

Central Valley Regional Water Quality Control Board
18/19 February 2016 Board Meeting

Response to Comments
for the
Olivehurst Public Utility District
Wastewater Treatment Facility
Tentative Waste Discharge Requirements

The following are Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (NPDES Permit) for the Olivehurst Public Utility District Wastewater Treatment Facility, Yuba County.

The tentative NPDES Permit was issued for a 30-day public comment period on 4 December 2015, and comments were due 4 January 2016.

The Central Valley Water Board received comments regarding the tentative NPDES Permit by the due date from the following interested parties:

- Central Valley Clean Water Association (CVCWA)
- Olivehurst Public Utility District Wastewater Treatment Facility (Discharger)

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

CENTRAL VALLEY CLEAN WATER ASSOCIATION (CVCWA) COMMENTS

CVCWA, Comment No. 1.

CVCWA contends that the effluent limit for total mercury must be removed because the discharge does not have reasonable potential to exceed the applicable numeric criteria for mercury, and the Tentative Order does not otherwise establish that the discharge has reasonable potential to exceed the narrative objective based on the factors listed in the Basin Plan. Alternatively, if an effluent limit for mercury is imposed, it must include an analysis that is consistent with the requirement of the Basin Plan, including the necessary information for evaluating compliance with a narrative water quality objective.

Response: Central Valley Water Board staff does not concur. The Lower Bear River, to which the facility discharges, is 303(d) listed for mercury, which bioaccumulates in fish tissue. Until a TMDL, which establishes a mercury waste load allocation for the Lower Bear River, is developed, the proposed permit for this facility will retain a mercury mass-based limit to protect beneficial uses..

Central Valley Water Board staff concur that the Fact sheet includes inconsistent statements, stating both that the effluent limit for mercury has been removed and that an effluent limit is necessary. Fact Sheet, Section IV.C.3.b.iii.(b) of the proposed Order was modified, as shown in strikeout format below.

- (b) **RPA Results.** The MEC for mercury was 0.0066 µg/L based on 55 samples collected between January 2011 and December 2014. No effluent or receiving water data for methylmercury was available. Therefore, the effluent does not have reasonable potential to cause or contribute to an exceedance of the CTR criteria for mercury, and the effluent limitations for mercury have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

CVCWA, Comment No. 2.

CVCWA contends that the effluent limitation for electrical conductivity should be removed because there is no reasonable potential, and the Central Valley Water Board does not offer another legally sound basis for imposing a WQBEL under the federal regulation and the Basin Plan. CVCWA further contends that the tentative Order states that effluent limitations based on Secondary Maximum Contaminant Levels (MCL) would likely require construction of a reverse osmosis treatment plant. However, the RPA results show that the levels of chloride, electrical conductivity (EC), sulfate, and total dissolved solids do not exceed the recommended level (i.e., lowest) Secondary MCL. This statement, likely from a permit template, does not apply to this high quality discharge.

Response: Central Valley Water Board staff concurs. The Central Valley Water Board staff support the Discharger's water conservation efforts. Salinity is an issue in the Central Valley and controls are necessary to minimize the discharge of salinity. The Order has been revised to include an electrical conductivity trigger of 900 µmhos/cm for the Discharger to review and update their Salinity Evaluation and Minimization Plan.

In addition, the fact sheet of the proposed Order states: "Effluent limitations based on the MCL or the Basin Plan would likely require construction and operation of a reverse osmosis treatment plant... Construction and operation of reverse osmosis facilities to treat discharges...prior to implementation of other measures to reduce the salt load...would not be a reasonable approach." Therefore, the proposed Order requires the Discharger to continue to implement and determine the effectiveness of their existing Salinity Evaluation Minimization Plan.

