

***Appendix F***  
***Coliform Monitoring Plan***

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## **Coliform Monitoring Plan & Pressure Loss 2019**

### **System Information and Water Facilities Inventory (WFI)**

#### **Department of Health (DOH) and Intertie contacts**

- **Drinking water after hours – Emergency Hotline**

#### **Coliform Sampling procedure and Routes**

- **Sample locations and Sample collectors**
- **Monthly rotation schedule**
- **Alternate Sample Stations**

#### **Laboratory Info and How to Complete a Coliform Lab Slip**

- **Lab Slips with example info filled in**

#### **Distribution and Source Response Plan / Checklist**

- **Follow up to an unsatisfactory routine coliform sample**
- **Distribution System *E. coli* Response Plan**
- ***E. coli* Present Triggered Source Sample Response Plan**
- **Wholesale Customer unsatisfactory routine coliform sample**
- ***E. coli*- Sample Response checklist**
- **Troubleshooting Checklist for Coliform Contamination**

#### **RTCR Level 1 and 2 Assessment Guidance Template**

- **Treatment technique triggers, violations, and public notification requirements**

#### **Drinking Water Warning**

- **Drinking water warning door hangers, English and Spanish**

#### **Public Notice Certification *E. Coli*- MCL Violation**

#### **News Release Boil Water Advisory and Boil Water Advisory Rescinded**

#### **Coliform Bacteria and Drinking Water (Questions and Answers)**

#### **Groundwater Rule and Groundwater Sources under the Direct Influence of Surface Water (GWI)**

**Pressure Loss**

- **Responding to a Pressure-Loss Event**
- **Water Main Break Response Protocol for Chlorinated Systems**
- **Drinking Water Warning – Washington State Department of Health**

# System Information and Water Facilities Inventory (WFI)



# WATER FACILITIES INVENTORY (WFI) FORM

ONE FORM PER SYSTEM

Quarter: 1

Updated: 08/02/2019

Printed: 11/12/2019

WFI Printed For: On-Demand

Submission Reason: Pop/Connect Update

RETURN TO: Central Services - WFI, PO Box 47822, Olympia, WA, 98504-7822

<b>1. SYSTEM ID NO.</b> 07650 H	<b>2. SYSTEM NAME</b> BONNEY LAKE WATER DEPARTMENT CITY	<b>3. COUNTY</b> PIERCE	<b>4. GROUP</b> A	<b>5. TYPE</b> Comm
<b>6. PRIMARY CONTACT NAME &amp; MAILING ADDRESS</b>  DAVID L. CIHAK [ASST. SUPT.] PO BOX 7380 BONNEY LAKE, WA 98391		<b>7. OWNER NAME &amp; MAILING ADDRESS</b>  BONNEY LAKE, CITY OF DAVID L. CIHAK PO BOX 7380 BONNEY LAKE, WA 98391		<b>8. OWNER NUMBER: 000575</b>  ASST. SUPT.
<b>STREET ADDRESS IF DIFFERENT FROM ABOVE</b> ATTN ADDRESS CITY STATE ZIP		<b>STREET ADDRESS IF DIFFERENT FROM ABOVE</b> ATTN ADDRESS CITY STATE ZIP		
<b>9. 24 HOUR PRIMARY CONTACT INFORMATION</b>		<b>10. OWNER CONTACT INFORMATION</b>		
Primary Contact Daytime Phone: (253) 862-8602		Owner Daytime Phone: (253) 862-8602 x4312		
Primary Contact Mobile/Cell Phone: (253) 405-6611		Owner Mobile/Cell Phone: (253) 405-6611		
Primary Contact Evening Phone: (xxx)-xxx-xxxx		Owner Evening Phone: (xxx)-xxx-xxxx		
Fax: E-mail: xxxxxxxxxxxxxxxxxxxxxx		Fax: (253) 447-4330 E-mail: xxxxxxxxxxxxxxxxxxxxxx		
<b>11. SATELLITE MANAGEMENT AGENCY - SMA (check only one)</b>				
<input checked="" type="checkbox"/> Not applicable (Skip to #12) <input type="checkbox"/> Owned and Managed SMA NAME: _____ SMA Number: _____ <input type="checkbox"/> Managed Only <input type="checkbox"/> Owned Only				
<b>12. WATER SYSTEM CHARACTERISTICS (mark all that apply)</b>				
<input type="checkbox"/> Agricultural <input checked="" type="checkbox"/> Commercial / Business <input checked="" type="checkbox"/> Day Care <input checked="" type="checkbox"/> Food Service/Food Permit <input checked="" type="checkbox"/> 1,000 or more person event for 2 or more days per year <input checked="" type="checkbox"/> Hospital/Clinic <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Licensed Residential Facility <input type="checkbox"/> Lodging <input checked="" type="checkbox"/> Recreational / RV Park <input checked="" type="checkbox"/> Residential <input checked="" type="checkbox"/> School <input type="checkbox"/> Temporary Farm Worker <input checked="" type="checkbox"/> Other (church, fire station, etc.): _____				
<b>13. WATER SYSTEM OWNERSHIP (mark only one)</b>				<b>14. STORAGE CAPACITY (gallons)</b>
<input type="checkbox"/> Association <input checked="" type="checkbox"/> City / Town <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Investor <input type="checkbox"/> Private <input type="checkbox"/> Special District <input type="checkbox"/> State				20,740,000

- SEE NEXT PAGE FOR A COMPLETE LIST OF SOURCES -

# WATER FACILITIES INVENTORY (WFI) FORM - Continued

1. SYSTEM ID NO. 07650 H	2. SYSTEM NAME BONNEY LAKE WATER DEPARTMENT CITY		3. COUNTY PIERCE			4. GROUP A	5. TYPE Comm																										
15	16 SOURCE NAME	17 INTERTIE	18 SOURCE CATEGORY							19 USE	20	21 TREATMENT			22 DEPTH	23	24 SOURCE LOCATION																
Source Number	LIST UTILITY'S NAME FOR SOURCE AND WELL TAG ID NUMBER.  Example: WELL #1 XYZ456  IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S NAME Example: SEATTLE	INTERTIE SYSTEM ID NUMBER	WELL	WELL IN A WELL FIELD	WELL IN A WELL FIELD	WELL IN A WELL FIELD	WELL IN A WELL FIELD	WELL IN A WELL FIELD	WELL IN A WELL FIELD	WELL IN A WELL FIELD	WELL IN A WELL FIELD	EMERGENCY	SEASONAL	PERMANENT	OTHER	RANNEY / INF. GALLERY	SURFACE WATER	SEA WATER	SPRING IN SPRINGFIELD	SPRING IN SPRINGFIELD	SPRING	NONE	CHLORINATION	FILTRATION	FLUORIDATION	IRRADIATION (UV)	OTHER	DEPTH TO FIRST OPEN INTERVAL IN FEET	CAPACITY (GALLONS PER MINUTE)	1/4, 1/4 SECTION	SECTION NUMBER	TOWNSHIP	RANGE
S01	VICTOR FALLS SPRING				X						X																1100	SW NW	09	19N	05E		
S02	GRAINGER SPRINGS				X						X																1669	NE SE	32	20N	05E		
S03	InAct 06/01/1989 DELETED		X								X															310	1000	SW NW	09	20N	05E		
S04	InAct 06/01/1989 DELETED		X								X															385	60	SW SW	28	20N	05E		
S05	InAct 06/01/1989 DELETED		X								X															120	140	SE NW	21	20N	05E		
S06	BALL PARK WELL #1 AAB889			X							X															199	1000	SE SE	21	20N	05E		
S07	OLD BUCKLEY/214TH AV		X								X															85	340	SE NE	34	20N	05E		
S08	Tacoma/86800 (4)	86800 N									X															1389			00N	00E			
S09	InAct 06/01/1989 DELETED		X								X															85	250	SE NE	34	20N	05E		
S10	TACOMA PT WELL #2 AAB888			X							X															239	1000	SE SE	05	21N	05E		
S11	TACOMA PT WELL #4 AAB887			X							X															287	1200	SE SE	05	21N	05E		
S12	TACOMA PT WELLS 2,4,6			X							X															239	2300	SE SE	05	21N	05E		
S13	TACOMA PT WELL #6			X							X															275	1300	SE SE	05	21N	05E		
S14	BALL PARK WELL #2			X							X															199	270	SE SE	21	20N	05E		
S15	Ball Park Well Field			X							X															199	1270	SE SE	21	20N	05E		

# WATER FACILITIES INVENTORY (WFI) FORM - Continued

<b>1. SYSTEM ID NO.</b> 07650 H	<b>2. SYSTEM NAME</b> BONNEY LAKE WATER DEPARTMENT CITY	<b>3. COUNTY</b> PIERCE	<b>4. GROUP</b> A	<b>5. TYPE</b> Comm
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	ACTIVE SERVICE CONNECTIONS	DOH USE ONLY CALCULATED ACTIVE CONNECTIONS	DOH USE ONLY APPROVED CONNECTIONS
<b>25. SINGLE FAMILY RESIDENCES (How many of the following do you have?)</b>		14956	Unspecified
A. Full Time Single Family Residences (Occupied 180 days or more per year)	12920		
B. Part Time Single Family Residences (Occupied less than 180 days per year)	0		
<b>26. MULTI-FAMILY RESIDENTIAL BUILDINGS (How many of the following do you have?)</b>			
A. Apartment Buildings, condos, duplexes, barracks, dorms	335		
B. Full Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied more than 180 days/year	2036		
C. Part Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied less than 180 days/year	0		
<b>27. NON-RESIDENTIAL CONNECTIONS (How many of the following do you have?)</b>			
A. Recreational Services and/or Transient Accommodations (Campsites, RV sites, hotel/motel/overnight units)	133	133	
B. Institutional, Commercial/Business, School, Day Care, Industrial Services, etc.	210	210	
<b>28. TOTAL SERVICE CONNECTIONS</b>		15299	

<b>29. FULL-TIME RESIDENTIAL POPULATION</b>
A. How many residents are served by this system 180 or more days per year? <span style="float: right; text-decoration: underline;">37708</span>

30. PART-TIME RESIDENTIAL POPULATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. How many part-time residents are present each month?												
B. How many days per month are they present?												

31. TEMPORARY & TRANSIENT USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. How many total visitors, attendees, travelers, campers, patients or customers have access to the water system each month?												
B. How many days per month is water accessible to the public?												

32. REGULAR NON-RESIDENTIAL USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. If you have schools, daycares, or businesses connected to your water system, how many students daycare children and/or employees are present each month?												
B. How many days per month are they present?												

33. ROUTINE COLIFORM SCHEDULE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
* Requirement is exception from WAC 246-290	40	40	40	40	40	40	40	40	40	40	40	40

<b>34. NITRATE SCHEDULE</b> (One Sample per source by time period)	<b>QUARTERLY</b>	<b>ANNUALLY</b>	<b>ONCE EVERY 3 YEARS</b>

**35. Reason for Submitting WFI:**

Update - Change   
  Update - No Change   
  Inactivate   
  Re-Activate   
  Name Change   
  New System   
  Other \_\_\_\_\_

<b>36. I certify that the information stated on this WFI form is correct to the best of my knowledge.</b>	
SIGNATURE: _____	DATE: _____
PRINT NAME: _____	TITLE: _____



## System Information:

City of Bonney Lake  
PO Box 7380  
Bonney Lake, WA 98390  
ID #07650H  
Pierce County

Plan prepared by:

David Cihak  
Assistant Superintendent of Public Works  
253-447-4312

Ursulla Ronscavage  
WTPO, WDM3, CCCS  
253-447-3227

### Sources:

#S01	Victor Falls Springs	1,100 Gallons Per Minute	
#S02	Grainger Springs	1,669 Gallons Per Minute	
#S012	Tacoma Point Well Field	2,300 Gallons Per Minute	Depth 239 Feet
#S15	Ball Park Well Field	1,270 Gallons Per Minute	Depth 197 Feet

### Storage:

Lakeridge Tank	0.75 Million Gallons
Peaking Tank	15 Million Gallons
Ponderosa I Tank	1 Million Gallons
Ponderosa II Tank	2.8 Million Gallons
Tacoma Point Tank	1.25 Million Gallons
<b>Total Storage:</b>	<b>20.8 Million Gallons</b>

### Treatment:

All sources are treated with sodium hypochlorite for disinfection. Grainger Springs and Tacoma Point Well Field are also treated with sodium hydroxide for corrosion control. Ball Park Well Field is filtered for iron and manganese.

**Total Service Connections:** 13,473 as of December 2018

**Total Estimated Population Served:** 37,878 as of December 2018

**Pressure Zones:**

There are eleven pressure zones within the water system. All zones are based on elevation above sea level. Lakeridge 800 pressure zone is operated by a pressure booster pump station at the Lakeridge Storage Tank. Ponderosa 800 pressure zone is operated by gravity from the height of the water level in Ponderosa Tank II. Ponderosa II is filled from Ponderosa I Tank by four booster and two emergency pumps. Panorama 790 zone is operated by the Panorama Booster Station. The Pinnacle Estates 795 pressure zone is operated by the Pinnacle Estates Booster Station. Pressure zone 748 and all lower pressure zones are operated by gravity from the sources and tanks.

**Interties:**

The City of Bonney Lake Water Department has wholesale and emergency interties with the City of Tacoma, City of Auburn, and Tapps Island Water Company. (See attached page)

**Distribution System:**

The City of Bonney Lake Distribution System is shown on the attached map. All sources, storage reservoirs, and water mains within the distribution system are interconnected.

Department of Health (DOH)  
and Intertie Contacts

# DRINKING WATER AFTER-HOURS EMERGENCY HOTLINE

OFFICE OF DRINKING WATER STAFF ARE AVAILABLE AROUND THE CLOCK TO PROTECT THE HEALTH OF YOUR CUSTOMERS.

Call it Murphy's Law or whatever – emergencies don't just happen during business hours.

Imagine. . .

- *A midnight landslide damages your distribution system.*
- *You are notified on Friday evening before a three-day weekend that your repeat samples were E. Coli positive.*
- *A nearby stream floods, leaving your wellhead underwater on the day after Thanksgiving.*

**This hotline is for after-hours emergencies only**, not for problems that arise during business hours, and not for routine business.

**Here's how the system works:**

- *We evaluate after-hour calls to determine the nature of the emergency.*
- *We will return the call within 30 minutes.*
- *We will ask callers clearly seeking routine business assistance to contact our regional office during business hours.*

**This service is for water system operators, local health officials, laboratory operators, and others** who need immediate technical, engineering or public health advice

from state drinking water experts during emergencies.

**Individuals with concerns about their drinking water should call their water utility, their local health department, or 911.**



DOH PUB #331-133  
December 2015

If you need this publication in an alternative format, call 800.525.0127 (TDD/TTY call 711). This and other publications are available at [www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/PublicationsandForms](http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/PublicationsandForms).

IN CASE OF **URGENT THREATS** TO THE HEALTH OF YOUR CUSTOMERS OR THE INTEGRITY OF YOUR SYSTEM, CALL:

# 1-877-481-4901

## **Intertie Contacts:**

Any intertied water system who is receiving or providing water at the time of a positive coliform sample shall be notified. The Assistant Superintendent of Public Works or his designee will contact the intertied systems.

The City of Bonney Lake purchases surface water from and sells groundwater to:

### Tacoma Public Utilities

Control Center (24 hour)  
253-502-8344

Water Quality: 253-502-8207

The City of Bonney Lake sells groundwater to:

### The City of Auburn

Maintenance and Operation: 253-931-3048  
After Hours: 253-876-1953

### Josh Flanders, Water Manager

Cell: 253-261-2239  
Desk: 253-876-199

### Valley Water District (Winchester)

Main- 253-841-9698  
Emergency- 888-205-0118

### Tapps Island Water

John Clark, General Manager  
Office- 253-862-6616  
Cell- 253-293-2444



☛ [Community and Environment](#) > [Drinking Water](#) > [Offices and Staff](#) > [Northwest Regional Office Staff](#)

## Northwest Regional Office Staff

### Physical Address:

Northwest Drinking Water Operations  
20425 72nd Ave. South, Building 2, Suite 310  
Kent, WA 98032-2358

### [Map with driving directions](#)

Main Phone: 253-395-6750  
FAX: 253-395-6760  
TDD Relay Service: 1-800-833-6388



## Information and Technical Assistance

Our office is open Monday through Friday from 8 a.m. to 5 p.m. Please direct all general inquiries to our main line at 253-395-6750. Staff are available to assist with most questions immediately. As necessary, other questions will be referred to the appropriate staff for response.

The Northwest Regional Office regulates and provides technical assistance to over 2156 Group A public water systems serving approximately 4,458,373 people in the following counties:

- Island
- San Juan
- Whatcom
- King
- Skagit
- Pierce
- Snohomish

**Robert James**, Regional Manager, 253-395-6768

Supervises the Northwest Regional Office. Supervises the Program Staff.

**Vacant**, Assistant Regional Manager, 253-395-6763

Manages Planning and Engineering Staff, Ground Water Under the Influence.

**Cynthia Blackwell**, Office Manager, 253-395-6753

Supervises the Regional Administrative Staff. Manages office records and public disclosure.

### Engineers:

Regional Engineers are responsible for the implementation of the state's drinking water program in assigned counties. They conduct sanitary surveys and special purpose investigations of public water systems and promote needed water facility improvements. They are the lead reviewer of specifications for system improvements and provide technical assistance to purveyors and local health departments upon request.

<u>Laura McLaughlin</u>	Whatcom County	253-395-6761
<u>Steve Deem, P.E.</u>	Seattle Public Utilities	253-395-6767
<u>Brietta Carter, P.E.</u>	King County (except Seattle Public Utilities)	253-395-6770
<u>Jolyn Leslie, P.E.</u>	San Juan County	253-395-6762

**Specialty:** Disinfection – Surface Water, Disinfection, and Disinfection By Product

<u>Erika Lindsey, P.E.</u>	Snohomish, Skagit Counties	253-395-6766
<u>John Ryding, P.E.</u>	Pierce County	253-395-6757
<u>Denis Mehinagic</u>	Island County	253-395-6764
	<b>Specialty:</b> State Revolving Loan Fund Assistance (SRF)	

**Planners:**

Regional Planners are responsible for the implementation of the state's drinking water planning program in assigned counties. They are the lead reviewer of Water System Plans, Small Water System Management Program Plans, Water System Consolidations, Water Use Efficiency, Funding, and they provide technical assistance to purveyors and local health departments upon request.

<u>Richard Rodriguez</u>	King, San Juan, Snohomish, and Whatcom Counties	253-395-6771
<u>Jennifer Kropak</u>	Island, Pierce and Skagit Counties	253-395-6769

**Program staff:**

Provide the day-to-day contact for the implementation of the state's drinking water program requirements and compliance, and provide technical assistance to purveyors and local health departments upon request.

<u>Carol Stuckey</u>	<b>Coliform Water Quality Monitoring Program</b>	253-395-6775
<u>Ingrid Salmon</u>	<ul style="list-style-type: none"> <li>• Coliform sampling results, requirements, and compliance</li> <li>• Coliform and E.coli technical assistance</li> <li>• Boil water/health advisories</li> <li>• Total coliform rule</li> </ul>	

<u>Steve Hulsman</u>	<b>Chemical Water Quality Monitoring Program</b>	253-395-6777
	<ul style="list-style-type: none"> <li>• Nitrate, arsenic, inorganic chemicals, volatile organic chemicals, synthetic organic chemicals and radionuclides, asbestos, and lead &amp; copper</li> <li>• Susceptibility assessment, pesticide vulnerability determinations, and waivers for organic and inorganic chemical monitoring</li> <li>• Water Quality Monitoring Schedules</li> <li>• Consumer Confidence Reports</li> <li>• Groundwater under the influence</li> </ul>	

<u>Aniela Sidorska</u>	<b>Compliance Program</b>	253-395-6751
	<ul style="list-style-type: none"> <li>• Compliance strategies &amp; enforcement</li> <li>• Operating permits</li> </ul>	

<u>Brian Boye</u>	<b>Sanitary Survey Program</b> <ul style="list-style-type: none"><li>• Well-site inspections</li><li>• Technical investigations</li><li>• Complaint tracking and follow-up</li></ul>	253-395-6778
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<u>Krista Chavez</u>	<b>Water Treatment Program</b> <ul style="list-style-type: none"><li>• Treatment reports</li><li>• Source assessment monitoring</li><li>• Small system Cross-Connection Control</li></ul>	253-395-6772
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**Administrative staff:**

<u>Mary Rucksdashel</u>	<ul style="list-style-type: none"><li>• Customer assistance</li><li>• Public disclosure</li><li>• Invoices: project review/approval, surveys</li><li>• Complaints</li><li>• Consumer Confidence Report</li><li>• Publication requests</li><li>• Monthly treatment reports</li></ul>	253-395-6756
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# Coliform Sampling Procedures and Routes

# Coliform Sampling Procedure

We recommend that you follow these steps when collecting your sample. If instructions from your lab are different, please call us for clarification.

Most sample kits contain a:

- ◆ Sample bottle
- ◆ Lab slip
- ◆ Rubber band

Protect the sample bottle from contamination before and after sampling. Don't rinse it and don't expose it to direct sunlight, heat, or unsanitary conditions.



