CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2019-0012

WASTE DISCHARGE REQUIREMENTS

FOR
LIBERTY PACKING COMPANY, LLC
TOMATO PROCESSING FACILITY
MERCED COUNTY

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

1. On 29 December 2017, Liberty Packing Company, LLC (Discharger) submitted a Report of Waste Discharge (RWD) to update Waste Discharge Requirements (WDRs) Order 90-223 for the discharge of tomato processing wastewater from the Liberty Packing, LLC Tomato Processing Facility (Facility).

2. The Discharger owns and operates the Facility that generates the waste and the land discharge areas and is responsible for compliance with these Waste Discharge Requirements (WDRs).

3. The Facility is at 12045 Ingomar Grade near Los Banos (Section 26, T9S, R9E, and Section 35, T9S, R9E, MDB&M). The Facility occupies Assessor's Parcel Numbers (APNs) 070-112-012-000 and 070-112-003-000. The vicinity map with the location of the Facility is shown on Attachment A, which is attached hereto and made part of this Order by reference.

4. WDRs Order 90-223, adopted by the Central Valley Water Board on 10 August 1990, originally prescribed requirements for Tri-Valley Grower and allowed a 30-day average wastewater flow of up to 4.0 million gallons per day (gpd). The Discharger purchased the Facility in 2002. The WDRs for the Facility are being updated to ensure the discharge is consistent with water quality plans and policies and to reflect changes to the Facility. Order 90-223 will be rescinded and replaced with this Order.

## Existing Facility and Discharge

5. The Facility operates during the tomato harvest season from approximately July through October and produces conventional and organic aseptic tomato paste and diced tomatoes in bulk, food service and consumer packaging. The Facility operates 24 hours per day, every day during the harvest season. Occasionally, the Facility operates during the off-season (for brief periods) by remanufacturing initially processed products (paste, diced, or other) into other products.

6. During the harvest season, tomatoes are received in trucks, graded, then transported into the Facility by flumes for processing into paste or diced product.

7. Source water for the Facility is from three onsite wells. Table 1 below summarizes analytical results provided in the RWD.

Table 1 – Source Water

| Constituent | Units[1] | Well #3 | Well #4 | Well #5 |
|---|---|---|---|---|
| Calcium | mg/L | 74 | 54 | 72 |
| Magnesium | mg/L | 34 | 24 | 32 |
| Potassium | mg/L | 3.6 | 2.2 | 2.4 |
| Hardness (Total) as CaC03 | mg/L | 325 | 234 | 312 |
| Carbonate | mg/L | 1.4 | ND[2] | ND |
| Bicarbonate | mg/L | 381 | 287 | 390 |
| Sulfate | mg/L | 93 | 55 | 78 |
| Chloride | mg/L | 218 | 89 | 106 |
| Nitrate as N | mg/L | 0.48 | 1.65 | 1.67 |
| Fluoride | mg/L | 0.14 | 0.18 | 0.19 |
| pH | s.u. | 7.6 | 7.8 | 7.9 |
| Electrical Conductivity (EC) | µmhos/cm | 1,460 | 918 | 1,301 |
| Total Dissolved Solids | mg/L | 944 | 591 | 828 |

1 mg/L denotes milligrams per liter, s.u. denotes standard units, and µmhos/cm denotes micromhos per centimeter.

2 ND = non-detect

8. Waste streams during the harvest season are generated from unloading, peeling, wet waste container leakage, boiler blowdown, reverse osmosis discharge, water softener discharge, calcium bath overflow, cooker/cooler overflow, equipment sanitation and cooling pond overflow. A process flow diagram is shown on Attachment C, which is attached hereto and made part of this Order by reference.

9. The majority of wastewater produced by the Facility is from tomato conveyance. Tomatoes are transported to the Facility in trucks, unloaded by flooding the transportation bins and dumping into the flume system. Along with tomatoes, stems, soil, and rocks enter the flume. The flume is equipped with rotary screens to remove the rocks and stems. The conveyance system is designed to continuously recycle the tomato conveyance water through a settling pond. As the conveyance water flows through the Settling Pond (1 acre in size with a total capacity 5.3 million gallons), a portion is recycled through the flume system and the remaining flow is conveyed to the ditch system for disposal on the land application area (LAA).

10. The RWD indicates that Merced County required the Discharger to install tile drains under the cooling pond and fields 1, 2, 4, and 5. Tile drainage is pumped to the Fish Pond, which overflows at a freeboard of one foot to a natural drainage channel on the northeast side of the Facility. The natural drainage channel flows to the Volta State Wildlife Area.

11. The Settling Pond was constructed of compacted, engineered fill and, as previously mentioned, has an operating volume of 5.3 million gallons. The Settling Pond is utilized during the processing season as a pretreatment system to settle heavier solids from the wastewater prior to discharging the wastewater to the LAA via the Facility ditch system. After the processing season, the Settling Pond is drained and the solids are allowed to dry. The dried solids are applied to the LAA prior to the next processing season. Provision H.3.b requires the Discharger to submit a Wastewater and Nutrient Management Plan that details

all sources of nutrients applied to the LAA and requires the Discharger to develop practicable measures to ensure even application of wastewater and solids to the LAA.

12. Table 2 below summarizes Facility flow for the 2015-2017 processing seasons:

Table 2 - Monthly Average Flow (mgd)

| Season | July | August | September | October | Average |
|---|---|---|---|---|---|
| 2015 | 3.52 | 3.84 | 3.59 | 2.55 | 3.38 |
| 2016 | 3.12 | 3.94 | 3.83 | 0.95 | 2.96 |
| 2017 | 3.01 | 3.88 | 3.74 | 2.25 | 3.22 |

The Discharger reports that offseason flows average around 0.2 mgd and range between 0.15 and 0.25 mgd.

13. Water balances were included in the 2017 RWD for a normal year and a 100-year return rain year for maximum flow during the processing season of 4.0 mgd but did not address off season flows. A revised water balance was submitted in October 2018, which included off-season flows and a maximum flow of 5.0 mgd during the processing season.

Calculations for the LAA water balances were based on wastewater flows, total crop irrigation needs, and acreage of LAA used for summer and winter crops. The water balances show that total crop irrigation demand exceeds the volume of wastewater available for irrigation during the processing season.

14. Wastewater from the processing area and Settling Pond is collected in the tomato waste line, which flows to a ditch equipped with a Parshall flume and screen before it is discharged to the LAA. The LAA consists of 574 acres. Attachment B, which is attached hereto and made part of this Order by reference, shows the configuration of the LAA. The RWD included analytical data for the 2016 and 2017 harvest seasons to characterize the discharge. This data is summarized in Table 3 below.

Table 3 – Effluent Characterization

| Constituent[1] | Units | 2016 Avg. | 2017 Avg. |
|---|---|---|---|
| pH | std | 5 | 5.1 |
| EC | uhmos/cm | 2,828 | 2,866 |
| BOD[1] | mg/L | 2,910 | 2,992 |
| COD | mg/L | 5,167 | 4,000 |
| Nitrate as N | mg/L | ND | ND |
| TKN | mg/L | 112.8 | 102.5 |
| TDS | mg/L | 2,467 | 2,328 |
| TSS | mg/L | 1,157 | 721 |
| FDS | mg/L | 1,075 | 1,235 |
| FDS/TDS[2] | -- | 0.4 | 0.53 |
| Ammonia as N | mg/L | n/a | 52 |
| Arsenic | mg/L | n/a | 0.006 |
| Settable Matter | mL/L/hr | n/a | 35.9 |

Table 3 – Effluent Characterization

| Constituent[1] | Units | 2016 Avg. | 2017 Avg. |
|---|---|---|---|
| Hardness | mg/L | n/a | 368 |
| Calcium | mg/L | n/a | 138 |
| Magnesium | mg/L | n/a | 31.3 |
| Sodium | mg/L | n/a | 188 |
| Potassium | mg/L | n/a | 196 |
| Alkalinity | mg/L | n/a | 792 |
| Bicarbonate | mg/L | n/a | 916 |
| Sulfate | mg/L | n/a | 110 |
| Chloride | mg/L | n/a | 434 |
| Copper | ug/L | n/a | 5 |
| Iron | ug/L | n/a | 1,747 |
| Manganese | ug/L | n/a | 750 |

1 BOD = biochemical oxygen demand;
COD = chemical oxygen demand;
TKN = total kjeldahl nitrogen;
TDS = total dissolved solids;
TSS = total suspended solids;
FDS = fixed dissolved solids;
2 FDS/TDS = ratio of FDS to TDS.

15. Screens are used at various stages of the sorting and processing lines to remove different types of solid waste (referred to as residual solids), these include rocks, soil, stems, tomato solids, skins, etc. Screened stems and other tomato solids are collected in bins and hauled offsite for cattle feed. Screened soil is applied to the LAA.

16. Chemicals in use at the Facility include: potassium hydroxide, sodium hydroxide, hydrochloric acid, calcium chloride, citric acid, sodium hydroxide chelated, sodium chlorite, and nitric/phosphorous anti NAP 50.

17. The RWD indicates that a third of the LAA will be planted in corn or milo and the rest in a hay crop (Sudan grass) and potentially double cropped with winter wheat. The actual plantings will vary depending upon economics, water management, and nutrient management considerations. Potential nitrogen uptake rates as described in the *Western Fertilizer Handbook (Eighth Edition)* are 250 lbs/acre for corn and milo, 325 lbs/acre for Sudan grass, and 175 lbs/acre for wheat.

18. Table 4 below provides effluent biochemical oxygen demand (BOD) concentrations and BOD loading rates for the 2012 through the 2017 processing season.

