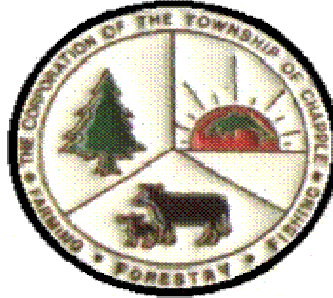


# THE CORPORATION OF THE TOWNSHIP OF CHAPPLE



## DRINKING WATER QUALITY MANAGEMENT SYSTEM

### OPERATIONAL PLAN

**YEAR: 2017**

## TABLE OF CONTENTS

DESCRIPTION	PAGE
<b>ELEMENT 1 – INTRODUCTION</b>	<b>3</b>
<b>ELEMENT 2 – SYSTEM POLICY</b>	<b>4</b>
<b>ELEMENT 3 – COMMITMENT AND ENDORSEMENT</b>	<b>5</b>
<b>ELEMENT 4 – QMS REPRESENTATIVE</b>	<b>6</b>
<b>ELEMENT 5 – DOCUMENT AND RECORDS CONTROL</b>	<b>7</b>
<b>ELEMENT 6 – DRINKING WATER SYSTEM</b>	<b>10</b>
<b>ELEMENT 7&amp;8 – RISK ASSESMENT AND OUTCOMES</b>	<b>17</b>
<b>ELEMENT 9 – ROLES AND RESPONSIBILITIES</b>	<b>21</b>
<b>ELEMENT 10 – COMPETENCIES</b>	<b>23</b>
<b>ELEMENT 11 – PERSONNEL COVERAGE</b>	<b>24</b>
<b>ELEMENT 12 – COMMUNICATIONS</b>	<b>25</b>
<b>ELEMENT 13 – ESSENTIAL SUPPLIES AND SERVICE</b>	<b>27</b>
<b>ELEMENT 14 – REVIEW OF INFRASTRUCTURE</b>	<b>30</b>
<b>ELEMENT 15 – INFRASTRUCTURE REHAB AND RENEWAL</b>	<b>31</b>
<b>ELEMENT 16 – SAMPLING, TESTING, MONITORING</b>	<b>32</b>
<b>ELEMENT 17 – CALIBRATION AND MAINTENANCE</b>	<b>33</b>
<b>ELEMENT 18 – EMERGENCY MANAGEMENT</b>	<b>34</b>
<b>ELEMENT 19 – INTERNAL AUDITS</b>	<b>37</b>
<b>ELEMENT 20 – MANAGEMENT REVIEW</b>	<b>40</b>
<b>ELEMENT 21 – CONTINUAL IMPROVEMENT</b>	<b>43</b>
<b>GLOSSARY OF ACRONYMS</b>	<b>44</b>
<b>APPENDIX A – QMS SCHEDULE</b>	<b>45</b>
<b>APPENDIX B – INTERNAL AUDIT SCHEDULE</b>	<b>46</b>
<b>APPENDIX C – INTERNAL AUDIT CHECKLIST</b>	<b>47</b>
<b>APPENDIX D – INTERNAL AUDIT CHECKLIST EXPANDED</b>	<b>48</b>
<b>APPENDIX E – CORRECTIVE ACTION FORM</b>	<b>58</b>
<b>APPENDIX F – COMMENT FORM</b>	<b>59</b>
<b>APPENDIX G – DOCUMENT CHANGE REQUEST FORM</b>	<b>60</b>
<b>APPENDIX H – GENERAL DOCUMENT REQUEST FORM</b>	<b>61</b>
<b>APPENDIX I – OPERATOR RECOMMENDATION FORM</b>	<b>62</b>
<b>APPENDIX J – RETURN OF GOODS FORM</b>	<b>63</b>

**Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution**

Reference: Element # 1

Revision #: 2

Qms Representative: *David Michels*

## **INTRODUCTION**

This operational plan is the first step in establishing a quality management system for the township's water treatment and distribution system. It is mandatory that all owners, administration, and staff become completely familiar with and endorse this document. The twenty chapters here within address all of the requirements necessary to successfully operate and maintain our water treatment and distribution systems. Supporting documents which complete the management system are referred to throughout, especially in areas of operational and maintenance procedures.

This operational plan clearly defines policy, roles, responsibility, and areas of authority. It describes the water source, treatment process, distribution system, and potential risks and hazards. It is designed as a working document; listing emergency contacts, contractors, suppliers, spare operators etc. It also identifies supporting documents crucial to the management system and gives their exact location for quick and easy access.

Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution

Reference: Element # 2

Revision #: 3

Qms Representative: *David Michals*

**QUALITY MANAGEMENT SYSTEM POLICY**

The Township of Chapple is committed to the consumers in the service area, and to providing a safe and ample water supply of a quality that meets or exceeds provincial Legislative & Regulatory requirements and aesthetic objectives.

The Township is also committed to the continual ongoing maintenance and improvement of the complete Quality Management System, striving for optimum quality, performance, and efficiency.

**Township of Chapple  
 Quality Management Operational Plan  
 Water Treatment and Distribution**

Reference: Element # 3

Revision #: 7

Qms Representative: *David M. [Signature]*

**ENDORSEMENT**

The Owners and Management of the Township of Chapple’s Water Treatment and Distribution System support and endorse the contents, implementation, and maintenance of this Drinking Water Quality Management System. This endorsement extends beyond agreement in principal to providing resources for and active participation in the maintenance and improvement of this complete document.

**Endorsed by:**

\_\_\_\_\_ Reeve

\_\_\_\_\_ Councilor

\_\_\_\_\_ Councilor

\_\_\_\_\_ Councilor

\_\_\_\_\_ Councilor

\_\_\_\_\_ Clerk-Treasurer

\_\_\_\_\_ Superintendent of Public Works

\_\_\_\_\_ DWQMS Representative and ORO

**Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution**

Reference: Element # 4

Revision #: 2

Qms Representative: *David McKelvie*

**QUALITY MANAGEMENT SYSTEM REPRESENTATIVE**

The Township of Chapple has appointed David McKelvie as the DWQMS Representative for the Township of Chapple Water Treatment Plant and Distribution System. He is also the ORO

**The responsibilities of the QMS Representative are:**

- Ensure that the processes and procedures required by the QMS are implemented and maintained current.
- Report to Top Management on the performance of the QMS and any need for improvement
- Promote awareness of the QMS to all Personnel and Management
- Ensure that all Personnel are aware of applicable current regulatory requirements within the operation of the Drinking Water System
- Provide applicable training to all personnel and owners involved in the delivery of safe, high quality drinking water

**Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution**

Reference: Element # 5

Revision #: 4

Qms Representative:



**DOCUMENTS AND RECORD CONTROL**

**Procedure Description**

This procedure defines the processes in place to ensure control of all documentation and records affecting the Township of Chapple DWQMS. This is necessary to ensure the creating, revising, approving and releasing documents are completed in a consistent manner to make certain they are retrievable, current and accurate.

**Reason for Procedure**

To ensure control of documentation and records which affect the Township of Chapple DWQMS.

**Responsibility**

The designated QMS Representative, (or the alternate), shall be responsible for the control of all QMS documents. All documents must meet the approval of the QMS Representative before initial or revision issuance.

The designated ORO/QMS Representative, (or the alternate), shall be responsible for the control of all documents and records pertaining to the Water Treatment Plant. All documents created or revised must meet the approval of the ORO/QMS Representative before initial or revision issuance. The presence of a signature from the ORO/QMS Representative, (or the alternate) on the front page of the document indicates this approval.

**Procedure**

All records, reports and documents shall be retained for at least the time frame as mandated by O.Reg 170/03, Sec. 13, Pg. 22. The regulation states that all records compiled daily, weekly, and monthly must be kept for 2 years. Records compiled quarterly and annually must be kept for 6 years. Records compiled at a frequency greater than 1 year, including engineer's reports must be kept for 15 years. Drawings, blueprints and equipment manuals must be kept and maintained current indefinitely, or until they become redundant. Electronic Files are backed up weekly to a thumb drive.

**Document and records location:**

- **OMS Operational Plan**  
On computer file at the Township office and WTP  
Paper copy at the Township office and WTP office
- **OMS Forms** (Minutes, Audit checklist & Reports)  
WTP Computer File  
WTP filing cabinet
- **Engineers Reports**  
WTP office  
Township Office
- **Annual and Summary Reports**  
WTP computer and filing cabinet  
Township office
- **Monthly Plant Data Reports**  
WTP Computer file  
WTP filing cabinet
- **Forms**  
WTP Computer file  
WTP filing cabinet
- **Operator Certificate of Classification**  
Posted on the wall of the WTP Office  
Copies kept in the Township Office
- **Contingency Plan/SOP Water Treatment and Distribution**  
Binders are located in the WTP Office  
WTP Computer File
- **Engineering and Equipment Manuals**  
WTP Office, Operations Manuals Volumes 1 to 6
- **As Built Drawings and Blue Prints**  
Copies located in WTP filing cabinet  
Originals hanging in the Township office  
Equipment Details in Equipment Manuals
- **Regulations**  
Contained in the Contingency Plan/SOP Binders  
WTP Computer file
- **Lab Sample Reports**  
WTP Computer file  
WTP Office filing cabinet
- **Chain of Custody carbon copies**  
WTP Office
- **Daily Log Books**  
Current year on WTP desk, previous years in the right cabinet in the WTP Office
- **Archived Documents**  
All Archived documents from the WTP are located in the Archive room located upstairs in the Township office  
Archive file list maintained on WTP computer file



- **Training Records**

- WTP Office Binders

- WTP Computer File

All QMS documents are equipped with a header which includes the reference, element revision number and Qms approval signature and a footer which includes the title of the document, whether it is controlled or uncontrolled and the page number. Changes to the Qms will be made by individual element's to revisions will be tracked by archiving the old revision for future reference.

All original documents and records for the Water Treatment Plant are kept in the Water Treatment Plant and electronic files are kept on the computer located in the Water Plant office. Archived documents that have past there relevance are stored in the Archives room upstairs at the Township office. Outdated and old revisions of electronic documents are stored in the Archive file located on the computer in the Water Plant office. Currently all documents are retained. The destruction of hard copies or deletion of electronic outdated files shall be the responsibility of the QMS Representative or Alternate. A Document Change Request Form will be competed indicating Delete Existing as the type of change. A review and update of all documents, policies and procedures will be conducted annually, or on as needed basis to ensure that they are up to date and relevant.

Hard copies of documents and procedures are printed and kept in binders located in the water plant office and also the filing cabinet. Relevant operating staff are the only ones that have access to the WTP and it's associated documents and procedures. If operating staff need to remove any documents, policies, maintenance manuals, training binders etc. a note will be made in the daily log book of what was taken and who has taken it.

