

Procedures for Providing Safe Water

Policy Number: 41/711 (03)
Adopted: May 26/03

1.0 Purpose

This purpose of this policy is to set out the policies and procedures for the safe operation of the Town of Lacombe Water supply and Distribution System.

2.0 Definitions

2.1 In this policy:

- a) Assigned employee shall mean an employee or employees of the Town assigned by the Foreman, Superintendent or CAO to undertake duties and actions under this policy.
- b) Authority to Operate shall mean the Code of Practice and any other official authority to operate the Town's water supply and distribution system as issued by Alberta Environment and which contains the requirements and parameters by which the Town's system shall be operated.
- c) CAO shall mean Chief Administrative Officer of the Town or delegate
- d) Foreman shall mean the Public Works Foreman or delegate or in the absence of the Foreman without delegation, the Superintendent
- e) Health Region shall mean the regional health authority within which jurisdiction the Town is located
- f) Operator shall mean an employee of the Town certified to operate the water supply and distribution system
- g) Provincial Laboratory shall mean the Alberta Public Health Laboratory in Edmonton
- h) Superintendent shall mean the Public Works Superintendent of the Town
- i) Water Emergency Number shall mean the telephone number monitored on a continuous basis by the assigned employee.

3.0 Normal Operations

- 3.1 An assigned employee shall visit each pump house and reservoir facility every day, including weekend days and all holidays and while at each facility shall:
- a) Inspect the chlorine room to ensure no chlorine leaks or other chlorine equipment failures have occurred.
 - b) Record reservoir levels, quantities of water entering and leaving the pump house in past 24 hours, and the number of hours that each distribution pump has operated.
 - c) Measure and record the concentration of free chlorine residuals of water in the reservoir and ensure that measurements of residual chlorine are not trending downward nor have fallen to a concentration of 0.5 mg/L. or less.
 - d) Immediately notify the Foreman or an operator if the assigned employee is not an operator, to rectify any problems if chlorine residuals are trending downward or have fallen to 0.5 mg/L. or less,
 - e) Monitor the overall operation and condition of the pump house and report any unusual conditions to the Foreman or an Operator
- 3.2 The assigned employee shall inspect each well site and the exterior of the pumphouse and reservoir facility and grounds a minimum of twice each week for damage or hazards and to otherwise ensure that the facility is safe, secure and in a proper state of repair.
- 3.3 The assigned employee shall gather a minimum of three water samples for bacterial analysis each week in accordance with the following:
- a) Samples shall be collected only in containers supplied by the Health Region.
 - b) Sample sites shall be chosen throughout the distribution system in such a manner as to sample water emanating from each of the pump house facilities.
 - c) The concentration of free chlorine residual shall be measured

at each sample site and recorded

- d) Samples shall be packed in a cooler with ice packs and the assigned employee shall transport the samples to an office designated by the Health Region. It is the understood obligation of the Health Region to forward the samples to the Provincial Laboratory for analysis for bacterial contamination

3.4 The Foreman shall engage the services of a reputable laboratory to obtain samples of treated and untreated water annually from the pump house and reservoir facilities and analyze the water samples for the chemical parameters required by the Authority of Operate.

3.5 The Foreman or Superintendent may arrange for the testing of the Town's water for any other substance or chemical parameter.

3.6 The Superintendent shall submit a report each second month to the CAO which shall contain the following information:

- a) Total volume of water produced by each water well each month, the aggregate year to date total for each well, and the proportion of licensed volume produced
- b) The average depth below surface of the aquifer in the wells at the end of each month.
- c) Total volume of water discharged from each pump house into the distribution system each month
- d) Total volume of water sold to water system customers for each two month period and the difference from total water produced by the pump houses.
- e) Lowest free chlorine residual level recorded at each pumphouse
- f) The average daily water production for the system
- g) Highest peak daily water production for the system
- h) A summary of incidents and problems with the water system including water main breaks, equipment failures, system disruption, levels of chlorine residual below 0.2 mg/L
- i) Operating cost per cubic meter of water produced into the

system.

- 3.7 The Superintendent shall submit annually such reports required under the Authority to Operate.
- 3.8 The CAO shall provide a report on the water system to Council every four months which shall contain the information set out in Section 3.5.

4.0 Reaction to Low Chlorine Residuals Without Evidence of Bacterial Contamination

- 4.1 If the free chlorine residual entering the system at any pump house is less than 0.2 mg/L., the Foreman shall:
 - a) Stop water production from the affected pump house and increase disinfections until the concentration of free chlorine residual of at least 0.5 milligrams per liter is achieved
 - b) Increase free chlorine residual monitoring frequency to once per hour until the concentration of free chlorine residual of at least 0.5 mg/L. is achieved
 - c) Call the Regional Engineer of Alberta Environment in Red Deer to report the incident and to plan further corrective actions
- 4.2 If the free chlorine residuals in the water in the water distribution system are less than 0.1 mg/L. the Foreman shall:
 - a) Increase the chlorine feed rate at the pump house supplying the water to the affected part of the water distribution system
 - b) Flush the lines until the free chlorine residuals in the water distribution system, of at least 0.1 mg/L. are achieved
 - c) Increase free chlorine residual monitoring frequency to a minimum of once per hour until the concentration of free chlorine residual in the water distribution system of 0.5 mg/L. is achieved

5.0 Notification of Bacterial Contamination

- 5.1 It is the understood obligation of the Provincial Laboratory to notify the Town if one, or more of the water samples submitted is found to be contaminated by bacteria beyond parameters as set out in the Authority to Operate. It is understood that the notification will be sent to the Town in the following manner:
- a) If during normal working hours, by fax to the Town office fax machine.
 - b) Outside of normal working hours, by telephone call to the Water Emergency Number.

