

APPENDIX A: EMERGENCY RESPONSE AND CONTINGENCY PLAN TEMPLATE

This template is designed to be a starting point to aid you in preparing your own plan. Please modify to suit the needs of your water supply system (e.g. add or delete emergency contacts as you see fit).

Name of Water Supply System:

Mailing Address:

Phone Number(s):

Date prepared:

EMERGENCY CONTACT INFORMATION

Name	Phone Number(s)	Email	Fax
Operator (primary):	Primary: Secondary:		
Operator:	Primary: Secondary:		
Owner (responsible):	Primary: Secondary:		
Other owner(s):	Primary: Secondary: Primary: Secondary:		
Health Authority Contacts			
Drinking Water Officer/ Environmental Health Officer:	Office: Secondary:		
Public Health Engineer:	Office: Secondary:		
Medical Health Officer:	Office: Secondary:		
After hours health authority emergency contact:			

Name	Phone Number(s)	Email	Fax
Government Agencies			
Local Government Emergency Program Coordinator (Municipality):			
Local Government Emergency Program Coordinator (Regional District):			
Emergency Management BC Emergency Coordination Centre:	1 800 663-3456		
Emergency Management BC Regional Office: Central Region 1255-D- Dalhousie Drive Kamloops, B.C. V2C 5Z5	250 371-5240		250 371-5246
Ministry of Environment:			
Ministry of Forests, Lands, & Natural Resource Operations :			
Ministry of Transportation:			
Media			
Laboratories			
Bacteriological: Address:			
Chemical: Address:			

Name	Phone Number(s)	Email	Fax
Emergency Departments			
Police/ RCMP:			
Fire Department:			
Ambulance:			
Hospital:			
Health Centre:			
Repair Services			
Utility:			
Electrician:			
Plumber:			
Bulk water hauler / alternative water supplier:			
Excavator:			
Water Well Drilling Contractor:			
Pump Installer:			
Computer support:			

Name	Phone Number(s)	Email	Fax
Equipment Supplier(s)			
Water Treatment Supplier:			
Other Local Water Supply System(s)			

In the case of emergency contacts, provide as many forms of communication to each contact as possible (including: primary, secondary and after hours phone numbers). The Emergency Contact Information must be reviewed on an annual basis to ensure the contact information is up to date. Forward any changes to your local Drinking Water Officer or delegate.

Date Reviewed	Completed by	Forwarded to Drinking Water Officer

APPENDIX B: POSSIBLE EMERGENCIES WITH PLANNED RESPONSES

This provides examples of common possible emergencies and sample responses. You may need to modify the list and/or the responses (including example actions) to ensure it suits the needs of your system. For example, the type of response, the contact list and the order of response will vary, depending on the size of your system, the type of source you use, and other factors.

Use the list of possible emergencies that you created to fill in the blanks under “other”. Use the blank templates at the end of the appendix to develop your own emergency responses. You should work with your Drinking Water Officer to make sure you are on the right track.

EXAMPLES OF POSSIBLE EMERGENCIES

SOURCE(S) / INTAKE(S)

- Contamination of source (chemical)
- Loss of source
- Flood conditions
- Turbidity (no example response)
- _____
- _____
- _____
- _____

DISTRIBUTION SYSTEM

- Broken water main
- Backflow or Back Siphonage
- Blocked / faulty valve (no example response)
- Contaminated Reservoir (no example response)
- _____
- _____
- _____
- _____

TREATMENT / PUMP HOUSE

- Pump failure
- Chlorine gas leaks (no example response)
- Chlorinator failure
- Disinfection system failure (UV, filters, etc.)
- Power failure
- _____
- _____
- _____
- _____

OTHER

- Spills of disinfected water into fish-bearing streams (no example response)
- Earthquake (no example response)
- Fire (no example response)
- Unacceptable Water Sample (Total Coliform or E. coli bacteria)
- _____
- _____
- _____
- _____

EXAMPLES OF PLANNED RESPONSES

GENERAL EMERGENCY SHUT-DOWN AND START-UP PROCEDURES

SHUT-DOWN PROCEDURE

In case of any emergency in which the water is not safe for consumption or general use:

1. Issue a Boil Water Notice, Do Not Consume or Do Not Use Notice.
2. Shut off water supply (if necessary).
3. _____ will contact the drinking water officer _____ or other health authority contact(s) (as per specified emergency procedures).
4. _____ will notify affected water users (as per the communication protocols).
5. _____ will notify appropriate government agencies (as per specified emergency procedures).
6. _____ will post warning signs in public spaces and other necessary locations.
7. _____ will coordinate repairs.
8. _____ will arrange for alternate source of safe drinking water.

START-UP PROCEDURE

1. Identify and correct the source of contamination.
2. The entire system should be flushed and disinfected (as per attached procedures).
3. Send water sample(s) to the appropriate approved lab for testing. For bacteriological contamination, two or three consecutive sampling results must be negative.
4. Contact the drinking water officer or delegate for approval to resume normal operations of the water supply system (e.g., lifting the Boil Water Notice).

CHEMICAL CONTAMINATION OF SOURCE: SPILL, VEHICLE ACCIDENT, ETC.

ACTIONS

- Shut down pump.
- Notify health authority.
- Notify all users.
- Contact government agencies (see below) for advice and assistance.
- Contact local media for public service announcement (where all customers cannot be notified by phone).
- Arrange alternate source if necessary—i.e., bottled water, bulk hauler and storage tank.

