

INFORMATION SHEET

R5-2008-_____
CENTRAL VALLEY MEAT COMPANY
HANFORD MEAT PROCESSING FACILITY
KINGS COUNTY

Background

Central Valley Meat Company (Discharger) operates a slaughterhouse and beef processing facility (Facility) in Hanford, Kings County. The Discharger leases the property from Lawrence and Shirley Coelho Revocable Trust who are named as co-dischargers.

This Facility is regulated by Waste Discharge Requirements (WDR) Order No. 93-114, which authorizes a maximum daily discharge of 25,000 gallons per day (gpd) of process wastewater. The WDRs replace an older Order issued to the Hanford Meat Packing Company, which was rescinded in 1988. Order No. 93-114 found that former activities at the Facility by the Hanford Meat Packing Company, which included hide processing, resulted in elevated EC and chloride concentrations in shallow groundwater beneath the Facility. Hide processing at the Facility ceased prior to 1986 and is not part of the current operations.

Central Valley Meat Company commenced operation at the Facility in 1993 for meatpacking and deboning. On commencing operation the Discharger implemented several mitigation measures intended to prevent the discharge of wastewater to the ponds from spreading the existing groundwater pollution. Mitigation measures included reconstruction of the ponds to limit percolation, the use of wastewater for irrigation, and continued groundwater monitoring.

The Discharger submitted a Report of Waste Discharge (RWD) dated 27 March 2002 to add additional farmland to their land application area. The new land application area (Reuse Area) was purchased by the Discharger in 2001 and is used to grow feed and fodder crops. Following comments from Regional Water Board staff and collection of additional data, the Discharger submitted a revised RWD in March 2003. The revised RWD included wastewater treatment upgrades and proposed a flow increase to 0.525 million gallons per day (mgd) since discharge volumes greatly exceed the permitted limit of 25,000 gpd. The revised RWD also included design specifications for improvements to the pond system. The improvements included increasing the depth of the ponds, and installation of a synthetic liner. To date these improvements have not been implemented.

The Discharger is in the process of adding 210 additional acres to its Reuse Area through purchase or signed use agreements, which would bring the total acreage of the Reuse Area to about 396 acres. The Discharger has already acquired parcel 016-060-041 (47.74 acres) and 016-130-055 (84.29 acres), and is in the process of securing a use agreement for parcel 016-130-058 consisting of 78.48 acres from the owner Mr. Daniel J. Leal.

Solids Disposal

Solids collected from the corrals (primarily manure) and removed from the wastewater stream by the screens or the CAF units are collected and temporarily stockpiled on-site. According to Mr. Brian Coelho, general manager for the Facility, the solids are segregated and stockpiled in a dirt area directly west of the ponds. The area is unlined; however, it is graded and all runoff is collected in a sump and returned to the pond system.

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Groundwater Conditions

Regional groundwater in the area is encountered at about 100 feet below ground surface (bgs) and flows to the northwest according to information in Lines of Equal Elevation of Water in Wells in Unconfined Aquifer, published by Department of Water Resources in Spring 2004.

The groundwater-monitoring network at the Facility consists of eight shallow monitoring wells, and one deep monitoring well (MW-5B). The groundwater-monitoring network covers the existing wastewater ponds, the former land application area, and the Reuse Area. Monitoring wells MW-2, MW-4A, MW-5A, MW-6, and MW-11, down-gradient of the ponds and the former land application area, show significant increases in EC, TDS, and chloride concentrations over background, likely due to former hide processing operations at the Facility. In addition, elevated EC, TDS, and chloride concentrations in MW-5B indicate that the influence from the former hide processing extends vertically in the aquifer to at least 200 feet bgs.

Nitrate concentrations in groundwater appear to vary significantly beneath the Facility with average concentrations ranging from non-detect to 192 mg/L. Based on the groundwater data it appears that nitrate concentrations are below water quality objectives in the vicinity of the wastewater ponds. The low nitrate and higher organic carbon in groundwater beneath the wastewater ponds is likely the result of denitrification due to saturated soils, anoxic conditions, and the excess presence of organic constituents in the effluent. This appears to be supported by the high nitrate (in excess of the MCLs) and lower organic carbon in monitoring wells both up-gradient and further down-gradient of the ponds. Overloading from the former land application area and the Reuse Area could also contribute to the higher nitrate concentrations in these monitoring wells.

