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WASTE DISCHARGE REQUIREMENTS ORDER R5-2020-0034



ORDER INFORMATION

Order Type(s): Waste Discharge Requirements (WDRs)
Status: Adopted
Program: Non-15 Discharges to Land
Region 5 Office: Fresno
Discharger(s): Wonderful Pistachios & Almonds, LLC, Wonderful Orchards, LLC,
Wonderful Nut Orchards, LLC, and Wonderful Pomegranate
Orchards, LLC
Facility: Wonderful Firebaugh Pistachio Processing Plant
Address: 5970 Road 13 Firebaugh California
County: Madera County

CERTIFICATION

I, PATRICK PULUPA, Executive Officer, hereby certify that the following is a full, true, and correct copy of the order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 4 June 2020.

PATRICK PULUPA,
Executive Officer

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GLOSSARY

Antidegradation Policy	Statement of Policy with Respect to Maintaining High Quality Waters in California, State Water Board Resolution 68-16
Basin Plan	Water Quality Control Plan for Tulare Lake Basin
bgs	Below Ground Surface
BOD_[5]	[Five-Day] Biochemical Oxygen Demand at 20°Celsius
BPTC	Best Practicable Treatment and Control
CEQA	California Environmental Quality Act, Public Resources Code section 21000 et seq.
CEQA Guidelines	California Code of Regulations, Title 14, section 15000 et seq.
C.F.R.	Code of Federal Regulations
COC[s]	Constituent[s] of Concern
DO	Dissolved Oxygen
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EC	Electrical Conductivity
EIR	Environmental Impact Report
FDS	Fixed Dissolved Solids
FEMA	Federal Emergency Management Agency
IPP	Industrial Pretreatment Program
LAA	Land Application Area
lbs/ac/day	Pounds per Acre per Day
lbs/ac/yr	Pounds per Acre per Year
µg/L	Micrograms per Liter
µmhos/cm	Micromhos per Centimeter
MG[D]	Million Gallons [per Day]
mg/L	Milligrams per Liter

msl	Mean Sea Level
MRP	Monitoring and Reporting Program
MW	Monitoring Well
MCL	Maximum Contaminant Level per Title 22
mJ/cm²	Millijoules per Square Centimeter
ORP	Oxygen Reduction Potential
N	Nitrogen
ND	Non-Detect
NE	Not Established
NM	Not Monitored
Recycled Water Policy	<i>Policy for Water Quality Control for Recycled Water, State Water Board Resolution 2009-0011, as amended per Resolutions 2013-0003 and 2018-0057</i>
R[O]WD	Report of Waste Discharge
RCRA	Resource Conservation and Recovery Act
SPRRs	Standard Provisions and Reporting Requirements
SERC	State Emergency Response Commission
TDS	Total Dissolved Solids
Title 22	California Code of Regulations, Title 22
Title 23	California Code of Regulations, Title 23
Title 27	California Code of Regulations, Title 27
TKN	Total Kjeldahl Nitrogen
Unified Guidance	Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (USEPA, 2009)
USEPA	United States Environmental Protection Agency
VOC[s]	Volatile Organic Compound[s]
WDRs	Waste Discharge Requirements
WQO[s]	Water Quality Objective[s]

FINDINGS

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) hereby finds as follows:

Introduction

1. Wonderful Pistachios & Almonds, LLC owns and operates the Wonderful Firebaugh Pistachio Processing Plant (Facility), near Firebaugh, CA. The land application areas (LAA) are operated by Wonderful Orchards, LLC and are owned by Wonderful Nut Orchards, LLC and Wonderful Pomegranate Orchards, LLC. Hereafter, these four entities are collectively referred to as the Discharger. The Facility and settling ponds are within Sections 2 and 3, Township 13 S, Range 15 E, MDB&M (36.8321°, -120.3118°). The Facility's location is depicted in **Attachment A** (Site Location Map) and **Attachment B** (Facility Map). The LAA is depicted in **Attachment A** (Site Location Map) and **Attachment C** (Current Available Land Application Areas)
2. The Facility is comprised of the following Madera County Assessor Parcel Numbers (APNs): 042-172-004 and 042-172-005. The LAA consists of existing orchards owned by the Discharger within Madera County. Crops planted within the LAA include almonds, pistachios, and pomegranates. The crops are irrigated using micro drip or spray irrigation. According to the Discharger, only the pistachio and pomegranate orchards will receive wastewater, though the cropping plan is subject to change. Table 1 provides a list of APNs within the LAA and includes acreage and status (i.e., whether it is currently available for application of wastewater or potential future use).

Table 1. Land Application Area (LAA)

APN	Acreage	Status
041-141-002	320.0	Available
041-142-003	607.5	Available
041-201-012	318.3	Available
041-202-003	489.9	Available
041-202-004	188.3	Potential
041-211-003	553.0	Potential
041-211-004	36.0	Potential
042-061-004	116.8	Potential
042-101-001	166.3	Potential
042-212-004	1.3	Potential

APN	Acreage	Status
042-161-004	182.0	Potential
042-071-001	153.1	Potential
042-081-005	180.6	Potential
042-082-005	42.7	Potential
042-110-010	9.9	Potential
042-110-022	118.0	Available
042-110-024	721.0	Potential
042-110-026	97.0	Potential
042-110-027	92.0	Potential
042-122-003	241.0	Potential
042-122-004	835.5	Potential
042-161-005	709.0	Potential
042-171-003	780.0	Available
042-171-005	53.0	Potential
042-181-007	254.5	Potential
042-191-001	347.0	Potential
042-192-003	249.0	Potential
042-192-004	355.0	Potential
042-211-001	260.3	Potential
042-220-012	81.5	Potential
042-220-013	71.7	Potential
042-231-009	564.0	Potential
042-231-010	530.0	Potential
042-231-011	358.0	Potential
042-231-013	95.5	Potential
042-232-002	964.0	Potential
042-241-001	142.5	Potential
042-252-003	115.4	Potential
042-260-005	50.6	Potential
042-260-006	174.0	Potential
042-260-007	703.5	Potential
042-280-002	190.0	Potential
042-300-002	132.7	Potential
042-300-008	142.0	Potential

APN	Acreage	Status
042-310-002	68.0	Potential
042-310-003	325.0	Potential
042-310-006	716.0	Available
042-310-007	60.1	Potential
Total Acreage	13,962.5	

3. As the Facility's owner and operator, the Discharger is responsible for compliance with the Waste Discharge Requirements (WDRs) prescribed in this Order.
4. The following materials are attached and incorporated as part of this Order:
 - a. Attachment A – Site Location Map
 - b. Attachment B – Facility Map
 - c. Attachment C – Current Available Land Application Areas
 - d. Attachment D – Process Flow Diagram
 - e. Attachment E - Requirements for Monitoring Well Installation Work Plans and Installation Reports
 - f. Standard Provisions & Reporting Requirements dated 1 March 1991 (SPRRs)
 - g. Information Sheet
5. Also attached is **Monitoring and Reporting Program R5-2020-0034** (MRP), which requires monitoring and reporting for discharges regulated under these WDRs.
6. The Facility was first constructed and began operations in 2012. On 21 March 2012 the Discharger submitted a Report of Waste Discharge (RWD) to discharge pistachio process wastewater to approximately 3,800 acres of orchards (primarily pomegranates and/or pistachios) owned by the Discharger. According to the RWD, the Facility would discharge up to 126 million gallons per year with a daily maximum flow of 5.4 million gallons per day (mgd) of process wastewater generated during the six-week pistachio season from mid-August to October. A revised RWD was submitted on 25 February 2013 increasing the annual flow to 175 million gallons per year and the maximum daily flow to 8.0 mgd based on actual operating conditions at the Facility. The revised RWD also decreased the available LAA acreage from 3,800 acres to 3,000 acres.

7. WDRs are needed for this Facility to ensure the discharge will comply with water quality plans and policies.

Existing Facility and Discharge

8. According to the RWD, the Facility will be constructed in phases. During the initial phase, the Facility will hull, dry, and store pistachio nuts. A bulk packaging line was added to the Facility in 2014. The Facility consists of an office building, truck scales, receiving pits, pre-cleaning station, two hulling lines, dryers, storage silos, and a packaging building.
9. Process wastewater at the Facility consists of hulling water and equipment wash down generated during the six-week pistachio harvest between mid-August and October. According to the Discharger, the packaging line is dry cleaned and no wastewater is generated from the packaging lines.
10. Pistachios brought in from the fields are cleaned and processed to remove the hulls. Upon arrival, the trailers are weighed, and the nuts are unloaded and dumped into the hulling lines. The pistachios are pre-cleaned to remove leaves and stems before being sent to the hullers. After the hulls are removed the pistachios are placed in a float tank to separate out closed and blank pistachios.
11. Process wastewater and solids (i.e., hulls, shells, and skins removed during the hulling process) are discharged to the floor augers and collected in a concrete vault. From the vault the wastewater and material are pumped to a bank of parabolic screens (hydrasieves) used to remove solids. The screened wastewater is then discharged to a series of three lined settling ponds. The settling ponds provide additional treatment (i.e., solids removal) and equalization prior to discharge into the irrigation system.
12. The three settling ponds are each lined with a single layer 60-mil high density polyethylene (HDPE) liner. The settling ponds are each approximately 1,000 feet long and 100 feet wide and eight feet deep with a storage capacity of about 4.5 million gallons assuming two feet of freeboard. In addition, there is a lined emergency storage pond adjacent to the settling ponds to provide additional storage and equalization capacity. The emergency storage pond is lined with a single layer 60-mil HDPE liner and is approximately 1,200 feet long by 560 feet wide and 12 feet deep with a designed storage capacity of approximately 50 million gallons assuming two feet of freeboard.

