2007
Water Works Summary Report

Large Municipal – Residential Systems

v.1.2

Greater Grand Sudbury
www.greatersudbury.ca

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EXECUTIVE SUMMARY

The production and delivery of potable water in Ontario is regulated by the Ministry of Environment (MOE) under the Safe Drinking Water Act, 2002 (formerly the Ontario Water Resources Act). Regulated systems must meet the requirements of Ontario's Safe Drinking Water Act, 2002 and its regulations. Most notably, the Drinking Water Systems Regulation, O. Reg. 170/03, sets out treatment and testing requirements for all categories of regulated water systems, including small non-municipal and seasonal operations.

Since the implementation of the Act, several amendments to O. Reg. 170/03 have taken place. There are amendments requiring additional resources and costs, while others, streamlined legislative requirements to make the new regulations feasible for the vast majority of municipalities.

Among other obligations, O. Reg. 170/03 prescribes the need for all owners of licenced water works to produce an Annual Summary Report as indicated in Schedule 22. This Summary Report is filed annually for the previous calendar year and is required to contain the following information:

- List of requirements of the Safe Drinking Water Act (SDWA), the regulations, the owned systems compliance to the Act and Regulations.
- Any order from the MOE that the system failed to meet at any time during the period covered by the report, specify the duration of the failure and describe the measures taken to correct the situation.
- Summary of quantities and flow rates of the water supplied during the reporting period, including monthly averages, maximum daily flows, and daily instantaneous peak flow rates.
- A comparison of the summary of quantities and flow to the rated capacities and flows approved in the systems certificates.

The City of Greater Sudbury is listed as the Owner of six (6) municipal large, residential systems and four (4) independent distribution systems. All of the ten (10) systems have a Certificate of Approval issued by the MOE. The following reports are written to comply with the Condition that each of these facilities produces an Annual Summary Report as per schedule 22 of O. Reg. 170/03.

The City of Greater Sudbury is also supplied from other, privately owned, water providers, wherein water is purchased by the CGS and supplied to consumers through CGS owned distribution systems. Table 1 provides a summary of the various water systems throughout the City.

Table 1 - Overview of the City's Water Systems

Name	Owner	Type of Facility	Source of Water	Community Serviced
Wanapitei WTP and Distribution System	City of Greater Sudbury	Surface water conventional treatment plant	Wanapitei River	Sudbury, Coniston, Wanapitei, Markstay, Garson
David Street WTP and Distribution Sytem	City of Greater Sudbury	Membrane Filtration and Ultraviolet irradiation	Ramsey Lake	Sudbury
Garson Wells and Distribution	City of Greater Sudbury	Well with disinfection	Groundwater	Garson
Falconbridge Water Works	Xstrada	Well with disinfection	Groundwater	Falconbridge
Falconbridge Distribution	City of Greater Sudbury	Fluoridation Station and Distribution System	Falconbridge Water Works	Falconbridge
Levack Well Supply	ValeINCO	Wells with disinfection	Recharged groundwater	Levack
Levack Distribution	City of Greater Sudbury	Fluoridation Station and Distribution System	Levack Well Supply	Levack
Onaping Potable Water Supply	Xstrada	Well with disinfection	Groundwater	Onaping
Onaping Distribution	City of Greater Sudbury	Distribution System	Onaping Potable Water Supply	Onaping
Capreol Wells and Distribution System	City of Greater Sudbury	Well with disinfection and Ultraviolet irradiation	Groundwater	Capreol

Valley Wells and Distribution System	City of Greater Sudbury	Well with disinfection and Ultraviolet irradiation	Groundwater	Valley East, Azilda, Chelmsford
Dowling Wells and Distribution System	City of Greater Sudbury	Well with disinfection and Ultraviolet irradiation	Groundwater	Dowling
Vermillion River WTP	ValeINCO	Surface water conventional treatment plant	River	Lively, Naughton, Whitefish, Copper Cliff, Walden Industrial Park
Vermillion Distribution	City of Greater Sudbury	Distribution System	Vermillion River WTP	Lively, Naughton, Whitefish, Copper Cliff, Walden Industrial Park

Due to the significant impact of the new Drinking Water Protection Regulation and continuing source water protection legislation, virtually all of the City's water works have had to undergo some level of upgrading. It should not be assumed that these upgrades are the result of any detected incidents of poor water quality. The upgrades at the City water works are necessary to reduce the risk of potable water contamination as deemed necessary by the MOE. The level of acceptable risk is stipulated through mandatory compliance with O. Reg. 170/03.

The City is well organized to manage their existing water works systems. Further, staff have been pro-active to ensure all necessary measures are taken to achieve compliance with the Regulation and the various Certificates of Approval.

Certain upgrades are currently underway, or are being investigated at this time. In most cases, the studies have been completed, and reports have been reviewed by the MOE. The exact extent of upgrades varies along with individual deadline dates. It is important to understand that this is part of the required process of the new Regulation and the MOE's statutory Standard of Care to ensure all citizens have access and receive safe reliable water. The regulation assumes that water works owners will continually monitor water works performance, and review levels of treatment versus current standards. As time passes, general knowledge of potential water borne diseases increases. The public expects that responsible Owners will be diligent in their duty to care for public water supplies.

The water works owned and operated by the City have been managed with the standard of care expected by the public and as legislated by the government. All necessary upgrades are being planned and implemented in accordance with applicable standards.

Reviewed by:

Date: April 30/08

Gary Comin
Water Supervisor III

Approved by:

Date: MAY 1/08

Nick Benkovich
Director of Water/Wastewater Services

SECTION 1 - PLANT SPECIFIC REVIEW

1. PLANT SPECIFIC REQUIREMENTS

This Section of the report provides details on measures taken by the City to ensure compliance with Terms and Conditions of the Certificates of Approvals, Acts, Regulations or any MOE orders the systems may have been under during the reporting period. This section of the report provides details on the specifics of the systems, any non-compliance issues along with actions taken by the City to rectify the situations, as well as flow data with comparison to allowable limits. This flow comparison is to allow for a basic overview of the systems performance and allows for review and planning of possible future expansions if required.

In this section, a more detailed description of the water works is also provided at the start of each sub-section. The description is provided for reference purposes only, and to ensure that the compliance measures remain in context. All other non-compliance and actions taken are summarized in table format and appended to the particular plant section in this report. The Certificate of Approval that was valid at the time of this report is also listed in the particular plant section.

