

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER R5-2012-0122  
FOR  
CITY OF LINDSAY, SWORLCO, LP, AND  
EDWARD AND EDNA BROWER REVOCABLE TRUST  
SWORLCO LAND APPLICATION SITE  
TULARE COUNTY

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

1. The City of Lindsay and Sworlco, LP, operate a Land Application Site for the discharge of citrus processing wastewater. The Land Application Site is on the southwest corner of Road 188 and Avenue 240 in Tulare County, Section 4, T20S, R26E, MDB&M, as shown on Attachment A, which is attached hereto and made part of this Order by reference.
2. Citrus processing wastewater discharged to the Land Application Site is from two Plants on property owned by Sworlco, LP (hereafter Sworlco) at 525 Lindmore Street in Lindsay. The first Plant is operated by California Citrus Pulp, Inc. (CCPI), which manufactures orange juice concentrate. The second adjoining Plant is operated by Vita-Pakt, which processes fresh kiwi and citrus peels for purees and marmalades.
3. The Land Application Site consists of three contiguous parcels which total approximately 216 acres. The center parcel, Assessor's Parcel Number (APN) 197-050-005 is owned by Sworlco. The other two parcels APN 197-050-004 and 197-050-006 are owned by the Edward and Edna Brower Revocable Trust (hereafter the Trust) identified as a Co-Discharger in this Order. The City of Lindsay has signed a long term lease agreement with Edward and Edna Brower, the trustees for the Trust, to accept and manage the Land Application Site for the discharge of citrus processing wastewater until the year 2060.
4. The discharge of citrus processing wastewater to the Land Application Site has been on-going since 1985. Waste Discharge Requirements (WDRs) Order 85-203 regulates the discharge of 0.45 million gallons per day (mgd) of citrus processing wastewater to the Land Application Site. Order 85-203 is out of date and needs to be updated to ensure that the discharge is consistent with current plans and policies of the Central Valley Water Board. In March 2012, the Discharger submitted a Report of Waste Discharge to facilitate update of the Order, which identified improvements made to the effluent disposal line to increase the reliability and capacity of the line and to allow for future increases from Sworlco and/or discharges from additional food processing facilities.

**Existing Plant and Discharge**

5. Wastewater generated from both CCPI and Vita-Pakt is collected and combined in a single concrete lined sump at the CCPI Plant. The collected wastewater is screened to remove solids and discharged via a six mile long pipeline to two unlined holding ponds at the Land Application Site. Solids removed from the waste stream are collected and sold as cattle feed.

6. Average wastewater flows to the Land Application Site are about 0.3 mgd. The City of Lindsay recently completed improvements to the effluent line to repair leaks and increase the reliability and capacity of the line. Annual flows to the Land Application Site for the years 2009 through 2011 ranged from about 40 to 70 million gallons.
7. Wastewater discharged to the Land Application Site consists of condensate from juice concentrate evaporators, refrigeration cooling water, and wash water. The following table presents wastewater quality data for the discharge collected from 2006 through 2011.

<u>Constituent</u>	<u>Units</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average</u>
pH	s.u	3.2	12.5	6.0
Electrical Conductivity (EC)	umhos/cm	300	3,600	1,600
Total Dissolved Solids (TDS)	mg/L	80	5,500	2,700
Biochemical Oxygen Demand (BOD)	mg/L	350	8,200	3,300
Nitrate as Nitrogen	mg/L	< 0.1	18	1.2
Total Kjeldahl Nitrogen	mg/L	8	200	52

8. The wastewater is held in the holding ponds and then blended with irrigation water at a ratio of 1 part wastewater to 4 parts well water prior to application on crops. The blended water is applied to the fields via flood irrigation. Crops grown in the fields include alfalfa and fodder crops such as wheat and corn silage. In accordance with its lease agreement with the City of Lindsay, the Trust, through its connection with Brower Dairies, Inc., manages the farming operation within the Land Application Site including blending and distribution of wastewater as well as planting and harvesting of the crops.
9. Excessive application of food processing wastewater to land can create objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater by overloading the soil profile and causing waste constituents (i.e., organic carbon, nitrates, other salts, and metals) to percolate below the root zone. Typically, irrigation with high strength wastewater can result in high BOD loading on the day of application, which can deplete oxygen in the soil and lead to anoxic conditions. When insufficient oxygen is present below the ground surface, anaerobic decay of organic matter can create reducing conditions that convert metals, naturally present in the soils as relatively insoluble (oxidized) forms to more soluble (reduced) forms. This condition can be exacerbated by acidic soils and/or acidic wastewater. If reducing conditions do not reverse as the percolate travels through the vadose zone, these dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. 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.

