

Central Valley Regional Water Quality Control Board  
4/5 December 2008 Board Meeting

Response to Comments for the City of Nevada City  
Wastewater Treatment Plant  
Tentative Waste Discharge Requirements

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The following are Regional Water Quality Control Board, Central Valley Region (Regional Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (NPDES Permit renewal) for the City of Nevada City Wastewater Treatment Plant (WWTP). Public comments regarding the proposed Orders were required to be submitted to the Regional Water Board by 5:00 p.m. on 24 October 2008 in order to receive full consideration.

The Regional Water Board received comments regarding the proposed NPDES Permit renewal by the due date from the City of Nevada City and the California Sportfishing Protection Alliance (CSPA). The submitted comments were accepted into the record, and are summarized below, followed by Regional Water Board staff responses.

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**CITY OF NEVADA CITY COMMENTS**

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**General Discharger Comments** - The Discharger made numerous minor, non-substantive wording changes in their comment letter. Changes have been accepted and incorporated into the NPDES permit.

**Discharger Comment No. 1.** - The Discharger discussed frustration with the scheduling of the permitting process. They stated they submitted their Report of Waste Discharge 18 months ago and that the City was provided 30 days to review and comment on the tentative permit. The Discharger feels they have not been provided adequate time to review and comment on the tentative permit.

**RESPONSE:** Regional Water Board staff has been consistently reducing the number of expired NPDES permits in the Central Valley Region. The United States Environmental Protection Agency has been encouraging Regional Water Board staff to reduce the number of these “backlogged” permits. The time the Discharger had to review and comment on the tentative permit is consistent with other recent NPDES permits and fully complies with all Federal and State regulations.

**Discharger Comment No. 2. Designated Party Status** - The commenter requests designated party status for their consultants.

**RESPONSE:** The City is a designated party and will be granted a certain amount of time for testimony and cross examination at the board hearing. The consultants representing the City may act for the City during the City’s allotted time, but will not be recognized as a separate designated party.

**Discharger Comment No. 3. Dilution Credits** - The Discharger believes that sufficient flows are available in the receiving water such that dilution credits may be available. The Discharger requests a reopener provision be placed in the permit allowing the effluent limitations to be adjusted accordingly once dilution factors have been established.

**RESPONSE:** The Discharger has not provided Regional Water Board staff with a mixing zone/dilution study to allow a dilution credit at this time. If a study is submitted to Regional Water Board staff and is deemed sufficient, the permit may be reopened to adjust the effluent limitations, circulated for public comment, and presented to the Regional Water Board for approval. To satisfy the Discharger's concern, a reopener provision has been added to the tentative permit specific to this issue.

**Discharger Comment No. 4. BOD<sub>5</sub> and TSS Monitoring Requirements** - The Discharger requests that the monitoring frequency for BOD<sub>5</sub> and TSS be consistent with monitoring requirements in past NPDES permits.

**RESPONSE:** Regional Water Board staff agrees and the monitoring frequency has been adjusted to be consistent with the requirements in the current Order.

**Discharger Comment No. 5. Fecal Coliform Monitoring Requirement** - The Discharger requests that the monitoring frequency for fecal coliform be consistent with monitoring requirements in past NPDES permits.

**RESPONSE:** Regional Water Board staff agrees and the monitoring frequency has been adjusted to be consistent with the requirements in the current Order.

**Discharger Comment No. 6. Ammonia Effluent Limit** - The tentative permit has an instantaneous maximum effluent pH limitation of 8.5. The tentative permit also contains an ammonia effluent limitation based in part on a maximum observed effluent pH value of 8.2. The Discharger states that records indicate that monthly pH values for the last year have been 7.0 or less. The City requests the instantaneous maximum pH limit be lowered to 7.5 and the ammonia effluent limitations, which are pH and temperature dependant, be adjusted accordingly.

**RESPONSE:** The permit has been adjusted with an instantaneous maximum pH limit of 8.0 standard units. Based on effluent pH data in the record, Regional Water Board staff have determined that the Facility could not consistently comply with a 7.5 standard units pH limit. The effluent limitation for ammonia has also been adjusted based on the new effluent limit for pH. Therefore the revised ammonia effluent limitations are an average monthly effluent limit of 2.0 mg/L and a maximum daily effluent limit of 5.8 mg/L. The ammonia limits in the

tentative permit were an average monthly effluent limit of 0.3 mg/L and a maximum daily effluent limit of 1.0 mg/L.

