



California Sportfishing Protection Alliance

"An Advocate for Fisheries, Habitat and Water Quality"

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Mr. Ken Landau, Assistant Executive Officer
Ms. Diana Messina, Supervising WRCE
Mr. Josh Palmer, WRCE
Regional Water Quality Control Board
Central Valley Region
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VIA: Electronic Submission
Hardcopy if Requested

RE: Order Amending Waste Discharge Requirements Order R5-2008-0173 (NPDES Permit No. CA0078662) for El Dorado Irrigation District, Deer Creek Wastewater Treatment Plant, Eldorado County

Dear Mesdames Creedon, Messina and Messrs. Landau, Palmer,

The California Sportfishing Protection Alliance (CSPA) has reviewed the proposed Amended Waste Discharge Requirements (NPDES No. CA0078662) for the Deer Creek Wastewater Treatment Plant (Permit) 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 El Dorado County.

- 1. The proposed Permit establishes Effluent Limitations for metals based on the hardness of the effluent as opposed to the ambient instream receiving water hardness and fails to use the mandated equations as required by Federal Regulations, the California Toxics Rule (CTR, 40 CFR 131.38(c)(4)).**

Hardness The Court's Ruling

The California Toxics Rule (CTR) 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).

As is stated in the proposed Permit, the permit is being amended based on a ruling of the Superior Court of California (Case number 34-2009-80000309) (County of Sacramento, Judge Timothy M. Frawley, 26 January 2011). With regard to the development of effluent limitations for hardness dependant metals and an objection by the Regional Board the court found that:

"Ruling. Respondent Board's objection is denied. The Court finds no ambiguity in the footnote. If the Board calculates the fresh aquatic life criteria for hardness-dependent metals based on the hardness value of the downstream receiving water, it must use the actual ambient hardness of the surface water after the effluent and receiving water have fully mixed. It cannot use the hardness values of the receiving water "at or immediately downstream of the discharge outfall," since this is (for all intents and purposes) the same as using the hardness values of the effluent, which is prohibited."

With regard to hardness dependant metals the Court ruling, in part, also contains the following:

On balance, the Court is persuaded that the term "ambient," as applied in the CTR, refers to the surface water surrounding the aquatic life. In light of the purpose of the CTR, it would be unreasonable to interpret the regulation as requiring States to ignore the effect of the effluent on the hardness (and consequent toxicity) of the downstream receiving water. The most reasonable interpretation of the regulation, therefore, is that the metal criteria should be calculated based on the actual ambient hardness of the surface water after the effluent and receiving water mix.⁷ Stated differently, the criteria should be based on the upstream receiving water hardness, adjusted, as necessary, for the effects of the effluent. (Footnote No. 7 on page 14 of the final court order states that: "This means after the effluent and receiving water fully mix")

For the determination of the CTR hardness-dependent metals criteria, the Board has the discretion to use either the upstream receiving water hardness values or the hardness values of the downstream mixture of the effluent and the receiving water, whichever is most protective.

The final court ruling is quite clear that when developing effluent limitations for hardness dependant metals that:

- (1) The hardness of the surface water must be used;

- (2) Use of the effluent hardness is prohibited; and
- (3) The term ambient means that the hardness must be taken from outside the area where the effluent mixes with the receiving stream.
- (4) Either the upstream surface water hardness or the downstream surface water hardness (following complete mixing with the effluent) may be used to develop effluent limitations for hardness dependant metals, whichever is most protective.

The Effluent Hardness Was Used in the Revised Permit

The proposed Permit, page F-23, states that:

“For both copper and zinc, using the “fully mixed” hardness value results in criteria that are higher (less stringent) than using the effluent-dominated (100% effluent) condition in the receiving water. Effluent limitations based on the less stringent criteria would allow the effluent to cause receiving water toxicity during low-flow conditions. Even assuming that would be a correct interpretation of the CTR and SIP or the EID Court Order, a more stringent effluent limitation would required to comply with the Basin Plan’s narrative toxicity objective unless the Board approves a mixing zone.14 Accordingly, this Order sets effluent limitations for copper and zinc based on low-flow conditions as shown in the above tables.” (Emphasis added)

The “above tables” referred to in the permit are Tables F-4 and F-5 on pages F-21 and F-22. The “low flow conditions” described in the text can be observed in Tables F-4 and F-5 in the far left hand lower column of the tables. The “low flow condition” in the tables represents “100% effluent” with a recorded effluent hardness value of 42 mg/l.

Throughout the text in the proposed Permit, pages F-16 through F-26, discussing the development of effluent limitations for hardness dependant metals, the discussion is limited to the effluent and upstream ambient hardness. The downstream surface water ambient hardness, as defined by the court; following complete mixing is not discussed or numerically cited. While the Regional Board attempts to calculate this value, we can only conclude based on the total absence of downstream surface water ambient hardness values that it has not been sampled by the Discharger.

On page F-20 of the proposed Permit, the discussion, equation 3 and the following Table F-4 are all based on the lowest observed effluent hardness of 42 mg/l. Again, based on the total absence of discussion of any downstream surface water sampling for hardness, the Regional Board’s decision process is based on the effluent hardness, which was confirmed by the Superior Court is prohibited.

The proposed Permit discussion beginning on page F-23 again focuses on the effluent hardness. This can be observed by evaluation of equation 4 (page F-23) where the input value H_e represents the lowest observed effluent value. The data in Table F-5 are based on equation 4 and is therefore also based on the effluent hardness.

The development of effluent limitations for hardness dependant metals in the proposed Permit is based on the effluent hardness or a combination of the effluent and upstream hardnesses. The use of the effluent hardness rather than the CTR prescribed “actual ambient hardness of the surface water” is contrary to the requirements of the CTR and directly violates the mandate of the Superior Court’s Order. As cited above the Superior Court clearly stated that use of the effluent hardness is prohibited.

The Wrong Equations Were Used

The California Toxics Rule (CTR) 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 CTR requires the use of the equations presented in paragraph (b)(2) of 40 CFR 131.38 for the development of effluent limitations for hardness dependant metals. The required CTR equation is:

$$\text{CTR Criterion} = \text{WER} \times (\exp(m[\ln(H)]+b))$$

where: H = hardness (mg/L as CaCO₃), WER = water-effect ratio (with a default value of 1) and m, b = metal and criterion specific constants.

