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In Reply Refer to: EOL0412-276

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VIA EMAIL AND FIRST CLASS US MAIL

Ms. Lixin Fu
California Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
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SUBJECT: Comments on the Tentative Waste Discharge Requirements for the El Dorado Irrigation District, Camino Heights Wastewater Treatment Facility

Dear Ms. Fu:

The El Dorado Irrigation District (EID) appreciates the opportunity to provide comments on the Tentative Waste Discharge Requirements (Tentative Order) for EID's Camino Heights Wastewater Treatment Facility (WWTF). Our comments below are provided based on the issue of concern.

I. Electrical Conductivity

A. Factual Corrections to Findings for Electrical Conductivity

The Tentative Order includes a number of findings that must be corrected to properly describe the actual operations at the WWTF. In particular, finding 14 provides a summary of data with respect to electrical conductivity (EC) measured in the effluent. However, the data identified here is not actual effluent data from when effluent was being applied to the Land Application Areas (LAAs). There are typically four months of the year when effluent is not applied to the LAAs. Over the last several years, EID continued taking and reporting effluent data samples at times when effluent was NOT being applied to the LAAs. Although no discharges to LAAs were occurring, EID continued to apply chlorine to the contact basin for algae control. This resulted in drastic increases in the concentration of EC in the effluent. Further, this overly concentrated effluent was never applied to the LAAs and was returned to the ponds prior to land application. Pond monitoring data indicates that the return of the concentrated effluent to the ponds did not result in increasing EC concentrations in the ponds.

To address the over-monitoring issue, EID recommends that the Central Valley Regional Water Quality Control Board (Central Valley Water Board) remove effluent samples from the dataset when effluent was not applied to the LAAs. By removing this data, the effluent average for EC for the last three years (September 2009 through November 2011) is 741 $\mu\text{mhos/cm}$. The average EC of 741 $\mu\text{mhos/cm}$ is still a direct correlation of over-monitoring, but inconclusive data of draining the contact basin when EC was high makes this difficult to prove. Staff reported draining the basin after sampling and before land application. Thus, the maximum EC effluent value of 2,060 $\mu\text{mhos/cm}$ as identified in the Tentative Order for September 2011 is incorrect as no discharge to LAAs occurred.

B. Effluent Limitation for EC

Because of the over-monitoring of effluent EC, the Central Valley Water Board has incorrectly concluded that effluent from the WWTF may have the potential to degrade groundwater when it is applied to the LAAs. Based on this incorrect conclusion, the Tentative Order proposes that an appropriate effluent limitation is an incremental increase of 500 $\mu\text{mhos/cm}$ over source water, which is a proposed effluent limitation of 600 $\mu\text{mhos/cm}$ for EC. EID disagrees with this proposed effluent limitation for several reasons.

First, as is shown when a corrected dataset is used, the average EC effluent for a three-year period is 741 $\mu\text{mhos/cm}$; using 2011 data, the monthly average typically ranges from 319 $\mu\text{mhos/cm}$ to 522 $\mu\text{mhos/cm}$. This means that the effluent is NOT greater than the lowest range of the secondary maximum contaminant level (MCL) for EC, which is a standard for consumer protection (i.e., taste and odor) – not human health. Accordingly, the effluent does not have the potential to degrade groundwater above the applicable water quality standard. Because the effluent is well below the secondary MCL, EID recommends that the effluent limitation for EC be removed altogether. Removal of the effluent limitation for EC is consistent with the Central Valley Water Board's approach in the recently adopted WDR for the City of Plymouth's Wastewater Treatment facility. (Waste Discharge Requirements for City of Plymouth WWTF, Order No. R5-2011-0092 (Plymouth WDR).) In the Plymouth WDR, the Central Valley Water Board determined that it was unlikely that discharges would cause an exceedance of the applicable water quality objectives. (Plymouth WDR, pp. 10-11.) Based on this finding, the Central Valley Water Board did *not* include an effluent limitation for EC. EID's circumstances are similar to those for the Plymouth WWTF. Thus, the effluent limitation for EC should be removed. At the very least, the effluent limitation should be set equal to the low-end range of the secondary MCL, which is 900 $\mu\text{mhos/cm}$.