The proposed Order has been modified as shown in underline/strikeout format below and throughout the permit as appropriate:

- Limitations and Discharge Requirements section VII.A.1.h and IV.A.2.h, Page 5 and 6
 - h. ~~**Electrical Conductivity.** For a calendar year, the annual average effluent electrical conductivity shall not exceed 900 µmhos/cm.~~
- Limitations and Discharge Requirements section VI.C.3.a, Page 15
 - a. **Salinity Evaluation and Minimization Plan.** The Discharger shall continue to implement a salinity evaluation and minimization plan to address sources of salinity from the Facility. The Discharger shall provide annual reports discussing the effectiveness of implementing the salinity evaluation and

minimization plan, and changes in the salinity in the effluent discharge if it is increasing. The salinity evaluation and minimization plan shall be reviewed and updated as necessary as part of the report of waste discharge if the effluent annual average calendar year electrical conductivity concentration is greater than 900 µmhos/cm. If the plan is updated, it shall be submitted with the report of waste discharge within 60 days of exceeding an effluent electrical conductivity annual average of 900 µmhos/cm 180 days prior to the Order expiration date. The annual reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, section X.D.1).

- Limitations and Discharge Requirements section IV.H, Page 21

F. ~~Electrical Conductivity Calendar Year Annual Average Effluent Limitation (Section IV.A.1.g and IV.A.2.g)~~ Compliance with the calendar year annual average effluent limitations for electrical conductivity shall be determined by calculating the sum of all daily discharges measured during a calendar year divided by the number of daily discharges measured during that year.

- Fact Sheet – Attachment F, IV.C.3.a.i, Page F-21

i. Salinity

(b) **WQO**. The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The USEPA Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no USEPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no USEPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan Amendment that will establish a salt and nitrate Management Plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. The Salinity Minimization Plan and annual reports submitted by the discharger will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

Table F-9 Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Objective ¹	Secondary MCL ²	USEPA NAWQC	Effluent	
				Average ³	Maximum
EC (µmhos/cm)	Varies	900, 1600, 2200	N/A	694	875
TDS (mg/L)	Varies	500, 1000, 1500	N/A	112	138
Sulfate (mg/L)	Varies	250, 500, 600	N/A	23	28
Chloride (mg/L)	Varies	250, 500, 600	860 1-hr 230 4-day	455	513

¹ Narrative chemical constituent objective of the Basin Plan. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the Policy for Application of Water Quality, Chapter IV, Section 8 of the Basin Plan. However, the Basin Plan does not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.

² The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

³ Maximum calendar annual average.

- (1) **Chloride.** The Secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.
 - (2) **Electrical Conductivity.** The Secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum.
 - (3) **Sulfate.** The Secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.
 - (4) **Total Dissolved Solids.** The Secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.
- (b) **RPA Results.**
- (1) **Chloride.** Chloride concentrations in the effluent ranged from 92 mg/L to 130 mg/L, with an average of 112 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in receiving water ranged from 13 mg/L to 105 mg/L, with an average of 48 mg/L, for 3 samples collected by the Discharger from January 2012 through April 2013.
 - (2) **Electrical Conductivity.** A review of the Discharger's monitoring reports shows an average effluent EC of 694 µmhos/cm, with a range from 238 µmhos/cm to 875 µmhos/cm. These levels do not exceed the Secondary MCL. The background receiving water EC averaged 193 µmhos/cm.
 - (3) **Sulfate.** Sulfate concentrations in the effluent ranged from 20 mg/L to 28 mg/L, with an average of 23 mg/L. These levels do not exceed the Secondary MCL. Background

concentrations in receiving water ranged from 3.8 mg/L to 19 mg/L, with an average of 10 mg/L.

- (4) Total Dissolved Solids. The average TDS effluent concentration was 455 mg/L with concentrations ranging from 246 mg/L to 513 mg/L. These levels do not exceed the Secondary MCL. The background receiving water TDS ranged from 83 mg/L to 451 mg/L, with an average of 303 mg/L.

