

**Central Valley Regional Water Quality Control Board  
21/22 June 2007 Board Meeting**

**Response to Comments for City of Davis Wastewater Treatment Plant  
Tentative Waste Discharge Requirements (NPDES No. CA0079049)**

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The proposed NPDES permit for the City of Davis Wastewater Treatment Plant (WWTP) will be presented to the Regional Water Quality Control Board, Central Valley Region (Regional Board) at its 21/22 June 2007 Board meeting. The proposed permit was issued for public comments on 20 April 2007. This document contains responses to written comments received from interested parties in response to the proposed permit. Written comments from interested parties were required to be received by the Regional Board by 22 May 2007 in order to receive full consideration. Comments were received by the due date from:

1. City of Davis (Discharger)
2. California Sportfishing Protection Alliance (CSPA)
3. City of Yuba City
4. Central Valley Clean Water Agency (CVCWA)

Written comments from the above interested parties are summarized below, followed by Regional Water Board staff responses.

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**CITY OF DAVIS COMMENTS**

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**CITY OF DAVIS - COMMENT #1:** The Regional Board must meaningfully consider the factors in California Water Code (CWC) Section 13241 in determining whether to require tertiary treatment.

**RESPONSE:** CWC section 13241 factors were considered as part of the permit development to require tertiary (or equivalent) level. Additional explanation has been provided in the Fact Sheet, as late revisions, to clarify and support the findings of consideration of the CWC 13241 factors, including economic considerations. As part of the consideration of the CWC 13241 factors, the Fact Sheet has been modified to note costs to the Discharger for treatment of its wastewater. The proposed permit states that "the Discharger estimates the cost to upgrade the WWTP to tertiary or equivalent to be \$140 million dollars. Much of this cost is for upgrades necessary to comply with the mandatory California Toxics Rule (CTR) limitations. The Wastewater User Charge Survey Reports, prepared by the State Water Resources Control Board, show the City of Davis' monthly user rates prior to fiscal year 2006-2007 have been lower than the State monthly average, but recently the rates have increased in anticipation of the WWTP upgrade to tertiary. Effective the summer of 2007, the City of Davis has a user rate of \$39.00 per month, which covers the costs of the existing operation and maintenance of the WWTP and preliminary design and planning for plant upgrades.

**CITY OF DAVIS - COMMENT #2:** The Discharger requests the compliance date for providing tertiary (or equivalent level) treatment, and complying with ammonia, aluminum and iron limitations be extended to June 2015 if the overland flow system is to be removed, or June 2017 if the overland flow system is to remain. The Discharger notes that since the WWTP provides equivalent-to-secondary treatment, it will not be feasible to simply add tertiary treatment facilities to the existing treatment process. The plant must first be upgraded to a conventional secondary system prior to pilot testing, design and construction of a tertiary treatment process that will comply with the proposed Title 22 tertiary effluent limitations. The Discharger submits that ten years is the shortest practical time to achieve compliance with the proposed tertiary (or equivalent) treatment requirement and will be unable to comply with many of the permit effluent limits until completion of the tertiary upgrade.

**RESPONSE:** The proposed permit contains a five-year time schedule for compliance. This proposed compliance schedule is consistent with compliance schedules for tertiary treatment compliance in other NPDES permits. However, Regional Water Board staff acknowledges that the Discharger will need more than five years, and in all likelihood, will need ten years to comply with the proposed tertiary treatment requirement and CTR and non-CTR limitations. At the June 2007 Board meeting, staff will be recommending that the Regional Water Board consider revising the tentative permit to allow ten years for the Discharger to comply with the tertiary treatment requirement and proposed effluent limitations for non-CTR constituents ammonia, aluminum, and iron to the extent authorized by law. The Regional Board may in the alternative, issue up to an additional five-year time schedule in a subsequent enforcement order which would provide the Discharger the requested time to comply with the limitations in the proposed permit.

**CITY OF DAVIS - COMMENT #3:** The criteria of some CTR metals are hardness-dependent. The Discharger objects to using the lowest upstream receiving stream hardness to base hardness-dependent metals criteria and subsequent determination of reasonable potential and effluent limitations. The Discharger states that other methods of selecting hardness are protective, such as the lowest hardness reported during 1Q10 and 7Q10 flow or a combination of downstream hardness for some constituents and effluent hardness for other constituents. These alternatives result in "no reasonable potential" and therefore no proposed effluent limitations for copper and silver.