Second, an effluent limitation based on 500 $\mu\text{mhos/cm}$ over source water is not a proper effluent limitation. The Central Valley Water Board's statement that a reasonable incremental EC increase for domestic water use is 500 $\mu\text{mhos/cm}$ over source water has no credible scientific basis. This proposed effluent limitation actually derives from the Water Quality Control Plan for the Tulare Lake Basin (Tulare Lake Basin Plan), which is not applicable here. Further, the basis for the effluent limitation in the Tulare Lake Basin Plan is also not supported by credible scientific evidence.

Specifically, the effluent limitation was adopted as part of the original Tulare Lake Basin Plan in 1975. Prior to adoption of the language in 1975, a preliminary draft of the Tulare Lake Basin Plan was circulated for review. In the preliminary draft, the language was worded differently. It stated:

[m]aximum EC concentration of municipal and industrial point source wastewater effluent which has hydraulic continuity with the groundwater shall not exceed the present average monthly EC concentration by more than 10 percent or the average EC concentration of the source water plus 500 micromhos, whichever is less. When the source water is from more than one source, the EC concentration shall be a weighted average. (Part I. Water Quality Control Plan, Section 3. Program of Implementation, Chapter 5 Recommended Plan (Revised May 1974), "Preliminary – For Review Only," p. 5-17.)

Beyond indicating that the Central Valley Water Board was considering several approaches, the administrative record for the 1975 Tulare Lake Basin Plan provides no other support for an effluent limitation based on source water plus 500 $\mu\text{mhos/cm}$.

The most comprehensive discussion regarding the effluent limit appears in the administrative record for the Tulare Lake Basin Plan update that occurred in 1995. As part of the 1995 Tulare Lake Basin Plan update, the Cities of Visalia and Fresno submitted comments on this issue to the Central Valley Water Board. The City of Fresno's comments were extensive and the result of significant research by an engineering student. The City of Fresno's research identified references for the typical mineral pick-up amount of 500 $\mu\text{mhos/cm}$. According to the City of Fresno's research, the references used were typical mineral pick-up for domestic use in semi-arid communities that did not include industrial or commercial additions, and more importantly, excluded water softeners. (City of Fresno Wastewater Management Division, Comments on the Proposed Water Quality Control Plan for the Tulare Lake Basin (Aug. 1, 1995), p. 1282.)

In response to the comments submitted by the Cities of Visalia and Fresno, Central Valley Water Board staff wrote that:

. . . [t]he electrical conductivity limit was developed in 1975. The limit was based on typical increases through domestic use, as found in literature, which was more than incremental increases experienced by representative municipalities at that time within the Tulare Lake Basin. Control of salt discharged to the Basin is a primary objective of the Regional Water Board, and the effluent limit is a means to control salt from point sources. This limit has been in effect for twenty years already (Administrative Record for Water Quality Control Plan for the Tulare Lake Basin, Response to Comments received on July 1995 draft Basin Plan, p. 13441.)

At the Central Valley Water Board's hearing for adoption of the 1995 edition of the Tulare Lake Basin Plan, staff commented further that ground water quality objectives for salinity were recommended to be a high priority triennial review issue and that the discharge limitation would be part of the review. (Administrative Record of the Water Quality Control Plan for the Tulare Lake Basin, Item 3, Consideration of Adopting Proposed New Edition of the Water Quality Control Plan for the Tulare Lake Basin and the Workplan for the Triennial Review (Aug. 17, 1995), pp. 1371, 1375-1376.) Based on comments and testimony from the Cities of Visalia and Fresno, the Central Valley Water Board staff admitted that the effluent limitation was based on typical increases that occur from domestic use and that it was an issue that should be revisited due to changes in the valley. (*Id.*, p. 1399.) According to the transcript, it appeared that the Central Valley Water Board staff was committed to reviewing the groundwater objective and the effluent limitation as part of the next triennial review.