Electronic controlled master copies of the DWQMS and all relevant documents are kept in a password protected file with the ORO/QMS Representative and Senior Management being the only one with access to the master documents.

# Township of Chapple

## Quality Management Operational Plan

### Water Treatment and Distribution

Reference: Element # 6

Revision #: 5

Qms Representative: *David M. Myles*

## **DRINKING WATER SYSTEM**

The Treatment Process and Distribution system are described in detail in the SOP Binders. Included in these binders are the plant history, startup well history, equipment data, operating procedures and Emergency response procedures.

The Chapple Water System is owned and operated by The Corporation of The Township of Chapple and serves the village of Barwick. The village of Barwick is located approximately 30 miles west of Fort Frances and approximately 25 miles East of Rainy River.

### **Source Water**

The raw water source for the Township of Chapple is from 4 Non-Gudi wells located within a 150 m radius of the Chapple Water Treatment Plant. The bedrock aquifer from which the municipal system draws is contained within fractured metavolcanic Precambrian rock. Regional groundwater flow is from upland areas north of the village of Barwick, south towards the Rainy River. Our main production is from well #1 with wells 2, 5 and 6 producing on a rotating basis. Operators are instructed to refer to Operations Manual Volume #1 and the startup report from Degremont Infilco to obtain well characteristics and depths. The treatment process and raw water characteristics have not changed since startup in 1994. The average current raw water characteristics are still staying stable, the average pH is 7.1, and average turbidity is 4 ntu. There is no E. Coli or Total Coliform in the raw water. Do to the fact that we draw from 4 groundwater wells that are considered Non-Gudi the raw water chacteristics do not change from season to season therefore there are no event driven fluctuations to consider.

As pointed out in the Engineers study done in 2003 a portion of the well field is used as an R.V Park. To minimize the threat, as it is still currently an R.V Park the town advises campers that they are on a municipal well field and to avoid bringing hazardous chemicals into the park.

### **The Treatment Process**

Water treatment consists of four stages: softening (addition of lime); PH adjustment (recarbonation with CO<sub>2</sub>); filtration (gravity filters); and disinfection (addition of sodium hypochlorite.) The water is then stored. The raw water stays at such a stable rate year round and there is no problem in the treatment process that there are no critical upstream or downstream processes to maintain adequate treatment required.

The largest operational threats that should be watched for are a clarifier upset or a filter break through. Procedure to address each of these events can be found in the Contingency/SOP Binder. Diligent daily monitoring of the clarifier and adjustment of the treatment process as required will greatly reduce the chance of clarifier upset.

### **The Lime Pump Feeder System**

The lime pumps, service and standby are Wallace and Tiernan model 44-313. For information refer to Operations Manual Volume #4.

The pump is electric motor belt driven with a four-step pulley for changing the speed of the pump. For our purposes the 3<sup>rd</sup> step position is the most practical. This belt position drives the pump at a speed or frequency of 38 strokes per minute. Simply timing the pulses of the lime feed line can check this. The belt position is never changed unless the lime-pumping requirement more than doubles.

Adjusting the length of the stroke easily adjusts the feed rate. With the pump running the jam nut is loosened on the adjusting hand wheel. Turning the hand wheel clockwise increases the feed rate, counter clockwise decreases it. Each complete revolution of the hand wheel changes the stroke length by 2% as noted on the stroke length gauge. the jam nut must be re-snugged after adjusting.

### **Chlorine Feed Pump**

The chlorine feed service pump is a Milton Ray model A161. For information refer to Operations Manual Volume #4. The pump is a positive displacement piston pump with two adjustments: stroke length and stroke rate. Adjusting the rate or SPM changes the feed rate. To avoid confusion, it is important to adjust only the rate setting.

The chlorine feed standby pump is a Milton Ray model A151. For information refer to Operations Manual Volume #4. The pump is a positive displacement piston pump with two adjustments: stroke length and stroke rate. For our purposes, under normal operating conditions, the stroke length is set at 50% and is never changed. Adjusting the rate or SPM changes the feed rate. To avoid confusion, it is important to adjust only the rate setting.

### **Carbon Dioxide Feeder**

The CO<sub>2</sub> feeder is a Wallace and Tiernan, Series V75 - V notch Vacuum regulated. For information and an explanation of its operation refer to Operations Manual Volume #4. When the treatment process starts a solenoid valve opens to allow plant service water to flow through the feeder. The water passes through a narrowed throat, or injector, producing a vacuum, drawing the CO<sub>2</sub> gas from the cylinders, through the auto switch-over valves, then through the sight glass and into the injector where it mixes with the service water, which flows into the recarbonation tank. The amount of gas drawn into the injector is controlled by the rate adjustment valve (red knob to the right of the sight glass.) The float ball in the sight glass will be held in suspension by the up flowing gas, indicating the feed rate in lbs/day.

## **Storage**

The Chapple Water Treatment Plant has 2 Reservoirs and 2 pump wells. The combined capacity of the 2 reservoirs is 259.1 m<sup>3</sup>. The east pump well has a capacity of 27.6 m<sup>3</sup>, and the west pump well, a capacity of 25.2 m<sup>3</sup>, for a total treated water capacity of 312.5 m<sup>3</sup>. With Under normal flow conditions this provides approximately a three days supply.

## **Starting the Treatment Process**

All parts of the process are operated (and left) in the automatic mode. When the process starts all of the chemical feeders, clarifier flocculator drive, raw water pump and control valve, filter valves and reservoir valves are started or energized. The process will start automatically when the reservoirs level falls to 2.3 m. The process can also be started manually at the stop/start station on the MCC, provided the reservoir level is below 2.44 m.

When starting manually, the raw water low pressure cut out switch on the raw water control valve must be in the manual override position. Once the raw water pressure has stabilized the manual override lever should be turned too automatic.

## **Optimizing the Clarifier/Softening Process**

The Degremont manuals explain thoroughly how the clarifier and softening process works.

To soften the water properly, the lime feed rate must accurately match the raw water flow rate. When these two adjustments are accurate the PH of the clarifier will be from 11.3 to 11.5 and the top of the clarifier will be clear and the floc pool or bed will be clearly defined and visible about four feet below the surface. For maximum softening, the clarifier should be operated as clear as possible. This also makes the recarbonation process more efficient, reducing the amount of CO<sub>2</sub> required and resulting in less carry over to the filters and a reduced frequency of backwashing.

## **Raw Water Control Valve and Discharge Orifice**

The control valve is a 2" Clayton pressure reducing valve, Cat# 93-EG-051Y with a range of 2 to 75 PSI. For more information refer to the Degremont manuals.

The valve maintains a constant flow rate by maintaining a constant downstream or discharge pressure. Once the discharge pressure is set it will not change unless the upstream or head pressure falls below the set value. Thus, the flow rate will be consistent even if the well level falls substantially over the course of the running cycle.

The discharge orifice or nozzle is a simple 1 ¼" galvanized pipe cap drilled out to the desired size. The larger the orifice, the higher the flow rate will be for any given pressure. Presently the orifice used is drilled out to 13/32" and the control valve discharge pressure is set at 12.5 PSI. This combination results in a flow rate of 44 l/m or 10 GPM.

The flow rate can quickly be checked at the raw water flow meter or at the discharge pressure gauge. The flow rate can be adjusted or changed at the control valve, pilot control valve, (3/8" bolt head). For large increases in flow the orifice can be changed.

The flow rate and/or pressure are to be checked everyday. If the flow rate is constantly changing by more than a few l/m, it's impossible to optimize the treatment process.

### **Sludge Extraction**

The sludge produced from the clarifier is discharged on a timed rate to the sanitary sewer system. The sludge produced from backwashing is also discharged to the sewer system, when operated manually.

### **Chlorine and Carbon Dioxide Feeder Adjustment**

It is water plant policy to discharge treated water into the west reservoir only. The valves between reservoirs and pump wells are arranged (open or closed) so that water flows from the west reservoir to the east reservoir, through the east pump well into the west pump well. This arrangement is never changed and ensures that the water reaching the pump wells is relatively consistent.

A sample is taken from the west reservoir every day and tested for chlorine residual and PH. Changes to the chlorine feed rate and CO<sub>2</sub> feeder are based on these tests.

The chlorine residual of the west reservoir should be kept at .40 mg/l to .60 mg/l. By the time this water makes it to the pump wells, it should still be around .3 to .5 mg/l. The PH of the west reservoir should be kept at 8.0 to prevent corrosion.

### **Distribution and Fire Pump**

The distribution system is normally supplied by 2 - 3HP pumps, DP-1 and DP-2 both rated at 51 GPM U.S. The fire pump HFP P-1 30 HP is rated at 551 GPM U.S. Under normal flow conditions DP-1 and DP-2 are started and stopped on an alternating basis with the rising and falling of pressure at the pressure (cushion) tank. Automatic pressure control as well as tank air volume/water level control is provided by a bank of pressure activated mercury switches and a float switch in the control cabinet at the pressure tank. For more information and a detailed sequence of operations, refer to the Healy Ruff instruction manuals in operations manual Volume 3.

### **Operation**

Both pumps are operated in the automatic mode as selected at the motor control center. When the system pressure drops to 43 PSI, the lead pump DP-1 or DP-2 starts. When the water in the pressure tank rises to a pre set level, a float activated switch shuts the pump off and simultaneously activates the air adjust feature. If the pressure is less than 60 PSI, air pressure will be added to the top of the tank. If the pressure is more that 60-PSI pressure will be released. As the level of the tank drops the air adjust feature de-activates. When the system pressure drops to 43 PSI, the other pump starts and becomes the lead pump. If the demand is high and the pressure continues to drop to 40 PSI, the remaining pump will start as the lag pump. Both pumps will continue running until the pre-set tank level is reached.

### **Fire Pump Operation**

If the pressure continues to drop to 35 PSI (extreme flows, hydrant open etc.) the pressure switches mounted on the fire pump pressure reducing valve will start the fire pump. When the fire pump was up to rated speed (6 seconds) the distribution pumps will shut off. Excess pressure from the fire pump will be discharged into pump well #2 through the pressure reducing valve. Regardless of the demand on the distribution system the fire pump will continue to run for 20 minutes.

### **Filter Operation**

For a complete description of the filters and associated equipment, theory of operation, sequence of operation and diagrams refer to Operations Manual Volume #1 – Section C50 and Volume #2 Degremont Equipment.

