



California Sportfishing Protection Alliance

"An Advocate for Fisheries, Habitat and Water Quality"

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19 May 2007

Dr. Karl Longley, Chairman
Ms. Pamela Creedon, Executive Officer
Mr. Kenneth Landau, Assistant Executive Officer
Mr. Dave Carlson, Env. Program Manager, NPDES
Ms. Diana Messina, Sr. WRC Engineer
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: Waste Discharge Requirements (NPDES No. CA0078671) for El Dorado
Irrigation District, El Dorado Hills Wastewater Treatment Plant, El Dorado
County

Dear Messrs. Longley, Landau, Carlson and Mesdames Creedon and Messina:

The California Sportfishing Protection Alliance and Watershed Enforcers (CSPA) has reviewed the Central Valley Regional Water Quality Control Board's (Regional Board) tentative NPDES permit (Order or Permit) for El Dorado Irrigation District, El Dorado Hills Wastewater Treatment Plant (Discharger) 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 surface and ground waters and associated fisheries. CSPA members reside, boat, fish and recreate in and along waterways throughout the Central Valley, including El Dorado County.

This is a very well written permit and is reminiscent of the quality of permits the Region used to produce. We especially appreciate that the permit writer included the priority pollutant data, which has been excluded from recent Region 5 permits, which is necessary to determine the basis for the permit.

- 1. 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 and State Board's Resolution 68-16. The proposed Permit allows degradation of groundwater contrary to Section 101(a) of the Clean Water Act, Federal Regulations 40 CFR § 131.12 and State Board's Resolution 68-16.**

The proposed Permit is one of the first tentative Permits issued by the Regional Board that at least makes an attempt to comply with Federal and State antidegradation analysis requirements. The proposed Permit states that: "The District operates a wastewater treatment plant that meets or exceeds the highest statutory and regulatory requirements which meets or exceeds Best Practicable Treatment or Control (BPTC)." This statement is not supported and is contrary, to the fact that the proposed Permit contains a significant number of Effluent Limitations for individual constituents where the current tertiary system is non-compliant with the proposed limitations. An expansion in kind will be similarly noncompliant and the antidegradation analysis does not discuss the means of compliance with the limitations and best practicable treatment and control (BPTC) of the discharge and the economic costs of compliance and interim non-compliance on an individual constituent bases. The cost analysis is superficial and does not analyze the unit cost per household when the total project costs are amortized over the life of a project to actually achieve water quality objectives and protect the beneficial uses of the receiving stream.

The proposed Permit allows for an expansion of the wastewater discharge and antidegradation analysis is deficient in several areas, as follows:

The antidegradation analysis does not discuss groundwater degradation and the proposed Permit allowance to degrade groundwater quality. Groundwater Limitation No. B2 states that the wastewater shall not degrade groundwater quality or exceed MCLs for ammonia, TDS or nitrate, whichever is greater. This language allows the Discharger to degrade groundwater to water quality objectives above background water quality, if background is below the MCL for ammonia, TDS and nitrate. Groundwater Limitation No. B1 states that the wastewater shall not degrade groundwater quality above the level typically caused by domestic wastewater. The allowance for groundwater degradation is not analyzed in the antidegradation analysis and is not BPTC and is not in the interest of the people of California. The use of unlined ponds, which allow percolation to groundwater at a tertiary wastewater treatment plant, is not BPTC.

The proposed Permit, Effluent Limitation h, allows for an increase in the mass of mercury permitted to be discharged based on an expanded flow rate of the wastewater treatment plant. This is contrary to the discussion regarding mercury loading rates and the antidegradation policy discussion.

The El Dorado Hills wastewater treatment plant currently nitrifies the wastestream. Table F-18 shows that the maximum level of ammonia discharged was 3.4 mg/l and the mean concentration was 0.607 mg/l. Effluent Limitation in the proposed

Permit, Interim Effluent Limitations b, is 10.6 mg/l, which essentially allows the discharger to backslide into an operational mode of non-nitrification. The interim limitation methodology is not fixed by regulation. There is no technical or regulatory reason for this allowance and the allowance is not discussed with regard to degradation, providing nitrification to the maximum extent practicable, and the interim impacts to the receiving stream.

The antidegradation analysis does not discuss protection of the municipal and domestic uses of the receiving stream with regard to pathogens which was an issue with the District's Deer Creek Wastewater Treatment Plant.

The antidegradation analysis must be amended to contain an examination of treatability, BPTC, whether the proposed degradation is consistent with the maximum benefit to the people of the state and whether the resulting water quality is adequate to protect and maintain existing beneficial uses. The BPTC technology analysis must be done on an individual constituent basis.