10. It is reasonable to expect some attenuation of various waste constituents that percolate below the root zone within the vadose (unsaturated) zone. Specifically, excess nitrogen can be mineralized and denitrified by soil microorganisms, organic constituents (measured as both BOD and volatile dissolved solids) can be oxidized, and the cation exchange capacity of the soil may immobilize some salinity constituents.
11. With an average nitrogen concentration of approximately 52 mg/L, the annual nitrogen load to the Land Application Site with an annual discharge of about 120 million gallons (based on a daily average discharge of 0.45 mgd for 264 days a year) would be about 240 lbs/acre/year. This is less than the annual nitrogen uptake of 480 lbs/acre/year for alfalfa and 425 lbs/acre/year for a double cropped field of corn and winter wheat (*Western Fertilizer Handbook*, 9th edition).
12. 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. *Pollution Abatement in the Fruit and Vegetable Industry*, published by the United States Environmental Protection Agency (USEPA Publication 625/3-77-0007), cites BOD loading rates for irrigation purposes in the range of 36 to 100 lbs/acre/day to prevent nuisance, but indicates that loading rates can be even higher under certain conditions. The studies that supported this report did not evaluate actual or potential groundwater degradation associated with those loading rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have are not readily adapted to varying soil, groundwater, and climate conditions prevalent throughout the region.
13. At the flow rate of 0.45 mgd and an average BOD concentration of 3,300 mg/L the average BOD loading rate to the Land Application Site for the application of citrus processing wastewater would be about 57 lbs/acre/day. To minimize the potential for reducing and/or nuisance conditions, this Order sets a cycle average BOD loading rate limit of 100 lbs/acre/day, and requires the Discharger(s) to prepare a Nutrient and Wastewater Management Plan to ensure application of wastewater at agronomic rates.
14. Domestic wastewater generated at the CCPI and Vita-Pakt Plants is discharged separately to the City of Lindsay's Wastewater Treatment Facility.

### **Site-Specific Conditions**

15. Source water for both CCPI and Vita-Pakt is provided by the City of Lindsay and is predominantly treated surface water from the Friant-Kern Canal. Groundwater from three municipal supply wells may be used to supplement supply during times when demand is high (summer months) or when the canal is shut down for maintenance. The 2010 Consumer Confidence Report for the City of Lindsay reported the following concentrations (calculated as a flow-weighted average for all sources): EC of 573 umhos/cm, TDS of 285 mg/L, and nitrate (as N) of 2.9 mg/L.

16. The Plants and Land Application Site are in an arid climate characterized by hot dry summers and mild winters. The rainy season generally extends from November through April. Occasional rains occur during the spring and fall months, but summer months are dry. Based on publications from the Department of Water Resources and the Western Regional Climate Center, the 100-year-return-period wet year rainfall is about 25.15 inches, and average annual rainfall is 12.57 inches. The evaporation (Class 'A' pan) is about 83 inches. The California Irrigation Management Information System (CIMIS) database reports an annual average potential evapotranspiration (ET<sub>o</sub>) of 52.8 inches for nearby Porterville.
17. United States Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey maps characterize approximately the top six feet of soil. Soils within the Land Application Site are primarily Quonal-Lewis Association and Flamen loam. These soils are moderately well drained with a saturated hydraulic conductivity between 0.01 and 0.2 inches per hour, and are non-saline to slightly saline with an irrigated land capability classification of III-s and II-s, respectively.
18. The Land Application Site is generally surrounded by agricultural land. According to a 1999 land use survey from the Department of Water Resources, primary crops grown in the area include hay and grain crops, corn, grapes, plums, and olives. North and west of the Land Application Site are two dairies including the Brower Dairy adjoining the site to the west and the Hilarides Dairy directly north of the site.
19. The former Lindsay Olive Growers Plant (1916-1992) discharged highly saline olive brine wastewater to two groups of ponds, owned and operated by the City of Lindsay, identified as the Eastside and Westside Brine Ponds. The Eastside Brine Ponds are approximately a half mile north and east of the Land Application Site adjacent to the City of Lindsay's Wastewater Treatment Facility. The Westside Brine Ponds are directly north and up-gradient of the Land Application Site. Lindsay Olive Grower's Eastside and Westside Brine Ponds were constructed or reconditioned in 1967 with a single 10 mil PVC liner. Prior to that, Lindsay Olive Growers discharged its olive brine wastewater to unlined ponds in the vicinity of the Eastside Brine ponds. Discharge to the ponds ceased in 1992 following closure of the Lindsay Olive Growers Plant.
20. Wastewater, characterized by excessive concentrations of sodium and chloride, migrated from the ponds, polluting groundwater in the area. Because of the effects on groundwater, the Central Valley Water Board issued Cleanup and Abatement Order (CAO) 92-708 to the City of Lindsay and Lindsay Olive Growers to retrofit or close all the ponds, characterize the nature and extent of groundwater degradation, and develop a Corrective Action Program. In 1999, Robert and Sharon Hilarides with the Sierra Cattle Company purchased the site of the Westside Brine Ponds from the City of Lindsay and proposed to close the ponds. Between 1999 and 2001, the Westside Brine Ponds were closed in accordance with Title 27, as a non-municipal solid waste landfill with a low-permeability earthen cover, leaving the brine impacted soil in place. Following closure, a 10,000 cow dairy (Hilarides Dairy) was constructed on top of the closed ponds. Closure and Post-Closure Maintenance of the Westside Brine Ponds is regulated by WDRs R5-2004-0084.