**RESPONSE:** Regional Water Board staff concurs with the Discharger that other methods for selecting hardness are protective and recommends that the reasonable lowest hardness value of the receiving water during critical low flow conditions be used to evaluate if the effluent has reasonable potential to cause an excursion of water quality criteria for the hardness-dependent metals. Use of the reasonable lowest hardness during critical flow conditions may result in "no reasonable potential" and therefore, no effluent limitations for Discharge 001 for copper and silver. The proposed permit will include a copper effluent limitation for Discharge 002, regardless of which of the three options is chosen, since a 30-31 May 2006

effluent sample showed a copper concentration of 39 ug/L. At the June 2007 Board meeting, staff will be recommending that the Regional Water Board consider modifying the proposed effluent limitations to be based on the lowest hardness during low flow periods, consistent with other NPDES permits.

**CITY OF DAVIS - COMMENT #4:** The use of toxic equivalency factors for reasonable potential is inconsistent with the State's Policy for Implementation of Toxics Standards for Inland Surface Water, Enclosed Bays, and Estuaries of California (SIP). The Fact sheet does not contain any information indicating the Regional Board considered the factors listed in CWC 13241 for the effluent limitation for dioxin and congeners.

**RESPONSE:** The proposed permit has been modified to include a final water quality-based effluent limitation for the one detected congener (1,2,3,4,6,7,8-HeptaCDD), as late revisions, instead of a final water quality-based effluent limitation for 2,3,7,8-TCDD equivalents (dioxin and congeners). (Note: 2,3,7,8-TCDD and the sixteen 2,3,7,8-TCDD equivalents are sometimes referred to as dioxin congeners.)<sup>1</sup>.

The use of toxic equivalency factors (TEF) in determining reasonable potential for 2,3,7,8-TCDD equivalents is consistent with the SIP. While the SIP requires monitoring of 2,3,7,8-TCDD equivalents, it does not preclude establishing effluent limitations for 2,3,7,8-TCDD equivalents, nor the use of TEF to determine reasonable potential for 2,3,7,8-TCDD equivalents.

Moreover, the Clean Water Act and federal regulations at 40 CFR 122.44(d) require that NPDES permits contain effluent limitations for all pollutants that "are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality." (40 CFR 122.44(d).) 40 CFR 122.44(d)(1)(vi) further provides that "[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, have the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits."

The federal regulations require Regional Water Boards to establish effluent limits using one or more of three specified sources, including the Environmental Protection Agency's (EPA's) published water quality criteria, a proposed state criterion (i.e., water quality objective), or an explicit state policy interpreting its narrative water

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<sup>1</sup> Dioxin and furan compounds are commonly found as complex mixtures when detected in the environment and in biological tissues. Researchers have developed the concept of "toxic equivalency factors" (TEFs) to evaluate the relative risk of these mixtures. The reference compound for assignment of TEFs is 2,3,7,8-TCDD. The "toxicity equivalence" (TEQ) is the sum of each of the seventeen congener concentrations multiplied by its respective TEF. The resulting concentration is expressed as if the mixture's toxicity was due entirely due to 2,3,7,8-TCDD. Because dioxins and furans are generally persistent, bioaccumulative pollutants, controlling their mass is critical.

quality criteria. (40 CFR 122.44(d)(1)(vi)(A), (B), (C).) The Regional Board has adopted the "Policy for Application of Water Quality Objectives," which sets forth an explicit state policy for interpreting narrative water quality objectives. That Policy requires, among other considerations, that the Regional Board consider relevant numerical guidelines and criteria developed and/or published by other agencies and organizations. In this matter, it is appropriate to apply U.S. EPA's guidance in developing the appropriate numeric limit to implement the narrative toxicity objective. The United States Environmental Protection Agency (USEPA) supports the regulation of other dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs) in NPDES permits. As set forth in the USEPA preamble to 40 CFR Part 131, Establishment of Water Quality Standards: "For California waters, if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric water quality-based effluent limits for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme."

The Basin Plan contains narrative toxicity water quality objective which states: "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances." (Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region, Sacramento River Basin and San Joaquin River Basin (Basin Plan), Water Quality Objectives: Toxicity, 2005, p. III-8.01.) Effluent monitoring data indicates reasonable potential for the dioxin congener 1,2,3,4,6,7,8-HpCDD to cause or contribute to a violation of Basin Plan narrative toxicity objectives water quality objective). Effluent limitations for 1,2,3,4,6,7,8-HpCDD have been included in the proposed permit consistent with the SIP, CWA, federal regulations and the Basin Plan Policy, as late revisions. This revises the earlier "dioxin and congener" effluent limit found in the earlier draft version of the permit.

