE	UG/L	5	.05	<=W	.05	<=W
TRIHALOMETHANES; TOTAL	UG/L	100 e	82		88	
URANIUM	UG/L	20	0	+/-0.18		

Shortforms:

<T - A measurable trace amount; interpret with caution
<W - No measurable response (zero) : < Reported value
<=W - No measurable response (zero) : < Reported value
< - Actual result is less than reported value
ND - Not detected
!NP - No appropriate procedure available
NA - Result not available
NS - Not sampled
NG/L - Nanograms per litre
UG/L - Micrograms per litre
MG/L - Milligrams per litre

Footnotes:

1 Maximum Concentration as per O.Reg 169/03.

2 Aesthetic Objective.

3 Operational Guideline.

4 Includes *alpha*-chlordane, *gamma*-Chlordane and Oxychlordane.

5 Includes *p,p'*-DDE, o,p'-DDT, *p,p'*-DDD and *p,p'*DDT.

a Total toxic equivalents when compared with 2,3,7,8,-TCDD (tetrachlorodibenzo-p-dioxin).

b Where fluoride is added to drinking water, it is recommended that the concentration be adjusted to 0.5 - 0.8 mg/L, the optimum level for control of tooth decay. Where supplies contain naturally occurring fluoride at levels higher than 1.5 mg/L but less than 2.4 mg/L the Ministry of Health and Long Term Care recommends an approach through local boards of health to raise public and professional awareness to control excessive exposure to fluoride from other sources.

c This standard applies to water at the point of consumption. Since lead is a component in some plumbing systems, first flush water may contain higher concentrations of lead than water that has been flushed for five minutes.

d Where both nitrate and nitrite are present, the total of the two should not exceed 10 mg/L (as nitrogen).

e The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the distribution system.

f An aesthetic objective of 5 NTU for Turbidity has been set for all waters at the point of consumption.

ADVERSE RESULTS OF A DRINKING-WATER TEST UNDER O.REG. 170/03

According to section 16-3 of O.Reg. 170/03,the following are prescribed as adverse results of a drinking-water test for the purpose of section 18 of the Safe Drinking Water Act 2002:

1. A result that exceeds any of the standards prescribed by Schedule 1, 2 or 3 to the Ontario Drinking-Water Quality Standards, other than the standard for fluoride, if the result is from a sample of drinking water.

2. A result indicating the presence of Aeromonas spp., Pseudomonas aeruginosa, Staphylococcus aureus, Clostridium spp. or fecal streptococci (Group D streptococci) in a sample of drinking water.

3. A result indicating the presence of a pesticide not listed in Schedule 2 to the Ontario Drinking-Water Quality Standards in a sample of drinking water, at any concentration.

4. If the drinking-water system is required to provide secondary disinfection in accordance with section 1-5 of Schedule 1 or section 2-5 of Schedule 2, the system provides chlorination, the system does not provide chloramination and a report under subsection 18(1) of the Act has not been made in respect of free chlorine residual in the preceding 24 hours, a result indicating that the concentration of free chlorine residual in the preceding 24 hours, a result indicating that the concentration of free chlorine residual is less than 0.05 milligrams per litre in,

i. a distribution sample that is a grab sample, or

ii. two distribution samples that are tested by continuous monitoring equipment, if the two samples were taken 15 minutes or more apart and the later of the two samples was the first sample that was taken 15 minutes or more after the earlier sample.

5. If the drinking -water system is required to provide secondary disinfection in accordance with section 1-5 of Schedule 1 or section 2-5 of Schedule 2, the system provides chloramination and a report under subsection 18(1) of the Act has not been made in respect of combined chlorine residual in the preceding 24 hours, a result indicating that the concentration of combined chlorine residual is less than 0.25 milligrams per litre and the concentration of free chlorine residual is less than 0.05 milligrams per litre in,

i. a distribution sample that is a grab sample, or

ii. two distribution samples that are tested by continuous monitoring equipment, if the two samples were taken 15 minutes or more apart and the later of the two samples was the first sample that was taken 15 minutes or more after the earlier sample.

