

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH

IN RE: FCPG LOST LAKE RECREATION AREA  
Water System No. 1000097

TO: Mr. David Chavez  
Senior Staff Analyst  
FCPG/Lost Lake Recreation Area  
2220 Tulare Street, 6th Floor  
Fresno, CA 93721

CITATION FOR NONCOMPLIANCE  
TOTAL COLIFORM MAXIMUM CONTAMINANT LEVEL VIOLATION

OCTOBER 2013

Issued on January 22, 2014

Section 116650, Chapter 4, Part 12, Division 104 of the California Health and Safety Code (CHSC), authorizes the issuance of a citation for failure to comply with a requirement of the California Safe Drinking Water Act, or any regulation, standard, permit, or order issued hereunder.

VIOLATION

The Drinking Water Field Operations Branch of the California Department of Public Health (hereinafter 'Department') hereby issues a Citation to FCPG/Lost Lake Recreation Area (hereinafter 'Water System'), for failure to comply with Section 116555(a)(1) of the CHSC and Section 64426.1(b)(2) of Title 22, California Code of Regulations (CCR). Specifically, the Water System (mailing address: 2220 Tulare Street, 6<sup>th</sup> floor, Fresno, CA 93721) failed

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27

to comply with the total coliform Maximum Contaminant Level (MCL) for the month of October 2013.

The Water System operates under a domestic water supply permit issued by the Department in September of 2008. FCPG Lost Lake Recreation Area is a transient non-community water system that supplies water to a park and a campground. The park has an employee population of approximately two (2) people and a transient population of up to 500 people a week during the summer months. The Water System has approximately fifty (50) service connections which include restrooms and hose bibs that serve the campsites. The Department's records show that the operating season for the Water System is year round.

Section 64426.1(b)(2) specifies that a public water system collecting fewer than 40 samples per month is in violation of the total coliform MCL when more than one sample collected during any month is total coliform-positive.

The Water System is required to collect two (2) routine bacteriological samples from the distribution system during the months where the population served is over 1,000 people.

During months where the population served is typically under 1,000 people, the Water System may conduct quarterly bacteriological monitoring of the distribution system.

The bacteriological water analysis results submitted by the Water System reported the presence of total coliform bacteria in five (5) of six (6) samples collected by the Water System in October 2013. None of the positive samples showed the presence of fecal coliform or *E. coli* bacteria.

1 Upon being informed of the presence of total coliform bacteria in one of two routine  
2 samples collected on October 23, 2013, Water System staff collected a total of four repeat  
3 samples, including one from Well #1, on October 25, 2013. Well #1 serves one of the two  
4 pressure zones of the water system. All of the repeat samples, including the well sample,  
5 showed the presence of total coliform bacteria, and the absence of fecal coliform and E.  
6 Coli bacteria. Due to the above-mentioned total coliform positive samples, the Water  
7 System failed the total coliform MCL for the month of October 2013. All water samples  
8 for coliform bacteria collected during 2012 and 2013 are summarized in Attachment A.  
9

10 Water System staff have attributed the cause of contamination to incomplete disinfection  
11 and flushing of the well and distribution system following the installation of a check valve  
12 and a pressure relief valve. The Positive Total Coliform Investigation form completed by  
13 Water System staff is included here as Attachment B.  
14

15 **The five routine samples required the month following a month with one or more total**  
16 **coliform-positive samples were not collected in November 2013.**  
17

18 The Groundwater Rule adopted by the Department, effective August 18, 2011, requires the  
19 collection of a sample for bacteriological evaluation from wells serving the system in  
20 response to a coliform positive distribution sample. This requirement was met with the  
21 round of repeat sampling conducted by the Water System in October 2013.  
22  
23  
24  
25  
26  
27





1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27

A Tier 2 Public Notice for violation of paragraph 64426.1(b)(2) shall be given pursuant to Section 64463.4 and 64465. The Tier 2 Public Notice shall include the mandatory health effects language from Appendix 64465-A for a total coliform MCL failure.

The Water System shall post the public notice in conspicuous locations within the water system. Section 116450(g) requires that upon receipt of notification from a public water system, schools must notify school employees, students, and parents (if the students are minors), residential rental property owners or managers (including nursing homes and care facilities) must notify their tenants and business property owners, managers or operators must notify employees of businesses located on the property. These secondary notification requirements are included in the public notice.