The effluent limitation for the one detected dioxin congener is not more stringent than federally required, and therefore a 13241 analysis is not required. The effluent limit is based specifically on federal regulations that address implementation of narrative objectives. The federal Clean Water Act (CWA) section 301 requires that NPDES permits contain effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law. (33 United States Code, § 1311(b)(1)(C); 40 CFR § 122.44(d)(1).)

**CITY OF DAVIS - COMMENT #5:** The USEPA National Recommended Water Quality Criteria (NRWQC) for aluminum is not applicable to the waters in the Central Valley and therefore, the aluminum effluent limitations should be removed.

**RESPONSE:** The Discharger has not provided information specific to the Willow Slough Bypass or Conaway Ranch Toe Drain that demonstrates that the NRWQC

for aluminum are not applicable. In the absence of such information, the Regional Water Board must rely on the national criteria to prevent toxicity to aquatic life from aluminum. The national criteria were developed based on scientific studies that concluded that aluminum is toxic to aquatic life at specified concentrations. Since the discharge contains aluminum it is necessary to assure that the discharge does not result in toxicity. The narrative toxicity objective from the Basin Plan is applicable to the discharge. Aluminum is a toxic constituent of the discharge. Applying the narrative toxicity objective using the USEPA National Recommended Water Quality Criteria for aluminum is consistent with state policy, the *Policy for Application of Water Quality Objectives* in Chapter IV (beginning on page IV-16.00) of the Basin Plan. With respect to narrative objectives, the Regional Water Board must establish effluent limitations using one or more of three specified sources, including EPA's published water quality criteria. [(40 CFR 122.44(d)(1)(vi)(A), (B), or (C)].

The NRWQC for aluminum, Criteria Continuous Concentration, contains a footnote that states,

*“USEPA believes that use of Water-Effects Ratios might be appropriate because: (1) aluminum is less toxic at higher pH and hardness but relationship not well quantified; (2) aluminum associated with clay particles may be less toxic than that associated with aluminum hydroxide particles; (3) many high quality waters in U.S. exceed 87 ug/L as total or dissolved.”*

The USEPA states that the relationship between aluminum toxicity, pH and hardness is not well quantified and recommends that a Water-Effects Ratio (WER) be used to adjust the criteria where necessary. The Discharger has not submitted information supporting a WER for aluminum discharge to Willow Slough Bypass and Conaway Ranch Toe Drain. Without this information, Regional Water Board staff used the default assumption of a WER of 1.0, as was done in performing the reasonable potential analysis. If the Discharger provides site-specific criteria for the receiving waters at the discharge points along with sufficient supporting data, it may request the Regional Board to modify the aluminum limits accordingly.

As explained in the Fact Sheet, the acid soluble analysis method is appropriately used to determine compliance with the effluent limits, which should eliminate from consideration aluminum associated with clay particles.

**CITY OF DAVIS - COMMENT #6:** The Basin Plan requires the Regional Water Board to conduct a case-by-case evaluation to determine if the iron water quality criterion proposed for use is appropriate and applicable. (See Basin Plan at p. IV-17.00.) Iron – need justification of numerical limitation based on narrative objective.

**RESPONSE:** The Basin Plan states, “where compliance with these narrative objectives is required (i.e., where the objectives are applicable to protect specified

beneficial uses), the Regional Water Board will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.” In this particular case, the specified beneficial uses include aquatic life beneficial uses and effluent monitoring data indicates reasonable potential for iron (which could cause, or contribute to a violation of Basin Plan narrative toxicity objectives water quality objective). Therefore, the proposed permit includes effluent limitations for iron.

**CITY OF DAVIS - COMMENT #7:** Site-specific information must be considered before applying the agricultural water quality goals contained in the *Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev.1* (“United Nations Report”). Effluent limitations for boron and manganese should be removed until site-specific information is available to determine whether reasonable potential exists and to establish appropriate limitations. The constituent study requirement for fluoride should be removed since the soils in the Yolo Bypass are not considered to be acidic and fluoride is more toxic in acid soils.

