Small System Vulnerability Assessment & Emergency Response Plan

For systems with up to 150 connections

State of Oregon
Oregon Health Authority
Drinking Water Services

June, 2009

EMERGENCY RESPONSE PLAN

For small public water systems serving 150 connections or less

All public water systems in Oregon are required to develop a written emergency response plan which incorporates the results of a security vulnerability assessment (OAR 333-061-0064). The Drinking Water Services has developed this handout for smaller systems to assist operators in meeting the requirement. This document includes:

1) An introduction to emergency response planning

2) Three tasks to complete a vulnerability assessment and develop a workable emergency response plan

3) A certificate of completion to be mailed to the Drinking Water Services

4) Appendices of various emergency response related templates for your use

Why should a public water system have an Emergency Response Plan?

In addition to the regulatory requirements, there are a number of reasons including the following:

- The plan prepares the water system for all kinds of emergencies – natural disasters, man-made events, and terrorist activities.
- The plan gives specific instructions about who to call if there is an emergency situation that may affect the water system.
- The plan helps develop procedures for responding to events that could affect your drinking water, such as a contaminated water source or storage tank.
- The plan addresses security measures for the water system.
- The plan organizes a number of important management and operations procedures into one document.

How is an emergency response plan incorporated into water system operations?

The emergency response plan should be an integral part of the water system routine operations. For example, a daily inspection of the system could be done along with other tasks. When the operator checks the stock of regular supplies they should inventory the emergency supplies and equipment as well. Also, ongoing training of water system staff should include the actions outlined in the emergency response plan.

Keep the emergency response plan active. Update the plan at least annually (especially contact information) and replace outdated copies of the plan immediately. Keep copies of the plan where they will be accessible to all staff, at all times. For example, some systems keep contact numbers, a map showing key components, and emergency procedures posted in the locked pump house. Consider writing the emergency response plan on a computer – then it can be easily updated and the current version shared with staff.

The information and procedures in this model plan are important and should be included in your water system's emergency response plan. If you currently have an emergency response plan that lacks any of the elements included in this packet, please amend the plan to include them. Feel free to organize the plan to best suit your needs.

Task 1: Complete a Security Vulnerability Assessment

Water systems must be prepared for the threat of deliberate acts of destruction, including terrorist activities meant to contaminate the water supply or destroy the water system itself. To begin, each water system must conduct a security vulnerability assessment as part of their emergency response plan to determine if there are areas needing improved security measures. The vulnerability assessment will address the following points:

- Characterize the water system, including its mission and objectives

- Identify adverse consequences to avoid
- Determine which critical assets might be subject to malevolent acts
- Assess the likelihood of such malevolent acts
- Evaluate existing countermeasures and what risks remain
- Develop a prioritized plan for risk reduction

Complete the questionnaire on pages 7 and 8 of this document for your vulnerability assessment, and modify as necessary to meet your needs.

Correct all security deficiencies identified in your security vulnerability assessment as soon as possible. You may have to prioritize this work, investing in the most obvious and cost-effective security improvements immediately and budgeting to complete others as you are able.

Task 2: Develop a Written Security Program

This document should provide a complete description of your security program, including such details as procedures for routine checks of the water system infrastructure and information about alarm systems. The written security program should be available only to those who need this information to ensure the security of the system. The following are basic components of a security program. Some of the components are one-time tasks and some should be written as security program procedures.

1. **Security management:**
   - Assign security responsibilities to qualified individuals.
   - Encourage staff to be alert to any signs of suspicious activity.
   - Immediately investigate all information about suspicious activity and alert local law enforcement when appropriate.
   - Conduct a daily check of the water system for signs of tampering or other unusual activity.
   - Ask the local police/sheriff to include your facility in their routine patrols.
   - Involve everyone in routine surveillance. Ask all water system users to watch for suspicious or unusual activity around water system facilities and provide them with phone numbers to report their observations.

2. **Physical activity:**
   - Establish procedures for restricting entry to authorized personnel, contractors, vendors, and visitors only.
   - Restrict access to critical areas of the water system; accompany visitors as needed.

3. **Physical security:**
   - Protect wells, intake structures, reservoirs, etc., with fencing.

- Secure doors, windows, hatches, etc. using locks, seals, alarms, motion sensors, and other appropriate means (remember to consult federal, state, and local fire and occupational safety codes before making any changes).
- Account for all keys to all areas of the system.
- Use video surveillance where appropriate.
- Provide adequate interior and exterior security lighting.

