

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

Response to Comments for the El Dorado Irrigation District  
El Dorado Hills Wastewater Treatment Plant  
Proposed NPDES Permit Renewal

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The following are Regional Water Quality Control Board, (Regional Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (NPDES permit) for the El Dorado Irrigation District's El Dorado Hills Wastewater Treatment Plant (WWTP). Public comments regarding the proposed permit were required to be submitted to the Regional Water Board office by 22 May 2007 in order to receive full consideration.

The Regional Water Board office received comments regarding the proposed permit from the El Dorado Irrigations District, the California Sportfishing Protection Alliance, and the Environmental Law Foundation. The significant comments are summarized below, followed by staff responses.

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**EL DORADO IRRIGATION DISTRICT (DISCHARGER) COMMENTS**

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**DISCHARGER - COMMENT No. 1. Terminology of Regulated Flow.** The Discharger requested that the term used to set flow restrictions on this facility be changed to "average dry weather flow (ADWF)" instead of "average daily discharge flow (ADDF)", and that a definition of ADWF be added to the Definitions section of the permit.

Additionally, the Discharger requested that the proposed compliance determination language (Section VII.G.) referring to the regulated flow be modified to state that compliance with the flow limitations will be measured annually based on the average daily flow over three consecutive dry weather months (e.g. July, August, and September) at times when groundwater is at or near normal and runoff is not occurring.

**RESPONSE:** Reference to the regulated flow in the proposed permit has been changed from average daily discharge flow (ADDF) to average dry weather flow (ADWF) throughout the entire permit. A definition for the regulated flow has not been added. The definition is included in the compliance determination language for the regulated flow, which has been modified as follows:

*"G. Average Dry Weather Flow Effluent Limitations. The Average Dry Weather Flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the Average Dry Weather 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)."*

**DISCHARGER - COMMENT No. 2. Tertiary Treatment and Stringency of Requirements and Dilution.** The Discharger requests that the tertiary discharge requirements in the current permit (Order No. 5-01-135) be maintained in the proposed permit and that compliance with Title 22 requirements only pertain to recycled water and not discharge. The existing permit requires tertiary level treatment necessary when the

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receiving water to effluent flow ratio is less than 20:1. The Discharger also requests clarification on the triggers for the applicable periods of 20:1 dilution.

**RESPONSE:** During permit development, the existing requirements for tertiary treatment when the receiving water to effluent flow ratio is less than 20:1 were inadvertently overlooked. The permit has been modified to maintain the existing tertiary treatment requirements, as included in the existing permit. However, to protect the beneficial uses of the receiving waters (municipal and domestic water supply, agricultural water supply and contact recreation), the tertiary treatment requirements for discharge to the receiving water have been upgraded to meet Title 22 of the California Code of Regulations requirements.

The Discharger additionally commented that there is inadequate discussion and findings relating to the evaluation of section 13241 factors when imposing limitations more stringent than federal standards. The proposed permit requires no additional plant upgrades to maintain the existing tertiary treatment of effluent discharged to surface water. The additional costs in treatment are related to: (1) the Discharger's decision to replace the existing chlorine disinfection system with an ultraviolet system, and (2) compliance with new limitations for federal California Toxic Rule (CTR) constituents. Cost for proposed WWTP upgrades are included in the antidegradation analysis and discussed in the Fact Sheet. The El Dorado Irrigation District's sewer rates to community ratepayers are within the same range as similar northern California foothill communities providing tertiary level wastewater treatment for surface water discharge.

**DISCHARGER - COMMENT No. 3. Compliance Determination for Mass Limitations.** The District requests that the proposed permit contain compliance determination language for mass limitations consistent with other recently adopted permit (e.g., Mountain House Community Service District, City of Tracy). The Discharger additionally requests that if the effluent flow exceeds the permitted average dry weather flow due to wet-weather storm events or when groundwater is above normal and runoff is occurring, the effluent mass limitations not apply, and that under these circumstances, the effluent mass limitations shall be recalculated based on the wet weather effluent flow rate occurring at that time, rather than the permitted average dry weather flow.

**RESPONSE:** The following language has been added to the proposed permit, consistent with other recently adopted NPDES permits:

- J. *Mass Effluent Limitations. Compliance with the mass effluent limitations will be determined during average dry weather periods only when groundwater is at or near normal and runoff is not occurring.*

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The final mass limitations, however, apply year-round and are not proposed to be adjusted based on actual wet weather flow.

**DISCHARGER - COMMENT No. 4. Mass Limitations.** The Discharger commented that mass limitations for aluminum, ammonia, and copper are unnecessary as the applicable water quality criteria are expressed in terms of concentration and any effects of these constituents on downstream beneficial uses would be due to elevated concentrations, not elevated mass. The Discharger also commented that the imposition of mass limitations for these constituents contradicts the findings in the Fact Sheet, which state that “pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration”.

**RESPONSE:** To be consistent with other NPDES permits, mass limitations are applied to limited constituents that are oxygen-depleting, bioaccumulative, or listed on the California Water Act Section 303(d) listing and/or TMDL-related. Ammonia is an oxygen-depleted constituent and aluminum and manganese are listed on the 2006 303(d) listing for Carson Creek immediately downstream of the WWTP. Therefore, concentration and mass limitations are proposed for ammonia and aluminum. However, copper is not oxygen-depleting or bioaccumulative. The proposed copper mass limitations have been removed. The Fact Sheet has been modified accordingly.

**DISCHARGER - COMMENT No. 5. Interim Effluent Limitations/WWTP Expansion.** The Discharger commented that Section IV.a.2., as proposed, is prohibiting the discharge flow to be increased from 3.0 to 4.0 mgd unless the Discharger is compliant with the final effluent limitations. The Discharger continued to comment that a decision to allow the increase in discharge is unrelated to compliance with the final effluent limitations, which is controlled by the compliance schedule provisions contained in the permit. The Discharger requests that the last sentence in Section IV.a.2, requiring compliance with final effluent limitations prior to an increase in permitted discharge flow, be removed.

**RESPONSE:** The intention of the proposed permit is not to condition the proposed increase in regulated flow with permit compliance. Therefore, the language in Section IV.a.1. that reads: “*Interim limitations only apply to an effluent flow of 3.0 mgd ADDF. Upon completion of construction of WWTP expansion to 4.0 mgd ADDF final effluent limitations apply per Section IV.A.1.*”, has been deleted from the proposed permit.