**RESPONSE:** Staff concurs that boron and manganese limitations using the United Nations Report may be supplemented by site-specific studies. The proposed permit has been modified to not include effluent limitations for boron. The proposed permit instead requires that boron be studied and states that it is the intent of the Regional Board to include boron effluent limitations in a subsequent permit if deemed necessary. The constituent study for fluoride is required to determine the potential effect of fluoride in the receiving waters.

The proposed effluent limitation for manganese in the tentative permit was mistakenly adjusted to 100 ug/L. The National Ambient Water Quality Criteria of 100 ug/L for manganese is for the protection of consumers of marine mulluscs and, therefore, not applicable to this discharge. The United Nations Report states that manganese is “[t]oxic to a number of crops at a few-tenths to a few mg/l, but usually only in acid soils.” Regional Water Board staff will recommend to the Regional Water Board that the hearing be continued, in part to assess whether the proposed permit should require site-specific studies to determine the appropriate site-specific manganese level in the receiving water that is protective of beneficial uses in lieu of a manganese effluent limitation.

**CITY OF DAVIS - COMMENT #8:** The Discharger needs more than one year to consider biosolids alternatives.

**RESPONSE:** The compliance date for the Discharger to cease application of biosolids to the overland flow system has been extended to 1 December 2008, as a late revision. This will allow the Discharger to apply biosolids to the overland flow system for two additional application cycles prior to implementing other biosolids disposal alternatives.

**CITY OF DAVIS - COMMENT #9:** The definition of average dry weather flow should be clarified.

**RESPONSE:** The definition of average dry weather flow has been clarified to state, “compliance with the Average Dry Weather Discharge Flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g. July, August, and September)”

**CITY OF DAVIS - COMMENT #10:** The point of compliance for biochemical oxygen demand (BOD) and total suspended solids (TSS) should be with other constituents while the WWTP is at an equivalent to secondary or secondary level.

**RESPONSE:** Staff concurs that the point of compliance for tertiary treatment may be at EFF-001 and EFF-002, with the other constituents. The proposed monitoring and reporting program in the permit has been revised to include a footnote stating, “Prior to completion of the upgraded tertiary WWTP, BOD, TSS, settleable solids, turbidity, and electrical conductivity may be monitored at EFF-001 and EFF-002 in lieu of at EFF-A.”

**CITY OF DAVIS - COMMENT #11:** A bacteria objective should not apply to the groundwater since it is not being used for drinking water.

**RESPONSE:** The groundwater beneficial uses are based on the Basin Plan, which states, “[u]nless otherwise designated by the Regional Water Board, all ground waters in the Region are considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).” Beneficial uses are to be protected, regardless of whether the beneficial use is being actively used. Therefore, the bacteria objective applies to the groundwater and the proposed permit contains a groundwater limitation for total coliform organisms.

**CITY OF DAVIS - COMMENT #12:** The mercury limitation should be revised to be based on the mercury criteria.

**RESPONSE:** The downstream Sacramento/San Joaquin Delta has been 303(d)-listed for mercury, and mercury is a bio-accumulative constituent. A total maximum daily load has not yet been established for mercury in the Sacramento/San Joaquin Delta. The proposed mercury limitation is not a water-quality based limitation, but is instead based on the current treatment plant performance. The proposed permit contains a performance-based mercury limitation that is intended to cap the WWTP’s discharge of mercury at its current mass.

**CITY OF DAVIS - COMMENT #13:** The percent removal requirement should be modified on an interim basis to reflect the equivalent secondary treatment plant performance.

**RESPONSE:** Staff concurs that the percent removal requirement is intended for the future upgraded tertiary WWTP. The proposed permit has been modified to state that the percent removal requirement is effective the expiration date of this Order (when the tertiary treatment requirement becomes effective). If the Regional Board decides to extend the deadline for the tertiary treatment requirement, staff recommends that the percent removal requirement be extended to meet the same deadline as the tertiary treatment requirement.

**CITY OF DAVIS - COMMENT #14:** The silver limitation should be expressed as a daily maximum limit and not as an instantaneous maximum limit.

**RESPONSE:** The silver limitation is based on the CTR criterion, which is expressed as an instantaneous maximum criterion. Because the CTR criterion for silver is presented as an instantaneous maximum with no associated averaging period, it is impracticable to convert the standard to an average monthly effluent limitation, an average weekly effluent limitation, or a maximum daily effluent limitation.

**CITY OF DAVIS - COMMENT #15:** The interim sodium and chloride effluent limitations should be expressed as annual averages like conductivity instead of daily maximum.

