

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2008-0017

WASTE DISCHARGE REQUIREMENTS

FOR
CENTRAL VALLEY MEAT COMPANY
AND
LAWRENCE AND SHIRLEY COELHO REVOCABLE TRUST

HANFORD BEEF PROCESSING FACILITY
KINGS COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Water Board) finds that:

1. Central Valley Meat Company, a California corporation, operates a slaughterhouse and beef processing plant leased from the Lawrence and Shirley Coelho Revocable Trust (Central Valley Meat Company and the Lawrence and Shirley Coelho Revocable Trust are hereafter jointly referred to as Discharger).
2. The beef processing facility (hereafter Facility) is approximately one mile east of the City of Hanford in Kings County at 10431 Avenue 8 3/4, Latitude 36° 19' 20" and Longitude 119° 36' 50", within Section 32, T18S, R22E, MDB&M, as shown on [Attachment A](#), which is attached hereto and made part of this Order by reference.
3. This Facility is regulated by Waste Discharge Requirements (WDRs) Order No. 93-114, which authorizes a maximum daily discharge of 25,000 gallons per day (gpd) of process wastewater. The WDRs replaced an older Order issued to the Hanford Meat Packing Company, which was rescinded in 1988.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. In addition, nitrate concentrations in groundwater down-gradient of the ponds and the land application area exceeded water quality objectives. Hide processing at the Facility ceased prior to 1986 and is not part of the current operations at the Facility.
4. 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.
5. The Discharger submitted a Report of Waste Discharge (RWD) dated 27 March 2002 to add additional farmland to its land application area. The additional farmland, consisting of about 186 acres (Assessor's Parcel No. 016-060-09s, 016-060-11s, and 016-060-22s) was

acquired by Brian, Steve, and Ronnie Coelho and added to the land application area in 2001.

6. A review of the RWD determined inconsistencies between the information provided in the RWD and data submitted as part of the self-monitoring and reporting program (SMRs). The Discharger had been significantly under reporting flows in its SMRs. On 9 October 2002 the Discharger was issued a Administrative Civil Liability (ACL) complaint No. R5-2002-0518 for failure to submit complete and accurate SMRs. As part of the Settlement Agreement the Discharger was required to complete the following tasks: (a) Submit complete and accurate SMRs; (b) Provide documentation confirming purchase and training for 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 to oversee all necessary sampling procedures for a six month period including report documentation. The Regional Water Board issued a letter dated 5 August 2003 documenting that the Discharger had satisfactorily completed all tasks required as part of the Settlement Agreement.
7. 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.
8. The purpose of this Order is to rescind WDRs Order No. 93-114 and prescribe requirements that reflect the Discharger's existing discharge and treatment system.

Existing Facility and Discharge

9. The Facility is a slaughterhouse and beef processing facility. [Attachment B](#), which is attached hereto and made a part of this Order by reference, depicts a plan view of the Facility and the land application areas, as depicted in the RWD. Process wastewater is generated five to six days per week, approximately 273 working days per year, from the slaughter of between 550 and 650 cattle per working day.
10. For purposes of this Order, the term "Treatment System" shall refer to the wastewater treatment system, which consists of collection sumps, hydrostatic wedgewire screens, Cavitation Air Flotation (CAF) units, wastewater storage ponds, and associated irrigation piping and land application area. [Attachment C](#) of this Order, which is attached hereto and made part of this Order by reference, depicts a process flow diagram of the Treatment System.

11. Cattle are kept in holding pens to provide a continuous supply of animals for processing. The pens are sources of wastewater from pen washing, drinking water spillage, and washing of live cattle. Manure in the pens is dry scraped to reduce pollutant concentrations before the pens are washed down. The cattle are killed and the carcasses hung from an overhead rail conveyor used to transport the carcasses through the processing plant. The carcasses are rapidly bled and most of the blood collected in tanks and shipped off site for fertilizer. After the hides are removed, the animals are eviscerated and the hides and viscera are shipped offsite for processing or rendering.
12. Federal regulations require that the carcass processing areas be cleaned at least every eight hours to maintain sanitary conditions. During cleanup, equipment, walls and floors are rinsed and then scrubbed with detergents and sanitizing agents. Phosphorus based detergents are commonly used as are chlorine solutions and other bactericidal compounds.
13. Wastewater generated from the various processes drain into individual sumps throughout the Facility, which all drain into a large aerated central collection sump (Central Sump). The Central Sump collects all wastewater at the Facility. Wastewater from the kill floor and tripe processing is sent over a shaker screen and into a sump, which is then pumped to the Central Sump. Wash rack and condenser water also flow into another sump, that pumps to the Central Sump. A float level controls the volume of wastewater in the Central Sump. When the wastewater reaches a certain level a pump is turned on and pumps the wastewater from the Central Sump over a hydrostatic wedgewire screen into one of two CAF units. The CAF units are operated in parallel to remove suspended solids from the wastewater. From the CAF units, the wastewater is discharged into the first of three ponds operated in series. The first pond (Pond 1) is an aerated treatment pond and the remaining two ponds are storage/percolation ponds. The RWD includes details for pond improvements including combining Ponds 1 and 2, deepening the ponds, and installing a synthetic liner. To date, these improvements have not been implemented.
14. Pond 1 has an existing treatment capacity of 100,000 gallons and Ponds 2 and 3 with a combined surface area of 2.6 acres have a total storage capacity of 8.8 million gallons. The existing ponds were reconstructed in 1993 by compacting one foot of selected soils on the bottom and sidewalls of the ponds in an effort to limit percolation.
15. Manure collected from the corrals and solids removed from the wastewater stream by the screens or the CAF units are collected and temporarily stockpiled onsite. 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.
16. Self monitoring data from 2003 through 2006 characterizes the average wastewater concentrations for constituents of concern as follows:

<u>Constituent</u>	<u>Units</u>	<u>Pond 1 Influent</u>	<u>Pond 3 Effluent</u>
Average Daily Flow	mgd	0.35	0.24
BOD	mg/L	1,000	120
Nitrate (as Nitrogen)	mg/L	0.6	0.3
Ammonia (as Nitrogen)	mg/L	21	110
TKN	mg/L	120	160
Total Nitrogen	mg/L	120	160
EC	µmhos/cm	1,500*	2,000
FTDS	mg/L	480	600
Chloride	mg/L	110*	96
Sodium	mg/L	190*	170

* = Based on samples collected in 2002/2003

17. The average BOD removal efficiency from 2003 through 2006 was 88%. Total nitrogen and fixed dissolved solids concentrations in the effluent from Pond 3 were about 30% higher than the influent to Pond 1.
18. In recent years the Discharger has implemented several measures to decrease flows and improve wastewater characteristics. Some of these measures include: modified corral and wash pen set up to reduce the time that the cattle are in the wash pen thus reducing the concentration and volume of wastewater generated during the washdown; directed all wastewater collection to an aerated central collection sump; added a new wedgewire screen to improve solids removal; rebuilt the CAF units and added a flocculent mix chamber to improve suspended solids removal; relocated the outlet pumps from Pond 2 to Pond 3 to allow for better circulation and stabilization of the wastewater; and installed a magnetic flow meter and composite sampler to improve flow data and sample collection to comply with Regional Water Board requirements.
19. Domestic wastewater is discharged separately to a septic tank/leachfield system regulated by Kings County.