- Fact Sheet – Attachment F, IV.C.3.b.vi., Page F-38

vi. **Salinity**

- (a) ~~WQO. The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The USEPA Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no USEPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no USEPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan Amendment that will establish a salt and nitrate Management Plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. The Salinity Minimization Plan and annual reports submitted by the discharger will be reviewed by and consistent with the efforts currently underway by CV-SALTS.~~

Table F-1. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Objective ¹	Secondary MCL ²	USEPA NAWQC	Effluent	
				Average ³	Maximum
EC (µmhos/cm)	Varies	900, 1600, 2200	N/A	694	875
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² The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

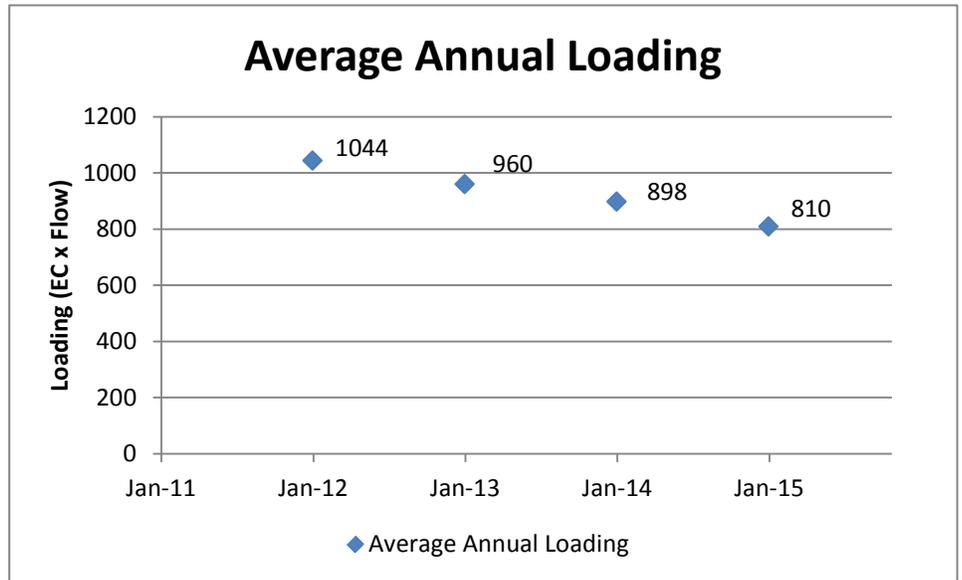
³ Maximum calendar annual average.

- (1) **Chloride.** The Secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.
 - (2) **Electrical Conductivity.** The Secondary MCL for EC is 900 μ mhos/cm as a recommended level, 1600 μ mhos/cm as an upper level, and 2200 μ mhos/cm as a short-term maximum.
 - (3) **Sulfate.** The Secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.
 - (4) **Total Dissolved Solids.** The Secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.
- (e) **RPA Results.**
- (5) Chloride. Chloride concentrations in the effluent ranged from 92 mg/L to 130 mg/L, with an average of 112 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in receiving water ranged from 13 mg/L to 105 mg/L, with an average of 48 mg/L, for 3 samples collected by the Discharger from January 2012 through April 2013.
 - (6) Electrical Conductivity. A review of the Discharger's monitoring reports shows an average effluent EC of 694 μ mhos/cm, with a range from 238 μ mhos/cm to 875 μ mhos/cm. These levels do not exceed the Secondary MCL. The background receiving water EC averaged 193 μ mhos/cm.
 - (7) Sulfate. Sulfate concentrations in the effluent ranged from 20 mg/L to 28 mg/L, with an average of 23 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in receiving water ranged from 3.8 mg/L to 19 mg/L, with an average of 10 mg/L.
 - (8) Total Dissolved Solids. The average TDS effluent concentration was 455 mg/L with concentrations ranging from 246 mg/L to 513 mg/L. These levels do not exceed the Secondary MCL. The background receiving water TDS ranged from 83 mg/L to 451 mg/L, with an average of 303 mg/L.
- (b) **WQBEL's.** Effluent limitations based on the MCL or the Basin Plan would likely require construction and operation of a reverse osmosis treatment plant. The State Water Board, in Water Quality

