CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2014-0116

WASTE DISCHARGE REQUIREMENTS

FOR
DEL MONTE FOODS, INC., AND ALCALA FARMS
PLANT #24
KINGS COUNTY

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

1. On 7 April 2014, Del Monte Foods, Inc., a Delaware Corporation (Del Monte), submitted a Report of Waste Discharge (RWD) that describes expansion of the land application area (LAA) that receives process wastewater from an existing tomato and zucchini processing facility (referred to as Plant #24).

2. Del Monte Foods, Inc., owns and operates Plant #24 that generates the waste and 650 acres of the LAA (including the expansion of the LAA described in the April 2014 RWD). Alcala Farms owns 585 acres of the LAA and is responsible for wastewater application and crop management throughout the entire LAA. Del Monte Foods, Inc., and Alcala Farms are collectively referred to as Dischargers and are responsible for compliance with these Waste Discharge Requirements (WDRs).

3. Plant #24 is at 10652 Jackson Avenue in Hanford (Section 24, T19S, R21E, MDB&M) and occupies Assessor's Parcel Numbers (APN) 028-030-021. Information regarding the location, size, and owners of each Field within the LAA are summarized in the table below.

Land Application Area

Field Number	Size (acres)	APN	Section, Township, Range	Owner
12 (new)	158	028-220-067	Sec. 2, T20S, R21E	Del Monte
15 (existing)	15	028-030-021	Sec. 24, T19S, R21E	Del Monte
16 (existing)	157	028-100-005	Sec. 25, T19S, R21E	Del Monte
17 (existing)	160	028-100-003	Sec. 26, T19S, R21E	Del Monte
22 (existing)	150	028-220-069	Sec. 2, T20S, R21E	Alcala Farms
23 (existing)	158	028-220-005	Sec. 2, T20S, R21E	Alcala Farms
24 (existing)	41	028-220-064	Sec. 2, T20S, R21E	Alcala Farms
25 (existing)	79	028-220-075	Sec. 2, T20S, R21E	Alcala Farms
29 (existing)	157	028-100-009	Sec. 25, T19S, R21E	Alcala Farms
30 (existing)	160	028-100-002	Sec. 26, T19S, R21E	Del Monte
Total = 1,235 acres				

Plant #24 and the LAA are shown on Attachment A, which is attached hereto and made part of this Order by reference. Fields 15, 16, 17, 29, and 30 are commonly referred to as the "North Fields" and Fields 12, 22, 23, 24, and 25 are commonly referred to as the "South Fields."

4. WDRs Order 96-083, adopted by the Central Valley Water Board on 22 March 1996, prescribes requirements for the discharge. Order 96-083 allows a monthly average daily wastewater flow of up to 3.5 million gallons per day (mgd) and a daily peak wastewater flow of 4.5 mgd from 1 June through 31 October (processing season). Additionally, Order 96-083 allows a monthly average daily wastewater flow of up to 0.5 mgd from 1 November through 31 May (off-season). Prior to adopting Order 96-083, the Central Valley Water Board adopted a Mitigated Negative Declaration in accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) and State CEQA Guidelines for the discharge. The Dischargers do not propose to expand the wastewater flows from Plant #24; only increase the overall size of the LAA. Order 96-083 will be rescinded and replaced with this Order.

Existing Facility and Discharge

5. Plant #24 processes approximately 1,000 raw tons of zucchini and approximately 409,000 raw tons of tomatoes each year. Zucchinis and tomatoes are delivered by truck and are cleaned, sorted, peeled, and thermally processed by cookers into a variety of shelf stable products that are sold to commercial and retail customers throughout the United States.

6. Source water for processing vegetables is obtained from three on-site water supply wells. Source water quality from 2013 is summarized in the table below:

Source Water Quality

Parameter	Units	Plant Well #1	Plant Well #3	Plant Well #4
pH	standard units	8.7	9.2	8.5
Electrical Conductivity	umhos/cm	310	338	298
Arsenic	mg/L	0.083	0.004	0.068
Aluminum	mg/L	0.18	0.22	0.05
Bicarbonate	mg/L	110	128	113
Carbonate	mg/L	12.5	42.8	8.2
Calcium	mg/L	2.3	1.4	2.9
Chloride	mg/L	30	14	23
Fluoride	mg/L	1.4	0.87	1.1
Iron	mg/L	0.112	0.125	0.102
Magnesium	mg/L	0.19	<0.10	0.47
Manganese	mg/L	0.018	<0.01	0.033
Nitrate as Nitrogen	mg/L	<1.0	<1.0	<1.0
Total Phosphorous	mg/L	0.24	0.13	0.23
Potassium	mg/L	<2.0	<2.0	<2.0
Silica	mg/L	36	22	45
Sodium	mg/L	66	81	66
Sulfate	mg/L	5.9	8.1	7.5
Total Dissolved Solids	mg/L	210	220	213

7. Zucchini processing occurs during an approximate 7-day period in June. Tomatoes may be directly packaged into food products on the day of delivery (primarily between June and October) or processed into sealed bins that are used throughout the remainder of the year to package a variety of tomato products.

8. Processing operations generate approximately 233 million gallons (715 acre feet) of wastewater and more than 2,000 wet tons of solid by-products for land application each year. Wastewater generated at Plant #24 consists of water generated from sorting, washing, peeling, and cooking vegetables, boiler and cooling tower blowdown, and water softener regenerate.

9. Process wastewater receives pH adjustment (via carbon dioxide gas injection) and screening and is discharged to a concrete lined pump station. Wastewater is then pumped directly to an irrigation distribution system where it is used to supplement flood irrigation of the LAA which consists of 1,077 acres of alfalfa, barley, cotton, sorghum, sudan grass and/or wheat. Irrigation water used at the LAA is provided by three agricultural wells and water from the Lakeside Irrigation Ditch. Average irrigation water quality for 2012-2013 is summarized in the table below.

Irrigation Water Quality

Parameter	Units	Farm Well #23	Farm Well #29	Farm Well #30	Lakeside Irrigation Ditch
Electrical Conductivity	umhos/cm	370	320	260	110
Nitrate as Nitrogen	mg/L	<0.10	<0.10	0.12	0.26
Total Kjeldahl Nitrogen	mg/L	<1.0	<1.0	<1.0	<1.0
Total Phosphorous	mg/L	2.5	0.26	0.32	0.16
Potassium	mg/L	<2.0	<2.0	<2.0	<2.0

10. During the processing season, process wastewater is discharged to a "bypass storage basin" approximately once per week for less than 12 hours in order to perform maintenance on the LAA irrigation system. The bypass storage basin is 135 feet long by 100 feet wide by 9 feet deep (approx. 700,000 gallons of storage capacity). The sides of the bypass storage basin are lined with concrete, but the bottom is unlined.

11. Effluent samples of the wastewater discharged to the LAA, prior to mixing with irrigation water are required by revised Monitoring and Reporting Program (MRP) No. 96-083 and are summarized in the table below.

2013 Average Effluent Wastewater Quality
(Processing Good Quality Tomatoes)

Parameter	Units	Off-Season[1]		Processing Season	
		Number of Samples	Mean Result	Number of Samples	Mean Result
Electrical Conductivity	umhos/cm	209	712	152	1,128

Parameter	Units	Off-Season[1]		Processing Season	
		Number of Samples	Mean Result	Number of Samples	Mean Result
Biochemical Oxygen Demand, 5-day	mg/L	27	655	21	1,354
Nitrate as Nitrogen	mg/L	27	0.23	21	0.18
Total Kjeldahl Nitrogen	mg/L	27	15.3	21	54
Total Nitrogen	mg/L	27	15.5	21	55
Total Dissolved Solids	mg/L	11	1,286	13	2,035
Fixed Dissolved Solids	mg/L	11	413	13	651
Aluminum	mg/L	1	0.73	2	15
Arsenic	mg/L	1	0.028	2	0.082
Bicarbonate	mg/L	1	<3	2	196
Calcium	mg/L	11	8.1	13	23
Carbonate	mg/L	1	<3	2	<3
Chloride	mg/L	11	119	13	115
Fluoride	mg/L	1	0.88	2	1.2
Iron	mg/L	1	2.9	2	23
Magnesium	mg/L	11	3.2	13	17
Manganese	mg/L	1	0.12	2	0.54
Sodium	mg/L	11	148	13	112
Potassium	mg/L	11	63	13	370
Silica	mg/L	1	31	2	101
Sulfate	mg/L	1	26	12	28
Total Phosphorus	mg/L	11	5.7	13	16
pH	pH units	[2]	6.3	[2]	5.9

1. An effluent sample collected on 13 March 2013 is not representative of the quality of the discharge (and not included in the averages shown in the table). The elevated results of the sample were caused by a batch of concentrated food quality ingredients spilled on the plant floor.
2. pH analyzed by continuous in-line meter.

12. For 2013, the annual hydraulic loading rate of wastewater to the LAA ranged from 0.01 acre-inches per acre (ac-in/acre) in Field 23 to 24.21 ac-in/acre in Field 15. This corresponds to annual total nitrogen loading rates (neglecting volatilization and/or denitrification) ranging from 0.05 pounds per acre (lbs/acre) to 383 lbs/acre and fixed dissolved solids (FDS) loading rates ranging from 0.69 lbs/acre to 3,424 lbs/acre. However, the hydraulic loading rate (and corresponding total nitrogen and FDS loading rates) to Field 15 were high due to the Dischargers experimenting with irrigation practices with higher salt tolerant crops. Therefore, excluding data for Field 15, the maximum annual hydraulic, total nitrogen (neglecting volatilization and/or denitrification), and FDS loading rates for 2013 were 15.72 ac-in/acre, 255 lbs/acre, and 2,171 lbs/acre, respectively. In addition, based on the total volume of wastewater applied during a month divided by the number of days in the month and the average monthly biochemical oxygen demand (BOD) concentration, the maximum BOD

loading rate was 115 lbs/acre/day (Field 15 in July) and 104 lbs/acre/day (Field 24 in September).