In other words, the Tentative Order proposes an effluent limitation for 500 μ mhos/cm over source water based solely on literature values developed over 30 years ago. The Central Valley Water Board is required to support decisions with specific findings and must relate evidentiary findings to the ultimate order. In particular, the Central Valley Water Board must "set forth findings to bridge the analytical gap between raw evidence and the ultimate decision or order." (*Topanga Assn. for a Scenic Community v. County of Los Angeles* (1974) 11 Cal.3d 506, 515 (*Topanga*); see also *In re Petition of the City and County of San Francisco, et al.*, SWRCB Order 95-4, 1995 WL 576920, pp. 4-5 (SWRCB Order 95-4).) The Tentative Order does not satisfy these requirements for the imposition of an effluent limitation for EC that is based on 500 μ mhos/cm over source water. It does not, for example, explain why the 30-year old literature value is relevant and appropriate to the

situation at hand. (See, e.g., Tentative Order, p. 10.) There is no evaluation to determine if the effluent limitation as applied is relevant in this case, including consideration of the WWTF's operation. Because the effluent limitation based on 500 $\mu\text{mhos/cm}$ cannot be supported, it must be removed from the Tentative Order.

C. Effluent Salinity Reduction Work Plan

The Tentative Order also proposes to require EID to submit and implement an *Effluent Salinity Reduction Work Plan*. As explained previously, the levels of salinity in the effluent as reported in the monitoring data are artificially high and are not reflective of current plant operations. Also, the WWTF services a small community with 121 sewer connections, and a small number of commercial businesses. There are no industrial dischargers to this system. Over the last several years, EID has evaluated operations at the WWTF and has already reduced salinity in the effluent. For example, improvements such as chlorine dosage control and SCADA were added in 2009/2010. Accordingly, there is no the need for EID to prepare an *Effluent Salinity Reduction Work Plan*, and the requirement should be deleted.

II. Coliform

A. Coliform Findings, Effluent Limitations, and Groundwater Limitations

The Tentative Order includes a finding with respect to coliform organisms and the "Basin Plan's numeric water quality objective of 2.2 MPN over any seven-day period for coliform organisms." (Tentative Order, p. 11.) EID has several concerns with this finding. First, the finding incorrectly states that the Tentative Order sets an effluent limitation of 2.2 MPN/100 mL for total coliform organisms. In actuality, the Tentative Order proposes an effluent limitation of 23 MPN as a seven-day median concentration. The findings must be consistent with the limitations, and must support the limitations proposed. Accordingly, this language of the finding must be revised.

Second, EID recommends that the effluent limitation for total coliform be revised to be a monthly median of 23 MPN/100 mL versus the seven-day median. This is consistent with the WWTF's current permit as well as other permits recently adopted by the Central Valley Water Board. (See, e.g., Plymouth WDR, p. 19.)

Third, the Tentative Order includes a groundwater limitation for total coliform based on the adopted water quality objective. The Tentative Order specifically states that it is appropriate to adopt a numerical groundwater limitation of 2.2 MPN/100 mL for *total* coliform organisms. (Tentative Order, p. 11.) The water quality objective in the Water

Quality Control Plan for the Sacramento River and San Joaquin River Basins (Sacramento-San Joaquin Basin Plan) is for *coliform organisms* and does not differentiate between total and fecal. (Sacramento-San Joaquin Basin Plan, p. III-10.00.) EID believes that the appropriate limitation here should be based on *fecal* coliform versus total coliform. Fecal coliform is a much more reliable indicator of sewage contamination as compared to total coliform. Total coliforms are present throughout the environment and would likely result in false positive data that would not correlate with any actual contamination that may be caused by the WWTF. The Central Valley Water Board has agreed with this approach in other permits. (See, e.g., Waste Discharge Requirements for the City of Vacaville, Order No. R5-2008-0055-01, p. 16.) Thus, both the groundwater limitation and associated finding need to be revised to reflect that the groundwater limitation is for fecal coliform – not total coliform.