**Discharger Comment No. 7. Continuous DO Effluent Monitoring Requirement -**

The Discharger requests that the monitoring requirement for dissolved oxygen monitoring of the effluent be removed.

**RESPONSE:** This monitoring requirement was inadvertently placed in the tentative permit. Regional Water Board staff agrees with the comment and will remove the requirement.

**Discharger Comment No. 8. Cyanide Effluent Limit -** The Discharger states that they have no record of the data point classified as the maximum effluent concentration (MEC) for cyanide. It stated that all analytical results were non-detect with the exception of one result at 2 µg/L. The Discharger submitted laboratory reports showing test results for cyanide sampling.

**RESPONSE:** The sample in question occurred on 15 October 2002. The analytical results submitted to the Regional Water Board indicated a cyanide concentration of 13 µg/L. However, in the comments submitted by the Discharger, the analytical results for that sample date show a result of non-detect for cyanide for the same date. The Discharger provided additional lab sheets showing the sample in question with the result of 13 µg/L was the result of a laboratory error. The reanalyzed sample resulted in a non-detect value for cyanide. Using the correct analytical value in the reasonable potential analysis shows that cyanide does not pose reasonable potential and an effluent limitation is not required. The effluent limitation for cyanide has been removed from the tentative permit.

**Discharger Comment No. 9. Reopener Provisions -** The Discharger requests that reopener provisions be added allowing the effluent limitations to be modified based on information not available at the time of the Tentative Order.

**RESPONSE:** The tentative permit already contains reopener provisions that allow for modification of effluent limitations. Provision VI.C.1.b.ii. states that a major modification to the permit can occur when “new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.” The current reopener provisions are adequate, so an additional reopener provision is unnecessary.

**Discharger Comment No. 10. Hydroelectric Project –** In their comments, the Discharger provided information on a proposed hydroelectric project that will use the discharge through Outfall 001 to generate electricity. The Discharger requests this information be added to the facility description. The proposed project will divert effluent from the existing piping to a new turbine. The discharge from the turbine will go directly

into Deer Creek. The city states the discharge will occur in the same location in the receiving water. Designers of the hydroelectric project indicate there will be no change to the quality or quantity of the effluent as a result of the project according to the Discharger.

**RESPONSE:** The proposed hydroelectric project will be added to the planned changes section of the fact sheet. Prior to any discharge from the new project, a new Report of Waste Discharge will need to be submitted to the Regional Water Board.

**Discharger Comment No. 11. Monitoring Trigger Should be Modified** - The Discharger believes that the chronic toxicity monitoring trigger is not in concert with the inherent variability in the chronic bioassay test. The monitoring trigger of >1 TUc should be modified to allow for a minor amount of toxicity (real or statistical) to be present and allowed in chronic bioassay results. The Discharger requests that the numeric monitoring trigger be modified to something similar to the following:

- An LOEC of less than 100% for any result from a single chronic bioassay test shall trigger accelerated monitoring.
- A median NOEC of less than 100% for any result from any three consecutive chronic bioassay tests shall trigger accelerated monitoring.

The Discharger believes that occasional random problems with the chronic bioassay test will trigger accelerated chronic bioassay monitoring based on the proposed >1TUc trigger. Accelerated monitoring is expensive because it is custom bioassay work, and involves more duplicates and controls to minimize the chances of a second “random” NOEC result of less than 100% causing a toxicity reduction evaluation which is very expensive, when there is no toxicity in the effluent. A less sensitive trigger is needed when interpreting results from a very sensitive test, such as the chronic bioassay test.

**RESPONSE:** Regional Water Board staff disagrees. The toxicity provision in the proposed Order has been developed in accordance with US EPA guidance. The provision requires accelerated chronic toxicity monitoring in the event a regular chronic toxicity test result exceeds 1 TUc. We are aware that there can be false positives in the chronic test. The reason for the accelerated monitoring is to ensure that there is a pattern of toxicity before requiring a costly toxicity reduction evaluation. The accelerated monitoring, though costly, is necessary to ensure there is no chronic toxicity in the effluent. However, performing the test using a full dilution series is not necessary for accelerated monitoring. Therefore, the proposed Order has been modified to only require the testing with 100 percent effluent for accelerated monitoring, which should reduce the lab costs.