Table 4 – BOD Loading 2012-2017*

| Month | BOD Conc. (mg/L) | BOD Loading (lbs/acre/day) |
|---|---|---|
| Jul-12 | 1,580 | 62 |
| Aug-12 | 1,991 | 109 |
| Sep-12 | 3,352 | 192 |
| Oct-12 | 1,882 | 80 |
| Jul-13 | 3,493 | 141 |

Table 4 – BOD Loading 2012-2017*

| Month | BOD Conc. (mg/L) | BOD Loading (lbs/acre/day) |
|---|---|---|
| Aug-13 | 2,577 | 124 |
| Sep-13 | 3,679 | 155 |
| Oct-13 | 1,138 | 40 |
| Jul-14 | 1,191 | 54 |
| Aug-14 | 3,433 | 194 |
| Sep-14 | 2,290 | 119 |
| Oct-14 | 1,123 | 55 |
| Jul-15 | 969 | 50 |
| Aug-15 | 3,082 | 172 |
| Sep-15 | 3,535 | 184 |
| Oct-15 | 1,298 | 48 |
| Jul-16 | 900 | 41 |
| Aug-16 | 4,268 | 244 |
| Sep-16 | 3,563 | 207 |
| Jul-17 | 3,311 | 145 |
| Aug-17 | 2,921 | 164 |
| Sep-17 | 2,826 | 154 |

*Data from the December 2017 RWD. RWD indicates that loading rates were calculated using discharge volumes and operation days per month, not a cycle average.

19. In a 1 November 2018 Technical Memorandum, *Updated Antidegradation Evaluation for Report of Waste Discharge*, prepared by Brown and Caldwell on behalf of the Discharger (signed and stamped by Robert A. Beggs, RCE No. 46503), the Discharger provides the results of reaeration calculations for the predominant soil in the LAA (Pedcat clay loam). The report concludes that the aeration capacity of the LAA fields is conservatively estimated to be suitable for a BOD loading rate of 150 lbs/acre/day with a 7-day irrigation cycle. Provision H.2 provides the Discharger with a time schedule for coming into compliance with the cycle average BOD limit.

20. In 2017 the average effluent FDS was reported as 1,235 mg/L (Finding 14). Assuming an even application to the LAA and an average flow of 3.05 mgd during the processing season (July – October), approximately 55 lbs/acre/day of FDS is applied to the LAA during the processing season. During the 120-day operating season, roughly 6,568 pounds of FDS are applied per acre.

21. Table 5 below summarizes TKN loading data based on reported TKN values and flow rates for the 2012 through 2017 seasons and assumes use of all 574 acres of the land application area. The RWD indicates that nearly all nitrogen in the wastewater occurs in the form of TKN.

Table 5 - TKN Loading

| Year | TKN Conc. (mg/L) | Discharge Vol. (million gal.) | Total TKN (lbs/acre/yr) |
|---|---|---|---|
| 2012 | 159 | 338 | 780 |
| 2013 | 133 | 311 | 601 |
| 2014 | 94 | 369 | 501 |
| 2015 | 101 | 358 | 527 |
| 2016 | 113 | 323 | 529 |
| 2017 | 103 | 310 | 462 |

22. The LAA and Facility span about 825 acres. The parcels are zoned A-1 (General Agricultural). The designated uses are consistent with Liberty Packing Company's operations.

23. The RWD states that stormwater received on the LAA after the processing season is initially held in the fields. After receiving two inches of rain, stormwater runoff from fields 4 and 5 and all fields farther north discharge to a natural drainage channel on the northeast side of the facility. Fields 8 – 15 discharge to a natural drainage channel near the pumps and rotary screen. Both natural channels eventually discharge into the San Luis Wasteway and the San Luis Holding Reservoir to the east of the facility, which are waters of the US.

24. Domestic wastewater is discharged to a septic tank leach field system, which is regulated by Merced County.

**Planned Changes in the Facility and Discharge**

25. In its 29 December 2017 RWD, the Discharger identified potential future changes at the Facility, including the processing of other fruits and vegetables; expansion of the cooling pond; expansion of the settling pond; change in processing capacity; and bag fermentation of the wet waste, pomace, and other solid or semi-solid wastes for cattle feed.

26. Merced County approved a Negative Declaration for the proposed upgrades on 14 March 2014. Central Valley Water Board staff commented on the draft Negative Declaration stating that prior to construction of the expanded cooling and settling ponds that the Discharger should submit final design plans for review and comment.

27. Provision H.4 requires the Discharger to submit final design drawings and the necessary details of the proposed cooling pond and settling pond upgrades described in Finding 25 and an evaluation of the potential impacts these changes will have on the Facility's discharge and underlying groundwater quality.

**Site-Specific Conditions**

28. The tomato processing facility and LAA are relatively flat. A Federal Emergency Management Agency (FEMA) map identified the eastern edge of the facility to include portions of the LAA, processing facility, and warehousing area to be in the flood plain.

29. Surface waters in the area consist of the San Luis Wasteway, San Luis Holding Reservoir, and various irrigation canals and ditches. Surface water typically drains to the east and eventually enters the San Luis Wasteway.

30. The Natural Resources Conservation Service soils report for the LAA states soils are comprised primarily of Pedcat loam, Pedcat clay loam, and Volta clay loam. The soils range from somewhat poorly drained to poorly drained with depths to a restrictive feature being greater than 80 inches except for Volta Clay loam which meets a duripan between 46 and 60 inches. These soil types are alluvium derived from sedimentary rock.

31. The annual average precipitation for the area is approximately 9.2 inches and 21.1 inches for a 100-year precipitation event. Based on data published by the California Irrigation Management Information System (CIMIS, 2018) for Los Banos, California, Station 56, the reference evapotranspiration rate is approximately 59 inches per year.

32. Regional land use data compiled by the California Department of Water Resources (DWR) indicate that land near the tomato processing facility is primarily used for agricultural purposes; however, there are a few private residences and areas of pasture land and natural vegetation.

## Groundwater Conditions

33. The local gradient typically flows from the west to the east. Depth to groundwater underlying the Facility and LAA ranges from 4 to 10 feet below ground surface.

34. Order 90-223 required the installation of one 10-foot deep piezometer for each 40 acres of LAA. In addition, the Discharger installed groundwater monitoring wells in 2007 to monitor the expanded LAA.

35. Order 90-223 required groundwater monitoring for depth to free or perched water table, electrical conductivity (EC), nitrate, and chemical oxygen demand (COD). Table 6 below summarizes upgradient groundwater monitoring results for the period January 2015 through August 2017 and Table 7 below summarizes downgradient groundwater monitoring results for the period January 2015 through August 2017:

Table 6 – Upgradient Monitoring Well/Piezometer Characterization

| Constituent | Monitoring Well/Piezometer # | | | Potential WQO |
|---|---|---|---|---|
| | 1 | 8 | 17 | |
| EC (µmhos/cm) | **2,399** | **4,454** | **1,385** | 900[1] |
| COD (mg/L) | 18 | 13 | 10 | -- |
| $NO_3$-N (mg/L) | **29** | **14** | 2 | 10[2] |

Concentrations in **bold** exceed a potential water quality objective (WQO).

1. Recommended Secondary Maximum Contaminant Recommended Level
2. Primary Maximum Contaminant Level (MCL)

Table 7 – Downgradient Monitoring Well/Piezometer Characterization

| Constituent | Monitoring Well/Piezometer # | | | | | | | | | | | | Potential WQO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 4 | 9 | 10 | 11a | 14 | 15 | 16 | 18 | 19 | 20 | 21 | |
| EC (µmhos/cm) | **4,887** | **5,668** | **3,397** | **5,309** | **5,598** | **5,304** | **3,667** | **3,124** | **4,911** | **4,086** | **6,345** | **4,142** | 900[1] |
| COD (mg/L) | 11 | 10 | 15 | 12 | 14 | 57 | 7.4 | 20 | 15 | 19.7 | 16 | 13 | |
| $NO_3$-N (mg/L) | 2 | 8 | 4 | 3 | **18** | 7 | **19.7** | 3.4 | 3 | 2 | 0.12 | 0.37 | 10[2] |

Concentrations in **bold** exceed a potential water quality objective (WQO).

1. Recommended Secondary Maximum Contaminant Recommended Level
2. Primary Maximum Contaminant Level (MCL)

36. The monitoring well/piezometer analytical results show a significant increase in salinity in downgradient wells. It appears that substantial denitrification occurs in the upper soils causing a decrease in the average downgradient nitrogen concentration (with the exception of monitoring wells 11a and 15).

37. Regional groundwater quality data can be found on the United States Geological Survey (USGS) Water Quality Portal website. Five USGS wells are reported to be within a two-mile radius of the Facility. The results of five sampling events in the Water Quality Portal are summarized in Table 8 below:

Table 8 - Regional Groundwater Results

| Well Number | Date | Depth feet bgs | Electrical Conductivity umhos/cm | Chloride mg/l | Sulfate mg/l | Total Dissolved Solids mg/l | Nitrate (as N) mg/l | Boron ug/l |
|---|---|---|---|---|---|---|---|---|
| 009S009E27E001M | 5/2/1968 | 125 | 960 | 120 | 77 | 551 | 0.21 | 470 |
| 009S009E26B002M | 5/1/1968 | 224 | 1,040 | 180 | 73 | 600 | 0.91 | 770 |
| 009S009E36E001M | 4/2/1967 | 65 | 731 | 92 | - | - | - | - |
| 010S009E02D001M | 6/27/1963 | 707 | 970 | 200 | 70 | 610 | 0.61 | 1,400 |
| 010S009E02D002M | 5/7/1987 | - | 2,070 | 220 | 220 | 1,320 | 9.35 | 1,100 |

**Basin Plan, Beneficial Uses, and Regulatory Considerations**

38. The Central Valley Water Board's operative *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (*Basin Plan*) designates beneficial uses for water, establishes water quality objectives (WQOs) necessary to sustain such uses; contains implementation plans and policies for protecting waters of the basin; and incorporates State Water Board plans and policies. Per Water Code section 13263(a), WDRs implement the *Basin Plan*.

