MINISTRY OF THE ENVIRONMENT
DRINKING-WATER INSPECTION REPORT
CHILDREN'S FIRST GROUP HOME
SMALL NON-MUNICIPAL NON-RESIDENTIAL SYSTEM
(DESIGNATED FACILITY)

CHILDREN'S FIRST WATER TREATMENT PLANT
TOWNSHIP OF SOUTH STORMONT

Inspected By: Don Munro
Inspection Completed On: August 5, 2004
Report Distributed On: September 30, 2004

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CHILDREN'S FIRST WATER TREATMENT SYSTEM

INSPECTION DETAILS	
Location:	4190 County Road No. 14
Water Works Number:	26002893
Date of Physical Inspection:	2004/08/05
Date of Previous Inspection:	N/A

CONTACT INFORMATION	
Owner 102 Baldwin Avenue Cornwall, Ontario K6H 4J2 Attention: David Ayton Owner Phone: (613) 933-4220 Fax: (613) 933-9895	**Operating Authority** Same information as Owner
Inspector: Donald Munro Cornwall District, Eastern Region (613) 933-7402	Distribution Date: September 30, 2004

Name and address of other contacts can be found in **Appendix C**

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APPENDICES

SECTION 1 INTRODUCTION

1.1 INSPECTION OBJECTIVES

The primary focus of this inspection is to confirm compliance with Ministry of the Environment legislation and control documents, as well as conformance with Ministry drinking water-related policies for the inspection period. Specifically, this includes a review and assessment of operating practices in relation to, but not limited to, the following documents:

- Drinking Water Systems Regulation (O. Reg. 170/03)
- Operator Certification Regulation (Water Works and Sewage Works - O. Reg. 128/04)
- Engineer's Report dated May, 2002
- Chemical Analyses dated 2002 and 2004.
- Microbiological sample results 2003/04.

The ministry has implemented a rigorous and comprehensive approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as water system management practices.

The MOE Inspector was accompanied during the inspection by Mr. David Ayton, Owner and the operating authority.

The drinking-water inspection included a physical inspection of the treatment plant and distribution facilities, and a document review for the period of 2003 and 2004 to the present. The period of [January 1, 2003 to August 5, 2004] is referred to as the "inspection period" in this report. No samples were obtained for analyses. Mr. Ayton, the plant operator was interviewed to determine his overall perception as to how the plant was equipped and is being operated. No previous inspections have been conducted at this location or orders issued

SECTION 2 EXISTING WATER SYSTEM DESCRIPTION

2.1 WATER SOURCE, TREATMENT PROCESSES, AND DISTRIBUTION SYSTEM

2.1.1 Water Source

☐ Surface Water ☐ Groundwater ☒ GUDI

One 9.14 m (30 ft) stone - cribbed dug well provides water to the group residence.

2.1.2 Treatment Processes

☐ Zebra Mussel Control

☐ Direct Filtration (Coagulation, Flocculation & Filtration)
☐ Full Conventional Surface Water Treatment (Coagulation, Flocculation, Sedimentation & Filtration)
☒ Cartridge Filter
☐ Actiflo Process
☐ Membrane Filtration
☐ Reverse Osmosis
☒ Softening
☐ Fluoridation
☐ pH adjustment
☐ Alkalinity Augmentation
☐ Greensand Filtration
☐ Aeration
☐ Iron and/or Manganese Sequestration
☒ Primary Disinfection using UV Light
☐ Primary Disinfection using Ozone
☐ Primary Disinfection using Chlorine-based Products
☐ Secondary Disinfection using Chlorine-based Products (Includes Chloramination)
☐ Re-chlorination within Distribution System
☐ No Treatment Provided
☐ Other (Specify):

The Children's First Group Home is located on the west side of County Road No. 14 approximately 3 kilometers North of the Community of Osnabruck Centre in South Stormont Township. Water for the group home is pumped via a shallow well one-half horse power Burke centrifugal pump from a dug well to a Well-Rite (Model WR6002) 180 litre (40 gallon) steel storage tank that is located in the basement of the residence where it is distributed to the internal plumbing system. Primary disinfection is provided by a Trojan (UV Max) UV lamp which is preceded by a Water Group water Softener unit and a small sediment (cartridge filter - 5u) filter unit.

The owner could not provide documentation with regards to the size or capacity of the raw water well pump. An Engineer's Report for the water system was done in May, 2002. The engineer calculated that the peak water demand for the home is 10.7 L/min or about 15,408 litres per day. No Permit To Take Water (PTTW) is required at this time.

List Treatment Process Chemicals Used:

– The only chemical in use is the potassium salt crystals used for softening purposes.

Is Process Wastewater Treated Prior to Discharge?

☐ Yes ☒ No ☐ Not Applicable

GPS coordinates for the water works can be found in **Appendix "A".**

SECTION 3 INSPECTION FINDINGS

3.1 OPERATIONS

3.1.1 Source/Supply

Are measures in place to protect the surface water source?

☐ Yes ☒ No ☐ Not Applicable

Has a GUDI assessment been performed?

☐ Yes ☐ No ☒ Not Applicable

- Water supply is considered a surface source according to O. Reg 170/03, Section 2.

Is there adequate separation distance as identified in *Ontario Regulation 903* separating each well from sources of pollution.

☒ Yes ☐ No ☐ Not Applicable

There are two dug wells present. One located in front of the house at the south west corner (the service well) and one near the garden area along the west side of the property.

Are measures in place to protect the groundwater source?

