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5 March 2009

Mr. Ken Landau, Assistant Executive Officer
Ms. Diana Messina, Sr. WRCE
Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6144

VIA: Electronic Submission
Hardcopy if Requested

RE: Tentative Waste Discharge Requirements, NPDES Permit No. CA0081621, and Tentative Cease and Desist Order for Donner Summit Public Utilities District Wastewater Treatment Plant, Nevada County

Dear Mr. Landau and Ms. Messina:

The California Sportfishing Protection Alliance (CSPA) has reviewed the proposed Waste Discharge Requirements (NPDES Permit No. CA0081621) and Cease and Desist Order for the Donner Summit Public Utilities District Wastewater Treatment Plant, and submits the following comments.

CSPA requests status as a designated party for this proceeding. CSPA is a 501(c)(3) public benefit conservation and research organization established in 1983 for the purpose of conserving, restoring, and enhancing the state's water quality and fishery resources and their aquatic ecosystems and associated riparian habitats. CSPA has actively promoted the protection of water quality and fisheries throughout California before state and federal agencies, the State Legislature and Congress and regularly participates in administrative and judicial proceedings on behalf of its members to protect, enhance, and restore California's degraded water quality and fisheries. CSPA members reside, boat, fish and recreate in and along waterways throughout the Central Valley, including Nevada County.

**1. The technical basis for the proposed Permit limitations is elusive and does not contain the principal facts regarding the design capabilities of the treatment system as required by Federal regulation 40 CFR 124.8. The limitations do not appear to be based on the design flow of the wastewater treatment plant as required by Federal regulation40 CFR 122.45.**

The Federal Regulations, at 40 CFR 122.45 (b), require that POTW effluent limitations, standards, or prohibitions be based on design flow. The Findings and Fact Sheet do not contain sufficient information to determine the design parameters of the wastewater treatment system or that the limitations are actually based on design flow.

The Donner Summit service area is dominated by winter skiing land uses. The proposed Permit confirms in the Findings "The varying influent flows are accompanied by varying organic loads to the system due to the fluctuation of occupancy at the ski resorts within the service area. The higher influent flows and organic loadings occur during low temperature time periods…" The proposed Permit then states however that: "This Order prohibits a discharge greater than the existing regulated flow, based on an average dry weather flow, however, does not restrict the Discharger from serving new customers with its existing capacity." Footnote No. 1 to Table 6 of the proposed Permit also confirms that the average dry weather flow was utilized to calculate the mass limitations for BOD and TSS.

Traditional wastewater treatment plant design utilizes average dry weather flow rates for organic, individual constituent, loading rates. However, the 2004 10-States Standards, *Recommended Standards for Wastewater Facilities,* requires that "…the design average BOD for facilities having critical seasonal high loading periods (e.g., recreational areas, campuses, industrial areas) shall be based on the daily average BOD during the seasonal period." And, "The design peak hourly BOD is the largest amount of organic load to be received during a one hour period expressed as weight per day." The oxygen requirements of an activated sludge treatment system are designed utilizing the maximum diurnal organic loading (design peak hourly BOD).

Therefore, it would be inappropriate for the Donner Summit wastewater treatment plant to have been designed utilizing the average dry weather flow organic loading rate. The allowance to increase flow rates based on the average dry weather flow may result in organically overloading the treatment capabilities of the plant.

This also brings into question the mass based Effluent Limitations for BOD and TSS which were based on the average dry weather flow rate, instead of the actual plant design as is required by 40 CFR 122.45. The use of the actual design flow of the WWTP will result in numerically greater mass limitations for BODS and TSS; however the compliance assessment must also be modified to the actual design terms for the organic loading rate.

It must also be noted that the aeration requirements necessary to achieve adequate nitrification will be significantly impacted based on the design loading on the wastewater treatment plant, since achieving and maintaining nitrification has been a significant compliance issue at the Donner Summit plant. In discussing nitrification and denitrification the proposed Permit is silent on the aeration design capabilities, based on the actual WWTP design, to reliably achieve nitrification and whether denitrification has been included in the design.

The proposed Permit Fact Sheet does not adequately contain the principal facts regarding the design flows and the capabilities of the system, which were utilized to develop the limitations and prohibitions. The average dry weather flow rate, which was utilized to develop the mass limitations for BOD and TSS and to determine whether the facility has additional capacity to accommodate growth, is likely the incorrect design parameter for the Donner Summit facility. Utilizing the dry weather flow rates for an allowance to add additional wastewater service connections could result in overloading the system resulting in violations. The proposed Permit Fact Sheet must be amended to discuss the principal facts regarding the design and capabilities of the treatment system.

**2. The proposed Permit contains an allowance for a mixing zone that does not comply with the requirements of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP), the Basin Plan, the Antidegradation Policy (Resolution 68-16) and the California Constitution.**

The proposed Permit requires that: "b. Cross-Stream Diffuser**.** This Order requires the Discharger to replace its existing side-stream rock diffuser with a new cross-stream diffuser designed to rapidly and completely mix the effluent and the receiving water. The existing outfall location does not create completely mixed effluent discharge conditions. Rapid and complete mixing of effluent within the receiving water mitigates areas of higher pollutant concentrations where the mixing of receiving water and effluent is not occurring. This Provision includes requirements for the Discharger to develop and submit a project Work Plan" and "c. Mixing Zone Study**.** Within 6 Months of the adoption date of this Order, the Discharger shall submit to the Regional Water Board a work plan for conducting a mixing zone study once the cross-stream diffuser is operational. Within 12 Months after installation of the cross-stream diffuser, the Discharger shall conduct and submit to the Regional Water Board a mixing zone study to determine the resulting boundaries of a mixing zone corresponding with the cross-stream diffuser once it is operational." (Emphasis added)

Despite these Findings the proposed Permit, Fact Sheet pages F-17 and 18, state in part that: "Dilution and flow information contained in the Report of Waste Discharge is the basis of the dilution credit of 24.5 for dichlorobromomethane and 1.8:1 for nitrate. Actual monitoring data demonstrates that a dilution credit of 1.8:1 is protective of the receiving water. The Discharger is required by this Order to construct and cross-stream diffuser and perform a mixing zone study once the new diffuser is operational. At that time, new mixing zone boundaries will be established. For other parameters, the worst-case dilution is assumed to be zero to provide protection for the receiving water beneficial uses. The impact of assuming zero dilution/assimilative capacity within the receiving water is that the discharge limitations are end-of-pipe limits with no allowance for dilution within the receiving water." (Emphasis added)

