

Central Valley Regional Water Quality Control Board
22/23/24 September 2010 Board Meeting

Response to Comments
for the
Placer County Department of Facility Services
Placer County Sewer Maintenance District 1 (SMD1)
Wastewater Treatment Plant (WWTP)
Tentative Waste Discharge Requirements
Continuation of Hearing

At its May 2010 Board Meeting, the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) continued the Public Hearing for the tentative Waste Discharge Requirements (National Pollutant Discharge Elimination System or NPDES Permit) renewal and tentative Cease and Desist Order for the Placer County Department of Facility Services (hereinafter Discharger), Placer County Sewer Maintenance District 1 Wastewater Treatment Plant (hereinafter Facility). The Board also considered (1) a tentative discharge expansion option, and (2) tentative alternative for compliance schedules, however continued the hearing for the entire tentative package.

The following are Central Valley Water Board staff responses to public comments regarding the subsequent tentative NPDES Permit renewal package, issued on 8 July 2010, which includes the tentative NPDES permit, the tentative CDO, and the following subsequent tentative alternatives:

- (1) Compliance Schedule for Tertiary Level Effluent Limitations in the Proposed Cease and Desist Order,
- (2) Compliance Schedule For Ammonia And Tertiary Level Effluent Limitations In Proposed Ceased And Desist Order,
- (3) Applicability Of Aluminum Criteria, and
- (4) Chloroform Effluent Limitations

Public comments regarding the proposed continued NPDES Permit were required to be submitted to the Central Valley Water Board by 9 August 2010 in order to receive full consideration. Comments regarding the tentative Chloroform Effluent Limitations were required to be submitted by 16 August 2010.

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

- Discharger; (Letters dated 14 June 2010, 9 August 2010, 9 August 2010- Attachment A, and 16 August 2010)
- United States Environmental Protection Agency (USEPA); (Letter dated 24 June 2010)

- California Sportfishing Protection Alliance (CSPA), (Letter dated 8 August 2010); and
- Central Valley Clean Water Association (CVCWA); (Letter dated 9 August 2010).

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

PLACER COUNTY DEPARTMENT OF FACILITY SERVICES (DISCHARGER) COMMENTS

Discharger Comment No. 1. Effluent Limitations for Aluminum

The Discharger contested the Central Valley Water Board application of the USEPA's 87 ug/L chronic aquatic life criterion to the Placer County Sewer Maintenance District 1 Wastewater Treatment Plant (SMD1) effluent. The Discharger stated that comments by Central Valley Water Board staff and USEPA Region 9 have raised questions whether new information has been developed since the adoption of the existing Permit to justify changing the Central Valley Water Board's previous conclusion that the 87 ug/L criterion is applicable to SMD1 effluent. The Discharger stated that substantial new information exists as follows:

- Effluent and receiving water data collected since 2005, which affirms that the low hardness and pH conditions to which the 87 ug/L criterion applies do not exist at the site.
- A 10 June 2010 letter from Charles Delos, USEPA Headquarters, Office of Water, Criteria Division technical expert on the aluminum criteria and its application, which interprets the new effluent and receiving water data and affirms his previous conclusions in 2001 and 2002 that 750 ug/L is an appropriate criterion for SMD1.
- The Arid West Water Quality Research Program report published in 2006 (funded by USEPA Region 9), *Evaluation of the EPA Recalculation Procedure in the Arid West Technical Report*, that includes re-calculated (updated) aquatic life criteria for aluminum.
- Results from an aluminum water-effect ratio (WER) sample event for SMD1. The WER was >13.7, which when applied to the 87 ug/L criterion results in a WER-adjusted chronic criterion of >1,192 ug/L. This indicates that there is no risk of toxicity to aquatic life in the receiving waters due to SMD1 effluent, which has a maximum concentration of 162 ug/L.

The Discharger stated that the maximum effluent concentration of aluminum is 162 ug/L, which does not exceed the applicable aquatic life criterion of 750 ug/L, the Arid West Water Quality Research Program-derived criteria for a hardness of 20 mg/L or higher, or the drinking water MCL of 200 ug/L. The upstream hardness ranged from 20 mg/L (not a method detection level) to 98 mg/L. The Discharger confirmed that the hardness data of 20 mg/L were based on detected levels, not on method detection limits. Therefore, the Discharger contends, the discharge does not

have reasonable potential to cause or contribute to an in-stream excursion above the applicable criteria for protection of freshwater aquatic life or human health.

The Discharger requested that Alternative 3, Applicability of Aluminum Criteria be adopted with the following correction:

Revise Section IV.C.1.b.ii, Line 7 to read “The upstream water hardness ranged from 20 mg/L (not a method detection level) to 98 mg/L.”

The Discharger stated that, if the Central Valley Water Board does impose the effluent limitations for aluminum, the Discharger requests that the CDO provide a compliance schedule for the maximum daily effluent limitation (MDEL), including protection from MMPs for the exceeding the aluminum MDEL. The MDEL for aluminum of 151 ug/L in the Tentative Order is more stringent than the MDEL of 160 ug/L in the existing NPDES permit. The Discharger requests that the CDO be modified to provide a five-year compliance schedule.