CONTACTS

- Drinking water officer
- Local government's emergency program coordinator
- Emergency Management BC
- Police
- Ministry of Forests, Lands and Natural Resource Operations
- Department of Fisheries
- Others as necessary, depending on severity.
-

LOSS OF SOURCE: INTAKE DAMAGED, CREEK DRIED UP, ETC.

ACTIONS

- Ensure pump is shut off (to protect pump).
- Notify all users.
- Contact government agencies (see below) for advice and assistance.
- Arrange alternate source (e.g., bottled water, bulk hauler and storage tank)

CONTACTS

- Drinking water officer
- Local government's emergency program coordinator
- Ministry of Forests, Lands and Natural Resource Operations
- Others as necessary, depending on severity (possibly, the Fire Department).
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FLOOD CONDITIONS

ACTIONS

- Notify all users regarding the potential for water contamination, loss of pump, power, etc. Users should be advised to store some drinking water in advance, and to boil any suspect water for two minutes or disinfect with chlorine when flood conditions exist.
- Phone government contacts (see below).
- Contact local media for public service announcement (where all customers cannot be notified by phone).
- Arrange alternate source if possible – i.e., bottled water, bulk hauler, storage tank.

CONTACTS

- Drinking water officer
- Local government's emergency program coordinator
- Emergency Management BC
- Ministry of Forests, Lands and Natural Resource Operations

PUMP FAILURE

ACTIONS

- Notify all users of interruption of service.
- Call for repairs: pump manufacturer.
- Advise drinking water officer (if interruption not short-term).
- Arrange alternate source if necessary (e.g., bottled water, bulk hauler, etc.).

CONTACT

- Drinking water officer
-

CHLORINATOR FAILURE

ACTIONS

- Advise local health authority.
- Notify all users to boil water for two minutes or take other disinfection procedures in accordance with recommendation of local health officials.
- Arrange chlorinator repairs.

CONTACTS

- Drinking water officer
- Chlorinator manufacturer
-

DISINFECTION SYSTEM FAILURE (ULTRAVIOLET LAMP, FILTRATION SYSTEM, OZONE ETC.)

ACTIONS

- Advise local health authority.
- Notify all users to boil water for two minutes or take other disinfection procedures in accordance with recommendation of local health officials.
- Arrange disinfection system repairs.

CONTACTS

- Drinking water officer
- Disinfection system manufacturer

POWER FAILURE

ACTIONS

- Call BC Hydro.
- Start back-up generator.
- Notify all users about interruption of service if back up not capable of maintaining supply.
- Advise drinking water officer.
- Arrange alternate source if necessary (e.g., bottled water, bulk hauler, etc.).

CONTACT

- Drinking water officer
- BC Hydro

BROKEN WATER MAIN

ACTIONS

- Reduce pressure (but maintain enough pressure to prevent backflow – at least 20 psi/140 kpa).
- Call for repairs (e.g., plumber, excavator).
- Notify all users of interruption of service.
- Advise local drinking water officer
- Arrange alternate source if necessary (e.g., bottled water, bulk hauler, etc.).

CONTACT

- Drinking water officer

BACKFLOW OR BACK SIPHONAGE

ACTIONS

- Advise Medical Health Officer at local health authority.
- Notify users to boil water for two minutes or take other disinfection procedures in accordance with recommendation of local health officials.
- Purge and disinfect lines as directed, after corrections have been made.

CONTACT

- Drinking water officer

TEMPLATE FOR PLANNED RESPONSES

Fill in the following blank template with your planned responses to the list of possible emergencies that you listed under “other”. Make more copies of this page as necessary.

EMERGENCY: UNACCEPTABLE BACTERIOLOGICAL WATER SAMPLE RESULT (TOTAL COLIFORM BACTERIA OR E. COLI BACTERIA)

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EMERGENCY:

ACTIONS

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CONTACTS

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EMERGENCY:

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CONTACTS

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EMERGENCY:

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EMERGENCY:

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APPENDIX C: ADDITIONAL INFORMATION CHECKLIST

Check off the following items as you add them to your Emergency Response and Contingency Plan.

COMMUNICATION PROTOCOLS

- Communications Protocols with contact list of water system users (include phone numbers and addresses).
- "Water Quality Advisory", "Boil Water Notice", "Do Not Consume Notice" and "Do Not Use Water Notice" signs, and instructions for issuance.
- Operating equipment instructions.
- Instructions for switching to alternative source (if applicable).
- Instructions for switching to generator / alternative power supply.
- Instructions for shutting off water supply.
- Disinfection procedures for wells, distribution system and reservoir (refer to Resource/Reference List)
- Disinfection operation.
- Electrical schematics for generator.
- Electrical schematics for disinfection equipment and room.

MAP OF WATER SUPPLY SYSTEM

- Source (include GPS settings and directions as needed).
- Mains.
- Critical control points (where a loss of control could result in a risk of adverse health effects or equipment damage).
- Intake(s).
- Shut-off valves.
- Access routes to critical control points.
- Pump house.
- Locations of emergency contact list, tools, spare parts and maintenance equipment.
- High-water-use industries.
- High-risk facilities:
 - schools
 - day-care centres
 - seniors residential housing complexes (e.g. supportive housing or assisted living)
 - long-term-care facilities
 - hospitals and medical/dental offices