13. After review of the tentative WDRs, Del Monte indicated the effluent data submitted in the RWD (and summarized in Finding 11) was representative of discharge quality when processing good quality tomatoes. The quality of wastewater discharged depends on the quality of the tomatoes received at Plant #24 and tomato quality is an uncontrollable factor. Generally, poorer quality tomatoes require more lye in the peeling process which results in a higher effluent EC. In its August 2014 comments on the tentative WDRs, Del Monte provided the following discharge data that is representative of processing good, moderate, and poor quality tomatoes.

Proposed Average Effluent Wastewater Quality
(Processing Good, Moderate, and Poor Quality Tomatoes)

Parameter	Units	Mean Off-Season	Mean Processing Season
Electrical Conductivity	umhos/cm	1,577	2,064
Biochemical Oxygen Demand, 5-day	mg/L	1,436	1,750
Nitrate as Nitrogen	mg/L	0.38	0.48
Total Kjeldahl Nitrogen	mg/L	52	82
Total Nitrogen	mg/L	52	82
Total Dissolved Solids	mg/L	2,640	2,214
Fixed Dissolved Solids	mg/L	815	947
Aluminum	mg/L	0.82	13.6
Arsenic	mg/L	0.028	0.07
Bicarbonate	mg/L	<3	282
Calcium	mg/L	39.7	23
Carbonate	mg/L	<2	<2
Chloride	mg/L	347	111
Fluoride	mg/L	0.9	0.9
Iron	mg/L	2.5	21
Magnesium	mg/L	7	12
Manganese	mg/L	0.1	0.5
Sodium	mg/L	341	112
Potassium	mg/L	81	466
Silica	mg/L	31	102
Sulfate	mg/L	29	36
Total Phosphorus	mg/L	10	16

The off-season chloride concentration of the discharge is projected to range from 120 mg/L to 650 mg/L.

14. Chemicals used at Plant #24 include potassium hydroxide for peeling operations and carbon dioxide gas for pH control of wastewater.

15. Solids generated at Plant #24 consist of flume mud, tomato by-products (culls and vines), tomato pumice, and tomato wet wastes. A summary of the solids produced in 2013 is included in the following table.

2013 Solids

Type	Source	Amount Generated (wet tons)	Management Description [1,2]
Flume Mud and Tomato By-Products (culls, vines, etc.)	Process Flume	1,530	Spread, disked, and incorporated into 20-acres on southwest side of Field 30.
Tomato Pumice	Process Evaporator Discharge	3,460	Hauled off-site and used as cattle feed and/or other acceptable animal feed.
Tomato Wet Waste	Process Wastewater Screens	1,800	Hauled off-site and used as cattle feed and/or other acceptable animal feed.

1. Flume mud and tomato by-products disked and incorporated into the soil within 24-hours of application.
2. Flume mud and tomato by-products are not land applied across the same fields from year to year.

16. Domestic wastewater is discharged to the sanitary sewer and treated at the City of Hanford wastewater treatment plant.

17. In April 2010, Del Monte was issued a Notice of Violation (NOV), in part, for violation of Reclamation Specification C.4 or Order 96-083, for applying wastewater at rates exceeding agronomic demand. In response to the NOV, Del Monte submitted a technical report[1] that provided monthly nitrogen balances for the LAA for 2007 through 2009, an evaluation of the nitrogen balances to determine the extent to which wastewater was applied at rates exceeding agronomic demand, and a description of measures taken and planned, along with a time schedule, to modify the discharge operation to ensure that wastewater is applied at rates not exceeding agronomic demand. Although the technical report found surplus nitrogen applications to the LAA at times during 2007 - 2009 (due to over-application of nitrogen fertilizer), detailed statistical analysis on soils and groundwater do not reflect any significant negative short-term impacts as a result of the surplus applications. However, Del Monte has proposed and is implementing the following:

    a. Modify agriculture practices for nitrogen fertilizer application to improve existing LAA nitrogen balance;

    b. Modify data collection and reporting systems and track and test all site fresh water sources;

    c. Improve groundwater monitoring well network (see Finding 29);

[1] Brown and Caldwell. Response to Notice of Violation for Del Monte Hanford Plant #24. December 2010.

d. Evaluate pre-treatment/source reduction for nitrogen in process wastewater;

e. Increase size of LAA;

f. Deep till and apply gypsum to LAA; and

g. Implement test plots to evaluate effectiveness of higher salt tolerant crops.

Planned Changes in the Discharge

18. In December 2012, Del Monte purchased a 158-acre parcel of land (Field 12; APN 028-220-067) to add to the LAA. Del Monte has already removed weeds, deep plowed, and leveled Field 12.

Site-Specific Conditions

19. Plant #24 and the LAA are at an elevation of approximately 220 feet above mean sea level and the area in the vicinity is relatively flat. The LAA is managed to prevent irrigation water from running off-site.

20. Review of the Federal Emergency Management Agency's Flood Insurance Rate Map (FIRM) Number 06031C350C, effective date 16 June 2009, indicates the LAA is outside of a floodplain. A FIRM has not been printed for the area of Plant #24.

21. According to the *Kings County Agricultural Crop Report 2013*, the primary crops grown in Kings County in 2013 were wheat, cotton, corn silage, alfalfa, pistachios, almonds, and walnuts.

22. Annual precipitation in Hanford averages 8.31 inches and the evapotranspiration rate is approximately 63 inches per year.

23. According to the US Department of Agriculture, Natural Resources Conservation Service, surface soils at Plant #24 consist of Kimberlina fine sandy loam, saline-alkali; surface soils at the North Fields consist of Kimberlina fine sandy loam, saline-alkali and Kimberlina saline alkali-Garces complex; and surface soils at the South Fields consist of Kimberlina saline alkali-Garces complex and Nord fine sandy loam. These soil types are well drained.

24. Soil sampling within the LAA is required by revised MRP No. 96-083. Data collected in 2013 are summarized in the table below:

2013 LAA Soil Analytical Data [1]

Field #	Depth (feet)	pH (pH units)	EC (umhos/cm)	NO_3-N (mg/kg)	NO_2-N (mg/kg)	TKN (mg/kg)	Total N (mg/kg)
North Fields							
15	2	9.1	1,410	3.0	<0.25	205	210
	4	8.9	3,450	4.0	<0.25	83	87
	6	8.6	2,580	11.8	<0.25	72	83

Field #	Depth (feet)	pH (pH units)	EC (umhos/cm)	NO_3-N (mg/kg)	NO_2-N (mg/kg)	TKN (mg/kg)	Total N (mg/kg)
16	2	8.3	3,650	5.4	<0.25	295	300
	4	8.5	2,453	2.4	<0.25	90	94
	6	8.9	2,148	1.6	<0.25	63	65
17	2	7.7	1,613	17.5	<0.25	258	275
	4	8.7	1,640	7.1	<0.25	84	94
	6	8.5	1,813	8.9	<0.25	65	74
29	2	8.0	4,153	6	0.30	205	230
	4	8.2	3,513	9	0.26	115	140
	6	8.2	3,375	17	<0.25	162	170
30	2	8.8	2,973	7.1	<0.25	365	373
	4	8.8	4,030	5.6	<0.25	88	94
	6	9.2	3,105	6.0	<0.25	76	84
South Fields							
12[2]	2	9.8	13,390	24	<0.25	205	230
	4	9.9	18,838	25	<0.25	115	140
	6	9.6	13,925	9	<0.25	162	170
22	2	9.1	6,150	22.3	<0.25	127	150
	4	8.9	5,467	13.1	<0.25	95	107
	6	9.0	4,140	11.4	<0.25	76	88
23	2	8.0	4,830	11.8	0.82	403	413
	4	8.9	3,465	5.1	<0.25	108	114
	6	8.9	5,345	8.8	<0.25	106	116
24	2	9.3	6,730	3.5	<0.25	210	220
	4	9.8	7,780	7.2	<0.25	91	98
	6	9.8	12,700	9.6	<0.25	47	57
25	2	9.2	13,295	8.6	<0.25	272	275
	4	9.1	6,780	3.6	<0.25	209	212
	6	8.8	4,520	5.6	<0.25	107	107

1. Average of up to four discrete samples per field at each depth.
2. Background samples historically collected from Field 12. Beginning in 2014, Field 12 will be added to Land Application Area.

25. Included in the April 2014 RWD was a request to modify the soil monitoring requirements of MRP No. 96-083. Del Monte proposed to discontinue collecting discrete depth soil samples down to six feet below ground surface and instead collect one composite sample (a mixture of 10-15 subsamples) from each Field within the LAA from the top 12-inches of the soil profile. Although a composite sample from the

top 12-inches is important to determine soil fertility, data is needed below 12-inches in order to evaluate the migration of wastewater constituents through the soil column.

Groundwater Conditions

26. The groundwater monitoring well network consists of 15 wells that monitor groundwater in the vicinity of the North Fields and South Fields. Boring logs for wells installed in the vicinity of the North Fields indicate the upper 10 to 30 feet of soils consists of sandy silt/silty sand. Below this to a depth of approximately 60 feet, moderately fine textured to fine textured alluvial sediments predominate. Boring logs for wells installed in the vicinity of the South Fields indicate moderately fine to fine textured alluvial sediments may be found at 5 to 40 feet below ground surface.

27. Based on data from the fourth quarter 2013 groundwater monitoring event, depth to groundwater at the North Fields ranged from 25 to 50 feet below ground surface (ft. bgs.) while depth to groundwater at the South Fields was approximately 10 ft. bgs. Groundwater flow underneath the North Fields is consistently towards the east-northeast. Groundwater flow underneath the South Fields is less consistent and appears to be affected by nearby recharge from an unlined irrigation ditch and storm water collection basin on the north side of the South Fields; however, groundwater generally flows to the northeast.

