

INFORMATION SHEET

ORDER R5-2015-_____
SACRAMENTO RENDERING COMPANIES
SACRAMENTO RENDERING COMPANY RANCHO CORDOVA RENDERING PLANT
SACRAMENTO COUNTY

Current Facility Description

Sacramento Rendering Companies owns and operates the Rancho Cordova Rendering Plant at 11350 Kiefer Boulevard in Rancho Cordova that generates the animal rendering process wastewater and the land to which the waste is discharged.

WDRs R5-2005-0166 allows a monthly average wastewater flow up to 150,000 gallons per day (gpd) and established the following interim effluent limitations:

Constituent	Units	Monthly Average Concentration
Total Dissolved Solids	mg/L	2,000
Total Nitrogen	mg/L	750

Companion CDO R5-2005-0167 was adopted on the same day and required the Discharger to perform various tasks and comply with a time schedule to implement measures and improvements required to ensure compliance with WDRs R5-2005-0166. CDO R5-2005-0167 was rescinded on 10 October 2014 because the Discharger completed the required studies and certain facility and operational improvements, and submitted a new RWD as required.

The rendering plant processes livestock carcasses, meat and poultry processing by-products, and grease from restaurants and other food services businesses. The facility has been operating at this site since 1956. Approximately 750,000 pounds per day of animal by-products is processed. The rendering process typically operates 24 hours per day, seven days per week.

Wastewater generated by the rendering plant consists of moisture from animal by-products, water separated from grease, condensate from the continuous cookers, contact water from the Venturi scrubber and Scrubbers 1 through 4, plant sanitation wastewater, water softener reject, boiler blowdown, and incidental storm water runoff from some roof drains and the exterior part of the processing plant's front loading area. The combined wastewater stream from all sources contains high concentrations of BOD, TDS, and nitrogen (primarily in the form of ammonia).

The process wastewater undergoes a pretreatment process to remove excess oil and grease, anaerobic treatment in eight unlined small and shallow lagoons (Finger Lagoons), is stored in unlined ponds (Front and Back Winter Storage Ponds and Front and Back Mixing Ponds), and is then used to irrigate land application areas (LAAs) that serve as pasture. The LAAs consist of six fields totaling approximately 85 acres and is irrigated by flood irrigation. Cattle and sheep are allowed to graze the LAAs. Supplemental irrigation

water is periodically applied directly to the fields to dilute dissolved solids and other constituents in the wastewater and supplement the water demand of grass in the fields.

Changes to Facility and Discharge

In response to CDO R5-2005-0167, the Discharger evaluated additional treatment and source control measures and by February 2009 implemented the following:

- a. Construction of an additional land application area (Field 6) to reduce mass loading of nitrogen on a per acre basis.
- b. Construction of blood/liquid handling facilities that divert salts contained in the blood and liquids into products instead of wastewater.
- c. Segregation and off-site disposal of boiler blowdown and water softener reject water at a permitted facility.
- d. Implementation of a field flushing program with supplemental irrigation water prior to the start of the rainy season, to improve the quality of storm water runoff discharged to Frye Creek. Tailwater generated during the flushing operation is collected in the winter storage ponds.
- e. Following each grazing rotation, use of a tractor-mounted chain or spike drag pulled across the field to break up manure into smaller particles. Reduction in particle size increases the potential for additional nitrogen loss through ammonia volatilization and improves the subsequent leaching and decomposition of organic matter and nutrients in the soil.
- f. Protection of all tailwater and storm water collection trenches, pipe entrances, valves, and other tailwater and storm water conveyances from cattle intrusions; and repair as necessary to minimize erosion and impacts from cattle wastes.

Wastewater quality at this facility has improved since implementation of the source control measures described above.

WDRs R5-2005-0166 requires that the total nitrogen loading to each LAA irrigation check not exceed the agronomic rate for plant available nitrogen (PAN) for the type of crop grown. In compliance with CDO R5-2005-0167, the Discharger provided a method of calculating PAN based on waste character and site-specific physical and climatic conditions. Despite improvements to the LAA operations, loading rate data show that total nitrogen loading rates have occasionally exceeded agronomic rates for PAN at some of the LAAs in violation of the WDRs.

Storm water monitoring was established to determine whether the Discharger's current LAA storm water retention program and storm water best management practices were adequate to protect surface water quality during the entire rainy season. Currently, storm

water runoff generated during the first significant rainfall event is directed to the Winter Storage Ponds. In an effort to improve storm water runoff quality, the Discharger has implemented the following Best Management Practices (BMPs);

- a. Implementation of a field flushing program each fall with groundwater prior to discharging storm water to Frye Creek, as discussed further below.
- b. Following each grazing rotation, a tractor-mounted chain or spike drag is pulled across the field to break up manure into smaller particles. Reductions in particle size should increase the potential for additional nitrogen loss through ammonia volatilization and should improve the subsequent leaching and decomposition of organic matter and nutrients in the soil.
- c. All tailwater and storm water collection trenches, pipe entrances, valves, and other tailwater and storm water conveyances are protected from cattle intrusion, and when necessary, such conveyances are repaired to minimize erosion and impacts from cattle wastes.
- d. In general, storm water runoff from the LAAs contains some constituents (particularly salinity constituents and nutrients) at concentrations greater than background concentrations measured in unirrigated, adjacent land and storm water quality in Frye Creek upgradient of the facility in violation of the WDRs. Continued monitoring of the LAA storm water retention program is necessary to determine whether current operational practices are sufficient or whether additional flushing of the LAAs and/or cessation of waste discharge to the LAAs earlier than 15 October each year is appropriate.