Water System staff has reported that notification of the public was conducted on October 28, 2013, advising each consumer of the failure of the total coliform MCL during the month of October 28, 2013. A copy of the notice that was posted for each consumer is provided as Attachment C.

**DIRECTIVES**

The Water System is hereby directed to take the following actions:

1. By **February 15, 2014**, the Water System shall collect five (5) routine samples from the distribution and report the results to the Department by March 10, 2014.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27

2. Whenever the Water System has one or more total coliform-positive samples in a given month, at least five (5) routine samples shall be collected the following month as required by Section 64424(d) and as discussed in this Citation.
  
3. By **February 28, 2014**, the Water System shall submit an amended Bacteriological Sample Siting Plan which reflects the increased monitoring described in this citation. Guidelines are provided here as Attachment D.
  
4. By **February 28, 2014**, The Water System shall conduct a bacteriological cycle test on the raw water produced from Well #1. The cycle test shall be conducted using the guidelines provided as Attachment E. All of these raw water samples shall be analyzed for total and fecal coliform using the Multiple Tube Fermentation Method to determine the density of the coliform. The results of these samples shall be reported to the Department by the 10th day of the following month.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27

CIVIL PENALTIES

Sections 116650(d) and 116650(e) of the CHSC allow for the assessment of a civil penalty for failure to comply with requirements of the California Safe Drinking Water Act. Failure to comply with any provision of this Citation may result in the Department imposing an administrative penalty of not less than \$100 (one hundred dollars) per day as of the date of violation of any provision of this Citation.

1/22/14  
Date

Betsy Lichti  
Betsy S. Lichti, P.E.  
Senior Sanitary Engineer, Fresno District  
DRINKING WATER FIELD OPERATIONS BRANCH



BSL/EL

Attachments:

- Attachment A: Summary of Bacteriological Samples collected during 2012 and 2013
- Attachment B: Positive Total Coliform Investigation
- Attachment C: Public Notice
- Attachment D: Guidelines for the Development of a Bacteriological Sample Siting Plan
- Attachment E: Guidelines for conducting a Well Cycle Test

## Bacteriological Distribution Monitoring Report

<b>1000097</b>		<b>FCPG/Lost Lake Recreation Area</b>				<b>Distribution System Freq: 1/Q</b>			
<b>Sample Date</b>	<b>Time</b>	<b>Location</b>	<b>T Coli</b>	<b>E Coli</b>	<b>F Coli</b>	<b>Type</b>	<b>Cl2</b>	<b>Violation</b>	<b>Comment</b>
1/31/2012	10:50	Site #1	<1.1	A		Special			Special Samples following site damage clean up
1/31/2012	11:03	Site #2	<1.1	A		Special			Special samples following site damage cleanup
3/20/2012	11:49	Site 2	<1.1	A		Routine			
3/20/2012	12:04	Site 2	<1.1	A		Routine			
4/1/2012		Please see comments				Routine			Mark Minter retires on 3/30/12 requested the 2nd quarter samples to be collected during the last week in March as he would be traveling for replacement then and it could be more easily scheduled.
8/20/2012	8:47	ROU-3 PZ#1	A	A		Routine			
8/20/2012	9:10	ROU-5 PZ#2	A	A		Routine			
12/26/2012	10:29	ROU-4 PZ#1	A	A		Routine			
12/26/2012	10:55	ROU-4 PZ#2	A	A		Routine			
2/27/2013	11:36	ROU-1 P.2. #1	A	A		Routine			
4/16/2013	10:04	PZ 1	A	A		Routine			
4/16/2013	10:19	PZ 2	A	A		Routine			
4/16/2013	10:19	PZ 2	A	A		Routine			
7/16/2013	11:15	ROU - 3 PZ #1	A	A		Routine			
7/16/2013	11:31	Rou-3 PZ #2	A	A		Routine			
10/23/2013	10:21	Rou 4 PZ 1	P	A		Routine			
10/23/2013	11:00	Rou-4 PZ #2	A	A		Routine			
10/25/2013	9:45	Well #1	P	A		Source Repeat			
10/25/2013	10:00	ROU-4 PZ#1	P	A		Repeat			
10/25/2013	10:05	4-Rep 1 up	P	A		Repeat			
10/25/2013	10:10	4-Rep 3 down	P	A		Repeat		MCL	