Water Recycling

20. Wastewater from the Facility is discharged to land owned by the Discharger. In 2001, the Discharger purchased additional land to add to the existing 25-acre land application area. The new land application area (Reuse Area) consists of six fields totaling approximately 186 acres and is used to grow feed, fodder, and fiber crops such as alfalfa, wheat, corn silage and cotton.

21. The existing 25-acre land application area was determined to be unsuitable for the land application of process wastewater due to overloading and was abandoned. Currently, the area no longer receives wastewater applications, no crops are being grown, and the area is allowed to remain fallow. During a recent inspection by staff, the area was observed to have been disked and cleared of weeds.
22. Crops grown in the Reuse Area are irrigated with a combination of wastewater, groundwater, and surface water from the Lakeside Irrigation District.
23. The treated wastewater is blended with irrigation water at the check valves to each field and then applied via flood irrigation. According to the RWD, backflow prevention devices were placed on all irrigation wells to prevent wastewater from traveling into the wells. Blending of the wastewater and irrigation water will promote the beneficial reuse of the wastewater. The RWD estimates that during a normal year the wastewater will supply approximately 30% of the total irrigation demand.
24. The RWD included the results of a study that was used 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.
25. Based on SMR data for 2005 and 2006, the fixed dissolved solids (FDS) concentration in the influent to Pond 1 ranged from about 350 mg/L to 600 mg/L. The FDS concentration in the effluent from Pond 3 to the fields was slightly higher, ranging from 400 mg/L to 800 mg/L, likely the result of evaporation in the pond system. Using the average concentration of FDS 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.
26. The RWD estimated BOD and nitrogen loading rates for the 186 acre Reuse Area as one to two lbs/acre/day for BOD and 445 lbs/acre/year for nitrogen in 55 acres of alfalfa and 261 lbs/acre/year for nitrogen in 135 acres of double cropped fields of wheat and corn silage. These calculations were based on an average daily discharge flow of 0.36 mgd and average BOD₅ and nitrogen concentrations of 90 mg/L and 75.8 mg/L, respectively from samples collected in January and February 2003. These assumptions do not appear to be consistent with current nitrogen concentrations in the wastewater.
27. The following table illustrates the BOD and Nitrogen loading to the 186-acre Reuse Area (based on average concentrations provided in monthly SMRs from 2004 through 2006):

<u>Year</u>	<u>Effluent Flow</u>	<u>BOD₅</u>	<u>BOD Loading</u>	<u>Total Nitrogen</u>	<u>Nitrogen Loading</u>
2006	0.235 mgd	145 mg/L	1.5 lbs/acre/day	186 mg/L	715 lbs/acre/year
2005	0.279 mgd	119 mg/L	1.5 lbs/acre/day	153 mg/L	698 lbs/acre/year
2004	0.232 mgd	124 mg/L	1.3 lbs/acre/day	176 mg/L	668 lbs/acre/year

Based on these calculations the nitrogen loading to the fields exceeds the nitrogen uptake rates for alfalfa, cotton, and a double crop of wheat/corn silage of 480 lbs/acre/year,

180 lbs/acre/year, and 425 lbs/acre/year, respectively, based on the *Western Fertilizer Handbook, 9th edition*.

28. Soil data from 2005 and 2006 in the Table below shows the increase in nitrate concentrations in the Reuse Area and the accumulation of nitrate as nitrogen (NO₃-N) in the soil in Fields 1, 2, and 5 at four to five feet, which is below the root zone of most crops:

Nitrate Concentrations in Soil
(mg/kg)

	2005		2006	
	0 to 3 feet	4 to 5 feet	0 to 3 feet	4 to 5 feet
Field 1	9	4	138	53
Field 2	21	7	161	57
Field 3	13	11	17	4
Field 4	14	14	39	10
Field 5	37	57	72	114

The annual Nutrient Management Plan submitted for 2006 indicates that the acreage available for wastewater application is insufficient for the Facility. Dellavalle Laboratory, Inc., the Discharger’s agronomic consultant who prepared the Nutrient Management Plan, recommended better communication between the farmer and the Discharger regarding crop types and nitrogen concentrations along with additional land to minimize the amount of excess nitrogen in the soil.

29. Groundwater in the project area (down-gradient of the Reuse Area) already contains nitrate concentrations in excess of water quality objectives, and additional nitrogen, if allowed to percolate to groundwater, would exacerbate this condition.
30. 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.

Site-Specific Conditions

31. The Facility is in an arid climate characterized by hot dry summers and mild winters. The rainy season generally extends from November through March. Occasional rains occur during the spring and fall months, but summer months are dry. Average annual precipitation and evaporation in the vicinity of the Facility and the Reuse Area are about 8.58 inches and 58.73 inches, respectively, according to information published by the California Department of Water Resources.

32. According to the USDA Natural Resources Conservation Service *Soil Survey of Kings County, 1986*, soils in the Reuse Area are primarily Kimberlina Fine sandy loam – saline alkali. These soils have moderately slow permeability 2 to 0.6 inches/hour. Soil salinity is about 4 to 8 mmhos/cm and soils are best suited for crops that are salt and alkali tolerant.
33. Storm water at the Facility is generally diverted to the process wastewater stream or into an onsite storm water basin. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System general industrial storm water permit since all storm water runoff is retained onsite and does not discharge into a water of the United States.
34. According to Federal Emergency Management Agency (FEMA) maps, the Facility and Reuse Area lay outside of the 500-year flood zone.
35. As shown on [Attachment A](#), the Lakeside Irrigation Ditch is a raised canal that cuts diagonally across the southern half of the Reuse Area from the eastern boundary to the southwest corner of the property.
36. Land use in the vicinity of the Facility and the Reuse Area is primarily agricultural or light industrial. Directly east of the Facility are several rural residences. Primary crops grown in the area include corn, cotton, and alfalfa. Other crops such as walnuts, tomatoes, and almonds are also grown in the area according to DWR land use data for Kings County published in 2003. Irrigation water is supplied primarily by groundwater.

Groundwater Considerations

37. 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.
38. Source water for the Facility is provided by an onsite groundwater well with a perforated interval from 240 to 360 feet. Source water characteristics for the Facility include an average EC of 340 umhos/cm, TDS of 250 mg/L, nitrate as nitrogen of < 1 mg/L, chloride of 30 mg/L, sodium of 65 mg/L, and arsenic of 0.04 mg/L.
39. Currently the groundwater-monitoring network at the Facility includes eight shallow monitoring wells with screened intervals from 100 to 150 feet bgs, and one deep monitoring well (MW-5B) screened from 190 to 200 feet bgs. The groundwater-monitoring network covers the existing wastewater ponds, the former land application area, and the Reuse Area. Depth-to-first water in recent years has ranged from 100 to 120 feet bgs with the flow direction to the west-northwest.
40. The following Table depicts average concentrations for constituents of concern in groundwater for 2005-2006.