*A model sampling station in Kent.*

## For More Information

If you have questions about coliform sampling procedures, call our regional office:

### Eastern Region

Spokane Valley  
509-329-2100

### Northwest Region

Kent  
253-395-6750

### Southwest Region

Tumwater  
360-236-3030

Our publications are online at <https://fortress.wa.gov/doh/eh/dw/publications/publications.cfm>

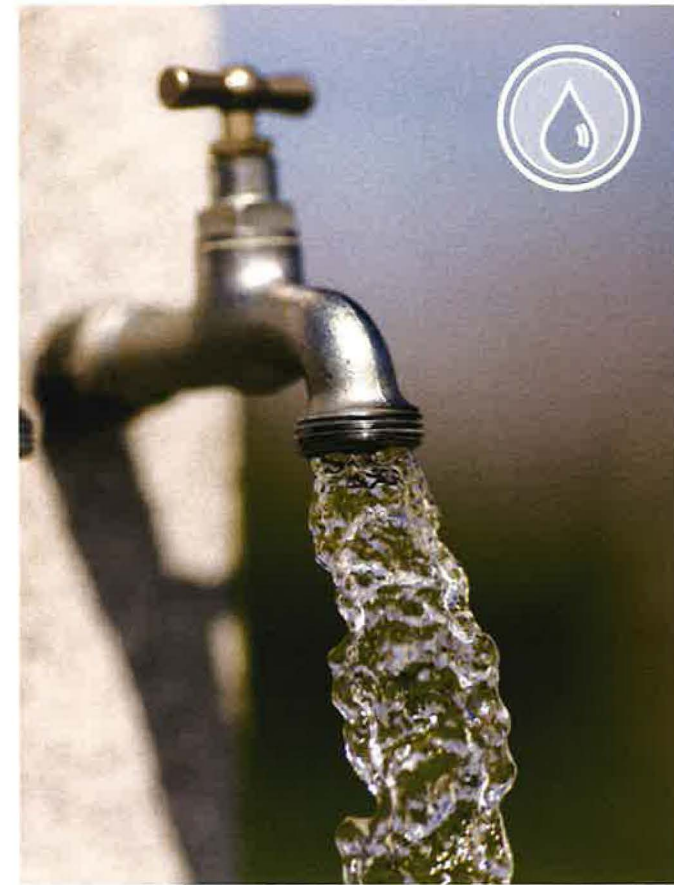
## Related Publications

### Revised Total Coliform Rule (331-556):

An explanation of the federal Revised Total Coliform Rule, including explanations of key terms, assessments, and violations of the rule.

### General Sampling Procedure (331-219):

An overview of how to sample water in your system, including explanations of best practices and key terms.



# Coliform Sampling Procedure



DOH PUB #331-225  
December 2015

If you need this publication in an alternative format, call 800.525.0127 (TDD/TTY call 711). This and other publications are available at [www.doh.gov/eph/dw](http://www.doh.gov/eph/dw).

## Step One

Follow your Coliform Monitoring Plan to collect routine, repeat, and raw source samples from sites throughout the distribution system. You must collect raw source samples from sites prior to all treatment and close to the source while the source pump is running.

Sample taps should represent the water in your distribution system. Avoid poor sample sites such as swivel faucets, hot and cold mixing faucets (with a single lever), leaky or spraying faucets, drinking fountains, janitorial sinks, frost-free hose bibs, and faucets below or near ground level.

## Step Two

Remove any attachments from the faucet, including aerators, screens, washers, hoses, and water filters. If you choose to disinfect the sample site before collecting the sample, be sure to flush the site thoroughly to remove all disinfectant.

## Step Three

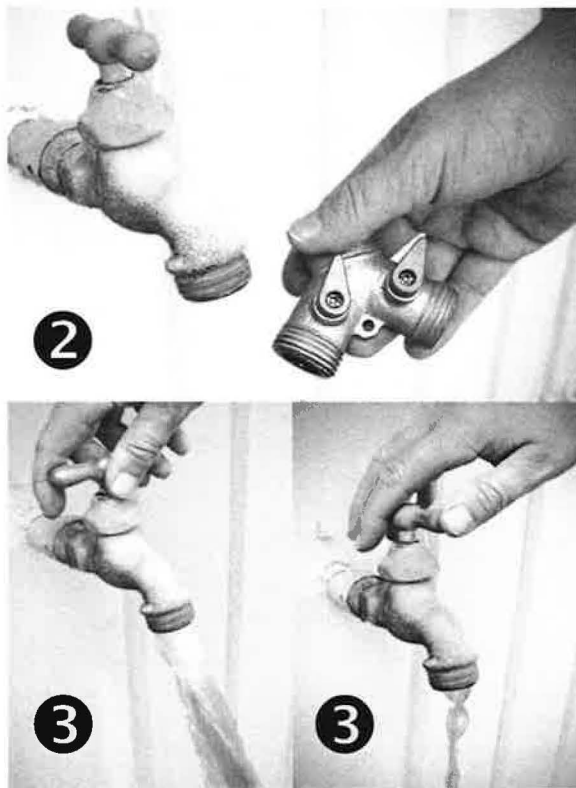
Turn on the cold water only and let it run with a steady stream for at least five minutes. Before collecting the sample, turn the water down to a thin stream (about the width of a pencil), then let the water run one minute. If you chlorinate your system, measure the free chlorine residual and note the measurement on the lab slip.

## Step Four

There may be some liquid or powder in the sample bottle to neutralize chlorine. Do not rinse it out.

## Step Five

To avoid contamination while taking the sample, hold the bottle near the bottom with one hand, hold the top of the cap with the other, and then unscrew the cap.



Do not set the cap down, touch any part of the cap that touches the bottle, or let anything touch the rim of the bottle or the inside of the cap.



## Step Six

Hold the bottle under the stream of water. Be careful not to let the bottle touch the sample tap. Fully fill the bottle to the neck or indicated fill line. Don't allow it to overflow. Remove the bottle from the water flow and carefully screw the cap back on.

## Step Seven

Complete the lab slip. If there was anything unusual about the sample collection, note it on the lab slip.

Lab forms vary. It is important to include at least the following information:

- ◆ Collection date and time
- ◆ System type (Group A or B)
- ◆ Water system ID number
- ◆ Water system name
- ◆ Contact information
- ◆ Sample location (street address or other location identifier)
- ◆ Type of sample (check ONLY ONE Type: Routine, Repeat, Raw, or For Information Only)
- ◆ Chlorine residual—even if it's zero.



## Step Eight

Secure the lab slip to the bottle with the rubber band. Deliver the sample to a certified lab or a designated drop-off location for the lab as soon as possible. Lab analysis must begin within 30 hours after you collect your sample.

### **Sample Locations:**

Sample station lists include routine/repeat, upstream, and downstream addresses. The upstream and downstream locations are private residences with samples to be taken from hose bibs.

### **Sample Collectors:**

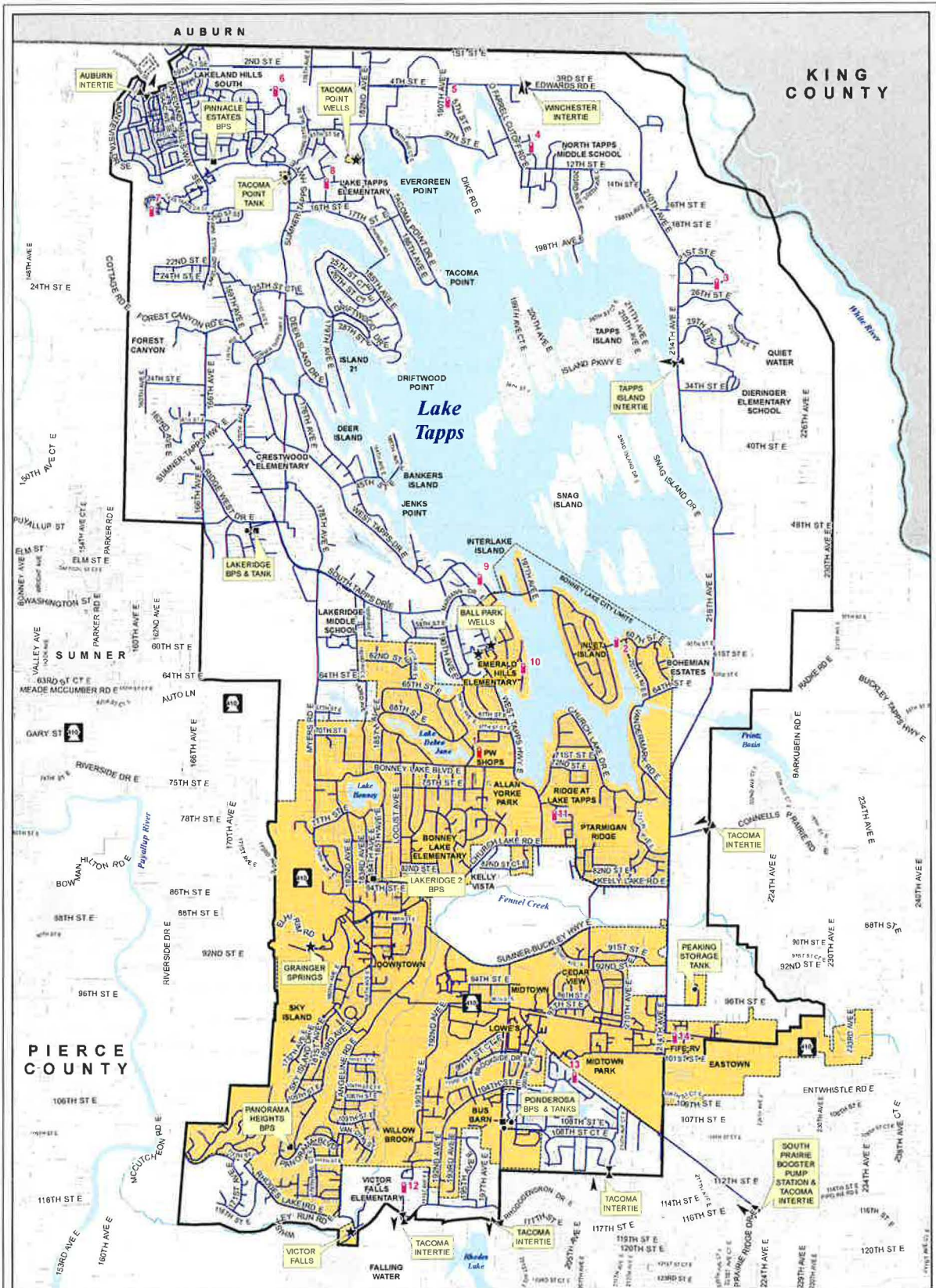
It is the sample collector's decision to collect from a location or not. Samples should not be taken if any activity at the sample site may have compromised the sanitary integrity of the sample station.

**Monthly Rotation schedule for Coliform Monitoring Plan**

Week #1 Sample Sites #1-14

Week #2 Sample Sites #1, #15-26

Week #3 Sample Sites #1, #27-38



- Coliform Sample Station Monitoring Start
- ★ Coliform Sample Station Monitoring List 1
- ★ Water Source
- Water Tank
- Booster Pump Station
- ⚡ Emergency Intertie and Flow Direction
- Water Main Line
- Bonney Lake Water Service Area
- ▭ Tax Parcel
- ▭ Bonney Lake City Limits

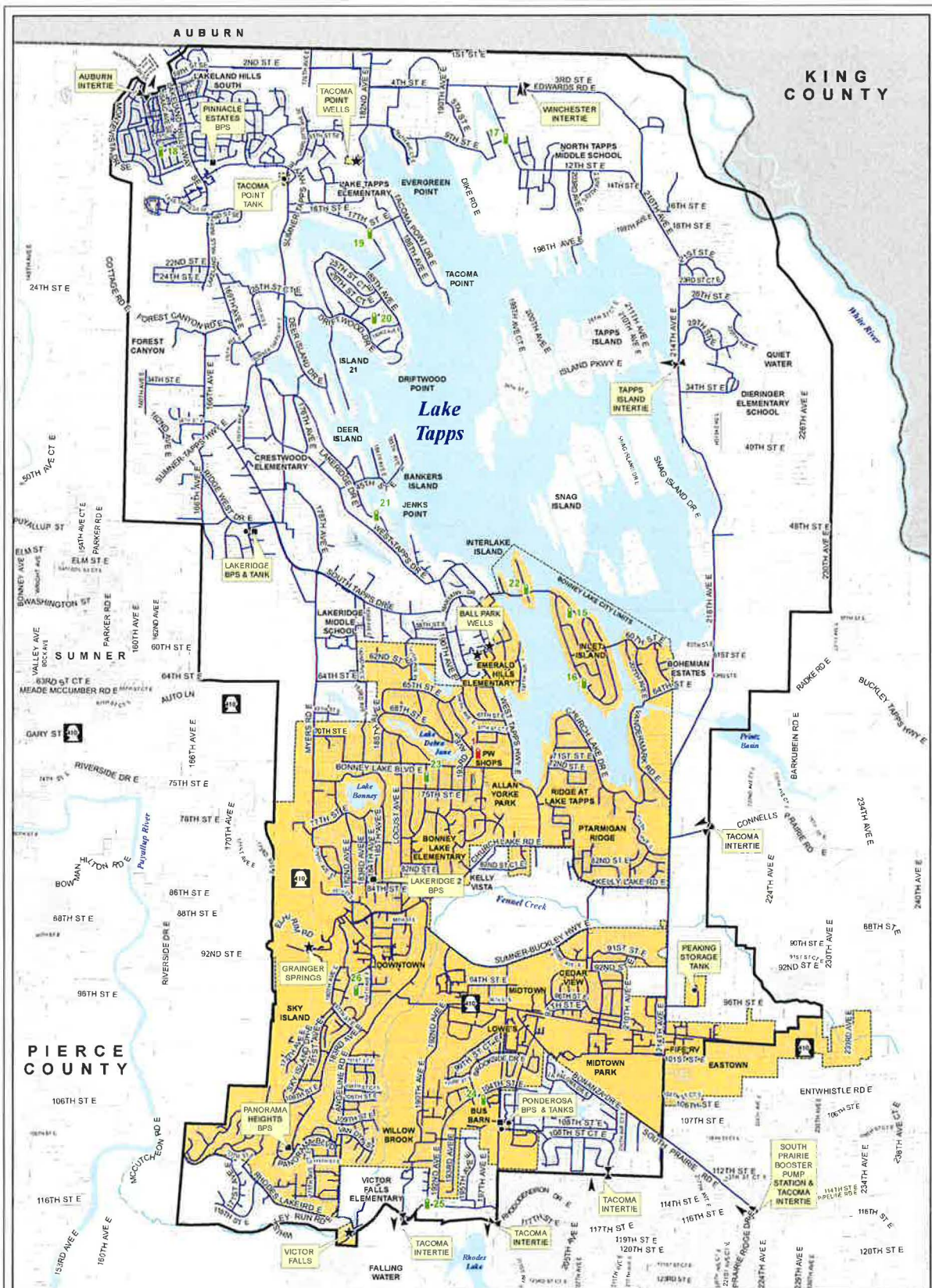
# Coliform Water Monitoring List 1



May 25, 2016

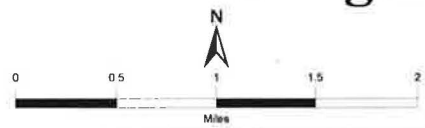
## **Sample Station List 1**

- 1 Routine- 19306 Bonney Lake Blvd (Shops)**  
Upstream- 19304 Bonney Lake Blvd (Senior Center)  
Downstream- 7210 194 Ave E (RES)
- 2 Routine- 11401 188<sup>th</sup> Av Ct E (Victor Falls Elementary School)**  
Upstream- 18707 Rhodes Lake Rd (RES)  
Downstream- 11415 188<sup>th</sup> Av Ct E (RES)
- 3 Routine- 20505 Bonanza Dr E (Ponderosa)**  
Upstream- 20513 Bonanza Dr E (RES, hose bib)  
Downstream- 20427 La Paloma Dr E (RES, hose bib)
- 4 Routine- 21514 SR 410 (Fife RV)**  
Upstream- 21406 SR 410 (Chevron, hose bib)  
Downstream- 21616 SR 410 (Mazatlan, hose bib)
- 5 Routine- 2224 218<sup>th</sup> Ave E. (Skyline Estates)**  
Upstream- 2216 218<sup>th</sup> Ave E.  
Downstream- 21619 23<sup>rd</sup> St Ct E.
- 6 Routine- 8109 184<sup>th</sup> St. E.**  
Upstream- (RES, hose bib)  
Downstream- (RES, hose bib)
- 7 Routine- 190<sup>th</sup> Ave E & 5<sup>th</sup> St E**  
Upstream- 19003 5<sup>th</sup> St E (RES)  
Downstream- 18928 3<sup>rd</sup> St E (RES)
- 8 Routine- 6201 Wesley Pl SE (Lakeland East)**  
Upstream- 6205 Wesley Pl SE (RES, hose bib)  
Downstream- 2301 62<sup>nd</sup> St SE (RES, hose bib)
- 9 Routine- 904 72<sup>nd</sup> St SE (Madera, Lakeland)**  
Upstream- 906 72 St SE (RES)  
Downstream- 902 72 St SE (RES)
- 10 Routine- 1320 178<sup>th</sup> Ave E (Lake Tapps Elementary School)**  
Upstream- 17723 N Tapps Dr. (RES)  
Downstream- 1505 178<sup>th</sup> Av E (RES)
- 11 Routine- 5407 W Tapps Dr E**  
Upstream- 5409 W Tapps Dr E (RES)  
Downstream- 5403 W Tapps Dr E (RES)
- 12 Routine- 6006 197 Ave E (East of Emerald Hills Elementary)**  
Upstream- 6009 197 Ave E (RES, hose bib)  
Downstream- 6004 197 Ave E (RES, hose bib)
- 13 Routine- 202<sup>nd</sup> Ave E / 77<sup>th</sup> St Ct E (The Ridge at Lake Tapps)**  
Upstream- 20201 78<sup>th</sup> St Ct E (RES, hose bib)  
Downstream- 20212 77<sup>th</sup> St Ct E (RES, hose bib)
- 14 Routine- 7522 188<sup>th</sup> Ave E**  
Upstream- 7526 188<sup>th</sup> Ave E (RES)  
Downstream- 7518 188<sup>th</sup> Ave E (RES)



- Coliform Sample Station Monitoring Start
- Coliform Sample Station Monitoring List 2
- ★ Water Source
- Water Tank
- Booster Pump Station
- ⚡ Emergency Intertie and Flow Direction
- Water Main Line
- Bonney Lake Water Service Area
- Tax Parcel
- Bonney Lake City Limits

# Coliform Water Monitoring List 2

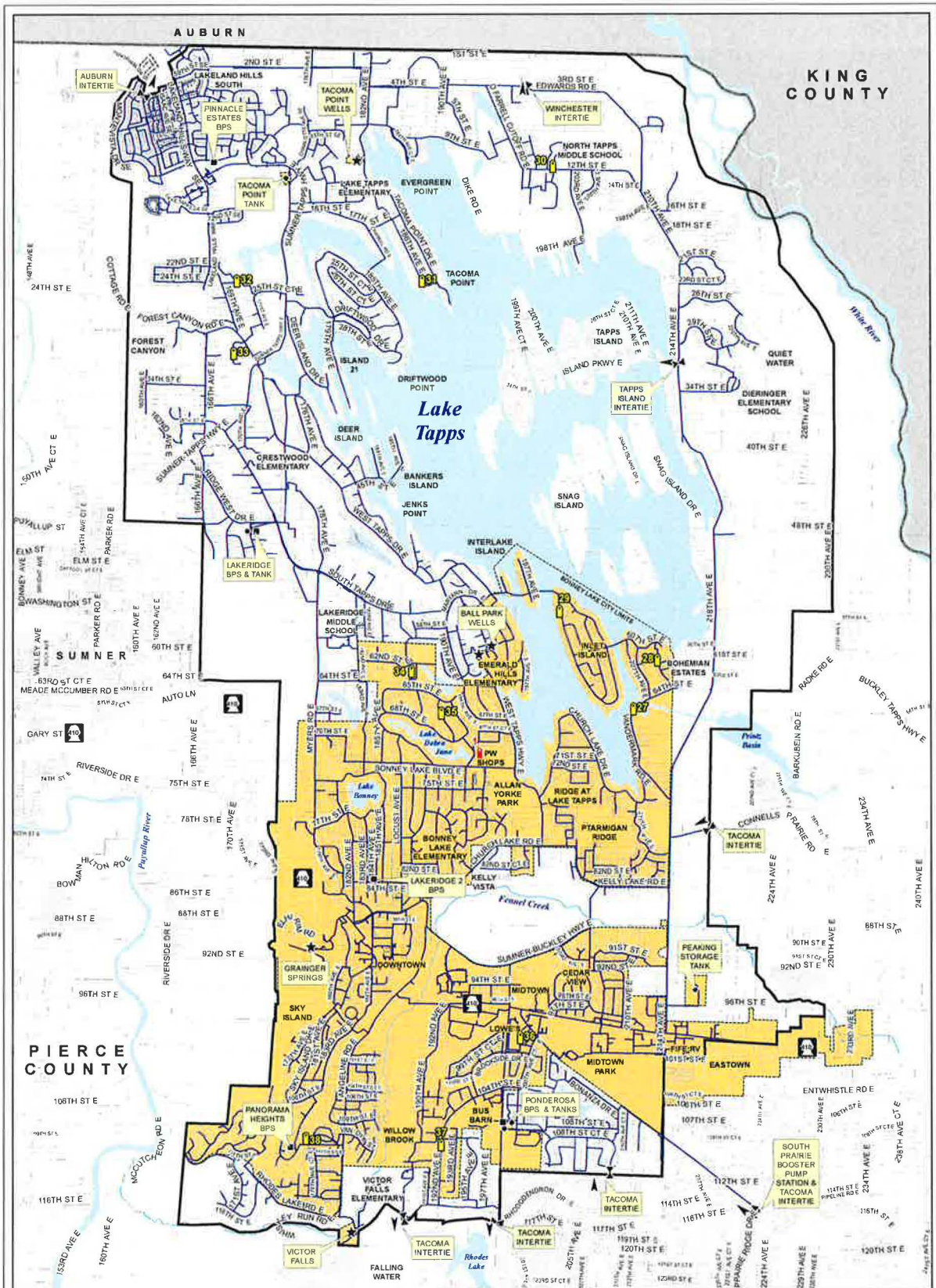


May 25, 2016



## Sample Stations List 2

- 1 Routine- 19306 Bonney Lake Blvd (Shops)**  
Upstream- 19304 Bonney Lake Blvd (Senior Center, hose bib)  
Downstream- 7210 194 Ave E (RES, hose bib)
  
