

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER R5-2015-XXXX
FOR
PARAMOUNT FARMS INTERNATIONAL LLC
KING PISTACHIO PROCESSING PLANT AND
WILLIAM J. MOUREN FARMING, INC.
KERN COUNTY

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

Background

1. In 2002, Paramount Farms, Inc, purchased the King Pistachio Processing Plant (King Plant) at 10429 King Road in Lost Hills from Homa Ranch. The discharge was regulated under Waste Discharge Requirements (WDRs) Order 96-121, that authorized a daily maximum flow up to 1.0 million gallons per day (mgd) and a monthly average flow up to 0.87 mgd of pistachio wastewater to 130 acres of land application area (LAA). Paramount Farms, Inc., did not purchase the 130-acre LAA.
2. On 10 September 2001, the Central Valley Water Board adopted Revised Monitoring and Reporting Program (MRP) 96-121 to add constituents to the effluent monitoring, include water supply monitoring, solid waste monitoring, land application monitoring, pond monitoring, and soil monitoring.
3. On 26 April 2002, the Central Valley Water Board adopted Order R5-2002-0060 for the ownership and name change of the King Plant from Homa Ranch to Paramount Farms, Inc. Paramount Farms, Inc., subsequently changed its name to Paramount Farms International LLC (hereafter Paramount or Discharger).
4. On 31 October 2014, Insight Environmental Consultants, Inc., (Insight) submitted a Report of Waste Discharge (RWD) on behalf of Paramount for the discharge of comingled pistachio hulling and process wastewater (clean-in-place, filter backwash and plant washdown, boiler blowdown, water softener regeneration wastewater, cooling tower blowdown, and condensates from the pasteurizer) to 640 acres owned by William J. Mouren Farming, Inc. (Mouren Farming) during the harvesting season, and the discharge of only process wastewater to approximately 27 acres of farmland owned by Paramount during the non-harvesting season. Paramount also proposed to construct two lined evaporation ponds for the storage of brine wastewater generated from its new roasting operation. Subsequently, the Discharger reported it was going to install a desalination plant on site or similar treatment. Residue/salts would be shipped off-site for beneficial reuse as a feed supplement and the desalinated water would be discharged with the process wastewater. The Discharger now proposes to continue hauling the brine wastewater off-site to a permitted facility. Insight submitted additional information on 13 and 17 March 2015.

5. The King Plant occupies part of Assessor's Parcel Number (APN) 043-550-04. The 640-acre LAA where wastewater is applied during the harvest season occupies APN 043-210-17 and APN 043-210-18. The new 27-acre LAA where wastewater is applied during the non-harvest season occupies part of APN 043-550-04. The King Plant and the LAA's are shown on Attachment A, which is incorporated by reference and considered a part of this Order.
6. As described in Finding 4, the 640 acre LAA is owned by Mouren Farming, Inc. Discharge to this LAA occurs under a short term agreement that is renewed annually and may be terminated with two years written notice to Paramount Farms International LLC. Paramount manages discharge application operations, and is primarily responsible for compliance with the terms of this Order. However, Mouren Farming accepts the wastewater and is also named as Discharger on this Order.
7. WDRs Order 96-121 and Revised MRP 96-121 need to be updated to ensure that the discharge is consistent with Central Valley Water Board plans and policies and prescribe requirements that reflect changes the Discharger has made to its Plant. WDRs Order 96-121 will be rescinded and replaced with this Order.

Existing Plant and Discharge

8. The King Plant operates year round with the harvest season from August to September, lasting approximately 30 to 45 days. During the harvest season, the King Plant operates 24 hours per day and 7 days a week. During the non-harvest season, the King Plant operates 24 hours per day and 5 to 7 days a week.
9. During the harvest season, approximately 150 to 200 million pounds of pistachios are processed. Pistachios are transported to the King Plant and pre-cleaned. Leaves, twigs, and other debris are removed and transferred to a temporary green waste area onsite where the material is ground and shipped offsite to a broker for use as compost or feedstock material.
10. Immediately after pre-cleaning, pistachios are hulled. During the hulling process, water is introduced to facilitate the removal of the hulls and to clean the pistachios. Wastewater generated from this process contains pistachio hulls and some shells and skins. The wastewater is collected in a concrete pit and then pumped through parabolic screens (hydrasieves) to separate the solids from water. The screened solids are shipped offsite to local farms for use as a cattle feed. In 2002, the Discharger constructed two holding ponds (north and south ponds) with a total capacity of 55 million gallons. In 2012, the Discharger divided the north pond into five smaller holding ponds (Ponds 1 through 5). The south pond is now used for emergency storage. All six holding ponds are hydraulically connected. When the hydrasieves are operating, hulling wastewater is discharged to holding Pond 1 and then pumped to a surge pond prior to discharge to the 640-acre LAA via a 12-inch pipeline. During emergencies when the hydrasieve is down, hulling wastewater is bypassed to holding Pond 5 for settling of solids where wastewater gravity flows to holding Pond 1. A process flow schematic is shown in Attachment B, which is incorporated by reference and considered a part of this Order.

11. The Discharger places temporary sprinklers on 320 acres of the 640-acre LAA one year and alternates to the other 320 acres the following year. The irrigation system consists of main lines and sets of laterals, which are all operated manually. According to Paramount, there is no systematic method of applying wastewater; it is applied on as needed basis. Irrigation primarily supports native grasses used for animal grazing.
12. Based on Discharger's self-monitoring reports (SMRs) from 2006 through 2013, the quality of hulling wastewater is summarized in Table 1.

Table 1. Hulling Wastewater Data

Year	Monthly Ave Flow (mgd)	BOD ¹ (mg/L)	TDS ² (mg/L)	FDS ³ (mg/L)	Cl ⁴ (mg/L)	Na ⁵ (mg/L)	Nitrate as Nitrogen (mg/L)	TKN ⁶ (mg/L)	K ⁷ (mg/L)
2006	0.78	4,100	---	---	---	---	---	180	---
2007	1.20	3,488	---	---	---	---	---	172	---
2008	1.13	4,167	---	---	---	---	---	89	---
2009	2.66	4,766	4,510	---	140	69	---	149	910
2010	2.92	4,425	3,800	1,500	200	86	<0.5	130	810
2011	1.39	3,167	3,450	1,650	930	76	<0.5	98	785
2012	2.35	5,675	5,100	1,900	200	13	0.47	280	620
2013	2.16	9,667	6,900	2,000	6,900 ⁸	3,600 ⁸	0.42	125	605
Average ⁹	1.78	4,255	4,215	1,683	368	61	0.47	157	781
Average ¹⁰	1.82	4,932	4,752	1,763	1,674	769	0.44	153	746

- 1 Biochemical Oxygen Demand (BOD)
- 2 Total Dissolved Solids (TDS)
- 3 Fixed Dissolved Solids (FDS)
- 4 Chloride (Cl)
- 5 Sodium (Na)
- 6 Total Kjeldahl Nitrogen (TKN)
- 7 Potassium (K)
- 8 Data from one sampling event. May be an anomaly.
- 9 Average based on 2006 through 2012 data.
- 10 Average based on 2006 through 2013 data.

13. Based on annual data from 2006 to 2012, approximately 60 percent of the TDS is a result of organic compounds based on an average FDS of 1,683 mg/L and an average TDS of 4,215 mg/L.

Proposed Plant and Discharge

14. Waste streams at the King Plant are generated from the hulling operation (hulling wastewater), and various processes including equipment sanitation, clean-in-place, filter backwash, plant washdown, boiler blowdown, water softener regeneration wastewater, cooling tower blowdown, and condensates from the pasteurizer (process wastewater), and a new seasoning and roasting operation (roasting wastewater).

15. The proposed flow rates for the hulling wastewater, roasting wastewater, and process wastewater, as described in the RWD, are tabulated below.

Table 2. Proposed Wastewater Flow Rates

	Hulling Wastewater	Roasting Wastewater	Process Wastewater
Monthly Average (mgd)	4.0	---	0.05
Daily Maximum (mgd)	5.5	0.007	0.35
Total Annual (mgy)	110	---	15

16. Process wastewater generated at the King Plant is comingled with hulling wastewater in the holding ponds and then discharged to the 640-acre LAA during the harvest season. The remainder of the year this waste stream will be discharged to the holding Pond 5 and then to 27 acres of farmland owned by the Discharger. Table 3. shows the quality of process wastewaters generated at the King Plant.