6. If the drinking-water system is required to provide filtration and a report under subsection 18 (1) of the Act has not been made in respect of turbidity in the preceding 24 hours, a result indicating that turbidity exceeds 1.0 Nephelometric Turbidity Units (NTU) in,

i. a grab sample of water taken from a filter effluent line, or

ii. two samples of water from a filter effluent line that are tested by continuous monitoring equipment, if,

A. two samples were taken 15 minutes or more apart and the later of the two samples was the first sample that was taken 15 minutes or more after the earlier sample, and

B. the filter effluent line is directing water to the next stage of the treatment process.

7. If an approval or order, including an OWRA order, identifies a parameter as a health-related parameter and establishes a maximum concentration for the parameter, a result indicating that the parameter exceeds the maximum concentration in a sample of drinking water.

8. A result indicating that the concentration of sodium exceeds 20 milligrams per litre in a sample of drinking water, if a report under subsection 18 (1) of the Act has not been made in respect of sodium in the preceding 60 months.

9. A result indicating that the concentration of fluoride exceeds 1.5 milligrams per litre in a sample of drinking water, if,

i. the drinking-water system provides fluoridation and a report under subsection 18 (1) of the Act has not been made in respect of fluoride in the preceding 24 hours, or

ii. the drinking-water system does not provide fluoridation and a report under subsection 18 (1) of the Act has not been made in respect of fluoride in the preceding 60 months.

APPENDIX
TABLE 5
NAIRN CENTRE DRINKING WATER SYSTEM
AUDIT SAMPLE RESULTS - 13-SEP-2011
SUMMARY OF MICRO, CHEMICAL / PHYSICAL PARAMETERS - NOT HEALTH RELATED

Sample Legend:
Sample # 1 - NAIRN CENTRE DWS
Sample # 2 - TOWN OFFICE/HALL
Sample # 3 - TRUCK STOP GAS BAR

Parameter	Units	OBJECTIVE	TYPE OF OBJECTIVE	SAMPLE # 1	SAMPLE # 2	SAMPLE # 3
1,2-DICHLOROBENZENE	UG/L	3	AO	.05 <=W		.05 <=W
ALUMINUM	UG/L	100	OG	29.6 +/-4.90		
COPPER	UG/L	1000	AO	6 +/-0.70		
ETHYLBENZENE	UG/L	2.4	AO	.05 <=W		.05 <=W
IRON	UG/L	300	AO	10 +/-18.42		
M- AND P-XYLENE	UG/L	300	AO	.05 <=W		.05 <=W
MANGANESE	UG/L	50	AO	7.1 +/-0.70		
NT: DETERIORATION INDICATORS	C/100ML	0	AO	NOT DETECTED	NOT DETECTED	NOT DETECTED
O-XYLENE	UG/L	300	AO	.05 <=W		.05 <=W
TOLUENE	UG/L	24	AO	.05 <=W		.05 <=W
ZINC	UG/L	5000	AO	6.7 +/-0.80		

Shortforms:

<T - A measureable trace amount; interpret with caution
<W - No measurable response (zero). <Reported value
<=W - No measurable response (zero). <Reported value
< - Actual result is less than reported value
ND - Not detected
NA - Result not available
NS - Not sampled
DEG - Degree celsius
AO - Aesthetic Objective
OG - Operational Guideline
FTU = NTU - Nephelometric Turbidity Unit
TCU - True Colour Units
NG/L - Nanograms per litre
UG/L - Micrograms per litre
MG/L - Milligrams per litre

Footnotes:

a Organic Nitrogen = (Total Kjeldahl Nitrogen - (Ammonia + Ammonium))

b 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.

c When sulphate levels exceed 500 mg/L, water may have a laxative effect on some people.

d Applicable for all water at the point of consumption.

APPENDIX
TABLE 6
NAIRN CENTRE DRINKING WATER SYSTEM
AUDIT SAMPLE RESULTS - 13-SEP-2011
SUMMARY OF PARAMETERS WITH NO ODWQS

Sample Legend:

Sample # 1 - NAIRN CENTRE DWS

Sample # 2 - TRUCK STOP GAS BAR

Parameter	Units	SAMPLE # 1		SAMPLE # 2	
1,1,1-TRICHLOROETHANE	UG/L	.05	<=W	.05	<=W
1,1,2,2-TETRACHLOROETHANE	UG/L	.2	<=W	.2	<=W
1,1,2-TRICHLOROETHANE	UG/L	.1	<=W	.1	<=W
1,1-DICHLOROETHANE	UG/L	.05	<=W	.05	<=W
1,2-DIBROMOETHANE	UG/L	.1	<=W	.1	<=W
1,2-DICHLOROPROPANE	UG/L	.05	<=W	.05	<=W
1,3-DICHLOROBENZENE	UG/L	.05	<=W	.05	<=W
BERYLLIUM	UG/L	0	+/-0.25		
BROMODICHLOROMETHANE	UG/L	1.8	<T	2	
BROMOFORM	UG/L	.5	<=W	.5	<=W
CHLOROFORM	UG/L	80.1		85.8	
CIS-1,2-DICHLOROETHENE	UG/L	.05	<=W	.05	<=W
COBALT	UG/L	0	+/-0.18		
DIBROMOCHLOROMETHANE	UG/L	.2	<=W	.2	<=W
DICHLOROACETONITRILE	UG/L	3	<T	3.5	<T
DIISOPROPYLETHER	UG/L	.05	<=W	.05	<=W
MOLYBDENUM	UG/L	.1	+/-0.15		
NICKEL	UG/L	.8	+/-0.32		
NITROGEN; AMMONIA+AMMONIUM	MG/L	.014			
PHOSPHORUS; PHOSPHATE	MG/L	.0025			
SILVER	UG/L	0	+/-0.17		
STRONTIUM	UG/L	21.2	+/-2.10		
STYRENE	UG/L	.05	<=W	.05	<=W
TERT-BUTYL METHYL ETHER	UG/L	.05	<=W	.05	<=W
THALLIUM	UG/L	0	+/-0.11		
TITANIUM	UG/L	.5	+/-0.25		
TRANS-1,2-DICHLOROETHENE	UG/L	.05	<=W	.05	<=W
VANADIUM	UG/L	.6	+/-0.23		

Shortforms:

<T - A measurable trace amount; interpret with caution

<W - No measurable response (zero) : < Reported value

<=W - No measurable response (zero) : < Reported value

< - Actual result is less than reported value

ND - Not detected

!NP - No appropriate procedure available

NA - Result not available

NS - Not sampled

NG/L - Nanograms per litre

UG/L - Micrograms per litre

MG/L - Milligrams per litre

NO DATUM FOUND FOR THE FOLLOWING TABLE(S):
-TABLE 1 - SUMMARY OF PARAMETERS EXCEEDING ODWQS
-TABLE 2 - SUMMARY OF PARAMETERS EXCEEDING HALF OF THEIR HEALTH-RELATED ODWQS

APPENDIX VI
Inspection Rating Record

Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2011-2012)

DWS Name:	NAIRN CENTRE DRINKING WATER SYSTEM
DWS Number:	210002138
DWS Owner:	Nairn And Hyman, The Corporation Of The Township
Municipal Location:	Nairn And Hyman
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	September 13, 2011
Ministry Office:	Sudbury District

Maximum Question Rating: 567

Inspection Module	Non-Compliance Rating
Source	0 / 14
Capacity Assessment	0 / 30
Treatment Processes	0 / 77
Operations Manuals	0 / 28
Logbooks	0 / 14
Contingency/Emergency Planning	0 / 7
Certification and Training	0 / 28
Water Quality Monitoring	0 / 281
Reporting & Corrective Actions	0 / 88
TOTAL	**0 / 567**

Inspection Risk Rating	**0.00%**

FINAL INSPECTION RATING:	**100.00%**

Inspection Rating Record Generated On 11-OCT-11 (Inspection ID: 1-9G5DN).

Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2011-2012)

DWS Name:	NAIRN CENTRE DRINKING WATER SYSTEM
DWS Number:	210002138
DWS Owner:	Nairn And Hyman, The Corporation Of The Township
Municipal Location:	Nairn And Hyman
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	September 13, 2011
Ministry Office:	Sudbury District

Maximum Question Rating: 567

Inspection Risk Rating	**0.00%**

FINAL INSPECTION RATING:	**100.00%**

Inspection Rating Record Generated On 11-OCT-11 (Inspection ID: 1-9G5DN).

APPENDIX C

Annual Report:

2011 Operating Year

Drinking-Water Systems Regulation O. Reg. 170/03

Part III Form 2
Section 11. ANNUAL REPORT.

Drinking-Water System Number:	210002138
Drinking-Water System Name:	Nairn Centre Water Treatment Facility
Drinking-Water System Owner:	The Corporation of the Township of Nairn and Hyman
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2011 – December 31, 2011

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 [X]

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

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
P0M 2L0

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

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

Drinking Water System Name	Drinking Water System Number

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?
Yes [ ] No [ ]

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

[X] 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 _____

Describe your Drinking-Water System

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.