- 15 Routine- 4727 N Island Dr E**  
Upstream- 4725 N Island Dr E (RES, hose bib)  
Downstream- 4729 N Island Dr E (RES, hose bib)
  
- 16 Routine- 5429 S Island Dr E**  
Upstream- 5429 S Island Dr E (RES, hose bib)  
Downstream- 5421 S Island Dr E (RES, hose bib)
  
- 17 Routine- 8 St Ct E & O'Farrell**  
Upstream- 19506 8 St Ct E (RES, hose bib)  
Downstream- 1003 198 Ave (RES, hose bib)
  
- 18 Routine- 1301 67<sup>th</sup> St SE (Palisades, Lakeland)**  
Upstream- 1301 67<sup>th</sup> St SE, Bldg. 21 C (RES, hose bib)  
Downstream- 1301 67<sup>th</sup> St SE, Bldg. 20 B (RES, hose bib)
  
- 19 Routine- 1716 Channel Rd E (Tacoma Point)**  
Upstream- 1710 Channel Rd E (RES, hose bib)  
Downstream- 1728 Channel Rd E (RES, hose bib)
  
- 20 Routine- 2713 182<sup>nd</sup> Av E (Driftwood)**  
Upstream- 2717 182<sup>nd</sup> Av E (RES, hose bib)  
Downstream- 2707 182<sup>nd</sup> Av E (RES, hose bib)
  
- 21 Routine- 4743 Lakeridge Dr E**  
Upstream- 4721 Lakeridge Dr E (RES, hose bib)  
Downstream- 4747 Lakeridge Dr E (RES, hose bib)
  
- 22 Routine- 4938 197<sup>th</sup> Av E (Interlake Island)**  
Upstream- 4934 197<sup>th</sup> Av E (RES, hose bib)  
Downstream- 4944 197<sup>th</sup> Av E (RES, hose bib)
  
- 23 Routine- 7216 190<sup>th</sup> Av E**  
Upstream- 7212 190<sup>th</sup> Av E (RES, hose bib)  
Downstream- 7220 190<sup>th</sup> Av E (RES, hose bib)
  
- 24 Routine- 195<sup>th</sup> Av E & 104<sup>th</sup> St E (Bus Barn)**  
Upstream- 19701 104<sup>th</sup> St E (Food Services, hose bib)  
Downstream- 10920 199<sup>th</sup> Av E (BLHS, hose bib)
  
- 25 Routine- 191<sup>st</sup> Av E & Rhodes Lake Rd**  
Upstream- 11408 191<sup>st</sup> Av E (RES, hose bib)  
Downstream- 19019 Rhodes Lake Rd (RES, hose bib)
  
- 26 Routine- 18225 95<sup>th</sup> Loop**  
Upstream- 18225 95<sup>th</sup> Loop (RES, hose bib)  
Downstream- 18221 95<sup>th</sup> Loop (RES, hose bib)



- Coliform Sample Station Monitoring Start
- Coliform Sample Station Monitoring List 3
- ★ Water Source
- Water Tank
- Booster Pump Station
- ⚡ Emergency Intertie and Flow Direction
- Water Main Line
- ▭ Bonney Lake Water Service Area
- ▭ Tax Parcel
- ▭ Bonney Lake City Limits

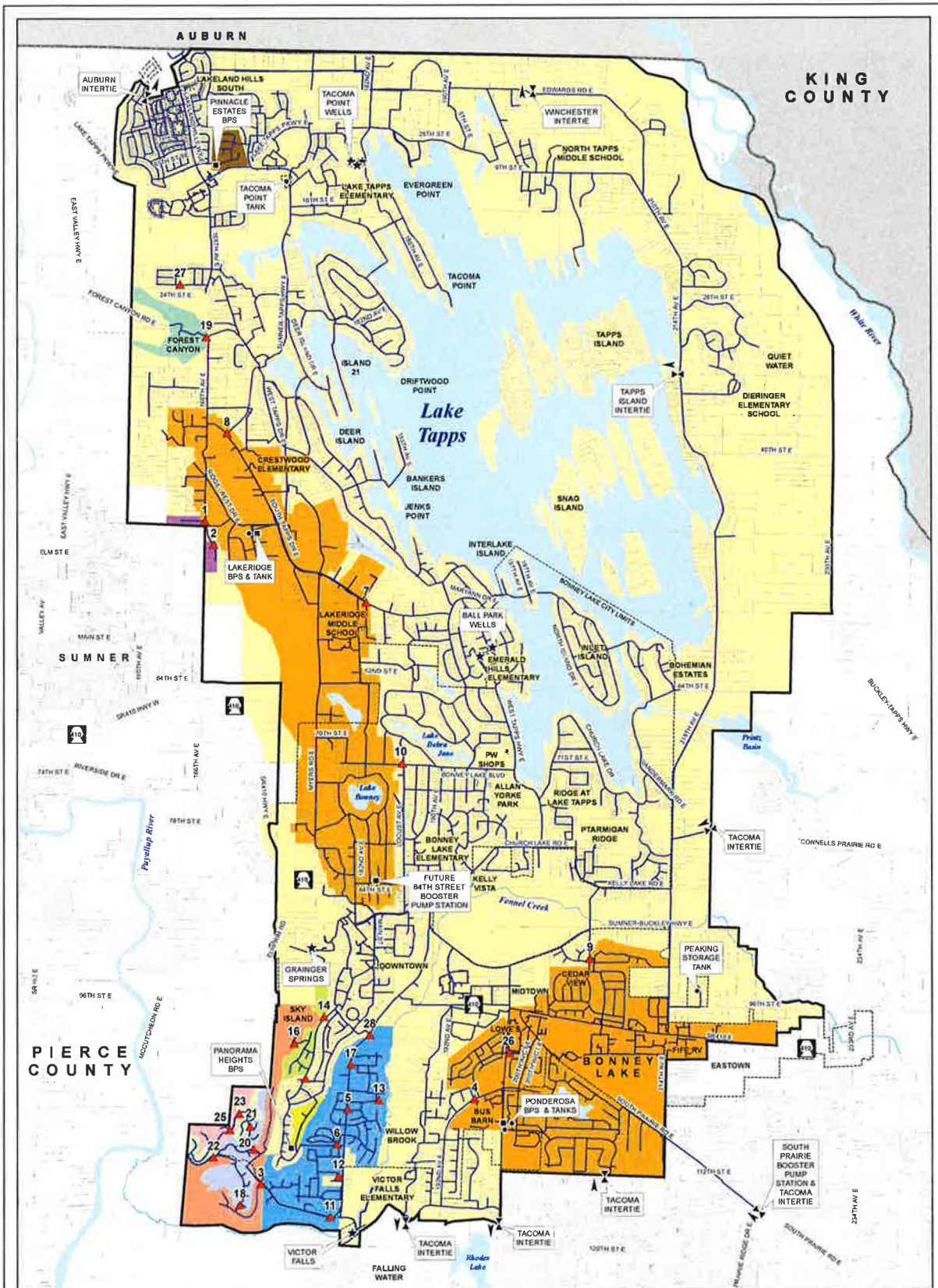
# Coliform Water Monitoring List 3



May 25, 2016

## Sample Stations List 3

- 1 Routine- 19306 Bonney Lake Blvd (Shops)**  
Upstream- 19304 Bonney Lake Blvd (Senior Center, hose bib)  
Downstream- 7210 194 Ave E (RES, hose bib)
  
- 27 Routine- 6606 Vandermark Rd E**  
Upstream- 6704 Vandermark Rd E (RES, hose bib)  
Downstream- 6602 Vandermark Rd E (RES, hose bib)
  
- 28 Routine- 6021 213<sup>th</sup> Ave. Ct. E.**  
Upstream- 6013 213<sup>th</sup> Ave. Ct. E. (RES, hose bib)  
Downstream- 21303 61st St. Ct. E.
  
- 29 Routine- 4807 N Island Dr E**  
Upstream- 4625 N Island Dr E (RES, hose bib)  
Downstream- 4807 N Island Dr E (RES, hose bib)
  
- 30 Routine- 20029 12 St E (N Tapps Jr High)**  
Upstream- 19918 12 St E (RES, hose bib)  
Downstream- 20510 12 St E (RES, hose bib)
  
- 31 Routine- 2315 186 Av E (Tacoma Point)**  
Upstream- 2309 186 Av E (RES, hose bib)  
Downstream- 2323 186 Av E (RES, hose bib)
  
- 32 Routine- 2323 170 Av E (The Estates, Lakeland)**  
Upstream- 2321 170 Av E (RES, hose bib)  
Downstream- 2325 170 Av E (RES, hose bib)
  
- 33 Routine- 3104 170 Av E (Off of Forest Canyon Rd)**  
Upstream- 3103 170 Av E (RES, hose bib)  
Downstream- 3110 170 Av E (RES, hose bib)
  
- 34 Routine- 6216 187<sup>th</sup> Av E (East of Lakeridge MS)**  
Upstream- 6202 187<sup>th</sup> Av E (RES, hose bib)  
Downstream- 6304 187<sup>th</sup> Av E (RES, hose bib)
  
- 35 Routine- 6518 192<sup>nd</sup> Ave E (NW of Shop)**  
Upstream- 6520 192<sup>nd</sup> Ave E (RES, hose bib)  
Downstream- 6512 192<sup>nd</sup> Ave E (RES, hose bib)
  
- 36 Routine- 19911 S Prairie Rd (Lowe's Parking Lot)**  
Upstream- 9928 198 Av Ct E (RES, hose bib)  
Downstream- 20020 SR 410 (Kids Corner, hose bib)
  
- 37 Routine- 192 Ave E & 109 St E (Bonney Lake Manor)**  
Upstream- 19105 109 St E (RES, hose bib)  
Downstream- 19112 111 St E (RES, hose bib)
  
- 38 Routine- 20305 70<sup>th</sup> St E (Off Church Lk Dr)**  
Upstream- 20301 70<sup>th</sup> St E (RES, hose bib)  
Downstream- 20307 70<sup>th</sup> St E (RES, hose bib)



- ▲ Pressure Reducing Valve Station
  - ★ Water Source
  - Water Tank
  - Booster Pump Station
  - ⚡ Emergency Intertie and Flow Direction
  - Water Main Line
  - Bonney Lake Water Service Area
  - ▭ Tax Parcel
  - ⋯ Bonney Lake City Limits
- 310 PRESSURE ZONE
  - 385 PRESSURE ZONE
  - 465 PRESSURE ZONE
  - 530 PRESSURE ZONE
  - 565 PRESSURE ZONE
  - 620 PRESSURE ZONE
  - 640 PRESSURE ZONE
  - 660 PRESSURE ZONE
  - 748 PRESSURE ZONE
  - 790 PRESSURE ZONE
  - 795 PRESSURE ZONE
  - 800 PRESSURE ZONE

# PRV Stations and Pressure Zones



APRIL 16, 2014

## **Alternate Sample Stations**

### **Routine- 7522 188 Ave E (North of Bonney Lake Elementary)**

Upstream- 7526 188 Ave E (RES, hose bib)

Downstream- 7518 188 Ave E (RES, hose bib)

### **Routine- 7023 181 Ave E (West end of Bonney Lake Blvd)**

Upstream- 18101 Bonney Lake Blvd (RES, hose bib)

Downstream- 7021 181 Ave E (RES, hose bib)

### **Routine- 3408 Deer Island Dr (Deer Island)**

Upstream- 3402 Deer Island Dr (RES, hose bib)

Downstream- 3414 Deer Island Dr (RES, hose bib)

### **Routine- 20908 95 St E (Cedar View)**

Upstream- 20902 95 St E (RES, hose bib)

Downstream- 9405 210 Ave E (RES, hose bib)

### **Routine- 9506 204 Ave E (Cedar View)**

Upstream- 9404 204 Ave E (RES, hose bib)

Downstream- 9512 204 Ave E (RES, hose bib)

### **Routine- 9202 211 Ave E (Cedar View)**

Upstream- 21101 91 St E (RES, hose bib)

Downstream- 9205 211 Av E (RES, hose bib)

### **Routine- 16311 22<sup>nd</sup> St E (The Estates, Lakeland)**

Upstream- 16313 22<sup>nd</sup> St E (RES, hose bib)

Downstream- 16231 22<sup>nd</sup> St E (RES, hose bib)

### **Routine- 16302 24<sup>th</sup> St E (The Estates, Lakeland)**

Upstream- 16230 24<sup>th</sup> St E (RES, hose bib)

Downstream- 16304 24<sup>th</sup> St E (RES, hose bib)

### **Routine- 6407 Thomas Pl SE (Lakeland East)**

Upstream- 6405 Thomas Pl SE (RES, hose bib)

Downstream- 6406 Udall Av SE (RES, hose bib)

### **Routine- 18501 68<sup>th</sup> St E (NW of Lake Jane)**

Upstream- 18503 68<sup>th</sup> St E (RES, hose bib)

Downstream- 6804 185<sup>th</sup> Ave E (RES, hose bib)

### **Routine- 20409 108<sup>th</sup> St E (Ponderosa)**

Upstream-20405 108<sup>th</sup> St E (RES, hose bib)

Downstream- 20505 108<sup>th</sup> St E (RES, hose bib)

## **Alternate Cont.**

### **Routine- 20312 Church Lake Dr E**

Upstream- 20402 Church Lake Dr E (RES, hose bib)

Downstream- 20308 Church Lake Dr E (RES, hose bib)

### **Routine- 20305 70<sup>th</sup> St E (Off of Church Lk Dr)**

Upstream- 20301 70<sup>th</sup> St E (RES, hose bib)

Downstream- 20307 70<sup>th</sup> St E (RES, hose bib)

### **Routine- 1723 65<sup>th</sup> St SE (RES, hose bib) Pinnacle**

Upstream- 1803 65<sup>th</sup> St SE (RES, hose bib)

Downstream- 1715 65<sup>th</sup> St SE (RES, hose bib)

# Laboratory Info and How to Complete a Coliform Lab Slip

**Laboratory Information:**

Water Management Laboratories, Inc.

1515 80<sup>th</sup> St E

Tacoma, WA 98404

253-531-3121

\*Cell: 253-312-1651

\*Cell: 253-691-6691

Hours: Monday - Friday 8 AM – 5 PM

Saturday 9 AM – Noon

*\*Cell phones activated in a power outage only*

Spectra Analytical, Inc.

2221 Ross Way

Tacoma, WA 98421

253-272-4850

Hours: Monday - Friday 8 AM – 5 PM





# How to Complete a Coliform Lab Slip

331-247 | Revised 5/2018

It is important to fill out the lab slip completely. The Department of Health Office of Drinking Water (DOH) may not be able to give you credit for the sample result if the date, time, system ID number, system name, or type of sample is missing or incomplete. The lab slip contains three sections. The first two for the person collecting the sample and the third for the lab.

## Section 1: Basic Sample and Water System Information

**Date Sample Collected:** Two-digit month, day, and year the sample was collected, for example 02/05/2018

**Time Sample Collected:** Time sample collected. Check AM or PM.

**County:** County location for the water system.\*

**Type of Water System:** Group A, Group B, or Other.\*

**Water Facilities Inventory (WFI) ID#:** The five–six character water system ID number (include numbers and letters).\*

**System Name:** Name for this water system registered with DOH.\*

**Contact Person:** List the person the lab or DOH staff should contact with questions about this sample.

**Day/Cell/Evening Phone and Email:** List the best way to reach the Contact Person.

**Send results to:** List the best mailing and email address for the lab to send the results.

**Sample collected by:** List the person who collected the sample.

**Specific location where sample collected:** Describe in detail the sample location point.

**Specific instructions or comments:** Include any specific instructions for the lab.

Place Logo Here ]	[Add Your Name Here ]	
	<b>COLIFORM BACTERIA ANALYSIS</b>	
Date Sample Collected / / Month Day Year	Time Sample Collected : : AM PM	County
Type of Water System (check only one box) <input type="checkbox"/> Group A <input type="checkbox"/> Group B <input type="checkbox"/> Other _____		
Group A and Group B Systems -- Provide from Water Facilities Inventory (WFI): ID# _____ System Name _____		
Contact Person: _____		
Day Phone: ( ) _____	Cell Phone: ( ) _____	
Email: _____	Eve. Phone: ( ) _____	
Send results to: (Print full name, address and zip code or e-mail) _____ _____ _____		
<b>SAMPLE INFORMATION</b>		
Sample collected by (name) _____		
Specific location where sample collected	Special instructions or comments:	

## Section 2: Sample Purpose (Coliform Sample Type)

- 1 Routine Distribution Sample (A/P):**  
Public water systems must take this sample on a routine basis.
- **Chlorinated:** Mark “Yes” or “No.”
  - **Chlorine Residual:** List measured Total and/or Free chlorine results.

- 2 Repeat Sample (A/P):** Public water systems must take this sample after a coliform-present routine sample. \*\*
- **Distribution System Sample:** Take at a sample tap in the distribution system.
  - **Unsatisfactory routine lab number:** List the lab and sample ID number from the original unsatisfactory sample.
  - **Unsatisfactory routine collect date:** Enter collection date for the original unsatisfactory sample.
  - **Chlorinated:** Mark “Yes” or “No” for repeat sample.
  - **Chlorine Residual:** Enter measured Total and/or Free chlorine results.

- 3 Ground Water Rule Source Sample:**
- List the source ID number here:
  - **Triggered (A/P):** Groundwater system must take a raw sample following a coliform-present sample.
  - **Assessment (A/P):** DOH directed some public water systems to monitor their groundwater source monthly for 12 months even if they have no coliform-present routine samples.

- 4 Surface or GWI Raw Source Water Sample (Enumeration):**  
When a system must have an enumeration for *E. coli* or fecal analysis.
- List the source ID number here:
  - ***E. coli*:** Requires an enumeration for *E. coli* not an absence/presence test.
  - **Fecal:** Requires an enumeration for fecal not an absence/presence test.
    - Filtered: Mark “Yes” or “No” if the sample is for a surface water source.

- 5 Sample Collected for Information Only:** Check if sample for engineering purposes, construction or repairs, a home sale, or other uses. These samples do not need to go to DOH for processing.

Type of Sample (select only one type of sample from types 1 through 5 below)	
<p><b>1. <input type="checkbox"/> Routine Distribution Sample (A/P)</b></p> <p><b>1</b> Chlorinated: Yes _____ No _____</p> <p>Chlorine Residual: Total _____ Free _____</p>	<p><b>2. Repeat Sample (A/P)</b> (from distribution system after unsat. routine)</p> <p>Unsatisfactory routine lab number: _____</p> <p>Unsatisfactory routine collect date: ____/____/____</p> <p>Chlorinated: Yes _____ No _____</p> <p>Chlorine Residual: Total _____ Free _____</p>
<p><b>3. Ground Water Rule Source Sample</b></p> <p><b>3</b> <input type="text" value="S"/> <input type="text"/> <input type="text"/> <input type="text"/></p> <p><input type="checkbox"/> Triggered (A/P)</p> <p><input type="checkbox"/> Assessment (A/P)</p>	<p><b>4. Surface or GWI Raw Source Water Sample (Enumeration)</b></p> <p><input type="checkbox"/> <i>E. coli</i>    <input type="checkbox"/> Fecal    Filtered Yes _____ No _____</p> <p><input type="text" value="S"/> <input type="text"/> <input type="text"/> <input type="text"/></p>
<p><b>5. <input type="checkbox"/> Sample Collected for Information Only:</b></p>	

## Section 3: Drinking Water Results

**Unsatisfactory:** Check if sample is total coliform-present AND *E. coli* present OR *E. coli* absent.

**Satisfactory:** Check if no coliforms detected.

**Bacterial Density Results:** Record the colony count or most-probable number if the test yields it (both are enumeration methods).

**Replacement Sample Required:** Check if sample is not viable for any reason, such as “too old” or “volume less than 100ml.”

**Date and Time Received:** Enter the date and time the laboratory received the sample.

**Lab Reference Number:** Lab staff generate this number for in-laboratory tracking. I.e., Invoice Numbers or Project Numbers (**Optional**)

**Receipt Temp C°:** Required for unfiltered surface water samples.

**Method Code:** Enter the code for the analytical method used to analyse the sample (SM-9223B or SM-9222B, not MICR codes).

**Date Reported to DOH:** Enter the date the lab reported the result to DOH.

**DOH Lab-Sample#:** Enter the three-digit DOH-assigned lab number and then the five-digit lab-assigned sample ID number.

**Lab Use Only:** A space for the lab’s own purpose. For example, details about the water system being informed of the result.