Groundwater Analytical Results

<u>Well ID</u>	<u>EC</u> umhos/cm	<u>TDS</u> mg/L	<u>Chloride</u> mg/L	<u>Nitrate (NO₃)</u> mg/L	<u>TOC</u> mg/L
<u>Background</u>					
MW-8	722	470	73	1.6	1.4
MW-10	501	353	35	23	0.85
<u>Wastewater Ponds</u>					
MW-2	1,748	1,080	113	14.5	6.5
MW-5A	1,958	1,258	96	1.8	4.8
MW-5B	1,486	885	374	< 0.4	0.95
<u>Down-gradient Monitoring Wells</u>					
MW-4A	2,258	1,373	446	146	1.5
MW-6	2,140	1,335	368	192	2.0
MW-9	1,442	950	86	110	1.9
MW-11	1,766	1,355	366	38	1.8

41. Monitoring wells MW-8 and MW-10 are up-gradient or cross-gradient of the ponds and the land application areas best represent background water quality. Background quality of shallow groundwater in the area is generally “good”, except for arsenic, with an average EC of 610 umhos/cm, a chloride concentration of 55 mg/L, total dissolved solids of 410 mg/L, and nitrate (as NO₃) of 1 to 30 mg/L. Arsenic in shallow groundwater with concentrations as high as 381 ug/L exceed the drinking water quality objective.
42. Groundwater data shows that waste constituents from activities at the Facility have significantly degraded groundwater. 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. This is likely due to former hide processing operations at the Facility. In addition, elevated EC, TDS, and chloride concentrations in the deep monitoring well MW-5B, directly down-gradient of the disposal ponds, indicate that the influence from the former hide processing extends vertically in the aquifer to at least 200 feet bgs. EC and chloride concentrations in all monitoring wells have increased or remained relatively stable since 2000.
43. Nitrate concentrations in groundwater appear to vary significantly beneath the Facility with average concentrations ranging from non-detect to 192 mg/L. Nitrate concentrations in monitoring wells MW-4A, MW-6, and MW-9 exceed the primary Maximum Contaminant Level (MCL) of 45 mg/L. Since 2000, average nitrate concentrations in MW-2 and MW-5A, located in close proximity to the wastewater ponds, have decreased steadily from 294 mg/L to 9.5 mg/L in MW-2 and 53 mg/L to 1 mg/L in MW-5A. At the same time average nitrate concentrations in MW-6, located down-gradient of the former land application area,

decreased from 351 mg/L in 2000 to 181 mg/L in 2005 and then increased slightly to 204 mg/L in 2006. While MW-4, down-gradient of the wastewater ponds and the former land application area, has shown a steady increase in average nitrate concentrations from 34 mg/L in 2000 to 148 mg/L in 2006, and MW-9, located up-gradient of the wastewater ponds but down-gradient of the Reuse Area, has had nitrate concentrations in excess of the primary MCL since sampling began in December 2004.

44. Based on the groundwater data it appears that nitrate concentrations are below water quality objectives in the vicinity of the wastewater storage 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.
45. The anoxic conditions and the high carbon content beneath the wastewater ponds could result in the mobilization of iron and manganese.

Basin Plan, Beneficial Uses and Regulatory Considerations

46. The Water Quality Control Plan for the Tulare Lake Basin, 2nd Edition, (hereafter Basin Plan) designates beneficial uses, establishes **numerical and narrative** water quality objectives, contains implementation plans and policies for protecting all waters of the basin, and incorporates by reference plans and policies of the State Water Board. Pursuant to Section 13263(a) of the California Water Code (CWC), these waste discharge requirements implement the Basin Plan.
47. The Facility is in Detailed Analysis Unit **238** of the Tulare Lake Basin. Beneficial uses of underlying groundwater are Municipal and Domestic Supply, Agricultural Supply, and Industrial Service and Process Supply.
48. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the MCLs specified in Title 22, California Code of Regulations. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Regional Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
49. The Basin Plan establishes narrative water quality objectives for Chemical Constituents, Tastes and Odors, and Toxicity. The Toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. Quantifying a narrative water quality objective requires a site

specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.

50. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until a valley wide drain is constructed to carry salts out of the basin. Until the drain is available, the Basin Plan establishes several salt management requirements, including:
- a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC shall not exceed the EC of the source water plus 500 $\mu\text{mhos/cm}$. When the source water is from more than one source, the EC shall be a weighted average of all sources.
 - b. 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.

These effluent limits are considered best practicable treatment or control (BPTC).

51. 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 $\mu\text{mhos/cm}$ and 1,600 $\mu\text{mhos/cm}$ for EC, 500 mg/L and 1,000 mg/L for TDS, and 250 mg/L and 500 mg/L for chloride and sulfate, respectively.
52. The list of crops in [Finding 36](#) is not intended as a definitive inventory of crops that are or could be grown in the area affected by the discharge, but is representative. Based on climate, and soil type, it is not likely that crops sensitive to salt and boron will be capable of being grown in the area; however, further information regarding the types of crops grown, background groundwater conditions, and overall effluent quality is necessary to make a final determination.

Antidegradation Analysis

53. State Water Resources Control Board Resolution No. 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
- a. The degradation is consistent with the maximum benefit to the people of the State;
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
 - c. 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
 - d. The discharger employs BPTC to minimize degradation.

54. 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 Reuse Area is 1 to 2 lbs/acre/day, which is significantly below the USEPA recommended rate of 100 lbs/acre/day 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 average EC of the wastewater (1,500 to 2,500 $\mu\text{mhos/cm}$) exceeds the Basin Plan Limit of 1,000 $\mu\text{mhos/cm}$. 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 fixed dissolved solids of 500 mg/L, based on the recommended secondary MCL for dissolved solids established as a water quality objective for municipal and domestic supply, and includes a Provision to submit a Final Salinity Control Plan detailing control measures taken to reduce the salinity of the discharge, and identify any additional methods that could be used to further reduce the salinity of the discharge to the maximum extent feasible.

Treatment and Control Practices

55. 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.

56. This Order establishes groundwater limitations 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. This Order includes a monitoring and reporting program that contains groundwater monitoring to assure that the highest water quality consistent with the maximum benefit to the people of the State will be achieved.

Water Recycling Criteria

57. State Water Board Resolution No. 77-1, Policy with Respect to Water Recycling in California, encourages recycling projects that replace or supplement the use of fresh water, and the Water Recycling Law (California Water Code Section 13500-13529.4) declares that utilization of recycled water is of primary interest to the people of the State in meeting future water needs.
58. The Basin Plan encourages recycling on irrigated crops wherever feasible and indicates that evaporation of recyclable wastewater is not an acceptable permanent disposal method where the opportunity exists to replace an existing use or proposed use of fresh water with recycled water.

