



EDMUND G. BROWN JR.  
GOVERNOR



MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

## State Water Resources Control Board

Division of Drinking Water

February 16, 2016

System No. 0210001

Kimi Johnson  
General Manager  
Lake Alpine Water Company  
P.O. Box 5013  
Bear Valley, CA 95223

### LAKE ALPINE WATER COMPANY WATER SYSTEM - TRANSMITTAL OF CITATION NO. 01-10-16C-003 FOR DISINFECTION CONTACT TIME VIOLATION (FEBRUARY 2016)

Dear Ms. Johnson:

The Lake Alpine Water Company (LAWC) Water System (No. 0210001) failed to achieve adequate pathogen inactivation as measured using the CT ratio for two (2) days during the month of February 2016. The State Water Resources Control Board, Division of Drinking Water (Division), has issued Citation No. 01-10-16C-003 in response to this violation. The citation is being transmitted to LAWC under cover of this letter.

Please respond to the Directives of this Citation by the deadlines established with each item. If you have any questions regarding this Citation, please contact Dave Remick of this office by email at [david.remick@waterboards.ca.gov](mailto:david.remick@waterboards.ca.gov) or by phone at (209) 948-3878.

Sincerely,

Bhupinder S. Sahota, P.E.  
District Engineer, Stockton District  
NORTHERN CALIFORNIA BRANCH  
DRINKING WATER FIELD OPERATIONS

Attachments:

Citation No. 01-10-16C-003

Certified Mail No. 7004 2890 0002 0057 9980

R:\DDW\Stockton\Dist10\SSF\Alpine County\0210001\Enforcement\Jan 2016 CT citation cover letter.doc

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

31 E. Channel Street, Room 270, Stockton, CA 95202 | [www.waterboards.ca.gov](http://www.waterboards.ca.gov)



1 for violation of California Code of Regulations (CCR), Title 22, **Sections 64652(a),**  
2 **64654(a), 64654(b)(1), and 64663(c).**

3  
4 **APPLICABLE AUTHORITIES**

5 **Section 116650 of California Health and Safety Code provides:**

6  
7 (a) If the Division determines that a public water system is in violation of  
8 this chapter or any regulation, permit, standard, citation, or order issued or adopted  
9 thereunder, the Division may issue a citation to the public water system. The citation  
10 shall be served upon the public water system personally or by certified mail. Service  
11 shall be deemed effective as of the date of personal service or the date of receipt of  
12 the certified mail. If a person to whom a citation is directed refuses to accept delivery  
13 of the certified mail, the date of service shall be deemed to be the date of mailing.

14 (b) Each citation shall be in writing and shall describe the nature of the  
15 violation or violations, including a reference to the statutory provision, standard, order,  
16 citation, permit, or regulation alleged to have been violated.

17 (c) A citation may specify a date for elimination or correction of the  
18 condition constituting the violation.

19 (d) A citation may include the assessment of a penalty as specified in  
20 subdivision (e).

21 (e) The Division may assess a penalty in an amount not to exceed one  
22 thousand dollars (\$1,000) per day for each day that a violation occurred, and for each  
23 day that a violation continues to occur. A separate penalty may be assessed for each  
24 violation.

25

26

27

1 **California Code of Regulations, Title 22, Section 64652(a) provides, in relevant**  
2 **part:**

3  
4 (a) Each supplier using an approved surface water shall provide multibarrier treatment  
5 that meets the requirements of this chapter and reliably ensures at least:

6 (1) A total of 99.9 percent reduction of *Giardia lamblia* cysts through filtration  
7 and disinfection; and

8 (2) A total of 99.99 percent reduction of viruses through filtration and  
9 disinfection.

10

11 **California Code of Regulations, Title 22, Section 64654(a) and (b)(1) provides, in**  
12 **relevant part:**

13

14 (a) All approved surface water utilized by a supplier shall be provided with continuous  
15 disinfection treatment sufficient to insure that the total treatment process provides  
16 inactivation of *Giardia lamblia* cysts and viruses, in conjunction with the removals  
17 obtained through filtration, to meet the reduction requirements specified in section  
18 64652(a).