LAB USE ONLY		DRINKING WATER RESULTS		LAB USE ONLY	
<input type="checkbox"/> <b>Unsatisfactory</b> Total Coliform Present and <input type="checkbox"/> <i>E. coli</i> present			<input type="checkbox"/> <i>E. coli</i> absent		
			<input type="checkbox"/> <b>Satisfactory</b>		
<b>Bacterial Density Results:</b> Total Coliform _____/100ml. <i>E. coli</i> _____/100ml. Fecal Coliform _____/100ml. HPC _____/1 ml.					
<b>Replacement Sample Required:</b> <input type="checkbox"/> TNTC <input type="checkbox"/> Sample too old <input type="checkbox"/> Sample Volume <input type="checkbox"/> Damaged Container <input type="checkbox"/> _____					
Date/Time Received:			Lab Reference Number		
Receipt Temp C°:			Method Code:		
Date Reported to DOH			Lab Use Only:		
DOH Lab-Sample#					

## Resources

\*This information is on your *Water Facilities Inventory* form and Sentry at [fortress.wa.gov/doh/eh/portal/odw/si/Intro.aspx](http://fortress.wa.gov/doh/eh/portal/odw/si/Intro.aspx)

\*\*See *Follow-up to an unsatisfactory routine coliform sample* (DOH 331-187) at [ortress.wa.gov/doh/eh/dw/publications](http://ortress.wa.gov/doh/eh/dw/publications).

**If you have questions, please call our regional office:**

**Eastern Region, Spokane Valley**

509-329-2100

**Region, Kent**


253-395-6750

**Southwest Region, Tumwater**


360-236-3030

If you need this publication in an alternate format, call 800-525-0127 (TDD/TTY call 711). This and other publications are available at [doh.wa.gov/DrinkingWater](http://doh.wa.gov/DrinkingWater).

Example of pretreatment source sample form

		<b>WATER MANAGEMENT LABORATORIES INC.</b> 1515 80th St E, Tacoma, WA 98404			
		<b>COLIFORM BACTERIA ANALYSIS FORM</b>			
Date Sample Collected		Time Sample Collected		County	
03 / 25 / 2019		10 : 20 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM		PIERCE	
Month		Day		Year	
Type of Water System (check only one box)					
<input checked="" type="checkbox"/> Group A <input type="checkbox"/> Group B <input type="checkbox"/> Other _____					
Group A and Group B Systems – Provide from Water Facilities Inventory (WFI):					
ID# 0 7 6 5 0 H					
System Name: Bonney Lake Water Dept, City					
Contact Person:					
Day Phone: (253) 862-8602			Cell Phone: ( )		
Email:			Eve. Phone: ( )		
Send results to: (Print full name, address and zip code)					
City of Bonney Lake, Water Dept					
P.O. Box 7380					
Bonney Lake, WA 98391-					
<b>SAMPLE INFORMATION</b>					
Sample collected by (name): Ursulla Ronscavage					
Specific location where sample collected: Grainger Springs Pump #1				Special instructions or comments:	
Type of Sample (select only one type of sample from types 1 through 5 below)					
1. <input type="checkbox"/> Routine Distribution Sample (A/P) Chlorinated: Yes _____ No _____ Chlorine Residual: Total _____ Free _____		2. <input type="checkbox"/> Repeat Sample (A/P) (from distribution system after unsat. routine) Unsatisfactory routine lab number: _____			
3. Ground Water Rule Source Sample S O 2 <input checked="" type="checkbox"/> Triggered (A/P) <input type="checkbox"/> Assessment (A/P)		Unsatisfactory routine collect date: 03 / 24 / 2019 Chlorinated: Yes _____ No <input checked="" type="checkbox"/> Chlorine Residual: Total _____ Free _____			
4. Surface or GWI Raw Source Water Sample (Enumeration)					
<input type="checkbox"/> E. coli <input type="checkbox"/> Fecal    Filtered Yes _____ No _____		S			
5. <input type="checkbox"/> Sample Collected for Information Only:					
<b>LAB USE ONLY</b>		<b>DRINKING WATER RESULTS</b>		<b>LAB USE ONLY</b>	
<input type="checkbox"/> Unsatisfactory Total Coliform Present and <input type="checkbox"/> E. coli present <input type="checkbox"/> E. coli absent				<input type="checkbox"/> Satisfactory	
Bacterial Density Results: Total Coliform _____ /100ml E. coli _____ /100ml					
Fecal Coliform _____ /100ml. HPC _____ /1 ml.					
Replacement Sample Required: <input type="checkbox"/> TNTC <input type="checkbox"/> Sample too old					
<input type="checkbox"/> Sample Volume <input type="checkbox"/> Damaged Container <input type="checkbox"/> _____					
Date/Time Received:			Lab Reference Number		
Receipt Temp C°:			Method Code:		
Date Reported to DOH			Lab Use Only: AB019R		
DOH Lab Sample#			089		

Investigative Sampling Only  
(Eng. Use Only / Total & HPC)

		<b>WATER MANAGEMENT LABORATORIES INC.</b> 1515 80th St E, Tacoma, WA 98404	
		<b>COLIFORM BACTERIA ANALYSIS FORM</b>	
Date Sample Collected		Time Sample Collected	County
03 / 25 / 2019		11 : 00 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	PIERCE
Month Day Year			
Type of Water System (check only one box)			
<input checked="" type="checkbox"/> Group A <input type="checkbox"/> Group B <input type="checkbox"/> Other _____			
Group A and Group B Systems – Provide from Water Facilities Inventory (WFI):			
ID# 0 7 6 5 0 H			
System Name: Bonney Lake Water Dept, City			
Contact Person:			
Day Phone: (253) 862-8602		Cell Phone: ( )	
Email:		Eve. Phone: ( )	
Send results to: (Print full name, address and zip code)			
City of Bonney Lake, Water Dept			
P.O. Box 7380			
Bonney Lake, WA 98301-			
<b>SAMPLE INFORMATION</b>			
Sample collected by (name): Ursulla Ronscavage			
Specific location where sample collected:		Special instructions or comments:	
Peaking Storage		ENG. USE ONLY TOTAL & HPC	
Type of Sample (select only one type of sample from types 1 through 5 below)			
1. <input type="checkbox"/> Routine Distribution Sample (A/P) Chlorinated: Yes _____ No _____ Chlorine Residual: Total _____ Free _____		2. <input type="checkbox"/> Repeat Sample (A/P) (from distribution system after unsat. routine) Unsatisfactory routine lab number: _____	
3. Ground Water Rule Source Sample <input type="checkbox"/> Triggered (A/P) <input type="checkbox"/> Assessment (A/P)		Unsatisfactory routine collect date: _____ / _____ / _____ Chlorinated: Yes _____ No _____ Chlorine Residual: Total _____ Free _____	
4. Surface or GWI Raw Source Water Sample (Enumeration) <input type="checkbox"/> E. coli <input type="checkbox"/> Fecal    Filtered Yes _____ No _____		<input checked="" type="checkbox"/> Sample Collected for Information Only: ENG. USE ONLY TOTAL & HPC	
<b>LAB USE ONLY DRINKING WATER RESULTS LAB USE ONLY</b>			
<input type="checkbox"/> Unsatisfactory Total Coliform Present and <input type="checkbox"/> E. coli present <input type="checkbox"/> E. coli absent		<input type="checkbox"/> Satisfactory	
Bacterial Density Results: Total Coliform _____ /100ml. E. coli _____ /100ml.			
Fecal Coliform _____ /100ml. HPC _____ /1 ml.			
Replacement Sample Required: <input type="checkbox"/> TNTC <input type="checkbox"/> Sample too old			
<input type="checkbox"/> Sample Volume <input type="checkbox"/> Damaged Container <input type="checkbox"/> _____			
Date/Time Received:		Lab Reference Number:	
Receipt Temp C°:		Method Code:	
Date Reported to DOH		Lab Use Only: AB019R	
DOH Lab-Sample#			
089			

# Distribution and Source Response Plan/Checklist

### Following a Positive Coliform Sample (City of Bonney Lake)

1. Notify the Assistant Superintendent of Public Works and appropriate staff.
2. Assistant Superintendent or designee will contact DOH.
3. Assistant Superintendent or designee will notify intertied systems if the interties were active at the time of the sample.
4. Take required samples and deliver to lab:
  - The same tap as the original unsatisfactory routine sample.
  - An active service within five active connections upstream from the original unsatisfactory sample was taken.
  - An active service within five active connections downstream from the original unsatisfactory sample was taken.
  - Sample all sources (prior to treatment) that were in operation at the time the original unsatisfactory routine sample was collected. Test for E. coli per the groundwater rule (GWR).
  - Perform investigative sampling for all active reservoirs for City information only, not to be reported to DOH.
  - Additional samples may be taken as needed.
5. Inspect all water system treatment plants and facilities for sanitary defects that could provide a pathway of entry for microbial contamination, or that indicate failure (existing or potential) of protective barriers against microbial contamination.
6. Interview staff to determine whether anything unusual was happening in the water system recently. Review new construction activities, main breaks, and low pressure events that may have occurred in the last month.

**No one shall make a positive coliform sample and resulting actions public information without the permission of the Assistant Superintendent of Public Works.**

### **E. Coli Present Triggered Source Sample Response Plan**

(Following a positive coliform sample)

1. If a source is *E. Coli* positive the source shall be shut down immediately.
2. Assistant Superintendent or designee shall contact DOH.
3. Assistant Superintendent or designee shall interview staff to determine if any repairs or problems have occurred at the source (treatment plant, pump house, watershed, etc.).
4. Inspect and repair any problems at the source (treatment plant, pump house, watershed, etc.).
5. In concert with DOH, the Assistant Superintendent shall begin work on a corrective action plan.



**Following a Positive Coliform Sample (City's Wholesale Customer)**

1. The Wholesale Customer shall notify the City of Bonney Lake on unsatisfactory routine sample.
2. Assistant Superintendent or designee will contact DOH.
3. Assistant Superintendent or designee will notify intertied systems if the interties were active at the time of the sample.
4. Take required samples and deliver to lab:
  - Within 24 hours of learning about the customer's unsatisfactory sample, City staff will sample all sources (prior to treatment) that were in operation at the time the original unsatisfactory routine sample was collected. Test for E. coli per the groundwater rule (GWR).
  - Perform investigative sampling for all active reservoirs for City information only, not to be reported to DOH.
  - Additional samples may be taken as needed.

**Coliform Monitoring Plan for: City of Bonney Lake**

**A. System Information**

**Plan Date:** January 22, 2019

<b>Water System Name</b> <u>City of Bonney Lake</u>	<b>County</b> <u>Pierce</u>	<b>System I.D. Number</b> <u>07650H</u>
<b>Name of Plan Preparer</b> <u>Dave Cihak</u> <u>Ursulla Ronscavage</u>	<b>Position</b> <u>Assistant Superintendent</u> <b>Cross Connection</b> <u>Control Specialist</u>	<b>Daytime Phone</b> <u>253-447-4312</u> <u>253-447-3227</u>
<b>Sources:</b> DOH Source Number, Source Name, Well Depth, Pumping Capacity	<u>01-Victor Falls Springs, 1100 GPM</u> <u>02-Grainger Springs, 1669 GPM</u> <u>06-Ball Park Well #1, 239 Depth, 1000 GPM</u> <u>10-Tacoma Point Well #2, 287 Depth, 1000 GPM</u> <u>11-Tacoma Point Well #4, 312 Depth, 1200 GPM</u> <u>12-Tacoma Point Wells #2,4,6, 287 Depth, 2300 GPM</u> <u>13-Tacoma Point Well #6, 301 Depth, 1300 GPM</u> <u>14-Ball Park Well #2, 260 Depth, 270 GPM</u> <u>15-Ball Park Well Field, 239 Depth, 1270 GPM</u>	
<b>Storage:</b> List and Describe	<u>Peaking Storage Tank 15 MG</u> <u>Lakeridge Tank 0.75 MG</u> <u>Ponderosa I Tank 1 MG</u> <u>Ponderosa II Tank 2.8 MG</u> <u>Tacoma Point Tank 1.25 MG</u>	
<b>Treatment:</b> Source Number & Process	<u>01-chlorination</u> <u>02-chlorination, pH adjustment</u> <u>06-chlorination</u> <u>10-chlorination, pH adjustment</u> <u>11-chlorination, pH adjustment</u> <u>12-chlorination, pH adjustment</u> <u>13-chlorination, pH adjustment</u> <u>14-chlorination, pH adjustment</u> <u>15-chlorination, filtration (pyrolusite &amp; anthracite)</u>	
<b>Pressure Zones:</b> Number and name	<u>800-Ponderosa &amp; Lakeridge Pressure Zone</u> <u>790-Panorama Pressure Zone</u> <u>795-Pinnacle Pressure Zone</u>  <u>748 and all lower pressure zones are operated by gravity from the sources and tanks and controlled by a series of prv stations.</u>	

<b>Population by Pressure Zone</b>	<u>800-Lakeridge Pressure Zone population 2,892</u> <u>800-Ponderosa Pressure Zone population 3,440</u> <u>795-Pinnacle Pressure Zone population 252</u> <u>790-Panorama Pressure Zone population 102</u> <u>748- and all lower pressure zones population 32,755</u>  *The average persons per household, 2013-2017 is 2.55 as per <a href="https://census.gov/quickfacts/fact/table/wa#">https://census.gov/quickfacts/fact/table/wa#</a>
<b>Number of Routine Samples Required Monthly by Regulation:</b>	<u>40</u>
<b>Number of Sample Sites Needed to Represent the Distribution System:</b>	<u>40</u>
<b>*Request DOH Approval of Triggered Source Monitoring Plan?</b>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

\*If approval is requested a fee will be charged for the review.

## B. Laboratory Information

<b>Laboratory Name</b> <u>Water Management Laboratories</u>	<b>Office Phone 253-531-3121</b> <b>After Hours Phone 253-841-0732</b>
<b>Address</b> <u>1515 80<sup>th</sup> St. E., Tacoma, WA 98404</u>	<b>Cell Phone</b> <b>Email</b> <u>customerservice@watermanagementlabs.com</u>
<b>Hours of Operation</b> Mon-Fri: 8:00PM – 5:00PM Sat: 9:00AM – 12:00PM Sun: Closed	
<b>Contact Name</b> <u>No Specified Contact Name</u>	
<b>Emergency Laboratory Name</b> <u>Water Management Laboratories</u>	<b>Office Phone 253-531-3121</b> <b>After Hours Phone 253-841-0732</b>
<b>Address</b> <u>1515 80<sup>th</sup> St. E., Tacoma, WA 98404</u>	<b>Cell Phone 253-312-1651</b> <b>Cell Phone 253-691-6691</b> <b>(*Cell phones activated when no power is available)</b> <b>Email</b> <u>customerservice@watermanagementlabs.com</u>
<b>Hours of Operation</b> Mon-Fri: 8:00PM – 5:00PM Sat: 9:00AM – 12:00PM Sun: Closed	
<b>Contact Name</b> <u>No Specified Contact Name</u>	

**C. Wholesaling of Groundwater**

	Yes	No
<b>We are a consecutive system and purchase groundwater from another water system.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>If yes, Water System Name:</p> <p>Contact Name:</p> <p>Telephone Numbers</p> <p>Office - - After Hours - -</p>		
<b>We sell groundwater to other public water systems.</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>If yes, Water System Name:</p> <p>The City of Auburn</p> <p>Contact Name: Maintenance and Operations</p> <p>Telephone Numbers</p> <p>Office <b>253-931-3048</b> After Hours <b>253-876-1953</b></p>		
<p>If yes, Water System Name:</p> <p>Valley Water District (Winchester)</p> <p>Contact Name: 24/7 On-call</p> <p>Telephone Numbers</p> <p>Office <b>253-841-9698</b> After Hours <b>888-205-0118</b></p>		
<p>If yes, Water System Name:</p> <p>Tapps Island Water</p> <p>Contact Name: John Clark</p> <p>Telephone Numbers</p> <p>Office <b>253-862-6616</b> After Hours <b>253-293-2444</b></p>		
<p>If yes, Water System Name:</p> <p>City of Tacoma</p> <p>Contact Name: Tacoma Public Utilities</p> <p>Telephone Numbers</p> <p>Office <b>253-502-8207</b> After Hours <b>253-502-8344</b></p>		

**D. Routine, Repeat, and Triggered Source Sample Locations\***

Location/Address for <b>Routine Sample Sites</b>	Location/Address for <b>Repeat Sample Sites</b>	Groundwater Sources for <b>Triggered Sample Sites**</b>
<b>X1. 19306 Bonney Lake Blvd. (Shop)</b>	<b>1-1. 19306 Bonney Lake Blvd. (Shop)</b>	<b>S *</b>
	<b>1-2. 19304 Bonney Lake Blvd. (Senior Center)</b>	<b>S *</b>
	<b>1-3. 7210 194<sup>th</sup> Ave. E.</b>	<b>S *</b>
		<b>S *</b>
		<b>S * (* All online sources sampled)</b>
<b>X2. 11401 188<sup>th</sup> Ave. Ct. E. (Victor Falls Elementary)</b>	<b>2-1. 11401 188<sup>th</sup> Ave. Ct. E. (Victor Falls Elementary)</b>	<b>S *</b>
	<b>2-2. 18707 Rhodes Lake Rd.</b>	<b>S *</b>
	<b>2-3. 11415 188<sup>th</sup> Ave. Ct. E.</b>	<b>S *</b>
		<b>S * (* All online sources sampled)</b>
<b>X3. 20505 Bonanza Dr. E. (Ponderosa)</b>	<b>3-1. 20505 Bonanza Dr. E. (Ponderosa)</b>	<b>S *</b>
	<b>3-2. 20513 Bonanza Dr. E.</b>	<b>S *</b>
	<b>3-3. 20427 La Paloma Dr. E.</b>	<b>S *</b>
		<b>S * (* All online sources sampled)</b>
<b>X4. 21514 SR 410 (Fife RV)</b>	<b>4-1. 21514 SR 410 (Fife RV)</b>	<b>S *</b>
	<b>4-2. 21406 SR 410 (Chevron Hose Bib)</b>	<b>S *</b>
	<b>4-3. 20427 SR 410 (Mazatlan Hose Bib)</b>	<b>S *</b>
		<b>S * (* All online sources sampled)</b>

<p><b>X5. 2224 218<sup>th</sup> Ave. E. (Skyline Estates)</b></p>	<p><b>5-1. 2224 218<sup>th</sup> Ave. E. (Skyline Estates)</b></p> <hr/> <p><b>5-2. 2216 218<sup>th</sup> Ave. E.</b></p> <hr/> <p><b>5-3. 21619 233<sup>rd</sup> Ct. E.</b></p>	<p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S * (* All online sources sampled)</b></p>
<p><b>X6. 8109 184<sup>th</sup> St. E.</b></p>	<p><b>6-1. 8109 184<sup>th</sup> St. E.</b></p> <hr/> <p><b>6-2. 8103 184<sup>th</sup> St. E.</b></p> <hr/> <p><b>6-3. 8101 184<sup>th</sup> St. E.</b></p>	<p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S * (* All online sources sampled)</b></p>
<p><b>X7. 190<sup>th</sup> Ave. E. &amp; 5<sup>th</sup> St. E.</b></p>	<p><b>7-1. 190<sup>th</sup> Ave. E. &amp; 5<sup>th</sup> St. E.</b></p> <hr/> <p><b>7-2. 19003 5<sup>th</sup> St. E.</b></p> <hr/> <p><b>7-3. 18928 3<sup>rd</sup> St. E.</b></p>	<p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S * (* All online sources sampled)</b></p>
<p><b>X8. 6201 Wesley Pl. S.E. (Lakeland East)</b></p>	<p><b>8-1. 6201 Wesley Pl. S.E. (Lakeland East)</b></p> <hr/> <p><b>8-2. 6205 Wesley Pl. S.E.</b></p> <hr/> <p><b>8-3. 2301 62<sup>nd</sup> St. S.E.</b></p>	<p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S * (* All online sources sampled)</b></p>
<p><b>X9. 904 72<sup>nd</sup> St. S.E. (Madera, Lakeland)</b></p>	<p><b>9-1. 904 72<sup>nd</sup> St. S.E. (Madera, Lakeland)</b></p> <hr/> <p><b>9-2. 906 72 St. S.E.</b></p> <hr/> <p><b>9-3. 902 72 St. S.E.</b></p>	<p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S * (* All online sources sampled)</b></p>

<p><b>X10. 1320 178<sup>th</sup> Ave. E. (Lake Tapps Elementary School)</b></p>	<p><b>10-1. 1320 178<sup>th</sup> Ave. E.</b></p> <hr/> <p><b>10-2. 17723 N. Tapps Dr.</b></p> <hr/> <p><b>10-3. 1505 178<sup>th</sup> Ave. E.</b></p>	<p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S * (* All online sources sampled)</b></p>
<p><b>X11. 5407 W. Tapps Dr. E.</b></p>	<p><b>11-1. 5407 W. Tapps Dr. E.</b></p> <hr/> <p><b>11-2. 5409 W. Tapps Dr. E.</b></p> <hr/> <p><b>11-3. 5403 W. Tapps Dr. E.</b></p>	<p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S * (* All online sources sampled)</b></p>
<p><b>X12. 6006 197 Ave. E. (East of Emerald Hills Elementary)</b></p>	<p><b>12-1. 6006 197 Ave. E. (East of Emerald Hills Elementary)</b></p> <hr/> <p><b>12-2. 17723 N. Tapps Dr.</b></p> <hr/> <p><b>12-3. 1505 178<sup>th</sup> Ave. E.</b></p>	<p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S * (* All online sources sampled)</b></p>
<p><b>X13. 202<sup>nd</sup> Ave. E. / 77<sup>th</sup> St. Ct. E. (The Ridge at Lake Tapps)</b></p>	<p><b>13-1. 202<sup>nd</sup> Ave. E. / 77<sup>th</sup> St. Ct. E. (The Ridge at Lake Tapps)</b></p> <hr/> <p><b>13-2. 20201 78<sup>th</sup> St. Ct. E.</b></p> <hr/> <p><b>13-3. 20212 77<sup>th</sup> St. Ct. E.</b></p>	<p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S * (* All online sources sampled)</b></p>
<p><b>X14. 7522 188<sup>th</sup> Ave. E.</b></p>	<p><b>14-1. 7522 188<sup>th</sup> Ave. E.</b></p> <hr/> <p><b>14-2. 7526 188<sup>th</sup> Ave. E.</b></p> <hr/> <p><b>14-3. 7518 188<sup>th</sup> Ave. E.</b></p>	<p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S *</b></p> <hr/> <p><b>S * (* All online sources sampled)</b></p>