Designated Waste and Title 27

59. CWC Section 13173 defines designated waste as either:
- a. Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code.
 - b. Nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions as a waste management unit, could be released in concentrations exceeding applicable water quality objectives or could reasonably be expected to affect beneficial uses of the waters of the state contained in the appropriate state water quality control plan.
60. Release of designated waste is subject to full containment pursuant to the requirements of Title 27, CCR, Section 20005 et seq. (hereafter "Title 27"). Title 27 Section 20090(b) exempts discharges of designated waste to land from Title 27 containment standards provided the following conditions are met:
- a. The applicable regional water board has issued waste discharge requirements, or waived such issuance;
 - b. The discharge is in compliance with the applicable basin plan; and
 - c. The waste is not hazardous waste and need not be managed according to Title 22, CCR, Division 4.5, Chapter 11, as a hazardous waste.

CEQA

61. 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.
62. The Regional Water Board is a responsible agency pursuant to CEQA. The Regional Water Board reviewed and considered the Negative Declaration with respect to water quality. This Order contains requirements intended to mitigate or avoid environmental effects on water quality.

General Findings

63. Pursuant to CWC Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.
64. CWC Section 13267(b) states that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."
65. The technical reports required by this Order and the attached Monitoring and Reporting Program No. [R5-2008-0017](#) are necessary to assure compliance with these waste discharge requirements. The Discharger operates the Facility that discharges the waste subject to this Order.
66. The California Department of Water Resources set standards for the construction and destruction of groundwater wells, as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to CWC Section 13801, apply to all monitoring wells.

67. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.

Public Notice

68. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
69. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that, Waste Discharge Requirements Order No. 93-114 is rescinded and that, pursuant to Sections 13263 and 13267 of the California Water Code, Central Valley Meat Company, the Lawrence and Shirley Coelho Revocable Trust, and their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Prohibitions:

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated wastes, except as allowed by Provision E.2 of Standard Provisions and Reporting Requirements, is prohibited.
3. Discharge of waste classified as 'hazardous', as defined in Section 2521(a) of Title 23, California Code of Regulations, Section 2510 et seq., is prohibited. Discharge of waste classified as 'designated', as defined in California Water Code Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.
4. Application of treated wastewater in a manner or location other than that described herein is prohibited.

B. Effluent Limitations:

1. The monthly average flow rate shall not exceed 0.39 mgd. Upon written acceptance by the Executive Officer of the signed use agreement for the use of process wastewater on parcel 016-130-058, the monthly average flow rate shall be increased to 0.42 mgd.
2. The interim annual flow-weighted average fixed dissolved solids (FDS) of the discharge to the ponds shall not exceed 500 mg/L. This performance-based limit may be re-opened based upon completion of [Provision G.10](#).
3. The chloride concentration of the discharge to the wastewater ponds shall not exceed 175 mg/L.

C. Discharge Specifications:

1. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
2. Objectionable odors shall not be perceivable beyond the limits of the Facility or the Reuse Area at an intensity that creates or threatens to create nuisance conditions.
3. Wastewater storage ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the winter. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
4. On or about 1 October of each year, the available storage pond capacity shall at least equal the volume necessary to comply with [Discharge Specification C.3](#).
5. Storage ponds shall be managed to prevent breeding of mosquitoes. In particular,
 - a. An erosion control plan should assure that coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, and herbicides.
 - c. Dead algae, vegetation and other debris shall not accumulate on the water surface.
 - d. Vegetation management operations in areas in which nesting birds have been observed shall be carried out either before or after, but not during, the 1 April to 30 June bird nesting season.
6. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of groundwater limitations.

D. Reuse Area Specifications:

1. The perimeter of the Reuse Area shall be graded to prevent ponding along public roads or other public areas and prevent runoff onto adjacent properties not owned or controlled by the Discharger.
2. No physical connection shall exist between wastewater piping and any domestic water supply or domestic well, or between wastewater piping and any irrigation well that does not have an air gap or reduced pressure principle device.

3. Hydraulic loading of wastewater and irrigation shall be at reasonable agronomic rates designed to minimize the percolation of wastewater and irrigation water below the root zone (i.e., deep percolation).
4. 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 annual nutritive loading of the Reuse Area, including the nutritive value of organic and chemical fertilizers and of the wastewater, shall not exceed the annual crop demand.
5. The Reuse Area shall be managed to prevent breeding of mosquitoes. More specifically:
 - a. All applied irrigation water must infiltrate completely within a 48-hour period;
 - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation; and
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.

E. Solids Specifications

1. Any handling and storage of solids and sludge at the Facility or the Reuse Area shall be temporary, and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitations of this Order.
2. Collected screenings, sludges, and other solids removed from the liquid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, rendering plants, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.
3. Any proposed change in solids use or disposal practice shall be reported to the Executive Officer at least 90 days in advance of the change.

F. Groundwater Limitations:

1. Release of waste constituents from any treatment or storage component associated with the discharge shall not cause or contribute to groundwater:
 - a. Containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:
 - (i) Nitrate as nitrogen of 10 mg/L.

- (ii) Electrical Conductivity of 900 μ mhos/cm.
 - (iii) Total Coliform Organisms of 2.2 MPN/100 mL.
 - (iv) For constituents identified in Title 22, the MCLs quantified therein.
- b. Containing taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

G. Provisions:

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as *Standard Provisions*.
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. [R5-2008-0017](#), which is part of this Order, and any revisions thereto as adopted by the Regional Water Board or approved by the Executive Officer. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger self-monitoring reports.
3. The Discharger shall keep at the Facility a copy of this Order, including its MRP, Information Sheet, attachments, and Standard Provisions, for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. The Discharger must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This Provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger only when the operation is necessary to achieve compliance with the conditions of the Order.
5. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. To demonstrate compliance with sections 415 and 3065 of Title 16, CCR, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

6. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Regional Water Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Regional Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
7. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the appropriate Regional Water Board office (currently, the Fresno office).
8. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with the Regional Water Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Regional Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
9. At least **90 days** prior to termination or expiration of any agreement involving a recycled water use area that may jeopardize compliance with this Order due to lack of disposal capacity, the Discharger shall notify the Executive Officer in writing of the situation and of what measures have been taken or are being taken to ensure full compliance with this Order.
10. **Salinity Control Plan.** By **1 July 2008**, the Discharger shall submit a Final Salinity Control Plan detailing all control measures taken to reduce the salinity of the discharge. The control plan should also identify any additional methods that could be used to further reduce the salinity of the discharge to the maximum extent feasible, include an estimate on load reductions that may be attained through the methods identified, and provide a description of the tasks, cost, and time required to investigate and implement various elements in the salinity control plan.

11. **Pond Improvements.** By 1 June 2008, the Discharger shall submit a Design Plan with a time schedule to complete improvements to the wastewater pond system.

Design Plan. The Discharger shall submit a Design Plan for the pond improvements. The Design Plan must be prepared by or under the direct supervision of a Civil Engineer registered in California or other persons registered to practice in California pursuant to California Business and Professions Code, and approved by the Executive Officer prior to construction. The design report shall include the following: (a) design calculations demonstrating that adequate containment will be achieved and that the pond liner will be protective of groundwater quality; (b) details on the pond liner and the leachate collection and removal system (if appropriate); and (c) a construction quality assurance plan describing testing and observations needed to document construction of the liner in accordance with the design criteria.

Upon written acceptance of the Design Plan by the Executive Officer, the Discharger shall begin construction on the pond improvements to be completed by 1 January 2010. The Discharger shall submit a post-construction report following completion of the pond improvements.