Table 3. Quality of Process Wastewater

		Blowdown	Boiler Blowdown	Filter Backwash	Clean-in-Place	Roaster 9 Drain
Constituent/Parameter	Units	9/22/2014	9/24/2014	9/24/2014	10/1/2014	11/20/2014
BOD	mg/L	<4.1	11	<2.0	780	---
EC ¹	umhos/cm	1,730	2,820	911	970	879
TDS	mg/L	1,100	1,700	550	650	840
FDS	mg/L	880	1,500	450	420	470
Calcium	mg/L	46	1	25	21	26
Magnesium	mg/L	31	1.3	17	18	17
Sodium	mg/L	260	580	130	140	120
Potassium	mg/L	7.3	2.1	3.8	21	5.9
Bicarbonate	mg/L	180	<10	100	99	110
Carbonate	mg/L	5.8	120	4.6	<2.5	<2.5
Chloride	mg/L	320	480	170	180	150
Nitrate as Nitrate	mg/L	4.6	<2.2	13	<0.44	0.98
TKN	mg/L	1.2	0.47	1.6	34	6
Hardness CaCO ₃	mg/L	240	8	130	130	---
pH	pH Units	8.43	11.1	8.61	7.12	7.82

¹ Electrical Conductivity (EC)

17. In 2012, the Discharger added a new seasoning and roasting operation to the King Plant. This new operation consists of roasting in-shell pistachios in Building 3 and pistachio kernels in Building 9. Wastewater from this process is generated year-round from the various steps of the seasoning, mixing, and application processes, including equipment sanitation after each

change of seasoning, with a minimum of one sanitation procedure per operating day. This wastewater is segregated from the hulling wastewater and all other process wastewaters and is collected and stored in two 25,000 gallon holding tanks for temporary storage before being shipped off-site, reportedly to Waste Management Inc., in Kettleman Hills. The quality of the brine wastewater from the new roasting operation is shown in Table 4 below.

Table 4. Quality of Brine Wastewater from Roasting Operation

Constituent/Parameter	Units	Roaster 9	Roaster 3			Average
		4/30/2014	4/30/2014	5/7/2014	10/7/2014	
Calcium	mg/L	19	330	530	340	305
Magnesium	mg/L	14	100	95	150	90
Sodium	mg/L	5,500	60,000	76,000	74,000	53,875
Potassium	mg/L	240	1,000	1,300	1,900	1,110
Bicarbonate	mg/L	120	510	<10	480	370
Carbonate	mg/L	<5.0	<5.0	<2.8	<5.0	---
Chloride	mg/L	9,100	110,000	140,000	110,000	92,275
Hardness as CaCO ₃	mg/L	110	1,200	1,700	1,500	1,128
pH	pH Units	6.10	6.11	2.88	5.41	5.13
EC	umhos/cm	24,600	>100,000	>100,000	>100,000	---
TDS	mg/L	17,000	210,000	340,000	210,000	194,250
FDS	mg/L	---	---	---	9,5000	95,000
Aluminum	mg/L	<0.50	7.0	12.0	---	---
Manganese	mg/L	0.28	3.9	1.0	---	1.73
Iron	mg/L	1.1	---	8.0	---	5
Copper	mg/L	0.19	---	---	---	0.19

18. Chemicals used at the King Plant include: sodium bromide (1,100 gal/yr), sodium sulfite (275 gal/yr), water-soluble polymers/phosphates (250 gal/yr), and water-soluble co-polymer (1,020 gal/yr).
19. During the harvesting season, storm water generated on-site drains to the wastewater lift station where it is comingled with hulling wastewater and discharged to holding Ponds 1 through 5. During major storm events, the lift station fills where it reaches the overflow pipe, and gravity drains to the storm water pond in the northwest corner of the King Plant. If the Kings Plant loses power, no additional hulling wastewater will be generated; however, residual hulling wastewater in the lift station will be comingled with storm water and drained to the storm water pond.
20. Domestic wastewater is discharged separately to an on-site septic tank/leachfield regulated by Kern County.

Land Application Area Practices

21. Excessive application of food processing wastewater to land can create objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater by overloading the soil profile and causing waste constituents (i.e., organic carbon, nitrates, other salts, and metals) to percolate below the root zone. Irrigation with high-strength wastewater can result in high BOD loading on the day of application, which can deplete oxygen in the soil and lead to anoxic conditions. When insufficient oxygen is present below the ground surface, anaerobic decay of organic matter can create reducing conditions that convert metals naturally present in the soil as relatively insoluble (oxidized) forms to more soluble (reduced) forms. This condition can be exacerbated by acidic soils and/or acidic wastewater. If reducing conditions do not reverse as the percolate travels through the vadose zone, these dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. Excessive organic loading can also increase groundwater bicarbonate concentrations, which cause increases in groundwater EC and total dissolved solids.
22. It is reasonable to expect some oxidation of BOD at the ground surface, within the evapotranspiration zone, and below the root zone within the vadose (unsaturated) zone. The maximum BOD loading rate that can be applied to land without creating nuisance conditions or causing unreasonable degradation of groundwater can vary significantly depending on soil conditions and operation of the land application system.
23. Pollution Abatement in the Fruit and Vegetable Industry, published by the United States Environmental Protection Agency, cites BOD loading rates associated with crop irrigation in the range of 36 to 100 lbs/acre/day to prevent nuisance, but indicates that loading rates can be even higher under certain conditions. The studies that support this report did not evaluate actual or potential groundwater degradation associated with those loading rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have are not readily adapted to varying soil, groundwater, and climate conditions that are prevalent throughout the region.
24. The California League of Food Processors *Manual of Good Practice for Land Application for Food Processing/Rinse Water* proposes risk categories associated with particular BOD loading rate ranges as follows:
 - a. Risk Category 1: (less than 50 lbs/ac/day; depth to groundwater greater than 5 feet) indistinguishable from good farming operations with good distribution important.
 - b. Risk Category 2: (less than 100 lbs/ac/day; depth to groundwater greater than 5 feet) minimal risk of unreasonable groundwater degradation with good distribution more important.
 - c. Risk Category 3: (greater than 100 lbs/ac/day; depth to groundwater greater than 2 feet) requires detailed planning and good operation with good distribution very important to prevent unreasonable degradation, as well as use of oxygen transfer design equations that consider site-specific application cycles and soil properties and special monitoring.

The *Manual of Good Practice* recommends allowing a 50 percent increase in the BOD loading rates in cases where sprinkler irrigation is used, but recommends that additional safety factors be used for sites with heavy and/or compacted soils. The Manual of Good Practice also states that the use of surface irrigation (boarder check method) makes uniform application difficult, especially for coarse textured soils.

25. Although it has not been subject to a scientific peer review process, the Manual of Good Practice provides science-based guidance for BOD loading rates that, if fully implemented, may be considered management practices to prevent groundwater degradation due to reduced metals.
26. The 640-acre LAA is surface irrigated via sprinklers. Each year the Discharger installs a temporary sprinkler system that is operated manually on 320-acres of the LAA. On any given day during the processing season, multiple lateral lines are open at the same time. The number of lateral lines open depends on the need to dispose of wastewater. There is no set rotation pattern and no set rest period between applications. Actual distribution of wastewater varies. In addition, the 640-acre LAA is not intensively managed, irrigated throughout the year, or harvested multiple times. According to the Discharger, the new 27-acre LAA will either be irrigated via sprinklers or flood irrigated depending on the final choice of crop planted (i.e., safflower and/or wheat). This Order requires the Discharger to submit a Wastewater Irrigation Management Plan that will detail proposed methods to evenly apply wastewater to the 640-acre and new 27-acre LAA's. This Order also requires the Discharger to submit a Nutrient Management Plan that describes the amount of nutrient crops grown in the LAA's will take up based on site specific information and that demonstrates how much may be applied to the LAA's without violating the terms of this Order.
27. The calculated average BOD loading rate to the 320-acre LAA during the harvest season, based on a proposed monthly average flow of 4.05 mgd, and a flow weighted BOD concentration of 4,880 mg/L (comingled hulling and process wastewater quality) is 515 lbs/acre/day. The average BOD loading rate to the new 27-acre LAA during the non-harvest season, based on a proposed monthly average flow of 0.05 mgd, and BOD concentration of 780 mg/L is 12 lbs/acre/day. The 13 March 2015 information submitted by Insight proposes to use the entire 640 acres for effluent disposal. Two 160 acre parcels would receive effluent for three days and then be rested for three days. The remaining two parcels would receive effluent for two days and then be rested for four days. The maximum cycle average BOD loading rate would be about 260 lbs/acre/day.
28. The total nitrogen loading rate to 640 acres of LAA, based on a proposed annual flow of 110 mgd and a flow weighted total nitrogen concentration of 155 mg/L (comingled hulling and process wastewater quality), is 222 lbs/acre/year. Nitrogen uptake rates for native grasses/pastures have not been provided. The nitrogen loading rate to the this LAA is presumed to be higher than the nitrogen uptake rate for native grasses, which should be on the low end of the nitrogen uptake rates for grasses like Timothy, Sorghum-Sudan, and Vetch, that generally range from 150 to 390 lbs/acre/year. The total nitrogen loading rate to the new 27-acre LAA based on a proposed annual flow of 15 mgd and total nitrogen concentration of 34 mg/L is 158 lbs/acre/year. This is less than the annual nitrogen uptake for safflower or

wheat of 200 lbs/acre/year and 175 lbs/acre/year, respectively, according to the *Western Fertilizer Handbook*, Eighth Edition.