X15. 4727 N. Island Dr. E.	15-1. 4727 N. Island Dr. E.	S *
	15-2. 4725 N. Island Dr. E.	S *
	15-3. 5421 S. Island Dr. E.	S *
		S * (* All online sources sampled)
X16. 5429 S. Island Dr. E. (sample station)	16-1. 5429 S. Island Dr. E. (sample station)	S *
	16-2. 5429 S. Island Dr. E. (Residence)	S *
	16-3. 5421 S. Island Dr. E.	S *
		S * (* All online sources sampled)
X17. 8 <sup>th</sup> St. Ct. E. & O'Farrell	17-1. 8 <sup>th</sup> St. Ct. E. & O'Farrell	S *
	17-2. 19506 8 <sup>th</sup> St. Ct. E	S *
	17-3. 1003 198 <sup>th</sup> Ave.	S *
		S * (* All online sources sampled)
X18. 1301 67 <sup>th</sup> St. S.E. (Palisades, Lakeland)	18-1. 1301 67 <sup>th</sup> St. S.E. (Palisades, Lakeland)	S *
	18-2. 1301 67 <sup>th</sup> St. S.E., Bldg. 21 C	S *
	18-3. 1301 67 <sup>th</sup> St. S.E., Bldg. 20 B	S *
		S * (* All online sources sampled)
X19. 1716 Channel Rd. E. (Tacoma Point)	19-1. 1716 Channel Rd. E. (Tacoma Point)	S *
	19-2. 1710 Channel Rd. E.	S *
	19-3. 1728 Channel Rd. E.	S *
		S * (* All online sources sampled)



X20. 2713 182 <sup>nd</sup> Ave. E. (Driftwood)	20-1. 2713 182 <sup>nd</sup> Ave. E. (Driftwood)	S *
	20-2. 2717 182 <sup>nd</sup> Ave. E.	S *
	20-3. 2707 182 <sup>nd</sup> Ave. E.	S *
		S * (* All online sources sampled)
X21. 4743 Lakeridge Dr. E.	21-1. 4743 Lakeridge Dr. E.	S *
	21-2. 4721 Lakeridge Dr. E.	S *
	21-3. 4747 Lakeridge Dr. E.	S *
		S * S * (* All online sources sampled)
X22. 4938 197 <sup>th</sup> Ave. E. (Interlake Island)	22-1. 4938 197 <sup>th</sup> Ave. E. (Interlake Island)	S *
	22-2. 4934 197 <sup>th</sup> Ave. E.	S *
	22-3. 4944 197 <sup>th</sup> Ave. E.	S *
		S * (* All online sources sampled)
X23. 7216 190 <sup>th</sup> Ave. E.	23-1. 7216 190 <sup>th</sup> Ave. E.	S *
	23-2. 7212 190 <sup>th</sup> Ave. E.	S *
	23-3. 7220 190 <sup>th</sup> Ave. E.	S *
		S * S * (* All online sources sampled)
X24. 195 <sup>th</sup> Ave. E. & 104 <sup>th</sup> St. E. (Bus Barn)	24-1. 195 <sup>th</sup> Ave. E. & 104 <sup>th</sup> St. E. (Bus Barn)	S *
	24-2. 19701 104 <sup>th</sup> St E. (Food Services, Hose bib)	S *
	24-3. 10920 199 <sup>th</sup> Ave. E. (BLHS, Hose bib)	S *
		S * (* All online sources sampled)

<b>X25. 191<sup>st</sup> Ave. E. &amp; Rhodes Lake Rd.</b>	<b>25-1. 191<sup>st</sup> Ave. E. &amp; Rhodes Lake Rd.</b>	<b>S *</b>
	<b>25-2. 11408 191<sup>st</sup> Ave. E.</b>	<b>S *</b>
	<b>25-3. 19019 Rhodes Lake Rd.</b>	<b>S *</b>
		<b>S *</b>
		<b>S * (* All online sources sampled)</b>
<b>X26. 18225 95<sup>th</sup> Loop (sample station)</b>	<b>26-1. 18225 95<sup>th</sup> Loop (sample station)</b>	<b>S *</b>
	<b>26-2. 18225 95<sup>th</sup> Loop (residence)</b>	<b>S *</b>
	<b>26-3. 18221 95<sup>th</sup> Loop</b>	<b>S *</b>
		<b>S * (* All online sources sampled)</b>
<b>X27. 6606 Vandermark Rd. E.</b>	<b>27-1. 6606 Vandermark Rd. E.</b>	<b>S *</b>
	<b>27-2. 6704 Vandermark Rd. E.</b>	<b>S *</b>
	<b>27-3. 6602 Vandermark Rd. E.</b>	<b>S *</b>
		<b>S * (* All online sources sampled)</b>
<b>X28. 6021 213<sup>th</sup> Ave. Ct. E.</b>	<b>28-1. 6021 213<sup>th</sup> Ave. Ct. E.</b>	<b>S *</b>
	<b>28-2. 6013 213<sup>th</sup> Ave. Ct. E.</b>	<b>S *</b>
	<b>28-3. 21303 61st St. Ct. E.</b>	<b>S *</b>
		<b>S * (* All online sources sampled)</b>
<b>X29. 4807 N. Island Dr. E.</b>	<b>29-1. 4807 N. Island Dr. E.</b>	<b>S *</b>
	<b>29-2. 4625 N. Island Dr. E.</b>	<b>S *</b>
	<b>29-3. 4807 N. Island Dr. E</b>	<b>S *</b>
		<b>S * (* All online sources sampled)</b>

X30. 20029 12 <sup>th</sup> St. E. (N. Tapps Jr. High)	30-1. 20029 12 <sup>th</sup> St. E. (N. Tapps Jr. High)	S *
	30-2. 19918 12 <sup>th</sup> St. E.	S *
	30-3. 20510 12 <sup>th</sup> St. E.	S *
		S * S * (* All online sources sampled)
X31. 2315 186 <sup>th</sup> Ave. E. (Tacoma Point)	31-1. 2315 186 <sup>th</sup> Ave. E. (Tacoma Point)	S *
	31-2. 2309 186 <sup>th</sup> Ave. E.	S *
	31-3. 2323 186 <sup>th</sup> Ave. E.	S *
		S * (* All online sources sampled)
X32. 2323 170 <sup>th</sup> Ave. E. (The Estates, Lakeland)	32-1. 2323 170 <sup>th</sup> Ave. E. (The Estates, Lakeland)	S *
	32-2. 2321 170 <sup>th</sup> Ave. E.	S *
	32-3. 2325 170 <sup>th</sup> Ave. E.	S *
		S * (* All online sources sampled)
X33. 3104 170 <sup>th</sup> Ave. E. (Off of Forest Canyon Rd)	33-1. 3104 170 <sup>th</sup> Ave. E. (Off of Forest Canyon Rd)	S *
	33-2. 3103 170 <sup>th</sup> Ave. E.	S *
	33-3. 3110 170 <sup>th</sup> Ave. E.	S *
		S * (* All online sources sampled)
X34. 6216 187 <sup>th</sup> Ave. E. (East of Lakeridge Middle School)	34-1. 6216 187 <sup>th</sup> Ave. E. (East of Lakeridge Middle School)	S *
	34-2. 6202 187 <sup>th</sup> Ave. E.	S *
	34-3. 6304 187 <sup>th</sup> Ave. E.	S *
		S * (* All online sources sampled)

X35. 6518 192 <sup>nd</sup> Ave. E. (N.W. of Shop)	35-1. 6518 192 <sup>nd</sup> Ave. E. (N.W. of Shop)	S *
	35-2. 6520 192 <sup>nd</sup> Ave. E.	S *
	35-3. 6512 192 <sup>nd</sup> Ave. E.	S *
		S * S * (* All online sources sampled)
X36. 19911 S. Prairie Rd. (Lowe's Parking Lot)	36-1. 19911 S. Prairie Rd. (Lowe's Parking Lot)	S *
	36-2. 9928 198 Ave. Ct. E.	S *
	36-3. 20020 SR 410 (Kids Corner, hose bib)	S *
		S * (* All online sources sampled)
X37. 192 <sup>nd</sup> Ave. E. & 109 <sup>th</sup> St. E. (Bonney Lake Manor)	37-1. 192 <sup>nd</sup> Ave. E. & 109 <sup>th</sup> St. E. (Bonney Lake Manor)	S *
	37-2. 19105 109 <sup>th</sup> St. E.	S *
	37-3. 19112 111 <sup>th</sup> St. E.	S *
		S * S * (* All online sources sampled)
X38. 20305 70 <sup>th</sup> St. E. (Off Church Lake Dr.)	38-1. 20305 70 <sup>th</sup> St. E. (Off Church Lake Dr.)	S *
	38-2. 20301 70 <sup>th</sup> St. E.	S *
	38-3. 20307 70 <sup>th</sup> St. E.	S *
		S * S * (* All online sources sampled)

\*NOTE: If you need more than three routine samples to cover the distribution system, attach additional sheets as needed.

\*\* When you collect the repeats, you must sample every groundwater source that was in use when the original routine sample was collected.

**Important Notes for Sample Collector:**

Be aware of your surroundings and what is happening that could cause operator error.

**E. Reduced Triggered Source Monitoring Justification (add sheets as needed):**

**F. Routine Sample Rotation Schedule**

<b>Month</b>	<b>Routine Site(s)</b>	<b>Month</b>	<b>Routine Site(s)</b>
<b>January</b>	<b>**</b>	<b>July</b>	<b>**</b>
<b>February</b>	<b>**</b>	<b>August</b>	<b>**</b>
<b>March</b>	<b>**</b>	<b>September</b>	<b>**</b>
<b>April</b>	<b>**</b>	<b>October</b>	<b>**</b>
<b>May</b>	<b>**</b>	<b>November</b>	<b>**</b>
<b>June</b>	<b>**</b>	<b>December</b>	<b>**</b>

\*\* X1-X38 with X1 being sampled three times in total for the month to equal 40 routine samples.

## G. Level 1 and Level 2 Assessment Contact Information

<p><b>Name:</b></p> <p><b>Eric Meyer (WDM3)</b></p> <p><b>Ursulla Ronscavage (WDM3)</b></p> <p><b>Joe Lovett (WDM1)</b></p>	<p><b>Office Phone 253-862-8602</b></p> <p><b>Eric Meyer Cell 253-261-1892</b></p> <p><b>Joe Lovett Cell 253-261-1058</b></p> <p><b>After Hours Phone 253-261-5501</b></p>
<p><b>Address</b></p> <p><b>19306 Bonney Lake Blvd.</b></p> <p><b>Bonney Lake, WA 98391</b></p>	<p><b>Email: <a href="mailto:meyere@cobl.us">meyere@cobl.us</a> (Eric)</b></p> <p><b><a href="mailto:lovettj@cobl.us">lovettj@cobl.us</a> (Joe)</b></p>
<p><b>Name:</b></p> <p><b>Dave Cihak – Assistant Superintendent of Public Works (WDM 3)</b></p> <p><b>Jim Miracle - Water Production &amp; Distribution Lead (WDM 3)</b></p> <p><b>Eric Meyer - Maintenance Worker 3 (WDM3)</b></p> <p><b>Ursulla Ronscavage - Maintenance Worker 3 (WDM3)</b></p>	<p><b>Office Phone 253-862-8602</b></p> <p><b>Dave Cihak Cell 253-405-6611</b></p> <p><b>Desk 253-447-4312</b></p> <p><b>Jim Miracle Cell 253-261-7404</b></p> <p><b>Eric Meyer Cell 253-261-1892</b></p> <p><b>Ursulla Ronscavage 253-293-3091</b></p> <p><b>After Hours Phone 253-261-5501</b></p>
<p><b>Address</b></p> <p><b>19306 Bonney Lake Blvd, Bonney Lake WA 98391</b></p>	<p><b>Email <a href="mailto:cihakd@cobl.us">cihakd@cobl.us</a> (Dave)</b></p> <p><b><a href="mailto:miraclej@cobl.us">miraclej@cobl.us</a> (Jim)</b></p> <p><b><a href="mailto:meyere@cobl.us">meyere@cobl.us</a> (Eric)</b></p>

## H. *E. coli*-Present Sample Response

<b>Distribution System <i>E. coli</i> Response Checklist</b>				
<b>Background Information</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
We inform staff members about activities within the distribution system that could affect water quality.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We document all water main breaks, construction & repair activities, and low pressure and outage incidents.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can easily access and review documentation on water main breaks, construction & repair activities, and low pressure and outage incidents.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our Cross-Connection Control Program is up-to-date.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We test all cross-connection control devices annually as required, with easy access to the proper documentation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We routinely inspect all treatment facilities for proper operation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We identified one or more qualified individuals who are able to conduct a Level 2 assessment of our water system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have procedures in place for disinfecting and flushing the water system if it becomes necessary.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can activate an emergency intertie with an adjacent water system in an emergency.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have a map of our service area boundaries.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have consumers who may not have access to bottled or boiled water.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is a sufficient supply of bottled water immediately available to our customers who are unable to boil their water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have identified the contact person at each day care, school, medical facility, food service, and other customers who may have difficulty responding to a Health Advisory.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have messages prepared and translated into different languages to ensure our consumers will understand them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
We have the capacity to print and distribute the required number of notices in a short time period.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Policy Direction</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
We have discussed the issue of <i>E. coli</i> -present sample results with our policy makers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If we find <i>E. coli</i> in a routine distribution sample, the policy makers want to wait until repeat test results are available before issuing advice to water system customers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>(Cont.)</b>				

<b>Distribution System <i>E. coli</i> Response Checklist</b>				
<b>Potential Public Notice Delivery Methods</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
It is feasible to deliver a notice going door-to-door.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have a list of all of our customers' addresses.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have a list of customer telephone numbers or access to a Reverse 9-1-1 system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
We have a list of customer email addresses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
We encourage our customers to remain in contact with us using social media.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have an active website we can quickly update to include important messages.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our customers drive by a single location where we could post an advisory and expect everyone to see it.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We need a news release to supplement our public notification process.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Distribution System <i>E. coli</i> Response Plan</b>
<p><b>If we have <i>E. coli</i> in our distribution system we will immediately:</b></p> <ol style="list-style-type: none"> <li>1. Call DOH and Tacoma Pierce County Health Department.</li> <li>2. Collect repeat and triggered source samples per Part D. Collect additional investigative samples as necessary.</li> <li>3. Assistant Superintendent or designee shall notify intertied systems if the interties were active at the time of sample.</li> <li>4. Within 24 hours of notification of a total coliform sample positive results, take required samples and deliver to the lab: <ul style="list-style-type: none"> <li>• <b>The same tap of the original unsatisfactory routine sample.</b></li> <li>• <b>An active service within five active connections upstream from where the original unsatisfactory sample was taken.</b></li> <li>• <b>An active service within five active connections downstream from where the original unsatisfactory sample was taken.</b></li> <li>• <b>Sample all sources (prior to treatment) that were in operation at the time the original unsatisfactory routine sample was collected. Test for <i>E. coli</i> per the ground water rule (GWR).</b></li> <li>• <b>Sample all active reservoirs.</b></li> <li>• <b>Additional samples may be taken as needed.</b></li> </ul> </li> <li>5. Inspect all water system treatment plants and facilities for proper operation.</li> <li>6. Assistant Superintendent or designee shall interview staff to determine whether anything unusual was happening in the water system recently. Review new construction activities, main breaks, and low pressure events that may have occurred in the last month.</li> <li>7. Review Cross-Connection Control Program.</li> </ol>



8. Assistant Superintendent or designee shall discuss with the DOH whether to issue a Health Advisory based on findings of steps 3-6 DOH whether to issue a Health Advisory based on the findings of steps 3-6.

***E. coli*-Present Triggered Source Sample Response Checklist –  
All Sources**

<b>Background Information</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
We review our sanitary survey results and respond to any recommendations affecting the microbial quality of our water supply.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We address any significant deficiencies identified during a sanitary survey.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are contaminant sources within our Wellhead Protection Area that could affect the microbial quality of our source water, and If yes, we can eliminate them.	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
We routinely inspect our well site(s).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have a good raw water sample tap installed at each source.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After we complete work on a source, we disinfect the source, flush, and collect an investigative sample.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Public Notice</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
We discussed the requirement for immediate public notice of an <i>E. coli</i> -present source sample result with our water system's governing body (board of directors or commissioners) and received direction from them on our response plan.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We discussed the requirement for immediate public notice of an <i>E. coli</i> -present source sample result with our wholesale customers and encouraged them to develop a response plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
We have prepared templates and a communications plan that will help us quickly distribute our messages.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

***E. coli*-Present Triggered Source Sample Response Checklist – Source  
S01 Victor Falls Springs**

<b>Alternate Sources</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
We can stop using this source and still provide reliable water service to our customers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have an emergency intertie with a neighboring water system that we can use until corrective action is complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(perhaps for several months).				
We can provide bottled water to all or part of the distribution system for an indefinite period.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly replace our existing source of supply with a more protected new source.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Temporary Treatment</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer. If yes, at what concentration? <u>0.8</u> mg/L	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (operational storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can alter the demand for drinking water (maximum day or peak hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**E. coli-Present Triggered Source Sample Response Checklist – Source S02-Grainger Springs**

<b>Alternate Sources</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
We can stop using this source and still provide reliable water service to our customers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can provide bottled water to all or part of the distribution system for an indefinite period.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly replace our existing source of supply with a more protected new source.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Temporary Treatment</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer. If yes, at what concentration? <u>0.8</u> mg/L	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (operational storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can alter the demand for drinking water (maximum day or peak hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**E. coli-Present Triggered Source Sample Response Checklist – Source S12-Tacoma Point Wellfield**

<b>Alternate Sources</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
We can stop using this source and still provide reliable water service to our customers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can provide bottled water to all or part of the distribution system for an indefinite period.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly replace our existing source of supply with a more protected new source.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Temporary Treatment</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer. If yes, at what concentration? <u>0.8</u> mg/L	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (operational storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can alter the demand for drinking water (maximum day or peak hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**E. coli-Present Triggered Source Sample Response Checklist – Source S15-Ball Park Well Field**

<b>Alternate Sources</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
We can stop using this source and still provide reliable water	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

service to our customers.				
We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can provide bottled water to all or part of the distribution system for an indefinite period.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly replace our existing source of supply with a more protected new source.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Temporary Treatment</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>To Do List</b>
This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer. If yes, at what concentration? <u>0.8</u> mg/L	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (operational storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can alter the demand for drinking water (maximum day or peak hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\*NOTE: If your system has multiple sources, you may want to complete a separate checklist for each source.

### ***E. coli*-Present Triggered Source Sample Response Plan – Source \_\_\_\_**

**If we have *E. coli* in Source \*\*\* water we will immediately:**

- 1.) Call DOH.
- 2.) If a source is *E. coli* positive the source shall be shut down immediately.
- 3.) Assistant Superintendent or designee shall interview staff to determine if any repairs or problems have occurred at the source (treatment plant, pump house, watershed, etc.) recently.
- 4.) Inspect and repair any problems at the source (treatment plant, pump house, watershed, etc.).
- 5.) In concert to DOH, the Assistant Superintendent shall begin work on a corrective action plan.

\*\*\* All Sources

**No one shall make a positive coliform sample and resulting actions public information without the permission of the Assistant Superintendent.**

#### **I. System Map**

\* See attached



## PUBLIC NOTICE CERTIFICATION

### *E. coli*-MCL Violation

Within 10 days after notifying your customers about an *E. coli*-MCL violation, you must complete this form and send it to our regional office along with a copy of each type of notice you distributed to your customers (hand-delivered notices, news releases, newspaper articles, and so on).

By completing this form, you certify that:

- You met all of the public notification requirements.
- You will meet future requirements for notifying new billing units of the violation or situation.

If the boil water advisory remains in effect more than three months, you must re-notify your water users and send another completed copy of this *Public Notice Certification* to us.

**Complete the following items, sign the form and mail it to the nearest regional office, addresses below:**

Water System: <u>City of Bonney Lake</u> ID # <u>07650H</u> County: <u>Pierce</u>		
Violation Date: ____ / ____ / ____ Violation Type _____		
<b>This public water system certifies that it gave this public notice to water users, following state and federal requirements for delivery, content, and deadlines.</b>		<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Distribution was completed</b> Yes <input type="checkbox"/> No <input type="checkbox"/> on ____ / ____ / ____ .		
<b>Check all that apply:</b>		
<input type="checkbox"/> Hand delivery,		
<input type="checkbox"/> News release (TV, radio, newspaper)		
<input type="checkbox"/> Posting at _____ (by DOH approval only),		
<input type="checkbox"/> Other _____ (by DOH approval only).		
<b>Were the water users notified within 24 hours?</b> Yes <input type="checkbox"/> No <input type="checkbox"/>		
_____ Signature of owner or operator	_____ Position	_____ Date

If you need this publication in an alternative format, call 800.525.0127 (TDD/TTY call 711). This and other publications are available at [www.doh.wa.gov/drinkingwater](http://www.doh.wa.gov/drinkingwater).

