

**Regional Water Quality Control Board  
Central Valley Region  
Board Meeting – 7/8 August 2014**

**Response to Written Comments for  
City of Merced  
Merced Wastewater Treatment Facility  
Merced County  
Tentative Waste Discharge Requirements/NPDES Permit (NPDES CA0079219)  
And  
Tentative Time Schedule Order R5-2010-0904 Rescission**

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At a public hearing scheduled for 7/8 August 2014, the Regional Water Quality Control Board, Central Valley Region, (Central Valley Water Board) will consider adoption of Waste Discharge Requirements/NPDES Permit CA0079219 (NPDES permit) and Time Schedule Order (TSO) R5-2010-0904 rescission for the City of Merced (hereafter Discharger), Merced Wastewater Treatment Facility (Facility). This document contains responses to written comments received from interested parties regarding the tentative NPDES permit and TSO circulated on 23 May 2014. Written comments from interested parties were required by public notice to be received by the Central Valley Water Board by 5:00 pm on 27 June 2014 to receive full consideration. Written comments were received from:

- The City of Merced (Discharger) (24 June 2014), and
- Central Valley Clean Water Association (CVCWA) (27 June 2014).

Written comments from the Discharger and CVCWA are summarized below, followed by the responses of Central Valley Water Board staff. Based on the comments, Central Valley Water Board staff did make some changes to the tentative NPDES permit.

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**CITY OF MERCED COMMENTS**

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**Comment No. 1: Copper Effluent Limitations and Request for a Time Schedule Order.**

The Discharger requests the Central Valley Water Board adopt a Time Schedule Order for the new copper effluent limitations included in the tentative NPDES permit. Although it appears the effluent can consistently comply with the new copper effluent limitations, the Discharger is concerned it would be subject to mandatory minimum penalties for violation of these effluent limitations, without protection from a Time Schedule Order, since they were based on only three available effluent samples. Furthermore, the Discharger indicates that based on EPA guidance<sup>1</sup>, if only three effluent samples were used in the reasonable potential analysis, the coefficient of variance should be 0.6. Therefore, at a 99% confidence interval and a 99% probability basis, the maximum projected effluent copper concentration is 16 ug/L (which is greater than the average monthly effluent limitation of 6.5 ug/L and the maximum daily effluent limitation of 13. ug/L). In addition, at a 95% confidence interval and a 95% probability basis, the maximum projected effluent copper concentration is 8.7 ug/L (which is greater than the average monthly effluent limitation of 6.5 ug/L).

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<sup>1</sup> Technical Support Document for Water Quality Based Toxics Control, March 1991.

**RESPONSE:** No change to the tentative NPDES permit has been made in response to this comment. After discussing this issue further, the Discharger has decided to collect additional effluent copper samples in order to increase the data set. Discharge from the Facility is currently regulated under Order R5-2008-0027, which does not include effluent limitations for copper. Since this tentative NPDES permit is scheduled for adoption at the August 2014 Central Valley Water Board meeting, it will not become effective until October 2014. This will allow the Discharger to collect effluent samples (proposed to be 2/month) until October 2014 without being subject to the copper effluent limitations and potential mandatory minimum penalties. A Time Schedule Order can be issued by the Executive Officer, if needed, following review of the increased effluent copper data set.

**Comment No. 2: Oxidation, Coagulation, and Filtration Requirements for Discharge to Wildlife Management Area and Land Application Area.**

The Discharger indicates the oxidation, coagulation, and filtration requirements of *Other Special Provision C* is not applicable to the discharge to the Wildlife Management Area or the Land Application Area.

**RESPONSE:** Section VI.C.6.c (*Other Special Provisions*) has been modified as follows:

Title 22, or Equivalent, Disinfection Requirements. Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the Department of Public Health (DPH) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent **for discharge to Hartley Slough**.

**Comment No. 3: Elimination of Monitoring Influent Electrical Conductivity.**

The Discharger requests the requirement to monitor electrical conductivity (EC) of the influent to the Facility be removed from the Monitoring and Reporting Program. The Discharger's reasoning is that EC monitoring of the influent does not provide accurate results due to the presence of anaerobic metabolites in the untreated waste stream due to the detention time in the wastewater collection system. These anaerobic metabolites are removed from the waste stream post aeration and the effluent EC is a more accurate indicator of salinity.

**RESPONSE:** No change to the tentative NPDES permit is proposed. Review of EC data since mid-2011 indicate the influent and effluent EC have been relatively stable with an average influent EC of 725 umhos/cm and the average effluent EC of 539 umhos/cm. The influent EC monitoring is not used for compliance purposes so interferences due to the presence of anaerobic metabolites is not a concern. The influent EC data are used for a relative comparison to the effluent EC in order to identify changes in trends that may indicate something at the Facility is contributing more salinity to the discharge than what has been observed historically. However, the tentative NPDES permit has been revised to reduce the frequency of collecting influent EC samples from 5/week to 3/week to be consistent with the influent sample collection frequency for biochemical oxygen demand and total suspended solids.