Fourth, EID has concerns with finding 34.e in the Tentative Order, and portions of 45.c and 50.b.ii. (Tentative Order, pp. 8, 11, 12-13.) Finding 34.e makes some very generalized conclusions that are not supported by evidence in the record. Specifically, the finding states that, “[t]he groundwater coliform detections are likely due to the wastewater percolation from the unlined ponds or cross-contamination of the monitoring wells during construction and/or subsequent sampling.” Such a conclusion is inappropriate until EID is given the opportunity to further evaluate the potential sources of coliform in the downgradient monitoring wells. Further, EID objects to the inclusion of language in the finding that indicates additional treatment and control, including the installation of liners in the treatment ponds may be necessary if coliform detections continue. With respect to findings 45.c and 50.b.ii, EID is concerned that they too imply that lining ponds will be necessary to protect groundwater. For the reasons discussed below, these references in findings 34.e, 45.c, and 50.b.ii need to be removed.

B. Groundwater Monitoring Well Disinfection Workplan and Sampling and Analysis Plan

When fecal coliform is evaluated versus total coliform, data collected by EID indicates that the ponds are not the cause of total coliform contamination detected in the groundwater wells. Specifically, review of the historical fecal coliform data for the monitoring wells at the WWTF site (as reported in the historical data summary tables in each quarterly groundwater monitoring report) indicates 8 detections at or above the laboratory reporting limit out of 121 sample analyses from the five monitoring wells. The data spans the time period from the first quarter of 2005 to the second quarter of 2011. A summary for the data from each well is as follows: from 25 sampling events at well MW-1A, one detection was recorded above the reporting limit (1.8 or 2.0 MPN/100 mL) at 4.5 MPN/100 mL; from 24 sampling events at well MW-2, one detection was recorded

at or just above the reporting limit (1.8 or 2.0 MPN/100 mL) at 2.0 MPN/100 mL; from 22 sampling events at well MW-3, four detections were recorded at or above the reporting limit (1.8 or 2.0 MPN/100 mL) ranging from 1.8 to 4.5 MPN/100 mL; from 25 sampling events at well MW-4, two detections were recorded at or above the reporting limit (1.8 or 2.0 MPN/100 mL) at 2.0 and 4.5 MPN/100 mL; and from 25 sampling events at well MW-5, no detections were recorded above the reporting limit (1.8 or 2.0 MPN/100 mL). Based on these low, infrequent fecal coliform detections, EID does not believe a well disinfection work plan is warranted. Accordingly, the requirement to prepare and submit a *Groundwater Monitoring Well Disinfection Workplan and Sampling and Analysis Plan* should be deleted.

However, should the Central Valley Water Board maintain the requirement, EID is concerned with the proposed timeframes to comply with this requirement. The Tentative Order proposes to require the submittal of the *Groundwater Monitoring Well Disinfection Workplan and Sampling and Analysis Plan* by December 1, 2012. Due to concerns with contracting requirements, EID requests that this date be changed to March 1, 2013. With this change, it is also necessary to change the other associated deadlines. We recommend changing the 1 June 2013 and 1 July 2013 dates, to 1 September 2013 and 1 October 2013, respectively.

