Regional Water Quality Control Board
Central Valley Region Board Meeting
22/23 April 2021

Response to Written Comments for the
City of Los Banos
Wastewater Treatment Facility
Merced County
Tentative Waste Discharge Requirements

At a public hearing scheduled for 22/23 April 2021, the Regional Water Quality Control Board, Central Valley Region, (Central Valley Water Board) will consider adoption of revised Waste Discharge Requirements for the Los Banos Wastewater Treatment Facility (WWTF) in Merced County. This document contains responses to written comments received from interested persons regarding the tentative Waste Discharge Requirements (TWDRs) circulated on 5 February 2021. Written comments were required by public notice to be received by the Central Valley Water Board by 8 March 2021 to receive full consideration. Comments were received from Beth Cohen with Stantec Consulting Services, Inc. (Stantec) on behalf of the City of Los Banos (City or Discharger) on 8 March 2021.

Written comments are summarized below, followed by responses from Central Valley Water Board staff. In addition, staff has made a few minor changes to the TWDRs to improve clarity and fix typographical errors.

COMMENTS

CITY COMMENT #1: Under Finding 55 of the TWDRs, it should be noted that the results for MW-1U and MW-6U (detailed in Table 9) show fecal coliform detections in more samples than those for total coliform, which is impossible since fecal coliform is a subset of total coliform and, therefore, cannot be higher. This indicates that there might be an issue with the lab analysis for these samples. Furthermore, because coliform hits do not correspond with high groundwater events, it is likely that they resulted from disturbed sediments in the wells or damaged casing and not caused by wastewater effluent.

> **RESPONSE:** The paragraph above Table 9 (Finding 55) states that *there have been some detections for total and fecal coliform in the monitoring wells, the detections have been erratic and do not appear to correspond to a specific well or periods with high groundwater.* In addition, concerns of fecal coliform being present or at higher concentrations than the reported total coliform in the same sample are discussed in greater detail in the Information Sheet under Groundwater Considerations, which is a part of the Order. Therefore, staff proposes no change to Table 9 of the TWDRs.

CITY COMMENT #2: Under Finding 80.a., the statement “this Order includes a groundwater limitation for nitrate (as N) of 10 mg/L” should be changed to include “groundwater limitation for nitrate (as N) of 10 mg/L (monthly average)”.

> **RESPONSE:** The groundwater limitations in the TWDRs are established by the Basin Plan to protect designated beneficial uses and the applicable water quality objectives. The Groundwater Limitations section (section F) of the TWDRs states compliance with the groundwater limitations specified in the TWDRs will be determined annually. Annual

compliance with the nitrate water quality objective (based on the primary Maximum Contaminant Level in Title 22 of the California Code of Regulations) is appropriate since changing trends in groundwater quality is a long-term process that generally takes place over several years or decades. Effluent limitations are included in the TWDRs to ensure the Facility provides a minimum level of treatment at the Facility and, therefore, typically have shorter compliance averaging periods (e.g., monthly average). Furthermore, modifying the groundwater limitation for nitrate to require evaluation as a monthly average would require increased groundwater monitoring, which, based on available information, would be an unnecessary burden for the City.

CITY COMMENT #3: Under Finding 80.b, the statement "This suggests that elevated salinity in groundwater has been present since the 1960s, when the WWTF was first constructed" should be replaced with "This suggests that elevated salinity in groundwater has been present **prior to the construction** of the WWTF in the 1960s."

RESPONSE: The TWDRs have been modified to reflect this change.

CITY COMMENT #4: For Discharge Specification E.8, please add "or higher" to the DO concentration. The Discharge Specification should read "If the DO in any storage pond is below 1.0 mg/L for any single sampling event, the Discharger shall implement daily DO monitoring (excluding weekends and holidays) of that pond until the minimum DO concentration **(or higher)** is achieved for at least three consecutive days."

RESPONSE: The TWDRs have been modified to reflect this change.

CITY COMMENT #5: For Discharge Specification E.8, please replace reference to WPRRs with "MPR part III-A.6". In addition, the minimum DO limit should be changed from 1.0 mg/L to 0.5 mg/L since odors are not consistently generated until DO concentrations fall below 0.5 mg/L. Furthermore, since the ponds generally take more than three days to turn over, requiring the City to report to the Central Valley Water Board after only three consecutive days would result in excessive reporting even when the City has already implemented a corrective action.