13. From the settling ponds the wastewater is pumped through sand filters and discharged into the sites irrigation canal and blended with fresh irrigation water. Backwash water from the sand filters is discharged back into the settling ponds.
14. The blended wastewater and irrigation water are then sent to the various fields throughout the LAA where it is pumped into holding reservoirs. From the holding reservoirs the blended water is filtered using pressure sand filters to remove any fine solids and applied to the orchards via micro irrigation.
15. The revised RWD proposed a maximum daily discharge of 8.0 mgd and an annual discharge of up to 175 million gallons for the processing season. Information on annual wastewater discharged from the settling ponds to the irrigation system for the 2016 through 2019 processing seasons is provided in Table 2 below.

Table 2. Wastewater Flows (2016 through 2019)

Year	Discharge Volume (million gallons)
2016	155.7
2017	100.6
2018	149.0
2019	66.7

16. Stems and leaves removed during the pre-cleaning process are combined with other green waste from the farming operation for composting. Residual solids (from the hulling operations) removed from the screens and the ponds are pressed to reduce the water content and stored temporarily on a concrete pad. After they are dried the residual solids are shipped off site for use as cattle feed or sent to a composting facility. Blank or broken shells are segregated and shipped separately to be composted or for use as road base. In the future some solids may be used as feedstock for a gasifier system.
17. Source water for the Facility is supplied by groundwater. According to the Discharger, pumped groundwater from about 12 wells is transported via the Central Canal to an on-site water treatment system where the water is filtered and disinfected before being used at the Facility. The water treatment system is permitted with the State Water Resources Control Board, Division of Drinking Water (DDW) (Permit No. 03-11-17P-048). A sample of the source water for the Facility was collected after the treatment on 3 September 2014. The results from this sampling is presented in Table 3 below.

Table 3. Source Water Characterization

Constituent/Parameter	Units	3 September 2014
pH	s.u.	8.4
Electrical Conductivity	µmhos/cm	470
Nitrate as Nitrogen	mg/L	0.09
Total Nitrogen	mg/L	<1
Total Dissolved Solids	mg/L	320
Total Hardness	mg/L CaCO ₃	13
Calcium	mg/L	3.9
Magnesium	mg/L	0.89
Sodium	mg/L	94
Potassium	mg/L	1.8
Chloride	mg/L	57
Sulfate	mg/L	36
Bicarbonate	mg/L CaCO ₃	120
Carbonate	mg/L CaCO ₃	0.97
Total Alkalinity	mg/L CaCO ₃	100
Boron	mg/L	0.16

18. Sodium hypochlorite is added to disinfect the source water for domestic and process use within the Facility. In addition, the following chemicals are used for sanitation purposes within the Facility including: Aqua Chlor 12.5, Sani T-10, chlorinated degreasers, and chlorine dioxide. According to the Discharger, wastewater generated from sanitation purposes is a minor component of the waste stream.
19. The Facility is currently not permitted; therefore, limited wastewater quality data is available. The RWD estimated wastewater quality based on a 10-year average from data collected at a similar pistachio processing facility in Lost Hills. In addition, samples of the wastewater were collected from the settling ponds during the first processing season in 2012 and during an inspection of the Facility on 3 September 2014. The results are provided in Table 4 below.

Table 4. Estimated Wastewater Quality

Constituent/Parameter	RWD Estimate	2012 Season Average	Sept. 2014 Inspection Sample
pH, (std. units)	5.0	5.4	5.2
EC, (µmhos/cm)	2,319	2,160	1,900

Constituent/Parameter	RWD Estimate	2012 Season Average	Sept. 2014 Inspection Sample
BOD ₅ , (mg/L)	2,725	2,238	2,300
TDS, (mg/L)	3,507	2,625	3,200
FDS, (mg/L)	---	1,043	---
Total Nitrogen, (mg/L)	147	102	130
Sodium, (mg/L)	105	102	78
Chloride, (mg/L)	140	112	52
Potassium, (mg/L)	595	496	530
Sulfate, (mg/L)	81	67	53

20. Based on the analytical data from the 2012 season, approximately 60 percent of the TDS is the result of organic compounds based on an average FDS of 1,043 mg/L and an average TDS of 2,625 mg/L.
21. The Discharger also collected additional samples of the wastewater for nitrogen and potassium from the settling pond during the 2015 through 2019 seasons. According to the Discharger, the samples were collected from the last settling pond prior to the sand filters and being discharged into the irrigation system. The results are provided in Table 5 below.

Table 5. Nitrogen and Potassium Concentrations (mg/L)

Season	Average Total Nitrogen	Total Nitrogen Range	Average Potassium	Potassium Range
2015	224	170 - 330	971	810 – 1,200
2016	216	150 – 290	1,139	870 – 1,300
2017	267	180 – 490	1,081	520 – 1,300
2018	297	170 – 570	1,464	980 – 2,300
2019	385	320 - 580	1,438	1,000 – 1,800

22. The additional sampling shows an increase in nitrogen and potassium concentrations in the settling pond over the years. The Discharger suspects that this is the result of improved hulling technology, which has reduced the size of the solids allowing more of the hull material to pass through the screens and collect in the settling ponds. The Discharger is working to improve its screening process. In addition, running the wastewater through the sand filters, prior to discharge into the irrigation system, is expected to provide some further reduction in constituent concentrations.

23. Domestic wastewater is handled by an on-site septic tank/leach field system regulated by Madera County.
24. Generally, stormwater is not generated during the pistachio processing season (i.e., mid-August through October). According to the RWD, all stormwater that falls on paved areas in or around the Facility other than what falls directly in the settling ponds is diverted to an on-site stormwater retention basin.

Land Application Areas

25. According to the revised RWD, the LAA consists of approximately 3,000 acres of orchard crops consisting of two ranches. Each ranch is divided into several fields and planted with pomegranates and/or pistachios. After 2015, the Discharger ceased sending wastewater to the ranch north of Avenue 7 ½ due to the difficulty of transporting wastewater to those fields. This reduced the available LAA to approximately 1,500 acres (APNs 042-171-003 and 042-310-006).
26. The Discharger has since completed some improvements to its irrigation system and plans on implementing additional improvements in order to send wastewater back to fields north of Avenue 7 ½ (identified as Ranch 4051) with approximately 1,300 acres (APNs 041-141-002, 041-201-012, 041-202-003, and a portion of 041-142-003) as well as to an additional ranch (Ranch 4061) with approximately 118 acres (APN 042-110-022). This would increase the available LAA back to about 2,900 acres.

As discussed in Finding 2, wastewater is only applied to the pistachio and pomegranate orchards, though the available acreage is subject to change depending on farming operations. This Order includes Provision G.5, which requires the Discharger to submit a revised Nutrient and Wastewater Management Plan by 1 August 2021 and submit additional revisions prior to any future changes.

27. BOD loading does not appear to be an issue for this discharge. Given the short processing season, based on the available data, the average BOD loading rate for the 1,500-acre LAA assuming a 45-day season would be about 58 pounds per acre per day assuming an annual flow rate of 175 million gallons, and about 30 pounds per acre per day if the LAA is increased to about 2,900 acres. Nevertheless, this Order includes a Land Application Area Specification limiting BOD loading to a cycle average loading rate of 100 pounds per acre per day.
28. Table 6 below summarizes projected annual LAA loading rates for nitrogen and potassium. Projected annual LAA loading rates are in pounds per acre per year

(lbs/ac/yr) assuming an annual discharge of 175 million gallons with either 1,500 or 2,900 acres of LAA.

Table 6. Projected Annual LAA Loading Rates

Acres	Units	1,500 (acres)	2,900 (acres)	Crop Requirement (lbs/ac/yr)
Total Nitrogen (see 1 below)	lbs/ac/year	215	111	125 (see 3 below)
Potassium (see 2 below)	lbs/ac/year	1,070	553	195 (see 3 below)

1. Based on an average total nitrogen concentration of 221 mg/L (average of available data for 2012 and 2015 to 2019).
2. Based on an average potassium concentration of 1,100 mg/L (average of available data for 2012 and 2015 to 2019).
3. There is insufficient data available on crop uptake requirements for pomegranates, so the numbers provided in the table are based on grapes, which is expected to be similar to pomegranates. Uptake of nitrogen and potassium in pistachios is slightly higher at about 200 lbs/ac/yr for both (*Western Fertilizer Handbook*, 8th Edition).