Source Water

29. The King Plant receives supply water from Lost Hills Water District. The Lost Hills Water District gets water from the California Aqueduct. The quality of supply water based on the annual average is tabulated below.

Table 5. Source Water Quality

Year	EC (umhos/cm)	TDS (mg/L)	Na (mg/L)	Cl (mg/L)	Nitrate as Nitrogen (mg/L)	pH (mg/L)
2011	221	124	26	26	0.60	7.7
2012	519	292	40	86	0.63	8.0
2013	562	311	24	101	0.05	8.1

Site-Specific Conditions

30. Land uses in the vicinity of the King Plant and LAA's are primarily agricultural. Crops grown in the area includes pistachios, almonds, and figs, according to the Kern County 2006 and Kings County 2003 Land Use Maps published by the Department of Water Resources.
31. The King Plant and LAA's are in an arid climate characterized by dry summers and mild winters. The rainy season generally extends from November through April. Average annual pan evaporation is about 108 inches according to data in the *National Oceanic and Atmospheric Administration Technical Report NWS 34, Mean Monthly, Seasonal, and Annual Pan Evaporation for the United States*, published by the U.S. Department of Commerce National Oceanic and Atmospheric Administration. The average annual precipitation is about 7 inches according to data obtained from the Western Regional Climate Center.
32. Soils in the 640-acre LAA are predominately Kimberlina Sandy Loam. Soils near the King Plant and the new 27-acre LAA are Kimberlina Fine Sandy Loam and Milham Sandy Loam, according to the Web Soil Survey published by the United States Department of Agriculture, Natural Resources Conservation Service. Kimberlina Sandy Loam has a land capacity classification of 2e. Soils with "Class 2" have moderate limitations that restrict the choice of plants or require moderate conservation practices. The subclass "e" shows that the main problem is the hazard of erosion unless close-growing plant cover is maintained. The susceptibility to erosion and past erosion damage are the major soil-related factors affecting the soils that are assign this subclass. Kimberlina Fine Sandy Loam and Milham Sandy Loam both have a land capacity classification of 1. Soils with "Class 1" have slight limitations that restrict their use.

33. According to the September 2008 Federal Emergency Management Agency maps (Map Numbers 06029C0075E and 06029C0100E), a small portion of the lower south half of the 640-acre LAA is in Zone A. In Zone A, there is a one percent annual chance of flooding (typically called the 100-year floodplain). No depth or base flood elevations are shown in the FEMA maps for this site. The King Plant and the new 27-acre LAA are all in Zone X. This area is outside the 500-year floodplain.

Basin Plan, Beneficial Uses, and Water Quality Objectives

34. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004* (hereafter "Basin Plan") designates beneficial uses, establishes narrative and numerical 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. In accordance with Water Code section 13263 (a), these waste discharge requirements implement the Basin Plan.
35. The King Plant, the 640-acre LAA, and the new 27-acre LAA are all in Detailed Analysis Unit (DAU) No. 247, which is not specifically identified in Table II-2 of the Basin Plan. Where a DAU is not identified, beneficial uses are described in Table II-2 under the category All Other Ground Waters. All Other Ground Waters only identifies municipal and domestic supply (MUN) as a designated beneficial use for groundwater at the King Plant site.
36. The King Plant, the 640-acre LAA, and the new 27-acre LAA are in the Kettleman Hydrologic Area No. 558.50 of the South Valley Floor Hydrologic Unit, as depicted on hydrologic maps prepared by State Water Resources Control Board in August 1986. As indicated in the Basin Plan, the beneficial uses of Valley Floor Waters are: agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), water contact recreation (REC-1), non-water contact recreation (REC-2), warm freshwater habitat (WARM), wildlife habitat (WILD), and groundwater recharge (GWR).
37. The Basin Plan includes narrative water quality objectives for chemical constituents that, at a minimum, require water designated as domestic or municipal supply to meet the Maximum Contaminant Levels (MCLs) specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley 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.
38. The Basin Plan establishes narrative water quality objectives for chemical constituents, taste 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.

39. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt a numerical limitation in order to implement the narrative objective.
40. 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 there is a long-term solution to the salt imbalance. Until then, 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 in the discharge shall not exceed the EC of the source water plus 500 umhos/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 to good quality groundwater, the Basin Plan states that they shall not exceed an EC of 1,000 umhos/cm, a chloride of 175 mg/L, or a boron content of 1.0 mg/L. The Basin Plan generally applies these limits to industrial discharges to land.
41. The Basin Plan authorizes an exemption to the incremental EC increase limit in Finding 40.a. 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 must be based on demonstration of best available technology and best management practices that control inorganic dissolved solids to the maximum extent feasible.

Groundwater Considerations

42. The King Plant and LAA's are on the west side of the valley floor within the Lost Hills Northwest oil field. The LAA is up-slope to the west of the King Plant on a portion of the South Dome of the Kettleman Hills Anticline. Surface and near surface sediments are comprised of approximately 1,800 feet of exposed silt stones, sandstones, and conglomerates, which were deposited in a shallow sea or marine environment. Potential oil-bearing formations extend to, and are exposed at, the ground surface. A portion of an oil well log for a well drilled in 1926 near the present day holding ponds is replicated in Table 6 below:

Table 6. Oil Well Log

Depth to (feet)		Comments
Top of Formation	Bottom of Formation	
0	37	Surface sand and clay.
37	63	Surface sand and strike yellow clay.
63	64	Hard gray sand.
64	84	Yellow clay and strike of gravel.
84	120	Sandy yellow clay with strike of gray sand.
120	130	Yellow clay.
130	245	Blue clay and strike of hard sand.
245	260	Hard sandy blue shale.
260	263	Hard gray sand.
263	383	Sandy blue shale with strike of hard gray sand.
383	408	Hard sandy blue shale and sea shells.
408	433	Sandy blue shale with strike of hard gray sand.

The log shows significant clay layers exist below the ponds and disposal areas and evidence of marine sediments.

43. Groundwater within these sediments is expected to be brackish, based in part of depositional environment (shallow sea and/or marine). The current depth to groundwater in the area is unknown, and various sources indicate that local water supplies are surface water, as local groundwater is of poor quality and not used.
44. More recent information submitted by Insight Environmental Consultants, Inc., indicates that in the upland areas of the LAA, Monterey Shale has been encountered at depths of about six feet below ground surface.
45. The Discharger is not required to conduct groundwater monitoring and there are no monitoring wells in the immediate vicinity of LAA. Based on the limited data available, groundwater in area was 234 feet below ground surface (ft bgs) in 1966. Groundwater is of poor quality with EC ranging from 3,340 to 6,200 umhos/cm; TDS ranging from 2,171 to 4,030 mg/L; chloride ranging from 303 up to 1,440 mg/L; and sodium ranging from 464 up to 1,030 mg/L (see Table 7).

Table 7. Groundwater Quality

	Date	Groundwater Depth (ft bgs)	Well Depth (ft bgs)	EC (umhos/cm)	TDS ¹ (mg/L)	Cl (mg/L)	Na (mg/L)	Nitrate as Nitrogen (mg/L)
25S/19E-23B01	1/9/1953	Unknown	130	3,350	2,178	340	470	3.6
	8/3/1954			3,360	2,184	311	484	4.5
	5/2/1956			3,340	2,171	326	470	4.5
	9/6/1962			3,430	2,230	320	465	4.1
	8/8/1963			3,425	2,226	355	550	1.0
	4/7/1966			3,410	2,217	303	464	4.5
25S/19E-23A01	3/6/1956	Unknown	Unknown	3,370	2,191	310	482	4.1
25S/20E-06R01	3/2/1966	234	807	6,200	4,030	1,440	1,030	---
25S/20E-08Q01	10/13/2009	Unknown	Unknown	4,900	3,185	630	820	22.1

¹ TDS calculated as 0.65 x EC.

46. Generally, the quality of the discharged wastewater is better than that of groundwater, and given the site location and geology, this is expected. This Order does not require groundwater monitoring at this time. It does require wastewater effluent monitoring and LAA loading calculations. Should constituent concentrations and loadings in one year exceed those described in Findings 12, 16, 27, and 28, this Order will require the Discharger to submit a technical report describing measures it will implement to prevent future exceedances from occurring. Should the Discharger exceed the constituent concentrations and loading rates described above for two consecutive years, this Order requires the Discharger to submit an Ambient Conditions Report (Report) prior to the installation of a groundwater monitoring well network. If the Discharger does not submit the Report or the Executive Officer does not concur with the results of the Report that is submitted, this Order requires the Discharger to submit a plan to install a groundwater monitoring well network to evaluate any potential impacts from the discharge.

Antidegradation Analysis

47. State Water Board Resolution 68-16, the *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (the "Antidegradation Policy"), prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high quality groundwater unless it has been shown that:
- a. The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;

- c. The discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and
 - d. The degradation is consistent with the maximum benefit to the people of the state.
48. Available groundwater quality data and local geologic conditions indicate that the local groundwater is not high quality with respect to EC, TDS, chloride, and sodium. Groundwater may be high quality with respect to iron and manganese and nitrate as nitrogen and MUN is currently a designated beneficial use of groundwater.

