CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0177

WASTE DISCHARGE REQUIREMENTS
FOR
BAKER COMMODITIES, INC.
HANFORD HIDE SKINNING AND HIDE CURING FACILITY
KINGS COUNTY

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

1. Baker Commodities, Inc. (hereafter Discharger), a Delaware corporation, owns and operates a dead cow and calf skinning and hide salt curing facility (Facility). The 160-acre Facility is at 7480 Hanford Armona Road, approximately 2 miles east of the City of Hanford. The property is described by Kings County Assessor's Parcel Nos. 016-070-12, 016-070-13, and 016-070-15 and is in Section 33, T18S, R22E, MDB&M, as shown on Attachment A, which is incorporated herein and made a part of this Order.

2. The Facility has operated since at least 1964 and discharged industrial wastes to land the entire period without waste discharge requirements. The Discharger submitted a Report of Waste Discharge (RWD) in July 1996 after Regional Board staff found the Facility operating. In September 2000, the Discharger submitted a revised RWD in support of an increase in discharge associated with a complete upgrade of the Facility (i.e., new buildings, equipment, etc.). The September 2000 RWD proposed continued use of three existing unlined lagoons constructed in the early 1970s to store hide skinning process wastewater. Operations moved into the newly constructed Facility in January 2002. In February 2003, the Discharger submitted a second revised RWD (to respond to Regional Board staff comments regarding the inadequacy of the existing unlined lagoons in preventing waste constituents from migrating into groundwater) that proposes to construct three new lined treatment lagoons.

3. Dead cows and calves are trucked to the Facility from dairies operating in Kings and surrounding counties. The hides are removed from the carcasses during the skinning operation. Hides are sent to a hide curing room while carcasses are chopped up and loaded into trucks for transport to Baker Commodities' rendering plant near Kerman. Other types of dead animals (e.g., swine, poultry) are accepted at the Facility where they are loaded into trucks and transported to the Kerman rendering plant. The RWD estimates that approximately 36,000 tons of material were transported offsite for rendering in 2003. The Discharger projected then that growth in the dairy industry in Kings and surrounding counties will result in increasing processing rates of dead stock over the next several years.

4. Hide skinning wastewater is generated from the release of bodily fluids during the skinning and rinsing process and by washing down truck beds, facility floors, and equipment; and from the rinsing of carcasses and hides. The skinning wash water and animal fluids are collected via floor drains and discharged to a mechanical catch basin that provides gravity separation of lighter-than-water solids and heavier-than-water solids. Recovered lighter-than-water solids (e.g., grease) are rendered at Baker Commodities' Kerman facility. Grit in this document refers to heavier-than-water

solids collected from the mechanical catch basin. Recovered grit is incorporated into the soils of the Facility's onsite land application area. Hide skinning wastewater from the mechanical catch basin is pumped to Lagoon No. 1, the first of three 50 x 80 x 10 foot in-series unlined lagoons. The last lagoon is pumped and mixed with irrigation well water and Lakeside Irrigation Water District canal water when the crops on the Facility's 124-acre land application area need to be irrigated.

5. Brine waste is generated from the hide curing process when freshly skinned hides salted with rock salt (i.e., sodium chloride, NaCl) drain highly saline liquid comprised of salt mixed with moisture from the hides. When Regional Board staff inspected the Facility on 3 November 2000, no physical system segregated brine waste generated in the curing process from hide skinning wastewater (the September 2000 and July 1996 RWDs reported segregation).

6. A sample of wastewater held in the unlined lagoons (i.e., hide skinning wastewater combined with brine waste) collected by staff during the 3 November 2000 inspection yielded a chloride concentration of 4,000 mg/L. In addition, twenty-five internal laboratory analyses of lagoon wastewater performed by the Discharger on the sodium chloride content of wastewater held in the unlined lagoons between 1995 and 1997 as submitted on 6 November 2000 via fax indicate a sodium chloride content of between 2,000 and 12,700 mg/L (average content of 5,600 mg/L). The high chloride content reflects the brine waste.

7. Between February 2001 and continuing through December 2001, interim salt control measures were implemented by the Discharger to segregate brine waste from hide skinning wastewater. These measures included laying down plastic sheeting to contain the brine waste and directly pumping collected liquid brine into a tanker truck for transport to Baker Commodities' Los Angeles facility. In the Los Angeles facility, the brine waste was and continues to be discharged to the sewage collection system of a publicly owned treatment works with an ocean outfall.

8. Since the opening of the new Facility in January 2002, salting of hides has occurred in an area physically and hydraulically separated from the skinning area. Separation of these processing areas prevents commingling of salting wastewater with hide skinning wastewater. Within the hide curing area, liquid brine waste is directed manually to in-floor sumps using squeegees. A handheld pump is used to periodically pump out the sumps into a 10,000-gallon above-ground plastic brine holding tank in the rear of the building just outside of the curing area. Approximately every ten days, 4,000 gallons of brine waste are pumped from the holding tank into a tanker truck and transported to Baker Commodities' Los Angeles facility and discharged to the sewer system. The RWD indicates that 140,000 gallons of brine waste were transported to the Los Angeles facility in 2002.

9. Self-monitoring data from January 2002 to August 2005 characterize the salinity component of the hide skinning wastewater as follows:

Constituent / Parameter	Units	Value
Electrical Conductivity@25°C (EC)	µmhos/cm	1884
Total Dissolved Solids (TDS)	mg/L	1512

Constituent / Parameter	Units	Value
Volatile Dissolved Solids (VDS)	mg/L	968
Fixed Dissolved Solids (FDS)	mg/L	551
Sodium	mg/L	143
Chloride	mg/L	114

10. Self-monitoring data from January 2002 to August 2005 characterize the organic component of untreated hide skinning wastewater as follows:

Constituent / Parameter	Units	Average
BOD_5[1]	mg/L	4086
Total Kjeldahl Nitrogen (TKN)	mg/L	466

[1] 5-day, 20°C biochemical oxygen demand

11. The Discharger proposes to construct three lined lagoons in series to treat and control hide skinning wastewater. The Discharger's February 2003 RWD contains a waste stabilization lagoon engineering design report. The proposed design uses different configurations and geometries for each of the three lagoons to optimize treatment at a design flow rate of 27,000 gpd. The primary lagoon is deep enough to allow settleable solids to collect at the bottom without interfering with treatment and a large enough volume for a hydraulic retention time of approximately 60 days. The secondary lagoon is relatively shallow to allow for volatilization of ammonia. The third pond functions as a storage pond and allows for greater efficiency by allowing the primary and secondary ponds to be maintained at a constant operating level while providing some additional treatment by increasing hydraulic retention times. The proposed design does not depend on any additional treatment provided by the third pond and estimates a nitrogen treatment and removal efficiency of approximately 70% and a BOD treatment and removal efficiency of approximately 80%. BOD removal efficiency will likely be higher given that existing lagoons have a BOD removal efficiency of 90% and that the replacement lagoons will be larger and have a longer hydraulic retention time. The predicted secondary lagoon effluent quality before discharge into the third pond, based on the above mentioned removal efficiencies, are as follows:

Constituent / Removal Efficiency	Units	70 %	80 %	90%
BOD_5	mg/L	-	820	410
Total Nitrogen	mg/L	140	-	-

12. The 17-foot water level design depth of the primary lagoon is to allow it to accommodate approximately 20 years of accumulated of sludge without significantly impacting operating

efficiency. Sludge in this document refers to solid, semisolid, and liquid residues from the bottom of the Facility's lagoons.