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**DISCHARGER - COMMENT No. 6. Compliance Schedules.** In its Infeasibility Study, the Discharger requested a 5-year compliance schedule for Bis (2-chloroethyl) ether, Bis (2-ethylhexyl) phthalate, carbon tetrachloride, chlorinated hydrocarbon pesticides and aluminum. A five-year compliance schedule is proposed for chlorinated hydrocarbon pesticides and aluminum, but not for the above-cited organic compounds. Additionally, the Discharger requested a 4-year compliance schedule for copper and zinc. The proposed permit provides a 3-year compliance schedule for Bis (2-chloroethyl) ether, Bis (2-ethylhexyl) phthalate, carbon tetrachloride, copper, and zinc.

The Discharger submitted a request for a Time Schedule Order (TSO) to be adopted in concurrence with the permit to provide the time justified in the Infeasibility Analysis for the above-cited constituents.

**RESPONSE:** Compliance schedules for non-CTR constituents such as aluminum and hydrocarbon pesticides, as requested by the Discharger, are proposed in the permit. In accordance with the CTR and *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (State Implementation Plan or SIP), a compliance schedule up to 18 May 2010 has been included for CTR constituents, including Bis (2-chloroethyl) ether, Bis (2-ethylhexyl) phthalate, carbon tetrachloride, copper, and zinc. During permit development, Regional Water Board staff discussed with the Discharger the options of: (1) proposed adoption of an enforcement order concurrently with permit renewal, with a five-year compliance schedule overlapping an in-permit compliance schedule, or (2) proposed future adoption of an enforcement order as the 18 May 2010 date approaches, giving the Discharger the opportunity to refine the additional time needed to comply with final limitations and potentially obtaining more than five years to comply with CTR constituent limitations if necessary. The Discharger chose the latter option, which is reflected in the Fact Sheet discussion.

To fulfill the Discharger's later request for an enforcement order concurrently with the permit renewal, a tentative TSO must be issued through the public comment process prior to consideration of Regional Water Board adoption.

**DISCHARGER - COMMENT No. 7. Analytical Method for Pesticides.** The Discharger requests the following edits to Section V.A.9.c. of the proposed Receiving Water Limitations, regarding the analytical methods requirement for water column analysis of persistent chlorinated hydrocarbon pesticides:

- "c. Total identifiable at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer, as prescribed in *Standard Methods for the Examination of Water and Wastewater, 18th Edition* or

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latest edition, methods defined in 40 CFR 126, or other equivalent methods approved by the Executive Officer.”

**RESPONSE:** Regional Water Board staff concurs with the need to allow the latest edition of the *Standard Methods for the Examination of Water and Wastewater* to be used and has made the suggested edit.

**DISCHARGER - COMMENT No. 8. Groundwater Limitations.** The Discharger commented that the proposed ammonia groundwater limitation is inappropriate and unnecessary because there is no agriculture goal/criterion or municipal (MUN) drinking water maximum contaminant level (MCL) for ammonia. The Discharger further commented that the limit is based on EU Council Directive 98/83/EC, “On the Quality of Water Intended for Human Consumption, see SWRCB Order No. Order WQO 2002-0015 (p. 47). This Order states that the Directive explains that the ammonia value is intended to be used for monitoring purposes and as an indicator parameter. If the value is exceeded, the EU member states are directed to consider whether non-compliance poses any human health risk.” Proposed groundwater limitations for nitrite + nitrate are provided to protect human health for nitrogen compounds. Therefore, the Discharger requested the ammonia groundwater limitation be deleted.

**RESPONSE:** Regional Water Board staff concurs that nitrites and nitrates are the results of the ammonia nitrification/denitrification process, and the proposed groundwater limitations for nitrite + nitrate provide the human health protection for nitrogen compounds. A groundwater monitoring study is proposed in the permit in which further information regarding the Discharger’s impact on groundwater quality will be studied and evaluated, and if deemed necessary, ammonia limitations will be considered.

**DISCHARGER - COMMENT No. 9. Chronic Toxicity Numeric Monitoring Trigger and Page E-6, V.B.5. Methods.** For compliance with the Basin Plan’s narrative toxicity objective, the proposed permit requires the Discharger to conduct chronic whole effluent toxicity testing. The permit includes a numerical trigger that, if exceeded during the testing, requires the Discharger to investigate the causes of the toxicity and initiate corrective actions to reduce or eliminate effluent toxicity by conducting a Toxicity Reduction Evaluation (TRE).

The Discharger commented that the description of statistical analyses to determine chronic toxicity is misleading, and states that the USEPA guidance, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Appendix H)), provides guidance on test variability and states “[w]hen NPDES permits require sublethal hypothesis testing endpoints..., within-test variability must be reviewed and variability

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criteria must be applied as described in this section (10.2.8.2).” The Discharger requests the following modification be made to Section VI.C.2.a.iii. of the proposed permit and to Section B.5. of the proposed Monitoring and Reporting Program:

**VI.C.2.a.iii. Numeric Monitoring Trigger.** “The numeric toxicity monitoring trigger is a statistically significant ~~difference~~ reduction between in the 100% effluent test concentration response relative to and the laboratory control test response. The toxicity threshold that determines a statistically significant difference between the two tests mentioned above is established in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Appendix H) , and its subsequent amendments or revisions. Determination of statistical significance is subject to a review of test variability as detailed in section 10.2.8.2 of the Test Method (page 51). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.”

B.5. “The presence of chronic toxicity shall be estimated using statistical analyses specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821- R-02-013, October 2002 (Appendix H), and determination of statistical significance is subject to a review of test variability as detailed in section 10.2.8.2 of the Test Method (page 51).”

**RESPONSE:** The proposed language clarifies the numerical trigger and testing requirements; therefore, the suggested language has been added to the permit as a late revision.

**DISCHARGER - COMMENT No. 10. Constituent Study for Selenium and Nitrite.**

The Discharger commented that the dataset for selenium monitoring sufficiently demonstrates that the maximum effluent concentration (MEC) of 3.7 ug/l (total recoverable) is below the lowest applicable water quality criterion of 5.0 ug/l (total recoverable) for chronic protection of aquatic life. Furthermore, because selenium will be monitored annually as part of the required monitoring for CTR priority pollutants, the constituent study proposed for selenium is unnecessary and the Discharger requests that the provision for conducting a study for selenium be deleted from the permit.

