CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-0144

WASTE DISCHARGE REQUIREMENTS

FOR
MORNING STAR PACKING COMPANY, L.P.
AND FRED GOBEL
THE MORNING STAR TOMATO PACKING PLANT
COLUSA COUNTY

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

1. On 30 December 2005, Morning Star Packing Company, L.P. submitted a Report of Waste Discharge (RWD) that describes facility improvements made to its Williams tomato processing facility to comply with Cease and Desist Order (CDO) R5-2005-0003. Additional information to update the RWD was submitted on 30 November 2012, 3 April 2013, 24 April 2013, and 29 August 2013.

2. Morning Star Packing Company, L.P. owns and operates the tomato processing facility (Facility), including approximately 609 acres of associated land application areas (LAAs). An additional 95 acres of LAA (Field MS1) is owned by Fred Gobel and leased to Morning Star Packing Company, L.P. Morning Star Packing Company, L.P. and Fred Gobel (hereafter known as "Discharger") are responsible for compliance with these Waste Discharge Requirements (WDRs).

3. The Facility, which consists of a tomato processing facility and associated LAAs, is located south of the City of Williams, east of Interstate 5 in rural Colusa County (Sections 19, 20, 29 and 30, T15N, R2W, MDB&M), as shown on Attachment A, which is attached hereto and made part of this Order by reference.

4. WDRs Order 95-160, adopted by the Central Valley Water Board on 23 June 1995, prescribes requirements for the discharge of tomato processing wastewater. Order 95-160 allows a maximum discharge from the wastewater Settling Pond not to exceed 4.3 million gallons per day (mgd) and a maximum discharge to the Cooling Pond not to exceed 58 mgd. The WDRs are no longer adequate to regulate the discharge. Therefore, it is appropriate that WDRs Order 95-160 be rescinded and replaced with this Order.

Enforcement History

5. A Notice of Violation (NOV) was issued in September 2003 due to non-compliance with the Monitoring and Reporting Program (MRP) and inadequacy of the monitoring network to detect groundwater degradation. The NOV required the installation of additional monitoring wells and improved sampling and reporting. A Revised MRP was finalized in October 2003. Based on the limited groundwater data from the new

wells and groundwater data from monitoring wells installed in 1995, it appeared that groundwater beneath the Facility and LAAs had been degraded.

6. On 27 January 2005, the Central Valley Water Board adopted CDO R5-2005-0003 as a result of the following:

   a. Discharges of wastewater to surface water.

   b. Non-compliance with the dissolved oxygen (DO) requirement in the upper zone (1 foot) of wastewater in the Settling Pond.

   c. Evidence of groundwater degradation with calcium, chloride, nitrate, sulfate, and total dissolved solids (TDS) due to the discharge.

   d. Monthly monitoring reports for July through November 2004 indicated over-application of nitrogen and salts to the LAAs. Nitrogen and TDS loading rates ranged from 296 to 811 pounds per acre (lb/ac) and 5,600 to 14,800 lb/ac, respectively. Few crops can consume more than 400 lb/ac of nitrogen per year.

7. The 2005 CDO required that the Discharger immediately comply with the following new requirements:

   a. The discharge of wastewater and tailwater or storm water containing waste to surface water drainage courses is prohibited.

   b. There must be at least 2-feet of freeboard at the concrete weir during periods when wastewater is being used for irrigation and/or when tailwater in the ditch results from irrigation with wastewater.

   c. Irrigation water, regardless of the source, must be applied at agronomic rates for the crops grown. The frequency and depth of irrigation must be determined based on actual weather conditions and crop needs.

   d. Nitrogen and other nutrients, regardless of the source, must be applied at agronomic rates for crops grown. All nitrogen applied must be considered “plant available”.

   e. Loading rates for biochemical oxygen demand (BOD) must not exceed 100 lb/ac/day or 300 lb/ac/irrigation cycle.

   f. Comply with Discharge Specification B.5 of the WDRs - irrigation and drainage ditches must be maintained free of weeds and aquatic plants.

8. The 2005 CDO required that the Discharger comply with a schedule for submittal of the following technical reports:

a. 2005 Cropping Plan – to describe how the fields will be planted with suitable crops and managed, including loading rates (hydraulic loading, BOD, nitrogen, and TDS) for both the packing season and on an annual basis.

b. Dissolved Oxygen Compliance Report – to contain (a) feasibility study of methods to ensure that the waste in the Settling Pond contains at least 1.0 mg/L of dissolved oxygen to prevent nuisance conditions and, (b) the preferred alternative for achieving compliance.

c. Salinity Reduction Study Workplan – to contain a discussion of all chemicals used at the Facility, chemical characterization and estimated generation rate for each identified waste stream, methods available to reduce the concentration of TDS in each waste stream discharged to the Settling Pond and Cooling Pond, and calculations estimating the mass of salinity removed by the crops.

d. Flow Metering Systems Improvements Report – to describe the design, construction, and operation of the flow metering systems for each flow monitoring point and include a final report verifying that the metering systems are adequate and fully operational.

e. Field MS11 Irrigation System Report – to document the management and/or physical changes that have been made to the manner in which wastewater is supplied to Field MS11.

f. Results of the Salinity Reduction Study – to contain a discussion of each element required by the Salinity Reduction Study.

g. Background Groundwater Quality Study and Groundwater Impacts Assessment Report – to present a summary of all historical monitoring data, concentration in background monitoring wells, and comparison of background quality to that in wells used to monitor groundwater beneath the ponds and land application areas.

h. Report of Waste Discharge – to describe all improvements required to comply with the 2005 CDO and prevent groundwater degradation.

9. The Discharger submitted the required reports and implemented the Facility and operational improvements required under the 2005 CDO. However, compliance with the BOD and nitrogen loading rate limits has not been consistent, as discussed later in these findings.

Facility and Discharge

10. The Facility operates during the tomato harvest season from approximately June to mid-October. Processing operations occur 24 hours per day, every day during the harvest season. The Facility is designed to produce aseptic tomato paste and diced

tomatoes in bulk packaging. The Discharger has only produced tomato paste to date, but plans to include diced tomato operations in the future.

11. Tomatoes are received in trucks, transported into the Facility by flumes, processed into tomato paste, and packaged in bulk packaging. A site plan is included in Attachment B, which is attached hereto and made part of this Order by reference.

12. The Facility produces five wastewater streams. Four of the five wastewater streams are discharged to either the 5 acre-feet (ac-ft) Settling Pond or 210 ac-ft Cooling Pond. A portion of the wash water from the flume system is discharged into the Settling Pond prior to use as irrigation water for the LAAs. The Cooling Pond receives water softener reject, condensate from the evaporation process, and boiler blowdown. Cooling Pond water is used to irrigate the LAAs or reused in the flume system. Water from plant sanitation and cleaning activities make up the fifth waste stream. Sodium hydroxide is used in the sanitation and cleaning practices. This wastewater is collected in floor drains, then gravity flows into a sump, and is later combined with Settling Pond water in a conveyance ditch for use as irrigation water. A wastewater process flow diagram is included on Attachment C, which is attached hereto and made part of this Order by reference.

13. The Settling Pond was constructed with clay soils compacted in lifts and includes a mechanical aerator. The Settling Pond receives wastewater during the processing season and is typically empty during the non-processing season. Currently, any solids that have settled at the bottom of the pond are removed at the end of the processing season and applied to the LAAs as a soil amendment or used to build up farm roads around the Facility.

    The 1995 WDRs allow solid wastes from the Settling Pond to be discharged to land as a soil amendment; however, they do not allow solids use on farm roads at the site as currently practiced by the Discharger (and as described in the December 2005 RWD). Settling Pond solids include soil washed off the tomatoes in the flume system and tomato waste, so the solids are likely high in BOD and nitrogen. The RWD did not specify which onsite roads receive these solids, nor did it include a description of management practices to prevent discharge of storm water runoff containing waste constituents to surface water drainage courses. This Order prohibits the use of Settling Pond solids on farm roads until a *Settling Pond Solids Management Plan* is approved by the Executive Officer.

14. The flume system is supplied with water from the facility supply wells or condensate from the evaporation process. A small amount of chlorine is added to the well water prior to use as make-up water in the flume system. In 2005, the Discharger began using low-salinity condensate in the flumes in lieu of well water to reduce salinity concentrations in the wastewater. The November 2005 *Salinity Reduction Study Report* included a comparison of the condensate, Cooling Pond, supply well, and Settling Pond water quality which is summarized in the table below.

Water Description	EC [1], µmhos/cm	TDS, mg/L
Condensate	20	N/A
Cooling Pond (2004 Processing Season)	457	256
Cooling Pond (2005 Processing Season)	391	283
Supply Well [2]	785	418
Settling Pond (2004 Processing Season)	1,177	1,489
Settling Pond (2005 Processing Season)	905	620

[1] EC denotes electrical conductivity.
[2] Average of Plant Well 1 and Plant Well 2.

15. The wastewater character discharged from the Settling Pond is summarized in the table below for select parameters. Wastewater samples are collected at the flow metering station just outside the Settling Pond, which also captures plant sanitation and clean-up water collected from the facility floor drains. Potentially applicable Water Quality Objectives (WQOs) are shown for comparison.

	Annual Average Wastewater Quality						
	pH	EC	TDS	FDS	BOD	TKN	Nitrate Nitrogen
Year	pH units	µmhos/cm	mg/L	mg/L	mg/L	mg/L	mg/L
WQO	6.5-8.5[1]	700[4]-2,200[2]	450[4]-1,500[2]	--	--	--	10[3]
1996	6.3	1,520	--	--	--	--	--
1997	6.6	1,688	--	--	--	--	--
1998	6.6	1,290	--	--	--	--	--
1999	5.6	1,257	--	--	--	--	--
2000	5.0	1,620	--	--	--	--	--
2001	5.7	1,338	1,118	--	885	--	--
2002	6.2	3,164	1,886	--	1,473	75.3	0.1
2003	5.1	1,267	1,397	--	1,342	58.6	0.0
2004	4.5	1,177	1,489	901	1,059	69.7	1.8
2005	5.7	906	620	374	527	58.1	0.4
2006	6.2	756	646	397	389	27.5	3.8
2007	5.4	954	847	459	840	48.2	0.4
2008	6.0	901	760	491	647	52.8	1.2
2009	6.1	1,017	923	550	850	43.5	2.1
2010	5.5	986	882	565	650	51.2	2.5
2011	5.6	1,011	877	607	241	67.1	2.4

	Annual Average Wastewater Quality						
	pH	EC	TDS	FDS	BOD	TKN	Nitrate Nitrogen
Year	pH units	µmhos/cm	mg/L	mg/L	mg/L	mg/L	mg/L
WQO	6.5-8.5[1]	700[4]-2,200[2]	450[4]-1,500[2]	--	--	--	10[3]
2012	5.5	1,219	1,173	849	849	80.8	1.9

"—" denotes no data available.
[1] Secondary Maximum Contaminant Level (MCL).
[2] Upper Secondary MCL.
[3] Primary MCL.
[4] Agricultural Water Quality Goal.

Wastewater pH measurements from the Settling Pond have frequently been below 6.0 and occasionally as low as 4.0. However, the discharge to the Settling Pond has caused only limited degradation of groundwater with respect to pH, and this degradation does not appear to have impacted beneficial uses.

Based on the data above, wastewater quality improved with respect to salinity and BOD concentrations after the 2005 modifications, but average FDS concentrations have increased steadily since 2007. More recent data from 2012 show higher salinity and nitrogen concentrations that are more consistent with pre-CDO values. This Order does not require further salinity control but does not allow the wastewater salinity to increase significantly above current concentrations.

16. The Cooling Pond is generally full of water (a mixture of water softener reject, condensate from the evaporation process, and boiler blowdown) throughout the year; however, the pond is occasionally emptied for maintenance. After the processing season, water in the Cooling Pond is drained to achieve 4 feet of freeboard to accommodate direct precipitation during the rainy season. Based on a 100-year return 365-day precipitation event, reasonable estimates for evaporation, and minimal percolation, adequate capacity (with a minimum of 2-foot freeboard) is maintained during the wet weather months.

17. When the Facility operates daily, approximately 728,800 gallons per month of boiler blowdown is generated (which represents less than 1 percent of the 81.9 million gallons (mgal) of total wastewater discharged by the Facility during the peak months of August and September). The boiler blowdown has an average EC of 1,200 to 1,400 µmhos/cm.

18. The Facility has two water softeners. The water softener regeneration cycle occurs after 200,000 gallons of soft water has been produced. There are four stages to a cycle. Water quality and discharge rates from each cycle are summarized below:

Cycle and Description	Flow During Cycle, gpm	EC, mg/L	Total Monthly Flow, gallons	% of Total WW Flow [1]
Backwash - water flows backwards to loosen bed and remove foreign matter	145	850	52,171	0.06
Brine - between 600 and 1,000 lb of salt introduced to softener	24	7,300	19,275	0.02
Slow Rinse - slowly distributes remaining sodium through softener	145	8,600	44,718	0.05
Final Rinse - Compacts resin and removes excess brine	220	3,463	113,080	0.14

[1] Based on approximately 81.9 million gallons of wastewater discharged to the LAAs during the peak months of August and September. Wastewater includes water from Settling Pond, Cooling Pond, and plant sanitation and cleanup activities.

19. Approximately 695 acres of LAAs are available for irrigation with wastewater from the Settling Pond and/or Cooling Pond. Supplemental water is provided by the Glen-Colusa Irrigation District (GCID). The various crops grown on the LAAs include sudan grass hay, alfalfa, pasture grass and corn. A description of the LAAs is summarized below.

LAA Field	Acreage	Land Use	Land Owner
MS1	95	Crop	Gobel
MS2, MS3	82.1	Crop	Morning Star
MS5	24.6	Pasture	Morning Star
MS6	21.4	Crop	Morning Star
MS11	35.6	Crop	Morning Star
MS14	44.5	Crop	Morning Star
MS15	26.7	Pasture	Morning Star
MS16	18	Pasture	Morning Star
MS17	18.7	Pasture	Morning Star
MS18	78.2	Pasture	Morning Star
MS20	64.6	Crop	Morning Star
MS21	25.9	Crop	Morning Star
MS24	159.8	Pasture	Morning Star

20. Although the 1995 WDRs did not envision cattle grazing, the Discharger began using Fields MS5, MS15, MS16, MS17, MS18, and MS24 in 2005 to graze cattle. The 2005 Cropping Plan required by the CDO stated that pasture grasses are grown on some of the LAA fields. However, the projected mass loading rates presented in the Cropping Plan do not account for any additional BOD and nutrient loadings associated with the cattle grazing. The 2005 RWD also stated that some LAAs are used for pasture, but it was unclear whether the projected nutrient loading rates included in the RWD accounted for cattle manure.

    Currently, approximately 160 head are rotated between each field designated as pasture from mid-May to early November. Grazing cattle returns nutrients to the LAAs in their waste products, which could result in nitrogen overloading and increased potential for nitrate to be transported into the groundwater. This Order allows the Discharger to continue grazing cattle on the LAA fields currently specified for pasture use in Finding 19, but limits the number of head to the current practice of 160 head rotated among the fields listed above. If the Discharger proposes changes to the current grazing operations, this Order requires a *Livestock Management Plan* to be approved by the Executive Officer prior to any change.

    Cattle can also damage earthen structures such as berms used to control irrigation and ditches used to convey wastewater, tailwater, and other irrigation supplies. The Discharger states that the irrigation and tailwater ditches that convey the wastewater to these fields are located outside the perimeter fences and away from the cattle. This Order requires that fences be maintained on all fields where cattle are grazed to prevent damage that might cause discharges of waste to surface water drainage courses.