Compliance History

An Administrative Civil Liability (ACL) complaint No. [R5-2002-0518](#) was issued to the Discharger on 9 October 2002 for failure to submit complete and accurate SMRs. As part of the Settlement Agreement the Discharger was given a time schedule and required to complete the following tasks: (a) Submit complete and accurate SMRs; (b) Provide documentation confirming purchase and training of field equipment to measure EC, pH, and dissolved oxygen; (c) Provide a technical report documenting installation and implementation of appropriate flow meters to measure the discharge of all waste streams and include calibration records; and (d) Contract with an engineering firm or certified analytical laboratory to prepare a sampling analysis quality assurance/control plan and oversee all necessary sampling procedures for a six month period including reporting documentation.

The Regional Water Board issued a letter dated 5 August 2003 documenting that the Discharger had satisfactorily completed all tasks required in the Settlement Agreement.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The Basin Plan indicates the greatest long-term problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated by man's activities and particularly

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affected by intensive irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. The Regional Board encourages proactive management of waste streams by dischargers to control addition of salt through use, and has established an incremental EC limitation of 500 $\mu\text{mhos/cm}$ or a 1,000 $\mu\text{mhos/cm}$, as the measure of the maximum permissible addition of salt constituents through use. Discharges to areas that may recharge good quality groundwaters shall not exceed an EC of 1,000 $\mu\text{mhos/cm}$, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L. Title 22 in Table 64449 B establishes recommended, upper, and short term ranges for EC, TDS, chloride, and sulfate. The recommended and upper ranges are 900 and 1,600 $\mu\text{mhos/cm}$ for EC, 500 and 1,000 mg/L for TDS, and 250 and 500 mg/L for chloride and for sulfate, respectively.

An exception to the EC limit for may be permitted for food processing industries that discharge to land and exhibit a disproportionate increase in EC of the discharge over the EC of the source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided that beneficial uses are protected. Exceptions shall be based on demonstration of best available technology and best management practices that control inorganic dissolved solids to maximum extent feasible.

The Discharger conducted a study to determine the "organic fraction" of the discharge. Based on the results of the study and recent SMR data, the "organic fraction" of the dissolved solids is between 40% and 50% of the total dissolved solids. Using the average fixed dissolved solids (FDS) concentration in the wastewater from 2005 and 2006, the annual salt load to the Fields from the wastewater would be about 2,200 to 2,800 lbs/acre/year, which is within the loading rate of 2,000 lbs/acre/year for a single crop and 3,000 lbs/acre/year for a double crop, that has been accepted as BMPs for dairies for many years. In addition, the Discharger has implemented several improvements in management practices and wastewater handling to decrease flows and improve wastewater characteristics.

Antidegradation

The antidegradation directives of State Water Board Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation Policy" require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses and not others. Policy and procedures for complying with this directive are set forth in the Basin Plan.

Constitutes of concern that have the potential to degrade groundwater include, in part, nutrients and salts. However, the discharge will likely not degrade the beneficial uses of groundwater because:

- a. For BOD, the loading rate to the land application area is less than 10 lbs/acre/day, which is significantly below the USEPA recommended rate of 100 lbs/acre/day

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according to publication No. 625/3-77-007, Pollution Abatement in the Fruit and Vegetable Industry. Therefore, no degradation due to organic loading should occur.

- b. For nitrogen, shallow groundwater already contains nitrate concentrations in excess of water quality objectives. Application of wastewater at agronomic rates for both nutrient and hydraulic loading and implementation of the proposed pond improvements including installation of an approved pond liner should preclude further degradation of groundwater.
- c. For salinity, the Basin Plan contains effluent limits (EC of SW + 500 umhos/cm, 1,000 umhos/cm max.). With an EC between 1,500 umhos/cm and 2,500 umhos/cm, the treated effluent exceeds the Basin Plan limit. However, the Basin Plan does allow an exception for food processing industries that discharge to land and exhibit a disproportionate increase in EC of the discharge over the EC of the source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided that beneficial uses are protected.