28. Groundwater monitoring is conducted quarterly in accordance with Revised MRP No. 96-083. Groundwater analytical data from November 2013 are summarized in the tables below.

North Fields Groundwater Monitoring Data - November 2013

Parameter	Units	MW-4	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
Temperature	°C	19.4	21.8	17.9	18.7	18.5	16.7	21.1
pH	pH units	7.17	7.62	7.25	7.29	7.57	7.67	7.99
Electrical Conductivity	umhos/cm	1,954	880	2,915	1,758	1,413	1,395	446
Total Dissolved Solids	mg/L	1,200	570	1,900	1,100	900	960	320
Carbonate	mg/L	<30	<3	<30	<30	<30	<3	<3
Bicarbonate	mg/L	560	270	810	600	470	400	130
Calcium	mg/L	200	70	210	160	78	140	12
Chloride	mg/L	230	53	230	150	75	62	12
Fluoride	mg/L	0.1	0.22	0.23	0.38	0.42	0.19	0.58
Iron	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Magnesium	mg/L	37	11	48	33	20	29	3.8
Sodium	mg/L	160	120	430	210	220	150	83
Sulfate	mg/L	130	130	300	190	140	270	41
Potassium	mg/L	<2	<2	2.1	<2	<2	<2	<2

Parameter	Units	MW-4	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
Total Phosphorous	mg/L	0.45	0.13	0.58	0.29	0.36	0.35	0.42
Nitrate as Nitrogen	mg/L	20	<0.1	44	5.3	7.9	8	9
Total Kjeldahl Nitrogen	mg/L	1.7	<1	3	<1	<1	1.1	<1.0
Total Nitrogen	mg/L	21.7	<1	47	5.3	7.9	9.1	9

South Fields Groundwater Monitoring Data - November 2013

Parameter	Units	MW-1	MW-2	MW-3	MW-5	MW-6	MW-13	MW-14	MW-15
Temperature	°C	18.5	dry	19.0	dry	dry	20.2	21.1	21.1
pH	pH units	7.39	dry	7.70	dry	dry	7.74	7.30	7.06
Electrical Conductivity	umhos/cm	1,343	dry	504	dry	dry	847	5,116	6,217
Total Dissolved Solids	mg/L	890	dry	300	dry	dry	540	3,400	3,900
Carbonate	mg/L	<3	dry	<3	dry	dry	<3	<30	<30
Bicarbonate	mg/L	430	dry	170	dry	dry	330	1,600	930
Calcium	mg/L	130	dry	37	dry	dry	73	96	230
Chloride	mg/L	91	dry	58	dry	dry	49	440	1100
Fluoride	mg/L	0.23	dry	0.68	dry	dry	0.23	<1	<1
Iron	mg/L	<0.03	dry	<0.03	dry	dry	<0.03	<0.03	<0.03
Magnesium	mg/L	33	dry	8.9	dry	dry	15	32	100
Sodium	mg/L	140	dry	60	dry	dry	110	1,200	1200
Sulfate	mg/L	220	dry	15	dry	dry	44	810	950
Potassium	mg/L	<2	dry	<2	dry	dry	<2	<2	2.6
Total Phosphorous	mg/L	0.2	dry	0.34	dry	dry	0.28	0.40	0.46
Nitrate as Nitrogen	mg/L	<0.1	dry	<0.1	dry	dry	2.9	24	22
Total Kjeldahl Nitrogen	mg/L	<1	dry	<1	dry	dry	<1.	<1	<1
Total Nitrogen	mg/L	<1	dry	<1	dry	dry	2.9	24	22

29. Included in the April 2014 RWD was a request to modify the groundwater monitoring requirements of MRP No. 96-083. Del Monte proposed to destroy eight wells and install two new wells. Although some of the requested modifications are appropriate, it does not appear the proposed upgradient wells are adequately positioned to collect sufficient data to characterize regional groundwater quality. This Order includes a Provision requiring the Dischargers to submit a revised work plan to modify the

groundwater monitoring well network to provide monitoring locations for the updated configuration of the LAA, particularly background or regional groundwater quality.

Basin Plan, Beneficial Uses, and Regulatory Considerations

30. The *Water Quality Control Plan for the Tulare Lake Basin,* Second Edition (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section13263(a), waste discharge requirements must implement the Basin Plan.

31. Plant #24 is in Detailed Analysis Unit 238 within the Tulare Lake Basin hydrologic unit. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.

32. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. The toxicity objective 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. 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 numerical limitations in order to implement the narrative objective.

33. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the 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.

34. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until a valley wide drain is constructed to carry salts out of the basin. Until the drain is available, the Basin Plan establishes several salt management requirements, including:

    a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum electrical conductivity (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 good quality groundwater 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.

35. The Basin Plan allows an exception to the EC limitation of source water plus 500 umhos/cm where the discharge exhibits a disproportionate increase in EC over the EC of source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided water quality objectives are met and the Dischargers have implemented best available technology and best management practices that control inorganic dissolved solids to the maximum extent feasible. Based on effluent data in Findings 11 and 13, the average inorganic fraction (as measured by fixed dissolved solids) of the total dissolved solids of the waste stream is approximately 30% to 40%. This indicates the discharge exhibits a disproportionate increase in EC of the discharge over the EC of the source water due to unavoidable concentrations of organic dissolved solids in the raw food product. In addition, the Dischargers have implemented, or will implement (according to the time schedule in Provision G.4), treatment and control of the discharge as described in Finding 47. As such, the discharge meets the incremental EC limitation exception.

36. Based on the discharge quality that is representative of processing good, moderate, and poor quality tomatoes, consistent compliance with the performance based effluent limitation for EC of 1,000 umhos/cm (annual average) (Effluent Limitation C.1, page 20) and the Basin Plan effluent chloride limitation of 175 mg/L (maximum daily) for discharges that may recharge to good quality groundwater (Effluent Limitation C.2, page 20) is not immediately practicable. Therefore, Provision G.4 (pages 23 and 24) includes a compliance schedule to allow the Dischargers to come into compliance with the Effluent Limitations.

37. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700 umhos/cm. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000 umhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

38. The list of crops in Finding 21 is not intended as a definitive inventory of crops that are or could be grown in the area affected by the discharge, but it is representative of current and historical agricultural practices in the area. The effluent concentrations for discharge permitted by this Order are consistent with water quality objectives to support these crops and will not limit the use of shallow groundwater for irrigation on all but the most salt-sensitive crops.

39. With regard to BOD, excessive application can deplete oxygen in the vadose zone and lead to anoxic conditions. At the ground surface, this can result in nuisance odors and fly-breeding. When insufficient oxygen is present below the ground surface, anaerobic decay of the organic matter can create reducing conditions that convert metals that are 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 the reducing conditions do not reverse as the percolate travels down through the vadose zone, these dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. Many aquifers contain enough dissolved oxygen to reverse the process, but excessive BOD loading over extended periods may cause beneficial use impacts associated with these metals.

40. Typically, irrigation with high strength wastewater results in high BOD loading on the day of application. 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 leaching of metals can vary significantly depending on soil conditions and operation of the land application system.

41. *Pollution Abatement in the Fruit and Vegetable Industry*, published by the United States Environmental Protection Agency, cites BOD loading rates in the range of 36 to 600 lbs/acre-day to prevent nuisance, but indicates the loading rates can be even higher under certain conditions. The studies that supported this report did not evaluate actual or potential groundwater degradation associated with those rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have been done are not readily adapted to the varying soil, groundwater, and climate conditions that are prevalent throughout the region.

42. Based on the expansion of the LAA to 1,235 acres, the anticipated effluent water quality to be similar to that in Finding 11 (when processing good quality tomatoes), and the proposed irrigation schedule of the North and South Fields submitted in the April 2014 RWD, the maximum annual hydraulic loading to any field is anticipated to be 115 acre-feet. This corresponds to a maximum total nitrogen loading (neglecting volatilization and/or denitrification) and FDS loading of 130 lbs/acre/year and 1,223 lbs/acre/year, respectively. In addition, the maximum daily BOD loading is anticipated to be 40 lbs/acre/day.

43. Based on the expansion of the LAA to 1,235 acres, the anticipated effluent water quality to be similar to that in Finding 13 (when processing good, moderate and poor quality tomatoes), and the proposed irrigation schedule of the North and South Fields submitted in the August 2014 comments on the tentative WDRs, the maximum annual hydraulic loading to any field is anticipated to be 152 acre-feet. This corresponds to a maximum total nitrogen loading (neglecting volatilization and/or denitrification) and

FDS loading of 228 lbs/acre/year and 2,579 lbs/acre/year, respectively. In addition, the maximum daily BOD loading is anticipated to be 65 lbs/acre/day.

44. Crop tissue analysis conducted by the Dischargers is summarized in the table below:

Crop Tissue Analysis for 2010 - 2013

Crop	Mean Yield tons/acre	Mean Nitrogen Uptake		Mean FDS Uptake[1]	Mean Potassium Uptake[1]
		lbs/acre	lbs N/ton	lbs/acre	lbs/acre
Alfalfa	3.9	241	62	1,405	415
Barley	4.0	116	29	--	--
Cotton (lint)	1.6	108	68	204	44
Sorghum	5.2	158	30	899	253
Sudan Grass	1.8	67	37	424	126
Wheat	3.9	94	24	274/91/1,508[2]	23/54/173[2]
Wheat plus Sorghum	9.9	259	26	--	--

1. Mean FDS and Potassium Uptake for 2013 only.
2. Mean uptake data for wheat (grain)/wheat straw/wheat (silage).

Based on the cropping pattern presented in the April 2014 RWD, the maximum nitrogen crop uptake is anticipated to be 259 lbs/acre.

Antidegradation Analysis

45. State Water Resources Control Board Resolution 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:

    a. The degradation does 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 employs 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.