21. The LAAs are surface irrigated (border check method) using breakouts in the irrigation ditch berms or siphon hoses from the ditches to the fields. Each field contains several checks that are separated by berms. Each check is typically 20 feet wide, and the current check lengths typically range from approximately 1,000 to 2,600 feet.

    On any given day during the processing season, multiple checks within a field and multiple LAA fields may be receiving water at the same time. The number of checks receiving wastewater at any one time depends on process wastewater flow rates, which vary from day to day. For a particular field, the checks are irrigated sequentially until the entire field has been irrigated. The field is then allowed to rest until the next irrigation cycle begins. Because of the long check lengths, it typically takes one to two days of continuous irrigation to ensure that the lower end of the each check receives sufficient water to sustain the crop, and it may take up to 10 days or more to irrigate one field.

    Fields with long check lengths may not be able to ensure irrigation uniformity, due to higher application rates and longer infiltration periods at the top end of the field in comparison to the bottom end of the field. The Discharger states that reducing check

lengths to improve uniformity in water and waste constituent application rates would require extensive work to reconfigure the existing irrigation and tailwater ditch system. This Order allows the Discharger to continue using the LAAs in their current configuration and to calculate waste constituent loading rates as a field wide average as long as monitoring reports clearly demonstrate best efforts to achieve uniform application field-wide and compliance with this Order. However, this Order also requires that the Discharger employ methods to rectify existing conditions of pollution by 2018. Reconfiguring the existing irrigation and tailwater ditch system may be required to achieve ultimate compliance with applicable water quality objectives.

22. Earth dams and additional ditches (temporary and permanent) are used to separate the Discharger's irrigation distribution and tailwater collection system from the GCID easement drain and other public drainage courses that traverse the LAAs. The GCID drain is located along the western boundary of Fields MS11 and MS21 and crosses through the LAAs near Fields MS3, MS5, MS6, and MS14 as shown on Attachment B. A parallel ditch is used in lieu of the GCID drain to provide irrigation to Fields MS11 and MS21. The temporary tailwater collection ditch parallel to the public drain along the eastern boundary of Fields MS5, MS16, MS17, and MS18 isolates the public drain and the concrete weir east of MS5 from wastewater discharges. At the end of the processing season, temporary tailwater ditches are filled in, storm water culverts to the GCID are restored, and storm water is allowed to discharge into the GCID drain.

23. Based on the Discharger's Annual Monitoring Reports, the average monthly wastewater applied to the LAAs is summarized below. No supplemental irrigation water from GCID was used during the 2009 through 2012 processing seasons.

	Average Monthly Discharges to the LAAs, mgd	
Processing Year	**From Settling Pond**	**From Cooling Pond**
2009 [1]	2.0 – 2.4	0.8 – 1.1
2010 [2]	1.8 - 2.4	0.3 – 0.9
2011 [3]	1.5 – 2.3	0 – 0.4
2012 [4]	0.7 – 2.8	0 – 0.5

[1] Processing season July through October.
[2] Processing season August through October.
[3] Processing season August through October.
[4] Processing season July through October.

24. Nitrogen is introduced to the LAAs through process wastewater and manure from grazing cattle. Annual nitrogen uptake values vary from 150 to 350 lb/ac depending on the crop grown and whether the LAAs are pasture lands. A nitrogen balance for each LAA was provided by the Discharger in the 30 November 2012 submittal, which is summarized below.

Fields	Land Use	Average Nitrogen Loading, lb/ac/yr (Minimum/Maximum from 2009 through 2011)			
		Wastewater	Other Sources [1]	Crop Uptake [2]	Nitrogen Balance [3]
MS1	Crop	0 / 107	--	0 / 230	0 / -123
MS2, MS3	Crop	59 / 182	--	230 / 350	-171 / -168
MS5	Pasture	115 / 164	30 / 30	150	-5 / 44
MS6	Crop	63 / 150	--	230 / 350	-167 / -200
MS11	Crop	95 / 142	--	350	-255 / -208
MS14	Crop	98 / 217	--	290 / 350	-192 / -133
MS15	Pasture	69 / 144	38 / 18	150	-43 / 12
MS16, MS17	Pasture	90 / 156	30 / 18	150	-30 / 24
MS18, CH1	Pasture	69 / 165	38 / 30	150	-43 / 45
MS18, CH2	Pasture	30 / 112	38 / 30	150	-82 / -8
MS20, CH1	Crop	48 / 77	--	350 / 230	-302 / -153
MS20, CH2	Crop	44 / 161	--	350	-306 / -189
MS21	Crop	52 / 142	--	230 / 350	-178 / -208
MS24, CH1	Pasture	97 / 189	30 / 38	150	-23 / 77
MS24, CH2	Pasture	139 / 257	30 / 18	150	19 / 125

[1] Range of nitrogen loadings from cattle manure during 2009, 2010, and 2011 based on nitrogen excreted per season: approximately 30 lb/ac in 2009, 38 lb/ac in 2010, 18 lb/ac in 2011.
[2] Typical crop uptake rates: 350 lb/ac for alfalfa, 230 lb/ac for corn, 230 lb/ac for sudan hay grass, 290 lb/ac for alfalfa/grass, and 150 lb/ac for pasture land.
[3] Nitrogen applied from wastewater plus nitrogen applied from other source minus crop root uptake. Positive number indicates overloading of nitrogen.

The data above show that some of the fields received more nitrogen than could be consumed by the crop, which is a violation of CDO R5-2005-0003. CDO R5-2005-0003 requires that nitrogen and other nutrients, regardless of source, be applied at agronomic rates for the crops grown. Review of these results in concert with reported irrigation rates during the same period indicates that the nitrogen overloading is primarily associated with fields used for pasture and fields that were over-irrigated with wastewater. This Order requires the application of wastewater and nutrients at reasonable rates to preclude creation of a nuisance condition or degradation of groundwater. In addition, this Order requires the Discharger to improve operational controls to prevent nitrogen overloading.

25. Based on the 30 November 2012 RWD Addendum, the maximum daily BOD loading rates during the 2009 to 2011 processing season (July through October) were as high as 700 lb/ac/day. High BOD daily loading rates occurred during the 2009 season, specifically during the months of July and August. Ranges indicate the variation

between the different field sizes. Review of the 2012 BOD loading data (July through October) indicated maximum daily BOD loading rates up to 220 lb/ac/day. Therefore, the Discharger has occasionally exceeded the daily maximum BOD limit of 100 lb/ac/day imposed by CDO R5-2005-0003.

Based on additional information submitted on 29 August 2013 in response to a Notice of Violation, maximum daily BOD loadings were calculated for each field, rather than each check as required by Revised MRP 95-160. Calculations were based on monthly average BOD loadings and the assumption that wastewater was distributed uniformly across each field. This Order prescribes protective BOD loading limits and requires submittal of a plan to better control and monitor BOD loading rates from wastewater and cattle manure and ensure compliance with this Order.

26. The California League of Food Processors' *Manual of Good Practice for Land Application of Food Processing/Rinse Water* [1] proposes risk categories associated with particular BOD loading rate ranges as follows:

    a. Risk Category 1: (less than 50 lb/ac/day; depth to groundwater greater than 5 feet) Indistinguishable from good farming operations with good distribution important.

    b. Risk Category 2: (less than 100 lb/ac/day; depth to groundwater greater than 5 feet) Minimal risk of unreasonable groundwater degradation with good distribution more important.

    c. Risk Category 3: (greater than 100 lb/ac/day; depth to groundwater greater than 2 feet) Requires detailed planning and good operation with good distribution very important to prevent unreasonable degradation, as well as use of oxygen transfer design equations that consider site-specific application cycles and soil properties and special monitoring.

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

27. Although it has not been subject to a scientific peer review process, the *Manual of Good Practice* provides science-based guidance for BOD loading rates that, if fully implemented, are considered a best management practice to prevent groundwater degradation due to reduced metals. Based on facility- and site-specific information, the discharge falls in Risk Category 3. On 29 August 2013, the Discharger submitted an oxygen transfer model that demonstrated a cycle average BOD loading of

[1] Brown and Caldwell and Kennedy/Jenks Consultants, Second Edition, February 2007.

139 lb/ac/day that would maintain aerobic conditions within the LAA soils. However, as discussed below, uneven loading of water and waste constituents is inherent with border check irrigation, especially with the long checks used by this Discharger. The resulting uneven BOD application rates pose and increase threat of reducing conditions. Therefore, this Order limits the BOD loading rate to 100 lb/ac/day as an irrigation cycle average and requires that the Discharger improve irrigation efficiency.

28. The Discharger plans to increase production by up to 65 percent in the future and states that the planned expansion is not expected to change wastewater character or cause exceedance of the wastewater flow limits of this Order (which are the same as those in WDRs Order 95-160). The flow limits of this Order allow the discharge of up to 422 MG of process wastewater combined with Cooling Pond water each year. For 695 acres of land application areas, this is equivalent to approximately 22 inches of water over four months from July through October. Average reference evapotranspiration (ET_o) rates in the Williams area for that period are typically 24 inches. Although the crop evapotranspiration rates will typically be less than ET_o, the inherent inefficiency of border check irrigation requires some over application of water to ensure good crop yield. Although increases in wastewater flows up to the flow limits of this Order would likely not lead to gross over irrigation of the LAA fields, those flow increases will be accompanied by increased BOD and total nitrogen mass loadings. If wastewater flows increase to the flow limits of this Order, it is possible that the Discharger will not be able to comply with the loading rate limits of this Order without eliminating the cattle grazing, eliminating land application of residual solids, and/or implementing wastewater treatment to reduce BOD and/or total nitrogen loading rates.

29. During the processing season, any storm water or irrigation runoff (tailwater) from the LAAs is collected in the irrigation and tailwater ditches for reuse in the irrigation system.

30. Storm water generated at the processing Facility is contained on-site. Drains collect and convey storm water to several storm water collection basins onsite for percolation or evaporation. The storm water basins have a total capacity of approximately 4.7 million gallons and their locations are shown on Attachment B.

31. In the Discharger's 30 October 2013 comments on the tentative WDRs, the Discharger stated that any standing water remaining in the irrigation and tailwater ditches at the end of the processing season, including runoff from the first 2 inches of rainfall, is applied to the LAAs. LAA runoff from the next rain event collected in the tailwater ditches is analyzed and compared to analytical results for water in the nearby GCID drain. The Discharger stated that if the results for the two sources are similar, the earthen dams that separate the tailwater ditches from other drainage courses are removed and subsequent storm water runoff is allowed to drain offsite for the remainder of the rainy season.

This practice may be a violation of the 1995 WDRs and the 2005 CDO. The 2005 CDO specifically prohibits the discharge of storm water containing waste to surface water drainage courses. In a 6 January 2009 letter, the Discharger proposed that this practice be allowed and provided an analysis comparing the quality of storm water runoff from the LAAs and runoff collected from the GCID drain. However, the samples were only analyzed for pH and electrical conductivity, whereas the wastewater discharged to the LAAs characteristically contains high concentrations of BOD and nitrogen as well. Staff did not approve the proposed practice.

This Order provisionally allows the current storm water management practice for the 2013-2014 rainy season only and requires the Discharger to submit a *Storm Water Runoff Evaluation and Management Plan* that demonstrates through monitoring that the current practices are not in violation of the WDRs. If the Executive Officer does not approve the plan, this Order requires that the Discharger not release storm water runoff from the LAAs in subsequent years unless and until a revised plan is approved.

32. Currently, cull tomatoes and vines (approximately 3,000 to 6,000 tons per year) and tomato pomace including seeds and skins (approximately 12,000 tons per year) are transported off-site for use as animal feed or soil amendment. The Discharger requested that the WDRs be revised to allow these residual solids to be applied to the LAAs, but did not provide information regarding the character of the solids. Land application of residual solids may represent a significant new source of BOD and nitrogen loading to the LAAs, which are already occasionally overloaded. Therefore, this Order prohibits that use until a *Residual Solids Management Plan* that demonstrates that nutrient loading will not result in exceedances of water quality objectives is approved by the Board's Executive Officer.

33. Three flow metering stations measure wastewater flows to the LAAs. Station 1 is located in the main irrigation supply ditch that carries Settling Pond and plant sanitation/clean-up water to the LAAs. Station 2 is located in the conveyance ditch that carries Cooling Pond water to the main irrigation supply ditch. Station 3 is located on the main irrigation supply ditch downstream of the Cooling Pond discharge point and measures the total irrigation flow (a blend of plant sanitation/clean-up, Settling Pond, Cooling Pond, and GCID supplemental water) applied to the LAAs. The flow metering stations are also used as sampling points, and their locations are shown on Attachment B.

34. Domestic wastewater generated at the Facility is discharged to a septic tank and leachfield system regulated by the Colusa County Environmental Health Department. Its location is shown on Attachment B.

Site-Specific Conditions

35. The processing facility is supplied with water from two wells located on the property. Plant Well 1 is designated as the primary water source. Plant Well 2 is used as a back-up water source. The process supply water quality is summarized below for select constituents.

	Average Water Quality Data [1], mg/L unless specified	
Constituent	**Plant Well 1**	**Plant Well 2**
pH, std units	7.4	7.7
EC, µhmos	664	746
TDS	410	420
Calcium	48	42
Chloride	45	57
Iron, µg/L	70	60
Magnesium	20	26
Manganese, µg/L	<10	<10
Potassium	1	2
Sulfate	62	70
Nitrate – NO_3,	5.7	3.1

[1] Based on data obtained 29 October 2012.

36. The Facility and LAAs are relatively flat with a mild downward slope toward the north-east. Drainage within the area is towards the GCID drainage ditch, which is tributary to the Colusa Basin Drain.

37. Based on the 15 May 2003 Flood Insurance Rate Map, the Facility is located within an area determined to be outside the 0.2 percent annual chance (or 500-year) flood.

38. Surrounding land uses are primary agricultural. The nearest California Irrigation Management Information System climate data station (Station #32) is located near Colusa. The annual average precipitation is approximately 18 inches, the 100-year total annual precipitation is approximately 33 inches, and the reference evapotranspiration rate is approximately 54 inches per year.

Groundwater Conditions

39. Based on information from the United States Department of Agriculture Colusa County Soil Survey, soils below the Facility and LAAs are predominantly loam and clay loam soils. According to the United States Department of Agriculture Natural

Resources Conservation Service data, near-surface soils at the Facility are classified as Westfan loam. These soils are characterized as well drained soils.

40. Groundwater beneath the Facility and associated LAAs is relatively shallow, approximately 5 to 15 feet below ground surface, and generally flows towards the north to north-east. Groundwater gradient and background groundwater quality are likely influenced by infiltration of high quality water from the GCID Canal, which is adjacent to the southern site boundary (see Attachment B). This unlined canal carries high quality Sacramento River water used to irrigate farmland. Percolation from this canal most likely produces localized improvements in groundwater quality. The unlined Cooling Pond also recharges the shallow groundwater immediately upgradient of the LAAs with relatively low salinity water year-round.

41. Nine groundwater monitoring wells monitor the shallow groundwater at the site, as shown on Attachment B. Groundwater monitoring near the Settling Pond was established just prior to operation of the Facility in 1995 and includes wells MW1, MW2, MW3 (installed in 1995) and MW4 (installed in 2004). Monitoring wells near the LAAs were installed in 2004 several years after the discharge began (wells MW5, MW6, MW7, MW8 and MW9).