**Comment No. 4: Combine Nitrate as Nitrogen and Nitrite as Nitrogen Analysis for Effluent Samples in Table E-3.**

The Discharger requests that the nitrate as nitrogen and nitrite as nitrogen analysis be combined for effluent samples. There is very little nitrite as nitrogen in the wastewater, so the separate testing incurs unwarranted cost.

**RESPONSE:** Central Valley Water Board Staff concurs and Table E-3 has been revised so the nitrate as nitrogen and nitrite as nitrogen are a combined parameter. To be consistent, Table E-8 (Groundwater Monitoring Requirements) has also been similarly revised.

**Comment No. 5: Reference Test Method for Plant Tissue Analysis.**

The Discharger requests a reference for plant tissue testing for molybdenum, copper, and selenium required by Table E-6 of the Monitoring and Reporting Program. In the absence of an approved EPA test method, the Discharger requests the plant tissue testing for molybdenum, copper, and selenium be eliminated since plants do not uptake dissolved salts, of which metals constitute a sub-group.

**RESPONSE:** No change to the tentative NPDES permit has been made in response to this comment. A reference for the plant tissue testing is the *Soil, Plant, and Water Reference Methods for the Western Region, 2003, 2nd Edition (WCC-103 Publication) (WREP-125, 2nd Edition)*. Central Valley Water Board staff does not agree that a non-EPA approved method is sufficient justification to discontinue the plant tissue testing. The Discharger has been conducting plant tissue testing in accordance with current Order R5-2008-0027 since 2008 that provides data regarding the removal of molybdenum, copper, and selenium from soil in areas where wastewater and sludge are applied. Plant tissue testing for molybdenum, copper, and selenium is also required by the State Water Resources Control Board's General Order for the discharge of biosolids to land (Order No. 2004-0012-DWQ). Order No. 2004-0012-DWQ requires permittees to send plant tissue samples to laboratories that participate in a program similar to the North American Proficiency Testing Program (<http://www.naptprogram.org/>) administered by the Soil Science Society of America. This testing program develops guidelines for agricultural laboratories, including recommending standardized plant tissue analysis methods.

Regarding the uptake of dissolved salts, Central Valley Water Board staff does not agree that plants do not uptake some dissolved salts and metals. Micronutrients and trace elements are most readily absorbed by plants when they are in the soluble form. Copper and molybdenum are micronutrients essential for plant growth and selenium is a trace element often found in plants. These metals can cause toxicity to humans and animals where their levels are elevated in plant tissue.

### **Comment No. 6: Frequency of Receiving Water Priority Pollutant Monitoring.**

The Discharger requests receiving water priority pollutant monitoring be reduced from 2/year to once during the permit cycle. The Discharger is not requesting or making use of dilution credits; therefore, the Discharger contends the receiving water priority pollutants monitoring is not useful information with respect to regulating the discharge. Since most priority pollutants are not naturally occurring, the Discharger is being asked to fund the research efforts of other dischargers that are the sources of those priority pollutants.

**RESPONSE:** No change has been made to the tentative NPDES permit in response to this comment. Pursuant to federal regulations, 40 CFR 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that “are or may be discharged at a level which will cause, have the reasonable potential to cause, *or contribute* [emphasis added] to an excursion above any state water quality standard, including state narrative criteria for water quality.” In order to determine if the discharge has the reasonable potential to contribute to an excursion above a water quality standard, the quality of the receiving water must be known. As such, Central Valley Water Board staff believes the receiving water priority pollutant data are not only useful, but necessary. The Discharger is not being asked to fund the research efforts of upstream dischargers; rather it is being required to characterize the quality of the surface water into which it discharges. The frequency of collecting priority pollutants samples from the upstream receiving water is the same as collecting priority pollutant samples from the discharge.

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## **CENTRAL VALLEY CLEAN WATER ASSOCIATION (CVCWA) COMMENTS**

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### **Comment No. 1: Reduce Scope of Land Use and Groundwater Limitations Study.**