1.1 Wanapitei Water Treatment Plant and Distribution System

C of A No. 2103-6YEKXL
April 3, 2007

The Wanapitei WTP is a surface water plant, which draws water from the Wanapitei River. Proportionally, the plant services approximately 60% of the water for Sudbury; however, most of the water produced is delivered to New Sudbury, Coniston, Wahnapitae, Markstay, and parts of Downtown. Garson, west of Falconbridge Rd. and O'Neil Dr., is also supplied by this plant. The plant was constructed in the 1970's at the onset of Regional Government. Since the original construction, the plant has undergone upgrading to enhance treatment efficiency, increase production, and to reduce energy costs. The plant is currently undergoing further retrofits to ensure compliance with O. Reg. 170/03.

The water supply for the plant is the Wanapitei River. The raw water quality is reasonably reliable but is however, subject to changes in water quality typical of most rivers. The watershed area for the Wanapitei River is vast with much in its natural state.

The river water quality varies depending on seasonal changes and local weather patterns. Some process parameters affected by these changes include:

- Temperature;
- Turbidity; and
- Colour.

The changing raw water quality requires careful observation by the water plant operators to ensure necessary process and chemical adjustments are made to effectively treat the water.

The Wanapitei WTP incorporates conventional technologies to treat the water. The Raw water undergoes initial treatment with Chlorine Dioxide for taste and odour control and/or Chlorine for pre-disinfection. Raw water is further subjected to chemical coagulation with Alum to form a floc. The coagulated water passes through one of two settling tanks, referred to as reactivators, for the flocculation and sedimentation process. The water then passes through one of four dual media filter beds. The filtered water is treated with hydrated lime for pH /alkalinity adjustment; with chlorine for disinfection; with fluoride to comply with Health Unit requirements; and with polyphosphate to reduce corrosion in the distribution system. The plant is designed to be capable of achieving, at all times, at least 99.99% removal or inactivation of viruses by the time water enters the distribution system.

The distribution system incorporates a large diameter concrete pressure pipe to deliver water to Sudbury and Coniston. The communities are networked with an extensive distribution system including numerous booster stations. The system pressure is regulated by the water level in the Ellis Water Reservoir. Most of the pipes in the distribution system are less than 50 years old and much of the system is plastic pipe.

Water quality throughout the distribution system is monitored through regular sampling in accordance with O. Reg. 170/03.

Non-Compliance with Act, Regulations, Order or Approvals

Table 2 provides a summary of any requirements of the Act, Regulations, Orders, or Approval that the system failed to meet during the 2007 reportable period.

Table 2 - Wanapitei Water Treatment Plant

Item	Non-Compliance	Measure Taken to Ensure Compliance
MOE Inspection Issues	Final design and upgrades req'd to meet Cond. 8.2 of C of A not submitted by Oct 31, 2007 deadline	CGS consultant EarthTech to submit to MOE by March 30, 2008
MOE Orders	NONE	N/A

2007 Adverse Water Quality Incident Report

210001111 Wanapitei Water Treatment Plant and Distribution System

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.

Table 3 - Adverse Water Quality Incidents

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2007/10/19	Chlorine	0.02	mg/l	Resample/Re-test Flushing Main/Pipes	2007/10/22

Annual Flow Summary

Table 4 provides a summary of the quantities of flow rates with a comparison to rated capacities as listed in the systems Certificate of Approval during the 2007 reportable period.

Table 4 - Annual Flow Summary (Sudbury Plants)

	Wanapitei Water Treatment Plant						David Street Water Treatment Plant					
	Total Flow m3	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	C of A Maximum Flow m3/d	% Capacity	Total Flow m3	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	C of A Maximum Flow m3/d	% Capacity
January	1,056,771	34,089	37,061	42,298.06	54,000	69	334,227	10,782	13,764	316.39	40,000	34
February	980,570	35,020	40,270	43,980.13	54,000	75	334,350	11,941	12,084	142.43	40,000	30
March	1,035,717	33,410	36,489	43,371.10	54,000	68	335,451	10,821	12,144	317.88	40,000	30
April	1,048,935	34,965	36,810	44,574.65	54,000	68	340,007	11,334	14,910	318.20	40,000	37
May	1,069,143	34,488	39,000	44,821.16	54,000	72	344,997	11,129	19,080	361.02	40,000	48
June	1,014,654	33,822	36,653	46,401.72	54,000	68	459,770	15,326	22,979	318.77	40,000	57
July	1,005,290	32,429	34,922	41,834.05	54,000	65	438,124	14,133	24,396	322.50	40,000	61
August	1,033,910	33,352	38,473	46,343.71	54,000	71	507,040	16,356	25,844	326.84	40,000	65
September	1,008,218	33,607	35,316	42,095.05	54,000	65	406,988	13,566	23,718	317.62	40,000	59
October	1,005,980	32,451	35,579	42,240.06	54,000	66	383,739	12,379	19,647	318.57	40,000	49
November	984,651	32,822	38,460	42,892.59	54,000	71	359,958	11,999	18,380	318.30	40,000	46
December	1,030,669	33,247	34,104	41,080.02	54,000	63	370,105	11,939	17,990	318.48	40,000	45
Total	12,274,508						4,614,756					

1.2 David Street Water Treatment Plant and Distribution System

C of A No. 2171-6VDLHP

Feb 2, 2007

The David St. WTP is a surface water plant, which draws water from Ramsey Lake. Proportionally, the plant services approximately 40% of Sudbury, however, most of the water produced at the David St. WTP is normally delivered to the south, west and downtown areas of Sudbury. The plant is over 100 years old and has undergone numerous upgrades to meet changing needs. The plant completed retrofits with Zenon membrane ultrafiltration technologies and UV irradiation in 2004 to ensure the treatment system meets the requirements in O. Reg. 170/03. The plant is designed to be capable of achieving, at all times, at least 99.99% removal or inactivation of viruses by the time water enters the distribution system.

The water supply for the David St. WTP is Ramsey Lake. Although this lake is seen as an excellent source of raw water, development around the lake has compromised the security of this water source. Although virtually all septic use has been removed from the watershed, further measures are being reviewed by City staff to maintain and improve the source water quality.

The City is planning to have the David St. plant remain an integral part of the water works system for many years. For this reason the City has made a significant financial investment in the upgrading of this plant during this reporting period.