In a Draft Order, SWRCB/OCC File A-1846 (a) and A-1846 (b), regarding a petition of the City of Tracy's NPDES permit, the SWRCB states that: "The record indicates that the discharge into Old River is incompletely mixed. When a Discharge is not complete mixed, then mixing zones and dilution credits may only be granted based on site-specific data and special studies. These are not in the record. As a result, we will remand the permit for calculation of appropriate effluent limitations for the human health criteria for dichlorobromomethane and chlorodibromomethane, to be based either on no dilution credit or the results of an appropriate study." While this is only a Draft Order, it is based on the requirements of the State's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (SIP), Section 1.4.2.2, which contains requirements for a mixing zone study which must be analyzed before a mixing zone is allowed for a wastewater discharge. A "completely mixed discharge" is defined by the SIP, Appendix 1-1, when a pollutant concentration is less than 5% different across a transect of the waterbody at a point within two stream/river widths from the point of discharge. The SIP, Section 1.4.2, requires that for incompletely mixed discharges; mixing zones will only be considered following the completion of a mixing zone

study by the Discharger. The SIP only allows the granting of a dilution credit using Table 3 parameters, such as the harmonic mean flow, only if the Discharger demonstrates that the discharge is completely mixed. For any incomplete mixed discharge dilution credits can only be based on a mixing zone analysis, which has not been completed at Donner Summit. The proposed Permit confirms in numerous citations that the discharge at Donner Summit is not completely mixed; therefore a mixing zone cannot be granted absent a complete mixing zone analysis.

The proposed Permit must be amended to eliminate the allowance for mixing zones for dichlorobromomethane and nitrate.

There is no Antidegradation Policy discussion for the allowance of mixing zones in the proposed Permit. Federal Antidegradation regulations at 40 CFR 131.12 require that states protect waters at their present level of quality and that all beneficial uses remain protected. The corresponding State Antidegradation Policy, Resolution 68-16, requires that any degradation of water quality not unreasonably affect present and anticipated beneficial uses. Resolution 68-16 further requires that: "Any activity which produces or may produce or increase volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with the maximum benefit to the people of the State will be maintained."

Pollution is defined in the California Water Code as an alteration of water quality to a degree that unreasonably affects beneficial uses. In California, Water Quality Control Plans (Basin Plans) contain water quality standards and objectives, which are necessary to protect beneficial uses. The Basin Plan for California's Central Valley Regional Water Board states that: "According to Section 13050 of the California Water Code, Basin Plans consist of a designation or establishment for the waters within a specified area of beneficial uses to be protected, water quality objectives to protect those uses, and a program of implementation needed for achieving the objectives. State law also requires that Basin Plans conform to the policies set forth in the Water Code beginning with Section 13000 and any state policy for water quality control. Since beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plans are regulatory references for meeting the state and federal requirements for water quality control (40 CFR 131.20)." Nuisance is defined in the California Water Code as anything that is injurious to health, indecent, offensive or an obstruction of the free use of property, which affects an entire community and occurs as a result of the treatment or disposal of waste.

The Antidegradation Policy (Resolution 68-16) allows water quality to be lowered as long as beneficial uses are protected (pollution or nuisance will not occur), best practicable treatment and control (BPTC) of the discharge is provided, and the degradation is in the best interest of the people of California. Water quality objectives were developed as the maximum concentration of a pollutant necessary to protect beneficial uses and levels above this concentration would be considered pollution. The Antidegradation Policy does not allow water quality standards and objectives to be exceeded. Mixing zone are regions within public waters adjacent to point source

discharges where pollutants are diluted and dispersed at concentrations that routinely exceed water quality standards.

The Antidegradation Policy (Resolution 68-16) requires that best practicable treatment or control (BPTC) of the discharge be provided. Mixing zones have been allowed in lieu of treatment to meet water quality standards at the end-of-the-pipe prior to discharge. To comply with the Antidegradation Policy, the trade of receiving water beneficial uses for lower utility rates must be in the best interest of the people of the state and must also pass the test that the Discharger is providing BPTC. By routinely permitting excessive levels of pollutants to be legally discharged, mixing zones act as an economic disincentive to Dischargers who might otherwise have to design and implement better treatment mechanisms. Although the use of mixing zones may lead to individual, short-term cost savings for the discharger, significant long-term health and economic costs may be placed on the rest of society. An assessment of BPTC, and therefore compliance with the Antidegradation Policy, must assess whether treatment of the wastestream can be accomplished, is feasible, and not simply the additional costs of compliance with water quality standards. A BPTC case can be made for the benefits of prohibiting mixing zones and requiring technologies that provide superior waste treatment and reuse of the wastestream.

The *CALIFORNIA CONSTITUTION, ARTICLE 10, WATER, SEC. 2* states that: "It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion of water. Riparian rights in a stream or water course attach to, but to no more than so much of the flow thereof as may be required or used consistently with this section, for the purposes for which such lands are, or may be made adaptable, in view of such reasonable and beneficial uses; provided, however, that nothing herein contained shall be construed as depriving any riparian owner of the reasonable use of water of the stream to which the owner's land is riparian under reasonable methods of diversion and use, or as depriving any appropriator of water to which the appropriator is lawfully entitled. This section shall be self-executing, and the Legislature may also enact laws in the furtherance of the policy in this section contained." The granting of a mixing zone is an unreasonable use of water when proper treatment of the wastestream can be accomplished to meet end-of-pipe limitations. Also contrary to the California Constitution, a mixing zone does not *serve the beneficial use;* to the contrary, beneficial uses are degraded within the mixing zone.

**3. The proposed Permit does not contain a protective Effluent Limitation for nitrate in violation of Federal Regulations 40 CFR 122.44 and the Antidegradation Policy.**

The proposed Permit is for a domestic wastewater treatment plant. Domestic wastewater treatment plants, by their nature, receive ammonia in concentrations ranging from 30 mg/l to 60 mg/l. The proposed Permit, Finding No. B, states that: "The Facility is operated to treat the

varying influent flows during the winter ski season and the infiltration and inflow for spring time snow melt. The varying influent flows are accompanied by varying organic loads to the system due to the fluctuation of occupancy at the ski resorts within the service area. The higher influent flows and organic loadings occur during low temperature time periods when the metabolic rate of the biological organisms that treat the wastewater for ammonia removal (nitrification and denitrification). The higher organic loading rate provides the necessary "food" for the organisms within the biological treatment system to stabilize the biological oxygen demand and nitrify/denitrify the wastewater. During periods of low organic loading due to low tourism within the service area, ammonia is added to the wastewater to maintain the appropriate food-to-microorganism ratio necessary for the nitrification and denitrification process."

Nitrification is a process that converts ammonia to nitrate. The denitrification process eliminates nitrate. As cited above, the proposed permit clearly states that the wastewater treatment plant nitrifies and denitrifies. Nitrification and denitrification are common treatment technologies and can be considered best practicable treatment and control (BPTC) of wastewater discharges. The application of BPTC is required by the Board's Antidegradation Policy (Resolution 68-16).

Federal Regulations, 40 CFR 122.44(d), requires that limits must be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality standards. US EPA has interpreted 40 CFR 122.44(d) in *Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program* (Factsheets and Outreach Materials, 08/16/2002) that although States will likely have unique implementation policies there are certain tenets that may not be waived by State procedures. These tenets include that "where the preponderance of evidence clearly indicates the potential to cause or contribute to an exceedance of State water quality standards (even though the data may be sparse or absent) a limit MUST be included in the permit."