Selenium concentrations in the effluent have been monitored monthly from March 2001 to February 2002, and quarterly from November 2002 to present for a total of 23 samples. The maximum detected total recoverable concentration was 3.7 ug/l (estimated below the reporting limit) and the maximum reporting limit was 5.0 ug/l. Concentrations have been below the lowest aquatic life criterion of 5.0 ug/l. The Discharger commented that the additional monitoring for selenium in the proposed

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constituent study, in addition to the required annual monitoring requirement to monitor selenium with other CTR priority pollutants, is excessive. The Discharger requests the provision for conducting a study for selenium be removed from the proposed permit.

**RESPONSE:** Selenium is required to be monitored annually with the CTR priority pollutant monitoring. Regional Water Board staff concurs that the 23-sample dataset for selenium indicates that there is no reasonable potential to cause or contribute to an exceedance of a water quality standard and the proposed annual selenium effluent monitoring is an adequate amount of monitoring for this constituent.

Regional Water Board staff reexamined the nitrites effluent monitoring data which indicates that the MEC of 0.950 mg/L is below the primary MCL of 1.0 mg/l for nitrites. Additionally, ten of the 13 effluent nitrite samples were non-detect. Staff made the subsequent conclusion that ammonia and nitrates monitoring provides sufficient information regarding the nitrification of the wastewater and that the proposed nitrite constituent study may be an additional monitoring requirement that does not provide additional valuable information. Therefore, due to the basis described above, the proposed constituent study for selenium and nitrites has been removed from the permit. Further clarification regarding nitrites has been provided in the fact sheet as a late revision.

**DISCHARGER - COMMENT No. 11. Special Studies for Best Practicable Treatment or Control (BPTC).** The Discharger commented that the proposed Special Study for BPTC required to address the discharge's potential contamination of groundwater is premature and that the *Antidegradation Analysis For The El Dorado Hills Wastewater Treatment Plant*, dated April 2007, addresses BPTC for this facility and the state's antidegradation policy. The Discharger additionally comments that (1) there is no data indicating that this facility is contaminating groundwater, and (2) the groundwater monitoring evaluation required in the proposed permit will determine the discharge's impact on groundwater quality and the need for a BPTC study. The Discharger requested that the BPTC study requirement be removed from the proposed permit.

**RESPONSE:** The requirement to perform a BPTC study is typical for continued protection of groundwater due to impacts of wastewater discharged/stored in unlined ponds. The proposed permit acknowledges that there is no data to assess the wastewater's impact on groundwater. Data will need to be collected and evaluated prior to the determination of the treatment or source control measures to mitigate the groundwater quality impact. Regional Water Board staff concurs that the proposed BPTC study will be dependent on the results of the required ground water monitoring, evaluation and technical conclusions. Therefore, the requirement for the

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BPTC Special Study has been modified to be required “as applicable” based on the results of the required Special Study for Groundwater Monitoring.

The Discharger is proposing to line the unlined ponds as part of the WWTP upgrades. Therefore, implementation of BPTC will be concurrently implemented.

**DISCHARGER - COMMENT No. 12. Ultraviolet disinfection (UV) System Operating Requirements.** The Discharger commented that the UV disinfection operations criteria listed are specific to recycled water distribution and are not required for stream discharge, and the proposed permit does not make the distinction between discharge to surface water and use of recycled water. For example if the Discharger only discharged, then the UV system would not be required to have Department of Health Services (DHS) Title 22 approval and would be considerably different in design and may not meet any or all of the Title 22 requirements listed in this permit section. The Regional Water Board may establish applicable water quality based effluent limitations, but does not have the legal authority to prescribe the treatment process (Water Code Section 13360(a).) The proposed language prescribes treatment process and thus the Discharger requests that it, and all similar language, be deleted from the permit, or edited to clarify that the DHS requirements apply to recycled water only. The Discharger requests that the requirements for dosing, UVT, and lamp life be deleted from this section. The permit can only specify effluent limitations (e.g., coliform limits) for discharges to surface waters and cannot specify the manner of treatment.

**RESPONSE:** The proposed permit allows discharge to an ephemeral stream with beneficial uses that include municipal and domestic supply, water contact recreation, and agricultural irrigation supply. At less than 20:1 dilution, in accordance with DHS requirements, the discharge must be disinfected and treated to Title 22 requirements to prevent disease. Therefore, operational requirements that assure Title 22 quality water is required to be discharged to the receiving stream, unless otherwise approved by DHS, are maintained in the permit. The permit includes the words “or equivalent” following the required tertiary treatment process to meet Title 22 requirements, as prescribed by DHS.

The Discharger is proposing to replace its chlorination disinfection process with an ultraviolet disinfection process. UV process operations requirements in the proposed permit have been modified to clarify that the process must be operated per manufacturer’s operation manual.

**DISCHARGER - COMMENT No. 13. Pretreatment Requirements.** The Discharger commented that it is currently working with U.S. EPA to obtain an approved Industrial Pretreatment Program (IPP) and request that the proposed permit supports EPA’s final approval, potentially occurring after the effective date of this permit. The Discharger



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requests that rather than the proposed permit requiring implementation of an U.S. EPA-approved IPP, it require an IPP in accordance with U.S. EPA approvals.

Additionally, the Discharger commented that it has obtained coverage under State Water Resources Control Board (State Water Board) Order 2006-0003, and that the requirements identified in the proposed Special Provisions for Municipal Facilities, specifically Section 5.a. (Paragraph i.) are addressed under the State Water Board Order and should be removed from the proposed permit.

Lastly, the Discharger noted that in the proposed Special Provisions for Municipal Facilities, (Section 5.a. Pretreatment Requirements), the proposed permits states that limited portions of the wastewater collection system may be outside the service area of the Discharger. This is incorrect and needs to be corrected to read that no portion of the wastewater collection system is outside the service area of the Discharger. The first sentence of the third paragraph should be deleted.

**RESPONSE:** The Special Provisions for Pretreatment Program requirements in NPDES permits are standard language included in all applicable NPDES permits for municipal dischargers. Therefore, the proposed language in the Special Provisions that may be duplicative of State Water Board Order No. 2006-0003 has not been removed. The language has been modified, however, to reflect that this Discharger shall implement its pretreatment program in accordance with U.S. EPA approvals. Additionally the language implying that portions of the Discharger's collection system are outside its jurisdictional boundaries has been corrected.