Given the good quality of the effluent being applied to the Wildlife Management Area and Land Application Area, CVCWA questions the purpose of task ii (determination of the types of crops that are, and potentially be, grown, and any other potential beneficial uses of groundwater, that could be affected by the discharge) and task iii (appropriate numeric groundwater quality objectives for groundwater that could be affected by the discharge) of the Land Use and Groundwater Limitations Study (the Study) (Provision VI.C.2.b). CVCWA indicates it is a waste of the Discharger's resources to develop site-specific groundwater quality objectives if it is unlikely to exceed them and the requirement to submit the Land Use and Groundwater Limitations Study should be removed. At a minimum, the study requirement should be reduced to only require task i (determination of the spatial extent of groundwater affected by, and that could be affected by, the discharge) to confirm whether the discharge, in fact, has an effect on groundwater before the Discharger is required to develop site-specific groundwater quality objectives. CVCWA indicates since the high quality of the effluent being applied to the Wildlife Management Area and Land Application Area, (i.e., average effluent EC from May 2011 through August 2013 was 542 micromhos per centimeter (umhos/cm) and since May 2011, the maximum monthly average nitrate plus nitrite as nitrogen concentration was 8.2

mg/L), and the low threat to groundwater from the land applications, the requirement for the Land Use and Groundwater Limitations Study is not justified.

**RESPONSE:** The Discharger submitted a Land Use and Groundwater Limitations Study workplan in 2008 as required by Order R5-2008-0027. The tentative NPDES permit circulated on 23 May 2014 proposed to have the Discharger execute its workplan. However, upon reconsideration, Central Valley Water Board staff agrees to remove Provision VI.C.2.b., tasks ii and iii from the Study. Staff does not propose to remove task i because data from the existing groundwater monitoring well network indicate the Discharger has impacted groundwater. Many of the considerations and much of the work required to complete tasks ii and iii are being done by CV-SALTS. Specifically, CV-SALTS is identifying and evaluating beneficial uses of groundwater along with water quality objectives to protect those beneficial uses.

#### **Comment No. 2: Rationale for Water Quality-Based Effluent Limitations for Pathogens.**

CVCWA does not take issue with the specific Water Quality Based Effluent Limitations (WQBELs) for pathogens in the tentative NPDES permit; however, it requests the Central Valley Water Board more accurately describe the basis for imposing these WQBELs in the Fact Sheet. CVCWA provides recommended language for the Fact Sheet regarding the WQBELs for pathogens. In particular, CVCWA requests the following language be included in the Water Quality Objectives subsection of the Fact Sheet for pathogens:

This site-specific objective is more stringent than the existing Basin Plan bacteria objective for REC-1 that serves as the federal water quality standard. Effluent limitations established in this permit, in part, to protect REC-1 beneficial uses are more stringent than necessary to comply with federal law. Therefore, the Central Valley Water Board is under an obligation to consider the factors set forth in Water Code section 13241 (Section 13241). (Order WQO 2002-0015, pp. 32-35).

**RESPONSE:** The WQBELs for pathogens are carried-over from the current NPDES permit (Order R5-2008-0027) and, therefore, Central Valley Water Board staff does not propose more stringent limitations. The Fact Sheet of Order R5-2008-0027 provided justification for a site-specific pathogen objective used to derive the WQBELs, including consideration of the factors set forth in Water Code section 13241. Because the Board has already considered the factors set forth in section 13241 and the pathogen limitations are the same as those already in place under the current permit, it is not necessary to revise the permit to include the recommended language for the Merced permit.

Central Valley Water Board staff disagrees with CVCWA's assertion that the Basin Plan's bacteria objective serves as the federal water quality standard for pathogens and that the WQBELs for pathogens, "are more stringent than necessary to comply with federal law." The Clean Water Act requires that permits include any WQBELs necessary to meet water quality standards [CWA section 301(b)(1)(C)]. Water quality standards include beneficial uses, water quality objectives, and the antidegradation policy. The beneficial uses

applicable to Hartley Slough include, in part, REC-1 and agricultural supply (AGR). The bacteria numeric objective in the Basin Plan is specific only to the REC-1 beneficial use and not the AGR beneficial use. Furthermore, the Basin Plan water quality objective for pathogens is applied to ambient water. This water quality objective is not sufficient to protect the public from a domestic wastewater discharge, because wastewater contains human waste and pathogens which are able to be transferred to other humans. Ambient water includes pathogens from animal and other non-human sources that mostly are not transferrable to humans. Total coliform organisms are used as indicator parameters for proper disinfection of domestic wastewater discharges. Pathogens include bacteria, viruses, and protozoans. To ensure all bacteria, viruses, and protozoans are adequately removed from domestic wastewater, a much lower count for total coliform organisms is required. Thus, including WQBELs in the tentative NPDES permit based on Title 22 criteria for pathogens is reasonable and appropriate to ensure protection of all beneficial uses of Hartley Slough and to fulfill our obligations under the Clean Water Act. This approach is also recommended by the Department of Public Health for discharges receiving less than 20:1 dilution for the protection of human health due to recreational exposure and for the protection of the agricultural beneficial use.

Although Central Valley Water staff does not propose any changes to the proposed NPDES permit based on CVCWA's comments, Central Valley Water Board staff will continue discussions with CVCWA regarding programmatic language to support our rationale to establish WQBELs for pathogens.