

STATE OF CALIFORNIA
AMENDMENT TO THE
DOMESTIC WATER SUPPLY PERMIT ISSUED TO

City of Mt. Shasta
Public Water System No. 4710008



By The

State Water Resources Control Board
Division of Drinking Water

PERMIT AMENDMENT NO. 01-01-17(P)003A

EFFECTIVE DATE: August 18, 2017

WHEREAS:

1. The State Water Resources Control Board (State Water Board), through its Division of Drinking Water (DDW) "may renew, reissue, revise, or amend any domestic water supply permit whenever the ... [State Water Board] deems it to be necessary for the protection of public health whether or not an application has been filed." (California Health and Safety Code (CHSC), Section 116525 (c))
2. "Every resident of California has the right to pure and safe drinking water." (CHSC, Section 116270 (a))
3. "The Safe Drinking Water Act is "intended to ensure that the water delivered by public water systems of this state shall at all times be pure, wholesome, and potable." (CHSC, Section 116270 (e))

And WHEREAS:

1. This public water system is known as the City of Mt. Shasta (hereinafter "City") and is located in the City of Mt. Shasta, Siskiyou County, California.
2. The legal owner of the City of Mt. Shasta public water system is the City of Mt. Shasta, who is responsible for compliance with all statutory and regulatory drinking water requirements and the conditions set forth in this permit.

3. The City of Mt. Shasta public water system is described briefly below:

The City of Mt. Shasta is a community public water system that serves untreated groundwater to approximately 1,841 connections and an approximate population of 3,400 people in the City of Mt. Shasta, located in Siskiyou County, California. The approved groundwater sources are designated as Cold Spring Source (Sampling Point 002), Well 1 (Sampling Point 003) and High School Well (Sampling Point 004). Historically, chlorination or other disinfection has not been provided for the raw water sources or the water distribution system.

4. During 2014, the City of Mt. Shasta violated the Total Coliform Maximum Contaminant Level in August, September, November and December 2014. During 2015, the City of Mt. Shasta violated the Total Coliform Maximum Contaminant Level in January, February, May and October 2015. During 2016, the City of Mt. Shasta violated the Total Coliform Maximum Contaminant Level in March, July and August 2016. During 2017 to date, the City of Mt. Shasta violated the Total Coliform Maximum Contaminant Level in July 2017. E. Coli bacteria was detected in 1 sample (1 MPN) from the Cold Spring source in June 2017. E. Coli bacteria was detected in 2 samples (26 MPN and 3 MPN) collected from Tank 1 in July 2017.
5. In response to detection of E. Coli from Tank 1 in July 2017, the City conducted an investigation and submitted a Technical Memorandum entitled *City of Mt. Shasta – Water System Contamination and Degradation Origin Evaluation* (hereinafter *Technical Memo*) dated August 7, 2017, and prepared by PACE Engineering. The *Technical Memo* details recent water system problems, coliform test results, interior inspection of Tank 1, and planned improvements to the water system. The *Technical Memo* states that, “The results show that the level of coliforms decrease from Tank 1 to Tank 3. This corresponds to the hydraulic connectivity of the tanks and may suggest Tank 1 is the source of the problem.” This is further confirmed by the two positive E. Coli tests from water collected from Tank 1.
6. The City and PACE Engineering conducted an inspection of the interior of Tank 1 on August 2, 2017. This inspection revealed loose screens, spalling concrete and steel rebar exposure on the ceiling, leaking roof, roosting birds and feces on the roof, root intrusion into the interior of the tank, cracks at the roof/wall interface, stubbed piping through the tank wall, and rodent nests next to one of the perimeter vents. Based on the evidence, it has been concluded by the City, PACE Engineering, and State Water Board’s DDW Redding Field Office that the most probable source of E. Coli and Total Coliform detected in July 2017 was due to sanitary defects in Tank 1.

Tank 1 was reportedly isolated by valving by the City on July 27, 2017, and physically disconnected on August 10, 2017.

7. The *Technical Memo* lists these planned improvements to the public water system including:

A) *Tank 1 and Roseburg Improvements*, including:

- 1) Replacement of Tank 1;
- 2) Solenoid Override Control of the Quail Hill altitude valve;
- 3) Tank Inlet/Outlet Improvements; and,

B) *Emergency Chlorination Improvements*. As stated in the *Technical Memo*:

“The City has begun construction of emergency chlorination facilities at the Cold Spring site. These facilities include a timber framed building, tablet chlorinator, booster pump, and dosing pump. A manual generator transfer switch will be provided in the event of power failure. These improvements will allow the City to temporarily chlorinate the water system in the event of water contamination.”

8. The DDW Redding Field Office has received *Emergency Chlorination Plans* by PACE Engineering dated July 31, 2017, for the construction and installation of emergency chlorination facilities below Tank 4 at the Cold Springs source.
9. The City has conducted several recent upgrades to the public water system including a new transmission line from the Cold Spring source to Tank 2 and Tank 3. Other historic water system operational or material sanitary concerns were identified and documented in the 2016 *Inspection Report* from the DDW Redding Field Office. The City, with assistance from PACE Engineering has applied for SRF funding to provide long-term solutions for these concerns.
10. The State Water Resources Control Board, Division of Drinking Water, Redding Field Office conducted *Level 2 Assessment* inspections of the public water system on June 25, 2017, and on July 28, 2017. The *L2 Assessment* dated August 7, 2017, serves as the *Technical Report* for this *Permit Amendment*.
11. The State Water Resources Control Board, Division of Drinking Water has the authority to issue domestic water supply permits pursuant to Health and Safety Code Section 116540.