**DISCHARGER - COMMENT No. 14. Effluent Monitoring for Conventional Pollutants.** The Discharger commented that it is unaware of methods to provide continuous recording of temperature, pH, and dissolved oxygen that meet standardized EPA-approved methods. The Discharger also stated that it is unnecessary to have continuous recording on temperature, pH, and dissolved oxygen because, unlike turbidity, the continuous monitoring results provide no insight into plant process control. Despite not meeting an EPA-approved methodology, this requirement would obligate the Discharger to install continuous monitoring devices for temperature, pH, and dissolved oxygen. Therefore, the Discharger requests that the continuous recording requirements for temperature, pH, and dissolved oxygen be changed to daily grab samples. The Discharger, however, does not object to the proposed continuous effluent turbidity monitoring requirement.

Additionally, the Discharger requests that the proposed daily effluent monitoring for Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), total coliform bacteria, and settleable solids be reduced to five days per week. The basis of the request is the five days a week WWTP staffing and the historical consistency in effluent

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quality for these constituents. The Discharger additionally requests that the monitoring location to collect samples for total coliform bacteria be at the outlet from the chlorine contact basins, prior to dechlorination.

**RESPONSE:** Regional Water Board staff concurs that information provided by continuous temperature, pH and dissolved oxygen monitoring will not provide additional valuable compliance information above and beyond information provided by daily grab samples. Therefore, the proposed permit has been modified to require daily grab samples for these parameters. Additionally, Regional Water Board staff confirmed that the effluent BOD, TSS, total Coliform bacteria and settleable solids are consistent on a regular basis; therefore, to be compatible with laboratory staffing at the WWTP, the daily effluent monitoring for these constituents has been reduced to five days per week.

**DISCHARGER - COMMENT No. 15. Effluent Monitoring.** The Discharger commented that the bimonthly monitoring (monitoring every two months) for a number of constituents specified in Table E-3 of the Monitoring and Reporting Program (MRP) was proposed due to the reporting limit and/or method detection limit being greater than the lowest applicable criterion. Statements in the Fact Sheet suggest that the SIP requires this monitoring in this circumstance. Monitoring for the constituents listed in Table E-3 has already been conducted in accordance with Regional Water Board reporting limit requirements specified in the September 2001 California Water Code (CWC) Section 13267 letter sent to the Discharger. The fact that the reporting limits and/or method detection limits are higher than the criteria is not due to inadequate monitoring or analysis, but because these constituents have very low criteria. Requiring bimonthly monitoring for such constituents is inconsistent with permits adopted by the Regional Water Board as recently as May 2007. The Discharger requested that the monitoring requirement be reduced to once per year, consistent with the timing of the priority pollutant sampling.

Additionally, the Discharger commented that the weekly monitoring frequency for non-conventional CTR and non-CTR constituents is excessive and inconsistent with monthly monitoring frequencies normally required by the Regional Water Board in other recently adopted NPDES permits (i.e. Mountain House Community Service District).

**RESPONSE:** Section 1.3 of the SIP states that *“[I]f, upon completion of the monitoring required by Step 8 and the subsequent analysis in Steps 1 through 7, a specific pollutant was not detected in any effluent or if ambient background sample and applicable detection limits are greater than or equal to the C value, the RWQCB may require periodic monitoring of the pollutant.”* The data submitted by the

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Discharger indicates that (1) the reporting limit and/or method detection limit for this group of constituents are greater than the lowest applicable criteria, (2) more frequent monitoring may not provide greater detailed information, and (3) annual monitoring, in accordance with priority pollutant monitoring requirements, will provide necessary water quality information to determine whether the effluent continues to not have reasonable potential to cause an exceedance of water receiving water criteria. Therefore, the bimonthly monitoring (monitoring every two months) has been removed.

Regional Water Board staff concurs that the proposed weekly monitoring frequency for CTR and non-CTR constituents is excessive and not consistent with other NPDES permits. The proposed monitoring frequencies for these non-conventional constituent has been modified to monthly monitoring.

**DISCHARGER - COMMENT No. 16. Subsequent Test Methods.** To account for future updates to the specified method, the Discharger requests the following underlined wording be included to modify the proposed language specifying acute and chronic whole effluent toxicity test methods.

Page E-6, Item A.4: *"The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition, and its subsequent amendments or revisions."*

Page E-7, Item B.5. *"The presence of chronic toxicity shall be estimated using statistical analyses specified in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002 (Appendix H), and its subsequent amendments or revisions."*

**RESPONSE:** The proposed language has been added.

**DISCHARGER - COMMENT No. 17. Chronic Toxicity Testing and Dilutions.** The Discharger commented that since it does not have a history of toxicity in its chronic 3-species bioassays, changing from the existing quarterly testing frequency to monthly is unwarranted. Also, it should be noted that EPA guidance does not favor a single point pass/fail toxicity test (see page 5 and page 36 of the Test Method). While greater frequency can be achieved with single point monthly testing at similar costs to quarterly dilution series testing, much toxicological information is lost. The Discharger requests that the chronic testing frequency be maintained as in the existing permit and a serial dilutions series of 100%, 85%, 75%, 50%, and 25% effluent, a modification of the EPA recommended series because the discharge is to an ephemeral creek. The serial dilution series is necessary for evaluation of the dose-response curve relevant to a Toxicity Reduction Evaluation (TRE) that may result from accelerated monitoring data,

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to determine if the toxicity present is of sufficient magnitude for a Toxicity Identification Evaluation (TIE) study to be practicable.

**RESPONSE:** Regional Water Board staff concurs that the serial dilution is necessary for follow up accelerated monitoring triggered by the standard testing. Modifications have been made to the permit to allow the modified dilution series stated in the Discharger's comments to be used for TRE and subsequent toxicity identification requirements. Additionally, the Discharger's historical results of its 3-species bioassay testing does not warrant increased frequency from quarterly to monthly testing. Therefore, the proposed permit has been modified to maintaining the existing quarterly testing frequency as required in the existing permit.

**DISCHARGER - COMMENT No. 18. Year-Round Receiving Water Monitoring.** The Discharger commented that no rationale is provided for the proposed monitoring of Carson Creek when there is no discharge occurring. When there is no discharge to Carson Creek, there can be no impact to Carson Creek, thus no need to assess compliance. As such, the Discharger requests the monitoring of Carson Creek only be required when discharge is occurring. No rationale is provided for requiring monitoring when no discharge is occurring.

