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April 19, 2012

Mr. James Marshall, P.E.
Senior Engineer
Water Quality Control Engineer
California Water Quality Control Board
Central Valley Division
11020 Sun Center Drive, #200
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**Subject: City of Modesto Water Quality Control Facility Preliminary Draft
Waste Discharge Requirements NPDES Permit No. CA0079103**

Dear Mr. Marshall:

We appreciate the efforts of you and your staff in preparing the Central Valley Regional Water Quality Control Board's (Regional Board) Tentative *Waste Discharge Requirements for the City of Modesto Water Quality Control Facility* (WQCF, NPDES No. CA0079103). We respectfully submit the comments in this letter and Attachment 1. While many of the comments are requests for clarification and intent, there are several items that are significant and we are requesting modification to the permit requirements.

Dilution and Mixing Zone Study

Included as Attachment 2 to this letter is the mixing zone and dilution analysis prepared by the City's consultant to address the human health water quality objective dilution granted in the permit. Provision VI.C.2.b. of the Tentative Order requires that the City perform this study prior to February 2014; however, in the interest of completeness and to support adoption of the Tentative Order, the City submits the study report with this letter. The analysis is based on an update to the *Mixing Zone – Dilution & Copper Translator Study* submitted by the City in May 2003 to include the human health mixing zones. The modeling used the EPA-approved CORMIX model and field data collected for the 2003 study. *The City requests that Provision VI.C.2.b. be removed from the permit and the Fact Sheets updated accordingly to reflect completion of this requirement.*

Description of the Project Phasing and Permitting

The City's large improvement project and the existing Tentative Order provisions should be revised to identify the current permitted year-round discharge capacity of 4.8 mgd in addition to the current secondary treated discharge. As stated on page F-72

of the TO Fact Sheet, “This Order allows an increase in year-round tertiary discharge flow of 14.3 mgd (an increase in discharge from 4.8 mgd to 19.1 mgd)”. *The City requests that this statement is incorporated in other sections of the permit – such as Finding II.A Background (page 4) and several instances referring to Phase 1A of development of tertiary treatment facilities. The mass limits allocated for Phase 1A flows should be based on the currently permitted flows of 4.8 mgd.*

Mercury Mass Effluent Limitation

The Tentative Order includes mass-based effluent limitations for both the secondary and tertiary discharges (Provisions IV.A.1.j and IV.A.2.i) despite the finding that there was no reasonable potential to cause or contribute to a water quality objective exceedance in the San Joaquin River. The justification for the mercury mass “cap” is consistent with the Antibacksliding Policy and lack of new information. The City believes that there are several justifications for removal of this mass-limit including 1) the same new information demonstrating no reasonable potential for mercury concentrations should also be applied to mass-based limitations 2) implementation of a mass limitation does not allow reasonable use of the receiving water’s assimilative capacity in the absence of a TMDL waste load allocation, 3) the City’s antidegradation analysis did not identify an impact for mercury in future discharge scenarios, and 4) the significant planned improvements to the facility result constituent new information as the treatment process will change significantly. If unnecessary mass limitations are never removed from permits in cases where they are not necessary it poses an unnecessary administrative burden on the City. *Although the City can comply with the mercury mass limitations, we request that the mass limitations for mercury in Provisions IV.A.1.j and IV.A.2.i be removed.*

Mercury Pollution Prevention Plan

As stated previously, the Tentative Order includes a finding of no reasonable potential for mercury. Provision VI.C.3.a of the Tentative Order requires development of a Pollution Prevention Plan. *Because there is no concentration based effluent limitation and compliance with the mass limitation is known to be achievable the City requests that Provision VI.C.3.a be removed.*

Performance Based Effluent Limitations

The Tentative Order includes a final effluent limitation for molybdenum based on historical discharge rather than receiving water quality. The Tentative Order finds sufficient assimilative capacity and dilution to allow for a much higher effluent limitation. However, the Tentative Order finds “that granting of these dilution credits could allocate an unnecessarily large portion of the receiving water’s assimilative capacity” and reverts to the performance based effluent limitation for both the secondary and tertiary effluent limitations. While we understand the reluctance to allow extremely high effluent limitations despite their validity, use of the performance based effluent limitation places the City in a position where any moderate process change or upset could result in non-compliance subject to mandatory minimum penalties. *The City requests that a permit reopener be included to allow the introduction of new information to establish an appropriate effluent limitation.*