This Order limits organic loading rates to 260 lbs/acre/day and requires use of a suitable cycle average to minimize effluent discharges from causing reducing conditions at the site. The Order also requires submittal of a Wastewater Irrigation Management Plan to ensure even application of wastewater to the LAA. These requirements, combined with site geology, should prevent the discharge from causing increases in groundwater iron and manganese concentrations that would adversely affect potential groundwater beneficial uses or cause exceedences of applicable water quality objectives.

For Nitrogen, this Order limits the application of wastewater to agronomic rates for both nutrient and hydraulic loading. Total nitrogen loading estimates indicate the discharge will add about 222 lbs/acre/year to the 640-acre LAA in use in any given year. Growing native grasses may utilize approximately 150 to 390 lbs/acre/year of nitrogen. Approximately, 158 lbs/acre/year will be applied to the 27-acre LAA. The proposed crops of safflower or wheat will uptake 175 to 200 lbs of nitrogen. This Order requires the Discharger to submit a Nutrient Management Plan and a Wastewater Irrigation Management Plan to assess and implement measures to ensure nitrogen is applied at agronomic rates. These measures, combined with the geology of the site, should preclude impermissible degradation of underlying groundwater with nitrate as nitrogen.

49. The Discharger provides control of the discharge, or will provide control of the discharge, as required by this Order, that incorporates:
- a. Pre-cleaning to remove leaves, twigs, and other debris,
 - b. A cycle average BOD loading rate of 260 lbs/acre/day;
 - c. Soil monitoring at the LAA's;
 - d. Preparation and implementation of a Salinity Management Plan to evaluate potential methods to reduce the salinity of the discharge,
 - e. Preparation and implementation of a Nutrient Management Plan to evaluate the nutrient load of the discharge and how to best manage the application of wastewater,
 - f. Preparation and implementation of a Wastewater Irrigation Management Plan to ensure wastewater is spread evenly over the 640-acre and 27-acre LAA's.

g. Groundwater limitations.

These control practices are reflective of BPTC of the discharge.

50. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State and, therefore, sufficient reason exists to accommodate growth and limited groundwater degradation around the Plant, provided that the terms of the Basin Plan are met. The Discharger aids in the economic prosperity of the region by the direct employment of about 230 full time employees year round and an additional 100 seasonal employees during the harvest season. The Discharger provides a tax base for local and county governments. The Discharger pays between \$1.5 and \$2.0 million in property taxes. The Discharger also provides additional benefits to California by purchasing materials, and services from approximately 15,000 vendors, contractors, and companies.
51. This Order establishes terms and conditions to ensure that the discharge does not unreasonably affect present and anticipated future beneficial uses of groundwater or result in groundwater quality worse than background or the water quality objectives set forth in the Basin Plan.
52. This Order is consistent with the Anti-Degradation Policy since: (a) the Discharger has or will implement BPTC to minimize degradation, (b) the limited degradation allowed by this Order will not unreasonably affect present and anticipated future beneficial uses of groundwater, or result in water quality less than water quality objectives, and (c) the limited degradation is of maximum benefit to the people of the State.

Other Regulatory Considerations

53. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
54. Based on the threat and complexity of the discharge, the King Plant is 2B as defined below:
 - a. Category 2 threat to water quality: "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."
 - b. Category B complexity: "Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management units."

55. California Code of Regulations, Title 27 ("Title 27") contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste, which includes designated waste, as defined by Water Code section 13173. However, Title 27 exempts certain activities from its provisions. The hulling wastewater and sanitation and operational process wastewater discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt wastewater discharges. The exemption, found at Title 27, section 20090, is described below:

The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:

(b) Wastewater – Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

- (1) The applicable regional water quality control board has issued WDRs, reclamation requirements, or waived such issuance;
- (2) The discharge is in compliance with applicable water quality control plan; and
- (3) The wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

56. The discharge of hulling wastewater and sanitation and operational process wastewater authorized herein is exempt from the requirements of Title 27 in accordance with Title 27, section 20090(b) because:
- a. The Central Valley Water Board is issuing WDRs,
 - b. The discharge authorized herein will comply with the Basin Plan, and;
 - c. The treated effluent discharged to the LAA's does not need to be managed as hazardous waste.
57. On 1 April 2014, the State Water Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities. Order 2014-0057-DWQ supersedes State Water Board Order 97-03-DWQ (NPDES General Permit CAS000001) and becomes effective 1 July 2015. Order 2014-0057-DWQ requires dischargers to submit Permit Registration Documents for either Notice of Intent (NOI) or No Exposure Certification (NEC) coverage. The Discharger is not enrolled under 2014-0057-DWQ (NPDES General Permit CAS000001). Storm water

generated by this facility does not discharge to waters of the U.S. Coverage under Order 2014-0057-DWQ is not required at this time.

58. Water Code 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...shall furnish, under penalty of perjury, technical or monitoring program reports which the 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.

59. The technical reports required by this Order and monitoring reports required by the attached MRP R5-2015-XXXX are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the Plant that discharges the waste subject to this Order.

60. This Order does not authorize the construction of new evaporation ponds for the disposal of brine wastewater, nor does it authorize the construction of a desalination plant, both of which were proposals that were previously made by the Discharger but plans for which have since been abandoned. Instead, this Order places additional requirements on the continued operation of wastewater management systems that have already been installed and that are currently in use in order to ensure the protection of waters of the state. The issuance of this Order is therefore exempt from the provisions of California Environmental Quality Act ("CEQA")(Pub. Resources Code, § 21000 et seq.) in accordance with California Code of Regulations, title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting ... of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review. This action may also be considered exempt because it is an action by a regulatory agency for the protection of natural resources (Cal. Code Regs., tit. 14, § 15307.) and an action by a regulatory agency for the protection of the environment (Cal. Code Regs., tit. 14, § 15308.).

61. Pursuant to 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 the discharge.

Public Notice

62. 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 conditions of discharge of this Order.

63. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they

have been provided an opportunity to submit written comments and an opportunity for a public hearing.

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

IT IS HEREBY ORDERED that Waste Discharge Requirements Order 96-121, and Revised Monitoring and Reporting Program 92-121 are rescinded except for enforcement purposes. Pursuant to Water Code sections 13263 and 13267, Paramount Farms International LLC and William J. Mouren Farming, Inc., their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of waste to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in California Code of Regulations, title 23, section 2521 et seq., is prohibited.
3. Discharge of waste classified as 'designated', as defined in Water Code section 13173, in a manner that causes violation of groundwater limitations, is prohibited.
4. Treatment system bypass or overflow of untreated wastes is prohibited, except as allowed by Standard Provisions E.2 in *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991.
5. Discharge of wastewater in a manner or location other than that described herein or in the RWD is prohibited.
6. Application of residual solids to the LAA's is prohibited.
7. Discharge of domestic wastewater to the process wastewater treatment system is prohibited.
8. Discharge of process wastewater to the domestic wastewater treatment system (septic system) is prohibited.
9. Discharge of domestic wastewater to the wastewater ponds, LAA's or any surface water is prohibited.
10. Discharge of brine wastewater from the roasting and seasoning operation to the wastewater treatment system, ponds, LAA's, or any location at the King Plant site is prohibited.

B. Effluent and Mass Loading Limitations

1. During the harvest season, the discharge from the King Plant shall not exceed the following: a monthly average daily flow of 4.05 mgd, a maximum daily flow of 5.5 mgd, or a total annual flow of 110 mgy. **[Compliance shall be determined at EFF-001]**
2. During the non-harvest season, the discharge from the King Plant shall not exceed the following: a monthly average daily flow of 0.05 mgd, a daily maximum flow of 0.35 mgd, or a total annual flow of 15 mgy. **[Compliance shall be determined at EFF-002]**
3. The cycle average BOD loading rates to the 640-acre LAA and the new 27-acre LAA shall not exceed 260 lbs/acre/day over the course of any discharge cycle.

C. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of Groundwater Limitations of this Order.
2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
3. The discharge shall remain within the permitted waste treatment/containment structures and LAA's at all times.
4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
5. 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.
6. Objectionable odors shall not be perceivable beyond the limits of the limits of the property where the waste is generated, treated, and/or discharged at an intensity that creates or threatens to create nuisance conditions.

D. Land Application Area Specifications

1. Crops shall be grown in the LAA. Crops shall be selected based on nutrient uptake, consumptive use of water, and irrigation requirements to minimize crop uptake of water and nutrients.
2. Application of waste constituents to the LAA's shall be at reasonable agronomic rates to preclude creation of a nuisance and degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the

LAA's, including the nutritive value of organic and chemical fertilizers and of the wastewater shall not exceed the annual crop demand.