List all water treatment chemicals used over this reporting period

Aluminum Sulphate
Magnafloc LT 27 AG
Sodium Hypochlorite (12%)
Soda Ash (dense)
Hydroflurosilic Acid (HFS)

Were any significant expenses incurred to?

[X] Install required equipment
[X] Repair required equipment
[X] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

1.	**New fire alarm panel and testing**	**2299$**
2.	**Electrical Upgrades**	**707$**
3.	**Portable lab Analyzer**	**773$**
4.	**Repair Starter and replace 6 relays for HLP system**	**903$**

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	AWQI #
June 1 -2011	Total Coliform - Distribution	48	CFU/100 ml	Resample	June 1, 2011	101126
June 13 – 2011	Low pressure	22	psi	flush/sample	June 13, 2011	101341

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

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC /Background Samples	Range of HPC Results (min #)-(max #)
Raw	52	0-28	0-740	52	
Treated	52	0-0	0-0	52	0-16
Distribution	107	0-0	0-0	52	0-16

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 (min #)-(max #)
Turbidity (Filter)	8760	0.001-0.953 NTU
Chlorine(TW-Plant)	8760	0.4 – 2.0
Chlorine(Dist)	8760	0.136-2.1
Fluoride	8760	0.027 – 1.038

NOTE: For continuous monitors use 8760 as the number of samples.

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

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	Date Sampled	Result	Unit of Measure
Dec 20, 2010	Suspended Solids	Monthly	2011 Average 20.167	mg/l

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

Parameter	Sample Date (mm/dd/yyyy)	Result Value	Unit of Measure	Exceedance
Antimony	01/10/2011	0.03	ug/L	No
Arsenic	01/10/2011	0.3	ug/L	No
Barium	01/10/2011	5.86	ug/L	No
Boron	01/10/2011	4.9	ug/L	No

Cadmium	01/10/2011	<0.003	ug/L	No
Chromium	01/10/2011	<0.5	ug/L	No
***Lead(Dist)**	N/A			
Mercury	01/10/2011	<0.02	ug/L	No
Selenium	01/10/2011	<1.0	ug/L	No
Sodium	01/10/2011	17.7	mg/L	No
Uranium	01/10/2011	0.009	ug/L	No
Fluoride (Annual Avg)	Continuous	0.503	mg/L	No
Nitrite	01/10/2011	<0.005	mg/L	No
	04/11/2011	<0.005	mg/L	No
	07/11/2011	<0.005	mg/L	No
	10/11/2011	<0.005	mg/L	No
Nitrate	01/10/2011	0.084	mg/L	No
	04/11/2011	0.146	mg/L	No
	07/11/2011	0.036	mg/L	No
	10/11/2011	0.057	mg/L	No

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

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 Dec 15, 2010 – Apr 15, 2011)	**Number of Samples**	**Range of pH Results (min#) – (max #)**	**Range of Alkalinity Results mg/L as CaCO3 (min#) – (max#)**
Plumbing	N/A	N/A	N/A
Distribution	1	7.21	30

MAC for Lead: 10 ug/L

Location Type (June 15, 2011 – Oct 15, 2011)	**Number of Samples**	**Range of pH Results (min#) – (max #)**	**Range of Alkalinity Results mg/L as CaCO3 (min#) – (max#)**
Plumbing	N/A	N/A	N/A
Distribution	1	7.21	29

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

Parameter	**Sample Date (mm/dd/yyyy)**	**Result Value**	**Unit of Measure**	**Exceedance**
Alachlor	01/10/2011	<0.02	ug/L	No
Aldicarb	01/11/2010	<0.01	ug/L	No
Aldrin + Dieldrin	01/10/2011	<0.01	ug/L	No
Atrazine + N-dealkylated metobolites	01/10/2011	<0.01	ug/L	No
Azinphos-methyl	01/10/2011	<0.02	ug/L	No
Bendiocarb	01/10/2011	<0.01	ug/L	No
Benzene	01/10/2011	<0.32	ug/L	No
Benzo(a)pyrene	01/10/2011	<0.004	ug/L	No

