Central Valley Regional Water Quality Control Board
18-19 April 2024 Board Meeting

Response to Written Comments on
Tentative Waste Discharge Requirements for
Shasta County Service Area No. 17
Cottonwood Wastewater Treatment Plant
Shasta County

At a public hearing scheduled for 18-19 April 2024, the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) will consider adoption of tentative Waste Discharge Requirements (NPDES No. CA0081507) Shasta County Service Area No. 17 (Discharger) Cottonwood Wastewater Treatment Plant, Cottonwood (Facility). This document contains responses to written comments received from interested persons and parties in response to the tentative Order. Written comments from interested parties were required to be received by the Central Valley Water Board by 22 February 2024 in order to receive full consideration. Comments were received prior to the deadline from:

1. Joanne Kipps (received 22 February 2024)

Written comments from the above interested person are summarized below, followed by the response of Central Valley Water Board staff.

Jo Anne Kipps COMMENTS

JO ANNE KIPPS COMMENT #1 – Site Map

"Please revise the tentative order to include a scaled Facility Site Map depicting the Facility property lines, locations of unit operations identified in Attachment C, monitoring locations identified in the MRP, and any and all storm water retention/disposal basins."

RESPONSE:

Staff have added a scaled Facility Site Map that identifies Facility approximate property lines and locations of unit operations and monitoring locations; the new map is located in Attachment B of the tentative Order. The Discharger has confirmed that the Facility does not have any storm water retention/disposal basins. (A description of the

Discharger's collection, management, and disposal of Facility storm water is provided in response to Comment #5.)

JO ANNE KIPPS COMMENT #2 – Sludge Basins

"Revise the tentative order to provide the areas of both sludge basins, their working sludge depths, berm elevations, invert elevations, and the vertical separation distance between basin inverts and highest anticipated groundwater."

RESPONSE:

The tentative Order has been updated to include the areas of both sludge basins, their working sludge depths, berm elevations, and invert elevations. However, the exact vertical separation between basin inverts and highest anticipated groundwater is unknown. Both sludge basins are surrounded by a 6-inch perforated underdrain with a maximum elevation of 407.5 ft. The underdrain is intended to ensure a minimum separation of 3.5 ft between groundwater and the floor of the individual sludge basins. Information about the underdrain elevation has been added to the tentative Order, as well. The new information has been added to the Fact Sheet, Section II.A.

JO ANNE KIPPS COMMENT #3 – Facility Soils and Groundwater Information

"Provide information on Facility area soils and their permeabilities, and area groundwater occurrence, flow direction, and quality."

RESPONSE:

The tentative Order has been updated to include soil information in the area of the northern sludge storage basin.

There are no groundwater monitoring wells associated with the Facility, and the Discharger does not have specific information regarding groundwater occurrence, flow direction or quality. However, several perforated underdrains exist at the Facility with the intent of intercepting groundwater and maintaining suitable separation between Facility infrastructure and groundwater. Specifically, both sludge basins are surrounded by a 6-inch perforated underdrain with a maximum elevation of 407.5 ft. The underdrain is intended to ensure a minimum separation of 3.5 ft between groundwater and the floor of the individual sludge basins.

Fact Sheet, Section II.A has been updated to acknowledge the limited information on Facility soils, groundwater occurrence, flow direction or quality and the mechanisms

employed at the Facility to maintain a suitable separation Facility infrastructure and groundwater.

JO ANNE KIPPS COMMENT #4 – Sludge Basin Liners and Groundwater Protection

"Revise the tentative order to identify the year(s) when the basins were lined and disclose if soils underlying the sludge storage basins were compacted prior to liner installation. Also, identify the liners' certified design hydraulic conductivities in terms of centimeters per second or gallons per day per acre of basin area."

"If the Discharger's consulting professional did not provide a certification of the liners' hydraulic conductivities, please consider revising the tentative order to include a special provision requiring the Discharger to conduct a technical evaluation of the sludge basin liners to determine their hydraulic conductivities and consistency with the State Antidegradation Policy. Alternatively, please revise the tentative order to include a provision requiring the Discharger to install a groundwater monitoring well network consisting of at least three wells, one upgradient and two downgradient of the sludge storage basins and require groundwater monitoring in the tentative Order."

RESPONSE:

Information has been added to the Fact Sheet, Section II.A on the sludge basins liners; however, Staff do not concur with the recommendation to require the Discharger to perform a technical evaluation on the sludge basin liner's hydraulic conductivities or for the tentative Order to require the installation of groundwater monitoring wells.