**RESPONSE:** The existing NPDES permit does not require year-round receiving water monitoring; it only requires receiving water monitoring when WWTP effluent is discharged to Carson Creek. During development of the proposed permit that allows year-round discharge, year-round receiving water data was not available to assess critical low flow receiving water conditions for the reasonable potential analysis. (Year-round receiving water monitoring data provides the critical low flow information necessary to conduct a reasonable potential analysis.) However, due to the Discharger's comment, Regional Water Board staff reevaluated the proposed requirement for year-round receiving water monitoring and acknowledges that the frequency of receiving water monitoring during non-discharge periods, similar to the frequency during discharge, results in excessive information. Therefore, the receiving water monitoring requirements have been modified, as a late revision to the tentative permit, to require monitoring only during periods of discharge, as only necessary for compliance determination with receiving water limitations. Additionally, Section VI.D.1. (Receiving Water Monitoring) of the Fact Sheet has been revised, as a late revision to the tentative permit, to read:

"Receiving water monitoring is necessary during discharge to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream."

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**DISCHARGER - COMMENT No. 19. Fact Sheet Discussion on Assimilative Capacity/Mixing Zone.** The Discharger commented that the following statement in the third paragraph of Section IV.C.2. c. of the Fact Sheet is incorrect and should be deleted, “*However, new water quality based effluent limits established in this Order for metals such as zinc, aluminum, copper, and manganese require tertiary level of treatment.*” Actions to achieve compliance with effluent limitations for these metals may include water-effect ratio studies, translator studies, or source control. The need for tertiary treatment is based on the permit’s findings regarding pathogens (see Fact Sheet p. F-34), not metals treatment and removal.

**RESPONSE:** The edit has been made as a late revision to the tentative permit.

**DISCHARGER - COMMENT No. 20. Fact Sheet Discussion on Determining Need for WQBELS.** The Discharger commented that in the Fact Sheet discussion in Section IV.C.3.b. should be modified to reflect that effluent concentrations of iron and manganese have been below water quality objectives and, thus, the discharge does not pose a reasonable potential to cause or contribute to an in-stream excursion of a water quality standard for these metals. The reason for the effluent limitations is the SIP’s requirement that limitations be issued when the background receiving water concentration has exceeded objectives and the constituent has been detected in the effluent.

**RESPONSE:** The paragraph has be modified, as a late revision to the tentative permit, to provide the suggested clarification.

**DISCHARGER - COMMENT No. 21. Aluminum Criteria.** The Discharger commented that there is no adopted water quality criteria/objective for aluminum in California, and Regional Water Board staff’s use of the 87 ug/l aquatic life criteria per U.S. EPA’s Section 304(a) National Recommended Water Quality Criteria for Aluminum (2002) to interpret Basin Plan narrative toxicity objective is not correctly interpreting the U.S. EPA’s recommended criteria for establishing aluminum limitations. The aluminum criteria for the WWTP discharge should be based on site-specific effluent and receiving water conditions, as discussed in the May 2006 *Evaluation of the EPA Recalculation Procedure in the Arid West Technical Report*, funded by and prepared for U.S. EPA. This Technical Report updated the data base on the environmental significance of freshwater organism aluminum exposure and available toxicity studies, relative to that used by U.S. EPA in its 1988 aluminum criteria document. Section 3 of this report summarizes the status of the technical review of the freshwater aluminum criteria and provides a recalculation of the aluminum criteria based on hardness.

A number of communities in the Central Valley (i.e., Manteca, Modesto, and Yuba City) are initiating water effect ratio (WER) studies for aluminum in response to aluminum

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effluent limits adopted in their NPDES permits. Preliminary results from these studies indicate that WERs derived from individual tests for aluminum range from a low of about 23 ug/l to a high of greater than 200 ug/l. WER adjusted criteria based on these findings (i.e., WER value for Discharger x 87 µg/l) would range from approximately 1975 ug/l to 6925 ug/l (Cities of Manteca, Modesto, and Yuba City; unpublished data).

Failure by Board staff to identify and utilize available WER information for aluminum from the Central Valley or elsewhere does not represent best professional judgment. In short, best professional judgment indicates that, with possible rare exceptions (and Carson Creek not being such an exception), aluminum toxicity to aquatic life is not an issue of concern in Central Valley receiving waters or effluents.

Given the comparisons in effluent and receiving water hardness and pH for the Discharger's receiving water and effluent compared to that documented for Modesto, Manteca and Yuba City, it is fully expected that WER studies for aluminum, should they be performed by the Discharger, would yield similar findings.

A secondary human-health based Maximum Contaminant Level (MCL) of 200 ug/l exists for aluminum and is incorporated into the Basin Plan by reference. As part of objectively developing and applying best professional judgment, if permitting staff accounted for: (a) the appropriate EPA recommended criteria of 750 ug/l (both acute and chronic); (b) the updated "Arid West Technical Report" recalculated values for 50 mg/l hardness of 1280 ug/l for acute and 512 ug/l for chronic, and (c) results from aluminum WER studies from area dischargers, the secondary MCL would control the NPDES permit effluent limit calculations, not the aquatic life criteria.

Finally, as stated in the EPA's 1988 aluminum criteria document (p. 10-11), the acid-soluble measurement is the best form of measurement for implementation of recommended total aluminum criteria for the protection of aquatic life.

The District requests that the permit limitations based on an 87 ug/l aquatic life criterion be removed from the permit because they cannot be justified based on best professional judgment, and that an annual average dissolved aluminum (acid soluble measurement) effluent limitation of 200 ug/l be permitted instead, which would be protective of both the municipal and aquatic life beneficial uses. If staff seek an additional limitation for the acute protection of aquatic life, best available information indicates that this limitation would be 1280 ug/l for this site. However, because there is no reasonable potential to exceed this value, the limitation is not needed.

**RESPONSE:** Aluminum is considered a toxic constituent. There is no CTR criteria and no numerical water quality objective in the Basin Plan for aluminum. The applicable water quality objective is the Basin Plan's "narrative toxicity objective".

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The information available to the Regional Board indicates that there is a reasonable potential for the discharge to cause or contribute to an excursion above the narrative toxicity objective. Consistent with 40 CFR 122.44(d)(1)(vi)(A)-(C), the proposed Order includes an effluent limit based on an EPA criteria.