**RESPONSE:** The proposed permit has been modified to not propose interim sodium and chloride effluent limitations. The proposed permit regulates salinity by an interim electrical conductivity limitation.

**CITY OF DAVIS - COMMENT #16:** The pH limitation should be for effluent going into the ponds, not the pH in the ponds.

**RESPONSE:** The proposed permit contains the same pond pH limitations as the existing permit. The proposed permit does not remove the pond pH limitations, as this may constitute backsliding and the Discharger did not provide justification why it cannot comply with the existing pond pH limitations.

**CITY OF DAVIS - COMMENT #17:** Remove cyanide, boron, dioxins and congeners from the pollution prevention requirements since this will not assist in achieving compliance. Cyanide is a disinfection byproduct and unlikely to have influent sources. Boron is associated with the water supply. For dioxins it is also highly unlikely that there are controllable sources as the most likely source is atmospheric deposition. Also, Regional Water Board inadvertently failed to remove ammonia from the second sentence when the requirement was removed from the tentative order based on comments received on the administrative draft order.



**RESPONSE:** The proposed permit has been revised to not require boron to be studied as part of the pollution prevention requirements since it will be studied with the other salt constituents in an EC, Boron, Chloride, and Sodium Study. The proposed permit has been modified, as late revisions, to not require dioxins and congeners to be studied as part of the pollution prevention requirements since it is unlikely the Discharger has control over their source(s). Additionally, the single reference to ammonia that was inadvertently left in the pollution prevention requirements in the tentative permit is not included in the proposed permit. However, the proposed permit includes pollution prevention requirements for cyanide, as this must be studied to determine its source(s) and whether load reductions can be achieved. Influent monitoring data shows cyanide has been detected in the WWTP's influent.

**CITY OF DAVIS - COMMENT #18:** Modify the language of the numeric monitoring trigger for chronic toxicity to clarify the use of the monitoring trigger as follows:

“The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring. During accelerated monitoring, it is exceedance of the toxicity threshold that triggers the initiation of a TRE.”

Also, remove the parenthetical “(where TUC = 100/NOEC)” from this section.

**RESPONSE:** This language is consistent with numerous NPDES permits issued by the Central Valley Regional Water Board and throughout the state and will remain unchanged.

**CITY OF DAVIS - COMMENT #19:** Delete the groundwater study requirement because this study has already been conducted. The Groundwater Quality Report was submitted to the Regional Water Board on 31 January 2002, which shows a decrease in EC levels in the groundwater wells and compliance with groundwater standards.

**RESPONSE:** Although the Discharger submitted a groundwater study, more recent groundwater data indicates electrical conductivity has risen in some groundwater monitoring wells since the date of this Study. A groundwater study is necessary to evaluate the impacts of the WWTP on underlying groundwater.

**CITY OF DAVIS - COMMENT #20:** Remove acrolein, diethyl phthalate, and butyl benzyl phthalate from the Constituent Study requirement because there is no reasonable potential for these constituents to exceed the criteria.

**RESPONSE:** Staff concurs that there is no reasonable potential for butyl benzyl phthalate to exceed the criteria. The proposed permit has been modified to not require butyl benzyl phthalate be studied as part of the Constituent Study. The proposed permit still requires a Constituent Study for acrolein and diethyl phthalate as these constituents were close to exceeding the criteria.

**CITY OF DAVIS - COMMENT #21:** Replace Method 502.2 with Method 624 for volatile organic compound constituents.

**RESPONSE:** Method 502.2 is for drinking water analyses and Method 624 is for wastewater analyses. However, Method 502.2 contains a different (and longer) list of constituents than Method 624. The requirement to use Method 502.2 was replaced with Method 624 in the tentative permit. However, the proposed permit does not specify an EPA method for volatile organic compound constituents, and instead includes a footnote to the effluent monitoring table in the Monitoring and Reporting Program that states, "Volatile Organic include all constituents listed in EPA Method 502.2." .

**CITY OF DAVIS - COMMENT #22:** Reduce Monitoring Requirements while the WWTP is still at secondary levels.

**RESPONSE:** The monitoring frequencies required in the Monitoring and Reporting Program has been reduced for several constituents, including biochemical oxygen demand, total suspended solids, total coliform organisms, and settleable solids.