**Discharger Comment No. 12. The Effluent Hardness Value Used for Determining Reasonable Potential Should be 41 mg/L** - The Discharger states the lowest recorded effluent hardness value recorded since the conversion of the treatment system to an

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activated sludge system was 41 mg/L. The Discharger states this value should be used instead of the 21 mg/L used in the proposed permit.

**RESPONSE:** Although the Facility underwent a change in the treatment system, there is insufficient effluent hardness data to determine if this change has resulted in higher hardness. Therefore, no change will be made to the permit. Should the Discharger provide an adequate dataset that demonstrates that the hardness has increased, the permit may be reopened to modify the effluent limitations for metals with hardness-dependent criteria.

**Discharger Comment No. 13. Removal of Receiving Water Monitoring Location –**

The Discharger requests that receiving water monitoring location RSW-003 be removed. The Facility has undergone substantial upgrades to the treatment system and now has nitrification/denitrification activated sludge and effluent filters. The Discharger states that the data obtained from the downstream receiving water monitoring location RSW-002 should be sufficient to determine compliance with receiving water limitations and that the additional costs for sampling RSW-003 is not warranted.

**RESPONSE:** Regional Water Board staff agrees. The upgrades to the treatment system should provide better treatment performance and result in lower effluent concentrations of ammonia, nitrates, and other toxic and biostimulatory pollutants. Effluent data, along with data collected both upstream and downstream of the outfall will provide necessary data to determine compliance.

**Discharger Comment No. 14. Electrical Conductivity (EC) Effluent Limit.** Potential problems with the 420 µmhos/cm EC limit are that 1) it is based on a limited dataset (only four complete annual averages: 2003, 2004, 2005, and 2006) that does not include the potential salt concentrating effects of droughts, and 2) it discourages water conservation by the City and its residents. More appropriate limitations are:

- 700 µmhos/cm so that City residents can maximize water conservation to the extent possible without compromising water quality in Deer Creek and downstream waters.
- Potable water supply EC plus 500 µmhos/cm so that City effluent salinity compliance is not at the whim of NID, the water purveyor, and how it wheels and treats the surface water that becomes the City's water supply. This limitation would also allow more water conservation.

**RESPONSE:** Regional Water Board staff agrees. The proposed Order has been modified by changing the effluent EC limit to be based on the municipal water supply EC plus an increment of 500 µmhos/cm. The municipal water supply EC for the City averaged approximately 50 µmhos/cm, based on 3 samples collected from 2002-2004. Therefore, the EC limit was changed to an

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annual average effluent limit of 550  $\mu\text{mhos/cm}$ , which is an increase from the 415  $\mu\text{mhos/cm}$  limit that was included in the tentative Order.

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## CALIFORNIA SPORTFISHING PROTECTION ALLIANCE COMMENTS

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**Comment No. 1. The proposed Permit fails to include an Effluent for Bis(2-ethylhexyl) phthalate as required by Federal Regulations 40 CFR 122.44 and the permit should not be adopted in accordance with California Water Code Section 13377** – The commenter states that Federal Regulations, 40 CFR 122.44(d), requires that limits must be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality standards. The commenter states that the CTR Water Quality Standard for bis(2-ethylhexyl) phthalate is 1.8  $\mu\text{g/L}$ . The commenter asserts that the maximum effluent concentration (MEC) was 4.0  $\mu\text{g/L}$  and the receiving water concentration was also 4  $\mu\text{g/L}$ . Therefore, an effluent limitation is required to be placed in the permit.

