

INFORMATION SHEET

ORDER R5-2015-____
SUTTER HOME WINERY, INC.
SUTTER HOME WINERY WESTSIDE FACILITY
WASTE DISCHARGE REQUIREMENTS
SAN JOAQUIN COUNTY

Facility Description

Sutter Home Winery, Inc., (“Discharger”) owns and operates a winery located at 18667 Jacob Brack Road, Lodi, in San Joaquin County. The facility comprises approximately 270 acres of agricultural land, several administrative and wine production buildings, three lined wastewater treatment ponds, and 111 acres of cropped Land Application Areas (LAAs) for the discharge of winery wastewater. The property has been used winery operations since 1998. Order R5-2009-0073, adopted by the Central Valley Water Board on 13 March 2009, and amended on 3 August 2012, prescribes waste discharge requirements for the facility. On 30 May 2014, a Report of Waste Discharge (RWD) was submitted to allow an increase of wastewater treatment and land application as a result of planned expansion of winery production activities at the facility. In January and March 2015, the Discharger submitted additional information to support the RWD.

Current Wastewater Process and Land Application Areas

The winery operates year-round, with maximum wastewater discharge occurring during the crush season of September through November. The facility currently crushes approximately 100,000 tons of grapes and produces 21 million gallons of wine annually. Process wastewater is pumped to a treatment system consisting of three lined wastewater treatment and storage ponds that were constructed in 2009. Treated wastewater is used irrigate 111 acres of cropped Land Application Area (LAAs). The Discharger is planning to increase winery production and to crush up to 200,000 tons of grapes annually. The Discharger has recently constructed a bottling plant and is planning to increase wastewater flow and expand the LAAs to include a total of 268 acres of cropped LAAs.

WDRs Order R5-2009-0073 allows a maximum daily wastewater flow of up to 7.0 million gallons per day (MGD), and a total annual flow of 30 million gallons per year (MGY). In 2014, the Discharger discharged 29.8 MG and proposes to further expand winery operations, increasing daily wastewater discharge to 13 MGD and annual flow to 70 MGY.

Wastewater Characterization and Salinity Reduction Efforts

Wastewater monitoring data indicate that the annual average annual flow-weighted FDS concentrations of wastewater from Pond 3 since 2010 has ranged from 1,239 milligrams per liter (mg/L) in 2012 to 1,432 mg/L in 2014. In contrast, average annual effluent BOD concentrations from Pond 3 between 2010 and 2014 ranged between 133 mg/L to 286 mg/L. The Discharger is implementing salinity source control and reduction measures as part of current winery production activities; however, operations have also included water conservation measures, which tend to increase the concentration of salinity in the wastewater.

Groundwater Quality

The Discharger currently maintains twenty two shallow-interval groundwater monitoring wells and has been monitoring groundwater quality at the site since 2002. The existing monitoring wells are located at strategic locations to provide water quality data from upgradient, cross-gradient, and downgradient of process areas and LAAs. Groundwater generally flows to the west-southwest, with some variability on the eastern side of the site.

Pre-discharge groundwater quality data showed spatial variability across the site and that TDS and nitrate nitrogen pollution occurred in shallow groundwater prior to Sutter Home's discharge was initiated at this facility. Intrawell analysis of monitoring data from wells surrounding the existing LAAs indicate that TDS and nitrate nitrogen concentrations have generally decreased or remained relatively stable and below the water quality objectives in most of the monitoring wells, however there is some temporal and spatial variability. Currently, one monitoring well exceeds the water quality goal for TDS while six monitoring wells continue to exceed the water quality goal nitrogen.

Antidegradation

Because pre-discharge data were available for the existing LAAs, an intrawell analysis was used to determine whether the discharge to date is in compliance with the Basin Plan and whether the proposed expansion is likely to be consistent with the Basin Plan. Based on the available groundwater and wastewater FDS loading data, it appears that continuing and/or expanding the discharge at the current FDS effluent limitation would not cause significant exceedance of the water quality objective if the wastewater is carefully managed to ensure even loading between LAAs and within each LAA. If further effluent salinity increases are a consequence of water conservation beyond that which has already been implemented, it would be reasonable to expect that wastewater flows would be reduced commensurate with the FDS concentration increase, and that the FDS loading rate from wastewater would not increase significantly.

Since the discharge began, nitrate nitrogen concentrations in groundwater have remained stable or decreased to below the water quality objective, however concentrations continue to exceed the water quality objective in six monitoring wells. Based on these findings, the discharge is not causing nitrate degradation, and the expansion to new LAAs is expected not to cause or contribute to a condition of pollution. Because the discharge will not provide sufficient nitrogen to meet crop demand, nitrogen will be added from supplemental sources.

This Order sets numeric trigger concentrations for TDS and nitrate nitrogen for wells where current water quality is below the water quality objective. If a trigger concentration is exceeded, this Order requires that the Discharger demonstrate that the increasing trend will not result in exceedance of the groundwater limitation or implements additional treatment or control measures to ensure compliance with the groundwater limitation.

Flow and Effluent Limitations

Effectively immediately, discharge from winery sumps to the existing 111-acres of LAAs shall not exceed 7.0 million gallons per day, and 35 MG annually. The allowable daily and annual flow limits can be increased to 13 million gallons and 70 million gallons, respectively, upon the completion of reconfiguring and preparing the expanded 268 acres of LAAs, and approval by the Executive Officer. Effective the date of adoption for these WDRs, wastewater discharge limits for the LAAs will include a daily maximum loading rate FDS limit of 3,800 lb/ac/yr.

The water balance included in the RWD indicated that a maximum of 5.2 inches of wastewater would be applied to any LAA in a single month. Assuming that depth of wastewater were to be applied in one day and a minimum irrigation cycle of 7 days, the estimated maximum daily BOD loading would be approximately 318 lb/ac/day, and the irrigation cycle average loading rate would be approximately 45 lb/ac/day. Therefore, this Order sets an irrigation cycle average BOD loading rate limit for the LAAs of 100 lbs/acre/day and requires that the Discharger manage land application to evenly distribute the BOD load evenly between the LAAs and within each discrete irrigation area of each LAA.

Groundwater Limitations

Effective immediately, for constituents and wells where the Controllable Factors Policy applies, the WDRs will prohibit any statistically significant increase in in any compliance well. Otherwise, degradation up to the water quality objective would be allowed. Compliance with this requirement will be determined based on an approved intrawell statistical analysis comparing the well to historic data collected from each well location rather than referring to an upgradient well. Updated values must be calculated annually as described in the MRP.

The Order requires quarterly groundwater monitoring and reporting, and submittal of an annual report. The annual report will include a comprehensive evaluation of the effectiveness of the past year's wastewater application operations in terms of odor control and groundwater protection, including consideration of application management practices (e.g., waste constituent and hydraulic loadings, application cycles, drying times, and cropping practices), and groundwater monitoring data. The annual report will also include tabular and graphical summaries of total loading rates for BOD, total nitrogen, and FDS, a description of salinity control methods implemented in the calendar year and a quantification of the reductions achieved as compared to previous years, and a discussion of compliance and corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.