Consistent with other NPDES permits, the 87 ug/l aquatic life aluminum criteria, as specified in the 2002 USEPA National Recommended Water Quality Criteria (NRWQC) was implemented for the development of aluminum limitations in the proposed permit. 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 Discharger requests that the NRWQC for aluminum be adjusted based on the pH and hardness of Carson Creek prior to performing the reasonable potential analysis. However, 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 Carson Creek. Without this information, Regional Water Board staff used the default assumption of a WER of 1.0 for performing the reasonable potential analysis.

In Section VII. of the proposed permit, compliance with aluminum limitations may be determined with an acid soluble analysis method if acid soluble monitoring information is available. Such determination of compliance addresses the concern of elevated aluminum monitoring results associated with clay particles in the water column.

The upstream receiving water data for aluminum exceeds both the acute and chronic criteria of 87 ug/l and 750 ug/l, based on total recoverable analyses. The proposed permit may be reopened in the future if the Discharger submits site-specific information such as a site specific WER, or information such as a WER study conducted for a waterbody with similar water quality and flow characteristics. If such information results in a analysis that indicates no reasonable potential for exceedance of the applicable criteria, then the need for effluent limits may be reassessed, and the permit may be amended.

**DISCHARGER - COMMENT No. 22. Ammonia.** The Discharger commented that the Fact Sheet concludes that because there is no prohibition on discharges during the summer months, the ammonia limitation must be derived using a potential worst-case summer temperature. This approach results in overly stringent limitations that are unnecessary for the protection of beneficial uses. The WWTP typically does not

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discharge during the months of June through October due to reclaim operations. Because of the seasonal nature of the discharge to Carson Creek, the Discharger requests the equation-based "floating" ammonia limitations contained in the existing NPDES permit be used. At a minimum, the Discharger requests that seasonal ammonia limitations be provided for the periods November through May when discharge typically occurs and June through October when discharge typically does not occur. Both approaches would be protective of beneficial uses.

Furthermore, the Discharger commented that EPA recommended chronic ammonia criterion expressed as 30-day average concentrations should be converted to a 4-day criteria criterion continuous concentration (CCC) before calculating the Average Monthly Effluent Limit (AMEL). The procedures for calculating effluent limitations described in the SIP are based largely on the EPA Technical Support Document (TSD) procedures (EPA/505/2-90-001, March 1991). The TSD procedures, in turn, define the basis of chronic effects as the 4-day exposure period (TSD, p. 99). The 30-day criteria used to develop the proposed "fixed" ammonia limitations were not converted to 4-day criteria, as required. The 4-day average should not exceed 2.5 times the CCC (EPA-822-R-99-014, December 1999).

For the November through May period, using the maximum observed 30-day average effluent temperature cited in the Fact Sheet of 66.7°F (19.3°C) and maximum allowable effluent pH of 8.5, the chronic (30-day) and acute (1-hour) ammonia criteria are 0.80 mg/L-N and 2.14 mg/L-N, respectively. For the June-October period, using the maximum observed daily effluent temperature cited in the Fact Sheet of 78.3 °F (25.7°C) and maximum allowable effluent pH of 8.5, the chronic (30-day) and acute (1-hour) ammonia criteria are, as cited in the Fact Sheet, 0.53 mg/L-N and 2.14 mg/L-N, respectively. Multiplying the 30-day CCC by 2.5 results in 4-day average criteria of 1.32 mg/L-N (June-October) and 2.00 mg/L-N (November-May). In running these values through the SIP procedures (below), the acute criterion becomes the limiting factor for calculating the effluent limitations, thus, the AMEL and maximum daily effluent limitation (MDEL) are the same for the June-October period and the November-May period, because the acute criterion is a function of pH only, not temperature.

**RESPONSE:** Acute ammonia criterion for protection of aquatic life is based on pH. Chronic ammonia criteria for protection of aquatic life are based on pH and temperature. (Ammonia poses a higher chronic toxicity threat at higher temperatures.)

Seasonal ammonia limitations were calculated to take the lower winter temperatures in account for less-stringent limitations during the months of November through May. However, in calculating the ammonia limitations, protection of acute toxicity conditions prevailed over chronic toxicity conditions. Therefore, the resulting



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ammonia limitations do not change with seasonal temperature variation, resulting in one set of year-round final ammonia limitations. The discussion in the Fact Sheet has been modified to provide the basis for the proposed ammonia limitations and corresponding changes from the existing NPDES permit.

Regional Water Board staff revised the ammonia calculations, per the comment summarized above, to represent the chronic toxicity as 2.5 times the 30-day chronic criterion. However, in doing so, the 30-day chronic criterion was not taken in account. The proposed limitations have been recalculated taking the lowest of the long-term averages (LTA) for the (1) acute criterion, and (2) 4-day and 30-day chronic criteria. (The LTAs are calculated using the corresponding acute, 4-day, and 30-day calculation multipliers.) The lowest LTA is then used to calculate average monthly and daily maximum effluent limitations. The resulting revised year-round limitations are added to the tentative permit as a late revision.

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**COMMENTS FROM THE ENVIRONMENTAL LAW FOUNDATION (ELF) AND THE CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA)**

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**ELF and CSPA – COMMENT No. 1: Antidegradation.** ELF commented that the antidegradation analysis improperly performs socioeconomic and alternatives Analyses solely on the basis of “significant” degradation. It disagrees with the use of the existing water quality as the baseline for potential degradation comparison and that cumulative effects from prior expansions/permits since 1968 when State Water Board Resolution No. 68-16 was adopted, or since 1975 under the federal policy, must be considered. Additionally, ELF commented that the findings and Fact Sheet discussion in the proposed permit were insufficient. The proposed permit fails to properly balance the proposed degradation against socioeconomic needs by failing to (1) make findings that the economic or social development being accommodated is important, and (2) requiring all reasonable alternatives to the discharge.

CSPA commented that 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 Section 131.12 and State Water Board Resolution No. 68-16. The proposed permit allows degradation of groundwater contrary to Section 101(a) of the Clean Water Act, Federal Regulations 40 CFR Section 131.12 and the State Water Resources Control Board (State Water Board) Resolution No. 68-16.

**RESPONSE:** The proposed permit requires the Discharger to treat its wastewater to a tertiary level that meets the recycling criteria of CCR Title 22 when 20:1 receiving water dilution is not present, and to a level protective of aquatic life and human

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health. The permit, as proposed complies with federal and state antidegradation policies.