RESPONSE: Central Valley Water Board staff acknowledges the Discharger’s support of Alternative No. 3 (Effluent Limitations for Aluminum), which proposes the determination of reasonable potential using the California Department of Public Health (DPH) Secondary Maximum Contaminant Level (MCL) of 200 µg/L (resulting in no effluent limits), as opposed to the tentative NPDES Permit, which proposes effluent limitations for aluminum based on USEPA’s National Ambient Water Quality Criteria (NAWQC) chronic criterion of 87 µg/L for the protection of aquatic life. At the May 2010 Central Valley Water Board meeting, the Board continued this item, allowing interested parties to submit compelling evidence regarding the applicability of the appropriate criteria for the reasonable potential analysis. Information supporting Alternative No. 3 includes a 14 June 2010 letter submitted by the Discharger. The submitted information raises the issue of whether the applicability of the chronic criterion should be based on upstream or downstream receiving water conditions. At the September 2010 meeting, the Central Valley Water Board will be considering both the proposed NPDES Permit and Alternative No. 3 (Effluent Limitations for Aluminum). The proposed implementation of the Secondary MCL has been presented as a separate tentative option for the Central Valley Water Board to make a determination whether the chronic criterion of 87 µg/L should be applied based on upstream or downstream hardness and pH conditions.

Central Valley Water Board staff does not concur that enough site-specific information exists to support that the chronic criterion for aluminum of 87 µg/L is not applicable to the receiving water. The chronic criterion of 87 µg/L is based on studies conducted on waters with low pH (6.5 to 6.8 pH units) and hardness (<10 mg/L as CaCO₃). Similar to the pH of the facility influent, the upstream receiving water pH is at times low, with available data indicating that it ranges from 6.3 – 9.5. The hardness of the upstream receiving water ranges from 20 mg/L to 98 mg/L. The minimum observed effluent hardness was 141 mg/L. The high hardness of the effluent is due to the addition of magnesium hydroxide in the primary clarifier effluent

to provide alkalinity for nitrification, as reported in Table B-1 in Addendum B – Form 2A Part B, section B.3 of the Report of Waste Discharge. Although the effluent hardness may currently increase the downstream hardness, future modifications of the treatment process may result in changes in magnesium hydroxide use. These changes may reduce the effluent hardness and, consequently, the downstream receiving water hardness to levels supportive of the applicability of the NAWQC chronic criterion for aluminum.

The Central Valley Water Board generally discourages the addition of chemicals when unnecessary for treatment, because it increases the potential for salinity and other constituents to be discharged to the receiving water. Therefore, until site-specific testing is approved by Central Valley Water Boards staff confirming that it is appropriate to incorporate effluent hardness in this evaluation, it is inappropriate to base the applicability of the aluminum chronic criterion for the receiving water on the characteristics of the effluent.

The low pH values and low hardness observed during the months of June through August (typically critical low flow time periods) in the receiving water makes it questionable if the receiving water conditions year-round are supportive of removing the applicability of the NAWQC chronic criterion for aluminum. Additionally, since at times the effluent has a much higher hardness than the receiving water, and there is no recent receiving water aluminum data (2002-2003 data shows concentration range of 54 ug/L to 215 ug/L), it remains unknown if the “worse-case” conditions occur during critical low flow of the receiving water. Additional site-specific information, equivalent to a Water Effect Ratio Study, and receiving water data is necessary to confirm that the conditions in the receiving water will not result in toxicity if the 87 ug/L chronic criteria is not applied. In certain situations, the Central Valley Water Board may consider information from the *Arid West Water Quality Research Project - Evaluation of the EPA Recalculation Procedure in the Arid West Technical Report* (May 2006) when determining the applicability of the chronic criterion to a receiving water. However, the 2006 Arid West Study alone does not constitute a sufficient basis to justify discarding the 87 ug/L chronic criterion for water bodies where ambient hardness can be very similar to the conditions used to develop the chronic criterion. While Board staff acknowledge that the Central Valley Water Board has not always required additional WER study information to justify departures from the criterion, in cases where additional information was not required, receiving water hardness levels were significantly higher than those used to develop the chronic criterion.

With its public comments submitted on 9 August 2010, the Discharger submitted a sample Water Effect Ratio (WER) result which indicates a preliminary WER conclusion of 13.7. Although the initial testing indicates that applying this ratio to the 87 ug/L criterion ($13.7 \times 87 \text{ ug/L} = 1191.9 \text{ ug/L}$) would result in a chronic criterion greater than the applicable Secondary MCL of 200 ug/L or the acute criterion of 750 ug/L, staff needs the conclusion of additional sampling events, and possibly confirmation testing using a secondary species, in accordance with USEPA's *Interim*

Guidance on Determination and Use of Water-Effect Ratios for Metals (February 1994), to justify the removal of the chronic criterion. If not a full WER study, at minimum sufficient testing that indicates that this receiving water, with hardness as low as 20 mg/L, is still protected by implementation of the 200 ug/L MCL and 750 ug/L acute criteria. Therefore, Central Valley Water Board staff does not believe that sufficient site-specific information is available at this time to warrant discontinuation of the use of the chronic criterion for aluminum.

The discharger requested that WER study conclusions from the City of Yuba City regarding aluminum criteria for Feather River should be applicable to Rock Creek. Staff does not believe that Rock Creek, a small creek, is comparable to the Feather River, a water body in which the City of Yuba City conducted a WER study (Phase 1) to conclude that the 87 ug/L criterion was not applicable. The Feather River is a large river with minimum flows of 1500 cubic feet per second controlled by upstream dams. The discharger has not provided information indicating hardness, pH and temperature parameters of this larger river are comparable to the conditions of the smaller Rock Creek.

Upon the availability of sufficient information, the permit may be reopened to adjust effluent limitations for aluminum, as necessary. The Central Valley Water Board staff recommendation is also consistent with a 24 June 2010 letter from USEPA Region 9 regarding this aluminum issue, recommending the conservative approach of retaining the existing limitation based on the chronic criterion in the absence of adequate site-specific information supporting discontinuation of its use. An antidegradation analysis, supporting the additional degradation that will be allowed to occur if the Board is to backslide from the existing effluent limitation, is required. In 2005, the Regional Board considered the degradation associated with the existing effluent limitations based on the 87 ug/L criteria. An analysis of aluminum receiving water data together with site-specific information for aluminum would allow the Central Valley Water Board to conduct an appropriate antidegradation analysis, which could support the removal of the 87 ug/l final effluent limitation. The Discharger would also have to demonstrate that BPTC is implemented at a level that would meet the requirements of the antidegradation policies.