**RESPONSE:** The analytical results in question were both based on detected, but not quantifiable (DNQ) estimated values. Therefore, Regional Water Board staff is unable to determine if the effluent values for bis(2-ethylhexyl) phthalate do exceed, or have the reasonable potential to exceed, State water quality objectives. As stated in the fact sheet:

Since bis (2-ethylhexyl) phthalate is a common contaminant of sample containers, sampling apparatus, and analytical equipment, and sources of the detected bis (2-ethylhexyl) phthalate may be from plastics used for sampling or analytical equipment, the Regional Water Board is not establishing effluent limitations for bis (2-ethylhexyl) phthalate at this time. Instead of limitations, additional monitoring has been established for bis (2-ethylhexyl) phthalate; should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, then this Order may be reopened and modified by adding an appropriate effluent limitation.

The analytical results could not be quantified and quite possibly been the result of sample contamination. In accordance with Section 1.2 of the SIP Regional Water Board staff shall have discretion to consider if any data are inappropriate or insufficient for use in implementing the policy. Where Regional Water Board staff have found the data are insufficient to determine reasonable potential, Section 1.3 of the SIP allows the Board to implement monitoring for the parameter of concern. If the monitoring results indicate that bis(2-ethylhexyl) phthalate does have reasonable potential to exceed the criterion values, the permit may be reopened and appropriate effluent limitations placed in the permit.

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**Comment No. 2. The proposed Permit fails to include an Effluent Limit for Lead as required by Federal Regulation 40 CFR 122.44 and the permit should not be adopted in accordance with California Water Code Section 13377** – The commenter states that Federal Regulations, 40 CFR 122.44(d), requires that limits must be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State’s water quality standards. The commenter states that the chronic criterion for lead at a receiving water hardness value of 15 mg/L is 0.34 µg/L and the applicable acute criterion is 10.78 µg/L, as total recoverable. The commenter reported the MEC for lead was 0.5 µg/L. Therefore, an effluent limitation is required to be placed in the permit.

**RESPONSE:** The analytical result in question was the only quantifiable detected value. As stated in the fact sheet:

The MEC for total lead was 0.5 µg/L, based on 5 samples collected between May 2002 and June 2004. However, all but one of the detected values for the effluent was reported as DNQ (detected not quantified), therefore, the discharge was deemed to not have a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for lead. Instead of limitations, additional monitoring has been established for lead; should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, then this Order may be reopened and modified by adding an appropriate effluent limitation.

The one detected value was at the reporting limit, which is the lowest value where the analytical result can be confirmed and quantified. Based on the limited number of samples, with all but one where the analytical results could not be quantified, Regional Water Board staff concluded that it was questionable as to whether reasonable potential existed. In accordance with Section 1.2 of the SIP Regional Water Board staff shall have discretion to consider if any data are inappropriate or insufficient for use in implementing the policy. Where Regional Board staff have found the data are insufficient to determine reasonable potential, Section 1.3 of the SIP allows the Board to implement monitoring for the parameter of concern. Therefore additional monitoring is being required to be able to conclusively determine if effluent limitations for lead are required. If the monitoring results indicate that lead does have reasonable potential to exceed the criterion values, the permit may be reopened and appropriate effluent limitations placed in the permit.

**Comment No. 3. The proposed Permit fails to include an Effluent Limit for Persistent Chlorinated Hydrocarbon Pesticides as required by Federal Regulation 40 CFR 122.44 and the permit should not be adopted in accordance with California Water Code Section 13377** – The commenter states that Federal Regulations, 40 CFR 122.44(d), requires that limits must be included in permits where

pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality standards. The commenter states that aldrin, alpha-BHC, beta-BHC, lindane, delta-BHC, 4,4'-DDT, 4,4'-DDE, 4,4'-DDD, dieldrin, alpha-endosulfan, beta-endosulfan, endosulfan sulfate, endrin, heptachlor, and heptachlor epoxide were detected in the effluent. The Basin Plan requires that total chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations. Therefore, an effluent limitation is required to be placed in the permit.