☐ Yes ☒ No ☐ Not Applicable

Both wells are covered with concrete tops with access provided through a steel cover bolted down. The concrete top is raised above the ground surface at least 20 cm (8 inches). No other observations were noted.

Is the owner maintaining well in a manner sufficient to prevent entry into the well of surface water and foreign materials?

☐ Yes ☒ No ☐ Not Applicable

The well may be susceptible to contamination by surface runoff and associated foreign materials. The dug well's access is raised above the ground surface by at least 20 cm which provides some protection against against surface water runoff from gaining direct access to the well reservoir.

Does a water conservation plan exist?

☐ Yes ☒ No

3.1.2 Treatment Processes

Does the drinking-water system provide the required minimum level of treatment at all times ?

☐ Yes ☒ No

The existing drinking water treatment system was approved under O. Reg 505/01. However there have been seven (7) adverse water quality incidents at this location since June, 2003. This implies that the existing water treatment may not be sufficient and that the treatment system should be re-evaluated with respect to the new Ontario Drinking Water Regulation 170/03, Schedule 2 , section 2-4 to confirm that current water treatment is adequate.

Does the drinking-water system provide adequate primary disinfection ?

☐ Yes ☒ No ☐ Not Applicable

A Trojan UV disinfection system is installed however, the source of water is a dug well and should therefore be considered a surface water supply according to section 2 (2) of O. Reg 170/03 necessitating the provision of chemically assisted filtration (or equivalent). The current system conceived under O. Reg 505/01, may not meet the new requirements outlined in Schedule 2, section 2-4 of O. Reg 170/03.

Has the owner ensured that all equipment is installed in accordance with O. Reg. 170/03 and the Engineering Evaluation Report?

☐ Yes ☒ No ☐ Not Applicable

See above items.

Does the owner have up-to-date plans for the drinking water treatment system ?

☐ Yes ☒ No

Are filters monitored and/or inspected?

☐ Yes ☒ No ☐ Not Applicable

Do the facility and equipment appear to be maintained and in a fit state of repair ?

☐ Yes ☒ No

Has the owner established any water quality goals over and above O. Reg. 169/03?

☐ Yes ☒ No

Is it possible for raw water or partially treated water to bypass key treatment units?

☐ Yes ☒ No

Does the owner have evidence indicating that all chemicals used in the treatment process and all materials contacting the water have met the AWWA and ANSI standards?

☐ Yes ☐ No ☒ Not Applicable

Is adequate spill containment provided for process chemicals?

☒ Yes ☐ No ☐ Not Applicable

Do the placement of floor drains pose a threat to the contamination of source water, treated water, or the natural environment?

☐ Yes ☐ No ☒ Not Applicable

Is the operator aware of the required CT value and is the CT value used in process calculations and process control?

☐ Yes ☐ No ☒ Not Applicable

Has the owner initiated measures to address potential cross-connections at the treatment plant?

☐ Yes ☐ No ☒ Not Applicable

Are there any issues or concerns with respect to the storage, preparation, handling or application of pesticides on the premises ?

☐ Yes ☒ No

No pesticides are reported to be used at the facility.

3.1.3 Process Wastewater

Does the facility generate process wastewater ?

☒ Yes ☐ No

Water Softener Backwash discharge.

3.2 WATER SYSTEM MANAGEMENT PRACTICES

3.2.1 Operational Manuals

Is an Operations Manual available (does it exist) ?

☐ Yes ☒ No

No operations manual exists for the full treatment system. Operations manuals exist for individual treatment components only (ie the softener). Engineering Evaluation Reports prepared under O. Reg 170/03 now include the provision of maintenance instructions for the water supply system.

3.2.2 Logbooks

Where required, do logbooks confirm that only certified Operators or Trained Persons (whichever is applicable) make adjustments to treatment equipment ?

☒ Yes ☐ No

A log book is maintained for the facility and the owner currently holds a small system operator's licence issued by OETC which is displayed at the residence.

Do logbooks confirm that only certified Operators, Trained Persons or Water Quality Analysts (whichever are appropriate) are performing operational testing not performed by continuous monitoring equipment?

☒ Yes ☐ No

For every required operational test and for every required sample, is a record made of the date, time, location and certified Operators or Water Quality Analyst who performed the test and the result of the analysis?

☒ Yes ☐ No

If required, do logbooks identify who is serving as Operator-In-Charge?

☒ Yes ☐ No

David Ayton's signature is shown after each recorded event.

Are necessary logbook entries made and are they made in chronological order?

☒ Yes ☐ No

If required, are entries into the logbook made only by the Operator-In-Charge or by personnel authorized to make an entry by the owner or an Operator-In-Charge?

☒ Yes ☐ No

It is evident that log book entries are only completed by David Ayton as his signature is shown on the entries.

If required, does the system allow the reader to unambiguously identify the person making the entry, the date, the time period and /or the number or designation of the shift and the names of all operators on duty during the shift ?

☒ Yes ☐ No

See the above note.

Are departures from normal operating procedures documented along with the time they occurred?

☒ Yes ☐ No ☐ Not Applicable

Are unusual or abnormal conditions observed at the facility recorded along with action taken?

☒ Yes ☐ No ☐ Not Applicable

Are logbooks accessible in the facility for at least two years prior to the date of the most recent entry?

☒ Yes ☐ No ☐ Not Applicable

3.2.3 Security

Has the owner provided adequate security measures to protect wells, intakes, treatment facilities, and components of the distribution system?

☒ Yes ☐ No

The treatment equipment is housed in the basement and the dug well is covered with a steel cover and bolted down.