The existing final effluent limitations for aluminum went into effect in 2005. The existing 2005 Cease and Desist Order granted the Discharger a five-year compliance schedule, with a compliance date of March 2010, and protection from Mandatory Minimum Penalties (MMPs). Because the 2005 CDO provided the Discharger with 5 years to comply with effluent limitations for aluminum, the exception from mandatory minimum penalties provided by California Water Code (CWC) section 13385(j)(3) can not be utilized for this parameter.

Discharger Comment No. 2. Compliance Schedules for Total Coliform, BOD, TSS, and Title 22 or Equivalent Requirements

The Discharger stated that the Central Valley Water Board should adopt the Tentative Order with the in-Permit compliance schedules for total coliform, BOD, TSS and Title 22 or equivalent, and reject “Alternative 1, Tentative Compliance Schedule for Tertiary Level Effluent Limitations in Proposed Cease and Desist Order” and “Alternative 2, Tentative Compliance Schedule for Ammonia and Tertiary Level Effluent Limitations.”

The Discharger stated that in the Tentative Order, the Central Valley Water Board derived new, more stringent numeric permit limitations for total coliform, BOD, TSS, and turbidity from the narrative toxicity objective in the Basin Plan and that the limitations are more stringent than the technology-based requirements for secondary treatment mandated by the federal Clean Water Act. In the existing Permit, tertiary effluent limitations or operational specifications for total coliform, turbidity, BOD, and TSS are applicable when influent flow is less than 3.5 mgd. Per the California Department of Public Health’s (DPH) recommendation, the existing Permit also establishes effluent limitations for total coliform of 2.2 MPN/100ml as a 30-day median when flow is greater than 3.5 mgd and 7-day median temperature of the receiving water less than 60°F. This limitation is less stringent than the final effluent limitation in the Tentative Order. To accommodate the discharge of comingled tertiary/secondary wastewater, the existing Permit also contains effluent limitations or specifications for BOD, TSS, and turbidity that are less stringent than the equivalent of tertiary treatment-based limitations. The Tentative Order requires the equivalent of tertiary treatment regardless of influent flow rate.

The Discharger stated that, as explained in the Tentative Order’s findings, the Discharger submitted an Infeasibility Report in compliance with the requirements for requesting an extension to the Compliance Schedule. The Discharger stated that the permit findings further explain that the County needs additional time to implement actions to comply with the new limitations and that the compliance schedule is as short as possible. The Discharger stated that inclusion of the compliance schedules in the Tentative Order is also appropriate because the parameters have not been included in any previous enforcement order. Existing law provides no more than five years of protection from MMPs where a schedule of compliance is included in an enforcement order. Moving the compliance schedule from the permit to the CDO will remove the Central Valley Water Board’s discretion to authorize any additional time for compliance if regionalization proves viable. If the schedule is included in the permit, the Central Valley Water Board retains full discretion to grant or deny additional time for compliance.

RESPONSE: The State Water Board Compliance Schedule Policy authorizes compliance schedules in a permit for an existing discharger to implement a newly interpreted water quality objective or criterion in a water quality standard that results in a permit limitation more stringent than the limitation previously imposed where it is determined that the discharger: (1) has complied with the application requirements in

paragraph 4 of the Compliance Schedule Policy, and (2) has demonstrated that the discharger needs additional time to implement actions to comply with the limitation. Existing Order No. R5-2005-0074 required compliance with tertiary level effluent limitations for BOD₅ and TSS when the influent flow is less than 3.5 MGD, but did not require compliance with tertiary level effluent limitations when the influent flow is greater than 3.5 MGD and the 7-day median receiving water temperature is less than 60°F. The proposed NPDES Permit now requires compliance with tertiary level effluent limitations for BOD₅ and TSS regardless of influent flow and receiving water temperature to protect the beneficial uses of the receiving water. This represents a new interpretation of the narrative Chemical Constituents objective that results in a permit limitation more stringent than the limitation previously imposed.

On 4 May 2010, the Discharger submitted supplemental information in their *Infeasibility Report for the Sewer Maintenance District 1 Wastewater Treatment Plant* (Infeasibility Report) 2010 addressing the requirements of the Compliance Schedule Policy. The Facility is not designed to provide full tertiary treatment for wet weather flows exceeding 3.5 MGD, and currently discharges a blend of secondary and tertiary wastewater under those conditions. The Discharger therefore cannot currently comply with the BOD and TSS limits when the influent flow is greater than 3.5 MGD and the 7-day median receiving water temperature is less than 60°F.

Tentative Alternatives No. 1 and 2 have been developed specifically to allow the Board discretion whether to place the compliance schedule for ammonia in the permit or enforcement order.

