Central Valley Regional Water Quality Control Board
23/24 June 2016 Board Meeting

Response to Comments
for the
City of Auburn
Wastewater Treatment Plant
Tentative Order Renewing Waste Discharge Requirements

The following are Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff responses to comments submitted by interested parties regarding the Tentative Order Renewing Waste Discharge Requirements Order R5-2010-0091-01(NPDES Permit No. CA0077712) for the City of Auburn (Discharger), Wastewater Treatment Plant (Facility).

The tentative Order was issued for a 30-day public comment period on 20 May 2016 with comments due by 20 June 2016. The Central Valley Water Board received public comments regarding the tentative Permit by the due date from the following:

- City of Auburn
- United States Environmental Protection Agency (USEPA)
- Central Valley Clean Water Association (CVCWA)
- Bill Jennings, Executive Director, California Sportfishing Protection Alliance (CSPA)
- Ronald Otto, Ophir Area Property Owners Association, Inc., and Auburn Ravine Preservation Committee-Chair (OAPOA)

The submitted comments were accepted into the record, and are summarized below, followed by Central Valley Water Board staff responses.

DISCHARGER COMMENTS

Discharger Comment 1: In agreement with the proposed permit

The Discharger acknowledged that Central Valley Water Board staff addressed their comments and is in agreement with the proposed permit.

RESPONSE: Comment noted.

USEPA COMMENTS

USEPA Comment 1: In agreement with the proposed permit

USEPA acknowledged that Central Valley Water Board staff addressed their comments and are not objecting to the issuance of the proposed permit.

RESPONSE: Comment noted.

CVCWA COMMENTS

CVCWA Comment 1: Freshwater mussels collaborative study

CVCWA supports the recommendation that the Discharger joins the Freshwater mussels collaborative study. However, note that they support POTWs being given a choice in these matters.

RESPONSE: Comment noted.

CVCWA Comment 2: Low level toxicity

CVCWA notes that it is currently working with Central Valley Water Board staff to address indications of low level toxicity and welcomes the Discharger to participate.

RESPONSE: Comment noted.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

Request for Designated Party Status. CSPA requested designated party status for the Central Valley Water Board hearing scheduled for 23/24 June 2016 with regard to the proposed renewal of the NPDES Permit for the City of Auburn, Wastewater Treatment Plant. The commenter will be granted designated party status for the subject hearing.

CSPA Comment 1: Effluent Limitation for Aluminum based on Chronic Toxicity

CSPA comments that the proposed Permit fails to contain an effluent limitation for aluminum based on chronic toxicity in accordance with Federal Regulations 40 CFR 122.44, USEPA's interpretation of the regulation, and California Water Code, Section 13377.

RESPONSE: Central Valley Water Board staff does not concur. In developing this Order, staff interpreted the relevant narrative criteria consistent with 40 CFR § 122.44(d)(1)(vi)(B), by considering the EPA recommended numeric water quality criteria and supplementing it as necessary with additional relevant information.

The USEPA recommended aluminum criteria was issued in 1988 and updated in 1999. The 1999 update indicates that many high quality surface waters in the U.S. contain aluminum in concentrations higher than the recommended criteria that did not affect beneficial uses. Toxicity testing was later conducted using surface water from the Central Valley region. The testing indicated that aluminum in Central Valley surface waters is less reactive and less toxic than the studies USEPA used to develop the criteria showed. Therefore, it was found that higher limits for aluminum are still protective of beneficial uses in some Central Valley surface waters and a watershed approach is more appropriate to

implement the recommended aluminum criteria. Furthermore, the criteria are recommended and not mandated by Federal regulations.

In addition, the National Ambient Water Quality Criteria (NAWQC) chronic aquatic life criterion for aluminum is 87 ug/L. Central Valley Water Board staff does not believe this criterion is appropriate for implementing the Basin Plan's narrative toxicity objective in this case because (1) the site-specific hardness conditions are greater than the hardness conditions under which the NAWQC chronic criterion was developed, (2) the results of the Phase I Aluminum Toxicity Study determined that the Water Effects Ratio (WER) for aluminum was >12.4 based on samples collected on 15/16 June 2010 and 17 October 2010 as part of the WER study. The study was performed on both *Oncorhynchus mykiss* (rainbow trout) and *Ceriodaphnia dubia* (water flea). The resulting data is provided on Table F-9 of the proposed Order.