The distribution system supplied by the David Street WTP includes parts of downtown Sudbury, the South End and the West End of Sudbury. In addition, the Ellis Reservoir is part of the distribution network for Sudbury. As is common with many older distribution networks, the Sudbury pipe system is prone to line breaks, complaints of discoloured water, and difficulties maintaining adequate chlorine residual.

Water quality throughout the distribution system is monitored through regular sampling in accordance with O. Reg. 170/03.

Non-Compliance with Act, Regulations, Order or Approvals

Table 5 provides a summary of any requirements of the Act, Regulations, Orders, or Approval that the system failed to meet during the 2007 reportable period.

Table 5 - David Street Water Treatment Plant

Item	Non-Compliance	Measure Taken to Ensure Compliance
MOE Inspection Issues	The maximum water takings were not in accordance with those allowed under the PTTW.	An application to amend the PTTW submitted Aug 24, 2006
MOE Orders	NONE	N/A

2007 Adverse Water Quality Incident Report

220003537 David Street Water Treatment Plant and Distribution System

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.

Table 6 - Adverse Water Quality Incidents

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2007/06/01	Total Coliform	1.0	CFU/100ml	Resample/Retest	2007/06/01
2007/07/16	Pressure	1.06	PSI	Resample/Retest, Disinfectant Restored/Increased	2007/07/16
2007/07/19	Total Coliform	7.0	CFU/100ml	Resample/Retest	2007/07/23
2007/09/05	Chlorine Residual	0.03	mg/l	Disinfectant Restored/Increased	2007/09/05

Annual Flow Summary

Table 7 provides a summary of the quantities of flow rates with a comparison to rated capacities as listed in the systems Certificate of Approval during the 2007 reporting period.

Table 7 - Annual Flow Summary

	Wanapitei Water Treatment Plant						David Street Water Treatment Plant					
	Total Flow m3	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	C of A Maximum Flow m3/d	% Capacity	Total Flow m3	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	C of A Maximum Flow m3/d	% Capacity
January	1,056,771	34,089	37,061	42,298.06	54,000	69	334,227	10,782	13,764	316.39	40,000	34
February	980,570	35,020	40,270	43,980.13	54,000	75	334,350	11,941	12,084	142.43	40,000	30
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April	1,048,935	34,965	36,810	44,574.65	54,000	68	340,007	11,334	14,910	318.20	40,000	37
May	1,069,143	34,488	39,000	44,821.16	54,000	72	344,997	11,129	19,080	361.02	40,000	48
June	1,014,654	33,822	36,653	46,401.72	54,000	68	459,770	15,326	22,979	318.77	40,000	57
July	1,005,290	32,429	34,922	41,834.05	54,000	65	438,124	14,133	24,396	322.50	40,000	61
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November	984,651	32,822	38,460	42,892.59	54,000	71	359,958	11,999	18,380	318.30	40,000	46
December	1,030,669	33,247	34,104	41,080.02	54,000	63	370,105	11,939	17,990	318.48	40,000	45
Total	12,274,508						4,614,756					

1.3 Capreol Wells and Distribution System

C of A No. 8275-6R2JVZ

June 23rd, 2006

The Capreol Well System is a communal well system which draws water from three (3) wells to service the community of Capreol. The wells include:

- Well No.6 (decommissioned Oct 31, 2007);
- Well "J"; and
- Well "M".

Well No. 6 included a Vertical Turbine well pump, disinfection with gas chlorine, UV irradiation along with fluoride injection for public health. Well No. 6 was decommissioned Oct 31, 2007.

Well "J" and "M" are located within approximately 30 metres of each other on the east side of Greens Lake and west of M. R. No.84. Well "J" and "M" are housed in separate well houses and have vertical turbine well pumps. A common discharge from the wells undergoes treatment in the form of disinfection by gas chlorination, Ultra-Violet irradiation, fluoridation and corrosion control with Aquamag. Standby power with an automatic transfer switch for Wells "M" and "J" is available from a diesel generator located in Well "M" pumphouse.

In the event that "M" and "J" wells fail, the Blezard Valley wells can supply water to the Capreol Boosters located onsite at M Well. This system, started in 2004, was recently completed and commissioned in 2007, ensuring a continued water supply to Capreol.

The source of water for the Capreol system is groundwater wells. Well "J" and "M" draw from a common unconfined aquifer comprised mostly of sands and gravels. Although all of the wells have no record of bacteriological contamination, the unconfined nature of the aquifer required these wells to be characterized as potentially under the influence of surface water (potentially GUDI).

The C of A for Capreol required further hydrogeological studies to be conducted in Capreol to determine if the wells were in fact under influence of surface water. The results of the study were necessary to determine if a filtration system would be required to ensure that the water quality remains in compliance with the ODWS at all times. The studies, referred to as GUDI studies, were completed for Wells "J" and "M" and submitted to the MOE on June 30, 2002. The response from a review by MOE found these

wells to be potentially under influence of surface water and as such required upgrades to meet the Ontario Drinking Water Standards disinfection and log removal criteria. Upgrades have been completed and the system achieves the required log removals and enhanced the disinfection process.

The distribution system in Capreol was developed in conjunction with the growth of the industrial development. Some of the pipe network is therefore, relatively old. The frost depths in Capreol extend to extreme depths during cold winters, which impose additional stresses on the integrity of the distribution system. The distribution system is comprised of PVC, Cast Iron and Ductile piping and serves approximately 3700 residents.

Water quality throughout the distribution system is monitored through regular sampling in accordance with O. Reg. 170/03.

Non-Compliance with Act, Regulations, Order or Approvals

Table 8 provides a summary of any requirements of the Act, Regulations, Orders, or Approval that the system failed to meet during the 2007 reportable period.