13. The three proposed lined lagoons will need to be constructed before the old unlined lagoons can be cleaned up and closed. The proposed lined lagoons will be constructed under a time schedule in a separately issued cleanup and abatement order (CAO) that will also regulate the cleanup and closure of the unlined ponds and abatement of the effects of brine waste and brine waste combined with hide skinning waste that was discharged to them.

Hydrology, Soils, and Land Use

14. The Facility lies within the Tulare Lake Basin, specifically the Hanford-Lemoore Hydrologic Area (No. 551.90) of the South Valley Floor, as depicted on interagency hydrologic maps prepared by the California Department of Water Resources (DWR) in 1986. Surface water drainage is to the valley floor. The Facility is not within a 100-year floodplain.

15. The three parcels comprising the 160-acre property are all within the Lakeside Irrigation Water District. As shown on Attachment A, the Lakeside Ditch travels from east to west across the northern half of the property. The head of Settler's Ditch begins along the stretch of the Lakeside Ditch on the property and travels south down the approximate centerline of the property.

16. Hot dry summers and mild winters characterize the arid climate. 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 evapotranspiration in the discharge area are 8.58 inches and 58.73 inches, respectively, according to information published by DWR.

17. The Facility is underlain by *Garces loam* and *Kimberlina fine sandy loam, saline-alkali.* These alluvium formed soils are deep, well drained, and saline-alkali. The Garces loam on the eastern two thirds of the property has very slow permeability while the Kimberlina fine sandy loam on the western third of the property has moderately slow permeability.

18. Land use in the Facility vicinity is primarily agricultural. Crops grown within two miles of the Facility include corn, cotton, and alfalfa according to DWR land use data published in 1996. Agricultural lands adjacent to the Facility are to the north, south, and west. Directly east are a number of rural residences and a tree recycling facility. Kit Carson School is a rural elementary school located approximately one-half mile to the northeast that serves between 400 and 500 Kindergarten through eighth grade students.

Groundwater and Vadose Zone

19. The Facility is in Detailed Analysis Unit (DAU) No. 238 of the Tulare Lake Basin, as depicted on interagency hydrologic maps prepared by DWR. Regional groundwater gradient maps prepared by DWR for the Tulare Lake Groundwater Basin indicate that the depth to first encountered groundwater water at the Facility has varied from 70 to 100 feet bgs for select years (i.e., 1989, 1998, and 1999) assuming a ground surface elevation of approximately 250 feet. Groundwater self-

monitoring reports for sampling done between March 2001 and October 2003 (ten sampling events during thirty-two months) indicates depth to first encountered groundwater has varied between 70 and 94 feet with an average groundwater gradient of due south and a magnitude of 6 ft/1000 ft.

20. To determine the impact of the three unlined lagoons on the uppermost aquifer from the impounded brine waste and the hide skinning wastewater, the Discharger was required to install a groundwater-monitoring network around the unlined lagoons. Six-wells (MW-1 through MW-6) were installed to depths between 93 and 94 feet below ground surface (bgs) with 25-foot screen intervals across the water table. The boring logs for MW-1 through MW-6 indicate that the subsurface geology to that depth is comprised generally of sand and silt.

21. Groundwater and soil data show that waste constituents from the unlined lagoons have significantly degraded groundwater. Groundwater monitoring results from wells MW-4 and MW-6 indicate significant increases in EC, TDS, sodium, chloride, and nitrate concentrations downgradient of the lagoons with no other potential sources for these constituents, at the levels found, within the vicinity of the Facility. Results from well MW-5 also indicate increases in concentrations of the above constituents that are likely from the lagoons, but may also indicate a contribution from the leach field used for disposal of the Facility's domestic wastewater. In addition, soil borings from the ground surface to the top of the water table confirm the transport of waste constituents from the unlined lagoons into groundwater, as soils horizontally within 20 ft of the lagoons contain waste constituents at levels one to two orders of magnitude greater than background soils.

22. The Facility's new supply well was put into service January 2002. The new supply was installed to meet increased water demand associated with higher animal processing throughput from the Facility upgrade and the need for greater onsite fire fighting capabilities. The old well remains a potential backup water supply. The new well is constructed to 500 ft below ground surface (bgs) and is screened between 260 ft and 500 ft bgs, drawing groundwater from both the confined aquifer (i.e., below the Corcoran Clay Member of the Tulare Formation, or E-clay) and overlying unconfined aquifer. Four samples collected between January and December 2002 characterize the source water from the new supply well as follows:

Constituent / Parameter	Units	Value
Electrical Conductivity	µmhos/cm	354
Total Dissolved Solids (TDS)	mg/L	245
Sodium	mg/L	66
Chloride	mg/L	22
Nitrate (as N)	mg/L	<0.2

Basin Plan

23. *The Water Quality Control Plan for the Tulare Lake Basin, Second Edition*, (hereafter Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, and contains implementation plans and policies for protecting all waters of the Basin. The Basin Plan includes plans and policies of the State Water Resources Control Board (State Board) incorporated by reference. Pursuant to California Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.

24. The Lakeside Ditch and Settler's Ditch are surface waters of the State and are classifiable as Valley Floor Waters. The Basin Plan designates the beneficial uses of Valley Floor Waters as agricultural supply; industrial service supply; industrial process supply; water contact recreation; noncontact water recreation; warm freshwater habitat; wildlife habitat; rare, threatened, or endangered species; and groundwater recharge.

25. The Basin Plan designates the beneficial uses of groundwater in DAU No. 238 as municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

26. Basin Plan water quality objectives to protect the above beneficial uses include a numerical objective for coliform and narrative objectives for chemical constituents in and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, or animals. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The Basin Plan establishes numerical water quality objectives that quantify maximum permissible concentrations for groundwaters designated as municipal supply. These include maximum contaminant levels (MCLs) in Title 22, California Code of Regulations (i.e., sections 64431 (Inorganic Chemicals); 64431 (Fluoride); 64443 (Radioactivity); 64444 (Organic Chemicals); and 64449 (Secondary MCLs - Consumer Acceptance Limits)).

27. Quantifying a narrative water quality objective requires a site-specific evaluation of each waste constituent for consistency with the narrative objective using the procedures set forth in the Basin Plan. These procedures require the consideration of, among other things, site-specific hydrogeologic and land use factors and relevant numerical criteria and guidelines developed or published by other agencies and organizations. The latter include the National Academy of Sciences, the University of California Cooperative Extension, and the Food and Agricultural Organization of the United Nations. Westcot and Ayers in a 1985 publication *(Water Quality for Agriculture, Food and Agriculture Organization of the United Nations — Irrigation and Drainage Paper No. 29)* provide detailed information to evaluate the quality of irrigation water necessary to sustain various crops. This publication is clear that considerable judgment should be used in applying the criteria and that appropriate irrigation management and crop variety selection can overcome some of the adverse impact where high water quality is not an option.