As part of this requirement, if coliform detections in groundwater occur after implementation of the *Groundwater Monitoring Well Disinfection Workplan and Sampling and Analysis Plan*, the Tentative Order would require EID to submit and implement a workplan for additional treatment or control, including the installation of pond liners. (Tentative Order, p. 21.) This portion of the *Groundwater Monitoring Well Disinfection Workplan and Sampling and Analysis Plan* provision is inappropriate for a number of reasons. In particular, this requirement presumes that if total coliform detections occur after implementation of the *Groundwater Monitoring Well Disinfection Workplan and Sampling and Analysis Plan*, then leaching from the ponds must be the source. However, the Tentative Order includes no findings to substantiate this conclusion. As indicated previously, the Central Valley Water Board is required to support decisions with specific findings and must relate evidentiary findings to the ultimate order. (*Topanga, supra*, 11 Cal.3d at p. 515; see also SWRCB Order 95-4, pp. 4-5.) Without being able to show that the WWTF is the cause of the total coliform detections in the groundwater monitoring wells, the requirement in the Tentative Order is not supported with specific findings that are based on evidence in the record.

Next, the requirement could also trigger the need for costly treatment plant upgrades based on one detection of total coliform. This WWTF serves a very small community. If the

costs for such upgrades were allocated directly to those served, the sewer rates would be extraordinarily high. Considering that total coliform is not a good indicator of sewage contamination, and that fecal coliform data indicates compliance with applicable water quality standards, it is inappropriate and unreasonable to include such a requirement. Accordingly, provision G.1.d must be deleted from the Tentative Order.

III. Groundwater Limitations

The Tentative Order includes a proposed groundwater limitation that would essentially prohibit any discharge that would “contain waste constituents in concentrations statistically greater than current groundwater quality.” (Tentative Order, p. 20.) Compliance with this limitation would be determined using approved intrawell statistical methods. As proposed, this groundwater limitation would prohibit any increase in background quality even if applicable water quality objectives were not exceeded. Setting groundwater limitations equal to existing water quality is not consistent with the law where the groundwater may be considered high-quality. Under the State’s Policy With Respect to Maintaining High Quality of Waters in California (Resolution No. 68-16), some degradation is allowed if it is consistent with the maximum benefit to the people of the state, will not unreasonably affect beneficial uses, and will not result in water quality that no longer meets applicable water quality objectives. Further, in such circumstances, the discharge is required to be subject to waste discharge requirements that result in best practicable treatment or control. (See Resolution No. 68-16, p. 1.) EID contends that discharges that may occur from the WWTF are consistent with Resolution No. 68-16. Maintaining the WWTF for this small community provides maximum benefit to people of the state by collecting and treating domestic wastewater to secondary treatment standards that might otherwise be addressed through individual septic systems. Further, as indicated by the almost ten-years of quarterly monitoring data, and as summarized in the Tentative Order, discharges from the WWTF will not unreasonably impact beneficial uses or result in the exceedance of water quality objectives. (See, e.g., Tentative Order, p. 7.) Moreover, EID contends that the proposed WDR (with the modifications proposed by EID herein) does result in best practicable treatment or control. The proposed effluent limitations and other constituent-specific groundwater limitations ensure that groundwater quality is protected.

Finally, the proposed groundwater limitation at issue here is not consistent with the Central Valley Water Board’s approach for establishing groundwater limitations in other similar WDRs. (See, e.g., Plymouth WDR, pp. 19-20; see also Tentative Waste Discharge Requirements for Shasta-Tehama-Trinity Joint Community College District, Shasta College Wastewater Treatment Facility, pp. 21-22; see also Waste Discharge Requirements for Calaveras County Water District, Copper Cove Waste Water Treatment Plant, Order No. R5-2010-0070, pp. 23-24.)

Accordingly, proposed groundwater limitation F.1.a must be removed from the Tentative Order.