RESPONSE: Reporting persistent low DO in the storage ponds to the Central Valley Water Board (as well as any other violation of a prohibition or limitation in the TWDRs) is required by a condition of the Standard Provisions and Reporting Requirements (SPRRs not WPRRs). Therefore, the reference to the SPRRs in Discharge Specification E.8 was not changed. In addition, Central Valley Water Board staff proposes to keep the minimum DO requirement at 1.0 mg/L rather than reducing it to 0.5 mg/L. This is a typical requirement specified in most WDRs for domestic wastewater treatment facilities. The City hasn't provided sufficient technical information at this point to justify a lower minimum DO requirement. Generally, the City can comply with a minimum DO limit of 1.0 mg/L (e.g., in 2019 the DO concentration in the storage ponds was only below 1.0 mg/L in 4 out of 35 sampling events).

However, to address the potential concerns from excessive reporting and to provide the Discharger more flexibility due to the size of the ponds and the length of time necessary

to turn them over, Discharge Specification E.8 has been modified to set the DO minimum limit as a daily average of several samples collected from around the pond and requires the Discharger to notify the Central Valley Water Board in the event that the daily average DO remains below 1.0 mg/L for more than seven days rather than three days, as shown below:

E.8 As a means of ensuring compliance with Discharge Specification E.7, the **daily average** dissolved oxygen (DO) content in the upper one foot of any wastewater storage pond (Ponds 3, 4, and 7) shall not be less than 1.0 mg/L for ~~three~~ **seven** consecutive **daily** sampling events. Notwithstanding the DO monitoring frequency specified in the monitoring and reporting program, if the **daily average** DO in any storage pond is below 1.0 mg/L for any ~~single~~ sampling event, the Discharger shall implement daily DO monitoring (excluding weekends and holidays) ~~of that~~ **at various points around** the pond until the minimum DO concentration **(or higher)** is achieved for at least three consecutive days. If the **daily average** DO in any storage pond is below 1.0 mg/L for **seven** ~~three~~ consecutive sampling events, the Discharger shall report the findings to the Central Valley Water Board in accordance with **Section B.1** of the SPRRs. The written notification shall include a specific plan to resolve the low DO results within 30 days of the first date of violation.

CITY COMMENT #6: For Discharge Specification E.15, as written, there are no provisions for compliance if multiple ponds are violating solids concentration at the same time. The City will not be able to remove more than one pond a year from service (in order to clean) and will need an extension of the 12-month cleaning deadline. Please incorporate provision for allowing more time than 12-months, if multiple ponds have sludge accumulation exceeding 5-percent capacity.

RESPONSE: Discharge Specification E.15 requires the City to monitor sludge accumulation in the ponds and remove sludge as needed to maintain adequate treatment and storage capacity. The requirement to clean out the ponds if sludge exceeds 5 percent of the reservoir capacity was provided as an example of a trigger to use to determine when to clean out a given pond. The Discharger can select a different trigger to estimate when to clean out the ponds to maintain adequate treatment and storage capacity. However, when establishing the trigger for cleaning out the ponds, the Discharger should factor in the time and cost (as well as the time and cost to clean out the other ponds) to ensure that the Discharger maintains adequate storage capacity at the WWTF and does not violate Provision E.15. To reduce confusion, Discharge Specification E.15 has been modified as follows:

E.15 The Discharger shall monitor…Specifically, if the estimated volume of sludge in the reservoir threatens to impact the pond(s) storage/disposal capacity, ~~**(e.g., exceeds five percent of the permitted reservoir capacity),**~~ the Discharger shall complete sludge cleanout within 12 months after the date of the estimate.

CITY COMMENTS #7: For Groundwater Limitations F.1 and F.2, please change the groundwater limits for nitrate (as N) to "10 mg/L monthly average" and for total coliform organisms to "2.2 MPN/100 ml median seven day".

RESPONSE: As discussed in our response to Comment #2 above, these are groundwater limitations not effluent limitations. Modifying the groundwater limitations as proposed would require increased groundwater monitoring and will not provide any additional benefits. Furthermore, the seven-day period for total coliform is specified in the Bacteria Water Quality Objectives for Ground Waters section of the Basin Plan (Section 3.2.1). Therefore, staff proposes no change to Groundwater Limitations F.1 or F.2.

