
Boil Water Advisories

Tia Skerbeck REHS
Drinking Water Services
October 18, 2018



PUBLIC HEALTH DIVISION
Drinking Water Services

Overview of Presentation

1. Types of Boil Water
2. Examples:
 1. E. coli MCL in distribution
 2. Loss of positive pressure
3. Questions and Answers?

Types of Advisories – Boil Water



- *E. coli* MCL in distribution
- Loss of Positive Pressure (zero pressure)
- *E. coli* confirmed in groundwater source without 4-log inactivation of viruses
 - Or loss of chlorination as above

E. coli MCL in distribution

Coliform Resources

[Drinking Water Services](#)

[County & Dept. of Agriculture Resources](#)

[Water System Surveys](#)

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On this page:

- [Coliform Monitoring Resources](#)
- [Groundwater Rule procedures following a positive routine coliform sample](#)
- [Resources for addressing confirmed *E. coli*-positive sources under the Groundwater Rule](#)
- [Representative and combined source monitoring](#)

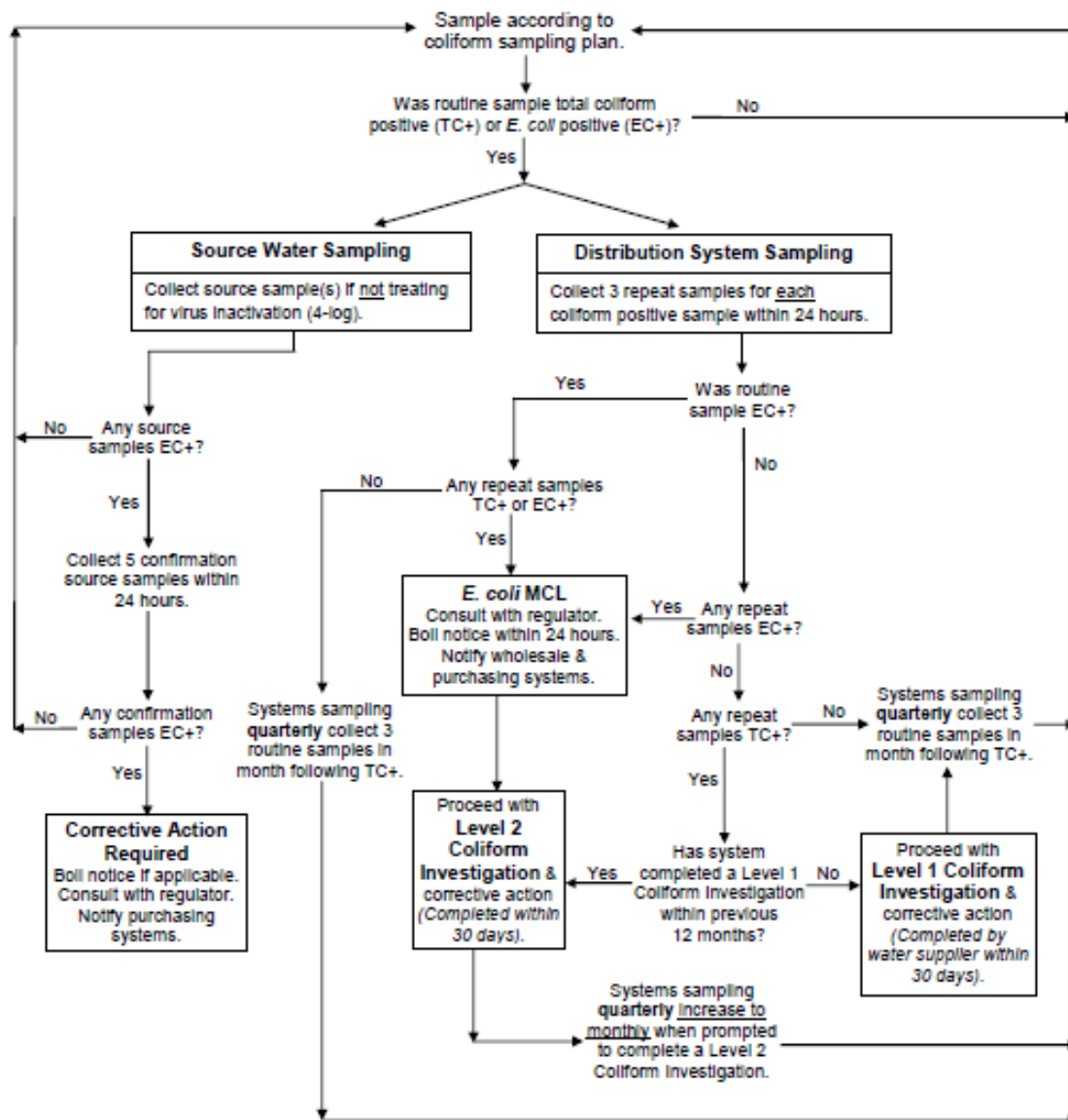
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Coliform Monitoring Resources

As of April 1, 2016 a detailed investigation is required after the MCL for *E. coli* is exceeded or a second level 1 coliform investigation is triggered in a 12 month period. The individual responsible for conducting sanitary surveys at the water system where the investigation was triggered must complete the investigation within 30 days and submit the completed investigation form to DWS.

- [Coliform Investigation Procedure](#)
- [Level 2 Coliform Investigation Form](#) ([Word](#) Fillable MS Word)
- [Coliform Alert Response Procedure](#): General procedure for responding to routine sample coliform alerts for all groundwater systems.
- [Coliform Response Chart](#) - For groundwater systems serving up to 1,000 persons

Coliform Response Chart for Groundwater Systems Serving up to 1,000 Persons



E. coli MCL in distribution

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E. coli MCL in distribution

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	Coliform Alert Response Procedure	Date:	2/14/05
Unit:	Technical Services - ks	Revised:	1/24/17 gb/bp
Purpose & Scope: How to follow up on all coliform water quality alerts in public water systems. Determining if an investigation is triggered.			
Procedure/Process:			

An alert is generated every time a sample is reported with total coliform or *E. coli* present. The alert creates a record in SDWIS and notifies personnel in the data management unit (DMCE) and regulators about the sample results by email. For every alert, DMCE personnel will review the last 12 months of sampling results reported for the water system and determine if any of the coliform investigation triggers were exceeded.

- 1) If notified by a coliform water quality alert, call the water system contact person and find out what happened and when.
- 2) All activities must be documented in a **contact report** referencing the alert ID and submitted by the appropriate DWS staff assigned to that water system. Boil water advisories must be immediately passed on to DWS management and PHD Communication Staff.
- 3) If this is the **first positive sample** (TC+ or EC+) they have had in the month, advise the operator to collect 3 **repeat samples** within 24 hours of notification from the lab, if possible. No corrective action should be completed prior to collecting repeats. The samples should be collected according to their coliform sampling plan. Repeat samples are to be collected at these locations, at a minimum:
 - a) One at the site of the original positive routine sample,
 - b) One within five (5) connections upstream,
 - c) One within five (5) connections downstream.