**Northwest Regional Office:**  
20425 72nd Ave S Suite 310  
Kent WA 98032  
(253) 395-6775  
Fax: (253) 395-6760  
Email: [dw.nwro@doh.wa.gov](mailto:dw.nwro@doh.wa.gov)

**Southwest Regional Office:**  
PO Box 47823  
Olympia WA 98504-7823  
(360) 236-3030  
Fax (360) 664-8058  
Email: [swro.coli@doh.wa.gov](mailto:swro.coli@doh.wa.gov)

**Eastern Regional Office:**  
16201 E Indiana Ave Suite 1500  
Spokane Valley WA 99216  
(509) 329-2100  
Fax: (509) 329-2104  
Email: [mark.steward@doh.wa.gov](mailto:mark.steward@doh.wa.gov)

## **Troubleshooting Checklist for Coliform Contamination**

331-180 • Updated May 2016

Coliform bacteria in a water system are generally either a result of a failure to maintain a "closed" water system or a treatment failure. Visually inspect the system for "openings" and/or treatment equipment failures. Look for areas of the system where soil, leaves, insects, birds, sewage, or animal wastes could possibly get into your water system.

### **Check the following:**

#### **Wells**

- Well casing is above the floor or ground and the area around the well is clean.
- Well has a watertight seal and a U-shaped, inverted, screened (minimum 24-mesh) vent.
- There are no openings in the well cap or casing, including around the electrical wires.
- There is no standing water around the source.
- The well is at least 100 feet from sources of contamination, such as septic tanks, drain fields, sewers, manure, or garbage.
- The well has been effectively disinfected following any well or pump repairs.
- A dug well has a watertight lid with an overhanging edge and a neoprene-type seal between the lid and the well casing.

#### **Springs**

- The collection box and the hatch or lid are watertight. The hatch has an overhanging edge and a neoprene-type seal.
- Vents are covered with an insect-proof non-corroding screen (minimum 24-mesh).
- Overflow and drain lines are screened or protected with an angle-flap valve.
- Surface water is directed away from the spring collection area by a diversion ditch.
- The spring is at least 200 feet from sources of contamination, such as septic tanks, drain fields, sewers, manure, or garbage.

#### **Treatment**

- Chlorine residual is measured and levels are adequate.
- UV system is operating correctly.

#### **Hydropneumatic and Bladder Tanks**

- Tank(s) are not waterlogged.
- Sediment has not accumulated in the tank.
- Bladders are intact and functional.

## Reservoirs and Storage Tanks

- There are no openings that allow entry of surface water, debris, insects, etc.
- The access hatch has an overlapping, watertight cover and a neoprene-type seal.
- Vents are clean, directed downward, and screened (minimum 24-mesh).
- Overflow and drain lines are protected with screens or angle-flap valves and discharge above ground. The drainpipe should not be submerged in nonpotable water.
- There are no signs of dirt, insects, growth, sediment, or debris inside the tank.
- There are no cracks, leaks, or vegetative growth on the outside of the tank.

## Distribution System

- There are no obvious leaks or breaks.
- The system was effectively disinfected following any construction or repair work.
- There have been no low pressure or water outage incidents.
- Non-looped, dead-end sections are regularly flushed.
- System is free of possible cross connections.

## After Inspecting System

- Make needed repairs and improvements.
- Disinfect and flush the system according to DOH guidelines.
- Install sample taps at source and storage facilities, if needed.
- Establish or improve the preventive maintenance program (routine sanitary control area inspection, storage tank inspection, and distribution system flushing).

## For More Information

Our publications are online at <http://www.doh.wa.gov/drinkingwater>.

Contact our nearest regional office from 8 a.m. to 5 p.m. Monday through Friday. If you have an after-hours emergency, call (877) 481-4901.

**Eastern Region, Spokane Valley (509) 329-2100** Adams, Asotin, Benton, Chelan, Columbia, Douglas, Ferry, Franklin, Garfield, Grant, Kittitas, Klickitat, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman, and Yakima counties.

**Northwest Region, Kent (253) 395-6750** Island, King, Pierce, San Juan, Skagit, Snohomish, and Whatcom counties.

**Southwest Region, Tumwater (360) 236-3030** Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Kitsap, Lewis, Mason, Pacific, Skamania, Thurston, and Wahkiakum counties.

**RTCR Level 1 and 2  
Assessment Guidance Template**





# Level 1 Assessment Guidance Template

331-569, October 2017

Send your assessment to:

<b>Northwest Region</b>	20425 72nd Ave. South, Suite 310 Kent, WA 98032-2358	Phone: (253) 395-6750 Fax: (253) 395-6760 Email: <a href="mailto:carol.stuckey@doh.wa.gov">carol.stuckey@doh.wa.gov</a> <a href="mailto:ingrid.salmon@doh.wa.gov">ingrid.salmon@doh.wa.gov</a>
<b>Southwest Region</b>	PO Box 47823 Olympia WA 98504-7823	Phone: (360) 236-3030 Fax: (360) 664-8058 Email: <a href="mailto:swro.coli@doh.wa.gov">swro.coli@doh.wa.gov</a>
<b>Eastern Region</b>	16201 Indiana Ave Suite 1500 Spokane Valley WA 99216	Phone: (509) 329-2100 Fax: (509) 329-2104 Email: <a href="mailto:ero.waterquality@doh.wa.gov">ero.waterquality@doh.wa.gov</a>

<b>Water System Name:</b> City of Bonney Lake	<b>County:</b> Pierce	<b>Water System ID #:</b> 07650H
<b>Assessor Name:</b>	<b>Email Address:</b>	
<b>Assessor Address, City, State, Zip:</b>		<b>ODW Only, Date Received:</b>
<b>Date(s) Assessment Completed:</b>	<b>Month and Year of TTT:</b>	

Within 30 days of learning of the Treatment Technique Trigger (TTT), submit a completed assessment to [your regional office](#). Keep a copy in your water system files.

Use this *Level 1 Assessment Guidance Template* as a guide for a system with only a groundwater source(s).

**Part A: The Assessment**

- Review the most recent sanitary survey report.
- Assess the status of the system's significant deficiencies and findings, observations, and recommendations.
- Respond to all parts of this template that are applicable to the water system.
- Use additional pages if you need more space.

**Part B: The Summary and Corrective Actions**

- Summarize assessment findings. For corrective actions:
  - Completed: include photos, work receipts, or reports.
  - Not yet completed: include an action plan with timetable with dates.

Part A: Assessment	Corrective action needed?	Description, Comments, and Recommendations
<b>1. Site and Sampling Protocol</b>		
a. Is there a written coliform monitoring plan & sampling procedure that represents the distribution system? <b>If yes, does the system follow the coliform monitoring plan?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
b. Have there been changes in sampling conditions or procedures? Describe:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
c. Inspect sampling sites where unsatisfactory samples have been collected. Are the sampling taps and locations: <ul style="list-style-type: none"> <li>i. Free of potential sources of contamination?</li> <li>ii. In good condition?</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
d. Do the coliform sample results from the last 90 days suggest ongoing water quality issues?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
e. Is this assessment required due to failure to collect all repeat samples? <b>If yes, what were the procedures taken to ensure repeat samples will be collected in the future?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

Part A: Assessment	Corrective action needed?	Description, Comments, and Recommendations
<b>2. Distribution</b>		
a. Are procedures in place to: <ul style="list-style-type: none"> <li>i. Replace and repair system parts?</li> <li>ii. Regularly flush?</li> <li>iii. Routinely inspect vault(s)?</li> <li>iv. Implement a cross connection control program?</li> <li>v. Maintain positive pressure?</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
b. Have there been: <ul style="list-style-type: none"> <li>i. Recent reports of low pressure (less than 20 PSI) or complete loss of pressure?</li> <li>ii. Changes in condition or operation?</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
c. Inspect the distribution system. Are there any: <ul style="list-style-type: none"> <li>i. Visible line breaks or leaks?</li> <li>ii. Observed unprotected cross connections?</li> <li>iii. Waterlogged pressure tanks?</li> <li>iv. Evidence of vandalism or other security breaches?</li> <li>v. Other:</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>3. Storage Facilities - Is there a water storage tank? If no, skip to Section 4.</b> Note: Pressure and hydropneumatic tanks are <b>not</b> storage tanks	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
a. Are there: <ul style="list-style-type: none"> <li>i. Procedures for periodic inspection and upkeep of the facility?</li> <li>ii. Any changes in storage condition or operations?</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
b. Inspect each storage tank. Are there: <ul style="list-style-type: none"> <li>i. Overflow lines constructed to prevent contaminants?</li> <li>ii. Cracks or unprotected openings in the tank walls?</li> <li>iii. Reservoir roof cracks?</li> <li>iv. Unprotected roof openings?</li> <li>v. Improperly constructed access hatch or seal?</li> <li>vi. Evidence of vandalism or other security breaches?</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
c. If there is an air vent or opening for a water-level gauge, is it constructed to prevent entry of contaminants?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
d. If the overflow line discharges to a storm drain, to surface water, or directly into a sanitary sewer, is it protected by a proper air gap?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>4. Treatment - Is treatment in use for any source? If no, skip to Section 5.</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
a. If treatment includes disinfection, were chlorine residuals normal during the month the TTT occurred?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

<b>Part A: Assessment</b>		<b>Corrective action needed?</b>	<b>Description, Comments, and Recommendations</b>
b. Inspect the treatment facility. Are there: <ul style="list-style-type: none"> <li>i. Procedures in place for proper operation and maintenance?               <ul style="list-style-type: none"> <li>1. Is the treatment system operating properly?</li> </ul> </li> <li>ii. Changes in equipment or process? Describe.</li> <li>iii. Evidence of vandalism or other security breaches?</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>5. Source</b>			
a. Are there procedures in place for periodic inspection and maintenance of the source facilities?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
b. Does each source have a raw water sample tap properly located? <a href="http://www.doh.wa.gov/portals/1/Documents/pubs/331-436.pdf">http://www.doh.wa.gov/portals/1/Documents/pubs/331-436.pdf</a>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
c. Inspect the source facilities. Is the: <ul style="list-style-type: none"> <li>i. Sanitary control area free of all potential sources of contamination?</li> <li>ii. Wellhead or spring box above grade with no potential for flooding?</li> <li>iii. Well cap sealed and watertight?</li> <li>iv. Well casing free of unprotected openings?</li> <li>v. Pressure tank waterlogged?</li> <li>vi. Spring box (structure, hatch, and overflow) free of any unprotected openings?</li> <li>vii. Other:</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	
d. Have there been any changes in condition or operation?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>6. Other assessment activities. Describe:</b>			

<b>Part B: Assessment Summary and Corrective Action Plan with Timetable</b>		
<b>1. Actions Completed</b>	<b>Assessor: Summarize the issues found where corrective actions have been completed.</b> Include photos, work receipts, or reports to depict assessment findings.	
<b>Describe issue found</b>	<b>Describe corrective action taken</b>	<b>Date Completed</b>
<b>2. Actions To be Taken</b>	<b>Assessor: Describe the issues found where corrective actions will be completed later.</b>	<b>Provide a timetable</b>
<b>Describe issue found</b>	<b>Describe planned corrective action</b>	<b>Expected Completion Date</b>

**Assessor has discussed the Assessment findings with the Water System Owner:**  Yes  No

If no, note the date when the discussion will occur: \_\_\_\_\_

Signature of Assessor: \_\_\_\_\_ Date: \_\_\_\_\_

**Office of Drinking Water staff will review this assessment and determine if any of the issues identified are Sanitary Defects - a defect that could provide a pathway of entry for microbial contamination into the distribution system, or a defect that is indicative of a failure or imminent failure in a barrier that is already in place.**

**OFFICE OF DRINKING WATER USE ONLY**

Regional Office Reviewer: _____	Date of Review: _____	Assessment sufficient?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Likely Cause Determined? <input type="checkbox"/> Yes <input type="checkbox"/> No	Sanitary Defects Identified? <input type="checkbox"/> Yes <input type="checkbox"/> No	Corrective Actions Complete?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Corrective Action Plan Included? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Corrective Action Plan approved? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Comments:			



# Level 2 Assessment Guidance Template

331-570, 2017

Send your assessment to:

**Northwest Region** 20425 72nd Ave. South, Suite 310  
Kent, WA 98032-2358

**Southwest Region** PO Box 47823  
Olympia WA 98504-7823

**Eastern Region** 16201 Indiana Ave Suite 1500  
Spokane Valley WA 99216

Phone: (253) 395-6750  
Fax: (253) 395-6760  
Email: [carol.stuckey@doh.wa.gov](mailto:carol.stuckey@doh.wa.gov)  
[ingrid.salmon@doh.wa.gov](mailto:ingrid.salmon@doh.wa.gov)

Phone: (360) 236-3030  
Fax: (360) 664-8058  
Email: [swro.coli@doh.wa.gov](mailto:swro.coli@doh.wa.gov)

Phone: (509) 329-2100  
Fax: (509) 329-2104  
Email: [joseph.perkins@doh.wa.gov](mailto:joseph.perkins@doh.wa.gov)

<b>Water System Name:</b> City of Bonney Lake	<b>County:</b> Pierce	<b>Water System ID #:</b> 07650H
<b>Assessor Name:</b> Click here to enter text	<b>Email Address:</b> Click here to enter text	
<b>Assessor is:</b> WDM 2, 3, or 4 OR PE OR LHJ (check one)		<b>ODW Only, Date Received:</b> Click here to enter text
<b>Assessor Address, City, State, Zip:</b> Click here to enter text		
<b>Date(s) Assessment Completed:</b> Click here to enter text	<b>Month and Year of TTT:</b> Enter date	

**This assessment is required due to the repeated occurrence of total coliform bacteria, or the confirmation of *E. coli* bacteria in the distribution system. Conduct a thorough assessment of the water system per this guidance and within 30 days submit the assessment to your regional office. If this is the water system's second level 2 assessment and the cause for the contamination cannot be found and fixed, the system will be required to add the barrier of continuous disinfection treatment.**

Use this *Level 2 Assessment Guidance Template* for a system with only a groundwater source(s).

### Part A: The Assessment

- Review the most recent sanitary survey report.
  - Assess the status of the system's significant deficiencies and findings, observations, and recommendations.
- Respond to all parts of this template that are applicable to the water system.
- Use additional pages if you need more space.

### Part B: The Summary and Corrective Actions

- Summarize assessment findings. For corrective actions:
  - Completed: include photos, work receipts, or reports.
  - Not yet completed: include an action plan with dates for completion of each item.

Part A: Assessment	Corrective Action Needed?	Description, Comments, and Recommendations
<b>1. Site and Sampling Protocol</b>		
a. Is there a written <a href="#">coliform monitoring plan</a> & <a href="#">sampling procedure</a> that ensures each sample represents the distribution system?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
b. Is there a program to ensure that all sample collectors are trained before being allowed to collect compliance samples?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
c. Are routine and repeat sample sites regularly monitored to ensure that no site will contaminate the sample?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
d. Do the coliform sample results from the last 24 months suggest ongoing or reoccurring water quality issues?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
e. Relative to the Unsatisfactory samples associated with the TTT:		
i. Did a trained sample collector collect each sample?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
ii. Were the monitoring plan and sampling procedure followed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
iii. Were there any changes in sampling conditions or procedures that may have contributed to the TTT?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

Part A: Assessment	Corrective Action Needed?	Description, Comments, and Recommendations
f. Inspect the Unsatisfactory samples' sites: i. Are the sampling locations free of potential sources of contamination? ii. Are the sampling taps in good condition? iii. Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
g. Was this TTT due to failure to collect all repeat samples? If yes, describe steps being taken to ensure all required repeat samples will be collected in the future.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>2. Distribution System</b>		
a. Are there standard procedures for proper maintenance including: i. Pipe replacement and repair? ii. Other distribution system components replacement and repair? iii. Regular flushing? iv. Routine vault inspections? v. Maintain positive pressure throughout?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
b. Is there a fully implemented cross connection control program?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
c. Is each air-vacuum-relief-valve vented above-grade?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
d. Following work done in distribution system or any pressure loss event, are investigative coliform samples collected?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
e. Have there been any: i. Recent reports of low pressure (less than 20 psi) or complete loss of pressure? ii. Recent repairs or new construction? iii. Pipe leaks that are not yet repaired? iv. Recent use of fire hydrants such as hydrant maintenance or flushing by utility or fire department? v. Recent reports of a cross-connection incident? vi. Off-normal events such as discolored water, odd taste, or smell? vii. Other changes in distribution conditions or operations that may have contributed to the TTT?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
f. Inspect the distribution system. Are there any: i. Visible line breaks or leaks? ii. Observed cross connections? iii. Waterlogged pressure tanks? iv. Indications of vandalism or other security breach? v. Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>3. Storage Facilities – Is there storage? If no, skip to Section 4.</b>		
a. Are there standard procedures for periodic inspection of the exterior of each storage facility including vents, hatches, fittings for level gage/controls, and overflows?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

Part A: Assessment	Corrective Action Needed?	Description, Comments, and Recommendations
b. Are there standard procedures for periodic inspection and cleaning of the interior of each storage facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>If more than one tank, for each corrective action noted below, name which tank(s) the action applies to:</b>		
c. Are all storage facilities secured from unauthorized entry and vandalism?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
d. If there is an air vent, is it constructed to prevent entry of contaminants?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
e. If there is a fitting for a level gage or level controls, is it constructed to prevent entry of contaminants?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
f. If there is an overflow line that discharges to a storm drain, surface water, or into a sanitary sewer, is it protected by a proper air gap?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
g. Has there been: i. Any recent work done at a storage facility? ii. Any other changes in storage conditions or operations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
h. Inspect each storage tank. Are there any: i. Any floating objects in the tank? ii. Cracks or unprotected openings in tank walls? iii. Unprotected openings in the tank roof? iv. Gaps or weak areas in access hatch seals? v. Holes in the air vent screen? vi. Weak points in the attachment of the screen to the vent structure? vii. Holes in the screen on the open end of overflow line? viii. Obstructions compromising the proper air gap where the overflow line discharges into a storm drain, surface water, or sanitary sewer? ix. Indications of vandalism or other security breach?  x. Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No  <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>4. Treatment – Is there treatment? If no, skip to Section 5.</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
a. List every type of treatment in use:		
b. Is any source continuously treated with a disinfectant? If yes, Are there standard procedures for: i. Proper operation and maintenance of disinfection treatment facilities? ii. Monitoring disinfectant residual frequency per DOH requirement? Were: iii. Chlorine residuals 0.2 mg/L or greater in the Unsatisfactory samples? List residuals:  iv. Chlorine residuals normal throughout the month the TTT occurred? v. All chlorine residual measurements from the last 90 days indicative of any on-going or recurring treatment issue?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No  <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No  <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No

Part A: Assessment		Corrective Action Needed?	Description, Comments, and Recommendations
c. Have there been any:			
i. Changes in treatment equipment or processes?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
ii. Recent interruptions in any treatment process?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
iii. Recent maintenance performed on any treatment component?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
d. Inspect the treatment facilities:			
i. Is the treatment system operating properly?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
ii. Is there any evidence of vandalism or other security breach?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
iii. Other:	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>5. Source (if more than one source, note source number as needed)</b>			
a. Does each source comply with the Sanitary Control Area requirements (WAC 246-290-135(2))?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
b. Are all sources protected from fecal contamination by appropriate placement and construction?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
c. Are there standard procedures for periodic inspection and maintenance of the source facilities?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
d. Are the source facilities secured from unauthorized entry and vandalism?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
e. Has there been any:			
i. Recent use of an unapproved source?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
ii. Recent land use changes?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
iii. Standing water, heavy precipitation, or flooding around a source in the last month?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
iv. Recent failure of a source pump?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
v. Recent maintenance on a source pump or other source component?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
vi. Other changes in source conditions or operations?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
f. Inspect the source facilities. Is:			
i. Sanitary control area free of all potential sources of contamination?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
ii. Top of well casing or spring box at risk of submergence?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
iii. Well cap sealed and watertight?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
iv. Well casing or spring box free of unprotected openings?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
v. Pressure tank water logged or off-line?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
vi. There any evidence of vandalism or other security breach?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
vii. Other:	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>6. Other assessment activities.</b>			
a. Is it time for the additional barrier of continuous disinfection to be installed at this system? If no, why not? Explain:	<input type="checkbox"/> Yes <input type="checkbox"/> No		
b. Other activities:			



<b>Part B: Assessment Summary and Corrective Action Plan with Timetable</b>		
<b>1. Actions Completed</b>	<b>Assessor: Summarize the issues found where corrective actions have been completed. Include photos, work receipts, and/or reports to depict assessment findings.</b>	
<b>Describe issue found</b>	<b>Describe corrective action taken</b>	<b>Date Completed</b>
Click here to enter text	Click here to enter text	
Click here to enter text	Click here to enter text	
Click here to enter text	Click here to enter text	
<b>2. Actions To be Taken</b>	<b>Assessor: Describe the issues found where corrective actions will be completed later.</b>	<b>Provide a timetable</b>
<b>Describe issue found</b>	<b>Describe planned corrective action</b>	<b>Expected Completion Date</b>
Click here to enter text	Click here to enter text	
Click here to enter text	Click here to enter text	
Click here to enter text	Click here to enter text	

**Assessor has discussed the Assessment findings with the Water System Owner:**  Yes  No

If no, note the date when the discussion will occur: Click here to enter text

Signature of Assessor: \_\_\_\_\_ Date: Click here to enter text

**Office of Drinking Water staff will review this assessment and determine if any of the issues identified are Sanitary Defects - a defect that could provide a pathway of entry for microbial contamination into the distribution system, or a defect that is indicative of a failure or imminent failure in a barrier that is already in place.**

**OFFICE OF DRINKING WATER USE ONLY**

Regional Office Reviewer: <u>Click here to enter text</u>	Date of Review: <u>Click here to enter text</u>	Assessment sufficient?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Likely Cause Determined? <input type="checkbox"/> Yes <input type="checkbox"/> No	Sanitary Defects Identified? <input type="checkbox"/> Yes <input type="checkbox"/> No	Corrective Actions Complete?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Corrective Action Plan Included? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Corrective Action Plan approved? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Comments: <u>Click here to enter text</u>			



April 2016

DOH 331-206  
Revised

## Fact Sheet

### *Revised Total Coliform Rule*

# Treatment technique triggers, violations, and public notification requirements

The Revised Total Coliform Rule (RTCR) continues the basic monitoring requirements and objectives of the Total Coliform Rule; however, it offers greater public health protection by adding new requirements and updating others.