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## **CENTRAL VALLEY CLEAN WATER ASSOCIATION (CVCWA) COMMENTS**

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**CVCWA - COMMENT #1:** CVCWA recommends that the Regional Board re-consider the application of the water quality goals from the UN Report for boron and manganese until the Regional Board has properly considered site specific conditions and factors, as directed by the State Water Board. After the consideration of such information, then the Regional Board may determine if the discharge has reasonable potential to exceed applicable water quality criteria.

**RESPONSE:** See Response to City of Davis Comment #7.

**CVCWA - COMMENT #2:** Defining average dry weather flow ("ADWF") as times when groundwater is at or near normal and runoff is not occurring makes it difficult to determine compliance and is not appropriate. In lieu of using such a definition, CVCWA requests that the Regional Water Board consider determining ADWF during low-flow or dry weather months.

**RESPONSE:** See Response to City of Davis Comment #9.

**CVCWA - COMMENT #3:** The recommended ambient water quality criterion for chronic aluminum was developed in water that was very low in pH and very low in hardness, which is not typically found in the Central Valley. CVCWA encourages the Regional Board to not apply the EPA ambient water quality criteria for aluminum to Central Valley waterways, unless the Regional Board determines that there is substantial evidence to suggest that the criteria is applicable to the receiving water in question.

**RESPONSE:** See Response to City of Davis Comment #5.

**CVCWA - COMMENT #4:** Considering the inability to address the constituent with pollution prevention activities, it is unnecessary to require a pollution prevention plan for cyanide and dioxins. Cyanide is typically not present in the influent but measured in the effluent. Because it appears to either be an analytical issue, or caused from the treatment plant process, it is not amenable to pollution prevention activities. For dioxins, the source is usually considered to be air emissions and therefore not present in POTW effluent due to an activity for which the POTW can control.

**RESPONSE:** See Response to City of Davis Comment #17.

**CVCWA - COMMENT #5:** Finally, CVCWA is concerned with the monitoring requirement in the tentative order that requires continuous monitoring for electrical conductivity ("EC"). The monitoring requirement is not consistent with the permit limitation, which is an interim limit expressed as an annual average. Because the permit limit is an annual average, there is no need for a continuous EC monitoring requirement. Furthermore, EC is a conservative pollutant and therefore does not vary widely. Thus, CVCWA recommends that the continuous monitoring requirement for EC be removed.

**RESPONSE:** The Monitoring and Reporting Program has been revised to require five/week EC sampling frequency instead of continuous EC monitoring.

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## **CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS**

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**CSPA –COMMENT #1:** The wastewater discharge is toxic to aquatic life, yet the proposed permit fails to include [sic] prohibit toxic discharges, fails to assess violations for past and ongoing toxic discharges, fails to assess the impacts to endangered species and fails to require a remedy that will eliminate toxic discharges. The proposed permit violates 40 CFR 122.44 (d)(1)(i), the SIP, CWC Section 13377, and 40 CFR 122.4 (a), (d) and (g).

**RESPONSE: Acute toxicity.** The acute toxicity effluent limitations are consistent with numerous NPDES permits issued by the Central Valley Regional Water Board and throughout the state and are appropriate. The proposed permit as a whole contains

several mechanisms designed to ensure that the discharge does not cause toxicity in the receiving water. The Order contains Receiving Water Limitation V.A.16., which proscribes the discharge from causing toxicity in the receiving water. Additionally, end-of-pipe effluent limits are included for all toxic pollutants with reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water based on aquatic life toxicity criteria.

In addition to chemical-specific effluent limitations, the proposed permit requires chronic whole effluent toxicity (WET) testing that identifies both acute and chronic effluent toxicity. WET testing is necessary because chemical-specific effluent limitations do not address synergistic effects that may occur when the effluent mixes with receiving waters, synergistic effects of mixtures of chemicals, or toxicity from toxic pollutants for which there are no aquatic life toxicity criteria. To address toxicity detected in WET testing, the proposed permit includes a provision that requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exhibits a pattern of toxicity, the Discharger is required to initiate a Toxicity Reduction Evaluation and take actions to mitigate the impact of the discharge and prevent reoccurrence of toxicity.

The acute toxicity effluent limitations establish additional thresholds to control toxicity in the effluent: survival in one test no less than 70% and a median of no less than 90% survival in three consecutive tests. Some in-test mortality can occur by chance. To account for this, the test acceptability criteria for the acute test allows ten percent mortality (requires 90% survival) in the control. Thus, the acute toxicity effluent limitation allows for some test variability, but imposes ceilings for exceptional events (i.e. 30% mortality or more), and for repeat events (i.e., median of three events exceeding mortality of 10%).