~~Order 2005-005 (for the City of Manteca), states, "...the State Board takes official notice [pursuant to Title 23 of California Code of Regulations, Section 648.2] of the fact that operation of a large-scale reverse osmosis treatment plant would result in production of highly saline brine for which an acceptable method of disposal would have to be developed. Consequently, any decision that would require use of reverse osmosis to treat the City's municipal wastewater effluent on a large scale should involve thorough consideration of the expected environmental effects." The State Water Board states in that Order, "Although the ultimate solution to southern Delta salinity problems have not yet been determined, previous actions establish that the State Board intended for permit limitations to play a limited role with respect to achieving compliance with the EC water quality objectives in the southern Delta." The State Water Board goes on to say, "Construction and operation of reverse osmosis facilities to treat discharges...prior to implementation of other measures to reduce the salt load in the southern Delta, would not be a reasonable approach."~~

~~The Central Valley Water Board, with cooperation of the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. In a statement issued at the 16 March 2006, Central Valley Water Board meeting, Board Member Dr. Karl Longley recommended that the Central Valley Water Board continue to exercise its authority to regulate discharges of salt to minimize salinity increases within the Central Valley. Dr. Longley stated, "The process of developing new salinity control policies does not, therefore, mean that we should stop regulating salt discharges until a salinity Policy is developed. In the meantime, the Board should consider all possible interim approaches to continue controlling and regulating salts in a reasonable manner, and encourage all stakeholder groups that may be affected by the Regional Board's policy to actively participate in policy development."~~

~~Order R5-2010-0074 included an interim performance-based limitation of 700 µmhos/cm. Based on the highest average annual reported electrical conductivity (EC) of 694 µmhos/cm, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, average annual effluent EC concentrations are expected to increase due to a trend of decreasing flow (1.6 MGD in 2011 to 1.2 MGD in 2014) caused by water conservation efforts during the ongoing drought. However, EC loading has trended down over the past four years.~~



~~A revised performance-based effluent limitation that maintains EC loading was derived by taking the ratio of loading in 2011 versus 2014 and multiplying it by the previous 700 $\mu\text{mhos/cm}$ performance-based limit. Therefore, this Order revises the performance-based effluent limitation to 900 $\mu\text{mhos/cm}$ for EC to be applied as an annual average. The increased EC limit will not result in increased salt loading in the Central Valley. Since the facility discharges to the Western Pacific Interceptor Canal, a tributary of the Lower Bear River and eventually the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters. The maximum annual average of 694 $\mu\text{mhos/cm}$ occurred during the year 2011. Increasing this effluent limitation is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).~~

~~In order to ensure that the Discharger will continue to control the discharge of salinity, this Order includes a requirement to continue to implement the existing a salinity evaluation and minimization plan. Also water supply monitoring is required to evaluate the relative contribution of salinity from the source water to the effluent.~~

~~(c) **Plant Performance and Attainability.** Evaluating EC data obtained from January 2011 through December 2014, the maximum annual average of 694 $\mu\text{mhos/cm}$ occurred during the year 2011. Based on these sample results for the effluent, it appears the Discharger can meet the new final EC effluent limitation.~~

- Fact Sheet – Attachment F, IV.D.4.v., Page F-47
 - v. **Electrical Conductivity.** Effluent monitoring data collected between February 2012 and January 2015 indicates that the discharge does not

demonstrate reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives for salinity. ~~Discharge limitations are relaxed to preclude exceedance of the limit in Order R5-2010-0074 due to increased concentrations due to decreased flows resulting from water conservation efforts during the ongoing drought.~~

CVCWA, Comment No. 3.

CVCWA contends that the receiving water limitations for salinity cross-reference a page number in the Basin Plan. However, the water quality objectives listed on page III-6.02 and in Table III-3 do not apply to Bear River.

Response: Central Valley Water Board staff concurs. Section V.A.11. of the proposed Order was modified, as shown in strikeout format below.

~~11. **Salinity.** Salinity (chloride, electrical conductivity, TDS, etc.) objectives for Sac/SJ Basins, see page III-6.02.~~

OLIVEHURST PUBLIC UTILITY DISTRICT (DISCHARGER) COMMENTS

Discharger, Comment No. 1

The Discharger contends that there are inconsistencies regarding the monitoring locations and frequencies for total coliform organisms in tables E-3 and E-7.