This Order sets a performance based limit for FDS of 500 mg/L, and include a Provision requiring the Discharger to submit a Final Salinity Control Plan documenting all measures taken to reduce the salinity of the discharge, and identify any additional measures that could be used to further reduce the salinity of the discharge to the maximum extent feasible. This represents BPTC for control of salts from an industrial facility and is consistent with the Basin Plan.

Treatment Technology and Control

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

- a. Limiting the amount of time that the cattle spend in the concrete wash area.
- b. Screening to remove solids and haul them offsite for disposal.
- c. Pre-treatment using a CAF system to remove fat and suspended solids from the wastewater.
- d. Combining wastewater sources into a central aerated collection sump.
- e. Blending of wastewater with irrigation water to meet the agronomic requirements for crop growth or other measures to ensure even distribution of wastewater over the area irrigated.

Title 27

Title 27, CCR, section 20005 et seq. (Title 27) contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

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Title 27 Section 20090(b) exempts discharges of designated waste to land from Title 27 containment standards provided the Regional Water Board has issued waste discharge requirements or waived such issuance; the discharge is in compliance with the Basin Plan; and the waste need not be managed according to Title 22, CCR, Division 4.5, Chapter 11, as a hazardous waste.

Accordingly, the discharge of effluent and the operation of treatment or storage facilities associated with a food processing facility can be allowed without requiring compliance with Title 27, provided the resulting degradation of groundwater is in accordance with the Basin Plan.

CEQA

On 5 February 1990, Kings County adopted a Negative Declaration for a proposal to reopen the existing meat packing facility as a slaughterhouse and deboning operation for cattle in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et, seq.) and the State CEQA guidelines (Title 14, Division 6, California Code of Regulations, as amended). The findings in the Negative Declaration considered this a continuation of the existing operation and did not identify specific impacts from the discharge to land of process wastewater from operations at this Facility nor did it define a specific wastewater flow.

The Regional Water Board as a responsible agency pursuant to CEQA reviewed and considered the Negative Declaration with respect to water quality. While the Negative Declaration did not identify specific impacts from the discharge to land of process wastewater from operations at this Facility, this Order contains measures to mitigate any adverse water quality impacts.

Proposed Order Terms and Conditions

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

The proposed Order prohibits discharge to surface waters and water drainage courses.

The proposed Order would set a monthly average daily flow limit of 0.39 mgd, with an increase to 0.42 mgd upon acquisition of a signed use agreement for the use of process wastewater on parcel 016-130-058.

The proposed Order would set an effluent limit for chloride of 175 mg/L. In addition the proposed Order would prescribe an annual flow-weighted average limit for FDS of 500 mg/L, and include a provision requiring the Discharger to submit a Final Salinity Control Plan identifying all control measures taken to reduce the salinity of the discharge, evaluate any additional salinity reduction measures, and demonstrate that the discharge will be protective of groundwater and that best available technology and best management practices to control inorganic dissolved solids to the maximum extent feasible have been implemented.

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The proposed Order would prescribe that the application of waste constituents to the Reuse Area shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering the crop, soil, climate, and irrigation management system.

The proposed Order includes provisions to complete the pond improvements, evaluate the soil in the former land application area, and develop a comprehensive irrigation and nutrient management plan for the Reuse Area.

The proposed Order would prescribe groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedances of these objectives or natural background water quality, whichever is greatest.

Monitoring Requirements

Section 13267 of the CWC authorizes the Regional Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the state. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Section 13268 of the CWC authorizes assessment civil administrative liability where appropriate.

The proposed Order includes effluent monitoring requirements, Use Area monitoring, and groundwater and water supply monitoring. In order to adequately characterize wastewater, the Discharger is required to monitor for BOD₅, pH, EC, TDS, nitrogen, and other constituents.

The Discharger must monitor groundwater for waste constituents expected to be present in the discharge, and capable of reaching groundwater, and violating groundwater limitations if its treatment, control, and environmental attenuation, proves inadequate. For each constituent listed in [Section F, Groundwater Limitations](#), of the WDR, the Discharger must, as part of each monitoring event, compare concentrations of constituents found in each monitoring well (or similar type of groundwater monitoring device) to the background concentration or to prescribed numerical limitations to determine compliance.

Reopener

The conditions of discharge in the proposed 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. It may be appropriate to reopen the Order if applicable laws and regulations change.