28. The major constituents of concern in assessing the quality of water for agriculture are salinity (expressed as EC or TDS), boron, chloride, and sodium. In general, animal uses are less sensitive than crops to these constituents. Salinity reduces crop growth by reducing the ability of plant roots to absorb water. The salt tolerance of crops also depends on the frequency and type of irrigation (e.g., drip, furrow, or sprinkler irrigation). Sprinkler irrigation has the greatest impact due to foliar absorption of salt. Absorption and foliar injury are further influenced by high temperature, low humidity, and drying winds, type of sprinkler, and timing of irrigation. A predominance of sodium relative to other ions in irrigation water may disperse soil aggregates, which in turn, affects virtually all crops by decreasing the permeability of the soil by water and air.

29. *Water Quality for Agriculture* provides general salt tolerance guidelines for many common field, vegetable, forage, and tree crops. Yield reductions can be avoided in nearly all crops when irrigating with water having an EC of less than 700 µmhos/cm. There is, however, an eight- to ten-fold range in salt tolerance of agricultural crops. It is possible to achieve full yield potential with waters having EC up to 3,000 µmhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

30. With respect to specific-ion toxicity, *Water Quality for Agriculture* indicates reductions in crop yields can be expected if sodium- and chloride-sensitive crops are sprinkler irrigated with water containing 69 mg/L sodium and 106 mg/L chloride. If such crops are not sprinkler irrigated, the maximum concentrations of sodium and chloride associated with no apparent yield reduction may increase, however the extent of the increase is typically crop specific.

31. In the process of crop irrigation, evaporation and crop transpiration remove water from and result in accumulation of residual salts in the soil root zone. These salts would retard or inhibit plant growth except for a fraction of irrigation water applied to leach the harmful salt from the root zone. The leached salts eventually enter groundwater and concentrate above the uppermost layer of the uppermost aquifer. As this is the general condition throughout the agricultural Tulare Lake Basin, water supply wells for all beneficial uses typically are constructed to extract groundwater from below this layer.

32. Groundwater in the area of the discharge is of substantially higher quality than the concentrations that implement water quality objectives. The impact caused by past discharge has significantly exceeded water quality objectives and feasibility of restoration has yet to be determined. The permitted discharge will not result in groundwater quality much different than ambient quality. Reasonable groundwater limitations based on translation of water quality objectives appropriate for the area of the discharge are as follows:

Constituent	Units	Value	Relevant Beneficial Use
Chloride	mg/L	106	Agricultural Supply (AGR)
Electrical Conductivity	µmhos/cm	700	Agricultural Supply (AGR)
Nitrate	mg/L	10	Municipal Supply (MUN)
Sodium	mg/L	69	Agricultural Supply (AGR)

33. Basin Plan maximum allowable effluent limits for discharges that recharge good quality ground waters are EC of 1,000 µmhos/cm, chloride of 175 mg/L, and boron of 1 mg/L.

34. The Basin Plan requires industrial Dischargers to limit the EC increase in their industrial process wastewater to 500 µmhos/cm over source water, or less if necessary to assure compliance with water quality objectives. The Basin Plan allows an exception for food processing industries that discharge to land and have a disproportionate increase in the EC attributable to organic dissolved solids from raw food product. Self-monitoring data (Finding 9) indicates that hide skinning wastewater is rich in organic acids and ions (i.e., approximately two-thirds of the TDS is volatile). To qualify for the food processing exception, the Discharger must demonstrate that it uses best management practices (BMPs) to control inorganic dissolved solids to the maximum extent feasible and that water quality objectives will not be exceeded.

35. An exception to the Basin Plan EC limit of 500 µmhos/cm over source water is reasonable as: a) a disproportionate increase in the EC of the Discharger's hide skinning wastewater is attributable to organic dissolved solids (i.e., approximately two-thirds of TDS is volatile), b) the Discharger is implementing the BMPs described in more detail in the following findings, c) the discharge of hide skinning wastewater as proposed by the Discharger in its RWD will not result in the loss of beneficial uses of groundwater, and d) salt removal technology, such as reverse osmosis, would require a higher level of biological treatment than proposed by the Discharger, but would not measurably reduce the wastewater's threat to underlying groundwater compared with the control measures proposed by the Discharger (i.e., lined lagoons and blending with irrigation water to meet crop demand).

36. The Discharger identified and proposes to implement the following BMPs to eliminate onsite discharges of brine waste to areas other than to the Facility's 10,000 gallon above ground plastic brine holding tank:

    a. All salt spills occurring outside the curing area will be immediately cleaned up. Dry cleanup will be executed where feasible, with the salt discharged into a dry storage bin or bulk salt shipping container. If wet cleanup is performed, the saline water will be captured and discharged to the brine tank.

    b. Salt will be unloaded either (1) as bulk salt directly from the delivery trucks to a salt storage bin, or (2) within bulk shipping containers (e.g., wooden boxes). During transfer of salt from the delivery truck to a bulk salt storage bin, particulate filters will be used to minimize escape of airborne particles of salt.

    c. When practical the doors to the curing area will remain closed.

    d. Hide transfer ports from the skinning area to the curing area are elevated so that salt migration back into the skinning area is prevented.

e. The brine holding tank will be at least partially emptied when it reaches 90% capacity, if not before.

f. The beds of the trucks used to transport hides offsite will be lined with plastic.

g. After each "load out" of palletized hides, dry cleanup will be performed, with the solids discharged to a dry storage bin or bulk salt shipping container.

37. The Discharger identified and implemented the following BMPs to eliminate salt from the hide skinning wastewater:

a. Engineered hide skinning, with hydraulic separation from the hide curing area to prevent salting wastewater from entering the hide skinning wastewater stream.

b. Periodically squeegeeing of bodily fluids off the concrete floor into the carcass-processing trough with no drain. All solids and fluids within the trough are loaded into trucks for rendering at the Discharger's Kerman facility.

c. Use of biodegradable, low-dissolved solids cleaner in place of caustic cleaners used at similar facilities to reduce the dissolved solids loading to the hide skinning wastewater stream.

Waste Classification

38. California Water Code section 13173 defines designated waste as "nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding water quality objectives…" Brine waste and brine waste combined with hide skinning wastewater have concentrations an order of magnitude greater than respective water quality objectives and must be classified as designated waste.

39. *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, California Code of Regulations, section 20005, et seq., (hereafter Title 27) specify types of waste that must be fully contained and prescribes standards for containment, including for designated waste.

40. Title 27, section 20090(i), exempts designated wastewater from the containment requirements of Title 27 when stored within a fully enclosed facility, such as concrete sumps and the above ground holding tank. The storage of brine waste in the concrete sumps and the 10,000-gallon above ground plastic holding tank at the Facility are exempt from Title 27.

41. The discharge of hide skinning wastewater authorized herein is exempt from the requirements of Title 27. The exemption, pursuant to section 20090(b), and set forth in more detail in later findings, is based on the following:

a. The Regional Board is issuing these waste discharge requirements.

b. These waste discharge requirements implement the Basin Plan and allow discharge only in accordance with the Basin Plan.

c. The wastewater does not need to be managed according to Title 22, California Code of Regulations, Division 4.5, Chapter 11, as a hazardous waste.

Wastewater Reuse

42. The Basin Plan recommends that, when practicable, wastewater reclamation and reuse replace an existing use or proposed use of fresh water. Polices include measures that make it more difficult for a Discharger to propose a wastewater discharge that does not recycle water when feasible. Project reports for new or expanded wastewater treatment facilities may be required by Regional Board staff to include plans on why wastewater reclamation or reuse is not feasible. A discharge is not considered reclamation or reuse when wastewater applications exceed reasonable agronomic rates or result in crop yields below normal. Blending of effluent with groundwater is allowed when it promotes reuse in water short areas, but not to avoid reasonable wastewater treatment.