The Office of Drinking Water (ODW) always required water systems with microbial contamination to find and fix any maintenance or operational defect that could allow contamination to enter a water system. RTCR formalizes this process and requires water systems to submit a water system assessment report to us any time they have unsatisfactory sample results. It also assigns violations to water systems that fail to complete these tasks.

### Treatment Technique Triggers

When a treatment trigger occurs, water systems must conduct an assessment to find and fix any sanitary defects. There are two assessment levels; both evaluate the entire system from the point of sample collection to the source of supply.

**Don't wait for us to notify you about the treatment technique trigger.** You must complete the assessment within 30 days after the trigger occurs, and submit an assessment report to us.

**A Level 1 assessment** is a basic system evaluation that an owner or other knowledgeable person can do. The RTCR requires a Level 1 assessment when one of these treatment technique triggers occurs:

- A system that collects fewer than 40 routine samples during the month has more than one coliform-present sample.
- A system that collects 40 or more routine samples during the month has coliform-present results in more than 5 percent of the routine and repeat samples.
- A water system fails to collect three repeat samples for every total coliform-present sample.

**A Level 2 assessment** is a more complex evaluation that only a state-qualified person can do. The RTCR requires a Level 2 assessment when one of these treatment technique triggers occurs:

- A water system has an *E. coli* MCL violation (see page 2).
- A water system incurs a second treatment technique trigger in a rolling 12-month period.

### 3 parts of a Level 1 or Level 2 assessment

- **Evaluation:** Identify any sanitary defect that allowed coliform to enter the distribution system or failure or imminent failure of an existing barrier.
- **Discussion:** Discuss what you identified during the assessment that might allow contamination to occur and the corrective action needed to fix it.
- **Corrective action:** Record the steps you took or will take to fix the sanitary defect that allowed the contamination to occur.



HELPING TO ENSURE SAFE AND RELIABLE DRINKING WATER

## Violations

Violations under the RTCR usually indicate a failure to act. Water systems should prepare themselves to follow the rule requirements to protect the safety of their water supply.

Public Notification Requirements
Tier 1: Issued within 24 hours
Tier 2: Issued within 30 days
Tier 3: Issued within 1 year

## Treatment Technique Violation

A treatment technique violation indicates the water system failed to act or respond as required. When a treatment technique violation occurs, a system must provide **Tier 2 public notification** to its customers. A coliform treatment technique violation occurs when one of the following occurs:

- A water system fails to conduct or fully complete a required Level 1 or Level 2 Assessment within 30 days of the treatment technique trigger.
- A system fails to correct any sanitary defect by taking required corrective action within the required timeframe.
- A seasonal system fails to complete an ODW-approved start-up procedure and submit a certificate of completion prior to serving water at the start of its season.

## *E. coli* MCL Violation

If a system incurs an *E. coli* MCL violation, it must perform a **Level 2 assessment** and provide **Tier 1 public notification** to its customers. RTCR requires public notice within 24 hours after receiving confirmation of an *E. coli* MCL violation. There are four ways a system can have an *E. coli* MCL violation:

1. A total coliform-present repeat sample follows an *E. coli*-present routine sample.
2. An *E. coli*-present repeat sample follows a total coliform-present routine sample.
3. The lab fails to test a total coliform-present repeat sample for *E. coli*.
4. The system fails to take three repeat samples following an *E. coli*-present routine sample.

## Monitoring Violation

A water system that incurs a monitoring violation must provide **Tier 3 public notification** to its customers. A monitoring violation occurs when:

- A system fails to collect all routine samples.
- A system fails to have each total coliform-present routine sample analyzed for *E. coli*.

## Reporting Violation

A water system that incurs a reporting violation must provide **Tier 3 public notification** to its customers. A reporting violation occurs when:

- A system fails to submit a monitoring report or completed assessment form to ODW in a timely manner.
- A system fails to notify ODW of an *E. coli*-present sample in a timely manner.
- A seasonal system fails to submit to ODW a certificate of completion of an approved start-up procedure before serving water to consumers.

## For more information:

Call our regional office.

**Eastern Region:** Spokane Valley (509) 329-2100

**Northwest Region:** Kent (253) 395-6750

**Southwest Region:** Tumwater (360) 236-3030



Our publications are online at <https://fortress.wa.gov/doh/eh/dw/publications/publications.cfm>

For people with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).



## Fact Sheet

# Follow-up to an unsatisfactory routine coliform sample

April 2016

DOH 331-187

Revised

A drinking water sample is unsatisfactory whenever coliform bacteria are present. If your water system receives unsatisfactory sample results, you must collect a set of repeat samples. If your water system uses groundwater, you must also collect triggered source samples from every groundwater source that was in use when you collected the unsatisfactory routine sample. You must collect triggered source samples before treatment. If your water system has an approved triggered monitoring plan, follow your plan.

**Repeat samples** confirm the presence or absence of coliform bacteria in the system. If present, sample results can help you find the possible cause of contamination.

**Triggered source samples** indicate whether the groundwater source is contaminated with the fecal indicator *E. coli* bacteria.

You must collect repeat and triggered source samples within 24 hours after you learn about the unsatisfactory routine sample result. **Do not** shock-chlorinate the system or source before collecting any samples unless you have prior approval from us.

### Review your sampling procedure

Review your sampling procedure to make sure you collect your samples correctly. For help, see *Coliform Sampling Procedure* (331-225).

### Collect repeat samples

You *must* collect **THREE REPEAT** samples for every unsatisfactory ROUTINE sample. Three must come from the following locations:

1. The same tap as the original unsatisfactory routine sample.
2. An active service within 5 active connections upstream from the original unsatisfactory sample location.\*
3. An active service within 5 active connections downstream from the original unsatisfactory sample location.\*

You must also collect a raw water sample at each groundwater source that was in use when you collected the unsatisfactory routine sample and test it for *E. coli*.

\* You may deviate from these locations if your state-approved Coliform Monitoring Plan includes one of the following:

- A standard operating procedure (SOP) for selecting alternate repeat sites.
- Defined alternate repeat site locations.



HELPING TO ENSURE SAFE AND RELIABLE DRINKING WATER

## **Thoroughly inspect your water system**

Try to identify potential sources of contamination, such as “openings” in the system or treatment equipment failure. If you find obvious sources of contamination, call us (see below).

## **The month after an unsatisfactory sample**

**The month after an unsatisfactory routine sample, you must collect your usual number of ROUTINE samples from the distribution system.**

**Very small noncommunity groundwater systems not required to sample every month must collect ONE ROUTINE sample the month following an unsatisfactory sample even if they normally would not be required to collect a sample that month.**

## **Call us if:**

- You cannot sample as outlined above.
- You would like to discuss the triggered source sample requirement.
- Any repeat samples or triggered source samples are unsatisfactory.

**Northwest Region: Kent**  
253-395-6750

**Southwest Region: Tumwater**  
360-236-3030

**Eastern Region: Spokane Valley**  
509-329-2100

Our publications are online at <https://fortress.wa.gov/doh/eh/dw/publications/publications.cfm>



# Drinking Water Warning



## Fact Sheet

# Emergency water supply guidelines for food service

*Restaurants – Food Stores – Schools*

*Institutions – Convenience Stores*

April 2014

DOH 331-182  
(Revised)

These guidelines are for establishments that provide food service to the public. State regulation requires food service establishment (FSE) owners to ensure that their water supply is from an approved public drinking water system ([WAC 246-215-05100](#)). The state Department of Health regulates public water systems ([WAC 246-290](#)).

### Procedures required during a boil water advisory

When a water system issues a boil water advisory, food service establishments must close unless the local health agency authorizes them stay open. If the local health agency does authorize an FSE to operate during a boil water advisory, it must follow the minimum requirements below until the health advisory is lifted. *The local health agency may impose additional requirements to protect against health hazards during the boil water advisory, such as modifying food preparation steps or prohibiting some menu items.*

### Minimum Requirements

#### **Shut off:**

- Ice machines
- Drinking fountains
- Produce misters
- Bottled water refill machines
- Pop dispensers connected to water supply
- Running water dipper wells
- Coffee pots

#### **Discard:**

- Ice made with contaminated water
- Beverages made with contaminated water

**Ice:** Use packaged ice from an approved source

#### **Use boiled or bottled water for:**

- Drinking
- Cooking
- Food preparation
- Washing produce

#### **Hand washing:**

- Wash with antibacterial soap and water.
- Recommended: Use hand sanitizer after rinsing and drying.

#### **Dishwashing options:** Follow normal procedures.

- Mechanical dishwasher with high temperature or chemical sanitizer (verify correct operation).
- Three-compartment sink
  1. Wash in hot water with detergent.
  2. Rinse in warm water.
  3. Sanitize in cool-water chemical sanitizer solution (1 teaspoon bleach per 1 gallon water) or hot water (150 degrees) for one minute.
  4. Air dry.

#### **Employee Information:**

- Post signs or copies of the water system's health advisory.
- Develop a plan to notify and educate employees about emergency procedures.

When the health advisory is lifted, consult the owner's manual to find out how to sanitize appliances.

**Follow these procedures until notified by the local health agency or the state Department of Health.**

For people with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).



HELPING TO ENSURE SAFE AND RELIABLE DRINKING WATER



## DRINKING WATER WARNING

The City of Bonney Lake Water System, ID#07650H, located in Pierce County may be contaminated because of a water outage and loss of pressure in the water system.

**DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST.** Bring all water to a rolling boil for one minute, and let it cool before using. Boiled or purchased 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.

*When a loss of pressure occurs, it is possible that contamination from the environment or from human or animal waste may be drawn into the water system. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems. These symptoms are not only caused 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 provider.*

What happened?

The following is being done to correct the problem:

We have consulted with the Washington State Department of Health about this incident. We will notify you when you no longer need to boil the water. We anticipate resolving the problem by 11/1/2019 AM PM

For more information, please contact Dave Cihak at (253) 447-4347 or at 19306 Bonney Lake Blvd. Bonney Lake, WA 98391

*Please share this notice 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 distribution copies by hand or mail.*

This notice is sent to you by the City of Bonney Lake Water System on [Click here to enter a date.](#)



**WARNING:**  
**Do not drink tap water  
without boiling it first!**

Water System: City of Bonney Lake  
I.D. 07650H  
County: Pierce  
Date Notice Distributed: \_\_\_\_\_

- Loss of Pressure  
 Fecal coliform  
 E. coli bacteria  
 Other: \_\_\_\_\_

**Boiling kills bacteria and other organisms in the water:**

- Bring water to a rolling boil for one minute
- Let water cool before using

**To avoid possible illness:** use boiled or purchased bottled water for drinking, making ice, brushing teeth, washing dishes, and food preparation until further notice. Boiling kills bacteria and other organisms in the water.

**Contact your doctor, if you experience one or more of these symptoms:** nausea, cramps, diarrhea, jaundice, headache and/or fatigue. These symptoms are not only caused by organisms in drinking water.

People with chronic illnesses, infants and the elderly may be at higher risk and should seek medical advice.

We have consulted with the Washington State Department of Health about this incident. We will notify you when you no longer need to boil the water. We anticipate resolving the problem by:

\_\_\_\_\_  AM  PM

**For more information, please contact:** Dave Cihak at (253) 447-4312 or at 19306 Bonney Lake Blvd. Bonney Lake, WA 98391.

*Please share this notice with all 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 distribute copies by hand or mail.*

November 2019

**ADVERTENCIA:**  
**¡No tome el agua de la llave  
sin antes hervirla!**

Sistema de agua: City of Bonney Lake  
I.D.: 07650H  
Condado: Pierce  
Fecha de notificación: \_\_\_\_\_

- Pérdida de presión  
 Bacteria coliforme fecal  
 Bacteria E. coli  
 Otra: \_\_\_\_\_

**Hervir el agua mata a las bacterias y otros organismos en el agua:**

- Ponga el agua en la estufa hasta que hierva y deje hervir el agua por un minuto
- Deje enfriar el agua antes de usarla

**Para evitar posibles enfermedades y hasta nuevo aviso: use agua hervida o agua potable embotellada para tomar, hacer hielo, limpiarse los dientes, lavar los platos y para preparar comidas.**

**Hable con su doctor si usted tiene uno o más de los siguientes síntomas:** náusea, dolor estomacal, diarrea, ictericia, dolores de cabeza y/o cansancio. *Tesé el síntoma are no solamente causad por organismos in está bebiendo wáter.* La gente con enfermedades crónicas, bebés y personas mayores de edad, pueden estar en situación de alto riesgo y deben consultar con su médico o proveedores de servicios médicos.

Hemos consultado con el Departamento de Salud del Estado de Washington sobre este incidente. Le notificaremos cuando ya no necesite hervir el agua. Anticipamos la resolución del problema mediante:

\_\_\_\_\_  AM  PM

**Le notificaremos cuando ya no necesite hervir el agua. Anticipamos la resolución del problema mediante:** Dave Cihak (253) 447-4312 o en 19306 Bonney Lake Blvd. Bonney Lake, WA 98391.

*Por favor, comparta este aviso con todas las demás personas que beben esta agua, especialmente aquellas que no hayan recibido este aviso directamente (por ejemplo, personas en apartamentos, residencias de ancianos, escuelas y negocios). Puede hacerlo publicando este aviso en un lugar público<sup>3</sup> o distribuir copias a mano o por correo.*

**See reverse side for English version.**

Public Notice Certification  
*E. Coli*- MCL Violation



News Release

Boil Water Advisory and  
Boil Water Advisory Rescinded

Your logo or  
company name  
here.

# News Release

**For Immediate Release:** <DATE>

**Contact:** Water purveyor/system contact name and telephone number

**<Water System> announces boil water advisory for all customers in <area>**

**CITY NAME** – The <SYSTEM NAME> is advising all water customers to boil their drinking water after recent samples showed the presence of *E. coli*. The Washington State Department of Health (DOH) has been notified and <SYSTEM NAME> is working closely with the Office of Drinking Water to find the source of contamination and fix the problem, which may include disinfecting the system. The boil water advisory will remain in effect until further notice.

(Sample quote) “We are doing all we can to eliminate the bacteria from the water system. Safe and reliable drinking water is critical to good health and responding to this kind of emergency is our highest priority,” said <System spokesperson>.

<NUMBER or NO> illnesses related to the community’s drinking water have been reported. To correct the problem <WHAT IS BEING DONE> (e.g. Chlorine was applied to the entire system on DATE.)

The boil water advisory includes several precautionary steps for customers. These include using purchased bottled water or boiled water for drinking, brushing teeth, dishwashing, preparing food, and making ice. Water should come to a roiling boil for one minute, then cool to an appropriate temperature before using.

The advisory will remain in effect until <SYSTEM NAME> and DOH are confident the water is safe. When satisfactory results are reported, customers will be notified that the advisory has been lifted.

If you have questions, please call us at <TELEPHONE NUMBER>.

###

Your logo or  
company name here.

# News Release

**For Immediate Release:** <DATE>

**Contact:** Water purveyor/system contact name and telephone number

## <Water System Name> Boil Water Advisory Rescinded

CITY NAME – Customers of <SYSTEM NAME> no longer need to boil their drinking water. Recent test samples show the absence of *E. coli* bacteria.

<SAMPLE QUOTE> “Working with the Washington State Department of Health over the last <NUMBER OF > days, we have completed inspections, water quality sampling, disinfection, and flushing to resolve the contamination problem,” stated <NAME OF WATER SYSTEM MANAGER>. “We’re pleased to be able to lift the boil water advisory.”

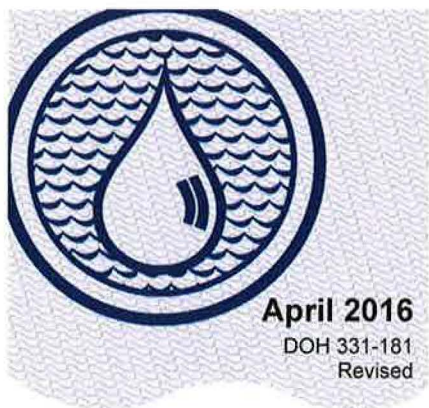
The inspection of the water system indicated <DESCRIPTION OF SOURCE OF CONTAMINATION, if known, and what will be done to maintain good water quality>

If you have shut off or not used fixtures, water fountains, ice machines, soda machines, and/or other equipment over the past several days, flush the fixture or equipment until there is a change in water temperature before putting it back into service.

The <SYSTEM NAME> encourages customers with questions to call <TELEPHONE NUMBER>.

###

Coliform Bacteria and  
Drinking Water  
(Questions and Answers)



## Questions & Answers

# Coliform Bacteria and Drinking Water

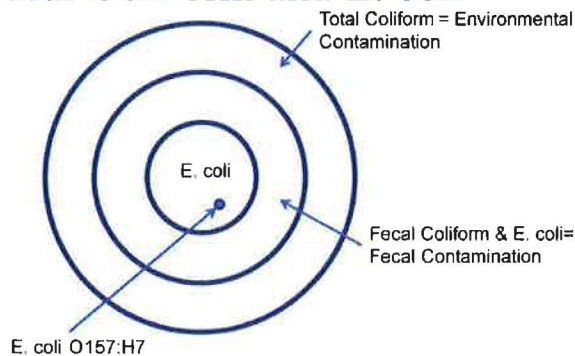
Public water systems must deliver safe and reliable drinking water to their customers 24 hours a day, 365 days a year. If the water supply becomes contaminated, consumers can get seriously ill. Fortunately, public water systems take many steps to make sure drinking water is safe. One of the most important steps is regular testing for coliform bacteria.

### What are coliform bacteria?

Coliform bacteria are present in the environment and feces of all warm-blooded animals and humans. Coliform bacteria are unlikely to cause illness. However, their presence in drinking water indicates that disease-causing organisms (pathogens) could be in the water system. Most pathogens that can contaminate water supplies come from the feces of humans or animals. Testing drinking water for all possible pathogens is complex, time-consuming, and expensive. It is easy and inexpensive to test for coliform bacteria. If testing detects coliform bacteria in a water sample, water systems search for the source of contamination and restore safe drinking water.

**There are three groups of coliform bacteria. Each is an indicator of drinking water quality and each has a different level of risk.** Total coliform is a large collection of different kinds of bacteria. Fecal coliform are types of total coliform that exist in feces. *E. coli* is a subgroup of fecal coliform. Labs test drinking water samples for total coliform. If total coliform is present, the lab also tests the sample for *E. coli*.

### Total Coliform, Fecal Coliform and *E. coli*



**Total coliform bacteria** are common in the environment (soil or vegetation) and are generally harmless. If a lab detects only total coliform bacteria in drinking water, the source is probably environmental and fecal contamination is unlikely. However, if environmental contamination can enter the system, pathogens could get in too. It is important to find and resolve the source of the contamination.

**Fecal coliform bacteria** are a subgroup of total coliform bacteria. They exist in the intestines and feces of people and animals.



HELPING TO ENSURE SAFE AND RELIABLE DRINKING WATER



*E. coli* is a subgroup of the fecal coliform group. Most *E. coli* bacteria are harmless and exist in the intestines of people and warm-blooded animals. However, some strains can cause illness. The presence of *E. coli* in a drinking water sample usually indicates recent fecal contamination. That means there is a greater risk that pathogens are present.

**Note:** *E. coli* outbreaks receive a lot of media coverage. A specific strain of *E. coli* bacteria known as *E. coli O157:H7* causes most of those outbreaks. When a drinking water sample is reported as “*E. coli* present,” it does not mean that *O157:H7* is present. However, it does indicate recent fecal contamination. Boiling or disinfecting contaminated drinking water destroys all forms of *E. coli*, including *O157:H7*.

### **What if coliform bacteria are found in my water?**

When coliform bacteria are found, water systems investigate to find out how the contamination got into the water. They collect additional water samples and often inspect the entire system. Collecting additional samples helps determine whether an actual problem exists. If the lab detects bacteria in any of the additional samples, the initial findings are “confirmed.”

### **What if total coliform bacteria are confirmed in my water?**

If a lab confirms total coliform bacteria in your drinking water, your water system must conduct an assessment to find out how the contamination got into the water. If the assessment identifies the cause of the contamination, the water system can usually correct the problem with repairs, treatment, or improved operation and maintenance practices. We help water systems resolve problems. When a lab confirms total coliform bacteria in drinking water, we recommend that the water system notify its customers as soon as possible. The notice will explain what the system is doing to correct the problem, when the problem will likely be resolved, and what customers may need to do until then.

### **What if *E. coli* are confirmed in my water?**

Confirmation of *E. coli* in a water system indicates recent fecal contamination, which may pose an immediate health risk to anyone who consumes the water. The water system will issue a “health advisory” within 24 hours to alert all water users of a health risk associated with the water supply. The advisory usually recommends using boiled or bottled water for drinking, preparing food, and brushing teeth. It also outlines the steps underway to correct the problem and explains when the system expects to resolve the problem.

Responding to health emergencies is our highest priority. We will inspect the system as soon as possible to help the water system resolve the problem. More water samples will be collected to find and eliminate potential contamination sources, and a system not normally disinfected will most likely be chlorinated and flushed. The health advisory will remain in effect until the situation is resolved and the water is safe to drink.

### **For more information**

Our publications are online at <https://fortress.wa.gov/doh/odwpubs/>

### **Call our nearest regional office**

Northwest Region: Kent  
253-395-6750

Southwest Region: Tumwater  
360-236-3030

Eastern Region: Spokane Valley  
509-329-2100

For people with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).