If security measures (e.g. locked gates, 6 foot security fencing, intruder alarms, warning signs etc.) are not in place, is the facility visited by system personnel at least daily?

☒ Yes ☐ No

Group home staff are present there 24 hours a day.

3.2.4 Communication with Consumers

Are required documents made available free-of-charge, during normal business hours, and at a location accessible to the public? (Itemize anything that is missing).

x Yes ☐ No

Does the owner take effective steps to advise consumers of the availability of reports?

☒ Yes ☐ No

3.2.5 Operators/Trained Persons

Do all operators / trained persons working at the treatment facility possess the required certification?

☒ Yes ☐ No

The owner, David Ayton currently holds a small system operator's licence issued by OETC which is displayed at the residence

Where required, are treatment plant system classification certificates and operator certificates displayed in a prominent location?

☒ Yes ☐ No

See above item.

Have all operators / trained persons received all required training?

☒ Yes ☐ No

Do records of operator / trained person training identify the names and positions of operators who attended the training sessions, the dates of training sessions, the duration of each of the training session and the subjects considered at each training session ?

☒ Yes ☐ No

Are operators regularly trained with respect to the contents of the Operations Manual?

☐ Yes ☒ No ☐ Not Applicable

There is no formal operations manual for this water system. The UV and water softener manufacturers have provided an operating manual for each of their units.

SECTION 4 WATER QUALITY

4.1 WATER QUALITY MONITORING & ASSESSMENT

Are continuous water quality analyzers and indicators with alarm systems calibrated in accordance with manufacturers instructions or the regulation?

☐ Yes ☐ No ☒ Not Applicable

Are continuous water quality analyzers and indicators with alarm systems installed at the prescribed locations, maintained and operated in accordance with the Regulation?

☐ Yes ☐ No ☒ Not Applicable

Are all water quality monitoring requirements under the *Safe Drinking Water Act* and applicable regulations complied with? Itemize as many as apply.

☐ Yes ☒ No

- Turbidity

The existing water supply is a dug well and considered a GUDI water supply under O. Reg 170/03 which requires chemically assisted filtration and as consequence, turbidity sampling. This has not been undertaken to date as the water supply was originally approved under O. Reg 505/01 which did not require turbidity sampling. A review of this treatment system by a qualified professional to determine if the current treatment system is in compliance with O. Reg 170/03 is necessary.

Are all ancillary monitoring requirements under Certificates of Approval, Orders, or Directions being complied with?

☐ Yes ☐ No ☒ Not Applicable

Are all testing for parameters required by legislation, C of A or Order conducted by laboratories that are accredited for that parameter ?

x Yes ☐ No

Currently, Lakefield Laboratories in Lakefield near Peterborough, Ontario are performing the analyses but the owner is contemplating changing to Caduceon Laboratories in Ottawa, Ontario

Has the drinking water system owner submitted written notices to the Director (LSB) of the identities of laboratories that conduct testing for parameters required by legislation, CofA or Order ?

x Yes ☐ No

Are samples being taken and handled as per instructions provided by the drinking water system's laboratories ?

x Yes ☐ No

Has any form of relief from water quality monitoring requirements been granted ? Itemize as many as apply. *(Does not include reduced sampling and analysis frequencies)*

☐ Yes x No ☐ Not Applicable

Are raw water monitoring requirements being complied with?

☒ Yes ☐ No ☐ Not applicable

Can samples of raw water be collected prior to treatment from an acceptable tap with a smooth nozzle?

☒ Yes ☐ No ☐ Not Applicable

Are continuous disinfectant residual analyzers equipped with alarms to ensure continuous disinfection?

☐ Yes ☐ No x Not Applicable

Is monitoring equipment capable of measuring turbidity with the required accuracy?

☐ Yes ☐ No x Not Applicable

For Drinking Water Systems sources practicing chemically assisted filtration, is continuous monitoring of each filter effluent line being performed for turbidity?

☐ Yes ☐ No ☒ Not Applicable

Is turbidity testing done using a meter that measures turbidity in Nephelometric Turbidity Units (NTUs)?

☐ Yes ☒ No ☐ Not Applicable

Are samples for lead analysis are being collected from a point in the distribution system, or connected plumbing that is likely to have an elevated concentration of lead?

☐ Yes ☒ No

Is the owner conducting any additional i.e. non-required sampling, such as for Giardia or Cryptosporidium? Select as many as apply.

☐ Yes x No

If the answer to the preceding question (pertaining to additional i.e. non-required sampling) is "YES", is this information (frequency, dates of sampling, results) being included in reports required by O. Reg. 170/03?

☐ Yes ☐ No ☒ Not Applicable

If analysis of a water sample for a parameter is required by an approval, order or direction and the parameter is health-related, has the owner informed the lab regarding the MAC or IMAC detailed in the approval, order or direction for the parameter?

☒ Yes ☐ No ☐ Not Applicable

Are records of laboratory analyses retained for the period of time prescribed by O. Reg. 170/03, (5 years for microbiological parameters, 15 years for chemical parameters?)

☒ Yes ☐ No

Are operators consistently examining continuous monitoring test results within 72 hours ?

☐ Yes ☐ No ☒ Not Applicable

Did the Inspector collect audit samples ?

☐ Yes x No

4.2 NOTIFICATION, CORRECTIVE ACTION AND REPORTING

Did the drinking water system have any adverse water quality incidents since the last inspection (or within the last two calendar years, whichever is less)?