The CTR equation is cited as “equation 1” in the proposed Permit (page F-18). The proposed Permit cites a 2006 technical paper prepared by Robert Emerick (see footnote 7 on page F-18) as the source of the equations used by the Regional Board in developing the Permit effluent limitations for some hardness dependant metals (see Table F-6 footnote 2). Dr. Emerick’s equation 4 is presented on page F-23 of the proposed Permit. Equation 4 is not the same as equation 1 which is prescribed by the CTR.

The use of equations other than those prescribed by the CTR for development of effluent limitations for hardness dependant metals is contrary to the requirements of the CTR.

The “ambient” hardness was not used

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 common dictionary definition of *ambient* is “in the surrounding area”, “encompassing on all sides”.

In petitioning the Deer Creek permit, CSPA argued that the common definition of ambient of surrounding would eliminate any areas that included the wastewater effluent in consideration of the hardness used in determining criteria for hardness dependant metals. 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. Confirming this definition, the SIP Sections 1.4.3.1 *Ambient Background Concentration as an Observed Maximum* and 1.4.3.2 state in part that: "If possible, preference should be given to ambient water column concentrations measured immediately upstream or near the discharge, but not within an allowed mixing zone for the discharge. The RWQCB shall have discretion to consider if any samples are invalid for use as applicable data due to evidence that the sample has been erroneously reported or the sample is not representative of the ambient receiving water column that will mix with the discharge."

CSPA's view regarding the term ambient is also supported by a biological opinion issued by the US Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS) on March 24th 2000. On March 24, 2000 the US Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS) issued a biological opinion on the effects of the final promulgation of the CTR on listed species and critical habitats in California in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.; Act). The biological opinion was issued to the U.S. Environmental Protection Agency, Region 9, with regard to the "Final Rule for the Promulgation of Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California" (CTR)". The document represented the Services' final biological opinion on the effects of the final promulgation of the CTR on listed species and critical habitats in California in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.; Act). The biological opinion contains the following discussion, beginning on page 205, regarding the use of hardness in developing limitations for toxic metals:

"The CTR should more clearly identify what is actually to be measured in a site water to determine a site-specific hardness value. Is the measure of hardness referred to in the CTR equations a measure of the water hardness due to calcium and magnesium ions only? If hardness computations were specified to be derived from data obtained in site water calcium and magnesium determinations alone, confusion could be avoided and more accurate results obtained (APHA 1985). Site hardness values would thus not include contributions from other multivalent cations (e.g., iron, aluminum, manganese), would not rise above calcium + magnesium hardness values, or result in greater-than-intended site criteria when used in formulas. In this Biological opinion, what the Services refer to as hardness is the water hardness due to calcium + magnesium ions only.

The CTR should clearly state that to obtain a site hardness value, samples should be collected upstream of the effluent source(s). Clearly stating this requirement in the CTR would avoid the computation of greater-than-intended site criteria in cases where samples were collected downstream of effluents that raise ambient hardness, but not other important water qualities that affect metal toxicity (e.g., pH, alkalinity, dissolved organic carbon, calcium, sodium, chloride, etc.). Clearly, it is inappropriate to use downstream site water quality variables for input into criteria formulas because they may be greatly altered by the effluent under regulation. Alterations in receiving water chemistry by a discharger (e.g., abrupt elevation of hardness, changes in pH, exhaustion of alkalinity, abrupt increases in organic matter etc.) should not result, through application of hardness in criteria formulas, in increased allowable discharges of toxic metals. If the use of downstream site water quality variables were allowed, discharges that alter the existing, naturally-occurring water composition would be encouraged rather than discouraged. Discharges should not change water chemistry even if the alterations do not result in toxicity, because the aquatic communities present in a water body may prefer the unaltered environment over the discharge-affected environment. Biological criteria may be necessary to detect adverse ecological effects downstream of discharges, whether or not toxicity is expressed.”

The Regional Board has argued however that they had discretion to redefine “ambient” and were not constrained by common dictionary definitions. The Regional Board’s definition of “ambient” included the wastewater effluent.

The Superior Court (Superior Court of California (Case number 34-2009-80000309) (County of Sacramento, Judge Timothy M. Frawley, 26 January 2011) ruled that the common dictionary definition of ambient was applicable, but that “ambient” also included the downstream waters after complete mix with the wastewater effluent had occurred.

The proposed Permit continues to utilize the wastewater effluent hardness when establishing criteria for hardness dependant metals. This can best be observed by review of Tables F-4, F-5 and F-6 in which the “Fully Mixed Downstream Ambient Conditions” are based on the “Effluent Fraction” which ranges from 1% to 100%. This is also confirmed in the text regarding hardness in the Fact Sheet and by “equation 4” on page F-23 which is partly based on the “lowest observed effluent hardness”.

The Regional Board in the proposed Permit continues to use the effluent as “ambient” in their calculation of criteria for hardness dependant metals contrary to common definition, the language in the SIP, guidance from the US Fish and Wildlife Service and the National Marine Fisheries Service and a ruling by the Superior Court.

Use of the “Surface Water Hardness”

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).

As is stated above, the proposed Permit continues to utilize the wastewater effluent hardness when establishing criteria for hardness dependant metals. This can best be observed by review of Tables F-4, F-5 and F-6 in which the “Fully Mixed Downstream Ambient Conditions” are based on the “Effluent Fraction” which ranges from 1% to 100%. This is also confirmed in the text regarding hardness in the Fact Sheet and by “equation 4” on page F-23 which is partly based on the “lowest observed effluent hardness”.

The wastewater effluent is not “surface water”. The Regional Board has not argued this point but has steadfastly refused to acknowledge or discuss the CTR requirement that the hardness of the surface water be used in calculating the criteria for hardness dependant metals. The proposed Permit is again based on the hardness of the effluent, not surface water, for hardness dependant metals.