3. Hydraulic loading of wastewater and supplemental irrigation water shall be at reasonable agronomic rates.
4. Land application of wastewater shall be managed to minimize erosion.
5. The Discharger may not discharge process wastewater to the LAA within 24 hours of a storm event of measurable precipitation or when soils are saturated.
6. Any irrigation runoff shall be confined to the LAA's and shall not enter any surface water drainage course or storm water drainage system.
7. Tailwater runoff and spray of wastewater shall not be discharged outside of the LAA's.
8. The LAA's shall be managed to prevent breeding of mosquitos. In particular:
 - a. All applied irrigation water must infiltrate within 48 hours;
 - b. Tailwater ditches shall be maintained essentially 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.
9. Irrigation of the LAA's shall occur only when appropriately trained personnel are on duty.
10. LAA's shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.

E. Solids Specifications

Solids generated at the Plant consist of leaves, twigs, and other debris removed during the pre-cleaning process and pistachio hulls removed during the screening process.

1. Any drying, handling and storage of solids at the Plant shall be temporary, and controlled and contained in a manner that minimizes leachate formation and precludes the development of odor nuisance conditions and infiltration of waste constituent into soils in a mass or concentration that will violate groundwater limitations of this Order.
2. Collected screenings 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, 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

Release of waste constituents from any component of any treatment, storage, delivery system, or land application area associated with the discharge shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:

1. Nitrate (as N) of 10 mg/L.
2. For constituents identified in Title 22, the MCLs quantified therein.

G. Provisions

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions), which are part of this Order.
2. The Discharger shall comply with MRP R5-2015-XXXX, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.
3. A copy of this Order, including its MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified documents to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
5. The Discharger shall 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 this Order.

6. As a means of discerning compliance with Discharge Specification C.6, the dissolved oxygen (DO) content in the upper one foot of any wastewater pond or irrigation reservoir containing wastewater shall not be less than 1.0 mg/L for three consecutive weekly sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the discharger shall report the finding to the Central Valley Water Board in writing within 10 days and shall include a specific plan to resolve the low DO issues within 30 days.
7. The Discharger shall operate and maintain all wastewater ponds and irrigation reservoirs sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow).
8. On or about 1 October of each year, available capacity shall at least equal the volume necessary to comply with Provision G.7.
9. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
10. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
11. In the event of any change in control or ownership of the Plant, 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 Central Valley Water Board.
12. To assume operation as a Discharger 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 Central Valley 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 Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

13. **By (120 days following Order adoption)**, the Discharger shall submit a Wastewater Irrigation Management Plan detailing proposed methods to evenly apply wastewater to the 640-acre LAA and the new 27-acre LAA.
14. **By (180 days following Order adoption)**, the Discharger shall submit a Nutrient Management Plan for the LAA's for Executive Officer approval. The Plan must include procedures of daily monitoring of the LAA's and proposed management practices that will be implemented to ensure wastewater and the nutrients contained therein are applied evenly at agronomic rates. The objective of the Plan shall be to identify and utilize site specific data to demonstrate that wastewater loading will occur at reasonable agronomic rates that will preclude degradation of groundwater that will exceed Water Quality Objectives or adversely affect Beneficial Uses.
15. **By (180 days following Order adoption)**, the Discharger shall submit a Salinity Management Plan, which identifies additional methods, and projected costs, that could potentially be used to reduce the salinity of the discharge to the maximum extent feasible. The Salinity Management Plan shall include a proposed implementation schedule subject to review and approval of the Executive Officer.
16. The Discharger shall comply with the following schedule:

	<u>Task</u>	<u>Due Date</u>
a.	Submit a Technical Report that describes measures the Discharger will implement to prevent future effluent exceedances for constituent concentrations and loadings from those described in Findings 12, 16, 27, and 28. The Technical Report shall include a proposed implementation schedule and shall be subject to Executive Officer approval.	6 months from the first exceedance of Effluent and Mass Loading Limitations B.3.
b.	Submit an <i>Ambient Conditions Report</i> that: (1) describes in detail the underlying geology at the site, (2) provides data from suitable borings of on site infiltration rates (3) assesses local water well resources and quality (4) and assesses existing ambient or background groundwater conditions. The <i>Ambient Conditions Report</i> shall also include an analysis of the potential of discharges to adversely impact groundwater. Based on the results of the <i>Ambient Conditions Report</i> , the Executive Officer may determine that the requirements of Tasks c., d. and e. of this Item are unnecessary, and provide the Discharger written notice of such determination, at which point, this provision shall be considered satisfied. If Paramount chooses not to submit the <i>Ambient</i>	6 months from the second exceedance of Effluent and Mass Loading Limitations B.3.

	<i>Conditions Report</i> as described or if the Executive Officer does not concur with the results of the <i>Ambient Conditions Report</i> , Paramount shall submit a Work Plan for the installation of a groundwater monitoring well network, as required by Task 16.c.	
c.	Submit a Work Plan for the installation of a groundwater monitoring well network subject to Executive Officer approval. The Work Plan shall satisfy the information needs specified in the monitoring well installation section of Attachment C, <i>Standard Requirements for Monitoring Well Installation Work Plans and Monitoring Well Installation Reports</i> . All wells shall comply with appropriate standards as described in California Well Standard Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 74-81 (December 1981), and any more stringent standards adopted by the State or county pursuant to CWC section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.	6 months from the second exceedance of Effluent and Mass Loading Limitations B.3. if the report in Task b. is not submitted or 3 three months after the Executive Officer provides written notice of non-concurrence with the report that is submitted.
d.	Complete well installation and commence groundwater monitoring in accordance with the Work Plan submitted pursuant to Provision G.16.c and Monitoring and Reporting Program R5-2015-XXXX.	3 months from the completion of Task c.
e.	Submit a groundwater monitoring well installation report that meets the requirements of Attachment C, <i>Standard Requirements for Monitoring Well Installation Work Plans and Monitoring Well Installation Reports</i> .	1 month from the completion of Task d.

17. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the dues dates specified.
18. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain work plans for investigations and studies, that describe the conduct of investigations and studies or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified

professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.

19. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan amendment that will establish a salt and nitrate management plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objectives are to be interpreted for the protection of agricultural use. If new information or evidence indicates that groundwater limitations are different than those prescribed herein are appropriate, this Order will be reopened to incorporate such limits.
20. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filling petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality/

or will be provided upon request.

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 _____.

PAMELA C. CREEDON, Executive Officer

Order Attachments:

- A Site Map
- B Process Flow Schematic

WASTE DISCHARGE REQUIREMENTS ORDER R5-2015-XXXX
PARAMOUNT FARMS INTERNATIONAL LLC
KING PISTACHIO PROCESSING PLANT AND
WILLIAM J. MOUREN FARMING, INC.
KERN COUNTY

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C Standard Requirements for Monitoring Well Installation
Work Plans and Monitoring Well Installation Reports
Monitoring and Reporting Program R5-2015-XXXX
Information Sheet
Standard Provisions (1 March 1991)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2015-XXXX
FOR
PARAMOUNT FARMS INTERNATIONAL LLC
KING PISTACHIO PROCESSING PLANT AND
WILLIAM J. MOUREN FARMING, INC.

KERN COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to Water Code section 13267.

The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts or the Executive Officer issues a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer. All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with ***Standard Provisions and Reporting Requirements for Waste Discharge Requirements***, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as pH) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer and in accordance with manufacturer instructions.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer.

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

A glossary of terms used within this MRP is included on page 10.

The Discharger shall monitor the following locations to demonstrate compliance with the requirements of this Order:

Monitoring Location Name	Monitoring Location Description
EFF-001	During harvest season, the location after the holding ponds and before comingled wastewater is discharged to the 640-acre LAA.
EFF-002	During non-harvest season, the location after the holding pond and before wastewater is discharged to the new 27-acre LAA.
SW-001	Source water from the Lost Hills Water District
PND-001 through PND-007	Wastewater Ponds PND-001 through PND-005, emergency pond (PND-006), and surge pond (PND-007).
LAA-001 and LAA-002	640-acre LAA (LAA-001) and new 27-acre LAA (LAA-002)

EFFLUENT MONITORING

Effluent samples shall be collected at EFF-001 during the harvest season and EFF-002 during the non-harvest season. Time of collection of the sample shall be recorded. Effluent monitoring shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Effluent Flow	mgd	Meter
Daily	pH	pH Units	Grab
Daily	Electrical Conductivity (EC)	umhos/cm	Grab
Weekly	Biochemical Oxygen Demand ₅ (BOD) ¹	mg/L	Grab
Weekly	Chemical Oxygen Demand	mg/L	Grab
Weekly	Total Suspended Solids	mg/L	Grab
Weekly	Total Dissolved Solids	mg/L	Grab
Weekly	Fixed Dissolved Solids	mg/L	Grab
Weekly	Total Kjeldahl Nitrogen	mg/L	Grab
Weekly	Nitrate as Nitrogen	mg/L	Grab
Weekly	Nitrite as Nitrogen	mg/L	Grab
Weekly	Ammonia as Nitrogen	mg/L	Grab
Weekly	Total Nitrogen	mg/L	Computed
Weekly	Chloride	mg/L	Grab
Weekly	Sodium	mg/L	Grab
Weekly	Potassium	mg/L	Grab
Monthly	General Minerals ²	mg/L	Grab

¹ Five-day, 20°C biochemical oxygen demand (BOD₅)

2 See glossary on page 10 for list of general mineral constituents

SOURCE WATER MONITORING

The Discharger shall monitor source water SW-001. For each source (either well or surface water supply), the Discharger shall calculate the flow-weighted average concentrations for the specified constituents utilizing monthly flow data and the most recent chemical analysis conducted in accordance with Title 22 drinking water requirements.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	Flow-Weighted EC	umhos/cm	Grab
Annually	General Minerals ^{1,2}	mg/L	Grab

1 With the exception of wastewater samples, samples must be filtered. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.