If adopted, the permit will authorize an expansion of the facility, which may result in degradation of water quality. State and federal antidegradation policies, where applicable, do not prohibit any change in water quality, but requires that changes be justified. The proposed permit protects existing in-stream uses by requiring compliance with applicable federal technology-based standards and with effluent limitations for constituents having the reasonable potential to cause or contribute to an exceedance of water quality standards. The proposed permit is significantly more stringent than the previous permit. The permit (1) continues to require tertiary treatment, (2) establishes more stringent ammonia limitations, (3) limits CTR and non-CTR constituents, including aluminum, and (4) does not allow the increased discharge of salinity despite expansion of the facility.

The proposed permit is in accordance with the Clean Water Act and the Water Code, requires advanced level of treatment, and where authorized by law, allows the discharger reasonable time schedules to achieve compliance with new and/or more stringent requirements. Additionally the permit requires the Discharger, pursuant to Water Code Section 13263.3, to prepare a pollution prevention plan to determine feasible measures to reduce waste discharges and to implement the plan.

State Water Board Administrative Procedure Update (APU 90-004) provides implementation policy for the State Water Board Resolution 68-16 and 40 CFR Section 131.12. Detailed socioeconomic and alternatives analyses are required when the water quality impacts are significant. APU 90-004 states: "...a complete antidegradation analysis is not required if...[t]he *"Regional Board determines the proposed action will produce minor effects which will not result in a significant reduction of water quality..."* This is consistent with the federal guidance that states: *"Applying antidegradation review requirements only to those activities that may result in significant degradation of water quality is a useful approach that allows states and tribes to focus their resources where they may result in the greatest environmental protection"* (EPA, 2005). There is no established a numeric significance threshold in California. In the absence of a threshold, APU 90-004 recommends the use of 10% assimilative capacity as a significance threshold.

The analysis addresses potential degradation of the receiving water due to the proposed increase in regulated discharge from 3.0 million gallons per day (mgd) to 4.0 mgd to Carson Creek. The existing surface water quality and the effluent water quality allowed by the existing NPDES permit were used as the "baseline" to estimate degradation due to the proposed flow increase.

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Due to the increase in treatment requirements, the proposed permit will result in maintenance of existing in-stream uses. The proposed conversion to ultraviolet disinfection from the existing chlorination process will improve the receiving water quality for dibromochloromethane, dichlorobromomethane, electrical conductivity, total dissolved solids, and total trihalomethanes. The potential significant changes in Carson Creek water quality identified in the antidegradation analysis include up to a 45 percent and 28 percent utilization of the remaining assimilative capacity for two constituents; bis(2-ethylhexyl) phthalate and carbon tetrachloride, respectively. Bis(2-ethylhexyl) phthalate is a common contaminant of environmental samples while carbon tetrachloride is a volatile organic compound that volatilizes from surface water. Beneficial uses remain fully protected with the increased discharge.

The antidegradation analysis identifies that the increase in flow results in increased loading of mercury to Carson Creek, which results in additional loading of mercury to the Delta. The potential impact for other constituents is identified as the use of less than 10 percent of the available assimilative capacity. The effluent concentrations for all constituents will remain the same during increased regulated flows.

Degradation of high quality waters is allowed if the state finds that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. The Discharger conducted an antidegradation analysis, consistent with 40 CFR section 131.12 and State Water Board Resolution No. 68-16. As discussed in the permit Fact Sheet, the analysis includes conclusions regarding growth in the El Dorado Irrigation District's service area and the necessary treatment of the increased influent wastewater to protect water quality and accommodate growth.

APU 90-004 states that the severity and extent of water quality reduction should be weighed when evaluating the benefits that compensate for that degradation. The antidegradation analysis included incremental costs for the "no additional discharge" alternative and other disposal alternatives, and compared these impacts against the socioeconomic benefit. Annual rate increase is estimated from \$47 to \$169 for existing and new customers, respectively, to finance the \$35.6 million planned expansion and modification of the existing 3.0 mgd plant. The costs for the "zero additional discharge" alternative (\$37.2 million plus) is an additional annual rate increase of \$49 to \$176 for existing and new customers, respectively. There are also corresponding increases in connection fees. All these costs are in addition to the current annual ratepayer costs. The conclusions of the antidegradation analysis support that the potential lowering of water quality (1) does not threaten the beneficial uses of the receiving waters and (2) provides important housing and economic benefits to the people of the El Dorado community and the State.

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Therefore, staff believes the proposed permit is in accordance with antidegradation policies.

The permit findings and Fact Sheet have been further modified, as a late revision, to include further detail to address comments by ELF and CSPA.

**CSPA ANTIDEGRADATION COMMENT CONTINUED:** CSPA additionally comments that the antidegradation analysis does not address degradation to groundwater regarding discharge to the unlined ponds.

**RESPONSE:** The proposed permit does not allow an increase in pond capacity. It does, however, require the use of Best Practicable Treatment or Control (BPTC). As part of the WWTP upgrade project, the Discharger proposes to line its currently unlined ponds. The permit also requires the Discharger to perform a groundwater monitoring study to determine the existing groundwater quality (“baseline” to determine degradation) and the assess groundwater degradation due to the impacts of the wastewater in the ponds. If the wastewater is found to impact groundwater quality, the permit requires a subsequent BPTC study. The proposed permit also contains reopener language for addition of more stringent effluent and/or groundwater limitations if monitoring data indicates degradation of the groundwater.

**CSPA - COMMENT No. 2: Electrical Conductivity (Salinity) Limitations.** The proposed Permit fails to contain a protective Effluent Limitation for electrical conductivity (EC) in accordance with Federal Regulations 40 CFR 122.44 and California Water Code, Section 13377.

**RESPONSE:** The Code of Federal Regulations (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.”

WWTP monitoring data indicates that the discharge has the reasonable potential to exceed 700 umhos/cm for electrical conductivity (EC), which is a level that is most protective of agricultural uses as recommended in the Ayers and Westcot study. The Ayers and Westcot study, however, does not include water quality objectives or goals that are site-specific to Carson Creek and the local agriculture practices. The Regional Board need additional information to determine what numeric limit is

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relevant and appropriate to evaluate compliance with the narrative chemical constituent water quality objectives in the Basin Plan. The proposed permit (1) requires the Discharger to conduct a site-specific study to determine the EC level that must be maintained in the receiving water to implement the narrative chemical constituents water quality objectives and to protect beneficial uses, and (2) sets an interim performance-based EC limitation to maintain the Discharger's current effluent EC levels, regardless of the future increase in discharge flow. A final EC effluent limitation will be included in a subsequent permit renewal or amendment, based on the results of approved site-specific studies.