4. **Storage and use of chemicals:**
   - Secure chemical storage areas and limit access to authorized personnel.
   - Keep track of hazardous chemicals and understand their associated risks.
   - Use only properly labeled chemicals.
   - Inspect incoming chemicals for signs of tampering or counterfeiting.

5. **Personnel:**
   - Screen prospective employees or volunteers (references, background checks, etc.).
   - Monitor employee activity through daily work assignments.
   - Restrict personal items allowed in water system facilities.
   - Collect identification keys and other security items when employees terminate.

6. **Evaluation:**
   - Evaluate the lessons learned from past tampering or security threatening events.
   - Annually review and test the effectiveness of the security program by:
     - Doing an annual water system security assessment (see appendix).
     - Using mock tampering events, challenging computer system security, etc.
     - Using a third-party expert to periodically evaluate your security program, revising the program as needed.

Task 3: Complete the Small System Security Vulnerability Assessment Questionnaire

List the Critical Components of your system. *For example, wells, pressure and storage tanks, pumps, etc.*

Is your system vulnerable in any way? *For example, lack of locks, open access to critical components, etc.*

What steps have you taken to protect your system? *For example, locks, fencing, alarms, cameras, routine patrols by law enforcement, etc.*

What additional steps could you take to further protect your system? *For example, additional or improved fencing, better locks, additional lighting, etc.*

How would you know if your system had been compromised? *For example, broken doors, locks, or windows, cut fencing, etc.*

What actions would you take if you thought the system had been compromised? *For example, halt normal operations, turn off water supply, conduct water tests, close the business, notify law enforcement, bring in bottled water for drinking and cooking purposes, etc.*

Additional Information:

Task 4: Chain of Command & Emergency Contacts

Water System Chain of Command:

	Staff Name and Position	Emergency Phone
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

Operators and staff members will need to contact each other quickly in an emergency. Therefore, key personnel should have access to critical phone numbers both on and off duty. Keep these numbers up to date.

Where will the Emergency Response Plan be stored? _____

Have all the people listed above been informed of the location(s)? Yes ☐ No ☐

Would they all have access to the stored plan in an emergency? Yes ☐ No ☐

In an emergency the following actions can be taken independently by any staff member:

1. Halt normal operations – (how?) _____
2. _____
3. _____
4. _____

The following actions require approval by a supervisor:

1. Resume normal operations (with approval of the Drinking Water Services)
2. _____
3. _____
4. _____

EMERGENCY CONTACTS

(Review/update annually)

Name of Your Public Water System:		**PWS ID #: 41-**	
WHO	**ADDRESS, CITY**	**PHONE**	**FAX**
OR Drinking Water Services	**Portland**	**(971) 673-0405**	**(971) 673-0457**
County Health Dept			
After hours, call the OR Emergency Response System (OERS)		**(800) 452-0311**	
Your Water Lab			
Fire Department			
Law Enforcement			
County Emergency Management Agency			
Equipment Supply			
Engineering Company			
Utilities – Electrical			
Local Media			
Alternate Water Supplier(s)			
Pump Maintenance / Repair			

TO REPORT A DRINKING WATER SYSTEM EMERGENCY

Please be prepared provide the following when contacting the OR Drinking Water Services, OERS, and/or your County Health Department

1. YOUR NAME, ADDRESS, PHONE NUMBER, CURRENT LOCATION

2. TYPE OF INCIDENT

3. EXACT LOCATION OF INCIDENT

4. THE DATE AND TIME THE INCIDENT OCCURRED

5. NATURE OF THREAT TO THE WATER SYSTEM

Emergency Response Plan/VA Proof of Completion

(*Please remove sheet and return*)

State of Oregon
Oregon Health Authority
Drinking Water Services

For small water systems with populations of 150 or less

Public Water System ID number: _____

Water System Name: _____

Address: _____

Name of person authorized to sign on behalf of this system:

Printed Name: _____

Title: _____Phone: _____

Address: _____

I certify that this water system has completed an Emergency Response Plan and associated security assessment that complies with the minimum requirements prescribed by DHS-DWP and has coordinated, to the extent possible, with the local emergency management system.

<u>Do not</u> send your actual ERP/VA to DHS-DWP; these will be reviewed during routine water system surveys. <u>Do</u> send in this form as proof of completion.