THEREFORE:

The State Water Resources Control Board, Division of Drinking Water determines for the protection of public health, this Domestic Water Supply Permit amendment is hereby issued to the City of Mt. Shasta public water system and is subject to the following conditions:

1. Tank 1 is hereby removed from the list of approved potable water facilities for use by the City of Mt. Shasta public water system. The City has physically and permanently disconnected Tank 1 as of August 10, 2017.
2. The City shall construct and install permanent facilities for emergency chlorination at the Cold Springs source **by November 18, 2017**. The emergency chlorination facilities shall be constructed in accordance with design plans and specifications submitted by the City and approved by DDW Redding Field Office.
3. The City shall contact DDW Redding Field Office within 24 hours and activate emergency chlorination when the following condition occurs:
 - a. The City violates the E. coli Maximum Contaminant Level.

Additionally, the City shall contact DDW Redding Field Office within 24 hours and activate emergency chlorination if directed by DDW Redding Field Office when any of the following conditions occur:

- b. The City gets two or more total coliform positive bacteriological samples in a single month; or,
- c. The City fails to take all required repeat samples after any single total coliform-positive routine sample.

Additionally, the City shall activate emergency chlorination for any reason at any time when directed to do so by the State Water Board, Division of Drinking Water.

During any emergency chlorination event, the City shall continue chlorination of its distribution system until receiving written permission to cease from the State Water Board, Division of Drinking Water.

4. The City shall conduct and submit to the State Water Board, Division of Drinking Water a *Sanitary Integrity Spring Assessment* (hereinafter *SI Spring Assessment*) of the spring vaults and facilities at the Cold Springs source **by November 18, 2017**. The *SI Spring Assessment* shall include, but is not limited to the evaluation of vault door seal effectiveness, vault door upgrade options, the effect of aquatic organisms in the spring vaults in terms of coliform bacteria formation, the effect of possible root intrusion from nearby trees, the possible improvement of the screened vault vents, and the identification and repair of any cracks in the concrete surface seal of the Cold Springs site. Recommendations regarding repairs, improvements and maintenance of the Cold Springs source facilities shall be included in the *SI Spring Assessment*. A schedule for making any repairs/improvements proposed shall also be included. Once approved by the State Water Board, Division of Drinking Water, the City will complete the proposed repairs/improvements in accordance with an approved schedule.
5. The City shall draft and submit to DDW Redding Field Office a Water System Operations and Maintenance Plan in accordance with, and as specified in CCR Section 64600(a)(1-12), **by November 18, 2017**. The frequency for routine inspection of storage tanks shall be at least monthly and the inspection shall include the review of all screens, the roof of tank, and visual inspection of the inside the tank as a minimum. The plan shall describe in detail each component of tank inspections and provide a report form that will be used to document each tank inspection. During any emergency chlorination event, the City shall measure and record free chlorine residuals at least once per day at a minimum of 5 routine bacteriological sites with at least one free chlorine measurement in each pressure zone. This data shall be reported in the *Monthly Chlorination Monitoring Reports* that shall be signed by the Chief Water Treatment/Distribution Operator and shall be submitted to the DDW Redding Filed Office by the 10th day of the following month after any month when emergency chlorination was operated.
6. The City shall keep a copy of all *Monthly Chlorination Monitoring Reports* for a minimum of three (3) years.


7. The City shall collect at least one untreated water sample from each water source used by the City in each month. These water samples shall be analyzed by a State-certified lab for the number present of Total Coliform and E. Coli bacteria using an approved bacteriological density (MPN) method.
8. The Chief Water Treatment/Distribution Operator shall make a site visit and physically check the emergency chlorination system at least once per month. A person who is trained shall visibly inspect the emergency chlorination system each week and report any observed problems to the Chief Operator for direction. Records of inspections by the City of the emergency chlorination facilities shall be maintained by the City and delivered to DDW Redding Field Office upon request.
9. The City shall perform or ensure that the required annual testing is conducted for all Backflow Preventers (BP) in the water distribution system. Backflow Preventers shall be tested by persons who have demonstrated their competency in testing of these devices to the water supplier or health agency. A summary report of annual BP testing and maintenance shall be sent each year to DDW Redding Field Office and maintained by the water supplier for a minimum of three years.
10. The City shall modify the current *Bacteriological Sample Siting Plan* (BSSP) to include the collection of routine coliform analysis water samples at a frequency of at least two samples per week.

This Domestic Water Supply Permit amendment shall be appended to and shall be considered to be an integral part of the existing Domestic Water Supply Permit previously issued to the water system.

This Domestic Water Supply Permit amendment shall be effective as of the date shown below.

**FOR THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD
DIVISION OF DRINKING WATER**

Dated: August 18, 2017



Barry Sutter, P.E., Klamath District Engineer
Division of Drinking Water
STATE WATER RESOURCES CONTROL BOARD