

# ALTO UTILITIES LTD.

## EMERGENCY RESPONSE PLAN



**ALTO UTILITIES**

Updated January 2025

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## 1.0 Introduction

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Section 10 of the *Drinking Water Protection Act* requires all water suppliers to have an Emergency Response Plan that will form the basis for a response to an emergency which might present a threat to the health of people drawing water from that system. This plan has been developed by Alto Utilities Ltd. in consultation with its engineers, health officers and operators to facilitate an appropriate response to a given emergency.

Special contingency plans may be issued under the scope of this plan. They will detail functions, responsibilities and responses to special circumstances requiring more detail than can be described in this plan.

This Emergency Response Plan constitutes a framework for the response and recovery to specific emergencies relating to the supply of water. Emergencies related to roads, sanitary sewers, storm sewers, etc. are the responsibility of others, mainly the District of Lake Country, who can be contacted at 250-766-5650.

## 2.0 System Overview

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The Alto Water System provides water for approximately 430 domestic connections, 1 school and 1 church (approximately 1000 people).

The distribution system consists of 2 well sources with 500 gpm and 300 gpm pumps respectively, a pump house located on Lodge Road, a booster station on Cheryl Road with one 15 hp and one 7 hp booster pumps, approximately 8.5 kms of 200 mm, 150 mm and 100 mm dia. watermains, 26 fire hydrants, 2 pressure reducing valve stations (PRV's) and 4 reinforced concrete storage reservoirs with a total capacity of 1,780 m<sup>3</sup> (391,422 lgals). The operators provide a service contract to the 2 privately owned hydrants on Lot 1, Plan 4720 (Winfield United Church).

Water is not disinfected because it is an approved groundwater source. The initial distribution system was constructed in 1970. The watermains are asbestos cement and PVC "Blue Brute" pipes. System controls were upgraded in 1999 with remote monitoring capability. A new well was constructed in 2002.

Appendix B includes a plan depicting the Alto water system components.

With periodic upgrades that have been implemented over the years, the water system is in good condition.

Alto Utilities Ltd. is a private water utility regulated by the Utilities Regulation Division of the Ministry of the Environment.

### 3.0 Emergency Contact List

Updated April 2022

CONTACT	PHONE NUMBERS	EMAIL
<b>OPERATORS</b>		
Keith Hanson Operator 2 Owner/Operator Teresa Hanson	250-766-4486 (office) 250-899-6274 (cell) 1-855-888-6423 (emergency) 250-899-2775 (cell)	alto.utilities@shaw.ca
Richard Bastiaansen Operator 2	250-253-2534 (cell)	cloudburstwater@gmail.com
Bryce Connor Operator 4	250-309-7791 (cell)	
<b>ENGINEER</b>		
WSP - Georgia Brabender AF Consulting – Antonio Faccini	250-300-0121 250-870-2478	georgia.brabender@wsp.com afaccini@afcltd.ca
<b>EMERGENCY PERSONNEL</b>		
Lake Country Fire Department Police – RCMP <b>BC Hydro</b>	911 250-766-2327 (non-emergency) 911 250-766-2288 1-888-POWERON	fireprevention@lakecountry.bc.ca
<b>SERVICES</b>		
<b><u>Electrical/Instrumentation:</u></b>		
Turn-Key Controls <ul style="list-style-type: none"> <li>Doug Halverson</li> <li>Nathan Tucker</li> <li>Dallas Labelle</li> </ul>	250-549-4701 (office) 250-549-4761 (fax) 250-306-4701 (cell) 250-308-2345 (cell) 250-550-7454 (cell)	
<b><u>Mechanical:</u></b>		
Aqua Tech Services <ul style="list-style-type: none"> <li>Randy Woods</li> </ul> Mountain View Electric <ul style="list-style-type: none"> <li>Pat Doorn</li> </ul>	250-768-4730 (home/office) 250-765-5801 (fax) 250-470-8869 (cell)  250-309-3622 (cell)	
<b><u>Hydrant Service:</u></b>		
Cloudburst Waterworks <ul style="list-style-type: none"> <li>Richard Bastiaansen</li> </ul>	250-253-2534 (cell)	cloudburstwater@gmail.com
<b><u>Excavation Equipment:</u></b>		
Deano's Advance Excavating Trystar Hydrovac	250-212-2603 (Dean) 250-765-3776 250-862-1113 (Sean cell) 250-463-9797 (Ryan cell)	
<b>PUBLIC HEALTH (in priority order) – Call Gordon Moseley and leave a message. If there is no response in 2 hours, proceed to phone subsequent numbers in sequence until contact is made with a person.</b>		
<ul style="list-style-type: none"> <li>Gordon Mosely</li> <li>Judi Ekkert, Interior health officer</li> <li>Heath Protection main line</li> <li>Medical Health Officer On-Call (after hours)</li> </ul>	250-549-5725 250-808-3444 (cell) 250-469-7070 ext 12274 (office) 250-469-7061 1-866-457-5648	gordon.moseley@interiorhealth.ca  judi.ekkert@interiorhealth.ca

