

ITEM: 23

SUBJECT: Town of Discovery Bay Community Services District, Wastewater Treatment Plant, Contra Costa County

BOARD ACTION: *Consideration of NPDES Permit Renewal (NPDES Permit No. CA0078590)*

BACKGROUND: The Town of Discovery Bay Community Services District is the owner of the Discovery Bay Wastewater Treatment Plant (Facility), located at 2500 Channel Road (Plant 1) and 17501 Highway 4 (Plant 2), Discovery Bay, CA. The Facility provides sewerage services for the Town of Discovery Bay, serving a population of approximately 16,000. The median household income for Discovery Bay is approximately \$96,000 and the current sewer user rates are \$57/month. Discharges from the Facility are currently regulated by Waste Discharge Requirements Order R5 2008-0179-01, permitting an average dry weather flow of 2.1 million gallons per day (MGD). Treated wastewater from the Facility is discharged to the Old River, a water of the United States, within the Sacramento – San Joaquin Delta. The United States Environmental Protection Agency and the Central Valley Water Board have classified this discharge a major discharge.

The proposed NPDES permit renewal allows for an increase in the discharge from the current permit from 2.1 MGD to 2.35 MGD to accommodate anticipated development in the service area. The proposed NPDES permit renewal includes new or more stringent effluent limits for ammonia, nitrate plus nitrite, total recoverable copper, biochemical oxygen demand, total suspended solids, total coliform organisms, and methylmercury. The proposed Order also removes effluent limits for total recoverable aluminum and total recoverable iron, because the discharge no longer exhibits reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives for these constituents.

A permit alternative for the regulation of nitrate plus nitrite is also provided in the agenda package to be considered by the Central Valley Water Board. The proposed permit does not allow a mixing zone and includes a final effluent limit for nitrate plus nitrite of 10 mg/L (as N). The permit alternative identifies changes to the proposed permit that allows a mixing zone for nitrate plus nitrite with a final effluent limitation of 31 mg/L (as N) that is calculated with the allowance of dilution.

ISSUES: A Notice of Public Hearing was sent to the discharger and interested parties on 26 March 2014 for a 30-day public comment period. Timely public comments on the tentative NPDES permit and nitrate plus nitrite permit alternative were received by the Discharger, the California Urban Water Agencies (CUWA), the Central Valley Clean Water Association (CVCWA), and the State Water Contractors and San Luis & Delta-Mendota Water Authority (Water Contractors). United States Environmental Protection Agency, Region IX (USEPA) provided late comments on 29 April 2014. The following is a summary of the comments on the major permitting issues and Central Valley Water Board staff responses. Detailed comments and responses are included in the Staff Response to Comments document included in the agenda package.

Support Nitrate Plus Nitrite Option. The Discharger and CVCWA support the proposed Nitrate Plus Nitrite Option. This option provides a facility performance based effluent limitation on nitrate plus nitrite (as N) of 31 mg/L. These commenters argue that the more stringent effluent limits do not appear to be justified when there would not be known benefits to public health or the environment considering that the overall long-term average dilution is greater than 1,000:1.

Central Valley Water Board staff does not concur. The Central Valley Water Board is concerned with the effects of the discharge of nutrients, including nitrate and nitrite, on biologically sensitive aquatic resources and critical habitats, as are present in the Delta, and the impact of nutrients on the use of the water for municipal uses. The proposed limits are necessary to address cultural eutrophication, which is the adverse effect of excess human-caused nutrient inputs. Because the Delta is currently experiencing eutrophication, point source dischargers need to reduce nutrient levels. The proposed nitrate plus nitrite effluent limit is based on the technical capability of publicly-owned treatment works and is readily achievable using standard denitrification technologies. The limit is protective of the MUN beneficial use, and is a technologically achievable limit that results in a reduction in nutrient loadings from the previous Order that is protective of aquatic life beneficial uses.

Total Coliform. Maintain the effluent limitation of 23 MPN/100 mL. The Discharger and CVCWA comments that the discharge should be regulated to the public health protection limitation for total coliform organisms of 23 MPN/100 mL, as described by the California Department of Public Health (DPH) for effluent dischargers receiving 20:1 or more dilution, and not the proposed 2.2 MPN/100 mL standard.