☒ Yes ☐ No

SUMMARY OF WATER QUALITY EXCEEDENCES

DATE	EXCEEDENCE	DETAILS
June 12, 2003	HPC > 500	Distribution System
July 4, 2003	HPC > 500	Distribution System
October 1, 2003	TC = 1	Distribution System
July 15, 2004	BG > 200	Distribution System
July 23, 2004	HPC > 500	Distribution System
August 5, 2004	EC = 1, TC = 1, BG > 200	Distribution System
August 19, 2004	BG > 200	Distribution System

Were all required notifications of adverse water quality incidents provided to the Spills Action Centre and the Medical Officer of Health ? Specify any that apply.

☒ Yes ☐ No

Were there any required corrective actions that were not taken ? Itemize as many as apply.

☐ Yes ☒ No

In instances where written notice of issue resolution was required by O. Reg. 170/03, was that notice provided within 7 days, summarizing the action taken and results achieved?

☐ Yes ☒ No ☐ Not Applicable

No, there are some omissions.

Were warning notices issued in instances where they were required?

☒ Yes ☐ No ☐ Not Applicable

Signs were posted where required.

In instances where alarms for continuous monitoring equipment sounded, were appropriate actions taken in a timely manner by a qualified person ?

☐ Yes ☐ No ☒ Not Applicable

If no one is at the location where / when the alarm sounds, was a qualified person is promptly dispatched?

☐ Yes ☐ No ☒ Not Applicable

Was the most recent Engineering Evaluation Report prepared and submitted within required time frames?

☒ Yes ☐ No

Have Annual Reports been completed and made available to the public on time, and do they include the required information ?

☐ Yes ☒ No

The annual report document is currently under preparation.

Did the drinking water system owner reduce the frequency of chemical sampling and analysis as a result of the system's not having been in operation for a period of 60 or more consecutive days?

☐ Yes ☒ No

Did the drinking water system owner reduce the frequency of microbiological sampling and analysis as a result of the system's not having been in operation for a period of 7 or more consecutive days ?

☐ Yes ☒ No ☐ Not Applicable

Did the drinking water system owner reduce the frequency of microbiological sampling and analysis as a result of the system's having had 24 consecutive months with not greater than one confirmed adverse test result for *E.coli,* fecal coliforms or total coliforms ?

☐ Yes ☐ No x Not Applicable

SECTION 5 ASSESSMENT OF PREVIOUS INSPECTION ISSUES

5.1 NON COMPLIANCE WITH REGULATORY REQUIREMENTS

The Children's First Group Home was not inspected previously.

5.2 BEST MANAGEMENT PRACTICES RECOMMENDATIONS

The Children's First Group Home was not inspected previously.

SECTION 6 SUMMARY OF NON COMPLIANCE ISSUES & ACTIONS REQUIRED

1. The water system is supplied with water from a dug well which is deemed to be a surface water source under Section 2 of O. Reg 170/03 and must therefore be designed with water treatment equipment which is capable of chemically assisted filtration and primary disinfection in accordance with the Ministry's "*Procedure for Drinking Water Disinfection in Ontario*" as outlined in Schedule 2, section 2-4 of O. Reg 170/03.	
Order Number: 8720-64CJ5C	Compliance Date: November 30, 2004

2. The annual report was not submitted as per Section 11 of O. Reg. 170/03.	
Order Number: 8720-64CJ5C	Compliance Date: November 30, 2004

3. Microbiological sampling was not being performed as per Schedule 12 of O. Reg 170/03.	
Order Number: 8720-64CJ5C	Compliance Date: November 30, 2004

4. Chemical sampling and testing was not being performed as per Schedule 15 of O. Reg. 170/03.	
Order Number: 8720-64CJ5C	Compliance Date: November 30, 2004

5. There is no Operations Manual for this facility.	
Order Number: 8720-64CJ5C	Compliance Date: November 30, 2004

6. Turbidity is not being measured on a continuous basis and this is required as provided for in Schedule 8, section 8-4 (2) (b) of O. Reg 170/03.	
Order Number: 8720-64CJ5C	Compliance Date: November 30, 2004

If a Provincial Officers Order has been issued, a copy of the Order, along with a Provincial Officer's Report, can be found in **Appendix G**.

SECTION 7 SUMMARY OF BEST PRACTICE RECOMMENDATIONS

Legislated requirements have been identified in the previous section. In the interest of continuous improvement, we provide the following suggestions:

1. Security measures associated with the well head should be reviewed and augmented through locked hatches or other similar arrangements.

2. Once the engineering evaluation is complete, the owners should ensure that all non-compliance issues will be met in a timely and reasonable manner

3. Once the owner has installed the necessary treatment equipment by the required deadline, he will need the services of a trained person will be required to make the necessary process changes at the water system as outlined in Schedule 6, section 3 of O. Reg 170/03.

By no later than Tuesday, November 30, 2004, the owner of the Drinking Eater System shall provide the undersigned Provincial Office with an Action plan that specifies how the owner intends to address each of the four (4) cited issues in Section 6 in a manner that ensures that they will be resolved and not repeated. The Action Plan is to be provided complete with implementation dates.