**ALTO UTILITIES LTD  
EMERGENCY RESPONSE PLAN**

<b>GOVERNMENT</b>			
Land & Water BC Inc. <ul style="list-style-type: none"> <li>Al Aderichin, Engineer</li> <li>Chris McMillan, Secretary to Comptroller of Water Rights</li> </ul>	778-698-7325 (office) 778-698-7334 (office)	250-953-5124 (fax)	Al.Aderichin@gov.bc.ca Chris.Mcmillan@gov.bc.ca
Provincial Emergency Program	1-800-663-3456 250-371-5246 (fax)	250-371-5240 (office)	www.pep.bc.ca
District of Lake Country <ul style="list-style-type: none"> <li>Kiel Wilke, Capital Projects Manager</li> <li>Scott Unser, Utilities Manager</li> <li>Neil Davis, Road Maintenance</li> </ul>	778-738-2721  250-864-1709 (cell)  250-863-2857		kwilkie@lakecountry.bc.ca  sunser@lakecountry.bc.ca
Peter Greer Elementary School School District #23	250-766-2104 (office) 250-491-4000 (office)	250-766-5497 (fax) 250-491-4010 (fax)	Lloyd.Pendleton@sd23.bc.ca Purchasing@sd23.bc.ca Operations.Department@sd23.bc.ca
<b>MEDIA</b>			
<b>Radio:</b> Sun FM (99.9)	250-868-4720 (news)	250-860-8856 (fax)	www.thesun.net info@thesun.net
EZ Rock 101.5	250-868-4720 (news)	250-860-8856 (fax)	kelowna.myezrock.com news@am1150.ca
103.9 Juice FM Power 104 K96.3 FM Q103.1 AM1150	250-980-9009 (main) 250-763-1047 (main) 250-862-5963 (news) 250-762-3331 (main) 250-868-4720 (news)	250-980-9009 (fax)  250-469-9963 (fax)  250-860-8856 (fax)	1039.juicefm.ca info@power104.fm kboloten@newcap.ca theq@q103.ca info@am1150.ca
<b>Television:</b> CHBC - Global News	250-762-4535 (office)		okanagan@globalnews.ca
<b>Internet:</b> Castanet – Kelowna’s Homepage	250-763-3212 (office) 250-762-4445 (office)	250-862-5275 (fax) 250-762-3866 (fax)	www.castanet.net

#### 4.0 Potential Emergency Situations

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A review of the Alto service area indicates that the Emergency Response Plan (ERP) should facilitate a response to the following emergency situations:

<u>Potential Emergency</u>	<u>Risk of Occurrence</u>
• Contamination of source	Low
• Loss of source	Low
• Contamination of Distribution System (backflow, siphonage, minor watermain break, cross-connection)	Moderate
• Flooding	Low
• Broken watermain	Moderate
• Landslides	Low
• Pump failure	Moderate
• Power failure	Moderate
• Fire at Pump House	Moderate
• Earthquake	Low
• Wildfire	Low
• Drought	Low
• Vandalism (reservoir, pump house)	Moderate

The following response plans generally only list actions which are to be carried out immediately by the Utility to deal with the specific emergency as it relates to assuring a potable water supply to users. Subsequent and longer-term actions to respond to larger scale emergencies will be developed by local experts such as the Fire Department, RCMP and Provincial Emergency Preparedness (PEP) Coordinator.