29. The calculations show that nitrogen loading will be above agronomic rates for the 1,500-acre available LAA at the proposed flow limit of 175 million gallons annually. This is a conservative estimate which does not account for any potential losses due to nitrification/denitrification in soil. Expansion of the LAA as discussed in Finding 26 above will ensure the Discharger can maintain nitrogen loading within acceptable limits. This Order includes a Discharge Specification requiring application of wastewater and fertilizers to be at reasonable agronomic rates. In addition, this Order requires the Discharger to establish and maintain a groundwater monitoring well network around its LAA if the available LAA is less than 2,900 acres.
30. The calculations show that potassium loading to the LAA will exceed agronomic rates for potassium. However, potassium is an essential nutrient and crops will often take up more potassium than is required if it is available. In addition, potassium tends to bind readily to soil until needed. The Discharger plans to monitor crop uptake for potassium and to adjust its fertilizing plan as needed to account for the excess potassium in the wastewater.
31. There are several surface water bodies in the vicinity of the Facility and LAA. As shown in **Attachment A**, the San Joaquin River is within two miles of the site. In addition, the Chowchilla bypass runs along the western boundary of the site, the Columbia Canal Company has several irrigation canals within and adjacent to the

site, and there are two natural sloughs including the Buttonwillow Slough to the east of Ranch 4051 and the Lone Willow Slough, which runs across the site. The portion of the Lone Willow Slough that crosses the site has been channelized and is sometimes used to carry irrigation water to various fields across the property. According to the Discharger, there is no direct connection between the irrigation system used to carry wastewater and any off-site surface waters. An inspection at the site conducted by Central Valley Water Board staff in June 2015 did not observe any direct connections between the sites irrigation system and any off-site surface water bodies.

This Order includes a prohibition against any discharge of waste to off-site surface waters or drainage courses. To ensure compliance with this prohibition, the MRP will require the Discharger to inspect its irrigation system annually prior to the start of the processing season identifying all irrigation canals to be used to carry wastewater and confirming that there are no direct connections with off-site surface waters.

Site-Specific Conditions

32. The Facility and LAA are in south western Madera County. Topography in the area is generally level with an approximate elevation ranging from about 145 to 165 feet above mean seal level (msl).
33. Soil in the vicinity of the LAA is predominantly the Traver Chino Complex, Chino loam, Calhi Loamy sand, and Dinuba El-Peco fine sandy loams according the United States Department of Agriculture, Natural Resources Conservation Service soil survey maps. These soils are described as saline alkali, relatively shallow to very deep, and somewhat poorly to moderately well drained. Approximately one third of the LAA meets the US Department of Agriculture's criteria for prime farmland.
34. The climate in the Central Valley is characterized by hot dry summers and mild winters. The rainy season generally extends from November through March. Occasional rains occur during the spring and fall months, but summer months are dry.
35. Average annual precipitation and evaporation (Class 'A' pan) in the area are about 6.9 inches and 69 inches, respectively, according to information published by the California Department of Water Resources (DWR). The California Irrigation Management Information System (CIMIS) database reports an annual average potential evapotranspiration (ETo) of 52.1 inches for the nearby Firebaugh/Telles station.

36. According to National Oceanic and Atmospheric Administration (NOAA) Precipitation Frequency Atlas 14, Vol. 6 (rev. 2014), 100-year and 1,000-year, 24-hour rainfall events are estimated to result in 9.78 and 14.4 inches of precipitation, respectively.¹
37. According to the Federal Emergency Management Agency's (FEMA) [Flood Insurance Rate Map](https://msc.fema.gov/portal) (https://msc.fema.gov/portal), Maps 06039C1095E, 6039C1260E, and 06039C1300E dated 26 September 2008, the Facility and LAA is within Flood Zone A, areas with a 1% chance of annual flooding where the base flood elevation has not been determined.
38. The DWR Land Use Viewer mapping application shows that land in the vicinity of the LAA is primarily agricultural, used to grow almonds, pomegranates, grapes, and hay and grain crops.

Groundwater Conditions

39. According to the [California Department of Water Resources \(DWR\) Groundwater Information Center Interactive Map Application](https://gis.water.gov/app/gicima/) (https://gis.water.gov/app/gicima/), depth to groundwater in the vicinity of the Facility is approximately 90 to 130 feet below ground surface (bgs) while groundwater underlying the LAA ranges from approximately 60 to 100 feet bgs. Regional groundwater flow in the area is generally to the east-northeast away from the San Joaquin River.
40. Regional groundwater quality data can be found on the State Water Resources Control Board's (State Water Board) [Groundwater Ambient Monitoring Program \(GAMA\) database](https://www.waterboards.ca.gov/gama/) (https://www.waterboards.ca.gov/gama/). A search of the GAMA database identified several wells in the vicinity of the Facility and LAA. In addition, the Discharger collected groundwater samples from three monitoring wells in the vicinity of the Facility to establish groundwater quality in the area prior to construction.
41. Based on the available data, groundwater quality in the vicinity of the Facility is of relatively good quality with respect to nitrates and potassium. However, the salinity increases in the northern portion of the LAA. The results of the groundwater sampling and database search for specific groundwater constituents are provided in Table 7 below.

¹ Source: [NOAA Precipitation Frequency Data Server](https://hdsc.nws.noaa.gov/hdsc/pfds) (https://hdsc.nws.noaa.gov/hdsc/pfds)

Table 7. Regional Groundwater Quality

Well	pH (s.u.)	EC (µmhos/cm)	Nitrate as N (mg/L)	Sodium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Potassium (mg/L)
2480-95 (6/27/2012)	8.1	1,100	3.3	210	23	100	4.6
2480-96 (6/27/2012)	8.0	1,200	4.8	170	77	110	3.8
2480-93 (10/17/2011)	8.6	226	<1	55	1.4	2.3	<0.5
12S15E32F001M (11/9/1984)	8.0	960	2.5	180	25	90	6.5
01.96503390 (7/30/1965)	8.2	685	<1	110	28	100	2.0
13S15E03M001M (7/30/1965)	8.2	685	<1	113	28	103	2.4
13S15E14P001M (6/7/1965)	8.6	397	<1	82	2.2	45	1.3
12S14E12N001M (6/11/1965)	8.3	1,770	1.5	235	84	406	1.5
13S15E02K001M (9/28/1964)	7.6	608	<1	60	42	70	2.3
13S15E11F001M (10/23/1964)	--	471	<1	91	7.6	42	2.2
12S14E26G001M (10/23/1964)	8.3	1,390	<1	209	59	288	2.1

Legal Authorities

42. This Order is adopted pursuant to Water Code section 13263, subdivision (a), which provides in pertinent part as follows:

The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge..., with relation to the conditions existing in the disposal area or receiving waters upon, or into which, the discharge is made or proposed. The requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonable required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Section 13241.

43. Compliance with section 13263, subdivision (a), including implementation of applicable water quality control plans, is discussed in the findings below.

44. 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. (Wat. Code, § 13263, subd. (g).)
45. This Order and its associated Monitoring and Reporting Program (MRP) are also adopted pursuant to Water Code section 13267, subdivision (b)(1), which provides as follows:

[T]he 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 ... 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.

46. The reports required under this Order, as well as under the separately issued MRP, are necessary to verify and ensure compliance with WDRs. The burden associated with such reports is reasonable relative to the need for their submission.

Basin Plan Implementation

47. Pursuant to Water Code section 13263, subdivision (a), WDRs must “implement any relevant water quality control plans..., and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Section 13241.”
48. This Order implements the Central Valley Water Board’s Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin (Basin Plan), which designates beneficial uses for surface water and groundwater and establishes water quality objectives (WQOs) necessary to preserve such beneficial uses. (See Wat. Code, § 13241 et seq.)
49. Local drainage is to the San Joaquin River approximately two miles east-southeast of the Facility and LAA. The beneficial uses of this segment of the San Joaquin River include: municipal and domestic supply (MUN); agricultural supply (AGR)); industrial process supply (PRO); contact water recreation (REC-1); non-contact water

recreation (REC-2); warm freshwater habitat (WARM); migration of aquatic organisms (MGR); spawning, reproduction, and/or early development (SPAWN); and wildlife habitat (WILD).

50. Per the Basin Plan, beneficial uses of underlying groundwater in the area are: municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); and industrial process supply (PRO).
51. The Basin Plan establishes narrative WQO's for chemical constituents, taste and odors, and toxicity in groundwater. The toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses.
52. 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.
53. The narrative WQO for toxicity provides that groundwater shall be maintained free of toxic substances in concentrations producing detrimental physiological responses in human, animal, plant or aquatic life associated with designated beneficial uses.
54. 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.
55. 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 of 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) of less than 700 $\mu\text{mhos/cm}$. 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 groundwater EC up to 3,000 $\mu\text{mhos/cm}$, if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

Salt and Nitrate Control Programs Reopener

56. 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. The Basin Plan amendments were conditionally approved by the State Water Board on 16 October 2019 (Resolution 2019-0057) and by the Office of Administrative Law on 15 January 2020 (OAL Matter No. 2019-1203-03).
- a. For nitrate, dischargers 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 the Nitrate Control Program, the Facility falls within Groundwater Sub-Basin 5-22.07 (San Joaquin Valley Delta Mendota Basin), a priority 2 Basin. Notices to Comply for Priority 2 Basins will be issued within two to four years after the effective date of the Nitrate Control Program (17 January 2020).
 - b. For salinity, dischargers that are unable to comply with stringent salinity requirements will 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. Dischargers will receive a Notice to Comply with instructions and obligations for the Salt Control Program within one year of the effective date of the amendments (17 January 2020). Upon receipt of the Notice to Comply, the Discharger will have no more than six months to inform the Central Valley Water Board of their choice between Option 1 (Conservative Option for Salt Permitting) or Option 2 (Alternative Option for Salt Permitting).

