

Central Valley Regional Water Quality Control Board
23/24 April 2009 Board Meeting

Response to Comments for the Nevada County Sanitation District No. 1
Lake of the Pines Wastewater Treatment Plant
Tentative Waste Discharge Requirements

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), rescission of Time Schedule Order (TSO) R5-2007-0072, and rescission of Cease and Desist Order No. R5-2002-0096 for the Nevada County Sanitation District No. 1, Lake of the Pines, 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 2 April 2009 in order to receive full consideration.

The Regional Water Board received comments regarding the proposed NPDES Permit renewal by the due date from the Nevada County Sanitation District No. 1 (Discharger) 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.

NEVADA COUNTY SANITATION DISTRICT NO. 1 COMMENTS

Rescission of Time Schedule Order and Rescission of Cease and Desist Order.
The Discharger had no comments on the tentative Orders.

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

DISCHARGER COMMENT - p.22, C.3.a Salinity Evaluation and Minimization Plan.
The Discharger requests that the requirement for submittal of this plan be removed from the Order. The Discharger's request is based on the fact that both effluent and receiving water electrical conductivity are "substantially" lower than the lowest numeric criterion that might be used to interpret the narrative objective. The Discharger requests that the requirement for this plan be removed.

RESPONSE: Regional Water Board staff agrees that based on the low reported salinity the discharge may not have the reasonable potential to cause an in-stream excursion of the conservative screening value for salinity. However, the Regional Water Board is concerned about overall salt contributions to the Sacramento River Basin. The provision for submitting a Salinity Evaluation and Minimization Plan is necessary to assure that adequate measures are in place to minimize the discharge of salinity. This could include salt containing substances in wastewater discharged to the facility from other sources including salt containing substances used in collection system maintenance and facility processes.

DISCHARGER COMMENT. p. E-4 to E-5, Table E-3, Effluent Monitoring. The Discharger requests that annual monitoring for alpha-BHC, aldrin, and dieldrin only be required through the third year following the date of permit adoption. Alternatively, additional monitoring for these banned compounds could be obtained as part of the priority pollutant monitoring (i.e., quarterly during the third year of the permit term). The Discharger's request is based on the results of post-plant monitoring which shows that reasonable potential for these pesticides no longer exists. Furthermore, these compounds have been banned for many years and are not expected to be present in the effluent.

RESPONSE: Regional Water Board staff agrees. Recent monitoring results for 7 samples after the new facility came on line show non-detect for alpha-BHC, aldrin, and dieldrin. The monitoring and reporting program has been revised to reflect monitoring for the first three years after permit adoption through the quarterly priority pollutant monitoring. No sampling is required after the third year if the constituent is not detected in any sample above the applicable method detection limit. Should monitoring results detect these chlorinated hydrocarbon pesticides, the Order may be reopened and modified by adding an appropriate effluent limitation and monitoring.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE COMMENTS (CSPA)

CSPA requested designated party status for the board hearing on this matter. The commenter will be granted designated party status for the hearing.

CSPA COMMENT NO. 1. The proposed Permit is based on an incomplete Report of Waste Discharge (RWD) and in accordance with Federal Regulations 40 CFR 122.21(e) and (h) and 124.3(a)(2) the State's *Policy for Implementation of Toxics standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP)* and California Water Code Section 13377 the permit should not be issued until the discharge is fully characterized and a protective permit can be written. CSPA contends that the effluent discharge from the new wastewater treatment plant has not been characterized for all priority pollutants and that the Reasonable Potential Analyses from the old treatment system does not represent the capability of the new microfiltration membrane bioreactor (MBR) system.

RESPONSE: The Discharger has submitted a complete permit application for the NPDES permit renewal in compliance with State and Federal requirements (Cal EPA Form 200, U.S. EPA NPDES Form 1 and Form 2C). Regional Water Board staff used data presented in the complete permit application and more recent monitoring data submitted by the Discharger to determine reasonable potential. As specified in the Fact Sheet, sample data collected by the

Discharger after the new treatment facility came on line was used to determine reasonable potential for constituents that exhibited reasonable potential while the old treatment system was in operation. Influent to the new facility has not changed and is primarily domestic wastewater with no industrial component. The new MBR system is providing a significantly higher level of treatment than the previous treatment system and has eliminated the need for chemical additions to further reduce reasonable potential for additional constituents. After the new treatment system came on line, alum was no longer used as a coagulant and monitoring documented there is no longer reasonable potential for aluminum. The replacement of the chlorine disinfection system with a UV disinfection system has eliminated the formation of chlorine byproducts. Based on new sample data there is no longer reasonable potential in the effluent for aluminum, copper, cyanide, dichlorobromomethane, manganese, alpha-BHC, aldrin, and dieldrin.