**Chronic Toxicity.** The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region<sup>2</sup> that contained numeric chronic toxicity effluent limitations. As a result of this petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, *"In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next*

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<sup>2</sup> In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)

*year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits.”* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process.

Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, the proposed permit requires that the Discharger meet best management practices for compliance with the Basin Plan’s narrative toxicity objective, as allowed under 40 CFR 122.44(k). The proposed permit includes Provisions VI.C.2.a., which contains a numeric chronic toxicity monitoring trigger and explicit protocols for accelerated monitoring and toxicity reduction evaluation implementation if a pattern of effluent toxicity is observed. This provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

**CSPA –COMMENT #2:** The proposed permit fails to require that the Discharger apply best practicable treatment and control (BPTC) and comply with 40 CFR 131.12 and State Policy (Resolution 68-16) regarding Antidegradation despite clear documentation that the wastewater discharge has degraded groundwater quality.

**RESPONSE:** The proposed permit requires the Discharger to submit a technical report that evaluate its WWTP with respect to BPTC and “where deficiencies are documented, [provides] recommendations for necessary modifications (e.g., new or revised salinity source control measures, lining the ponds, lining the sludge lagoon, WWTP component upgrade and retrofit) to achieve BPTC and identify the source of funding and proposed schedule for modifications.” The proposed permit requires the Discharger submit a time schedule for implementation of these modifications that is as short as practicable but in no case “exceed four years past the Executive Officer’s determination of the adequacy of the comprehensive technical evaluation, unless the schedule is reviewed and specifically approved by the Regional Water Board.” The proposed permit specifically requires that “[i]f the monitoring shows that any constituent concentrations are increased above background water quality, the Discharger shall submit a technical report by 2 years after the effective date of this Order describing the groundwater technical report results and critiquing each evaluated component of the Facility with respect to BPTC and minimizing the discharge’s impact on groundwater quality.”

**CSPA –COMMENT #3:** The proposed permit fails to comply with federal regulations (40 CFR 131.12) and state antidegradation policy (SB Resolution 68-16).

**RESPONSE:** The proposed permit complies with the antidegradation provisions of 40 CFR 131.12 and SB Resolution 68-16. As detailed in APU 90-004, Antidegradation Policy Implementation for NPDES Permitting, if it is determined that

the proposed action will not lower water quality, no further antidegradation analysis is required. In this case, the proposed permit requires a higher level of treatment than the existing permit and does not allow an increase in flow. Insofar as the proposed action will not result in lowering of water quality, no further antidegradation analysis is required.

**CSPA –COMMENT #4:** The proposed permit fails to summarize compliance.

**RESPONSE:** The proposed permit states the following: “The Discharger is proposing to construct a new WWTP. Upon completion of the new tertiary facility, the character of the wastewater discharged will be significantly improved over the equivalent to secondary level of treatment currently provided. This Order contains limitations based on the discharge from the existing facility. According to the Discharger, the new treatment system will be designed with the goal of achieving full compliance with Waste Discharge Requirements. However, due to the nature of emerging contaminants, additional measures may be required after construction, but prior to the final compliance date, to assure that all emerging contaminants respond satisfactorily to the proposed treatment process. Based on a characterization of the discharge quality, following startup of the new WWTP, this Order may be reopened and modified.”

Additionally, a summary of past compliance has been included in the proposed permit in response to the above comment.

**CSPA –COMMENT #5:** The proposed permit contains unsubstantiated and likely inaccurate information regarding the treatment capability of wetlands.

**RESPONSE:** The tentative permit stated, “[t]hese treatment wetlands were created to support restoration of wetlands in the northwestern flyway, provide advanced secondary wastewater treatment and storm water treatment.” This statement does not assess the actual treatment capability of the wetlands, but instead states the purpose of the wetlands upon construction. However, for clarification, the proposed permit has been modified to state, “[t]hese wetlands were created to support restoration of wetlands in the northwestern flyway, provide additional wastewater treatment and storm water treatment.”

**CSPA –COMMENT #6:** The Order does not contain a protective or legal effluent limit for EC.

**RESPONSE:** CFR Title 40, Section 122.44 (d)(1)(i) requires NPDES permits to contain effluent limitations that “control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.” 40 CFR Section 122.44 (d)(1)(vii)

requires that “[t]he level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards.”