12. **By 1 July 2008**, the Discharger shall conduct a soil investigation of the 25-acre former land application area and submit a technical report documenting the results of the soil investigation, and develop a cropping plan or evaluate additional alternatives to prevent further unreasonable degradation of groundwater, and submit a time schedule to implement the selected alternative.
13. **By 1 January 2009**, the Discharger shall submit a comprehensive irrigation and nutrient management plan for the Reuse Areas. The Irrigation and Nutrient Management Plan shall include: (a) a description of the types of crops to be grown, (b) crop water use and uptake rates, (c) supporting data and calculations for monthly and annual nutrient balances to meet agronomic loading rates considering the crop, soil, climate, and irrigation management system.
14. If the Regional Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of an objective for groundwater, this Order may be reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for the problem constituents.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 25 January 2008.

PAMELA C. CREEDON, Executive Officer

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2008-0017
CENTRAL VALLEY MEAT COMPANY
HANFORD BEEF PROCESSING FACILITY
KINGS COUNTY

-20-

Order Attachments:

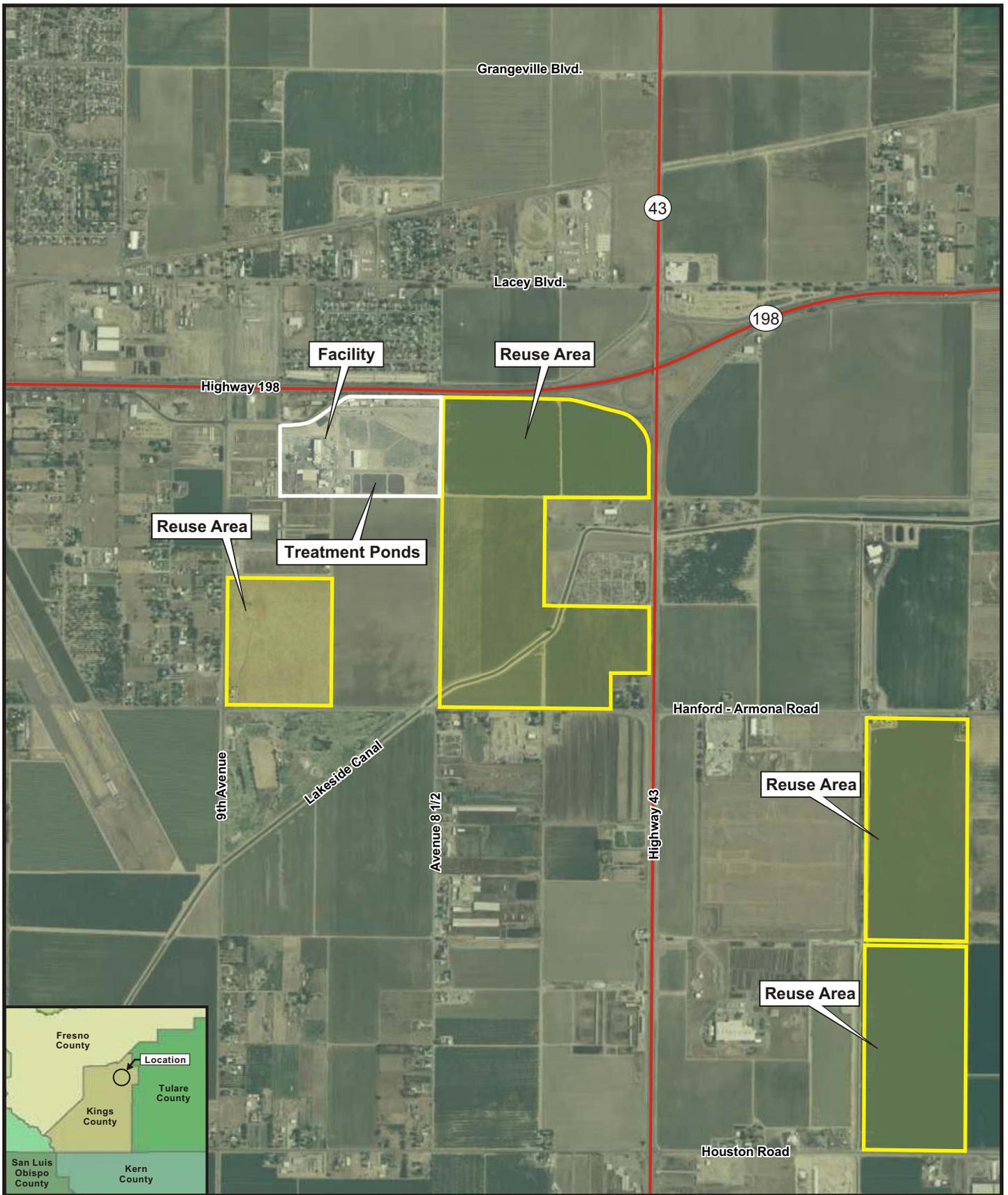
- A. Site Map
- B. Plane View of Facility and Reuse Area
- C. Process Flow Diagram

Monitoring and Reporting Program No. [R5-2008-0017](#)

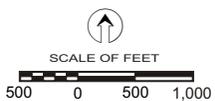
Information Sheet

Standard Provisions (1 March 1991) (separate attachment to Discharger only)