As these strategies are implemented, the Central Valley Water Board may find it necessary to modify the requirements of these WDRs to ensure the goals of the Salt and Nitrate Control Programs are met.

57. This Order may be amended or modified to incorporate any newly applicable requirements.

Special Considerations for High Strength Waste

58. 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. Typical high strength wastewaters include septage, some food processing wastes, winery wastes, and rendering plant wastes.

59. 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 BOD₅ to prevent nuisance conditions.
60. Regarding 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.
61. Typically, irrigation with high strength wastewater results in heavy 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.
62. *Pollution Abatement in the Fruit and Vegetable Industry*, published by the United States Environmental Protection Agency, cites BOD₅ loading rates in the range of 36 to 600 lbs/ac/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 BOD₅ 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.

63. The California League of Food Processors' *Manual of Good Practice for Land Application of Food Processing/Rinse Water* (Manual of Good Practice) proposes risk categories associated with particular BOD₅ loading rate ranges as follows:
- a. Risk Category 1: (less than 50 lbs/ac/day; depth to groundwater greater than 5 feet) Indistinguishable from good farming operations with good distribution important.
 - b. Risk Category 2: (less than 100 lbs/ac/day; depth to groundwater greater than 5 feet). Minimal risk of unreasonable groundwater degradation with good distribution more important.
 - c. Risk Category 3: (greater than 100 lbs/ac/day; depth to groundwater greater than 2 feet) Requires detailed planning and good operation with good distribution very important to prevent unreasonable degradation, as well as use of oxygen transfer design equations that consider site-specific application cycles and soil properties and special monitoring.

The *Manual of Good Practice* recommends allowing a 50 percent increase in the BOD₅ 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.

64. Although it has not been subject to a scientific peer review process, the *Manual of Good Practice* provides science-based guidance for BOD₅ loading rates that, if fully implemented, are considered a best management practice to prevent groundwater degradation due to reduced metals.
65. In a properly managed land application area, a cycle average BOD loading rate of less than 100 lbs/ac/day should not result in objectional odors or unreasonably threaten underlying groundwater. This Order sets an irrigation cycle average BOD loading rate for the LAA of 100 lbs/ac/day.

Compliance with Antidegradation Policy

66. The *Statement of Policy with Respect to Maintaining High Quality Waters in California*, State Water Board Resolution 68-16 (Antidegradation Policy), which is incorporated as part of the Basin Plan, prohibits the Central Valley Water Board from authorizing degradation of "high quality waters" unless it is shown that such degradation: (1) will be consistent with the maximum benefit to the people of California; (2) will not unreasonably affect beneficial uses, or otherwise result in

water quality less than as prescribed in applicable policies; and (3) is minimized through the discharger’s best practicable treatment or control (BPTC).

67. Given the availability of pre-1968 water quality information, compliance with the Antidegradation Policy will be determined based partly on pre-1968 water quality, as discussed below (Antidegradation Baseline).
68. After the lined settling ponds wastewater is blended with irrigation water prior to land application. The Discharger collected samples of the blended wastewater and irrigation water from the reservoirs at each irrigation field during the 2012 season for constituents of concern. In addition, the Discharger collected samples from the reservoirs for nitrogen and potassium for the 2015 to 2019 seasons. Table 8 below shows the average concentration of the blended irrigation and wastewater concentrations for constituents of concern alongside pre-1968 regional groundwater quality.

Table 8. Blended Irrigation Water and Groundwater Evaluation

Constituent/Parameter	Units	Number of Samples	Average Blended Water	Regional Groundwater (pre-1968)
Electrical Conductivity	µmhos/cm	70	1,197	471 – 1,030
Total Nitrogen	mg/L	196	61	Not Reported
Calcium	mg/L	70	26	7.6 – 42
Sodium	mg/L	70	107	60 – 229
Potassium	mg/L	196	321	2.0 – 2.4
Chloride	mg/L	70	110	42 – 262

69. Constituents of concern (COCs) that have the potential to degrade groundwater include organics, nutrients, and salts.
 - a. **Organics.** Application of organic materials (as measured by BOD₅) at excessive rates can cause anerobic conditions that may result in nuisance odor conditions, dissolution of metals, and degradation of groundwater. This Order requires the Discharger to apply wastewater to the LAA at agronomic rates and limits the cycle average BOD loading rate to the LAA to less than 100 lbs/ac/day. Given the short processing season (i.e., about six weeks) and implementation of best management practices including blending with irrigation water and drip or spray irrigation the discharge should not unreasonably degrade groundwater quality with constituents related to organic loading or cause nuisance odor conditions.

- b. **Nitrate (as Nitrogen).** Based on the available data, groundwater in the vicinity of the Facility prior to 1968 reported nitrates as N of less than 1 mg/L. In addition, a sample collected from an on-site monitoring well in June 2012 (prior to construction of the Facility) reported a nitrate as N sample concentration of 4.8 mg/L, which is less than the MCL of 10 mg/L. To address nitrogen concentrations in the discharge, this Order requires the application of nutrients from wastewater and fertilizers to be at reasonable agronomic rates. At the proposed annual flow limit of 175 million gallons the projected annual total nitrogen loading rate of 215 lbs/ac/year (Table 6) will be above agronomic rates for the existing 1,500-acre available LAA. However, expansion of the LAA to about 2,900 acres as discussed in Finding 26 will reduce nitrogen loading rates to about 111 lbs/ac/year, which should ensure the Discharger can maintain nitrogen loading within agronomic rates. With storage in lined ponds, blending with better quality irrigation water, and application at agronomic rates the discharge should not cause significant degradation of groundwater for nitrates.
 - c. **Salinity.** For salinity, the discharge is high in salts, specifically potassium. There is no maximum contaminant Level (MCL) or other numeric limit established for potassium except for overall limits for EC and TDS, to which potassium would contribute. Potassium is an important nutrient for crops and, if readily available, plants will take up potassium in excess of their needs. Therefore, the application of wastewater high in potassium to crops would be beneficial. Further, the positively charged ion in potassium binds readily to soils allowing for greater retention time in the root zone for crop uptake. The Discharger implements best management practices to minimize impacts from potassium including blending with irrigation water low in potassium and tissue sampling to adjust its use of potassium fertilizers. In addition, this Order requires the Discharger to prepare and implement a Salinity Reduction Study Workplan to identify and address sources of salinity to and from the Facility (Provision G.4).
70. The Discharger implements, or will implement, as required by this Order, the following BPTC measures:

 - a. Mechanical solids removal (wastewater screening);
 - b. Storage of wastewater in lined ponds;
 - c. Application of blended wastewater and irrigation water at agronomic rates (except for potassium);

- d. BOD cycle average loading rate less than 100 lbs/acre/year;
 - e. Groundwater monitoring if the available LAA is less than 2,900 acres;
 - f. Preparation and implementation of a Salinity Reduction Study Work Plan, and
 - g. Compliance with the Salt and Nitrate Control Programs.
71. The Discharger's implementation of the above-listed BPTC measures will minimize the extent of water quality degradation resulting from the Facility's continued operation.
72. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the state. Therefore, sufficient reason exists 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 typical waste constituents released with discharge from the Facility after effective source reduction, treatment and control, and considering the best efforts of the Discharger and magnitude of degradation, is of maximum benefit to the people of the state. The Facility contributes to the economic prosperity of the region by providing employment; by providing incomes for numerous aligned businesses; and by providing a tax base for local and county governments. Accordingly, to the extent that any degradation occurs as the result of the Facility's operation, such degradation is consistent with the maximum interest of the people of the State of California.
73. Based on the foregoing, the adoption of this Order is consistent with the State Water Board's Antidegradation Policy.

California Environmental Quality Act

74. In accordance with the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq., Madera County, on 11 October 2011 adopted a Mitigated Negative Declaration in connection with its issuance of a Conditional Use Permit for construction and operation of a pistachio processing plant off Chowchilla Road near Avenue 7. The Mitigated Negative Declaration (MND) found that the "project," which includes the following pertinent elements, would not have a significant effect on the environment, provided that specified mitigation measures were implemented:

- a. Construction of a pistachio processing plant for hulling, drying, storage, packaging, and roasting of pistachios from neighboring lands;
 - b. Year-round packaging and shipping of pistachios; and
 - c. Reuse of process wastewater for irrigation of nearby trees owned by the Discharger.
75. The Central Valley Water Board, as a “responsible agency” under CEQA, was consulted in the lead agency’s development of the MND. The discharges and other activities authorized under this Order also fall within the scope of the proposed project (as contemplated in the MND). Additionally, there are no substantial changes to either the proposed project or the attendant circumstances under which the proposed project will be undertaken, and no new information requiring revision of the MND. The MND is therefore presumed compliant with CEQA for use by the Central Valley Water Board as a “responsible agency” under CEQA. (See Cal. Code Regs., tit. 14, §15162.) Accordingly, no further environmental review is required under CEQA.