The 2007 RWD did not include a water balance. The Discharger has not indicated that the wastewater flow will increase. Monthly monitoring reports do not indicate any storage and disposal capacity issues. Based on the water balance submitted in 2005 for preparation of WDRs R5-2005-0106, the facility has adequate wastewater and storm water storage capacity to accommodate an average daily flow of 150,000 gallons. However, major structural and operational changes were implemented after that time. This Order continues the previous flow limit but requires that the Discharger submit an updated water balance to verify sufficient capacity while ensuring an appropriate level of LAA runoff retention at the beginning of each rainy season.

Site-Specific Conditions

The rendering plant area is relatively level, and the irrigated pasture areas are gently sloped at an elevation of approximately 145 feet above mean sea level. Surrounding land uses have been historically rural and agricultural. However, the area is undergoing urban development and residential developments now neighbor the facility.

Frye Creek originates immediately west of the back pasture area and drains to the southwest. The creek is an ephemeral stream that collects storm water runoff from the property during the wet weather months. The Federal Emergency Management Agency

does not identify Frye Creek as a flood hazard and the facility is not constructed within a 100-year flood zone.

The County of Sacramento Municipal Services Agency, Department of Water Resources identified the facility to be within a Local Flood Hazard Area. It appears that the designation was made without a formal hydrologic study. Local Flood Hazard Area designations are locations where standing water has been observed or reports of flooding have been submitted to the County.

Groundwater Conditions

Groundwater is generally encountered at approximately 140 feet below the ground surface (5 feet above mean sea level) and generally flows west to southwest. Nine groundwater monitoring wells (MW-2 through MW-10) monitor first encountered groundwater quality.

Based on an inter-well analysis, monitoring data show that the unlined storage ponds (particularly the Front Winter Storage Pond, Finger Lagoons, and Back Mixing Pond) have caused some degradation of the underlying groundwater with respect to TDS, chloride, and nitrate; but have not caused an exceedance of a water quality objective. MW-4 TDS concentrations are above the recommended secondary MCL of 500 mg/L, but do not exceed the upper secondary MCL of 1,000 mg/L. Salinity and nitrate concentrations in wells downgradient of the LAAs show that some degradation has occurred with respect to salinity and nitrate, but concentrations have been fairly constant over time and are significantly less than those downgradient of the unlined ponds.

Basin Plan, Beneficial Uses, and Regulatory Considerations

Local drainage is to Frye Creek, which is tributary to Laguna Creek and the Sacramento River within the legal boundaries of the Sacramento-San Joaquin River Delta. The beneficial uses of Sacramento-San Joaquin River Delta, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; navigation; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; wildlife habitat; and migration of aquatic organisms; spawning, reproduction, and/or early development. 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 and chloride) and nutrients. For TDS, chloride, and nitrate, current groundwater monitoring data indicates that groundwater quality has been degraded by the discharge, but the degradation has not caused exceedance of a water quality objective and is not expected to get worse. This Order imposes effluent and mass loading rate limitations that should ensure compliance with the groundwater limits.

This Order allows degradation up to the water quality objective; however this Order also sets a numeric trigger concentration for TDS and nitrate. If the 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 implement additional treatment or control measures to ensure compliance with the groundwater limitation.

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

- a. Blood/liquid handling facilities to divert salts contained in these wastes into products instead of wastewater.
- b. A pre-treatment process for partial solids settling prior to pond treatment,
- c. Segregation and disposal off-site of high salinity waste streams that include boiler blowdown and water softener reject water,
- d. Operation of a fully functionally tailwater and storm water runoff control system, and
- e. Implementation of a storm water management program that improves storm water runoff quality discharged to Frye Creek.

The increasing TDS trend in groundwater downgradient of the unlined ponds is a concern, and it is not clear at this time that the Discharger has implemented best practicable treatment or control. This Order contains a schedule for a feasibility study of alternatives to prevent further salinity increases in groundwater. However, upon completion of the work, this Order may be reopened to include a time schedule for implementation of additional measures or a determination that the Discharger's current efforts represent best practicable treatment or control for salinity constituents.

Discharge Prohibitions, Specifications, and Provisions

This Order prescribes effluent and groundwater limitations that ensure the discharge does not affect present and anticipated future beneficial uses of groundwater or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan.

This Order restricts the discharge of wastewater to irrigate the land application areas between 15 April and 15 October each year. Discharge of storm water runoff from the LAAs to off-site land or surface water drainage courses is allowed only between 16 October and 14 April, and only when sufficient runoff has been captured and stored such that waste constituent concentrations in any runoff discharged to surface waters do not exceed those of runoff from adjacent pasture land not irrigated with wastewater.

The Monitoring and Reporting Program is designed to verify compliance with flow, effluent, mass loading and groundwater limitations and operational requirements of the WDRs.