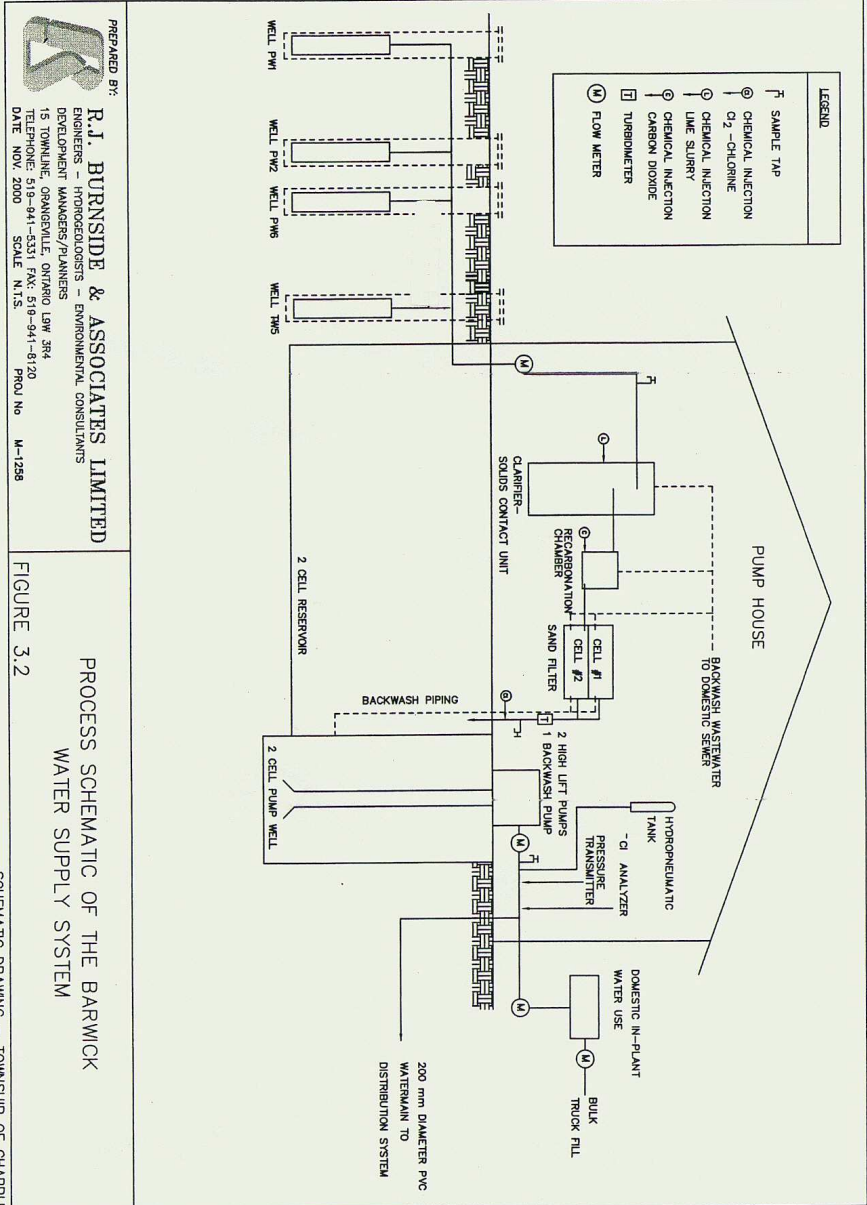
The filters serve to remove the lime floc carry over from the clarifier. The lime floc particles are relatively large and for the most part tend to cake on the filter surface, resulting in excellent filter effluent turbidity. Historically filter turbidity rarely exceeds .05 NTU even with excessive carry over under clarifier upset conditions.

### **Distribution system**

Water from the WTP enters the distribution system through an 8” water main. This water main is reduced to 6” branch lines. There is a total of 3 kilometers of water mains. There are 24 main line valves, 19 hydrants and hydrant valves and 60 service connections. There are 6 commercial establishments and 54 residential connections. All connections in the distribution grid are on a meter and all new establishments are required to have a meter.

Flushing of the hydrants is done spring and fall. Hydrants are pumped in the fall to prevent freezing. Main valves and hydrant valves are exercised once a year generally in the spring.

A complete in depth look at the treatment process and distribution system can be found in the Chapple Water Treatment Plant SOP/Contingency binder located in the wtp office.



PREPARED BY:  
**R.J. BURNSIDE & ASSOCIATES LIMITED**  
 ENGINEERS - HYDROLOGISTS - ENVIRONMENTAL CONSULTANTS  
 DEVELOPMENT MANAGERS/PLANNERS  
 15 TOWNLINE, ORANGETHURP, ONTARIO L9W 3R4  
 TELEPHONE: 519-941-5331 FAX: 519-941-8120  
 DATE: NOV. 2000 SCALE: N.T.S. PROJ. NO. M-1298

FIGURE 3.2  
 SCHEMATIC DRAWING - TOWNSHIP OF CHAPPLE

**Schedule "C"**

Subject System Description Form

Municipal Residential Drinking-Water System

Owner of Municipal Residential Drinking-Water System: THE CORPORATION OF THE TOWNSHIP OF CHAPPLIS  
 Name of Municipal Residential Drinking-Water System: BASIC WELL SUPPLY

Subject Systems			
Name of Operational Subsystems (if Applicable) <sup>3</sup>	Name of Operating Authority <sup>5</sup>	DWS Number(s) <sup>6</sup>	
<input checked="" type="checkbox"/> Check here if the Municipal Residential Drinking-Water System is operated by one operating authority. Enter the name of the operating authority in adjacent column <sup>4</sup>			
Operational Subsystem 1:	TOWNSHIP OF CHAPPLIS	22000 8140	
Operational Subsystem 2:			
Operational Subsystem 3:			
Operational Subsystem 4:			

Add attachments if there are additional 'Operational Subsystems'

Contact Information			
Name	Title	Phone No(s)	Email Address
Primary Name: <u>DAVID McKEULIE</u>			
Alternate Name: <u>RELSY JOHNSON</u>	<u>GENERAL RESPONSIBLE OPERATOR</u>	<u>(807) 487-1070</u>	<u>WTP@chapple.ca</u>
	<u>CLERK-TREASURER (AS NAO)</u>	<u>(807) 487-2354</u>	<u>Chapple@TheVetinet</u>



Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution

Reference: Elements # 7 &amp; 8

Revision #: 4

Qms Representative: *David M. [Signature]*

**RISK ASSESSMENT AND RISK ASSESSMENT OUTCOMES**

**Element 7 Risk Assessment will be covered under this section as well**

**Risk Assessment Outcomes**

The Corporation of the Township of Chapple has established, implemented and maintains this procedure to determine what potential hazards and critical control points exist in the Water Treatment and Distribution System.

The Risk Assessment procedure is conducted annually, prior to the DWQMS annual management review or more frequently if a significant process change or upgrade has occurred.

The process for hazard analysis includes an assessment of each process step and/or activity and identification of hazards that are potentially present or possible at each process stop and/or activity.

Once hazards are identified, the next step is determination of critical control points (CCPs). This process involved a risk assessment by prioritizing hazards and identifying points where control may be exerted to eliminate or minimize those hazards, (for example, by determining which are CCPs).

The risk assessment was performed by rating the likelihood, severity and detectability of each hazard at each relevant process step or activity on a scale of 1 to 5. The values for each of these factors were added together to give a risk priority number.

**Likelihood** is probability/likelihood of a hazard or hazardous event occurring.

**Severity or Consequence** is the potential impact to health or impact on operations if the risk is not controlled (assumes control measures do not work).

**Detectability** is a measure of the ability to detect the presence of certain hazards. Hazards, which could be easily and quickly detected, were given a low value. Hazards that are hard to detect or undetectable are given a high value. The risk is greater as appropriate responses cannot be taken to control or mitigate the risk.

**The rating system is defined on the following page:**

<b>Description</b>	<b>Likelihood of Hazard Occurring</b>	<b>Rating</b>
Rare	May occur in exceptional circumstances, or has not occurred	1
Unlikely	Could occur at some time, historically has occurred annually or less than annually.	2
Possible	Has occurred once or more per year.	3
Likely	Has occurred on a monthly to quarterly basis.	4
Very Likely	One or more occurrences on a monthly or more frequent basis	5

<b>Description</b>	<b>Severity of Hazard Occurring</b>	<b>Rating</b>
Insignificant	Insignificant impact, little disruption to normal operation.	1
Minor	Minor impact some manageable operation disruption, some increase in operational requirements.	2
Moderate	Minor impact significant modification to normal operation but manageable. Increased monitoring and operational requirements.	3
Major	Major impact systems significantly compromised and abnormal operation if at all.	4
Catastrophic	Major impact complete failure of all systems.	5

<b>Description</b>	<b>Detectability of Hazard</b>	<b>Rating</b>
Very Detectable	Very easy to detect, instantaneous	1
Moderately Detectable	Moderately detectable, alarm present may require operator to walk by and notice; problem is indicated promptly by lab test results.	2
Normally Detectable	No alarm present, visually detectable on rounds or regular maintenance.	3
Poorly Detectable	Poorly detectable, visually detectable but not inspected on a regular basis; would not be detected before a problem was evident, lab tests that are not done on a regular basis.	4
Undetectable	Undetectable, cannot detect.	5

Included in the following pages is a chart that identifies the process and activity hazards related to the Water Treatment & Distribution System along with the outcome of the risk assessment, and finally the identification of which of these are identified as critical control points.

Critical control points identified in the table that follows have controlled conditions that are established, implemented and maintained that include Critical Limits, The availability of information to operations personnel that outlines the critical limits, The availability and awareness of SOP's, and The reliability and redundancy of equipment, as appropriate to the identified risks and nature of the Water Treatment Plant.

The Township of Chapple's determined threshold value is " 8 "

All actions performed in the WTP are recorded in the daily logbook. Reporting of any adverse outcomes, the operator is to follow the adverse protocol outlined in O. Reg 170. The operator will also report to the ORO his/her findings and outcomes related to the problem, and the ORO will communicate what is relevant to the PWS and CAO. If any maintenance or repairs are done to any piece of equipment the operator will also update the corresponding binder or line item in the track pro maintenance program.

