

INFORMATION SHEET

ORDER R5-2018-XXXX
CITY OF NEWMAN
WASTEWATER TREATMENT FACILITY
STANISLAUS COUNTY

Facility Description

The City of Newman (Discharger) owns and operates a wastewater treatment facility (WWTF). The WWTF treats wastewater from residential, commercial, and industrial sources: a cheese manufacturer, a turkey hatchery, and a tomato processor. As of 2016, the estimated population of the City is approximately 11,000 residents. The WWTF discharge is currently regulated by Order 98-163, which set an influent flow limit of 1.69 million gallons per day (MGD) as a monthly average dry weather flow (ADWF).

The WWTF includes a bar screen, two unlined earth basins BASIN-1 and BASIN-2, an unlined Oxidation Pond, two unlined effluent storage reservoirs with a total capacity of 230 million gallons (MG), 60 acres of overland flow terraces, and 199 acres of land application areas (LAAs). Based on two feet of freeboard, BASIN-1, BASIN-2, and Oxidation Pond have capacities of 7MG, 9 MG and 90 MG respectively.

On 23 January 2017, the Discharger submitted a letter stating that BASIN-1 is operating as an anaerobic treatment basin rather than an aerobic treatment basin as originally designed. From September 2014 through December 2016, the dissolved oxygen (DO) in BASIN-1 averaged approximately 0.2 mg/L, with a maximum of 0.28 mg/L. WDRs 98-163 set a minimum DO limit of 1.0 mg/L for all ponds to prevent objectionable odors beyond the boundary limits of the WWTF. While BASIN-1 has not met the minimum DO limit, the Discharger reports that no objectionable odors are apparent at the boundary of the WWTF because BASIN-1 effluent is further treated by aerobic basins and odors are minimized. An inspection by Board staff on 17 August 2017 confirmed that objectionable odors were not noticeable on the WWTF property boundary. The Discharger submitted a sludge volume report for BASIN-1 as part of the April 2017 RWD, which states that operating BASIN-1 as an anaerobic treatment basin reduces high strength BOD influent by sixty to eighty percent and is necessary to stabilize the BOD for aerobic treatment. The Discharger states that converting BASIN-1 to a conventional aeration basin by installing additional aerators, as originally proposed in the February 2015 RWD, is cost prohibitive. The anaerobic operation of BASIN-1 may be contributing to conditions that mobilize naturally occurring metals in groundwater.

Groundwater monitoring data indicate that groundwater upgradient of the WWTF is of poor quality. Salinity concentrations in compliance groundwater monitoring wells surrounding the WWTF are approximately double of the up-gradient monitoring wells. Average nitrate nitrogen concentrations in all monitoring wells are less than the Title 22 Primary Maximum Contaminant Level (Primary MCL) of 10 mg/L for nitrate. Monitoring data indicate an increasing trend for nitrate that may be a result of long-term agricultural practices in the area.

The Discharger's 2015 *Urban Water Management Plan* indicated that nitrate and hexavalent chromium are the primary concerns in the potable groundwater supply. Three active supply wells have nitrate concentrations above 50 percent of the Primary MCL. The City has stopped using one supply water well where hexavalent chromium concentrations almost double the Primary MCL, while three other supply wells have hexavalent chromium concentrations that are

either close to or in excess of the Primary MCL. Salinity constituent concentrations measured as electrical conductivity (EC) and total dissolved solids (TDS) are also high in the city's water supply.

Influent BOD concentrations to the WWTF indicate high-strength organic matter in the community waste stream. Influent TDS and EC are approximately double that of the source water, indicating considerable salinity contributions from community sewer and industry.

A private residence is located approximately 0.4 miles northwest and downgradient of the WWTF. The residence is not identified in the RWD. Two wells are located on the residential property, an unused 100-foot domestic well and a 200 foot deep agricultural well. Water from the agricultural wells is currently used to irrigate fodder crops. Groundwater samples were collected and analyzed from the two wells in late 2017. Despite having some of the highest concentrations of dissolved salts in the study area (TDS ranging from 6,490 mg/L to 3,700 mg/L), general mineral and isotopic data indicate that these wells are not impacted from wastewater discharge from the Newman WWTF.

Regulatory Background

In March 2008, the Discharger submitted a Report of Waste Discharge (RWD) for the construction of an additional storage reservoir to ensure adequate capacity for permitted influent flow. Revised WDRs have not yet been adopted because groundwater degradation concerns with regard to salinity, arsenic, manganese, and iron were not addressed in the RWD.