### Violation Key

MCL	Exceeds the maximum contaminant level	MR5	Incorrect number of repeat samples as follow-up to a positive sample
MR1	No monthly sample for the report month	MR6	No source sample
MR2	No quarterly sample for the report month	MR7	No summary report submitted
MR3	Incorrect number of routine samples for the report month	MR8	Other comments and/or info
MR4	Did not collect 5 routine samples for previous month's positive sample	MR9	Cl2 not reported

## POSITIVE TOTAL COLIFORM INVESTIGATION Simple Well with Pressure Tank Systems

This form is intended to assist public water systems in completing the investigation required by the California Department of Public Health (Section 64426(b) of Title 22, California Code of Regulations) and may be modified to take into account conditions unique to the system.

### ADMINISTRATIVE INFORMATION

<b>PWS Name:</b> FCPG/LOST LAKE RECREATION AREA	<b>PWS ID NUMBER:</b> 1000097
<b>Name</b>	<b>Address</b>
Operator in Responsible Charge (ORC)	
Person that collected TC samples, if different than ORC	
Owner	2220 TULARE ST. FRESNO CA
Certified Laboratory for Microbiological Analyses	559-600-4259
Date Investigation Completed: 11-07-13	
Month(s) of Total Coliform MCL Failure: October 2013	

### INVESTIGATION DETAILS

SOURCE	WELL (name)	WELL (name)	WELL (name)	WELL (name)	COMMENTS
	# 1				
1. Inspect each well head for physical defects and report					
a. Is raw water sample tap upstream from point of disinfection?	N/A				NO DISINFECTION
b. Is wellhead vent pipe screened?	N/A				NO VENT
c. Is wellhead seal watertight?	YES				
d. Is well head located in pit or is any piping from the wellhead submerged?	NO				
e. Does the ground surface slope towards well head?	NO				
f. Is there evidence of standing water near the wellhead?	NO				
g. Is there a check valve on the well discharge line? Is the check valve seating properly?	YES				NEW CHECK VALVE
h. Are there any connections to the raw water piping that could be cross connections? (describe all connections in comments)	NO				
i. Is the wellhead secured to prevent unauthorized access?	YES				
j. To what treatment plant (name) does this well pump?	N/A				
k. How often do you take a raw water total coliform (TC) test?	REPEATS				
l. Provide the date and result of the last TC test at this location	08-20-13				ABSENT

**POSITIVE TOTAL COLIFORM INVESTIGATION**

DISTRIBUTION SYSTEM	SYSTEM RESPONSES
1. What is the minimum pressure you are maintaining in the distribution system?	40 PSI
2. Did pressure in the distribution system drop to less than 5 psi prior to experiencing the TCR positive finding.	Yes
3. Has the distribution system been worked on within the last week? (service taps, hydrant flushing, main breaks, main extensions, etc.) If yes, provide details.	A NEW CHECK VALVE AND PRESSURE RELIEF VALVE WAS INSTALLED ON WELL HEAD
4. Are there any signs of excavations near your distribution system not under the direct control of your maintenance staff?	NO
5. Did you inspect your distribution system to check for mainline leaks? Do you or did you have a mainline leak?	UNKNOWN NO LEAKS VISIBLE
6. If there was a mainline leak, when was it repaired?	UNKNOWN
7. On what date was the distribution system last flushed?	No
8. Is there a written flushing procedure you can provide for our review?	Dec. 11, 2013
9. Do you have an active cross connection control program?	Yes
10. What is name and phone number of your Cross-Connection Control Program Coordinator?	David Chavez, Sr. Staff Analyst, Fresno Co. Public Works, 600-4308 or (559) 706-4803 (cell)
11. Is the review and testing of backflow prevention devices current?	No, A program for testing of Backflow Prevention Devices by a private vendor is being implemented and should be operational by December 31, 2013, UNKNOWN
12. On what date was the last physical survey of the system done to identify cross-connections?	UNKNOWN