19

20 (b) Disinfection treatment shall comply with the following performance standards:

21 (1) Water delivered to the distribution system shall not contain a disinfectant  
22 residual of less than 0.2 mg/l for more than four hours in any 24 hour period.

23

24

25

26

1 **California Code of Regulations, Title 22, Section 64663(c) provides, in relevant**  
2 **part:**

3  
4 The supplier shall notify the Division as soon as possible, but no later than by the end  
5 of the next business day, or within 24 hours, whichever is less, by telephone or other  
6 equally rapid means whenever:

7  
8 (c) There is a failure to maintain a minimum disinfectant residual of 0.2 mg/l in the  
9 water being delivered to the distribution system. The supplier shall report whether or  
10 not the disinfectant residual was restored to at least 0.2 mg/l within four hours.

11  
12  
13  
14 **STATEMENT OF FACTS**

15  
16 The LAWC water system operates under the authority of a Domestic Water Supply  
17 Permit, No. 03-10-08P-001, granted by the Division on July 17, 2008.

18  
19 The LAWC operates and maintains a water system that supplies water to a population  
20 of approximately 1,330 permanent and seasonal residents. During peak holiday  
21 periods, the numbers can spike up to around 2,500 people. The number of people  
22 served varies greatly with seasonal use in the area. There are about 490 service  
23 connections in the service area that consists of the community of Bear Valley, which  
24 is located north of State Highway 4 in the western portion of Alpine County.

25  
26 LAWC is permitted to use surface water from Bear Lake, which is on an unnamed  
27 tributary of Bloods Creek at the northern end of Bear Valley. The lake water

1 treatment process utilizes two Memcor 48CMF–L microfiltration membrane skids  
2 manufactured by US Filter, Inc. The treated water is stored in three reservoirs with a  
3 total storage capacity of about 600,000 gallons.

4  
5 CCR Section 64652(a) specifies that each supplier using an approved surface water  
6 source shall provide multibarrier treatment that meets the requirements of the Surface  
7 Water Filtration and Disinfection Treatment Regulations (hereinafter “SWTR”) and  
8 reliably ensures that at least a total of 99.9 percent (3.0-log) reduction of *Giardia* cysts  
9 and 99.99 percent (4.0-log) reduction of viruses is achieved through filtration and  
10 disinfection. The LAWC Memcor 48CMF–L microfiltration membrane treatment is  
11 credited with 4.0-log *Giardia* removal and 0.5-log virus removal through filtration.  
12 LAWC’s permit requires 0.5-log of *Giardia* inactivation through disinfection and 3.5-log  
13 of virus inactivation through disinfection at all times to meet the SWTR requirement to  
14 provide multibarrier treatment.

15  
16 The LAWC is required to calculate a daily disinfectant pathogen inactivation (CT) ratio  
17 in order to determine the effectiveness of the disinfection treatment.

18  
19 The effectiveness of the disinfection process to achieve the inactivation levels is  
20 determined by the amount of time a specific concentration of disinfectant is in contact  
21 with the water. The ‘CT’ concept is used, in which ‘C’ is the disinfectant concentration  
22 and ‘T’ is the contact time.

23  
24  
25  
26  
27

<b>LAWC Treatment Requirements and Removal Credits</b>	
Total Reduction Requirements Through Filtration and Disinfection	3.0-log <i>Giardia</i> 4.0-log virus
Assigned Removal Credit for Memcor microfiltration Membranes	4.0-log <i>Giardia</i> 4.0-log <i>Cryptosporidium</i> 0.5-log virus
<b>Disinfection (CT) Inactivation Requirements</b>	<b>0.5-log <i>Giardia</i></b> <b>3.5-log virus</b>

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20

The CT effectiveness is dependent on various factors including temperature, pH, the chlorine residual, and the contact time. The LAWC treatment system includes one 200,000-gallon redwood tank, which serves as the clearwell through which CT is determined.