Signed: _____ Date: _____

Mail completed form to: Tony Fields, Oregon Health Authority-Drinking Water Services, 800 NE Oregon Street, Suite 640, Portland, Oregon 97232

Appendices

The following appendices lay out useful reference information for your emergency response plan:

1. Annual System Security Assessment
2. Annual System Hazard Review
3. Well Disinfection Procedures
4. Templates for the following issues
    A. Fecal bacteria/*E. coli* boil water public notice
    B. Turbidity boil water public notice
    C. Unresolved total coliform bacteria public notice

PLEASE NOTE:

Electronic templates for these and other public notice documents are available on our website, located at http://www.oregon.gov/DHS/ph/dwp/tools.shtml#mtable, and are available in both MS Word (.doc) and Adobe Acrobat (.pdf) formats.

The MS Word format will allow the water system to enter their relevant data directly into the template for printing, which can save a considerable amount of time and effort.

Appendix 1: Annual System Security Assessment

System name: _____

Date of assessment: _____

Assessor: _____

Well/spring/intake protective structures, pump houses, offices, treatment plants

	Yes/No		Comments
Locks on all doors	Y☐	N☐	_____
All windows secured	Y☐	N☐	_____
Adequate alarms, motion sensors, video cameras	Y☐	N☐	_____
Adequate security lighting	Y☐	N☐	_____
Entry restricted to authorized personnel	Y☐	N☐	_____
"Employees only" signs posted	Y☐	N☐	_____

Reservoirs

	Yes/No		Comments
Fenced area around reservoir	Y☐	N☐	_____
Locked gate	Y☐	N☐	_____
Ladder guard locked	Y☐	N☐	_____
Access hatches locked	Y☐	N☐	_____
Adequate security lighting	Y☐	N☐	_____
"Employee only" signs posted	Y☐	N☐	_____

Distribution System

	Yes/No		Comments
Manholes, hydrants and other access points secured	Y☐	N☐	_____

Procedures

	Yes/No		Comments
All facilities locked and alarms set during prescribed times	Y☐	N☐	_____
Background checks before hiring employees	Y☐	N☐	_____
Employees regularly trained/drilled regarding security program	Y☐	N☐	_____
Access restricted to authorized persons	Y☐	N☐	_____
Visitors and contractors checking in and out	Y☐	N☐	_____
Passcode/keys/access cards changed when an employee is dismissed	Y☐	N☐	_____
Keys never stored in equipment or vehicles	Y☐	N☐	_____

Appendix 2: Annual System Hazard Review

System name: _____

Date of assessment: _____

Assessor: _____

Source

	Yes/No		Comments
Uncorrected water system survey deficiencies	Y☐	N☐	_____
Minimum 100 foot control zone	Y☐	N☐	_____
Chemical storage within 100 feet	Y☐	N☐	_____
Pesticide application within 100 feet	Y☐	N☐	_____
Sewage system within 100 feet	Y☐	N☐	_____
Animal grazing/housing within 100 feet	Y☐	N☐	_____
Risk of flooding/tsunami	Y☐	N☐	_____
Roads/driveways within 100 feet	Y☐	N☐	_____
Solid waste storage/disposal within 100 feet	Y☐	N☐	_____
Area vulnerable to earthquakes[1]	Y☐	N☐	_____

Reservoirs

	Yes/No		Comments
Uncorrected water system survey deficiencies	Y☐	N☐	_____
Zone of control around reservoir	Y☐	N☐	_____
Tanks vulnerable to earthquake damage	Y☐	N☐	_____

Distribution System

	Yes/No		Comments
Uncorrected water system survey deficiencies	Y☐	N☐	_____
Adequate valving provided	Y☐	N☐	_____
Valves exercised annually	Y☐	N☐	_____
Blowoffs/hydrants provided	Y☐	N☐	_____
Blowoffs/hydrants exercised	Y☐	N☐	_____
Cross-connection program current	Y☐	N☐	

[1] See "Earthquakes for Oregon, 1841 to 2002", at http://www.oregongeology.org/sub/earthquakes/images/epicentermap.pdf

Appendix 3: Well Disinfection Procedure

Disinfection is a procedure that uses chlorine to eliminate microorganisms that may have entered the water system. A chorine solution is introduced into the well and throughout the entire distribution system. This solution stands in the system for at least 12 hours; it is then removed by thoroughly flushing. The disinfection procedure is considered successful when a representative sample of the water tests "absent" for coliform bacteria. The water system should not be used as a source of potable water until it has an "absent" coliform test result. The disinfection procedure consists of the following steps:

1. **Notify all customers that you will be disinfecting the water system. They should use an alternate water source until notified that the system has resolved the microbiological contamination problem.**

2. **Determine the amount of chlorine needed based on the depth and the diameter of the well:**

<u>Depth</u>: Check the well report (also known as a well "log") and find the depth under the heading "Depth of Completed Well". If you do not have a copy of the well report for each well supplying the water system, contact the regulatory agency.