Municipal and domestic are documented beneficial uses of the receiving stream as is stated in the proposed Permit. The proposed permit also includes a Receiving Water Limitation for biostimulatory substances based on a Basin Plan water quality objective. In accordance with 40 CFR 122.44 the proposed Permit must contain an Effluent Limitation for nitrate that is protective of the beneficial uses of the receiving stream. The drinking water maximum contaminant level (MCL), a Basin Plan chemical Constituents objective, for nitrate is 10 mg/l (as N). The proposed Permit's Receiving Water Limitation for biostimulatory substances states that the discharge shall not cause: "Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses." Nitrate is a biostimulatory substance. According to the proposed Permit, in late spring 2008, the Regional Water Board received reports showing visible algal growth in the South Yuba River, primarily downstream of the Facility discharge. Regional Water Board staff, and the Discharger's consultants confirmed these growths. Sampling for biostimulatory substances in the effluent discharge and in the receiving water was conducted by the Regional Water Board staff and found concentrations of nitrogen compounds and phosphorus.

The proposed Permit requires that: "f. Biostimulatory Substances Study**.** This Order requires the Discharger to conduct studies of the discharge and receiving water to evaluate the impact of the discharge on aquatic growths. Based upon the results of the initial studies, the Discharger will be

required to conduct a study on feasible alternatives to eliminate or reduce any impacts. This Order may be reopened to address biostimulatory issues, which could include imposition of new or more stringent effluent limitations, or other limitations on the manner and location of discharge to the receiving water." Nitrogen and phosphorus are the principal biostimulatory substances.

Properly designed and operated wastewater treatment plants are capable of providing nitrification and denitrification to levels that are below the drinking water MCL and do not unreasonably contribute to biostimulation of aquatic plants. As cited above, the proposed Permit states that the wastewater treatment plant nitrifies and denitrifies. Despite this citation, the proposed Permit contains an Effluent Limitation for nitrate of 18 mg/l and 78 pounds per day: a level above the MCL and which will contribute to biostimulation. Table F-2 of the proposed Permit shows that nitrate has been discharged at concentration up to 80 mg/l.

As is also stated in the proposed Permit and cited above, additional ammonia is intentionally added to the wastestream increasing the ultimate nitrogen load to the system and hence to the receiving stream if the system does not adequately nitrify and denitrify. The proposed Permit states that this is due to a dilute wastewater influent flow. There are other means available for treating dilute influent wastewater other than the addition of ammonia. First and foremost, the proposed Permit states that the nitrification issues are due to dilute influent; yet is silent with regard to a corrective action program to eliminate leaking sewer lines; inflow and infiltration (I/I) correction. The proposed Permit should be amended to require an I/I correction program to eliminate the need for extreme measure to deal with the dilute influent.

Properly designed and operated denitrification processes are capable of eliminating nitrate levels to well below the drinking water MCL of 10 mg/l. Nitrate limitations of 10 mg/l in NPDES permit adopted by the Central Valley Regional Board are commonplace. Based on the proposed Effluent Limitation for nitrate; the Discharger is not be required to fully denitrify the wastestream. There is no Antidegradation Policy discussion of why BPTC, full denitrification of the wastestream, is not being required in the proposed Permit. The proposed permit failure to require full denitrification and allowing a discharge of nitrate at 18 mg/l exceeds the drinking water MCL, contributes significantly to biostimulation of the receiving stream contrary to the Receiving Water Limitations, is not BPTC.

**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).**

Under the Clean Water Act (CWA), point source dischargers are required to obtain federal discharge (NPDES) permits and to comply with water quality based effluent limits (WQBELs) in NPDES permits sufficient to make progress toward the achievement of water quality standards or goals. The antibacksliding and antidegradation rules clearly spell out the interest of Congress in achieving the CWA's goal of continued progress toward eliminating all pollutant discharges. Congress clearly chose an overriding environmental interest in clean water through discharge reduction, imposition of technological controls, and adoption of a rule against relaxation of limitations once they are established.

Upon permit reissuance, modification, or renewal, a discharger may seek a relaxation of permit limitations. However, according to the CWA, relaxation of a WQBEL is permissible only if the requirements of the antibacksliding rule are met. The antibacksliding regulations prohibit EPA from reissuing NPDES permits containing interim effluent limitations, standards or conditions less stringent than the final limits contained in the previous permit, with limited exceptions. These regulations also prohibit, with some exceptions, the reissuance of permits originally based on best professional judgment (BPJ) to incorporate the effluent guidelines promulgated under CWA §304(b), which would result in limits less stringent than those in the previous BPJ-based permit. Congress statutorily ratified the general prohibition against backsliding by enacting §§402(o) and 303(d)(4) under the 1987 Amendments to the CWA. The amendments preserve present pollution control levels achieved by dischargers by prohibiting the adoption of less stringent effluent limitations than those already contained in their discharge permits, except in certain narrowly defined circumstances.

When attempting to backslide from WQBELs under either the antidegradation rule or an exception to the antibacksliding rule, relaxed permit limits must not result in a violation of applicable water quality standards. The general prohibition against backsliding found in §402(o)(1) of the Act contains several exceptions. Specifically, under §402(o)(2), a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant *if*: (A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation; (B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B) of this section; (C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy [(e.g., Acts of God)]; (D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) of this title; or (E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit, and has properly operated and maintained the facilities, but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

Even if a discharger can meet either the requirements of the antidegradation rule under §303(d)(4) or one of the statutory exceptions listed in §402(o)(2), there are still limitations as to how far a permit may be allowed to backslide. Section 402(o)(3) acts as a floor to restrict the extent to which BPJ and water quality-based permit limitations may be relaxed under the antibacksliding rule. Under this subsection, even if EPA allows a permit to backslide from its previous permit requirements, EPA may never allow the reissued permit to contain effluent limitations which are less stringent than the current effluent limitation guidelines for that pollutant, or which would cause the receiving waters to violate the applicable state water quality standard adopted under the authority of §303.49.

Federal regulations 40 CFR 122.44 (l)(1) have been adopted to implement the antibacksliding requirements of the CWA:

> (l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under Sec. 122.62.)
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> (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.
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> (i) Exceptions--A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if:
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> (A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;
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> (B)(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b);
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> (C) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;
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> (D) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or
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> (E) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

> (ii) Limitations. In no event may a permit with respect to which paragraph (l)(2) of this section applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 303 applicable to such waters.