The LAWC utilizes free chlorine as a method of disinfection. An on-site liquid chlorine generation system is used to produce sodium hypochlorite for disinfection. LAWC is required to provide a daily CT ratio of at least 1.0 to determine compliance with disinfection inactivation requirements and monitor the performance of the disinfection process. This CT ratio is determined by the amount of CT achieved in relation to the amount of CT that is required. The LAWC failed to maintain a daily CT ratio of 1.0 or greater for two (2) days in February 2016. These failures are summarized below in Table 1:

**Table 1: CT Failure Dates**

<b>Date</b>	<b>CT Ratio</b>
2/4/2016	0.40
2/6/2016	0.80

Permit No. 03-10-08P-001 was issued on July 17, 2008, and included the following conditions, which are directly applicable to this citation:

1 7. To maintain a second barrier against microorganisms, the LAWC Water Treatment Plant shall  
2 provide a minimum of **0.5-log *Giardia*** cyst and **3.5-log virus** inactivation through disinfection (post  
3 chlorination) at all times. LAWC shall utilize a  $T_{10}/T$  (baffling factor) of 0.1 for the 200,000 gallon  
4 clearwell.

5  
6 15. LAWC shall notify the Division's Stockton District office by telephone and fax of any failure to meet  
7 SWTR standards in the effluent of the treatment plant, failure to meet CT requirements, or whenever  
8 the turbidity of the filter effluent exceeds 1.0 at any time. Notification shall occur within 24 hours of  
9 LAWC becoming aware of such an incident. If the Division's Stockton District office is closed at the  
10 time, it shall be notified by telephone before 8:15 a.m. of the next day. The water shall not be supplied  
11 to the distribution system until such incidents are corrected.

12  
13 In addition to failing to meet the minimum required CT ratio on the two days specified  
14 in February, the LAWC also failed to ensure that water delivered to the distribution  
15 system contained a disinfectant residual of not less than 0.2 mg/l for more than four  
16 hours in any 24 hour period. This occurred on February 4, 2016.

17  
18 LAWC also failed to notify the Division's Stockton District office (within 24 hours) of  
19 failure to meet the SWTR standards, which includes failure to meet CT requirements  
20 and to maintain a chlorine residual of not less than 0.2 mg/l in the water delivered to  
21 the distribution system.

22  
23  
24  
25  
26  
27

**DETERMINATION**

1  
2 The Division has determined that the LAWC Water System failed to comply with the  
3 requirements of Section 64652(a) due to the fact that the LAWC Water System is in  
4 violation of the requirement to achieve required log inactivation of *Giardia* cysts and  
5 viruses through disinfection.

6  
7 The Division has determined that the LAWC Water System failed to comply with the  
8 requirements of Section 64654(a) due to the fact that the LAWC Water System is in  
9 violation of the requirement to insure that the total treatment process provided  
10 inactivation of *Giardia lamblia* cysts and viruses in conjunction with removals obtained  
11 through filtration and failed to comply with Section 64654(b)(1) due to the fact that the  
12 LAWC Water System is in violation of the requirement to ensure that the water  
13 delivered to the distribution system shall not contain a disinfectant residual of less  
14 than 0.2 mg/l for more than four hours in any 24 hour period.

15  
16 The Division has determined that the LAWC Water System failed to comply with the  
17 requirements of Section 64663(c) due to the fact that the LAWC Water System is in  
18 violation of the requirement to notify the Division within 24 hours after it was  
19 determined that water delivered to the distribution system had a disinfectant residual  
20 of less than 0.2 mg/l.

21  
22 Therefore the LAWC Water System is in violation of Sections 64652(a), 64654(a),  
23 64654(b)(1), and 64663(c) of the CCR.