Staff have added the following information regarding the north and south sludge storage basins (SSB1 and SSB2, respectively) in the tentative Order:

SSB1 was expanded and lined in 2002. The liner consists of 12-inches of clay with a 3-inch asphalt floor. Side slopes consist of 3-inch shotcrete with an 8-inch thickened shotcrete section extending 1-foot vertically above the asphalt-shotcrete joint. Prior to construction of the clay liner, the bottom 8-inches of soil was scarified and re-compacted. The hydraulic conductivity is unknown.

SSB2 was lined in 2008. The liner consists of a 60-mil High Density Polyethylene (HDPE) geomembrane underlain by 16-oz geotextile. Prior to construction of the liner, the existing subgrade was rolled with a smooth drum roller.

Although the Discharger does not have a certification of the liners' hydraulic conductivities, the ponds have engineered liner systems with either compacted clay or a

60-mil HDPE liner. These liner systems are presumed to be relatively impermeable. Furthermore, there are several perforated underdrains at the Facility with the intent of intercepting groundwater and maintaining suitable separation between Facility infrastructure and groundwater. Specifically, both sludge basins are surrounded by a 6-inch perforated underdrain with a maximum elevation of 407.5 ft. The underdrain is intended to ensure a minimum separation of 3.5 ft between groundwater and the floor of the individual sludge basins. Liquid collected in the underdrain system is routed back to the headworks for treatment at the Facility.

Since the sludge storage basins are underlain by engineered liner systems and an underdrain system collects shallow groundwater from under the sludge storage basins, it is reasonable to conclude the basins do not have the potential to cause an exceedance of applicable water quality objectives in groundwater. Based on this information, requiring a technical evaluation on the sludge basin liner's hydraulic conductivities or the installation of groundwater monitoring wells is not necessary at this time.

JO ANNE KIPPS COMMENT #5 – Stormwater

"Revise the tentative order to provide a description of the Discharger's collection, management, and disposal of Facility storm water."

RESPONSE:

The tentative Order (Fact Sheet, Section II.A) has been updated with additional information on the Discharger's collection, management, and disposal of Facility storm water, as follows:

The only stormwater-specific infrastructure at the Facility is curbing which keeps stormwater from being exposed to wastewater treatment equipment and processes. In general, stormwater flows across the facility's impervious surfaces following the surface grade, which generally flows to the south.

JO ANNE KIPPS COMMENT #6 – Effluent Limitations for Nitrate plus Nitrite

"If concentrations of nitrate plus nitrite in Facility effluent are always substantially lower than computed water quality-based effluent limitations, it would appear that there is no reasonable potential for the discharge to cause or contribute to an instream excursion above the water quality objective for nitrate plus nitrite. If this is the case, why continue to include limitations for these constituents?"

RESPONSE:

Effluent limitations for nitrate plus nitrite have been included in the tentative Order because the Facility discharge has a reasonable potential to cause or contribute to an instream excursion above the Primary Maximum Contaminant Level (MCL).

As discussed in Fact Sheet section IV.C.3.d.vi., the Facility is a publicly owned treatment works (POTW) that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that is harmful to aquatic life and exceed the Basin Plan's narrative toxicity objective. Inadequate or incomplete treatment may result in the discharge of nitrate and/or nitrite to the receiving stream in concentrations that may exceed the Primary MCL and would violate the Basin Plan's narrative chemical constituents' objective. Therefore, the Central Valley Water Board finds the discharge has a reasonable potential to cause or contribute to an instream excursion above the Primary MCL and Water Quality-Based Effluent Limits (WQBELs) are required for nitrate plus nitrite.

As discussed in Fact Sheet section IV.C.2.c., the Discharger has been granted a human health mixing zone downstream of the discharge. The mixing zone has an associated dilution credit that has been used to calculate the effluent limitations for nitrate plus nitrite. Application of the dilution credit in the calculation of the water quality-based effluent limitation results in limitations greater than the applicable criteria (e.g. State primary MCL of 10 mg/L for the sum of nitrate plus nitrite) and greater than observed or historic nitrate plus nitrite effluent concentrations.

Although facility performance indicates that compliance with the proposed nitrate plus nitrite effluent limitations is easily achievable, the fact that the limit exceeds performance values does not negate the need to establish effluent limitations, as WQBELS are required to be established when a reasonable potential to cause or contribute to an instream excursion above an applicable water quality criteria exists, as is the case for this discharge as it relates to nitrate plus nitrite.