IV. Other Issues of Concern in the Tentative Order

The following issues are presented in numeric order in which the finding or provision appears in the Tentative Order, and are not identified based on any priority with respect to the issue for EID:

- Discharge specification B.10 (Tentative Order, p. 16) incorrectly references B.7 instead of B.9.
- Discharge specification B.12.d (Tentative Order, p. 16) would require consultation with the local Mosquito Abatement District. Such consultation is not necessary because EID manages the ponds in an appropriate manner to prevent breeding of mosquitos. Thus, the provision should be deleted.
- Discharge specification B.15 (Tentative Order, p. 17) would require EID to install and maintain a staff gauge for each pond. Such a requirement is not necessary and should be deleted. Ponds 1 and 2 have overflow pipes that connect to Ponds 2 and 3 respectively. The invert of the overflow pipes were established such that minimum freeboard is always maintained in Ponds 1 and 2. Pond 3 has a staff gauge.
- Land Application Area specification C.2 (Tentative Order, p. 17) would require that the irrigation of the spray field be halted within 24 hours of a forecasted precipitation event. Such a requirement is practically impossible to implement, and inappropriately prevents spray application even when a precipitation event is unlikely. Frequently, local forecasts indicate a 10 to 20% chance of rain, even though it is unlikely to occur. To avoid such an arbitrary limitation, EID recommends that the specification be revised to either remove this portion of the language altogether, or at the very least, limit it to a 50% chance of precipitation. Further, EID is able to quickly terminate its land application at any time in the case of precipitation.
- Solids/Sludge Disposal specification D.3 (Tentative Order, p. 18) would require EID to clean out the ponds if sludge exceeds 5% of the permitted pond capacity. EID believes that this requirement is too conservative and that the ponds have sufficient capacity to maintain sludge up to 15% of pond capacity. This evaluation is based on review of the water balance for the WWTF. Thus, EID requests that the percentage in this provision be changed from 5% to 15%.

V. Monitoring and Reporting Program

In addition to the issues identified above, EID has evaluated the proposed monitoring and reporting program (MRP) and requests the following changes:

- Pond Monitoring (MRP, p. 2), with respect to monitoring for pH and dissolved oxygen, EID requests that the sampling frequency be changed from weekly to monthly.
- Effluent Monitoring (MRP, p. 2), in general, effluent monitoring should only be required when effluent is being applied to the LAAs, and the MRP should be revised to clarify this accordingly. With respect to total coliform monitoring, EID requests that the sampling frequency be changed from daily to weekly. With respect to TDS, chloride, and total nitrogen, EID requests that the sampling frequency be changed from monthly to annually like the standard minerals.
- Groundwater Monitoring (MRP, p. 3) would require EID to continue quarterly monitoring for an additional two years and then the sampling frequency would decrease to semi-annual. EID has been conducting quarterly monitoring since 2003 and therefore has almost ten years of quarterly data. It is not necessary to continue quarterly monitoring for another two years. EID recommends that the monitoring frequency for groundwater be changed to semi-annual. Further, consistent with EID's request to change the groundwater limitation from total coliform to fecal coliform, the groundwater monitoring requirement for total coliform would also need to be changed from total coliform to fecal coliform.

In closing, we would like the Central Valley Water Board to take note that the District has had to implement significant reductions in our labor force and raise water and sewer rates to deal with reduction in revenue during these difficult economic times. The District approved a multi-year sewer rate increase that taken cumulatively is a 50 percent rate increase. In addition, to reduce the operating budget and to reduce rate increases beyond the recently adopted rate increases, the District laid off 45 people since mid 2008. The District also eliminated several positions through attrition since 2008. The lay-offs combined with the position eliminations has resulted in a 26 percent staff reduction. The District is very concerned with budget impacts that the Tentative Order would impose on our rate payers. The District has invested over 1 million in improvements at this facility in the last decade. A cost-of-service analysis for this facility (includes bond payment and operating costs) forecasts sewer rates at \$450 bimonthly for the 121 connections.

EID appreciates the opportunity to provide these comments, and appreciates the Central Valley Water Board staff's efforts to draft an appropriate WDR for the Camino Heights WWTF. We look forward to working with you on these issues. Please contact myself, or Vickie Caulfield, at (530) 642-4146 or (530) 642-4058, if you have any questions with respect to these comments.

Sincerely,



Elizabeth D. Wells, P.E.
Engineering Division Manager

EW/TAD:cr/tf

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