**RESPONSE:** The rationale for not establishing effluent limitations for persistent chlorinated hydrocarbon pesticides was fully explained in the fact sheet. The following were detected in the Discharger's effluent: aldrin, alpha-BHC (alpha-benzene hexachloride), beta-BHC, lindane (gamma-BHC), delta-BHC, 4,4'-DDT, 4,4'-DDE, 4,4'-DDD, dieldrin, alpha-endosulfan, beta-endosulfan, endosulfan sulfate, endrin, heptachlor, and heptachlor epoxide were detected in the effluent in concentrations as high as 0.115 µg/L, 0.15 µg/L, 0.05 µg/L, 0.22 µg/L, 0.189 µg/L, 0.43 µg/L, 0.33 µg/L, 0.4 µg/L, 0.2 µg/L, 0.11 µg/L, 0.32 µg/L, 0.37 µg/L, 0.35 µg/L, 0.33 µg/L, and 0.15 µg/L, respectively. However, the only detection for each of these parameters occurred during the same, single sampling event of 21 February 2003, while all other sampling events were non-detect. It is likely that the detected concentrations are erroneous and calls into question the validity of the sampling results for that date. Regional Water Board staff used all other sampling data in the reasonable potential analysis and concluded no reasonable potential exists for these constituents. Quarterly monitoring for persistent chlorinated hydrocarbon pesticides is contained in the tentative permit. If the results of monitoring indicate reasonable potential, the Order may be reopened and effluent limitations established.

**Comment No. 4. Mass limits have been removed contrary to Antidegradation Regulations 40 CFR 122.44(l) and 122.26 (a)(16) from the proposed Permit which also fails to contain mass-based effluent limits for copper, zinc, cyanide, carbon tetrachloride, dichlorobromomethane, ammonia, and nitrate+nitrite as required by Federal Regulations 40 CFR 122.45(b)** - The commenter states that mass based effluent limits have been removed for ammonia and nitrate plus nitrite. The commenter also states that mass limits are required for copper, zinc, cyanide, carbon tetrachloride, and dichlorobromomethane.

**RESPONSE:** The mass limits for ammonia and nitrate plus nitrite were inadvertently deleted from the tentative permit and have been added to the permit. However, Regional Water Board staff disagrees with mass limitations being required for copper, zinc, cyanide, carbon tetrachloride, and dichlorobromomethane.

40 CFR SEC 122.25(f) states the following:

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*“Mass limitations. (1) All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass except:*

- (i) For pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass;*
  - (ii) When applicable standards and limitations are expressed in terms of other units of measurement; or*
  - (iii) If in establishing permit limitations on a case-by-case basis under §125.3, limitations expressed in terms of mass are infeasible because the mass of the pollutant discharged cannot be related to a measure of operation (for example, discharges of TSS from certain mining operations), and permit conditions ensure that dilution will not be used as a substitute for treatment.*
- (2) Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations.”*

40 CFR section 122.25(f)(1)(ii) states that mass limitations are not required when applicable standards are expressed in terms of other units of measurement. The numerical effluent limitations for copper, zinc, cyanide, carbon tetrachloride, and dichlorobromomethane are based on water quality standards and objectives. These are expressed in terms of concentration. Pursuant to 40 CFR section 122.25(f)(1)(ii), expressing the effluent limitations in terms of concentration is expressly allowed and is in no way contrary to Federal Regulations.

**Comment No. 5. The proposed Permit does not contain Effluent Limitations for nitrite and is therefore less stringent than the existing permit contrary to the Antibracksliding Regulations 40 CFR 122.44(l)(1)** - The commenter states that the existing permit contains an effluent limitation for nitrite at 1.0 mg/L and 5.8 pounds/day. The commenter states the effluent limitation has been removed from the proposed permit without justification.

**RESPONSE:** The effluent limits for nitrite were inadvertently deleted from the tentative permit and have been added to the permit.

**Comment No. 6. The proposed Permit contains Effluent Limitations requiring the percentage removal for BOD and TSS less stringent than the existing permit contrary to the Antibracksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44(l)(1)** - The commenter states that the existing permit contains an effluent limitation for percentage removal of BOD and TSS of 95%. The proposed permit contains a percentage removal of BOD and TSS of 85%. According to the commenter, the Report of Waste Discharge from the facility indicates that the plant's

design percent removal of BOD and TSS is 95%. The proposed permit states that the 95 percent removal was in error and replaced the 95 percent removal with 85 percent removal. The commenter states the 95% removal of BOD and TSS in the current permit was not in error and was based on the design capabilities of the wastewater treatment plant and therefore must be retained in the proposed permit.