39. Local drainage is to the San Luis Wasteway and San Luis Holding Reservoir, the beneficial uses of which (per the *Basin Plan*) include: municipal and domestic supply (MUN); hydropower generation (POW); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); and wildlife habitat (WILD).

40. Per the *Basin Plan*, beneficial uses of underlying groundwater at the Facility are municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND); and industrial process supply (PRO).

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

42. The *Basin Plan*'s numeric WQO 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-designated groundwater.

43. The *Basin Plan*'s narrative WQO's for chemical constituents require MUN-designated water to at least meet the MCLs specified in California Code of Regulations, title 22 (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.

44. The narrative toxicity WQO 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.

45. Quantifying a narrative WQO 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 to implement the narrative objective.

46. 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 electrical conductivity (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. The list of crops in Finding 17 is not intended as a definitive inventory of crops that are or could be grown in the area affected by the discharge, but is representative of current and historical agricultural practices in the area.

47. The Central Valley Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. These programs, once effective, could change how the Central Valley Water Board permits discharges of salt and nitrate. For nitrate, discharges that are unable to comply with stringent nitrate requirements will be required to take on alternate compliance approaches that involve providing replacement drinking water to persons whose drinking water is affected by nitrates. Dischargers could comply with the new nitrate program either individually or collectively with other dischargers. For salinity, dischargers that are unable to comply with stringent salinity requirements would instead need to meet performance-based requirements and participate in a basin-wide effort to develop a long-

term salinity strategy for the Central Valley. This Order may be amended or modified to incorporate any newly-applicable requirements.

48. The stakeholder-led Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative has been coordinating efforts to implement new salt and nitrate management strategies. The Board expects dischargers that may be affected by new salt and nitrate management policies to coordinate with the CV-SALTS initiative.

**Special Considerations for High Strength Waste**

49. For the purpose of this Order, "high strength waste" is defined as wastewater that contains concentrations of readily degradable organic matter that exceed typical concentrations for domestic sewage. Such wastes contain greater than 500 mg/L BOD and often contain commensurately high levels of TKN, which is a measure of organic nitrogen and ammonia nitrogen. Typical high strength wastewaters include septage, some food processing wastes, winery wastes, and rendering plant wastes.

50. Excessive application of high organic strength wastewater to land can create objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater with nitrogen species and metals, as discussed below. Such groundwater degradation can be prevented or minimized through implementation of best management practices which include planting crops to take up plant nutrients and maximizing oxidation of BOD to prevent nuisance conditions.

51. Unless groundwater is very shallow, groundwater degradation with nitrogen species such as ammonia and nitrate can be prevented by minimizing percolation below the root zone of the crops and ensuring that the available nitrogen load does not exceed crop needs over the course of a typical year. Where there is sufficient unsaturated soil in the vadose zone, excess nitrogen can be mineralized by soil microorganisms. Subsequent denitrification can take place in soil microsites and saturated or anoxic zones.

52. With regard to BOD, excessive application can deplete oxygen in the vadose zone and lead to anoxic conditions. At the ground surface, this can result in nuisance odors and fly-breeding. When insufficient oxygen is present below the ground surface, anaerobic decay of the organic matter can create reducing conditions that convert metals that are naturally present in the soil as relatively insoluble (oxidized) forms to more soluble reduced forms. This condition can be exacerbated by acidic soils and/or acidic wastewater. If the reducing conditions do not reverse as the percolate travels down through the vadose zone, these dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. Many aquifers contain enough dissolved oxygen to reverse the process, but excessive BOD loading over extended periods may cause beneficial use impacts associated with these metals.

53. Typically, irrigation with high strength wastewater results in high BOD loading on the day of application. It is reasonable to expect some oxidation of BOD at the ground surface, within the evapotranspiration zone and below the root zone within the vadose (unsaturated) zone. The maximum BOD loading rate that can be applied to land without creating nuisance conditions or leaching of metals can vary significantly depending on soil conditions and operation of the land application system.

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

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

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

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

    c. Risk Category 3: (greater than 100 lbs/acre/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.

56. 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.

57. This Order sets an irrigation cycle average BOD loading rate for the LAA of 150 lbs/acre/day consistent with Risk Category 3 in the *Manual of Good Practice* based on the site-specific evaluation conducted (see Finding 19) and requires the Discharger to develop practicable measures to ensure the even application of wastewater over the available LAAs. Provision H.2 provides the Discharger with a compliance schedule for coming into compliance with the cycle average BOD loading rate limit.

58. This Order establishes a performance-based FDS effluent limit of 1,400 mg/L as a flow-weighted annual average to prevent significant increases of TDS concentrations in groundwater. Table 8 below summarizes annual average FDS concentrations for the 2012 through 2017 processing seasons. The table shows falling annual average FDS concentrations from 2012 through 2015 with the FDS concentration increasing during the 2016 and 2017 seasons.

Table 8 – Annual Average FDS Concentrations (2012 – 2017)

| Year | FDS (mg/L) |
|---|---|
| 2012 | 1,453 |
| 2013 | 1,297 |
| 2014 | 706 |
| 2015 | 674 |
| 2016 | 1,075 |
| 2017 | 1,235 |

**Antidegradation Analysis**

59. State Water Resources Control Board's (State Water Board) *Statement of Policy with Respect to Maintaining High Quality Waters of the State*, Resolution 68-16 (Antidegradation Policy) prohibits degradation of groundwater unless it has been shown that such degradation:

    a. Will not unreasonably affect present and anticipated beneficial uses;

    b. Will not result in water quality less than that prescribed in state and regional policies, (including violation of one or more WQOs);

    c. Will be minimized by the discharger through best practicable treatment or control (BPTC) to minimize degradation; and

    d. Will be consistent with the maximum benefit to the people of the State.

60. Antidegradation Policy applies when an activity discharges to high-quality waters and will result in degradation of high-quality waters.

61. Constituents of concern that have the potential to cause degradation of the underlying groundwater include, in part, organics, nitrogen, salts, iron, and manganese.

    a. **Organics.** For organics, the Discharger reports application of wastewater with BOD loading rates ranging from 40 to 244 lbs/acre/day during the 2012 through 2017 processing seasons (Finding 18 and Table 4 above). The BOD cycle average requirement of 150 lbs/acre/day included in this Order can be categorized at Risk Category 3 in the Manual of Good Practice. With the conditions stipulated in this Order, the Discharger is not expected to cause nuisance conditions or unreasonable degrade groundwater with constituents related to organic overloading. This Order includes a compliance schedule, which allows the Discharger to implement the necessary changes at the Facility to come into compliance with the BOD cycle average loading rate limit of 150 lbs/acre/day. Furthermore, the attached Monitoring and Reporting Program requires the Discharger to conduct groundwater monitoring to determine if the Facility is causing unreasonable degradation due to organic overloading

    b. **Nitrogen.** For nitrogen, this Order limits the application of wastewater to agronomic rates for both nutrient and hydraulic loading. During the 2012 through 2017 processing seasons, the TKN loading ranged from 471 to 737 lbs/acre/year (Finding 21 and Table 5 above). The Discharger did not include a nutrient balance as part of its RWD, but did list potential LAA crops as corn, milo, sorghum and winter wheat (potential crop nitrogen

uptake rates are discussed in Finding 17). This Order requires that net available nitrogen loading to the LAA be at reasonable agronomic rates and includes a provision that requires the Discharge to submit a Wastewater and Nutrient Management Plan to assess and implement measures to ensure nutrients are applied at agronomic rates. The Central Valley Water Board expects that application of wastewater and fertilizers at reasonable agronomic rates for nitrogen will preclude further degradation/pollution of groundwater for nitrate as nitrogen. Degradation is likely the result of long-term agricultural use of the area. For the continued protection of groundwater from discharges to land, this Order limits the application of wastewater to be consistent with the plant available nitrogen (PAN) for the crop type to be grown on the LAAs.

c. **Salinity.** For salinity, as shown in Table 8 and Finding 37, groundwater prior to 1968 had EC values ranging from 731 to 1,040. Source water EC from the onsite wells ranges from 918 to 1,460. Groundwater monitoring (Table 6) shows that the EC of shallow groundwater under and downgradient the LAA is elevated above background levels. Therefore, it appears that the continued discharge of process wastewater to the LAA has caused or contributed to elevated salinity in shallow groundwater. Provision H.3.a. requires the Discharger to prepare and implement a Salinity Reduction Study Work Plan to identify and implement measures to reduce the salinity in the Facility's discharge. Furthermore, this Order establishes a performance-based FDS effluent limitation as a flow-weighted annual average to prevent any further significant increase of salinity in groundwater.

**d. Iron and Manganese.** As shown in Finding 14 and Table 3 above, the average concentration of iron in the effluent is approximately 1,750 ug/L, well above the secondary MCL of 300 ug/L. For manganese, the average effluent concentration is 750 µg/L, well above the secondary MCL of 50 µg/L. The Order requires the Discharger to conduct groundwater monitoring for both iron and manganese to evaluate if the Facility's discharge has impacted downgradient concentrations for either or both metals. Furthermore, this Order (Provision H.3.c) requires the submittal of a Metal Evaluation and Minimization Plan to address sources of elevated iron and manganese in the effluent.

**Treatment and Control Practices**

62. Liberty Packing provides, or will provide, as required by this order, the following treatment and control of the discharge that incorporates:

a. Solids removal from the wastewater;

b. Reuse of wastewater for crop irrigation via flood irrigation;

c. A cycle average BOD loading limit of 150 lbs/acre/day;

d. A performance based FDS limit of 1,400 mg/L

e. Preparation and implementation of a Nutrient Management Plan;

f. Application of net available nutrients at agronomic rates;

g. Preparation and implementation of a Salinity Reduction Study Work Plan;

h. Preparation and implementation of a Metals Evaluation and Minimization Plan;

i. Preparing an annual report that measures the salt, BOD, and nitrogen loading to the LAA and assesses the groundwater quality;

j. Daily inspection of the LAA during wastewater discharge; and

k. Groundwater monitoring.