Response: Central Valley Water Board staff concurs. Tables E-3 and E-7 of the proposed order were modified as shown in part in strikeout/underline format below to remove the total coliform organisms monitoring requirement from the effluent and to reduce the sampling frequency from daily to 2/week at UVS-001:

Table E-3. Effluent Monitoring

Non-Conventional Pollutants				
Total Coliform Organisms	MPN/100 mL	Grab ⁴	2/Week ⁴⁴	1 ⁴

⁴⁴ ~~Samples for total coliform organisms may be collected at any point following disinfection.~~

Table E-7. Filtration System and UV Disinfection System Monitoring Requirements

Parameter	Units	Sample Type	Monitoring Location	Minimum Sampling Frequency
Total Coliform Organisms	MPN/100mL	Grab	UVS-001	1/Day <u>2/week</u>

CENTRAL VALLEY WATER BOARD STAFF (STAFF) CHANGES

Staff Change No.1.

The proposed permit will be revised to include copper limits. The tentative permit has been corrected to include copper limits by including the corrected background copper criterion (C) of 4.6 µg/L, which is less than the maximum background concentration (B) of 6.0 µg/L. In accordance with SIP procedures reasonable potential exists where B>C. Therefore, final effluent limits and monitoring for copper are warranted. The proposed Order was modified in part as shown in underline format below and throughout the proposed Order as appropriate.

- Limitations and Discharge Requirements Tables 4 and 5

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
<u>Copper</u>	<u>mg/L</u>	<u>9</u>	<u>18</u>	--	--	--

- Attachment E – Monitoring and Reporting Program, Table E-3. Effluent Monitoring, Page E-4

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Priority Pollutants				
<u>Copper</u>	<u>µg/L</u>	<u>Grab</u> ⁴	<u>1/Month</u>	<u>1.6</u>

- Attachment F – Fact Sheet section IV.C.3.b. Page F-25

b. ~~**Constituents with No Data or Insufficient Data.** Reasonable potential cannot be determined for the following constituents because effluent data are limited or ambient background concentrations are not available. The Discharger is required to continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.~~

i. **Copper**

- (a) ~~**WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. These criteria for copper are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default USEPA translators were used in this Order.~~
- (b) ~~**RPA Results.** The Discharger collected eight samples between July 2011 and May 2013 (minimum MDL 0.07 µg/L, minimum RL~~

0.5 µg/L). Of the eight sample detections, one analytical result (15 µg/L) indicated copper concentrations in the effluent exceeded the chronic hardness-dependent criterion 11.4 µg/L, while the remaining seven detections indicated that all copper concentrations were 2.2 µg/L or less.

Staff evaluated additional data to determine if the analytical result of 15 µg/L was representative of monitoring samples collected from the Facility's treatment system. Of 32 monitoring samples obtained during the previous permit term (July 2004 to May 2010), all analytical results indicated copper concentrations in the effluent below the chronic hardness-dependent criterion 11.4 µg/L. Thus, during the past seven years, September 2006 through May 2013 (data available at the writing of this Order), out of the 40 effluent monitoring results obtained only one analytical result (7 February 2013) indicated the presence of copper in the effluent at a concentrations at 15 µg/L while the remaining 39 analytical results indicated effluent concentrations were 7.8 µg/L or less. Section 1.2 of the SIP states that "When implementing the provisions of this Policy [the SIP], the RWQCB shall use all available, valid, relevant, representative data and information, as determined by the RWQCB. The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use implementing this Policy [the SIP]." The discretion of the Central Valley Water Board is further explain in Draft SIP Supplement 1 to Appendix G to January 31, 2000 Functional Equivalent Document (FED) titled Responses to Public Comments on 1999 Draft Policy and FED. In response to comment 155d the SWQCB states that "Additionally, the proposed policy [SIP] gives the RWQCB the ultimate discretion to determine if a limitation is required. Therefore, RWQCB staff determines if the data set submitted by the discharger is representative of the discharge and receiving water quality."