Central Valley Water Board staff does not concur. Typically, the Central Valley Water Board requires Title 22 or equivalent tertiary treatment when there is less than 20:1 dilution, based on recommendations by DPH. Although in this case there is 20:1 dilution, Title 22 or equivalent tertiary level treatment is required based on the following:

- (1) The State Water Project and Central Valley Water Project pumps are located approximately 2 miles downstream of the discharge. Therefore, providing a high level of disinfection is appropriate to protect the MUN beneficial use.
- (2) The discharge is located in a portion of the Delta that is used heavily for recreation. Because of this, there is the chance for public exposure to the discharge as it mixes into the receiving water. As described above, there is high average dilution (1000:1); however, the dilution has been less than 20:1 during critical flow periods. Providing tertiary level disinfection is appropriate to ensure protection of recreation beneficial use.
- (3) The Central Valley Water Board adopted Resolution R5-2009-0028¹ which encourages recycling of wastewater. The facility has proposed upgrades that will achieve equivalent to tertiary level treatment for all but pathogen removal. As described in the comment, there is additional, incremental cost associated with ensuring reliable pathogen removal to 2.2 MPM/100 mL, however, ensuring tertiary level capabilities for pathogen removal has the benefit of the flexibility to recycle wastewater. Requiring that the discharge achieve tertiary-level pathogen removal is consistent with Resolution R5-2009-0028.
- (4) With the significant pelagic organism decline, the fragile nature of the Delta, unknown Delta stressors and recent legal decisions on water supply diversions for the Delta, it is prudent to require a high level of treatment for discharges within the Delta. Requiring pathogen removal to the Title 22 tertiary, or equivalent, levels ensures tertiary filtration processes are also in place.
- (5) The Facility provides UV disinfection without filtration, which is not a normal wastewater engineering practice due to the need for low turbidity wastewater for effective UV disinfection. The requirement to provide tertiary filtration is necessary

¹ Resolution R5-2009-0028 in Support of Regionalization, Reclamation, Recycling, and Conservation for Wastewater Treatment Plants, adopted 23 April 2009

to ensure reliable disinfection to protect the contact and non-contact recreation beneficial uses.

Receiving Water and UV Disinfection Monitoring Requirements. The Discharger requests that the monitoring frequency for pH, ammonia, DO, temperature, and turbidity should be 1/month, instead of 2/month because the increase in monitoring frequency would double staff time required and increase laboratory costs. The Discharger also requests that the monitoring frequency for total coliform of 5/week be reduced to 2/week because it seems excessive given the available dilution and flow volume being discharged.

The receiving water monitoring frequency, specifically for pH, temperature, and ammonia, was increased to better evaluate the applicable ammonia criteria and the appropriate effluent limitations to protect beneficial uses. However, Central Valley Water Board staff understands this increased monitoring frequency results in increased monitoring costs, thus, the monitoring frequency for pH, ammonia, DO, temperature, and turbidity will remain at 1/month, consistent with the current Permit. Regarding the total coliform monitoring, due to compliance issues it is appropriate to increase the monitoring. The proposed permit was revised to 3/week monitoring for effluent total coliform.

Turbidity Specifications. The Discharger requests that the turbidity specification of 10 NTU as 7-day median of daily averages, prior to the Ultraviolet Light (UV) disinfection system, be increased to 15 as a 7-day median of daily averages because the proposed limit will not be achievable on a regular basis and will likely result in violations of the permit.

Central Valley Water Board staff does not concur. The Discharger conducted a site-specific study of the effluent to determine UV dose response as a function of turbidity. The study results demonstrated that a turbidity of 10 NTUs was necessary to meet the total coliform effluent limits. These UV Disinfection System Operating Specifications have been in effect for the past two years and must be carried forward in the proposed Permit to ensure compliance with the disinfection requirements.

Drinking Water Monitoring Requirements and Notification of Drinking Water Agencies. CUWA requests to add ammonia, total Kjeldahl nitrogen (TKN), total organic carbon (TOC), and dissolved organic carbon (DOC) to the Effluent and Receiving Water Characterization Study of the proposed permit. Additionally, CUWA requests to include a requirement in the Order to notify downstream drinking water agencies if there are spills of untreated or partially treated wastewater from the Facility or collection system that reach Delta waters.

Central Valley Water Board staff concurs and has modified the proposed order.

RECOMMENDATION: Adopt NPDES Permit Renewal, as proposed.

Mgmt. Review AWL
Legal Review _____
5/6 June 2014 Board Meeting
11020 Sun Center Dr. #200
Rancho Cordova, CA 95670