Table 8 - Capreol Wells and Distribution System

Item	Non-Compliance	Measure Taken to Ensure Compliance
MOE Inspection Issues	1. No evidence that all chemicals met AWWA and ANSI standards in accordance with the C of A, Well No. 6. 2. Well No. 6 design allowed raw or partially treated water to by-pass key treatment units. 3. Evaluation of need for chlorine room scrubber or properly ventilated 4. Online chlorine analyzer setpoints	1. Removed the filter installed at Well No. 6 2. Provided written confirmation that operations manuals and SCADA notes adjusted to include directions on emergency use of Well No. 6 when UV is not functioning. 3. Provided assurances on evaluation from design engineer and ventilation fan are compliant. 4. Provided notice that operating ranges for all chlorine analyzers were reconfigured to more accurately reflect operational parameters.
MOE Orders	NONE	N/A

2007 Adverse Water Quality Incident Report

220003528 Capreol Wells and Distribution System

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

Table 9 - Adverse Water Quality Incidents

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2007/03/14	UV	0	mJ/cm²	Disinfectant restored/increased;	2007/03/14
2007/05/30	Pressure / UV	28/0	psi / mJ/cm²	Resample/Re-test	2007/06/01
2007/05/31	UV	0	mJ/cm²	Resample/Re-test	2007/06/05
2007/06/25	UV	0	mJ/cm²	Resample/Re-test;	2007/06/25
2007/08/15	Fluoride	1.95	mg/L	Resample/Re-test	2007/08/15
2007/08/23	UV	0	mJ/cm²	Disinfectant restored/increased;	2007/08/30
2007/08/29	Pressure	15	psi	Resample/Re-test	2007/08/31

Annual Flow Summary

Table 10 provides a summary of the quantities of flow rates with a comparison to rated capacities as listed in the systems Certificate of Approval during the 2007 reportable period.

Table 10 - Annual Flow Summary (Capreol Wells)

	"J" Well						"M" Well					
	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	604	19	294	29	3,273	9	32,283	1,041	2,510	36	3,927	64
February	2,323	83	1,129	27	3,273	34	0	0	0	0	3,927	0
March	11,621	375	2,056	28	3,273	63	0	0	0	0	3,927	0
April	38,359	1,279	2,102	32	3,273	64	0	0	0	0	3,927	0
May	18,841	608	2,109	33	3,273	64	41,041	1,324	2,174	41	3,927	55
June	0	0	0	0	3,273	0	57,402	1,913	2,199	50	3,927	56
July	51	2	31	29	3,273	1	56,100	1,810	2,252	50	3,927	57
August	195	6	47	24	3,273	1	67,854	2,189	2,278	50	3,927	58
September	276	9	82	31	3,273	2	59,907	1,997	2,281	50	3,927	58
October	23	1	12	14	3,273	0	46,036	1,485	2,161	33	3,927	55
November	249	8	71	34	3,273	2	60,944	2,031	2,125	29	3,927	54
December	436	14	150	37	3,273	5	61,894	1,997	2,116	44	3,927	54
Total	72,978						483,461					

	# 6 Well					
	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	33,996	1,097	2,024	30	2,946	69
February	50,480	1,803	1,958	26	2,946	66
March	48,422	1,562	1,951	28	2,946	66
April	23,571	786	1,925	25	2,946	65
May	8,404	271	1,320	28	2,946	45
June	12,504	417	1,108	28	2,946	38
July	14,275	460	1,898	25	2,946	64
August	4,012	129	471	28	2,946	16
September	5,336	178	1,192	24	2,946	40
October	18,291	590	2,097	28	2,946	71
November		0			2,946	0
December		0			2,946	0
Total	219,291					

1.4 Dowling Wells and Distribution System

C of A No. 9374-6RLP45

July 17, 2006

The Dowling water works is a communal groundwater system, which supplies water to the community of Dowling. The water works includes two (2) wells with well pumphouses, a distribution network of in-ground piping and an elevated water storage tank. The entire water system was developed with subsidy from the MOE in the 1970's. The ownership and operation of the water works was transferred to the Regional Municipality of Sudbury and it is now owned and operated by the City of Greater Sudbury.

The Riverside Well and Pumphouse include a vertical turbine supply pump, disinfection with gas chlorine, UV irradiation along with fluoride injection for public health. The Lionel Well and pumphouse has similar facilities plus a diesel generator for standby power. Both facilities have automatic valving to waste raw water for a few minutes upon start-up of a well pump.

The water supply source for the Dowling Wells is an unconfined aquifer of sand and gravel deposits located within the Onaping River Watershed. Due to the unconfined nature of the soils and the proximity to the River, the MOE has characterized the water source as potentially under the direct influence of surface water (potentially GUDI).

Studies were conducted in 2002 with the resulting submission of a GUDI study on July 1, 2002. This study was reviewed by the MOE and as a result, both wells were deemed to be GUDI and as such, additional treatment and disinfection would be required. The prior recommendations of the consultant included that, while the wells have met the MOE criteria for "potentially under the influence of surface water", adequate natural filtration of the water exists. Based on the conclusions by the MOE, the well systems have had Ultra-Violet irradiation added to enhance disinfection to comply with the treatment requirements of the ODWS.

The distribution network in Dowling has been relatively reliable and is not exposed to as severe frost depths as other areas of the City. Further, the elevated water storage provides a measure of security to the water system in the event of power interruptions and watermain breaks.

Water quality throughout the distribution system is monitored through regular sampling in accordance with O. Reg. 170/03.

Non-Compliance with Act, Regulations, Order or Approvals

Table 11 provides a summary of any requirements of the Act, Regulations, Orders, or Approval that the system failed to meet during the 2007 reportable period.

Table 11 - Dowling Wells and Distribution System

Item	Non-Compliance	Measure Taken to Ensure Compliance
MOE Inspection Issues	All microbiological water monitoring required not being conducted (HPC)	Corrected by end of Jan 2007
MOE Orders	NONE	N/A

2007 Adverse Water Quality Incident Report

210001665 Dowling Wells and Distribution System

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.

Table 12 - Adverse Water Quality Incidents

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2007/07/11	UV	33	mJ/cm^2	Resample/Re-test	2007/07/11
2007/10/26	UV	16.2	mJ/cm^2	Disinfectant restored/increased	2007/10/26
2007/10/29	UV	16	mJ/cm^2	Disinfectant restored/increased	2007/10/29
2007/12/11	UV	16.67	mJ/cm^2	Disinfectant restored/increased	2007/12/11

Annual Flow Summary

Table 13 provides a summary of the quantities of flow rates with a comparison to rated capacities as listed in the systems Certificate of Approval during the 2007 reportable period.