Other Regulatory Considerations

76. 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 subject to Water Code section 106.3, as it does not revise, adopt or establish a policy, regulation or grant criterion, (see §106.3, subd. (b)), it nevertheless promotes the policy by requiring discharges to meet maximum contaminant levels (MCLs) for drinking water, which are designed to protect human health and ensure that water is safe for domestic use.
77. For the purposes of California Code of Regulations, title 23 (Title 23), section 2200, the Facility has a threat-complexity rating of 2-B.
- a. Threat Category “2” reflects waste discharges that can impair receiving water beneficial uses, cause short-term water quality objective violations, cause secondary drinking water standard violations, and cause nuisances.
 - b. Complexity Category “B” reflects any discharger not included in Category A, with either (1) physical, chemical or biological treatment systems (except for septic systems with subsurface disposal), or (2) any Class II or Class III WMUs.

78. This Order, which prescribes WDRs for discharges of wastewater, is exempt from the prescriptive requirements of California Code of Regulations, title 27 (Title 27), section 20005 et seq. (See Cal. Code Regs., tit. 27, § 20090, subd. (b).)
79. Because all storm water at the Facility is collected and disposed onsite, the Discharger will not be required to obtain coverage under the *Statewide General Permit for Storm Water Discharges Associated with Industrial Activities*, State Water Board Order 2014-0057-DWQ, NPDES Permit No. CAS000001 (Industrial General Permit).

Scope of Order

80. This Order is strictly limited in scope to those waste discharges, activities and processes described and expressly authorized herein.
81. Pursuant to Water Code section 13264, subdivision (a), the Discharger is prohibited from initiating the discharge of new wastes (i.e., other than those described herein), or making material changes to the character, volume and timing of waste discharges authorized herein, without filing a new Report of Waste Discharge (RWD) per Water Code section 13260.
82. Failure to file a new RWD before initiating material changes to the character, volume or timing of discharges authorized herein, shall constitute an independent violation of these WDRs.
83. This Order is also strictly limited in applicability to those individuals and/or entities specifically designated herein as “Discharger,” subject only to the discretion to designate or substitute new parties in accordance with this Order.

Procedural Matters

84. All of the above information, as well as the information contained in the attached Information Sheet (incorporated herein), was considered by the Central Valley Water Board in prescribing the WDRs set forth below.
85. The Discharger, interested agencies and other interested persons were notified of the Central Valley Water Board’s intent to prescribe the WDRs in this Order, and provided an opportunity to submit their written views and recommendations at a public hearing. (See Wat. Code, § 13167.5.)
86. At a public meeting, the Central Valley Water Board heard and considered all comments pertaining to the discharges regulated under this Order.

87. The Central Valley Water Board will review and revise the WDRs in this Order as necessary.

REQUIREMENTS

IT IS HEREBY ORDERED, pursuant to Water Code sections 13263 and 13267, that the Discharger and their agents, employees and successors in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following.

A. Discharge Prohibitions

1. Discharge of wastes to off-site 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. Treatment system bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the Standard Provisions and Reporting Requirements for WDRs, 1 March 1991 ed. (SPRRs), which are incorporated herein.
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 the LAA such that biological treatment mechanisms are disrupted is prohibited.
6. Discharge of domestic wastewater to the process wastewater treatment system, settling ponds, and/or LAA fields is prohibited.
7. Discharge of industrial wastewater to the septic systems is prohibited.

B. Flow Limitations

1. The wastewater discharge to the LAA shall not exceed the following (monitored at EFF-001):
 - a. A maximum daily flow limit of 8.0 mgd, or
 - b. An annual flow limit of 175 million gallons,

C. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of 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. The Discharger shall operate all systems and equipment to optimize the quality of the discharger.
4. The discharge shall remain within the permitted wastewater ponds, conveyance structures, and the LAA at all times.
5. The Facility and wastewater ponds 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 wastewater ponds or the LAA at an intensity that creates or threaten to create nuisance conditions.
7. As a means of ensuring compliance with Discharge Specification D.6, the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or storage pond shall not be less than 1.0 mg/L for three consecutive sampling events. Notwithstanding the DO monitoring frequency specified in the monitoring and reporting program, if the DO in any single pond is below 1.0 mg/L for any single sampling event, the Discharger shall implement daily DO monitoring of that pond until the minimum DO concentration is achieved for at least three consecutive days. If the DO in any single pond is below 1.0 mg/L for three consecutive days, the Discharger shall report the findings to the Central Valley Water Board in accordance with Section B.1 of the SPRRs. The written notification shall include a specific plan to resolve the low DO results within 30 days of the first date of violation.
8. The ponds and open containment structures shall be managed to prevent breeding of mosquitos or other vectors. 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.
9. 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 shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge or other suitable measurement device with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.
10. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
11. On or about 1 August of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications D.9 and D.10.
12. The Discharger shall monitor sludge accumulation in the wastewater settling/storage ponds annually and shall periodically remove sludge as necessary to maintain adequate storage capacity. Specifically, if the estimated volume of sludge in the pond exceeds five percent of the permitted capacity, the Discharger shall complete sludge cleanout within 12 months after the date of the estimate.
13. Wastewater contained in any unlined pond shall not have a pH less than 4.5 or greater than 9.0.

D. Groundwater Limitations

1. Release of waste constituents from any treatment unit, storage unit, delivery system or disposal location 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 natural 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.

E. Land Application Area Specifications

1. For the purposes of this Order, "land application area" or "LAA" refers to the discharge area described in the Findings and shown in Attachment A.
2. Crops shall be grown within the LAA. Crops shall be selected based on nutrient uptake, consumptive use of water, and irrigation requirements to maximize uptake of nutrients.
3. 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 to the LAA, including nutritive value of organic and chemical fertilizers, and the wastewater, shall not exceed the annual crop demand.
4. Hydraulic loading of wastewater and irrigation water shall be at reasonable agronomic rates designed to minimize the percolation of wastewater and irrigation water below the root zone (i.e., deep percolation).
5. The BOD loading to the LAA calculated as a cycle average, as determined by the methods described in the attached Monitoring and Reporting Program, shall not exceed 100 pounds per acre per day.
6. The resulting effect of the discharge on soil pH shall not exceed the buffering capacity of the soil profile.
7. The Discharger shall not discharge process wastewater to the LAA when soils are saturated (e.g., during or after significant precipitation).
8. Any irrigation runoff shall be confined to the LAA and shall not enter any surface water drainage course or storm water drainage system.

9. Discharge of process wastewater to any land not having a fully functional tailwater/runoff control system is prohibited.
10. The LAA shall be managed to prevent breeding of mosquitos. More specifically:
 - a. All applied irrigation water must infiltrate completely within 48-hours;
 - b. Ditches not serving as wildlife habitat shall be maintained free of emergent marginal, and floating vegetation; and
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitos shall not be used to store process wastewater.

F. Solids Disposal Specifications

1. For the purpose of this Order, sludge includes the solid, semisolid, and liquid organic matter removed from the wastewater treatment system. Solid waste refers to solid inorganic matter removed from screens and soil sediments for washing of unprocessed nuts. Except for waste solids originating from meat processing, residual solids means organic food processing byproducts such as blanks, culls, hulls, stems, and leaves that will not be subject to treatment prior to disposal or land application.
2. Residual solids shall be removed from screens, sumps, and ponds as needed to ensure optimal operation, prevent nuisance conditions, and maintain adequate storage capacity.
3. Any handling and storage of residual solids shall be temporary and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.
4. If removed from the site, residual solids shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for reuse as animal feed, biofuel feedstock, 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.

G. Provisions

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (SPRRs), which are a part of this Order. This attachment and its individual paragraphs are referred to as Standard Provisions.
2. The Discharger shall comply with the separately issued **Monitoring and Reporting Program (MRP) R5-2020-0034**, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.
3. A copy of this Order (including Information Sheet, Attachments and SPRRs) and the MRP, shall be kept at the Facility for reference by operating personnel. Key operating personnel shall be familiar with their contents.
4. **By 4 December 2020**, the Discharger shall submit a **Salinity Reduction Study Workplan** for Executive Officer approval. At a minimum, the Salinity Reduction Study Workplan must include:
 - a. Data on current and effluent salinity concentrations;
 - b. Identification of known salinity sources;
 - c. Description of current plans to reduce/eliminate known salinity sources;
 - d. Preliminary identification of other potential sources;
 - e. A proposed schedule for evaluating sources; and
 - f. A proposed schedule for identifying and evaluating potential reduction, elimination, and prevention methods.

Implementation progress of the Salinity Reduction Workplan shall be reported each year in the Annual Monitoring Report required pursuant to Monitoring and Reporting Program R5-2020-0034.

5. **By 2 August 2021**, the Discharger shall submit a **Nutrient and Wastewater Management Plan** for the available land application area (LAA) for Executive Officer approval. In addition, prior to any future changes in acreage or location of the available LAA, the Discharger shall submit a revised Nutrient and Wastewater Management Plan. The main

objective of the Plan is to identify the changes in the available LAA and demonstrate how nutrient and hydraulic wastewater loading will occur at reasonable agronomic rates. At a minimum, the Plan must include:

- a. An action plan to deal with objectionable odors and/or nuisance conditions;
 - b. Supporting data and calculations for monthly and annual hydraulic, nitrogen, and salinity (i.e., potassium) loading rates; and
 - c. Management practices that will ensure wastewater, irrigation water, fertilizers, solids, and salts are applied at reasonable rates to preclude nuisance conditions and unreasonable degradation of groundwater.
6. **Effective 1 August 2021**, the Discharger shall maintain a minimum available LAA of 2,900 acres or proceed with installing a groundwater monitoring well network around its LAA to monitor changes in groundwater quality associated with its discharge. Prior to installation of a groundwater monitoring well network, the Discharger shall submit a **Monitoring Well Installation Workplan** and time schedule for Executive Officer approval. At a minimum, the monitoring well network shall include one monitoring well up-gradient of the LAA to establish background groundwater quality and at least two down-gradient monitoring wells. If the Discharger does not have at least 2,900 acres of LAA by 1 August 2021, the Discharger shall submit the Monitoring Well Installation Workplan **by 1 October 2021**.