As early as 2006, the Discharger proposed converting the potable groundwater supply to higher quality surface water as a means of salinity source reduction, but no significant progress has yet been made to acquire a surface water supply. From 2008 through 2017, the Discharger and Central Valley Water Board staff worked to develop economically feasible source control measures and wastewater treatment and disposal methods that would allow the City to increase permitted wastewater flows.

In August 2012, the Discharger submitted a *Salinity Impact Assessment* that determined the cost and financing of the surface water potable water supply project would be infeasible until the City population had doubled. The initially-proposed alternative approach would use infiltration basins to percolate Central California Irrigation District (CCID) surface water into groundwater upgradient of the City with the intent of generally improving groundwater quality in the area. In May 2013, the Central Valley Water Board's Executive Officer notified the Discharger that this would not be an appropriate use of high-quality surface water. It was then suggested that CCID water with an average EC of 800 $\mu\text{mhos/cm}$ be blended with effluent water with an average EC of 3,800 $\mu\text{mhos/cm}$ to be used for irrigation. The Executive Officer also required the City to begin taking immediate actions to reduce salinity sources, such as maximizing use of low salinity groundwater supply wells and banning installation of new self-regenerating water softeners.

In February 2015, the Discharger submitted a Notice of Intent (NOI) for State Water Resources Control Board Recycled Water Use Order WQ 2016-0068-DDW (Recycled Water Use General Order). The NOI proposed that farmer-owned land application areas will be enrolled in the City's recycled water use program, which would be regulated under the Recycled Water Use General Order. The Discharger also submitted an updated RWD, which proposed using irrigation wells, rather than CCID water, for blending with effluent as irrigation water. The average EC of the irrigation well water was estimated to be 1,800 $\mu\text{mhos/cm}$. In July 2015, Central Valley Water

Board staff issued a letter stating the RWD and NOI were incomplete. The RWD did not include an evaluation of groundwater quality at the wastewater treatment facility, an Antidegradation Analysis, or a project schedule to achieve compliance.

In March 2017, the Discharger submitted a letter stating that they completed the actions, to the extent feasible, required by the Executive Officer in May 2013. In April 2017, the Discharger submitted a revised RWD, which contained sufficient information to develop these WDRs.

Planned Facility Changes

The Discharger is proposing to modify the facility in two phase. This Order will allow the Discharger to increase the influent ADWF limit from 1.14 MGD to 1.5 MGD in Phase I, and then to 2.4 MGD in Phase II, provided that the Discharger has demonstrated to the Central Valley Water Board that the proposed WWTF modifications have been successfully completed.

CV-SALTS Regulatory Considerations

The Central Valley Water Board is developing amendments to the Basin Plan to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the waters and soils of the Central Valley as part of the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative. The Salinity Control Program currently being developed would subject dischargers that do not meet stringent salinity numeric values (700 $\mu\text{S}/\text{cm}$ EC as a monthly average) to protect the AGR beneficial use and 900 $\mu\text{S}/\text{cm}$ EC as an annual average to protect the MUN beneficial use) to performance-based salinity requirements and would require these dischargers to participate in a basin-wide Prioritization and Optimization Study to develop a long-term strategy for addressing salinity accumulation in the Central Valley.

The level of participation required of dischargers whose discharges do not meet stringent salinity requirements will vary based on factors such as the amount of salinity in the discharge, local conditions, and type of discharge. The Board anticipates that the CV-SALTS initiative will result in regulatory changes that will be implemented through conditional prohibitions and modifications to many WDRs region-wide, including the WDRs that regulate discharges from the Newman WWTF. More information regarding this regulatory planning process can be found at the following link: https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/

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 Limitations and Provisions

This Order establishes flow limits to the WWTF and a schedule to increase flow limits based on completing proposed work. This Order establishes a performance based annual average effluent limit for EC. This limit was determined using the reported monthly average EC from storage reservoir 1 collected from January 2014 through December 2017 (47 samples) and applying a bootstrap approach to calculate the prediction limit on a mean with a sample size of 12 (representing 12 annual samples) and a one-sided confidence level of 0.99 (i.e., the 99th

percentile of the bootstrap distribution). This Order establishes effluent BOD limits based on typical wastewater pond treatment performance.

This Order also sets a time schedule for groundwater limitations for the Discharger to come into compliance with the Basin Plan. Under the time schedule waste constituents in groundwater are not allowed to exhibit a statistically significant increasing trend. Salinity constituents EC, TDS, chloride, and sodium are excluded from this limitation because salinity concentrations in groundwater may increase even though the Discharger has implemented “best efforts” to reduce salinity in the discharge.

The Provisions section of this Order requires submittal of technical and monitoring reports by the specified dates.