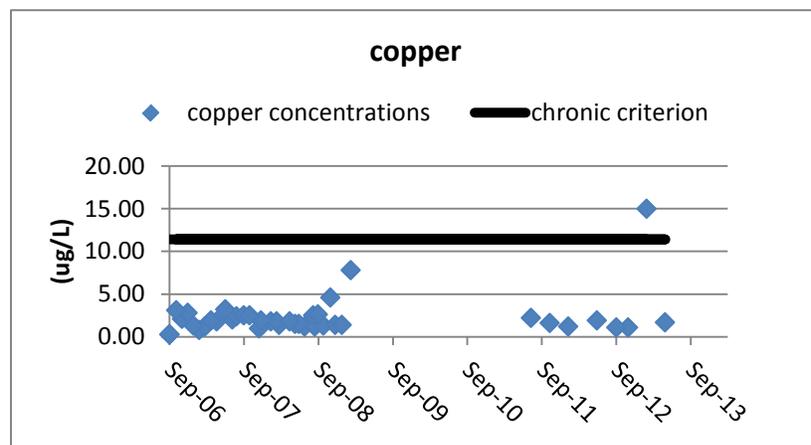
Central Valley Water Board staff conducted a statistical analysis of the complete data set (September 2006 to May 2013) using Rosner's outlier test (an approved outlier test included in section 4.4.1 of USEPA's *Data Quality Assessment: Statistical Methods for Practitioners*) to determine if the monitoring sample obtained in February 2013 is representative datum. The results of the Rosner's outlier test indicated that three analytical results are outliers. Thus, with a robust data set (40 data points) obtained during a seven year span, the Central Valley Water Board determined that the three effluent monitoring samples for copper obtained on 7 February 2013, 17 February 2009, and 10 November 2008 are not representative of the Facility's treatment system and effluent discharge and should not be used to determine if the discharge demonstrates reasonable potential to cause or contribute to exceedances of the human health criterion for copper in the receiving water. Therefore, Central Valley Water Board

determined the MEC for copper was 3.20 µg/L based on the 37 representative samples collected between September 2006 and May 2013, as allowed by section 1.2 of the SIP.

As further confirmation, Central Valley Water Board staff also performed an analysis of the effluent copper data according to the methodology described in section 4.4.1 of USEPA's *Data Quality Assessment: Statistical Methods for Practitioners*. While the Data Quality Assessment Document is not a regulatory document, thus the Central Valley Water Board has no regulatory obligation to reference or use it when evaluating data, the Central Valley Water Board, as presented below, has gone through the five steps listed in section 4.4.1 of the Data Quality Assessment Document.

Step 1: Identify extreme values that may be potential outliers

As shown in the graph below, three copper analytical results are significantly larger than the rest of the data. Hence, the Central Valley Water Board identifies the 15 µg/L, 7.8 µg/L and 4.6 µg/L data points as potential outliers.



Step 2: Apply statistical test

As previously discussed, the Rosner's test for outliers was used to determine if the 15 µg/L, 7.8 µg/L and 4.6 µg/L detections were outliers. The Rosner's test calculated test statistics of 5.27, 7.8 and 3.39 for the potential three outliers. Using a confidence interval of 99%, the critical values were calculated to be 3.38, 3.37, and 3.36. Since the test values were greater than the critical values, Rosner's test confirms that there are three outliers (15 µg/L, 7.8 µg/L and 4.6 µg/L). Therefore, the Central Valley Water Board concludes that 15 µg/L, 7.8 µg/L and 4.6 µg/L are statistical outliers.