The “Emerick” Paper cannot be used

The proposed Permit relies on the “Emerick” paper in developing effluent limitations for hardness dependant metals. The “Emerick” paper is inappropriate for use based on the following:

- The “Emerick” paper does not utilize the hardness of the surface water but also heavily relies on the effluent hardness. Recall that 40 CFR 131.38 requires use of the actual ambient hardness of the surface water.
- The “Emerick” paper does not solely use the equations specified in 40 CFR 131.38(c)(4).
- The “Emerick” paper does not utilize the ambient hardness also heavily relies on the effluent hardness.
- The “Emerick” paper ignores the other important water qualities that affect metal toxicity (e.g., pH, alkalinity, dissolved organic carbon, calcium, sodium, chloride, etc.) and focuses solely on hardness. As can be seen the U.S. EPA’s latest ambient criteria for copper (*Aquatic Life Ambient Freshwater Quality Criteria—Copper 2007 Revision*), the latest science utilizes these other quality that affect metal toxicity. Since EPA published the hardness-based recommendation for copper criteria in 1984, new data have become available on copper toxicity and its effects on aquatic life. The Biotic Ligand Model (BLM) – a metal bioavailability model that uses receiving water body characteristics to develop site-specific water quality criteria – utilizes the best available science and serves as the basis for the new national recommended criteria. The BLM requires ten input parameters to calculate a freshwater copper criterion (a saltwater BLM is not yet available): temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity. The BLM is used to derive the criteria rather than as a post-derivation adjustment as was the case with the hardness-

based criteria. This allows the BLM-based criteria to be customized to the particular water under consideration. The Regional Board failed to utilize the latest science in developing the proposed Permit.

Establishing a protective limitation

For the great majority of wastewater discharges to surface waters the hardness of the effluent is much greater than the hardness of the upstream surface water. In such cases, use of the higher hardness of the effluent to calculate discharge limitations for hardness dependant metals results in significantly less stringent discharge limitations. The “Emerick” method uses the higher effluent hardness to determine criteria as the effluent mixes with surface water. The Regional Board has used the “Emerick” method to generate these less stringent limitations stating that the methodology only eliminates what would have otherwise been overly protective limitations¹. Adherence to the required CTR methodology using the lower surface water hardness would, under these circumstances, produce more stringent criteria. In reviewing the Central Valley Regional Board’s NPDES permits it can be seen that use of the “Emerick” method is used by default, ignoring the mandated CTR method of calculating criteria for hardness dependant metals. It has been questioned whether the Regional Board’s default use of the “Emerick” method constitutes an underground regulation. "Regulation" means every rule, regulation, order, or standard of general application or the amendment, supplement, or revision of any rule, regulation, order or standard adopted by any state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure.” (Government Code section 11342.600).

The Regional Board cannot produce a technical defense that use of the CTR prescribed methods is overly protective. To the contrary, the US Fish and Wildlife Service and the National Marine Fisheries Service in their biological opinion and U.S. EPA in developing new ambient criteria for copper, all state that the use of hardness alone, ignoring temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity, may not be protective of water quality. The agencies, in their biological opinion, state that only the lower upstream hardness should be used to account for the inaccuracies of using hardness alone. The Regional Board does not present any technical information to rebut the technical fisheries and water quality standards development experts at US Fish and Wildlife Service, the National Marine Fisheries Service or U.S. EPA. The Regional Board has refused to discuss the technical merits of the opinions given by the US Fish and Wildlife Service, the National Marine Fisheries Service and U.S. EPA, stating only that the opinions address the CTR and are not applicable to individual permitting actions.

¹ See permits for Sacramento Regional (http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/sacramento/r5-2010-0114_npdes.pdf, at pages F-22 and 23), The City of Auburn (http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/placer/r5-2010-0090-01.pdf, page F-23 “An ECA based on a lower hardness (e.g., lowest upstream receiving water hardness) would also be protective, but would result in unreasonably stringent effluent limits considering the known conditions.”), Placer County SMD-1 (http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/placer/r5-2010-0092.pdf, page F-26, “Use of a lower ECA (e.g., calculated based solely on the lowest upstream receiving water hardness) is also protective, but would lead to unreasonably stringent effluent limits considering the known conditions.”)

There are a few unique circumstances when a wastewater discharge occurs at the headwaters of a stream or where the natural upstream surface water hardness is higher than the effluent hardness. Under the first circumstance there is no upstream surface water hardness. Under the circumstance where the upstream hardness is higher than the effluent hardness; use of the upstream surface water hardness will produce criteria that are not sufficiently protective of water quality. This is the condition observed at Deer Creek. The unique circumstances do not nullify the regulatory requirements to use the ambient surface water hardness or to use the CTR prescribed equations when calculating criteria for hardness dependant metals. There is however a legal and technically correct way to properly address these situations. The methodology to protect water quality in these rare events is prescribed in the federal regulations: the CTR method must be followed to show that the developed criteria are not protective of water quality; 40 CFR 122.44 (d)(1) should be cited as requiring the development of limitations more stringent than the promulgated effluent limitations, and; use of the CTR prescribed method using the lower hardness used to develop the more protective limitations. The Regional Board's consistent use of the "Emerick" method, and the Regional Board's assessment that use of the CTR prescribed methodology using the lowest observed hardness is overly protective, are without technical or legal merit.

2. The Proposed Permit Fails to Include an Effluent Limitation for Aluminum that is Protective of the Aquatic Life Beneficial Use of the Receiving Stream With Regard to Chronic Toxicity. The Proposed Permit Cites the Development of a Site Specific Water Quality Standard for Aluminum But Fails to Comply with all Regulatory Requirements for Development of such a Standard.

The Superior Court of California (Case number 34-2009-80000309) (County of Sacramento, Judge Timothy M. Frawley, 26 January 2011) ruled that:

"The Court finds that this matter should be remanded to the Board to reconsider its effluent limitation for aluminum. In developing an effluent limitation for aluminum, the Board shall (a) either use the EPA chronic criterion for aluminum, or develop a site-specific standard for aluminum sufficient to protect freshwater aquatic life; and (b) conduct a pollutant variability analysis in determining the MEC for aluminum."

The proposed Permit, page 2 Finding No. 5, states that:

"The Court required the Central Valley Water Board to either use the USEPA chronic criterion for aluminum or develop a site-specific standard for aluminum to protect freshwater aquatic life. A site-specific objective was developed by using site-specific data and studies, including the establishment of the arid West Technical Report as an applicable study for use at Deer Creek. Based on the site-specific data the narrative toxicity objective is not exceeded but a conservative limit of 200 µg/L per year was added because the pollutant variability analysis estimated the MEC to be greater than 200 µg/L."

The maximum measured wastewater effluent aluminum concentration at the Deer Creek wastewater treatment plant was 150 ug/l. The statistically projected maximum effluent concentration was 705 ug/l. (Permit F-37 and F-38)

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 Basin Plan contains a narrative water quality objective for toxicity that states in part that “[a]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life” (narrative toxicity objective). Where numeric water quality objectives have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter. U.S. EPA developed National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for aluminum to prevent toxicity to freshwater aquatic life. The recommended ambient criteria four-day average (chronic) and one-hour average (acute) criteria for aluminum are 87 µg/l and 750 µg/l, respectively.