Appendix B includes a plan depicting the Alto water system with locations of critical control points to ensure continuous service. The only high-risk facility is the school.

## **5.0 Operation Response Philosophy**

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### **5.1 NORMAL OPERATION AND MAINTENANCE**

Normal maintenance procedures, including incidences such as localized watermain breaks, which pose no threat to public health and property are exercised by the System Operator under standard procedures.

### **5.2 EMERGENCY PLANNING**

Alto reviews the ERP annually to develop and maintain a condition of readiness to respond to water supply emergencies. This includes training of personnel assigned to emergency responses and testing of procedures.

### **5.3 RESPONSE**

The primary emergency response rests with the Alto Owner/Operators as it relates to water supply.

### **5.4 RESPONSE STRUCTURE**

When an emergency occurs, the System Manager/Operators respond immediately to protect public health and safety. The Operators, in consultation, decide on further action (eg. Contact Lake Country Municipality, PEP and Public Health Department for assistance).



## 6.0 Potential Emergency Situations and Responses

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The following emergency scenarios identify hazards and actions required in response. It must be borne in mind that potential effects, actions and reactions are suggested but they must be adapted in the field to suit the actual emergency.

Alto Utilities Ltd. is responsible for the supply of water and in the event of major emergencies such as earthquake, flooding, etc., the response of other levels of government and emergency resources will be in place to deal with other damage.

### 6.1 CONTAMINATION OF SOURCE

- Sewer main break; rupture of Lodge Road sewer lift station
- Truck Spill near well head
- High E.Coli Levels in water sample

#### **Actions:**

- Contact System Operator
- System Operator shall determine severity of spill and if contaminant introduced to system  
If system contamination apparent or suspected:
  - Shut down well pump, close valves in station
  - Check distribution system and reservoir water for possible contamination
  - Notify Public Health Department
  - Issue Water Quality Advisory or Boil Water Advisory, if necessary, in consultation with Public Health Dept and Appendix "E"
  - Post notice on digital signboard.
  - Contact local media for public service announcement, if necessary
  - Advise District of Lake Country, if necessary
  - Impose water restrictions as needed to ration available storage
  - Arrange alternative source of water for affected residents (eg. Fire hydrant source in strategic locations at Peter Greer School and Copper Hill Place, or arrange trucking of water to reservoirs)

#### **Contacts:**

- Public Health Department
- Lake Country Fire Department, if fire flow interruptions

Support Plans and Procedures:

- Alto Water Quality Monitoring Program
- Alto Watermain Flushing program
- Alto Watermain Repair and Tie-In Protocol

6.2 LOSS OF SOURCE

- See Pump/Power Failure (Sections 6.5/6.6)

6.3 CONTAMINATION OF DISTRIBUTION SYSTEM

- Distribution System contaminated from loss of pressure in main and/or syphonage from homes or irrigation systems, minor water breaks, cross-connection

Actions:

- System Operator shall:
  - Isolate contaminated area
  - Advise Public Health Department
  - Implement Water Quality Advisory or Boil Water Advisory, if required and post notice on digital signboard.
  - Determine cause, source of syphonage and remedy
  - Flush and disinfect lines as required
  - Arrange alternative source of water for affected residents (eg. Fire hydrant source in strategic locations at Peter Greer School and Copper Hill Place, or arrange trucking of water to reservoirs)

Contacts:

- Public Health Department
- Lake Country Fire Department re: isolated lines for fire protection

Support Plans and Procedures:

- Alto Water Quality Monitoring Program
- Alto Watermain Flushing Protocol
- Alto Protocol for Watermain Repair and Tie-ins

#### 6.4 BROKEN WATERMAINS

Actions:

- System Operator shall:
  - Isolate affected area, switch off pumps if necessary
  - Initiate repairs
  - Notify affected users and post notice on digital signboard.
  - Arrange alternate source of emergency water at fire hydrant (if necessary due to major watermain break) located at Peter Greer School and/or Copper Hill Place or arrange trucking of water to reservoirs.