Element or Process Step	Description of Hazard	Potential Result of Hazard	Comments	Available Monitoring & Control Measures	Emergency Procedure or Contingency Plan	Likelihood	Severity	Detectability	Risk Priority Number	CCP?	Control Procedure
Source water	Well Pump Failure	Loss of Raw Water		Switch to another production well	Switch to another production well and repair damaged pump	2	2	3	7	No	
	Well Casing Collapse	Loss of Raw Water		Switch to another production well	Switch to another production well and repair damaged well	1	2	3	6	No	
	Well Field Contamination	Contamination of Aquifer		Monitor and Sample	Refer to Contingency binder "Chemical spill well field"	1	2	2	5	No	Contingency Binder
	Highway or Road Accident	Contamination of Aquifer		Notify MOE and Spills Action of spill and potential contamination	Stop treatment process. Supply water from storage. Restrict water usage if required. Haul Water	1	2	2	5	No	Contingency Binder "Chemical spill"
Treatment	Filter Breakthrough	Biological Contaminant		On-line turbidity analyzer. Alarm set point 0.5 ntu	Take filter out of service. One filter handles plant flow	2	4	2	8	Yes	Contingency Binder
	Floculator Failure	Unsoftened water		Visual inspections	Repair floculator drive	1	1	3	5	No	
	Coagulant Failure	Unsoftened water		On-line filter turbidity analyzer. Alarm set point 0.5 ntu	Operations Manual	2	2	3	7	No	Contingency Binder
	Pump Failure	Quantity/Quality	Loss of System Pressure		Repair or Replace Damaged Pump	1	4	3	8	Yes	Contingency Binder
	CO2 Gas Feeder Failure	No PH Adjustment	PH is not adjusted down		Operations Manual	1	3	3	7	No	Contingency Binder

Element or Process Step	Description of Hazard	Potential Result of Hazard	Comments	Available Monitoring & Control Measures	Emergency Procedure or Contingency Plan	Likelihood	Severity	Detectability	Risk Priority Number	CCP?	Control Procedure
Primary Disinfection	Chlorine Pump Failure	Biological Contamination	Bacterial and viruses are not inactivated without chlorine	On-line Analyser alarm. Low set point 0.25 mg/l. High set point 1.13 mg/l	Operations Manual	3	3	3	9	Yes	Contingency Binder "Cl2 failure"
Reservoir	Structural Integrity of reservoir compromised. Groundwater seepage	Biological and Chemical contamination		On-line chlorine analyzer and daily treated water testing	Isolate Reservoir. Switch process to good reservoir. Keep plant full and good cl2 to allow adequate CT value	1	3	3	7	No	
Distribution	Water Main Break	Biological and Chemical contamination		High flow pump starts. Customer complaints. Chart Recorder	Refer to Contingency Binder	2	3	4	9	Yes	Contingency Binder "Water main break"
	Loss of Free Chlorine Residual (Below 0.05 mg/l)	Biological contamination	O. Reg 170/03	Dist. Free Cl2 testing twice a week	Flush lines until a 0.20 mg/l is achieved. Increase Cl2 dose at plant	2	4	3	9	Yes	O. Reg 170/03 corrective actions
	Cross Connection	Biological and chemical contamination	Backflow Prevention	Visual	Isolate, Flush, and Resample	1	3	4	8	Yes	Municipal By-Law in place
	Generator Failure	Biological Contamination		On-Line Analyzer Generator Alarm	Refer to SOP for Generator failure	1	4	2	7	NO	SOP Binder OP&M Vol 5

**Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution**

Reference: Element # 9

Revision #: 2

Qms Representative: *David M. Myles*

**ORGANIZATIONAL STRUCTURE, ROLES, RESPONSIBILITIES AND  
AUTHORITIES**

**The Township of Chapple, Reeve and Council (Owners)**

The Township of Chapple, represented by the Reeve and Council, is responsible for providing a safe and reliable supply of drinking water for all customers of the Chapple Water Treatment System. Reeve and Council will approve expenditures and all user fees. Reeve and Council have the authority to delegate management of municipal assets to qualified staff, and will participate in long range planning, budgeting, compliance issues and any on-going issues.

**Clerk-Treasurer, CMO, CAO (Top Management)**

The Clerk-Treasurer is responsible for reporting to the Reeve and Council on the operations and oversight of the Chapple Water Treatment System. The Clerk-Treasurer will provide direction from the owner and guidance to the Public Works Superintendent, and the Overall Responsible Operator regarding issues pertaining to the overall operation of our water system. The Clerk-Treasurer is also authorized by Reeve and Council to ensure that qualified staff is in place to ensure a safe and reliable drinking water system operating within regulatory compliance.

**Public Works Superintendent**

The Public Works Superintendent is responsible for ensuring that operations within the Chapple Water Treatment System are being performed. The Public Works Superintendent will work with the ORO and the Clerk-Treasurer on issues pertaining to the water system.

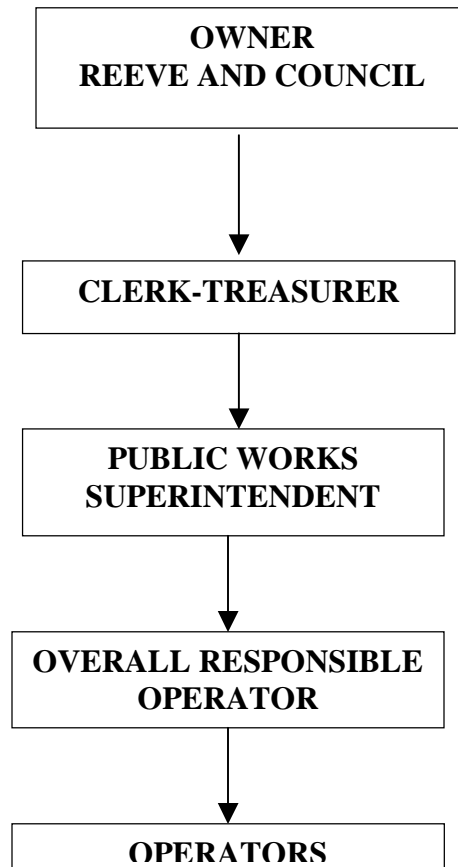
**Overall Responsible Operator and DWQMS Representative**

The ORO is responsible for day to day operations and supervision of all operators, ensuring all operators have adequate training to maintain a current Drinking Water Operator Certificate to operate the Chapple Water Treatment System. The ORO works hand in hand with the Public Works Superintendent and the Clerk-Treasurer on items pertaining to the water system. The ORO provides a written report to the Reeve and Council and Clerk-Treasurer on a monthly basis. The Clerk-Treasurer is updated orally on a daily basis, if required, on issues pertaining to the day to day operation of the system. The ORO will provide oral reports, and updates at council meetings, as

requested. The ORO will initiate Operational and Management Reviews and Internal and External Audits. The ORO may make changes to, or dispose of documents and records in consultation with senior management.

**Operator in Charge (OIC)**

The OIC is responsible for running the water system on a daily basis. The OIC will follow regulatory requirements as set out in O. Reg 170/03, follow wtp procedures, complete forms, file records and attend training. The OIC is also responsible for reporting all issues and complaints to the ORO. The OIC will also carry out Operations and Maintenance activities as required by or requested by the ORO.



**Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution**

Reference: Element # 10

Revision #: 3

Qms Representative: *David M. Myles*

## **COMPETENCIES**

### **Overall Responsible Operator (ORO)**

- Limited Groundwater Subsystem or higher
- WHMIS
- Confined Space Entry and Fall Protection
- Mechanical Aptitude
- Computer Knowledge
- Basic Lab Skills
- First Aid
- DWQMS Internal Auditor Training

### **WTP Operator**

- Limited Groundwater Subsystem or higher
- WHMIS
- Confined Space Entry and Fall Protection
- Mechanical Aptitude
- First Aid
- Computer Knowledge
- Basic Lab Skills

All operators will have an understanding of the complete water treatment process. They will understand the purposes and operational aspects of the treatment process from source to consumer. They will be provided with QMS training and have knowledge of all regulations and access to O. Reg 170. Operators will have the opportunity to comment and make suggestions for improvement of the Drinking Water System and the DWQMS. All training documents for all operators are kept at the WTP, as well CEU's accumulated to date and when they need updating. Frequency for both mandatory training and township selected training is all on file at the WTP and Municipal Office.

Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution

Reference: Element # 11

Revision #: 4

Qms Representative: *David Michals*

**PERSONNEL COVERAGE**

With the small size of the Chapple Water Treatment Plant minimum staff requirements are needed. It would require a minimum of 2 people to run the water plant.

The ORO and part time operators currently staff the Chapple Water Treatment system. A new agreement has been reached between the Township of Chapple and Rainy River First Nation to provide backup operations at each water plant during times of need. Currently there is one trained operator being utilized from RRFN and contact information has been added to the SOP/Contingency Plan resource personnel list. The backup operators are OICs. All staff operating within the drinking water system is fully licensed and licenses are displayed in the wtp office.

The ORO, or back-up operator, shall be available by telephone or cell phone to respond to emergencies. A backup operator may be designated as ORO in the case of a long-term absence.

The Chapple Water Treatment Plant is a small ground water plant that is not required to be staffed full time; however an operator who is required to carry a cell phone will be on call to respond to emergencies at all times. An in-plant auto-dialer will call the operator in the event of an alarm and the operator will respond to the alarm within 30 minutes. The Contingency Plan/SOP binder lists treatment process safety shutoffs that are in place.

Public Works staff at the Township of Chapple normally work from 7:00 a.m. to 3:30 p.m. On weekends and statutory holidays, the ORO or a backup operator will attend the plant to perform operational checks and daily water plant procedures.

An 80KW stand-by generator is available in case of a power interruption. The generator starts automatically. If it fails to start an alarm will alert the on-call operator.

All alarm scenarios and emergencies require a physical response to the WTP, and only after the operator has responded to check the problem will the alarm system reset back to normal.

A list of resource personnel and procedures for handling water main breaks or other wtp disruptions is contained in the Contingency Plan/SOP binder.



**Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution**

Reference: Element # 12

Revision #: 2

Qms Representative: *David M. Myles*

**COMMUNICATIONS**

The Township of Chapple is a small municipality operating with a small staff. The ORO will keep the Public Works Superintendent and top management informed of all the operational aspects to the water treatment and distribution system. The ORO will keep Reeve and Council informed through written monthly reports to council. These reports summarize the month's activities and list any emergencies, budget requests, training requests and all other relevant information pertaining to the safe operation of our facilities.

Backup operators will discuss any issues or make requests with the ORO on plant operations, policy or procedures and the ORO will discuss any relevant issues with the Public Works Superintendent and/or top management as needed. If necessary the Clerk Treasurer or Public Works Superintendent may inform Reeve and Council.

Reeve and Council, Top Management, Public Works Superintendent, Acting Public Works Superintendent, ORO and current operators will have a copy of the DWQMS Policy and will provide, to the DWQMS Representative, a sign off sheet confirming that they have read and understand the Policy for auditing purposes

Implementation of the DWQMS policy will be communicated at a meeting of all public works full and part time staff, top management and reeve and council and information regarding ongoing improvements will be forwarded to monthly council meetings and input from all parties will be encouraged.

An Annual Review Meeting with employees, owners and top management will be held to discuss any changes to the policy. All new employees being required to do work within the Chapple Water Treatment System will become familiar with the DWQMS Policy. A sign-in sheet will be used for all meetings pertaining to the DWQMS Policy and will be retained by the DWQMS Representative for auditing purposes.