The Discharger has not begun to construct or implement the necessary treatment or controls an upgrade of the existing Facility in order to comply with the past March 2010 compliance dates. The tentative permit package to be considered by the Board includes options for an additional five-year compliance schedule to provide the time necessary for the Discharger to complete the necessary upgrades. The option that places the compliance schedule in the CDO is based on the fact that the Discharger has not taken necessary steps to begin upgrade of the Facility as a short-term solution once the County became aware that Regionalization is a long-term compliance solution. Although the County claims that the hope to regionalize deterred the Discharger from upgrading, the City of Auburn, in the same situation with the same Regionalization pipeline project, commenced an upgrade project upon awareness of the long-term feasibility of regionalization, and will be in compliance with many similar final effluent limitations in the year 2011. The tentative option of placing the compliance schedules in the tentative permit is on the basis that the State Water Board Compliance Schedule allows this, and the Board is open to the possibility of considering a future request in five years from this Discharger for additional time (above and beyond the then to be 10-year compliance schedule) for final effluent limitations established in 2005. The State Board policy allows the subject compliance schedule in the permit, however, the Board has discretion whether to grant an additional compliance schedule, and whether it is to be in the permit or in an enforcement order.

Central Valley Water Board staff recommends that the subject compliance schedule be placed in the CDO in accordance with USEPA guidance. The guidance recommends that a compliance schedule be placed in a permit when the Discharger has shown a good faith effort to comply with the previous compliance date, and the delay in compliance was out of the discharger's control.

Discharger Comment No. 3. Compliance Schedule for Ammonia

The Discharger stated that the Central Valley Water Board should adopt the Tentative Order with the in-permit compliance schedule for ammonia and reject "Alternative 2, Tentative Compliance Schedule for Ammonia and Tertiary Level Effluent Limitations."

The Discharger stated that the compliance schedule is consistent with the State Water Board's Compliance Schedule Policy, which authorizes in-permit compliance schedules where a new interpretation of a water quality objective or criterion results in a numeric permit limitation more stringent than the limitation in the discharger's prior permit. The Discharger's prior permit contained "floating" ammonia limitations. In contrast, the Tentative Order contains new, more stringent "fixed" ammonia limitations. The Discharger was able to comply consistently with the floating limitations. However, monitoring data indicates that the Discharger would be out of compliance with the fixed limitations a significant portion of the time.

The Discharger contends that the Discharger's Infeasibility Report, report of waste discharge and anti-degradation analysis address the Discharger's need to construct treatment plant upgrades to comply with the new effluent limitations for ammonia. Ammonia has not been included in a previous enforcement order. Existing law provides no more than five years of protection from MMPs where a schedule of compliance is included in an enforcement order. Moving the compliance schedule from the permit to the CDO will remove the Central Valley Water Board's discretion to authorize any additional time for compliance if regionalization proves viable. If the schedule is included in the permit, the Central Valley Water Board retains full discretion to grant or deny additional time for compliance.

RESPONSE: See Response to USEPA Comment No. 2 in Response to Comments for First Tentative Permit Package.

Central Valley Water Board staff believes that the compliance schedule for ammonia in the proposed NPDES Permit is consistent with the State Water Board's Compliance Schedule Policy. The floating ammonia effluent limitations included in the existing Order No. R5-2005-0074 were applied directly as 1-hour average, 4-day average, and 30-day average effluent limitations which vary based on pH and temperature at the time of sampling. The fixed effluent limitations in the proposed NPDES Permit are applied as an MDEL and AMEL and are based on water quality criteria conservatively determined using worst-case pH and temperature conditions

observed over the term of Order No. R5-2005-0074, as discussed the USEPA Comment No. 2 of the initial set of Staff Response to Comments.

Tentative Alternatives No. 2 has been developed specifically to allow the Board discretion whether to place the compliance schedule for ammonia in the permit or enforcement order.

See related discussion in Staff Response to Discharger Comment No. 2 Above, relating to the placement of compliance schedules for BOD, TSS and tertiary treatment requirements.

Discharger Comment No. 4. New Arsenic Effluent Limitation

The Discharger stated that an arsenic effluent limitation is not needed because reasonable potential for arsenic does not exist. The Discharger requests that the arsenic effluent limitation be removed. If the Central Valley Water Board does decide to include an effluent limit for arsenic, then the Discharger requests the arsenic effluent limitation be changed to an annual average limitation, consistent with DPH implementation.

The Discharger stated that the Tentative Order identifies the lowest applicable water quality objective for arsenic as the primary maximum contaminant level (MCL) of 10 ug/L, as a monthly average. The Tentative Order cites the maximum effluent concentration as 21.5 ug/L and used this value for the reasonable potential analysis. The Discharger disagreed with the use of 21.5 ug/L value for the reasonable potential analysis because this value is not representative of other values obtained at SMD1 or of other nearby wastewater treatment plants with similar receiving water quality.

RESPONSE: Central Valley Water Board staff does not concur that the effluent limitations for arsenic should be removed. Based on the Discharger's annual monitoring from July 2006 through June 2009, the maximum effluent concentration (MEC) for arsenic was 21.5 µg/L. Arsenic is a California Toxic Rule (CTR) constituent. Therefore, the reasonable potential analysis procedure must be in accordance with the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries* (State Implementation Policy or SIP) requiring the use of the MEC. Additionally, because only one sample was taken each year, each annual average effluent concentration is equivalent to each single sample concentration. Therefore, the annual average concentration used to determine reasonable potential to exceed the Primary MCL of 10 µg/L for arsenic was equivalent to the MEC of 21.5 µg/L. Although the remaining samples were below the water quality objective, sufficient samples were not taken at a sufficient frequency or within the immediate timeframe that the 21.5 ug/L sample was taken to confidently conclude that the MEC was misrepresentative of the effluent. Furthermore, the corresponding laboratory quality assurance-quality control data does not indicate any laboratory error for the sample. Without sufficient evidence to

conclude that the sample is an outlier, it is appropriate to use the MEC of 21.5 µg/L to determine reasonable potential; therefore effluent limitations are included in the proposed NPDES Permit.