43. California Department of Water Resources Bulletin 118-80 published in 1980 identified the Tulare Lake Sub Basin, including DAU 238, as one of eleven in California in a condition of critical overdraft. The bulletin states, "A basin is subject to critical conditions of overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social or economic impacts." The 2003 update to Bulletin 118 contains no revision to the statewide critical overdraft evaluation contained in the 1980 edition. Hence, the discharge occurs in a water short area.

44. The water necessary to meet crop demand on the Facility's 124-acres of cropland comes from five sources: hide skinning wastewater, rainfall, Lakeside Irrigation Water District (LIWD) canal water, and groundwater pumped from two onsite agricultural wells. The salt character of each of these sources is as follows:

Parameter / Constituents	Units	Chloride	Sodium	TDS
Hide Skinning Wastewater	mg/L	140[1]	180[1]	700[1,2]
Rainfall	mg/L	0.2	0.6	4.8
LIWD Water	mg/L	3.5	4.6	52.6
Ag Well No. 1	mg/L	33	85	300
Ag Well No. 3	mg/L	39	91	340

[1]Six Month Average discharge limit specified by this Order

[2]Fixed Dissolved Solids

45. The Discharger estimates that 775 acre-feet of water are applied to the 124-acres of cropland on an average annual basis to meet crop demand. The quantities of water applied by source are given in the table below. Lakeside Irrigation Water District supplies canal water on a limited basis in May, June and July. Because the quantity of canal water available is insufficient to meet crop demand, the Discharger depends on pumped groundwater. Without the reuse of hide skinning wastewater as irrigation water, the Discharger would pump an additional 28-acre feet of groundwater to meet crop demand.

Source	Volume[1]	% of Total
Hide Skinning Wastewater	28 acre-feet	3.6
Rainfall	89 acre-feet	11.4
LIWD Water	254 acre-feet	32.7
Ag Well No. 1	145 acre-feet	18.7
Ag Well No. 3	260 acre-feet	33.5
Total Applied	775 acre-feet	100

[1] On an average annual basis.

46. Reuse of the hide skinning wastewater slightly increases the salt content of the overall irrigation water. The approximate calculated annual average salt content of the irrigation water with and without hide skinning wastewater, as well as the calculated change in quality between the two irrigation waters, are given in the table below. The addition of hide skinning wastewater to the irrigation water increases the salt concentration in the irrigation water, but the increase is small enough to make irrigation water with hide skinning wastewater virtually indistinguishable from the irrigation water alone.

Parameter / Constituents	Units	Chloride	Sodium	FDS
Irrigation Water – No Hide Skinning Wastewater	mg/L	21	51	196
Irrigation Water – With Hide Skinning Wastewater at the Three-Month Average Limit	mg/L	25	54	210

47. Reuse of the hide skinning wastewater is anticipated to increase the nitrogen concentration of the irrigation water from nondetect to 5 mg/L and the BOD concentration from nondetect to 30 mg/L. Discharge of the 9 million gallons of reuse water to the 124-acre land application area results in average annual nitrogen and BOD loadings of 90 and 500 lbs/acre, respectively. Nitrogen loading of 90 lbs/acre/yr is insufficient to meet the nitrogen demand of any double cropping pattern (of row crops) the Discharger might implement. The BOD loading results in an average daily loading of

less than 2 lb/acre, which is what a typical farm receiving recycled water from a municipal wastewater plant would receive.

Antidegradation

48. State Board Resolution No. 68-16 (hereafter Resolution 68-16 or the "Antidegradation" Policy) requires that, in authorizing any discharge of waste, that the high quality waters of the State be maintained until it is demonstrated that any change in quality is consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality that exceeds water quality objectives.

49. Degradation of groundwater by constituents other than those specified in this Order (e.g., toxic chemicals), and by constituents that can be effectively removed by reasonable treatment is inconsistent with Resolution 68-16. Degradation of groundwater by waste constituents in the discharge after subjecting them to effective treatment and control may be determined consistent with Resolution 68-16 after consideration of reasonableness under the circumstances of the discharge. Some degradation of groundwater by the Discharger is consistent with Resolution 68-16 provided that the degradation is

    a. limited in magnitude and extent;

    b. restricted to waste constituents characteristic of the discharge not removable by best practicable treatment and control (BPTC) measures;

    c. minimized by fully implementing, regularly maintaining, and optimally operating BPTC measures;

    d. demonstrated to be consistent with water quality objectives prescribed in the Basin Plan; and

    e. justified to be of maximum benefit to the people of California.

50. The Discharger provides or will provide treatment and control measures (described in earlier findings) for the discharge of the hide skinning wastewater and the brine waste to the degree that they constitute BPTC. The following were considered in making the BPTC determination:

    a. new treatment lagoons will be constructed and lined with a composite liner;

    b. the new lagoons will be monitored for leakage using leakage detection technology to be approved by the Executive Officer (Task 1.a of the CAO described in Finding 13);

    c. a groundwater monitoring network will be installed around the new lagoons to verify the effectiveness of lagoon liners and leakage detection technology;

    d. brine waste is segregated, trucked offsite and discharged to a sewer with an ocean outfall;

e. nitrogen loading to land will not be in excess of agronomic uptake;

f. a low BOD loading rate of less than 1 lb/acre/day.

51. The minimal amount of degradation resulting from the discharge is reasonable and of maximum benefit to the people of California. The Discharger's business provides a critical service to the local farming industry by providing a hygienic method of disposing of dead animals. In addition, the discharger employs approximately 40 to 50 residents of Kings County.

California Environmental Quality Act (CEQA)

52. On 10 July 2000, the Kings County Planning Commission approved Conditional Use Permit (CUP) No. 00-05 and adopted a Negative Declaration in accordance with CEQA (Public Resources Code section 21000, et seq.) to upgrade the Facility by constructing a 13,000 square foot building. The Initial Study cites Baker Commodities' July 1996 RWD as the basis for analyzing the potential environmental impacts of the Facility's wastewater discharge.

53. The Hydrology and Water Quality checklist in the Initial Study finds potentially significant impacts from item "a) Violate any water quality standards or waste discharge requirements" and item "f) Otherwise substantially degrade water quality" and no significant impacts from the other items. The Negative Declaration requires that the Discharger submit an amended RWD 120 days prior to an increase in discharge volume to mitigate any impacts from the increase. The Discharger's February 2003 RWD proposes an average daily discharge of 0.023 mgd on a calendar day basis.

54. The Initial Study finds that brine waste is contained in storage tanks and periodically hauled to Baker Commodities' Los Angeles Facility for treatment and disposal based on the Discharger's July 1996 RWD. Regional Board staff found in its inspection subsequent to the approval of the Negative Declaration by Kings County that the Discharger failed to adequately segregate its brine waste. The Discharger has subsequently implemented segregation of brine waste and off-site disposal.