As stated in 40 CFR § 122.21(e)(1), "The Director shall not issue a permit before receiving a complete application for a permit except for NPDES general permits. An application for a permit is complete when the Director receives an application form and any supplemental information which are completed to his or her satisfaction. The completeness of any application for a permit shall be judged independently of the status of any other permit application or permit for the same facility or activity." 40 CFR § 124.3(a)(2) states, "The Director shall not begin the processing of a permit until the applicant has fully complied with the application requirements for that permit." Regional Water Board staff concluded a complete NPDES permit application was submitted by the Discharger and together with the supplemental effluent monitoring data, the wastewater has been adequately characterized in compliance with the regulations cited above.

CSPA COMMENT NO. 2. 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). CSPA contends that a chronic toxicity limitation is required in all permits and the proposed permit does not implement SIP.

RESPONSE: Regional Water Board staff disagrees. As stated in the SIP a chronic toxicity effluent limitation is required if the discharge causes, has a reasonable potential to cause, or contributes to chronic toxicity in receiving waters. The Discharger has conducted semi-annual whole effluent toxicity testing (WET) in order to demonstrate compliance with the Basin Plan's narrative toxicity objective. No chronic toxicity or reasonable potential has been documented in the WET data and adequate WET monitoring is not available for the new facility. As stated above in the response to CSPA comment No. 1, the new treatment facility is capable of providing a higher level of treatment than the

previous treatment system. An effluent limitation (either numeric or narrative) for chronic toxicity is only required if there is reasonable potential. (40 CFR § 122.44(d)(v); SIP, § 4.) The Discharger is required to conduct semi-annual chronic toxicity testing is required in order to demonstrate continued compliance with the Basin Plan's narrative toxicity objective. The Order contains a reopener should chronic toxicity occur.

CSPA COMMENT NO. 3. The proposed Permit fails to comply with the Antidegradation Policy (Resolution 68-16) by allowing degradation of ground water without any degradation analysis or assessment of the requirements of the Policy. CSPA contends there is no supporting documentation or analysis of the requirements of the Antidegradation Policy that an allowance of degradation is best practicable treatment and control (BPTC) of the discharge or that an allowance for degradation is in the best interest of the people of California.

RESPONSE: Regional Water Board staff disagrees that an antidegradation analysis is necessary. The previous Order No. R5-2002-0095 required the Discharger to conduct a hydrogeologic assessment and a provision requiring installation and sampling of monitoring wells to determine if the discharge from the treatment and storage ponds, and the spray disposal area, impacted groundwater. The data collected from four monitoring wells over a 2-year period did not show that the existing unlined treatment/storage ponds and spray disposal caused degradation of ground water. However, the Discharger opted to abandon the pond system in favor of mechanical treatment. The new treatment facilities are contained in concrete basins. The spray disposal area is no longer used for disposal of wastewater. The three disposal ponds are no longer used for treatment of wastewater and no longer contain untreated or partially treated wastewater. The ponds only contain tertiary treated, disinfected reclaimed wastewater, consistent with Department of Public Health reclamation criteria, for habitat preservation. The existing aeration pond will only be used as a transient emergency storage basin. The potential for pollutants from treatment facility to degrade groundwater has been substantially reduced as has the potential for degradation.

CSPA COMMENT NO. 4. 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 Special Provisions, 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.

RESPONSE: Regional Water Board staff disagrees. As stated in the Fact Sheet, turbidity testing is a quick way to monitor the effectiveness of treatment filter performance, and to signal the Discharger to implement operational procedures to correct deficiencies in filter performance. 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, turbidity is not a valid indicator parameter for pathogens. Furthermore, the former turbidity limitations were not imposed to protect the receiving water from excess turbidity, and were not even related to turbidity in the receiving water. Thus, the former turbidity limitations were not technology based effluent limitations or water quality based effluent limitations for either pathogens or turbidity.

On the other hand, total coliform organisms are an indicator of the level of pathogens in the effluent. Therefore, effluent limitations for total coliform organisms are necessary to control the discharge of pathogens, and have been included in the proposed Order.