2 See glossary on page 10 for list of general mineral constituents.

WASTEWATER PONDS AND SURGE POND MONITORING

Permanent markers (e.g. staff gauges) shall be placed in all ponds. The markers shall have calibrations indicating the water level at design capacity and available operational freeboard. The Discharger shall monitor Ponds PND-001 through PND-007, monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Weekly	Freeboard	Feet	Grab
Weekly	pH	pH Units	Grab
Weekly	Dissolved Oxygen ¹	mg/L	Grab ²

1 DO in the upper one foot of any wastewater pond or irrigation reservoir containing wastewater shall not be less than 1.0 mg/L for three consecutive weekly sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the discharger shall report the finding to the Central Valley Water Board in writing within 10 days and shall include a specific plan to resolve the low DO issues within 30 days.

2 DO shall be measured between 8:00 am and 10:00 am and shall be taken opposite the pond inlet at a depth of approximately one-foot.

The Discharger shall inspect the condition of the ponds weekly and record visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether grease, dead algae, vegetation, scum, or debris are accumulating on the pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark green, dull green, yellow, gray, tan, brown, etc.). A summary of the entries made in the log shall be included in the subsequent monitoring report.

LAND APPLICATION AREA MONITORING

The Discharger shall perform the following routine monitoring and loading calculations for the 640-acre (LAA-001) and new 27-acre (LAA-002) LAA's. In addition the Discharger shall keep a log of routine monitoring observations (e.g. areas of ponding, broken irrigation pipes, odors and/or flies within the LAA's, etc.). Data shall be collected and presented in tabular format and shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Daily	Application Location	n/a	n/a
Daily	Application Area	acres	n/a
Daily	Wastewater Flow	gallons	Metered
Daily	Wastewater Loading	inches/day ¹	Calculated
Daily	Supplemental Irrigation	inches/day ¹	Calculated
Daily	Precipitation ²	inches/day ¹	Rain gage ²
<u>BOD₅ Loading Rates:</u>			
Daily	On Day of Application ³	lbs/acre	Calculated
Daily	Cycle Average ⁴	lbs/acre/day	Calculated
<u>Nitrogen Loading Rates:</u>			
Monthly	From Wastewater ⁵	lbs/acre	Calculated
Monthly	From Fertilizer ⁶	lbs/acre	Calculated
<u>Salt Loading Rates:</u>			
Monthly	From Wastewater ⁵	lbs/acre	Calculated
Annually	Cumulative Salt Loading	lbs/acre/year	Calculated

1 Report to the nearest 0.01 inch.

2 National Weather Service data from the nearest weather station is acceptable.

3 Loading rates to be calculated using the applied volume of wastewater, applied acreage, and average of the four most recent concentrations for BOD₅.

4 The cycle average BOD₅ loading rates shall be calculated using applied volume of wastewater, applied acreage, and average of the four most recent concentrations for BOD₅ and divided by the number of days between applications.

5 Nitrogen and salt shall be calculated using the applied volume of wastewater, applied acreage, and average of the four most recent concentrations for total nitrogen and Fixed Dissolved Solids.

6 Additional nitrogen loading to the land application area from other sources (i.e. organic matter and manure).

SOIL MONITORING

The Discharger shall establish with concurrence of Central Valley Water Board staff, at least six soil profile monitoring locations within the LAA's and at least two representative background location(s) (i.e., that historically have not received process wastewater). The Discharger shall submit a map to the Central Valley Water Board with the identified sample locations no fewer than **30 days** prior to the first sampling event in October following adoption of this Order. The samples shall be collected and analyzed for the constituents and frequencies specified below:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Annually	Moisture Content	% volume	Grab ¹
Annually	Cation Exchange Capacity	meq/100 grams	Grab ¹
Annually	Soil pH	pH units	Grab ¹
Annually	Buffer pH	mg/kg as CaCO ₃	Grab ¹
Annually	Sodium	mg/kg	Grab ¹
Annually	Chloride	mg/kg	Grab ¹
Annually	Potassium	mg/kg	Grab ¹
Annually	Nitrate as Nitrogen	mg/kg	Grab ¹
Annually	Ammonia as Nitrogen	mg/kg	Grab ¹
Annually	TKN	mg/kg	Grab ¹

¹ Samples shall be collected at 6-inches, 2.5, 5, 7.5, and 10 feet below ground surface (bgs). Sample depth in any individual sampling location may be terminated at first refusal. The depth of refusal shall be noted in the results for each soil sampling location.

REPORTING

All monitoring results shall be reported in **Quarterly Monitoring Reports** which are due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

First Quarter Monitoring Report:	1 May
Second Quarter Monitoring Report:	1 August
Third Quarter Monitoring Report:	1 November
Fourth Quarter Monitoring Report:	1 February

The Central Valley Water Board has gone to a Paperless Office System. All regulatory documents, submissions, materials, data, monitoring reports, and correspondence shall be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be mailed to: centralvalleyfresno@waterboards.ca.gov. Documents that are 50MB or larger should be transferred to a disc and mailed to the appropriate regional water board office, in this case 1685 E Street, Fresno, CA, 93706.

To ensure that your submittals are routed to the appropriate staff, the following information block should be included in any email used to transmit documents to this office:

Program: Non-15, WDID: 5D151170001, Facility Name: Paramount Farms King Plant, Order: R5-2015-XXXX

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, and shall discuss any violations that occurred 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 or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

In addition to the details specified in Standard Provision C.3, monitoring information shall include the method detection limit (MDL) and the reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

Laboratory analysis reports do not need to be included in the monitoring reports; however, the laboratory reports must be retained for a minimum of three years in accordance with Standard Provision C.3.

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3.

All monitoring reports 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.

In the future, the State or Central Valley Water Board may notify the District to electronically submit and upload monitoring reports using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site <http://www.waterboards.ca.gov/ciwqs/index.html> or similar system.

A. All Quarterly Monitoring Reports shall include the following:

Wastewater Reporting

1. The results of Effluent and Pond Monitoring specified on page 2 and 3.
2. For each month of the quarter, calculation of the maximum daily flow and the monthly average flow.
3. For each month of the quarter, calculation of the monthly average effluent EC and BOD₅ concentrations.

Source Water Reporting

1. The results of Source Water Monitoring specified on page 3.

Land Application Area Reporting

1. The results of the routine monitoring and loading calculations specified on page 4.
2. Provide a Site Map of the LAA's showing predominant features, and include field numbers (if applicable) and acreage where wastewater was applied.
3. For each month that wastewater is applied to the LAA's, calculation of the monthly hydraulic load for wastewater and supplemental irrigation water (in million gallons) to each discrete irrigation area.
4. A summary of the notations made in the LAA's monitoring log during each quarter. The entire contents of the log do not need be submitted.

B. Fourth Quarter Monitoring Reports, in addition to the above, shall include the following:

Facility Information

1. The names and general responsibilities of all persons in charge of wastewater management.
2. The names and telephone numbers of persons to contact regarding the facility for emergency and routine situations.
3. 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).
4. A summary of any changes in processing that might affect waste characterization and/or discharge flow rates.

Solids Reporting

1. Annual production total solids (excluding trash and recyclables) in dry tons or cubic yards.
2. A description of disposal methods, including the following information related to the disposal methods used. If more than one method is used, include the percentage disposed of by each method.
 - a. For landfill disposal, include: the name and location of the landfill, and the Order number of WDRs that regulate it.
 - b. For land application, include: the location of the site, and the Order number of any WDRs that regulate it.

- c. For incineration, include: the name and location of the site where incineration occurs, the Order number of WDRs that regulate the site, the disposal method of ash, and the name and location of the facility receiving ash (if applicable).
- d. For composting, include: the location of the site, and the Order number of any WDRs that regulate it.
- e. For beneficial reuse at locations and by entities not operating under a WDRs, and as approved by the Executive Officer, include: the name and location of the site where the beneficial reuse occurs and/or solids are sent for beneficial reuse.