55. The project as approved by Kings County could still result in potentially significant impacts on groundwater quality from:

a. discharge of hide skinning wastewater to unlined lagoons.

b. discharge of waste constituents stored in lagoon sludge and soil beneath the unlined lagoons;

c. discharge of hide skinning wastewater to the land application area;

56. The following mitigation measures are necessary to mitigate or avoid the potentially significant impacts on groundwater quality, and are required herein and in the CAO.

a. segregation of hide salting brine from hide skinning wastewater (Discharge Prohibition A.3);

b. construction of lined lagoons to contain hide skinning wastewater to replace existing unlined lagoons (Task 1 of the CAO); and

c. closure of the unlined lagoons in accordance with Title 27 (Tasks 3 and 4 of the CAO).

General Findings

57. California Water Code section 13267 states, in part, that:

> In conducting an investigation specified in [§13267] 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 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.

58. The technical reports required by this Order and the monitoring and reporting required by this Order and the attached Monitoring and Reporting Program No. R5-2005-0177 are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

59. Domestic waste from the 40 to 50 full-time employees is discharged to a septic system regulated by the Kings County Department of Public Health.

60. Pursuant to California Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue discharge.

61. Task 3 of the separately issued CAO requires the Discharger to submit a technical report that evaluates alternatives for cleanup and abatement and proposes groundwater concentration limits in accordance with Title 27, section 20400(a). Once Task 3 is completed, this Order will be reopened and Groundwater Specifications herein will be updated pursuant to Title 27, section 20400(b).

62. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System general industrial storm water permit as the closest Standard Industrial Classification (SIC) code for the Facility is “2011 Hides, and skins, cured or uncured” which is within the meat packing category. No coverage is required because all processing of the animals is handled indoors and no industrial materials, equipment, or activities are exposed to stormwater.

63. 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.

64. The Discharger and interested agencies and persons were notified of the intent to prescribe waste discharge requirements for this discharge and provided an opportunity to submit written views and recommendations and to be heard in a public meeting.

65. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED, pursuant to California Water Code sections 13263 and 13267, that Baker Commodities, Inc., as well as its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted there under, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991. This attachment and its individual paragraphs are commonly referenced as Standard Provision(s).]

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.

2. Discharge of waste classified as 'hazardous,' as defined in Title 23, California Code of Regulations, section 2521, is prohibited.

3. Discharge of waste classified as 'designated,' as defined in California Water Code section 13173, except the discharge of brine waste to the Facility sumps and above ground tank identified in Finding 40, is prohibited.

4. Bypass or overflow of untreated or partially treated waste is prohibited, except as allowed in Provision E.2 of Standard Provisions.

5. Cross-connections between any potable water supply and piping containing reuse water are prohibited. As such, no physical connection shall exist between reuse water piping and any domestic water supply well, or between water piping and any irrigation well that does not have an air gap or reduced pressure principle device.

6. The discharger of domestic waste, other than to the existing on-site septic system, is prohibited.

B. Discharge Specifications

1. The monthly average daily discharge flow from the facility to the lagoons shall not exceed 0.035 mgd.

2. The discharge from treatment and storage lagoons shall not exceed the following limits:

Constituent/Concentration	Units	Six Month Average[1]	Daily Maximum[2]
Sodium	mg/L	180	270
Chloride	mg/L	140	210
Fixed Dissolved Solids (FDS)	mg/L	700	1050

[1] The "six month average" concentration is the arithmetic mean of measurements made during the current month and the five previous months.

[2] The "daily maximum" concentration is the highest measurement made on any single discrete sample or composite sample.

3. The 124-acre land application area shall be double cropped and irrigated at the reasonable hydraulic rate that- meets crop demand.

4. The discharge shall not have a pH less than 6.0 or greater than 9.0.

5. The Discharger shall preclude public access to the waste treatment and storage lagoons through methods such as fences and signs, or other acceptable means.

6. Objectionable odors originating at the lagoons or land application areas shall not be perceivable beyond the limits of the waste treatment areas at an intensity that creates or threatens to create nuisance conditions.

7. Lagoons shall be managed to prevent breeding of mosquitoes. In particular:

   a. An erosion control plan should assure that small 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 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 **April 1** to **June 30** bird nesting season.

8. Freeboard shall never be less than three feet in any lagoon (measured vertically) or lesser freeboard if certified in writing by a California registered civil engineer as adequate to prevent overtopping, overflows, or levee failures.

9. As a means of discerning compliance with Discharge Specification B.8, the Discharger shall install and maintain in each lagoon permanent markers with calibration indicating the water level at design capacity and available operational freeboard.

10. The Facility shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year frequency.

11. The three lined lagoons shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation during the winter.

C. Groundwater Specification

1. No waste constituent shall be released through the composite liner of the three lined lagoons in a concentration or mass that will cause groundwater to be degraded more than approved by the Regional Board pursuant to Title 27, section 20400(b).

D. Sludge and Grit Specifications

1. Sludge and grit shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27.

2. Sludge from the ponds shall be discharged off-site at an appropriately permitted facility. The Discharger shall submit a revised RWD for any proposed on-site discharge of sludge.

3. Any proposed changes in solids disposal practices shall be reported to the Executive Officer at least 30 days in advance of the change.

4. Grit application on site shall be managed and controlled in accordance with a written waste management plan (WMP) describing removal and disposal of liquid from the grit and BMPs for its land application. The WMP shall be subject to the written approval of the Executive Officer in accordance with Provision E.7.

E. Provisions

1. The Discharger shall comply with *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991, which are attached hereto and by reference a part of this Order.

2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. R5-2005-0177, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

3. The Discharger shall keep a copy of this Order, including its attachments and Standard Provisions, at the Facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

4. 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 Title 16, California Code of Regulations, sections 415 and 3065, 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.

5. The Discharger shall use best practicable treatment and control, including proper operation and maintenance, to comply with terms of this Order.

6. **Sampling and Analysis Plan**. By **30 January 2006**, the Discharger shall submit a Sampling and Analysis Plan. The purpose of the Sampling and Analysis Plan is to insure sample results collected under this Order's Monitoring and Reporting Program are representative of site conditions and the media being sampled. The Sampling and Analysis Plan should cover the following for each type of monitoring (e.g., influent, effluent, groundwater):
    a. Sampling objectives;
    b. Pre-sampling activity;
    c. Sample collection;
    d. Field measurements;
    e. Sample preservation and handling;
    f. Sample control (including chain of custody);
    g. Analytical procedures (field and laboratory methods);
    h. Field and laboratory QA/QC;
    i. Health and safety procedures pertaining to sampling.

    The Plan must also detail how the Discharger will provide for comprehensive training of all staff and supervisors with sample collection and analysis, and monitoring and reporting oversight responsibilities. Training shall include proper techniques and procedures for equipment calibration, sampling, analyses, chain-of-custody, and reporting (e.g., data entry) to ensure that complete, timely and accurate monitoring reports are submitted to the Regional Board. An Employee Training & Responsibility Log signed by the individuals responsible for implementation shall be included in the Sampling and Analysis Plan and contain the following:

Name;
a. Title;
b. Responsibility;
c. Phone Number;
d. Read Sampling and Analysis Plan (yes or no);
e. Trained on Duties (yes or no);
f. Signature, and
g. Date.