The Township of Chapple's website will contain an overview of the DWQMS Policy for open review by the public. There will be a link to the Township's email address for public input. Customers will be advised in their utility bills that the policy is available for review at the Municipal Office and a comment sheet will be provided.

Where appropriate, the DWQMS Policy will be provided to essential suppliers of the Chapple Water Treatment System either electronically or hard copy. If copies are sent electronically a read receipt will be requested. If hard copies are provided an internal record will be maintained stating that a hard copy was sent to the supplier.

**Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution**

Reference: Element # 13

Revision #: 4

Qms Representative:

*David Myles*

**ESSENTIAL SUPPLIES AND SERVICES**

Chlorine	Cleartech
	340 Saulteaux Crescent, Winnipeg, MB. R2J 2X2
	800 – 387 – 7503
	<ul style="list-style-type: none"> <li>When 1 Jug left – Reorder 5 20lt Returnable Car Buoys Sodium – Hypochlorite</li> </ul>
Lime	Emo Feed Service Ltd.
	335 Canning Lane, Emo, ON. P0W 1E0
	807 - 482 – 2017
	<ul style="list-style-type: none"> <li>When 10 Bags are left on the pallet – Reorder 1 full Pallet</li> </ul>
CO2 Gas (Bev Grade)	Praxair
	308 Kennedy Road, Dryden, ON. P9N 2Y7
	800 – 225 – 8247
	<ul style="list-style-type: none"> <li>Consistent Delivery Schedule in Place – No ordering required</li> </ul>
Accredited Laboratory	ALS Laboratory Group
	1081 Barton Street, Thunder Bay, ON. P7B 5N3
	800 – 668 – 9878      Fax 807 – 623 – 7598
Chlorine Pump Parts	Cleartech
In House Lab Products	340 Saulteaux Crescent, Winnipeg, MB. R2J 2X2
	800 – 387 – 7503
24 Hour Chart Recorder (Pens & Chart Paper)	Graphic Controls
	400 Exchange Street, Buffalo, NY. 14240-1271
	800 – 267 – 9498
	Email: <a href="mailto:orders@graphiccontrols.com">orders@graphiccontrols.com</a>
	<ul style="list-style-type: none"> <li>Reorder Pens when down to 1 package of each – 4 blue / 2 Black / 2 Red / 2 Green</li> <li>Chart Paper when down to 1 box – Reorder 3 boxes</li> </ul>
Material Supplier (Process & Distribution)	EMCO Corporation
	Lyle Lemay Account Manager
	933 Tungsten Street. Thunder Bay, ON P7B 5Z3
	888 – 496 – 5555 Fx 807-345-0090 Dir. 807-346-6310
Material Supplier	JTJ Contracting ( Also does Plumbing)
	6349 Hwy 11 Emo, ON. P0W 1E0
	807 – 482 – 2170      Fax 807 – 482 – 2204

WTP Electrician	B & B Electric (Bruce Brigham) 92 Brigham Road South, Emo, ON P0W 1E0 807 – 482 – 2396 Cell: 807 – 275 - 6383
WTP Electrician	J & A Electric 36 Charles St. Emo, ON. P0W 1E0 807 – 482 – 2174
Water Distribution Contractor	M. L. Judson Contracting 6515 Hwy 11 Emo, ON. P0W 1E0 807 – 482 – 2237 After Hrs. 807 – 482 – 2061
Generator Service	Dieseltech Pritchard 100 Otter Street, Winnipeg, MB. R3T 0M8 204 – 452 – 4334
Lime & CO2 Parts (Wallace & Tiernan)	Perma Engineering Supply Winnipeg, MB. 204 – 633 – 7213
Pump Parts & Repairs (Distribution & High Flow)	JTJ Contracting 6349 Hwy 11 Emo, ON. P0W 1E0 807 – 482 – 2170 Fax 807 – 482 – 2204 Johnston Pump of Canada Inc. Factory Service Center 1907 Albion Road, Rexdale, ON. M9W 5S8 416 – 675 – 2470 Fax 416 – 675 – 2174
Ontario One Call (Utility Locate)	800 – 400 – 2255 Contractor ID # 28922
Calibration Services	Lakeside Industrial Services Winnipeg, MB Toll Free: 1-877-988-7378 Cell: 807 – 707 - 1905
Well Technician	Mells Well Drilling Emo, Ontario PH: 807 – 482 - 2895 Cell: 807 – 275 – 7961 (Jason Tessier)

May 4, 2016

Revision # 4

All suppliers will be selected on their ability to consistently meet the requirements of the Township of Chapple. Performance (delivery, acceptance rate, responsiveness) will be evaluated to ensure adherence to the township's purchasing policy

Lab Services will be provided by only Accredited Labs

All chemicals will be ANSI/NSF Certified

All excavation / construction services will be provided by bonded and insured contractors with the necessary licenses.

When returning goods (i.e Pallets, Car buoys, overages on orders, wrong item etc.) a Return of Goods form must be completed. The only omissions are companies like Prax Air where we have a contract for bottles and they are on a in/out return system. Form is found as an appendix in the QMS Document or in digital file on the water plant computer.

**Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution**

Reference: Element # 14

Revision #: 3

Qms Representative: *David M. Myles*


**REVIEW AND PROVISION OF INFRASTRUCTURE**

The infrastructure is being assessed on an ongoing basis through out the year by the ORO. Areas being assessed include flow and process trends, water quality reports, treatment and distribution maintenance records, complaints file, inspection reports, staff input and unplanned maintenance activities, any issues that arise are reported in the monthly reports to council. As required any major infrastructure items are included in the month report to council but a sit meeting will take place for further discussion. Annually a summary of items are generated and submitted for budget approval. A summary of infrastructure items as they arise will also be included in the management review meeting conducted once annually with Top Management, Reeve and Council.

Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution

Reference: Element # 15

Revision #: 2

Qms Representative: 

**INFRASTRUCTURE MAINTENANCE, REHABILITATION & RENEWAL**

The Chapple Water Treatment Plant has a preventative maintenance program in place. Preventative maintenance schedules, procedures and results are all logged in a software program called “TrackPro Calibration and Maintenance” and also there is a maintenance file in the filing cabinet with hard copies of reports and pocket cards with directions for maintaining water treatment plant equipment. A daily log report details maintenance records. Detailed equipment manuals are also kept in the operations manuals located in the wtp office. Monthly, quarterly and annual preventative maintenance schedules for wtp equipment are in place and followed diligently.

Preventative maintenance on the distribution system is done twice annually (spring and fall). Hydrant flushing is performed in the spring and fall and the information is documented in the hydrant maintenance binder located in the wtp office. Hydrant valves and main line valves are exercised once annually in the spring and the information is documented in the valve records binder located in the wtp office.

Rehabilitation and renewal of the water supply system is performed on a needs basis. The Corporation of the Township of Chapple has reserve funding in place to cover these costs as they are required.

Once annually, the ORO will review the maintenance programs in place, keep them current and generate a summary report to be presented to top management and council on the infrastructure maintenance, rehabilitation and renewal programs. The summary will include the results from hydrant maintenance, valve exercising and preventative maintenance of wtp equipment.

Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution

Reference: Element # 16

Revision #: 3

Qms Representative: *David Michals*

### SAMPLING, TESTING AND MONITORING

The Chapple Water Treatment Plant has a sampling program based on the requirements set out in Ontario Regulation 170/03 and our current C of A.

There is always an up to date sampling plan located on the bulletin board in the water treatment plant office that states the required sample, location and frequency of sampling.

A distribution sample for free chlorine is taken twice per week. Samples are taken from different zones in the distribution system and recorded in the finished water binder located in the office of the wtp.

The operator performs all in-house sampling. Results are recorded daily in the treated water binder and daily logbook. Detailed procedures for all tests performed on-site are provided in the operations manual and SOP/Contingency binder. Procedures to deal with adverse water samples are located in the SOP/Contingency binder and also can be referred to in O. Reg 170/03 schedule 16.

An accredited laboratory performs all off site lab work. Bacteriological and chemical results from the accredited lab are e-mailed to the ORO and the Clerk-Treasurer. Hard copies are filed in the wtp filing cabinet and electronic copies are kept on the water plant computer located in the wtp office.

Copies of all bacteriological and chemical analytical results are provided to members of the public upon request.



Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution

Reference: Element # 17

Revision #: 3

Qms Representative: *David M. Myles*

**MEASUREMENT AND RECORDING EQUIPMENT CALIBRATION AND  
MAINTENANCE**

Currently the Chapple Water Treatment Plant on-line measurement devices consist of one filter effluent turbidity meter and one CL17 Hach on-line free chlorine analyzer. We also have one raw water Rosemont magnetic flow tube for measuring raw water flow and one treated water Rosemont magnetic flow tube for measuring treated water flow.

A complete procedure for calibrating the turbidity meter and free chlorine analyzer can be found in the Hach Aqua Trend Binder located in the wtp office. The frequency of calibrations is outlined in the TrackPro program. Completed records of these calibrations are kept in the filing cabinet and also logged in the TrackPro program. Manufacturers' manuals are located in the Hach turbidity binder located along with the operations manuals for maintenance and manufactures calibration techniques.

An external calibration company does flow measurement calibrations annually. Currently in use is Lakeside Calibrations. Reports from these calibrations are kept in the filing cabinet, manufacturer's manuals can also be found in the operations manuals located in the wtp.

Township of Chapple  
 Quality Management Operational Plan  
 Water Treatment and Distribution

Reference: Element # 18

Revision #: 6

Qms Representative: *David Michals*

**EMERGENCY MANAGEMENT**

Detailed documented procedures for emergency situations, which could result in adverse water quality in the drinking water system are documented in the Chapple Water Treatment Plant Contingency Plan, which also contains the adverse water quality reporting procedures. More detailed procedures are provided in the Operations Manuals.

**Preparedness**

All operators in the Chapple Water Treatment Plant have training and are aware of the locations of written procedures to deal with emergencies in the water treatment and distribution system. Twenty-four hour on-call operators and Water Treatment Plant alarms ensure that a qualified staff member will attend and assess any emergency situation within a very short period of time.

The emergency plan shall contain an up-to-date list of emergency contacts. If present methods should change or if new employees are brought into the system, semi-annual training would occur on dealing with emergency situations. Senior employees or direct supervisors would provide this training as they do yearly simulations themselves to keep refreshed. All testing situations are recorded and kept on file.

**Water Emergencies**

During working hours 7:00 am to 3:30 pm call the **Water Treatment Plant** or the **Municipal Office** from 9:00 am to 4:30 pm.

Water Treatment Plant	Phone: 807-487-1070	Cell: 807-275-6108
Municipal Office	Phone: 807-487-2354	Fax: 807-487-2406

After hours and weekends refer to water treatment plant schedule and call current operator on call or the **Public Works Superintendent**. Phone numbers are below.

