

INFORMATION SHEET

ORDER ___
CITY OF MENDOTA
MENDOTA WASTEWATER TREATMENT FACILITY
FRESNO COUNTY

Facility Description

The City of Mendota (hereafter “Discharger”) owns and operates an existing publicly owned wastewater treatment facility (WWTF). The WWTF treats domestic wastewater from the City of Mendota and a nearby Federal Correctional Institution. The City has a population of approximately 11,000 residents and the prison has approximately 1,100 inmates and 300 staff. The WWTF was originally constructed in 1972 and has been incrementally modified over the years. The WWTF is located along Bass Avenue about one mile northeast of the City of Mendota and adjacent to the Fresno Slough near the convergence with the San Joaquin River.

The WWTF previously consisted of three unlined treatment ponds (Ponds 1 through 3) run in series and four percolation/evaporation disposal ponds (Ponds 4 through 7). The disposal ponds have a low percolation rate that has limited hydraulic disposal capacity. On 26 April 2002, the Central Valley Water Board adopted Cease and Desist Order (CDO) R5-2002-0048, which required the Discharger to implement salinity source control, wastewater treatment improvements, and hydraulic capacity improvements. In 2006, the Discharger submitted a Preliminary Engineer’s Report that evaluated alternative treatment designs to comply with the CDO and improve the WWTF’s treatment and hydraulic capacity. Based on the evaluation, the Discharger proposed a WWTF improvements project that involved decommissioning the old treatment ponds, relocating and constructing a new headworks, constructing a larger treatment pond system consisting of aerated primary treatment ponds and secondary facultative ponds, removing sludge from the decommissioned treatment ponds for use as disposal ponds, rehabilitating existing disposal ponds to improve percolation rates, and constructing new disposal ponds with better percolation rates.

From 2010 through 2012, the Discharger completed construction of the proposed WWTF improvements project as available funding allowed. Construction included two aerated primary treatment ponds, T1 and T2, and two secondary facultative treatment ponds, F1 and F2. Additional funds were not available to complete the planned construction of two additional aerated primary treatment ponds, T3 and T4, and two additional secondary facultative treatment ponds, F3 and F4. The Discharger constructed three new disposal ponds (Ponds 8 through 10) in an underlying sand lens that was anticipated to have a higher percolation rate. However, within four weeks of filling the new disposal ponds with wastewater, the percolation fell to previously observed rates. Efforts to improve the percolation rates of existing disposal Ponds 4 through 7 were not successful during the project timeline due to wet weather conditions, funding availability, and project deadlines. In 2012, the Discharger attempted another effort to obtain better percolation by constructing disposal Pond 11 in the same sand lens as Ponds 8, 9, and 10, but Pond 11 also exhibits the same percolation rate of 0.07 feet per day. Currently, an economically feasible solution to improve the percolation rate does not exist.

Planned Changes

The Discharger was not able to complete the WWTF improvement project as proposed due to funding limitations. From 2011 through 2015, the Discharger used the abandoned treatment ponds (Ponds 1 through 3) for emergency disposal. The Discharger was not able to remove the sludge from Ponds 2 and 3 until 2015, at which point they were designated as disposal ponds. This Order establishes a time schedule to remove sludge from Pond 1.

In 2015, the Discharger began discharging wastewater to the bermed land area designated for the future construction of treatment ponds T3, T4, F3, and F4. This Order names this area Pond 12 and requires the Discharger to submit a *Pond Construction Report* providing the as-built dimensions for Pond 12. When funding becomes available the Discharger plans to finish the remaining tasks of the project.

Site-Specific Conditions

The Mendota community obtains its potable water supply from groundwater supply wells, which are owned and operated by the Discharger. The original source water wells were constructed on the west side of the San Joaquin River Bypass and the water was of low quality with high turbidity and poor odor and taste quality. Three new source water wells were installed in 2004 and on on the east side of the San Joaquin River Bypass and have proven to provide higher quality water.

The WWTF is relatively level and as stated in the Discharger's 2006 Preliminary Engineering Report: "Mendota lies on the western slope of the San Joaquin Valley, at an elevation of approximately 170 feet. The closest irregularly formed land is the Coastal Range about 16 miles to the west. From the mountain range a gentle slope beginning at an elevation of about 475 feet extends eastward until the axial center of the valley is reached at the Fresno Slough just east of the City. Unlike the soils throughout most of the western part of Fresno County, the soils within the Mendota area are rather poor for most crops. Most of the soil within the area falls in a class which includes recent alluvial fan and flood plain soils, along with basin rim soils." The Report also states that the soils have a high alkali content that can be termed as "White Alkali", meaning that the sodium present in the soil is predominantly in the form of free salts

The 2015 RWD states that "[v]irtually all the undeveloped area of the WWTF parcel has a relatively-impermeable [layer] of silty-clays and clays at the surface. This layer varies in thickness from several feet to well over 20 feet. The silty clays are underlain by discontinuous lenses of coarse sand, also of varying thickness. These sands themselves are underlain by thicker clay layers and then alternating layers of sands, silts and clays. The net effect is that ponds located in any of the fine-grained silty-clay layers do not provide substantial percolation rates."

