ROBERTSON - BRYAN, INC.
Solutions for Progress
9888 Kent Street • Elk Grove, CA 95624
Phone: (916) 714-1801 • Fax: (916) 714-1804

May 2, 2011

DELIVERED BY EMAIL

Ms. Diana Messina
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Subject: El Dorado Irrigation District Comments on Tentative Order Amending Waste Discharge Requirements Order No. R5-2008-0173 for the Deer Creek Wastewater Treatment Plant (NPDES No. CA0078662)

Dear Ms. Messina:

On behalf of the El Dorado Irrigation District (District), Robertson-Bryan, Inc. (consultant to the District) is submitting the District's comments on the Tentative Order amending Waste Discharge Requirements Order No. R5-2008-0173 issued for the Deer Creek Wastewater Treatment Plant (see Attachment A). District staff are pleased to have had the opportunity to review and provide comments on this Tentative Order, and look forward to discussing their comments with you and your staff at the meeting scheduled for May 2, 2011, 1:00-2:30 pm at your office.

If you have any questions regarding the enclosed comments, please contact Elizabeth Wells at (530) 642-4146 or myself at (916) 714-1802.

Sincerely,

ROBERTSON-BRYAN, INC.

Michael D. Bryan, Ph.D.
Principal Scientist/Partner

Attachment A: Comments on Tentative Order Amending Waste Discharge Requirements for the El Dorado Irrigation District's DCWWTP

cc: Elizabeth Wells, Co-Manager Wastewater/Recycled Water-Engineering (District)
Victoria Caulfield, Co-Manager Wastewater/Recycled Water-Operations (District)
Gayleen Perreira, Regional Water Board
Joshua Palmer, Regional Water Board

Attachment A

COMMENTS
ON
TENTATIVE ORDER
AMENDING WASTE DISCHARGE REQUIREMENTS
FOR
EL DORADO IRRIGATION DISTRICT
DEER CREEK WASTEWATER TREATMENT PLANT
EL DORADO COUNTY

May 2, 2011

---

pp. 10 and F-42, Bromodichloromethane. The maximum daily effluent limitation for bromodichloromethane (BDCM) in Table 6b should be changed from 0.79 µg/L to 0.80 µg/L, consistent with the value in Table 6a and in Table F-16 of the Fact Sheet.

Notwithstanding the above required correction, the District disagrees with the findings on p. F-42 that an effluent limitation for BDCM is required to comply with the EID Court Order. Footnote #4 on pages 6-7 of the EID Court Order addressing this topic states, in part, "Subsequent to the filing of this case, the Board discovered an additional data point regarding "bromodichloromethane" that, Board staff has concluded, will require an effluent limitation for this chlorination by-product…since the Board concedes that an effluent limitation is required, the Court shall issue a writ requiring the Board to impose one." However, Board staff have since learned that the sample in question was not an effluent sample, but rather a drain sample (as stated in the Fact Sheet, p. F-42). The EID Court Order does not say a BDCM limitation is required, even if the appropriate procedures for determining "reasonable potential" are implemented and the findings are one is not needed. Rather, the EID Court Order to include a BDCM limitation is based on a previous conclusion of the Board that a limitation was warranted, which has since been found to be erroneous. Including a BDCM limitation in the NPDES permit now blindly implements the EID Court Order, which was based on incomplete information, and fails to address this matter consistent with the SIP. In doing so, the NPDES permit results in an overly stringent regulation of the discharge and requires the already fiscally-constrained District to expend additional funds on monthly compliance monitoring for BDCM (which at the estimated cost of $205/sample x 60 samples over a 5-year permit term = $12,300).

Based on the above, the District requests that the BDCM limitation and monthly monitoring requirements be removed from the Tentative Order because reasonable potential for the discharge to cause or contribute to exceedance of BDCM criteria does not exist and cannot be demonstrated using the SIP procedures.

pp. 10 and F-37/38, Aluminum. The paragraph at the top of p. F-38 states, "However, as required by the EID Court Order, staff conducted a pollutant variability analysis using the method described in section 3.3.2 of EPA's *Technical Support Document for Water Quality-Based Toxics Control*. The projected MEC based on this analysis was 705 µg/L." The District disagrees with this statement and the conclusion that an effluent limitation for aluminum is required.

First, the EID Court Order does not require a pollutant variability analysis using the specified TSD procedures employed in the Tentative Order or any other specific procedures, but simply states in the conclusion, "…the Board shall…conduct a pollutant variability analysis in determining the MEC for aluminum." Further, as noted in Footnote #18 on p. F-38, the Code of Federal Regulations (CFR) does not specify a procedure for conducting a "pollutant variability analysis." As also stated in Footnote #18, the supporting documentation for the SIP demonstrates that the SIP reasonable potential analysis methodology accounts for pollutant variability, albeit in a different manner than the TSD does. The aluminum data used for the reasonable potential analysis are concentrations over various months, reflecting a seasonal variability in the effluent. The Regional Water Board should rely on that rationale for characterizing the effluent variability, as it has done for assessing reasonable potential for all other constituents in this Tentative Order, and as Board staff has does in all NPDES permits adopted during the last few years.

Also, applying the TSD procedure results in an unrealistic projected maximum effluent concentration (MEC) of 705 µg/L, which is an artifact of multiplying the MEC of 150 µg/L by 4.7, which is the TSD statistical multiplier when the data set has four or less values. The historical effluent aluminum concentrations illustrate the unreasonableness of the TSD-projected value and that the MEC is a reasonable projected upper bound concentration. As cited in the Tentative Order, the 2006-2007 data set used for reasonable potential analysis included the following values in addition to the MEC: 25 µg/L, 21 µg/L, and <50 µg/L, all well below the MEC. The following historical Deer Creek WWTP effluent aluminum (total recoverable) concentrations further illustrate the flaw in the TSD approach and that 150 µg/L is the upper level of the expected concentration.