Step 3: Scientifically review statistical outliers and decide on their disposition

~~The data set comprises 40 data points collected between September 2006 and May 2013, three of which are outliers as determined by Rosner's outlier test. These outliers vary from 2 to 6 standard deviations from the next highest analytical result. The Discharger was not required to conduct influent sampling for copper. Therefore, a Local Limits study to determine the facility's removal efficiency, and comparison to the outlier concentrations could not be performed.~~

Step 4: Conduct data analysis with and without statistical outliers

~~The mean with the outliers is 2.26 µg/L and without the three outliers the mean is 1.79 µg/L. The standard deviation with the outliers is 2.41 and is reduced significantly to 0.61 with removal of the three outliers, which would be expected because of the historical consistency of the data over the past two permit terms.~~

Step 5: Document the entire process

~~The process is documented in the preceeding four steps.~~

~~The maximum observed upstream receiving water concentration for copper was 6 µg/L based on three samples collected between January 2012 and April 2013 (MDL 0.005 µg/L, RL 0.5 µg/L), which is below the CTR hardness-dependent criterion for copper. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to exceedances of the copper CTR hardness-dependent criterion for protection of freshwater aquatic life in the receiving water. The Lower Bear River has been listed as an impaired water body pursuant to CWA section 303(d) because of copper and the discharge must not cause or contribute to increased copper levels.~~

- Attachment F – Fact Sheet section IV.C.3.b. Page F-30

ii. **Copper**

- (a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. These criteria for copper are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default USEPA translators were used the receiving water and effluent.
- (b) **RPA Results.** Section IV.C.2 of this Fact Sheet includes procedures for conducting the RPA for hardness-dependent CTR metals, such as copper. The CTR includes hardness-dependent criteria for copper for the receiving water. The maximum observed upstream receiving water copper concentration was 6 µg/L, based

on 3 samples collected between 27 January 2012 and 5 April 2013. The RPA was conducted using the upstream receiving water hardness to calculate the criteria for comparison to the maximum ambient background concentration, and likewise using the reasonable worst-case downstream hardness to compare the maximum effluent concentration. The table below shows the specific criteria used for the RPA.

	<u>CTR Chronic Criterion (Total Recoverable)</u>	<u>Maximum Concentration (Total Recoverable)</u>	<u>Reasonable Potential? (Y/N)</u>
<u>Receiving Water</u>	<u>4.6 µg/L¹</u>	<u>6 µg/L</u>	<u>Yes³</u>
<u>Effluent</u>	<u>11 µg/L²</u>	<u>15 µg/L</u>	<u>Yes⁴</u>

¹Based on lowest observed upstream hardness of 44 mg/L (as CaCO₃)

²Based on reasonable worst-case downstream hardness of 127 mg/L (as CaCO₃)

³Per Section 1.3, step 4 of the SIP.

⁴Per Section 1.3, step 6 of the SIP.

Based on the available data, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life.

- (c) **WQBEL's.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBEL's for copper. This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for copper of 9 µg/L and 18 µg/L, respectively, based on the CTR criterion for the protection of freshwater aquatic life.
- (d) **Plant Performance and Attainability.** The maximum copper detection of 15 µg/L occurred once in forty sampling events over a 6-year period. The remaining 39 sampling results were below the AMEL of 9 µg/L; therefore, the Central Valley Water Board concludes that immediate compliance with the copper effluent limitations is feasible.

Staff Change No. 2.

The Discharger clarified that there are different monitoring locations for UV disinfection system flow monitoring versus UV transmittance and turbidity monitoring. UV flow monitoring is conducted upstream of the filter element. UV transmittance and turbidity monitoring is conducted downstream of the filter prior to the UV disinfection system. Tables E-1 and E-7 have been modified accordingly as shown in part in underline/strikeout below.

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
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--	FIL-001	Monitoring of the filter effluent influent to be measured downstream <u>upstream</u> of the filters prior to the ultraviolet light (UV) disinfection system.
--	<u>FIL-002</u>	<u>Monitoring of the filter effluent to be measured downstream of the filters prior to the ultraviolet light (UV) disinfection system</u>

Table E-7. Filtration System and UV Disinfection System Monitoring Requirements

Parameter	Units	Sample Type	Monitoring Location	Minimum Sampling Frequency
Flow	MGD	Meter	UVS FIL-001	Continuous ¹
Turbidity	NTU	Meter	FIL- 001 <u>002</u>	Continuous ^{1,2}
UV Transmittance	Percent (%)	Meter	UVS-001 FIL- <u>002</u>	Continuous ¹