

INFORMATION SHEET

ORDER R5-_____
NAPA BERRYESSA RESORT IMPROVEMENT DISTRICT
NAPA BERRYESSA WASTEWATER TREATMENT FACILITY
NAPA COUNTY

Background

Napa Berryessa Resort Improvement District (hereafter “Discharger” or “NBRID”) submitted a Report of Waste Discharge (RWD) that describes major improvements and expansion of the existing wastewater treatment facility (WWTF). The NBRID WWTF is regulated under Waste Discharge Requirements (WDRs) Order 95-173, which prescribes requirements for the treatment and discharge of domestic wastewater to three holding basins and a 60-acre spray field. The treatment plant and holding basins is located at 1465 Steele Canyon Road, while the spray field is located approximately 0.5 miles south of the plant. WDRs 95-173 allows a monthly average discharge up to 50,000 gallons per day. Upgrades to the WWTF will improve the treatment system and increase effluent storage capacity to comply with Cease and Desist Order (CDO) R5-2010-0101.

For several years, the Discharger has experienced problems managing severe sewer inflow and infiltration, which led to exceeding the flow limits set forth in the WDRs, failure to contain wastewater runoff from the spray field, and discharges of treated and partially treated wastewater to surface water drainage courses and to Lake Berryessa. These violations of the WDRs resulted to the adoption of three CDOs, a connection restriction, an Administrative Civil Liability, and a Time Schedule Order.

Planned Changes in the Facility and Discharge

Improvements to the WWTF include replacing the existing manual bar screen with a rotary drum screen; constructing a concrete pad at the existing sludge dewatering area; replacing the existing extended aeration treatment system with a new membrane bioreactor package treatment plant system; and constructing three new high density polyethylene geomembrane (HPDE) lined effluent storage ponds and expanding and lining the existing tailwater pond for a total off-site effluent storage capacity of approximately 20.1 million gallons. Improvements to the treatment plant will produce disinfected secondary-23 effluent. Sewer collection system repairs consisting of excavation and repair of certain sewer lines will be performed to reduce the amount of inflow and infiltration.

Site-Specific Conditions

The wastewater treatment plant is at an elevation of approximately 500 feet above mean sea level (MSL). The effluent disposal and new storage pond site is located at elevations ranging from 550 to 1,000 feet MSL. The effluent disposal site is characterized by moderately steep to steep slopes (30 to 75 percent) with intervening westerly flowing seasonal drainages. The effluent disposal site supports a dense growth of native grasses with scattered oak trees and dense areas of brush.

Groundwater Considerations

Baseline/background groundwater quality exceeds protective groundwater quality limits with respect to TDS, chloride, boron, iron, manganese, and total coliform. The poor water quality is likely naturally occurring, with the exception of total coliform.

Basin Plan, Beneficial Uses, and Regulatory Considerations

Local drainage is to Lake Berryessa. The beneficial uses of Lake Berryessa, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; spawning, reproduction, and/or early development; and wildlife habitat.

The Basin Plan designates the beneficial uses of underlying groundwater as municipal and domestic supply, agricultural supply, and industrial supply.

Antidegradation Analysis

State Water Resources Control Board Resolution 68-16 prohibits degradation of groundwater unless it has been shown that:

- The degradation is consistent with the maximum benefit to the people of the state.
- The degradation will not unreasonably affect present and anticipated future beneficial uses.
- The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and
- The discharger employs best practicable treatment or control (BPTC) to minimize degradation.

The Discharger has been monitoring groundwater quality at the site since 2007. Based on the data available, it is not possible to determine pre-1968 groundwater quality and it may not be possible to establish background groundwater concentrations due to the geologic complexity of the site. Therefore determination of compliance with Resolution 68-16 for this facility must be based on ambient pre-discharge/background groundwater quality for the monitoring wells that are outside the influence of the current discharge.

Degradation of groundwater by some of the typical waste constituents associated with discharges from a municipal wastewater utility, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from reliance on numerous, concentrated individual wastewater systems, and the impact on water quality will be substantially less.

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

- Screening to remove large solids and debris from the raw sewer;
- Secondary treatment of the wastewater;
- Some disinfection;
- Tailwater return system to capture all tailwater runoff;
- Biosolids storage activities and disposal off-site; and
- The use of certified operators to assure proper operation and maintenance.

The proposed facility and operational improvements that this Order requires will provide the following additional treatment and control measures:

- Advanced secondary treatment;
- Disinfection to 23 MPN/100 mL;
- Wastewater storage ponds lined with high density polyethylene geomembrane;
- Spray field application rates that minimize leaching; and
- Nutrient loading consistent with the vegetation grown in the spray field.

Discharge Prohibitions, Specifications, and Provisions

Effectively immediately, influent flows to the WWTF shall not exceed a monthly average flow of 0.050 million gallons per day (mgd).

Effective on the date of the Executive Officer approval of the certification report submitted pursuant to item 13 of CDO R5-2010-0101, influent flows to the WWTF shall not exceed the following limits:

| Flow Measurement | Flow Limit |
|---------------------------------|------------|
| Total Annual Flow ¹ | 36.4 MG |
| Total Monthly Flow ² | 4.50 MG |

¹ As determined by the total flow for the calendar year.

² As determined by the total flow during the calendar month.

The Order establishes a BOD, total nitrogen, and total coliform effluent limit prior to discharge to the wastewater storage ponds and sets groundwater limits that will ensure compliance with the Basin Plan. This Order also sets specifications for waste disposal and land application.

Monitoring Requirements

The Monitoring and Reporting Program is designed to verify compliance with effluent limitations and operational requirements of the WDRs. The Order requires monitoring the

influent, effluent, ponds, land application areas, groundwater, sludge and water supply. If results of the monitoring reveal a threat to water quality or indicate a change in waste character such that the threat to water quality is significantly increased, the Central Valley Water Board may reopen this Order to reconsider groundwater limitations and other requirements to comply with Resolution 68-16.

Reopener

The conditions of discharge in the Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. If the information obtained from the monitoring activities indicate a significantly increased threat to water quality, it may be appropriate to reopen the Order to address compliance with the Basin Plan.

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