The proposed Permit Fact Sheet discusses Pathogens and states that the previous Order established Effluent Limitations for turbidity. Turbidity limitations are maintained in the proposed Permit but have been moved to "Special Provisions", they are no longer Effluent Limitations. The Fact Sheet Pathogen discussion states that infectious agents in sewage are bacteria, parasites and viruses and that tertiary treatment is necessary to effectively remove these agents. This discussion also states that turbidity limitations were originally established: "…to ensure that the treatment system was functioning properly and could meet the limits for total coliform organisms. This discussion is incorrect. First, coliform organism limitations are also an indicator parameter of the effectiveness of tertiary treatment. The coliform limitations in the proposed and past Permit are significantly lower than the Basin Plan Water Quality Objective and are based on the level of treatment recommended by the California Department of Public Health (DPH). Second, both the coliform limitations and turbidity are recommended by DPH as necessary to protect recreational and irrigated agricultural beneficial uses of the receiving water. Turbidity has no lesser standing than coliform organisms in the DPH recommendation. Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. There are no limitations for viruses and parasites in the proposed Permit, which the Regional Board has indicated are necessary to protect the contact recreation and irrigated agricultural uses of the receiving water. Both coliform and turbidity limitations are treatment effectiveness indicators that the levels of bacteria viruses and parasites are adequately removed to protect the beneficial uses. Special Provisions are not Effluent Limitations as required by the Federal Regulations. The turbidity Effluent Limitations must be restored in accordance with the Clean Water Act and Federal regulations 40 CFR 122.44 (l)(1).

The only rational that can explain moving the turbidity from Effluent Limitations to Provisions is to protect Dischargers from mandatory minimum penalties as prescribed by the California Water Code, Section 13385. The Regional Board has consistently failed to provide any other rationale for moving the limitations. It is doubtful that it was intent of the legislature in adopting the mandatory penalty provisions to have the Regional Boards delete Effluent Limitations from permit to avoid penalties.

**5. The proposed Permit does not contain enforceable Effluent Limitations for chronic toxicity and therefore does not comply with the Basin Plan, 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).**

Proposed Permit, State Implementation Policy states that: **"**On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP."

The SIP, Section 4, Toxicity Control Provisions, Water Quality-Based Toxicity Control, states that: "A chronic toxicity effluent limitation is required in permits for all dischargers that will cause, have a reasonable potential to cause, or contribute to chronic toxicity in receiving waters." The SIP is a state *Policy* and CWC Sections 13146 and 13247 require that the Board in carrying out activities which affect water quality shall comply with state policy for water quality control unless otherwise directed by statute, in which case they shall indicate to the State Board in writing their authority for not complying with such policy.

Federal regulations, at 40 CFR 122.44 (d)(1)(i), require that limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including state narrative criteria for water quality. There has been no argument that domestic sewage contains toxic substances and presents a reasonable potential to cause toxicity if not properly treated and discharged. The Water Quality Control Plan for the Sacramento/ San Joaquin River Basins (Basin Plan), Water Quality Objectives (Page III-8.00) for Toxicity is a narrative criteria which states that all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. The Proposed Permit contains a narrative Effluent Limitation prohibiting the discharge of chronically toxic substances: however a *Compliance Determination* has been added to the proposed Permit: "Compliance with the accelerated monitoring and TRE/TIE provisions of Provision VI.C.2.a shall constitute compliance with effluent limitations contained in sections IV.A.1.d and IV.B.1.d of this Order for chronic whole effluent toxicity ". The *Compliance Determination* nullifies the Effluent Limitation and makes toxic discharges unenforceable.

The proposed Permit requires that: "2. Special Studies, Technical Reports and Additional Monitoring Requirements Chronic Whole Effluent Toxicity**.** For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity testing, as specified in the Monitoring and Reporting Program."

The Basin Plan narrative Toxicity Objective states that: "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances. Compliance with this objective

will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Board."

According to the Basin Plan toxicity sampling is required to determine compliance with the requirement that all waters be maintained free of toxic substances. Sampling does not equate with or ensure that waters are free of toxic substances. The Tentative Permit requires the Discharger to conduct an investigation of the possible sources of toxicity if a threshold is exceeded. This language is not a limitation and essentially eviscerates the Regional Board's authority, and the authority granted to third parties under the Clean Water Act, to find the Discharger in violation for discharging chronically toxic constituents. An enforceable effluent limitation for chronic toxicity must be included in the Order.

**6. The proposed Permit fails to require groundwater monitoring which is necessary to assure compliance with the Groundwater Limitations and to qualify for exemption from CCR Title 27 and assure compliance with the Antidegradation Policy.**

The proposed permit contains Groundwater Limitations which require that: "Release of waste constituents from any storage, treatment, or disposal component associated with the WWTP, in combination with other sources, shall not cause the underlying groundwater to contain waste constituents in concentrations greater than background water quality." The Discharger extensively utilizes land irrigation for wastewater disposal. Although not detailed in the proposed Permit, it is reasonable based on the local topography to assume that the soils are relatively shallow overlying noncontiguous bedrock. The discharge of wastewater utilizing percolation presents a reasonable potential for wastewater to migrate to underlying groundwater. It is also reasonable to assume that, if the underlying geography is fractured bedrock, the undiluted wastewater will migrate through the fractures to potentially high quality groundwater for which beneficial uses are designated in the Basin Plan. It is therefore also reasonable to assume that this percolating wastewater will degrade groundwater quality and therefore degrade or significantly impact the beneficial uses. Groundwater monitoring to determine the impacts of percolating wastewater is required in order for the Regional Board to make a determination that groundwater has not been degraded and/or polluted. A determination that groundwater has not been degraded and/or polluted by the percolating wastewater is required to quality for exemption from California Code of Regulations Title 27 and to conclude that the discharge has not degraded high quality groundwater as mandated by the Antidegradation Policy.

**7. 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)).**

Federal Regulation 40 CFR 131.38(c)(4) states that: "For purposes of calculating freshwater aquatic life criteria for metals from the equations in paragraph (b)(2) of this section, for waters with a hardness of 400 mg/l or less as calcium carbonate, the actual ambient hardness of the surface water shall be used in those equations." (Emphasis added). The proposed Permit states that the effluent hardness and the downstream hardness were used to calculate Effluent

Limitations for metals. The definition of *ambient* is "in the surrounding area", "encompassing on all sides". It has been the Region 5, Sacramento, NPDES Section, in referring to Basin Plan objectives for temperature, to define *ambient* as meaning upstream. It is reasonable to assume, after considering the definition of ambient, that EPA is referring to the hardness of the receiving stream before it is potentially impacted by an effluent discharge. It is also reasonable to make this assumption based on past interpretations and since EPA, in permit writers' guidance and other reference documents, generally assumes receiving streams have dilution, which would ultimately "encompass" the discharge. Ambient conditions are in-stream conditions unimpacted by the discharge.