46. Constituents of concern that have the potential to cause degradation of high quality waters include, in part, organics, nutrients, and salts.

    a. For organics, this Order sets a cycle average BOD loading rate for the LAA of 100 lbs/acre/day, which is expected to prevent odor and nuisance conditions, minimize the potential for anoxic and reducing conditions in soil, and preclude iron and manganese degradation of groundwater from organic loading.

b. For nitrogen and nitrates, the application of wastewater at agronomic rates to the LAA for both nutrient and hydraulic loading should preclude degradation of groundwater to the extent it exceeds water quality objectives.

c. For salinity, this Order includes a performance based effluent limitation for electrical conductivity of 1,000 umhos/cm (annual average) and a daily maximum effluent limitation of 175 mg/L for chloride set forth in the Basin Plan for discharges that may recharge to good quality groundwater. Compliance with these limits must be achieved in accordance with the schedule in Provision G.4.

Treatment and Control Practices

47. The Discharger has implemented the following treatment and control of the discharge:

a. Replaced sodium hydroxide with potassium hydroxide for lye peeling operations;

b. Upgraded the pH control system to include carbon dioxide gas injection to neutralize process wastewater instead of using pH neutralizing chemicals;

c. Replaced the existing wastewater screening units with two new internally fed rotary wedge wire screens;

d. Implemented water conservation practices to reduce overall use of source water by 20 percent;

e. Leveled, deep plowed, applied gypsum, and double-cropped the LAA;

f. Installed an advance screw process for purposes of dewatering fines/screenings for use as cattle feed;

g. Increased the size of the LAA; and

h. Installed two evaporation units that recycle lye used for peeling operations.

Antidegradation Conclusions

48. This Order establishes groundwater limitations that allow some degradation, but that will not unreasonably threaten present and future anticipated beneficial uses of groundwater or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan.

49. The treatment and control measures described above in Finding 47, in combination with the requirements of this Order, represent BPTC. Adoption of this Order will result in the implementation of BPTC. In addition, this Order requires monitoring to evaluate potential groundwater impacts from the discharge and confirm that BPTC measures are sufficiently protective of groundwater quality.

50. The Discharge aids in the economic prosperity of the region by direct employment and provides a tax base for local and county governments. According to the Del Monte Foods, Inc., internet page, Plant #24 employs 300 full time, 40 salaried, and 12 hourly employees. At peak production during the processing season, there are 1,200

seasonal employees. Provided the discharge from Plant #24 complies with State and Central Valley Water Board plans and policies, authorized degradation due to the continued operation of Plant #24 is to the maximum benefit to the people of the State. In addition, the use of process wastewater for irrigation in place of higher quality groundwater is of further benefit to the people of the State.

51. The discharge and the potential for groundwater degradation allowed in this Order is consistent with the Antidegradation Policy since: (a) the limited degradation allowed by this Order will not result in water quality less than water quality objectives, or unreasonably affect present and anticipated beneficial uses of groundwater, (b) the Dischargers have implemented BPTC to minimize degradation, and (c) the limited degradation is of maximum benefit to the people of the State.

Other Regulatory Considerations

52. 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.

53. Based on the threat and complexity of the discharge, the facility is determined to be classified as 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, defined as: “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 unit.”

54. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt wastewater. Title 27, section 20090 states in part:

    > 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 RWQCB has issued WDRs, reclamation requirements, or waived such issuance;

(2) the discharge is in compliance with the 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.

***

55. The discharge authorized herein, and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:

    a. Discharges to the bypass storage basin and the LAA are exempt pursuant to Title 27, section 20090(b) because they are discharge of wastewater to land and:

        i. The Central Valley Water Board is issuing WDRs.

        ii. The discharge is in compliance with the Basin Plan, and;

        iii. The treated effluent discharged to the ponds does not need to be managed as hazardous waste.

    b. Discharge of food processing residual solids to the LAAs is exempt pursuant to Title 27, section 20090(b) because it constitutes use of nonhazardous decomposable waste as a soil amendment and this Order requires implementation of applicable best management practices.

56. The State Water Board adopted Order 97-03-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. All storm water from Plant #24 is directed to the bypass storage basin or allowed to percolate on-site. The Dischargers are therefore not required to obtain coverage under NPDES General Permit CAS000001.

57. Water Code section 13267(b) states:

> In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge 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 reports 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.

The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2014-0116 are necessary to ensure compliance with these waste discharge requirements. The Dischargers own and operate the facility that discharges the waste subject to this Order.

58. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.

59. 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.

California Environmental Quality Act

60. As indicated in Finding 4, the Central Valley Water Board adopted a Mitigated Negative Declaration for the discharge regulated under Order No. 96-083. This Order ensures that the operation of Plant #24 will not have any significant effects on the environment, authorizes no additional expansion of flows, and is in compliance with Resolution 68-16. As such, the adoption of this Order for an existing facility is exempt from the requirements of CEQA in accordance with California Code of Regulations, title 14, section 15301.

Public Notice

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

62. The Dischargers 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.

63. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Order No. 96-083 is rescinded except for purposes of enforcement, and, pursuant to Water Code sections 13263 and 13267, Del Monte Foods, Inc., and Alcala Farms, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted hereunder, shall comply with the following:

A. Discharge Prohibitions

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

2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2510 et seq., is prohibited.

3. Bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*.

4. Discharge of waste at a location or in a manner different from that described in the RWD and Findings herein, is prohibited.

5. Discharge of toxic substances into the wastewater treatment system or LAA such that biological treatment mechanisms are disrupted is prohibited.

6. Discharge of domestic wastewater to the bypass storage basin, land application area or any surface waters is prohibited.

B. Discharge Specifications

1. As determined by measuring the flow at monitoring location EFF-001[1], the discharge from Plant #24 shall not exceed the following:

Discharge Specifications

Date	Units	Average Monthly	Maximum Daily
1 June through 31 October	mgd[1]	3.5	4.5
1 November through 31 May	mgd	0.5	--

1. mgd = million gallons per day

[1] Monitoring Location EFF-001 is described in Monitoring and Reporting Program R5-2014-0116.

2. 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 the Groundwater Limitations of this Order.

3. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.

4. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.

5. The Dischargers shall operate all systems and equipment to optimize the quality of the discharge.

6. Objectionable odors shall not be perceivable beyond 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.

7. The discharge shall be distributed uniformly on adequate acreage within the LAA in compliance with the Discharge Specifications.

8. The Dischargers shall periodically monitor solids accumulation in the bypass storage pond and shall remove solids from it to maintain adequate storage capacity. Solids shall be managed in accordance with Solids Disposal Specifications.

C. Effluent Limitations

1. As determined by collecting samples from monitoring location EFF-001[1], the electrical conductivity of wastewater discharged to the LAA, prior to mixing with irrigation water, shall not exceed an interim annual average limitation of 2,000 umhos/cm and a final annual average limitation of 1,000 umhos/cm, subject to the Compliance Schedule provided in Provision G.4 (pages 23 and 24).

2. As determined by collecting samples from monitoring location EFF-001[1], the chloride concentration of wastewater discharged to the LAA, prior to mixing with irrigation water, shall not exceed an interim annual average limitation of 210 mg/L and a final daily maximum limitation of 175 mg/L, subject to the Compliance Schedule provided in Provision G.4 (pages 23 and 24).

[1] Monitoring Location EFF-001 is described in Monitoring and Reporting Program R5-2014-0116.

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 maximize crop uptake of water and nutrients.

2. Application of waste constituents to the LAA shall be at reasonable agronomic rates to preclude creation of a nuisance or unreasonable degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the LAA, 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 irrigation water shall be at reasonable agronomic rates.

4. The BOD loading to the LAA calculated as a cycle average as determined by the method described in the attached Monitoring and Reporting Program, shall not exceed 100 pounds per acre per day.

5. Land application of wastewater shall be managed to minimize erosion.

6. The Dischargers may not discharge process wastewater to the LAA within 24 hours of a storm event of measurable precipitation or when soils are saturated.

7. Any runoff of wastewater or irrigation water shall be confined to the LAA and shall not enter any surface water drainage course or storm water drainage system.

8. Discharge of process wastewater to any LAA not having a fully functional tailwater/runoff control system is prohibited.

9. The LAA shall be managed to prevent breeding of mosquitos. More specifically:

    a. All applied irrigation water must infiltrate completely within 48-hours;

    b. Ditches not serving as wildlife habitat shall be maintained free of emergent, marginal, and floating vegetation; and

    c. Low-pressure and unpressurized pipeline and ditches accessible to mosquitos shall not be used to store recycled water.

E. Solids Disposal Specifications

1. Solids shall be removed from processing equipment, drains, sumps, and the bypass storage basin as needed to ensure optimal operation and adequate storage capacity.

2. Any handling and storage of solids shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.

3. Flume mud and tomato by-products may be discharged to LAA in accordance with the Land Application Area Specifications of this Order.

4. Tomato pumice and tomato wet wastes shall be hauled off-site and used as cattle feed and/or other acceptable animal feed.

5. Any proposed change in solids use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change

F. Groundwater Limitations

Release of waste constituents associated with the discharge shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or in excess of natural background quality for the specified constituents, whichever is greater:

a. Nitrate as nitrogen of 10 mg/L.

b. For constituents identified in Title 22 of the California Code of Regulations, the MCLs quantified therein.

G. Provisions

1. The Dischargers shall comply with Monitoring and Reporting Program (MRP) R5-2014-0116, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of self-monitoring reports shall be no later than the submittal date specified in the MRP.

2. The Dischargers shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provisions."

3. **By 9 April 2015**, the Dischargers shall submit a work plan to modify the groundwater monitoring well network to provide monitoring locations for the

updated configuration of the LAA, particularly background or regional groundwater quality.