Sample can be collected at sites other than b and c above (such as a reservoir outlet) if approved by the regulating agency and incorporated into the sampling plan.

For routine EC+ samples, DMCE will send a letter to the system reminding them to collect repeats and report them within 10 days.

Repeat results must be submitted to DWS within 10 days of the detection.

E. coli MCL in distribution

- It begins on a Thursday afternoon in July

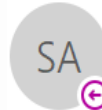
– Call

- Lab
- Portland DWS phone duty

– Email

Reply Reply All Forward IM

Thu 6/14/2018 1:39 PM



Spielman Abbie

Water Quality ALERT: COLI17879

To Skerbeck Christia D; CHAPMAN Amy; hlarish@co.lincoln.or.us; kchavarria@co.lincoln.or.us; Carlson Joseph R; PATTEE Tom

Cc Michael Charles E; Spielman Abbie; Wahlquist Angela M

Water Quality ALERT
Contaminant : COLIFORM, E. COLI
Sample Result : Positive
Sample Type : RT

Laboratory : ALEXIN ANALYTICAL LABORATORIES INC
Sample ID : 816400301
Sample Date : 6/12/2018
Data Received : 6/14/2018
Data Batch ID : 33084

Jun 12, 2018	1	RT	Total	POSITIVE--816400301	1082 RIVERBEND	DIST-A	Jun 14, 2018
		RT	E.coli	POSITIVE--816400301	1082 RIVERBEND	DIST-A	

Water Quality ALERT
Contaminant : COLIFORM, TOTAL (TCR)
Sample Result : Positive
Sample Type : RT

Laboratory : ALEXIN ANALYTICAL LABORATORIES INC
Sample ID : 816400301
Sample Date : 6/12/2018
Data Received : 6/14/2018
Data Batch ID : 33084

6/14/18

E. coli MCL in distribution



E. coli MCL in distribution

Coliform Resources

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The Groundwater Rule (GWR), which took effect December 1st, 2009, applies to all public water systems that use groundwater sources or purchase groundwater. The primary purpose is to protect the public from fecal-related bacterial and viral pathogens in public groundwater systems. *E. coli* is used as the indicator of fecal contamination. If a groundwater source (well or spring) is found to be fecally contaminated, or a significant efficiency rule violation is identified during a water system survey, the public water system must take corrective action to assure that their consumers are adequately protected. See the following resources for more information on implementing the rule.

Coliform Monitoring Resources

As of April 1, 2016 a detailed investigation must be completed if a MCL for *E. coli* is exceeded or a second level 1 coliform investigation is triggered in a 12 month period. The investigation must include conducting sanitary surveys at the water system where the investigation was triggered must complete the investigation within 30 days and submit the completed investigation form to DWS.

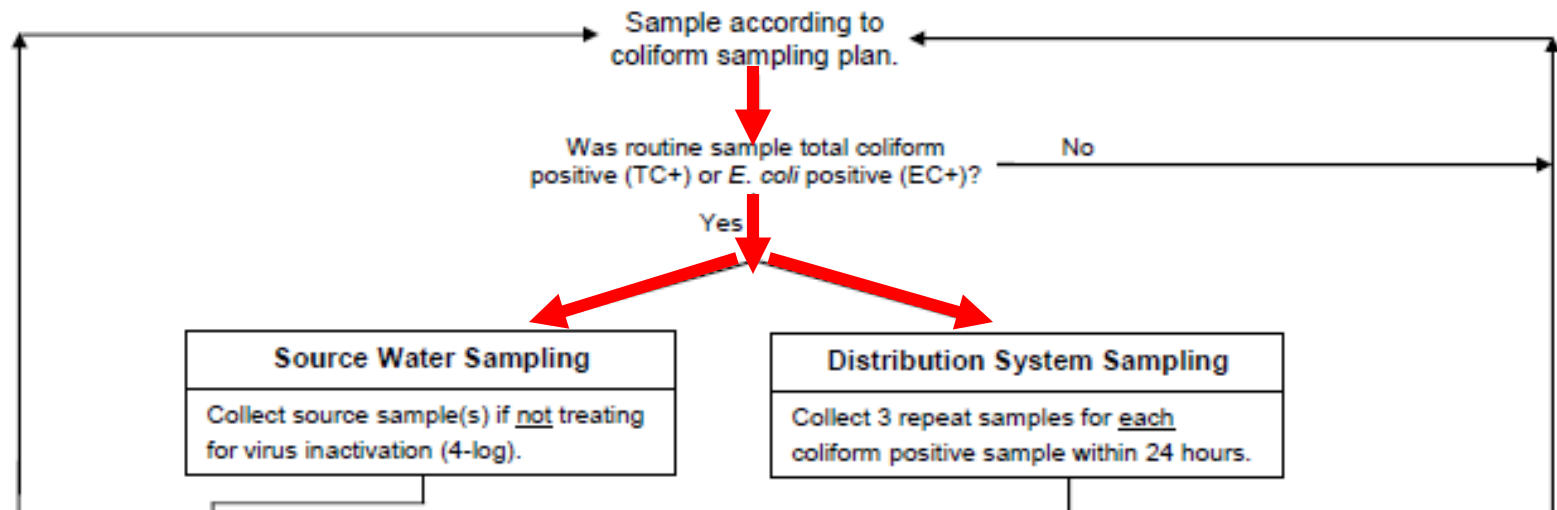
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6/14/18

E. coli MCL in distribution

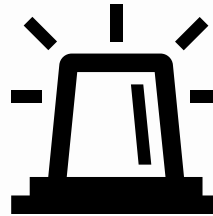
Coliform Response Chart for Groundwater Systems Serving up to 1,000 Persons



6/14/18

E. coli MCL in distribution

- Regulator contact the system to direct them to take 3 repeat samples and 1 source sample.



Repeat, Temporary Routine, and Prior Coliform Sample Schedules

(Schedules in **bold** reflect current schedules.)

GWR: 1 Triggered sample(s) to be taken and reported 06/12/2018 - 06/23/2018
1 at SRC-AA - IG FOR DUNCAN & NONAME CREEKS

TCR: 3 Repeat sample(s) within 24 hours of a TC+ Routine Sample to be reported 06/13/2018 - 06/23/2018 at DIST-A

6/14/18

E. coli MCL in distribution

- DMCE auto generated letter



PUBLIC HEALTH DIVISION
Drinking Water Services
Kate Brown, Governor

Oregon
Health
Authority

800 NE Oregon Street, #640
Portland, OR 97232-2162
Phone 971-673-0405
FAX 971-673-0694
TTY-Nonvoice 971-673-0375

6/14/2018



Re: *E. coli* detected in routine water quality monitoring results

Dear [REDACTED]

This letter is to inform you that Drinking Water Services (DWS) has received initial results from distribution monitoring indicating fecal contamination. You are required by Oregon Administrative Rule (OAR) 333-061-0036(6)(b) to collect repeat samples within 24 hours of notification of *E. coli* positive detection. In addition to the repeat distribution samples, one triggered source sample from each active groundwater source, if any, is also required within 24 hours of notification of the results per OAR 333-061-0036 (6)(q) unless conducting 4-log compliance monitoring. You may have already been contacted by your regulating agency to collect these samples.