**RESPONSE:** Technology-based effluent limitations for publicly owned treatment works (POTWs) are specified in the Code of Federal Regulations (CFR), Title 40, Part 133, otherwise known as the Secondary Treatment Regulations. 40 CFR §133.102 provides the technology-based effluent quality requirements for 5 day biochemical oxygen demand (BOD<sub>5</sub>), suspended solids, and pH. In the regulation, the percent removal for BOD<sub>5</sub> and Total Suspended Solids (TSS) is a minimum of 85 percent.

Case-by-case effluent limitations are technology-based limits developed utilizing the permit writer's best professional judgment (BPJ). The regulations found at 40 CFR §125(c)(3)(2) and the CWA section 402(a)(1)(B) give permit writers the authority to develop technology-based limitations on a case-by-case basis. However, case-by-case effluent limitations are only allowed "to the extent that EPA-promulgated effluent limitations are inapplicable." (40 CFR §125.3(c)(2)) The EPA has promulgated the secondary treatment regulations and considered the percent removal requirements for BOD<sub>5</sub> and TSS in the development of those regulations. Therefore, the imposition of more stringent effluent limitations is only allowed if necessary due to water quality impacts. Case-by-case technology-based effluent limitations more stringent than those promulgated by the EPA are not permissible. The percent removal requirement of 95 percent in the current Order is based on technical mistakes or a mistaken interpretation of the law. As a result, the 85 percent removal for BOD<sub>5</sub> and TSS in the proposed permit is the appropriate effluent limitation and is based on the secondary treatment requirements found in 40 CFR §133.102(a)(4)(iii) and 40 CFR §133.102(b)(3). In addition, since the previous effluent requirement was determined to have been a technical mistake or mistaken interpretation of law, the backsliding of the effluent limitation is allowed under 40 CFR §122.44(l)(2)(i)(B)(2).

**Comment No. 7. The proposed Permit replaces Effluent Limitations for turbidity which were present in the existing permit; contrary to the Antibacksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44(l)(1)**

- The proposed Permit contains [turbidity] Effluent Limitations less stringent than the existing permit contrary to the Antibacksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (l)(1). . . Turbidity limitations are maintained in the proposed Permit but have been moved to Section 5f Special Provisions, page 30, they are no longer Effluent Limitations. . . Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. There are no limitations for viruses and parasites in the proposed

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Permit, which the Regional Board has indicated, are necessary to protect the contact recreation and irrigated agricultural uses of the receiving water. Both coliform and turbidity limitations are treatment effectiveness indicators that the levels of bacteria viruses and parasites are adequately removed to protect the beneficial uses.

**Response:** Regional Water Board staff disagrees. The prior turbidity limit was not based on the water quality objective for turbidity or the need to regulate turbidity in the receiving water. As stated in the Fact Sheet, turbidity testing is a quick way to determine the effectiveness of the treatment filter performance, and to signal the Discharger to implement operational procedures to correct deficiencies in the filter performance. Yet, higher effluent turbidity measurements do not necessarily indicate that the effluent discharge exceeds the water quality criteria/objectives for pathogens (i.e. bacteria, parasites, and viruses), which are the principal infectious agents that may be present in raw sewage. Therefore, operational requirements for turbidity are appropriately included as a Provision in the proposed Order rather than effluent limitations. On the other hand, total coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing pathogens. Therefore, effluent limitations for total coliform organisms are necessary and have been included in the proposed Order. The previous Order included effluent limitations for turbidity. The operational turbidity requirements in the proposed Order are an equivalent limitation that is not less stringent than the turbidity effluent limitations required in the previous Order No. R5-2002-0050. Therefore, the removal of the turbidity effluent limitations does not constitute backsliding. The revision in the turbidity limitation is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16 because this Order imposes equivalent requirements to the prior permit and therefore does not allow degradation. Therefore, even if changing the limit from an effluent limitation to a provision did constitute backsliding from a water-quality based effluent limitation,, it would be allowed under CWA sections 303(d)(4) and 402(o).

The discharge does not have reasonable potential to cause or contribute to an exceedance of any turbidity objective, so water quality based turbidity effluent limitations are not required. The proposed Order nevertheless includes receiving water limitations based on the Basin Plan's site specific turbidity objectives.