42. The Discharger submitted the *Background Groundwater Quality Study and Groundwater Impacts Assessment Report* as required by CDO R5-2005-0003 on December 2005. An intra-well analysis and upper control limits were established for wells MW1 through MW3. At that time, groundwater monitoring results indicated high spatial variability between wells, but low temporal variability within each well. The report concluded that salinity and nitrate concentrations were below the respective intra-well upper control limits. Therefore, the report concluded, there was no evidence of groundwater degradation caused by the discharge to the Settling Pond at that time. However, the report stated that nitrate nitrogen concentrations exceeded the upper control limit, particularly in wells MW1 and MW3. This apparent degradation was attributed to either contamination or an innocuous cause, such as sampling, transcription, or lab error. In this case, because this occurred in both an upgradient and downgradient well, the report concluded that the increased concentrations were not attributed to the Settling Pond and therefore there was no evidence of degradation.

43. Since the 2005 report, the Discharger has continued to monitor shallow groundwater quality near the Settling Pond. In general, shallow groundwater quality has continued to show high spatial variability between wells and low short-term temporal variability within each well. A comparison of the current groundwater quality to groundwater quality prior to discharge operations is summarized in the table below. Because of the low short-term temporal variability, average concentrations are considered representative of the data.

	Average Groundwater Concentration, mg/L							
	Background				Compliance Wells			
	MW1		MW4		MW2		MW3	
Constituent	**1995**	**2012**	**2004**	**2012**	**1995**	**2012**	**1995**	**2012**
TDS	206	147	350	318	453	477	490	507
Chloride	21	5.5	29	20	35	56	26	30
Iron	--	< 0.1 [1]	0.1	< 0.1 [1]	--	< 0.1 [1]	--	< 0.1 [1]
Manganese	--	< 0.1 [1]	< 0.1 [1]	< 0.1 [1]	--	< 0.1 [1]	--	< 0.1 [1]
Nitrate Nitrogen	0.2	1.8	6.0	6.4	11	3.9	10	19

"—" denotes no data available.
[1] The laboratory reporting limit for iron and manganese is 0.1 mg/L.

Groundwater quality in wells MW1 and MW4, which are upgradient of the Settling Pond, exhibits high spatial variability, possibly due to influences from the nearby GCID canal. MW1 is located immediately downgradient from this canal and exhibits higher quality water when compared to MW4, which is also upgradient of the Settling Pond but farther north of the canal.

In general, groundwater quality in wells MW1 through MW4 has been relatively constant over time for salinity constituents and nitrate nitrogen since just before the discharge began:

a. TDS concentrations have been relatively constant over time in all four wells, so there is no significant evidence of degradation from the pond.

b. Chloride concentrations in MW2 have increased in the last two years, indicating groundwater degradation caused by the discharge. However, the concentrations do not exceed the lowest agricultural water quality goal for chloride.

c. Use of the Settling Pond has apparently not caused degradation from iron and manganese. However, the Discharger's laboratory's reporting limit for manganese is 0.1 mg/L, which is two times the secondary MCL of 0.05 mg/L. This Order requires that all laboratory reporting limits be no greater than the applicable water quality objectives for all monitored constituents.

d. Nitrate nitrogen concentrations have been relatively constant over time, indicating no evidence of degradation from the pond. Nitrate nitrogen concentrations in MW3 have historically exceeded the primary MCL since before discharge operations began. This apparent pollution appears to be highly localized (i.e., nitrate levels in wells further downgradient do not exceed the water quality objective).

44. As noted above, wells MW-5 through MW9 monitor shallow groundwater at the LAAs. Because wells MW5 though MW9 were installed several years after the discharge began and limited data were available at the time of the 2005 study, a comparison between the average water quality results was performed to determine if upgradient well MW5 had lower constituent levels than the downgradient wells, MW6 through MW9. The 2005 report concluded that the groundwater monitoring results near the LAAs indicated spatial variability but no evidence of degradation from wastewater application operations at that time.

45. The Discharger has continued to monitor shallow groundwater quality near the LAAs. With the additional data, the potential for degradation at the LAAs was re-evaluated. A comparison of 2005 groundwater quality and current (2012) groundwater quality is summarized in the table below.

	Average Groundwater Concentration, mg/L									
	Background		**Compliance Wells**							
	MW5		**MW6**		**MW7**		**MW8**		**MW9**	
Constituent	**2005**	**2012**	**2005**	**2012**	**2005**	**2012**	**2005**	**2012**	**2005**	**2012**
TDS	488	700	735	748	537	674	730	885	987	1012
Chloride	24 [3]	55	54 [3]	75	76 [3]	98	63 [3]	139	39 [3]	156
Iron	2.2 [2]	< 0.1 [1]	7.4	< 0.1 [1]	1.0 [2]	< 0.1 [1]	9.6	< 0.1 [1]	2.0	< 0.1 [1]
Manganese	0.6	< 0.1 [1]	0.2	< 0.1 [1]	0.7	0.5	1.0	0.8	0.1	< 0.1 [1]
Nitrate Nitrogen	6.8	39	11	5.9	9.7	4.1	2.4	1.8	23	17

[1] The laboratory reporting limit for iron and manganese was reported as 0.1 mg/L.
[2] The February 2005 groundwater samples resulted in iron concentrations of 88 mg/L and 56 mg/L in MW5 and MW7 respectively, which appear to be outliers; therefore these results were not used to calculate the averages.
[3] The November 2005 chloride data for MW6, MW7, MW8, and MW9 appear to be outliers; therefore they were not included in the yearly average.

In general, groundwater quality near the LAAs, indicates salinity constituents and nitrate nitrogen concentrations increase as groundwater moves northward away from the GCID canal. Concentrations of constituents of concern within each well have been relatively constant over time with a few exceptions:

a. TDS, chloride, and nitrate nitrogen concentrations in background well MW5 have increased in the last two years. More significantly, background nitrate concentrations, have exceeded the primary MCL since 2010. Prior to 2010, background nitrate concentrations were below 10 mg/L. Well MW5 is located away from the influence of the GCID canal and upgradient to side-gradient of the LAA discharge. Temporally variable background concentrations are likely due to natural variations and/or upgradient land uses that are not controlled by the Discharger, which are primarily irrigated agriculture.

b. TDS concentrations in wells MW6, MW7, MW8 and MW9 indicate degradation caused by the discharge. Increased concentrations were observed in wells MW8 and MW9 between 2010 and 2012. In particular, TDS concentrations in MW9 were at an all-time high. Annual average TDS concentrations exceeded the lowest agricultural water quality goal of 450 mg/L; however they did not exceed the upper secondary MCL of 1,000 mg/L.

c. Chloride concentrations in wells MW6, MW7, MW8 and MW9 indicate degradation caused by the discharge. Between 2010 and 2012, higher than normal chloride concentrations were observed in wells MW8 and MW9. In particular, chloride concentrations in MW9 were at an all-time high. Annual average chloride concentrations in MW9 did not exceed the lowest secondary MCL of 250 mg/L. However, concentrations exceeded 250 mg/L on two sampling events in 2011. Chloride increases were also observed in background well MW5 during the same period, but the degree of increase was less than the increases observed in MW8 and MW9.

d. Iron and manganese concentrations that exceed the secondary MCLs were sporadic in most of the compliance monitoring wells. In the case of manganese, concentrations in MW7 and MW8 exceeded the secondary MCL multiple times in 2012. In addition, multiple exceedances have been observed in well MW8 since its installation in 2004. As mentioned previously, the laboratory reporting limit for manganese is 0.1 mg/L, which is two times the secondary MCL. Lowering the reporting limits to below water quality objectives will be necessary to determine potential degradation from the LAAs.

e. Nitrate nitrogen concentrations in wells MW6, MW7, and MW8 have been relatively steady since 2010 and remain below the primary MCL. In contrast, nitrate nitrogen concentrations in MW9 indicate apparent pollution not evidenced in any other well within or downgradient of the LAAs. Concentrations in MW9 that exceed the primary MCL were sporadic prior to 2010. However, since 2010, concentrations have consistently exceeded the primary MCL. Nitrate concentrations in background well MW5 were relatively constant prior to 2010, but have significantly increased since 2010. However concentrations in other wells within or downgradient of the LAAs remained constant, with the exception of MW9.

Basin Plan, Beneficial Uses, and Regulatory Considerations

46. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins,* Fourth 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.

47. Local drainage is to the Colusa Basin Drain. The beneficial uses of Colusa Basin Drain as stated in the Basin Plan, are agricultural supply; water contact recreation; warm freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.

48. The Basin Plan designates the beneficial uses of underlying groundwater as municipal and domestic supply, agricultural supply, and industrial supply.

49. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.

50. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.

51. 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.

52. The narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses.

53. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. 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.

54. 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 µmhos/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 µmhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

Antidegradation Analysis

55. 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 is consistent with the maximum benefit to the people of the state.

    b. The degradation will not unreasonably affect present and anticipated future beneficial uses.

    c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and

    d. The discharger employs best practicable treatment or control (BPTC) to minimize degradation.

56. Degradation of groundwater by some of the typical waste constituents associated with discharges from a food processing facility, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The Discharger aids in the economic prosperity of the community by direct employment of full time and seasonal personnel. In addition, the Discharger provides a needed service for local growers, fertilizer, and equipment manufacturers as well as provides a tax base for local and county governments. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order.

57. The Discharger has been monitoring groundwater quality at the site since the beginning of facility operations in 1995. Based on the data available, it is not possible to determine pre-1968 groundwater quality. Therefore, determination of compliance with Resolution 68-16 for this Facility must be based on existing groundwater quality at the time that the discharge began.

58. Constituents of concern that have the potential to degrade groundwater include salts (primarily TDS and chloride), nutrients (nitrate nitrogen), and metals (iron and manganese) as summarized below:

    a. **Total Dissolved Solids.** Groundwater data indicate degradation caused by the discharge in LAA monitoring wells MW6, MW7, MW8, and MW9. TDS concentrations in these wells exceed the lowest agricultural water quality goal of 450 mg/L, but do not exceed the least stringent secondary MCL, which is the short-term level of 1,500 mg/L. Changes in effluent quality with respect to TDS are not anticipated. This Order includes an effluent limit that does not allow the salinity of the wastewater to increase significantly over the current level, and sets a

groundwater limitation that prohibits exceedance of a water quality objective. The Monitoring and Reporting Program (MRP) also establishes a numeric groundwater trigger concentration that is below the water quality objective to serve as a means of assessing whether the discharge might potentially cause a violation of the groundwater limitation at some later date. If the annual evaluation of groundwater quality performed pursuant to the MRP shows that the annual average exceeds the applicable trigger concentration in any compliance well during the calendar year, the Discharger is required to submit a technical report that either shows that the increase will not cause a violation of the Groundwater Limitation, or that proposes specific additional treatment or control to prevent exceedance of the Groundwater Limitation.

b. **Chloride.** The current monitoring program does not require analysis of chloride in wastewater, but chloride is known to be a key salinity constituent in food processing wastewater. Groundwater data indicate degradation caused by the discharge in Settling Pond well MW2 and LAA monitoring wells MW6, MW7, MW8, and MW9. However, the degradation does not exceed the least stringent secondary MCL of 250 mg/L.

   No additional modifications to the wastewater management system or expansion of the LAAs are anticipated; and effluent quality is not expected to change. This Order sets a groundwater limitation that prohibits an exceedance of the water quality objective in any compliance well, and the Board expects that compliance with the effluent limitation for FDS and other provisions of this Order will ensure that chloride concentrations in the wastewater do not increase significantly. If future monitoring data indicate further degradation, the Provisions require that the Discharger submit an *Action Workplan* to determine additional treatment or control measures for each waste constituent that exceeds a Groundwater Limitation.

c. **Iron.** Based on the character of process water supply and nature of typical food processing operations, wastewater at the site is not expected to contain significant iron concentrations. However, excessive BOD loading rates can deplete oxygen, resulting in anoxic conditions that can solubilize naturally occurring metals in soil, resulting in reducing conditions that favor dissolution of iron from native soil. In general, for the LAA monitoring wells, iron was not detected at or above the laboratory reporting limit of 0.1 mg/L in the background groundwater or groundwater downgradient of the LAAs. However, there were sporadic concentrations that exceeded the secondary MCL of 0.3 mg/L.

   No additional modifications to the wastewater management system or expansion of the LAAs are anticipated, and effluent quality is not expected to change. This Order sets a BOD loading limit for the LAAs to prevent potential anoxic conditions that could result in high iron detection levels in the groundwater. This Order sets a Groundwater Limitation that prohibits an exceedance of the water quality objective in any compliance well. The MRP also establishes a numeric groundwater trigger concentration that is below the water quality objective to serve as a means of

assessing whether the discharge might potentially cause a violation of the groundwater limitation at some later date. If the annual evaluation of groundwater quality performed pursuant to the MRP shows that the annual average exceeds the applicable trigger concentration in any compliance well during the calendar year, the Discharger is required to submit a technical report that either shows that the increase will not cause violation of the Groundwater Limitation, or that proposes specific additional treatment or control to prevent exceedance of the Groundwater Limitation.

d. **Manganese.** Based on the character of process water supply and nature of typical food processing operations, wastewater at the site is not expected to contain significant manganese concentrations. However, as with iron, excessive BOD loading rates can deplete oxygen, resulting in anoxic conditions that can solubilize naturally occurring metals in soil. It appears that BOD overloading has caused reducing conditions that favor dissolution of manganese from native soil. For the LAA monitoring wells, manganese was not detected at or above the laboratory reporting limit of 0.1 mg/L in the background groundwater. However, the secondary MCL for manganese is 0.05 mg/L, and manganese concentrations downgradient of the LAAs average 0.3 mg/L, indicating pollution caused by the discharge.

   No additional modifications to the wastewater management system or expansion of the LAAs are proposed, and effluent quality is not expected to change. However, current irrigation practices using long durations for border check irrigation of most of the LAAs has resulted in exceeding both the daily maximum and cycle maximum BOD loading limits. It is likely that the extended periods of soil saturation with high BOD wastewater has caused and/or contributed to an exceedance of the secondary MCL for manganese. To prevent potential anoxic conditions, this Order sets a protective BOD loading limit for the LAAs. This Order sets a Groundwater Limitation that prohibits an exceedance of the water quality objective in any compliance well. However, for compliance wells MW7 and MW8, where the discharge has already caused pollution, this Order sets a groundwater limit that prohibits any increases. The apparent localized pollution is expected to resolve once new and better-controlled irrigation operational practices have been implemented. If future monitoring data show that the manganese concentrations are not decreasing, the Provisions require that the Discharger submit an *Action Workplan* to evaluate and implement further treatment or control.

e. **Nitrate.** For nutrients such as nitrate, the potential for groundwater degradation depends on wastewater quality, crop uptake, and the ability of the vadose zone below the LAAs to support nitrification and denitrification to convert any excess nitrogen to nitrogen gas before it reaches the water table. Most of the nitrogen in the process wastewater is present as TKN, which can readily mineralize and convert to nitrate with some loss via ammonia volatilization, in the LAAs. Grazing cattle add additional nitrogen. The average wastewater total nitrogen concentration is approximately 54 mg/L. Background groundwater quality is poor

with a nitrate nitrogen concentration averaging 15 mg/L in MW5. The poor quality background groundwater is likely due to the predominantly agricultural land use in the area. In contrast, nitrate nitrogen concentrations in monitoring wells within and downgradient of the LAAs generally average 3.0 to 8.0 mg/L mg/L, with the exception of MW9. As stated in a previous finding, there appears to be localized pollution caused by the discharge in this well. Except for MW9, the current level of degradation is acceptable.