US EPA’s 87 ug/l chronic criterion was developed using low pH and hardness testing. California Central Valley waters, the Sacramento River, at the Valley floor, have been sampled to have hardnesses as low as 39 mg/l CaCO₃ by the USGS in February 1996 for the *National Water Quality Assessment Program*. Contributory streams, especially foothill streams, have also been sampled and shown to contain even lower hardness levels. US EPA recognized in their ambient criteria development document, (Ambient Water Quality Criteria for Aluminum, EPA 440/5-86-008) that the pH was in the range 6.5 to 6.6 and that the hardness was below 20 mg/l. Typical values for pH and hardness in the Central Valley alone warrant use of the chronic ambient criteria for aluminum. Despite the hardness and pH values used in the development of the criteria; U.S. EPA’s conclusions in their *Ambient Criteria for the Protection of Freshwater Aquatic Life* recommends that application of the ambient criteria as necessary to be protective of the aquatic beneficial uses of receiving waters in lieu of site-specific criteria.

The Regional Board and their proposed Permit cites US EPA’s *Ambient Criteria for the Protection of Freshwater Aquatic Life for Aluminum* (criteria) as not being representative or necessary because the chronic criteria were based on a low hardness and low pH. The Regional Board cites one section of the criteria development document but ignores the final recommendation to use the recommended criteria absent a site-specific objective for aluminum. The Regional Board’s citation of the criteria development document is incomplete its review, for example the *criteria* development document (EPA 440/5-86-008) also cites that:

169 ug/l of aluminum caused a 24% reduction in the growth of young brook trout.
174 ug/l of aluminum killed 58% of the exposed striped bass.

Bioaccumulation factors ranged from 50 to 231 for young brook trout exposed to aluminum for 15 days.

Aluminum at 169 ug/l caused a 24% reduction in the weight of young brook trout.

These citations are particularly important as the Regional Board ignores the chronic toxicity impacts from the criteria document. The chronic toxicity endpoints are not only those that produce mortality but impact growth and reproduction in aquatic life where aquatic life is not limited to fish but also includes invertebrates and aquatic plants. The cited numbers from EPA's criteria document are particularly relevant in Deer Creek as trout have been documented to be present.

US EPA recommends that understanding the *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* is necessary in order to understand the text, tables and calculations of a criteria document. The Regional Board's assessment of the use of low hardness and low pH clearly shows they did not heed EPA's advice in reviewing the criteria development procedures for water quality criteria or the final recommendations. The Regional Board occasionally cites individual aluminum toxicity testing at various locations; again individual testing is not a valid replacement for developing fully protective criteria. A prime example of a state utilizing good water quality standards development techniques for developing a site specific standard for aluminum is the state of Indiana where a final chronic criterion of 174 ug/l was established in 1997. In 2003, Canada adopted pH dependant freshwater aquatic life criteria for aluminum that ranges from 84 ug/l to 252 ug/l. Ignoring the final recommendation of the criteria misses the protective intermediate measures to protect against mortality and reductions to growth and reproduction.

The Regional Board claims to have developed a site specific objective for aluminum. EPA's criteria document states that they did a complete literature search and evaluated all of the available scientifically valid information. As one can see from the Regional Board's inclusion of very limited aluminum data in their analysis, they only included the data that agrees with their desired outcome; the Arid West Report and limited toxicity tests under local wastewater discharger control. The Regional Board excluded all of the above cited data that indicate that lower levels of aluminum cause chronic toxicity.

Limitation time frames

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, page 11, establishes Effluent Limitations for aluminum as an annual average contrary to the cited Federal Regulation. Establishing the Effluent Limitation for aluminum in accordance with the Federal Regulation is not impracticable. Proof of impracticability is properly a steep slope and the Regional Board has not presented any evidence that properly and legally limiting aluminum is impracticable. Impracticable – incapable of being put into practice with the available means; incapable of being performed or accomplished by the means employed or at hand.

Legal Requirements for Site specific Limitations

The proposed Permit, page 2 Finding 5, states that a site specific objective for aluminum was developed and is the basis for the limitations in the Permit. Federal and State laws and regulations specify the minimum requirements for developing site-specific standards and objectives. The Regional Board failed to cite or comply with any legal requirement in their development of the cited site specific objective for aluminum.

Federal Regulations 40 CFR 122.44

(vi) Where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:

(A) Establish effluent limits using a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use. Such a criterion may be derived using a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents; or

(B) Establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information; or

(C) Establish effluent limitations on an indicator parameter for the pollutant of concern, provided:

(1) The permit identifies which pollutants are intended to be controlled by the use of the effluent limitation;

(2) The fact sheet required by §124.56 sets forth the basis for the limit, including a finding that compliance with the effluent limit on the indicator parameter will result in controls on the pollutant of concern which are sufficient to attain and maintain applicable water quality standards;

(3) The permit requires all effluent and ambient monitoring necessary to show that during the term of the permit the limit on the indicator parameter continues to attain and maintain applicable water quality standards; and

(4) The permit contains a reopener clause allowing the permitting authority to modify or revoke and reissue the permit if the limits on the indicator parameter no longer attain and maintain applicable water quality standards.

Federal Regulations 40 CFR 131

§ 131.1 Scope.

This part describes the requirements and procedures for developing, reviewing, revising, and approving water quality standards by the States as authorized by section 303(c) of the Clean Water Act.

§ 131.5 EPA authority.

(a) Under section 303(c) of the Act, EPA is to review and to approve or disapprove State-adopted water quality standards. The review involves a determination of:

(1) Whether the State has adopted water uses which are consistent with the requirements of the Clean Water Act;

(2) Whether the State has adopted criteria that protect the designated water uses;

(3) Whether the State has followed its legal procedures for revising or adopting standards;

(4) Whether the State standards which do not include the uses specified in section 101(a)(2) of the Act are based upon appropriate technical and scientific data and analyses, and

(5) Whether the State submission meets the requirements included in §131.6 of this part and, for Great Lakes States or Great Lakes Tribes (as defined in 40 CFR 132.2) to conform to section 118 of the Act, the requirements of 40 CFR part 132.