SAMPLE SITE EVALUATION (Complete for all TC+ or EC+ findings)	Routine Site TC+ or EC+	Upstream Site	Downstream Site	Sample 4
				(specify)
1. What is the height of the sample tap above grade? (inches)	28"	28"	28"	WELL
2. Is the sample tap located in an exterior location or is it protected by an enclosure?	EXTERIOR	EXTERIOR	EXTERIOR	EXTERIOR
3. Is the sample tap threaded, have a swing arm (kitchen sink) or aerator (sinks)?	THREADED	THREADED	THREADED	THREADED
4. Is the sample tap in good condition, free of leaks around the stem or packing?	YES	YES	YES	YES
5. Can the sample tap be adjusted to the point where a good laminar flow can be achieved without excessive splash?	YES	YES	YES	YES
6. Is the sample tap and area around the sample tap clean and dry (free of animal droppings, other contaminants or spray irrigation systems)	YES	YES	YES	YES
7. Is the area around the sample tap free of excessive vegetation or other impediments to sample collection	YES	YES	YES	YES
8. Describe how the tap was treated in preparation for sample collection (ran water, swabbed with disinfectant, flamed, etc.)	Disinfected, ran water, flamed			
9. Is this sample tap designated on the sampling plan submitted with this information request?	Yes	Yes	Yes	Yes

# POSITIVE TOTAL COLIFORM INVESTIGATION

Page 3 of 3

Attachment B

SAMPLE SITE EVALUATION (Complete for all TC+ or EC+ findings)	Routine Site TC+ or EC+	Upstream Site	Downstream Site	Sample 4 (specify)
10. What were weather conditions at the time of positive sample (rainy, windy, sunny)?	Sunny	sunny	sunny	Sunny

GENERAL OPERATIONS:	Response
1. Where there any power outages that affected water system facilities during the 30 days prior to the TC+ or EC + findings?	Yes (motor contactor failure)
2. Where there any main breaks, water outages, or low pressure reported in the service area where TC+ or EC+ samples were located.	Yes (water outage caused by power failure)
3. Does the system have backup power or elevated storage?	No
4. During or soon after bacteriological quality problems, did you receive any complaints of any customers' illness suspected of being waterborne? How many?	No
5. What were the symptoms of illness if you received complaints about customers being sick?	No

## ADDITIONAL INFORMATION TO BE SUBMITTED WITH RESPONSES TO THE ABOVE QUESTIONS

1. Sketch of System showing all sources, treatment locations, storage tanks, microbiological sampling sites and general layout of the distribution system including the location of all hazardous connections such as the wastewater treatment facility.
2. A set of photographs of the well, pressure tanks, and storage tanks in the system may be submitted if they would show that the contamination is directly related and changes have been made since the last inspection by our Department
3. Name, certification level and certificate number of the Operator in Responsible Charge.
4. Copy of the last cross connection survey performed that identifies the location of all unprotected cross connections.

**SUMMARY: BASED ON THE RESULTS OF YOUR INVESTIGATION AND ANY OTHER INFORMATION AT YOUR DISPOSAL, WHAT DO YOU BELIEVE TO BE THE CAUSE OF THE POSITIVE TOTAL COLIFORM SAMPLES FROM YOUR PUBLIC WATER SYSTEM?**

I think when the pressure relief and new check valve were installed the system wasn't properly disinfected and flushed.

**CERTIFICATION: I CERTIFY THAT THE INFORMATION SUBMITTED IN RESPONSE TO THE QUESTIONS ABOVE IS ACCURATE TO THE BEST OF MY PROFESSIONAL KNOWLEDGE**

NAME: Mitchell Wright TITLE: \_\_\_\_\_ DATE: \_\_\_\_\_

**IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER**

Este informe contiene información muy importante sobre su agua potable.  
Tradúzcalo o hable con alguien que lo entienda bien.

---

**FCPG/ Lost Lake Park Has Levels of Coliform Bacteria  
Above the Drinking Water Standard**

---

Our water system recently failed a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what you should do, what happened and what we did to correct this situation.