7. **Grit Characterization and Waste Management Plan**. **90 days** prior to the onsite discharge of grit the Discharger shall submit a waste characterization and waste management plan for approval by the Executive Officer. The waste characterization and waste management plan shall propose a method of removal and disposal of liquid from the grit prior to land application and demonstrate that waste constituents in the subject waste will be consumed as a benefit in soil and/or by crops that will be commercially harvested and that no other waste constituent will be discharged in a concentration that will degrade underlying groundwater. The Plan shall also describe BMPs to optimize the benefits from the land application of waste and reduce or eliminate the chance that the discharge will result in a waste constituent being released in a concentration that will degrade underlying groundwater.

8. 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 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 Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

9. 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 this office. 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 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. Transfer shall be approved or disapproved in writing by the Executive Officer.

10. The Regional Board will review this Order periodically and will revise requirements when necessary.

I, THOMAS R. PINKOS, 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 29 November 2005.

_____
THOMAS R. PINKOS, Executive Officer

Order Attachments:

Monitoring and Reporting Program
A. Vicinity Map
B. Facility Map
Information Sheet
Standard Provisions (1 March 1991 version)

SJK/DKP: 11/29/05

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2005-0177
FOR
BAKER COMMODITIES, INC.
HANFORD HIDE SKINNING AND HIDE CURING FACILITY
KINGS COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code section 13267. The Discharger shall submit within **30 days** following issuance of this MRP a flow schematic identifying sample locations and irrigation blocks specified in this MRP.

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 Board's staff, and a description of the revised stations shall be submitted to the Regional Board for the approval of the Executive Officer. Changes to sample locations shall be established with concurrence of Regional Board's staff, and a description of the revised stations shall be submitted to the Regional Board and, following approval of the Executive Officer, attached by the Discharger to its copy of this Order. 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, Provisions for Monitoring. 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 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 by the manufacturer at the recommended frequency; and
4. field calibration reports are submitted as described in the "Reporting" section of this MRP.

Each laboratory report shall clearly identify the following:

1. analytical method;
2. measured value;
3. units;
4. what constituent a value is reported as;
5. method detection limit (MDL);
6. reporting limit (RL) (i.e., a practical quantitation limit or PQL); and
7. 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.

Analytical procedures shall 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 (hereafter Western Region Methods).

INFLUENT FLOW MONITORING

Lagoon influent flow shall be measured before discharge into the lagoons and shall include at least the following:

Constituent	Units	Type of Sample	Sampling Frequency
Daily Flow	gallons	Continuous	Daily[1]
Total Monthly Flow	gallons	Computed	Monthly
Average Daily Flow	gal/day	Computed	Monthly

[1] Sample frequencies referenced in this program as "Daily" shall not include days on which there is no flow.

LAGOON MONITORING

Permanent markers (e.g., staff gages) shall be placed in all lagoons with calibrations indicating the water level at design capacity and available operational freeboard. The freeboard shall be monitored on all lagoons to the nearest tenth of a foot. Lagoon monitoring shall include at least the following for Lagoons No. 1 through No. 3:

Constituent	Units	Type of Sample	Sampling Frequency
Freeboard[1]	feet[2]	Observation	Weekly

[1] Freeboard shall be monitored to the nearest tenth of a foot.

DISCHARGE MONITORING

Discharge monitoring samples shall be collected from the influent to the unlined lagoons until the lined lagoons are constructed, and from the discharge point of the last lagoon thereafter. Discharge monitoring shall include at least the following:

Constituent	Units	Type of Sample	Sampling Frequency
PH	mg/L	Composite/Grab	Monthly
Electrical Conductivity	µmhos/cm	Composite/Grab	Monthly
Chloride	mg/L	Composite/Grab	Monthly
Sodium	mg/L	Composite/Grab	Monthly
Total Dissolved Solids (TDS)	mg/L	Composite/Grab	Monthly
Fixed Dissolved Solids (FDS)	mg/L	Composite/Grab	Monthly
BOD	mg/L	Composite/Grab	Quarterly[1]
Total Suspended Solids	mg/L	Composite/Grab	Quarterly[1]

Constituent	Units	Type of Sample	Sampling Frequency
Ammonia (as NH_3-N)	mg/L	Composite/Grab	Quarterly[1]
Nitrate (as N)	mg/L	Composite/Grab	Quarterly[1]
Total Kjeldahl Nitrogen (TKN)	mg/L	Composite/Grab	Quarterly[1]
Total Nitrogen (as N)	mg/L	Composite/Grab	Quarterly[1]
General Minerals[2]	mg/L	Composite/Grab	Annually[3]

[1] January, April, July, October.

[2] General Minerals as referred to in this program shall include the constituents in the General Minerals Analyte List presented below.

[3] Fourth Quarter

General Minerals[1, 2]

Alkalinity	Electrical Conductivity (EC)	Sodium
Bicarbonate	Hardness	Sulfate
Calcium	Magnesium	Total Dissolved Solids (TDS)
Carbonate	pH	
Chloride	Potassium	

1 General minerals analyte lists may vary depending on the laboratory, but shall include at least the above analytes and properties. Except for wastewater analyses, an anion/cation balance demonstrating that analyses are complete should accompany results.

2 Samples placed in preserved bottles shall first be filtered through a 0.45 µm nominal pore size filter. If field filtering is not feasible, samples shall be placed in unpreserved containers and submitted to the laboratory within 24 hours with a request (reflected on the chain-of-custody form) to immediately filter then preserve the sample.

GROUNDWATER MONITORING

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.

Samples shall be collected from approved monitoring wells and analyzed for the following constituents at the following frequency:

Constituent/Parameter	Units	Type of Sample	Frequency
Depth to groundwater	feet, to the nearest 0.01 foot	Measured	Semi-annually[1]
Groundwater elevation	feet above mean sea level, to the nearest 0.01 foot	Calculated	Semi-annually[1]
EC	µmhos/cm	Grab	Semi-annually[1]

Constituent/Parameter	Units	Type of Sample	Frequency
pH	pH Units	Grab	Semi-annually[1]
TDS	mg/L	Grab	Semi-annually[1]
Sodium	mg/L	Grab	Semi-annually[1]
Chloride	mg/L	Grab	Semi-annually[1]
Nitrate (as NO_3-N)	mg/L	Grab	Semi-annually[1]
General Minerals	mg/L	Grab	Annually[2]

[1] Second and Fourth Quarters
[2] Fourth Quarter

Quarterly groundwater monitoring reports shall contain the following:

1. A statement certifying when monitoring instruments and devices used in monitoring groundwater were last calibrated, including identification of who performed the calibration.
2. A summary of groundwater monitoring in a format (both printed and electronic) selected in concurrence with Regional Board staff, including
3. Contour maps showing the gradient and direction of groundwater flow under/around the waste management unit, based upon water level elevations taken prior to the collection of the water quality data. The contour map shall be constructed using groundwater surface elevations from the Facility's monitoring wells;
4. Graphs of the laboratory analytical data for samples taken from approved wells within at least the previous five calendar years (as data become available). Each such graph shall plot the concentration of one or more waste constituents specified below over time for a given monitoring well, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent, the scale for the background plots shall be the same as that used to plot downgradient data. Separate graphs shall show hydrologic equipotential gradients and equal concentration gradients for constituents below selected in concurrence with Regional Board staff.

Groundwater Constituents to Evaluate

Electrical Conductivity	TDS
Sodium	Nitrate (as N)
Cloride	

BRINE WASTE MONITORING

Brine waste shall be monitored monthly for the following:

1. Quantity generated
2. Quantity shipped
3. Destination of the shipped brine waste
4. Quantity currently in storage

Truck manifest records for the brine waste shall be kept at the Facility for a minimum of five years and made available to Regional Board staff upon request, so that Regional Board staff may confirm who receives the brine waste, in what quantities, and when.