**Comment No. 8. The proposed Permit establishes Effluent Limitations for metals based on the hardness of the effluent as opposed to the ambient upstream**

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**receiving water hardness as required by Federal Regulations, the California Toxics Rule (CTR, 40 CFR 131.38(c)(4)) –**

**Response:** The proposed Order has established the criteria for hardness-dependent metals based on the reasonable worst-case estimated ambient hardness as required by the SIP, the CTR and Order No. WQO 2008-0008 (City of Davis). Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. In the absence of the option of including condition-dependent, “floating” effluent limitations that are reflective of actual conditions at the time of discharge, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. The SIP does not address how to determine hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water. The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO<sub>3</sub>), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones. The CTR does not define whether the term “ambient,” as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. The Regional Water Board thus has considerable discretion in determining ambient hardness. (Order WQ 2008-0008 (City of Davis), p.10.) The City of Davis order allows the use of “downstream receiving water mixed hardness data” where reliable, representative data are available. (Id., p. 11.)

The point in the receiving water affected by the discharge is downstream of the discharge. As the effluent mixes with the receiving water, the hardness of the receiving water can change. Therefore, it is appropriate to use the ambient hardness downstream of the discharge that is a mixture of the effluent and receiving water for the determination of the CTR hardness-dependent metals criteria. Recent studies<sup>1</sup> indicate that the previously used approach of using the upstream receiving water lowest hardness for establishing water quality criteria is not always the most protective for the receiving water (e.g. when the effluent hardness is less than the receiving water hardness). The studies evaluated the relationships between hardness and the CTR metals criterion that is calculated using the CTR metals equation. The Regional Water Board has evaluated these studies and concurs that to establish effluent limits that are protective of beneficial uses for some parameters the ambient hardness can best be estimated using the lowest hardness value of the effluent, while for other parameters, the use of both the lowest (or highest) hardness value of the

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<sup>1</sup> “Developing Protective Hardness-Based Metal Effluent Limitations”, Robert W. Emerick, Ph.D., P.E. and John E. Pedri, P.E.

receiving water and the lowest hardness value of the effluent best estimates the ambient conditions. This approach was used to establish water quality-based effluent limitations for hardness-dependent metals in the proposed Order and adequately protect the beneficial uses of the water body that receives the treated wastewater.

**Comment No. 9. The proposed Permit does not contain Effluent Limitations for chronic toxicity and therefore does not comply with Federal Regulations, at 40 CFR 122.44(d)(1)(i) and the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP)* –**

**Response:** This was an issue addressed in State Water Resources Control Board's Water Quality Order for the City of Davis (WQO 2008-0008) adopted on 2 September 2008. With regard to the need for a numeric chronic toxicity effluent limit, WQO 2008-0008 states, "We have already addressed this issue in a prior order and, once again, we conclude that a numeric effluent limitation for chronic toxicity is not appropriate at this time." However, the Order goes on to state, "Our review of the Permit, however, concludes that it does not include an appropriate narrative effluent limitation for chronic toxicity and that one must be added." Based on this recent Water Quality Order, the proposed Order has been modified to include the following narrative chronic toxicity effluent limitation in section IV.A.1., and the following compliance determination language in section VII.:

Section IV.A.1.

"k. **Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge."

Section VII.

"**Chronic Whole Effluent Toxicity Effluent Limitation.** Compliance with the accelerated monitoring and TRE/TIE provisions of Provision VI.C.2.a shall constitute compliance with effluent limitation IV.A.1.k for chronic whole effluent toxicity."

The commenter also contends that the Chronic Toxicity Testing Dilution Series in the proposed Order should bracket the actual dilution at the time of discharge, not use default values that are not relevant to the discharge. Regional Water Board staff disagrees. The proposed Order does not allow a dilution credit for chronic aquatic life criteria. Thus, the dilution series is appropriate and relevant to the discharge.

**Comment No. 10. The proposed Permit does not contain Effluent Limitations for oil and grease in violation of Federal Regulations 40 CFR 122.44 and California Water Code, Section 13377 –**

**Response:** The previous permit, Order R5-2002-0050, does not contain an effluent limitation for oil and grease. Based on information received, the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative objectives for oil and grease and floating material. Oil and grease used to be a problem at many POTWs and was a necessary effluent limit to protect receiving waters, but implementation of fats oils and grease (FOG) pretreatment programs in conjunction with improved levels of treatment have resulted in an overall reduction of oil and grease in wastewater treatment plant effluent.