4. The Dischargers shall comply with Effluent Limitations C.1 and C.2 in accordance with the following compliance schedule:

Task	**Description**	**Date Due**
1	Submit a work plan and implementation schedule that identifies and evaluates specific control measures, treatment measures, and/or other measures for potential implementation at Plant #24 to ensure compliance with Effluent Limitations C.1 and C.2. The work plan and implementation schedule shall be subject to the approval of the Executive Officer.	**9 October 2015**
2	Begin implementation of the approved Task 1 work plan.	**In accordance with the approved Task 1 schedule, but no later than 11 January 2016**
3	Submit annual progress reports for the Task 1 work plan.	**Beginning 1 February 2017, by the first day of February each year until the Dischargers have completed Task 4.**
4	Submit a technical report that provides the results and conclusions of the Task 1 work plan and identifies the specific control measures, treatment measures, and/or other measures Del Monte will implement at Plant #24. The technical report shall also include a schedule for implementing the chosen measure(s).	**In accordance with the approved Task 1 schedule, but no later than 9 October 2018**
5	Begin implementing the specific control measures, treatment measures, and/or other measures identified in the Task 4 technical report.	**In accordance with the approved Task 4 schedule, but no later than 9 October 2019**

Task	Description	Date Due
6	Submit annual progress reports documenting the implementation of specific control measures, treatment measures, and/or other measures identified in the Task 4 technical report.	**Beginning 3 February 2020, by the first day of February each year until the Dischargers have completed Task 7.**
7	Submit a technical report demonstrating complete implementation of the specific control measures, treatment measures, and/or other measures and compliance with Effluent Limitations C.1 and C.2. Upon receipt of written concurrence by the Executive Officer, this task shall be considered complete.	**In accordance with the approved schedule, but no later than 11 October 2021**

The following interim effluent limitations shall be effective from **9 October 2014** to **11 October 2021** or when the Dischargers are able to come into compliance with final Effluent Limitations C.1 and C.2, whichever is sooner:

a. As determined by collecting samples from monitoring location EFF-001[1], the electrical conductivity of wastewater discharged to the LAA, prior to mixing with irrigation water, shall not exceed an annual average of 2,000 umhos/cm.

b. As determined by collecting samples from monitoring location EFF-001[1], the chloride concentration of wastewater discharged to the LAA, prior to mixing with irrigation water, shall not exceed an annual average of 210 mg/L.

5. 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 Dischargers shall bear the professional's signature and stamp.

6. The Dischargers shall submit 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

[1] Monitoring Location EFF-001 is described in Monitoring and Reporting Program R5-2014-0116.

stated otherwise in this Order, the Dischargers shall proceed with all work required by the foregoing provisions by the due dates specified.

7. The Dischargers shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Dischargers shall submit the specified document 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 Dischargers shall state the reasons for such noncompliance and provide an estimate of the date when the Dischargers will be in compliance. The Dischargers shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule.

8. The Dischargers 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 Dischargers to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes 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 Dischargers only when the operation is necessary to achieve compliance with the conditions of this Order.

9. As described in the Standard Provisions, the Dischargers 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 Dischargers 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 Plant #24, the Dischargers must 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 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 name and 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. A copy of this Order including the MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at Plant #24 for reference by operating personnel. Key operating personnel shall be familiar with its contents.

14. If the Central Valley Water Board determines that the discharge has a reasonable potential to cause or contribute to an exceedance of a water quality objective, or to create a condition of nuisance or pollution, this Order may be reopened for consideration of additional requirements.

15. 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 different than those prescribed herein are appropriate, this Order will be reopened to incorporate such limits.

16. 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 Dischargers fail 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, sections 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 filing 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 that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on 9 October 2014.

Original signed by:

PAMELA C. CREEDON, Executive Officer

Order Attachment
A. Site Location Map

Monitoring and Reporting Program R5-2014-0116
Information Sheet
Standard Provisions (1 March 1991) (separate attachment to Dischargers only)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2014-0116

FOR
DEL MONTE FOODS, INC., AND ALCALA FARMS
PLANT #24
KINGS COUNTY

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

The Dischargers 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, temperature, and electrical conductivity (EC)) 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 or 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 Dischargers 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 sampling events, the Dischargers may request this MRP be revised to reduce monitoring and/or reporting frequency. The proposal must include adequate technical justification for reduction in monitoring and/or reporting frequency.

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

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

MONITORING LOCATIONS

Monitoring Location Name	Monitoring Location Description
EFF-001	Wastewater discharged from Plant #24 to the Land Application Area (LAA) prior to mixing with irrigation water.
LAA-001	Cropland where wastewater from Plant #24 is discharged.
SOIL-"Field #"@2	Soil samples collected from the Field number in parenthesis at 2 feet below ground surface.
SOIL-"Field #"@4	Soil samples collected from the Field number in parenthesis at 4 feet below ground surface.
SOIL-"Field #"@6	Soil samples collected from the Field number in parenthesis at 6 feet below ground surface.
SOIL-"Field #" Comp	Composite soil sample collected from the Field number in parenthesis.
RGW-001, -002, etc.	Groundwater monitoring wells MW-1, MW-2, etc.
SPL-001	Plant Well #1 that provides source water to Plant #24.
SPL-002	Plant Well #3 that provides source water to Plant #24.
SPL-003	Plant Well #4 that provides source water to Plant #24.
SPL-004	Farm Well #23 that provides irrigation water to the LAA.
SPL-005	Farm Well #29 that provides irrigation water to the LAA.
SPL-006	Farm Well #30 that provides irrigation water to the LAA.
SPL-007	Lakeside Irrigation Ditch water that provides irrigation water to the LAA.

EFFLUENT MONITORING EFF-001

Effluent samples shall be collected after treatment (i.e., screening and/or pH adjustment) and prior to mixing with irrigation water and discharged to the LAA and shall include at least the following:

Frequency	Constituent/Parameter	Units	Sample Type
Continuous	Flow	mgd	Meter
1/Day	pH	pH Units	Grab or Meter
1/Week or 1/Month[1]	Electrical Conductivity	umhos/cm	24-hour composite
1/Week or 1/Month[1]	Five-day Biochemical Oxygen Demand (BOD_5)	mg/L	24-hour composite
1/Week or 1/Month[1]	Nitrate + Nitrite as Nitrogen (NO_3-N +NO_2-N)	mg/L	24-hour composite
1/Week or 1/Month[1]	Total Kjeldahl Nitrogen	mg/L	24-hour composite
1/Week or 1/Month[1]	Total Nitrogen	mg/L	Calculated
1/Week or 1/Month[1]	Total Dissolved Solids	mg/L	24-hour composite
1/Week or 1/Month[1]	Fixed Dissolved Solids	mg/L	24-hour composite

Frequency	Constituent/Parameter	Units	Sample Type
1/Week or 1/Month[1]	General Minerals [2]	mg/L	24-hour composite

1. Samples shall be collected 1/week during the processing season (1 June through 31 October) and 1/month during the off-season (1 November through 31 May).
2. General minerals shall include: aluminum, bicarbonate (as CaCO3), calcium, carbonate (as CaCO3), chloride, magnesium, total phosphorous, potassium, sodium, and sulfate. General minerals analysis results shall include a cation/anion balance and calculation of the sodium adsorption ratio (SAR). Samples collected for metals shall be filtered with a 0.45 micron filter prior to preservation, digestion, and analysis.

LAND APPLICATION AREA MONITORING LAA-001

The Dischargers shall perform the following routine monitoring and loading calculations for the LAA. In addition the Dischargers shall keep a log of routine monitoring observations for example: areas of ponding, broken irrigation pipes, odors and/or flies within the LAA. Data shall be collected and presented in tabular format and shall include the following:

Frequency	Constituent/Parameter	Units	Sample Type
1/Day	Location of Wastewater Application Area	Field # & Acreage	n/a
1/Day	Wastewater flow	Gallons	Metered
1/Day	Wastewater loading	inches/day	Calculated
1/Day	Supplemental irrigation	Gallons	Metered
1/Day	Precipitation	inches	Rain gauge [1]
1/Day	BOD_5 loading (day of application) [2]	lbs/acre	Calculated
1/Day	BOD_5 loading (cycle average) [2]	lbs/acre-day	Calculated
1/Month	Nitrogen loading from wastewater [3]	lbs/acre	Calculated
1/Month	Nitrogen loading from fertilizer	lbs/acre	Calculated
1/Year	Cumulative nitrogen loading	lbs/acre-year	Calculated
1/Month	Salt loading [3]	lbs/acre	Calculated
1/Year	Cumulative Salt loading	lbs/acre-year	Calculated

1. National Weather Service data from the nearest weather station is acceptable.
2. Loading rates to be calculated using the applied volume of wastewater, applied acreage, and average of the three most recent concentrations for BOD. The BOD loading rate shall be divided by the #days between applications to determine cycle average.
3. Nitrogen and salt loading shall be calculated using the applied volume of wastewater, applied acreage, and average of the three most recent concentrations for total nitrogen and FDS.

SOIL MONITORING

The Dischargers shall collect at least one composite and one discrete depth soil sample from each Field within the LAA. In addition, at least two discrete depth soil samples shall be collected that represent background conditions (i.e., that historically have not received process wastewater). The samples shall be collected and analyzed for the constituents and frequencies specified below:

Frequency	Constituent/Parameter [1]	Units	Sample Type
1/Year [2]	pH	pH units	Composite [3] and Discrete Depth [4]
1/Year [2]	Electrical Conductivity	umhos/cm	Composite [3] and Discrete Depth [4]
1/Year [2]	Exchangeable Sodium Percentage	percent	Composite [3]
1/Year [2]	Sodium Adsorption Ratio	--	Composite [3]
1/Year [2]	Calcium	mg/kg	Composite [3]
1/Year [2]	Magnesium	mg/kg	Composite [3]
1/Year [2]	Sodium	mg/kg	Composite [3]
1/Year [2]	Nitrate as Nitrogen	mg/kg	Composite [3] and Discrete Depth [4]
1/Year [2]	Total Kjeldahl Nitrogen	mg/kg	Composite [3] and Discrete Depth [4]
1/Year [2]	Total Nitrogen	mg/kg	Composite [3] and Discrete Depth [4]
1/Year [2]	Available Potassium	mg/kg	Composite [3]
1/Year [2]	Available Phosphorous	mg/kg	Composite [3]

1. Each constituent/parameter (except nitrogen species, available potassium, and available phosphorous) shall be tested by saturation paste extract.
2. Samples shall be collected between 1 October and 31 December.
3. Composite samples shall consist of a mixture of 10 to 15 sub-samples taken from the plow layer (upper 12-inches) from each Field.
4. Discrete depth samples shall be collected at depths of 2 feet, 4 feet, and 6 feet below ground surface from each Field.