Based on the 18 February 2009 FEMA flood insurance map, the WWTF is partially located within the 100-year flood zone with a depth of 2 feet. The WWTF area excluded from the flood zone appears to be the location of the bermed ponds. The RWD provides design plans for each of the ponds that show that the berms are 4.5 to 9.7 feet high. Therefore, the WWTF as constructed after the improvements project is not expected to be within the

100-year flood zone.

Surrounding land use is primarily agricultural. Irrigation water is either supplied by groundwater wells or a network of surface water canals supplied by the San Joaquin River or the Fresno Slough. Agricultural irrigation has a considerable influence on groundwater movement and quality.

Groundwater Conditions

The Discharger began monitoring groundwater monitoring wells MW-1 through MW-7 in 2002. To better characterize background groundwater, the Discharger expanded the monitoring well network by installing MW-8 through MW-13, which were first monitored in September 2007. In 2007, MW-6 was destroyed because it required retrofit and casing extension. MW-8 was installed as a replacement to MW-6. Groundwater monitoring data indicate that the depth to shallow groundwater ranges from 25.4 to 34.5 feet below ground surface as an annual average. Monitoring data from MW-1 through MW-7 indicated that the groundwater flow direction varied at the site with flow directions trending towards the south during the wet winter/spring and towards the north/northeast during the dry summer/fall monitoring events. The expansion of the monitoring network provided evidence that groundwater flow is more consistently towards a southerly direction, with a localized, seasonal, deviation most notable in the northern portion of the facility and near the Fresno Slough. The observed variation in flow direction is likely attributed in part to seasonal pumping of agricultural water wells located north of the project area, including wells located just north and east of MW-3.

Groundwater monitoring data indicate that groundwater quality is highly spatially variable, generally poor, and that any impacts from the WWTF discharge are not discernible from other factors, such as agricultural impacts to groundwater quality or influence from the Fresno Slough. Because of the groundwater flow direction variability, the proposed background monitoring wells MW-2, MW 5, MW-9, MW 10, MW-11, MW-12, and MW-13 are at times downgradient of the discharge and do not provide a consistent representation of background groundwater quality.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The WWTF is in Detailed Analysis Unit (DAU) No. 235 within the Delta-Mendota Basin hydrologic unit. The Basin Plan designates the beneficial uses of underlying as municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), non-contact water recreation (REC-2), and wildlife habitat (WILD).

Antidegradation Analysis

MW-9 and MW-10 were determined to provide the best approximation of background groundwater quality for the Antidegradation Analysis. For EC, TDS, chloride, nitrate, sulfate, iron, and manganese, current groundwater monitoring data indicates that groundwater has not been degraded beyond background groundwater quality by the previous discharge and that the expanded discharge does not pose a threat of degradation in the future. The requirements of this Order do not allow any degradation to occur.

Due to the variability of the groundwater flow direction, it is not practical to use an interwell analysis approach for future compliance determination. Changes in groundwater quality associated with the discharge will be most discernible using an intrawell analysis approach on compliance wells that are predominately influenced by the discharge.

The Discharger provides treatment and control of the discharge that has incorporated:

- a. Installing new municipal supply wells that provide source water better quality and reduce salinity and hardness ;
- b. Conducting a resident outreach salinity education program;
- c. Repairing of old manholes potentially subject to upward groundwater intrusion;
- d. Decommissioning the old treatment ponds;
- e. Constructing new wastewater treatment ponds that improve treatment capacity and efficiency; and
- f. Constructing new disposal ponds in an attempt to improve percolation rates and disposal capacity.

Despite the Discharger's efforts of improving effluent quality, the discharge is not able to meet the Basin Plan maximum effluent limit for EC of 1,000 $\mu\text{mhos/cm}$. This Order implements an exception to discharge requirements for EC pursuant to the Basin Plan.

Legal Effect of Rescission of Prior WDRs or Orders on Existing Violations

The Board's rescission of prior waste discharge requirements and/or monitoring and reporting orders does not extinguish any violations that may have occurred during the time those waste discharge requirements or orders were in effect. The Central Valley Water Board reserves the right to take enforcement actions to address violations of prior prohibitions, limitations, specifications, requirements, or provisions of rescinded waste discharge requirements or orders as allowed by law.

Discharge Prohibitions, Specifications, Limitations and Provisions

This Order establishes flow limits to the WWTF and a schedule to increase flow limits based on completing proposed work to Pond 3 and Pond 6. The Discharger shall operate and maintain all basins and ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. This Order specifies freeboard limits for all ponds.

This Order establishes performance based effluent limits for BOD and electrical conductivity (EC). This Order also sets groundwater limitations that will ensure compliance with the Basin Plan.

The Provisions section of this Order requires submittal of technical and monitoring reports by the specified dates. The Monitoring and Reporting Program is designed to ensure and verify compliance with the limitations and requirements in this Order.