**Antidegradation Conclusions**

63. This Order establishes terms and conditions to ensure that the authorized discharge from the Facility will not excessively degrade groundwater, contribute to existing pollution, or unreasonable affect present and anticipated future beneficial uses of groundwater.

64. With respect to salinity, groundwater degradation has occurred. Therefore, this Order does not authorize any continued degradation beyond that which exists today for those constituents. This Order includes a performance-based fixed dissolved solids limit and Salinity Reduction Study Work Plan to determine ways to reduce salinity in the Facility's effluent. This Order will be reopened if necessary, to reconsider effluent limitations and other requirements to comply with the Antidegradation Policy and the CV-SALTS initiative (see Finding 47). Based on the existing record, the discharge authorized by this Order is consistent with the Basin Plan.

65. The provisions of this Order require the Discharger to implement treatment and control measures listed in Finding 62. These treatment and control practices are reflective of BPTC of the discharge.

66. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the state and, therefore, sufficient reason exist to accommodate growth and limited groundwater degradation around the Facility, provided that the terms of the Basin Plan are met. 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's operation provides 100 full-time jobs and approximately another 800 people during the processing season. 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.

**CEQA**

67. The prescription of WDRs for an existing facility and operation is exempt from the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq., pursuant to section 15301 of the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.). There have been no material changes or expansions at the Facility other than those described in the Merced County 14 March 2014 Mitigated Negative Declaration for Modification of Conditional Use Permit 02-001. Additionally, no adverse water quality

impacts should occur, provided the Discharger complies with the terms and conditions of this Order.

**Other Regulatory Considerations**

68. Pursuant to Water Code section 106.3, subdivision (a) it is "the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." Although this Order is not necessarily subject to Water Code section 106.3 because it does not revise, adopt or establish a policy, regulation or grant criterion (see § 106.3, subd. (b)), it nevertheless 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.

69. For the purposes of California Code of Regulations, title 23 (Title 23), the Facility's discharges have a threat-complexity rating of "2C," where:

    a. Threat Category 2 reflects "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. Complexity Category C is assigned to "[a]ny discharger … having no waste treatment systems or that must comply with best management practices dischargers having passive treatment and disposal systems, or dischargers having waste storage systems with land disposal."

70. This Order, which prescribes WDRs for discharges of wastewater, is exempt from the prescriptive requirements of California Code of Regulations, Title 27, section 20005 et seq. (See Cal. Code Regs., tit. 27, § 20090, subd. (b)).

71. Because all stormwater at the Facility is collected and disposed onsite, the Discharger is not be required to obtain coverage under the *Statewide General Permit for Storm Water Industrial Activities*, State Water Board Order 2014-0057-DWQ, NPDES Permit No. CAS000001 (Industrial General Permit).

72. Water Code section 13267, subdivision (b)(1) 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 having discharged or discharging, or who proposes to discharge waste within its region … shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.*

    The technical reports required by this Order and attached Monitoring and Reporting Program No. R5-2019-0012 are necessary to ensure compliance with these WDRs. The burden of producing such reports is also reasonable relative to the need for their submission.

73. Existing Department of Water Resources (DWR) standards for the construction and destruction of groundwater wells, as well as any more stringent standards that are

subsequently adopted, shall apply to all monitoring wells used to monitor impacts of wastewater storage or disposal governed by this Order. (see Cal. *Well Stds. Bulletin* 74-90 [DWR, June 1991]; *Water Well Stds. Bulletin* 94-81 [DWR, Dec. 1981].)

74. Statistical data analysis methods outlined in the U.S. Environmental Protection Agency's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance) are appropriate for determining compliance with Groundwater Limitations of this Order. Depending on the circumstances, other methods may also be appropriate.

75. Pursuant to Water Code section 13263, subdivision (g), the ability to discharge waste is a privilege, not a right, and adoption of this Order shall not be construed as creating a vested right to continue discharging waste.

**Public Notice**

76. 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.

77. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.

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

**IT IS HEREBY ORDERED** that Order 90-223 is rescinded and, pursuant to Water Code sections 13263 and 13267, Liberty Packing, LLC (Discharger), its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted hereunder, shall comply with the following:

## A. Discharge Prohibitions

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

2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.

3. Except as authorized pursuant to Section E.2 of the *Standard Provisions and Reporting Requirements for WDRs*, 1 March 1991 ed. (SPRRs), treatment system bypasses of untreated or partially-treated waste are prohibited.

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

5. Discharge of toxic substances into any wastewater treatment system or LAA, if disruptive of biological treatment methods, is prohibited.

6. Discharge of domestic wastewater to any process wastewater treatment system, the LAA, or surface water is prohibited.

7. Discharge of industrial wastewater to septic systems is prohibited.

8. Off-site discharges of tile drainage unrelated to crop production is not authorized by these Waste Discharge Requirements.

**B. Flow Limitations**

1. The wastewater discharge to the LAA shall not exceed the following (monitored at EFF-001):

   a. During the processing season (June – Oct.), an average daily flow to the LAA of 5.0 mgd.

   b. During the off-season (December – May), an average daily flow to the LAA of 0.3 mgd.

   c. During the transition month of November an average daily flow to the LAA of 0.4 mgd.

   d. A total annual discharge volume of 620 million gallons.

**C. Effluent and Mass Loading Limitations**

1. The blend of treated wastewater, storm water, and supplemental irrigation water (if used in the future) applied to the LAAs shall not exceed the following effluent and mass loading limits:

| Constituent | Units | Daily Maximum | Annual Maximum |
|---|---|---|---|
| Average FDS Concentration | mg/L | -- | 1,400 [3] |
| BOD Mass Loading [1] | lbs/acre/day | 150 [2, 5] | -- |
| Total Nitrogen Mass Loading [1, 4] | lbs/acre/year | -- | Crop Demand |

1. Based on all sources, including residual solids and commercial fertilizers, 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.
3. Flow-weighted average based on total flow and concentration for each source of water discharged to the LAA.
4. Based on plant available nitrogen (PAN) for the type of crop to be grown and site-specific conditions.
5. Subject to the compliance schedule provided in Provision H.2.

Compliance with the above requirements shall be determined as specified in the Monitoring and Reporting Program.

**D. Discharge Specifications**

1. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.

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

3. At all times, discharged waste shall remain within permitted waste treatment/containment structures and LAA.

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

5. 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.

6. Objectionable odors shall not be perceivable beyond the limits of the property where the waste is generated, treated, and/or discharged at an intensity that creates or threatens to create nuisance conditions.

7. The Discharger shall design, construct, operate, and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. The operating freeboard in any pond (except the Fish Pond) shall never be less than two feet (measured vertically from the lowest possible point of overflow). This requirement does not apply to concrete channels used to convey water to or from the Facility's ponds. 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 or other suitable measurement device with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.

8. 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.

9. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications C.7 and C.8.

10. 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.

11. 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.

12. The Discharger shall monitor residual solids accumulation in the settling pond as necessary to maintain adequate storage capacity. Specifically, if the estimated volume of solids in the pond exceeds the **design storage capacity of the pond**, the Discharger shall complete solids cleanout within **12 months** after the date of the estimate.

## E. Groundwater Limitations

1. Release of waste constituents from any treatment unit, storage unit, delivery system or LAA associated with the Facility shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or in excess of background quality, whichever is greater.

    a. Nitrate as nitrogen of 10 mg/L.

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

## F. Land Application Area Specifications

1. For the purposes of this Order, “land application area” (LAA) refers to the discharge area described in Finding 14 and shown in Attachment B.

2. Crops or other vegetation which may include pasture grasses, native grasses, trees, and/or ornamental landscaping shall be grown in the LAA. Vegetation shall be selected based on nutrient uptake, consumptive use of water, and irrigation requirements to maximize crop uptake of nutrients.

3. The resulting effect of the discharge on soil shall not exceed the buffering capacity of the soil profile.

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

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

6. The LAA shall be managed to prevent breeding of mosquitoes or other vectors. In particular:

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

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

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

7. Irrigation of the LAA shall occur only when appropriately trained personnel are on duty.

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

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

10. Discharge to the LAA shall not be initiated when the ground is saturated.

## G. Solids Disposal Specifications

For the purpose of this Order, residual solids are defined in accordance with Findings 11 and 15.

1. Residual solids shall be removed from screens, sumps, ponds, and clarifiers as needed to ensure optimal operation, prevent nuisance conditions, and maintain adequate storage capacity.

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

3. Residual solids may be discharged to land in accordance with the LAA Specifications of this Order.

4. If removed from the site, residual solids shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. 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. Any proposed change in solids use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

## H. Provisions

1. The Discharger shall comply with Monitoring and Reporting Program (MRP) R5-2109-0012, which is part of this Order, an any revisions thereto as ordered by the Executive Officer. The submittal dates of the self-monitoring reports shall be no later than the submittal date specified in the MRP.