The Workplan can propose to use existing wells as part of the monitoring well network provided the Discharger can demonstrate that the existing wells are constructed and located in a manner that can adequately evaluate the Facility's impact on underlying groundwater. The Workplan shall be prepared in accordance with, and include the items listed in, the first section of **Attachment E (Requirements for Monitoring Well Installation Work Plans and Installation Reports)**, which is incorporated herein. The monitoring wells shall comply with appropriate well standards as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981), and any more stringent standards adopted by local agencies pursuant to Water Code section 13801.

7. Within **12 months of receiving Executive Officer approval** of the Monitoring Well Installation Workplan, the Operator shall submit a **Groundwater Monitoring Well Installation Report** for the new groundwater monitoring wells constructed to comply with Provision G.6. The report shall be prepared in accordance with, and include the items listed in, the second section of Attachment E. The report shall describe the

installation and development of all new monitoring wells and explain any deviation from the approved workplan.

8. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.
9. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.
10. The Discharger shall comply with 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.
11. 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.

12. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.
13. Per 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.
14. In the event that the Discharger reports 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.
15. In the event of any change in control or ownership of the Facility or LAA, 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 Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
17. 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 Central Valley Water Board action may petition the State Water Board for review in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 et seq. The State Water Board must receive the petition by 5:00 p.m. on the 30th day after the date of this Order; if the 30th day falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. [Copies of the law and regulations applicable to filing petitions](#) are available on the Internet (at the address below) and will be provided upon request.

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

ATTACHMENTS

Attachment A—Site Location Map

Attachment B—Facility Map

Attachment C—Current Available Land Application Area Map

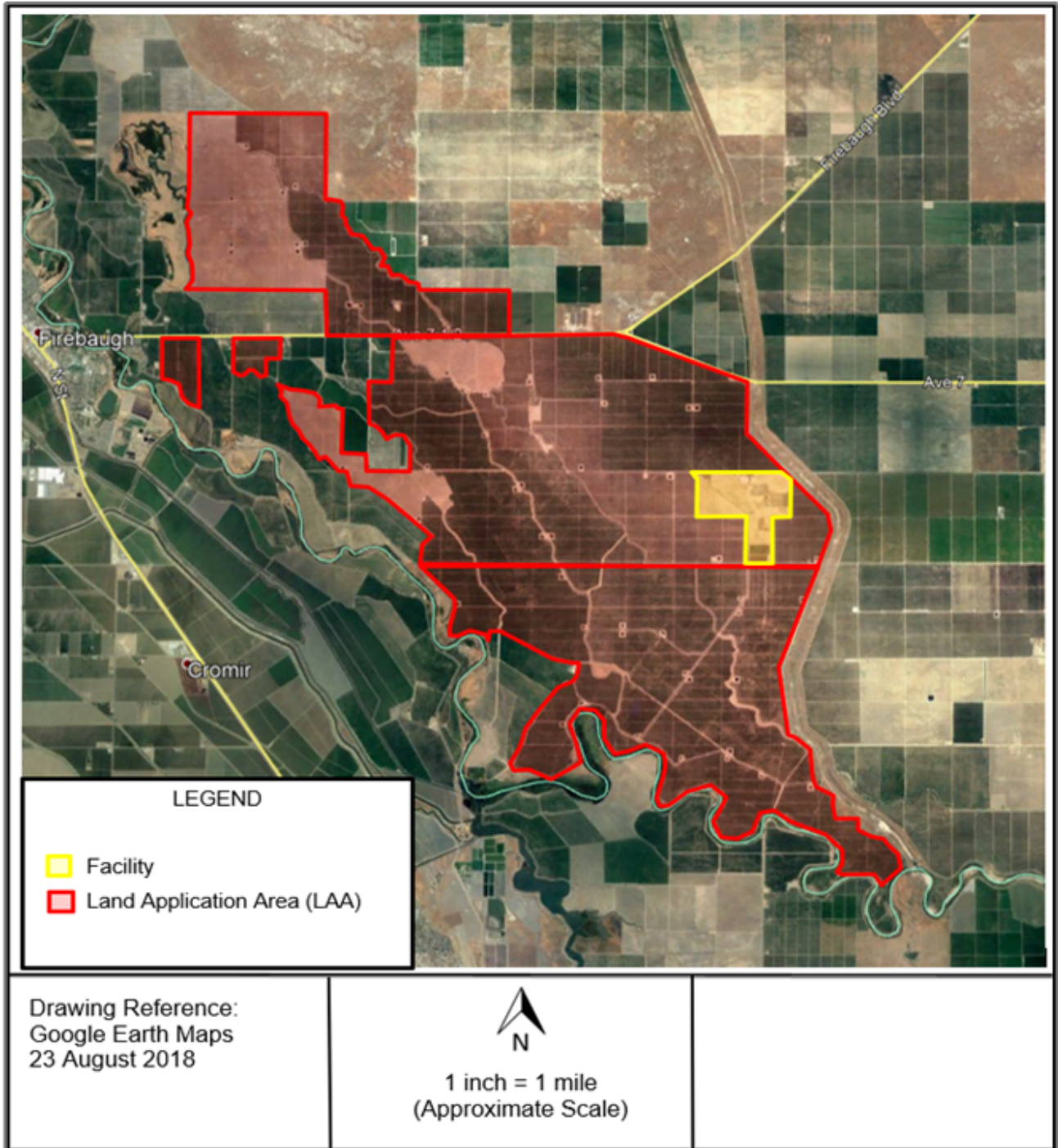
Attachment D—Process Flow Diagram

Attachment E— Requirements for Monitoring Well Installation Work Plans and
Installation Reports