Labs are only required to report positive results to DWS. As the water supplier, it is your responsibility to ensure absent results are reported to DWS by 6/23/2018. Reporting may be done using the following methods:

- Fax the report to (971) 673-0694

For faxed data, please include a cover sheet with the number of pages including the cover, your name, and your phone number.

- Email the report to: dwp.dmce@state.or.us

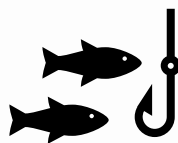
- Mail the report to: Water Quality Reports

Oregon
Health
Authority

6/14/18

E. coli MCL in distribution

- The weekend



E. coli MCL in distribution

• Monday



To: CHAPMAN Amy; Skerbeck Christia D
Cc: [Redacted]
You replied to this message on 6/19/2018 10:12 AM.



Hi Amy and Tia,

We had an e-coli hit a [Redacted] late last week. The lab informed us on Saturday of the confirmation on doors to deliver the attached notice. Door hangers with the attached notice were left for any door. We also put up a notice on our blog. We are in the process of disinfection and flushing as v let you know when we resolve the issue and have clean samples back.



Mon 6/18/2018 1:39 PM

Spielman Abbie

Water Quality ALERT: COLI17889 HILAND WC - RIVERBEND

To: Skerbeck Christia D; CHAPMAN Amy; hlarish@co.lincoln.or.us; khavarria@co.lincoln.or.us; Carlson Joseph R; PATTEE Tom
Cc: Michael Charles E; Spielman Abbie; Wahlquist Angela M

Alert ID : COLI17889

URL : <https://yourwater.oregon.gov/inventory.php?pwsno=00601>

Water Quality ALERT

Contaminant : COLIFORM, E. COLI

Sample Result : Positive

Sample Type : RP

Laboratory : ALEXIN ANALYTICAL LABORATORIES INC

Sample ID : 816602001

Sample Date : 6/15/2018

Data Received : 6/18/2018

Data Batch ID : 33099

Sample Point : 1130 riverbend hose

Jun 15, 2018	1	TG	Total	POSITIVE--816602004	816400301	WELL	SRC-AA	Jun 18, 2018
		TG	E.coli	Absent--816602004	816400301	WELL	SRC-AA	
Jun 15, 2018	1	RP	Total	POSITIVE--816602003	816400301	1130 RIVERBEND HOSE	DIST-A	Jun 18, 2018
		RP	E.coli	POSITIVE--816602003	816400301	1130 RIVERBEND HOSE	DIST-A	
Jun 15, 2018	1	RP	Total	POSITIVE--816602002	816400301	1130 RIVERBEND HOSE	DIST-A	Jun 18, 2018
		RP	E.coli	POSITIVE--816602002	816400301	1130 RIVERBEND HOSE	DIST-A	
Jun 15, 2018	1	RP	Total	POSITIVE--816602001	816400301	1130 RIVERBEND HOSE	DIST-A	Jun 18, 2018
		RP	E.coli	POSITIVE--816602001	816400301	1130 RIVERBEND HOSE	DIST-A	

E. coli MCL in distribution

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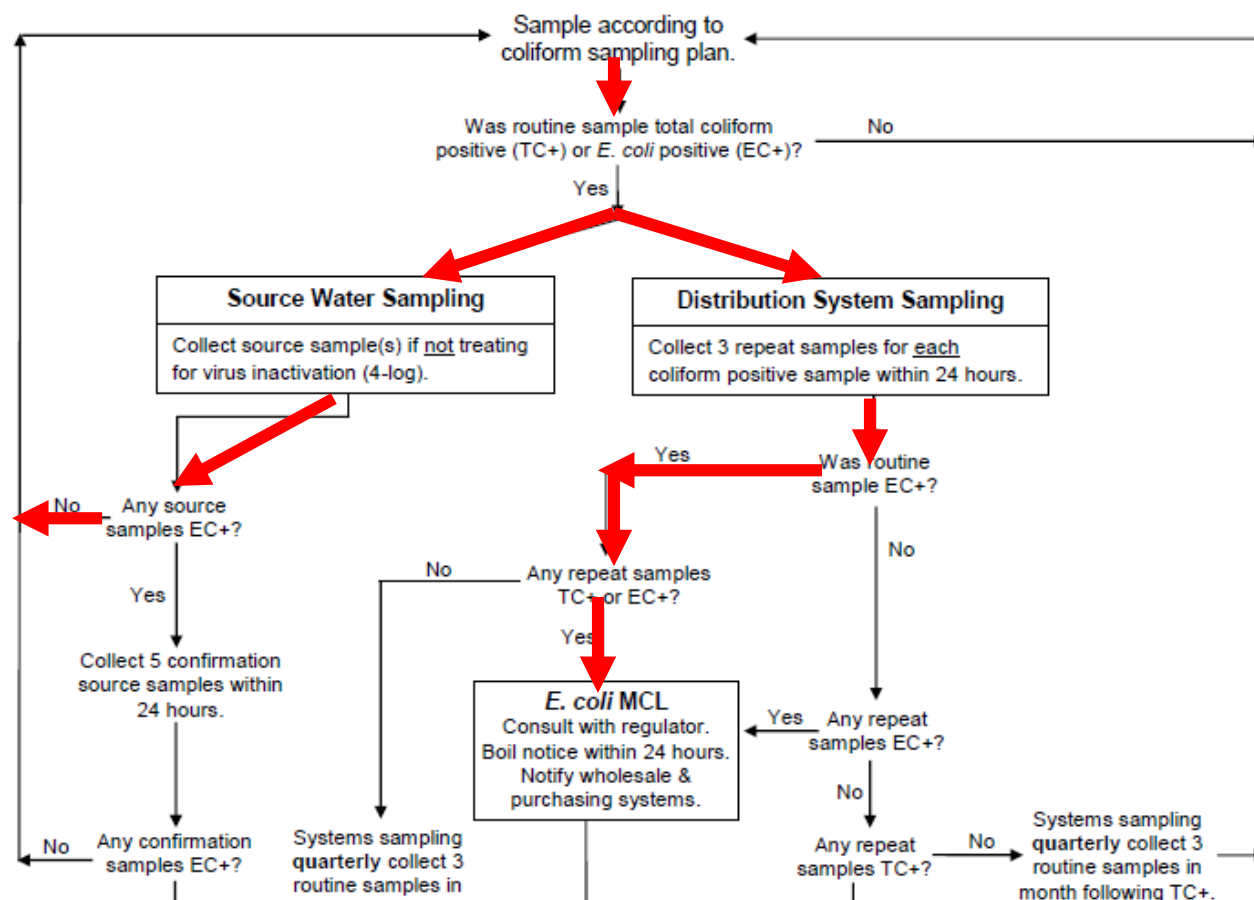
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6/18/18

E. coli MCL in distribution

Coliform Response Chart for Groundwater Systems Serving up to 1,000 Persons



6/18/18

E. coli MCL in distribution

Reply Reply All Forward IM

Mon 6/18/2018 2:37 PM



DANIELS Bradley K

Boil water advisory at [REDACTED]