(b) If EPA determines that the State's or Tribe's water quality standards are consistent with the factors listed in paragraphs (a)(1) through (a)(5) of this section, EPA approves the standards. EPA must disapprove the State's or Tribe's water quality standards and promulgate Federal standards under section 303(c)(4), and for Great Lakes States or Great Lakes Tribes under section 118(c)(2)(C) of the Act, if State or Tribal adopted standards are not consistent with the factors listed in paragraphs (a)(1) through (a)(5) of this section. EPA may also promulgate a new or revised standard when necessary to meet the requirements of the Act.

(c) Section 401 of the Clean Water Act authorizes EPA to issue certifications pursuant to the requirements of section 401 in any case where a State or interstate agency has no authority for issuing such certifications.

§ 131.6 Minimum requirements for water quality standards submission.

The following elements must be included in each State's water quality standards submitted to EPA for review:

- (a) Use designations consistent with the provisions of sections 101(a)(2) and 303(c)(2) of the Act.
- (b) Methods used and analyses conducted to support water quality standards revisions.
- (c) Water quality criteria sufficient to protect the designated uses.
- (d) An antidegradation policy consistent with §131.12.
- (e) Certification by the State Attorney General or other appropriate legal authority within the State that the water quality standards were duly adopted pursuant to State law.
- (f) General information which will aid the Agency in determining the adequacy of the scientific basis of the standards which do not include the uses specified in section 101(a)(2) of the Act as well as information on general policies applicable to State standards which may affect their application and implementation.

State Law

California Water Code, § 13241. Water quality objectives

Each regional board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses. Factors to be considered by a regional board in establishing water quality objectives shall include, but not necessarily be limited to, all of the following:

- (a) Past, present, and probable future beneficial uses of water.
- (b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.
- (c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
- (d) Economic considerations.
- (e) The need for developing housing within the region.
- (f) The need to develop and use recycled water.

Federal regulation 40 CFR 131.11(b)(1)

(a) *Inclusion of pollutants:* (1) States must adopt those water quality criteria that protect the designated use. Such criteria must be based on sound scientific rationale and must

contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use.

(b) Form of criteria: In establishing criteria, States should: (1) Establish numerical values based on: (i) 304(a) Guidance; or (ii) 304(a) Guidance modified to reflect site-specific conditions; or (iii) Other scientifically defensible methods; (2) Establish narrative criteria or criteria based upon biomonitoring methods where numerical criteria cannot be established or to supplement numerical criteria.

Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, 2005, (SIP)

5.2 Site-Specific Objectives:

If a priority pollutant criterion or objective is inappropriate for a particular water body (i.e., it does not protect the beneficial uses or, based on site-specific conditions, a less stringent standard may be warranted), a water quality objective that differs from the applicable criterion or objective may be developed for the site.

Development of Site-Specific Objectives

Water quality objectives shall be developed in a manner consistent with State and federal law and regulations. In accordance with the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code), objectives must provide for the reasonable protection of beneficial uses based on consideration of the factors listed in Water Code Section 13241. In accordance with federal law (CWA) and regulations (40 CFR 131.11, revised as of July 1, 1997), the objectives must be based on sound scientific rationale and protect the designated beneficial uses of the receiving water.

The RWQCB shall use scientifically defensible methods appropriate to the situation to derive the objectives. Such methods may include U.S. EPA-approved methods (e.g., Water Effects Ratio [WER] procedure, recalculation procedure, a combination of recalculation and WER procedures, Resident Species Procedure), and/or other methods specified in the workplan.

A site-specific objective adopted by the RWQCB may include a compliance schedule. However, if attainment of the potential objective(s) developed under the study is anticipated to be infeasible (as defined in 40 CFR 131.10(g), revised as of July 1, 1997), or if the RWQCB otherwise determines it is appropriate, a *use attainability analysis (UAA) may be conducted.

The RWQCB shall conduct, with the participation of interested persons, as appropriate, the UAA in accordance with 40 CFR 131.10(j) (revised as of July 1, 1997). If the UAA shows that attainment of the designated beneficial use(s) is not feasible (pursuant to 40 CFR 131.10(g) (revised as of July 1, 1997)), the RWQCB shall designate an alternative beneficial use or subcategory of use, and develop appropriate water quality objectives to

protect the new use(s). Both the use(s) and the objective(s) established to protect it would be reevaluated during the triennial reviews of the State's water quality standards.

Use of the Arid West Report

The Arid West Report is not applicable to this discharge.

1. The Arid West Report clearly states this is the case by presenting the map on page 3-1. The map clearly shows that the central valley is excluded from the report.
2. Page 3-2 of the Arid West Report characterizes the applicable water bodies for which the report is developed.

“The hydrology of arid west streams can affect the application of water quality standards, especially for ephemeral and effluent-dependent waters. For example:

Flashy nature of flow in ephemeral streams means that they are dry for significant lengths of time and then temporarily filled with water. Accordingly, the exposure duration assumptions inherent in federally recommended criteria may not be appropriate, and as such could be modified. Deer Creek flows year round. The Deer Creek Wastewater treatment plant is mandated by the State Board, division of water rights to discharge a minimum flow year round.

Effluent-dependent streams are artificially created habitats where the ecological community present is, by definition, adapted to the flow regime, i.e., the existing aquatic life use is dependent on the nature of the waterbody created. The extent to which aquatic life becomes established in an effluent-dependent stream will be influenced by the duration and frequency of the effluent discharge. For example, some wastewater facilities are designed primarily to provide reclaimed water for reuse. However, occasionally these facilities may have to discharge to an ephemeral waterbody for a few days or weeks. The expectations for the aquatic community that develops downstream of these intermittently discharging facilities systems will be quite different from the community that develops in a waterbody that receives effluent all of the time. The Deer Creek Wastewater treatment plant is mandated by the State Board, division of water rights to discharge a minimum flow year round.

The Arid West report states on page 3-4 that: “*Effluent-dependent streams support valuable riparian communities with high biodiversity of terrestrial plants and animals. In arid west waters, the differences between terrestrial vegetation upstream and downstream of a discharge can be striking, especially where the water is effluent-dependent.*” The permit contains no information, and there is no information in the record showing that there is any difference between the upstream and downstream vegetation. To the contrary, CSPA representatives² have

² Richard McHenry as a Civil Engineer, worked for the Central Valley Regional Board from 1987 through 2006, for much of that time he was assigned direct responsibility as a senior engineer for the regulation of EID's Deer Creek

visited the Deer Creek wastewater treatment plant site on numerous occasions and found both the upstream and downstream vegetation along the Deer Creek riparian corridor to be lush and fully developed.