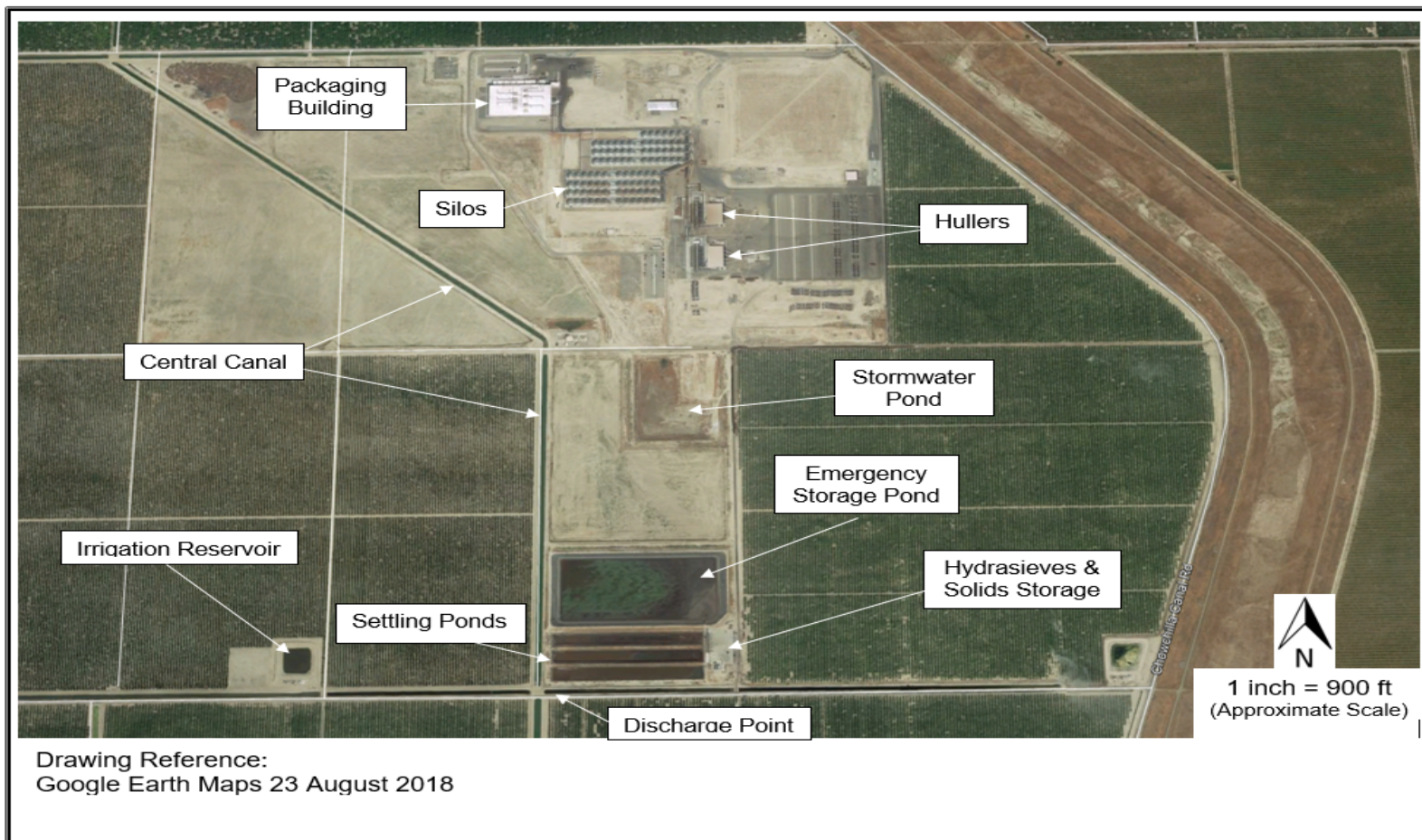
Information Sheet

Monitoring and Reporting Program R5-2020-0034

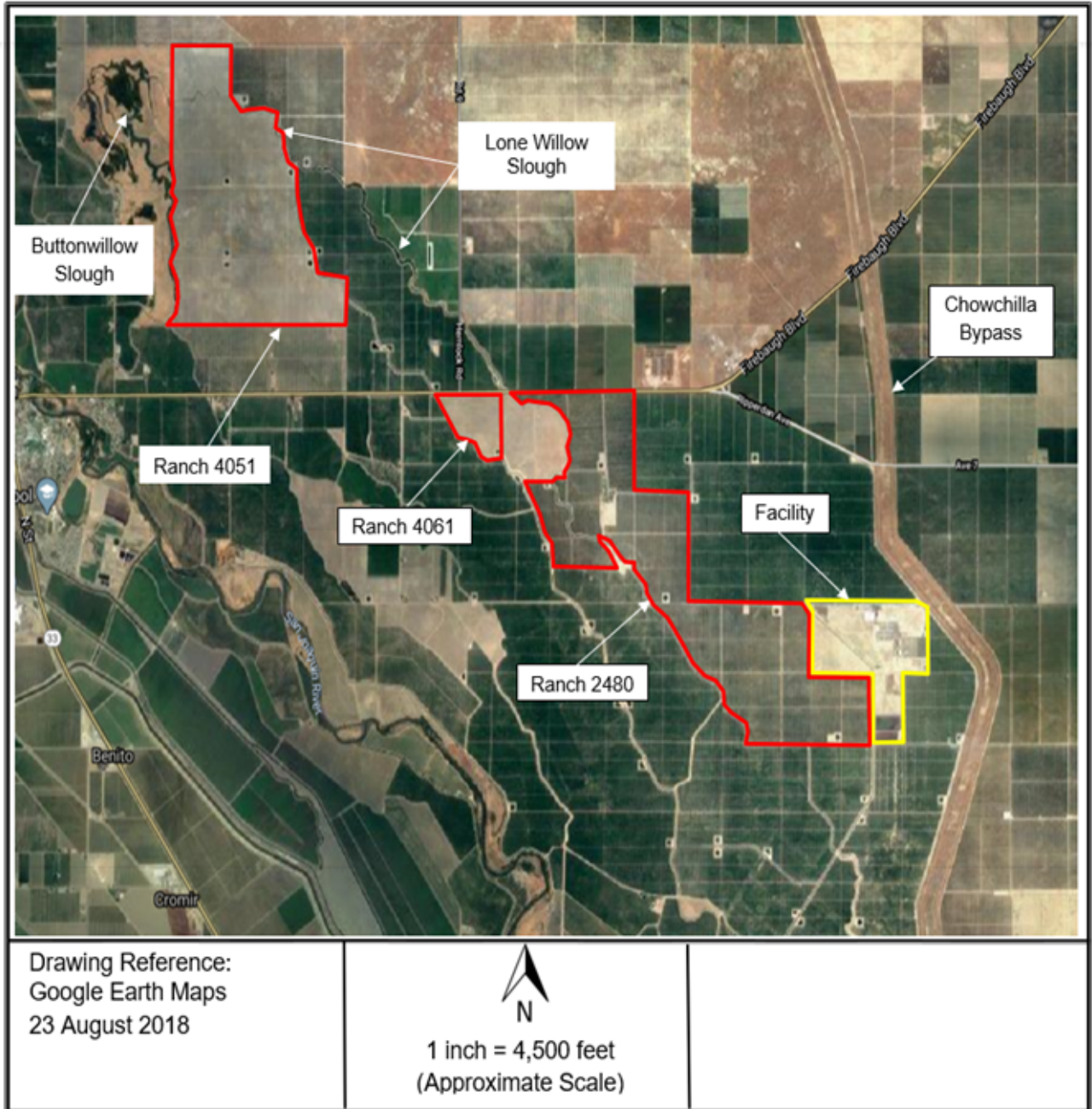
ATTACHMENT A—SITE LOCATION MAP



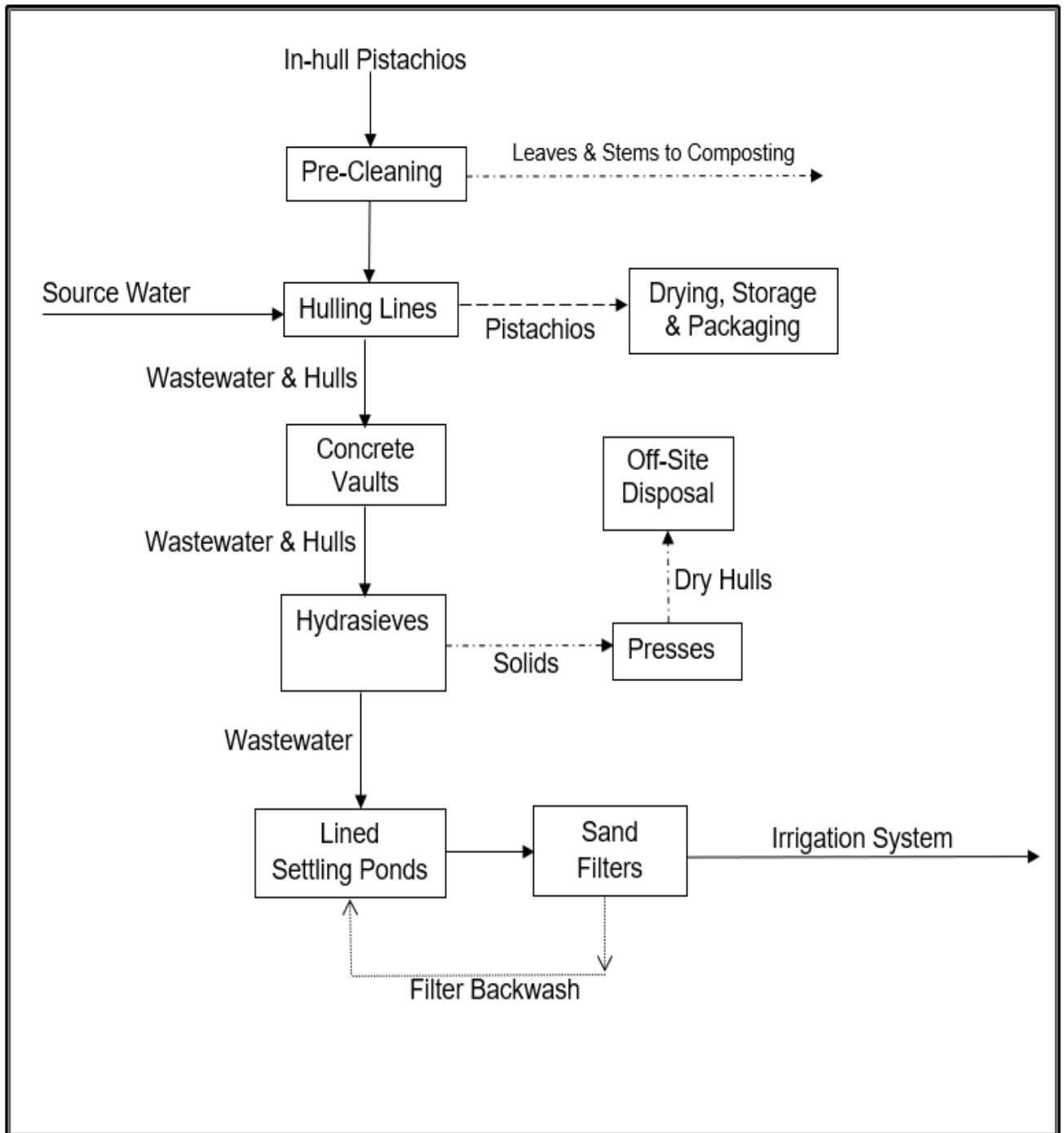
ATTACHMENT B—FACILITY MAP



ATTACHMENT C—CURRENT AVAILABLE LAND APPLICATION AREA MAP



ATTACHMENT D—PROCESS FLOW DIAGRAM



ATTACHMENT E

Requirements for Monitoring Well Installation Work Plans and Installation Reports

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approves the workplan. Upon installation of the monitoring wells, the Discharger shall submit a well installation report which includes the information contained in Section 2 below. All workplans and reports must be prepared under the direction of, and signed by, a registered geologist or civil engineer licensed by the State of California.