Requirement that the WQCF Tertiary Effluent Meet Title 22 Recycled Water Criteria

The City respectfully disagrees with the statement on Page F-57 of the TO Fact Sheet that Department of Public Health (DPH) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22 criteria) are applicable to the WQCF discharge to the San Joaquin River. Title 22 criteria are applicable to reclaimed water used in spray irrigation of food crops, parks, and other areas with public access. The City does not currently reclaim water for these purposes and intends to obtain a separate Master Reclamation Permit when such uses are developed. The Title 22 DPH regulations do not apply to surface waters and the City requests that Title 22 requirements associated with reclamation be eliminated from the permit until such time that the WQCF actually implements an off-site reclamation program.

Per Title 22 regulations "Secondary-23" recycled water has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a MPN of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30 day period. Currently the WQCF is only planning this use and the following allowed uses for disinfected secondary-23 recycled water:

- Cemeteries
- Freeway Landscaping
- Restricted access golf courses
- Ornamental nursery stock and sod farms where access by the general public is not restricted
- Pasture for animals producing milk for human consumption
- Any non-edible vegetation where access is controlled so that the irrigated area can not be used as if it were part of a park, playground or schoolyard.

At the very least, the City requests that Special Provision VI.C.6.a. on page 31 of the TO be clarified to specifically mention which of the Title 22 criteria are applicable to the WQCF river discharge. As currently written, this provision is too broad and requires that "The year-round tertiary discharge shall be oxidized, 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."

UltraViolet Disinfection Specifications and Tertiary Effluent Turbidity Limitations

Section VI.C.4.a of the Tentative Order and Section IX.C. of Attachment E, Monitoring and Reporting Program (MRP) include minimum UV dosage and turbidity specifications associated with ensuring adequate disinfection of wastewater to protect beneficial uses. The specifications are a minimum UV dosage of 80 mJ/cm² and turbidity that is less than 0.2 NTU over a 24-hour period, less than 0.5 NTU for 5% of the time over a 24-hour period, and less than 1 NTU at all times. These requirements are more stringent than the specifications seen in other Central Valley permits and, as noted on Fact Sheet page F-91, are based on the National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWARF's *Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*

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(first published in December 2000 and revised as a Second Edition dated May 2003). It should be noted that these specifications were developed for drinking water and recycled water, which infers that the treated water is applied without dilution or further treatment.

The Fact Sheet also refers to a Memorandum dated November 1, 2004, issued by DPH to Regional Water Board executive officers. This memorandum also discusses UV disinfection only as it applies to water recycling treatment plants. However, the WQCF discharges to surface water. Currently, none of the effluent is used for reclamation and there is no reclamation program in place. The recently adopted Thunder Valley Wastewater Treatment Plant permit (Order No. R5-2010-0005) which also contains these more stringent turbidity requirements is for a facility that recycles a portion of its effluent and the permit contains the corresponding reclamation specifications (R4-2010-0005, Section IV.C.). There is no corresponding set of specifications in the Modesto Tentative Order. As noted previously, the City intends to obtain a separate Master Reclamation Permit when off-site reclaimed uses are developed.

The City requests that a requirement for a specific numerical UV dosage be eliminated from the permit. The City suggests that it be replaced with a narrative specification such as, "The Facility must operate in accordance with an operations and maintenance program that assures adequate disinfection." The City also requests that the corresponding turbidity requirements are changed to less than 2 NTU over a 24-hour period, less than 5 NTU for 5% of the time over a 24-hour period, and less than 10 NTU at all times.

Description of Land Discharge and Reclamation Specification

The City believes that Paragraphs G and H on page F-81 of the Fact Sheet provide an accurate description of the WQCF current Land Discharge Specifications and Reclamation Specifications, respectively. *For clarification purposes, the City requests that these descriptions be included into the main body of the TO – and specifically under paragraphs B and C on page 17 of the Order.*

Other Minor Corrections

Attached to this letter you will find list of minor comments on other components of the permit.

Thank you again for your work on the Tentative Order and do not hesitate to contact Laura Anhalt (209-577-6224) or me if you have additional questions or requests.