GROUNDWATER MONITORING

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

The Dischargers shall monitor all wells in its Groundwater Monitoring Well Network, and any subsequent additional wells, for the following:

Frequency	Constituent/Parameter	Units	Sample Type
1/Quarter	Depth to groundwater [1]	Feet	Measured
1/Quarter	Groundwater Elevation [2]	Feet	Computed
1/Quarter	pH	pH Units	Grab

Frequency	Constituent/Parameter	Units	Sample Type
1/Quarter	Temperature	°C	Grab
1/Quarter	Electrical Conductivity	umhos/cm	Grab
1/Quarter	Nitrate + Nitrite as Nitrogen	mg/L	Grab
1/Quarter	Total Kjeldahl Nitrogen	mg/L	Grab
1/Quarter	Total Nitrogen	mg/L	Computed
1/Quarter	Total Dissolved Solids	mg/L	Grab
1/Quarter	General Minerals [3]	mg/L	Grab

1. Depth to groundwater shall be measured to the nearest tenth of a foot.
2. Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point.
3. General minerals shall include: bicarbonate (as $CaCO_3$), calcium, carbonate (as $CaCO_3$), chloride, iron, magnesium, manganese, total phosphorous, potassium, sodium, and sulfate. General minerals analysis results shall include a cation/anion balance. Samples collected for metals shall be filtered with a 0.45 micron filter prior to preservation, digestion, and analysis.

The Dischargers shall maintain its groundwater monitoring well network. If a groundwater monitoring well(s) are dry for more than four consecutive sampling events, the Dischargers shall submit a work plan and proposed time schedule to replace the well(s). The well(s) shall be replaced following written Executive Officer approval of the work plan and time schedule.

SOURCE WATER MONITORING SPL-001 THROUGH SPL-007

For each source (either well or surface water supply) that supplies process water to Plant #24 or irrigation water to the LAA, samples shall be collected and analyzed for the constituents and frequencies specified below:

Frequency	Constituent/Parameter [1]	Units	Sample Type
1/Year	Electrical Conductivity	µmhos/cm	Grab
1/Year	Total Dissolved Solids	mg/L	Grab
1/Year	Nitrate + Nitrite as Nitrogen	mg/L	Grab
1/Year	Calcium	mg/L	Grab
1/Year	Chloride	mg/L	Grab
1/Year	Magnesium	mg/L	Grab
1/Year	Total Phosphorous	mg/L	Grab
1/Year	Potassium	mg/L	Grab
1/Year	Sodium	mg/L	Grab

1. Samples collected for metals shall be filtered with a 0.45 micron filter prior to preservation, digestion, and analysis.

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**.

A transmittal letter shall accompany each monitoring report. The transmittal letter 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 Dischargers have previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

The following information is to be included on all monitoring and annual reports, as well as any report transmittal letters, submitted to the Central Valley Water Board:

Dischargers: Del Monte Foods, Inc., and Alcala Farms
Facility: Plant #24
MRP: R5-2014-0116
Contact Information (telephone number and email)

In reporting monitoring data, the Dischargers 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 Dischargers comply with waste discharge requirements.

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.

At any time henceforth, the State Water Resources Control board or Central Valley Regional Water Quality Control Board may notify the Dischargers to electronically submit 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. Until such notification is given, the Dischargers shall submit hard copy monitoring reports.

A. All Quarterly Monitoring Reports, shall include the following:

Effluent reporting

1. The results of effluent monitoring from sample location EFF-001 specified on page 2.
2. For each month of the quarter during the processing season (1 June through 31 October), calculation of the maximum daily flow, monthly average flow, and cumulative annual flow of the discharge.
3. For each month of the quarter during the off-season (1 November through 31 May), calculation of the monthly average flow and cumulative annual flow of the discharge.

Land Application Area reporting

1. The results of the routine monitoring and loading calculations for BOD, nitrogen, and salts as specified on page 3.
2. Provide a Site Map of the LAA showing predominant features, and include field numbers and applied acreages.
3. For each month of the quarter, calculation of the monthly hydraulic load on each individual section for wastewater and supplemental irrigation water in millions of gallons.
4. A summary of the notations made in the LAA monitoring log during each quarter. The entire contents of the log do not need to be submitted.

Groundwater reporting

1. The results of groundwater monitoring specified on pages 4 and 5. If there is insufficient water in the well(s) for sampling the monitoring well(s) shall be reported as dry for that quarter.

2. For each monitoring well, a table showing groundwater depth, elevation, and constituent concentrations for at least five previous years, up through the current quarter.
3. A groundwater contour map based on groundwater elevations for each monitoring event for that quarter. The map shall show the gradient and direction of groundwater flow under/around the LAA. The map shall also include the locations of all monitoring wells and wastewater storage and/or discharge areas.

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

Plant #24 Information

1. The names and general responsibilities of all persons in charge of wastewater treatment and disposal.
2. The names and telephone numbers of persons to contact regarding emergency and routine situations.
3. A statement certifying when the flow meter(s) 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.
5. Location and quantity of tomato pumice and tomato wet wastes hauled off-site and used as cattle feed and/or other acceptable animal feed.

Effluent reporting

1. The annual average electrical conductivity of the wastewater discharge.

Land Application Area reporting

1. The type of crop(s) grown, 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). Include any soil and/or tissue sampling results.
2. The monthly and annual discharge volumes during the reporting year expressed as 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 from irrigation efficiency such that the application rate is slightly greater than the crop utilization rate. A conservative design does not include this value.

b. Monthly average precipitation – this data is available at http://www.cimis.water.ca.gov/ or at http://www.ncdc.noaa.gov/oa/climate/online/ccd/nrmlprcp.html.

c. Monthly average and annual average discharge flow rates.

d. 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 BOD loading rates.
5. The total pounds of nitrogen applied to the LAA, as calculated from the sum of the monthly loadings, and the total annual nitrogen loading to the LAA in lbs/acre-year.
6. The total pounds of fixed dissolved solids (FDS) that have been applied to the LAA, as calculated from the sum of the monthly loadings, and the total annual FDS loading to the LAA in lbs/acre-year.
7. The total amount and location of flume mud and tomato by-products discharged to the LAA.

Soil Reporting

1. The results of soil monitoring specified on pages 3 and 4.

Source Water reporting

1. Include the results of monitoring source water monitoring specified on page 5.

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

Original signed by:

PAMELA C. CREEDON, Executive Officer

9 October 2014

(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-hr Composite	Samples shall be a flow-proportioned composite consisting of at least eight aliquots.
1/Day	Samples shall be collected every day except weekends or holidays.
2/Week	Samples shall be collected at least twice per week on non-consecutive days.
1/Week	Samples shall be collected at least once per week.
2/Month	Samples shall be collected at least twice per month during non-consecutive weeks.
1/Month	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.
1/Quarter	Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in March, June, September, and December.
2/Year	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 June and December.
1/Year	Samples shall be collected at least once per year. Unless otherwise specified or approved, samples shall be collected in June.
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 milliliter

INFORMATION SHEET

ORDER R5-2014-0116
DEL MONTE FOODS INC., AND ALCALA FARMS
PLANT #24
KINGS COUNTY

BACKGROUND

Del Monte Foods, Inc., currently owns and operates a tomato and zucchini processing plant (referred to as Plant #24) at 10652 Jackson Avenue in Hanford. Plant #24 has been in operation since at least the 1970's as documented by Waste Discharge Requirements Order 75-246 and Order 96-083. The processing season is from 1 June through 31 October and consists of cleaning, sorting, peeling, and directly packaging tomatoes and zucchinis into food products on the day of delivery. Also during the processing season, tomatoes are thermally processed into a variety of shelf stable products that are reprocessed during the off-season (1 November through 31 May) into a variety of tomato products. Process wastewater is used to supplement irrigation of nearby cropland.

Wastewater

Wastewater generated at Plant #24 consists of water generated from sorting, washing, peeling, and cooking vegetables, boiler and cooling tower blowdown, and water softener regenerate. Process wastewater receives pH adjustment (via CO_2 injection) and screening to remove solids. Wastewater quality from 2013 is summarized in the table below:

2013 Average Effluent Wastewater Quality
(Processing Good Quality Tomatoes)

Parameter	Units	Off-Season[1]		Processing Season	
		Number of Samples	Mean Result	Number of Samples	Mean Result
Electrical Conductivity	umhos/cm	209	712	152	1,128
Biochemical Oxygen Demand, 5-day	mg/L	27	655	21	1,354
Nitrate as Nitrogen	mg/L	27	0.23	21	0.18
Total Kjeldahl Nitrogen	mg/L	27	15.3	21	54
Total Nitrogen	mg/L	27	15.5	21	55
Total Dissolved Solids	mg/L	11	1,286	13	2,035
Fixed Dissolved Solids	mg/L	11	413	13	651
Aluminum	mg/L	1	0.73	2	15
Arsenic	mg/L	1	0.028	2	0.082
Bicarbonate	mg/L	1	<3	2	196
Calcium	mg/L	11	8.1	13	23
Carbonate	mg/L	1	<3	2	<3
Chloride	mg/L	11	119	13	115
Fluoride	mg/L	1	0.88	2	1.2
Iron	mg/L	1	2.9	2	23
Magnesium	mg/L	11	3.2	13	17
Manganese	mg/L	1	0.12	2	0.54
Sodium	mg/L	11	148	13	112

Parameter	Units	Off-Season[1]		Processing Season	
		Number of Samples	Mean Result	Number of Samples	Mean Result
Potassium	mg/L	11	63	13	370
Silica	mg/L	1	31	2	101
Sulfate	mg/L	1	26	12	28
Total Phosphorus	mg/L	11	5.7	13	16
pH	pH units	[2]	6.3	[2]	5.9

1. An effluent sample collected on 13 March 2013 is not representative of the quality of the discharge (and not included in the averages shown in the table). The elevated results of the sample were caused by a batch of concentrated food quality ingredients spilled on the plant floor.
2. pH analyzed by continuous in-line meter.