6.0 Reaction to Bacterial Contamination

- 6.1 Any employee of the Town receiving notification of a contaminated sample will immediately notify the following:
- a) Foreman
 - b) Superintendent
 - c) CAO
 - d) Director of Disaster Services
- 6.2 The CAO shall notify the Mayor of all incidents and Members of Council and the Town's Insurer of those incidents where there is a potential for risk to public health or safety.
- 6.3 The Director of Disaster Services shall activate the Emergency Operations Center if warranted in cases where there is a potential for risk to public health or safety.
- 6.4 It is understood that the response to a positive sample will be coordinated by Alberta Environment and the Health Region in accordance with the protocols established by those agencies. The Town's response shall include:
- a) Assigned employees shall check pump house performance, chlorine dosages and residuals and check the distribution system for the presence of free chlorine residuals and evidence of water main breaks
 - b) If the free chlorine residual is found to be below 0.1 mg/L in

the distribution system or below 0.2 mg\L at any pump house assigned employees shall increase dosages and flush necessary mains and services until a free chlorine residual of 0.5 or more is achieved

- c) Assigned employees shall collect a water sample from the site where the contaminated sample or samples were originally taken and also from 1 of the next 5 service connections upstream from the original sample site and from 1 of the next 5 sites downstream from the original sample site.
 - d) The new samples shall be packed in a cooler with ice packs and an assigned employee shall transport the samples to an office designated by the Health Region. These new samples clearly as Repeat Samples on the requisition forms that accompany the samples. The assigned employee who collected the samples will then transport the samples to the Provincial Laboratory for testing to ensure continuous and clear possession of the samples
 - e) Should the re-sampling occur on a Thursday or Friday, the assigned staff shall notify the Provincial Laboratory, the Regional Health Authority and Alberta Environment that weekend analysis is required.
- 6.5 An executive officer of the Health Region may issue a Boil Water Order if in executive officer's opinion such an order is necessary to safeguard the public's health.
- 6.6 The CAO may issue a Boil Water Order without the David Thompson Health Region having done so.
- 6.7 Only the official issuing a Boil Water Order may rescind the order.
- 6.8 The following steps will be taken to notify the public of a Boil Water Order:
- a) All local radio and television stations shall be instructed by the Director of Disaster Services, in the case that a local emergency has been declared, or the CAO to immediately broadcast a public warning.
 - b) Assigned Employees, with the assistance of the Lacombe Police Service and Lacombe Fire Department, shall visit or telephone to warn the following of the Boil Water Order:
 - i) all schools and daycares

- ii) Lacombe Hospital
 - iii) Lacombe Foundation Lodge
 - iv) All restaurants and hotels
 - v) All beverage and food manufacturers or packagers
- c) The Foreman with the assistance of officials from Alberta Environment and the Health Region officials shall attempt to determine the source of contamination and if found or suspected, take steps to terminate the contamination and prevent any recurrence.

7.0 Restrictions in Use and Availability of Water

- 7.1 The watering of lawns and gardens will be restricted on a continuing basis with occupants or owners even-numbered addresses being permitted to water lawns, gardens and plantings on calendar days of the months ending in even numbers and odd-numbered addresses on calendar days of the months ending in odd numbers. The use of water on newly-laid sod or plantings will not be restricted.
- 7.2 Where the demand for water from the users of the water distribution system exceeds or is expected to exceed the volume of water that can be supplied to the distribution system from the pump houses such that the total volume of water in the reservoirs will drop below 60 per cent of aggregate reservoir storage capacity, the Superintendent will advise the CAO of the need to restrict the use of water by users of the system.
- 7.3 Upon consideration of the circumstances, the CAO may implement water restrictions in one of three levels of restrictiveness.
- a) Level 1 Use of water for lawns and gardens is restricted to 2 days per week with even numbered addresses using water Wednesday and Sunday and odd numbered addresses using water Tuesday and Saturday. The use of water on newly laid sod or plantings will not be restricted.
 - b) Level 2 Use of water for lawns and gardens is restricted to 1 day per week during the hours of 7:00 PM to 10:00 PM only with even numbered addresses using water Tuesday and odd numbered addresses using water Friday. The use of water on

newly laid sod or plantings outside of this restriction may be allowed on exceptional circumstances.

- c) Level 3 All outdoor and non-essential indoor use of water is prohibited

7.4 Restrictions imposed under Section 7.2 may be eased or lifted by the CAO once it is apparent that the water reservoir levels can be held stable at greater than 50 per cent and production from the wells can be interrupted to allow a break of at least two hours for each 24 hour period.

8.0 Security

8.1 Any threats against the Town's water system will be taken seriously and an employee of the Town becoming aware of or receiving notification of a threat or attack on the water supply and distribution system of the Town or where there is evidence of break-in or tampering of any facility or equipment, shall immediately notify the following:

- a) Lacombe Police Service
- b) Foreman
- c) Superintendent
- d) CAO
- e) Director of Disaster Services

8.2 The Superintendent shall notify officials of Alberta Environment and the Health Region of any credible threat or attack that has the potential for risk to public health or safety.

8.3 The CAO shall notify the Mayor and Members of Council of all incidents and the Town's Insurer of those incidents where there is a potential for risk to public health or safety.

8.4 The Director of Disaster Services shall activate the Emergency Operations Center if warranted in cases where there is a potential for risk to public health or safety.

8.5 The CAO, or the Director of Disaster Services where the Emergency Operations Center has been activated, shall coordinate, in consultation with the Lacombe Police Service,

Alberta Environment the Health Region, the actions of the Town in response to any threat or attack.

Mayor

DATE: May 26, 2003

Chief Administrative Officer

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