2. The Discharger shall comply with the following time schedule to come into compliance with the BOD loading rate limit specified in Effluent and Mass Loading Limitations C.1:

| Task | Task Description | Due Date |
|---|---|---|
| a. | Submit a **work plan and time schedule**, for Executive Officer approval, that proposes the work the Discharger will conduct to come into compliance with the 150 lbs/acre/day BOD loading rate limit by **8 February 2022**. | **By 8 August 2019** |

| Task | Task Description | Due Date |
|---|---|---|
| b. | Until the Discharger has achieved compliance with the BOD loading rate limit, the Discharger shall provide **semiannual progress reports** detailing what steps have been implemented towards achieving compliance with the BOD loading rate effluent limitation, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final date. | **1 January & 1 July of every year until compliance is achieved** |
| c. | Submit a report that contains either:<br>i. A confirmation Liberty has or will comply with the 150 lbs/acre/day (cycle average) loading rate limit by **8 February 2022**;<br><br>ii. A demonstration that a site-specific BOD loading rate other than 150 lbs/acre/day (cycle average) is still protective of water quality and will not cause nuisance conditions. The report must include a new Report of Waste Discharge with an antidegradation analysis demonstrating how the proposed loading rate will not cause unreasonable groundwater degradation due to organic overloading and be protective of groundwater beneficial uses in order to revise these WDRs; or<br><br>iii. A request for the Executive Officer to extend the compliance schedule up to, but no more than, two years. The request must demonstrate how Liberty has diligently worked on coming in to compliance with the BOD loading rate limit and provide sufficient justification for the Executive Officer to grant an extension to the compliance schedule. | **By 9 August 2021** |
| d. | Comply with the 150 lbs/acre/day BOD loading rate limit specified in Effluent and Mass Loading Limitations C.1., unless the Executive Officer has extended the compliance schedule as discussed in task c.iii above. | **By 8 February 2022** |

3. The following reports shall be submitted pursuant to Water Code section 13267 and shall be prepared as described in Provisions H.6 and H.7.

   a. **By 8 February 2020**, the Discharger shall submit a **Salinity Reduction Study Work Plan**. The Discharger shall prepare and implement a Salinity Reduction Study Workplan to identify and address sources of salinity to and from the Facility. The Salinity Reduction Study Work Plan shall at a minimum include the following:

      i. Data on current influent and effluent salinity concentrations;

      ii. Identification of known salinity sources;

      iii. Description of current plans to reduce/eliminate known salinity sources;

      iv. Preliminary identification of other potential sources;

      v. A proposed schedule for evaluating sources; and

vi. A proposed schedule for identifying and evaluating potential reduction, elimination, and prevention methods.

Implementation progress of the Salinity Reduction Work Plan shall be reported each year in the Annual Monitoring Report required pursuant to Monitoring and Reporting Program R5-2019-0012.

b. **By 8 February 2020**, the Discharger shall submit a **Wastewater and Nutrient Management Plan** for Executive Officer approval. At a minimum, the Plan must include:

i. Procedures for monitoring Facility operations and discharge;

ii. Practicable measures to ensure reasonable even application of wastewater;

iii. An action plan to deal with objectional odors and/or nuisance conditions;

iv. Supporting data and calculations for monthly and annual water and nutrient balances;

v. A discussion on blending of wastewater, irrigation water;

vi. Management practices that will ensure wastewater irrigation water, and fertilizers are applied at plant available agronomic rates to the LAA;

vii. Using soil sampling data, an estimate of average net available nitrogen compared with gross wastewater organic nitrogen loading rates;

viii. Estimates of nitrogen mineralization and denitrification rates for wastewater using lab tests; and

ix. Supporting calculations/data including crop type(s) and calculations for monthly and annual water and nutrient balances demonstrating the discharge of Facility wastewater and land application of solids to the LAA will not exceed agronomic rates for both nutrient and hydraulic loading.

The Plan shall propose a site-specific percentage, with supporting rationale, to be used to calculate the plant available nitrogen (PAN) to determine compliance with the annual total nitrogen loading limitation specified in this Order (Effluent and Mass Loading Limitations C.1).

c. **By 8 February 2020**, the Discharger shall submit a **Metal Evaluation and Minimization Plan** to address sources of elevated iron and manganese in the effluent. The Metal Evaluation and Minimization Plan shall at a minimum include the following:

i. Data on current influent and effluent metal concentrations;

ii. Identification of known metal sources;

iii. Description of current plans to reduce/eliminate known metal sources;

iv. Preliminary identification of other potential sources;

v. A proposed schedule for evaluating sources; and

vi. A proposed schedule for identifying and evaluation potential reduction, elimination, and prevention methods.

Implementation progress of the Metal Evaluation and Minimization Plan shall be reported each year in the Annual Monitoring Report required pursuant to Monitoring and Reporting Program R5-2019-0012.

d. **By 8 August 2019**, the Discharger shall submit a work plan to characterize the source(s) of influent into the Fish Pond. The work plan should propose a plan, with an appropriate time schedule, to determine the quality of the water discharge to the Fish Pond and evaluate if the influent to the Fish Pond is of similar quality to agricultural tile drain water and the potential impacts to downstream beneficial uses.

4. Prior to initiating expansion of the cooling or settling ponds described in Finding 25, submit final design drawings for Executive Officer approval. If the proposed construction will result in a loss of land application area, the submittal shall include an evaluation of how these changes will affect the Facility's discharge and underlying groundwater quality.

5. 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**.

6. 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.

7. 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.

8. The Discharger shall comply with the SPRRs, which are incorporated herein.

9. 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.

10. 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.

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

12. As described in the SPRRs, 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.

13. In the event that the Discharger reports a toxic chemical release data to the State Emergency Response Commission (SERC) pursuant to section 313 of the Emergency Planning and Community Right to Know Act (42 U.S.C. § 11023), the Discharger shall also report the same information to the Central Valley Water Board within 15 days of the report to the SERC.

14. 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.

15. 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.

16. To assume operation as a “discharger” under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the 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 SPRRs, 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.

17. A copy of this Order (including attachments, Information Sheet, and SPRRs) and the operative MRP shall be kept at Facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

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

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

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and Title 23, section 2050 et seq. The State Water Board must receive the petition by 5:00 pm on the 30th day after the date of this Order: 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 pm on the next business day. Copies of the law and regulations applicable to filing petitions are published online (at the address below), and provided upon request.

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

I, PATRICK PULUPA, 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 8 February 2019.

*ORIGINAL SIGNED BY*

PATRICK PULUPA, Executive Officer

Order Attachments

- Attachment A – Vicinity Map
- Attachment B – Site Map
- Attachment C – Process Flow Diagram
- Monitoring and Reporting Program (MRP) Order R5-2019-0012
- Information Sheet
- Standard Provisions and Reporting Requirements dated 1 March 1991 (SPRRs)


Drawing Reference:
Google Earth
Map Data © 2018

0 1 2
Approximate Scale in Miles

**VICINITY MAP**
LIBERTY PACKING COMPANY, LLC
TOMATO PROCESSING FACILITY
MERCED COUNTY

**ATTACHMENT A**

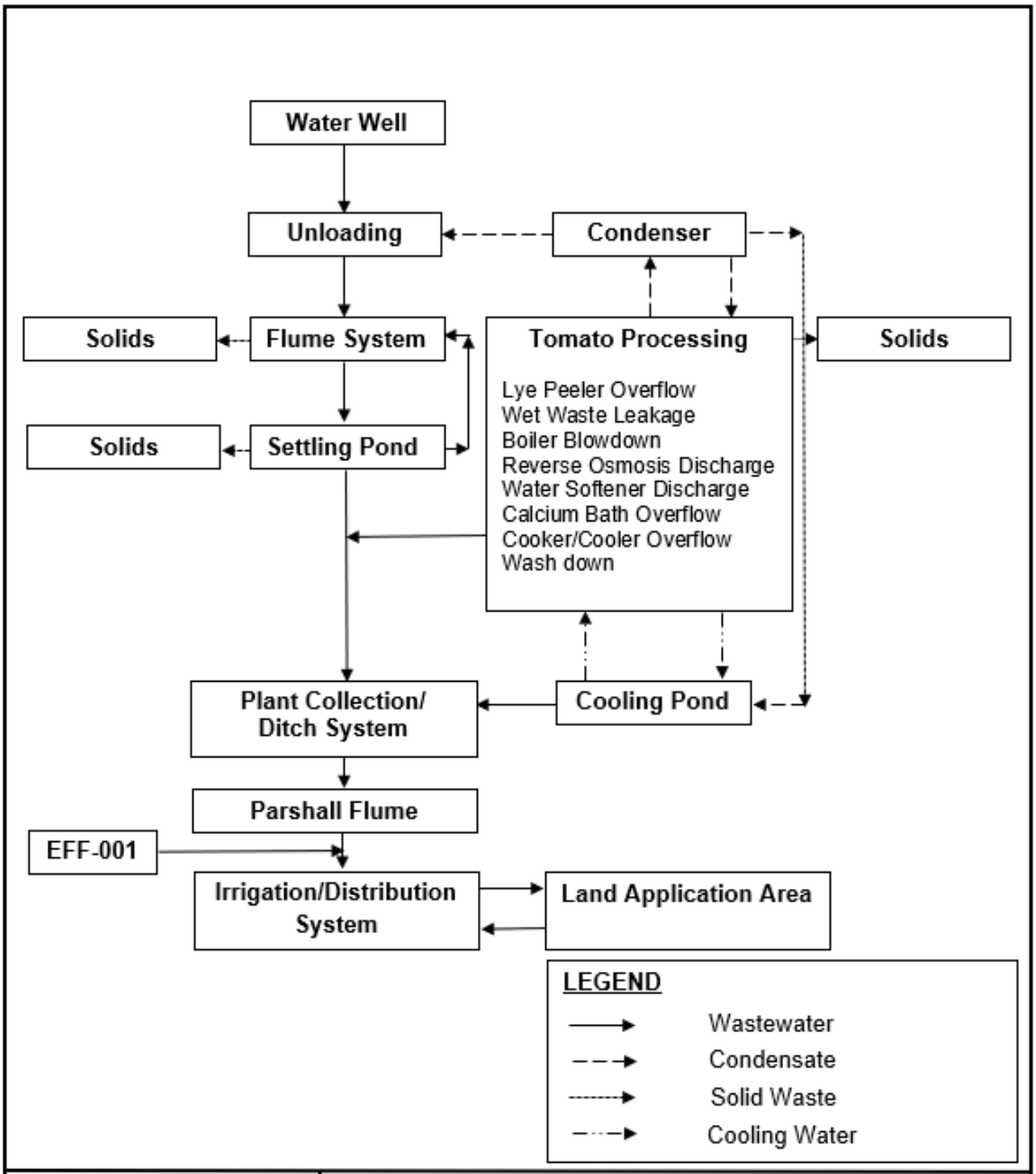

Drawing Reference:
Google Earth
Map Data: © 2017

N
W E
S

1/4 1/2
Approximate Scale in Miles

**SITE MAP**
LIBERTY PACKING COMPANY, LLC
TOMATO PROCESSING FACILITY
MERCED COUNTY

**ATTACHMENT B**




Drawing Reference:
Report of Waste Discharge
29 December 2017

**PROCESS FLOW DIAGRAM**
LIBERTY PACKING COMPANY, LLC
LIBERTY PACKING TOMATO PACKING PLANT
MERCED COUNTY

**ATTACHMENT C**

CALIFORNIA REGIONAL WATER QUALITY CONTOL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2019-0012

FOR

LIBERTY PACKING COMPANY, LLC
TOMATO PROCESSING FACILITY
MERCED COUNTY

This Monitoring and Reporting Program (MRP) is issued pursuant to Water Code section 13267. Liberty Packing Company, LLC (hereafter Liberty or Discharger) shall not implement any changes to this MRP unless and until the Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopts, or the Executive Officer issues, a revised MRP.