We routinely monitor for drinking water contaminants. Recent test results from the routine water sample indicated the presence of coliform. The State Health Department, Drinking Water Program requires repeat samples be taken within 24 hours of the notification of positive coliform test. The repeat samples confirm any positive detection of coliform bacteria and help identify the extent of contamination within the system, the type of coliform present, and the location or source of the contamination. Subsequently, we took four (4) samples to test for the presence of coliform bacteria in October 2013. All four (4) of these samples showed the presence of total coliform bacteria. The standard is that no more than one sample per month may show the presence of coliform bacteria.

**What should I do?**

- **You do not need to boil your water or take other corrective actions.**
- This is not an emergency. If it had been, you would have been notified immediately. Total coliform bacteria are generally not harmful themselves. *Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.*
- Usually, coliforms are a sign that there could be a problem with the treatment or distribution system (pipes). Whenever we detect coliform bacteria in any sample, we do follow-up testing to see if other bacteria of greater concern, such as fecal coliform or *E. coli*, are present. **We did not find any E.Coli in the testing.**
- People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice about drinking water from their health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1(800) 426-4791.
- If you have other health issues concerning the consumption of this water, you may wish to consult your doctor.

**What happened? What is being done?**

Due to recent maintenance on the well that serves the Park's day use area and volleyball courts, water test results came back positive. Public Work staff will be treating the affected well with chlorine and will re-test the water system.

For more information, please contact David Chavez at (559) 600-3004 or Fresno County Public Works and Planning, Parks, 2220 Tulare Street, Suite 600, Fresno, CA 93721.

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

**Secondary Notification Requirements**

Upon receipt of notification from a person operating a public water system, the following notification must be given within 10 days [Health and Safety Code Section 116450(g)]:

- **SCHOOLS:** Must notify school employees, students, and parents (if the students are minors).
- **RESIDENTIAL RENTAL PROPERTY OWNERS OR MANAGERS** (including nursing homes and care facilities): Must notify tenants.
- **BUSINESS PROPERTY OWNERS, MANAGERS, OR OPERATORS:** Must notify employees of businesses located on the property.



RON CHAPMAN, MD, MPH  
Director & State Health Officer

State of California—Health and Human Services Agency  
California Department of Public Health



EDMUND G. BROWN JR.  
Governor

**GUIDELINES FOR COMPLETING THE  
BACTERIOLOGICAL SAMPLE SITING PLAN FOR SMALL WATER SYSTEMS**

The total coliform regulation requires the water supplier to submit a bacteriological sample siting plan to the Department for review and approval. The locations where samples are to be collected must be written down and formally approved by the Department. These guidelines and Attachment 1, “Bacteriological Sample Siting Plan” Form, are to assist you in complying with these requirements.

To comply with the requirements for submitting a Bacteriological Sample Siting Plan, two (2) items must be submitted to the Department at this time.

1. A system map, street map, or system schematic showing all sampling locations must be submitted. The map can be prepared by any system representative. It does not have to be prepared by an engineer. The following are also to be shown on the map:

- Water Sources (i.e., well or spring)
- Treatment Facilities (i.e., chlorination)
- Storage Tanks
- Pressure Reducing Stations
- Booster Stations
- Pressure Zones
- Dead Ends
- Service Area Boundaries
- Routine Sample Sites
- Repeat Sample Sites
- Special Sample Sites

2. Complete Attachment 1, the “Bacteriological Sample Siting Plan” form, and **return the system map and form to the Department for review and approval.**

Once the Bacteriological Sample Siting Plan has been approved by the Department, copies should be provided to the person responsible for sample collection, the laboratory and the person responsible for reporting coliform-positive samples to the Department.

### Selection of Sampling Sites

The routine sampling sites chosen must be representative of the water distribution system including all pressure zones, areas supplied by each water source and distribution reservoir.

Looped Systems: If your entire water distribution system is looped, then one routine sample point may be representative of your system, assuming valves are open.

Pressure Zones: You should only be concerned about sampling in different pressure zones if your water system serves different areas of varying elevations, for example in mountainous areas.

#### ***How many routine sampling sites are required?***

A minimum of five (5) routine sampling sites must be selected and indicated on your map and sampling plan form. If your water system is required to collect fewer than 5 routine samples a month, then 5 routine samples must be collected the month following any coliform positive sample. This is the reason for identifying 5 routine sites in your plan.