Discharger Comment No. 5. Incorrect Citation of Office of Environmental Health Hazard Assessment (OEHHA) Public Health Goal for Chloroform

Alternative 4 incorrectly cites 1.1 ug/L as an OEHHA public health goal (PHG). OEHHA's website does not contain a PHG for chloroform. *A Compilation of Water Quality Goals* (July 2008) identifies 1.1 ug/L as a "CalEPA Cancer Potency Factor as a Drinking Water Level" at a 1-in-a-million cancer risk level. The basis of the 1.1 ug/L "goal" should be made factually correct in the final permit, should Option 1 be adopted.

RESPONSE: Central Valley Water Board staff concurs with the above correction. The existing permit, adopted in 2005, contained the OEHHA PHG of 1.1 ug/L, which was the published health goal at that time. *A Compilation of Water Quality Goals*, as of 25 August 2010, lists 1 ug/L as the "draft/tentative/provisional" value for the California (CalEPA and OEHHA) PHG for chloroform. The updated *Compilation of Water Quality Goals* also contains the 1.1 ug/L CalEPA Cancer Potency Factor, as a drinking water level. Clarification has been made in the Tentative Alternative No. 4.

Discharger Comment No. 6. The 1.1 ug/L "Goal" is not an Appropriate Basis for Establishing Effluent Limitations for SMD 1

The Discharger quoted the Central Valley Water Board; the OEHHA "public health goal is not used as the basis for effluent limitations when there are no active drinking water intakes in the vicinity of the discharge, because chloroform is a volatile organic constituent that will degrade in the environment." (City of Vacaville Easterly WWTP, Order R5-2008-055 at F-23.) The Discharger further states that based on chloroform's volatility and thus environmental fate, its concentration in undiluted, treated wastewater immediately prior to discharge bears little to no relationship to its concentrations in downstream receiving waters where water is diverted and treated prior to its consumption. The Discharger stated that not only does chloroform volatilize in receiving waters, it further volatilizes as the diverted water is treated in the water treatment plant process. The Discharger further stated that "the total THM MCL has been approved by the State and U.S. EPA as the appropriate value for regulating human health effects of THMs (including chloroform) in drinking water supplies, and the application of a cancer potency factor expressed as a drinking water goal has not been approved for regulating human health effects due to chloroform exposure through drinking water by either U.S. EPA or the State" and that the MCL represents the applicable criterion for assessing reasonable potential and deriving effluent limitations.

The Discharger stated that the State Water Resources Control Board has endorsed regulation of chloroform through effluent limitations for total THMs (Order WQ 2002-015, page 53) and this approach is consistent with other recently issued waste discharge requirement in addition to the City of Vacaville, such as the City of Placerville, the City

of Roseville's Dry Creek and Pleasant Grove Creek plants, and the El Dorado Irrigation District's Deer Creek plant.

RESPONSE: In the existing 2005 NPDES permit, the Central Valley Water Board implemented the 1.1 ug/L Public Health Goal with a resulting final effluent limitation of 1.1 ug/L. At that time of adoption, the Board took in consideration all the information that the Discharger states in this comment regarding downstream water for drinking water purposes.

There is not new information or change in policy or regulations that justifies the backsliding associated with the removal of the existing 1.1 ug/L limit. Removing the existing chloroform limitation based on a change in established criteria being used is not in accordance with federal backsliding regulations.

Discharger Comment No. 7. Regulating Chloroform Through an Effluent Limitation for Total THMs is Consistent with Antibacksliding Provisions

The Discharger stated that the existing NPDES effluent limitation for chloroform of 1.1 ug/L as a 30-day average was improper because the applicable criterion is the total THM MCL of 80 ug/L, not the OEHHA PHG. The use of the total THM MCL to establish effluent limits in the permits named above is clear evidence of how the Central Valley Water Board has addressed chloroform in recent permits. Use of the total THM MCL to establish effluent limitations would not be backsliding because its use is appropriate while the use of the OEHHA PHG to establish effluent limitations was overly stringent.

In addition, according to the Discharger, backsliding does not apply because the total THM MCL of 80 ug/L qualifies as new information that did not exist at the time the existing Permit was adopted. The total THM MCL was adopted by the California Department of Public Health on 17 June 2006.

In addition, according to the Discharger, they have not been able to comply with 1.1 ug/L effluent limitation, therefore, Option 2 and the effluent limitation based on 80 ug/L is consistent with the antidegradation policy; it will not result in an increase of the discharge of pollutants.

RESPONSE: The U.S. EPA had established an MCL for Total Trihalomethanes of 80 µg/l prior to adoption of the existing Permit and the MCL of 80 ug/L was discussed in the existing Permit. Therefore, the California DPH total THM MCL of 80 ug/L does not constitute a different standard. Tentative Alternative No. 4 proposes the implementation of the 80 ug/L MCL as an option for the Central Valley Water Board to consider through this permit renewal as the Board further considers backsliding and antidegradation requirements.

Discharger Comment No. 8. The Total THM Limitation Should be Expressed as an Annual Average

The Discharger stated that the Central Valley Water Board has consistently implemented MCLs in NPDES permits as annual averages. Effluent limitations for THMs in Option 2 should be based on the MCL and expressed as an annual average. For the Primary MCL for total THMs, Title 22 requires compliance on an annual average basis, when sampling at least quarterly. Water that meets these requirements is suitable for drinking, therefore, it is “impracticable” to calculate average monthly effluent limitations because such limits would be more stringent than necessary to protect MUN use.