As discussed above, the Discharger has historically over-applied wastewater to the LAAs and started using some of the LAAs as cattle pasture, resulting in uneven nutrient loading across the fields with some fields receiving more nitrogen than is reasonably expected to be consumed by the crop. Therefore, this Order requires that nutrients associated with the wastewater and other sources be applied to the LAAs at rates consistent with crop demand, and sets a groundwater limitation that prohibits any statistically significant increase in nitrate concentrations in any compliance well. For MW9, the apparent localized pollution is expected to resolve once new and better controlled irrigation operational practices have been implemented. If future monitoring data show that the nitrate concentrations are not decreasing, the Provisions require that the Discharger submit an *Action Workplan* to evaluate and implement further treatment or control.

59. This Order establishes effluent and groundwater limitations for the Facility that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan:

    a. For TDS, current groundwater monitoring data indicate that groundwater has been degraded by the discharge, but the degradation has not caused an exceedance of a water quality objective.

    b. For chloride, current groundwater monitoring data indicate that groundwater has been degraded by the discharge, but the degradation has not caused an exceedance of a water quality objective. This Order does not allow an exceedence of the secondary MCL.

    c. For iron, current groundwater monitoring data indicate a potential for groundwater degradation. This Order requires the Discharger to implement improved source control by controlling BOD loading rates and does not allow an exceedance of the secondary MCL.

    d. For manganese, current groundwater monitoring data indicate pollution as a result of the discharge. This Order requires the Discharger to implement improved source control by controlling BOD loading rates and does not allow any further degradation.

e. For nitrate, current groundwater monitoring data indicate isolated pollution in MW9. This Order requires the Discharger to implement best management practices (BMPs) and does not allow any further degradation to occur.

60. The Discharger currently provides treatment and control of the discharge that incorporates the following:

a. Salinity source control in the processing plant.

b. Wastewater screening to reduce BOD.

c. Low salinity condensate water used in lieu of well water as make-up water in the flume system.

d. BOD loading rate control.

e. Use of higher quality water for supplemental irrigation, which dilutes salinity.

f. Approximately 695 acres of LAAs are available. Crops are grown on the LAAs and will take up the nutrients found in the wastewater if wastewater application rates are carefully controlled.

g. A tailwater return system that captures all irrigation runoff for reapplication as irrigation water.

61. The Discharger currently employs treatment and control practices that are typical of those utilized in the food processing industry, but these practices may not be sufficient to rectify impacts to groundwater. If that is the case, the Discharger will be required to evaluate practicable alternatives that could be more effective at limiting the amount of degradation caused by the discharge. In particular, the Discharger will need to carefully evaluate whether the following practices should be altered:

a. Wastewater is currently applied to the LAAs by surface irrigation using extremely long irrigation checks, and this can result in higher application rates and longer infiltration periods at the top end of the field in comparison to the bottom end of the field;

b. The Settling Pond does not have sufficient storage capacity to allow the Discharger to cease irrigation during rain or control daily flows to the LAA fields, other than varying the number of checks being irrigated at one time;

c. Pasture grasses are a low-nitrogen crop and grazing cattle recycle some of the nitrogen removed by grazing in the form of cattle waste left in the LAAs.

62. The suite of treatment or control methodologies required by this Order, including those that require the implementation of additional control practices for iron, manganese, and nitrate, is expected to remedy groundwater pollution issues at the Facility over

time. If groundwater concentrations worsen, or if concentrations of nitrate-nitrogen and manganese in the wells specified in Groundwater Limitation E.1 have not decreased to levels below the respective water quality objectives by 30 December 2018, the Discharger must take appropriate action(s) to bring the discharge into compliance with applicable provisions of the Basin Plan on a time schedule that is as short as practicable. This Order therefore imposes requirements upon the Discharger that will result in the best practicable treatment or control of the waste constituents associated with this discharge. The Board therefore finds that the limited groundwater degradation allowed by this Order is consistent with the Antidegradation Policy.

Other Regulatory Considerations

63. 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.

64. 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 [as Category A] that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units.”

65. 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.(…)

66. The Settling Pond, Cooling Pond, and LAAs are exempt pursuant to Title 27, section 20090(b), because they are used for the discharge of wastewater to land, and:

    i. The Central Valley Water Board is issuing WDRs;

    ii. This Order prescribes requirements that will ensure compliance with the Basin Plan; and

    iii. The wastewater discharged to the LAAs does not need to be managed as hazardous waste.

67. The U.S. EPA published Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (hereafter "Unified Guidance") in 2009. As stated in the Unified Guidance, the document:

> …is tailored to the context of the RCRA groundwater monitoring regulations … [however, t]here are enough commonalities with other regulatory groundwater monitoring programs … to allow for more general use of the tests and methods in the Unified Guidance… Groundwater detection monitoring involves either a comparison between different monitoring stations … or a contrast between past and present data within a given station… The Unified Guidance also details methods to compare background data against measurements from regulatory compliance points … [as well as] techniques for comparing datasets against fixed numerical standards … [such as those] encountered in many regulatory programs.

    The statistical data analysis methods in the Unified Guidance are appropriate for determining whether the discharge complies with Groundwater Limitations of this Order.

68. 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. The Discharger prevents all storm water from leaving the tomato processing plant during the processing season. All storm water is collected in the storm water retention basin for evaporation and percolation. Therefore, the Discharger is not required to obtain coverage under the NPDES General Permit CAS000001.

69. 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 R5-2013-0144 are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

70. 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 94-81* (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.

71. As stated in Finding 9 of WDRs Order 95-160, Colusa County certified a Final Environmental Impact Report (EIR), in accordance with the California Environmental Quality Act (CEQA)(Pub. Resources Code, § 21000 et seq.) prior to the construction of the Facility. Because this Order does not envision or allow any significant change in the Facility or the discharge, the action to update the WDRs is exempt from CEQA in accordance with California Code of Regulations, title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting … of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review.

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

Public Notice

73. 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.

74. The Discharger(s) 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.

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

IT IS HEREBY ORDERED that WDRs Order 95-160 is rescinded, and pursuant to Water Code sections 13263 and 13267, the Morning Star Packing Company, LP and Fred Gobel, 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, including irrigation ditches outside the control of the Discharger, 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. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.

4. Discharge of toxic substances into land application areas such that biological treatment mechanisms are disrupted is prohibited.

5. Application of residual solids (i.e., cull tomatoes, vines and tomato pomace) to the LAAs is prohibited unless and until the Executive Officer approves a *Residual Solids Management Plan* submitted pursuant to Provision H.3 of this Order.

6. Application of Settling Pond solids on areas other than the LAAs is prohibited unless and until the Executive Officer approves a *Settling Pond Solids Management Plan* submitted pursuant to Provision H.4 of this Order.

7. Discharge of domestic wastewater to the Cooling Pond, Settling Pond, LAAs, or any surface waters is prohibited.

8. Discharge of process wastewater to the domestic wastewater treatment system (septic system) is prohibited.

B. Flow Limitations

1. **Effectively immediately**, the maximum daily industrial process wastewater [1] flow to the land application areas shall not exceed the following limits:

Flow Measurement	Flow Limit [1]
Average Daily Flow [2]	4.3 million gallons per day
Total Annual Flow [3]	422 million gallons per year

[1] Industrial process wastewater flow shall include any discharges from the Settling Pond, Cooling Pond, and wastewater generated from the plant sanitation and cleaning activities.
[2] As determined by the total flow during the calendar month divided by the number of days in that month.
[3] As determined by the total flow during the calendar year.

C. Effluent and Mass Loading Limitations

1. Prior to application to the land application areas, wastewater collected from Flow Metering Station 1, which is representative of Settling Pond water and any plant sanitation and clean-up water, shall not exceed the following effluent limit:

Constituent	Units	Daily Maximum	Annual Average
Average FDS Concentration [1]	mg/L	--	900

[1] Flow-weighted annual average.

a. The flow-weighted annual average FDS concentration shall be calculated using the following formula:

$$C_a = \frac{\sum_{1}^{12} (C_{Pi} \times V_{Pi})}{\sum_{1}^{12} (V_{Pi})}$$

Where: C_a = Flow-weighted annual average FDS concentration in mg/L

i = the number of the month (e.g., January = 1, February = 2, etc.)

C_{Pi} = Monthly average process wastewater FDS concentration for calendar month i in mg/L

V_{Pi} = volume of process wastewater applied to LAAs during calendar month i in million gallons

2. Wastewater applied to each LAA field shall not exceed the following mass loading limits:

Constituent	Units	Maximum	Annual Maximum
Total Nitrogen Mass Loading [1]	lb/ac/year	--	Crop Demand
BOD Mass Loading [1]	lb/ac/day	100 [2]	--

[1] Based on all sources, including residual solids, commercial fertilizers and cattle manure, as well as water from the Settling Pond and plant sanitation and cleaning activities.

[2] This limit applies as an irrigation cycle average. For the purpose of this Order, "irrigation cycle" is defined as the time period between the start of an irrigation event for a single field and the start of the next irrigation event for the same field.

Compliance with the above requirements shall be determined as specified below:

a. The mass of total nitrogen applied to each LAA field on an annual basis shall be calculated using the following formula and compared to published crop demand for the crop(s) actually grown within that field:

$$M = \sum_{i=1}^{12} \frac{(8.345(C_i V_i) + M_x)}{A}$$

Where:
M = mass of nitrogen applied to each LAA field in lb/ac/yr
C_i = concentration of total nitrogen in mg/L based on the average of the three most recent wastewater monitoring results for month i
V_i = volume of wastewater applied to each LAA field during calendar month i in million gallons
A = area of the LAA field irrigated in acres
i = the number of the month (e.g., January = 1, February = 2, etc.)
M_x = nitrogen mass from other sources (e.g., Settling Pond solids, residual solids, cattle manure and fertilizer) in pounds
8.345 = unit conversion factor

b. The mass of BOD applied to each LAA field as an irrigation cycle average shall be calculated using the following formula:

$$M = \frac{8.345(CV) + M_x}{A(CT)}$$

Where:
M = mass of BOD applied to each LAA field in lb/ac/day/irrigation cycle
C = concentration of BOD in mg/L based on the average of the three most recent wastewater monitoring results
V = volume of wastewater applied to the LAA field in millions of gallons per day during the irrigation cycle
A = area of the LAA field irrigated in acres
CT = cycle time (i.e., irrigation cycle length)
M_x = BOD mass from other sources (e.g., cattle manure, Settling Pond solids, and residual solids) in pounds
8.345 = unit conversion factor

D. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.

2. The discharge shall not cause degradation of any water supply.

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 Discharger shall operate all systems and equipment to optimize the quality of the discharge.

6. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

7. 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.

8. As a means of discerning compliance with Discharge Specification D.7, the dissolved oxygen (DO) content in the upper one foot of any wastewater pond shall not be less than 1.0 mg/L for three consecutive weekly sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Regional Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.

9. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.

10. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

11. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications D.9 and D.10.

12. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:

    a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.

    b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.

    c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

    d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.

13. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.

14. Wastewater contained in the Cooling Pond shall not have a pH less than 6.0 or greater than 9.0. Wastewater contained in the Settling Pond shall not have a pH less than 4.0 or greater than 9.0.

15. Storage of residual solids, including cull tomatoes, vines, and pomace (seeds and skins) on areas not equipped with means to prevent storm water infiltration, or a paved leachate collection system is prohibited.

E. Groundwater Limitations

Release of waste constituents from any portion of the Facility shall not cause groundwater to:

1. Contain any of the specified constituents in a concentration statistically greater than the maximum allowable concentration tabulated below. **The wells to which these requirements apply are specified in the Monitoring and Report Program.**

Constituent	Units	Water Quality Objective	Maximum Allowable Concentration
Nitrate nitrogen	mg/L	10	Current groundwater quality or the Water Quality Objective, whichever is greater [1,2]
Nitrate nitrogen	mg/L	10	Current groundwater quality [1,2]
Manganese	mg/L	0.05	Current groundwater quality or the Water Quality Objective, whichever is greater [1,2]
Manganese	mg/L	0.05	Current groundwater quality [1,2]

[1] "Current groundwater quality" means the quality of groundwater as evidenced by monitoring completed as of the date of this Order for each of the specified compliance monitoring wells listed in the Monitoring and Reporting Program.
[2] Applies only to the specific compliance monitoring wells listed in the Monitoring and Reporting Program.

2. Except as specified in Groundwater Limitation E.1 above, contain constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations.

3. Except as specified in Groundwater Limitation E.1 above, contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

F. Land Application Area Specifications

1. Perimeter fencing shall be maintained around each LAA field used for pasture to prevent irrigation, tailwater, and drainage ditches from damage by livestock.

2. The Discharger shall ensure that water, BOD, and nitrogen are applied and distributed uniformly across each LAA field. The Discharger shall implement changes to the irrigation system and/or operational practices as needed to ensure compliance with this requirement.

3. Tailwater runoff and spray from the wastewater shall not be discharged outside of the LAAs.

4. Crops and vegetation (which may include pasture grasses, native grasses and trees, and/or ornamental landscaping) shall be grown in the LAAs.

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

6. The LAAs shall be managed to prevent breeding of mosquitoes. In particular:

   a. There shall be no standing water 48 hours after irrigation ceases;

   b. Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation; and

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

7. LAAs shall be designed, maintained, and operated to comply with the following setback requirements:

Setback Definition	Minimum Irrigation Setback (feet)
Edge of LAA to property boundary	25
Edge of LAA to domestic water supply well	100

8. Irrigation of the LAAs shall occur only when appropriately trained personnel are on duty.

9. LAAs shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.

10. Any irrigation runoff (tailwater) shall be confined to the LAAs or returned to the irrigation system and shall not enter any surface water drainage course or storm water drainage system.

11. Discharge to the LAAs shall not be performed during rainfall or when the ground is saturated.

12. At the end of each processing season and no later than **15 November** each year, any standing water remaining in the irrigation and tailwater ditches shall be removed and applied to the LAAs.

13. **Effective on 30 October 2014**, discharge of storm water runoff from the LAAs to surface water drainage courses is prohibited unless and until the Executive Officer has approved a *Storm Water Runoff Evaluation and Management Plan* submitted pursuant to Provision H.1.c, the Discharger implements the approved plan, and the Discharger complies with Land Application Area Specifications F.11 and F.12 above.

14. The number of cattle allowed to graze on the LAAs shall not exceed 160 head per year and grazing shall be limited to Fields MS5, MS15, MS16, MS17, MS18, and MS24 unless and until the Executive Officer approves a *Livestock Management Plan* submitted pursuant to Provision H.2 of this Order and the Discharger implements the approved plan.

G. Residual Solids Disposal Specifications

Sludge, as used in this document, means the solid, semisolid, and liquid organic matter removed from wastewater treatment, settling, and storage vessels or ponds. Solid waste refers to solid inorganic matter removed by screens and soil sediments from washing of unprocessed fruit or vegetables. Except for waste solids originating from meat processing, residual solids means organic food processing byproducts such as culls, pulp, stems, leaves, and seeds that will not be subject to treatment prior to disposal or land application. Cull tomatoes, vines, and tomato pomace (including seeds and skins) are the residual solids generated from the Discharger's Facility.

1. At the end of each processing season and no later than **15 November** each year, the Settling Pond shall be drained and accumulated sludge and sediments shall be removed. The waste may be applied to the LAAs as a soil amendment or disposed of off-site.

2. Except as specified in Residual Solids Disposal Specifications G.1 above, sludge, solid waste, or residual solids shall be removed from screens, sumps, and ponds as needed to ensure optimal operation and adequate storage capacity.

3. Any handling and storage of residual solids at the Facility shall be temporary (i.e), no longer than 3 months), 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.