Table 13 - Flow Summary (Dowling Wells)

	Lionel Well						Riverside Well					
	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	4,588	148	766	32.97	3,600	21	9,541	308	1,036	32.50	3,600	29
February	2,694	96	751	32.50	3,600	21	9,447	337	787	31.40	3,600	22
March	3,737	121	751	32.17	3,600	21	10,017	323	831	32.13	3,600	23
April	7,731	258	712	32.62	3,600	20	5,783	193	771	30.37	3,600	21
May	4,832	156	732	32.20	3,600	20	10,601	342	911	31.20	3,600	25
June	8,617	287	791	32.57	3,600	22	7,182	239	927	31.35	3,600	26
July	9,171	296	948	32.37	3,600	26	6,624	214	783	31.62	3,600	22
August	4,991	161	760	32.13	3,600	21	12,253	395	818	31.00	3,600	23
September	4,905	164	759	31.80	3,600	21	8,272	276	776	32.60	3,600	22
October	12,526	404	1,838	31.62	3,600	51	5,664	183	744	31.77	3,600	21
November	5,343	178	785	31.60	3,600	22	6,327	211	725	32.72	3,600	20
December	5,395	174	741	32.10	3,600	21	6,818	220	776	32.87	3,600	22
Total	74,530						98,529					

1.5 Garson Wells and Distribution System

C of A No. 2733-6HLNSX Garson Wells No. 1 & 3)
November 23rd, 2005

C of A No. 8263-6LNM2C (INCO Garson Well)
April 24, 2006

The Garson water works is a communal groundwater system consisting of three wells, and servicing the community of Garson. The three wells are called:

- INCO Well No.1;
- Garson Well No.1; and
- Garson Well No.3.

INCO Well No.1 is now owned by the City of Greater Sudbury. Inco and the City transferred the ownership of the well to the City early in 2005. The well is situated within a pumphouse on the east side of Falconbridge at Spruce Street. The system includes a vertical turbine well pump, disinfection with sodium hypochlorite and fluoride injection for public health. There is no standby power at Well Pumphouse No.1. The City of Greater Sudbury operated the well pumphouse on behalf of Inco and now, as the sole owner/operator, the water is directly connected to the public distribution network.

The other two wells in Garson, No. 1 and 3, are situated on the south side of Falconbridge Road at Orell Street. The two wells are in close proximity to each other but are housed in separate buildings, both of which contain the vertical turbine well pumps. The discharges from the well pumps enter a common building which houses the disinfection and fluoride injection equipment.

Prior to the passing of O. Reg. 459/00, the Garson Well System delivered non-chlorinated water to the community of Garson. In the fall of 2000 an upgrade to the system was completed to add chlorine disinfection. The disinfection system was designed in accordance with current MOE Standard B13-3. The disinfection at each well provides 15 minutes of detention/contact time with due consideration for baffling conditions.

The well supply historically provided very good quality water with no record of bacteriological contamination. During preparation of the First Engineers' Report, in March 2001, a hydrogeological assessment was made of each of the wells. It was concluded that it is unlikely that any of the wells are

under the direct influence of surface water. The raw water was therefore found to be in general conformance with the ODWS.

Not withstanding the historical good water quality, the aquifer used in the Garson well supply has a recharge area which includes the developed area of Garson. The hydrogeologists noted potential sources of contamination of the water supply that required further study and a plan to provide long-term protection of the groundwater sources. The Source Water Protection Committee has since been formed and the City awaits direction from the Committee.

The community of Garson extends from Skead Road at the north to Garson-Coniston Road at the south. The pipe network is connected to the water supply from Sudbury however; this is only used in the event of emergencies. The pipe network is a combination of new and older pipes and frost penetration can be an issue in Garson.

Water quality throughout the distribution system is monitored through regular sampling in accordance with O. Reg. 170/03.

Non-Compliance with Act, Regulations, Order or Approvals

Table 14 provides a summary of any requirements of the Act, Regulations, Orders, or Approval that the system failed to meet during the 2007 reportable period.

Table 14 - Garson Wells and Distribution System

Item	Non-Compliance	Measure Taken to Ensure Compliance
MOE Inspection Issues	1. Measures not in place to protect the water source as per the C of A. 2. All microbiological water quality monitoring not being conducted 3. Chlorine residuals less than 0.05 mg/l four (4) times	1. Letter sent to remove requirement from C of A . 2. Sampling being done in accordance with regs since Jan 07. 3. Improvements made to the way Chlorine is drawn from supply/ storage
MOE Orders	NONE	N/A

2007 Adverse Water Quality Incident Report

220003485 Garson Wells and Distribution System

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.

Table 15 - Adverse Water Quality Incidents

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2007/07/25	Total Coliform	1	cfu/100mL	Resample / Re-test	2007/07/25
2007/08/29	Total Coliform	1	cfu/100mL	Resample / Re-test	2007/08/31
2007/09/13	Chlorine Residual	0.02	mg/L	Disinfectant restored/increased	2007/09/17
2007/09/25	Chlorine Residual	0.03	mg/L	Disinfectant restored/increased	2007/09/28
2007/10/01	Chlorine Residual	0.03	mg/L	Resample / Re-test	2007/10/03
2007/10/27	Chlorine Residual	0.03	mg/L	Flushing main & pipes mains/pipes	2007/10/29

Annual Flow Summary

Table 16 provides a summary of the quantities of flow rates with a comparison to rated capacities as listed in the systems Certificate of Approval during the 2007 reportable period.

Table 16 - Flow Summary (Garson Wells)

	Orell No. 1 Well						Orell No. 3 Well					
	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	16,915	546	675	14	1,572	43	14,816	478	682	30	3,274	21
February	16,034	573	691	14	1,572	44	17,295	618	893	30	3,274	27
March	12,478	403	681	15	1,572	43	12,488	403	869	30	3,274	27
April	10,471	349	644	12	1,572	41	7,451	248	953	31	3,274	29
May	2,822	91	286	11	1,572	18	18,805	607	1,352	35	3,274	41
June	4,937	165	389	10	1,572	25	14,967	499	1,048	35	3,274	32
July	1,259	41	201	13	1,572	13	13,057	421	923	34	3,274	28
August	1,474	48	322	11	1,572	20	14,905	481	1,385	27	3,274	42
September	509	17	95	10	1,572	6	22,220	741	1,746	35	3,274	53
October	254	8	22	9	1,572	1	19,176	619	1,716	35	3,274	52
November	6,105	204	689	16	1,572	44	14,813	494	1,356	33	3,274	41
December	20,209	652	762	15	1,572	48	14,998	484	891	32	3,274	27
Total	93,467						184,991					

	INCO Garson Well					
	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	25,014	807	2,160	32	2,981	72
February	9,050	323	670	32	2,981	22
March	23,329	753	1,844	32	2,981	62
April	31,479	1,049	1,323	32	2,981	44
May	43,286	1,396	1,685	32	2,981	57
June	43,049	1,435	1,624	30	2,981	54
July	38,333	1,237	1,548	30	2,981	52
August	39,275	1,267	1,562	30	2,981	52
September	30,309	1,010	1,714	30	2,981	57
October	27,395	884	1,374	30	2,981	46
November	22,037	735	1,953	30	2,981	66
December	7,803	252	759	30	2,981	25
Total	340,359					

1.6 Blezard Valley Wells and Distribution

C of A No. 6424-6E3JSH

July 27, 2005

The Blezard Valley Wells system is a multi-well groundwater system servicing the communities of Hanmer, Blezard Valley, Val Caron, McCrea Heights, Azilda and Chelmsford. Nine (9) groundwater wells are situated throughout the Valley and each are located in well pumphouses. The communities are interconnected with distribution piping and three (3) water storage tanks located in each of Val Caron, Azilda and Chelmsford.