<u>Well diameter</u>: The well diameter should be given under the heading "Casing diameter" in the well report. The casing diameter can also be determined by measuring the diameter of the sanitary seal (top of the casing).

Well diameter	Factor
4"	6
6"	3
8"	1.5

Use the following formula to determine how much 5% chlorine solution to add to the well:

Depth of well = _____ feet divided by (factor) = _____ ounces of 5% chlorine solution to use.

For example, a 4", 100 ft. deep well needs 100/6 = 16.7 ounces of bleach. If the well is 6" in diameter, 100/3 = 33.3 ounces would be required.

3. **Dilute the chlorine in 5 gallons of water and pour the bleach mixture into the well.**

4. **Circulate this mixture through the well and pressure tank(s) until thoroughly mixed. To do this, attach a food-grade hose to a hose bibb just downstream from the pressure tank(s), place the hose end in the well casing, and recirculate the water for at least 30 minutes. Be sure to wash down the walls of the casing.**

5. **Open all faucets in the distribution system until the chlorinated water can be smelled. Be sure the entire distribution system, including any dead end lines, have been chlorinated. Use a chlorine test kit to ensure that the water in the pipes has a minimum chlorine residual of 25 ppm.**

6. **Turn off the faucets and let the water sit undisturbed in the distribution system for 12 hours.**

7. **Open all the faucets (including any blow-offs for dead end lines) and flush all the chlorinated water out of the system. Let the water flow until all the chlorinated water has been flushed out of the distribution system. This can be checked with a chlorine test kit.**

8. **Wait 3-5 days, then collect a representative water sample in the distribution system and test for coliform bacteria.**

9. **The water system is considered free of bacterial contamination when the water sample is "absent" for coliform bacteria. Notify the water users that the system has resolved the bacterial contamination problem.**

Appendix 4-A: Fecal Bacteria/ *E. Coli* Boil Water Notice

Template on Reverse (next page)

Since exceeding the fecal coliform or *E. coli* maximum contaminant level is a Tier 1 violation, you must provide public notice to persons served as soon as practical but within 24 hours after you learn of the violation (141.202(b)). During this time, you must also contact your primacy agency. You should also coordinate with your local health department. You may also have to modify the template if you also have high nitrate levels or other coliform MCL violations. You must use one or more of the following methods to deliver the notice to consumers (141.202(c)):

- Radio
- Television
- Hand or direct delivery
- Posting in conspicuous locations

You may need to use additional methods (e.g., newspaper, delivery of multiple copies to hospitals, clinics, or apartment buildings), since notice must be provided in a manner reasonably calculated to reach all persons served.

The notice on the reverse is appropriate for hand delivery or a newspaper notice. However, you may wish to modify it before using it for a radio or TV notice. If you do, you must still include all required elements and leave the health effects language in italics unchanged. This language is mandatory (141.205(d)). See Chapter 8 for a notice designed for posting. If you post or hand deliver, print your notice on letterhead, if you have it.

Population Served

Make sure it is clear who is served by your water system--you may need to list the areas you serve.

Corrective Action

In your notice, describe corrective actions you are taking. Listed below are some steps commonly taken by water systems with fecal coliform or *E. coli* violations. Use one or more of the following actions, if appropriate, or develop your own:

- We are chlorinating and flushing the water system.
- We are switching to an alternate drinking water source.
- We are increasing sampling for coliform bacteria to determine the source of the contamination.
- We are repairing the wellhead seal.
- We are repairing the storage tank.
- We are restricting water intake from the river/lake/reservoir to prevent additional bacteria from entering the water system and restricting water use to emergencies.