4. If removed from the site, sludge and residual solids shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for reuse as animal feed or land disposal at facilities (i.e., landfills, composting facilities, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy this specification.

5. Prior to any use of residual solids as a soil amendment on the LAAs or use of Settling Pond solids on areas other than the LAAs, the Discharger shall obtain the Executive Officer's written approval of the *Residual Solids Management Plan* Provisions H.3 and *Settling Pond Solids Management Plan* Provision H.4, respectively. Any proposed change in solids management or disposal practices shall be reported in writing to the Executive Officer at least 90 days in advance of the proposed change.

H. Provisions

1. The following reports shall be submitted pursuant to Water Code section 13267 and shall be prepared as described in Provision H.8:

   a. By **1 March 2014**, the Discharger shall submit a *BOD and Nitrogen Application and Irrigation Management Report* that describes and evaluates the efficiency of the existing irrigation operations and proposes structural and/or operational changes as needed to ensure compliance with the Mass Loading Limitations, Groundwater Limitations, and other requirements prescribed by this Order. The report shall evaluate the appropriateness of the current irrigation system, alternatives that would provide more even distribution of water and waste constituents, crops grown, and application rates. The report shall address mass loading rates (BOD and total nitrogen) from wastewater and all other sources including residual solids from the processing facility, Settling Pond solids, cattle manure, and commercial fertilizers; and include BOD and nitrogen removal calculations. If reduced loading rates are necessary to ensure compliance with this Order, the report shall propose treatment and/or an increase of the LAA acreage, describe operational and/or physical improvements that will be implemented to ensure compliance with this Order, and provide a schedule for completion of those improvements that does not extend beyond **30 May 2015**.

   b. By **1 July 2014**, the Discharger shall submit a *Groundwater Limitations Compliance Assessment Plan*. The plan shall describe and justify the statistical methods proposed for use to evaluate compliance with Groundwater Limitation E.1, E.2, and E.3 of this Order for the specified compliance wells and constituents. Compliance shall be determined using appropriate statistical methods that have been selected based on site-specific information and the U.S. EPA Unified Guidance document cited in Finding 68 of this Order. The

report shall explain and justify the selection of the appropriate statistical methods.

c. By **31 July 2014**, the Discharger shall submit a *Storm Water Runoff Evaluation and Management Plan* that describes the proposed operational procedures for closing the LAAs at the end of the processing season and demonstrating through monitoring that no significant waste constituents are present in the storm water runoff to be released. Effective upon adoption of this Order and continuing through **30 June 2014**, the Discharger shall monitor storm water runoff contained in the LAA tailwater ditches and water collected from a nearby storm water drainage ditch not influenced by the Discharger's irrigation system. Samples from each location shall be obtained twice monthly during or following a precipitation event that generates runoff. The samples shall be analyzed for BOD, TDS, FDS, chloride, sodium, TKN, and nitrate nitrogen. The plan shall include a map showing the locations of the processing facility, LAAs, sample locations and all irrigation, tailwater, and drainage ditches. The plan shall include the monitoring results and propose specific procedures that will be used at the end of each processing season to clean out the irrigation and tailwater ditches and determine when and if storm water runoff from the LAAs will be released to off-site drainage courses.

d. By **30 May 2015**, the Discharger shall submit an *Irrigation Management Implementation Report*. The report shall describe operational improvements that have been implemented and/or physical improvements that have been completed pursuant to the approved *BOD and Nitrogen Application and Irrigation Management Report* to ensure even distribution of water and waste constituents to the LAAs and compliance with the Mass Loading Limitations of the Order.

2. If the Discharger requests an increase in the number of cattle and/or use of any LAA other than MS5, MS15, MS16, MS17, MS18, and MS24 as additional pasture land for grazing, the Discharger shall submit a *Livestock Management Plan* **at least 150 days prior to the proposed change** for approval by the Executive Officer. The report shall evaluate historical irrigation practices and nitrogen loading rates (maximum daily and cycle averages) for each LAA from all sources, propose cattle unit type (cattle head, animal unit, etc.) and basis for unit concept, determine the additional amount of cattle that will not result in nitrogen application in excess of the agronomic rate, and describe operational and/or physical improvements required to ensure compliance with this Order.

3. If the Discharger requests to apply residual solid waste (including cull tomatoes, vines, and tomato pomace generated at the tomato processing facility) to the LAAs, the Discharger shall submit a *Residual Solids Management Plan* to the Board's Executive Officer **at least 90 days prior to the planned application of residual solid waste to the LAAs**. The Plan shall describe the specific loading rates, temporary storage, management and application practices, application area(s), and operational procedures that will be used to ensure that the land application of waste solids does not cause nutrient overloading, nuisance odors, or promote vector breeding. Consistent with Prohibition A.5 and Residual Solids Disposal Specifications G.5, the application of residual solids to LAAs is prohibited unless and until the Executive Officer provides written approval of this *Residual Solids Management Plan.*

4. If the Discharger requests to apply Settling Pond solids to areas other than the LAAs, the Discharger shall submit a *Settling Pond Solids Management Plan* to the Board's Executive Officer **at least 90 days prior to the planned application of Settling Pond solids to areas other than the LAAs**. The plan shall characterize the solid wastes for BOD, salinity constituents, and nitrates; describe the specific method of application, spreading, and incorporation; propose loading rates for BOD and total nitrogen applied; provide a map showing the locations where the solids are to be applied; and describe application, operational, and management practices that will be used to ensure no release of waste constituents into surface water drainage courses. Consistent with Prohibition A.6 and Residual Solids Disposal Specifications G.5, the application of Settling Pond solids to areas other than the LAAs is prohibited unless and until the Executive Officer provides written approval of this *Settling Pond Solids Management Plan.*

5. If groundwater monitoring indicates that waste constituents are present in groundwater at concentrations that are not in compliance with the Groundwater Limitations of this Order, then the Discharger shall submit an *Action Workplan* to the Board's Executive Officer **within 120 days of receiving notice that the Facility is out of compliance.** The *Action Workplan* must set forth a schedule for the Discharger to conduct a comprehensive technical evaluation of each component of the facility's waste treatment and disposal system along with proposals for additional treatment or control measures for each waste constituent that exceeds a Groundwater Limitation. The *Action Workplan* must not only provide for the evaluation of the ability of additional treatment or control measures to achieve compliance with the applicable groundwater limitation, but must also provide for the evaluation of the practicability of installing or implementing the additional treatment or control measure(s) and a time schedule under which those measure(s) could be installed or implemented. The schedule proposed in the *Action Workplan* shall not exceed one year. The Discharger must begin the evaluation delineated in the *Action Workplan* immediately upon the Executive Officer's approval of the workplan. The results of the studies conducted pursuant to the *Action Workplan* will be used by the Board to modify these WDRs or take other

action, as appropriate, to ensure that discharges from the Facility comply with the Basin Plan on a time schedule that is as short as practicable.

6. If concentrations of nitrate-nitrogen and manganese in the wells specified in Groundwater Limitation E.1 have not decreased to levels below the respective water quality objectives by **30 December 2018**, the *Action Workplan* described in Provision 5 shall be submitted by **30 June 2019**.

7. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by **31 January**.

8. 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 workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.

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

10. The Discharger shall comply with Monitoring and Reporting Program R5-2013-0144, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.

11. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

12. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date,

the Discharger shall submit the specified 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 Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

13. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also 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 Discharger when the operation is necessary to achieve compliance with the conditions of this Order.

14. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.

15. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.

16. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."

17. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.

18. In the event of any change in control or ownership of the Facility, the Discharger 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.

19. 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.

20. A copy of this Order including the Monitoring and Reporting Program, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

21. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order or with the WDRs 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 5 December 2013.

Original signed by

PAMELA C. CREEDON, Executive Officer

LLA: 111513

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2013-0144

FOR
MORNING STAR PACKING COMPANY, LP. AND FRED GOBEL
MORNING STAR TOMATO PACKING PLANT
COLUSA COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring the ponds, flow to the land application areas, wastewater quality, land application area, groundwater, and residual solids. This MRP is issued pursuant to Water Code section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

Central Valley Water Board staff shall approve specific sampling locations prior to any sampling activities. All samples shall be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to test pH and electrical conductivity) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;

2. The instruments are calibrated prior to monitoring event;

3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and

4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

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

POND MONITORING

The Settling Pond and Cooling Pond shall each be monitored during periods when process wastewater is generated and/or stored in the pond. If a pond is dry and/or no wastewater was generated, the monitoring report shall so note.

Constituent	Units	Type of Sample	Sample Frequency	Reporting Frequency
Dissolved oxygen [1]	mg/L	Grab	Weekly/Monthly [2]	Monthly
pH	pH units	Grab	Weekly/Monthly [2]	Monthly
Freeboard	0.1 feet	Measurement	Weekly/Monthly [2]	Monthly
Odors	--	Observation	Weekly/Monthly [2]	Monthly
Berm/levee condition	--	Observation	Monthly	Monthly

[1] Samples shall be collected at a depth of one foot from each pond in use, opposite the inlet.
[2] Sample frequency shall be weekly during the processing season and monthly during the non-processing season.

FLOW MONITORING

The Discharger shall monitor wastewater and supplemental irrigation water flows discharged to each land application area field as depicted on Attachment B as follows:

Flow Source	Units	Type of Measurement	Monitoring Frequency	Reporting Frequency
Station 1 - Settling Pond, (includes plant sanitation and clean-up)	gallons	Meter	Daily [1]	Monthly, Annually
Station 2 - Cooling Pond	gallons	Meter	Daily [1]	Monthly, Annually
Supplemental irrigation (GCID)	gallons	Calculation	Daily [1,2]	Monthly, Annually
Station 3 - Total discharge to LAAs	gallons and inches	Meter	Daily [3]	Monthly, Annually

[1] Report as total daily flow from the flow source to each LAA Field.
[2] Supplemental irrigation flow amounts shall be calculated based on total discharge minus Cooling Pond discharge minus Settling Pond discharge.
[3] Includes all Settling Pond, plant sanitation/clean-up, Cooling Pond, and supplemental irrigation water discharged to the LAAs.

WASTEWATER MONITORING

Wastewater samples shall be collected from the flow metering Station 1 as shown on Attachment B and shall be representative of wastewater from the Settling Pond (including plant sanitation and clean-up water) prior to discharge to the land application areas. Sampling is not required during periods when no wastewater is discharged to the land application areas. At a minimum, wastewater monitoring shall include the following:

Constituents	Units	Type of Sample	Sample Frequency	Reporting Frequency
BOD_5 [1]	mg/L	Grab	Weekly	Monthly
FDS	mg/L	Grab	Weekly	Monthly
Total nitrogen	mg/L	Grab	Weekly	Monthly

BOD denotes Biochemical oxygen demand. FDS denotes Fixed dissolved solids.
[1] 5-day, 20 degrees Celsius biochemical oxygen demand.

LAND APPLICATION AREA MONITORING

The Discharger shall monitor the land application areas **daily during operation**, and shall submit the results in the corresponding monthly monitoring reports. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. The report shall also document any corrective actions taken based on observations made.

The Discharger shall perform the following routine monitoring and loading calculations for each LAA field during all months when land application occurs, and shall present the data in the Monthly and Annual Monitoring Reports. If irrigation does not occur during a reporting period, the monitoring report shall so indicate.

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Precipitation	0.1 in	Rain gauge [1]	Daily	Monthly
Hydraulic loading rate (from each source)	in	Calculated [2]	Daily	Monthly, Annually
BOD_5 loading rate as an irrigation cycle average (including Settling Pond solids, residual solids, manure and commercial fertilizers)	lb/ac/day	Calculated [3,4]	Daily	Monthly
Total nitrogen loading rate (including Settling Pond solids, residual solids, manure and commercial fertilizers)	lb/ac	Calculated [3,5]	Monthly	Monthly, Annually

[1] Data obtained from the nearest National Weather Service, California Irrigation Management Information System (CIMIS), or on-site rain gauge is acceptable.
[2] Rate shall be calculated for each check within each LAA field. Volumes for each check can be estimated based on the duration of flow, the number of checks being irrigated at any one time, and the daily flow rates for each field. Calculations and assumptions shall be clearly documented.
[3] Rate shall be calculated for each LAA field.
[4] BOD_5 shall be calculated using the daily applied volume of wastewater (representative of Settling Pond and plant sanitation/clean-up water), actual application area, average of the three most recent BOD_5 results for the wastewater, and the number of days per irrigation cycle. Loading rates for Settling Pond solids, residual solids, and supplemental nitrogen (including commercial fertilizers, manure from cattle, etc.) shall be calculated using the actual load and application area.
[5] Total nitrogen loading rates shall be calculated using the applied volume of wastewater (representative of Settling Pond and plant sanitation/clean-up water), actual application area, and average of the three most

recent total nitrogen results for the wastewater. Loading rates for Settling Pond solids, residual solids, and supplemental nitrogen (including commercial fertilizers, manure from cattle, etc.) shall be calculated using the actual load and application area.

At least **once per week** when wastewater is being applied to the land application areas, the application areas in use shall be inspected to identify any equipment malfunction or other circumstance that might allow wastewater or irrigation runoff to leave each LAA and/or create conditions that violate the Waste Discharge Requirements. A log of these inspections shall be kept at the facility and summarized for submittal with the monthly monitoring reports.

APPLICABILITY OF GROUNDWATER LIMITATIONS

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for review and approval. Once installed, all new wells shall be added to the compliance monitoring network. The following table lists all existing monitoring wells and designates the purpose of each well.

MW1 [1]	MW2 [2]	MW3 [2]	MW4 [1]	MW5 [1]	MW6 [2]	MW7 [2]	MW8 [2]	MW9 [2]

[1] Background well not used for compliance monitoring.
[2] Compliance well.

The Groundwater Limitations set forth in Section E of the WDRs shall apply to the specific compliance monitoring wells tabulated below. This table is subject to revision by the Executive Officer following construction of any new compliance monitoring wells.

Constituent	**Groundwater Limitation**	**Compliance Wells to which Limitation Applies**
Nitrate nitrogen	10 mg/L [1]	MW2, MW-6, MW7, MW8
Nitrate nitrogen	Current Groundwater Quality [1,2]	MW3, MW9
Manganese	0.05 mg/L [1]	MW2, MW3, MW6, MW9
Manganese	Current Groundwater Quality [1,2]	MW7, MW8
All Others	Concentrations that exceed either the Primary or Secondary MCL.	MW2, MW3, MW6, MW7, MW8, MW9
All Others	Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.	MW2, MW3, MW6, MW7, MW8, MW9

[1] Compliance with this requirement shall be determined on an intrawell basis for each of the specified wells using approved statistical methods.
[2] "Current groundwater quality" means the quality of groundwater in the well as evidenced by monitoring completed as of the date of WDRs.

GROUNDWATER MONITORING

Prior to sampling, depth to groundwater measurements shall be measured in each monitoring well to the nearest 0.01 feet. Groundwater elevations shall then be calculated to determine groundwater gradient and flow direction.

Low or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Groundwater monitoring for all monitoring wells shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Depth to groundwater	0.01 feet	Measurement	Semi-annual [3]	Semi-annual [3]
Groundwater elevation [1]	feet	Calculated	Semi-annual [3]	Semi-annual [3]
Gradient magnitude	feet/feet	Calculated	Semi-annual [3]	Semi-annual [3]
Gradient direction	degrees	Calculated	Semi-annual [3]	Semi-annual [3]
pH	pH units	Grab	Semi-annual [3]	Semi-annual [3]
TDS	mg/L	Grab	Semi-annual [3]	Semi-annual [3]
TKN	mg/L	Grab	Semi-annual [3]	Semi-annual [3]
Nitrate nitrogen	mg/L	Grab	Semi-annual [3]	Semi-annual [3]
Iron [2]	mg/L	Grab	Semi-annual [3]	Semi-annual [3]
Manganese [2]	mg/L	Grab	Semi-annual [3]	Semi-annual [3]

TDS denotes Total dissolved solids. TKN denotes Total Kjeldahl nitrogen.