To DWP-Tier 1 Communications

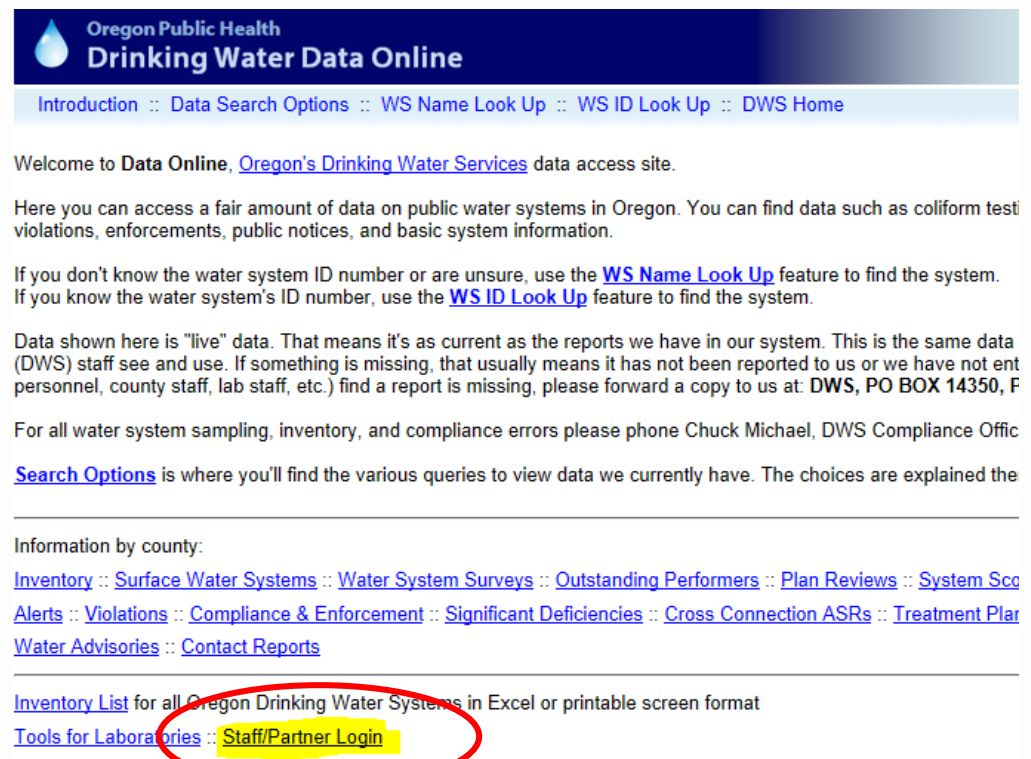
Cc CHAPMAN Amy; Kaline Chavarria

i You replied to this message on 6/22/2018 8:40 AM.

[REDACTED], is a community water system serving approximately 170 people through 80 connections and provides residual maintenance for water from an infiltration gallery source. The operators must issue a boil water advisory due to *E. coli*-positive routine and repeat samples collected on June 12 and 15 respectively. The advisory will remain in effect until samples indicate coliform absent results.

E. coli MCL in distribution

- Post advisory online



Oregon Public Health
Drinking Water Data Online

[Introduction](#) :: [Data Search Options](#) :: [WS Name Look Up](#) :: [WS ID Look Up](#) :: [DWS Home](#)

Welcome to **Data Online**, [Oregon's Drinking Water Services](#) data access site.

Here you can access a fair amount of data on public water systems in Oregon. You can find data such as coliform test violations, enforcements, public notices, and basic system information.

If you don't know the water system ID number or are unsure, use the [WS Name Look Up](#) feature to find the system. If you know the water system's ID number, use the [WS ID Look Up](#) feature to find the system.

Data shown here is "live" data. That means it's as current as the reports we have in our system. This is the same data (DWS) staff see and use. If something is missing, that usually means it has not been reported to us or we have not entered it yet. (If you are a county staff, lab staff, etc.) find a report is missing, please forward a copy to us at: **DWS, PO BOX 14350, F**

For all water system sampling, inventory, and compliance errors please phone Chuck Michael, DWS Compliance Officer.

[Search Options](#) is where you'll find the various queries to view data we currently have. The choices are explained the

Information by county:

[Inventory](#) :: [Surface Water Systems](#) :: [Water System Surveys](#) :: [Outstanding Performers](#) :: [Plan Reviews](#) :: [System Security](#) :: [Alerts](#) :: [Violations](#) :: [Compliance & Enforcement](#) :: [Significant Deficiencies](#) :: [Cross Connection ASRs](#) :: [Treatment Plant](#) :: [Water Advisories](#) :: [Contact Reports](#)

[Inventory List](#) for all Oregon Drinking Water Systems in Excel or printable screen format

[Tools for Laboratories](#) :: [Staff/Partner Login](#)

E. coli MCL in distribution

[Introduction](#) :: [Data Search Options](#) :: [WS Name Look Up](#) :: [WS ID](#)

Web Form Menu

DWS Web Forms

Username:

Password:

E. coli MCL in distribution

Web Form Menu :: Contact Reports :: Advisories :: Deficiencies

DWS Web Forms

Contact Reports

Water Advisories

- See the [Advisory Information](#) page for important

Update Deficiencies

- Record completion dates and revised due date

PASSWORD RESET

Web Form Menu :: Contact Reports :: Advisories :: Deficiencies

Advisory Tracking

PWS NUMBER: OR41 [99999](#) - HALL OF FAME TEST SYSTEM

Enter a New Advisory

Begin Date:

Type: ☒ Boil Water - Reason:

☐ Do Not Drink Water - Reason:

☐ No Contact With Water

Area Affected: ☐ System-wide

☐ Partial - Describe:

Affected Populations: ☒ All

☐ Vulnerable - Describe:*

-
- E. coli, Confirmed at GW Source Without Treatment
- E. coli, Confirmed in Distribution
- E. coli, Unconfirmed (Voluntary)
- Loss of Pressure
- Other
- Treatment Failure, Disinfection
- Treatment Failure, Filtration

E. coli MCL in distribution

[Introduction](#) :: [Data Search Options](#) :: [WS Name Look Up](#) :: [WS ID Look Up](#) :: [DWS Home](#) :: [Quick Data Links](#)

OR41 99999

HALL OF FAME TEST SYSTEM

Classification: Non-EPA (State Regulated)

WATER ADVISORY: BOIL WATER - E. coli, Confirmed in Distribution - [See details](#)

Contact: JANET BROCK
800 NE OREGON ST STE 640
PORTLAND, OR 97232

Population: 5 (Residential)

Operating Period: January 1 to December 31

Certified Operator(s)

Required: Y
Distribution class: 1
Treatment class: 1
Filtration Endorsement Required: No

Phone: [971-673-0405](tel:971-673-0405)

County: MULTNOMAH

Activity Status: ACTIVE Sep 26, 2018 -- [History](#)