After Issuing the Notice

Send a copy of each type of notice and a certification that you have met all the public notice requirements to your primacy agency within ten days from the time you issue the notice (141.31(d)). It is recommended that you notify health professionals in the area of the violation. People may call their doctors with questions about how the violation may affect their health, and the doctors should have the information they need to respond appropriately. In addition, health professionals, including dentists, use tap water during their procedures and need to know of contamination so they can use bottled water. It is a good idea to issue a 'problem corrected' notice when the violation is resolved.

DRINKING WATER WARNING

[Date]
[System] water is contaminated with [fecal coliform] or [*E. coli*]

BOIL YOUR WATER BEFORE USING

Fecal coliform [or *E. coli*] bacteria were found in the water supply on [date]. These bacteria can make you sick, and are a particular concern for people with weakened immune systems.

What should I do?

- **DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST.** Bring all water to a boil, let it boil for one minute, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, and food preparation **until further notice**. Boiling kills bacteria and other organisms in the water.

- *Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.*

- The symptoms above are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice. People at increased risk should seek advice about drinking water from their health care providers.

What happened? What is being done?

Bacterial contamination can occur when increased run-off enters the drinking water source (for example, following heavy rains). It can also happen due to a break in the distribution system (pipes) or a failure in the water treatment process.

[Describe corrective action.] We will inform you when tests show no bacteria and you no longer need to boil your water. We anticipate resolving the problem within [estimated time frame].

For more information, please contact [name of contact] at [phone number] or [mailing address]. General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at 1(800) 426-4791.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by [system].

State Water System ID#: _____
Date distributed: _____

Appendix 4-B: High turbidity boil water notice

Template on Reverse (next Page)

If your primacy agency has designated this turbidity single exceedance as a Tier 1 violation (141.202(a)), you must provide public notice to persons served within 24 hours after it has been designated Tier 1 (141.202(b)). Turbidity violations are Tier 2 by default, but may frequently be elevated to Tier 1 by your primacy agency. In addition, violations are automatically elevated if you are unable to consult with your primacy agency within 24 hours. **In such cases, you must issue a notice within the next 24 hours.** You may elevate the violation to Tier 1 yourself as well. You should also coordinate with your local health department. One or both agencies should tell you whether to instruct consumers to boil water. You must use one or more of the following methods to deliver the notice to consumers (141.202(c)):

- Radio
- Television
- Hand or direct delivery
- Posting in conspicuous locations

You may need to use additional methods (e.g., newspaper, delivery of multiple copies to hospitals, clinics, or apartment buildings), since notice must be provided in a manner reasonably calculated to reach all persons served. If you post or hand deliver, print your notice on letterhead, if you have it.

The notice on the reverse is appropriate for hand delivery or a newspaper notice. However, you may wish to modify it before using it for a radio or TV notice or posting. If you modify the notice, you must leave the health effects language in italics unchanged. This language is mandatory (141.205(d)).

Population Served

Make sure it is clear who is served by your water system--you may need to list the areas you serve.

Corrective Action

In your notice, describe corrective actions you are taking. Listed below are some steps commonly taken by water systems with turbidity single exceedance. Use one or more of the following actions, if appropriate, or develop your own:

- We are adding chemicals that reduce turbidity.
- We are sampling both untreated and treated water for the presence of coliform bacteria.
- We are monitoring chlorine levels and will adjust them as needed to compensate for filtration problems.
- We are inspecting and cleaning the filters.

Source of the Problem

If you know why the turbidity is high, explain it in your notice. For instance, unusual conditions, such as heavy rains and flooding, can overburden the water plant, and treated water may therefore not meet the standards. In addition, run-off from parts of the watershed could contain increased concentrations of sediment and animal waste.

After Issuing the Notice

Send a copy of each type of notice and a certification that you have met public notice requirements to your primacy agency within ten days after you issue the notice (141.31(d)). It is a good idea to issue a "problem corrected" notice when the violation is resolved. It recommended that you notify health professionals in the area of the violation. People may call their doctors with questions about how the violation may affect their health, and the doctors should have the information they need to respond appropriately. In addition, health professionals, including dentists, use tap water during their procedures and need to know of potential microbiological contamination so they can use bottled water.

DRINKING WATER WARNING

[system] has high turbidity levels

BOIL YOUR WATER BEFORE USING

We routinely monitor your water for turbidity (cloudiness). This tells us whether we are effectively filtering the water supply. A water sample taken [date] showed turbidity levels of [number] turbidity units. This is above the standard of [standard] turbidity units. Because of these high levels of turbidity, there is an increased chance that the water may contain disease-causing organisms.