CITY COMMENT #8: For Water Recycling Specifications G.4, please remove the reference to Title 22, sections 60304(a), 60304(b), and 60304(c) since the City discharges undisinfected secondary effluent and these sections of Title 22 do not apply

RESPONSE: Title 22, sections 60304(a), 60304(b), 60304(c), and 60304(d) discuss what recycled water uses require what type of wastewater treatment. While the WWTF only treats wastewater to an undisinfected secondary level, the other sections are applicable as they specifically note what recycled water uses the WWTF cannot currently apply wastewater at due to the level of treatment provided at the WWTF. However, to provide clarity Water Recycling Specifications G.4 has been modified as follows:

G.4 Recycled Water shall be used in compliance with Title 22, section 60304. Specifically, uses of recycled water shall be ~~limited to~~ **consistent with** those set forth in Title 22, sections(s) 60304(a), 60304(b), 60304(c), and 60304(d).

CITY COMMENT #9 For Solids Disposal Specifications H.1, please remove the word "clarifiers" as there are no clarifiers used onsite.

RESPONSE: The TWDRs have been modified to reflect this change.

CITY COMMENT #10: For Provisions I.2 and I.3, please update with the date of Order.

RESPONSE: The due dates for the reports required by Provisions I.2 and I.3 are contingent on the date that the WDRs are adopted. The correct due date for these reports will be reflected in the final signed version of the WDRs (using the specified criteria) upon adoption by the Central Valley Water Board.

CITY COMMENT #11: Regarding the tentative Monitoring and Reporting Program (MRP), sections I.B (Table 1) and II.G, there is no biosolids sludge handling or monitoring at the site. All solids accumulate in the bottom of the ponds over years and are cleaned out periodically (often decades between cleanings). Please define where BIO-001 is to be located or removed from the Table and tentative MRP.

RESPONSE: Solids accumulated in the bottom of the ponds are still considered biosolids/sludge and are subject to appropriate sampling, handling, and disposal

practices in accordance with Code of Federal Regulations, title 40, Part 503. Tentative MRP sections II.G and III.B.13 include specific monitoring and reporting requirements for sampling, handling and disposal of biosolids/sludge when removed from the ponds. If no biosolids/sludge is removed from the ponds during the calendar year, that fact should be noted in the fourth quarter monitoring report. Section III.B.13. of the tentative MRP has been revised to add this clarifying language. Furthermore, Table 1 and Sections II.G. have been modified to state monitoring at BIO-001 is to be conducted during clean out of the pond(s).

CITY COMMENT #12: Within the tentative MRP, Part II.B, modify footnote 1 for Table 3, to state "Report effluent flow rates required only when irrigating."

RESPONSE: The tentative MRP, Table 3, footnote 1 has been modified as follows:

1. **Effluent flow shall be recorded only when effluent is actively being discharged to the LAAs. If no effluent is discharged to the LAAs during the reporting period, the subsequent monitoring report shall so state**. Flow measurements may be based on flow meter readings or pump run time estimates. The method of measurement must be specified.

CITY COMMENTS #13: Within the tentative MRP, part II.C, replace sampling frequency for solids depth with "once every 5 years" in Table 4 and footnote 3 to match the requirements in Discharge Specification E.15.

RESPONSE: The tentative MRP have been modified to reflect this change.

CITY COMMENT #14: Within tentative MRP, part II.D, Table 5 please add a footnote that sampling for EC does not have to occur separately than samples already taken and used for the Drinking Water Consumer Confidence Report.

RESPONSE: The tentative MRP has been modified to reflect this change.

CITY COMMENT #15: Within tentative MRP, part II.E, modify footnote 2 of Table 6 by adding "Sampling shall take place once per quarter except as noted herein."

RESPONSE: The requested clarifying language has been added to the tentative MRP.

CITY COMMENT #16: Within tentative MRP, part II.F modify footnote 2 of Table 7 to include allowable gauge at site "Either rain gauge at WWTF or National Weather Service/CIMIS data from nearest weather station is acceptable."

RESPONSE: While staff believes the footnote is sufficient the way it is, staff has made the following modification to the tentative MRP, Table 7, footnote 2 to provide clarification:

2. **Precipitation measurements can be taken using a rain gage at the WWTF. Information from the** National Weather Service or CIMIS data from the nearest weather station **are** ~~is~~ acceptable **alternatives.**

CITY COMMENT #17: Within tentative MRP, part II.F, Table 7, change "Nitrogen Loading" in Table 7 to "Total Nitrogen Loading" and define how irrigation acreage is calculated (is this an estimate?). In addition, clarify the loading calculation frequency for total nitrogen (either annually as specified in Table 7 or monthly as specified in part III.B.7 of the tentative MRP). Furthermore, is the total nitrogen calculation only applicable when wastewater is applied to the land application areas (LAAs).