RESPONSE: The individual constituents of Total Trihalomethanes, chloroform, bromoform, bromodichloromethane, and dibromochloromethane, are California Toxic Rule constituents to be regulated with a monthly averaging period. Therefore the monthly averaging period of the proposed effluent limitation for the total sum of these constituents, implementing the Primary MCL for Trihalomethanes, corresponds to the averaging period determined to provide the public health protection for the individual counterparts.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) COMMENTS

USEPA Comment No. 1. Water Quality Criteria for Aluminum

USEPA Region IX recommends retaining the existing effluent limitations in the Tentative Order. USEPA has reviewed the Discharger’s request to relax the aluminum effluent limitations in the Tentative Order, including the 24 June 2010 letter from the Discharger containing updated receiving water information. USEPA states that relaxing the effluent limitations may degrade water quality, adversely affect beneficial uses, and conflict with federal anti-backsliding and/or antidegradation requirements. The aluminum effluent limitations in the proposed permit were calculated by applying USEPA-recommended aluminum criteria as an interpretation of the narrative toxicity standard in the Basin Plan. The effluent limitations were calculated in accordance with procedures described in the State Implementation Policy. The USEPA criteria were also applied to the existing Permit to establish the average monthly and maximum daily effluent limitations. USEPA has not formally changed its recommended aluminum criteria. The existing USEPA-recommended chronic aluminum criterion of 87 ug/L is clearly protective of aquatic life and is appropriate for use in evaluating reasonable potential and establishing effluent limitations. As USEPA’s Charles Delos notes in his 2002 and 2010 letters, it may be reasonable to apply a higher criterion value if the ambient hardness levels are substantially and consistently higher than the values used in deriving the existing chronic criterion value. When considering whether to apply a higher criterion value, the Central Valley Water Board should carefully consider whether the high ambient and effluent hardness values asserted by the Discharger are accurate and likely to continue in the future. The Central Valley Water Board has discretion in interpreting the Basin

Plan narrative toxicity standard and it may be possible to make a different reasonable potential conclusion or derive less stringent effluent limitations than provided in the existing Permit. However, a decision to apply higher criteria and relax or eliminate the effluent limits in the existing Permit would have to be supported by thorough anti-degradation and anti-backsliding analyses. The information from Mr. Delos does not constitute “new information” that provides a basis for backsliding from the existing Permit limitations because this information was initially provided to Central Valley Water Board staff in 2002, and considered during the adoption of the existing Permit.

RESPONSE: Central Valley Water Board staff concurs with USEPA to retain the existing aluminum effluent limitations in the Tentative Order and that the chronic aluminum criterion of 87 ug/L is protective of beneficial uses. The receiving water hardness is relatively low at 20 ug/L; thus, without further site-specific information, results in the conclusion that the 87 ug/L is applicable for these site conditions. The MEC for hardness was 162 ug/L, which would result in downstream hardness higher than 20 ug/L. However, the relatively high hardness of the effluent is due to the addition of magnesium hydroxide in the primary clarifier effluent. Plant upgrades may eliminate the use of primary clarifiers and thus result in an effluent with a lower hardness.

The information from Mr. Delos does not constitute “new information” that provides a basis for backsliding from the existing Permit limitations because this information was initially provided to Central Valley Water Board staff in 2002, and used it the consideration of adoption of the existing Permit.

With its public comments submitted on 9 August 2010, the Discharger submitted a sample Water Effect Ratio (WER) result which indicates a preliminary WER of 13.7. Although the initial testing indicates that application of a water effects ratio (WER) resulting in a chronic criterion less than the applicable Secondary MCL or acute criterion, a minimum of three sampling events and confirmation testing using a secondary species, in accordance with USEPA’s *Interim Guidance on Determination and Use of Water-Effect Ratios for Metals* (February 1994), may be necessary to adjust the removal of the chronic criterion. If not a full WER study, at minimum sufficient testing and additional receiving water data is necessary for the Central Valley Water Board to base a updated antidegradation finding addressing the relaxation of the existing aluminum final effluent limitation.

See Response to Discharger Comment No. 1 above for further details.

CENTRAL VALLEY CLEAN WATER ASSOCIATION (CVCWA) COMMENTS

CVCWA Comment No. 1. Alternative No. 3 Relies Upon Aluminum Criteria That Are Appropriate for the Receiving Water Conditions

CVCWA commented that the aluminum criteria applied under Alternative 3 are appropriate for the receiving water conditions. According to CVCWA, USEPA considers the chronic criterion of 87 ug/L necessary to protect receiving waters that concurrently experience low hardness (10-12 mg/L) and pH (6.5-6.6). For receiving waters that do not experience such conditions, USEPA indicates that the aluminum criterion of 750 ug/L is protective of aquatic life. The 750 ug/L criterion should apply to the receiving stream at and downstream of discharge point. The lowest measured upstream receiving water hardness is 20 mg/L and the lowest measured effluent hardness is 141 mg/L. Therefore, the downstream receiving water hardness will always be greater than 10-12 mg/L.

RESPONSE: Central Valley Water Board staff does not concur. The Arid West Water Quality Research Program (AWWQRP) report published in 2007 (funded by U.S. EPA Region 9), *Final Report* indicates that for aluminum there is not enough data from studies of individual water bodies to make a final determination that the 87 ug/L is overprotective in the entire arid west. The work on the toxicity database for aluminum resulted in new hardness based acute and chronic criteria equations. In its 24 June 2010 letter, USEPA Region 9 recommends using the 87 ug/L chronic aluminum criterion, based on the site-specific information submitted in the Discharger's 14 June 2010 letter, because the chronic criterion has not been formally changed and there is no new information since the adoption of the existing permit justifying backsliding, or providing basis for an updated permit finding regarding antidegradation. The existing Order contains the effluent limitations for aluminum based on the chronic criterion of 87 ug/L. Enough evidence has not been provided to address anti-backsliding concerns.