Section 101(a) of the Clean Water Act, the basis for the antidegradation policy, states that the objective of the Act is to "restore and maintain the chemical, biological and physical integrity of the nation's waters." Section 303(d)(4) of the Act carries this further, referring explicitly to the need for states to satisfy the antidegradation regulations at 40 CFR § 131.12 before taking action to lower water quality. These regulations describe the federal antidegradation policy and dictate that states must adopt both a policy at least as stringent as the federal policy as well as implementing procedures (40 CFR § 131.12(a)). California's antidegradation policy is composed of both the federal antidegradation policy and the State Board's Resolution 68-16.

The Regional Board must apply the antidegradation policy whenever it takes an action that will lower water quality such is the case by allowing an expansion of the wastewater treatment plant.

Virtually all waterbodies in California may be Tier 2 waters since the state, like most states, applies the antidegradation policy on a parameter-by-parameter basis, rather than on a waterbody basis (APU 90-004, p. 4).

The antidegradation review process is especially important in the context of waters protected by Tier 2. See EPA, Office of Water Quality Regulations and Standards, Water Quality Standards Handbook, 2nd ed. Chapter 4 (2nd ed. Aug. 1994). Whenever a person proposes an activity that may degrade a water protected by Tier 2, the antidegradation regulation requires a state to: (1) determine whether the degradation is "necessary to accommodate important economic or social development in the area in which the waters are located"; (2) consider less-degrading alternatives; (3) ensure that the best available pollution control measures are used to limit degradation; and (4) guarantee that, if water quality is lowered, existing uses will be fully protected. 40 CFR § 131.12(a)(2); EPA, Office of Water Quality Regulations and Standards, Water Quality Standards Handbook, 2nd ed. 4-1, 4-7 (2nd ed. Aug. 1994). These activity-specific determinations necessarily require that each activity be considered individually.

2. The proposed Permit fails to contain a protective Effluent Limitation for electrical conductivity (EC) in accordance with Federal Regulations 40 CFR 122.44 and California Water Code, Section 13377.

The proposed Permit Fact Sheet states that the effluent average EC concentration is 751 umhos/cm and the maximum concentration was 940 umhos/cm. The proposed Permit Fact Sheet, Table F-4, clearly shows that the agricultural water quality goal is 700 umhos/cm and the drinking water MCL is 900 umhos/cm. The discharge has a reasonable potential to exceed the agricultural water quality goal and the drinking water MCL.

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 μ mhos/cm (recommended level), 1,600 μ mhos/cm (upper level) and 2,200 μ mhos/cm (short term maximum).

The Basin Plan states, on Page III-3.00 Chemical Constituents, that “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 Arriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)*, levels above 700 μ mhos/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 μ mhos/cm.

The proposed Permit contains an interim effluent limit for EC of 1041 umhos/cm that is not protective of any beneficial use of the receiving water and fails to contain any final effluent limit.

The California Water Code (CWC), Section 13377 states in part that: “...the state board or the regional boards shall...issue waste discharge requirements... which apply and ensure compliance with ...water quality control plans, or for the protection of beneficial uses...” 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. Failure to include a protective effluent limitation for EC in the proposed permit violates 40 CFR 122.44 and CWC 13377.

3. The proposed Permit, Table 6a, does not contain mass based effluent limitations contrary to Federal Regulations 40 CFR 122.45 (f) and technical advice from EPA.

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 limitationa 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.”

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.

TMDLs represent a mass loading that may occur over a given time period to attain and maintain water quality standards. Mass loadings from WWTPs are critical to determining individual discharger allocations once a TMDL has been completed.

Once toxicity numeric limitations (TUs) have been established, it is necessary to convert toxicity units that can be directly related to mass.

The mass based limitations in Tables 6b and 6c consists of two limitations for copper.

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.

4. The proposed Permit contains an Effluent Limitation for acute toxicity that allows mortality that exceeds the Basin Plan water quality objective and does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i).

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. 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. This section of the Basin Plan further states, in part that, compliance with this objective will be determined by analysis of indicator organisms.

The Tentative Permit requires that the Discharger conduct acute toxicity tests and states that compliance with the toxicity objective will be determined by analysis of indicator organisms. However, the Tentative Permit contains a discharge limitation that allows 30% mortality (70% survival) of fish species in any given toxicity test.

The Regional Board has looked hard and long to find some citation as to the source of the limitation that would allow or recommend 10% and 30% mortality, such a find however does not eliminate the more restrictive applicable Basin Plan objective that simply prohibits the discharge from causing mortality in the receiving stream.

For an ephemeral or low flow stream, such as the case here, allowing 30% mortality in acute toxicity tests allows that same level of mortality in the receiving stream, in violation of federal regulations and contributes to exceedance of the Basin Plan's narrative water quality objective for toxicity. Accordingly, the proposed Permit must be revised to prohibit acute toxicity in accordance with Federal regulations, at 40 CFR 122.44 (d)(1)(i).