To clarify the sampling that was conducted by the Discharger as part of the WER study the following second paragraph of the Fact Sheet, section IV.C.2.f of the proposed Order was modified, as shown in underline/strikeout format below:

> The City of Auburn Aluminum Toxicity Study followed USEPA's Interim Guidance on Determination and Use of Water-Effect Ratios for Metals, USEPA, February 1994. No significant effects were shown in samples containing extremely high aluminum concentrations, so only ~~one testing event~~ the first phase of the WER study was ~~conducted~~ required after consultation with Central Valley Water Board staff. ~~This means that a complete WER study was not performed. However, t~~The information provided in the City of Auburn Aluminum Toxicity Study is sufficient for use in interpreting the Basin Plan's narrative toxicity objective. The Aluminum Toxicity Study indicates that a WER of >12.4 applied to the NAWQC is protective of aquatic life in the Auburn Ravine. Implementing a WER of >12.4 to the 87 ug/L chronic criterion results in a chronic aquatic life criterion of >1078.8 ug/L. The Aluminum Toxicity Study did not evaluate the acute criterion, therefore, the appropriate criterion to implement the Basin Plan's narrative toxicity objective for the protection of the aquatic beneficial use is the acute criterion of 750 ug/L, as recommended by USEPA's NAWQC. In this instance, the most stringent water quality objective for aluminum is the Department of Public Health's Secondary Maximum Contaminant Level (MCL) of 200 ug/L. Based on the site-specific evaluation of the effluent data, implementation of the 200 ug/L MCL will be protective of aquatic life and human health beneficial uses.

CSPA also refers to a 2012 objection letter from USEPA regarding the renewal of the Clear Creek Community Services District, Water Treatment Plant's NPDES permit. CSPA states that based on this letter the aluminum limitation included in the proposed permit is not in accordance with USEPA's interpretation of the regulations which requires the use of all valid, reliable, and representative data. Staff does not concur. In May 2005 a Superior Court ruling for the City of Woodland directed that only 3-years of data should be used. This court ruling is not precedential, but is a significant court opinion. The State Board subsequently issued a memo in March 2006 advising regional boards to use the most recent 3 years of data to perform a RPA. The memo recommends careful consideration of the

appropriate time periods for data review and suggests that in some cases longer time periods may be warranted, but must be supported by evidence in the record.

In this case, staff does not believe there is evidence supporting a longer dataset. The 3-year dataset is extensive with over 10,000 data points and comprised of more than 200 constituents. The dataset is representative of the discharge and ambient conditions, and is adequate to conduct the RPA. In addition, USEPA in not objecting to the issuance of the proposed permit and did not submit any comments on the proposed effluent limitation.

CSPA Comment 2: Reasonable Potential Analysis

CSPA comments that the proposed Permit contains an inadequate reasonable potential analysis by using incorrect statistical multipliers as required by Federal regulations, 40 CFR § 122.44(d)(1)(ii) , specifically for aluminum and salinity. The reasonable potential analysis fails to consider the statistical variability of data and laboratory analyses as explicitly required by the federal regulations.

RESPONSE: Central Valley Water Board staff does not concur. The reasonable potential analysis (RPA) was conducted appropriately considering the variability in effluent data in accordance with the federal regulations. For priority toxic pollutants, the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP) governs the methodology for conducting the RPA. The RPA approach in section 1.3 of the SIP was used for all priority pollutants and considers variability of the data.

While the SIP mandates specific RPA procedures for priority pollutants, for non-priority pollutants, the Central Valley Water Board has discretion to use its judgment in determining the appropriate method for conducting the RPA considering site-specific conditions. The federal regulations do not specify a specific manner in which to conduct the RPA. Federal regulations at 40 CFR § 122.44(d)(1)(ii), state “when determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.”

CSPA contends that the Central Valley Water Board failed to consider the variability of the pollutant parameter in the effluent, because the statistical procedures for projecting a maximum effluent concentration described in USEPA’s Technical Support Document for Water Quality-based Toxics Control (TSD) were not followed. The USEPA approach is guidance and not mandated by federal regulations. Furthermore, the procedures discussed in the TSD are for situations where there are small datasets and dilution will be considered in the RPA. The RPA in the proposed Order was conducted using an extensive dataset with over 10,000 data points. Consistent with the SIP procedures for priority toxic pollutants, when dilution is not considered, the Central Valley Water Board considered maximum concentrations when conducting the RPA. For non CTR priority pollutants such as aluminum and electrical conductivity, the Board is not restricted to one particular RPA method. The Board has flexibility to use its judgement in determining the appropriate

method considering site-specific conditions of the discharge and the objective that is being implemented. The applicable objective for aluminum and salinity are based on the Secondary Maximum Contaminant Level Drinking water standard. Secondary MCLs are established by the State Board's Division of Drinking Water and are not derived from human welfare constituents (e.g. taste, odor, and laundry staining) not for toxicity. The Division of Drinking Water requires compliance with these standards on an annual average basis. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the maximum calendar annual average effluent concentration. These RPA methods comply with the federal regulations. The proposed Order provides the RPA rationale constituent-by-constituent in the Fact Sheet (Attachment F, Section IV.C.3).