Regards,



Gary Dejesus
Deputy Director, Public Works
Tel: 209-577-6255

cc: Laura Anhalt, City of Modesto
Tom Sinclair, City of Modesto
William Wong, City of Modesto
Brian Laurensen, Larry Walker Associates

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ATTACHMENT 1

City of Modesto Minor Comments

Attachment 1. List of minor comments on City of Modesto WQCF Tentative Order

Document Page	Comment
TO, p 4	Finding II.A Background - add language to note that <u>"This Order allows an increase in year-round tertiary discharge flow of 14.3 mgd (an increase in discharge from 4.8 mgd to 19.1 mgd)."</u>
TO, p 12 and p 14	Table 6a and Table 6b - add annual average effluent limitation columns for manganese, iron, and aluminum and remove corresponding paragraphs f., g., and h. from Page 15.
TO, p 13	Paragraph d. Total Residual Chlorine - Add language to note that <u>"Compliance with these limits shall be determined according to Section VII. F."</u>
TO, p 18	Paragraph 8. pH. - Clarify language as follows: "The pH to be depressed fall below 6.5 nor raised above 8.5."
TO, p 33	Task table under paragraph d. - Correct typo: "implemetnt".
TO, p 38	Paragraph K - Correct reference in heading: "Section V.A. 178.a-e".
MRP, E-3	Table E-1 - Change description of EFF-001A <u>"Effluent from Secondary Treatment Facility, by itself or in combination with Effluent from the Tertiary Treatment Facility"</u> .
MRP, E-4	Table E-2 - Revise footnote 1 to: "Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 <u>or an EPA-approved Alternate Testing Procedure</u> ; where no methods are specified for a given pollutant <u>that meet a specific reporting limit or method performance standard, an alternate method can be approved by the Central Valley Water Board or the State Water Board.</u> "
MRP, E-5	Heading IV.A - Change heading to "A. Monitoring Location EFF-001A (Secondary Effluent, <u>by itself or in combination with Tertiary Effluent</u>)"
MRP, E-6	Table E-3a - Change the word "calculate" and footnote 14 to apply to Nitrate, not to Nitrate+Nitrite (same as Table E-3b).
MRP, E-6 and E-7	Tables E-3a and E-3b - Delete the analytical methods specified for chlorpyrifos and diazinon and replace with a reference to footnote 1.
MRP, E-6 and E-8	Table E-3a and E-3b - Change footnote 1 as follows: "Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 <u>or an EPA-approved Alternate Testing Procedure</u> ; where no methods are specified for a given pollutant <u>that meet a specific reporting limit or method performance standard, an alternate method can be approved by the Central Valley Water Board or the State Water Board.</u> "

Attachment 1. List of minor comments on City of Modesto WQCF Tentative Order (continued)

Document Page	Comment
MRP, E-20	Top paragraph and footnote 1 in table immediately following - The reference to the Dioxin and Furan Sampling requirements should indicate Attachment J, not Attachment I. See also comment on Dioxin and Furan Sampling, I-9, below.
Fact Sheet, F-17	Paragraph c. - Correct typo: "therefore"
Fact Sheet, F-81	Paragraph G. - Correct typo: "Reclamatoion"
Fact Sheet, F-85	Paragraph 4. Effluent and Receiving Water Characterization Study should refer to "monthly monitoring at EFF-001A and EFF-001B".
Fact Sheet, F-86	Paragraph a - Delete paragraph as it is not consistent with the Reopener Provisions listed in the TO (page 24 and 25).
Characterization Study, I-1	Paragraph II.A - Monthly Monitoring requirements should be clarified to read "For a one-year period, D during the third or fourth year of the permit term while a river discharge is occurring, monthly samples shall be collected from the effluent (secondary effluent at EFF-001A and tertiary effluent at EFF-001B) and analyzed for the constituents listed in Table I-1.
Dioxin and Furan Sampling, I-9	Heading should be changed to " <u>Attachment J. Dioxin and Furan Sampling</u> ", consistent with Paragraph I.D. on page I-1 which refers to the Dioxin and Furan sampling in Attachment J.

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ATTACHMENT 2

Human Health Mixing Zone Analysis