California Regional Water Quality Control Board
San Francisco Bay Region

RESPONSE TO WRITTEN COMMENTS

On the Tentative Order for
Calistoga City Dunaweal Wastewater Treatment Plant and Collection System
Calistoga, Napa County

The Regional Water Board received written comments from the City of Calistoga (February 7 and 10, 2022) on a tentative order distributed for public comment. The comments are summarized below in *italics* (paraphrased for brevity) and followed by a staff response. For the full content and context of the comments, please refer to the comment letter. To request a copy of the comment letter, see the contact information provided in Fact Sheet section 8.7 of the Revised Tentative Order.

Revisions are shown with ~~strikethrough~~ for deletions and <u>underline</u> for additions. This document also contains staff-initiated revisions in addition to those arising from the response to comments.

CITY OF CALISTOGA

Comment 1: *The City requests that we replace the Process Flow Diagram (Figure C) in the tentative order to remove outdated flows, update the name of the Tertiary Effluent Clearwell, and include the Utility Water Tank.*

Response
We agree, and we replaced the Process Flow Diagram.

Comment 2: *The City requests several minor changes throughout the tentative order to better describe the treatment process and mixing zones, and to correct typographical and reference errors.*

Response
We agree, and we revised Discharge Prohibition 3.2 as follows:

> Discharge of treated wastewater at Discharge Points 001 and 003 is prohibited unless the river flow-to-effluent flow ratio is at least 10:1 (flows from Discharge Points 001 and 003 shall be combined in calculating this river flow-to-effluent flow ratio). Discharge of treated wastewater at Discharge Point 002 is prohibited unless the river flow-to-effluent flow ratio is at least 56:1 (only the flow from Discharge Point 002 shall be considered in calculating this river flow-to-effluent flow ratio) and <u>treatment capacity of the filters is fully utilized</u> ~~discharge from Discharge Points 001 and 003 is maximized~~.

We revised Discharge Prohibition 3.6 (first paragraph) as follows:

> Discharge to the Napa River is prohibited from June 16 through October 31, unless Facility inflow will exceed the capacity of the influent storage (after factoring in anticipated wet weather storage needs) and Facility effluent flow will exceed the capacity of the recycled water distribution and storage system (described in Fact Sheet section ~~4.1.1.6.~~ 2) to meet recycled water demand….

We revised Fact Sheet section 2.1.2.1 as follows:

> **Discharge Point 001 Treatment Process.** The tertiary wastewater treatment process prior to discharge from Discharge Point 001 includes a bar screen, two aeration basins, four clarifiers, three filters, a tertiary chlorine contact basin, a tertiary effluent clearwell, and four Riverside Ponds that operate in series. After secondary clarification, the Discharger adds sodium hypochlorite and ammonium sulfate to the wastewater (chloramination) to limit the production of trihalomethanes. Following chloramination, wastewater is routed to filters, where polymer is added to improve solids removal or, if the 1.5-MGD treatment capacity of the filters is exceeded, routed to the secondary chlorine contact basin (see "Discharge Point 002 Treatment Process" below). After filtration, wastewater is routed to the tertiary chlorine contact basin. The Discharger adds sodium bisulfite in the tertiary effluent clearwell prior to routing tertiary-treated wastewater to either the Riverside Ponds or the 20-million-gallon Effluent Storage Pond. From the Riverside Ponds, tertiary-treated wastewater is discharged via Discharge Point 001 to the Napa River. Tertiary-treated wastewater stored in the 20-million-gallon Effluent Storage Pond is routed to the Riverside Ponds when discharge capacity is available.

We revised Fact Sheet section 2.1.2.2 as follows:

> **Discharge Point 002 Treatment Process.** The secondary wastewater treatment process prior to discharge from Discharge Point 002 includes the same bar screen, aeration basins, and clarifiers as described above, and a secondary chlorine contact basin. After secondary clarification, wastewater flow that exceeds the treatment capacity of the filters is routed to the secondary chlorine contact basin, where the Discharger adds sodium hypochlorite for disinfection ~~and ammonium sulfate to the wastewater to limit the production of trihalomethanes~~. The Discharger adds sodium bisulfite to dechlorinate the wastewater prior to discharge to the Napa River via Discharge Point 002.

We revised Fact Sheet section 2.1.6 (first paragraph) as follows:

> **Planned Upgrades.** Cease and Desist Order (CDO) R2-2016-0019 amended CDO R2-2014-0043 on April 13, 2016. These orders, discussed further in section 2.4.1, set forth time schedules for the Discharger to comply with chlorodibromethane, dichlorobromomethane, and antimony effluent limits, and required specific actions to reduce and prevent unauthorized discharges and bypasses. Table ~~F-3~~ F-2 below lists the remaining tasks and their expected completion dates, which are past the deadlines set forth in the CDOs. The following table is for informational purposes only and does not supersede the CDO deadlines.