[1] Groundwater elevation shall be determined based on depth-to-water measurements using a surveyed measuring point elevation on the well and surveyed reference elevation.

[2] Samples for metals shall be filtered with a 0.45-micron filter prior to sample preservation. Analytical methods shall be selected to provide reporting limits below the Water Quality Limit for each constituent.

[3] Semi-annual groundwater monitoring shall occur in the first (January – March) and third (July - September) quarter of each calendar year.

Groundwater Trigger Concentrations

The following groundwater trigger concentrations are intended only to serve as a means of assessing whether the discharge might potentially cause a violation of one or more of the Groundwater Limitations of the WDRs at some later date.

Constituent	Compliance Wells	Trigger Concentration, mg/L
TDS	MW2, MW3	700
TDS	MW6, MW7, MW8, MW9	1,200
Iron	MW2, MW3, MW6, MW7, MW8, MW9	0.2

If the annual evaluation of groundwater quality performed pursuant to this MRP shows that the annual average of one or more of the trigger concentrations has been exceeded in any compliance well during the calendar year, the Discharger shall submit one or both of the following technical reports by **1 May of the following calendar year** (e.g., if one or more trigger concentrations are exceeded for calendar year 2020, the appropriate report is due by 1 May 2021):

a. A technical evaluation of the reason[s] for the concentration increase[s] and a technical demonstration on a constituent-by-constituent that, although the concentration has increased more than expected in one or more compliance wells, continuing the discharge without additional treatment or control will not result in exceedance of the applicable groundwater limitation.

b. An Action Plan that presents a systematic technical evaluation of each component of the facility's waste treatment and disposal system to determine whether additional treatment or control is feasible for each waste constituent that exceeds a trigger concentration. The plan shall evaluate each component of the wastewater treatment, storage, and disposal system (as applicable); describe available treatment and/or control technologies; provide preliminary capital and operation/maintenance cost estimates for each; designate the preferred option[s] for implementation; and specify a proposed implementation schedule. The schedule for full implementation shall not exceed one year, and the Discharger shall immediately implement the proposed improvements.

RESIDUAL SOLIDS MONITORING

The Discharger shall monitor the residual solids generated and disposed of on a monthly basis. The following shall be monitored and reported:

1 Volume of Solids Generated. Solids may include pomace, seeds, stems, diatomaceous earth, screenings, pond solids, and sump solids, or other material.

2. Volume Disposed of Off-site. Describe the disposal method (e.g. animal feed, land application, off-site composting, landfill, etc.); the amount disposed (tons); and the name of the hauling company.

3. Volume Disposed of On-site. Describe the amount disposed (tons); location of on-site disposal (e.g. land application area field); method of application, spreading, and incorporation; application rate (tons/acre), and weekly grab sample analysis for total nitrogen.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and reported analytical result for each sample

are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Central Valley Water Board.

As required by the California Business and Professions Code sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Professional Engineer or Geologist and signed by the registered professional.

A. Monthly Monitoring Reports

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

1. Tabulated pond monitoring data.

2. Tabulated daily flow measurements from each wastewater source and supplemental irrigation water to each check in each LAA field.

3. The cumulative annual wastewater (Station 1 and Station 2) flow discharged to the LAAs to date, the average daily flow for the month, and comparison to the average daily flow limit.

4. Tabulated wastewater monitoring data and calculation of the running average for each group of three consecutive sample results for BOD and total nitrogen.

5. A current site plan depicting the irrigation checks within each LAA field that will be used during the calendar year, including all water conveyance ditches and internal berms that divide each LAA (where applicable).

6. Tabulated update cropping information for each LAA field that includes at least:

    a. The crop that will be grown in each field;

    b. Planned and actual planting dates;

    c. Planned and actual harvest dates;

    d. Planned and actual cattle grazing schedule, location of cattle grazing, including the number of head on each field.

    e. Typical maximum expected and actual yield at harvest in applicable crop units per acre;

f. Crop total nitrogen demand; and

g. Crop average evapotranspiration rate in inches.

7. Tabulated land application area monitoring data for each LAA field, including; calculation of the hydraulic loading, irrigation cycle average BOD loading, and total nitrogen loading to date from all sources. The average of the three most recent monitoring results shall be used to determine irrigation cycle average BOD and total nitrogen loading. Loading rates for Settling Pond solids, residuals solids, cattle manure and commercial fertilizers shall be calculated separately using actual load analytical results and application areas.

8. A summary of the daily pre-application inspection reports for the month.

9. Calculation of the flow-weighted average FDS concentration to date (representative of the Settling Pond and plant sanitation/clean-up water) as monitored at Station 1.

10. Residual solids monitoring data and monthly mass of residual solids generated and applied to each LAA field and/or disposed of off-site.

11. A comparison of monitoring data to the flow limitations, effluent limitations; mass loading limitations (for each LAA field), and discharge specifications, and an explanation of any violation of those requirements.

12. If requested by staff, copies of laboratory analytical report(s).

13. Copies of current calibration logs for all field test instruments.

B. Semi-Annual Monitoring Reports

The Discharger shall establish a sampling schedule for groundwater monitoring such that samples are obtained during the first and third quarter of each calendar year and obtained approximately every six months. Semi-Annual Groundwater Monitoring Reports shall be submitted to the Central Valley Water Board by the **1st day of the second month after the quarter** (i.e., the January-March quarterly report is due by 1 May each year). The monitoring report shall include the following:

1. Results of the semi-annual monitoring of the groundwater in tabular format.

2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;

3. Calculation of groundwater elevations, determination of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;

4. Summary data tables of historical and current groundwater elevations;

5. A scaled map showing relevant structures and features of the facility, land application areas, locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and

6. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Monitoring Report

An Annual Report shall be submitted to the Central Valley Water Board by **1 February** each year and shall include the following:

1. A description of the following work conducted after the end of the processing season:

    a. Irrigation/tailwater ditch draining procedures prior to the release of storm water runoff from the LAAs;

    b. Depth of total precipitation between dates of last discharge and first off-site release of storm water runoff from the LAAs; and

    c. Draining and cleaning of the Settling Pond, including the disposal method and location of off-site and/or on-site disposal.

2. Total annual flow measurements from each wastewater source and supplemental irrigation water to the LAAs for the calendar year and comparison to the annual maximum flow limit.

3. Flow-weighted annual average FDS concentration from the Settling Pond (including plant sanitation/clean-up water) for the calendar year with supporting data and calculations and comparison to the effluent limit.

4. Total hydraulic loading rate and total nitrogen loading rate applied to each LAA field for the calendar year with supporting data and calculations and comparison to crop evapotranspiration rate and nitrogen demand.

5. A nitrogen mass balance (from all sources) for the calendar year with supporting data and calculations. Include description of the types of crops planted and dates of planting and harvest for each crop. For each LAA field used for pasture, include description of the number of grazing cattle, start and finish dates of grazing operations, agricultural practices of the pasture land including types of crops planted, and total

nitrogen applied and comparison to the loading limits of the WDRs. If the mass balance indicates that nitrogen has been applied in excess of the agronomic rate, include a discussion of any corrective action performed during the year and a detailed plan and schedule for additional corrective actions that will be implemented to ensure future compliance with the land application area specifications of the WDRs.

6. Concentration vs. time graphs for each monitored constituent using all historic groundwater monitoring data. Each graph shall show the background groundwater concentration range, the trigger concentration specified above (where applicable), and the Groundwater Limitation as horizontal lines at the applicable concentration.
7. An evaluation of the groundwater quality beneath the site and determination of whether any trigger concentrations were exceeded in any compliance well at any time during the calendar year. This shall be determined by comparing the annual average concentration for each well during the calendar year to the corresponding trigger concentration specified above. If any groundwater trigger concentrations were exceeded, include acknowledgment that the technical report described in the Groundwater Trigger Concentrations section of this MRP will be submitted in accordance with the specified schedule.

8. An evaluation of the groundwater quality beneath the site and determination of Compliance with Groundwater Limitation E.1 of the WDRs based on statistical analysis for each constituent monitored for each compliance well in accordance with the approved *Groundwater Limitations Compliance Assessment Plan*. Include all calculations and data input/analysis tables derived from use of statistical software as applicable.

9. A discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.

10. A discussion of the following:
    a. Waste constituent reduction efforts implemented in accordance with any required workplan;
    b. Other treatment or control measures implemented during the calendar year either voluntarily or pursuant to the WDRs, this MRP, or any other Order; and
    c. Based on monitoring data, an evaluation of the effectiveness of the treatment or control measures implemented to date.

11. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

A letter transmitting the self-monitoring reports shall accompany each report. The letter shall include a discussion of requirement violations found during the reporting period, and actions

taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: Original signed by
PAMELA C. CREEDON, Executive Officer

5 December 2013
(Date)

LLA:111513

INFORMATION SHEET

ORDER R5-2013-0144
MORNING STAR PACKING COMPANY, L.P. AND MR. FRED GOBEL
THE MORNING STAR TOMATO PACKING PLANT
COLUSA COUNTY

Background

The Morning Star Tomato Packing Plant, which began operating in 1995, is a tomato processing facility located just south of the City of Williams. The facility operates from approximately June to mid-October. Wastewater is generated from processing tomatoes into aseptic tomato paste and bulk packaging. Wastewater is discharged into an unlined Settling Pond for later disposal to approximately 695 acres of land application areas (LAAs) through surface irrigation (border check method). Approximately 95 acres of the LAAs (Field MS1) is owned by Fred Gobel and leased to Morning Star Packing Company, L.P. Water softener reject, condensate from the evaporation process, and boiler blowdown is discharged into an unlined Cooling Pond for later reuse in the tomato processing operations or irrigation of the LAAs. The LAAs are divided into pasture lands for cattle grazing or cropped with sudan grass hay, alfalfa, and/or corn. Solids that have settled at the bottom of the Settling Pond are removed at the end of the processing season and applied to the LAAs as a soil amendment or used to build up farm roads around the facility. Residual solid wastes generated at the processing facility are transported off-site for use as animal feed or as a soil amendment. Fred Gobel and Morning Star Packing Company, L.P. ("Dischargers") are responsible for compliance with the WDRs.

The facility is regulated by WDRs Order 95-160 which prescribes a maximum discharge from the Settling Pond not to exceed 4.3 mgd and a maximum discharge to the Cooling Pond not to exceed 58 mgd.

Cease and Desist Order (CDO) R5-2005-0003 was adopted due to discharges of wastewater to surface water, non-compliance with the dissolved oxygen requirement, evidence of groundwater degradation, and over-application of nitrogen and salts to the LAAs. The CDO required compliance with new requirements including:

- No discharge of wastewater and tailwater or storm water containing waste to surface water drainage courses;
- Irrigation application at agronomic rates for the crop grown;
- Nitrogen application, regardless of source, at agronomic rates for the crops grown;
- BOD loading rates; and
- Maintaining the irrigation and drainage ditches free of weeds and aquatic plants;

In addition, the CDO required a number of technical reports to demonstrate completion of improvements which the Discharger has submitted. With the exception of nitrogen and BOD overloading, the Discharger has complied with the CDO.

Site-Specific Conditions

The facility is supplied with water from two wells, Plant Well 1 and 2, located on the property. The facility and the LAAs are relatively flat with a mild downward slope toward the north-east. Drainage within the area is towards the Glenn-Colusa Irrigation District Canal drainage ditch, which is tributary to the Colusa Basin Drain. Surrounding land uses are primary agricultural.

Groundwater Considerations

Groundwater within the area is relatively shallow, approximately 5 to 15 feet below ground surface, and generally flows towards the north to north-east. Groundwater gradient and background groundwater quality are likely influenced by infiltration of high quality water from the Glen Colusa Irrigation District Canal (GCID), located adjacent to the southern site boundary. Percolation from this canal most likely produces localized improvements in groundwater quality. The unlined Cooling Pond recharges the shallow groundwater immediately upgradient of the LAAs with relatively low salinity water year-round.

Nine groundwater monitoring wells monitor the shallow groundwater at the site. Groundwater monitoring near the Settling Pond was established just prior to operation of the facility in 1995 and include wells MW1, MW2, MW3 (installed in 1995) and MW4 (installed in 2004). Monitoring wells near the LAAs were installed in 2004 several years after the discharge began (wells MW5, MW6, MW7, MW8, and MW9).

Groundwater quality in MW1 and MW4 exhibit high spatial variability, possibly due to influences from the nearby GCID canal. In general, groundwater quality in wells MW1 through MW4 has been relatively constant over time for salinity constituents and nitrate nitrogen since just before the discharge began, with a few exceptions.

- Chloride concentrations in MW2 have increased in the last two years, indicating groundwater degradation caused by the discharge. However, concentrations do not exceed the lowest agricultural water quality goal for chloride.
- Use of the Settling Pond has apparently not caused degradation from iron and manganese. However, the laboratory reporting limit for manganese is 0.1 mg/L, which is two times the water quality limit of 0.05 mg/L.
- Nitrate nitrogen concentrations in MW3 have historically exceeded the primary MCL since before discharge operations began. This apparent pollution appears to be highly localized.

In general, groundwater quality near the LAAs, indicates salinity constituents and nitrate nitrogen concentrations increase as groundwater moves northward away from the GCID canal. Concentrations within each well have been relatively constant over time with a few exceptions.

- TDS, chloride, and nitrate nitrogen concentrations in background well MW5 have increased in the last two years. Nitrate concentrations have exceeded the primary MCL since 2010. Temporally variable background concentrations are believed to be due to natural variations and/or other upgradient land uses that are not controlled by the Discharger.
- TDS concentrations in wells MW8 and MW9 indicate degradation caused by the discharge. Increased concentrations were observed in wells MW8 and MW9 between 2010 and 2012. Annual average TDS concentrations exceed the lowest agricultural water quality goal of 450 mg/L; however they do not exceed the upper secondary MCL of 1,000 mg/L.
- Chloride concentrations in wells MW8 and MW9 indicate degradation caused by the discharge. Between 2010 and 2012, higher than normal chloride concentrations were observed in these wells. Similar chloride increases were observed in background well MW5 during the same period.
- Iron and manganese concentrations exceeding the secondary MCL were sporadic in most of the compliance monitoring wells. In the case of manganese, concentrations in wells MW7 and MW8 exceeded the secondary MCL multiple times in 2012. Multiple exceedances were observed in MW8 since its installation in 2004. The laboratory reporting limit for manganese is 0.1 mg/L, which is two times the water quality limit.
- Nitrate nitrogen concentrations in wells MW6, MW7, and MW8 have been relatively steady since 2010 and remain below the primary MCL. In contrast, nitrate nitrogen concentrations in MW9 indicate apparent pollution not evidenced in any other well within or downgradient of the LAAs. Concentration levels in MW9 that exceed the primary MCL were sporadic prior to 2010. However, since 2010, concentrations have consistently exceeded the primary MCL.

Basin Plan, Beneficial Uses, and Regulatory Considerations

Local drainage is to the Colusa Basin Drain. The Basin Plan designates the beneficial uses of Colusa Basin Drain as agricultural supply; water contact recreation; warm freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.