5. The proposed Permit does not contain Effluent Limitations for chronic toxicity and therefore does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i) and the SIP.

Proposed Permit, State Implementation Policy, states that: “On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxic 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.”

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. 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 states that: “...to ensure compliance with the Basin Plan’s narrative toxicity objective, the discharger is required to conduct whole effluent toxicity testing...”. However, sampling does not equate with or ensure compliance. 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 effluent limitation for chronic toxicity must be included in the Order.

Proposed Permit is quite simply wrong; by failing to include effluent limitations prohibiting chronic toxicity the proposed Permit does not “...implement the SIP”. The Regional Board has commented time and again that no chronic toxicity effluent limitations are being included in NPDES permit until the State Board adopts a numeric limitation. The Regional Board explanation does not excuse the proposed Permit’s failure to comply with Federal Regulations, the SIP, the Basin Plan and the CWC. The Regional Board’s Basin Plan, as cited above, already states that: “...waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses...” Accordingly, the proposed Permit must be revised to prohibit chronic toxicity (mortality and adverse sublethal impacts to aquatic life, (sublethal toxic impacts are clearly defined in EPA’s toxicity guidance manuals)) in accordance with Federal regulations, at 40 CFR 122.44 (d)(1)(i) and the Basin Plan and the SIP.

6. The ammonia Effluent Limitation in the proposed Permit, Interim Effluent Limitations b, is unreasonably high and is not protective of the aquatic life beneficial uses of the receiving stream contrary to Federal Regulations 40 CFR 122.44.

The El Dorado Hills wastewater treatment plant currently nitrifies the wastestream. Table F-18 shows that the maximum level of ammonia discharged was 3.4 mg/l and the mean concentration was 0.607 mg/l. Effluent Limitation in the proposed Permit, Interim Effluent Limitations b, is 10.6 mg/l, which essentially allows the discharger to backslide into an operational mode of non-nitrification. The interim limitation methodology is not fixed by regulation. There is no technical or regulatory reason for this allowance. The final effluent limitation for ammonia is 0.43 mg/l as a monthly average and 0.87 mg/l as a maximum daily. The current mean effluent concentration of ammonia meets the acute criteria for ammonia; the allowance of an interim limitation will allow acutely toxic discharges where they would be prevented under the current mode of operation. The proposed Permit interim limitation for ammonia does not meet the requirements of Federal Regulations 40 CFR 122.44 which prescribes that an effluent limitation is necessary if there is a reasonable potential for a constituent to exceed a water quality standard. The interim limitation for ammonia could be considered backsliding in accordance with 40 CFR 122.44 (l).

7. The proposed Permit contains a compliance schedule for aluminum and ammonia based on “a new interpretation of the Basin Plan” as detailed in the Fact Sheet, page F-32 and Finding No. k. The Regional Board fails to provide any explanation or definition of the “new interpretation” of the Basin Plan.

In a memorandum, dated 19 July 2002, to NPDES Staff from Kenneth Landau; Mr. Landau states in part that; “The critical factor in use of this “new interpretation” is that the previous Permit contains something that clearly indicates that a reasoned decision was made by the Board to grant mixing zones or not protect certain beneficial uses. This can include standards which are not measured for a considerable distance downstream, effluent limits obviously too large to be protective, or statements that “the ditch contains no fish”. Just because an existing permit is silent on an issue (for instance nothing was mentioned about drinking water protection), does not mean a “new interpretation” can be considered to occur.” The simple unsupported claim that there is a “new interpretation” of the Basin Plan is insufficient to claim coverage under State Board Order WQ 2001-06 at pp 53-55. The Regional Board has included compliance schedules for aluminum in enforcement orders for several years. The Regional Board must, at a minimum, define the old interpretation of the Basin Plan with respect to aluminum and ammonia and how has it changed. The permit must be modified to include the details of the new interpretation or the compliance schedule moved to an enforcement order.

8. The proposed Permit contains an inadequate reasonable potential analysis by using incorrect statistical multipliers.

Federal regulations, 40 CFR § 122.44(d)(1)(ii), state “when determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, **the variability of the pollutant or pollutant parameter in the effluent**, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.” Emphasis added.

The reasonable potential analyses for CTR constituents fail to consider the statistical variability of data and laboratory analyses as explicitly required by the federal regulations. The procedures for computing variability are detailed in Chapter 3, pages 52-55, of USEPA’s *Technical Support Document For Water Quality-based Toxics Control*.

The reasonable potential analyses for CTR constituents are flawed and must be recalculated. The fact that the SIP illegally ignores this fundamental requirement does not exempt the Regional Board from its obligation to consider statistical variability in compliance with federal regulations.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Jennings". The signature is fluid and cursive, with a large initial "B" and "J".

Bill Jennings, Executive Director
California Sportfishing Protection Alliance