The water works were originally constructed by the MOE in the 1970's then transferred to the Regional Municipality of Sudbury. Recently the ownership was transferred to the City of Greater Sudbury. All upgrades from the original MOE system were constructed by the City.

Each well pumphouse contains a vertical turbine well pump, gas chlorine disinfection equipment, and fluoride injection equipment for public health. Some of the well pumphouse's incorporate standby diesel generators, summarized as follows:

- Well A – Deschene;
- Well B – Kenneth;
- Well C – Phillipe;
- Well D – Frost; and
- Well E - Notre Dame.

The water supply source is a common groundwater aquifer characterized as a shallow sand and gravel aquifer. This well field extends approximately 7.5 km (west to east) from Val Therese to Hanmer. A preliminary hydrology study performed during the preparation of the First Engineers' Report classified all of the wells as not under the direct influence of surface water. Due to the shallow nature of the aquifer and the lack of a confining clay layer the MOE requested further study.

The GUDI study was submitted in August of 2002. An amended C of A was received on February 23, 2003. The amended C of A acknowledged the opinion of the hydrogeology study, which states that the

wells are not GUDI. As such, no additional filtration is required and the wells may supply water provided they meet MOE Procedures B13-3.

All of the wells in the Valley system have insufficient chlorine concentration and contact time (CT) except Well "F", Linden. Therefore, all the wells have been upgraded to incorporate UV irradiation to deal with CT issues. This project was completed in 2007.

The distribution system in the Valley is very extensive and contains many areas with dead-ends. System pressure is regulated by the level of the three reservoirs. During the reporting period the City operated the distribution system with good control of the chlorine residuals. This is due in part to the age of the distribution network, and the good source of raw water quality.

It should be noted that the Valley Well System is a relatively shallow aquifer and the community has developed extensively around the wells. Some of the wells are located immediately adjacent to residential homes, commercial establishments and major arterial roadways. The water quality is beginning to show the effects of urban storm drainage. Further, existing zoning by-laws appear inadequate to protect the wells from further development within the well capture zones. For these reasons, options are being considered to preserve the quality of the water over the long-term.

Water quality throughout the distribution system is monitored through regular sampling in accordance with O. Reg. 170/03.

Non-Compliance with Act, Regulations, Order or Approvals

Table 17 provides a summary of any requirements of the Act, Regulations, Orders, or Approval that the system failed to meet during the 2007 reportable period.

Table 17 - Blezard Valley Wells and Distribution System

Item	Non-Compliance	Measure Taken to Ensure Compliance
MOE Inspection Issues	All microbiological water quality monitoring not being conducted.	Action taken by Feb 2007 to correct sampling protocol and ensure all treated waters are tested as required.
MOE Orders	NONE	N/A

2007 Adverse Water Quality Incident Report

210000737 Blezard Valley Wells and Distribution System

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.

Table 18 - Adverse Water Quality Incidents

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2007/06/10	UV	38.8-39.9	mJ/cm²	Disinfectant restored/increased	2007/06/10
2007/06/11	UV	33.3	mJ/cm²	Disinfectant restored/increased	2007/06/11
2007/06/11	UV	32	mJ/cm²	Disinfectant restored/increased	2007/06/11
2007/10/21	Pressure/ UV	0/1.67	Psi/ mJ/cm²	Resample/retest	2007/10/21
2007/11/20	UV	0	mJ/cm²	Disinfectant restored/increased	2007/12/12
2007/11/23	UV	0	mJ/cm²	Disinfectant restored/increased	2007/11/26
2007/12/04	UV	0	mJ/cm²	Disinfectant restored/increased	2007/12/04
2007/12/26	UV	0	mJ/cm²	Disinfectant restored/increased	2007/12/28

Annual Flow Summary

Table 19 provides a summary of the quantities of flow rates with a comparison to rated capacities as listed in the systems Certificate of Approval during the 2007 reportable period.

Table 19 – Annual Flow Summary (Valley Wells)

	Well "A" Deschene						Well "B" Kenneth					
	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	34,245	1,105	1,385	18	1,797	77	31,085	1,003	1,516	22	2,288	66
February	28,407	1,015	1,387	18	1,797	77	30,070	1,074	1,486	23	2,288	65
March	31,167	1,005	1,230	18	1,797	68	15,136	488	1,364	22	2,288	60
April	1,989	66	974	18	1,797	54	36,746	1,225	1,378	21	2,288	60
May	32,265	1,041	1,388	18	1,797	77	34,612	1,117	1,524	23	2,288	67
June	31,567	1,052	1,385	18	1,797	77	30,316	1,011	1,698	24	2,288	74
July	28,902	932	1,299	18	1,797	72	30,906	997	1,191	24	2,288	52
August	33,499	1,081	1,332	18	1,797	74	30,525	985	1,228	20	2,288	54
September	30,095	1,003	1,187	18	1,797	66	27,043	901	1,133	18	2,288	49
October	32,452	1,047	1,434	19	1,797	80	29,667	957	1,442	24	2,288	63
November	25,529	851	1,069	17	1,797	60	20,546	685	1,403	33	2,288	61
December	23,947	772	1,049	17	1,797	58	12,144	392	1,131	27	2,288	49
Total	334,064						328,796					