The Federal Register, Volume 65, No. 97/Thursday, May 18th 2000 (31692), adopting the California Toxics Rule in confirming that the ambient hardness is the upstream hardness, absent the wastewater discharge, states that: "A hardness equation is most accurate when the relationship between hardness and the other important inorganic constituents, notably alkalinity and pH, are nearly identical in all of the dilution waters used in the toxicity tests and in the surface waters to which the equation is to be applied. If an effluent raises hardness but not alkalinity and/or pH, using the lower hardness of the downstream hardness might provide a lower level of protection than intended by the 1985 guidelines. If it appears that an effluent causes hardness to be inconsistent with alkalinity and/or pH the intended level of protection will usually be maintained or exceeded if either (1) data are available to demonstrate that alkalinity and/or pH do not affect the toxicity of the metal, or (2) the hardness used in the hardness equation is the hardness of upstream water that does not include the effluent. The level of protection intended by the 1985 guidelines can also be provided by using the WER procedure."

The proposed Permit goes into great detail citing the Federal Regulation requiring the receiving water hardness be used to establish Effluent Limitations. The result of using a higher effluent or downstream hardness value is that metals are toxic at higher concentrations, discharges have less reasonable potential to exceed water quality standards and the resulting Permits have fewer Effluent Limitations. The comparative Effluent Limitation values presented to defend the unsupported statements regarding which is more protective. Once again the public is subject to a bureaucrat "knowing better" and simply choosing to ignore very clear regulatory requirements. The Regional Board staff have chosen to deliberately ignore Federal Regulations placing themselves above the law. There are procedures for changing regulations if peer reviewed science indicates the need to do so, none of which have been followed. The proposed Permit failure to include Effluent Limitations for metals based on the actual ambient hardness of the surface water is contrary to the cited Federal Regulation and must be amended to comply with the cited regulatory requirement.

The most typical wastewater discharge situation is where the receiving water hardness is lower than the effluent hardness. Metals are more toxic in lower hardness water. Therefore in this case it must follow those metals would be more toxic in the receiving water than in the effluent. For example, if the receiving water hardness is 25 mg/l and the effluent hardness is 50 mg/l a corresponding chronic discharge limitation for copper based on the different hardness's would be 2.9 ug/l and 5.2 ug/l, respectively. Obviously, the limitation based on the ambient receiving water hardness is more restrictive. For this case however the Regional Board's argues that the higher effluent hardness or the downstream hardness is protective of all beneficial uses. Since

the limitation based on the upstream ambient hardness is more restrictive; the Regional Board's argument can only be made if in-stream mixing is considered. Mixing zones may be granted in accordance with extensive requirements contained in the SIP and the Basin Plan to establish Effluent Limitations. Mixing zones cannot be considered in conducting a reasonable potential analysis to determine whether a constituent will exceed a water quality standard or objective. The Regional Board's approach in using the effluent or downstream hardness to conduct a reasonable potential analysis and consequently establish effluent limitations can only be utilized if mixing is considered; otherwise the ambient (upstream) hardness results in significantly more restrictive limitations. A mixing zone allowance has not been discussed with regard to this issue and therefore does not comply with the SIP. Verification of the Regional Boards use of "mixing" in implementing their procedure can be found in text of Finding No. 4. The issue is 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.

**8. The proposed Permit fails to include an Effluent Limitation for Carbon Tetrachloride as required by Federal Regulations 40 CFR 122.44 and the permit should not be adopted in accordance with California Water Code Section 13377.**

Federal Regulations, 40 CFR 122.44 (d)(i), requires that; "Limitations must 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." The CTR Water Quality Standard for carbon tetrachloride is 0.25 µg/l. The wastewater discharge maximum observed concentration of carbon tetrachloride was 0.30 ug/l. Clearly the discharge exceeds the water quality objective. The proposed Order fails to establish an effluent limitation for carbon tetrachloride. In accordance with the SIP, Section 1.3, since the maximum effluent concentration exceeded the water quality standard, an effluent limitation is required.

Federal Regulations, 40 CFR 122.44(d), requires that limits must be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality standards. US EPA has interpreted 40 CFR 122.44(d) in *Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program* (Factsheets and Outreach Materials, 08/16/2002) that; although States will likely have unique implementation policies there are certain tenets that may not be waived by State procedures. These tenets include that "where valid, reliable, and representative effluent data or instream background data are available they MUST be used in applicable reasonable potential and limits derivation calculations. Data may not be arbitrarily discarded or ignored." The Regional Board has failed to use valid, reliable and representative data in developing limitations, contrary to the cited Federal Regulation.

The *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries Of California* (SIP), Section 1.2 requires that: "When implementing the provisions of this Policy, the RWQCB shall use all available, valid, relevant, representative data and

information, as determined by the RWQCB. The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy. Instances where such consideration is warranted include, but are not limited to, the following: evidence that a sample has been erroneously reported or is not representative of effluent or ambient receiving water quality; questionable quality control/quality assurance practices; and varying seasonal conditions."

The Regional Board states that carbon tetrachloride was only observed in one out of four samples and therefore is not including a limitation. The Regional Board ignores the fact that one out of four represents 25% of the samples collected. The Regional Board has required a significantly limited sampling requirement; only four samples have been collected to characterize the wastewater discharge; yet randomly ignore 25% of the small set of data. US EPA has interpreted 40 CFR 122.44(d) in *Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program* (Factsheets and Outreach Materials, 08/16/2002) that although States will likely have unique implementation policies there are certain tenets that may not be waived by State procedures. These tenets include that "where calculations indicate reasonable potential, a specific numeric limit MUST be included in the permit. Additional "studies" or data collection efforts may not be substituted for enforceable permit limits where "reasonable potential" has been determined."

California Water Code, section 13377, requires that: "Notwithstanding any other provision of this division, the state board and the regional boards shall, as required or authorized by the Federal Water Pollution Control Act, as amended, issue waste discharge and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance." The proposed Permit must be amended to include an Effluent Limitation for Carbon Tetrachloride.

**9. The proposed Permit fails to include an Effluent Limitation for Chromium VI as required by Federal Regulations 40 CFR 122.44 and the permit should not be adopted in accordance with California Water Code Section 13377.**

Federal Regulations, 40 CFR 122.44 (d)(i), requires that; "Limitations must 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." The CTR includes maximum 1-hour average and 4-day average total recoverable chromium VI concentrations of 16 _g/L and 11 _g/L, respectively, for the protection of freshwater aquatic life. The maximum observed effluent chromium VI concentration was detected once out of four samples at a concentration of 20 _g/L collected in June 2006. Three other samples were all non-detectable. Clearly the discharge exceeds the water quality objective. The proposed Order fails to establish an effluent limitation for Chromium VI. In accordance with the SIP, Section 1.3, since the maximum effluent concentration exceeded the water quality standard, an effluent limitation is required. The proposed Permit goes into great detail of the industrial sources of chromium VI, yet fails to acknowledge that naturally occurring

chromium VI has been widely detected and confirmed in groundwater by the University of California at Davis.