Contacts:

- Public Health Department
- Lake Country Fire Department for fire flow interruptions
- Insurance Agent if damage to private property evident
- District of Lake Country if damage to roads and sewers

Support Plans and Procedures:

- Alto Water Quality Monitoring Program
- Alto Watermain Flushing Protocol
- Alto Protocol for Watermain Repair and Tie-ins

#### 6.5 PUMP FAILURE

Actions:

- System Operator shall:
  - Isolate pump, switch off power to failed pump
  - Ensure second pump in operating mode
  - Review reservoir storage available and current demand. If necessary, notify users, post notice on digital signboard, and implement water restrictions to conserve reservoir storage/supply
  - Contact Aqua Tech or Mountainview Electric Services to Initiate repairs

Contacts:

- Notify Public Health Department if apparent that supply could be interrupted
- Notify Fire Department if fire flows affected

- Notify users and post notice on digital signboard if long interruption in service anticipated.

## 6.6 POWER FAILURE

### Actions:

- System Operator shall:
  - Back up Generator will continue to supply water to Cheryl Reservoir which will supply lower system.
  - Contact BC Hydro and determine anticipated duration of black-out
  - If reservoir storage deemed to be inadequate, notify users and post notice on digital signboard.
  - Implement water restrictions, isolate any irrigation users
  - Contact Public Health Department
  - If power failure is likely to be for extended time, assess water shortage/demand and, if necessary, arrange for emergency supply of water (eg. Fire hydrant source in strategic locations at Peter Greer School and Copper Hill Place or arrange trucking of water to reservoirs Public access to fire hydrant source).

### Contacts:

- BC Hydro
- Public Health Department
- District of Lake Country Fire Department

### Support Plans and Procedures:

- None

## 6.7 FIRE IN PUMP HOUSE

### Actions:

- System Operators shall:
  - If attended at time of fire, evacuate site, contact Fire Department and:
    - Switch off main power supply if possible
    - Ensure access road clear for fire vehicles
    - Keep spectators and passers-by clear of site
  - If unattended at time of fire, adjacent homeowners will contact Fire Department
  - Once fire extinguished, assess damage and potential duration of loss of supply. If deemed initially extensive, implement water restriction and notify public.

- If wells are unable to pump water for an extended period of time, arrange alternative source of water (eg. Fire hydrant source in strategic locations at Peter Greer School and Copper Hill Place, or arrange trucking of water to reservoirs)

Contacts:

- Fire Department
- BC Hydro
- Public Health Department
- Users, if necessary

## 6.8 VANDALISM AT RESERVOIR, PUMP HOUSE

- Unlawful access gained to reservoir or pump house
- Tampering with reservoir hatch or door at pump house

Actions:

- Contact System Manager or Operator
- System Operator shall:
  - Determine extent of damage and, if access to water supply achieved (eg. Reservoir hatch lock damaged/opened) and integrity of supply deemed compromised, notify Public Health Department immediately and request instructions regarding testing of water.
  - If access has been gained to pump house and not reservoir, switch off pump and assess damage. Water will be supplied from reservoirs.
  - If access has been gained to reservoir and not pump station, close off inlet/outlet at reservoir and switch pump on manual. Water supply then from pump directly into system.
  - Run system as above until Public Health Department provides direction on testing and/or need for Boil Water Advisory.
  - If indications are that source or reservoir could be out of service for more than 1 day, assess storage/demand implications and implement water restrictions as necessary, notify users and post notice on digital signboard.