If the water system is not adequately represented by 5 routine sample locations, you may identify additional locations and collect more than one sample per month. Each site identified should be rotated for sampling at least every three months.

#### ***How many repeat sampling sites are required?***

For systems normally collecting one or fewer samples per month, a repeat sample set consists of four samples (could be greater than four if more than one source is providing water to the distribution) to be collected from the following locations:

- One repeat sample from the same routine location.
- One repeat sample from an *upstream location*.  
(within 5 connections of the routine site)
- One repeat sample from a *downstream location*.  
(within 5 connections of the routine site)
- One sample from *each active source*.  
(The following criteria should be considered when determining where to collect the fourth repeat sample.)
  - For systems with only one active well and do not provide continuous chlorination, the sample may be collected at the wellhead.
  - For systems with more than one active well, it may not be possible to determine which well was serving the area where the positive routine sample

was collected. For these systems, repeat samples should be collected at each well head.

- Contact the Department for assistance.

For systems collecting more than one routine sample per month, a repeat sample set consists of three samples from the following locations:

- One repeat sample from the same routine location.
- One repeat sample from an upstream location.  
(within 5 connections of the routine site)
- One repeat sample from a downstream location.  
(within 5 connections of the routine site)

***What if the water system does not have enough locations to select the required number of routine and repeat sample sites?***

If the water system does not have enough sample locations to identify 5 routine sites and 3 to 4 repeat sites per routine, you may either (1) identify fewer than 5 routine sites as long as the sampling adequately reflects water quality in the distribution system, or (2) use some of the routine sites as repeat sites for other routines (i.e., double up on use of available sites).

### **Pointers for Sample Site Selection**

- When selecting a routine sample site you should be able to select a site upstream and a site downstream for repeat sampling.
- Select a site where the water is used continuously all year round.
- Pick a site that is easily accessible, i.e., a fenced yard with a locked gate and vicious dog is not a good selection.
- When choosing a sampling tap you should consider these factors:

The sampling tap should be located in as clean an environment as possible. It should be protected from contamination by humans, animals, airborne materials or other sources of contamination.

If you choose an outside private tap, it should be one that is in frequent use, clean, and at least 1½ feet (18 inches) above the ground. The sample tap should discharge downward.

If you choose an inside tap, be sure that you are not sampling from drinking fountains; taps that have aerators or strainers, or swivel faucets; or taps off of individual homeowner treatment units.

Do not choose a fire hydrant as sampling tap.

Avoid taps that are surrounded by excessive foliage or taps that are dirty or corroded.

Avoid taps that leak, have fittings with packing, or have permanent hoses or attachments fastened to the tap (Never collect a sample from a hose).

Avoid the use of dead ends for routine sample collection, and use them for repeat samples only if no other sample sites are available and if there is continuous water use from a service off the dead-end.

### **Instructions for Completing the Bacteriological Sample Siting Plan Form**

This form has been designed to include all the requirements for the Bacteriological Sample Siting Plan.

- **Public Water System Classification**

The public water system (PWS) classification for your water system is either community, nontransient noncommunity or transient noncommunity. This classification determines the type and frequency of all water quality testing. If you are uncertain of your classification, contact the Department.

- **Month/Daily Users**

The monthly population determines the frequency of bacteriological sample collection for community water systems. The daily population determines the frequency of sample collection for transient and nontransient noncommunity systems.

- **Active Service Connections (Community water systems only)**

This is the number of active hook-ups served by the system. If your system has a hook-up to a vacant lot, do not count this as an active connection. If a vacant lot has a right to a future connection, do not count this as an active connection. If a residence is connected to the system, but the residence is vacant, count this as an active hook-up.

- **Sampling Frequency**

This is the minimum number of routine bacteriological samples required at the frequency specified. If any routine sample is positive for coliform bacteria, additional repeat samples will be required. Repeat samples are in addition to the required routine samples. If you are uncertain of the routine sampling frequency for your water system, contact the Department.

A coliform-positive sample will increase the routine monitoring for a small system the following month. A system normally collecting less than 5 routine

samples per month, which has a coliform positive sample, must collect a minimum of five (5) routine samples the following month.