Federal Regulations, 40 CFR 122.44(d), requires that limits must be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality standards. US EPA has interpreted 40 CFR 122.44(d) in *Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program* (Factsheets and Outreach Materials, 08/16/2002) that; although States will likely have unique implementation policies there are certain tenets that may not be waived by State procedures. These tenets include that "where valid, reliable, and representative effluent data or instream background data are available they MUST be used in applicable reasonable potential and limits derivation calculations. Data may not be arbitrarily discarded or ignored." The Regional Board has failed to use valid, reliable and representative data in developing limitations, contrary to the cited Federal Regulation.

The *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries Of California* (SIP), Section 1.2 requires that: "When implementing the provisions of this Policy, the RWQCB shall use all available, valid, relevant, representative data and information, as determined by the RWQCB. The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy. Instances where such consideration is warranted include, but are not limited to, the following: evidence that a sample has been erroneously reported or is not representative of effluent or ambient receiving water quality; questionable quality control/quality assurance practices; and varying seasonal conditions."

The Regional Board states that Chromium VI was only observed in one out of four samples and therefore is not including a limitation. The Regional Board ignores the fact that one out of four represents 25% of the samples collected. The Regional Board has required a significantly limited sampling requirement; only four samples have been collected to characterize the wastewater discharge; yet randomly ignore 25% of the small set of data. US EPA has interpreted 40 CFR 122.44(d) in *Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program* (Factsheets and Outreach Materials, 08/16/2002) that although States will likely have unique implementation policies there are certain tenets that may not be waived by State procedures. These tenets include that "where calculations indicate reasonable potential, a specific numeric limit MUST be included in the permit. Additional "studies" or data collection efforts may not be substituted for enforceable permit limits where "reasonable potential" has been determined."

California Water Code, section 13377, requires that: "Notwithstanding any other provision of this division, the state board and the regional boards shall, as required or authorized by the Federal Water Pollution Control Act, as amended, issue waste discharge and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance." The proposed Permit must be amended to include an Effluent Limitation for Chromium VI.

**10. Effluent Limitations for specific conductivity (EC) and manganese are improperly regulated as an annual average contrary to Federal Regulations 40 CFR 122.45 (d)(2) and common sense.**

Federal Regulation 40 CFR 122.45 (d)(2) requires that permit for POTWs establish Effluent Limitations as average weekly and average monthly unless impracticable. The proposed Permit establishes Effluent Limitations for EC and manganese as an annual average contrary to the cited Federal Regulation. Establishing the Effluent Limitations for EC and manganese in accordance with the Federal Regulation is not impracticable; to the contrary the Central Valley Regional Board has a long history of having done so. Proof of impracticability is properly a steep slope and the Regional Board has not presented any evidence that properly and legally limiting EC and manganese is impracticable.

**11. The proposed Permit contains no Effluent Limitations for settleable solids (SS) which are present in the existing NPDES Permit contrary to the Antibacksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (l)(1).**

Under the Clean Water Act (CWA), point source dischargers are required to obtain federal discharge (NPDES) permits and to comply with water quality based effluent limits (WQBELs) in NPDES permits sufficient to make progress toward the achievement of water quality standards or goals. The antibacksliding and antidegradation rules clearly spell out the interest of Congress in achieving the CWA's goal of continued progress toward eliminating all pollutant discharges. Congress clearly chose an overriding environmental interest in clean water through discharge reduction, imposition of technological controls, and adoption of a rule against relaxation of limitations once they are established.

Upon permit reissuance, modification, or renewal, a discharger may seek a relaxation of permit limitations. However, according to the CWA, relaxation of a WQBEL is permissible only if the requirements of the antibacksliding rule are met. The antibacksliding regulations prohibit EPA from reissuing NPDES permits containing interim effluent limitations, standards or conditions less stringent than the final limits contained in the previous permit, with limited exceptions. These regulations also prohibit, with some exceptions, the reissuance of permits originally based on best professional judgment (BPJ) to incorporate the effluent guidelines promulgated under CWA §304(b), which would result in limits less stringent than those in the previous BPJ-based permit. Congress statutorily ratified the general prohibition against backsliding by enacting §§402(o) and 303(d)(4) under the 1987 Amendments to the CWA. The amendments preserve present pollution control levels achieved by dischargers by prohibiting the adoption of less stringent effluent limitations than those already contained in their discharge permits, except in certain narrowly defined circumstances.

When attempting to backslide from WQBELs under either the antidegradation rule or an exception to the antibacksliding rule, relaxed permit limits must not result in a violation of applicable water quality standards. The general prohibition against backsliding found in §402(o)(1) of the Act contains several exceptions. Specifically, under §402(o)(2), a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a

pollutant *if*: (A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation; (B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B) of this section; (C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy [(e.g., Acts of God)]; (D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) of this title; or (E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit, and has properly operated and maintained the facilities, but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

Even if a discharger can meet either the requirements of the antidegradation rule under §303(d)(4) or one of the statutory exceptions listed in §402(o)(2), there are still limitations as to how far a permit may be allowed to backslide. Section 402(o)(3) acts as a floor to restrict the extent to which BPJ and water quality-based permit limitations may be relaxed under the antibacksliding rule. Under this subsection, even if EPA allows a permit to backslide from its previous permit requirements, EPA may never allow the reissued permit to contain effluent limitations which are less stringent than the current effluent limitation guidelines for that pollutant, or which would cause the receiving waters to violate the applicable state water quality standard adopted under the authority of §303.49.

Federal regulations 40 CFR 122.44 (l)(1) have been adopted to implement the antibacksliding requirements of the CWA:

> (l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under Sec. 122.62.)
>
> (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.
>
> > (i) Exceptions--A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if:

(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;
(B)(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b);
(C) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;
(D) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or
(E) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

(ii) Limitations. In no event may a permit with respect to which paragraph (l)(2) of this section applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 303 applicable to such waters.

The existing NPDES permit (R5-200-) for this facility contains Effluent Limitations for settleable solids (SS). The most important physical characteristic of wastewater is its total solids content. SS are an approximate measure of the quantity of sludge that will be removed by sedimentation. Low, medium and high strength wastewaters will generally contain 5 ml/l, 10 ml/l and 20 ml/l of SS, respectively. Knowledge of SS parameters is critical for proper wastewater treatment plant design, evaluating sludge quantities, operation and troubleshooting. Excessive SS in the effluent discharge are typically indicative of process upset or overloading of the system. Failure to limit and monitor for SS limits the regulators ability to assess facility operations and determine compliance. Settleable matter is a water quality objective in the Basin Plan. Failure to include an Effluent Limitations for SS threatens to allow violation of the settleable matter receiving water limitation. As such, there is a reasonable potential for settleable solids to exceed the Basin Plan's water quality standard and Effluent Limitations are required in accordance with 40 CFR 122.44. We applaud the operators if indeed they did not violate the SS limitation during the life of the existing permit; this does not however remove the reasonable

potential to cause exceedances in the future during system upsets or overloading; this also does not constitute "new" information as is required under the antibacksliding regulations.