WATER SUPPLY MONITORING

The supply water for the Facility shall be monitored as follows:

Constituent	Units	Measurement	Frequency
General Minerals	mg/L	Grab	Annually[1]
Nitrate	mg/L	Grab	Annually[1]

[1] Fourth Quarter

REPORTING

The Discharger shall report monitoring data and information as required in this MRP and as required in the Standard Provisions and Reporting Requirements. All reports submitted in response to this MRP shall comply with the signatory requirements in Standard Provisions, General Reporting Requirements B.3. Monitoring reports shall be submitted to the Regional Board quarterly and shall be submitted by **1st day of the second month following the quarter the samples were collected** (i.e., the 1st Quarter report is due by 1 March).

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 waste constituent or parameter 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.

By **1 February of each year**, the Discharger shall submit a written report to the Executive Officer containing the following:

1. The names and general responsibilities of all persons in charge of wastewater treatment and disposal.
2. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations.

3. An updated copy of the Employee Training & Responsibility Log signed by the individuals currently responsible for implementation of the Facility's Sampling and Analysis Plan that was submitted in accordance with Provision E.6.
4. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.3).
5. A statement regarding whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment facility as currently constructed and operated, and the dates when these documents were last reviewed for adequacy.
6. The results of an annual evaluation conducted pursuant to Standard Provision E.4 and a figure depicting monthly average discharge flow for the past five years.
7. 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.

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

_____
THOMAS R. PINKOS, Executive Officer

29 November 2005
(Date)

SJK/DKP: 11/29/05

INFORMATION SHEET

ORDER NO. R5-2005-0177
BAKER COMMODITIES, INC.
HANFORD SKINNING AND HIDE CURING FACILITY
KINGS COUNTY

INTRODUCTION

Baker Commodities, Inc. (hereafter Discharger) owns and operates a dead cow and calf skinning and hide curing facility (Facility) at 7480 Hanford Armona Road, approximately 2 miles west of the City of Hanford. The Facility recieves dead cows and calves from surrounding dairies. Cow and calf hides are separated from carcasses during skinning. Hides are sent to the Facility's curing room where salt is applied and carcasses are chopped up and loaded into trucks for transport to Baker Commodities' Kerman rendering plant.

The Discharger has discharged industrial wastes to land since at least 1964 when it acquired half ownership in the property and onsite business. The Discharger acquired the remaining portion of the business in 1972. In July 1996, after Regional Board staff found the Facility operating without WDRs, the Discharger submitted a Report of Waste Discharge (RWD). In September 2000, the Discharger submitted a revised RWD in support of an increase in discharge associated with a complete upgrade of the Facility (i.e., new buildings, equipment, etc.). Operations in the newly constructed Facility began in January 2002. In February 2003, the Discharger submitted a second revised RWD to construct three lined treatment lagoons.

To segregate the brine waste from hide skinning wastewater, the curing process is physically separated from the hide skinning room. Hide skinning wastewater is discharged to three unlined lagoons then used to supplement an irrigation supply. Brine waste is stored in a tank and periodically trucked to the Discharger's Los Angeles facility where it is discharged to the local sewer system connected to a publically owned treatment works with an ocean outfall.

ENFORCEMENT

The Discharger was not segregating waste brine until February 2001 and before then discharged it and hide skinning wastewater to three unlined lagoons. To determine the impacts to the lagoons, the Discharger, at the Regional Board's request, performed a soil and groundwater investigation. The results of the groundwater investigation indicate significant increases in EC, TDS, sodium, chloride, and nitrate concentrations downgradient of the lagoons. Soil borings from the ground surface to the top of the water table confirm the transport of waste constituents from the unlined lagoons into groundwater. A time schedule is necessary to address mitigation of impacts from past discharges, construction of the new ponds, and closure of existing unlined ponds. This is addressed in a separate enforcement order.

DISCHARGE PROHIBITIONS

Discharge Prohibition A.3 prohibits the discharge of waste classified as designated, as defined by CWC section 13173. As the proposed Order finds that the Discharger's brine waste and brine waste combined

with hide skinning wastewater is "designated" (i.e., Finding 38), the discharge of the brine waste to other than the Facility sumps and above ground tank is prohibited.

DISCHARGE SPECIFICATIONS

Discharge Specification B.1 limits the average daily discharge of hide skinning wastewater to 0.027 mgd. This limit is based upon the RWD technical demonstration that the Facility will have adequate treatment, storage and reuse capabilities to handle this quantity of wastewater once the three lined lagoons are constructed.

The proposed Order prescribes discharge limitations for sodium, chloride and fixed dissolved solids to insure that BMPs for salinity control continue to be implemented and groundwater is adequately protected. Self-monitoring data that exceeds the six-month average and daily maximum discharge limits for sodium, chloride and fixed dissolved solids is indicative of process wastewater that contains waste brine or other wastes not representative of hide skinning wastewater.

The proposed discharge limitations were calculated using self-monitoring data obtained from lagoon influent data. Typically, effluent from pond systems more accurately characterizes a discharge than a composite of influent. This higher level of accuracy is attributable to the fact that effluent from a pond system generally represents a complete mix of the discharge over time. However, in this particular case, the Discharger's self monitoring data shows that sodium, chloride and TDS levels increase between influent and effluent, over what evaporation losses would cause, suggesting that sodium, chloride and TDS from brine-contaminated soil and sludge are reentering the wastewater held in the lagoons. These observed salinity increases make it impractical to establish reasonable statistically derived discharge limits based on the Discharger's current self-monitoring effluent data.

Six-month average discharge limits were calculated to be 180 mg/L for sodium, 140 mg/L for chloride and 700 mg/L for fixed dissolved solids using a one-sided confidence interval at the 99% confidence level. A six-month average concentration exceeding this limit would indicate hide skinning wastewater not characteristic of the hide skinning wastewater permitted by this proposed Order. The six-month average limits were calculated statistically from treatment lagoon sodium, chloride and fixed dissolved solids influent data collected between January 2002 and August 2005. During this period the discharge was comprised entirely of hide skinning wastewater as the Discharger had: 1) ceased discharging brine waste, 2) began operating its newly constructed Facility, and 3) began full implementation of BMPs.

The daily maximum concentration discharge limits were calculated as 150% of the six-month average concentration limits and are as follows: 270 mg/L for sodium, 210 mg/L for chloride and 1050 mg/L for fixed dissolved solids. Board staff simulated different maximums against the existing effluent data set collected between January 2002 and August 2005. Professional judgment was used in the simulation process by setting the daily maximum limit to take into account natural variation in data, which led to increasing the maximum limit, and the regulatory demand of decreasing the maximum limit to minimize potential degradation.

An exception to the Basin Plan EC limit is reasonable as a disproportionate increase in the EC of the Discharger's hide skinning wastewater is attributable to organic dissolved solids; the Discharger is

implementing Best Management Practices; and the discharge of hide skinning wastewater as proposed by the Discharger will not result in the loss of beneficial uses of groundwater. A mass balance was used to evaluate the impact from average sodium, chloride, and FDS at the six-month average limits in hide skinning wastewater on the quality of the irrigation water applied to 124-acres of double-cropped farmland. The table below shows the calculated difference in the quality of the irrigation water with and without the reuse of hide skinning wastewater.