Groundwater Rule and  
Groundwater Sources under the  
Direct Influence of Surface  
Water (GWI)



# Groundwater Rule

331-447 • Updated 2/15/2019

The Groundwater Rule (GWR) built onto the Total Coliform Rule (TCR) by addressing the health risks of fecal contamination in groundwater sources used by public water systems. The Groundwater Rule remained intact with slight updates as the TCR was modified to the Revised Total Coliform Rule (RTCR), effective April 2016.

## Who Is Affected?

The GWR applies to all Group A public water systems that:

- ◆ Rely on at least one or more groundwater source.
- ◆ Receive finished groundwater from another public water system.
- ◆ Mix groundwater with surface water sources; or groundwater under the direct influence of surface water. **Systems that combine all of their surface water and groundwater sources before treatment are exempt from the GWR.**

## What Does the Rule Require?

The basic requirements of the Groundwater Rule include source water monitoring (triggered and assessment), compliance monitoring, sanitary surveys, corrective actions, and public notification.

## Source Water Monitoring

**Triggered Source Water Monitoring** is required when one of your system's routine distribution samples collected under RTCR is total coliform positive. Within 24 hours of notification of the total coliform positive result, you must collect triggered source samples and have them tested for *E. coli*. You must sample each groundwater source (prior to treatment) that was in operation when you collected the routine sample.

If one of your triggered source samples is *E. coli*-positive you must distribute a public notice to all users within 24 hours of learning the sample result. You must also take corrective action as directed by the department. If not so directed, collect five additional source samples within 24 hours. If any of the five additional source samples is *E. coli*-positive, you must take corrective action. See pages 3 and 4 for corrective action details.

**TIP:** Your Coliform Monitoring Plan should have most of the information you need to submit a triggered source water monitoring plan.

If you have more than one groundwater source, you may be able to reduce the number of source samples you must collect by having an approved triggered source water monitoring plan (TSMP).

Your TSMP should be in your coliform monitoring plan (CMP). The TSMP must include justification to support your request to not have to sample every groundwater source for every

routine sample site. Such justification should include, but not be limited to, a system map that clearly identifies each source, routine coliform monitoring sites, and any distribution system features that help to identify the groundwater source associated with each sample site (such as pressure zones and isolation valves). The Department of Health (DOH) must approve your TSMP.

Assessment Source Water Monitoring may be required on a case-by-case basis to evaluate sources that the department determines may be at risk for fecal contamination. This usually requires you to collect one source sample per month and have it tested for *E. coli*. We will work with you to determine how long you should sample and if any further action is required based on your results.

## Other Source Monitoring Details

**Consecutive and Wholesale Systems:** A consecutive system is a system that purchases water; the system that sells the water is a wholesaler. When a consecutive system has a routine distribution sample that is total coliform positive the system must notify their wholesaler within 24 hours.

The wholesale system is required to collect triggered source samples from all of their groundwater sources that were in operation on the date the consecutive system's positive routine sample was collected. All the above mentioned response requirements apply including notifying all consecutive systems, if any of the samples is *E. coli* positive. There may be exceptions to this monitoring, so we encourage wholesale systems to contact us as soon as they get notice from a consecutive system.

**Sample Location and Size:** You must collect all source water samples at the source prior to treatment. If you are unable to meet these conditions, contact us to request an alternative sample location. All *E. coli* samples must be at least 100 milliliters (mL) and analyzed by an accredited laboratory using EPA-approved methods.

## Compliance Monitoring

Compliance monitoring confirms the effectiveness and reliability of disinfection treatment. If you provide 4-log treatment of viruses AND perform compliance monitoring, you won't have to meet the triggered source water monitoring requirements. DOH must approve your 4-log treatment system.

Compliance monitoring for chemical disinfection means that you must monitor the residual concentration daily before the first customer during peak flow, and continuously monitor if you serve more than 3,300 people. Your tests must confirm you are providing a chlorine residual high enough to maintain 4-log treatment. DOH must approve membrane and alternative treatment technologies, and you must follow our specifications for operations and maintenance.

You will be in violation if you fail to monitor, report, or provide adequate treatment. At a minimum, you must send public notification to your customers.

Systems providing 4-log treatment that is not the result of a corrective action or state mandate may choose to do triggered source water monitoring instead of compliance monitoring.

For more information on 4-log treatment or if you provide disinfection and are not sure if it meets 4-log inactivation, contact our regional office (see Page 5).

### **4-log Treatment**

Systems that provide 4-log treatment of viruses can avoid taking triggered source water monitoring samples by conducting compliance monitoring. You must let us know that you intend to exercise this option.

## **Sanitary Surveys**

The GWR increases the required frequency of sanitary surveys for community water systems from once every five years to once every three years. A community water system may qualify for a five-year schedule if it meets the following criteria.

1. Provides 4-log treatment of viruses for all groundwater sources or,
2. Since the last sanitary survey, has no *E. coli* MCL or treatment technique violation, has no violation under the TCR through March 2016, has no more than one total coliform monitoring violation, and has no unresolved significant deficiencies in the current survey

For information on sanitary surveys, visit us online at

[doh.wa.gov/CommunityandEnvironment/DrinkingWater/RegulationandCompliance/Sanitary Surveys.aspx](http://doh.wa.gov/CommunityandEnvironment/DrinkingWater/RegulationandCompliance/SanitarySurveys.aspx).

## **Corrective Actions**

The GWR requires you to take corrective action when you have a significant deficiency or when a source water sample is *E. coli*-positive.

A significant deficiency is "a defect in the design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that DOH determines to be causing, or have the potential for causing, the introduction of contamination into the water delivered to consumers." If left unaddressed, a significant deficiency could cause a health risk to

your customers. These deficiencies can occur at any time, but most often are detected during a sanitary survey.

Corrective actions can involve one or more of the following:

- ◆ Correct all significant deficiencies.
- ◆ Provide an alternative source of water.
- ◆ Eliminate the source of contamination,
- ◆ Provide 4-log treatment of viruses.

Your sanitary survey report will identify any deficiencies you need to address. If the report doesn't identify specific actions needed to correct the problem, you must contact us within 30 days to determine corrective actions. Your system has 120 days per WAC 246-290-453(1)(c) either to complete corrective actions or to comply with a corrective action plan.

Several situations and violations in the Groundwater Rule require public notification. This table outlines these violations, the type of water system the violation applies to, and the type of notification required.

Issue	Notification Required	System Type
<i>E. coli</i> -positive groundwater source sample <sup>1</sup>	Tier 1 PN, CCR, Special Notification	Community and Noncommunity
Failure to take corrective action within 120 days of notification	Tier 2 PN, CCR, Special Notification	Community and Noncommunity
Failure to maintain at least 4-log treatment of viruses	Tier 2 PN, CCR	Community and Noncommunity
Failure to meet monitoring requirements	Tier 3 PN, CCR	Community and Noncommunity
Uncorrected significant deficiency <sup>2</sup>	Special Notice in CCR	Community
	Special Notice	Noncommunity
Unaddressed <i>E. coli</i> -positive groundwater source sample <sup>3</sup>	Special Notice in CCR	Community

<sup>1</sup> Consecutive systems served by the groundwater source must also notify the public.

<sup>2</sup> Systems must continue to notify the public annually until they correct the significant deficiency.

<sup>3</sup> Community systems must put a notice in the CCR annually until they address the positive source water sample.

Systems that receive an *E. coli*-positive result in a source water sample must notify their customers within 24 hours after getting their results.

Wholesale systems that receive an *E. coli*-positive result in a groundwater source sample must notify all their customers and the consecutive systems that receive their water within 24 hours. The consecutive system must then notify all of their customers within 24 hours after receiving notification from the wholesale system.

It is important to contact us as soon as possible if you receive an *E. coli*-positive sample result. For more information on public notification requirements and resources, visit us online at [doh.wa.gov/CommunityandEnvironment/DrinkingWater/DrinkingWaterEmergencies/PublicNotification.aspx](http://doh.wa.gov/CommunityandEnvironment/DrinkingWater/DrinkingWaterEmergencies/PublicNotification.aspx).

## Resources

EPA developed several guidance documents and fact sheets to assist water systems with the requirements of the rule.

- ◆ Compliance Help—includes quick reference guides, fact sheets, and full guidance manuals. [epa.gov/safewater/disinfection/gwr/compliancehelp.html](http://epa.gov/safewater/disinfection/gwr/compliancehelp.html)
- ◆ Basic Information—includes several questions and answers. [epa.gov/safewater/disinfection/gwr/basicinformation.html](http://epa.gov/safewater/disinfection/gwr/basicinformation.html)

The Office of Drinking developed the following publication to help you.

- ◆ Groundwater Rule: Source Water Sample Taps (DOH 331-436): [doh.wa.gov/portals/1/Documents/pubs/331-436.pdf](http://doh.wa.gov/portals/1/Documents/pubs/331-436.pdf).

## For more information

Staff from our regional offices can provide technical assistance, especially with source water sampling and *E. coli*-positive results.

### Northwest Regional Office—Kent

Coliform Program: 253-395-6775    Main Office: 253-395-6750

### Southwest Regional Office—Tumwater

Coliform Program: 360-236-3045    Main Office: 360-236-3030

### Eastern Regional Office—Spokane Valley

Coliform Program: 509-329-2134    Main Office: 509-329-2100



If you need this publication in an alternative format, call 800.525.0127 (TDD/TTY call 711). This and other publications are available at [www.doh.wa.gov/drinkingwater](http://www.doh.wa.gov/drinkingwater).



## Fact Sheet

# Groundwater Sources Under the Direct Influence of Surface Water (GWI)

April 2006

DOH PUB. #331-216  
(Updated)

### Background

The federal Surface Water Treatment Rule applies to all Group A public water systems (community and non-community) that use:

- Surface water sources.
- Groundwater sources under the direct influence of surface water (GWI).

Such sources are vulnerable to microbiological contamination. For most affected systems, the rule requires both filtration and disinfection to control this contamination.

### Definitions and source classification

The federal rule defines **groundwater under the direct influence of surface water** as:

*"any water beneath the surface of the ground with:*

1. *significant occurrence of insects or other macroorganisms, algae or large-diameter pathogens such as *Giardia lamblia*, or*
2. *significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions".*

"Under the direct influence of surface water" means the groundwater source is located close enough to nearby surface water, such as a river or lake, to receive direct surface water recharge. Since a portion of the groundwater source's recharge is from surface water, the groundwater source is considered at risk of contamination from pathogens such as *Giardia lamblia* and viruses, which are not normally found in true groundwaters.

Sources most likely to be under the direct influence of surface water are:

- Infiltration galleries and Ranney wells located near surface waters.
- Poorly constructed springs.
- Shallow wells located near surface waters.

### Process for designating sources as GWI

**Records review.** DOH conducts a records review to identify "potential" GWI sources. Potential GWI sources are defined as all infiltration galleries, Ranney wells, springs, and wells less than 50 feet deep located within 200 feet of surface water.

**Determination of hydraulic connection.** A water system may either conduct a hydrogeologic investigation or use the water quality monitoring (WQM) method to determine whether the potential GWI source is hydraulically connected to nearby surface water. The hydrogeologic



HELPING TO ENSURE SAFE AND RELIABLE DRINKING WATER



investigation requires a licensed geologist; the water quality monitoring method does not. The WQM method requires one year of weekly measurements of temperature and conductivity (or other parameters) at both the source and the surface water. The purveyor must arrange for statistical analysis of the data to determine if there is a correlation between source measurements and surface water measurements. The department can provide assistance and will check the validity of the analysis. If either the WQM method or a hydrogeologic investigation indicate a hydraulic connection, the source is designated as a groundwater in hydraulic connection with surface water, requiring disinfection and microscopic particulate analysis.

**Microscopic particulate analysis.** The water system collects a sample of source water and sends the sample to a laboratory for a microscopic particulate analysis. If certain numbers or types of surface water organisms are found in the groundwater samples, the source is designated to be under the direct influence of surface water. Such sources are classified as GWI and are subject to the Surface Water Treatment Rule

### **Treatment requirements for systems with GWI sources**

Water systems with GWI sources must achieve at least 99.9% removal or inactivation of *Giardia lamblia* cysts and at least 99.99% removal or inactivation of viruses. To accomplish this, systems must do all of the following:

- Filter, unless certain source quality and site-specific conditions are met to avoid filtration.
- Disinfect.
- Be operated by qualified personnel.

### **Compliance options**

Systems with GWI sources or sources identified by the department as being “potential” GWI sources have several compliance options to choose from, including:

- Modify the source to eliminate direct surface water influence.
- Develop an alternate DOH-approved source (for example, develop a protected groundwater source or purchase from a nearby approved public water system).
- Attempt to meet the source quality and site-specific criteria to remain unfiltered.
- Install filtration.

### **More information and assistance**

#### **Department of Health, Office of Drinking Water**

- Eastern Region, Spokane Valley (509) 329-2100
- Northwest Region, Kent (253) 395-6750
- Southwest Region, Tumwater (360) 236-3030
- Toll-free (800) 521-0323
- Web site: <http://www.doh.wa.gov/ehp/dw/>. Provides access to publications on *Cryptosporidium* and other contaminants, information on how to hire an engineer, and many other resources. Also includes links to other sites such as the federal Environmental Protection Agency (EPA) and the American Water Works Association (AWWA.)

**US Environmental Protection Agency:**

Safe Drinking Water Hotline 1-800-426-4791

Pressure Loss  
Responding to a  
Pressure Loss Event



# Water Main Break Response Protocol for Chlorinated Systems

331-583 • 1/1/2017

Our water infrastructure continues to age faster than it is replaced, resulting in ever-aging water distribution systems. Water main breaks remain a major issue for water utilities despite improved asset management and financial planning. By some estimates, over 700 water mains break in the United States every day and need repair. Water utilities repair these types of breaks quickly and without interruption in water service or risk to water quality. Some breaks, like those that make the news, can affect water service to many people and businesses and present a significant risk to public health.

The water industry recognizes the need to classify water main breaks in terms of public health significance. We established four categories of water main breaks to standardize communication and response efforts in Washington State. These categories describe public health risk across the spectrum of water main failure impacts to utility operations. They are consistent with the Water Research Foundation study—Effective Microbial Control Strategies for Main Breaks and Depressurization (Kirmeyer et al. 2014).

The attached tables describe the recommended response, communication, and repair procedures for each type of water main break. We recommend water utilities incorporate these protocols into their standard operating procedures. The guidance for responding to each type of break is consistent with the requirements of WAC 246-290-451(1).

## For more information

Our publications are online at <http://www.doh.wa.gov/drinkingwater>.

Contact our nearest regional office from 8 a.m. to 5 p.m. Monday through Friday. If you have an after-hours emergency, call (877) 481-4901.

Eastern Region, Spokane Valley (509) 329-2100 Adams, Asotin, Benton, Chelan, Columbia, Douglas, Ferry, Franklin, Garfield, Grant, Kittitas, Klickitat, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman, and Yakima counties.

Northwest Region, Kent (253) 395-6750 Island, King, Pierce, San Juan, Skagit, Snohomish, and Whatcom counties.

Southwest Region, Tumwater (360) 236-3030 Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Kitsap, Lewis, Mason, Pacific, Skamania, Thurston, and Wahkiakum counties.



If you need this publication in an alternative format, call 800.525.0127 (TDD/TTY call 711). This and other publications are available at [www.doh.wa.gov/drinkingwater](http://www.doh.wa.gov/drinkingwater).

## Main Break Categories

Type I Break	Type II Break	Type III Break	Type IV Break
Positive pressure maintained through completion of repair.	Controlled pipe repair with limited depressurization during pipe segment shutdown.	Uncontrolled loss of pressure at break site or depressurization elsewhere in the system.	Catastrophic main break or water loss event resulting in the complete loss of water service.
Pressure maintained in pipe during repair.	Pressure maintained at break site until pipe is exposed and trench dewatered. Shutdown limited to immediate valved off area. No loss of pressure elsewhere.	Pressure loss at break site while pipe is still buried or submerged and/or pressure loss elsewhere in the system.	Extensive water loss compared to system capacity, with no pressure/no water. Storage loss leaves limited flushing capacity.
Contamination is unlikely.	Limited possibility of contamination.	Significant possibility of contamination.	Contamination likely or certain.

### Type I Main Break Response

Assess environmental impacts and respond accordingly.

Call Washington 811.

Excavate to below break. Maintain pit water level below break.

Disinfect repair parts and repair site by swab/spray with 1% chlorine solution.

Complete repair with pipe still pressurized.

Restore residual disinfectant level at break to background levels by flushing.

Boil Water Advisory (BWA) and bacteriological sampling not needed.

### Type II Main Break Response

Assess environmental impacts and respond accordingly.

Call Washington 811.

Excavate to below break. Maintain pit water level below break.

Isolate/shut off customer services in affected area.

Provide customer notification using door hanger, personal contact, email, or reverse 911.

Follow established utility procedures to perform controlled shutdown of broken pipe segment.

Disinfect repair parts and repair site by swab/spray with 1% chlorine solution. If pipe replacement, disinfect from both ends by swabbing.

Complete repair.

Conduct low velocity flush to displace water in affected piping. Discharge to waste.

Flush to restore residual disinfectant level at the break to background levels.

Advise customers to flush plumbing when water service returns. Verify service is restored to all isolated customers.

If utility shuts off customer services in affected area and positive pressure is maintained throughout the system prior to depressurizing the break site, a boil water advisory is not needed.

Collect bacteriological/heterotrophic plate count samples to validate repair procedures. The utility may restore service before getting results.

### **Type III Main Break Response**

Assess environmental impacts and respond accordingly.

Call Washington 811.

Provide generic water main break notification and customer response steps on utility's website or directly to customers by door hanger, personal contact, email, or reverse 911 as soon as possible.

Review cross connection control program status, particularly compliance with premise isolation of high health hazards and assess risk of back siphon/backflow accordingly.

Call DOH and local health jurisdiction. Decide appropriate public notification message and methods.

Issue a boil water advisory and update the utility's website to show impacted area(s).

Evaluate firefighting capacity and sanitation impacts and communicate with appropriate entities.

Isolate/shut off customer services at the break site (if practical).

Disinfect repair parts and repair site—swab/spray with 1% chlorine solution. If pipe replacement, disinfect from both ends by swabbing.

Complete repair.

Complete post-repair disinfection of the distribution system, applying AWWA Standard C651 Section 4.11.3.3, Water Research Foundation Project 4307, or other applicable standard for guidance on disinfectant levels, if:

- Pressure is lost at the break before dewatering the trench and isolating the break.
- The break results in loss of pressure at points beyond break site, depending on degree of risk associated with extent, duration, and type of services affected.

Conduct a scour flush (at least three feet/second) to remove break-related sediment. This may not be practical for pipes greater than a 12-inch diameter. Flush at maximum practical flow rate until at least three pipe volumes are displaced and flush water runs clear.

Conduct a low velocity flush throughout area(s) subject to low pressures to displace water and restore background chlorine residual.

Restore residual disinfectant level at the break to background levels.

Check residual disinfectant level throughout the distribution system.

Advise customers to flush household plumbing when water service returns.

Collect bacteriological samples to verify effectiveness of response and provide basis for lifting the boil water advisory. The number of samples should reflect the impacted service population and service area.

Rescind BWA based on water quality monitoring results.

### **Type IV Main Break Response**

A Type IV break is a Type III break, with significant impact on system-wide performance. Follow Type III response plus the following.

Assess utility capacity to deal with event and seek aid as soon as possible.

Notify local fire authority of current and expected status of storage volume and system pressure.

Depletion of stored water may affect flushing capacity following repairs, delaying full restoration of water service and lifting the BWA.

Utility may need to include conservation messages with BWA notification.

Continually assess storage, source, and distribution capacity as related to post-repair flushing needs.

# DRINKING WATER WARNING: LOSS OF PRESSURE

## Public Notification

The \_\_\_\_\_ Water System, ID \_\_\_\_\_, located in \_\_\_\_\_ County may be contaminated because of a loss of pressure in the water system. Even if you didn't lose water pressure, your tap water may still be contaminated.

**Until Further Notice, Boil Your Tap Water Before Drinking.** Bring all water to a roiling boil for one minute. Let it cool before using. You should use boiled or purchased bottled water for drinking, making ice, brushing teeth, washing dishes, and food preparation. Boiling kills bacteria and other organisms in the water.

*When pressure loss occurs, contamination from the environment or from human or animal waste can be drawn into the water system. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems. These symptoms are not only caused 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 provider.*

**What caused the pressure loss?**

**What is the affected area?**

**What are we doing to correct the problem?**

**What should you do when we restore pressure to the water system?**

**We will notify you when you no longer need to boil the water.**

For more information, please call \_\_\_\_\_ at ( ) \_\_\_\_\_ - \_\_\_\_\_ or email \_\_\_\_\_.

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

The \_\_\_\_\_ Water System sent this notice to you on \_\_\_/\_\_\_/\_\_\_

### For Water Utility Use Only:

<b>Pressure Loss Public Notice Certification Form</b> Within 10 days of notifying your customers, please complete this certification form and return a copy of each type of notice you distributed (hand-delivered notice, news release, email, phone transcript, etc.) to our regional office. Call 1-800-521-0323 for the regional office address.		
Distribution was completed on ___/___/___.	Check all that apply: <input type="checkbox"/> Hand delivery, <input type="checkbox"/> News release (TV, radio, newspaper, etc.), <input type="checkbox"/> Posting at _____ <input type="checkbox"/> Other _____	Were the water users notified within 24 hours? <input type="checkbox"/> Yes <input type="checkbox"/> No
Signature of owner or operator		Position

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