- **Trained Sampler**

The person collecting samples must be trained.

Sampling Service: Water systems utilizing a certified laboratory or other sampling service for water sample collection will be considered to have trained samplers. Enter the name of the laboratory or sampling service collecting your samples. A copy of the approved Bacteriological Sample Siting Plan should be provided to the laboratory or sampling service, if one is used.

Other Trained Samplers: Any person receiving a certificate from AWWA for attendance of the Water Sampling Training should submit a copy of their certificate along with the completed form. Any other samplers should submit a statement of their experience and training to this Department for approval.

- **Analyzing Lab**

Enter the state-certified laboratory, which will be analyzing your water samples.

- **Person Responsible to Report Coliform-Positive Samples to CDPH**

This should be the person that the laboratory is required to contact when a sample is total or fecal coliform positive. This person must notify the Department within 24 hours of a violation of the total coliform standard (more than one positive sample in a month) or when any sample is fecal or *E. coli* positive. This person should have the authority to take corrective action as required by regulation and the Department. This should be the same person listed on your Emergency Notification Plan.

- **Day/Evening Phone Number**

The Department requires that the water system provide the phone numbers of the person listed above so that they can be contacted by the laboratory or the Department at any time during the day or evening in the event of a bacteriological emergency.

- **Signature and Date**

The person preparing the Sample Siting Plan should sign and date the plan. If the Department has questions regarding the sampling plan, this is the person to be contacted.

- **Sample ID**

This should be entered on the laboratory slip when the sample is turned into the laboratory. This is the unique identifier for the water sample location or the location address may also be used. For systems, which have no more than five (5) routine locations, these routine sites will be 1-ROU, 2-ROU, 3-ROU, 4-ROU, and 5-ROU.

For systems collecting one or fewer routine samples per month, a minimum of five (5) routine sampling sites with three (3) repeat sampling sites for each routine sample locations must be listed.

For systems collecting more than one routine sample per month, a minimum of five (5) routine sampling sites with two (2) repeat sampling sites for each routine sample location must be listed. Repeat sample sites are to be located within five (5) service connections upstream and downstream of the routine sample site.

All sample locations should be marked in some way with the Sample ID or location address, i.e., the code painted on the sampling location or tagged with a water proof tag so the person collecting the water sample is sure to collect the water from the correct sample locations.

- **Sample Type**

This describes what type of sample (routine or repeat) is to be collected at this location.

- **Sample Point**

This is the type of the sample location. Use the following abbreviations, when appropriate.

HB	Hose Bib (exterior)
SF	Sink Faucet
PC	Goose Neck Type Copper Tube with Pet Cock

- **Location of Sample Point**

This is the description of the area in the distribution that the sample site is located. Routine sample sites shall not be located at dead ends.

DE	Dead End (Not Recommended)
PZ	Pressure Zone
RD	Representative Distribution

- **Location Address**

This is the actual physical location where the water sample is to be collected. If possible use a street address, i.e., 103 Good Street. If the location does not have a street address, use the nearest crossroads or use the last name of the resident, i.e., “Brown Residence.” If the location is a business, please list the business name and address.

When describing the location, keep in mind that the person collecting water samples must be able to locate the sample site from your description.

- **Months Sample Collected at This Location**

This is the schedule for routine samples to be collected. For example, suppose two (2) sites are representative of your systems. Site No. 1 will be sampled in January, March, May, July, September, and November. Site No. 2 will be sampled in February, April, June, August, October, and December. All routine sites identified should be rotated to allow sampling at least every 3 months.