21. The City of Lindsay failed to complete all the tasks required by CAO 92-708, including closure of the Eastside Brine Ponds. In 2004, CAO 92-708 was replaced with CAO R5-2004-0175 for the Eastside Brine Ponds issued to the City of Lindsay and CAO R5-2004-0703 for the Westside Brine Ponds issued to the City of Lindsay and Robert and Sharon Hilarides. Order R5-2004-0715 requires the City to clean up and abate the effects of olive brine waste at the site of the Eastside Brine Ponds and to establish a groundwater Evaluation and Monitoring Program in conjunction with Order R5-2004-0175 for the West Side Brine Ponds to delineate the extent of groundwater degradation and prepare an engineering feasibility study for corrective action. Long term monitoring and maintenance of the former brine ponds and continued groundwater investigations and monitoring is on-going.
22. Federal Emergency Management Agency (FEMA) map number 06107C1305E for Tulare County (effective 16 June 2009) shows that a portion of the Land Application Site is within Flood Zone A, an area subject to potential flooding by a 100-year flood, though no base flood elevation or flood hazard factors have been determined. Flood control features on the nearby Lewis Creek and berms placed around the Land Application Site are intended to prevent inundation or runoff from the Land Application Site during floods.

### **Groundwater Considerations**

23. According to Department of Water Resources Groundwater Elevation Maps (Spring 2009), first-encountered groundwater beneath the Land Application Site occurs in an unconfined zone at about 45 feet below ground surface (bgs). A deeper confined zone occurs at about 180 feet bgs. Typically, both the shallow and deeper aquifers in the vicinity of the Land Application Site flow to the west-southwest. In recent years, groundwater monitoring in the vicinity of the site has shown occasional shifts in flow direction to the northwest, possibly from over pumping due to drought conditions.
24. Groundwater investigations show that groundwater quality underlying the area has been degraded by constituents characteristic of olive brine wastewater since prior to 1968, and have identified an extensive plume of highly saline groundwater in the vicinity of the site that has impaired beneficial uses of groundwater in the area.
25. Analytical data from monitoring wells in the vicinity of the Land Application Site, for the years 1999 through 2011, show EC, TDS, and chloride concentrations ranging from 2,000 to 4,000 umhos/cm, 1,200 to 3,000 mg/L, and 300 to 1,200 mg/L, respectively. The highest concentrations of these constituents have been detected up-gradient of the site, in MW-13 on the northeast boundary between the Former Eastside Brine Ponds and the Land Application Site.
26. Average nitrate as nitrogen ( $\text{NO}_3\text{-N}$ ) concentrations in groundwater range from 1.8 mg/L in MW-1 closest to the wastewater holding ponds to 17.2 mg/L in MW-12 down-gradient of the Land Application Site but immediately adjacent to the Brower Dairy wastewater lagoon. Nitrate as nitrogen concentrations in up-gradient monitoring well MW-13 ranges from 10 to 15 mg/L.

27. Monitoring well MW-1, immediately adjacent to the wastewater holding ponds, shows evidence of reducing conditions with manganese concentrations from 0.67 to 2.3 mg/L, exceeding secondary MCLs, and low nitrate and high alkalinity at 1.8 mg/L and 700 mg/L, respectively. However, reducing conditions appear to be limited to the area adjacent the wastewater holding ponds, since manganese concentrations are below secondary MCLs in monitoring wells down-gradient of MW-1 and the Land Application Site and alkalinity concentrations are also lower. In addition, iron concentrations in monitoring wells at the Land Application Site, including MW-1, are all below the secondary MCL of 0.3 mg/L.
28. This Order requires continued groundwater monitoring around the ponds and the Land Application Site to evaluate the extent of reducing conditions in groundwater beneath the wastewater holding ponds. If it is determined that the reducing conditions extend beyond the immediate vicinity of the ponds, the Discharger(s) may be required to line the ponds or further treat the wastewater.