24  
25  
26  
27

**DIRECTIVES**

LAWC is hereby directed to take the following actions:

1. By **March 4, 2016**, notify the consumers served by the LAWC Water System that the water did not meet the disinfection treatment requirements of the SWTR during the month of February 2016, in conformance with notification requirements specified in Section 64463.4 (a)(1), Title 22, CCR. The notification shall be provided in accordance with the following:

a. Provide written notice of the disinfection treatment requirements violation by mail or by direct hand delivery to every customer and by internet using the LAWC website of [www.lakealpinewater.com](http://www.lakealpinewater.com). The notice shall be published and delivered once, no later than the above mentioned date.

This notification shall be given in English. In addition, if the LAWC Water System serves a large proportion of other non-English speaking consumers, notices must contain some information in the appropriate language(s) on the importance of the notice as provided in the Division's guidance for the Consumer Confidence Report (CCR).

b. The contents of the notice, including the mandatory language, shall be approved by the Division prior to publication and delivery.

c. Within ten (10) days following publication and delivery of the notice, LAWC shall submit to the Division a copy of the notification including certification of its publication and delivery.

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. By **March 4, 2016**, LAWC shall submit a written report to the Division describing:
  - a. The cause of the failure to provide adequate pathogen inactivation, as measured using the CT ratio, and any corrective actions taken, and
  - b. Any necessary operational changes that will be made to prevent future disinfection treatment failures.
3. LAWC shall notify the Division no later than by the end of the next business day or within 24 hours when the calculated CT ratio on any given day is below 1.0. LAWC shall notify the Division no later than by the end of the next business day or within 24 hours when the water delivered to the distribution system has a disinfectant residual of less than 0.2 mg/l.
4. By **March 4, 2016**, LAWC shall submit for review and comment, a standard operating procedure (SOP) that will be followed by the operators each day that they visit the treatment plant to ensure that water delivered to the distribution system meets all required standards.
5. Comply with Sections 64652(a), 64654(a), 64654(b)(1), and 64663(c), Title 22 of the CCR in all future monitoring periods.

The Division reserves the right to make such modifications to this Citation as it may deem necessary to protect public health and safety. Such modifications may be issued as amendments to this Citation, and shall be deemed effective upon issuance.

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

Nothing in this Citation relieves LAWC of its obligation to meet the requirements of the California Safe Drinking Water Act, or of any regulation, permit, standard, or order issued or adopted thereunder.

All submittals required by this Citation shall be submitted to the Division at the following address:

Bhupinder S. Sahota, P.E.  
District Engineer, Stockton District  
State Water Resources Control Board  
Division of Drinking Water  
31 E. Channel Street, Room 270  
Stockton, CA 9202

**PARTIES BOUND**

This Citation shall apply to and be binding upon LAWC, its officers, directors, shareholders, agents, employees, contractors, successors, and assignees.

**SEVERABILITY**

The Directives of this Citation are severable, and LAWC shall comply with each and every provision thereof, notwithstanding the effectiveness of any other provision.

**FURTHER ENFORCEMENT ACTION**

The California SDWA authorizes the Board to: issue citation with assessment of administrative penalties to a public water system for violation or continued violation of the requirements of the California SDWA or any permit, regulation, permit or order issued or adopted thereunder including, but not limited to, failure to correct a violation identified in a citation or compliance order. The California SDWA also authorizes the Board to take action to suspend or revoke a permit that has been issued to a public water system if the system has violated applicable law or regulations or has failed to comply with an order of the Board; and to petition the superior court to take various enforcement measures against a public water system that has failed to comply with violates an order of the Board. The Board does not waive any further enforcement action by issuance of this citation.

2-16-2016



Date

Bhupinder S. Sahota, P.E.,  
District Engineer, Stockton District  
Division of Drinking Water  
State Water Resources Control Board

cc: Rami Kahlon, Director of Division of Water & Audits  
California Public Utilities Commission  
505 Van Ness Avenue, 3<sup>rd</sup> Floor, Water Division  
San Francisco, CA 94102



Attachments:

1. Public Notification
2. Proof of Notification Form

Certified Mail No. 7004 2890 0002 0057 9980

R:\DDW\Stockton\Dist10\SSF\Alpine County\0210001\Enforcement\LAWC-Citation CT Failure violation Jan 2016.doc