CSPA Comment 3: CTR Hardness Dependent Metals

CSPA comments that the proposed Permit 1) establishes effluent limitations for metals based on the hardness of the effluent and/or the downstream water contrary to federal regulations and a 2014 court decision issued in *California Sportsfishing Protection Alliance v. California Regional Water Quality Control Board, Central Valley Region* (Super. Ct. Sacramento County, 2014, No. 34-2013-80001358) (SRCSD Decision); 2) uses mixing to determine reasonable potential and to develop effluent limitations and 3) fails to identify the proper 1Q10 and 7Q10.

RESPONSE:

Establishes effluent limitations for metals based on the hardness of the effluent and/or downstream water

The proposed Order has established the California Toxics Rule (CTR) criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP)[1] and the CTR[2]. The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR 131.38(c)(4).) The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones.[3] Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years (7Q10).[4]

Auburn Ravine is an ephemeral stream; therefore, under design conditions Auburn Ravine is effluent dominated. When there is no upstream flow in Auburn Ravine the effluent is the receiving water. Under these design conditions, the reasonable worst-case ambient hardness is 66 mg/L (as CaCO3), which is an actual observed downstream receiving water

[1] The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.
[2] The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used.
[3] 40 CFR 131.38 (c)(4)(ii)
[4] 40 CFR 131.38 (c)(4)(iii) Table 4

hardness. The Sacramento Superior Court case that the Commenter cites (*California Sportsfishing Protection Alliance v. California Regional Water Quality Control Board, Central Valley Region* (Super. Ct. Sacramento County, 2014, No. 34-2013-80001358) (Order Granting in Part and Denying in Part Petition for Writ of Mandate) (SRCSD Decision)) concerns the Sacramento River, which is not an effluent dominated stream. In the SRCSD Decision, the Court discussed the differences between the Sacramento River and Deer Creek, an effluent-dominated stream the Court had considered in an earlier case (*California Sportsfishing Protection Alliance v. California Regional Water Quality Control Board, Central Valley Region,* Super. Ct. Sacramento County, 2012, No. 34-2009-80000309) (Order Denying Petitioners' Motion to Strike Respondent's Return of Writ of Mandate and Granting Discharge of the Writ) (EID Deer Creek Decision)). In the SRCSD Decision, the Court stated:

> [T]he facts of the Deer Creek case were significantly different from the facts of this case [effluent discharge to the Sacramento River]. Specifically, Deer Creek is a stream of highly variable flow that "… is, under dry conditions, an effluent dominated stream", in which "the 'worst-case' downstream hardness happens to be the same as the effluent hardness." In other words, under certain regularly-occurring dry conditions, the effluent is, in effect, the ambient surface water. Thus, it was reasonable to use the effluent hardness as a measure of a realistic "worst-case" scenario to ensure "that effluent limitations will be fully protective under all flow conditions." [5]

Ambient surface water conditions in Auburn Ravine, an effluent dominated stream, are similar to conditions in Deer Creek that the Court discussed in the EID Deer Creek Decision.[6] The EID Deer Creek Decision upheld the Central Valley Water Board's calculation of effluent limitations for hardness dependent metals.

For this proposed Order, the Central Valley Water Board correctly used actual observed downstream ambient hardness values for Auburn Ravine that are fully protective under all flow conditions.

<u>Uses mixing to determine reasonable potential and to develop effluent limitations</u>

As stated above, the iterative approach, using the CTR equations, was used to calculate the effluent limits that are protective under all flow conditions. When there is no flow in Auburn Ravine, the effluent is representative of ambient conditions. Actual ambient hardness data collected on 7 November 2014 (52 mg/L), 7 November 2014 (52 mg/L), and 5 April 2013 (44 mg/L) were used for cadmium, lead, and silver, respectively. A mixing zone was not considered or granted as part of the iterative approach as stated in proposed Order, page F-16 (Cited in CSPA's comment letter dated 20 June 2016).