Soil Reporting

1. The tabulated results of Soil Monitoring as specified on page 5.

Land Application Area Reporting

1. The type of crop(s) grown in the LAA's, planting and harvest dates, and the quantified nitrogen and fixed dissolved solids uptakes (as estimated by technical references or, preferably, determined by representative plant tissue analysis).
2. The monthly and annual discharge volume during the reporting year expressed in million gallons and inches.
3. A monthly balance for the reporting year that includes:
 - a. Monthly crop uptake
 - i. Crop water utilization rates are available from a variety of publications available from the local University of California Davis extension office.
 - ii. Irrigation efficiency – Frequently, engineers include a factor for irrigation efficiency such that the application rate is slightly greater than the crop utilization rate. A conservative design does not include this value.
 - (a) Monthly average precipitation – this data is available at
<http://www.cimis.water.ca.gov/> or at <http://www.ncdc.noaa.gov>
 - (b) Monthly average and annual average discharge flow rates.
 - (c) Monthly estimates of the amount of wastewater percolating below the root zone (i.e., amount of wastewater applied in excess of crop requirements)
4. A summary of average and cycle BOD₅ loading rates.
5. The total pounds of nitrogen applied to the LAA's, as calculated from the sum of the monthly loadings, and the total annual nitrogen loading to the LAA's in lbs/acre-year.

6. The total pounds of fixed dissolved solids that have been applied to the LAA's in lbs/acre-year, as calculated from the sum of the monthly loadings.

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

(Date)

GLOSSARY

BOD ₅	Five-day biochemical oxygen demand		
CBOD	Carbonaceous BOD		
DO	Dissolved oxygen		
EC	Electrical conductivity at 25° C		
FDS	Fixed dissolved solids		
NTU	Nephelometric turbidity unit		
TKN	Total Kjeldahl nitrogen		
TDS	Total dissolved solids		
TSS	Total suspended solids		
Continuous	The specified parameter shall be measured by a meter continuously.		
24-Hour Composite	Samples shall be a flow-proportioned composite consisting of at least eight aliquots.		
Daily	Samples shall be collected at least every day.		
Twice Weekly	Samples shall be collected at least twice per week on non-consecutive days.		
Weekly	Samples shall be collected at least once per week.		
Twice Monthly	Samples shall be collected at least twice per month during non-consecutive weeks.		
Monthly	Samples shall be collected at least once per month.		
Bimonthly	Samples shall be collected at least once every two months (i.e., six times per year) during non-consecutive months.		
Quarterly	Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in January, April, July, and October.		
Semiannually	Samples shall be collected at least once every six months (i.e., two times per year). Unless otherwise specified or approved, samples shall be collected in April and October.		
Annually	Samples shall be collected at least once per year. Unless otherwise specified or approved, samples shall be collected in October.		
mg/L	Milligrams per liter		
mL/L	milliliters [of solids] per liter		
ug/L	Micrograms per liter		
umhos/cm	Micromhos per centimeter		
mgd	Million gallons per day		
MPN/100 mL	Most probable number [of organisms] per 100 milliliters		
General Minerals	Analysis for General Minerals shall include at least the following:		
	Alkalinity	Chloride	Sodium
	Bicarbonate	Hardness	Sulfate
	Calcium	Magnesium	TDS
	Carbonate	Potassium	Nitrate
	General Minerals analyses shall be accompanied by documentation of cation/anion balance.		

INFORMATION SHEET

INFORMATION SHEET-ORDER R5-2015-XXXX
PARAMOUNT FARMS INTERNATIONAL LLC
KING PISTACHIO PROCESSING PLANT AND
WILLIAM J. MOUREN FARMING, INC.
KERN COUNTY

Background

Waste Discharge Requirements (WDRs) Order 96-121, adopted 3 May 1996 authorize a monthly average flow of 0.87 million gallons per day (mgd) and a maximum daily flow of 1.0 mgd of pistachio process wastewater produce at the King Pistachio Processing Plant (King Plant) at 10429 King Road in Lost Hills to 130 acre of farmland.

In 2001, the Central Valley Water Board adopted Revised Monitoring and Reporting Program (MRP) 96-121 to include additional effluent monitoring constituents, include supply water monitoring, solid waste monitoring, land application monitoring, pond monitoring and soil monitoring.

The King Plant was formerly owned by Homa Ranch, a California Corporation, and in mid-2002, was sold to Paramount Farms, Inc. Paramount Farms, Inc., subsequently changed its name to Paramount Farms International LLC (hereafter Paramount of Discharger). Paramount did not purchase the 130 acres of farmland.

After the purchase, Paramount made several changes to the facility. In 2002, Paramount began discharging its pistachio wastewater to 640 acres of farmland owned by William J. Mouren Farming, Inc., (Mouren Farming). The Discharger also constructed two holding ponds (north and south) with total capacity of 55 million gallons. In 2012, Paramount divided the north pond into five smaller holding ponds (Ponds 1 through 5) and constructed a new roasting and seasoning operation that generates a brine waste.

On 20 September 2012, Reed Corporation submitted a Report of Waste Discharge (RWD) on behalf of the Discharger. The Central Valley Water Board found the RWD incomplete. The Discharger subsequently retained Insight Environmental Consultants. On 31 October 2014, Insight Environmental Consultants submitted a RWD on behalf of the Discharger for an overall flow increase to 4.05 mgd (annual discharge of 110 MG) and for the discharge of roasting wastewater from it new seasoning and roasting and seasoning operation. Insight submitted additional information on 13 and 17 March 2015.

The 640-acre LAA is in section 11 of Township 25 South, Range 19 East, Mount Diablo Base and Meridian (MDB&M). The King Plant and a new 27-acre LAA are in section 12 of Township 25 South, Range 19 East, MDB&M.

Discharge

The King Plant operates year-round. Flows are highest during the 30 to 45 day harvest season from August to September. Waste streams at the King Plant are generated from the hulling operation (hulling wastewater) and various processes including equipment sanitation, clean-in-place processes, filter backwash, plant washdown, boiler blowdown, water softener regeneration

wastewater, cooling tower blowdown, and condensates from the pasteurizer (process wastewater), and a new seasoning and roasting operation (roasting wastewater).

During the harvest season hulling wastewater is collected in a concrete pit and then pumped through parabolic screens (hydrasieves) to separate the solids from the water. The screened solids are shipped offsite to local farms for use as cattle feed. The hulling wastewater is discharged to holding Pond 1 where it comingles with process wastewater before being pumped to the surge pond and then discharged to the 640-acre LAA. Quality of hulling wastewater is shown in Table 1.

Table 1. Hulling Wastewater Quality

Year	Monthly Ave Flow (mgd)	BOD ¹ (mg/L)	TDS ² (mg/L)	FDS ³ (mg/L)	Cl ⁴ (mg/L)	Na ⁵ (mg/L)	Nitrate as Nitrogen (mg/L)	TKN ⁶ (mg/L)	K ⁷ (mg/L)
2006	0.78	4,100	---	---	---	---	---	180	---
2007	1.20	3,488	---	---	---	---	---	172	---
2008	1.13	4,167	---	---	---	---	---	89	---
2009	2.66	4,766	4,510	---	140	69	---	149	910
2010	2.92	4,425	3,800	1,500	200	86	<0.5	130	810
2011	1.39	3,167	3,450	1,650	930	76	<0.5	98	785
2012	2.35	5,675	5,100	1,900	200	13	0.47	280	620
2013	2.16	9,667	6,900	2,000	6,900 ⁸	3,600 ⁸	0.42	125	605
Average ⁹	1.78	4,255	4,215	1,683	368	61	0.47	157	781
Average ¹⁰	1.82	4,932	4,752	1,763	1,674	769	0.44	153	746

- 1 Biochemical Oxygen Demand (BOD)
- 2 Total Dissolved Solids (TDS)
- 3 Fixed Dissolved Solids (FDS)
- 4 Chloride (Cl)
- 5 Sodium (Na)
- 6 Total Kjeldahl Nitrogen (TKN)
- 7 Potassium (K)
- 8 Data from one sampling event. May be an anomaly.
- 9 Average based on 2006 through 2012 data.
- 10 Average based on 2006 through 2013 data.

The remainder of the year, the Discharger proposes to discharge the process wastewater to 27 acres of its land next to the King Plant. Process wastewater quality is shown in Table 2.