Section 13267 of the California Water Code states, in part:

> *"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."*

The Discharger owns and operates the Tomato Processing Facility (Facility) that is subject to the Waste Discharge Requirements (WDRs) cited herein, and the monitoring reports are necessary to determine compliance with the WDRs.

Pursuant to Water Code section 13268, subdivisions (a)(1) and (b)(1), failure to furnish the reports required under this MRP (and also under the operative WDRs), or falsifying information submitted in such reports, constitutes a misdemeanor and may result in the imposition of up to $10,000 in administrative civil liability for each day of noncompliance.

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

A glossary of terms used in this MRP is included on the last page.

## I. GENERAL MONITORING REQUIREMENTS

### A. FLOW MONITORING

Hydraulic flow rates shall be measured at the monitoring points specified in this MRP when wastewater or process water is being discharged or conveyed at the flow monitoring points specified. Central valley water board staff shall approve any proposed changes to flow monitoring locations prior to implementation of the change. All flow monitoring systems shall be appropriate for the conveyance system (i.e., open channel flow or pressure pipeline) and liquid type. Unless otherwise specified, each flow meter shall be equipped with a flow totalizer to allow reporting of cumulative volume as well as instantaneous flow rate. Flow meters shall be calibrated at the frequency recommended by the manufacturer; typically, at least once per year and records of calibration shall be maintained for review upon request.

### B. MONITORING AND SAMPLING LOCATIONS

Samples shall be obtained at the monitoring points specified in this MRP. Central Valley Water Board staff shall approve any proposed changes to sampling locations prior to implementation of the change.

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

| Monitoring Location Name | Monitoring Location Description |
|---|---|
| **SP-001** | Settling Pond |
| **CP-002** | Cooling Pond |
| **FP-001** | Fish Pond |
| **EFF-001** | Location where a representative sample of the effluent (process wastewater) can be obtained prior to discharge to the land application area (LAA). |
| **SPL-001, SPL-002, SPL-003** | Existing source water wells and any other source water wells added to the source water well network. |
| **LAA-001** | The LAA where the Facility's discharge is applied. |
| **MW-01 through MW-21** | Groundwater monitoring wells/piezometers and all future wells/piezometers added to the approved network. |

### C. SAMPLING AND SAMPLE ANALYSIS

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. Except as specified otherwise in this MRP, grab samples will be considered representative of water, wastewater, soil, residual solids, and groundwater.

The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (SPRRs).

Field test instruments (such as those used to measure pH, temperature, electrical conductivity, dissolved oxygen, wind speed, and precipitation) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated at the frequency recommended by the manufacturer;
3. The instruments are serviced and/or calibrated at the manufacturers recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

Laboratory analytical procedures shall comply with the methods and holding times specified in the following (as applicable to the medium to be analyzed):

- *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 (EPA) or the State Water Resources Control Board (State Water Board), Division of Drinking Water's Laboratory Accreditation Program (ELAP). 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.

If monitoring consistently shows no significant variation in a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request this MRP be revised to reduce monitoring frequency, constituent analyses, or monitoring parameters. The proposal must include adequate technical justification for reduction in monitoring frequency. This monitoring program shall remain in effect unless and until a revised MRP is issued.

## II. SPECIFIC MONITORING REQUIREMENTS

### A. SETTLING POND, COOLING POND, AND FISH POND MONITORING

The Settling Pond, Cooling Pond, and Fish Pond shall be monitored at Monitoring Location SP-001, CP-001, and FP-001 respectively. Sampling and monitoring will be conducted from permanent locations that will provide representative samples and observations of the ponds. Freeboard shall be measured vertically from the water surface to the lowest elevation of pond berm (or spillway/overflow pipe invert) and shall be measured to the nearest 0.10 feet. If any pond is dry, the monitoring report shall so state. Pond monitoring shall include, at a minimum, as specified below:

| Constituent/Parameter | Units | Sample Type | Monitoring Frequency |
|---|---|---|---|
| Freeboard | 0.1 feet | Measurement | Weekly[1] |
| Odors | -- | Observation | Weekly[1] |
| Berm/levee condition | -- | Observation | Weekly[1] |
| Dissolved Oxygen[2] | mg/L | Grab | Weekly[1] |

1. Weekly during the processing season and monthly during the offseason.
2. Dissolved oxygen monitoring is only required for the settling pond (SP-001).

### B. EFFLUENT MONITORING

Effluent samples shall be collected at the monitoring location EFF-001. Samples should be representative of the volume and nature of the discharge. Time of collection of samples shall be recorded. Sampling is not required during periods when no wastewater is discharged to the LAA. At a minimum, the effluent shall be monitored as specified below:

| Constituent/Parameter | Units | Sample Type | Monitoring Frequency |
|---|---|---|---|
| Flow | gallons | Meter Reading[1] | Continuous |
| $BOD_5$ | mg/L | Grab | Weekly |
| pH | pH Units | Grab | Weekly |
| Electrical Conductivity | µmhos/cm | Grab | Weekly |
| Total Kjeldahl Nitrogen | mg/L | Grab | Twice Monthly |
| Nitrate as Nitrogen ($NO_3$-N) | mg/L | Grab | Twice Monthly |
| Ammonia as Nitrogen | mg/L | Grab | Twice Monthly |
| Total Nitrogen | mg/L | Grab | Twice Monthly |
| Total Suspended Solids | mg/L | Grab | Monthly |
| Total Dissolved Solids | mg/L | Grab | Monthly |
| Fixed Dissolved Solids | mg/L | Grab | Monthly |

| | | | |
|---|---|---|---|
| Volatile Dissolved Solids | mg/L | Grab | Monthly |
| Standard Minerals [2] | mg/L | Grab | Quarterly |

[1] For continuous meters, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the meter(s) is not in operation.
[2] Standard minerals shall include, at a minimum, the following elements/compounds: arsenic, boron, calcium, chloride, iron, magnesium, manganese, phosphorus, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

**C. LAND APPLICATION AREA MONITORING (LAA-001)**

The Discharger shall inspect the LAA at least once daily prior to and during irrigation events. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions (i.e., flies, ponding, etc.) shall be noted in the Facility's log book and included as part of the quarterly monitoring report. In addition, the Discharger shall perform the following routine monitoring and loading calculations for each discrete irrigation area within the LAA each day when water is applied. If supplemental irrigation water is used, samples shall be collected from its source (e.g., SPL-001 & SPL-002). The data shall be collected and presented in graphical (map) and/or tabular format and shall include the following:

| Frequency | Constituent/Parameter | Units | Sample Type |
|---|---|---|---|
| Daily[1] | Fields Irrigated | Acres | Calculated |
| Daily[1] | Wastewater flow | Gallons | Metered |
| Daily[1] | Wastewater loading | Inches/day | Calculated |
| Daily[1] | Supplemental Irrigation Flow | Gallons | Metered |
| Daily[1] | Supplemental Irrigation Loading | Inches/day | Calculated |
| Daily[1] | Precipitation | Inches | Rain gage[2] |
| Monthly | Total Hydraulic Loading[3] | Inches | Calculated |
| <u>$BOD_5$ Loading[4]</u> | | | |
| Cycle | Cycle Average[5] | lbs/acre/day | Calculated |
| <u>Nitrogen Loading[4]</u> | | | |
| Annually | From wastewater | lbs/acre/yr | Calculated |
| Annually | From fertilizers and residual solids | lbs/acre/yr | Calculated |
| Annually | From supplemental irrigation water | lbs/acre/yr | Calculated |
| <u>Salt Loading[4]</u> | | | |
| Annually | From wastewater | lbs/acre/yr | Calculated |
| Annually | From supplemental irrigation water | lbs/acre/yr | Calculated |

[1] When wastewater is applied to the LAA.
[2] National Weather Service or CIMIS data from the nearest weather station is acceptable.
[3] Combined loading from wastewater, irrigation water, and precipitation.
[4] The $BOD_5$, salt, and nitrogen loading rates shall be calculated as specified in Section III of this MRP.
[5] A cycle average is calculated by taking the pounds of $BOD_5$ applied to the LAA in a given period, divided by the sum of the total days wastewater was applied plus the number of days of rest (no

application of wastewater), see section III.A. of this MRP for the calculation.

## D. GROUNDWATER MONITORING

The Discharger shall maintain the groundwater monitoring well network. If a groundwater monitoring well (or piezometer) is dry for more than four consecutive sampling events or is damaged, the Discharger shall submit a work plan and proposed time schedule to replace the well. The well shall be replaced following approval of the work plan. Once installed, all new wells shall be added to the groundwater monitoring network.