	Well "C" Philippe						Well "D" Frost					
	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	38,801	1,252	1,539	24	2,288	67	37,094	1,197	1,474	20	2,288	64
February	31,146	1,112	1,533	23	2,288	67	30,175	1,078	1,478	20	2,288	65
March	37,985	1,225	1,492	22	2,288	65	36,346	1,172	1,467	20	2,288	64
April	36,680	1,223	1,374	23	2,288	60	36,787	1,226	1,401	21	2,288	61
May	36,269	1,170	1,562	24	2,288	68	36,300	1,171	1,511	21	2,288	66
June	35,582	1,186	1,603	24	2,288	70	33,399	1,113	1,487	21	2,288	65
July	33,275	1,073	1,354	24	2,288	59	31,889	1,029	1,306	23	2,288	57
August	38,096	1,229	1,453	24	2,288	64	35,782	1,154	1,361	21	2,288	59
September	35,004	1,167	1,451	24	2,288	63	33,010	1,100	1,314	21	2,288	57
October	34,831	1,124	1,428	24	2,288	62	36,909	1,191	1,659	23	2,288	73
November	32,709	1,090	1,344	21	2,288	59	36,666	1,222	1,685	22	2,288	74
December	31,130	1,004	1,399	21	2,288	61	37,888	1,222	1,668	22	2,288	73
Total	421,508						422,245					

	Well "E" Notre Dame						Well "F" Linden					
	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	42,232	1,362	2,290	39	3,105	74	52,626	1,698	2,108	26	3,268	64
February	51,520	1,840	2,182	37	3,105	70	35,475	1,267	1,896	29	3,268	58
March	50,446	1,627	2,300	33	3,105	74	50,457	1,628	2,117	29	3,268	65
April	54,281	1,809	2,277	30	3,105	73	52,876	1,763	2,208	30	3,268	68
May	55,232	1,782	2,400	40	3,105	77	56,245	1,814	2,345	31	3,268	72
June	54,826	1,828	2,580	33	3,105	83	69,489	2,316	2,383	29	3,268	73
July	52,271	1,686	2,191	36	3,105	71	69,993	2,258	2,371	29	3,268	73
August	72,912	2,352	2,872	35	3,105	92	53,283	1,719	2,377	29	3,268	73
September	71,553	2,385	2,448	30	3,105	79	54,199	1,807	2,159	31	3,268	66
October	70,193	2,264	2,470	29	3,105	80	25,560	825	2,261	40	3,268	69
November	68,810	2,294	2,509	33	3,105	81	13,792	460	1,891	37	3,268	58
December	74,902	2,416	2,499	30	3,105	80	51,920	1,675	2,272	29	3,268	70
Total	719,178						585,915					

	Well "G" Pharand						Well "H" Michelle					
	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	16,952	547	1,092	16	2,289	48	45,326	1,462	1,809	23	2,289	79
February	15,547	555	1,169	14	2,289	51	37,183	1,328	1,801	23	2,289	79
March	17,443	563	1,074	15	2,289	47	45,146	1,456	1,829	24	2,289	80
April	14,791	493	950	13	2,289	41	44,154	1,472	1,656	23	2,289	72
May	19,126	617	968	13	2,289	42	55,372	1,786	1,866	24	2,289	82
June	12,381	413	1,217	18	2,289	53	42,217	1,407	1,870	28	2,289	82
July	11,494	371	1,215	18	2,289	53	35,482	1,145	1,575	28	2,289	69
August	21,718	701	1,345	18	2,289	59	39,569	1,276	1,581	21	2,289	69
September	17,906	597	1,198	21	2,289	52	36,234	1,208	1,482	23	2,289	65
October	293,026	9,452	1,480	19	2,289	65	40,062	1,292	1,726	26	2,289	75
November	31,239	1,041	1,442	19	2,289	63	35,921	1,197	1,612	21	2,289	70
December	7,834	253	1,110	18	2,289	48	34,493	1,113	1,506	21	2,289	66
Total	479,457						491,159					

	"I" Well					
	M3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	26,183	845	1,108	21	1,972	56
February	30,303	1,082	1,110	19	1,972	56
March	33,304	1,074	1,108	21	1,972	56
April	32,975	1,099	1,106	22	1,972	56
May	26,497	855	1,109	21	1,972	56
June	31,902	1,063	1,109	21	1,972	56
July	31,330	1,011	1,109	21	1,972	56
August	15,405	497	1,106	19	1,972	56
September	7,433	248	1,109	21	1,972	56
October	28,591	922	1,108	22	1,972	56
November	31,131	1,038	1,110	21	1,972	56
December	31,663	1,021	1,108	21	1,972	56
Total	326,717					

1.7 Levack Distribution System

C of A No. 3125-5TEN2Y

November 21, 2003

The Levack water system, as owned by the City, consists of a Fluoride Building, distribution network, and water is supplied to the Fluoride Building from the ValeINCO well pump house and treatment building in Levack. The water is treated to comply with O. Reg. 170/03 by ValeINCO then delivered to the community of Levack via the City Fluoride Building.

The Levack water supply system owned by ValeINCO is not the subject of this Compliance Report, however, a brief explanation of the system is provided for continuity. The Levack system is a groundwater well situated adjacent to the Onaping River. To enhance the water quality, a recharge pit is located adjacent to the wells, and filled with water pumped from the Onaping River. The water treatment system includes alkalinity adjustments and liquid chlorine injection for disinfection. The water is used by ValeINCO at their mines in the Levack area and is also delivered to the City for communal public water supply.

The MOE has considered the well aquifer to be potentially under the direct influence of surface water, and has stipulated that ValeINCO must prepare a GUDI study. ValeINCO has since served notice late in 2003 that they intend to end the supply agreement. ValeINCO will discontinue the supply of potable water to Levack on December 31, 2008.

The water works in Levack will invariably require upgrades to ensure full compliance with O. Reg. 170/03. In accordance with the Class Environmental Assessment completed on October 12, 2007, the City has decided to provide potable water to the residents of Levack and Onaping and to Xstrata Nickel's mining operations. The supply will come from the Wickwas Pump House in Onaping and a combining of the two (2) distribution systems of Levack and Onaping will be undertaken by the City of Greater Sudbury.

Water quality throughout the distribution system is monitored through regular sampling in accordance with O. Reg. 170/03.

Non-Compliance with Act, Regulations, Order or Approvals

Table 20 provides a summary of any requirements of the Act, Regulations, Orders, or Approval that the system failed to meet during the 2007 reportable period.