We revised Fact Sheet section 4.1.1.2 as follows:

> **Discharge Prohibition 3.2 (No discharge without at least 10:1 river flow-to-effluent flow ratio for Discharge Points 001 and 003, and no discharge without at least 56:1 river flow-to-effluent flow ratio for Discharge Point 002):** This prohibition ensures that the discharge does not fully use the assimilative capacity of the Napa River, reserving sufficient assimilative capacity for the other permitted wastewater discharges to this segment of the Napa River (i.e., the City of St. Helena and the Town of Yountville). Fact Sheet Appendix F-1 (page ~~F-~~**Error! Bookmark not defined.**) provides the detailed calculations underlying the dilution ratios.…

We revised Fact Sheet section 4.2.2.1 (second paragraph) as follows:

> At Discharge Points 001 and 003, the concentration-based BOD and TSS effluent limitations are more stringent than those required by the secondary treatment standards. These limits are technologically feasible for advanced wastewater treatment technologies and are similar to the limits applicable to other shallow-water discharges that must demonstrate a level of water quality protection equivalent to complying with Basin Plan Prohibition 1 (see Fact Sheet section ~~4.2~~ 4.1.2 above).…

We revised Fact Sheet section 4.2.2.3 (first paragraph) as follows:

> The total residual chlorine effluent limitation is based on the previous order and the limit that, until recently, had been required by Basin Plan Table 4-2.… This Order imposes a new water-quality based effluent limitation to implement the new water quality objectives that will become effective upon U.S. EPA approval. Thus, this technology-based effluent limit will be replaced by the water quality-based effluent limit (see Fact Sheet section ~~4.3.4.6~~ 4.3.4.4) on the first day of the month following U.S. EPA approval of the objectives.

We revised Fact Sheet section 4.3.4.2 (ninth and tenth paragraphs) as follows:

> These mixing zones are as small as practicable because they either correspond to the same dilution ratios established in the previous order or smaller dilution ratios based on the Discharger's ability to comply with effluent limitations derived using smaller dilution credits. …Mixing zones were established such that the projected monthly average and maximum daily effluent concentrations would not exceed the resulting average monthly and maximum daily effluent limitations. Since the previous order term, the Discharger made significant changes to its treatment and collection systems to reduce the effluent concentrations of disinfectant ~~biproducts~~ byproducts in accordance with CDO R2-2014-0043, as amended by CDO R2-2016-0019. As a result, the Discharger's ability to remove disinfectant ~~biproducts~~ byproducts has improved and smaller mixing zones are now practicable for chlorodibromomethane and dichlorobromomethane based on data collected during the past three years, from October 2018 through July 2021. This Order reflects these smaller mixing zones.
>
> The largest mixing zone at Discharge Point 001 is 33 feet long and 5.5 feet wide. The largest mixing zone at Discharge Point 002 is approximately ~~330~~ 600 feet long and ~~11~~ 12.6 feet wide….

We revised Fact Sheet section 7.1.4 (first paragraph) as follows:

> **Receiving Water Monitoring.** Receiving water monitoring is necessary to evaluate compliance with receiving water limitations. …Monitoring for total ammonia may be useful to ~~complete~~ conduct future reasonable potential analyses….

STAFF-INITIATED CHANGES

In addition to minor editorial and formatting changes, we clarified some Fact Sheet language to improve consistency and correct a few errors.

We revised Fact Sheet Table F-3 as follows:

Table F-3. Previous Effluent Limitations and Monitoring Data

Parameter	Unit	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Other Limit	Average	Highest Daily Value
Discharge Point 001							
Biochemical Oxygen Demand	mg/L	10 [1]	15 [1]	-	-	ND [2]	7
Total Suspended Solids (TSS)	mg/L	15 ~~[2-1]~~	20 ~~[2-1]~~	-	-	ND [2]	10
BOD percent removal	%	85 (minimum)	-	-	-	~~100~~ 97 [3]	~~88~~ [1] 92 [4]
TSS percent removal	%	85 (minimum)	-	-	-	99 [3]	~~96~~ [1] 97 [4]
Oil and Grease	mg/L	5	-	10	-	ND [2]	ND
Turbidity	NTU	-	-	10	-	0.83	3.2
Antimony, Total Recoverable	µg/L	25	-	36	-	14	21
Chlorodibromo methane	µg/L	3.4		6.4	-	0.19 [4] [2]	1.7
Dichlorobromo methane	µg/L	4.9		9.0	-	3.9 [4] [2]	9.3
pH	s.u.	-	-	-	6.5 – 8.5 [5]	-	6.5 - 9.3 [6], [7]
Chlorine, Total Residual	mg/L	-	-	-	0.0 [8]	-	0.0 [9]
Boron, Total Recoverable	µg/L	3700	-	5000		1900	2900
Ammonia, Total	mg/L as N	12	-	55	-	1.3 [4] [2]	12
Copper, Total Recoverable	µg/L	11	-	20	-	4.1	6.5
Cyanide, Total	µg/L	7.3	-	18	-	~~0.88~~ ND [2]	2.5
Total Coliform	MPN/ 100 mL	-	23 [10]	240	-	ND [2]	33
Acute Toxicity	% survival	-	-	-	Not less than 70% (eleven-sample 90th percentile), Not less than 90% (eleven-sample median)	100	100 [11]
Discharge Point 002							
Biochemical Oxygen Demand	mg/L	30	45	-		ND [2]	8

