

CITY OF CALISTOGA

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January 19, 2016

Mr. John Madigan
Water Resource Control Engineer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
By email: John.Madigan@waterboards.ca.gov

**Subject: Comments on Tentative Order and Tentative Cease and Desist Order
Amendment for the City of Calistoga Wastewater Treatment Plant
(Reissuance of NPDES Permit No. CA0037966)**

Dear Mr. Madigan:

The City of Calistoga (City) is submitting the following comments on the Tentative Order and Tentative Cease and Desist Order issued for the City of Calistoga Wastewater Treatment Plant (WWTP) on December 17, 2015. The City's comments are offered primarily to ensure accurate descriptions of operations, effluent quality, and monitoring requirements are included in the final adopted permit. Substantive comments are related to the effluent limits prescribed for Outfall 002 and re-calculation of boron effluent limits based on additional data. The proposed additions are shown as underlined text and the proposed changes are shown as ~~strikethrough~~.

Comment No. 1 – Water Quality Based Effluent Limits for Outfall 002

During extreme wet weather events, the City operates Outfall 002 to maintain positive hydraulic control of the WWTP and to discharge disinfected, dechlorinated, secondary effluent to the Napa River. In compliance with current NPDES permit Discharge Prohibition for Outfall 002 (III.B.), discharges occur only when Napa River flowrates are at least 50 times greater than the effluent flowrate. However, use of Outfall 002 typically occurs at much higher river-to-effluent flow ratios. From 2010 to 2014, the daily river-to-effluent flow ratios ranged from 58 to 7,500 with a median of 189:1. There were no discharges at Outfall 002 during 2015.

The Standard Operating Procedures (SOPs) for Outfall 002 specify a WWTP influent flowrate of 3 to 4 MGD and the equalization basin (EQ) water level between 321.2 and 321.7 ft. The critical water level in the EQ is between one foot, to a-foot-and-a-half (1.5') below

the elevations where treatment processes can back-up and contaminate treated effluent (effluent is contaminated at elevation 322.7'). Depending on circumstances, operators may use some judgment on when to start Outfall 002 discharges to ensure influent doesn't back-up and contaminate treated effluent. In addition, tertiary filter capacity (1 MGD) must be fully utilized before secondary discharge is initiated. When these operating conditions occur, the WWTP influent is diluted by inflow and infiltration (I&I) but may still contain antimony, boron, copper, and other regulated constituents. The activated sludge process ensures compliance with secondary standards and other conventional/non-conventional pollutant limitations prior to discharge, but may not achieve the required reductions for toxic constituents. Because Outfall 002 is used during extreme flow events only, it would be impractical to employ advanced treatment processes to remove these constituents.

The secondary effluent is disinfected and dechlorinated to meet bacteria and total chlorine residual limitations. Secondary disinfection occurs in a separate, smaller chlorine contact basin that is operated only during high flow events. The disinfection dose and contact time are maximized to ensure pathogen destruction, but the small volume contact basin reduces opportunities for mixing and volatilization of trihalomethanes. As a result, the secondary effluent may contain higher concentrations of disinfection byproducts (cyanide, dichlorobromomethane, chlorodibromomethane) than present in discharges at Outfall 001 (tertiary, Riverside Pond discharge).

Based on the operating conditions discussed above and no feasible options for additional treatment, separate Water Quality Based Effluent Limitations (WQBELs) are appropriate for Outfall 002. Since discharges are prohibited until the river-to-effluent flow ratio is at least 50:1, an increase in constituent-specific dilution credits when calculating the WQBELs is also warranted. Dilution credits of 2:1 to 10:1 will be appropriate for the calculation of copper, cyanide, antimony, boron, and ammonia limits. A dilution credit >10:1 will be needed for the calculation of dichlorobromomethane and chlorodibromomethane limits. Similar to ammonia, a dilution credit >10:1 is appropriate because these constituents are not persistent and quickly volatilize and degrade in natural systems to a non-toxic state. If separate WQBELs are applied, the City will consider utilizing Outfall 002 under a higher minimum river-to-effluent flow ratio. An exception to anti-backsliding requirements can be justified based on Clean Water Act (CWA) Section (o)(2)(C), "*a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy.*"

Comment No. 2 – Re-Calculation of Boron Water Quality Based Effluent Limits

Tentative Order: Table 4 (Page 5), Table F-8 (Page F-29), Table F-9 (Page F-36)

The City compiled all boron data measured at EFF-001 during the allowable discharge season and the complete dataset is provided below. Due to low flowrates in the Napa River, discharge did not occur on some of these sample dates. However, the data are representative of fully treated tertiary effluent. The expanded dataset should be used to re-calculate boron effluent limits for Outfall 001. With these additional data, the boron effluent limits will be approximately 3,800 µg/L (average monthly), 5,000 µg/L (maximum daily).