RESPONSE: In the paragraph above Table 7 it clearly states that "the Discharger shall perform the following routine monitoring and loading calculations for each discrete irrigation area within the LAA each day when wastewater is applied."

Staff has modified Table 7 of the tentative MRP to read "Total Nitrogen Loading" rather than just "Nitrogen Loading" to avoid any confusion. For calculating the acreage for the fields irrigated with wastewater effluent, the tentative MRP does not specify how the Discharger must conduct the calculation. The specific method for determining the acreage is left to the Discharger since they control how often, where, and how much wastewater is being applied to the LAA. An estimate is fine provided it is based on correct and actual knowledge of how and where wastewater is being applied and when.

The loading calculations specified in Table 7 are intended to demonstrate compliance with the TWDRs, Water Recycling Specifications G.6, which requires application of recycled water to the LAA at reasonable rates. Appropriate nitrogen loading rates are based on crop type and accepted annual nitrogen uptake. The tentative MRP, part III.B.7., requires the Discharger to calculate the total mass loading for total nitrogen annually, using monthly data. However, to provide additional clarity, staff has modified Table 7 of the tentative MRP to require actual loadings on a monthly basis. Table 7 of the tentative MRP has been modified as shown below:

Table 1. Land Application Area Monitoring

Constituent/Parameter	Units	Sample Type	Frequency
Fields Irrigated	Acres	n/a	Daily
Irrigation flow (see 1 below)	mgd	Metered	Daily
Irrigation loading (see 1 below)	Inches/day	Calculated	Daily
Precipitation	Inches	Rain gage (see 2 below)	Daily
Total Hydraulic Loading (see 3 below)	Inches/acre/month	Calculated	1/Month
<u>Total</u> Nitrogen Loading (see 4 below)			
From wastewater	lbs/acre	Calculated	**<u>1/Month</u>** ~~1/Year~~
From fertilizer	lbs/acre	Calculated	**<u>1/Month</u>** ~~1/Year~~

Constituent/Parameter	Units	Sample Type	Frequency
Cumulative Loading (see 5 below)	**lbs/acre**	**Calculated**	**1/Year**

1. Irrigation flow and irrigation loading will be the combined flow of wastewater and any supplemental irrigation water applied to the LAAs.

2. **Precipitation measurements can be taken using a rain gage at the WWTF. Information from the** National Weather Service or CIMIS data from the nearest weather station ~~is~~ **are** acceptable **alternatives**.

3. Combined loading from wastewater, irrigation water, and precipitation.

4. Nitrogen loading shall be calculated as specified in section III of this MRP.

5. **Cumulative Loading shall be the annual cumulative load of nitrogen from wastewater and fertilizers to the LAA.**

CITY COMMENT #18: Within MRP, part III.B.7, the calculation of total nitrogen loading says to multiply 8.345*C * V, where V is the volume of "blended wastewater and irrigation water applied to the LAA." However, the concentration of total nitrogen (C) collected in the wastewater effluent is not the same as supplemental water and therefore the volumes of the two cannot be combined to obtain a representative nitrogen load.

RESPONSE: Staff's understanding is that the Discharger does not currently provide supplemental irrigation water to the LAA. However, to avoid any confusion in the event the Discharger does decide to provide supplemental irrigation water in the future, the formula provided in MRP, part III.B.7 has been modified as follows:

7. Calculate the total mass loading for total nitrogen within the LAA specified in Section II.F.

   The mass of total nitrogen applied to the LAA fields shall be calculated using the following formula and compared to published crop demand for the crops actually grown:

$$M = \sum_{i=1}^{12} \frac{(8.345(C_i V_i) + M_x)}{A}$$

Where:

M	=	Mass of total nitrogen applied to the LAA in lbs/ac/yr
C_i	=	Average concentration of total nitrogen for the month *i* in mg/L
V_i	=	Volume of ~~blended~~ wastewater ~~and irrigation water~~ applied to the LAA during calendar month *i* in million gallons
A	=	Area of the LAA (i.e., field) irrigated in acres
I	=	The number of the month (e.g., January = 1, February = 2, etc.)
M_x	=	Nitrogen mass from other sources (e.g., **supplemental irrigation water,** fertilizer, and compost) in pounds
8.345	=	Unit conversion factor