The lowest measured receiving water hardness concentration of 20 mg/L is only 8 to 10 mg/L greater than the hardness range of the water utilized for development of the chronic criteria, which is relatively low. Aluminum is not a CTR metal in which the use of effluent hardness (under certain receiving water conditions) to address criteria has been studied, examined, peer reviewed and accepted by the Central Valley Water Board. The use of effluent hardness to address aluminum criteria is not an accepted approach, especially for a discharge to a water body in which receiving water aluminum concentration information is not available. Therefore, the mix of effluent with the receiving water represented by downstream data is not used in the evaluation of the application of the chronic aluminum criteria.

CVCWA Comment No. 2. Determination of Applicable Aluminum Criterion Involves Consideration of Effluent Hardness

CVCWA commented that the Central Valley Water Board should determine what USEPA recommended criteria apply based on the hardness of the effluent that the treatment plant currently produces. Alternative No. 3's use of only the acute aluminum criterion of 750 ug/L is consistent with this approach. (Alternative No. 3 at pp. 3-4.) In contrast, the Tentative Order's use of the 87 ug/L chronic criterion is based on future modifications to the treatment plant "that may reduce the effluent hardness, and,

consequently, the downstream receiving water hardness to levels supportive of the applicability of the chronic criteria for aluminum. The Tentative Order requires the Discharger to monitor hardness monthly and includes a reopener provision allowing for a permit modification when new information becomes available to justify different permit conditions. Monitoring data that demonstrate a reduction in effluent hardness as a result of treatment plant upgrades would constitute new information. Accordingly, if and when it becomes appropriate to modify the permit based on different criteria, the Central Valley Water Board may do so. Until then, the Central Valley Water Board should implement Alternative No. 3.

RESPONSE: See Response to Discharger Comment No. 1, USEPA Comment No. 1 and CVCWA Comment No. 1.

CVCWA Comment No. 3. Application of Alternative No. 3 Is Consistent With Anti-Degradation and Anti-Backsliding Requirements

CVCWA requested that the Central Valley Water Board adopt Alternative No. 3 to the Tentative Order. As the Fact Sheet of Alternative No. 3 explains, application of the acute aluminum criterion of 750 ug/L and Secondary MCL of 200 ug/L is consistent with anti-degradation and anti-backsliding requirements. Monitoring data and information not available at the time the Central Valley Water Board issued the existing waste discharge permit support application of Alternative No. 3 consistent with these requirements. For example, the County's comment letter on the prior Tentative Order attaches a June 10, 2010 letter from Charles Delos, Environmental Scientist for USEPA at its headquarters, making clear that use of the 750 ug/L criterion is appropriate in this case and would not degrade water quality or impact aquatic life beneficial uses:

The hardness of the SMD1 effluent is high, and the upstream hardness of Rock Creek and Dry Creek is generally moderate. With respect to the aluminum discharged in the effluent, the critical condition for protection of aquatic life is the low dilution condition. For SMD1 a criterion of 750 ug/L is appropriate. Because the effluent aluminum would be diluted simultaneously with any dilution of effluent hardness, there is no basis for anticipating that the effluent aluminum would pose a toxicity problem during periods of higher dilution flow, when it allows attainment of the 750 ug/L criterion in low-dilution situations.

CVCWA stated that because the 87 ug/L criterion is inappropriate for the County's discharge, the next most stringent criterion is the Secondary MCL of 200 ug/L. The aluminum levels in the County's discharge do not exceed 200 ug/L, and therefore will not affect the level of water quality necessary to maintain and protect the municipal beneficial uses of the Tier 1 receiving waters. Further, the state's anti-degradation policy does not apply because the receiving waters are not "high quality" with regard to aluminum.

RESPONSE: See Response to Discharger Comment No. 1, USEPA Comment No. 1 and CVCWA Comment No. 1.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

CSPA Comment No. 1. Applicability of proposed Aluminum Chronic Criteria:

CSPA submitted extensive comments regarding use of USEPA's recommended ambient criteria for the protection of freshwater aquatic life for aluminum and the applicability of the recommended chronic criteria. USEPA has submitted a letter, dated 24 June 2010, specifically supporting the applicability of the chronic aluminum criteria. USEPA stated that: "EPA has not formally changed its recommended aluminum criteria; the appropriate aluminum criteria values for higher hardness situations remain uncertain. The existing EPA-recommended chronic aluminum criterion of 87 ug/l is clearly protective of aquatic life and is appropriate for use in evaluating reasonable potential and establishing effluent limitations." USEPA concludes their letter by recommending: "...the conservative approach of retaining the existing effluent limitations in the new permit." CSPA concurs with USEPA's recommendation regarding retention of the chronic based effluent limitation for aluminum. In reviewing the Discharger's letter, dated 14 June 2010, to the Central Valley Water Board regarding "New Aluminum Information" we provide the following comments:

- a. The information used in Attachment 1 is based on mixing the effluent with the receiving stream hardness absent any mixing zone analysis. There is no indication that any of the mixing zone requirements of the SIP and/or the Basin Plan would be met under such conditions.
- b. The information used in Attachment 1 is based on effluent hardness data that is skewed by the addition of magnesium hydroxide, which raises the hardness. Hardness itself can be considered to degrade water quality. There is no indication the Discharger conducted any antidegradation analysis prior to adding magnesium hydroxide to the treatment process. There is also no indication in the record that the Discharger properly notified the Central Valley Water Board of the change in the character of the effluent quality from the addition of magnesium hydroxide as is required by 40 CFR 122.41(h).
- c. The Discharger conveniently ignores that fact that low hardness was observed in the receiving waters at levels used in the development of USEPA's criteria. The Discharger also conveniently ignores that fact that low pH values are common from activated sludge wastewater treatment systems at levels used in the development of USEPA's criteria. Regardless of the information used to develop the criteria, the criteria have been developed and are USEPA's recommended criteria. The Discharger's comments ignore the water quality standards process where a broad range of scientific studies and statistical procedures are used to

develop a specific criterion; not a single study as the comments would have one believe. It is likely that one could go through any water quality standards development document and discover an unattractive data point.