The WWTP effluent has the reasonable potential to cause, or contribute to an excursion above the State narrative criteria for water quality for electrical conductivity (EC). Therefore, a final EC effluent limitation that is derived from, and complies with, the applicable water quality standard is needed to meet the requirements contained in 40 CFR Section 122.44 (d)(1)(vii). The proposed permit contains an interim EC limitation that is based only on the current effluent EC levels, but does not include a final EC effluent limit that is derived from, and does not comply with the applicable water quality standards.

The City of Davis’ water supply has a high level of salinity. The City of Davis is investigating options to change its source water to improve the quality of its water supply, but implementing this change will take more than five years. The proposed permit (1) states that the water quality to be achieved is the level that is necessary to protect agricultural beneficial uses and requires the Discharger to identify the EC level that meets this objective, (2) explains that a final water-quality based effluent limitation is not being incorporated into the permit as an enforceable limit as the City of Davis needs time to improve its water supply, and (3) includes a statement that “[i]t is the intent of the Regional Water Board to include a final EC effluent limitation in a subsequent permit renewal or amendment, based on the results of approved site-specific studies.”

**CSPA –COMMENT #7:** The proposed permit fails to contain an Effluent Limitation for lead in accordance with 40 CFR 122.44 and CWC Section 13377.

**RESPONSE:** Using the results of the site-specific translator, the effluent does not exceed the criteria.

**CSPA –COMMENT #8:** The proposed permit fails to contain an Effluent Limitation for nickel in accordance with 40 CFR 122.44 and CWC Section 13377.

**RESPONSE:** See response to Comment #7

**CSPA –COMMENT #9:** The proposed permit fails to contain an Effluent Limitation for zinc in accordance with 40 CFR 122.44 and CWC Section 13377.

**RESPONSE:** The maximum effluent concentration of zinc was near, but not exceeding the criteria from May 2002 through May 2005. The SIP requires that the RPA be based on the maximum effluent limitation. Therefore, the proposed permit does not include an effluent limitation for zinc.

**CSPA –COMMENT #10:** The proposed permit discusses exemption from CCR Title 27 for domestic wastewater, yet fails to assess that sewage sludge which is not exempt has degraded groundwater quality.

**RESPONSE:** The proposed permit requires the Discharger to evaluate the sludge lagoons for BPTC and propose a schedule for modification necessary to achieve BPTC (e.g., lining the sludge lagoon). The proposed permit requires the Discharger to cease application of biosolids to the overland flow system by 1 December 2008.

**CSPA –COMMENT #11:** The proposed permit contains a compliance schedule for virtually all regulated constituents based on “a new interpretation of the Basin Plan” as detailed in the Fact Sheet. The Regional Board fails to provide any explanation or definition of the “new interpretation” of the Basin Plan.

**RESPONSE:** There are a number of Basin Plan narrative standards that are the basis for numeric effluent limits. The two most common narrative standards impacting NPDES Permits are the “No Toxics in Toxic Concentrations” standard, and the “Taste and Odor” standard. Time schedules can be included in permits for effluent limitations based upon “new interpretations” of narrative water quality objectives. An August 2005 Second District California Appeals Court Ruling [CBE v. SWRCB regarding the Avon Refinery (aka, Tosco Refinery)] greatly expanded the scope of “new interpretation”. Any effluent limit based upon a narrative water quality objective is a “new interpretation” that will allow a time schedule to be placed in an NPDES permit when that effluent limit is first applied to the Discharger.

**CSPA –COMMENT #12:** Inadequate Tertiary Treatment Discussion.

**RESPONSE:** The fact sheet has been modified to expand the tertiary treatment discussion. The tertiary treatment discussion in the proposed permit notes that the City of Woodland’s *December 2000 - Recreation, Land Use, and Dilution Study of the Tule Canal and Toe Drain* indicates that the Yolo Bypass has been used for fishing (with human consumption of fish) and swimming. It also notes that the State of California Department of Water Resources 1997 Yolo County Land Use Survey shows tomatoes and either melons, squash, or cucumbers grown in the Yolo Bypass within the vicinity of the WWTP discharge and that these crops require irrigation water be treated to a tertiary level to protect public health.

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## **CITY OF YUBA CITY COMMENTS**

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**CITY OF YUBA CITY - COMMENT #1:** The dioxin and congeners effluent limitation is inappropriate and should be removed from the permit

**RESPONSE:** See Response to City of Davis Comment #4.