After review of the tentative WDRs, Del Monte indicated the effluent data submitted in the RWD was representative of discharge quality when processing good quality tomatoes. The quality of wastewater discharged depends on the quality of the tomatoes received at Plant #24, and tomato quality is an uncontrollable factor. Generally, poorer quality tomatoes require more lye in the peeling process, which results in a higher effluent EC. In its August 2014 comments on the tentative WDRs, Del Monte provided the following discharge data that is representative of processing good, moderate, and poor quality tomatoes.

Proposed Average Effluent Wastewater Quality
(Processing Good, Moderate, and Poor Quality Tomatoes)

Parameter	Units	Mean Off-Season	Mean Processing Season
Electrical Conductivity	umhos/cm	1,577	2,064
Biochemical Oxygen Demand, 5-day	mg/L	1,436	1,750
Nitrate as Nitrogen	mg/L	0.38	0.48
Total Kjeldahl Nitrogen	mg/L	52	82
Total Nitrogen	mg/L	52	82
Total Dissolved Solids	mg/L	2,640	2,214
Fixed Dissolved Solids	mg/L	815	947
Aluminum	mg/L	0.82	13.6
Arsenic	mg/L	0.028	0.07
Bicarbonate	mg/L	<3	282
Calcium	mg/L	39.7	23
Carbonate	mg/L	<2	<2
Chloride	mg/L	347	111
Fluoride	mg/L	0.9	0.9
Iron	mg/L	2.5	21
Magnesium	mg/L	7	12
Manganese	mg/L	0.1	0.5

Parameter	Units	Mean Off-Season	Mean Processing Season
Sodium	mg/L	341	112
Potassium	mg/L	81	466
Silica	mg/L	31	102
Sulfate	mg/L	29	36
Total Phosphorus	mg/L	10	16

The off-season chloride concentration of the discharge is projected to range from 120 mg/L to 650 mg/L.

Source Water

Source water for processing vegetables is obtained from three on-site water supply wells. Source water quality from 2013 is summarized in the table below:

Source Water Quality

Parameter	Units	Plant Well #1	Plant Well #3	Plant Well #4
pH	standard units	8.7	9.2	8.5
Electrical Conductivity	umhos/cm	310	338	298
Arsenic	mg/L	0.083	0.004	0.068
Aluminum	mg/L	0.18	0.22	0.05
Bicarbonate	mg/L	110	128	113
Carbonate	mg/L	12.5	42.8	8.2
Calcium	mg/L	2.3	1.4	2.9
Chloride	mg/L	30	14	23
Fluoride	mg/L	1.4	0.87	1.1
Iron	mg/L	0.112	0.125	0.102
Magnesium	mg/L	0.19	<0.10	0.47
Manganese	mg/L	0.018	<0.01	0.033
Nitrate as Nitrogen	mg/L	<1.0	<1.0	<1.0
Total Phosphorous	mg/L	0.24	0.13	0.23
Potassium	mg/L	<2.0	<2.0	<2.0
Silica	mg/L	36	22	45
Sodium	mg/L	66	81	66
Sulfate	mg/L	5.9	8.1	7.5
Total Dissolved Solids	mg/L	210	220	213

DISPOSAL METHODS

Solids

Solids generated at Plant #24 consist of flume mud and tomato by-products (culls and vines), tomato pumice, and tomato wet wastes. Flume mud and tomato by-products are spread, disked, and incorporated into the LAA (location varies from year-to-year). Tomato pumice and wet wastes are hauled off-site and used as cattle feed and/or other acceptable animal feed.

Wastewater

Process wastewater receives pH adjustment (via carbon dioxide gas injection) and screening and is discharged to a concrete lined pump station. Wastewater is then pumped directly to an irrigation distribution system where it is used to supplement flood irrigation of the land application area (LAA) which consists of 1,235 acres of alfalfa, barley, cotton, sorghum, sudan grass and/or wheat. Fields 15, 16, 17, 29, and 30 are commonly referred to as the "North Fields" and Fields 12, 22, 23, 24, and 25 are commonly referred to as the "South Fields." Irrigation water used at the LAA is provided by three agricultural wells and water from the Lakeside Irrigation Ditch. Irrigation water quality is summarized in the table below.

Irrigation Water Quality

Parameter	Units	Farm Well #23	Farm Well #29	Farm Well #30	Lakeside Irrigation Ditch
Electrical Conductivity	umhos/cm	370	320	260	110
Nitrate as Nitrogen	mg/L	<0.10	<0.10	0.12	0.26
Total Kjeldahl Nitrogen	mg/L	<1.0	<1.0	<1.0	<1.0
Total Phosphorous	mg/L	2.5	0.26	0.32	0.16
Potassium	mg/L	<2.0	<2.0	<2.0	<2.0

During the processing season, process wastewater is discharged to a "bypass storage basin" approximately once per week for less than 12 hours in order to perform maintenance on the LAA irrigation system. The bypass storage basin is 135 feet long by 100 feet wide by 9 feet deep (approx. 700,000 gallons of storage capacity). The sides of the bypass storage basin are lined with concrete but the bottom is unlined.

GROUNDWATER CONDITIONS

The groundwater monitoring well network consists of 15 wells that monitor groundwater in the vicinity of the North Fields and South Fields. Boring logs for wells installed in the vicinity of the North Fields indicate the upper 10 to 30 feet of soils consists of sandy silt/silty sand. Below this to a depth of approximately 60 feet, moderately fine textured to fine textured alluvial sediments predominate. Boring logs for wells installed in the vicinity of the South Fields indicate moderately fine to fine textured alluvial sediments may be found at 5 to 40 feet below ground surface.

Based on data from the fourth quarter 2013 groundwater monitoring event, depth to groundwater at the North Fields ranged from 25 to 50 feet below ground surface (ft. bgs.) while depth to groundwater at the South Fields was approximately 10 ft. bgs. Groundwater flow underneath the North Fields is consistently towards the east-northeast. Groundwater flow underneath the South Fields is less consistent and appears to be affected by nearby recharge from an unlined irrigation ditch and storm water collection basin on the north side of the South Fields; however, groundwater generally flows to the northeast.

Groundwater monitoring is conducted quarterly in accordance with Revised Monitoring and Reporting Program No. 96-083. Groundwater analytical data from November 2013 are summarized in the tables below.

North Fields Groundwater Monitoring Data - November 2013

Parameter	Units	MW-4	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
Temperature	°C	19.4	21.8	17.9	18.7	18.5	16.7	21.1
pH	pH units	7.17	7.62	7.25	7.29	7.57	7.67	7.99
Electrical Conductivity	umhos/cm	1,954	880	2,915	1,758	1,413	1,395	446
Total Dissolved Solids	mg/L	1,200	570	1,900	1,100	900	960	320
Carbonate	mg/L	<30	<3	<30	<30	<30	<3	<3
Bicarbonate	mg/L	560	270	810	600	470	400	130
Calcium	mg/L	200	70	210	160	78	140	12
Chloride	mg/L	230	53	230	150	75	62	12
Fluoride	mg/L	0.1	0.22	0.23	0.38	0.42	0.19	0.58
Iron	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Magnesium	mg/L	37	11	48	33	20	29	3.8
Sodium	mg/L	160	120	430	210	220	150	83
Sulfate	mg/L	130	130	300	190	140	270	41
Potassium	mg/L	<2	<2	2.1	<2	<2	<2	<2
Total Phosphorous	mg/L	0.45	0.13	0.58	0.29	0.36	0.35	0.42
Nitrate as Nitrogen	mg/L	20	<0.1	44	5.3	7.9	8	9
Total Kjeldahl Nitrogen	mg/L	1.7	<1	3	<1	<1	1.1	<1.0
Total Nitrogen	mg/L	21.7	<1	47	5.3	7.9	9.1	9

South Fields Groundwater Monitoring Data - November 2013

Parameter	Units	MW-1	MW-2	MW-3	MW-5	MW-6	MW-13	MW-14	MW-15
Temperature	°C	18.5	dry	19.0	dry	dry	20.2	21.1	21.1
pH	pH units	7.39	dry	7.70	dry	dry	7.74	7.30	7.06
Electrical Conductivity	umhos/cm	1,343	dry	504	dry	dry	847	5,116	6,217
Total Dissolved Solids	mg/L	890	dry	300	dry	dry	540	3,400	3,900
Carbonate	mg/L	<3	dry	<3	dry	dry	<3	<30	<30
Bicarbonate	mg/L	430	dry	170	dry	dry	330	1,600	930

Parameter	Units	MW-1	MW-2	MW-3	MW-5	MW-6	MW-13	MW-14	MW-15
Calcium	mg/L	130	dry	37	dry	dry	73	96	230
Chloride	mg/L	91	dry	58	dry	dry	49	440	1100
Fluoride	mg/L	0.23	dry	0.68	dry	dry	0.23	<1	<1
Iron	mg/L	<0.03	dry	<0.03	dry	dry	<0.03	<0.03	<0.03
Magnesium	mg/L	33	dry	8.9	dry	dry	15	32	100
Sodium	mg/L	140	dry	60	dry	dry	110	1,200	1200
Sulfate	mg/L	220	dry	15	dry	dry	44	810	950
Potassium	mg/L	<2	dry	<2	dry	dry	<2	<2	2.6
Total Phosphorous	mg/L	0.2	dry	0.34	dry	dry	0.28	0.40	0.46
Nitrate as Nitrogen	mg/L	<0.1	dry	<0.1	dry	dry	2.9	24	22
Total Kjeldahl Nitrogen	mg/L	<1	dry	<1	dry	dry	<1.	<1	<1
Total Nitrogen	mg/L	<1	dry	<1	dry	dry	2.9	24	22

Included in the April 2014 RWD was a request to modify the groundwater monitoring requirements of MRP No. 96-083. Del Monte proposed to destroy eight wells and install two new wells. Although some of the requested modifications are appropriate, it does not appear that proposed upgradient wells are adequately positioned to collect sufficient data to characterize regional groundwater quality. This Order includes a Provision requiring the Dischargers to submit a revised work plan to modify the groundwater monitoring well network to provide monitoring locations for the updated configuration of the LAA, particularly background or regional groundwater quality.