The Basin Plan designates the beneficial uses of underlying groundwater as municipal and domestic supply, agricultural supply, and industrial supply.

Antidegradation Analysis

State Water Resources Control Board Resolution 68-16 prohibits degradation of groundwater unless it has shown that:

- The degradation is consistent with the maximum benefit to the people of the state.

- The degradation will not unreasonably affect present and anticipated future beneficial uses.
- The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and
- The discharger employs best practicable treatment or control (BPTC) to minimize degradation.

The Discharger has been monitoring groundwater quality near the Settling Pond since just prior to operation of the facility in 1995, but monitoring of groundwater at the LAAs did not begin until 2004, nine years later. Determination of compliance with Resolution 68-16 for this facility must be based on existing groundwater quality at the time that the discharge began.

Degradation of groundwater by some of the typical waste constituents associated with discharge from food processing facilities, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The economic prosperity of the community by direct employment of fulltime and seasonal personnel and associated industry is of maximum benefit to the people of the State, and provides sufficient justification for allowing limited groundwater degradation that may occur pursuant to this Order.

The following treatment and control measures are implemented at the facility:

- Salinity source control in the processing plant.
- Wastewater screening to reduce BOD.
- Low salinity condensate water used in lieu of well water as make-up water in the flume system.
- BOD loading rate control.
- Use of higher quality water for supplemental irrigation, which dilutes salinity.
- Approximately 695 acres of LAAs are available.
- Tailwater return system captures all irrigation runoff for reapplication as irrigation water.

The Discharger currently employs treatment and control practices that are typical of those utilized in the food processing industry, but these practices may not be sufficient to rectify impacts to groundwater. If that is the case, the Discharger will be required to evaluate practicable alternatives that could be more effective at limiting the amount of degradation caused by the discharge. In particular, the Discharger will need to carefully evaluate whether the following practices should be altered:

- Wastewater is currently applied to the LAAs by surface irrigation using extremely long irrigation checks, and this can result in higher application rates and longer infiltration periods at the top end of the field in comparison to the bottom end of the field;

- The Settling Pond does not have sufficient storage capacity to allow the Discharger to cease irrigation during rain or control daily flows to the LAA fields, other than varying the number of checks being irrigated at one time;
- Pasture grasses are a low-nitrogen crop and grazing cattle recycle some of the nitrogen removed by grazing in the form of cattle waste left in the LAAs.

The suite of treatment or control methodologies required by this Order, including those that require the implementation of additional control practices for iron, manganese, and nitrate, is expected to remedy groundwater pollution issues at the Facility over time. If groundwater concentrations worsen, or if concentrations of nitrate-nitrogen and manganese in the wells specified in Groundwater Limitation E.1 have not decreased to levels below the respective water quality objectives by 30 December 2018, the Discharger must take appropriate action(s) to bring the discharge into compliance with applicable provisions of the Basin Plan on a time schedule that is as short as practicable. This Order therefore imposes requirements upon the Discharger that will result in the best practicable treatment or control of the waste constituents associated with this discharge. The Board therefore finds that the limited groundwater degradation allowed by this Order is consistent with the Antidegradation Policy.

To assure protection of the beneficial uses of groundwater, this Order establishes flow limitations, effluent and mass loading limitations, groundwater limitations, discharge specifications, land application area requirements, solids disposal specifications, and groundwater monitoring requirements.

Flow Limitations

Effectively immediately, the maximum daily industrial process wastewater [1] flow to the land application areas shall not exceed the following limits:

Flow Measurement	Flow Limit [1]
Average Daily Flow [2]	4.3 million gallons per day
Total Annual Flow [3]	422 million gallon per year

[1] Industrial process wastewater flow shall include any discharges from the Settling Pond, Cooling Pond, and wastewater generated from the plant sanitation and cleaning activities.
[2] As determined by the total flow during the calendar month divided by the number of days in that month.
[3] As determined by the total flow during the calendar year.

Effluent and Mass Loading Limitations

Prior to application to the land application areas, wastewater collected from Flow Metering Station 1, which is representative of Settling Pond water and any plant sanitation and clean-up water, shall not exceed the following effluent limit:

Constituent	Units	Daily Maximum	Annual Average
Average FDS Concentration [1]	mg/L	--	900

[1] Flow-weighted annual average.

Wastewater applied to each LAA field shall not exceed the following mass loading limits:

Constituent	Units	Daily Maximum	Annual Maximum
Total Nitrogen Mass Loading [1]	lb/ac/year	--	Crop Demand
BOD Mass Loading [1]	lb/ac/day	100 [2]	--

[1] Based on all sources, including residual solids, commercial fertilizers and cattle manure, as well as water from the Settling Pond and plant sanitation and cleaning activities.

[2] This limit applies as an irrigation cycle average. For the purpose of this Order, "irrigation cycle" is defined as the time period between the start of an irrigation event for a single field and the start of the next irrigation event for the same field.

Provisions

By **1 March 2014**, the Discharger shall submit a *BOD and Nitrogen Application and Irrigation Management Report*.

By **1 July 2014**, the Discharge shall submit a *Groundwater Limitations Compliance Assessment Plan*.

By **31 July 2014**, the Discharger shall submit a *Storm Water Runoff Evaluation and Management Plan*.

By **30 May 2015**, the Discharger shall submit an *Irrigation Management Implementation Report*.

If the Discharger requests an increase in the number of cattle and/or use of any other LAA as additional pasture land for grazing, a *Livestock Management Plan* shall be submitted at least **150 days prior to and proposed change** for approval by the Executive Officer.

If the Discharger requests to apply residual solid waste (including cull tomatoes, vines, and tomato pomace generated at the tomato processing facility) to the LAAs, the Discharger shall submit a *Residual Solids Management Plan* to the Board's Executive Officer **at least 90 days prior to the planned application of residual solid waste to the LAAs.**

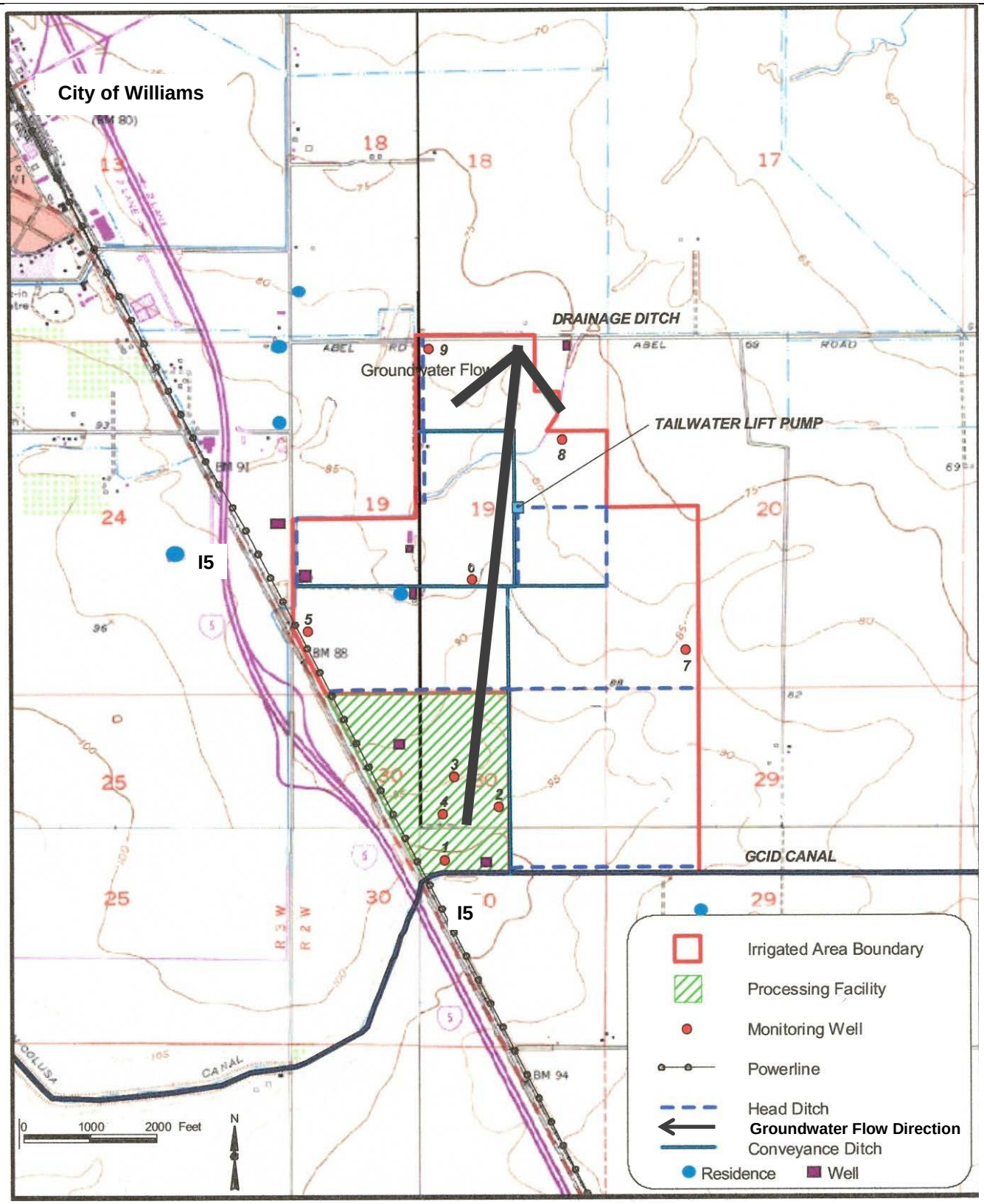
If the Discharger requests to apply Settling Pond solids to areas other than the LAAs, the Discharger shall submit a Settling Pond Solids Management Plan to the Board's Executive Officer **at least 90 days prior to the planned application of Settling Pond solids to areas other than the LAAs.**

If groundwater monitoring results show that the discharge of waste is causing groundwater to contain any waste constituents in concentrations not in compliance with the Groundwater Limitations of this Order, **within 120 days of receiving notice that the Facility is out of compliance** the Discharger shall submit an *Action Workplan*.

If concentrations of nitrate-nitrogen and manganese in the wells specified in Groundwater Limitation E.1 have not decreased to levels below the respective water quality objectives by **30 December 2018**, the *Action Workplan* shall be submitted by **30 June 2019**.

Monitoring Requirements

The Monitoring and Reporting Program is designed to verify compliance with the flow and effluent limitations and operational requirements of the WDRs. The Order requires monitoring of the ponds, wastewater flows to the land application areas, wastewater quality, land application area, groundwater, and residual solids. Groundwater limitations are necessary to protect the municipal and domestic use of groundwater. If results of the monitoring reveal a previously undetected threat to water quality or indicate a change in waste character such that the threat to water quality is significantly increased, the Central Valley Water Board may reopen this Order to reconsider groundwater limitations and other requirements to comply with Resolution 68-16.

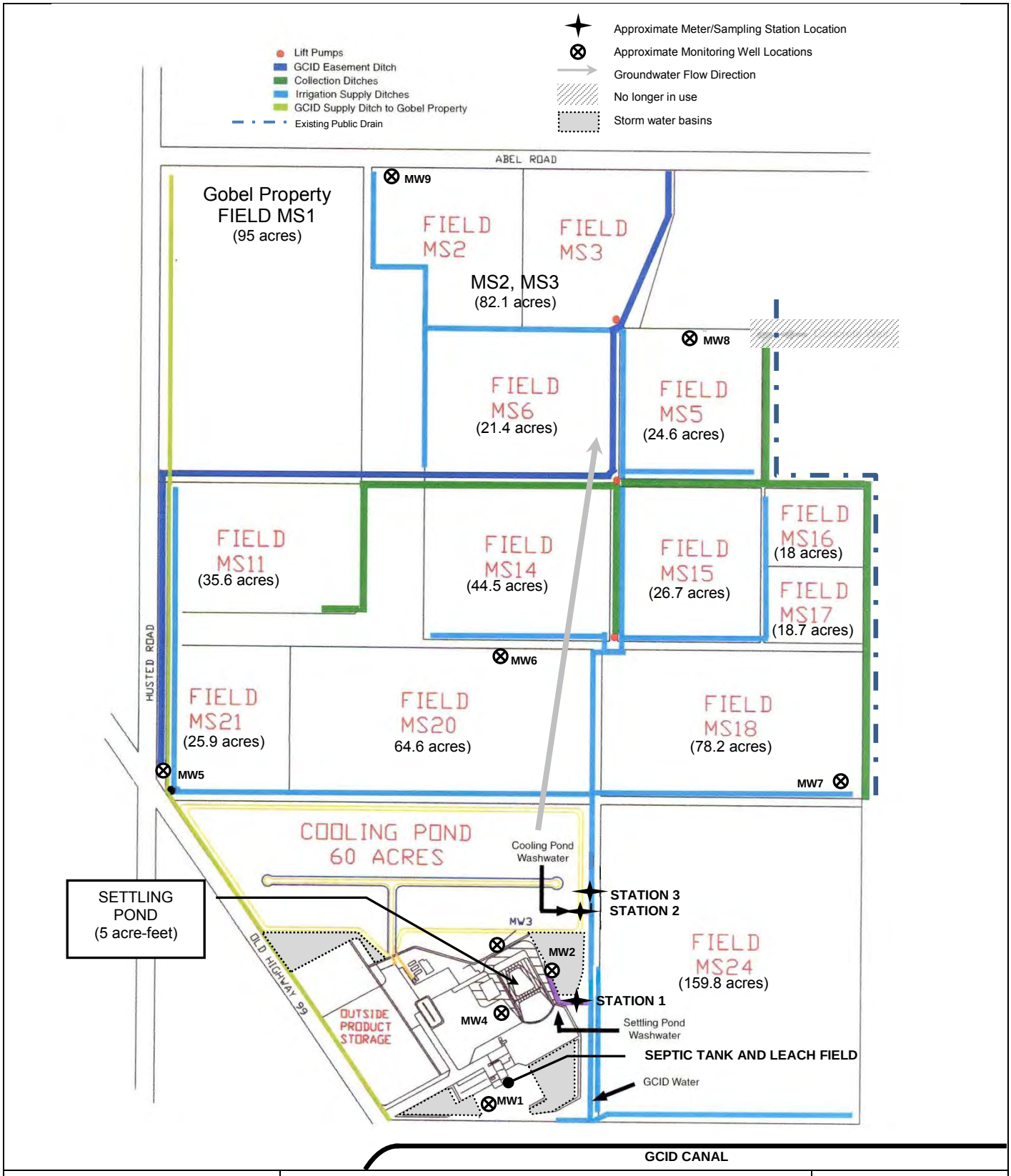


Drawing Reference:
U.S.G.S
Cortina Creek, Arbuckle
TOPOGRAPHIC MAP
7.5 MINUTE QUAD