#### **Basin Plan, Beneficial Uses, and Water Quality Objectives**

29. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004* (Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference, plans and policies of the State Water Board. In accordance with Water Code section 13263(a), these requirements implement the Basin Plan.
30. The Land Application Site lies within Detailed Analysis Unit (DAU) 242, within the Kaweah Basin Hydrologic Unit. The Basin Plan identifies the beneficial uses of groundwater in the DAU as municipal and domestic supply, agricultural supply, industrial service and process supply, and contact and non-contact recreation.
31. The Land Application Site is in the Kaweah Delta Hydrologic Area (No. 558.10) of the South Valley Floor Hydrologic Unit, as depicted on interagency hydrologic maps prepared by the State Water Resources Control Board and the Department of Water Resources, revised in August 1986.
32. The Basin Plan establishes narrative water quality objectives for Chemical Constituents, Taste and Odors, and Toxicity. The Toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.
33. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:

- a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC of the effluent discharged to land shall not exceed the EC of the source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources.
  - b. Discharges to areas that may recharge good quality groundwater shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or boron content of 1.0 mg/L.
34. Food processing wastewater may contain elevated concentrations of TDS resulting from the fruit and vegetable products or materials used for production. Typically, a percentage of the TDS is organic, which will generally decompose into its component elements and can be utilized by plants and microorganisms in the soil. In contrast, the FDS is that portion of the TDS which consists of inorganic constituents which can accumulate in the soil. Excessive salt is then leached to groundwater where it can degrade groundwater quality. Growing and harvesting crops provides a means to remove some of these constituents, particularly calcium, magnesium, potassium, phosphorus, nitrate, and ammonia.
35. The Basin Plan allows the Board to make exceptions to the presumptive EC limit of source water plus 500 umhos/cm for food processing industries, where the discharge exhibits a disproportionate increase in EC over source water due to unavoidable concentrations of organic dissolved solids from the raw food product. The Board may make this exception upon showing that the Discharger employs best available technology and best management practices that control inorganic solids to the maximum extent practicable. In June 2012, the Discharger collected a sample from its discharge showing a TDS of 4,000 mg/L and an FDS of 1,200 mg/L, indicating an unavoidable increase in EC due to concentrations of organic dissolved solids from the raw food product. The Discharger will provide treatment and control of the discharge that incorporates:
  - a. Use of cleaning products according to intended use described on labels;
  - b. Screening to remove solids prior to discharge to the wastewater holding ponds;
  - c. Recycling of wastewater for crop irrigation;
  - d. Blending of wastewater with normal irrigation water prior to application on crops;
  - e. Implementation of the Salinity Control Plan and Nutrient and Wastewater Management Plan required by Provisions F.14 and F.15 of this Order; and
  - f. Source water and discharge monitoring required by Monitoring and Reporting Program R5-2012-0122, a part of this Order.
36. These treatment and control measures represent a level of water quality protection measures consistent with those employed by comparable food processing facilities in the Central Valley, and the Board finds that the Discharger employs practices that control inorganic dissolved solids to the extent feasible. Therefore, an EC limit of source water plus 500 umhos/cm need not be applied to this discharge.

37. The Basin Plan Chemical Constituents water quality objective requires, at a minimum, waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of CCR. The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
38. The Basin Plan encourages the reuse of wastewater and identifies crop irrigation as a reuse option where the opportunity exists to replace an existing or proposed use of fresh water with recycled water.

### **Antidegradation Analysis**

39. State Water Board Resolution No. 68-16, the *Policy with Respect to Maintaining High Quality Water of the State* (the "Antidegradation Policy"), prohibits the Board from permitting the degradation of groundwater unless it has been shown that the degradation does not result in water quality less than that prescribed in state and regional policies, the degradation will not unreasonably affect present and anticipated future beneficial uses, the Discharger employs Best Practicable Treatment or Control (BPTC) to minimize degradation, and the degradation is consistent with the maximum benefit to the people of the State.
40. The discharge is not expected to cause groundwater degradation, since background groundwater quality is poor, and:
  - a. For organics, with an average BOD concentration of 3,300 mg/L, the average BOD loading rate to the Land Application Site at 0.45 mgd would be about 57 lbs/acre/day. Groundwater data for the area shows some evidence of reducing conditions in MW-1 adjacent to the two wastewater holding ponds with elevated alkalinity, and manganese concentrations above the secondary MCL of 0.05 mg/L. However, reducing conditions do not appear to be extensive, since monitoring wells both cross- and down-gradient of the ponds and the Land Application Site show no evidence of reducing conditions with lower alkalinity concentrations and manganese and iron concentrations below secondary MCLs.

To minimize the potential for reducing and/or nuisance conditions, this Order sets a BOD loading limit for the Land Application Site, and requires the Discharger(s) to prepare a Nutrient and Wastewater Management Plan. In addition, this Order requires continued groundwater monitoring around the ponds and the Land Application Site.
  - b. For nitrogen, nitrate (as N) concentrations in groundwater exceed the MCL of 10 mg/L both up-gradient and down-gradient of the Land Application Site. With an average nitrogen concentration of 52 mg/L, the nitrogen load to the Land Application Site at a maximum proposed volume of 120 million gallons annually would be about 240 lbs/acre/year. This loading rate is less than the annual nitrogen uptake for alfalfa and double cropped fields of wheat and corn silage. Given the potential for nitrogen losses within the wastewater holding ponds, and an expected nitrogen load to the Land Application Site that is less than crop requirements, the nitrogen concentration of the

discharge reaching groundwater is not expected to cause further degradation for nitrates.