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[5] *California Sportsfishing Protection Alliance v. California Regional Water Quality Control Board, Central Valley Region* (Super. Ct. Sacramento County, 2014, No. 34-2013-80001358) at 10 (Order Granting in Part and Denying in Part Petition for Writ of Mandate) (SRCSD Decision) (discussing *California Sportsfishing Protection Alliance v. California Regional Water Quality Control Board, Central Valley Region,* Super. Ct. Sacramento County, 2012, No. 34-2009-80000309) (Order Denying Petitioners' Motion to Strike Respondent's Return of Writ of Mandate and Granting Discharge of the Writ) (EID Deer Creek Decision)).

[6] EID Deer Creek Decision at 9.

Fact Sheet, Table F-5, Summary of CTR Criteria for Hardness-dependent Metals of the proposed Order was modified in underline/strikeout format to include the dates of when the design ambient hardness data points were collected and to revise the design ambient hardness values that were factual errors and revise the associated criteria. The design ambient hardness values and associated revised criteria have been revised throughout the proposed Order as appropriate. Also, the minimum hardness has been revised from 13 mg/L to 16 mg/L throughout the proposed Order.

Table F-5. Summary of CTR Criteria for Hardness-dependent Metals

CTR Metals	Design Ambient Hardness (mg/L) [2]	Criteria (µg/L, total recoverable) [1]	
		acute	chronic
Cadmium	~~60~~52[4]	~~2.5~~2.2	1.8
Chromium III	66[5]	1200	150
Copper	66[5]	9.5 (33) [3]	6.5 (17) [3]
Lead	~~54~~52[4]	~~37~~36	~~1.5~~1.4
Nickel	66[5]	330	37
Silver	44[6]	0.99	--
Zinc	66[5]	84	84

[1] Metal criteria rounded to two significant figures in accordance with the CTR.
[2] The ambient hardness values in this table represent actual observed receiving water hardness measurements from the dataset shown in Figure F-3.
[3] Site-specific Water Effects Ratio of 3.5 used to calculate CTR criteria for copper.
[4] Collected on 7 November 2014.
[5] Collected on 3 May 2013.
[6] Collected on 5 April 2013.

Fails to identify the proper 1Q10 and 7Q10

Central Valley Water Board staff concur, non-zero values for the 7Q10 and 1Q10 on Page F-21 under "Low receiving water flow" were inadvertently included. These values should have both been zero because Auburn Ravine is an ephemeral stream that does not have flow during periods of the year. Fact Sheet, section IV.C.2.g – Approach to derivation of criteria, bullet 1 of Reasonable worst-case ambient conditions of the proposed Order was modified, as shown in underline/strikeout format below:

- "Low receiving water flow." CTR design discharge conditions (1Q10 = ~~1.05~~0 cfs) and 7Q10 = ~~1.50~~0 cfs) have been selected to represent reasonable worst case receiving water flow conditions.

CSPA Comment 4: Antibacksliding

CSPA comments that the proposed Permit contains Effluent Limitations less stringent than the existing permit contrary to the Antibacksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR §122.44 (l)(1).

RESPONSE: Central Valley Water Board does not concur. The relaxation of effluent limitations for aluminum, electrical conductivity, lead, and manganese in the proposed Order

is consistent with the anti-backsliding requirements of the CWA and federal regulations, specifically CWA §402(o)(1) and CWA §402(o)(2). The rationale for each constituent is discussed in detail in the Fact Sheet of the proposed Order (Attachment F, Section IV.D.3).

CWA §402(o)(1) prohibits the establishment of less stringent water quality-based effluent limitations "*except in compliance with Section 303(d)(4).*" For attainment waters, CWA §303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation requirements. As discussed in the proposed Order, section IV.D.4, of the Fact Sheet (Attachment F), relaxation of the effluent limitations for the abovementioned constituents complies with federal and state antidegradation requirements because Auburn Ravine is an attainment water for aluminum, electrical conductivity, lead, and manganese. Thus, removal of the effluent limitations meets the exception in CWA §303(d)(4)(B).

CWA §402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance. Based on updated data for conducting the reasonable potential analyses, aluminum, electrical conductivity, lead, and manganese no longer exhibit reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives in the receiving water. Therefore, the water quality-based effluent limitations for these constituents were removed in the proposed Order. The new information to conduct the reasonable potential analyses meets the antibacksliding exception under CWA §402(o)(2)(B)(i), because it is new information that was not available at the time the previous permit was adopted which would have resulted in less stringent or no effluent limits.