What should I do?

- **DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST.** Bring all water to a boil, let it boil for one minute, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, washing dishes, brushing teeth, and food preparation until further notice.

- *Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.* People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice about drinking water from their health care providers.

- The symptoms above are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice.

What happened? What is being done?

[Describe reason for the high turbidity, corrective action, and when the system expects to return to compliance.]

We will inform you when turbidity returns to appropriate levels and when you no longer need to boil your water.

For more information, please contact [name of contact] at [phone number] or [mailing address]. General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at 1(800) 426-4791.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by [system].

State Water System ID#: _____
Date distributed: _____

Appendix 4-C: Unresolved Total Coliform Notice

Template on Reverse (Next Page)

Since exceeding the total coliform bacteria maximum contaminant level is a Tier 2 violation, you must provide public notice to persons served as soon as practical but within 30 days after you learn of the violation (141.203(b)). Persistent total coliform problems can be serious. Some states have more stringent requirements for coliform violations. Check with your primacy agency to make sure you meet all requirements. You must issue a repeat notice every three months for as long as the violation persists.

Community systems must use one of the following methods (141.203(c)):
- Hand or direct delivery
- Mail, as a separate notice or included with the bill

Non-community systems must use one of the following methods (141.203(c)):
- Posting in conspicuous locations
- Hand delivery
- Mail

In addition, both community and non-community systems must use another method reasonably calculated to reach others if they would not be reached by the first method (141.203(c)). Such methods could include newspapers, e-mail, or delivery to community organizations. If you mail, post, or hand deliver, print your notice on letterhead, if available.

The notice on the reverse is appropriate for hand delivery or mail. If you modify the notice, you must still include all the required elements and leave the health effects language in italics unchanged. This language is mandatory (141.205(d)).

Description of the Violation

The description of the violation and the MCL vary depending on the number of samples you take. The following table should help you complete the second paragraph of the template.

If You Take Less Than 40 Samples a Month	**If You Take More Than 40 Samples a Month**
State the number of samples testing positive for coliform. The standard is that no more than one sample per month may be positive.	State the percentage of samples testing positive for coliform. The standard is that no more than five percent of samples may test positive each month.

Corrective Action

In your notice, describe corrective actions you are taking. If you know what is causing the coliform problem, explain this in the notice. Listed below are some steps commonly taken by water systems with total coliform violations. Use one or more of the following actions, if appropriate, or develop your own:

- We are chlorinating and flushing the water system.
- We are increasing sampling for coliform bacteria.
- We are investigating the source of contamination.
- We are repairing the wellhead seal.
- We are repairing the storage tank.
- We will inform you when additional samples show no coliform bacteria.

Make sure to send a copy of each type of notice and a certification that you have met all the public notice requirements to your primacy agency within ten days after issuing the notice (141.31(d)). It is a good idea to inform your consumers when the violation has been resolved. See Template 1-8 for a "problem corrected" notice template.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Tests Show Coliform Bacteria in [System] Water

Our water system recently violated a drinking water standard. Although this is not an emergency, as our customers, you have a right to know what happened, what you should do, and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. We took [number] samples for coliform bacteria during [month]. [Number/percentage] of those samples showed the presence of coliform bacteria. The standard is that no more than [1 sample per month/5 percent of our samples] may do so.

What should I do?

- **You do not need to boil your water or take other corrective actions.** However, if you have specific health concerns, consult your doctor.
- People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice about drinking water from their health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

What does this mean?

This is not an emergency. If it had been you would have been notified immediately. Total coliform bacteria are generally not harmful themselves. *Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.*

Usually, coliforms are a sign that there could be a problem with the treatment or distribution system (pipes). Whenever we detect coliform bacteria in any sample, we do follow-up testing to see if other bacteria of greater concern, such as fecal coliform or *E. coli*, are present. **We did not find any of these bacteria in our subsequent testing.** If we had, we would have notified you immediately. However, we are still finding coliforms in the drinking water.

What is being done?

[Describe corrective action.]

We are still detecting coliform bacteria. We will inform you when our sampling shows that no bacteria are present. We anticipate resolving the problem within [estimated time frame].

For more information, please contact [name of contact] at [phone number] or [mailing address].

> *Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.*

This notice is being sent to you by [system].
State Water System ID#: _____.
Date distributed: _____.