- c. For salinity, groundwater has been degraded for salinity prior to 1968 due to the former discharge of olive brine wastewater from the Lindsay Olive Growers Plant to disposal ponds in the vicinity of the Land Application Site. Groundwater underlying the Land Application Site typically contains EC, TDS, and chloride concentrations in excess of water quality objectives. With an average EC of 1,600 umhos/cm, the EC of the discharge is of better quality than underlying groundwater and is not expected to cause further degradation of groundwater for salinity. Further, a portion of the EC of the discharge is from organic sources or from constituents beneficial for plant growth (particularly calcium, magnesium, potassium, phosphorus, nitrate, and ammonia) which will be further treated in the soil and removed by crops, and as such is not anticipated to contribute to groundwater degradation exceeding water quality objectives.

41. This Order is consistent with the Antidegradation Policy in that the discharge is not expected to result in groundwater degradation.

#### **CEQA**

42. On 12 April 1985, Tulare County, in accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) and the State CEQA guidelines (Division 6 of Title 14 of the California Code of Regulations, as amended) adopted a Negative Declaration for the discharge of citrus processing wastewater to the Land Application Site. The Negative Declaration determined that the project, as proposed, would not have a significant effect on water quality.
43. This Order includes specific conditions intended to mitigate or avoid environmental effects on water quality. Specifically, this Order:
  - a. Sets limits for flow and BOD loading to the Land Application Site;
  - b. Requires the application of wastewater be at agronomic rates and prohibits discharge in the event soils become saturated;
  - c. Establishes groundwater limitations;
  - d. Establishes a monitoring and reporting program; and
  - e. Requires the Discharger(s) to prepare and implement a Salinity Control Plan and a Nutrient and Wastewater Management Plan to control the salinity of the discharge and ensure application at agronomic rates.

### **Designated Waste and Title 27**

44. California Code of Regulations, title 27 (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste, which includes designated waste, as defined by Water Code section 13173. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to a provision that exempts wastewater under specific conditions. This exemption, found at Title 27, section 20090(b), is below:
- (b) Wastewater – Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:
    - (1) The applicable regional water quality control board has issued WDRs, reclamation requirements, or waived such issuance;
    - (2) The discharge is in compliance with applicable water quality control plan; and
    - (3) The wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.
45. The discharge authorized herein is exempt from the requirements of Title 27 in accordance with Title 27, section 20090(b) because:
- a. The Central Valley Water Board is issuing WDRs.
  - b. The discharge is in compliance with the Basin Plan, and;
  - c. The treated effluent discharged to the Land Application Site does not need to be managed as a hazardous waste.

### **Other Regulatory Considerations**

46. The annual fee for the discharge is based on a Threat to Water Quality rating of 2 and Complexity of A (Cal. Code Regs, tit 23, § 2200.). The Threat rating is based on the potential of the discharge to degrade water quality without violating water quality objectives, or cause a minor impairment of designated beneficial uses. The Complexity rating is based on the use of screens, wastewater ponds, and blending and reuse of the wastewater, which are forms of physical and biological treatment that add complexity to staff assessment.

### **General Findings**

47. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.
48. Water Code section 13267(b) states that:

In conducting an investigation specified in subdivision (a), the Central Valley Water 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 Central Valley Water 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 Central Valley Water 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.
49. The technical reports required by this Order and monitoring reports required by the attached MRP R5-2012-0122 are necessary to assure compliance with these waste discharge requirements. The Discharger operates the Plant that discharges the waste subject to this Order.
50. The DWR sets standards for the construction and destruction of groundwater wells, as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 94-81 (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to Water Code section 13801, apply to all monitoring wells.
51. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the conditions of discharge in this Order.

### **Public Notice**

52. The Discharger(s) and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
53. All comments pertaining to the discharge were heard and considered in a public meeting.

**IT IS HEREBY ORDERED** that, Waste Discharge Requirements Order 85-203 be rescinded and that, pursuant to sections 13263 and 13267 of the Water Code, the City of Lindsay, Sworlco, LP, and the Edward and Edna Brower Revocable Trust, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

**A. Prohibitions**

1. Discharge of waste, including storm water containing waste, to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated wastes, except as allowed by Standard Provisions E.2 in *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991, is prohibited.
3. Discharge of hazardous wastes, as defined in California Code of Regulations, title 22, section 66261.3, is prohibited. Discharge of waste classified as 'designated', as defined in Water Code section 13173, in a manner that causes violation of groundwater limitations, is prohibited.
4. Discharge of wastewater in a manner or location other than that described herein is prohibited.
5. Storage of solids on areas without means to prevent leachate generation and infiltration into the ground is prohibited.