City of Calistoga Effluent Quality (Measured at EFF-001)

Sample Date	Boron Concentration (µg/L)	Sample Date	Boron Concentration (µg/L)
2/15/2012	3180	5/12/2014	2700
4/27/2012	1960	6/4/2014	2700
5/8/2012	2310	11/5/2014	3900
11/14/2012	3200	12/3/2014	3100
12/4/2012	1600	1/6/2015	2700
5/15/2013	3000	2/9/2015	2100
11/5/2013	3400	3/12/2015	2900
12/11/2013	3600	3/16/2015	2700
1/7/2014	3600	3/17/2015	2500
2/7/2014	3600	3/18/2015	2600
3/4/2014	3000	3/19/2015	2800
4/2/2014	2300		

Comment No. 3 – Correction

Tentative Order: Permit Provision VI.C.1. (Page 9)

Calistoga is not a Permittee under the Municipal Regional Stormwater Permit. As such, the following reopener provision related to effluent limit adjustments is not applicable.

- f. ~~If the Discharger requests adjustments in effluent limits due to the implementation of stormwater diversion pursuant to the Municipal Regional Stormwater Permit (Permit No. CAS612008) for redirecting dry weather and first flush discharges from the storm drain system to the sanitary sewer system as a stormwater pollutant control strategy.~~

Comment No. 4 – Clarification

Tentative Order: Permit Provision VI.C.3. (Page 10)

The required locations for conducting the Receiving Water Characterization Study need to be clarified. The City understands that one upstream location and one downstream location must be sampled one time during the 5-year permit term. The upstream location will be RSW-001 under all operating conditions. The downstream location will be either RSW-005 (if only Outfall 001 and 002 are operated), or RSW-007 (if Outfall 003 is operated), or RSW-900 (if the City undertakes collaborative monitoring). Please confirm this understanding or modify the language provided on page 10.

Comment No. 5 – Clarification

Tentative Order: MRP Provision VI. (Page E-6), Table F-10 (Page F-44)

The locations specified for routine receiving water quality monitoring need to be clarified. The City understands that under operation of Outfall 001, water quality sampling must be conducted at RSW-001, RSW-002, RSW-004, and RSW-006. When Outfall 002 is operated, water quality sampling must be conducted at RSW-001, RSW-002, RSW-004, RSW-005, and RSW-006. When operation of Outfall 003 is approved, water quality sampling must be conducted at RSW-001, RSW-002, RSW-004, RSW-005 (if discharging at 002), RSW-007, and RSW-008. Please confirm this understanding or modify the language provided on pages E-6, E-7, and F-45.

Receiving water monitoring location RSW-003 was removed in the 2010 NPDES permit because of its close proximity to Outfall 001. The City suggests the following changes to clearly indicate that monitoring at this location is no longer required.

When discharging to the Napa River, the Discharger shall monitor the Napa River at Monitoring Locations RSW-001, through RSW-008 RSW-002, RSW-004, RSW-005, RSW-006, RSW-007, and RSW-008 as follows (see Table E-4 footnote 1 below):

Comment No. 6 – Acute Toxicity Monitoring

Tentative Order – Table E-3 (Page E-4), Table F-10 (Page F-44)

The City contracts with an outside laboratory to perform acute toxicity testing. Over the last 5 years (with the exception of May 2012, related to a polymer dosing mistake), acute toxicity results for both secondary and tertiary effluent have been 95 to 100% survival. Based on good performance and the need to allocate the City’s limited monitoring budget for other regulated constituents, the City requests a reduction in acute toxicity monitoring from monthly to quarterly.

Comment No. 7 – Clarification

Tentative Order: Provision II.A.3. (Page F-5), Provision II.A.7. (Page F-6)

The following changes are requested to accurately describe facility operations and planned facility upgrades.

3. Wastewater Treatment...

When influent flowrates reach 4 MGD, ~~the~~ tertiary filter capacity of 1 MGD is exceeded, tertiary treatment, tertiary discharge, and equalization storage are maximized, and Napa River flow is sufficiently high, secondary-treated effluent (without filtration) may be pumped to a separate chlorine contact tank, ~~bypassing the filters~~. The secondary-treated effluent is then dechlorinated and discharged at Discharge Point No. 002.

7. Facility Upgrades...

The improvements would be intended to prevent bypasses and comply with the antimony, chlorodibromomethane, and dichlorobromomethane effluent limits prescribed for Outfall 001 and Outfall 003. See subsection E, below.

Comment No. 8 – Correction

Tentative Order: Table F-9 (Page F-36)

The WQBELs prescribed for the City’s effluent are based on a Reasonable Potential Analysis of Priority Pollutants and other constituents of concern. The following edit is suggested to correctly identify the type of constituents being regulated.