Contacts:

- Fire Department
- Public Health Department
- Users, if necessary
- RCMP, if necessary and/or if insurance claim possible

## 7.0 Public Notification Protocol

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### 7.1 METHOD OF ISSUING PUBLIC NOTIFICATION

- 7.1.1 Direct contact to Peter Greer Elementary by phone (766-2104) with a follow-up of the notification by fax (250-766-5497)
- 7.1.2 Direct contact to School District #34: Lloyd Pendleton - Lloyd.Pendleton@sd23.bc.ca, Drasko Gujic (Purchasing Assistant) - Drasko.Grujic@sd23.bc.ca, Wendy.Sanderson@sd23.bc.ca, Purchasing@sd23.bc.ca, Operations.Department@sd23.bc.ca
- 7.1.3 Direct contact to Winfield United Church (250-766-4458)
- 7.1.4 Direct contact to District of Lake Country (250-766-5650)
- 7.1.5 Hand delivery of a hard copy of Boil Water Notice (BWN)/Water Quality Advisory (WQA) to all serviced residences, if small service area.
- 7.1.6 Fax BWN or WQA to local Radio and TV Stations
- 7.1.7 Post Notice on Digital Sign at Lodge Road pumphouse
- 7.1.8 Update phone message with public notice information
- 7.1.9 Distribute email notice to known recipients

### 7.2 INFORMATION TO BE INCLUDED IN PUBLIC NOTICE

- 7.2.1 Reason for issuing BWN/WQA
- 7.2.2 Precautions required
- 7.2.3 Indication of the corrective action that is being taken and the expected time frame
- 7.2.4 Contact information for customers requiring further information
- 7.2.5 Interior Health website for BWN and WQA information
- 7.2.6 Follow-up action required by Interior Health to rescind the public notice

*See Appendix E for Sample Boil Water Notice and Appendix F for Sample Water Quality Advisory*

### 7.3 CIRCUMSTANCES REQUIRING IMMEDIATE REPORTING

Immediate reporting is required under section 12 of the *Drinking Water Protection Act* if the water quality standards in Schedule A of the *Drinking Water Protection Regulation* are not met for the fecal coliform bacteria or *Escherichia coli* (e.coli) parameters.

*Schedule A*  
***Drinking Water Protection Regulation***  
Water Quality Standards for Potable Water

**Parameter:**

Fecal coliform bacteria  
*Escherichia coli* (e.coli)

**Standard:**

No detectable fecal coliform bacteria per 100 ml  
No detectable *Escherichia coli* (e.coli) per 100 ml

Total Coliform bacteria

- (a) 1 sample in a 30 day period
- (b) more than 1 sample in a 30 day period

No detectable total coliform bacteria per 100 ml  
At least 90% of samples have no detectable total coliform bacteria per 100 ml and no sample has more than 10 total coliform bacteria per 100 ml

### 7.4 RESCINDING PUBLIC NOTIFICATION

Prior to rescinding any public notification, Interior Health must be consulted and approve the removal of the public notification.

## APPENDIX A

### DRINKING WATER PROTECTION ACT



## APPENDIX B

### WATER SYSTEM LAYOUT

## APPENDIX C

### PROTOCOL FOR WATERMAIN REPAIR & TIE-INS



**ALTO UTILITIES**

# Alto Utilities Ltd.

## Protocol for Watermain Repair & Tie-Ins

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The following procedures apply when existing watermains are wholly or partially de-watered to facilitate repair to a broken watermain or a tie-in to an existing watermain.

### **1. Trench Treatment**

When an existing main is opened and the excavation is wet, liberal quantities of hypochlorite should be applied to open trench areas to lessen potential for contamination. Once the repair or tie-in has commenced, every effort should be made to keep the water level below pipe level by excavating an adjacent sump area in the trench and pumping as required. Once excavation is dry, proceed as follows.

### **2. Swabbing with Hypochlorite Solution**

The interior of all pipes and fittings used in making repair shall be swabbed with a 1% hypochlorite solution prior to installation.

### **3. Flushing**

Thorough flushing is essential to reduce the risk of contamination after watermain repairs. Where practical, always flush toward the repair/tie-in location from both directions (assuming valve/hydrant locations permit). Flushing to commence immediately after repair and continue until water is clear. Where practical and if work is in area adjacent to residences, service connections should be closed at the time the main is isolated and prior to repair to limit potential for contamination.