**B. Discharge Specifications**

1. The monthly discharge flow rate shall not exceed an average of 0.45 million gallons per day (mgd).
2. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.
3. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
4. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
5. The Discharger(s) shall operate all systems and equipment to optimize the quality of the discharge.

6. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
7. Objectionable odors shall not be perceivable beyond the limits of the Plant or the Land Application Site at an intensity that creates or threatens to create nuisance conditions.
8. Wastewater storage ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the winter. 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, the available storage pond capacity shall at least equal the volume necessary to comply with Discharge Specification C.8.
10. All ponds shall be managed to prevent breeding of mosquitoes. In particular,
  - a. An erosion control plan should assure that coves and irregularities are not created around the perimeter of the water surface.
  - b. Weeds shall be minimized through control of water depth, harvesting, and herbicides.
  - c. Dead algae, vegetation and other debris shall not accumulate on the water surface.
  - d. The Discharger(s) 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. The Discharger(s) shall monitor solids accumulation in the wastewater treatment/storage ponds, and shall periodically remove solids as necessary to maintain adequate treatment and storage capacity.

**C. Land Application Site Specifications**

1. For the purpose of this Order, "Land Application Site" refers to the discharge area described in Finding 3.
2. The perimeter of the Land Application Site shall be graded to prevent ponding along public roads or other public areas and prevent runoff or overspray onto adjacent properties not owned or controlled by the Discharger(s).
3. Crops shall be grown on the Land Application Site. Crops shall be selected based on nutrient uptake, consumptive use of water, and irrigation requirements to maximize crop uptake.

4. Average BOD loading to the Land Application Site shall not exceed 100 lbs/acre/day, both long term and over the course of any discharge cycle (i.e., the time between successive applications).
5. 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).
6. Application of waste constituents shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering the crop, soil, climate, and irrigation management. The annual nutritive loading to the Land Application Site, including the nutritive value of organic and chemical fertilizers and of the wastewater, shall not exceed the annual crop demand.
7. The resulting effect of the discharge on soil pH shall not exceed the buffering capacity of the soil profile.
8. The Discharger(s) may not apply process wastewater to the Land Application Site within 24 hours of a storm event of measurable precipitation or when soils are saturated.
9. The Land Application Site shall be managed to prevent breeding of mosquitoes. More specifically:
  - a. All applied irrigation water must infiltrate completely within 48-hours;
  - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation; and
  - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.

#### **D. Solids Specifications**

1. Any handling and storage of residual solids on property of the Discharger(s) 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.
2. Fruit skins, pulp and other solids shall be removed from sumps, screens, wastewater ponds, etc. as needed to ensure optimal operation and adequate hydraulic capacity. Solids drying operations, if any, shall be designed and operated to prevent leachate generation.
3. Collected screenings and other solids removed from the liquid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, rendering plants, composting

sites, soil amendment sites) operated in accordance with valid waste discharge requirements adopted by a regional water quality control board will satisfy this specification.

4. 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.

#### **E. Groundwater Limitations**

1. Release of waste constituents from any treatment, reclamation, or storage component associated with the discharge shall not cause or contribute to groundwater:
  - a. Containing constituent concentrations in excess of the concentrations specified below or background quality, whichever is greater:
    - (i) Nitrate (as N) of 10 mg/L.
    - (ii) For constituents identified in Title 22, the MCLs quantified therein.
  - b. Containing taste or odor-producing constituents, toxic substances, or any other chemical constituents in concentrations that cause nuisance or adversely affect beneficial uses.

#### **F. Provisions**

1. The Discharger(s) shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions), which are part of this Order.
2. The Discharger(s) shall comply with MRP R5-2012-0122, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.
3. The Discharger(s) shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
4. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger(s), the Discharger(s) shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the appropriate Central Valley Water Board office (currently, the Fresno office).
5. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation,

the address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

6. The Discharger(s) shall keep at the Plant a copy of this Order, including its MRP, Information Sheet, attachments, and Standard Provisions, for reference by operating personnel. Key operating personnel shall be familiar with its contents.
7. The Discharger(s) must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger(s) shall submit to the Central Valley Water Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger(s) will be in compliance. The Discharger(s) shall notify the Central Valley Water Board by letter 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.
8. The Discharger(s) must 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(s) to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This Provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger(s) only when the operation is necessary to achieve compliance with the conditions of this Order.
9. The Discharger(s) shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.
10. The Discharger(s) shall maintain and operate surface impoundments sufficiently to protect the integrity of containment levees and prevent overtopping or overflows. Unless a California registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard shall never be less than two feet (measured vertically). As a means of management and to discern compliance with this Provision, the Discharger(s) shall install and maintain a permanent marker with calibration that indicates the water level at the design capacity and enables determination of available operational freeboard.