### Groundwater Sampling and Analysis

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

The Discharger shall monitor the wells/piezometers in its monitoring well network MW-1 through MW-21 and any subsequent monitoring wells/piezometers as specified below. Low flow or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Otherwise, each monitoring well shall be purged of at least 3 to 5 casing volumes until pH, electrical conductivity and turbidity have stabilized prior to sampling. Groundwater monitoring for all monitoring wells and piezometers shall include, at a minimum, the following:

| Constituent/Parameter | Units | Sample Type | Monitoring Frequency |
|---|---|---|---|
| Depth to Groundwater [1] | 0.01 feet | Measurement | Quarterly |
| Groundwater Elevation [1] | 0.01 feet | Calculation | Quarterly |
| Gradient [1] | feet/feet | Calculation | Quarterly |
| Gradient Direction [1] | degrees | Calculation | Quarterly |
| pH | pH Units | Grab | Quarterly |
| Total Kjeldahl Nitrogen | mg/L | Grab | Quarterly |
| Nitrate as Nitrogen | mg/L | Grab | Quarterly |
| Total Nitrogen | mg/L | Grab | Quarterly |
| Total Dissolved Solids | mg/L | Grab | Quarterly |
| Electrical Conductivity | µmhos/cm | Grab | Quarterly |
| Standard Minerals [2] | mg/L | Grab | Quarterly |

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

[2] Standard Minerals shall include, at a minimum, the following: arsenic, boron, calcium, chloride, iron, manganese, magnesium, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness. Samples for metals shall be filtered prior to preservation and digestion using a 0.45-micron filter.

## E. 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 of Solids 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 of Solids Disposed On-site. Describe the disposal location (i.e., field number), the amount applied, nitrogen concentration, and supporting calculation to ensure application at an agronomic rate.

## F. WATER SUPPLY MONITORING

The Discharger shall sample each source well used at SPL-001, SPL-002, SPL-003 and any other source wells added to the source water well network. If the source water is from more than one well, the results shall also be presented as a flow-weighted average of all the wells used. Water supply monitoring shall include at least the following:

| Constituent/Parameter | Units | Monitoring Frequency |
|---|---|---|
| Total Dissolved Solids | mg/L | Annually |
| Fixed Dissolved Solids | mg/L | Annually |
| Volatile Dissolved Solids | mg/L | Annually |
| Electrical Conductivity | µmhos/cm | Annually |
| Total Nitrogen | mg/L | Annually |
| Nitrate as Nitrogen | mg/L | Annually |
| Total Kjeldahl Nitrogen | mg/L | Annually |
| Standard Minerals [1] | mg/L | Once every three years[2] |

[1] Standard Minerals shall include, at a minimum, the following: arsenic, boron, calcium, chloride, iron, magnesium, manganese, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

[2] Samples shall be collected once every three years starting in 2019.

## III. REPORTING REQUIREMENTS

All monitoring reports should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to: centralvalleyfresno@waterboards.ca.gov.

Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to the following address:

Central Valley Regional Water Quality Control Board
Region 5 – Fresno Office
1685 "E" St.
Fresno, California 93706

To ensure that your submittal is routed to the appropriate staff person, the following information should be included in the body of the email or transmittal sheet:

Program: Non-15,
WDID: 5C242010001
Facility: Liberty Packing Company, LLC, Tomato Processing Facility
Order: R5-2019-0012
County: Merced
Place ID: 264668

**A transmittal letter shall accompany each monitoring report.** The letter shall include a discussion of all violations of the WDRs and this MRP during the reporting period and actions taken or planned for correcting each violation. If the Discharger has previously submitted a report describing corrective actions taken and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. Pursuant to Section B.3 of the SPRRs, the transmittal letter shall contain a statement by the Discharger or the Discharger's authorized agent certifying under penalty of perjury that the report is true, accurate and complete to the best of the signer's knowledge.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, groundwater, 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 in the next scheduled monitoring report.

Laboratory analysis reports do not need to be included in the monitoring reports; however, all laboratory reports must be retained for a minimum of three years in accordance with SPRRs, Standard Provision C.3. For a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

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

All monitoring reports that involve planning, investigation, evaluation or design, or other work requiring interpretation and proper application of engineering or geologic sciences,

shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

## A. Quarterly Monitoring Reports

Quarterly 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 **May 1st**). Each Quarterly Monitoring Report shall include the following:

1. Results of **Pond Monitoring** specified in Section II. A.
2. Results of the **Effluent Monitoring** specified in Section II. B., including:
   a. Calculation of average total nitrogen concentration for each month;
   b. Calculation of the 12-month rolling average EC of the discharge for each month of the quarter using the EC value for that month averaged with the EC values for the previous 11 months;
   c. Calculation of the maximum daily flow, monthly average flow, and cumulative annual flow, for each month of the quarter.
3. Results of **Land Application Area Monitoring** specified in Section II. C., including:
   a. A summary of the inspection activities conducted by the Discharger for the LAA;
   b. Calculated cycle average $BOD_5$ loading rate for the LAA.
      i. The mass of $BOD_5$ applied to each field within the LAA on a cycle average basis shall be calculated using the following formula:

$$M = \frac{8.345(CV)}{AT}$$

| | | | |
|---|---|---|---|
| Where: | *M* | = | Mass of $BOD_5$ applied to an LAA in lbs/acre/day |
| | *C* | = | Concentration of $BOD_5$ in mg/L based on the three most recent monitoring results |
| | *V* | = | Total volume of wastewater applied to the LAA during the irrigation cycle, in millions of gallons |
| | *A* | = | Area of the LAA irrigated in acres |
| | T | = | Irrigation cycle length in days (from the first day water was applied to the last day of the drying time) |
| | 8.345 | = | Unit conversion factor. |

4. Results of **Groundwater Monitoring**, as specified in Section II. D., including:
   a. A narrative description of all preparatory, monitoring, sampling, and sample handling for groundwater monitoring.
   b. A field log for each well documenting depth to groundwater; method of purging; parameters measured before, during, and after purging; sample preparation (e.g., filtering); and sample preservation.
   c. Calculation of the groundwater elevation at each monitoring well, and determination of groundwater flow direction and gradient on the date of measurement.

d. Summary data tables of historical and current water table elevations and analytical results.

e. A scaled map showing relevant structures and features of the Facility, the locations of monitoring wells, surface waters, and groundwater elevation contours referenced to an appropriate datum (e.g., National Geodetic Vertical Datum).

5. Results of **Residual Solids Monitoring** as specified in Section II. E.

6. Results of **Water Supply Monitoring** as specified in Section II. F.

   a. If multiple sources are used, the Discharger shall calculate the flow-weighted average concentrations for each constituent monitored. Results must include supporting calculations.

7. A comparison of monitoring data to the effluent limitations and discharge specifications and an explanation of any violation of those requirements.

8. For the LAA, a comparison of monitoring data to the loading rate limitations and discharge specifications and an explanation of any violation of those requirements.

9. A copy of calibration log page(s) verifying calibration of all hand-held monitoring instruments performed during the quarter.

**B. Annual Monitoring Reports**

An Annual Report shall be submitted by **1 February of each year,** and shall include the following:

1. Total annual effluent flow, and the average monthly flows for each month of the year, compared to the total annual flow limitation of the WDRs.

2. For the LAA, a chronological log of dates of fertilizer application, residual solids application, irrigation, precipitation, and runoff control operations. Nitrogen and salt loading calculations shall be included.

3. The types of crop(s) grown, planting and harvest dates, and the quantified nitrogen and fixed dissolved solids uptakes including potassium (as estimated by technical references or, preferable, defined by representative plant tissue analysis).

4. Calculated flow-weighted annual average FDS concentration for each field within the LAA.

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

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

| | | | |
|---|---|---|---|
| Where: | $C_a$ | = | Flow-weighted average annual 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) |
| | $C_{Si}$ | = | Monthly average supplemental irrigation water FDS concentration for calendar month *i* in mg/L (considering each supplemental source separately) |
| | $V_{Pi}$ | = | Volume of process wastewater applied to LAA during calendar month *i* in million gallons |
| | $V_{Si}$ | = | Volume of supplemental irrigation water applied to LAA during calendar month *i* in million gallons (considering each supplemental source separately) |

5. Calculated total nitrogen loading rate for each discrete field within the LAA for each month and total annual loading to date

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

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

| | | | |
|---|---|---|---|
| Where: | $M$ | = | Mass of nitrogen applied to LAA in lbs/acre/yr |
| | $C_i$ | = | Monthly average concentration of total nitrogen for month *i* in mg/L |
| | $V_i$ | = | Volume of wastewater applied to the LAA during calendar month *i* in million gallons |
| | $A$ | = | Area of the LAA 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., fertilizer, residual solids, and compost) in pounds |
| | 8.345 | = | Unit conversion factor |

   The plant available nitrogen (PAN) shall be calculated using the site-specific percentage (determined as part of Nutrient Management Plan, Provision H.3.b.) of the total nitrogen applied to the LAA to determine compliance with the Total Nitrogen Mass Loading Effluent Limitation specified in the WDRs.

6. Concentration versus time graphs for each monitored constituent using all historic groundwater monitoring data. Each graph shall show the background groundwater concentration range and the groundwater limitation as horizontal lines at the applicable concentration.

7. An evaluation of the groundwater quality beneath the site, a determination of whether any groundwater limitations were exceeded in any well at any time during the calendar

year, an assessment of why groundwater limitations were exceeded, and recommendations for further testing or corrective actions to address the exceedances.

8. A summary of information on the disposal of residual solids during the calendar year.

9. An annual update to the Salinity Reduction Work Plan (as required by Provision H.3.a. of the WDRs)

10. An annual update to the Metal Evaluation and Minimization Plan (as required by Provision H.3.c. of the WDRs)

11. 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.

12. Monitoring equipment maintenance and calibration records, as described in SPRRs, Standard Provision C.4.

13. A statement of when the wastewater treatment system Operation and Maintenance Manual was last reviewed for adequacy and a description of any changes made during the year.