SIGNATURES

Inspected By: Donald Munro	Signature: (Inspector):
Reviewed & Approved By: James Mahoney	Signature (Supervisor):
Review & Approval Date: (yyyy/mm/dd) Insert date 2004/09/30	

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.

cc: Local Health Unit
Conservation Authority/Ministry of Natural Resources
District Office File

APPENDIX "A"

GPS COORDINATES

GPS REFERENCING	
ITEM	GLOBAL POSITIONING SYSTEM (GPS) COORDINATES
MAP DATUM:	G/18
UTM ZONE:	NAD 83
WELL:	**18T 0497181 4990826**
TREATMENT PLANT:	
STORAGE TANK:	n/a

APPENDIX "B"

OPERATOR AND FACILITY CERTIFICATION DETAILS

PLANT CLASSIFICATION

Plant Name: **CHILDREN'S FIRST WATER TREATMENT PLANT**

Facility Level: Small Water Treatment System

Certificate Number:

Date of Issue:

PLANT PERSONNEL

OPERATOR 1

Operator Name: David Ayton **Title:** Owner

Certificate Number: **SCC17298** **Issue Date:** **Nov. 5, 2002**

Certification Level: Operator Small Water System

APPENDIX "C"

CONTACT INFORMATION

Local Health Unit

1000 Pitt Street,
Cornwall, Ontario

Attention: Irene Marchand

Medical Officer of Health:
Dr. R. Bourdeau MD

Phone: (613) 933-1375
Fax: (613) 933-7930

Conservation Authority or Ministry of Natural Resources

15 Union Street,
Berwick, Ontario
K0C 1G0

Attention: R. Pilon
Engineer

Phone: (613) 984 - 2948
Fax: (613) 984- 2872

MOE Environmental Assessment and Approvals Branch

Ministry of the Environment
2 St. Clair Avenue West
Floor 12A
Toronto ON M4V 1L5

Attention: Mirek Tybinkowski
Water and Wastewater Specialist

Phone: (416) 314-8202
Fax: (416) 314-6935

Consultants or Other Key Contacts

1345 Rosemount Avenue
Cornwall, Ontario
K6J 3E5

Attention: Marco Vincelli, P. Eng
Project Manager

Phone: (613) 933-5602
Fax: (613) 936-0335

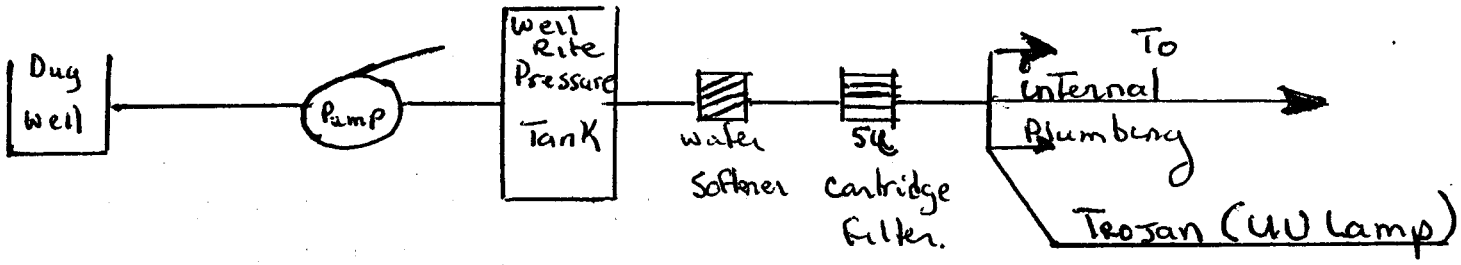
APPENDIX "D"

PLANT SCHEMATIC

(SEE ATTACHED)

Process Schematic

Children's First Water Treatment System



NTS

APPENDIX "E"

PROVINCIAL OFFICER'S REPORT AND ORDER

(SEE ATTACHED)

Ministry of the Environment
Ministère de l'Environnement
Ontario

Provincial Officer's Report

Order Number
8720-64CJ5C

D R A F T

1436216 Ontario Inc.
P.O. Box 647
Ingleside, Ontario, K0C 1M0
Canada

Site
Concession 4190, County Road 14
South Stormont, United Counties of Stormont, Dundas and Glengarry

Observations

On 2004/08/20, I visited the above site(s) and made the following observations:

1. The water system is supplied with water from a dug well which is deemed to be a surface water source under Section 2 of O. Reg 170/03 and must therefore be designed with water treatment equipment which is capable of chemically assisted filtration and primary disinfection in accordance with the Ministry' s "*Procedure for Drinking Water Disinfection in Ontario*" as outlined in Schedule 2, section 2-4 of O.Reg 170/03.

2. It was also observed that the annual report was not submitted as per Section 11 of O. Reg 170/03.

3. It was also noted that there is currently no operations manual for this water works facility. However, the UV manufacturer and water softener manufacturer have provided operating manuals for each unit.

4. Turbidity is not being measured on a continuous basis and this is required as provided for in Schedule 8, section 8-4 (2) (b) of O. Reg 170/03.

5. Chemical sampling and testing was not being performed as per Schedule 15, of O. Reg 170/03.

6. Microbiological sampling was not being performed as per Schedule 12 of O. Reg 170/03.

7. By no later than November 30th, 2004 ensure that all of the above items are appropriately

addressed and an Action Plan complete with scheduled dates is provided to the undersigned.

Offence(s)

Suspected Violation(s)/Offence(s):	
Act - Regulation - Section, Description {General Offence}	

Provincial Officer
Badge Number: Not Determined
Date:
District Office:

Ministry of the Environment
Ministère de l'Environnement
Ontario

D R A F T

Provincial Officer's Order

Environmental Protection Act, R.S.O. 1990, c.E 19 (EPA)
Ontario Water Resources Act, R.S.O. 1990, c. O. 40 (OWRA)
Pesticides Act, R.S.O. 1990, c. P11 (PA)
Safe Drinking Water Act, S.O. 2002, c.32 (SDWA)
Nutrient Management Act, 2002, S.O. 2002, c.4

Order Number
8720-64CJ5C

To: 1436216 Ontario Inc.
P.O. Box 647
Ingleside, Ontario, K0C 1M0
Canada

Site: Concession 4190, County Road 14
South Stormont, United Counties of Stormont, Dundas and Glengarry

Work Ordered

1. By no later than November 30, 2004 ensure that an evaluation of the existing water system is conducted by a qualified professional to ensure that the existing water treatment equipment is complies with Schedule 2 of O. Reg 170/03 or construct a new water supply source (groundwater). Finally an action plan should also be supplied with the appropriate installation dates to provide compliance with O. Reg 170/03.