During emergency situations the ORO, or in his absence the current ORO/OIC, shall assume the role of communications lead. The ORO shall contact the Clerk Treasurer and keep him/her informed about the situation. The ORO and Clerk Treasurer shall maintain open communication throughout the emergency situation. The ORO is responsible for

**EMERGENCY MANAGEMENT cont.**

communicating with the authorities such as MOE and MOH. The Clerk Treasurer will be lead in communications with other municipal staff. Communications to the public (radio, posting of notices, door to door notices) will be handled through the Clerk Treasurer's office.

MOECC	1-888-367-7622
SAC	1-800-268-6060
NWHU	1-807-468-3147

The potential emergencies that could occur and the location of the procedures to resolve the issue are as follows:

HYDRO OUTAGE	SOP PAGE 27
GENERATOR FAILURE	SOP PAGE 28 OP&M VOL 5
TRANSFORMER FAILURE	SOP PAGE 29
PUMP LOCKOUT	SOP PAGE 30
LOSS OF DISTRIBUTION PRESSURE	SOP PAGE 33 SOP PAGE 45
ADVERSE FILTER EFFLUENT	SOP PAGE 35 SOP PAGE 45
CHEMICAL SPILLS	SOP PAGE 38
ADVERSE SAMPLE RESULTS	SOP PAGES 44 & 45
FIRE IN TOWN	SOP PAGE 46
FIRE IN WTP	SOP PAGE 47
WATER MAIN BREAK	SOP PAGES 48-50
CHLORINE ALARMS (HIGH & LOW) PUMP MANUAL	SOP PAGE 18 SOP PAGE 45 OP & M VOLUME 4
TURBIDITY ALARMS (HIGH & LOW)	SOP PAGE 45 SOP PAGES 35-37 HACH OP BINDER SOP PAGES 10-19
RESERVOIR (HIGH/LOW/EMPTY)	MILTRONICS – OP&M VOL 4 SOP PAGE 30 DOMESTIC PUMPS – OP&M VOL 4
LOW AIR PRESSURE	OP&M MANUAL VOL 2
LOW BUILDING TEMP	SOP PAGE 28 (GENERATOR FAIL) SOP PAGE 5 (PLANT HEATING)
GENERATOR LOW FUEL/TROUBLE	OP&M VOL 5 SOP PAGE 28
PUMP OVERLOAD	OP&M VOL 4 (PUMP MANUALS) SOP PAGE 33 SOP PAGE 44

**Water Treatment and Service Problems**

After hours problems with the treatment plant will be indicated by an alarm and the current on call operator will be called. The on call operator will attend to the alarm in a timely fashion and, if required, contact the ORO for further assistance.

If a customer calls with “ no water, low water pressure” the on-call operator will be dispatched to confirm the water mains are functioning properly and there are no water main breaks. If the problem is not in the mains then the customer will be advised to call a plumber. If a customer calls with a water quality problem such as odors or bad taste the on call operator will be dispatched to assess the problem.

All alarms at the Water Plant are connected to a cell phone pager system. To cancel out alarms at the water plant you must physically push the reset button on the auto dialer and enter a code to reset the alarm control box located next to the entrance door.

The following is a list of current treatment and distribution operators for the Chapple Water Treatment Facilities:

David McKelvie	ORO	Cell: 807-275-6108	Home: 807-487-1413
Murray Wilson	OIC	Cell: 807-275-6163	Home: 807-487-1396
Charlie Loveday	OIC	Cell: 807-276-1653	Home: 807-483-1431
Wes Morriseau (RRFN)	OIC	Cell: 807-275-7455	Home: 807-487-2275
Randy Both	PWS	Cell: 807-275-7652	Home: 807-487-2220

- **ORO – Overall responsible operator**
- **OIC – Operator in Charge**
- **PWS – Public Works Superintendent**

Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution

Reference: Element # 19

Revision #: 3

Qms Representative: *David Myles*

**INTERNAL AUDITS**

Internal audits are conducted to confirm that the DWQMS is effectively implemented and meets or exceeds the requirement of the DWQMS Standard.

Internal audits are conducted annually and the QMS Representative, who is also the ORO, will select auditors. Previous audits will be reviewed in preparation of the internal audit. A report will be submitted at the end of the audit.

Outlined on the following page is the internal audit procedure.

## 1.0 Purpose

This procedure describes the Internal Audit process, which is used to verify that the QMS conforms to the requirements of the DWQMS, and the QMS has been effectively implemented and properly maintained.

## 2.0 Scope

This procedure is applicable to all process and activities addressed in the Operational Plan for the drinking water treatment and distribution systems in the Municipality of Chapple.

## 3.0 Procedure

### PREPARATION

- 1) Internal audits shall only be conducted by persons having the following qualifications:
  - Internal employees who have completed internal audit training
  - Employees of other operating authorities who have completed internal audit training. Outside Auditors shall provide proof of competency prior to conducting an audit.
- 2) Internal Audits of the QMS as documented in the operational plan are conducted annually. The QMS Representative shall schedule the audits to ensure that all elements of the DWQMS are sampled at least once in a twelve month period.
- 3) The audit QMS checklist(s) shall be created and maintained by the Representative jointly with the Overall Responsible Operator or Auditor. The checklist(s) shall be used by the Internal Auditor as a guideline, for record-keeping purposes, and for conducting the interviews and document review during the audit.

### CONDUCTING THE AUDIT

- 1) The auditor shall observe activities, review records, review previous internal and external audit results, and interview personnel as necessary to ensure that the status of the audited QMS has been effectively covered.
- 2) No audits may be planned and/or conducted without the QMS Representative's permission.

REPORTING THE RESULTS

- 1) The Auditor shall submit a completed report, including the DWQMS checklist, to the Overall Responsible Operator (ORO) and QMS Representative within a reasonable time of the internal audit.
- 2) The report shall include any corrective actions requests (CARs) required to address discrepancies between the QMS and the DWQMS, or between the QMS and how it is actually implemented, including a reference to the applicable section of the Standard.
- 3) The QMS Representative shall designate responses to CARs to the responsible individual.
- 4) It shall be the responsibility of the QMS Representative to ensure that all CARs are followed up and responses to the CARs are provided to the Internal Auditor within 45 days of the internal audit.
- 5) CARs shall be completed, addressed and filed at the Water Treatment Plant office.
- 6) The QMS Representative shall communicate the results of the audit to the Public Works Superintendent and CAO/Clerk-Treasurer.

CORRECTIVE ACTION/CORRECTIVE ACTION PROCEDURE:

- 1) The purpose of this procedure is:
  - to describe how Corrective Actions are initiated, assigned, documented and verified as being effective.
  - to detect all non-conformities of the QMS with respect to the requirements of the DWQMS and to all drinking water activities with the Township of Chapple.

TRACKING OF CORRECTIVE ACTIONS

- 1) The QMS Representative shall maintain a listing of all completed Corrective Actions.

**4.0 Associated Documents and Records:**

- Record of Auditor Training
- Internal Audit Schedule
- Completed Internal Audit Checklist
- Audit Report
- Corrective Action Report (CAR)

Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution

Reference: Element # 20

Revision #: 3

Qms Representative: *David Michals*

### MANAGEMENT REVIEW

Before setting an annual budget, a management review will take place. All aspects of the Chapple Water Treatment System shall be reviewed. The ORO will consult the operators for their input on any changes or recommendations for improvements to the system. Incidents of non-compliance or adverse drinking water tests will be looked at so any problems or potential problems can be rectified. Raw and Process water trends will be looked at and results from internal and external audits will be reviewed with recommendations to any changes to the DWQMS.

If necessary changes need to be made between management reviews, the ORO will bring any issues that have to be dealt with to the CAO/Clerk-Treasurer and the Superintendent of Public Works. If deemed necessary, issues may be brought up at the next Council Meeting or if necessary a special meeting may be called by the CAO/Clerk-Treasurer to inform Council.

Council will provide the needed resources to maintain the DWQMS.

On the next page you will find and outlined Management Review Procedure



## Management Review Procedure

### 1.0 Procedure Description

This procedure defines the process for the review of the effectiveness of the Drinking Water Quality Management System (DWQMS) by the Management Review Committee.

### 2.0 Reason for Procedure

Management reviews are conducted to assess and ensure the continuing suitability, adequacy, and effectiveness of the DWQMS.

### 3.0 Responsibility

Management reviews shall be conducted during a meeting of the following participants:

- ▶ Reeve and Council
- ▶ CAO/ Clerk-Treasurer
- ▶ Public Works Superintendent
- ▶ Overall Responsible Operator (QMS Representative)

Other participants may be added at the discretion of the Management Review Committee.

### 4.0 Procedure

- 4.1 This procedure is applicable to The Township of Chapple management, plant operators, and distribution and collection activities that fall under the scope of the QMS.
- 4.2 A management review shall be conducted at least once per year following completion and documentation of an internal audit and prior to the next scheduled third party audit.
- 4.3 Prior to the Management Review Meeting, the QMS Representative or Alternate shall provide a meeting agenda and summaries of the following information to the Management Review Committee.
  - Listing of incidents of regulatory non-conformance
  - Results of any relevant internal and third party audits
  - Results of regulatory compliance inspections
  - Summary of customer complaints
  - Summary / trending of operational performance noting any deficiencies
  - Status of action items from last Management Review
  - Summary of Commission meeting minutes pertaining to the QMS scope
  - Deviations from critical control point limits and response actions

- Changes in process or management that may affect drinking water quality
- Recommendations for improvement of the QMS

Feb 20, 2013

Revision # 3

- The efficiency of the risk assessment process
- The status of management action items identified between reviews
- The results of the infrastructure review
- Incidents of adverse drinking water tests
- Results of emergency response testing
- Raw water supply and drinking water quality trends
- The resources needed to maintain the Quality Management System

4.4 The Management Review Committee shall review and discuss all information presented. The Committee shall make recommendations and initiate action, as appropriate, to improve the content and implementation of the Operational Plan and related procedures, and to ensure the provision of adequate resources.

4.5 Minutes of management review meetings shall be maintained. The minutes shall document all new outstanding action items as well as any decisions made by the Committee.

4.6 The QMS Representative or Alternate shall be responsible for communication and Implementation of the management review action items as per item DWQMS Communication procedure.

**Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution**

Reference: Element # 21

Revision #: 2

Qms Representative: *David M. [Signature]*

**CONTINUAL IMPROVEMENT**

The Chapple Water Treatment System Overall Responsible Operator and DWQMS representative will establish and maintain a Drinking Water Quality Management System that will be regularly reviewed, improved and upgraded by the ORO and employees involved in the supply of drinking water.

When appropriate the Township of Chapple will modify, update, or adjust processes and procedures (while remaining in compliance with MOE regulations) to improve operations. Our goal is to provide clean, safe drinking water in the most cost-effective manor.