The Regional Board states in the proposed Permit, page F-31, that Deer Creek has the same characteristics as Arid West waters. Arid west waters are typified as dry stream beds where vegetation only exists downstream based on the wastewater being discharged; dry desert streambeds (see figure 3.2 on page 3.2 of the Arid West Report). Deer Creek is located east of Sacramento as the central valley rises into the Sierra Foothills south of the community of Cameron Park. There is nothing in the Deer Creek watershed that is similar to the waters described in the Arid West Report. An aerial map of the Deer Creek wastewater treatment plant, showing the surrounding vegetation can be seen at <http://wikimapia.org/#lat=38.6274321&lon=-120.9842777&z=15&l=0&m=b&v=8&ifr=1>.

The Arid West Report states on page 4-13 that: *“Although AWQC are designed to protect most species nationwide, criteria are derived from toxicity tests primarily with surrogate laboratory organisms. These surrogates are usually those species encountered in perennial streams in mesic environments, e.g., the eastern U.S., the Pacific Northwest, and the intermountain Rocky Mountains, such as rainbow trout. A much smaller body of toxicological knowledge exists for stream biota characteristic of the arid parts of the West. The responses of species adapted to effluent-dependent waters to discharged pollutants are even less well understood. EPA regulations and guidance documents provide a procedure to recalculate site-specific water quality criteria that reflect local, unique conditions, or exposed populations.”* Deer Creek support a population of rainbow trout³ unlike the waterbodies described in the Arid West Report.

The Regional Board has cited *Evaluation of the EPA Recalculation Procedure in the Arid West Technical Report* (May 2006). The title of the document infers recalculation of water quality criteria with the intent of developing site specific water quality criteria. This is confirmed in the *Forward* of the report presented on page ii (AR014031) which states that:

“The purpose of this fifth report, Evaluation of EPA Recalculation Procedure in Arid West Effluent Dependent Waters, (“Recalculation Procedure Study”) was to evaluate use of the Recalculation Procedure on selected water quality criteria with different modes of toxicity in specific arid West waters. In addition, based on the findings from this evaluation, a User’s Guide for Development of Site-Specific Water Quality Standards in

wastewater treatment plant. Mr. McHenry was present and participated in numerous compliance inspections at the Deer Creek wastewater treatment plant.

³ Direct observation by Mr. Richard McHenry and as cited from the Deer Creek permit R5-2002-0210, page 4 (e): “e. Preservation and Enhancement of Fish, Wildlife and Other Aquatic Resources. Deer Creek flows to the Cosumnes River. The California Department of Fish and Game (DFG) has verified that the fish species present in Deer Creek and downstream waters are consistent with both cold and warm water fisheries, that there is a potential for anadromous fish migration necessitating a cold water designation and that trout, a cold water species, have been found both upstream and downstream of the wastewater treatment plant. The Basin Plan (Table II-1) designates the Cosumnes River as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to Deer Creek. The cold-water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/l.”

Arid West Effluent-dependent Streams Using USEPA's Recalculation Procedure was also prepared as a practical guide for water quality standards practitioners regarding use of the Recalculation Procedure for developing site-specific water quality standards.”

The Regional Board has not however recalculated the criteria and begun the legally required process of modifying the water quality criteria. The Regional Board has circumvented the legal water quality standards development process and applied the recommended water quality levels for Arid West waterbodies in NPDES permits. This is not only contrary to the stated intent of the report but conflicts with federal and state requirements for developing water quality standards, including site-specific standards. The Regional Board has failed to follow the legally required procedures for developing water quality standards, 40 CFR Part 131. The Regional Board has also failed to comply with the California Water Code, Porter Cologne Section 13241.

The proposed Permit, page F-31, states that: *“The Technical Report found that “speciation and/or complexation of aluminum is highly dependent on ambient water quality characteristics and ultimately determines the mechanism of toxicity. [Increased] Concentrations of calcium in the water was shown to decrease toxic effects to fish.”* Yet, any analysis of calcium concentrations in Deer Creek is not presented. The proposed Permit then states in the next paragraph that: *“There is no evidence that aluminum behaves differently in Deer Creek than in the Arid West Project water bodies, and no basis to expect that it would behave differently.”* Clearly, if the Regional Board wishes to develop a site-specific objective for aluminum, the burden of proof is for them to prove that the proposed objective is fully protective of the beneficial uses of Deer Creek. None of the citations of the Arid west report appear to be applicable to Deer Creek.

Arid West Fish

The proposed Permit spends a lot of space discussing fish populations in Arid West waters and compares them to Deer Creek fish. Since the proposed permit fails to show that any other non-Arid West stream has different fish, the point is lost. The proposed Permit finally get to their point on page F-34 by stating that: *“Also, note that neither brook trout nor striped bass reside in Deer Creek, which are the two species USEPA developed the chronic criterion at 87 µg/L to protect. Additionally, Deer Creek does not support a resident, self-sustaining population of rainbow trout, which exhibits similar sensitivities as brook trout.”* The operable word in the previous sentence is apparently “self sustaining” since the following documentation confirms the presence of trout in Deer Creek.

Waste Discharge Requirements, Order No. R5-2002-0210 states that:

“Preservation and Enhancement of Fish, Wildlife and Other Aquatic Resources. Deer Creek flows to the Cosumnes River. The California Department of Fish and Game (DFG) has verified that the fish species present in Deer Creek and downstream waters are consistent with both cold and warm water fisheries, that there is a potential for anadromous fish migration necessitating a cold water designation and that trout, a cold water species, have been found both upstream and downstream of the wastewater

treatment plant. The Basin Plan (Table II-1) designates the Cosumnes River as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to Deer Creek. The cold-water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/l.” The Permit Finding was apparently based on a letter from the Department of Fish and Game dated 2 June 1999, which states in part that: “... the fish species present in Deer Creek are consistent with both cold and warm water fisheries, that the potential for anadromous migration in Deer Creek necessitates a cold water designation and that trout, a cold water species, have been found both upstream and downstream of the wastewater treatment plant.”