Table 20 - Levack Fluoridation Station

Item	Non-Compliance	Measure Taken to Ensure Compliance
MOE Inspection Issues	Changes to system registration not provided within ten (10) days of change	Upon identification of this issue, CGS immediately sent updated information
MOE Orders	NONE	N/A

2007 Adverse Water Quality Incident Report

260006490 Levack Distribution System

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.

Table 21 - Adverse Water Quality Incidents

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2007	No adverse reports				

Annual Flow Summary

Table 22 provides a summary of the quantities of flow rates with a comparison to rated capacities as listed in the systems Certificate of Approval during the 2007 reportable period.

Table 22 – Annual Flow Summary (Levack)

	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	18,990	613	646	18	1,056	61
February	18,692	668	713	17	1,056	67
March	20,591	664	693	20	1,056	66
April	19,420	647	828	44	1,056	78
May	20,541	663	899	42	1,056	85
June	18,104	603	760	26	1,056	72
July	18,892	609	652	22	1,056	62
August	21,359	689	752	22	1,056	71
September	17,840	595	838	33	1,056	79
October	17,962	579	795	30	1,056	75
November	16,994	566	619	27	1,056	59
December	19,076	615	661	18	1,056	63
Total	228,461					

1.8 Falconbridge Distribution System

C of A No. 3517-5VULKG

February 04, 2004

The Falconbridge water system, as owned and operated by the City, consists of a Fluoridation building and distribution network. Water is supplied to the Fluoride Building from the new deep-wells located southeast of the Sudbury Airport. The water is treated to comply with O. Reg. 170/03 by Xstrada then delivered to the community of Falconbridge via the City fluoride building and distribution system.

The Falconbridge well supply system that is owned by Xstrada is not the subject of this Compliance Report, however, a brief explanation of the system is provided for continuity.

Xstrada has considered alternatives to upgrade the water works to ensure compliance with O. Reg. 170/03. Xstrada reviewed options such as alternative groundwater sources and ultimately developed a new well field near the Sudbury Airport. OCWA has been contracted to operate these new facilities for Xstrada, which now feeds the town of Falconbridge. The old #4 well has been isolated from the distribution network and used solely for the mines as fire protection and process water.

Although Xstrada provides chlorine disinfection of the water supply, the MOE has imposed a condition on the City to add a re-chlorination facility to the Fluoride Building. The City requested a change to this condition with a letter in Nov of 2003. The MOE cannot acknowledge receipt of said letter and as such the City will resubmit its request to amend the condition of the C of A.

The distribution network in the community of Falconbridge is owned by the City but was developed by Xstrada for the original town-site. The piping system is relatively old and exposed to severe frost depths.

Water quality throughout the distribution system is monitored through regular sampling in accordance with O. Reg. 170/03.

Non-Compliance with Act, Regulations, Order or Approvals

Table 23 provides a summary of any requirements of the Act, Regulations, Orders, or Approval that the system failed to meet during the 2007 reportable period.

Table 23 - Falconbridge Fluoridation Station

Item	Non-Compliance	Corrective Measures Taken
MOE Inspection Issues	Non-compliance with requirement to seek changes to the C of A , requirement for re-chlorination facility.	City requested amendment to the C of A, Nov 2003 and will resubmit the request.
MOE Orders	NONE	N/A

2007 Adverse Water Quality Incident Report

260006477 Falconbridge Distribution System

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.

Table 24 - Adverse Water Quality Incidents

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2007/10/03	Fluoride	+1.5	mg/L	Resample / Re-test	2007/10/03
2007/11/28	Mercury	1.52	ug/L	Resample / Re-test	2007/12/03

Annual Flow Summary

Table 25 provides a summary of the quantities of flow rates with a comparison to rated capacities as listed in the systems Certificate of Approval during the 2007 reportable period.

Table 25 – Annual Flow Summary (Falconbridge)

	m3 Total Flow	Average Daily Flow m3/d	Maximum Daily Flow m3/d	Instantaneous Peak Flow L/s	m3/d C of A Maximum Flow	% Capacity
January	7,288	235	266	9.61	727	37
February	6,784	242	283	8.44	727	39
March	6,905	223	253	9.99	727	35
April	6,799	227	259	9.99	727	36
May	7,885	254	356	9.99	727	49
June	7,628	254	389	9.99	727	54
July	7,618	246	372	9.99	727	51
August	9,147	295	442	9.99	727	61
September	6,426	214	256	9.99	727	35
October	5,782	187	233	7.94	727	32
November	6,123	204	235	9.99	727	32
December	6,981	225	256	8.16	727	35
Total	85,366					

1.9 Other Distribution Systems (Onaping, Vermillion)

The distribution systems of Onaping and Vermillion do not have system specific certificates to operate but fall under the owners certificate for the treatment facilities. The owners of the Onaping and Vemillion treatment facilities are Xstrada and ValeINCO and as such, have responsibility for these systems and are not the subject of this report. The City owns and operates the distribution networks in the communities of Onaping, Copper Cliff, Lively, Naughton and Whitefish. The City has obligations to test, maintain and report on these distribution works as part of the new regulations.

Water quality throughout the distribution system is monitored through regular sampling in accordance with O. Reg. 170/03.

1.9.1 Onaping Distribution System

Non-Compliance with Act, Regulations, Order or Approvals

Table 26 provides a summary of any requirements of the Act, Regulations, Orders, or Approval that the system failed to meet during the 2007 reportable period.

Table 26 - Onaping Distribution System

Item	Non-Compliance	Measure Taken to Ensure Compliance
MOE Inspection Issues	NONE	N/A
MOE Orders	NONE	N/A

2007 Adverse Water Quality Incident Report

260006503 Onaping Distribution System

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.

Table 27 - Adverse Water Quality Incidents

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2007	No adverse reports				

1.9.2 Vermillion Distribution System

Non-Compliance with Act, Regulations, Order or Approvals

Table 28 provides a summary of any requirements of the Act, Regulations, Orders, or Approval that the system failed to meet during the 2007 reportable period.

Table 28 - Distribution System

Item	Non-Compliance	Measure Taken to Ensure Compliance
MOE Inspection Issues	NONE	
MOE Orders	NONE	N/A

2007 Adverse Water Quality Incident Report

260006789 Vermillion Distribution System

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.

Table 29 - Adverse Water Quality Incidents

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
2007/03/21	Background Count	TNTC	CFU/100mL	Resample / Re-test	2007/03/23
2007/08/02	Chlorine Residual	0.02	mg/L	Disinfectant restored/increased	2007/08/02