**BACTERIOLOGICAL SAMPLE SITING PLAN FOR SMALL WATER SYSTEMS**

<b>System No.:</b>		<b>System Name:</b>		<b>List all Active Sources that may need to be sampled for each Total Coliform Positive:</b>	
<b>PWS Classification:</b>		<b>No. Monthly Users: Daily Users:</b>			
<b>No. Active Service Connections:</b>		<b>Sampling Frequency:</b>			
<b>Name of Trained Sampler:</b>		<b>Analyzing Lab:</b>			
<b>Person responsible to report coliform-positive samples to CDPH:</b>				<b>Day/Evening Phone No:</b>	
<b>Signature of Water System Representative:</b>				<b>Date:</b>	
<b>Sample ID</b>	<b>Sample Type</b>	<b>Sample Point</b>	<b>Location of Sample Point</b>	<b>Address of Sample Point</b>	<b>Months Sample Collection at this Location</b>
1-ROU	Routine				
1-REP1	Repeat				Repeat Sample Only
1-REP2	Repeat				Repeat Sample Only
1-REP3 *	Repeat				Repeat Sample Only
2-ROU	Routine				
2-REP1	Repeat				Repeat Sample Only
2-REP2	Repeat				Repeat Sample Only
2-REP3	Repeat				Repeat Sample Only
3-ROU	Routine				
3-REP1	Repeat				Repeat Sample Only
3-REP2	Repeat				Repeat Sample Only
3-REP3	Repeat				Repeat Sample Only
4-ROU	Routine				
4-REP1	Repeat				Repeat Sample Only
4-REP2	Repeat				Repeat Sample Only
4-REP3	Repeat				Repeat Sample Only
5-ROU	Routine				
5-REP1	Repeat				Repeat Sample Only
5-REP2	Repeat				Repeat Sample Only
5-REP3	Repeat				Repeat Sample Only

If the water system has one or more total coliform-positive samples, at least five routine samples will be collected the following month.

If chlorine is being used, is it used on a continuous basis? Yes  No  *If yes, quarterly raw water samples must be taken*

\* May be a source sample to satisfy the triggered source monitoring requirement under the Ground Water Rule



RON CHAPMAN, MD, MPH  
Director & State Health Officer

## California Department of Public Health



EDMUND G. BROWN JR.  
Governor

### WATER SUPPLY WELL CYCLE TEST FOR BACTERIOLOGICAL CONTAMINATION

When a water supply well is suspected to be a possible source of bacteriological contamination in a domestic water system the well must be investigated. The cycle test is an effective method of evaluating the potential for the well to produce bacteriologically contaminated water.

The following procedure is considered to be an effective test for evaluation of the well. The well should be inactive for a minimum of ½ hour or longer before the start of the test, to allow the well to return to a static condition. For best results the well should discharge to waste, or if this is not possible, the discharge should be such that the well will run continuously for the 30 minute duration of the test. Have on hand an adequate supply of sample containers and identification tags.

- Open the discharge line and turn the pump on.
- Collect bacteriological samples at approximately:
 

No. 1 first water out of discharge	No. 4 at 15 minutes
No. 2 at 1 minute	No. 5 at 30 minutes
No. 3 at 5 minutes	

If the cycle test procedure is being done in follow-up to a previous coliform-positive sample from the well, the above samples should be analyzed by one of the methods listed below or a comparable method that would allow a determination of the density or enumeration of coliform present. If any of the cycle test samples are positive, the well should be disinfected and a follow-up cycle test performed by a method that would allow a determination of the density or enumeration of coliform present.

---

#### BACTERIOLOGICAL LABORATORY TEST PROCEDURES

##### Benefits and Disadvantages

##### Colilert Quanti-Tray or ColiPlate enzyme substrate test method: (Uses 100 ml sample)

- |                |   |
|----------------|---|
| Benefits:      | Determines degree of contamination with a MPN result (Most Probable Number)<br>Gives total coliform and E. coli results |
| Disadvantages: | More Expensive  |

##### Multiple Tube test method: (Uses 100 ml sample divided to ten 10 ml tubes)

- |                |   |
|----------------|---|
| Benefits:      | Determines degree of contamination with a MPN result (Most Probable Number) |
| Disadvantages: | More expensive  |

NOTE: For either of the above methods, time for test completion depends upon media used.  
Defined substrate medias yield faster results, 18 to 48 hours (varies with brand of media)  
Fermentation media takes 48 to 96 hours for results.

##### Membrane Filter (Uses 100 ml sample)

- |                |   |
|----------------|---|
| Benefits:      | Results in 24 hours<br>Relatively inexpensive   |
| Disadvantages: | Can be difficult to filter adequate size of sample<br>Colonies of non-coliform bacteria can obscure coliform bacteria thus nullifying results and requiring re-testing. |