Bromoxynil	01/10/2011	<0.33	ug/L	No
Carbaryl	01/10/2011	<0.01	ug/L	No
Carbofuran	01/10/2011	<0.01	ug/L	No
Carbon Tetrachloride	01/10/2011	<0.16	ug/L	No
Chlordane (Total)	01/10/2011	<0.01	ug/L	No
Chlorpyrifos	01/10/2011	<0.02	ug/L	No
Cyanazine	01/10/2011	<0.02	ug/L	No
Diazinon	01/10/2011	<0.02	ug/L	No
Dicamba	01/10/2011	<0.20	ug/L	No
1,2-Dichlorobenzene	01/10/2011	<0.41	ug/L	No
1,4-Dichlorobenzene	01/10/2011	<0.36	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	01/10/2011	<0.01	ug/L	No
1,2-Dichloroethane	01/10/2011	<0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	01/10/2011	<0.33	ug/L	No
Dichloromethane	01/10/2011	<0.35	ug/L	No
2-4 Dichlorophenol	01/10/2011	<0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/10/2011	<0.19	ug/L	No
Diclofop-methyl	01/10/2011	<0.40	ug/L	No
Dimethoate	01/10/2011	<0.03	ug/L	No
Dinoseb	01/10/2011	<0.36	ug/L	No
Diquat	01/10/2011	<1.0	ug/L	No
Diuron	01/10/2011	<0.03	ug/L	No
Glyphosate	01/10/2011	<6.0	ug/L	No
Heptachlor + Heptachlor Epoxide	01/10/2011	<0.01	ug/L	No
Lindane (Total)	01/10/2011	<0.01	ug/L	No
Malathion	01/10/2011	<0.02	ug/L	No
Methoxychlor	01/10/2011	<0.01	ug/L	No
Metolachlor	01/10/2011	<0.01	ug/L	No
Metribuzin	01/10/2011	<0.02	ug/L	No
Monochlorobenzene	01/10/2011	<0.30	ug/L	No
Paraquat	01/10/2011	<1.0	ug/L	No
Parathion	01/10/2011	<0.02	ug/L	No
Pentachlorophenol	01/10/2011	<0.15	ug/L	No
Phorate	01/10/2011	<0.01	ug/L	No
Picloram	01/10/2011	<0.25	ug/L	No
Polychlorinated Biphenyls(PCB)	01/10/2011	<0.04	ug/L	No
Prometryne	01/10/2011	<0.03	ug/L	No
Simazine	01/10/2011	<0.01	ug/L	No
Temephos	01/10/2011	<0.01	ug/L	No
Terbufos	01/10/2011	<0.01	ug/L	No
Tetrachloroethylene	01/10/2011	<0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	01/10/2011	<0.14	ug/L	No
Triallate	01/10/2011	<0.01	ug/L	No
Trichloroethylene	01/10/2011	<0.43	ug/L	No
2,4,6-Trichlorophenol	01/10/2011	0.35	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	01/10/2011	<0.22	ug/L	No
Trifluralin	01/10/2011	<0.02	ug/L	No
Vinyl Chloride	01/10/2011	<0.17	ug/L	No

THM Dist Sample Location Truck Stop Result marked with * not used in calculating the annual average. The regulation requires that the highest result from each quarter be used to calculate the average	1 st Quarter Result Value	2 nd Quarter Result Value	3 rd Quarter Result Value	4th Quarter Result Value	Unit of Measure	Exceedance
Date Sampled	**11 Jan 11**	**11 Apr 11**	**11 Jul 11**	**11 Oct 11**		
Bromodichloromethane	**2.2**	**2.5**	**2.2**	**2.3**	**ug/L**	**No**
Bromoform	**< 0.34**	**< 0.34**	**< 0.34**	**< 0.34**	**ug/L**	**No**
Chloriform	**22**	**82**	**132**	**91**	**ug/L**	**No**
Dibromochloromethane	**< 0.37**	**< 0.37**	**<0.37**	**< 0.37**	**ug/L**	**No**
Total Trihalomethanes	**24**	**85**	**134**	**94**	**ug/L**	**No**
Total Trihalomethanes 4 Quarter Average				**84.25**	**ug/L**	**No**

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
Sodium	17.7	Ug/L	Jan 10, 2011
Distribution THM	85	ug/L	Apr 11, 2011
Distribution THM	134	ug/L	Jul 11, 2011
Distribution THM	94	ug/L	Oct 11, 2011

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)