kc/DKP 12/28/07

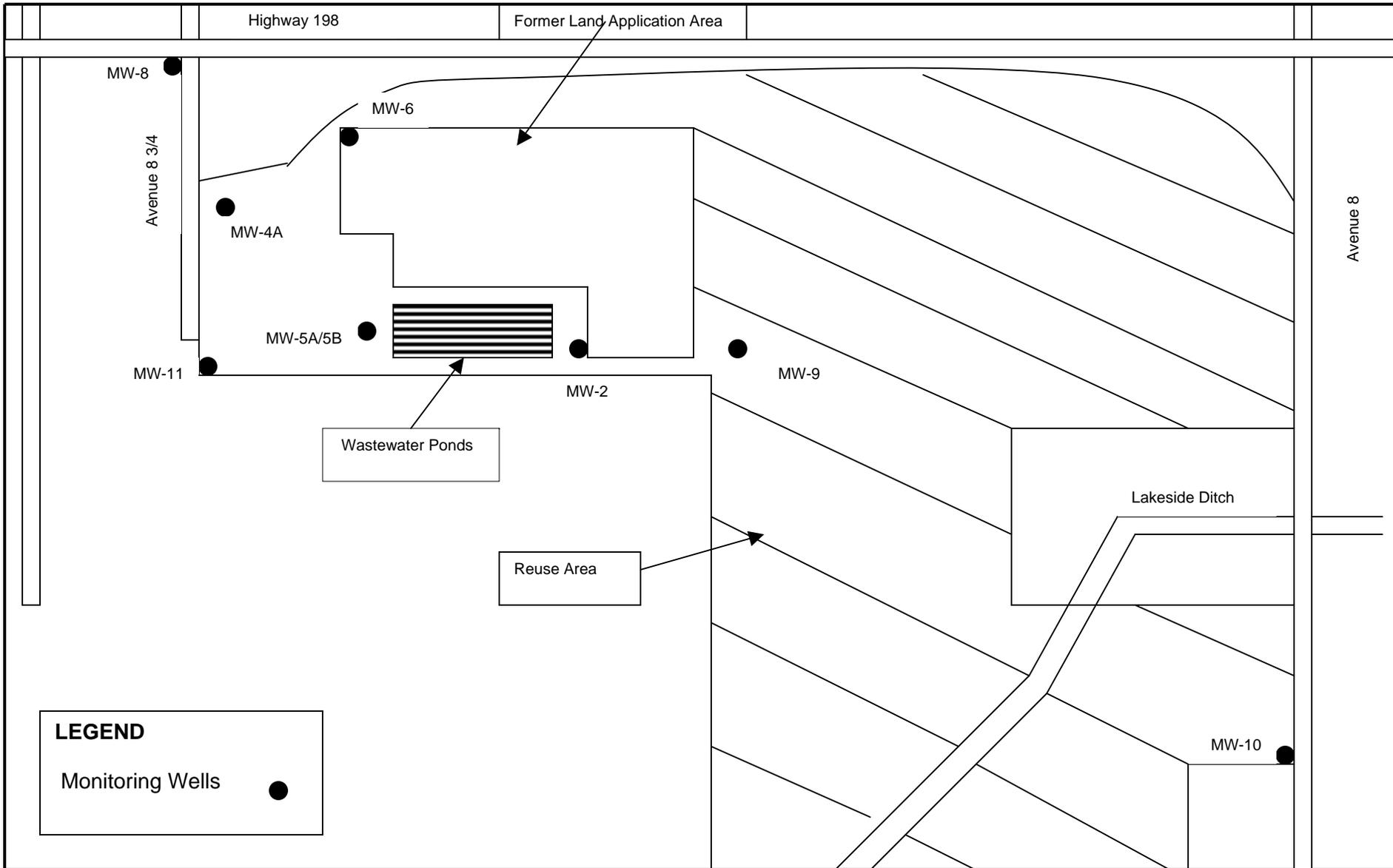


Map Source:
NAIP Aerial Photograph (2005)

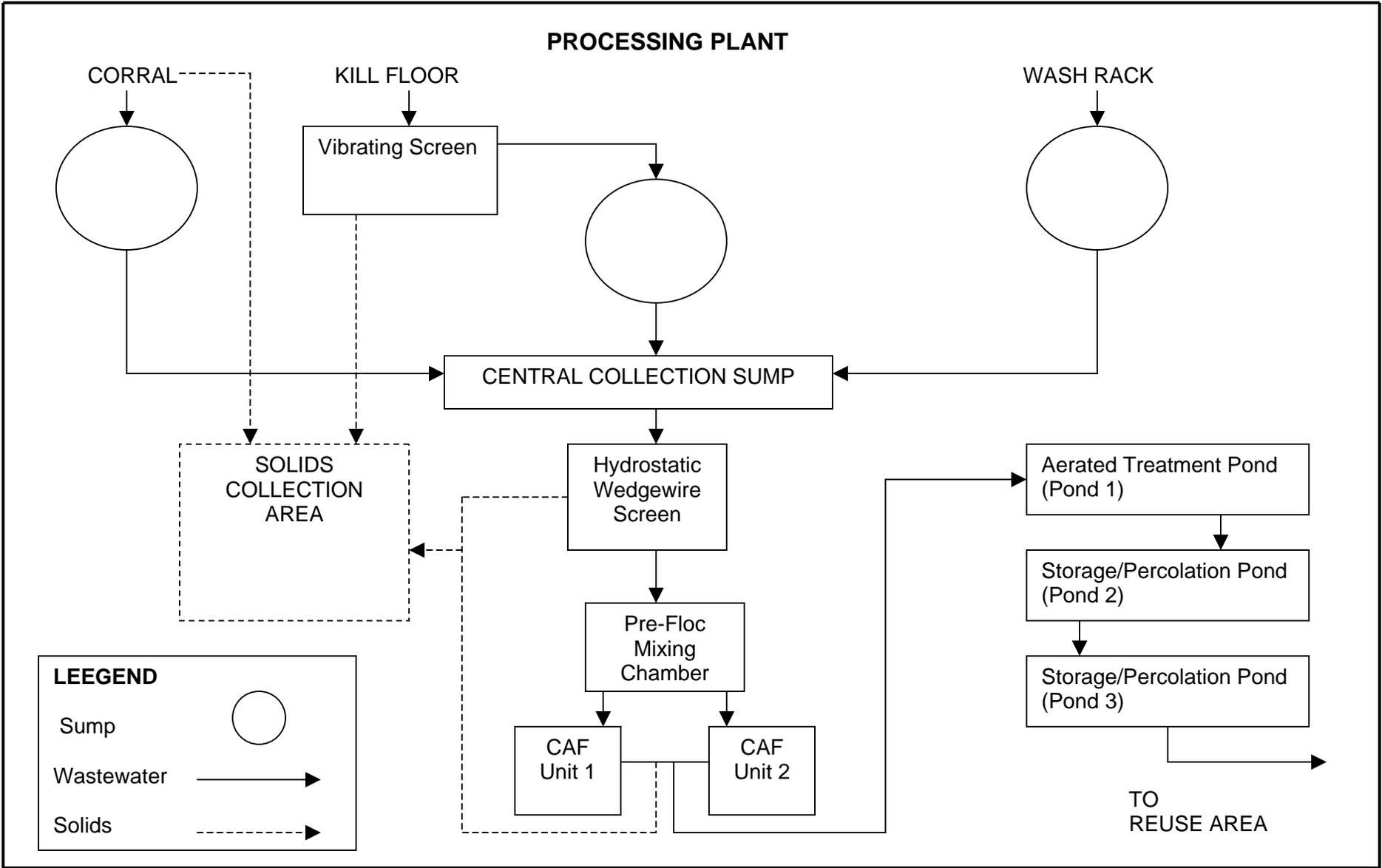


SITE MAP
 ORDER NO. R5 -2008-0017
 WASTE DISCHARGE REQUIREMENTS
 FOR
 CENTRAL VALLEY MEAT COMPANY
 HANFORD BEEF PROCESSING FACILITY
 KINGS COUNTY

ATTACHMENT A



PLANE VIEW
 Order No. R5-2008-0017
 Waste Discharge Requirements
 For
 Central Valley Meat Company
 Hanford Beef Processing Facility
 Kings County



PROCESS FLOW DIAGRAM
 Order No. R5-2008-0017
 Waste Discharge Requirements
 For
 Central Valley Meat Company
 Hanford Beef Processing Facility
 Kings County

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2008-0017

FOR
CENTRAL VALLEY MEAT COMPANY
HANFORD MEAT PROCESSING FACILITY
KINGS COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code (CWC) section 13267. The Discharger shall not implement any changes to this MRP unless and until the Regional Board adopts or the Executive Officer issues a revised MRP. Changes to sample location shall be established with concurrence of Regional Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer. All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991 (Standard Provisions). The results of analyses performed in accordance with specified test procedures, taken more frequently than required at the locations specified in this MRP, shall be reported to the Regional Water Board and used in determining compliance.