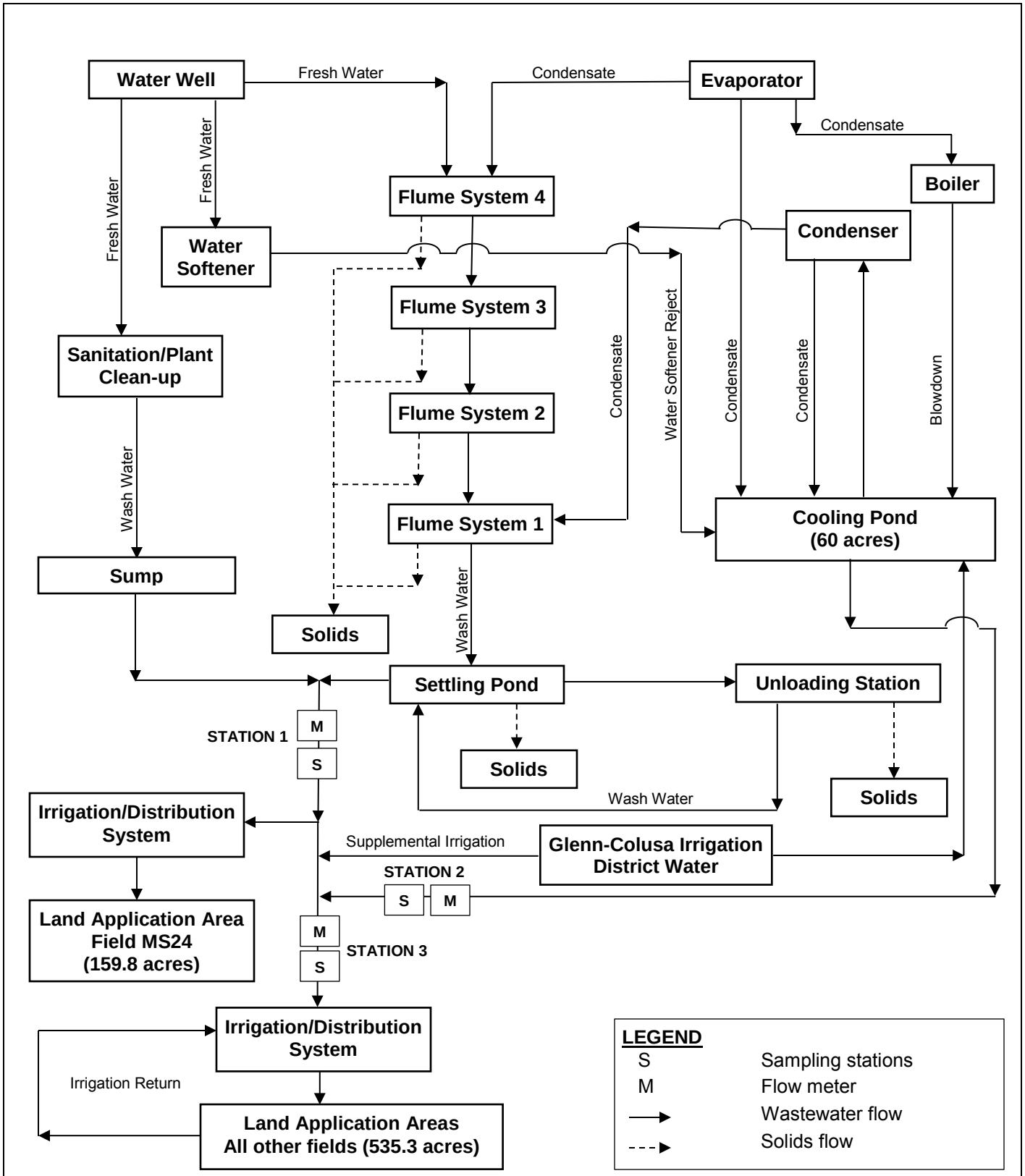
VICINITY MAP
MORNING STAR PACKING COMPANY, L.P.
MORNING STAR TOMATO PACKING PLANT
COLUSA COUNTY

N
W E
S

approx. scale
AS NOTED ABOVE



Drawing Reference: Davids Engineering, Inc. 2005	**FACILITY SITE PLAN** MORNING STAR PACKING COMPANY, L.P. MORNING STAR TOMATO PACKING PLANT COLUSA COUNTY	N W E S approx. scale NOT TO SCALE



Drawing Reference:
Report of Waste Discharge
30 December 2005

PROCESS FLOW DIAGRAM
MORNING STAR PACKING COMPANY, L.P.
MORNING STAR TOMATO PACKING PLANT
COLUSA COUNTY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS FOR WASTE DISCHARGE REQUIREMENTS

1 March 1991

A. General Provisions:

1. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, or protect the Discharger from liabilities under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.

2. The provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.

3. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

   a. Violation of any term or condition contained in this Order;

   b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;

   c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge;

   d. A material change in the character, location, or volume of discharge.

4. Before making a material change in the character, location, or volume of discharge, the discharger shall file a new Report of Waste Discharge with the Regional Board. A material change includes, but is not limited to, the following:

   a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements.

   b. A significant change in disposal method, location or volume, e.g., change from land disposal to land treatment.

   c. The addition of a major industrial, municipal or domestic waste discharge facility.

   d. The addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste.

5. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Board. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.

6. The discharger shall take all reasonable steps to minimize any adverse impact to the waters of the state resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance.

7. The discharger shall maintain in good working order and operate as efficiently as possible any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.

8. The discharger shall permit representatives of the Regional Board (hereafter Board) and the State Water Resources Control Board, upon presentations of credentials, to:

    a. Enter premises where wastes are treated, stored, or disposed of and facilities in which any records are kept,

    b. Copy any records required to be kept under terms and conditions of this Order,

    c. Inspect at reasonable hours, monitoring equipment required by this Order, and

    d. Sample, photograph and video tape any discharge, waste, waste management unit, or monitoring device.

9. For any electrically operated equipment at the site, the failure of which would cause loss of control or containment of waste materials, or violation of this Order, the discharger shall employ safeguards to prevent loss of control over wastes. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means.

10. The fact that it would have been necessary to halt or reduce the permitted activity in Order to maintain compliance with this Order shall not be a defense for the discharger's violations of the Order.

11. Neither the treatment nor the discharge shall create a condition of nuisance or pollution as defined by the California Water Code, Section 13050.

12. The discharge shall remain within the designated disposal area at all times.

B. General Reporting Requirements:

1. In the event the discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the discharger shall notify the Board by telephone at **(916) 464-3291** as soon as it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing within **two weeks**. The written

notification shall state the nature, time and cause of noncompliance, and shall include a timetable for corrective actions.

2. The discharger shall have a plan for preventing and controlling accidental discharges, and for minimizing the effect of such events.

   This plan shall:

   a. Identify the possible sources of accidental loss or leakage of wastes from each waste management, treatment, or disposal facility.

   b. Evaluate the effectiveness of present waste management/treatment units and operational procedures, and identify needed changes of contingency plans.

   c. Predict the effectiveness of the proposed changes in waste management/treatment facilities and procedures and provide an implementation schedule containing interim and final dates when changes will be implemented.

   The Board, after review of the plan, may establish conditions that it deems necessary to control leakages and minimize their effects.

3. All reports shall be signed by persons identified below:

   a. <u>For a corporation</u>: by a principal executive officer of at least the level of senior vice-president.

   b. <u>For a partnership or sole proprietorship</u>: by a general partner or the proprietor.

   c. <u>For a municipality, state, federal or other public agency</u>: by either a principal executive officer or ranking elected or appointed official.

   d. A duly authorized representative of a person designated in 3a, 3b or 3c of this requirement if;

      (1) the authorization is made in writing by a person described in 3a, 3b or 3c of this provision;

      (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a waste management unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

      (3) the written authorization is submitted to the Board

Any person signing a document under this Section shall make the following certification:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of the those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

4. Technical and monitoring reports specified in this Order are requested pursuant to Section 13267 of the Water Code. Failing to furnish the reports by the specified deadlines and falsifying information in the reports, are misdemeanors that may result in assessment of civil liabilities against the discharger.

5. The discharger shall mail a copy of each monitoring report and any other reports required by this Order to:

   California Regional Water Quality Control Board
   Central Valley Region
   11020 Sun Center Drive, #200
   Rancho Cordova, CA 95670-6114

   or the current address if the office relocates.

C. Provisions for Monitoring:

1. All analyses shall be made in accordance with the latest edition of: (1) *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA 600 Series) and (2) *Test Methods for Evaluating Solid Waste* (SW 846-latest edition). The test method may be modified subject to application and approval of alternate test procedures under the Code of Federal Regulations (40 CFR 136).

2. Chemical, bacteriological, and bioassay analysis shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Board staff. The Quality Assurance-Quality Control Program must conform to EPA guidelines or to procedures approved by the Board.

   Unless otherwise specified, all metals shall be reported as Total Metals.

3. The discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of three

years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

Record of monitoring information shall include:

a. the date, exact place, and time of sampling or measurements,
b. the individual(s) who performed the sampling of the measurements,
c. the date(s) analyses were performed,
d. the individual(s) who performed the analyses,
e. the laboratory which performed the analysis,
f. the analytical techniques or methods used, and
g. the results of such analyses.

4. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated at least yearly to ensure their continued accuracy.

5. The discharger shall maintain a written sampling program sufficient to assure compliance with the terms of this Order. Anyone performing sampling on behalf of the discharger shall be familiar with the sampling plan.

6. The discharger shall construct all monitoring wells to meet or exceed the standards stated in the State Department of Water Resources *Bulletin 74-81* and subsequent revisions, and shall comply with the reporting provisions for wells required by Water Code Sections 13750 through 13755.22

D. Standard Conditions for Facilities Subject to California Code of Regulations, Title 23, Division3, Chapter 15 (Chapter 15)

1. All classified waste management units shall be designed under the direct supervision of a California registered civil engineer or a California certified engineering geologist. Designs shall include a Construction Quality Assurance Plan, the purpose of which is to:

   a. demonstrate that the waste management unit has been constructed according to the specifications and plans as approved by the Board.

   b. provide quality control on the materials and construction practices used to construct the waste management unit and prevent the use of inferior products and/or materials which do not meet the approved design plans or specifications.

2. Prior to the discharge of waste to any classified waste management unit, a California registered civil engineer or a California certified engineering geologist must certify that the waste management unit meets the construction or prescriptive standards and performance goals in Chapter 15, unless an engineered alternative has been approved by the Board. In the case of an engineered alternative, the registered civil engineer or a certified engineering geologist must

certify that the waste management unit has been constructed in accordance with Board-approved plans and specifications.

3. Materials used to construct liners shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the operating life, closure, and post-closure maintenance period of the waste management units.

4. Closure of each waste management unit shall be performed under the direct supervision of a California registered civil engineer or a California certified engineering geologist.

E. Conditions Applicable to Discharge Facilities Exempted from Chapter 15 Under Section 2511

1. If the discharger's wastewater treatment plant is publicly owned or regulated by the Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to California Code of Regulations, Title 23, Division 4, Chapter 14.

2. By-pass (the international diversion of waste streams from any portion of a treatment facility, except diversions designed to meet variable effluent limits) is prohibited. The Board may take enforcement action against the discharger for by-pass unless:

   a. (1) By-pass was unavoidable to prevent loss of life, personal injury, or severe property damage. (Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a by-pass. Severe property damage does not mean economic loss caused by delays in production); <u>and</u>

      (2) There were no feasible alternatives to by-pass, such as the use of auxiliary treatment facilities or retention of untreated waste. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a by-pass that would otherwise occur during normal periods of equipment downtime or preventive maintenance; <u>or</u>

   b. (1) by-pass is required for essential maintenance to assure efficient operation; and

      (2) neither effluent nor receiving water limitations are exceeded; and

      (3) the discharger notifies the Board ten days in advance.

   The permittee shall submit notice of an unanticipated by-pass as required in paragraph B.1. above.

3. A discharger that wishes to establish the affirmative defense of an upset (see definition in E.6 below) in an action brought for noncompliance shall demonstrate, through properly signed, contemporaneous operating logs, or other evidence, that:

a. an upset occurred and the cause(s) can be identified;

b. the permitted facility was being properly operated at the time of the upset;

c. the discharger submitted notice of the upset as required in paragraph B.1. above; and

d. the discharger complied with any remedial measures required by waste discharge requirements.

In any enforcement proceeding, the discharger seeking to establish the occurrence of an upset has the burden of proof.

4. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Board by **31 January**.

5. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to disposal. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

6. Definitions

a. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper action.

b. The monthly average discharge is the total discharge by volume during a calendar month divided by the number of days in the month that the facility was discharging. This number is to be reported in gallons per day or million gallons per day.

Where less than daily sampling is required by this Order, the monthly average shall be determined by the summation of all the measured discharges by the number of days during the month when the measurements were made.

c. The monthly average concentration is the arithmetic mean of measurements made during the month.

d. The "daily maximum" **discharge** is the total discharge by volume during any day.

e. The "daily maximum" **concentration** is the highest measurement made on any single discrete sample or composite sample.

f. A "grab" sample is any sample collected in less than 15 minutes.

g. Unless otherwise specified, a composite sample is a combination of individual samples collected over the specified sampling period;

   (1) at equal time intervals, with a maximum interval of one hour

   (2) at varying time intervals (average interval one hour or less) so that each sample represents an equal portion of the cumulative flow.

The duration of the sampling period shall be specified in the Monitoring and Reporting Program. The method of compositing shall be reported with the results.

7. Annual Pretreatment Report Requirements:

Applies to dischargers required to have a Pretreatment Program as stated in waste discharge requirements.)

The annual report shall be submitted **by 28 February** and include, but not be limited to, the following items:

a. A summary of analytical results from representative, flow-proportioned, 24-hour composite sampling of the influent and effluent for those pollutants EPA has identified under Section 307(a) of the Clean Water Act which are known or suspected to be discharged by industrial users.

   The discharger is not required to sample and analyze for asbestos until EPA promulgates an applicable analytical technique under 40 CFR (Code of Federal Regulations) Part 136. Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto.

b. A discussion of Upset, Interference, or Pass Through incidents, if any, at the treatment plant which the discharger knows or suspects were caused by industrial users of the system. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any

additional limitations, or changes to existing requirements, may be necessary to prevent Pass Through, Interference, or noncompliance with sludge disposal requirements.

c. The cumulative number of industrial users that the discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.

d. An updated list of the discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The discharger shall provide a brief explanation for each deletion. The list shall identify the inddustrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent that the federal categorical standards. The discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:

(1) Complied with baseline monitoring report requirements (where applicable);

(2) Consistently achieved compliance;

(3) Inconsistently achieved compliance;

(4) Significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);

(5) Complied with schedule to achieve compliance (include the date final compliance is required);

(6) Did not achieve compliance and not on a compliance schedule;

(7) Compliance status unknown.

A report describing the compliance status of any industrial user characterized by the descriptions in items (d)(3) through (d)(7) above shall be **submitted quarterly from the annual report date** to EPA and the Board. The report shall identify the specific compliance status of each such industrial user. This quarterly reporting requirement shall commence upon issuance of this Order.

e. A summary of the inspection and sampling activities conducted by the discharger during the past year to gather information and data regarding the industrial users. The summary shall include but not be limited to, a tabulation of categories of dischargers that were inspected and sampled; how many and how often; and incidents of noncompliance detected.

f. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:

(1) Warning letters or notices of violation regarding the industrial user's apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations;

(2) Administrative Orders regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations;

(3) Civil actions regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations;

(4) Criminal actions regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

(5) Assessment of monetary penalties. For each industrial user identify the amount of the penalties;

(6) Restriction of flow to the treatment plant; or

(7) Disconnection from discharge to the treatment plant.

g. A description of any significant changes in operating the pretreatment program which differ from the discharger's approved Pretreatment Program, including, but not limited to, changes concerning: the program's administrative structure; local industrial discharge limitations; monitoring program or monitoring frequencies; legal authority of enforcement policy; funding mechanisms; resource requirements; and staffing levels.

h. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

i. A summary of public participation activities to involve and inform the public.

j. A description of any changes in sludge disposal methods and a discussion of any concerns not described elsewhere in the report.

Duplicate signed copies of these reports shall be submitted to the Board and:

Regional Administrator

U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

and

State Water Resource Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95812

Revised January 2004 to update addresses and phone numbers