REGULATORY CONSIDERATIONS

Basin Plan

The *Water Quality Control Plan for the Tulare Lake Basin,* Second Edition (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
Plant #24 is in Detailed Analysis Unit 238 within the Tulare Lake Basin hydrologic unit. The Basin Plan designates the beneficial uses of underlying groundwater as municipal and domestic supply; agricultural supply; and industrial service and process supply.

Treatment and Control Practices

The Dischargers have implemented the following treatment and control of the discharge:

a. Replaced sodium hydroxide with potassium hydroxide for lye peeling operations;

b. Upgraded the pH control system to include carbon dioxide gas injection to neutralize process wastewater instead of using pH neutralizing chemicals;

c. Replaced the existing wastewater screening units with two new internally fed rotary wedge wire screens;

d. Implemented water conservation practices to reduce overall use of source water by 20 percent;

e. Leveled, deep plowed, applied gypsum, and double-cropped the LAA;

f. Installed an advance screw process for purposes of dewatering fines/screenings for use as cattle feed;

g. Increased the size of the LAA; and

h. Installed two evaporation units that recycle lye used for peeling operations.

In combination with the requirements of this Order, these treatment and control measures represent best practicable treatment and control (BPTC).

Antidegradation

The antidegradation directives of State Water Board Resolution No. 68-16, "*Statement of Policy With Respect to Maintaining High Quality Waters in California*," or "Antidegradation Policy" require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Policy and procedures for complying with this directive are set forth in the Basin Plan.

The discharge and the potential for groundwater degradation allowed in this Order is consistent with the Antidegradation Policy since: (a) the limited degradation allowed by this Order will not result in water quality less than water quality objectives, or unreasonably affect present and anticipated beneficial uses of groundwater, (b) the Dischargers have implemented BPTC to minimize degradation, and (c) the limited degradation is of maximum benefit to people of the State.

Title 27

Unless exempt, the release of designated waste is subject to full containment pursuant to Title 27 requirements. Here, the discharge is exempt from the requirements of Title 27 pursuant to the wastewater exemption found at Title 27, section 20090(b).

California Environmental Quality Act

The Central Valley Water Board adopted a Mitigated Negative Declaration for the discharge regulated under Order No. 96-083. This Order ensures that the operation of Plant #24 will not have any significant effects on the environment, authorizes no additional expansion of flows, and is in compliance with Resolution 68-16. As such, the adoption of this Order for an existing facility is exempt from the requirements of California Environmental Quality Act in accordance with California Code of Regulations, title 14, section 15301.

PROPOSED ORDER TERMS AND CONDITIONS

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

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

The proposed Order sets the following discharge specifications for effluent flow from Plant #24:

Discharge Specifications

Date	Units	Average Monthly	Maximum Daily
1 June through 31 October	mgd[1]	3.5	4.5
1 November through 31 May	mgd	0.5	--

1. mgd = million gallons per day

The electrical conductivity and chloride of the effluent discharged from Plant #24, prior to mixing with irrigation water shall not exceed an annual average of 1,000 umhos/cm and a daily maximum of 175 mg/L, respectively.

Consistent compliance with the effluent limitations for EC and chloride is not immediately practicable. Therefore, the tentative WDRs include a compliance schedule to allow the Dischargers to come into compliance with the effluent limitations. The compliance schedule will include an interim effluent EC limitation of 2,000 umhos/cm (annual average) and an interim effluent chloride limitation of 210 mg/L (annual average). The compliance schedule will be for a period of seven years.

Application of waste constituents to the LAA shall be at reasonable agronomic rates to preclude creation of a nuisance or unreasonable degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the wastewater application area, including the nutritive value of organic and chemical fertilizers, manure from non-commercial livestock, and of the wastewater, shall not exceed the annual crop demand.

This Order requires the Dischargers to submit a revised work plan to modify the groundwater monitoring well network to collect sufficient upgradient data to characterize regional groundwater quality.

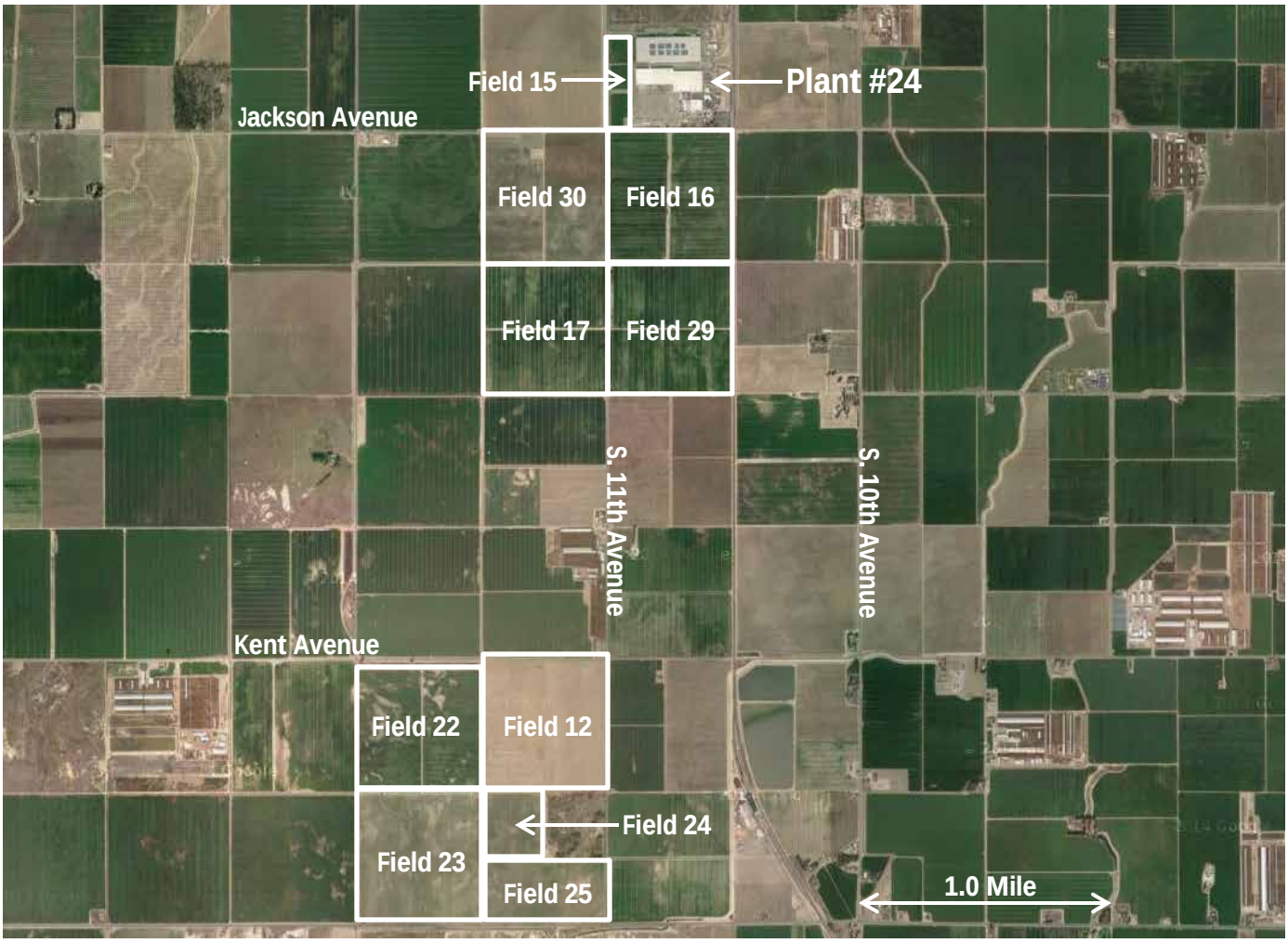
Monitoring Requirements

Water Code section 13267 authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State. Water Code section 13268 authorizes the assessment of administrative civil liability for failure to submit required monitoring and technical reports.

The Order includes monitoring requirements for effluent, soil, and groundwater. In addition, the Order requires loading calculations to the LAA for wastewater, irrigation water, organics, nutrients, and salts. This monitoring is necessary to characterize the discharge, and evaluate compliance with effluent limitations and discharge specifications prescribed in 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 provided or if applicable laws and regulations change.



Drawing Reference: **GOOGLE MAPS** ***2014***	ATTACHMENT A – SITE LOCATION MAP WASTE DISCHARGE REQUIREMENTS ORDER R5-2014-0116 DEL MONTE FOODS, INC., AND ALCALA FARMS PLANT #24 KINGS COUNTY	N W E S