Field test instruments (such as pH) may be used provided that:

1. The operator is trained in the proper use of the instrument;
2. The instruments are calibrated prior to each use;
3. Instruments are serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

In addition to details specified in Standard Provision, Provisions for Monitoring C.3, records of monitoring information shall also include the following:

1. Method detection limit (MDL);
2. Reporting limit (RL) (i.e., a practical quantitation limit or PQL); and
3. Documentation of cation/anion balance for general minerals analysis of supply water, and groundwater samples.

All laboratory results shall be reported down to the MDL. Non-detected results shall be reported as less than the MDL (<MDL). Results above the MDL, but below the concentration of the lowest calibration standard for multipoint calibration methods or below the reporting limit for other methods shall be flagged as estimated.

All analyses shall be performed in accordance with the latest edition of Guidelines Establishing Test Procedures for Analysis of Pollutants, promulgated by EPA (40 CFR 136) or other procedures approved by the Executive Officer, provided the methods have method detection limits equal to or lower than the analytical methods specified in this MRP. In reporting data, the Discharger shall indicate whether any analysis was performed using a method not in

conformance with EPA's Guidelines. Analyses may also comply with the methods and holding times specified in: Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020, 1983); Methods for Determination of Inorganic Substance in Environmental Samples (EPA/600/R-93/100, 1993); Standard Methods for the Examination of Water and Wastewater, 20th Edition (WEF, APHA, AWWA); and Soil, Plant and Water Reference Methods for the Western Region, 2003, 2nd Edition, 2003.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration after at least 12 months of monitoring, the Discharger may request the MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

POND INFLUENT - DISCHARGE MONITORING

Pond influent samples shall be collected just prior to discharge to the ponds. The Discharger shall monitor the discharge for the constituents and frequencies specified below:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Frequency</u>
Daily Flow ¹	gal/day	Continuous	Daily
Electrical Conductivity	µmhos/cm	24 hr – Composite ²	Weekly
Inorganic TDS ³	mg/L	24 hr – Composite	Monthly
Total Kjeldahl Nitrogen (TKN)	mg/L	24 hr – Composite	Monthly
Ammonia (as NH ₃ -N)	mg/L	24 hr – Composite	Monthly
Nitrate(as NO ₃ -N)	mg/L	24 hr – Composite	Monthly
Total Nitrogen	mg/L	24 hr – Composite	Monthly
BOD ₅ ⁴	mg/L	24 hr – Composite	Monthly
Total Suspended Solids (TSS)	mg/L	24 hr – Composite	Monthly
General Minerals ⁵	mg/L	24 hr – Composite	Quarterly ⁶

¹ Flow shall be measured using a magnetic or ultrasonic flow meter.

² Unless otherwise approved, 24-hour composite samples shall be collected using a composite wastewater sampler. While being composited samples shall be refrigerated at 4 °C (39.2 °F).

³ TDS, as used in this MRP, shall be determined using Standard Methods 2540C for combined organic and inorganic TDS and EPA Method No. 160.4 for inorganic TDS.

⁴ Five-day, 20°C biochemical oxygen demand (BOD₅)

⁵ General Minerals, as used in this MRP, shall include the constituents in the General Minerals Analyte List below.

⁶ In January, April, July, and October.

POND EFFLUENT - DISCHARGE MONITORING

Pond effluent samples shall be collected just prior to discharge to the Reuse Area. The Discharger shall monitor the discharge for the constituents and frequencies specified below:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Frequency</u>
Daily Flow	gal/day	Continuous	Daily
Electrical Conductivity	µmhos/cm	Grab	Weekly ¹
Inorganic TDS ³	mg/L	Grab	Monthly ¹
Total Kjeldahl Nitrogen (TKN)	mg/L	Grab	Monthly ¹
Ammonia (as NH ₃ -N)	mg/L	Grab	Monthly ¹
Nitrate(as NO ₃ -N)	mg/L	Grab	Monthly ¹
Total Nitrogen	mg/L	Grab	Monthly ¹
BOD ₅ ⁴	mg/L	Grab	Monthly
Total Suspended Solids (TSS)	mg/L	Grab	Monthly
General Minerals ⁵	mg/L	Grab	Quarterly ⁶

¹ Concurrent with pond influent monitoring.

² TDS, as used in this MRP, shall be determined using Standard Method 2540C for combined organic and inorganic TDS and EPA Method No. 160.4 for inorganic TDS.

³ Five-day, 20°C biochemical oxygen demand (BOD₅)

⁴ General Minerals, as used in this MRP, shall include the constituents in the General Minerals Analyte List.

⁵ In January, April, July, and October.

General Minerals Analyte List¹

Alkalinity (as CaCO ₃)	Carbonate (as CaCO ₃)	pH
Arsenic	Chloride	Potassium
Bicarbonate (as CaCO ₃)	EC	Sodium
Boron	Hardness (as CaCO ₃)	Sulfate
Calcium	Magnesium	TDS

¹ General Minerals Analyte lists may vary depending on the laboratory, but shall include at least the above analytes and properties.

GROUNDWATER MONITORING

Concurrently with groundwater quality sampling, the Discharger shall measure the water level in each well as groundwater depth (in feet and hundredths) and as groundwater surface elevation (in feet and hundreds above mean sea level). The horizontal geodetic location of each monitoring well shall be provided where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum.

Prior to collecting samples and after measuring the water level, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

The Discharger shall include in its submittal of groundwater elevation data, a contour map based on said data showing the gradient and direction of groundwater flow under/around the facility and effluent disposal area(s). The groundwater contour map shall also include the location of the monitoring wells and active storage and land disposal areas (i.e., areas receiving treated effluent).

The Discharger shall monitor groundwater for the constituents and frequencies specified below.

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Depth to groundwater	Feet ¹	Measured	Quarterly ²
Groundwater elevation	Feet above mean sea level	Calculated	Quarterly ²
pH	pH units	Grab	Quarterly ²
Electrical Conductivity	µmhos/cm	Grab	Quarterly ²
Total Dissolved Solids	mg/L	Grab	Semi-Annually ³
Ammonia (as NH ₃ -N)	mg/L	Grab	Semi-Annually ³
Nitrate (as NO ₃ -N)	mg/L	Grab	Semi-Annually ³
TKN	mg/L	Grab	Semi-Annually ³
Total Nitrogen	mg/L	Calculated	Semi-Annually ³
Iron	mg/L	Grab	Semi-Annually ^{3,4}
Manganese	mg/L	Grab	Semi-Annually ^{3,4}
Total Organic Carbon	mg/L	Grab	Annually ⁶
General Minerals ⁵	mg/L	Grab	Annually ⁶

footnotes: see next page

Footnotes

- ¹ To the nearest hundredth of a foot.
- ² January, April, July and October.
- ³ April and October.
- ⁴ Samples must be filtered prior to preservation
- ⁵ General Minerals shall include at least the constituents listed in General Minerals Analyte List included herein in the Pond Influent Monitoring section. An anion/cation balance demonstrating that analyses are complete shall accompany the results.
- ⁶ In October.