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

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

I, PATRICK PULUPA, Executive Officer, do hereby certify the forgoing is a full, true and correct copy of a Monitoring and Reporting Program issued by the California Regional Water Quality Control Board, Central Valley Region, on 8 February 2019.

*ORIGINAL SIGNED BY*

PATRICK PULUPA, Executive Officer

## GLOSSARY

| | |
|---|---|
| $BOD_5$ | Five-day biochemical oxygen demand |
| CaCO3 | Calcium carbonate |
| DO | Dissolved oxygen |
| EC | Electrical conductivity at 25° C |
| FDS | Fixed dissolved solids |
| NTU | Nephelometric turbidity unit |
| TKN | Total Kjeldahl nitrogen |
| TDS | Total dissolved solids |
| TSS | Total suspended solids |
| Continuous | The specified parameter shall be measured by a meter continuously. |
| 24-hr Composite | Samples shall be a flow-proportioned composite consisting of at least eight over a 24-hour period. |
| Daily | Every day except weekends or holidays. |
| Twice Weekly | Twice per week on non-consecutive days. |
| Weekly | Once per week. |
| Twice Monthly | Twice per month during non-consecutive weeks. |
| Monthly | Once per calendar month. |
| Quarterly | Once per calendar quarter. |
| Semiannually | Once every six calendar months (i.e., two times per year) during non-consecutive quarters. |
| Annually | Once per year. |
| mg/L | Milligrams per liter |
| mL/L | Milliliters [of solids] per liter |
| µg/L | Micrograms per liter |
| µmhos/cm | Micromhos per centimeter |
| gpd | Gallons per day |
| mgd | Million gallons per day |
| MPN/100 mL | Most probable number [of organisms] per 100 milliliter |

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2019-0012
LIBERTY PACKING COMPANY, LLC
TOMATO PROCESSING PLANT
MERCED COUNTY

# INFORMATION SHEET

## Background

Liberty Packing, LLC (Liberty or Discharger) owns and operates a tomato processing and packaging facility (Facility) about 5 miles northwest of Los Banos at 12045 Ingomar Grade in Merced County. The Facility was constructed in 1975. Tri-Valley Growers owned and operated the Facility from 1975 through the 1999 season. Liberty purchased the Facility and resumed operations in 2002.

The Facility processes fresh tomatoes for approximately four months from July through October, sometimes starting as early as June and ending as late as November. The Facility produces conventional and organic aseptic tomato paste and diced tomatoes in bulk, food service, and consumer packaging. Occasionally, the Facility remanufactures paste into other products during other months of the year. Liberty employs approximately 800 people during the processing season and over 100 employee's year-round. The Morning Star Company is the managing member of Liberty Packing.

The Facility was regulated by Waste Discharge Requirements (WDRs) 90-223. Waste Discharge Requirements Order 90-223 allowed a 30-day average daily dry weather flow of 4.0 million gallons of tomato processing wastewater to 440 acres of land. The Discharger submitted a Report of Waste Discharge (RWD) on 12 March 2003 and 10 November 2006 to reflect plant upgrades made after the acquisition of the Facility. These included the addition of the cooling pond, settling pond, and additional Land Application Area (LAA) acreage. Neither the 2003 or the 2006 RWDs requested an increase in allowed effluent flow.

In a 21 July 2017 letter, Regional Water Board staff requested an updated RWD to reflect current and planned practices to assist in updating the WDRs for the Facility. The Discharger submitted a RWD on 29 December 2017.

The Discharger submitted a 3 October 2018 letter which discussed off-season flows and provided an updated water balance for the Facility's discharge. In addition, the Discharge submitted a 1 November 2018 technical memorandum *Updated Antidegradation Evaluation for Report of Waste Discharge,* which provides an updated analysis of loading rates, potential groundwater impacts, and antidegradation comparisons for off-season and processing season loadings.

## Wastewater Generation and Disposal

Tomatoes are transported to the Facility in trucks, unloaded by flooding the transportation bins and dumping into the flume system. Along with tomatoes, stems, soil, and rocks enter the flume. The flume is equipped with rotary screens to sort the rocks and stems. The conveyance system is designed to continuously recycle the tomato conveyance water. As the conveyance water flows through the settling pond (1 acre in size with a total capacity 5.3 million gallons), a portion is recycled through the flume system and the remaining flowing into the ditch system for disposal on the LAA.

Wastewater is generated from peeling, evaporation, wet waste container storage, reverse osmosis, water softener discharge, calcium bath overflow, cooker/cooler overflow, and equipment sanitation. During tomato paste production, approximately 85% of the water is evaporated from the tomatoes. To capture this water, cooling pond water is pumped to the condensers where it condenses steam. The cooling pond water is then returned to the cooling pond (56 acres in size with a total capacity 100 million gallons). Condensate is reused in the Facility for tomato conveyance [(approximately 500 gallons per minute (gpm)] and boiler feed water (approximately 2,400 gpm). If needed, condensate is also used to top off the cooling pond. In the rare event the cooling pond is full, water from the cooling pond can be discharged to the LAA. The LAA consists of 574 acres which is planted in corn, milo, winter wheat, or a hay crop depending on economics, water management, and nutrient management considerations.

The wastewater characteristics for 2016 and 2017 are summarized in Finding 14, Table 3 of the Order.

**Groundwater Considerations**

Groundwater beneath the Facility and LAA averages 4 to 10 feet below ground surface and flows to the east. The previous Order did not contain groundwater limitations but did have a Disposal Site Monitoring requirement that required at least one 10-foot deep piezometer for each 40 acres of LAA. The Discharger installed additional groundwater monitoring wells in 2007 to monitor the expanded LAA. Wells 1-16 are piezometers while wells 17-21 are monitoring wells.

The facility is equipped with tile drains under the cooling pond and fields 1, 2, 4, and 5. Tile drainage is pumped to the Fish Pond which has an overflow to a natural drainage channel on the northeast side of the Facility that flows to the Volta State Wildlife Area

Order 90-223 required the Discharger to monitor groundwater for depth to free or perched water table, electrical conductivity, nitrate-NO3, and chemical oxygen demand. Finding 35 provides groundwater monitoring data for the period January 2015 through August 2017. Finding 37 provides regional groundwater data for USGS wells reported within a two-mile radius of the Facility.

Groundwater considerations are discussed in Findings 33 through 37 of the Order.

**Antidegradation**

Antidegradation analysis and conclusions are discussed in Findings 59 through 66 of the Order.

**Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions**

The Order limits the maximum average daily discharge flow to 5.0 mgd during the processing season, 0.3 mgd during the off-season, and 0.4 during the transition months with a total annual discharge volume of 620 million gallons. The Order sets a cycle average $BOD_5$ loading limit of 150 lbs/acre/day for the LAA, an annual average maximum FDS limit of 1,400 mg/L and requires that wastewater be applied at agronomic rates. Provision H.2 of the Order grants the Discharger a time schedule to achieve compliance with cycle average BOD loading limit of 150 lbs/acre/day. The Order also includes provisions requiring the Discharger to prepare and

implement a Wastewater and Nutrient Management Plan, a Salinity Reduction Study Work Plan, and a Metal Evaluation and Minimization Plan. The Order prescribes groundwater limitations that state that the discharge shall not cause or contribute to groundwater containing concentrations in excess of the maximum contaminant levels (MCLs) identified in Title 22 or in excess of natural background water quality, whichever is greater.

The Order prohibits the off-site discharge of tile drainage unrelated to crop production. Provision H.3.d of the Order requires the Discharger submit a work plan with an appropriate time schedule, to determine if the quality of influent to the Fish Pond is indistinguishable from agricultural tile drain water.

**Monitoring Requirements**

Section 13267 of the California Water Code authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of waste discharges on waters of the State. Water Code Section 13268 authorizes assessment of civil administrative liability where appropriate. The Order includes influent, effluent, source/irrigation water, settling pond, cooling pond, Fish Pond, residual solids, LAA, and groundwater monitoring requirements. This monitoring is necessary to characterize the discharge and evaluate compliance with the effluent/groundwater limitations and the discharge and LAA specifications prescribed in the Order.

**CV-SALTS Regulatory Considerations**

The Central Valley Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation in the waters and soils of the Central Valley at its 31 May 2018 Board Meeting. These programs once effective, could change how the Central Valley Water Board permits discharges of salt and nitrate. The Salinity Control Program currently being developed would subject dischargers that do not meet stringent salinity numeric values (700 µS/cm EC as a monthly average to protect the AGR beneficial use and 900 µS/cm EC as an annual average to protect the MUN beneficial use) to performance-based salinity requirements, and would require these dischargers to participate in a basin-wide Prioritization and Optimization Study to develop a long-term strategy for addressing salinity accumulation in the Central Valley.

The level of participation required of dischargers whose discharges do not meet stringent salinity requirements will vary based on factors such as the amount of salinity in the discharge, local conditions, and type of discharge. The Central Valley Water Board anticipates that the CV-SALTS initiative will result in regulatory changes that will be implemented through conditional prohibitions and modifications to many WDRs region-wide, including the WDRs that regulate discharges from the Liberty Packing Company, LLC, Tomato Processing Facility. More information regarding this regulatory planning process can be found at the following link: https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/

**Reopener**

The conditions of discharge in the Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. The Order sets limitations based on the information provided

thus far. If applicable laws and regulations change, or once new information is obtained that will change the overall discharge and its potential to impact groundwater, it may be appropriate to reopen the Order.

**Legal Effect of Rescission of Prior WDRs or Orders on Existing Violations**

The Central Valley Water Board's rescission of prior waste discharge requirements and/or monitoring and reporting orders does not extinguish any violations that may have occurred during the time those waste discharge requirements or orders were in effect. The Central Valley Water Board reserves the right to take enforcement actions to address violations of prior prohibitions, limitations, specifications, requirements, or provisions of rescinded waste discharge requirements or orders as allowed by law.