Number of Connections: 1

Regulating Agency: DENNIS NELSON

Owner Type: STATE GOVERNMENT

Licensed By: N/A

Approved Drinking Water Protection Plan: No

Source Water Assessment: No

Last Survey Date: [Feb 01, 2016](#)

Sources

Facility ID	Facility Name - Well Logs	Activity Status	Availability	Source Type
EP-A	EP FOR KURT PUTNAM WELL	A		GW
SRC-AA	WELL #1	A	Permanent	GW

E. coli MCL in distribution

- Post advisory online

OHA Drinking Water Services Water Advisory Details	
PWS ID:	[REDACTED]
PWS Name:	[REDACTED]
Advisory Type:	Boil Water
Reason:	E. coli, Confirmed in Distribution
Area Affected:	System-wide
Affected Populations:	All
Begin Date:	Jun 16, 2018
Date Lifted:	Jun 21, 2018
Contacted By:	CHAPMAN, AMY (LINCOLN COUNTY)
Who Was Contacted:	[REDACTED]
Contact Phone:	[REDACTED]
Details:	<p>Routine Sample taken 6/12/2018 positive for E. coli. 6/15/2018 took 1 source water sample positive for total coliform only. 6/15/2018 took 3 repeat samples and all were positive for E. coli Storage tank was chlorinated. Chlorination system is being installed. Will be re-sampling to be sure there is no coliform bacteria.</p> <p>Lifted 06/21/2018: Chlorination has been added and subsequent samples are clean. OK to lift the Boil Water Advisory.</p>
Associated Alerts:	<p>COLI17879 - 06/14/2018 - COLIFORM, E. COLI , COLIFORM, TOTAL (TCR) See also: 06/14/2018</p> <p>COLI17889 - 06/18/2018 - COLIFORM, E. COLI , COLIFORM, TOTAL (TCR)</p>


E. coli MCL in distribution

- Public Notice

DRINKING WATER WARNING
[REDACTED] water is contaminated with E. coli bacteria
BOIL YOUR WATER BEFORE USING


What happened?
E. coli bacteria were confirmed in our water system on June 16, 2018. These bacteria can make you sick, and are a particular concern for people with weakened immune systems. As our customers, you have a right to know what happened and what we are doing to correct this situation. E. coli was discovered during routine water testing.

Fri 6/22/2018 11:07 AM

 Amy Chapman <achapman@co.lincoln.or.us>
Re: BOIL WATER NOTICE for [REDACTED]

To: ✓ Skerbeck Christia D
Cc: ✓ DANIELS Bradley K; ⚡ Michael Charles E; ⚡ Spielman Abbie; **DWP-Tier 1 Communications**; ○ Compliance DrinkingWater

 Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

 2018-06-16 24 [REDACTED] Boilwater Notice.pdf
115 KB

Attached Boil Water Notice

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 [REDACTED] distributed: June 16, 2018 State Water System ID#: C1C41-00001

ter to a boil, let it boil for one
uld be used for drinking, making
g kills bacteria and other

t increased risk and should seek
ways to lessen the risk of
0) 426-4791, or contact Oregon
health concerns, consult your

ith human or animal wastes.
amps, nausea, headaches, or
me of the elderly, and people

perience any of these symptoms
uld seek advice about drinking

the cause of contamination. We
ter. We anticipate resolving the
should be taking.

E. coli MCL in distribution

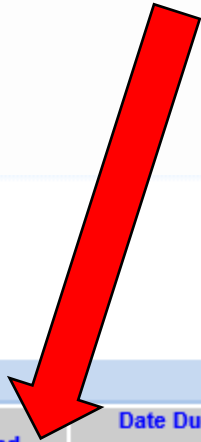
- Public notice

PWS ID: [00601](#) ---- [REDACTED]

Public notices are displayed for the last 5 years only.

Group Abbreviations: TCR = Total Coliform Rule

Public Notices							
Violation Number	Group	Reason for Public Notice	Monitoring Period		Date Distributed	Date Received	Date Due
			Begin	End			
903360279	TCR	Acute MCL for <i>E. coli</i>	Jun 01, 2018	Jun 30, 2018	Jun 16, 2018	Jun 18, 2018	Jun 26, 2018
903360275	TCR	Total Coliform MCL	Nov 01, 2015	Nov 30, 2015	Jan 26, 2016	Feb 12, 2016	Feb 06, 2016

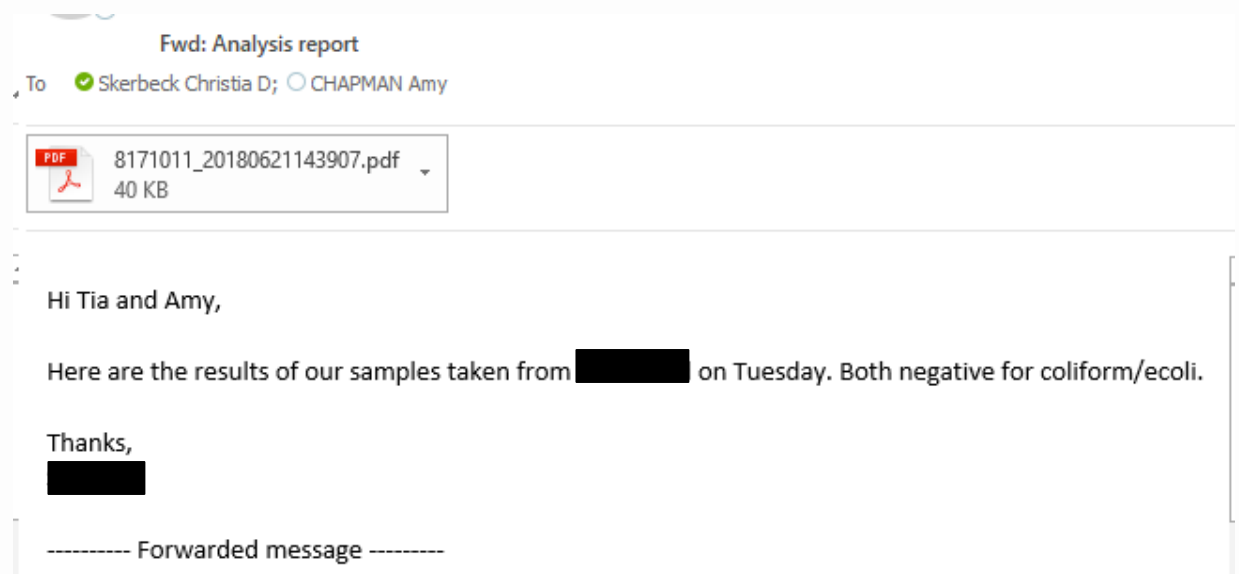


***E. coli* MCL in distribution**

- Lift boil advisory
 - In order to lift a boil water advisory, all defects found must be corrected, and samples must show an absence of coliform bacteria. Consider the system size and circumstances when evaluating an adequate number of samples to collect.