Parameter	Unit	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Other Limit	Average	Highest Daily Value
Total Suspended Solids (TSS)	mg/L	30	45	-	-	5 [2]	16
BOD percent removal	%	85 (minimum)	-	-	-	~~96~~ 94 [3]	~~90~~ 89 [4]
TSS percent removal	%	85 (minimum)	-	-	-	~~92~~ 96 [3]	~~87~~ 92 [4]
Oil and Grease	mg/L	10	-	20	-	ND [2]	ND
Antimony, Total Recoverable	µg/L	51	-	89	-	8.6	12
Chlorodibromo-methane	µg/L	9.7	-	18	-	1.5 [2]	2.6
Dichlorobromo-methane	µg/L	26	-	50	-	6.4	9.6
pH	s.u.	-	-	-	6.5 – 8.5 [5]	-	6.6 - 7.6 [6]
Chlorine, Total Residual	mg/L	-	-	-	0.0 [8]	-	0.0 [9]
Boron, Total Recoverable	µg/L	3700	-	5000	-	1100	~~1900~~ 1800
Ammonia, Total	mg/L as N	12	-	55	-	0.48 [4]	2.8
Copper, Total Recoverable	µg/L	11	-	20	-	4.9	5.8
Cyanide, Total	µg/L	7.3	-	18	-	~~1.1~~ 0.98 [2]	2.6
Total Coliform	MPN/ 100 mL	-	23 [10]	240	-	~~0.72~~ 2.0 [2]	49
Acute Toxicity	% survival	-	-	-	Not less than 70% (eleven-sample 90th percentile), Not less than 90% (eleven-sample median)	100	100 [11]

We revised Fact Sheet Table F-5 as follows:

Table F-5. Collection System and Category 1 SSO Rates (SSOs/100 miles)

(Values based on CIWQS April 2021 data ~~analysis completed in September 2021~~) [1]

	Length (miles)	Average Pipe Age (years)	2016	2017	2018	2019	2020
Discharger	18.4 ~~[2]~~	51	0.00	0.00	0.00	0.00	0.00
San Francisco Bay Region	17,700	46 ~~[3]~~ [2]	1.2	1.7	0.71	1.4	0.67
State of California	~~89,100~~ 111,000	44 ~~[3]~~ [2]	~~0.57~~ 0.46	~~0.57~~ 0.68	~~0.57~~ 0.39	0.57	~~0.57~~ 0.33

Footnotes:

[1] The State Water Board's *Enrollees's Guide to the SSO Database* defines "Total number of SSOs per 100 miles of Sewer" as "…the number of SSOs, for which the reporting enrollee is responsible, for every 100 miles of pipe or sewer lines in an enrollee's sanitary sewer system. Due to the large variation in facility specific characteristics, this metric should only be viewed as a rough comparison of the operation and maintenance performance of enrollees and their sanitary sewer systems."

~~[2] Length shown is based on 2021 data.~~

~~[3]~~ [2] The average pipe age for the State of California is estimated based on the percentages of piping constructed during each decade as reported by enrollees under State Water Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order WQ 2013-0058-EXEC.

We revised Fact Sheet Section 4.1.2 (first bullet of the second list) as follows:

> Prohibiting all discharges from Discharge Points 001, 002, and 003 would place an inordinate burden on the Discharger because, during wet weather, there is no other feasible alternative to discharging. Recycled water demand is low, and the irrigation fields are saturated and therefore have limited assimilative capacity so the vegetation there has little or no ability to take up more water. State Water Board Order WQ 2016-0068-DDW (Water Reclamation Requirements for Recycled Water Use) prohibits discharges to saturated irrigation fields. Despite the Discharger's substantial onsite storage, the volume of treated wastewater produced during wet weather may exceed the capacity of the irrigation fields and storage ponds. The Discharger is unable to build additional storage due to land constraints. During the previous order term, the number of days that the plant discharged tertiary treated effluent to the Napa River from Discharge Point 001 ranged from 15 days during 2020 to 115 days during the unusually wet year of 2017. The discharge of secondary treated effluent from Discharge Point 002 ranged from no days in 2018 and 2020 to 35 days in 2017.

We revised Fact Sheet section 4.3.4.2.4 as follows:

> **Adversely impact biologically sensitive or critical habitats, including, but not limited to, habitats of species under federal or State endangered species laws.** The Mixing Zone Study identified two potential species of concern in the area. Steelhead (*Oncorhyncus mykiss irideus*) is a federally-listed "threatened" species known to spawn in the Napa River in January and February. The western pond turtle (*Actinemys marmorata*) is a State-listed species of special concern. Turtles may absorb oxygen through their skin when they are submerged in water, but they are in open water only intermittently, so they are unlikely to be

adversely affected by contact with diluted effluent. Steelhead may take in pollutants through their gills as they pass through the mixing zones, but Steelhead are migratory and typically swim upriver when there is sufficient flow in the winter. Additionally, because the largest aquatic life mixing zone extends only 5.5 feet across the bank and 33 feet downstream, both turtles and steelhead are unlikely to reside within the mixing zones for any significant duration that could adversely affect them.