- d. The Discharger forwards quotes from an USEPA staff person who cites Texas and Utah as examples where the chronic criteria for aluminum is not utilized. There are numerous other, not cited areas, such as Canada where more stringent criteria have been developed. USEPA's criteria document for aluminum recommends that site specific criteria are an alternative to USEPA's recommended criteria. Texas, Utah and Canada are examples where site specific criteria have been developed. As site specific criteria, they are not applicable in California. There are scientific and procedural methods for developing site specific objectives all of which are ignored by the Discharger's proposal. We would not object to development of site specific criteria that follows the proper and applicable procedures for developing water quality standards in California.
- e. USEPA comments in their 24 June 2010 letter that the information supplied by the Discharger does not qualify as "new" information with regard to antibacksliding and antidegradation.
- f. It is our recollection that the receiving streams surrounding the Discharger's SMD1 WWTP are subject to use by water purveyors for transporting water. The low hardness sampling data from the receiving waters is unlikely due to a sampling anomaly; especially absent any QA/QC results to the contrary.

RESPONSE: Central Valley Water Board staff concurs with the above statements. See Staff Response to Discharger Comment No. 1 above.

CSPA Comment No. 2. The Discharger's Infeasibility Study

The Discharger's Infeasibility Study contains a list of treatment processes to be completed that reflect a fairly common nitrifying/denitrifying tertiary treatment system with UV disinfection. Performance of such facilities have been fairly well documented as being able to meet limitations for metals removal. The Discharger has a documented issue with aluminum. We have also been reviewing data at UV disinfection tertiary plants that are bypassing wastewater with chlorodibromomethane and other CTR listed trihalomethanes at levels above water quality standards. It is our assumption that the trihalomethane levels are due to the drinking water system; which is somewhat confirmed by the trihalomethane levels recorded in the drinking water distribution system. Other wastewater treatment systems, for example the Cities of Lincoln and Olivehurst, have implemented specific measures to assure compliance with discharge standards; the Discharger should provide assurance that their newly designed and constructed WWTP will be capable of compliance with discharge limitations.

RESPONSE: Central Valley Water Board staff concurs with the above statements.

CSPA Comment No. 3. Placement Of Compliance Schedules

The proposed Permit, page F-9 contains the following with regard to Planned Changes: “Prior to the adoption of Order No. R5-2005-0074, the Discharger began to pursue regionalization with the City of Lincoln Wastewater Treatment and Reclamation Facility. As stated in Finding No. 11 of Order No. R5-2005-0074, the Discharger committed to making a determination by 2 January 2008 regarding whether to regionalize or complete and implement measures to comply with effluent limitations. If, after 2 January 2008, wastewater regionalization was not the selected compliance alternative, the Discharger agreed that sufficient time remained to complete and implement measures to come into compliance with the Order by March 2010. The Discharger has not yet connected to the City of Lincoln Wastewater Treatment and Reclamation Facility or completed measures to come into compliance with permit requirements.”

Finding No. 11 of the existing NPDES permit, Order No. R5-2005-0074 states that: “After 2 January 2008, if wastewater regionalization is not the selected compliance alternative, the Discharger has agreed that there would be sufficient time remaining under the currently included compliance period to complete and implement measures to achieve full compliance with this Order.” The existing NPDES permit also includes a compliance schedule for I/I correction measures (pages 61 and 62) to be implemented by 30 December 2009 and compliance schedules (page 63) for Bis(2-ethylhexyl)phthalate, Bromodichloromethane, Copper, Dioxins and Furans, Lead, PCBs, Silver, and Zinc which became effective on 1 March 2010.

The Discharger’s SMD1 wastewater treatment plant remains in noncompliance despite their promise to complete and implement compliance measures by March 2010.

RESPONSE: Central Valley Water Board staff concurs with the above statements, which is the basis of providing the tentative alternatives for placing some or all of the compliance schedules in the enforcement order, thus providing regulatory incentive for the Discharger to complete the proposed upgrades within five years to avoid mandatory minimum penalties (MMPs).

The alternative of placing continuing compliance schedules in the permit for more stringent effluent limitations, for constituents in which the Discharger failed to initiate upgrades to address the existing less-stringent limitations, will provide a total ten year compliance schedule in the permit. In the future, the Discharger will have the opportunity to request the Board to grant an additional five-year compliance schedule with MMP protection.

CSPA Comment No. 4. Economic Benefit of Continued Noncompliance

There is an economic benefit derived from the Discharger’s continued noncompliance. The State Water Resources Control Board’s Office of Enforcement has a Civil Engineer with extensive design experience under contract to conduct economic analyses to

determine the economic benefit of noncompliance. In accordance with the State Board's Enforcement Policy an enforcement action collecting at a minimum the economic benefit derived by the Discharger for the intentional acts on noncompliance should be undertaken. The Central Valley Water Board should adopt an Order in accordance with CWC 13308 with full economic benefit recovery instead of rewarding the recalcitrant Discharger with another compliance schedule to ignore.

RESPONSE: Comment Noted. Tentative Alternative No. 1 and 2 have been provided for the Board to consider the Discharger's history of non-compliance and the fact that the Discharger remains in the preliminary stages of a compliance project after the initial compliance date of March 2010.