2. Once all of the above evaluation work is completed and the necessary treatment equipment installed, a formal operations manual should be completed for this water system. It should contain the following elements:

- plans, drawings and process description
- a process to ensure that all equpment used in the processes is monitored, inspected and evaluated regularly.
-identification, notification and corective actions for reporting adverse conditions and re-sampling.
- guidance as to how often any filters should be backwashed, the softener should be backwashed and where the softener discharge should be directed.

3. Immediately ensure that the annual report be submitted as per Section 11 of Ontario Regulation 170/03.

4. Immediately ensure that all microbiological sampling is being conducted as provided for in Schedule 12 of Ontario Regulation 170/03.

5. Immediately ensure that all chemical sampling and testing is being conducted as provided for in Schedule 15 of Ontario Regulation 170/03.

6. As the existing water supply source is deemed a surface water source, by virtue of Schedule 2 of Ontario Regulation 170/03, chemically assisted filtration and primary disinfection in accordance with the Ministry's "Procedure for Drinking Water Disinfection in Ontario" is required for this water system. In addition, turbidity values are not being measured on a continuous basis as required for such water systems per Schedule 8, section 8-4 (2) (b) of Ontario Regulation 170/03. Consequently, the owner is directed to perform these measurements, once this filtration equipment is in place or consider constructing another water supply source.

A.
While this Order is in effect, a copy or copies of this order shall be posted in a conspicuous place.

B.
While this Order is in effect, report in writing , to the District or Area office, any significant changes of operation, emission, ownership, tenancy or other legal status of the facility or operation.

This Order is being issued for the reasons set out in the annexed Provincial Officers Report which forms part of this Order.

Issued at this day of , .

Badge No:

Tel:

APPEAL/REVIEW INFORMATION

REQUEST FOR REVIEW

You may request that this order be reviewed by the Director. Your request must be made in writing (or orally with written confirmation) within seven days of service of this order and sent by mail or fax to the Director at the address below. In the written request or written confirmation you must,

- specify the portions of this order that you wish to be reviewed;
- include any submissions to be considered by the Director with respect to issuance of the order to you or any other person and with respect to the contents of the order;
- apply for a stay of this order, if necessary; and provide an address for service by one of the following means:
  1. mail 2. fax

The Director may confirm, alter or revoke this order. If this order is revoked by the Director, you will be notified in writing. If this order is confirmed or amended by order of the Director, the Director's order will be served upon you. The Director's order will include instructions for requiring a hearing before the Environmental Review Tribunal.

DEEMED CONFIRMATION OF THIS ORDER

If you do not receive oral or written notice of the Director's decision within seven days of receipt of your request, this order is deemed to be confirmed by order of the Director and deemed to be served upon you.

You may require a hearing before the Environmental Review Tribunal if, within 15 days of service of the confirming order deemed to have been made by the Director, you serve written notice of your appeal on the Environmental Review Tribunal and the Director. Your notice must state the portions of the order for which a hearing is required and the grounds on which you intend to rely at the hearing. Except by leave of the Environmental Review Tribunal , you are not entitled to appeal a portion of the order or to rely on grounds of appeal that are not stated in the notice requiring the hearing. Unless stayed by the Environmental Review Tribunal , the order is effective from the date of service.

Written notice requiring a hearing must be served personally or by mail upon:

The Secretary
Environmental Review Tribunal
P.O. Box 2382
2300 Yonge Street, Suite 1201
Toronto, ON M4P 1E4

and

Director (Provincial Officer Orders)
Ministry of the Environment
Kingston District Office
133 Dalton Ave
Kingston ON K7L 4X6
Fax: (613)548-6908
Tel: (613)549-4000

Where service is made by mail, it is deemed to be made on the fifth day after the date of mailing and the time for requiring a hearing is not extended by choosing service by mail.

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

Tel: (416) 314-4600 Fax: (416) 314-4506 www.ert.gov.on.ca

FOR YOUR INFORMATION

- Unless stayed by the Director or the Environmental Review Tribunal , this order is effective from the date of service. Non-compliance with the requirements of this order constitutes an offence.
- The requirements of this order are minimum requirements only and do not relieve you from complying with the following:
  - any applicable federal legislation;
  - any applicable provincial requirements that are not addressed in the order; and
  - any applicable municipal law.
- The requirements of this order are severable. If any requirement of this order or the application of any requirement to any circumstance is held invalid, the application of such requirement to other circumstances and the remainder of the order are not affected.
- Further orders may be issued in accordance with the legislation as circumstances require.
- The procedures to request a review by the Director and other information provided above are intended as a guide. The legislation should be consulted for additional details and accurate reference.

APPENDIX "F"

ENGINEER'S REPORT

(SEE ATTACHED)

The Thompson Rosemount Group Inc.
1345 Rosemount Avenue
Cornwall, ON, Canada K6J 3E5
Telephone: 613-933-5602
Fax: 613-936-0335
Internet: mail@trg.ca Website: www.trg.ca

May 21, 2002

Environmental Assessment and Approvals Branch
Ministry of the Environment
2 St. Claire Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

VIA COURIER

Attn: Director

Re: Drinking Water Protection Regulation 505/01 Engineers' Report for Water Works
Children First Group Home

Dear Sir:

Please find enclosed a copy of the Engineers' Report for Water Works for:

Children First Group Home

If you require any additional information or have any questions, please feel welcome to call the undersigned.