11. As a means of discerning compliance with Discharge Specification B.7, the dissolved oxygen (DO) content in the upper one foot of any wastewater pond shall not be less than 1.0 mg/L for three consecutive sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the Discharger(s) shall report the findings to the Central Valley Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.
12. The Discharger(s) shall submit the technical reports and work plans required by this Order for Central Valley Water Board staff consideration and incorporate comments they may have in a timely manner, as appropriate. The Discharger(s) shall proceed with all work required by the following provisions by the due dates specified.
13. All technical reports and work plans required herein 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. As required by these laws, completed technical reports and work plans must bear the signature(s) and seal(s) of the registered professionals(s) in a manner such that all work can be clearly attributed to the professional responsible for the work. All reports required herein are required pursuant to Water Code section 13267.
14. **By 7 June 2013**, the Discharger(s) shall submit a Salinity Control Plan, with salinity source reduction goals and an implementation time schedule for Executive Officer approval. The control plan should identify any additional methods that could be used to further reduce the salinity of the discharge to the maximum extent feasible, include an estimate on load reductions that may be attained through the methods identified, and provide a description of the tasks, cost, and time required to investigate and implement various elements in the salinity control plan. The Discharger(s) shall implement the plan in accordance with the approved schedule.
15. **By 7 June 2013**, the Discharger(s) shall submit a Nutrient and Wastewater Management Plan. At a minimum the Plan must include procedures for monitoring the Land Application Site including daily records of wastewater applications and acreages, an action plan to deal with objectionable odors and/or nuisance conditions, a discussion on blending of wastewater and supplemental irrigation water, supporting data and calculations for monthly and annual water and nutrient balances, and management practices that will ensure wastewater, irrigation water, and commercial fertilizers are applied at agronomic rates.
16. If the Central Valley Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of an objective for groundwater, this Order may be reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for potential constituents.

17. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan amendment that will establish a salt and nitrate management plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objectives are to be interpreted for the protection of agricultural use. If new information or evidence indicates that groundwater limitations different than those prescribed herein are appropriate, this Order will be reopened to incorporate such limits.
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, and may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

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

[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality/](http://www.waterboards.ca.gov/public_notices/petitions/water_quality/)

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 7 December 2012.

Original signed by

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PAMELA C. CREEDON, Executive Officer

Order Attachments:

A Site Location Map  
Monitoring and Reporting Program R5-2012-0122  
Information Sheet  
Standard Provisions (1 March 1991)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2012-0122  
FOR  
CITY OF LINDSAY, SWORLCO, LP, AND  
EDWARD AND EDNA BROWER REVOCABLE TRUST  
SWORLCO LAND APPLICATION SITE  
TULARE COUNTY

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

The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with ***Standard Provisions and Reporting Requirements for Waste Discharge Requirements***, dated 1 March 1991 (Standard Provisions).

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

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

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, the Discharger(s) 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 within this MRP is included on page 9.

### EFFLUENT MONITORING

Samples shall be collected at the Land Application Site prior to the first point of discharge to the wastewater holding ponds. Time of collection of the sample shall be recorded. Effluent monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Daily	Flow	mgd	Continuous
Weekly	pH	pH Units	Grab
Weekly	EC	umhos/cm	Grab
Monthly	BOD <sub>5</sub>	mg/L	Grab
Monthly	TDS	mg/L	Grab
Monthly	FDS	mg/L	Grab
Monthly	Nitrate as N	mg/L	Grab
Monthly	TKN	mg/L	Grab
Monthly	Ammonia	mg/L	Grab
Monthly	Total Nitrogen	mg/L	Computed
Quarterly <sup>1</sup>	General Minerals	mg/L	Grab

<sup>1</sup> In January, April, July, and October.

### POND MONITORING

Permanent markers (e.g. staff gauges) shall be placed in all ponds. The markers shall have calibrations indicating the water level at design capacity and available operational freeboard. For each wastewater pond, monitoring shall include at least the following:

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

<sup>1</sup> To nearest tenth of a foot

<sup>2</sup> If there is less than 1 foot of water in the ponds no sample shall be collected for dissolved oxygen.

The Discharger(s) shall inspect the condition of wastewater ponds weekly and record observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether grease, dead algae, vegetation, scum, or debris are accumulating on the pond surface and their location; whether odors are emanating from the pond and their strength (e.g. pungent sour smell noticeable from 100 feet away, mild organic odor at pond surface, etc.); whether burrowing animals or insects are present; and the color of the wastewater (e.g., dark green, dull green, yellow, gray, tan, brown, etc.). A summary of the entries made in the log shall be included in the subsequent monitoring report.