The presence of trout on Deer Creek is also confirmed by El Dorado Irrigation District’s consultants:

The three benthic macroinvertebrate surveys (CDFG 1995, 1998; SWRI 1996) and 5 fish surveys (JSA 1993; CDFG 1994; SWRI 1996; CDFG 1997; Nature Conservancy 1999) that have been conducted in Deer Creek between 1993 and 1999 (collectively from north of Hwy 50 to the confluence with the Cosumnes River – see Figure 1) documented that Deer Creek supports warm water ecosystems upstream and downstream of the Deer Creek Wastewater Treatment Plant (DCWWTP). Three rainbow trout were observed in the 1994 survey conducted by CDFG, but rainbow trout were not observed in any of the other 4 fish surveys that were conducted between 1993 and 1999. Hence, Deer Creek does not support a viable, self-sustaining population of rainbow trout, either upstream or downstream of the DCWWTP (Staff Report, Volume II, section 7.4.2 and Appendices G and H; SWRI 1996 for detailed biological and water temperature data for Deer Creek).

The above cited CDFG fish survey identifies that the study area was upstream and downstream of the wastewater treatment plant. The locations of the other fish surveys were not clearly identified. However, areas identified as north of highway 50 or at the confluence with the Cosumnes River would not be located near the wastewater treatment plant.

The information in the record is contrary to the proposed Permit conclusion that the fish used by U.S. EPA in evaluating the toxicity of aluminum are absent in Deer Creek. Clearly, trout are present in Deer Creek and U.S. EPA’s ambient criteria for aluminum are applicable.

The effects of pH and hardness

The proposed permit cites an Arid West based projected chronic toxicity limitation at the City of Auburn for aluminum of 287 ug/l, but discounts an association since the pH and hardness at Deer Creek are higher. Although not stated by the Regional Board their statement allowing that

hardness and pH at higher values will render aluminum less toxic is from the footnote to U.S. EPA's ambient criteria for aluminum 1999 update. We must remind the Regional Board of their oft cited revised ambient criteria footnote for aluminum which also states in part that: "but the effects of pH and hardness are not well quantified at this time". The Regional Board uses the fact that Auburn and Deer Creek are located in the foothills at approximately the same elevation to conclude that they support the same aquatic life.

Arid West Calculations

Finally, in evaluating the Arid West Studies and developing their "site-specific" objective, permit page F-37, the Regional Board uses the mean hardness rather than the most protective lowest hardness in their calculations. The mean hardness would not represent the worst case, most protective, limitation for chronic toxicity. It would be comical if it were not so potentially lethal, that the Regional Board has gone to such extreme measures to use the effluent hardness in developing limitations for toxic metals, yet uses the even more relaxed mean downstream hardness when developing their "objective" for aluminum.

- 3. The proposed Permit fails to require that analysis of water quality be performed by a certified laboratory, contrary to the California Water Code Section 13176.**

The Superior Court Order

CalSPA's contented that the Board abused its discretion by failing to require that monitoring for pH and temperature be conducted by a properly certified laboratory, as mandated by California Water Code section 13176. The Court concludes that this issue should be decided in the first instance by the Board, not by the Court. Accordingly, the Court shall issue a writ remanding this matter to the Board to consider whether it is legally and factually possible for the District to comply with the requirements of Water Code section 13176 in the manner suggested by CalSPA.

Legal Requirements

The law states that:

CWC § 13176. Certified laboratories (a) The analysis of any material required by this division shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code. (b) No person or public entity of the state shall contract with a laboratory for environmental analyses for which the State Department of Health Services requires accreditation or certification pursuant to this chapter, unless the laboratory holds a valid certification or accreditation.

CWC § 13383. Monitoring requirements (a) The state board or a regional board may establish monitoring, inspection, entry, reporting, and recordkeeping requirements, as authorized by Sections 13160, 13376, or 13377 or by subdivisions (b) and (c) of this

section, for any person who discharges, or proposes to discharge, to navigable waters, any person who introduces pollutants into a publicly owned treatment works, any person who owns or operates, or proposes to own or operate, a publicly owned treatment works or other treatment works treating domestic sewage, or any person who uses or disposes, or proposes to use or dispose, of sewage sludge.

(b) The state board or the regional boards may require any person subject to this section to establish and maintain monitoring equipment or methods, including, where appropriate, biological monitoring methods, sample effluent as prescribed, and provide other information as may be reasonably required.

(c) The state board or a regional board may inspect the facilities of any person subject to this section pursuant to the procedure set forth in subdivision (c) of Section 13267.

California Health and Safety Code (HSC) section 100825 (b) Laboratories that perform analyses on any combination of environmental samples, ...for regulatory purposes shall obtain a certificate of accreditation pursuant to this article.

HSC section 100825 (c) (3) “Certificate” means a document issued to a laboratory that has received certification or accreditation pursuant to this article.

HSC 100825 (c) (16) “Regulatory purposes” means a statutory or regulatory requirement of a state board, office, or department, or of a division or program that requires a laboratory certified under this article or of any other state or federal agency that requires a laboratory to be accredited.

The laws included in both the California Water Code and the Health and Safety Code is clear in the requirement that laboratories doing environmental analyses be certified. The Regional Board failed to require certification in the NPDES permit issued to El Dorado Irrigation District’s Deer Creek Wastewater Treatment Plant for pH and temperature. Both pH and temperature are regulated under the permit and therefore subject to the cited laws. The original permit, which was the subject of CSPA’s petition and eventual legal action, exempted El Dorado Irrigation District from conducting pH and temperature analyses at a certified laboratory without explanation. In response to the Superior Court’s order; the permit has been modified to state that a \$20,000 annual cost to conduct the analyses at a certified laboratory is overly expensive. The Regional Board does not cite any legal authority to exempt any Discharger from the legal requirements for laboratory certification.

A matter of routine

Since there was originally no explanation of exempting a Discharger from using certified laboratories to conduct required monitoring; recently adopted permits for other Dischargers were reviewed for similar exemptions.

Sacramento Regional County Sanitation District, Order No. R5-2010-0114, page E-2 No. C exempts the Discharger from lab certification for pH, turbidity, temperature and chlorine residual.

(http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/sacramento/r5-2010-0114_npdes.pdf)

City of Auburn, Wastewater Treatment Plant, Order No. R5-2010-0090-01, page E-1 No. C: “In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory.”

(http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/placer/r5-2010-0090-01.pdf)

Based on a review of the above regional Board permits, it appears that the Regional Board routinely exempts wastewater Dischargers from the legal responsibility of conducting compliance monitoring at a certified laboratory, in the case of Auburn for apparently all parameters. An explanation of the technical or legal authority for such exemption could not be located in the permits.