## **GLOSSARY OF ACRONYMS**

<b><i>WTP</i></b>	Water Treatment Plant
<b><i>GUDI</i></b>	Groundwater under the direct influence of surface water
<b><i>ORO</i></b>	Overall responsible operator
<b><i>OIC</i></b>	Operator in charge
<b><i>PWS</i></b>	Public works superintendent
<b><i>DWQMS</i></b>	Drinking water quality management system
<b><i>SOP</i></b>	Standard operating procedures
<b><i>MOE</i></b>	Ministry of the Environment
<b><i>MOECC</i></b>	Ministry of the Environment and Climate Change
<b><i>MOH</i></b>	Ministry of Health
<b><i>SAC</i></b>	Spills Action Centre
<b><i>NWHU</i></b>	Northwestern Health Unit

## APPENDIX A QMS SCHEDULE

QMS Activity	Frequency
Review all QMS documents (operational plan, QMS policy, all procedures, hazard analysis, PFDs, etc).	At least once a year.
Review emergency procedures and emergency contact lists.	At least once a year.
Perform internal audit.	At least once a year for all elements.
Perform management review.	At least once a year.
Test emergency procedures.	At least once a year.
Review competencies.	At least once a year.
Review and update training matrix and schedule.	Annually, prior to the management review.
Review and conduct hazard analysis.	Prior to a process or equipment change and after a significant change to the source water.
Review the status of corrective actions.	Quarterly.
Review status of continual improvement initiatives.	Per initiative/project schedule.
Perform QMS awareness training.	At least once a year or with new hires or temporary staff.

## APPENDIX B INTERNAL AUDIT SCHEDULE

**Date of Revision:** December 2, 2016

<b>Date</b>	<b>Process</b>	<b>DWQMS Element</b>	<b>Auditor(s)</b>
February 28, 2013	Treatment/Distribution	All Elements	Geoff Pearce
November 21, 2013	Treatment/Distribution	All Elements	Geoff Pearce
November 4, 2014	Treatment/Distribution	All Elements	Crystal Gray
November 5, 2015	Treatment/Distribution	All Elements	Crystal Gray
November 4, 2016	Treatment/Distribution	All Elements	Crystal Gray

**APPENDIX C INTERNAL AUDIT CHECKLIST**

**DATE OF INTERNAL AUDIT:**

**AUDITOR NAMES:**

**AREAS VISITED:**

**PEOPLE INTERVIEWED:**

**DOCUMENTS VIEWED:**

## APPENDIX D INTERNAL AUDIT CHECKLIST

DWQMS Requirement	Notes	Method in Place?	Documented?	Gap?
<p><b>1. Quality Management System</b></p> <p>PLAN – The Operational Plan shall document a Quality Management System that meets the requirements of this Standard.</p>		PL		
<p>DO – The Operating Authority shall establish and maintain the Quality Management System in accordance with the requirements of this Standard and the policies and procedures documented in the Operational Plan.</p>		DO		
<p><b>2. Quality Management System Policy</b></p> <p>PLAN – The Operational Plan shall document a Quality Management System Policy that provides the foundation for the Quality Management System, and:</p> <p>a) is appropriate for the size and type of the subject system,</p> <p>b) includes a commitment to the maintenance and continual improvement of the Quality Management System,</p> <p>c) includes a commitment to the consumer to provide safe drinking water,</p> <p>d) includes a commitment to comply with applicable legislation and regulations, and</p> <p>e) is in a form that provides for ready communication to all Operating Authority personnel, the Owner and the public.</p>		PL		
		a)		
		b)		
		c)		
		d)		
		e)		
<p>DO – The Operating Authority shall establish and maintain a Quality Management System that is consistent with the Policy.</p>		DO		
<p><b>3. Commitment and Endorsement</b></p> <p>PLAN – The Operational Plan shall contain a written endorsement of its contents by Top Management and the Owner.</p>		PL		
<p>DO – Top Management shall provide evidence of its commitment to an effective Quality Management System</p>		DO		



DWQMS Requirement	Notes	Method in Place?	Documented?	Gap?
by: a) ensuring that a Quality Management System is in place that meets the requirements of this Standard, b) ensuring that the Operating Authority is aware of all applicable legislative and regulatory requirements, c) communicating the Quality Management System according to the procedure for communications, and d) determining, obtaining or providing the resources needed to maintain and continually improve the Quality Management System.		a)		
		b)		
		c)		
		d)		
<b>4. Quality Management System Representative</b>  PLAN – The Operational Plan shall identify a Quality Management System representative.		PL		
DO – Top Management shall appoint, and authorize a Quality Management System representative who, irrespective of other responsibilities, shall: a) administer the Quality Management System by ensuring that processes and procedures needed for the Quality Management System are established and maintained, b) report to Top Management on the performance of the Quality Management System and any need for improvement, c) ensure that current versions of documents required by the Quality Management System are being used at all times, d) ensure that personnel are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the subject system, and e) promote awareness of the Quality Management System throughout the Operating Authority.		DO		
		a)		
		b)		
		c)		
		d)		
		e)		
<b>5. Document and Records Control</b>  PLAN – The Operational Plan shall document a procedure for document and records control that describes how:  a) documents required by the Quality Management System are:		PL		
		a)i.		
		a)ii.		

DWQMS Requirement	Notes	Method in Place?	Documented?	Gap?
<ul style="list-style-type: none"> <li>i. kept current, legible and readily identifiable</li> <li>ii. retrievable</li> <li>iii. stored, protected, retained and disposed of, and</li> </ul> b) records required by the Quality Management System are: <ul style="list-style-type: none"> <li>i. kept legible, and readily identifiable</li> <li>ii. retrievable</li> <li>iii. stored, protected, retained and disposed of.</li> </ul>		a)iii.		
		b)i.		
		b)ii.		
		b)iii.		
DO – The Operating Authority shall implement and conform to the procedure for document and records control and shall ensure that the Quality Management System documentation for the subject system includes: <ul style="list-style-type: none"> <li>a) the Operational Plan and its associated policies and procedures,</li> <li>b) documents and records determined by the Operating Authority as being needed to ensure the effective planning, operation and control of its operations, and</li> <li>c) the results of internal and external audits and management reviews.</li> </ul>		DO		
		a)		
		b)		
<b>6. Drinking-Water System</b>  PLAN – The Operational Plan shall document, as applicable: <ul style="list-style-type: none"> <li>a) for the subject system:               <ul style="list-style-type: none"> <li>i. a description of the system including all treatment processes and distribution system components</li> <li>ii. the name of the Owner and Operating Authority</li> <li>iii. a process flow chart</li> <li>iv. a description of the water source, including:                   <ul style="list-style-type: none"> <li>i. general characteristics of the raw water supply</li> <li>ii. common event-driven fluctuations and</li> <li>iii. any resulting operational challenges and threats</li> </ul> </li> <li>v. a description of any critical upstream or downstream processes relied upon to ensure</li> </ul> </li> </ul>		PL		
		i.		
		ii.		
		iii.		
		iv.		
		i.		
		ii.		
		v.		

DWQMS Requirement	Notes	Method in Place?	Documented?	Gap?
<p>the provision of safe drinking water.</p> <p>b) if the subject system is an operational subsystem, a summary description of the municipal residential drinking-water system it is a part of.</p> <p>c) if the subject system is connected to one or more other drinking-water systems owned by different owners, a summary description of those systems which:</p> <p>i. indicates whether the subject system obtains water from or supplies water to those systems, and</p> <p>ii. names the Owner and Operating Authority of those systems.</p>		b)		
		c)		
		i.		
		ii.		
DO – The Operating Authority shall ensure that the description of the drinking-water system is kept current.		DO		
<p><b>7. Risk Assessment</b></p> <p>PLAN – The Operational Plan shall document a risk assessment process that:</p> <p>a) identifies potential hazardous events and associated hazards,</p> <p>b) assesses the risks associated with the occurrence of hazardous events,</p> <p>c) ranks the hazardous events according to the associated risk,</p> <p>d) identifies control measures to address the potential hazards and hazardous events,</p> <p>e) identifies critical control points,</p> <p>f) identifies a method to verify at least once a year, the currency of the information and the validity of the assumptions used in the risk assessment,</p> <p>g) ensures that a risk assessment is conducted at least once every thirty-six months, and</p> <p>h) considers the reliability and redundancy of equipment.</p>		PL		
		a)		
		b)		
		c)		
		d)		
		e)		
		f)		
		g)		
		h)		
DO – The Operating Authority shall perform a risk assessment consistent with the documented process.		DO		
<p><b>8. Risk Assessment Outcomes</b></p> <p>PLAN – The Operational Plan shall</p>		PL		
		a)		

DWQMS Requirement	Notes	Method in Place?	Documented?	Gap?
<p>document:</p> <ul style="list-style-type: none"> <li>a) the identified potential hazardous events and associated hazards,</li> <li>b) the assessed risks associated with the occurrence of hazardous events,</li> <li>c) the ranked hazardous events,</li> <li>d) the identified control measures to address the potential hazards and hazardous events,</li> <li>e) the identified critical control points and their respective critical control limits,</li> <li>f) procedures and/or processes to monitor the critical control limits,</li> <li>g) procedures to respond to deviations from the critical control limits, and</li> <li>h) procedures for reporting and recording deviations from the critical control limits.</li> </ul>		b)		
		c)		
		d)		
		e)		
		f)		
		g)		
		h)		
<p>DO – The Operating Authority shall implement and conform to the procedures.</p>		DO		
<p><b>9. Organizational Structure, Roles, Responsibilities and Authorities</b></p> <p>PLAN – The Operational Plan shall:</p> <ul style="list-style-type: none"> <li>a) describe the organizational structure of the Operating Authority including respective roles, responsibilities and authorities,</li> <li>b) delineate corporate oversight roles, responsibilities and authorities in the case where the Operating Authority operates multiple subject systems,</li> <li>c) identify the person, persons or group of people within the management structure of the organization responsible for undertaking the Management Review,</li> <li>d) identify the person, persons or group of people, having Top Management responsibilities required by this Standard, along with their responsibilities, and</li> <li>e) identify the Owner of the subject system.</li> </ul>		PL		
		a)		
		b)		
		c)		
		d)		
		e)		
<p>DO – The Operating Authority shall keep current the description of the organizational structure including respective roles, responsibilities and authorities, and shall communicate this information to Operating Authority</p>		DO		