**12. The proposed Permit fails to contain mass-based effluent limits for Aluminum, Copper, Cyanide, Aldrin, Alpha BHC, Dichlorobromomethane, Silver and Zinc as required by Federal Regulations 40 CFR 122.45(b).**

Federal Regulation, 40 CFR 122.45 (b) requires that in the case of POTWs, permit Effluent Limitations, standards, or prohibitions shall be based on design flow. Concentration is not a basis for design flow. Mass limitations are concentration multiplied by the design flow and therefore meet the regulatory requirement.

Section 5.7.1 of U.S. EPA's *Technical Support Document for Water Quality Based Toxics Control* (TSD, EPA/505/2-90-001) states with regard to mass-based Effluent Limits:

> "Mass-based effluent limits are required by NPDES regulations at 40 CFR 122.45(f). The regulation requires that all pollutants limited in NPDES permits have limits, standards, or prohibitions expressed in terms of mass with three exceptions, including one for pollutants that cannot be expressed appropriately by mass. Examples of such pollutants are pH, temperature, radiation, and whole effluent toxicity. Mass limitations in terms of pounds per day or kilograms per day can be calculated for all chemical-specific toxics such as chlorine or chromium. Mass-based limits should be calculated using concentration limits at critical flows. For example, a permit limit of 10 mg/l of cadmium discharged at an average rate of 1 million gallons per day also would contain a limit of 38 kilograms/day of cadmium.
>
> Mass based limits are particularly important for control of bioconcentratable pollutants. Concentration based limits will not adequately control discharges of these pollutants if the effluent concentrations are below detection levels. For these pollutants, controlling mass loadings to the receiving water is critical for preventing adverse environmental impacts.
>
> However, mass-based effluent limits alone may not assure attainment of water quality standards in waters with low dilution. In these waters, the quantity of effluent discharged has a strong effect on the instream dilution and therefore upon the RWC. At the extreme case of a stream that is 100 percent effluent, it is the effluent concentration rather than the mass discharge that dictates the instream concentration. Therefore, EPA recommends that permit limits on both mass and concentration be specified for effluents discharging into waters with less than 100 fold dilution to ensure attainment of water quality standards."

Federal Regulations, 40 CFR 122.45 (f), states the following with regard to 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 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."

Federal Regulations, 40 CFR 122.45 (B)(1), states the following: "In the case of POTWs, permit effluent limitations, standards, or prohibitions shall be calculated based on design flow."

Traditional wastewater treatment plant design utilizes average dry weather flow rates for organic, individual constituent, loading rates and peak wet weather flow rates for hydraulic design of pipes, weir overflow rates, and pumps.

Increased wet weather flow rates are typically caused by inflow and infiltration (I/I) into the sewer collection system that dilutes constituent loading rates and does not add to the mass of wastewater constituents.

For POTWs priority pollutants, such as metals, have traditionally been reduced by the reduction of solids from the wastestream, incidental to treatment for organic material. Following adoption of the CTR, compliance with priority pollutants is of critical importance and systems will need to begin utilizing loading rates of individual constituents in the WWTP design process. It is highly likely that the principal design parameters for individual priority pollutant removal will be based on mass, making mass based Effluent Limitations critically important to compliance. The inclusion of mass limitations will be of increasing importance to achieving compliance with requirements for individual pollutants.

As systems begin to design to comply with priority pollutants, the design systems for POTWs will be more sensitive to similar restrictions as industrial dischargers currently face where production rates (mass loadings) are critical components of treatment system design and compliance. Currently, Industrial Pretreatment Program local limits are frequently based on mass. Failure to include mass limitations would allow industries to discharge mass loads of individual pollutants during periods of wet weather when a dilute concentration was otherwise

observed, upsetting treatment processes, causing effluent limitation processes, sludge disposal issues, or problems in the collection system.

In addition to the above citations, on June 26th 2006 U.S. EPA, Mr. Douglas Eberhardt, Chief of the CWA Standards and Permits Office, sent a letter to Dave Carlson at the Central Valley Regional Water Quality Control Board strongly recommending that NPDES permit effluent limitations be expressed in terms of mass as well as concentration.

**13. The proposed Permit fails to include a protective Effluent Limitation for electrical conductivity (EC) as required by Federal Regulations 40 CFR 122.44 and the permit should not be adopted in accordance with California Water Code Section 13377.**

The proposed Permit contains an Effluent Limitation for electrical conductivity (EC) which requires that: "g. Electrical Conductivity (EC). The annual average EC level in the effluent shall not exceed the EC level (umhos/cm) in the water supply plus 500." The proposed Permit does not however contain any information regarding the source of the limitation or any analysis that the limitation is, or is not, protective of the beneficial uses of the receiving water. To the contrary, the proposed Permit clearly indicates that levels of EC and TDS have been measured in the wastewater discharge at concentration exceeding water quality standards. The proposed Permit allowance for establishing the limitation as an annual average is contrary to federal regulations as established in the above comments; and is not supported by any information that the annual average limitation would be protective of any of the designated beneficial uses of the receiving stream. Drinking water standards for salinity are generally based on taste and odor that occur immediately, not on an annual average. Foliar damage to crops can occur immediately. Industrial uses are sensitive at the immediate point of use, for example it is not unusual for cooling towers to have to provide reverse osmosis treatment of groundwater to prevent scaling of the towers. Toxicity to freshwater aquatic life can occur acutely. There is no technical justification or defense of allowing an annual average discharge limitation for salt.

Concentrations of electrical conductivity (EC), total dissolved solids, sulfate and chloride have been measured in the wastewater discharge at concentrations up to 1413 ug/l, 926 mg/l, 71,1 mg/l and 58.2 mg/l respectively. Federal Regulations, 40 CFR 122.44 (d)(i), requires that; "Limitations must 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." The Water Quality Control Plan (Basin Plan) for the Central Valley Region, Water Quality Objectives, page III-3.00, contains a Chemical Constituents Objective that includes Title 22 Drinking Water Maximum Contaminant Levels (MCLs) by reference. The Title 22 MCLs for EC are 900 µmhos/cm (recommended level), 1,600 µmhos/cm (upper level) and 2,200 µmhos/cm (short term maximum).

The Basin Plan states, on Page III-3.00 Chemical Constituents, "Waters shall not contain constituents in concentrations that adversely affect beneficial uses." The Basin Plan's "Policy for Application of Water Quality Objectives" provides that in implementing narrative water quality objectives, the Regional Board will consider numerical criteria and guidelines developed

by other agencies and organizations. This application of the Basin Plan is consistent with Federal Regulations, 40CFR 122.44(d).

For EC, *Ayers R.S. and D.W. Westcott, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985),* levels above 700 μmhos/cm will reduce crop yield for sensitive plants. The University of California, Davis Campus, Agricultural Extension Service, published a paper, dated 7 January 1974, stating that there will not be problems to crops associated with salt if the EC remains below 750 μmhos/cm.