Sincerely,

The Thompson Rosemount Group Inc.

Marco V. Vincelli, P. Eng.
Project Manager

cc. Mr. David Ayton, Director, Children First Group Home
Mr. Rand Hougnton, Ministry of Community and Social Services
Ms. Kathy Neff, Program Supervisor, Ministry of Community and Social Services

attach.

X:\2002\025071\SUBMITTAL LETTER.DOC

Children First Group Home

Ingleside, Ontario

Engineers' Report for Water Systems - Designated Facilities

Prepared for:

1436216 Ontario Inc.

May 2002

Prepared by:

The Thompson Rosemount Group Inc.

Consulting Engineers

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Table of Contents

Appendices

1.0 INTRODUCTION

This document is an Engineer's Report (Report), prepared by The Thompson Rosemount Group Inc. (TRG) on behalf of the 1436216 Ontario Inc. (Corporation). The Report format and content are based on the Ontario Ministry of the Environment (MOE) "Drinking Water Protection – Designated Facilities, Regulation 505/01" (Regulation), December 2001.

1.1 The Owner

1436216 Ontario Inc. (Corporation) is the owner of the Children First Group Home. The Corporation operates a group home (Children First Group Home) for troubled children of school age. The contact information for the owner of the facility is as follows:

1436216 Ontario Inc.
P.O. Box 647
Ingleside, Ontario K0C 1M0

Attention: Mr. David Ayton, Director

Telephone: (613) 984-0993 Facsimile: (613) 534-2029

1.2 The Facility

The Children First Group Home (Home) is a seven bed facility. The Home is located at:

Concession #4190, County Road 14, Ingleside, Ontario K0C 1M0

Attention: Mr. David Ayton, Director

Telephone: (613) 984-0993 Facsimile: (613) 534-2029

1.3 Limitations

This Report is limited to the scope and content identified in the Regulation. This Report does not address other structural, safety, operational, or design issues unless specifically referenced.

1.4 Consultant

This report has been prepared by TRG. The technical contact for this report is:

The Thompson Rosemount Group Inc.
1345 Rosemount Avenue
Cornwall, Ontario
K6J 3E5

Attention: Marco Vincelli, P.Eng.

Telephone: (613) 933-5603 ext. 287 Facsimile: (613) 936-0335
e-mail mvincelli@trg.ca

2.0 DESCRIPTION OF THE WATER SYSTEM

The Children First Group Home's (Home) water supply is provided from groundwater using a dug well located on the south side of its property on Concession 6, Lot 18, former Township of Osnabruck. Historically, the well has had problems with microbiological contamination. To address this, an ultraviolet disinfection unit was installed in April 2001. The water supply system at the Home includes a high lift pump, softener, cartridge filter, ultraviolet disinfection, and pressure tank.

2.1 Water Treatment System

A high lift pump (make: Divio, model: NA) conveys water from the dug well to the basement of the Home. A Well Rite (model WR6002) pressure tank is connected to the plumbing of the discharge side of the pump.

A 5μ cartridge filter is used to remove sediment from the water prior to softening.

An Econoflo Water Softener (Model EFT30MI: capacity 10 US gpm) is used to remove the hardness from the water prior to ultraviolet irradiation.

2.2 Disinfection System

Disinfection is provided by a Trojan (Model: UV Max) UV lamp (capacity 57 L/min). The ballast features an audible/visual annual lamp change reminder.

The lamps uses 254 nm UV light to sterilize the water. The manufacturer of the Trojan Technologies provided documentation which indicated that the lamp provides 4 log reduction of bacteria, viruses, and protozoan cysts (Giardia Lamblia and Cryptosporidium) at the rated flow.

2.2.1 Ability to Comply with Minimum Level of Treatment

As indicated, the manufacturer, of the UV Max (Model C) Water Sterilizer has provided documentation indicating that their UV light systems provide a 4-log reduction of bacteria, viruses, and protozoan cysts (Giardia Lamblia and Cryposporidium). This technology provides equivalent to chlorination disinfection to meet the requirements of the minimum level of treatment specified in Ontario Regulation 505/01.

The group home is designed with a maximum occupancy of 7 residents. Based on MOE guidelines the flow per person per day is approximately 550 L. Therefore, using a peaking factor of 4, the peak water demand is 10.7 L/min, which is less than the capacity (53 L/min) of the UV lamp discussed in earlier in this section.

3.0 ASSESSMENT OF THE POTENTIAL FOR MICROBIOLOGICAL CONTAMINATION

3.1 Potential Contamination

Potential sources of microbiological contamination of the Home's water works were reviewed and are summarized below. Contamination may be present in the water supply because of:

- contamination of the groundwater supply (aquifer); and
- surface contamination ingress to the well.

It is important to note that the presence or absence of bacteria in a well may change over time thus continuous raw water supply sampling in particular following precipitation events is imperative.

3.1.1 Groundwater Supply

Provided that wells are properly constructed in accordance with Ontario Regulation 903 (Wells), so that no surface water or foreign materials can enter the well, and that the well is not within 15 m of a surface water source, then according to Section 5(2) of this Regulation the minimum level of water treatment is disinfection.