Table F-9 WQBEL Calculations

PRIORITY POLLUTANTS	Antimony	Boron	Cyanide	Copper	Chloro-dibromo-methane	Dichloro-bromo-methane	Total Ammonia (acute)	Total Ammonia (chronic)
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Comment No. 9 – Correction, as needed

Tentative Cease and Desist Order: Finding 3 (Page 1)

Finding 3 must be revised to reflect the Regional Water Board's final decision on separate WQBELs and discharge prohibitions for Outfall 002 (as described in Comment No 1).

Comment No. 10 – Clarification

Tentative Cease and Desist Order: Finding 6 (Page 2), Finding 9 (Page 3)

The following changes are requested to accurately reflect actions undertaken to reduce CDBM and DCBM concentrations.

Chlorodibromomethane and Dichlorobromomethane

6. On August 31, 2014, the Discharger reported compliance with the chlorodibromomethane and dichlorobromomethane effluent limits at Discharge Point No. 001, but not at Discharge Point No. 002. The Discharger had taken the following actions under the 2010 CDO to comply with the effluent limits:
 - a. ~~Operated Re-plumbed~~ the four Riverside Ponds ~~to operate~~ in series, increasing retention time and ~~THM~~ chlorodibromomethane and dichlorobromomethane removal.
 - b. Reduced the chlorine residual used to meet bacteria limits.
 - c. Installed low-energy ~~aerators~~ mixer in Riverside Pond 4.
9. The Discharger has completed the following additional tasks to comply with the chlorodibromomethane and dichlorobromomethane effluent limits at Discharge Point Nos. 001 and 002 since about December 2014:
 - a. ~~Added low-energy aerators to Riverside Pond 2, bringing the number of Riverside Ponds with aerators from one to two; the aerators remove some chlorodibromomethane and dichlorobromomethane.~~ Added two sump pumps to aerate water in Riverside Pond 2.
 - b. Modified treatment operations to further reduce chlorination added during treatment processes.
 - c. ~~Re-plumbed~~ monitors in the 20-million-gallon tertiary effluent storage pond to allow recirculation (by turning over water) and provide aeration (by spraying recirculated effluent back into the pond).

Comment No. 11 – Time Schedule for CDBM and DCBM Compliance

Tentative Cease and Desist Order: Table 3 (Page 4)

The deadline specified for Task "a" in Table 3 is prior to CDO adoption and additional time is needed to accomplish the specified activities. The deadline in Task "h" should be clarified to indicate monthly progress reports start with the SMR due by June 30, 2016. The following edits are requested.

Table 3
Time Schedule and Prescribed Actions to Comply with Permit Chlorodibromomethane and Dichlorobromomethane Effluent Limits

<u>Task</u>	<u>Compliance Date</u>
<p>a. Submit a Source Identification and Control Plan for Chlorodibromomethane and Dichlorobromomethane (THMs): Submit a source identification and control plan to identify and reduce THM sources and comply with Permit chlorodibromomethane and dichlorobromomethane limitations. The plan shall update and expand source control activities conducted from 2006 to 2008, include completion dates, and describe efforts to complete, at a minimum, the following:</p> <ol style="list-style-type: none"> 1. Identification and estimation of loading from THM sources and potential sources in plant influent, including sampling the drinking water distribution system, wastewater collection system, and plant influent. 2. Analysis of methods to prevent THM formation and discharges from identified sources. 3. Estimation of potential load reductions attainable through the methods identified in Task "a.2." 4. Plan for evaluating the results of the source control plan. 5. Description of the tasks, costs, and time required to investigate and implement the various elements of the sources identification and control program. 	<p>March 1, 2016 April 1, 2016</p>
<p>h. Report on Progress: Continue to implement the plans described in Tasks "b," "e," and "g," and submit monthly status reports that evaluate their effectiveness. Reports shall determine whether the plans have brought the discharge into compliance with Permit chlorodibromomethane and dichlorobromomethane limits. If not, the Discharger shall identify in these reports additional measures to further reduce THM discharges and implement them.</p>	<p>With monthly self-monitoring reports starting with the report due <u>by</u> June 30, 2016</p>
<p>i. Comply with Permit THM Chlorodibromomethane and Dichlorobromomethane Limits: Submit documentation confirming complete implementation of the plans required by Task "b" and, if necessary, Tasks "e" and "g" and comply with Permit chlorodibromomethane and dichlorobromomethane effluent limitations.</p>	<p>November 1, 2017</p>

The City appreciates the time and considerations granted by Regional Water Board staff during development of these tentative orders. Please contact me at (707) 942-2789 (or by email, drayner@ci.calistoga.ca.us) if you have any questions or need additional information.

Sincerely,

Derek Rayner, P.E.
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