The Corporation of the Town of Mattawa
P.O. Box 390, 160 Water St.,
Mattawa, Ontario, P0H 1V0

2009 Summary Waterworks Report

per O.Reg 170 / 03 &
Certificate of Approval Condition #4

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February 25, 2010

PLANT: # Town of Mattawa Water Works

WORKS NUMBER: 2100001905

PLANT TYPE: Municipal Drilled Wells

OPERATORS: Certified Municipal Staff

ADDRESS: Corporation of the Town of Mattawa
P.O. Box 390
160 Water Street
Mattawa, Ont., P0H 1V0

CONTACT PERSON: Marc Mathon, P.Eng
Public Works Superintendent
160 Water Street, Mattawa, Ont., P0H 1V0, (705) 744-2424

DESCRIPTION:

- Water Source is from two deep drilled wells. Well #1 – 26.4m & Well #2 – 23.6m.
- Standby chlorination system installed in 1996, replaced with new system in October 2003.
- Storage by underground concrete reservoir w/ 175,000 Imp. Gal. capacity.
- Distribution system is gravity fed from the reservoir.
- Average water pressure throughout distribution system is 97 psi.
- Distribution system comprises of a mixture of PVC, ductile iron and cast iron.
- Pump # 1 is rated at 53.0 L/s and pump #2 is rated at 22.7 L/s.
- The only treatment required for this system is disinfection. Disinfection is presently achieved by U.V. exposure via Trojan Swift Reactors. Chlorination is being used to maintain residuals throughout the distribution system to meet our certificate of approval and O.Reg 170/03.

REPORTS TO THE MINISTRY
Per Section 18 of the ACT:

- During this period there was **NO** test results from our weekly Table "A" and Quarterly sampling program that showed indicators of adverse water quality.
- There were no reports submitted to the Ministry under Section 18 of the Act for this period.

COMPLIANCE WITH TERMS & CONDITIONS OF THE CERTIFICATE OF APPROVAL:

- As far as we have been able to ascertain, with the exception of the items listed in the next section, in 2009 we operated the Town of Mattawa Waterworks in accordance with our Certificate of Approval #2383-5MGKJ9 and O.Reg 170/03.
- Chlorine readings in the distribution system are being taken using handheld turbidity meters.
- Chlorine at the plant is being monitored at the plant using an in-line analyzer.
- Water flows are measured in Imperial Gallons. Each day the operator records the meter readings onto a Daily Readings form. That form provides for an ongoing subtraction of the previous day's readings to determine the water produced during each day period. As such, daily flows are easily found on the flow recording forms for the plant & each well, as practiced for that past 10+ years.
- We recently completed a Groundwater Study as part of a regional project led by the North Bay – Mattawa Conservation Authority. This study will form the basis for a Ground Water Protection Plan which is part of an upcoming project also involving the North Bay – Mattawa Conservation Authority. We expect to be able to implement a preliminary plan by end of 2010.
- A detailed Operations Manual and Contingency Plan has been completed and implemented. We will be including a section called "Standard Conditions" outlining the routine, standard or normal levels and readings that are observed during the normal operation of the plan. This will assist operators in identifying problem areas quicker.
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NON - COMPLIANCE WITH TERMS & CONDITIONS OF THE CERTIFICATE OF APPROVAL:

Non-Compliance	We were unable to complete a hydrant inspection, valve inspection and flushing program in 2009.
Measures taken to comply	We are scheduled to implement a flushing program and hydrant and valve inspection program in September of 2010. Contracted with InfraResto from Ottawa.

Non-Compliance	SCADA System was being designed and not implemented or installed as of Decembe 31st, 2009
Measures taken to comply	Stroma Engineering is schedule to complete their installation and commission our SCADA system by middle of October, 2010.

Non-Compliance	
Measures taken to comply	

SUMMARY & DISCUSSION OF WATER PRODUCTION:

- From January 1st , 2009 to December 31st, 2009 the waterworks produced and supplied 111,662,000 Imp. Gallons of drinking water to the distribution system.

- The monthly average quantity of water supplied by this facility compared to the capacity of the wells is listed in table form below:

Summary of Water Production for 2009

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Avg Day Flow - I Gal:	286226	305724	319645	330433	316226	322300	306484	298097	285733	293613	301533	295710
Max. Day Flow - I Gal.:	314400	341333	326038	378545	342261	400000	386880	394435	327051	326038	337882	392727
Rated Capacity - IGPD:	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M
% (Avg Day / Rated):	20%	21%	22%	23%	22%	22%	21%	21%	20%	20%	21%	21%
% (Max Day / Rated):	22%	24%	23%	26%	24%	28%	27%	27%	23%	23%	23%	27%

SUMMARY OF FLOW RATE EXCEEDANCES & ANALYTICAL RESULTS:

Flow Rates

During this period there were **no** exceedances of the rated capacity flow rate occurred. Over the course of the past 5 years the municipality has undertaken a comprehensive leak detection program. This program has been effective in reducing losses to the degree that our normal production range has dropped from 550,000 – 650,000 down to within a normal production range of 300,000 to 425,000.

Our flow measuring devices are calibrated at the beginning of each year.

Quarterly Sampling

All tests required from our Nitrates/Nitrites & THMs quarterly sampling program yielded results below ODWS M.A.C. THM's were taken at the near end of the distribution system, while the Nitrates, Nitrites were taken at the plant exit. THMs were far below the M.A.C, with a 4 quarter running average of 0.0085 mg/L.

Schedule 23 of O.Reg. 170/03 - Inorganics

These parameters were tested for in 2009 & all results were well below the M.A.C. Due next in 2012.

Schedule 24 of O. Reg. 170/03 – Organics

These parameters were tested for in 2009 & all results were well below the M.A.C. or below detectable limits. Due next in 2012.

Bacteriological

There was only the occasional presence (GBP) of bacteria in the raw water samples with no indicators of negative trends. There was one occasion in 2009 where coliform bacteria was present in the raw water samples with no negative trends forming. This may be an indication that the measures introduced during 2005, to ensure that the sampling procedure is kept sterile to avoid biological transfer to the sample, were successful.

Free Chlorine Residual

During 2009, chlorine residual was conducted using an in-line analyzer in the water works station and handheld meters in the distribution system and for raw water. Chlorine residual tests in the distribution system were carried out at various locations and various times through the day every day of 2009. The free chlorine residual values in the distribution system generally ranged from 0.09 to 1.12 mg/L. Chlorine tests were conducted 365 times during this year.

There were no incidences to report where the maximum free chlorine residual exceeded 4.0 mg/L in either the distribution system or at the point where the water enters the distribution system.

There were no incidents to report where the free chlorine residual was less then 0.05 mg/L.

Turbidity

Turbidity levels of the raw water at the plant have been between 0.06 and 0.16 NTU. Since the upgrades were completed, turbidity of treated water has been monitored via the in-line analyzer, with the exception of raw water, being still tested with the hand held unit. Turbidity of treated water has been dropped from our Certificate of Approval, so we no longer monitor turbidity.

TREATMENT CHEMICALS AND DOSAGE:

Sodium Hypochlorite is the only chemical used at this water production facility. The metering pumps were set to provide approximately 1 L/hr chlorine dosage. We were having trouble with out metering pumps at the beginning of the year where our consumption rose to 1 L/hr +/-. Upon repair the consumption returned to normal dosages.

Prepared by:

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Marc Mathon – Public Works Superintendent