SOURCE WATER MONITORING

The Discharger's facility supply water shall be monitored for the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Measurement</u>	<u>Frequency</u>
General Minerals ²	mg/L	Grab	Annually ¹

-
- ¹ In October.
 - ² General Minerals shall include at least the constituents listed in General Minerals Analyte List included herein in the Pond Influent Monitoring section. An anion/cation balance demonstrating that analyses are complete shall accompany the results.

USE AREA MONITORING

The Discharger shall perform the following routine monitoring and loading calculations for each discrete irrigation area. Data shall be collected and submitted quarterly:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Frequency</u>
Wastewater application field number	N/A	N/A	Daily
Precipitation	inches ¹	Rain gauge ²	Daily
Wastewater application area	acres	N/A	Daily
Wastewater flow	mgd	Continuous	Daily
Wastewater loading	inches/day/acre ³	Calculated	Daily
Supplemental irrigation flow	mgd	Estimated	Daily
Supplemental irrigation flow	inches/day/acre ³	Calculated	Daily
Total hydraulic loading rate ⁴	Inches/day/acre ³	Calculated	Daily
BOD ₅ loading rate ⁵			
on application day ⁶	lbs/acre/day	Calculated	Daily
averaged over application cycle ⁷	lbs/acre/day	Calculated	Daily
Monthly nitrogen loading rates ⁸			

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Frequency</u>
From wastewater	lbs/acre/month	Calculated	Monthly
From fertilizers	lbs/acre/month	Calculated	Monthly
Cumulative Annual nitrogen loading rate ⁹	lbs/acre	Calculated	Monthly
Inorganic TDS loading rates ¹⁰	lbs/acre/month	Calculated	Monthly

- ¹ Report to the nearest 0.1 inch.
² National Weather Service data from the nearest weather station is acceptable.
³ Report to the nearest 0.01 inch.
⁴ Includes total liquid application (i.e., precipitation, wastewater, and irrigation water).
⁵ BOD₅ loading rates shall be calculated using the applied volume of wastewater, actual application area, and the average of the three most recent results of wastewater BOD₅.
⁶ Application day, as referred to in this MRP, shall be defined as a 24-hour period.
⁷ Application cycle, as referred to in this MRP, shall be defined as the period (in days) of wastewater application followed by resting interval until next wastewater application.
⁸ Wastewater nitrogen loading rates shall be calculated using the applied volume of wastewater, actual application area, and the wastewater total nitrogen.
⁹ Starting as zero each January 1
¹⁰ Inorganic TDS loading rates shall be calculated using the applied volume of wastewater, actual application area, and the average of the three most recent results of wastewater inorganic TDS.

REPORTING

The Discharger shall report monitoring data and information as required in this MRP and as required in the Standard Provisions.

Monitoring data and/or discussions submitted concerning the Treatment System's performance must also be signed and certified by the Facility manager. When reports contain laboratory analyses performed by the Discharger and the Facility manager is not in the direct line of supervision of the laboratory, reports must also be signed and certified by the chief of the laboratory.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger complies with waste discharge requirements. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the discharge monitoring report.

A. Monthly Reports

Daily, weekly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly monitoring reports shall be submitted to the Regional Water Board **by the 1st day of the second month following sampling** (i.e., the January Report is due by 1 March). At a minimum, the reports shall include at the minimum:

1. Results of influent, effluent, and pond monitoring;
2. Calculated Monthly Average Daily Flow;
3. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
4. Copies of laboratory analytical reports; and
5. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Quarterly Reports

Wastewater: Daily, weekly, monthly, and quarterly monitoring data shall be reported in quarterly monitoring reports. Quarterly monitoring reports shall be submitted to the Regional Water Board **by the 1st day of the second month after the calendar quarter** (i.e., the 1st Quarter Report is due by 1 May, 2nd Quarter Report is due by 1 August, and the 3rd Quarter Report is due 1 November). At a minimum, the quarterly reports shall include:

1. Results of discharge, and use area monitoring;
2. Calculated Monthly Average Daily Flow;
3. Daily, Monthly, and Average loading calculations;
4. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
5. Copies of laboratory analytical reports; and
6. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

Groundwater: Quarterly and Semi-Annual groundwater monitoring data shall be reported in the quarterly monitoring reports and submitted to the Regional Water Board as detailed in the previous section. Quarterly monitoring reports shall include all monitoring data required from quarterly and semi-annual groundwater monitoring events. The quarterly groundwater monitoring reports shall contain:

1. Quarterly groundwater contour maps;
2. Graphs of the laboratory analytical data for all samples taken from each well within at least the previous five calendar years. Each such graph shall plot over time for a given monitoring well the concentration of one or more waste constituents; and
3. All monitoring analytical data obtained during the quarter presented in tabular form and included with previous data obtained for the given well.

C. Annual Reports

Wastewater: The Annual Report will include all monitoring data required in the monthly/quarterly schedule plus the results of any annually sampled constituents (general minerals, selected metals, etc). The Annual Report shall be submitted to the Regional Water Board **by 1 March of the year following the year the samples were collected.** In addition to the data normally presented, the Annual Report shall include the following:

1. The names and telephone numbers of persons to contact regarding emergency and routine situations;
2. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (Standard Provision C.4);
3. The results of an annual evaluation conducted pursuant to Standard Provisions E.4 and a figure depicting monthly average discharge flow for the previous five calendar years;
4. The most recent water supply report including laboratory data;
5. A summary of solids monitoring, including:
 - a. Annual solids production in dry tons and percent solids; and
 - b. A description of disposal methods. If more than one method is used, include the percentage disposed of by each method.
6. A summary and discussion of the compliance record for the reporting period. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with this Order.

Groundwater: The Annual Groundwater Monitoring Report will include all groundwater monitoring data required in the groundwater monitoring schedule plus the results of any annually sampled groundwater constituents (general minerals, selected metals, etc). The Annual Groundwater Monitoring Report shall be submitted to the Regional Board **by 1 March of the year following the year the samples were collected.** In addition to the data normally presented in the quarterly groundwater monitoring reports, the Annual Report shall include the following:

1. Groundwater contour maps from the previous four quarters;
2. Graphs of the analytical data for all samples collected from each monitoring well for at least five calendar years. Each such graph shall plot over time for a given monitoring well the concentration of one or more waste constituents specified herein and selected in concurrence with Regional Water Board staff. Graphs shall be plotted at a scale appropriate to show trends or variations in water quality, and shall plot each datum, rather than plotting mean values.
3. All monitoring data obtained during the previous monitoring events for at least the last five calendar years.

All technical reports required herein must be overseen and certified by a California registered civil engineer, certified engineering geologist, or certified hydrogeologist in accordance with California Business and Professions Code, sections 6735, 7835, and 7835.1.

All reports submitted in response to this Order shall comply with the signatory requirements in Standard Provision B.3.

A transmittal letter shall accompany each self-monitoring report. The letter shall discuss any violations during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

25 January 2008

(DATE)

KC/DKP:01/25/08

INFORMATION SHEET

R5-2008-0017
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.

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

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

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.

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.

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.