Water quality based turbidity limits are not required because the effluent does not have a reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives for turbidity. Therefore, operational requirements for turbidity are appropriately included as a Provision in the proposed Order rather than effluent limitations. The previous Order No. R5-2002-0095 included effluent limitations for turbidity. The operational turbidity requirements in the proposed Order are an equivalent permit condition that is not less stringent than the turbidity limitations in previous Order. Therefore, the removal of the turbidity effluent limitations does not constitute backsliding.

CSPA COMMENT NO. 5. The proposed Permit establishes Effluent Limitations for metals based on the hardness of the effluent as opposed to the ambient upstream receiving water hardness as required by Federal Regulations, the California Toxics Rule (CTR, 40 CFR 131.38(c)(4)) – CSPA contends that the “Regional Board fails to comply with the regulatory requirement to use the ambient instream hardness for limiting hardness dependant metals under the CTR. Use of the effluent or the effluent receiving water mix simply does not meet the definition of the actual ambient hardness of the receiving stream.”

RESPONSE: Regional Water Board staff disagrees. 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 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 CaCO₃), 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.)

Recent studies¹ indicate that using the receiving water lowest hardness for establishing water quality criteria is not 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 for some parameters the ambient hardness can be estimated using the lowest hardness value of the effluent, while for some parameters, the use of both the lowest (or highest) hardness value of the 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 is protective of the beneficial uses.

Because of the non-linearity of the Criterion equation, the relationship can be either concave downward or concave upward depending on the criterion-specific constants. For those contaminants where the regulatory criteria exhibit a concave downward relationship as a function of hardness (e.g., acute and chronic copper, chromium III, nickel, and zinc, and chronic cadmium) use of the lowest recorded effluent hardness for establishment of water quality objectives is fully protective of all beneficial uses regardless of whether the effluent or

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

receiving water hardness is higher. The lowest effluent hardness value of 55 mg/L was used to establish water quality-based effluent limitations for acute (7.97 μ /L) and chronic copper (5.6 μ /L). Since the MEC for copper was 2.9 μ /L based on seven samples after the new facility came on line, no effluent limitations are included in the proposed Order.

CSPA COMMENT NO. 6. The proposed Permit contains no Effluent Limitations for settleable solids (SS) which are present in the existing NPDES Permit contrary to the Antidegradation requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44(l)(1). The discharger contends that the failure to include Effluent Limitations for settleable solids threatens to allow violation of the settleable matter receiving water limitation and that the removal of settleable solids limitations violates the antidegradation requirements of the CWA.

RESPONSE: Based on information included in self-monitoring reports submitted by the Discharger, the effluent settleable solids concentration was non-detectable (<0.05 ml/L). Therefore, 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 settleable solids.

The previous permit, Order R5-2002-0095, included an average monthly and maximum daily effluent limitation for settleable solids of 0.1 ml/L and 0.2 ml/L, respectively. A review of the Fact Sheet from the previous Permit indicates the settleable solids limits were not water quality based. However, the regulation of settleable solids is not applicable to a tertiary treated wastewater. Settleable solids monitoring data provides information regarding the performance of a secondary system that is dependent on clarification and/or settling to meet technology-based effluent limitations. Regional Water Board staff is proposing to remove the allowance to discharge secondary treated wastewater. For tertiary treatment facilities that treat wastewater to a concentration of total suspended solid of less than 10 mg/l as a monthly average and turbidity to Title 22 standards, regulating settleable solids is not applicable. The proposed Order does not include the effluent limitations for settleable solids based on new information consistent with anti-backsliding requirements of 40 CFR 122.44(l)(2)(i)(B)(1).

The proposed Order is adequately protective. It contains a narrative receiving water limitations for settleable solids, and requires 2 times weekly effluent monitoring for total suspended solids.

CSPA COMMENT NO. 7. 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. CSPA contends that issuance, re-issuance, and modifications of NPDES permits triggers use of the antidegradation policy.

RESPONSE: Regional Water Board staff disagrees. Water Code Sections 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. In addition, the dramatic increase in the level of treatment with the new MBR treatment train produces an actual reduction in degradation over the previous permit. No antidegradation analysis is required when the Regional Water Board reasonably concludes that degradation will not occur. (Attwater memo p. 3.)

CSPA COMMENT NO. 8. 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 R5-2002-0095, 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 is rarely a problem at publicly owned treatment works (POTWs). In addition, improved levels of treatment have resulted in an overall reduction of oil and grease in wastewater treatment plant effluent that eliminates the need for any limitation. The proposed Order is adequately protective