

## INFORMATION SHEET

ORDER R5-\_\_\_\_\_  
WOODLAND-DAVIS CLEAN WATER AGENCY  
DAVIS WOODLAND REGIONAL WATER TREATMENT FACILITY  
YOLO COUNTY

### **Facility Description**

The Woodland-Davis Clean Water Agency (WDCWA) owns and will operate the Davis Woodland Regional Water Treatment Facility (RWTF), a new facility that will treat water from the Sacramento River for distribution to the cities of Woodland and Davis and the University of California, Davis. WDCWA submitted a Report of Waste Discharge (RWD) for the land application of wastewater generated at the RWTF.

Water treatment will consist of flash mixing, sand ballasted clarification, ozonation, granular media filtration, and final disinfection with free chlorine. The treatment system will be equipped to add a number of chemicals at various stages of treatment.

The residual handling facilities include gravity thickeners for the underflow from the sand ballasted clarification process. Underflow from the thickeners will be sent to the solids drying beds for settling/decanting and evaporation. Free water will be decanted and conveyed to the backwash equalization basin, where it will be mixed with filter backwash water and returned to the water treatment process or gravity thickeners. The solids in the drying beds will be allowed to dry for approximately 1 year prior to having its solids removed and put back online. Solids will be hauled to an off-site permitted landfill.

### **Site-Specific Conditions**

The RWTF site elevation ranges from 25 to 39 feet above mean sea level. The facility is currently within the 100-year FEMA floodplain designation. WDCWA is in the process of a Map Revision to have the facility site removed from this designation.

Yolo County has an average annual precipitation of approximately 16.8 inches and a 100-year precipitation of approximately 33.1 inches. The reference evapotranspiration rate for the area is approximately 57.0 inches per year.

The area surrounding the RWTF is a mix of municipal, commercial/business, and agricultural properties. The City of Woodland Water Pollution Control Facility is located just south of the RWTF. Rice and alfalfa are grown on the nearby properties. Reclamation District 2035 supplies irrigation water from the Sacramento River to the surrounding area.

### **Groundwater Conditions**

The site is located in an area where there are two predominate soil series: Sycamore complex and Pescadero silty clay. The Sycamore soil series consist of silty clay loam and silty clay with a moderately high saturated hydraulic conductivity (0.20 to 0.57 in/hr).

The Pescadero soil series consist of silty clay, silty clay loam, and stratified loam to silty clay loam with a very low to moderately low saturated hydraulic conductivity (0.0 – 0.06 in/hr).

Based on available information, depth to groundwater ranges approximately 10 to 20 feet below the ground surface. Groundwater elevation data monitored by the Woodland Water Pollution Control Facility show that the groundwater flow direction is generally towards the east and northeast. Depth to groundwater and groundwater flows may be influenced by nearby irrigation pumping. In general, pre-discharge groundwater quality is poor with respect to salinity constituents (particularly TDS, sodium, and chloride).

### **Basin Plan, Beneficial Uses, and Regulatory Considerations**

Local drainage is to the Yolo Bypass. The beneficial uses of the Yolo Bypass, as stated in the Basin Plan, are agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.

### **Antidegradation Analysis**

Constituents of concern that have the potential to degrade groundwater include salts (primarily TDS), ammonia, nitrate, and iron.

**TDS.** Based on the high quality source water, low salinity of the discharge, and site-specific soil and groundwater conditions, the discharge is not likely to degrade groundwater quality due to increased salinity.

**Ammonia and Nitrate.** Aqueous ammonia used to treat the raw water is likely to volatilize during the treatment process; and therefore, the discharge to the drying beds is not likely to degrade groundwater quality due to increased nitrate. In addition, any ammonia concentration in the wastewater is likely to volatilize due to the large surface area of the drying beds. Operation of the clay-lined sludge beds with a continuous return of wastewater and yearly solids removal will not cause nitrate concentrations in groundwater to exceed the water quality objective.

**Iron.** Any iron added to the treatment process will convert to a solid state and will be captured in the solids drying beds and hauled off site each year. Therefore, although the discharge could degrade groundwater quality due to increased dissolved iron, it is unlikely that it would cause exceedance of the water quality objective.

The Discharger provides treatment and control of the discharge that incorporates:

- a. High quality source water;
- b. Engineered clay-lined solids drying beds.
- c. Removal of solids from the solids drying bed for off-site disposal.

These practices are best practicable control for this type of waste. Therefore, the groundwater limitations of this Order allow degradation of groundwater quality, but not pollution.

**Discharge Prohibitions, Specifications, Limitations and Provisions**

This Order establishes groundwater limitations for the facility that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. Based on the high quality source water, low salinity of the discharge, and high salinity of the existing shallow groundwater, the discharge has minimal potential to degrade groundwater quality if properly managed. Therefore, groundwater monitoring is not necessary unless the discharge changes significantly or new information regarding the threat to groundwater quality becomes available.

This Order requires submittal of a *Solids Management Plan* that shall include a detailed plan for solids removal, drying, and disposal.

The Monitoring and Reporting Program is designed to verify compliance with the limitations and requirements of the WDRs.