E. coli MCL in distribution

- Lift advisory
 - Clean samples
 - Residual install complete (now matches data online)



E. coli MCL in distribution

- Lift advisory

[Web Form Menu](#) :: [Contact Reports](#) :: [Advisories](#) :: [Deficiencies](#)

Tia Skerbeck :: [Log Out](#)

Advisory Tracking

PWS NUMBER: OR41 [99999](#) - HALL OF FAME TEST SYSTEM

[View all advisories](#)

[Enter New Advisory](#)

[Clear PWS #](#)

ADVISORIES FOR THIS WATER SYSTEM

Begin Date	Date Lifted	Type	Reason	Area Affected	Most Recent Update	Advisory Options
Oct 16, 2018	<i>Open</i>	Boil Water	E. coli, Confirmed in Distribution	System-wide	--	Lift/Update Edit View

E. coli MCL in distribution

- Lift advisory

Advisory Tracking

PWS NUMBER: OR41 [99999](#) - HALL OF FAME TEST SYSTEM

Lift or Update Advisory

BOIL WATER - E. coli, Confirmed in Distribution

Regulator: SKERBECK, TIA (REHS)

Person Contacted: Bender Doodle, 4444444444

Begin Date: 10/16/2018

Area Affected: System-wide

Affected Populations: All

Details: ncoejrieojrenjhfr

Date of Lift or Update:

☐ Advisory Update/Follow-up

☐ Lift Advisory

Details:*

*Choose words carefully and check for typos. Full text will appear online when the "Submit Data" button is clicked.

E. coli MCL in distribution

- Lift advisory

PWS NUMBER: OR41 [99999](#) - HALL OF FAME TEST SYSTEM

Advisory record was saved successfully: Boil Water, Oct 16, 2018

[Enter New Advisory](#)

ADVISORIES FOR THIS WATER SYSTEM

Begin Date	Date Lifted	Type	Reason	Area Affected	Most Recent Update	Advisory C
Oct 16, 2018	Oct 17, 2018	Boil Water	E. coli, Confirmed in Distribution	System-wide	--	Update

E. coli MCL in distribution

OHA Drinking Water Services Water Advisory Details

PWS ID: [REDACTED]
PWS Name: [REDACTED]

Advisory Type: Boil Water
Reason: E. coli, Confirmed in Distribution
Area Affected: System-wide
Affected Populations: All

Begin Date: Jun 16, 2018
Date Lifted: Jun 21, 2018

Contacted By: CHAPMAN, AMY (LINCOLN COUNTY)
Who Was Contacted: [REDACTED]
Contact Phone: [REDACTED]

Details: Routine Sample taken 6/12/2018 positive for E. coli. 6/15/2018 took 1 source water sample positive for total coliform only. 6/15/2018 took 3 repeat samples and all were positive for E. coli Storage tank was chlorinated. Chlorination system is being installed. Will be re-sampling to be sure there is no coliform bacteria.

Lifted 06/21/2018: Chlorination has been added and subsequent samples are clean. OK to lift the Boil Water Advisory.

Associated Alerts: COLI17879 - 06/14/2018 - COLIFORM, E. COLI , COLIFORM, TOTAL (TCR) See also: [06/14/2018](#)

COLI17889 - 06/18/2018 - COLIFORM, E. COLI , COLIFORM, TOTAL (TCR)

E. coli MCL in distribution

- Level 2 investigation?
- Triggered by:
 - ✓ Exceeding the MCL for *E. coli* (either EC+ repeat following a TC+ routine, TC+ repeat following a EC+ routine, or all repeats not collected following a EC+ routine); or
 - ❑ A second Level 1 trigger within a rolling 12-month period

E. coli MCL in distribution

If a Level 2 investigation is triggered by an *E. coli* MCL:

- ✓ Boil water advisory is issued
 - ✓ Public notice using mandatory language is required within 24 hours, delivered in a manner approved by the Regulating Agency.
 - ✓ This is an MCL (10 point) violation.
-
- ❑ A Level 2 investigation must be scheduled as soon as possible and conducted by the Regulating Agency on-site within 30 days.
 - ❑ If there is a time lag to when the Investigation can be scheduled, suggest that the operator conduct their own Level 1 investigation. If defects are found and corrected, and coliform is absent, the Regulating Agency could evaluate whether to lift the boil advisory prior to conducting the Level 2 investigation.

E. coli MCL in distribution

Coliform Investigation	Jun 18, 2018		Jul 24, 2018
COMPLETE LEVEL 2 INVESTIGATION		Jul 30, 2018	Jul 23, 2018
INSTALL DISINFECTION		Dec 22, 2018	Jul 24, 2018
Coliform Investigation	Sep 14, 2017		Oct 03, 2017
COMPLETE LEVEL 2 INVESTIGATION		Oct 21, 2017	Oct 03, 2017
Coliform Investigation	Aug 11, 2017		Aug 23, 2017
COMPLETE LEVEL 1 INVESTIGATION		Sep 16, 2017	Aug 23, 2017

E. coli MCL in distribution

- Violation
 - 10 points
 - acute MCL for *E. coli*

E. coli MCL in distribution

Violations are displayed for the last 5 years only.

Group Abbreviations: TCR = Total Coliform Rule

Gray shading indicates return to compliance.

[Hide Auto-RTC](#) | [Show Determination Dates](#)

[Click here](#) to see public notices.

Violation History

Violation Number	Auto-RTC?	Monitoring Period Begin	Monitoring Period End	Facility ID	Analyte Group	Violation Type - Analyte Count Show analytes for all violations	Enforcement Action - Date Show history	Points
903360279	N	Jun 01, 2018	Jun 30, 2018		TCR	Acute MCL for E. coli - 1	Returned To Compliance - Sep 21, 2018	10
903360276	Y	Dec 01, 2015	Dec 31, 2015		TCR	Routine Coliform - Did Not Report Enough - 1	Returned To Compliance - Feb 02, 2016	1
903360278	N	Nov 01, 2015	Nov 30, 2015		TCR	Public Notice Late/Nonreporting (Viol # 903360275) - 1	Returned To Compliance - Feb 12, 2016	1
903360275	Y	Nov 01, 2015	Nov 30, 2015		TCR	Total Coliform MCL - 1	Returned To Compliance - Feb 22, 2016	5

SYSTEM SCORE SUMMARY

Unaddressed Points:	0
Number of years the oldest violation has been unaddressed (n):	0
System Score:	0
Points under formal enforcement:	0
Points RTC'd:	17

E. coli MCL in distribution

Oregon RTC criteria

SS points	Violation Text	PN Tier	Auto RTC	Rule	Info	RTC criteria
10	Chemical MCL based on 1 sample	1	N	Nitrate		Resolve contamination problem or install treatment & 1 quarterly chem report below MCL
10	Chemical MCL based on average of samples	1	N	Nitrate		
5	Chemical MCL based on 1 sample	2	N	Chems not Nitrate		Resolve contamination problem or install treatment & Quarterly RAA below MCL (with sample)
5	Chemical MCL based on average of samples	2	N	Nitrate		
10	Acute MCL for E.coli	1	N	Coliform		Resolve contamination problem or install treatment & 2 monthly coliform reports without TC+

Localized versus System-Wide Boil Water Notices

OAR 333-061-0042(1)(b) requires

Public Notice

(1)The owner or operator of a public water system must provide public notice to persons served by the water system for all violations and situations established by these rules.