Date	Al (µg/L)
Feb 2002	39
Oct 2003	100
Feb 2004	100
Aug 2004	23
Mar 2005	39
Aug 2005	40

The upper reasonable projected level aluminum concentration of 150 µg/L is well below the most stringent applicable aluminum criterion of 200 µg/L, which is a "consumer acceptance" secondary maximum contaminant level (MCL) for drinking water, applied on an annual average basis. The average annual aluminum concentrations are also well below the 200 µg/L MCL.

Based on the above, the District requests that the aluminum limitation and monthly monitoring requirements be removed from the Tentative Order because reasonable potential for the discharge to cause or contribute to exceedance of aluminum criteria on an annual average basis does not exist and cannot be demonstrated using available data.

pp. F-16 through F-26, Hardness. The District provides the following comments on this section, which are mostly editorial in nature.

p. F-16, 1st and 2nd paragraphs. The first and second paragraphs on p. F-16 contain duplicate language. It appears that the sentence in the text in the first paragraph beginning with "The *California Toxics Rule*…" and ending with "nickel, silver, and zinc" should be deleted.

p. F-16, 3rd paragraph. The citation of Table 4, note 4 of 40 CFR § 131.38(c)(4) appears to be incorrect; there is no Table 4 in this section of the CFR.

p. F-21, Table F-4. The "Highest Assumed Upstream Receiving Water Copper Concentration" in Table F-4 should be calculated with a WER equal to 1, not 9.7, because the WER applies at and downstream of the discharge. The ECA and downstream criteria are correctly calculated using the WER equal to 9.7. Also, to avoid confusion, the Highest Assumed Upstream Receiving Water Copper Concentration, which is supposed to reflect the CTR criterion, should be rounded to two significant figures, which is how CTR criteria for metals are expressed, and how the criterion is shown in the table.

p. F-24, 1st paragraph. At a minimum, in the last sentence of this paragraph, the ECA should be changed from "1.3 µg/L" to "0.99 µg/L" and the "42 mg/L" should be changed to "40 mg/L."

However, it is unclear why it is necessary to solve for and present a reasonable worst-case ambient hardness (discussion beginning below Equation 4 on p. F-23 and ending on p. F-24). That value represents an artificial hardness, not an actual or even potential downstream hardness, and does not appear to be used for subsequent calculations in the Tentative Order. Thus, its presentation is confusing. The discussion on p. F-23 above Equation 4 and later on p. F-24 does make clear that waters that are separately compliant with so-called Concave Up criteria may not be when mixed. As such, the ECA must be reduced relative to a criterion calculated from the actual worst-case potential downstream hardness of 42 mg/L. Equation 4 determines that reduced ECA. Edits are offered below for your consideration, as the rationale provided in the Tentative Order is somewhat confusing.

~~By rearranging the CTR Equation (Equation 1) to solve for the hardness, the reasonable worst-case ambient hardness associated with the ECA from Equation 4 can be determined, as shown in Equation 5, below.~~

~~Reasonable Worst-Case Ambient Hardness = $e^{(\ln(ECA)-b)/m}$ (Equation 5)~~

~~Where:~~

~~m, b = criterion specific constants (from CTR)~~
~~ECA = effluent concentration allowance (from Equation 4)~~

An example is shown below for a Concave Up Metal. As previously mentioned, the lowest effluent hardness is 42 mg/L, while the upstream receiving water hardness ranged from 71 mg/L to 290 mg/L. In this example for lead, using Equation 4, the ECA is ~~1.3~~ 0.99 µg/L~~, which corresponds to a reasonable worst-case ambient hardness of 42 mg/L~~.

~~A reasonable worst-case ambient hardness of 40 mg/L has been used in this Order for lead.~~ In this case for lead, the lowest possible fully-mixed downstream hardness is 42 mg/L (see last row of Table F-6), which corresponds to a total recoverable lead criterion of 1.1 µg/L. However, a lower ~~hardness is required to establish the criteria to calculate the~~ ECA is required to ensure the discharge does not cause toxicity at any location in the receiving water, ~~at or~~ downstream of the discharge location. This is because for concave up criteria, mixing two waters of different hardness with metals concentrations at their respective criteria will always result in ~~toxicity~~ criterion exceedances ~~when the waters mix~~. ~~Therefore, the effluent must contain some assimilative capacity for the metal to not cause toxicity as the discharge mixes with the receiving water.~~ As shown in Table F-6, ~~using a hardness of 40 mg/L results in~~ an ECA ~~that~~ of 0.99 µg/L is protective under all discharge conditions. In this example for lead, for any receiving water flow condition (high flow to low flow), the fully-mixed downstream ambient lead concentration is in compliance with the CTR criteria.

Also suggested is deleting the "reasonable worst-case ambient hardness" row in Table F-6 (p. F-25) and the "Ambient Hardness" column in Table F-7 (p. F-26).

p. F-25, Table F-6. The hardness values in Table F-6 should be rounded to two significant figures, consistent with Table F-5; otherwise it appears two different assumptions for mixed conditions were used for copper and lead.

p. F-37, paragraph 1, line 5. The following edit is suggested to make this statement more technically accurate/appropriate.

Therefore, Auburn Ravine and Deer Creek are expected to support ~~the same~~ similar assemblages of aquatic life.