The discharge of EC or TDS may exceed water quality objectives for each designated beneficial use:

MUN: The Drinking Water maximum contaminant levels (MCLs) are water quality objectives incorporated into the Basin Plan Chemical Constituents by reference. The MCL for TDS is 500 mg/l as the recommended level, 1,000 mg/l as an upper level and 1,500 mg/l as a short term maximum. *McKee and Wolf* (1971 Water Quality Criteria) cites that waters above 4,000 mg/l TDS are generally unfit for human use.

AGR: The Basin Plan states, on Page III-3.00 Chemical Constituents, "Waters shall not contain constituents in concentrations that adversely affect beneficial uses." The Basin Plan's "Policy for Application of Water Quality Objectives" provides that in implementing narrative water quality objectives, the Regional Board will consider numerical criteria and guidelines developed by other agencies and organizations. This application of the Basin Plan is consistent with Federal Regulations, 40CFR 122.44(d). For EC, *Ayers R.S. and D.W. Westcott, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985),* levels above 700 μmhos/cm will reduce crop yield for sensitive plants. The State Water Resources Control Board's *Irrigation with Reclaimed Municipal Waste (July 1984)* and *McKee and Wolf* (1971 Water Quality Criteria), state that waters with TDS above 2,100 mg/l are unsuitable for any irrigation under most conditions.

IND: *McKee and Wolf* (1971 Water Quality Criteria) lists the limiting TDS concentrations for numerous industrial uses in mg/l; boiler feed water 50-3000, brewing 500-1000, canning 850, general food processing 850 and paper manufacturing 80-500.

COLD/MIGR/SPWN: In a *Biological Significance* document sent to the Regional Board regarding the Musco Olive facility, dated November 1st 2006, James M. Harrington, Staff Water Quality Biologist with the California Department of Fish and Game, citing McKee and Wolf (1971 Water Quality Criteria) wrote that: "Surveys of inland fresh waters indicates that good mixes of

> fish fauna are found where conductivity values range between 150 and 500 umhos/cm. Even in the most alkaline waters, the upper tolerance limit for aquatic life is approximately 2000 umhos/cm."

The beneficial uses of receiving streams may be degraded by salt concentrations in wastewater discharges and Federal Regulation, 40 CFR 122.4 (a), (d) and (g) require that no permit may be issued when the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or regulations promulgated under the CWA, when imposition of conditions cannot ensure compliance with applicable water quality requirements and for any discharge inconsistent with a plan or plan amendment approved under Section 208(b) of the CWA. California Water Code, section 13377, requires that: "Notwithstanding any other provision of this division, the state board and the regional boards shall, as required or authorized by the Federal Water Pollution Control Act, as amended, issue waste discharge and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance." The Region 5 Permits does not protect the beneficial uses of the receiving stream, the Sacramento River, and therefore does not comply with the requirements of Federal Regulations and the California Water Code.

The Central Valley Basin Plan, page IV-15.00, contains a *Controllable Factors Policy* which states that: "Controllable water quality factors are not allowed to cause further degradation of water quality in instances where other factors have already resulted in water quality objectives being exceeded. Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State, that are subject to the authority of the State Water or Regional Water Board, and that may be reasonably controlled."

The discharge of salt (EC or TDS) may be a designated waste as defined by the CWC, Section 13173(b) as nonhazardous waste that contains pollutants that could be released in concentrations exceeding applicable water quality objectives; which must be regulated in accordance with Title CCR 27. The discharge of salt may exceed the Toxicity and Chemical Constituents (drinking water MCL and at concentrations that adversely affect the industrial and agricultural beneficial uses) water quality objectives. CCR, Title 27, Section 20210, requires that designated wastes shall only be discharged at Class I or Class II waste management units. Designated waste must be kept out of the receiving stream. The Region 5 Permits consistently allow the discharge of a designated waste to surface water in violation of CCR Title 27. As is stated in the above comments, the proposed Permit does not require groundwater monitoring and the Regional Board therefore has no knowledge of the implications of the allowed discharge on groundwater quality. The proposed Permit, page F-31 Electrical Conductivity, states that there is no identified agricultural use of the local groundwater. This statement indicates that the Regional Board has no intention of protecting the designated beneficial use. The proper methodology for dedesignating groundwater is not through the NPDES permitting process, but though an amendment of the Water Quality Control Plan (Basin Plan). This would not however address the requirements of the Board's Antidegradation Policy (Resolution 68-16), which establishes

clear requirements that must be met before any degradation of water quality is allowed. The proposed Permit does not contain any discussion of the degradation of groundwater and the requirements of the Antidegradation Policy.

Clearly the discharge exceeds the MCLs for salinity presenting a reasonable potential to exceed water quality objectives. The discharge clearly exceeds the agricultural water quality goal and the MCL for EC. The proposed Order fails to establish an effluent limitation for EC that are protective of the Chemical Constituents water quality objective. The City's wastewater discharge increases concentrations of EC to unacceptable concentrations adversely affecting the agricultural beneficial uses of both surface and groundwater. The wastewater discharge not only presents a reasonable potential, but also actually causes, violation of the Chemical Constituent Water Quality Objective in the Basin Plan. The available literature regarding safe levels of EC for irrigated agriculture mandate that an Effluent Limitation for EC is necessary to protect the beneficial use of the receiving stream in accordance with the Basin Plan and Federal Regulations. Failure to establish effluent limitations for EC that are protective of the Chemical Constituents water quality objective blatantly violates the law.

**14. The proposed Permit cites that administrative civil liability penalties (fines) were allowed to be diverted to "compliance projects" for this largely noncompliant facility.**

The proposed permit states that: "D. Compliance Summary, The Discharger received an Administrative Civil Liability (ACL) Complaint from the Regional Water Quality Board dated 2 April 2007 for the violation of Waste Discharge Requirement (WDR) Order No. 95-150 and WDR Order No. R5-2002-0088. The ACL is in the amount of two hundred and four thousand dollars ($204,000) in mandatory minimum penalties for effluent limit violations from 1 January 2000 to 30 June 2006. ACL Order No. R5-2007-0528 settled the Complaint with payment of $204,000 applied to compliance projects to achieve compliance with NPDES effluent limitations." The proposed permit fails to cite the specific compliance projects or what they achieved. This is material to the public since, as the above comments would indicate; the wastewater treatment plant does not appear capable of meeting discharge limitations. This is confirmed by the fact that interim limitations are included for aluminum and manganese; a mixing zone is allowed for nitrate and dibromochloromethane; and compliance alternatives are being considered for ammonia, nitrate, dichlorobromomethane, copper, cyanide, aldrin, alpha BHC, silver, and zinc.

Thank you for considering these comments. If you have questions or require clarification, please don't hesitate to contact us.

Sincerely,

Bill Jennings, Executive Director
California Sportfishing Protection Alliance