### **4. Bacteriological Samples**

Bacteriological samples shall be taken after repairs or tie-in are completed to provide a record of the procedures' effectiveness. If the direction of flow is unknown, then samples shall be taken on each side of the repair. If positive samples are recorded, the situation shall be evaluated to determine corrective action if required. Daily sampling to continue until 2 consecutive negative samples are recorded.

## **5. New Watermain Construction Tie-In to Existing System**

Tie-ins to the existing water system from new construction are to comply with the above procedures and the following documentation is required:

- a) Request for Watermain Tie-in
- b) Field chlorination methods
- c) Dechlorination (typical)

Note: where necessary and in order to minimize time users are without water, the existing main may be returned to service prior to the completion of the bacteriological test provided the above procedures have been executed.



# Alto Utilities Ltd.

## ALTO UTILITIES

### Request for Watermain Tie-In

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

Project Name or Legal Lot Description: \_\_\_\_\_

Location of Tie-In(s): \_\_\_\_\_

Contractor installing main: \_\_\_\_\_

Tests & Procedures		Complete	Data Attached	
1. Flushing	As per AWWA	<input type="checkbox"/>		
2. Leakage & Pressure Test	Performed in accordance with AWWA	<input type="checkbox"/>	<input type="checkbox"/>	
	Satisfies Requirements	<input type="checkbox"/>		
3. Disinfection	In accordance with AWWA	<input type="checkbox"/>		
	Satisfies Requirements	<input type="checkbox"/>		
4. Flushing	To a tanker truck or holding facility	<input type="checkbox"/>		
5. Neutralizing & Testing (wasted water)	Confirmed absence of disinfection chemical	<input type="checkbox"/>	<input type="checkbox"/>	
	Quantity of Thiosulfate used _____			
	Describe how water was neutralized and where approved discharge occurred:			
6. Bacteriological Tests				
	a) Chlorine Residual	Residual less than 1.5 mg/l	<input type="checkbox"/>	<input type="checkbox"/>
	b) Coliform Testing	Satisfies AWWA & GCDWQ	<input type="checkbox"/>	<input type="checkbox"/>

**Other Information Required:**

Sketch, photo or plan showing section of main that was tested and tie-in locations      yes       no

Have results of ALL tests been attached?      yes       no  explain: \_\_\_\_\_

By signing below, the Consultant acknowledges that all watermain construction has been completed in accordance with the approved design and AWWA, including all associated tests and procedures, and satisfactory results were obtained. The new watermain may now be connected to the Alto Water System.

\_\_\_\_\_  
Engineering Firm

\_\_\_\_\_  
Project Engineer

\_\_\_\_\_  
Signature

**Authorization by Alto Utilities Ltd. for watermain tie-in**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date



# Alto Utilities Ltd.

## Watermain Disinfection – Field Chlorination Record

# ALTO UTILITIES

Date: \_\_\_\_\_ Project Name or Legal Lot Description: \_\_\_\_\_

Location of Tie-In(s): \_\_\_\_\_

Chlorination Start – Sample #1 @ 0 Hours

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

Total Chlorine in mg/l:

1. Start of Pipe \_\_\_\_\_

2. End of Pipe \_\_\_\_\_

Chlorination Finish – Sample #2 @ 24 Hours

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

Total Chlorine in mg/l:

1. Start of Pipe \_\_\_\_\_

2. End of Pipe \_\_\_\_\_

Dechlorination (neutralizing) of Pipe Chlorination Water

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

Volume of Water Dechlorinated \_\_\_\_\_

Pounds of Sodium Thiosulphate Used to Dechlorinate \_\_\_\_\_

Discharge Location of Dechlorinated Water \_\_\_\_\_

By: Consultant/Sampler \_\_\_\_\_

Coliform Bacteria Sampling

Date: \_\_\_\_\_ Sample #1 @ 0 Hours

Start of Pipe

End of Pipe

Total Coliform CFU/100 ml \_\_\_\_\_

Total Coliform CFU/100 ml \_\_\_\_\_

Fecal Coliform CFU/100 ml \_\_\_\_\_

Fecal Coliform CFU/100 ml \_\_\_\_\_

Chlorine Residual mg/l \_\_\_\_\_

Chlorine Residual mg/l \_\_\_\_\_

Date: \_\_\_\_\_ Sample #2 @ 24 Hours

Start of Pipe

End of Pipe

Total Coliform CFU/100 ml \_\_\_\_\_

Total Coliform CFU/100 ml \_\_\_\_\_

Fecal Coliform CFU/100 ml \_\_\_\_\_

Fecal Coliform CFU/100 ml \_\_\_\_\_

Chlorine Residual mg/l \_\_\_\_\_

Chlorine Residual mg/l \_\_\_\_\_

Coliform Analysis Performed by: \_\_\_\_\_

Note: mg/l = milligrams per litre or parts per million  
 CFU = colony forming units  
 Coliform results must be attached



## Alto Utilities Ltd. De-Chlorination

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# ALTO UTILITIES

All chlorinated water must be neutralized before it can be disposed of.

The use of sodium thiosulfate is one method of removing chlorine.

The following formula is useful to estimate how much thiosulfate is needed to neutralize a known volume of chlorinated water:

$$1 \text{ g thiosulfate} \quad / \quad 1 \text{ mg/L chlorine} \quad / \quad 1000 \text{ L}$$

Example: If you have 10 m<sup>3</sup> in the pipe and you know that the chlorine concentration is approximately 100 mg/L, you can use this formula to estimate that you'll need approximately 1 kg of thiosulfate to neutralize the chlorine before it can be discharged.

A water truck makes an excellent contact chamber to dechlorinate before water is discharged to the road base.

**Thiosulfate is toxic and must never be applied to water inside a main.** Refer to MSDS for proper handling instructions.

The only way to be sure that the chlorine concentration is zero is to test for it. If you are already going to use a low range test kit to measure chlorine residual at the time of coliform sampling, this is a perfect tool to ensure discharge water is free of chlorine.

## APPENDIX D

### SAMPLE BOIL WATER NOTICE





## Alto Utilities Ltd. BOIL WATER ADVISORY

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# ALTO UTILITIES

Effective [*enter date*], Alto Utilities Ltd. is issuing a Boil Water Notice to all domestic water users of the Alto Utilities Ltd. water system. Currently, we are experiencing problems with [*enter nature of problem*] and there is inadequate protection against bacteria or viruses that may enter the water system.

Water that will be used for drinking, washing ready-to-eat fruits or vegetables that won't be cooked, for making juice, ice or infant formula, and for brushing teeth must be brought to a rolling boil for a minimum of 1 minute.

Operators are presently working to correct the problem by [*enter actions being taken*]. Following consultation with Interior Health, a notification will be issued when the water no longer has to be boiled before drinking or to update you on the situation.

We appreciate your patience during this time. If you have any questions, please contact our office at 250-766-4486. You may also refer to the Interior Health website for general information at [www.interiorhealth.ca](http://www.interiorhealth.ca) and follow the link to Drinking Water Notification Listings or call Interior Health at 250-549-6359.

*(\*\*\*A copy of the completed Boil Water Advisory must be reviewed by Interior Health prior to its distribution to water users \*\*\*)*

## APPENDIX E

### SAMPLE WATER QUALITY ADVISORY



**ALTO UTILITIES**

## Alto Utilities Ltd. WATER QUALITY ADVISORY

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Effective *[enter date]*, Alto Utilities Ltd. in consultation with the Interior Health Authority, is issuing a Water Quality Advisory to all water users of the Alto Utilities Ltd. water system.

Interior Health recommends children, the elderly, people with weakened immune systems, and anyone seeking additional protection, drink boiled water, or a safe alternative. For these at-risk populations, water intended for drinking, washing fruits and vegetables, making beverages or ice, or brushing teeth should be boiled for one minute. Boiled water should then be refrigerated in a clean, covered container.

Customers could also choose to use bottled or distilled water, or water that has been filtered through a well-maintained treatment device.

Alto Utilities is taking additional measures to reduce risk. Interior Health has been fully involved and the public will be notified when conditions change or water quality has been improved.

We apologize for any inconvenience this might cause and appreciate your cooperation and patience during this time. More information can be obtained from the [Interior Health](#) website.