SECTION 1 -Monitoring Well Installation Workplan and Groundwater Sampling and Analysis Plan

The monitoring well installation workplan shall contain the following minimum information:

A. General Information:

- Purpose of the well installation project
- Brief description of local geologic and hydrogeologic conditions
- Proposed monitoring well locations and rationale for well locations
- Topographic map showing facility location, roads, and surface water bodies
- Large scaled site map showing all existing on-site wells, proposed wells, surface drainage courses, surface water bodies, buildings, waste handling facilities, utilities, and major physical and man-made features

B. Drilling Details:

- Description of the on-site supervision of drilling and well installation activities
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Soil sampling intervals (if appropriate) and logging methods

C. Monitoring Well Design (in narrative and/or graphic form):

- Diagram of proposed well construction details:
 - o Borehole diameter
 - o Casing and screen material, diameter, and centralizer spacing (if needed)
 - o Type of well caps (bottom cap either screw on or secured with stainless steel screws)
 - o Anticipated depth of well, length of well casing, and length and position of perforated interval

- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Anticipated screen slot size and filter pack
- **D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):**
 - Method of development to be used (i.e., surge, bail, pump, etc.)
 - Parameters to be monitored during development and record keeping technique
 - Method of determining when development is complete
 - Disposal of development water
- **E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):**
 - Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey
 - Datum for survey measurements
 - List well features to be surveyed (i.e. top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

G. Appendix: Groundwater Sampling and Analysis Plan (SAP)

The Groundwater SAP shall be included as an appendix to the workplan, and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling
 - General sampling techniques

- Record keeping during sampling (include copies of record keeping logs to be used)
- QA/QC samples
- Chain of Custody
- Sample handling and transport

SECTION 2 - Monitoring Well Installation Report

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved workplan.

A. General Information:

- Purpose of the well installation project
- Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells
- Number of monitoring wells installed and copies of County Well Construction Permits
- Topographic map showing facility location, roads, surface water bodies
- Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form):

- On-site supervision of drilling and well installation activities
- Drilling contractor and driller's name
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Soil sampling intervals and logging methods
- Well boring log (including the following):
 - Well boring number and date drilled
 - Borehole diameter and total depth
 - Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs)
 - Depth to first encountered groundwater and stabilized groundwater depth
 - Detailed description of soils encountered, using the Unified Soil Classification System

C. Well Construction Details (in narrative and/or graphic form).

- Well construction diagram, including:
 - o Monitoring well number and date constructed
 - o Casing and screen material, diameter, and centralizer spacing (if needed)
 - o Length of well casing, and length and position of perforated interval
 - o Thickness, position and composition of surface seal, sanitary seal, and sand pack
 - o Type of well caps (bottom cap either screw on or secured with stainless steel screws)

D. Well Development:

- Date(s) and method of development
- How well development completion was determined
- Volume of water purged from well and method of development water disposal
- Field notes from well development should be included in report

E. Well Survey (survey the top rim of the well casing with the cap removed):

- Identify the coordinate system and datum for survey measurements
- Describe the measuring points (i.e. ground surface, top of casing, etc.)
- Present the well survey report data in a table

Include the Registered Engineer or Licensed Surveyor's report and field notes in appendix.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER R5-2020-0034
FOR
WONDERFUL PISTACHIOS & ALMONDS, LLC, WONDERFUL ORCHARDS, LLC,
WONDERFUL NUT ORCHARDS, LLC, AND WONDERFUL POMEGRANATE
ORCHARDS, LLC
WONDERFUL FIREBAUGH PISTACHIO PROCESSING PLANT
MADERA COUNTY

INFORMATION SHEET

BACKGROUND

Wonderful Pistachio & Almonds, LLC owns and operates the Wonderful Firebaugh Pistachio Processing Plant (Facility) off Chowchilla Canal Road south of Avenue 7 in Madera County. The land application areas (LAA) are operated by Wonderful Orchards, LLC and owned by Wonderful Nut Orchards, LLC and Wonderful Pomegranate Orchards, LLC. Hereafter, these four entities are collectively referred to as the Discharger. The Facility was first constructed and began operations in 2012. The Facility hulls, dries, and stores pistachio nuts from neighboring farms. A bulk packaging line was added in 2014. Process wastewater is generated from hulling operations and equipment wash down, which takes place during the six-week pistachio harvest between mid-August and October.

The Facility has not previously been regulated by Waste Discharge Requirements (WDRs). On 21 March 2012 the Discharger submitted a Report of Waste Discharge (RWD) to discharge pistachio process wastewater to approximately 3,800 acres of orchards (pomegranates and/or pistachios) owned by the Discharger. According to the RWD the Facility would discharge up to 126 million gallons per year with a daily maximum flow of 5.4 million gallons per day (mgd) of process wastewater generated during the pistachio processing season. A revised RWD was submitted on 25 February 2013 increasing the annual flow to 175 million gallons per year and the maximum daily flow to 8.0 mgd based on actual operating conditions at the Facility. The revised RWD also decreased the available LAA acreage from 3,800 acres to 3,000 acres.

WASTEWATER GENERATION AND DISPOSAL

The Facility consists of an office building, truck scales, pistachio receiving pits, two hullers, dryers, storage silos, and a packaging building. The Facility will operate year round. However, process wastewater will be generated from hulling operations which takes place during the six-week pistachio harvest from mid-August through October.

Process wastewater is generated primarily from hulling operations and equipment wash down. Process wastewater and solids (consisting of hulls, shells, and skins) removed by the hullers is discharged to floor augers and collected in a concrete vault. From the vault

the wastewater is pumped through a bank of parabolic screens (0.015 inch) to remove solids. The screened wastewater is discharged to a series of three lined settling ponds. A fourth lined pond was constructed to provide additional storage and equalization capacity in the event of an emergency. From the settling ponds the wastewater is pumped through a sand filter and discharged into the site's irrigation system and blended with irrigation water. The blended wastewater and irrigation water is transported through a series of open irrigation canals to the various irrigation reservoirs within the LAA. From the reservoirs the blended wastewater and irrigation water is filtered and applied to the orchards via spray or drip irrigation.

According to the revised RWD, the LAA consists of approximately 3,000 acres of orchard crops consisting of two ranches. Each ranch is divided into several fields and planted with pomegranates and/or pistachios. After 2015, the Discharger ceased sending wastewater to the ranch north of Avenue 71/2 due to the difficulty of transporting wastewater to those fields. This reduced the available LAA to about 1,500 acres. The Discharger has since completed some improvements to its irrigation system and plans on implementing additional improvements in order to send wastewater back to areas north of Avenue 71/2. This would increase the available LAA back to about 2,900 acres.

Stems and leaves removed during the pre-cleaning process is combined with other green waste from the farming operation for composting. Residual solids (from the hulling operations) removed from the screens and the ponds are pressed to reduce the water content and stored temporarily on a concrete pad. After they are dried the residual solids, including any blank or broken shells, are collected and transported off-site to a composting facility. In the future some of these solids may be used as feedstock for a gasifier system.

GROUNDWATER CONSIDERATIONS

Groundwater conditions are discussed in Findings 39 to 41.

ANTIDegradation

Antidegradation analysis and conclusions are discussed in Findings 66 through 73 of the Order.

DISCHARGE PROHIBITIONS, EFFLUENT LIMITATIONS, DISCHARGE SPECIFICATIONS, AND PROVISIONS

The Order limits the maximum daily average and annual flow to 8.0 mgd and 175 million gallons respectively. The Order sets a cycle average BOD loading limit of 100 lbs/ac/day to the LAA and requires application of blended wastewater and irrigation water to be at agronomic rates. In addition, the Order requires the Discharger to install and maintain a groundwater monitoring well network if the LAA is less than 2,900 acres. Further, the Order includes a Provision requiring submittal of a Salinity Reduction Study Work Plan

as well as a Nutrient Management Plan for the available LAA as well as prior to any future changes in the available land application areas.

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, LAA, solids, groundwater, and water supply monitoring requirements. This monitoring is necessary to characterize the discharge and evaluate compliance with the requirements and specifications in the Order.

SALT AND NITRATE CONTROL PROGRAMS REGULATORY CONSIDERATIONS

As part of the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative, the Central Valley Water Board adopted Basin Plan amendments (Resolution R5-2018-0034) 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. On 16 October 2019, the State Water Resources Control Board adopted Resolution No. 2019-0057 conditionally approving the Central Valley Water Board Basin Plan amendments and directing the Central Valley Water Board to make targeted revisions to the Basin Plan amendments within one year from the approval of the Basin Plan amendments by the Office of Administrative Law. The Office of Administrative Law (OAL) approved the Basin Plan amendments on 15 January 2020. (OAL Matter No. 2019-1203-03).

Pursuant to the Basin Plan amendments, dischargers will receive a Notice to Comply with instructions and obligations for the Salt Control Program within one year of the effective date of the amendments (17 January 2020). Upon receipt of the Notice to Comply, the Discharger will have no more than six months to inform the Central Valley Water Board of their choice between Option 1 (Conservative Option for Salt Permitting) or Option 2 (Alternative Option for Salt Permitting). 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. For the Nitrate Control Program, the Facility falls within Groundwater Sub-Basin 5-22.07 (San Joaquin Valley Delta Mendota Basin), a priority 2 Basin. Notices to Comply for Priority 2 Basins will be issued within two to four years after the effective date of the Nitrate Control Program.

The CV-SALTS initiative will result in regulatory changes that will be implemented through conditional prohibitions and modifications to many WDRs regionwide, including the WDRs that regulate discharges from the Facility. More [information regarding the](#)

[CV-SALTS regulatory planning process](https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/) 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.