(b)If a public water system has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the Authority may, in writing, allow the system to limit distribution of the public notice to only persons served by that portion of the system which is out of compliance.

Localized versus System-Wide Boil Water Notices

“No possible way for water with *E. coli* to physically travel to section to be exempt from boil water notice for *E. coli*”

- Need positive pressure readings or continuous water service in a section to be exempt
- Consider hydraulics of system: reservoir, pumps, pressure zones
- Master plan or other existing documentation required to limit the extent of a system wide boil water notice

Loss of Positive Pressure

- NO PRESSURE

Loss of Positive Pressure


- Pump Station Failure
- Water Storage Outage
- Source Water Outage
- Main Transmission Pipeline or Intertie Failure
(see water main BMPs)
- Electrical Malfunction
- Service Interruption Thresholds

Loss of Positive Pressure

- Leaky pipes can allow contamination to enter pipes during pressure changes
- Study: Microbial contamination found in 56% of soil and water surrounding pipes



Loss of Positive Pressure



the Pipeline
Oregon Drinking Water News
Volume 34 • January 2018

Oregon's Drinking Water Program

by David Emme

After living and working for many years in northern Nevada, I joined Drinking Water Services as manager in February 2017. It's been an interesting 11 months and I'd like to share some observations so far.

Public concern is high.

In many respects, public water supplies have never been safer. Yet, the failures in Flint, Michigan, and issues with lead in school drinking water have shaken the public trust on a national level. In a 2016 Kaiser Family Foundation poll, Americans ranked the top health issues facing the nation as cancer, heroin abuse and **contaminated drinking water**, which ranked higher than diabetes or heart disease! Only 36% of those polled think the federal government is doing a good job protecting the water supply. Confidence in state government is higher, with 54% thinking the state is doing a good job protecting water. Still, nearly half have a negative view.

We can only uphold the public trust if we

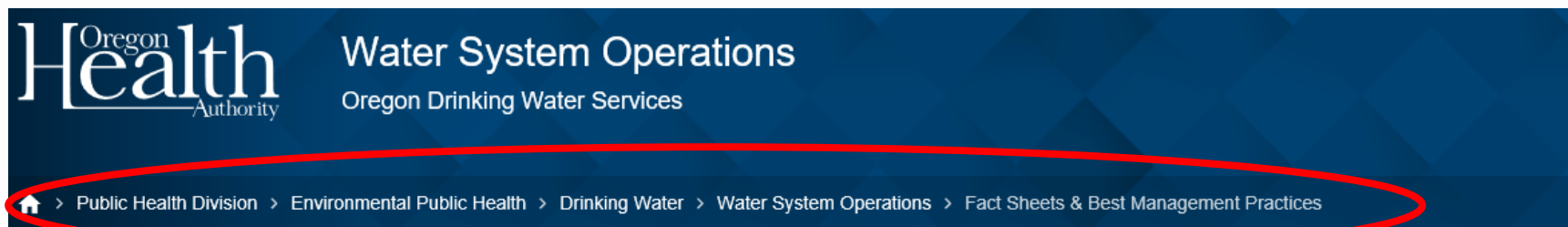
Loss of water system pressure requires a boil water advisory

by Michelle Byrd

A loss of water system pressure from a waterline break, power outage or equipment failure can happen at any time. When waterlines are no longer pressurized, contaminants in the soil can enter the water supply through leaky pipes, valves or other components. If the water system experiences any loss of pressure, contact your regulating agency to discuss the extent of pressure loss, outage duration, customer notification process and when normal operation will resume.

If there is a water outage in a portion or the entire service area, the water supplier is required to issue a public notice instructing consumers to boil their water before use. The notice is sent to people served in the affected area as soon as practical within 24 hours of learning of the situation. You can download a template with suggested content and delivery instructions from the DWS website. Once water pressure is restored and other corrective



Loss of Positive Pressure



Fact Sheets & Best Management Practices

Best Management Practices (BMPs)

Developed and prepared by the [Drinking Water Advisory Committee \(DWAC\)](#), these guidelines describe best practices for water systems and water suppliers. Systems and suppliers are encouraged to incorporate these BMPs into their routine operations.

-  [Cutting Into or Repairing Existing Water Mains](#)
-  [Service Outages Due to Reduced Pressure Events](#)
- Draft BMPs for Harmful Algae Blooms can be found on the [Algae Resources](#) page.

Loss of Positive Pressure

Oregon Drinking Water Services Best Management Practices for Service Outages Due to Reduced Pressure Events

Example Service Outage Scenarios:

- Pump Station Failure
- Water Storage Outage
- Source Water Outage
- Main Transmission Pipeline or Intertie Failure (see water main BMPs)
- Electrical Malfunction

Service Interruption Thresholds:

1. Maintain normal service pressure
2. Maintain positive pressure throughout affected service area
3. Loss of positive pressure

Management Scenarios:

1. Prevent service outages with backup facilities and power, maintain normal operating pressure - *best*

- ☐ Recognize service interruption immediately, either directly or through auto monitoring/alarms
- ☐ Engage standby facilities/power or activate interties to restore service
- ☐ Verify service pressure, and chlorine residuals if applicable

2. Recognize service outage and correct as soon as possible, maintaining positive service pressure - *desirable*

- ☐ Recognize service interruption, either directly or through auto monitoring/alarms
- ☐ Advise affected users to conserve water to maintain positive pressure, if applicable
- ☐ Make temporary or permanent corrective actions to restore service
- ☐ Verify service pressure, and chlorine residuals if applicable
- ☐ Advise users to resume normal water use
- ☐ Inform state drinking water program

3. Loss of service pressure, chlorinated systems

- a. Shut off service meters before complete loss of service pressure, and re-establish pressure. *Loss desirable, applicable mainly to service outages affecting few users.*

Loss of Positive Pressure

- Best Management Practices
 - Management Scenarios
 - Best Case - Prevent service outages with backup facilities and power, maintain normal operating pressure
 - Desirable - Recognize service outage and correct as soon as possible, maintaining positive service pressure
 - Loss of service pressure, chlorinated systems
 - Loss of service pressure, non-chlorinated systems

Loss of Positive Pressure

- Loss of service pressure, chlorinated systems

3. Loss of service pressure, chlorinated systems

- a. **Shut off service meters before complete loss of service pressure, and re-establish pressure - *less desirable, applicable mainly to service outages affecting few users***
 - Recognize loss of service pressure
 - Shut off customer services before positive pressure is lost
 - Notify affected water users of service outage, if practical
 - Make temporary or permanent corrective actions to restore service
 - Flush affected area to remove any infiltrated water and restore chlorine residuals
 - Restore service, verify service pressure and chlorine residuals
 - Collect a coliform bacteria sample to provide a record of corrective action effectiveness. Mark as a special sample¹ and retain in utility records for 2 years.
 - If the post-corrective action coliform sample result shows the presence of coliforms, resample per coliform sampling procedures. If second sample results show presence of coliforms, contact state drinking water program to consult on corrective action.
- b. **Complete loss of service pressure, notify users to take personal protective action, and re-establish pressure - *least desirable***
 - Recognize loss of service pressure
 - Notify affected users to take personal protective action (do not use water, boil water, or use bottled water). Unless all affected users can be quickly notified, conduct additional wider notification by media or other means
 - Notify and consult with state drinking water program
 - Make temporary or permanent corrective actions to restore service
 - Flush affected area to remove any infiltrated water and restore chlorine residuals
 - Restore service, verify service pressure and chlorine residuals
 - Collect coliform samples to demonstrate water safety, obtain coliform-absent results before proceeding
 - Consult with state drinking water program
 - Notify users that water is safe to use after they flush their household plumbing

Final 7/15/09

Loss of Positive Pressure

To: ☐ DWP-Tier 1 Communications;

Cc: ☐ scott.kruger@co.benton.or.us;

- This item will expire in 6 days. To keep the item longer, apply a different retention policy.