Parameter / Constituents	Units	Chloride	Sodium	FDS
Irrigation Water – No Hide Skinning Wastewater	mg/L	21	51	196
Irrigation Water – With Hide Skinning Wastewater	mg/L	25	54	210

The proposed Order contains no groundwater limits or groundwater monitoring of the 124-acre land application area. Results of mass balance calculations in the table above indicate that blending of irrigation water with hide skinning wastewater does not result in reasonable potential for the combined discharge to exceed water quality criteria or objectives. Further, it shows that the quality of the irrigation water mixed with the hide skinning wastewater is virtually indistinguishable from the irrigation water alone and thus any groundwater degradation from the discharge would be virtually identical to that caused by surrounding farming practices (i.e., land use), which is reflected to some degree in background water quality.

Specification B.3 requires that the Discharger's 124-acre land application area be double cropped and irrigated at a sufficient rate to meet crop demand. This specification is intended to insure that the hydraulic loading assumption used in the above mass balance is maintained and that the Discharger is using the hide skinning wastewater as irrigation reuse water. To crop on a year-round basis (i.e., to double crop), the Discharger will have to use, along with hide skinning wastewater, canal water from the LIWD, and groundwater from onsite wells: Ag Well No. 1 and Ag Well No. 3.

GROUNDWATER SPECIFICATIONS

Task 3 of the separately issued enforcement order requires the Discharger to submit a technical report that evaluates alternatives for cleanup and abatement and proposes groundwater concentration limits. Pursuant to Title 27, section 20400(b), the Regional Board will review the proposed concentration limits and approve, modify, or disapprove each proposed limit. Upon final approval, the proposed Order will be reopened and concentration limits specified in the Groundwater Specifications (Finding 61).

Specification C.1 states that releases of waste constituents from the composite liner of the three lined lagoons shall not cause groundwater degradation more than approved by the Regional Board pursuant to Title 27, section 20400(b). Compliance with Specification C.1 can be achieved by insuring that the new lined lagoons are designed, constructed, operated, and maintained in a manner that minimizes leakage to the extent that incidental leakage that does occur will not be of sufficient magnitude to be detectable in groundwater.

SLUDGE AND GRIT SPECIFICATIONS

Title 27, California Code of Regulations (CCR), Division 2, Subdivision 1, Section 20005, et seq., (hereafter Title 27) contains regulations for the prevention of pollution and unacceptable degradation of water quality as the result of discharges to land. Sludge and Grit Specification D.1 requires that sludge and grit be disposed of in a manner approved by the Executive Officer and consistent with Title 27, whether or not disposal takes place at the Facility or offsite. Specification D.2 requires that sludge from the lagoons be disposed of off site, at an appropriately permitted facility. Specification D.3 requires the Discharger to notify the Executive Officer at least 30 days in advance of any change in the disposal of sludge and grit to insure that the Executive Officer has adequate time to evaluate the change.

Section 20090(f) of Title 27 allows the Regional Board when issuing waste discharge requirements to exempt discharges to land from Title 27 when they consist only of nonhazardous, decomposable waste constituents applied as a soil amendment pursuant to best management practices. This requires that the waste constituents utilized by plants not be applied at rates in excess of plant needs such that they leach below the root zone, that decomposable constituents enrich and be bound by soils, and that no constituents cause groundwater degradation.

Prohibition A.2 and Grit Specifications D.3 and D.4 implement the exemption allowed by Section 20090(f). Prohibition A.2 prohibits the discharge of waste constituents in hazardous concentrations. Specification D.3 requires that the discharge be managed and controlled in accordance with written BMPs to preclude over-application. Specification D.4 requires that waste constituents in the discharge be utilized by the soil and benefit crops grown from the soil and not contain waste constituents or other waste constituent in concentration that will degrade groundwater.

PROVISIONS

The written site-specific Sampling and Analysis Plan required by Provision E.6 is needed to establish consistent sampling procedures to be used to comply with this Order's Monitoring and Reporting Program (MRP). The plan will allow review of proposed monitoring procedures and help insure that sample results are representative of site conditions and the media being sampled. Further, it will formally establish who is responsible for what monitoring and reporting functions using the Training and Responsibility log that is required under this Provision.

Provision E.7 of the proposed Order requires the submission of a waste characterization and a waste management plan prior to the discharge of either sludge or grit onsite. To protect groundwater from degradation, the Discharger must provide a method of removing liquids from the grit prior to land application. The waste management plan must demonstrate that the waste constituents in the subject waste once land applied will be consumed as a benefit in soil or by crops and that no waste constituent will be discharged in a concentration that could degrade underlying groundwater. It also requires that the Discharger propose BMPs to limit potential impacts to water quality. In the context of this Order, BMPs refer to the set of methods, measures, and practices employed to limit potential impacts to water quality. BMPs are typically site specific and change with time as new standards and information from industry-specific studies and practices become available.

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. Section 13268 of the CWC authorizes assessment of civil administrative liability where appropriate.

This Order prescribes monitoring of lagoon influent, lagoon, discharge monitoring, brine waste monitoring, and water supply monitoring. Influent monitoring is to determine the quantity of hide skinning wastewater discharged to the lagoons on a daily basis. Lagoon monitoring measures freeboard to track whether the lagoons have sufficient freeboard. Monitoring of the mineral and organic character of the discharge is necessary on an ongoing basis to determine: 1) the basic water quality characteristics of the discharge, 2) if the Discharger is complying with discharge limits for sodium, chloride, and FDS; and 3) if there is a material change in the discharge. Brine waste monitoring is necessary to confirm that the brine waste is being properly disposed of as a designated waste.

The proposed Order requires monitoring of groundwater using monitoring wells to be installed around the new lined lagoons. The purpose of these monitoring wells is to verify that the newly constructed lined lagoons do not leak, even if other safeguards fail. The proposed Order also requires monitoring of the Facility's supply well water for mineral character of the supply water. However, the proposed Order has no groundwater limits and requires no groundwater monitoring of the 124-acre land application area. Continued monitoring of the Facility's existing six well network designed to determine the impact on first encountered groundwater of hide skinning wastewater and brine waste leaching into groundwater from the three unlined lagoons is proposed as part of a separate enforcement order.

CEQA

The Kings County Planning Commission approved a Negative Declaration and Conditional Use Permit (CUP) No. 00-05 on 10 July 2000 to upgrade the Discharger's skinning and hide curing facility by constructing a 13,000 square foot building. The six item Hydrology and Water Quality checklist in the Initial Study finds potentially significant impacts from item "a) Violate any water quality standards or waste discharge requirements" and item "f) Otherwise substantially degrade water quality" and no significant impacts from the other items. The checklist summary acknowledges that the proposed upgrade would result in an increase in flow. Rather than proposing direct mitigation measures, Condition 35.A of Kings County Planning Commission Resolution No. 00-14 approving the Negative Declaration and CUP requires that the Discharger submit an amended RWD 120 days prior to any change in the volume of its discharge to the Regional Board. The Planning Commission thus relied on the Regional Board to mitigate the two identified potentially significant impacts. The proposed Order, and associated enforcement, are sufficient to insure that the two potentially significant impacts are mitigated.

SJK/DKP: 11/29/05