**CSPA - COMMENT No. 3: Mass Limitations.** The proposed permit, Table 6a, does not contain mass based effluent limitations, contrary to Federal Regulations 40 CFR 122.45 (f) and technical advice from EPA.

**RESPONSE:** 40 CFR SEC 122.25(f) states the following:

*“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. All pollutants with numerical effluent limitations in the proposed permit 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 in accordance with Federal Regulations.

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To be consistent with other NPDES permits, mass limitations are applied to limited constituents that are oxygen-depleting, bioaccumulative, or listed on the California Water Act Section 303(d) listing and/or TMDL-related. Ammonia is an oxygen-depleted constituent and aluminum and manganese are listed on the 2006 303(d) listing for Carson Creek immediately downstream of the WWTP. Therefore, concentration and mass limitations are proposed for ammonia and aluminum. However, copper is not oxygen-depleting or bioaccumulative. The proposed copper mass limitations have been removed. The Fact Sheet has been modified accordingly.

**CSPA - COMMENT No. 4: Acute Toxicity Limitations.** The proposed permit contains an effluent limitation for acute toxicity that allows mortality that exceeds the Basin Plan water quality objective and does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i).

**RESPONSE:** The proposed permit contains several mechanisms to ensure that effluent discharge does not cause acute or chronic toxicity in the receiving water. Receiving water limitations prohibit the discharge from causing toxicity in the receiving water. For effluent limitations based on the protection of the aquatic life beneficial use, the proposed permit includes end-of-pipe effluent limits developed with aquatic life toxicity criteria. Additionally, whole effluent chronic toxicity testing is required to identify both acute and chronic cumulative effluent toxicity. If this testing shows that the discharge causes, has the reasonable potential to cause, or contributes to an in stream excursion of the water quality objective for toxicity, the permit requires the Discharger to investigate the causes of, and identify corrective actions to eliminate the toxicity.

The acute whole effluent toxicity limitations establish additional thresholds to control acute 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 acute toxicity test acceptability criteria allow ten percent mortality (requires 90% survival) in the control. Thus, the acute toxicity limitations allow for some test variability, but impose ceilings for exceptional events (i.e., 30% mortality or more), and for repeat events (i.e., median of three events exceeding mortality of 10%). These effluent limitations are consistent with U.S. EPA guidance document titled "Guidance for NPDES Permit Issuance", dated February 1994, which states the following:

*"In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on*

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*the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc."*

The proposed permit protects aquatic life beneficial uses by implementing numerous measures to control individual toxic pollutants and whole effluent toxicity. Both the acute limitations and receiving water limitations are consistent with numerous NPDES permits issued by the Regional Water Board and throughout the State.

**CSPA - COMMENT No. 5: Lack of Chronic Toxicity Effluent Limitations.** 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 SIP.

**RESPONSE:** 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>1</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 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.

The toxicity control provisions in the SIP are under revision; therefore, it is impractical to develop numeric effluent limitations for chronic toxicity.

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<sup>1</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)

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**CSPA - COMMENT No. 6: Interim Ammonia Limitation.** The interim ammonia effluent limitation in the proposed permit is unreasonably high and is not protective of the aquatic life beneficial uses of the receiving stream contrary to Federal Regulations 40 CFR 122.44.

**RESPONSE:** The proposed interim limitation was calculated by use of the statistical methods in accordance to U.S. EPA Technical Support Document, resulting in a higher interim limitation than the ammonia limitations in the existing permit. Regional Water Board staff concurs that the statistical method used results in an unreasonably high interim effluent limitation. To address anti-backsliding concerns associated with a performance-based fixed interim limitation, the permit has been revised to include the same “floating” ammonia limitations as are in the existing permit to serve as proposed interim limitations, thus not allow backsliding. Daily pH and temperature monitoring has been added to correspond with daily compliance of the floating ammonia limits during the interim period.

**CSPA - COMMENT No. 7. Compliance Schedules for Aluminum and Ammonia.**

The proposed permit contains a compliance schedule for aluminum and ammonia based on “a new interpretation of the Basin Plan” as detailed in the Fact Sheet, page F-32 and Finding No. k. 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 objectives that are the basis for numeric effluent limitations. The two most common narrative objectives impacting NPDES permits are the “No Toxics in Toxic Concentrations” standard, and the “Taste and Odor” standard. The Basin Plan allows the use of compliance schedules for water quality objectives adopted after 1995 and EPA and the State Board have allowed such compliance schedules based on a “new interpretation” of an existing objective. Compliance schedules may 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 limitation 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 limitation is first applied to the Discharger. The Fact Sheet discussion on aluminum, ammonia and compliance schedules has been modified to provide further clarification that these limitations are applied to this WWTP effluent for the first time, and therefore a corresponding compliance schedule in the permit is allowed.



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**CSPA - COMMENT No. 8: Inadequate Reasonable Potential Analysis.** The proposed permit contains an inadequate reasonable potential analysis by using incorrect statistical multipliers. The reasonable potential analyses for CTR constituents fail to consider the statistical variability of data and laboratory analyses as explicitly required by the federal regulations. The procedures for computing variability are detailed in Chapter 3, pages 52-55, of USEPA's *Technical Support Document For Water Quality-based Toxics Control*.

The reasonable potential analyses for CTR constituents are flawed and must be recalculated. 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.

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.

**RESPONSE:** Regional Water Board staff performed a reasonable potential analysis to determine the proposed effluent limitations in accordance with the procedures specified in the SIP, by comparing the maximum effluent concentration of a pollutant to the applicable water quality criteria/objective. CSPA is commenting on the validity of the SIP to determine reasonable potential to cause or contribute to an exceedance of a water quality standard. The comment is specifically focused on the use of variable multiplier factors that represent the statistical variation and standard deviation of data used for the analysis outlined in the *USEPA Technical Support Document for Water Quality Based Toxics Control (TSD)*, compared to the use of the default multiplier of "1" in the SIP.

NPDES program staff is consistently using the SIP to evaluate reasonable potential for CTR and non-CTR constituents. For the constituents in which it was determined that reasonable potential exist, effluent limitations were calculated utilizing the statistical TSD method and taking statistical variation in account to calculate numerical limitations. Additionally, maximum daily interim limitations are also calculated using the statistical TSD method.