DWQMS Requirement	Notes	Method in Place?	Documented?	Gap?
personnel and the Owner.				
<p><b>10. Competencies</b></p> <p>PLAN – The Operational Plan shall document:</p> <ul style="list-style-type: none"> <li>a) competencies required for personnel performing duties directly affecting drinking water quality,</li> <li>b) activities to develop and maintain competencies for personnel performing duties directly affecting drinking water quality, and</li> <li>c) activities to ensure that personnel are aware of the relevance of their duties and how they affect safe drinking water.</li> </ul>		PL		
<p>DO – The Operating Authority shall undertake activities to:</p> <ul style="list-style-type: none"> <li>a) meet and maintain competencies for personnel directly affecting drinking water quality and shall maintain records of these activities, and</li> <li>b) ensure that personnel are aware of the relevance of their duties and how they affect safe drinking water, and shall maintain records of these activities.</li> </ul>		DO		
		a)		
		b)		
<p><b>11. Personnel Coverage</b></p> <p>PLAN – The Operational Plan shall document a procedure to ensure that sufficient personnel meeting identified competencies are available for duties that directly affect drinking water quality.</p>		PL		
<p>DO – The Operating Authority shall implement and conform to the procedure.</p>		DO		
<p><b>12. Communications</b></p> <p>PLAN – The Operational Plan shall document a procedure for communications that describes how the relevant aspects of the Quality Management System are communicated between Top Management and:</p>		PL		
		a)		
		b)		
c)				

DWQMS Requirement	Notes	Method in Place?	Documented?	Gap?
a) the Owner, b) Operating Authority personnel, c) Suppliers, and d) the public.		d)		
DO – The Operating Authority shall implement and conform to the procedure.		DO		
<b>13. Essential Supplies and Services</b>  PLAN – The Operational Plan shall: a) identify all supplies and services essential for the delivery of safe drinking water and shall state, for each supply or service, the means to ensure its procurement, and b) include a procedure by which the Operating Authority ensures the quality of essential supplies and services, in as much as they may affect drinking water quality.		PL		
		a)		
		b)		
DO – The Operating Authority shall implement the procedure.		DO		
<b>14. Review and Provision of Infrastructure</b>  PLAN – The Operational Plan shall document a procedure for the annual review of the adequacy of the infrastructure necessary to operate and maintain the subject system.		PL		
DO – The Operating Authority shall implement and conform to the procedure and communicate the findings of the review to the Owner.		DO		
<b>15. Infrastructure Maintenance, Rehabilitation and Renewal</b>  PLAN – The Operational Plan shall document a summary of the Operating Authority's infrastructure maintenance, rehabilitation and renewal programs for the subject system.		PL		
DO – The Operating Authority shall:		PL		
a) keep the summary current,		a)		
b) communicate the programs to the Owner, and		b)		
c) monitor the effectiveness of the maintenance program.		c)		
<b>16. Sampling, Testing and Monitoring</b>  PLAN – The Operational Plan shall		PL		

DWQMS Requirement	Notes	Method in Place?	Documented?	Gap?
document: a) a sampling, testing and monitoring procedure for process control and finished drinking water quality including requirements for sampling, testing and monitoring at the conditions most challenging to the subject system, b) a description of any relevant sampling, testing or monitoring activities that take place upstream of the subject system, and c) a procedure that describes how sampling, testing and monitoring results are recorded and shared between the Operating Authority and the Owner, where applicable.		a)		
		b)		
		c)		
DO – The Operating Authority shall implement and conform to the procedures.		DO		
<b>17. Measurement and Recording Equipment Calibration and Maintenance</b>  PLAN – The Operational Plan shall document a procedure for the calibration and maintenance of measurement and recording equipment.		PL		
DO – The Operating Authority shall implement and conform to the procedure.		DO		
<b>18. Emergency Management</b>  PLAN – The Operational Plan shall document a procedure to maintain a state of emergency preparedness that includes: a) a list of potential emergency situations or service interruptions, b) processes for emergency response and recovery, c) emergency response training and testing requirements, d) Owner and Operating Authority responsibilities during emergency situations, e) references to municipal emergency planning measures as appropriate, and f) an emergency communication protocol and an up-to-date list of emergency contacts.		PL		
		a)		
		b)		
		c)		
		d)		
		e)		
		f)		
DO – The Operating Authority shall implement and conform to the procedure.		DO		

DWQMS Requirement	Notes	Method in Place?	Documented?	Gap?
<p><b>19. Internal Audits</b></p> <p>PLAN – The Operational Plan shall document a procedure for internal audits that:</p> <ul style="list-style-type: none"> <li>a) evaluates conformity of the QMS with the requirements of this Standard,</li> <li>b) identifies internal audit criteria, frequency, scope, methodology and record-keeping requirements,</li> <li>c) considers previous internal and external audit results, and</li> <li>d) describes how Quality Management System corrective actions are identified and initiated.</li> </ul>		PL		
		a)		
		b)		
		c)		
		d)		
<p>DO – The Operating Authority shall implement and conform to the procedure and shall ensure that internal audits are conducted at least once every twelve months.</p>		DO		
<p><b>20. Management Review</b></p> <p>PLAN - The Operational Plan shall document a procedure for management review that evaluates the continuing suitability, adequacy and effectiveness of the Quality Management System and that includes consideration of:</p> <ul style="list-style-type: none"> <li>a) incidents of regulatory non-compliance,</li> <li>b) incidents of adverse drinking-water tests,</li> <li>c) deviations from critical control point limits and response actions,</li> <li>d) the efficacy of the risk assessment process,</li> <li>e) internal and third-party audit results,</li> <li>f) results of emergency response testing,</li> <li>g) operational performance,</li> <li>h) raw water supply and drinking water quality trends,</li> <li>i) follow-up on action items from previous management reviews,</li> <li>j) the status of management action items identified between reviews,</li> <li>k) changes that could affect the Quality Management System,</li> <li>l) consumer feedback,</li> <li>m) the resources needed to maintain the Quality Management System,</li> </ul>		PL		
		a)		
		b)		
		c)		
		d)		
		e)		
		f)		
		g)		
		h)		
		i)		
		j)		
		k)		
		l)		
		m)		
n)				



DWQMS Requirement	Notes	Method in Place?	Documented?	Gap?
n) the results of the infrastructure review, o) Operational Plan currency, content and updates, and p) staff suggestions.		o)		
		p)		
DO – Top Management shall implement and conform to the procedure and shall: a) ensure that a management review is conducted at least once every twelve months, b) consider the results of the management review and identify deficiencies and actions items to address the deficiencies, c) provide a record of any decisions and action items related to the management review including the personnel responsible for delivering the action items and the proposed timelines for their implementation, d) report the results of the management review, the identified deficiencies, decisions and action items to the Owner.		DO		
		a)		
		b)		
		c)		
		d)		
<b>21. Continual Improvement</b>  DO- The Operating Authority shall strive to continually improve the effectiveness of its Quality Management System through the use of corrective actions.		DO		

## **APPENDIX E CORRECTIVE ACTION FORM**

Date:

Description:

Taste complaint not followed up properly, as required in Taste Complaint Procedure P101.

On July 1/06, a taste complaint was called in to the main switchboard at 6:55pm. The dayshift Operator (Joan) wrote down details of the complaint into the Operator's Log Book. Since the shift ended at 7pm, the Operator left instructions for the nightshift Operator (Tom) to continue the paperwork and follow up. The nightshift Operator read the Operator's Log Book, but did not see the instructions. The complaint was not documented or followed up properly. When the dayshift Operator returned for her next shift on July 5, 2006, she noticed that the complaint hadn't been handled and notified the QMS Representative.

Root Cause:

Corrective Action Taken:

Corrective Action Complete (signature and title):

Date Corrective Action Complete:

Corrective Action Effective after 90 days:

**APPENDEX F COMMENT FORM**

**DATE:** \_\_\_\_\_

**ELEMENT:** \_\_\_\_\_

**COMMENTS:**

**REPLY REQUESTED YES / NO**

If Yes please provide Name: \_\_\_\_\_

Township of Chapple  
Quality Management Operational Plan  
Water Treatment and Distribution

Reference: Document Change Request Form

Revision #: 1

Qms Representative: *David Michals*

**APPENDIX G DOCUMENT CHANGE REQUEST FORM**

**Requested By:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Document:** \_\_\_\_\_

**Type of Change:**

**Edit Existing**

**Create New**

**Delete Existing**

**Changes Requested:**

---

---

---

---

**Justification for Changes:**

---

---

---

---

**Proposed Changes:**

---

---

---

---

**Approval:** \_\_\_\_\_

**QMS Representative:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Comments:** \_\_\_\_\_

# CORPORATION OF THE TOWNSHIP OF CHAPPLE

P.O. Box 4

BARWICK, ONTARIO POW 1A0

Phone 807-487-2354 Fax 807-487-2406

OFFICE OF THE CLERK-TREASURER

E-mail: [chapple@tbaytel.net](mailto:chapple@tbaytel.net)

## DOCUMENT REQUEST FORM

<b>Requested By:</b> _____	<b>Date:</b> _____
<b>Document:</b> _____	
<b>Date Range:</b> _____	

<b>Comments:</b> _____
_____
_____
<b>Taken By:</b> _____ <b>Processed by:</b> _____

<b>Method of Delivery:</b> <b>Email</b> <b>Mail</b> <b>Pick Up</b> <b>Fax</b>
<b>Date Sent:</b> _____ <b>Sent By:</b> _____
<b>If Pick Up:</b>
<b>Received in Good Order By:</b> _____
<b>Date:</b> _____

**Township of Chapple**  
**Quality Management Operational Plan**  
**Water Treatment And Distribution**

**OPERATOR CHANGES & RECOMMENDATIONS**

**DATE:** \_\_\_\_\_

**OPERATOR:** \_\_\_\_\_

**COMMENTS:**

<b>DATE:</b>	<b>NOTICE: RETURN OF GOODS</b>
--------------	--------------------------------

<b>To:</b>	<b>From:</b>

<b>Transport Company:</b>

<b>ORDER DATE</b>	<b>P.O #</b>	<b>INVOICE #</b>
<b>SHIPPED DATE</b>	<b>BILL OF LADING #</b>	<b>PROBILL #</b>

<b>QTY</b>	<b>DESCRIPTION OF ITEM</b>	<b>DESCRIPTION OF DAMAGE</b>	<b>PRICE</b>	<b>CREDIT DUE</b>

**YES / NO DANGEROUS GOODS**

**TOTAL CREDIT DUE: \$**

<b><u>SIGNATURES (print/sign)</u></b>	
<b>SHIPPER:</b> _____	<b>DATE:</b> _____
<b>CARRIER:</b> _____	<b>DATE:</b> _____
<b>NUMBER OF PIECES:</b> _____	
<b>DRIVER SIGNING FOR RECEIPT OF GOODS &amp; NUMBER OF PIECES, NOT \$ VALUE OF CREDIT</b>	

- **Original to wtp file / Copy to carrier driver / Copy to Accounting Dept**