A localized boil notice has been issued at the [REDACTED], located in Benton County, because of a main break that occurred Thursday (10/11/2018). The shutdown was isolated to 1500' of 6-inch pipe, so only 18 homes were affected. The City is waiting on the results from 3 coliform samples to lift the notice.

Loss of Positive Pressure

OHA Drinking Water Services Water Advisory Details

PWS ID: [REDACTED]
PWS Name: [REDACTED]

Advisory Type: Boil Water
Reason: Loss of Pressure
Area Affected: Partial - 18 homes
Affected Populations: All

Begin Date: Oct 11, 2018
Date Lifted: Oct 15, 2018

Contacted By: TEMPLIN, REBECCA (DWP - SPRINGFIELD)
Who Was Contacted: [REDACTED]
Contact Phone: [REDACTED]

Details: A localized boil notice has been issued at the City of Monroe (PWS#4100540), located in Benton County, because of a main break that occurred Thursday (10/11/2018). The shutdown was isolated to 1500' of 6-inch pipe, so only 18 homes were affected. The City is waiting on the results from 3 coliform samples to lift the notice.

Lifted 10/15/2018: The 3 coliform samples came back absent of bacteria so the boil advisory is lifted.

Regulator Responsibilities

- Assess whether advisory is necessary
- Ensure system uses appropriate notification content
- Discuss plan / process / methods to notify all customers within 24 hours
- Review corrective action steps (shock, flush)
- Provide support as water system resolves situation and advisory is lifted
- Document in webform

Simple tips for Live data

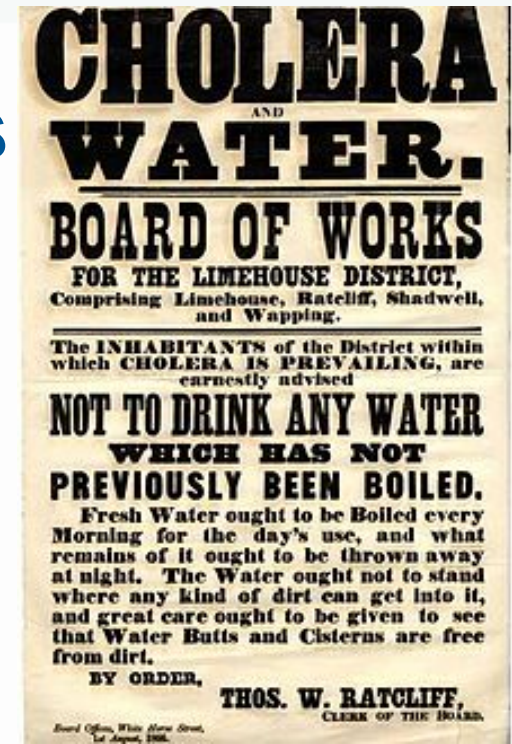
- Avoid or explain acronyms
- Write only what you would feel comfortable being quoted in a newspaper
- Stick to the facts of the matter
- Be clear but concise

Details: A ten inch water main broke and they were not a will distribution door-hangers and repair the line 1 morning of 6/8, with results expected 6/9. if all ne

Lifted 06/09/2017: As of this morning the four sa Linn have come back negative and WS will be lif by the loss of pressure.

Tier 1 Public Notice Templates

- Direct operators to templates
 - Explain what happened,
 - What to do
 - Mandatory health effects language
 - Importance of notifying others
 - Water system contact information
- Ensure DWS (compliance.dw@state.or.us) receives a copy of notice within 10 days of water system issuance
- Other resources: Shock chlorination procedures and calculation tools

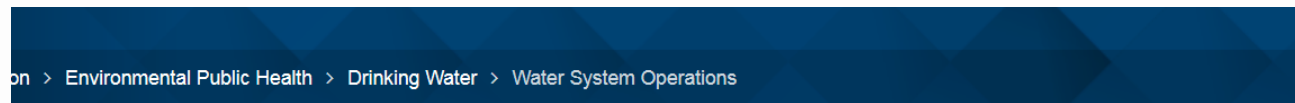


Delivery Methods / Options

- All persons served must be notified within 24 hours
- One or more of the following forms of delivery must be used:
 - Broadcast media, such as radio or television;
 - Posting of notices throughout area served; or
 - Hand delivery; or
- Consider sensitive populations
- Addressed in ERP?

Location of Templates Online

- Main Drinking Water Services Page
(www.healthoregon.org/dwp) – Water System Operations – Public Notice Resources & Templates



Resources for Oregon Water System Operators

Drinking Water Services

Water System Operations

Surface Water Treatment

Capacity Development

Public Notice Resources & Templates

Fact Sheets & Best Management Practices

Water System Surveys & Outstanding Performance

Circuit Rider Program

Pipeline Newsletter

Surface Water Treatment

Water systems that treat surface water sources have to deal with complex regulatory requirements, constantly changing raw water quality, and costly management of various assets. The [Surface Water Treatment](#) site provides information and tools needed to optimize water treatment processes and maximize public health protection without costly capital improvements.

Capacity Development

Water system capacity is the technical, managerial and financial capability of a water system to achieve and maintain compliance with drinking water standards and consistently provide safe drinking water. The [Capacity Development](#) site provides information and resources for drinking water systems to help build their capacity.

Public Notice Resources & Templates



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Follow-up of Boil Advisory

- If source issue, verify adequate treatment
- If distribution issue and Ecoli MCL exceeded, Level 2 investigation needed
 - Do not lift advisory until investigation completed and defects corrected
 - OR if operator inspects, identifies a problem, fixes, other corrective measures, provides photo documentation, OK to lift first

Lifting the notice

- Review sample number, location, and results
 - Chlorine residual returned to normal
 - Marked Special
- Water systems to notify all customers when notice is lifted explaining:
 - Need to flush internal plumbing to remove any bad water
 - OK to drink water without boiling
- Update WebForm with Lift info

Loss of Positive Pressure

- Best Management Practices
- Template language available
- Door hangers with simple language also acceptable



Questions?

Tia Skerbeck REHS

Oregon Drinking Water Services

(971) 673-04 or (971) 673-0405

christia.d.skerbeck@state.or.us

www.healthoregon.org/dwp