It should be noted that the MOE has a more stringent requirement to verify whether the groundwater supply is under the direct influence of surface water (MOE 2001) for communal wells that are subject to ODWS Section 52 which has not been applied here. The implication is that a detailed hydrogeological investigation would have to be completed to verify that this groundwater supply is not influenced by surface water and if not, the groundwater supply

would have to satisfy the treatment requirements of a surface water source (i.e. provide chemically-assisted filtration and disinfection).

3.1.2 *Surface Contamination Entering at Wells*

In addition to contamination attributed to poor well construction, microbiological contaminants may directly enter water supply into the well. At this Facility, the well is locked to prevent access and the top of the well is capped about 150 mm above grade. The nearest surface water is 50 m from the well. The on-site sewage system is located 50 m down gradient from the well. The possibility of contamination directly entering the well over the casing from the surface at the well is considered remote.

3.1.3 *Microbiological Test Results*

Historically, tests were conducted on the water, prior to the installation of treatment equipment, on a semi-annual basis. Tests results in April of 2001 indicated the presences of total coliform and *E.coli* in the water. The Owners of the Home installed the UV irradiation equipment after this sample result as well as a water cooler for consumption by residents and staff.

As part of the inspection of the Home, TRG draw raw and treated water samples for microbiological testing. The raw water contained 8 counts of total coliform per 100 mL of water and no *E.coli*. The treated water showed the absence of both total coliform and *E.coli*.

4.0 ASSESSMENT OF OPERATIONAL PROCEDURES

The Home's operation was reviewed for general compliance with the Regulation for Designated Facilities.

4.1 Operations

The operation of the Home's water system consists of routine activities for the water treatment system including:

- sampling treated water;
- inspection of equipment;
- adding salt;
- changing cartridge filter (semi-annually); and
- changing UV lamps (annual).

4.2 Logbook

A daily logbook is not maintained.

4.3 Operations Manual

There is no current operation manual for the water works. However, the UV manufacturer and water softener manufacturer have provided an operating manual for the unit.

5.0 MONITORING COMPLIANCE TO ENSURE COMPLIANCE WITH THE OWDS AND ITS REGULATIONS

5.1 Recommended Program

The *Drinking Water Protection – Designated Facilities Regulation* was reviewed for monitoring requirements. The following sampling program (Table 5.1) is required in accordance with this Regulation.

Microbiology

Table 5.1 – Microbiological Parameters

Parameter	Frequently Used Water Faucet	Raw Water Sample
Total Coliform	Weekly	Monthly
E. coli	Weekly	Monthly

If after a period of 24 consecutive months of monitoring, the microbiological results demonstrate no indicators of adverse water quality according to the Regulation, the owner of the Centre can reduce the sampling frequency of treated water to once every two weeks.

The microbiological testing schedule was to be in place by February 17, 2002.

Chemical Parameters

In addition to the microbiological testing, every 60 months a sample from a frequently used faucet and from the furthest point on the plumbing system must be sent to an accredited laboratory for all parameters contained in Schedule 2 of the Ontario Regulation 505/01, with the exception of turbidity, chlorine residual, and the microbiological parameters.

TRG collected water samples for analysis during their April 25, 2002 visit to the facility.

5.2 Trained Person

The Regulation requires a *Trained Person* to perform the prescribed sampling. A *Trained Person,* as defined in the Regulation, means a person who has, in the preceding 36 months, successfully completed a course approved by the Director that relates to water quality protection as it is addressed in the Regulation.

The Regulation also requires the *Trained Person* to perform the daily check of the disinfection and filtration equipment.

At the time of inspection of this facility, there was not a *trained person* in place to conduct the inspection of the facility. The Centre is in the process of having someone certified.

6.0 RECOMMENDATIONS

6.1 Recommendations to Mitigate the Potential of Microbiological Contamination

To mitigate the potential of microbiological contamination in the Facility's water works, it is recommended that the following modifications be made:

1. System be operated and maintained by a *Trained Person* in accordance with prescribed manuals and procedures.

6.2 Procedural Recommendations

The following procedures should be updated in the operating manual and instructions provided to the operator(s) (*trained person(s)*):

1. Operation Manual be composed as per MOE requirements; and
2. A logbook be maintained providing information pertaining to the weekly inspections and sampling dates.

Green Valley Group Home
Water Quality Log Sheet

WATER TREATMENT SYSTEM LOG SHEET			
Date	Sampling Location	Comments	Initials

Appendix B – Procedure for Sampling Water

It is absolutely critical that water samples are collected as specified by the laboratory. Otherwise, inaccurate analyses may occur and result in unnecessary notifications and corrective actions.

1. Equipment Checklist

Ice packs	Cooler	Sharpie Marker
Sterile Latex Gloves	Chain of Custody	Lab prepared sample bottles

2. Location of Samples

Sampling of the raw water is to be taken from the sampling spigot on the pipe that is attached to the untreated supply in the basement and labeled accordingly. Sampling of the treated water is to be taken at a location in the plumbing that is furthest from the treatment works and labeled accordingly.

A sample of treated water should be drawn from a sink faucet located furthest from the water treatment system.

If a positive test result is reported both locations should be sampled and analyzed.

3. Purging

Always ensure a clear pathway from the source to the sample collection point by removing aerators, tap screens, hoses, filters, etc. from any tap used during sample collection.

All sampling locations must be purged for 10 minutes to ensure a representative sample is being taken (not a sample of stagnant water).

To purge the raw water sample, attach the hose to the sample spigot and place the hose into the floor drain, then allow the water to run for 10 minutes.

To purge a faucet, take the aerator off the tap then allow the water to run for 10 minutes.