The proposed Order is adequately protective. It contains narrative receiving water limitations for oil and grease and floating materials, and requires weekly effluent monitoring for oil and grease.

**Comment No. 11. The proposed permit contains an inadequate reasonable potential analysis by using incorrect statistical multipliers** – The commenter states that the reasonable potential analyses failed to consider the statistical variability of data and laboratory analyses as required by Federal regulations. Federal regulations, 40 CFR § 122.44(d)(1)(ii), state “when determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, **the variability of the pollutant or pollutant parameter in the effluent**, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.” Emphasis added.

The reasonable potential analysis fails to consider the statistical variability of data and laboratory analyses as explicitly required by the federal regulations. The commenter further contends that the fact that the SIP illegally ignores this fundamental requirement does not exempt the Regional Board from its obligation to consider statistical variability in compliance with federal regulations.

**Response:** Until adoption of the SIP by the State Water Board, USEPA's Technical Support Document for Water Quality-based Toxics Control (TSD) was the normal protocol followed for permit development for all constituents. The SIP is required only for California Toxics Rule (CTR) and National Toxics Rule (NTR) constituents and prescribes a different protocol when conducting a Reasonable Potential Analysis (RPA), but is identical when developing water quality-based effluent limitations (WQBELs). For some time after SIP adoption, SIP protocols were used for CTR/NTR constituents, and TSD protocols were used for non-CTR/NTR constituents. While neither protocol is necessarily better or worse in every case, using both protocols in the same permit has led to confusion by dischargers and the public, and greater complexity in writing permits. Currently

there is no State or Regional Water Board Policy that establishes a recommended or required approach to conduct an RPA or establish WQBELs for non-CTR/NTR constituents. However, the State Water Board has held that the Regional Water Board may use the SIP as guidance for water quality-based toxics control. The SIP states in the introduction “*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency.*” Therefore, for consistency in the development of NPDES permits, we have begun to use the RPA procedures from the SIP to evaluate reasonable potential for both CTR/NTR and non-CTR/NTR constituents.

**Comment No. 12. Effluent Limitations for specific conductivity (EC) is improperly regulated as an annual average contrary to Federal Regulations 40 CFR 122.45(d)(2) and common sense** – The commenter states that 40 CFR 122.45(d)(2) requires that permits for POTWs establish effluent limitations as average weekly and average monthly unless impracticable.

**Response:** Regional Water Board staff disagrees. The proposed Order includes annual average performance-based effluent limitations for EC to keep the discharge from exceeding current levels. The averaging period is appropriate due to short-term fluctuations that can occur in the Discharger’s effluent. Consequently, it is impracticable to calculate performance-based effluent limitations for EC on a shorter averaging period.

**Comment No. 13. The proposed Permit contains an inadequate antidegradation analysis that does not comply with the requirements of Section 101(a) of the Clean Water Act, Federal Regulations 40 CFR §131.12, the State Board’s Antidegradation Policy (Resolution 68-16) and California Water Code (CWC) Sections 13146 and 13247 –**

**Response:** Regional Water Board staff disagrees; Water Codes Section 13146 and 13247 require other state agencies to comply with water quality control plans when those agencies are discharging waste. Although these sections are not relevant here, Regional Water Board staff concurs that the Regional Water Board must comply with state and federal antidegradation policies when issuing NPDES permits. However, the Permit complies with those policies.

The Permit is for an existing discharge with no increase in capacity or permitted flow. State Water Board and US EPA guidelines do not require a new antidegradation analysis. (Memo to the Regional Board Executive Officers from William Attwater (10/7/87), p.5; APU 90-004, pp. 2-3; *EPA Water Quality Handbook 2d*, § 4.5.) Nevertheless, the Fact Sheet within the proposed Order evaluates pollutant by pollutant the impact to waters of the state and demonstrates that such discharges will not unreasonably degrade the waters of the state. No antidegradation analysis is required when the Regional Water

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Board reasonably concludes that degradation will not occur. (Attwater memo p. 3.)