The Regional Board’s explanation

The following is an excerpt from the Deer Creek revised permit responding to the Court’s Order:

“The Court required the Central Valley Water Board to “consider whether it is legally and factually possible for the District to comply with the requirements of Water Code section 13176 either (i) by having its on-site laboratory re-certified or (ii) by having certified laboratory personnel travel to the District’s facility and conduct the testing on site.” California Water Code section 13176 requires that the analysis of water quality be performed by a laboratory that has accreditation or certification under the Health and Safety Code (Cal Water Code § 13176). To comply, Central Valley Water Board staff communicated separately with the District, with California Department of Public Health and State Water Board staff, and with three private laboratories within the vicinity of the Deer Creek Facility, and the findings are summarized below.

Last year the El Dorado Irrigation District leased its on-site laboratory at its El Dorado Hills Wastewater Treatment Plant to a certified private contract lab in an effort to save costs, and therefore, it is factually impossible for the District to recertify their on-site lab at the El Dorado Hills Wastewater Treatment Plant until the lease agreement expires.

There are four private certified labs with mobile units located within the vicinity of the District’s facilities, which includes the private contract lab now located on-site. However, none of the labs’ mobile units are currently certified nor provide this service. Based on conversations with three of the four private labs, it would be possible to acquire certification, and the monitoring fees are approximately \$100 per hour, which includes travel time to and from the monitoring locations. Thus, the cost to the District ranges from \$51,000 to \$81,000 per year for each Facility.

The District provided information that the on-site private lab at the El Dorado Hills Wastewater Treatment Plant can conduct the in-situ monitoring for an approximate annual cost of \$20,000 per facility; however, the District's current budget is \$19.661 million per year after recent local sewer fee increases, and the 2012 budget is projected at \$20.362 million per year (www.eid.org/2011-2012_OpBudget.pdf). The District states that they have reduced staff since 2008 by 34.8%, and increased sewerage fees up to 15%. Therefore, The Central Valley Water Board finds that the additional monitoring expense makes it economically impossible for the District to comply with the requirements of Water Code section 13176 without a further increase in local sewer fees”.

Closing their laboratory

The following is copied from *EID News*, 22 March 2010
(http://www.eid.org/doc_lib/03_news/2010/20100322_eidnews.pdf):

“We also laid off the four-person staff at our state-certified laboratory, where we test for water quality and perform other functions required by regulations,” Abercrombie said. “We are contracting with a private firm that will rent our lab facilities, perform our testing, and seek other business in the area. The district achieves overall savings of \$536,000 the first year and \$322,000 per year thereafter through the reduced personnel costs at the lab and the rental income.”

Wastewater Chemistry and Operations An easy fix for certification

In addition to compliance monitoring, wastewater treatment plant processes are monitored frequently by staff to assure the plant is operating properly. The following are excerpts from *Operation of Wastewater Treatment Plants (A field Study Training Program, Fourth edition, Volume II)* which is training guide for wastewater treatment plant operators:

“The pH test indicates whether a treatment process may continue to function properly at the pH measured. Each process in the plant has its own favorable range of pH which must be checked routinely.” (Page 555)

“Temperature is one of the most important factors affecting biological growth. Temperature measurements can be helpful in detecting changes in raw wastewater quality. For example, an influent temperature drop may indicate large volumes of cold water from infiltration. An increase in temperature may indicate that hot water by industry are reaching your plant

Temperature is one of the most frequently taken tests. One of the many uses is to calculate the percent saturation of dissolved oxygen in the DO test.”

Wastewater Treatment plants maintain a laboratory for operations control. Temperature and pH are typically measured using hand held devices; a thermometer and a pH meter. Even if EID did not maintain an operations laboratory, hand held devices would not require a dedicated area and could be certified independently.

An option for EID's Deer Creek wastewater treatment plant is to have the operations lab certified for pH and temperature.

Laboratory costs for pH and temperature sampling

The proposed Permit states that: *"the District's current budget is \$19.661 million per year after recent local sewer fee increases, and the 2012 budget is projected at \$20.362 million per year."* The proposed Permit also indicates that the cost for an outside lab to conduct certified sampling and analysis is \$20,000 per year. \$20,000 is a small percentage of the total operating cost of \$20,362,000.

Wastewater treatment plants have ever-changing conditions and maintenance requirements. One never knows when a pump or a sewer line may break. It is also not uncommon that engineering services are required for system analysis or to prepare a technical report. For these reasons, wastewater treatment plants generally keep a reserve fund to cover unexpected costs. It would be highly unusual for a utility with an annual budget of over \$20 million not to have a reserve fund well in excess of \$20,000, a tenth of a percent of the total budget. The Regional Board's assessment that a \$20,000 expense at a facility with a budget over \$20 million would necessitate a rate increase would appear at best to be without merit.

The proposed Permit cites that the average dry weather flow at the Deer Creek wastewater treatment plant is 3.6 million gallons per day. Without any significant industrial discharges, at an approximate discharge level of 100 gallons per person per day, the plant would serve approximately 36,000 people. Assuming a household is 2.5 people, \$20,000 per year divided equally between the local households would not be significantly over a dollar per year.

Ready means of compliance

The Regional Board's explanation for failing to requiring analyses at certified labs only comes down to the cost to the district, no other defense, technical or legal, is presented. In any of the cases, whether the District can certify their operations laboratory for pH and temperature or certify only their handheld pH and temperature devices or utilize reserve funds to cover the costs from outside laboratory analysis. There are options other than raising sewer rates to achieve certification for pH and temperature analyses. While no one is in favor of higher sewer rates; the Regional Board has not presented any technical or legal reason why an increased sewer rate excuses a wastewater Discharger from the requirement to conduct environmental analyses at a certified laboratory. The Regional Board has also not cited, if they believe this case is based on an economical hardship, why are other new permits being written with the same exemption (see above Sacramento Regional and City of Auburn citations).

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 the first name "Bill" being more prominent and the last name "Jennings" following in a similar style.

Bill Jennings, Executive Director
California Sportfishing Protection Alliance

Attachment 1: Emerick, Developing Protective Hardness-Based Metal Effluent Limitations

Attachment 2: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Factsheet
April 03

Attachment 3: Memorandum, Indiana Department of Environmental Management, Recalculation
of Water Quality Criteria for Iron and Aluminum

Attachment 4: EID News, 22 March 2010

Attachment 5: EID 2011-2012 Operating Budget

Attachment 6: Memorandum From Mark Bradley Enforcement Manager, State Water Resources
Control Board, titled Must Any Sample Used for Regulatory Purposes be
Analyzed By A Certified Laboratory?