Table 2. Quality of Process Wastewater Contributions

Constituent/Parameter	Units	Blowdown	Boiler Blowdown	Filter Backwash	Clean-in-Place	Roaster 9 Drain
		9/22/2014	9/24/2014	9/24/2014	10/1/2014	11/20/2014
BOD	mg/L	<4.1	11	<2.0	780	---
EC ¹	umhos/cm	1,730	2,820	911	970	879
TDS	mg/L	1,100	1,700	550	650	840
FDS	mg/L	880	1,500	450	420	470
Calcium	mg/L	46	1	25	21	26
Magnesium	mg/L	31	1.3	17	18	17
Sodium	mg/L	260	580	130	140	120
Potassium	mg/L	7.3	2.1	3.8	21	5.9
Bicarbonate	mg/L	180	<10	100	99	110
Carbonate	mg/L	5.8	120	4.6	<2.5	<2.5
Chloride	mg/L	320	480	170	180	150
Nitrate as NO3	mg/L	4.6	<2.2	13	<0.44	0.98
Nitrite as NO2	mg/L	<0.17	0.042	<0.17	<0.17	<0.17
TKN	mg/L	1.2	0.47	1.6	34	6
Hardness CaCO3	mg/L	240	8	130	130	---
pH	pH Units	8.43	11.1	8.61	7.12	7.82

¹ Electrical Conductivity (EC)

The Discharger has a short agreement to discharge its hulling wastewater to 640 acres of grazing land owned by Mouren Farming. This agreement runs year-to-year and Mouren Farming can terminate this agreement with two year written notice. Mouren Farming has accepted wastewater from the Discharger for the last twelve years. There are no permanent irrigation structures on the 640 acres. Each year the Discharger installs a temporary sprinkler system on 320 acres of the 640-acre LAA. The irrigation system is composed of main lines and sets of laterals that are operated manually. The 640-acre LAA is not intensively managed. Irrigation primarily supports native grasses for cattle grazing.

The Discharger proposes to split the 640-acre LAA into four 160-acre blocks and cycle wastewater applications. The estimated BOD and nitrogen loading rates to the 640-acre and the 27-acre LAA's are tabulated in Table 3.

Table 3. Estimated BOD and Nitrogen Loading Rates to the 640-acre and 27-acre LAA's

Area	BOD (lbs/acre/day)	Nitrogen (lbs/acre/year)
640-acre LAA	260	222
27-acre LAA	12	158

This Order requires the Discharger to submit a Nutrient Management Plan and Wastewater Irrigation Management Plan and determine an appropriate discharge cycle to meet the cycle average BOD limit of 260 lbs/acre/day at the 640-acre and the new 27-acre LAA's.

In 2012 the Discharger added a seasoning and roasting operation. High salinity wastewater (brine) from this process is generated year round. This brine is segregated from the other waste streams and is collected and stored in two 25,000 gallon tanks before being shipped off-site, reportedly to Waste Management Inc., in Kettleman Hills. The quality of the brine is shown in Table 4.

Table 4. Quality of Roasting Wastewater from Roasting Operation

Constituent/Parameter	Units	Roaster 9	Roaster 3			Average
		4/30/2014	4/30/2014	5/7/2014	10/7/2014	
Calcium	mg/L	19	330	530	340	305
Magnesium	mg/L	14	100	95	150	90
Sodium	mg/L	5,500	60,000	76,000	74,000	53,875
Potassium	mg/L	240	1,000	1,300	1,900	1,110
Bicarbonate	mg/L	120	510	<10	480	370
Carbonate	mg/L	<5.0	<5.0	<2.8	<5.0	---
Chloride	mg/L	9,100	110,000	140,000	110,000	92,275
Hardness as CaCO ₃	mg/L	110	1,200	1,700	1,500	1,128
pH	pH Units	6.10	6.11	2.88	5.41	5.13
EC	umhos/cm	24,600	>100,000	>100,000	>100,000	---
TDS	mg/L	17,000	210,000	340,000	210,000	194,250
FDS	mg/L	---	---	---	9,5000	95,000
Aluminum	mg/L	<0.50	7.0	12.0	---	---
Manganese	mg/L	0.28	3.9	1.0	---	1.73
Iron	mg/L	1.1	---	8.0	---	5
Copper	mg/L	0.19	---	---	---	0.19

The Discharger initially proposed to discharge its roasting wastewater to unlined ponds and after discussing the discharge with Central Valley Water Board staff, to two lined evaporation ponds. Subsequently, Paramount reported it was going to install a desalination plant or similar treatment

system. The residuals from the desalination process would be hauled to a permitted facility and the desalinated water would be discharged with the process wastewater. The Discharger now proposes to continue to haul the brine off-site to a permitted facility.

Soil and Groundwater Conditions

The Plant is on the west side of the valley floor within the Lost Hills Northwest oil field. The land application is up-slope to the west of the Plant on a portion of the South Dome of the Kettleman Hills Anticline. Surface and near surface sediments in this area are comprised of approximately 1,800 feet of exposed silt stones, sandstones, and conglomerates, which were deposited in a shallow-sea or marine environment. Potential oil-bearing formations extend to, and are exposed at the ground surface. Groundwater within these sediments is expected to be brackish, based in part of depositional environment (shallow sea and/or marine). The current depth to groundwater in the area is unknown, and various sources indicate that local water supplies are surface water, as local groundwater is of poor quality and not used. Based on the limited data available, groundwater in area was 234 feet below ground surface (ft bgs) in 1966. Groundwater is of poor quality with EC ranging from 3,340 to 6,200 umhos/cm, TDS ranging from 2,171 to 4,030 mg/L, chloride ranging from 303 up to 1,440 mg/L, and sodium ranging from 4.5 up to 98 mg/L.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004* (Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting waters of the Basin, and incorporates, by reference, plans and policies of the State Water Board.

The beneficial uses of the underlying groundwater are municipal and domestic supply.

The Basin Plan identifies the greatest long-term water quality problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, 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 in the discharge shall not exceed the EC of the source water plus 500 umhos/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 to good quality groundwater, the Basin Plan states that they shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L. The Basin Plan generally applies these limits to industrial discharges to land.

The Basin Plan authorizes an exemption to the incremental increase limit 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 the maximum extent feasible.

Antidegradation

State Water Board Resolution 68-16, the *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (Antidegradation Policy), requires the regional water boards to maintain high quality water of the State until it is demonstrated that any change in quality will not result in water quality less than that described in State and Regional Water Board policies or exceed water quality objectives, will not unreasonably affect beneficial uses and is consistent with the maximum benefit to the people of the State.

The constituents of concern in the discharge that have the potential to degrade and pollute groundwater include organics, nutrients, and salts. Groundwater in the area is of poor quality with respect to salinity. The Discharger provides control of the discharge or will provide control of the discharge that incorporates or will incorporate:

1. Pre-cleaning to remove leaves, twigs, and other debris,
2. A cycle average BOD loading rate of 260 lbs/acre/day;
3. Soil monitoring at the LAA's;
4. Preparation and implementation of a Salinity Management Plan to evaluate potential methods to reduce the salinity of the discharge,
5. Preparation and implementation of a Nutrient Management Plan to evaluate the nutrient load of the discharge and how to best manage the application of wastewater,
6. Preparation and implementation of a Wastewater Irrigation Management Plan to ensure wastewater is spread evenly over the 640-acre and 27-acre LAA's.
7. Groundwater limitations.

This Order establishes terms and conditions to ensure that the authorized discharge will not unreasonably affect present and anticipated future beneficial uses of groundwater or result in groundwater quality worse than background or the water quality objectives set forth in the Basin Plan.

This Order is consistent with the Anti-Degradation Policy since: (a) the Discharger has or will implement Best Practicable Treatment or Control to minimize degradation, (b) the limited degradation will not unreasonably affect present and anticipated beneficial uses of groundwater, or result in water quality less than water quality objectives, and (c) the limited degradation is of maximum benefit to the people of the State.

CEQA

The action to adopt Waste Discharge Requirements for this existing plant is exempt from provision of the California Environmental Quality Act (CEQA), in accordance with the California Code of Regulations, title 14, section 15301 (existing facilities).

Title 27

Unless the Board finds that the discharge of designated waste is exempt from Title 27 of the California Code of Regulations, the release of designated waste is subject to full containment requirements. Here, the discharge of hulling wastewater and process wastewater is exempt from the requirements of Title 27 pursuant to the wastewater exemptions found at Title 27, sections 20090 (b).

Proposed Order Terms and Conditions

Discharge Prohibitions, Specifications and Provisions

The proposed Order prohibits the discharge of waste to surface waters and to surface water drainage courses. The proposed Order restricts the discharge to a monthly average daily flow limit of 4.05 mgd and a total annual flow limit of 110 MG during the harvest season and a monthly average flow limit of 0.05 mgd and a total annual flow of 15 MG during the non-harvest season.

This Order sets cycle average BOD₅ loading rate limits of 260 lbs/acre/day at the 640-acre and at the new 27-acre LAA over the course of any discharge cycle. The proposed Order includes Provisions requiring the Discharger to submit a Salinity Management Plan, Nutrient Management Plan, and a Wastewater Irrigation Management Plan.

The proposed Order prescribes groundwater limitations that ensure the discharge does not affect present and anticipated beneficial uses of groundwater. The limitations require that the discharge not cause or contribute to exceedances of water quality objectives or natural background water quality, whichever is greater.

Monitoring Requirements

Section 13267 of the Water Code authorizes the Central Valley Water Board to require the Discharger to submit monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State.

The proposed Order includes effluent monitoring, source water monitoring, pond monitoring, land application area monitoring, and soil monitoring. This monitoring is necessary to characterize the discharge, evaluate compliance with effluent and mass loading limitations prescribed by the Order.

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 new technical information is received or if applicable laws and regulations change.