### SOURCE WATER MONITORING

For each source (either well or surface water supply), the Discharger(s) shall calculate the flow-weighted average concentrations for the specified constituents.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Annually	Flow-Weighted EC	umhos/cm	Computed Average

### LAND APPLICATION SITE MONITORING

The Discharger(s) shall perform the following routine monitoring and loading calculations for each discrete irrigation area within the Land Application Site. Table 1 in the back of this MRP can be used as a way to keep track of applications to individual fields/parcels. The data shall be collected and presented in tabular format and shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Daily	Application Area	acres	n/a
Daily	Wastewater flow	gallons	Metered
Daily	Wastewater loading	inches/day	Calculated
Daily	Supplemental irrigation	gallons	Estimated
Daily	Precipitation	inches	Rain gage <sup>1</sup>
Monthly	Total Hydraulic Loading <sup>2</sup>	inches/acre-month	Calculated
<u>BOD Loading<sup>3</sup></u>			
Daily	Day of Application	lbs/acre	Calculated
Monthly	Cycle Average <sup>4</sup>	lbs/acre/day	Calculated
<u>Nitrogen loading<sup>3</sup></u>			
Monthly	From wastewater	lbs/acre	Calculated
Monthly	From fertilizers	lbs/acre	Calculated
Annually	Cumulative	lbs/acre-year	Calculated
<u>Salt loading<sup>3</sup></u>			
Monthly	From wastewater	lbs/acre	Calculated
Annually	Cumulative	lbs/acre-year	Calculated

<sup>1</sup> National Weather Service or CIMIS data from the nearest weather station is acceptable.

<sup>2</sup> Combined loading from wastewater, irrigation water, and precipitation.

<sup>3</sup> Loading rates shall be calculated using the applied volume of wastewater, applied acreage, and average effluent concentrations for BOD, total nitrogen, and FDS.

<sup>4</sup> The BOD loading rate shall be divided by the # of days between applications to determine the cycle average.

In addition, the Discharger(s) shall inspect the Land Application Site on a weekly basis. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions (i.e., flies, ponding, etc.) shall be noted in field logs and included as part of the quarterly monitoring reports.

## GROUNDWATER MONITORING

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

The Discharger(s) shall monitor all wells within its Groundwater Monitoring Network, specifically: MW-1, MW-11, MW-12, MW-13, and MW-16D and any subsequent or additional wells installed in or around the Land Application Site for the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Semiannually	Depth-to-Water	Feet <sup>1</sup>	Measured
Semiannually	Groundwater Elevation	Feet <sup>2</sup>	Computed
Semiannually	pH	s.u.	Grab
Semiannually	EC	umhos/cm	Grab
Semiannually	Nitrate (as N)	mg/L	Grab
Semiannually	Total Kjeldahl Nitrogen	mg/L	Grab
Semiannually	Total Nitrogen	mg/L	Computed
Semiannually	General Minerals <sup>3</sup>	mg/L	Grab
Semiannually	Iron <sup>3</sup>	mg/L	Grab
Semiannually	Manganese <sup>3</sup>	mg/L	Grab
Semiannually	Arsenic <sup>3</sup>	mg/L	Grab
Semiannually	Total Organic Carbon	mg/L	Grab

<sup>1</sup> To the nearest tenth of a foot.

<sup>2</sup> Groundwater elevation shall be determined based on the depth-to-water measurements from a surveyed measuring point.

<sup>3</sup> Samples collected for analysis of metals shall be filtered using a 0.45 micron filter prior to preservation, digestion, and analysis.

## REPORTING

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

First Quarter Monitoring Report:	<b>1 May</b>
Second Quarter Monitoring Report:	<b>1 August</b>
Third Quarter Monitoring Report:	<b>1 November</b>
Fourth Quarter Monitoring Report:	<b>1 February.</b>

**A transmittal letter shall accompany each monitoring report.** The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or Plant modifications. If the Discharger(s) previously submitted a report

describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

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

City of Lindsay, Sworlco, LP, and Edward and Edna Brower Revocable Trust  
Sworlco Land Application Site  
R5-2012-0122  
Contact Information (telephone number and email)

In reporting monitoring data, the Discharger(s) shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger(s) complies with waste discharge requirements.

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

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

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3. For a Discharger(s) conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

All monitoring reports that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

At any time henceforth, the State or Central Valley Regional Water Board may notify the Discharger(s) to electronically submit monitoring reports using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>) or similar system. Until such notification is given, the Discharger(s) shall submit hard copy monitoring reports.

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

**Wastewater reporting**

1. Tabulated results of effluent and pond monitoring specified on page 2.

2. For each month of the quarter, calculation of the maximum daily flow, monthly average flow, and cumulative annual flow.
3. A summary of the notations made in the pond monitoring log during each quarter. The entire contents of the log do not need to be submitted.

#### **Land application site reporting**

1. The results of the routine monitoring and loading calculations specified on page 3.
2. For each month of the quarter, calculation of the monthly hydraulic load for wastewater and supplemental irrigation water in millions of gallons to each discrete irrigation area.
3. A summary of the notations made in the Land Application Site monitoring log during each quarter. The entire contents of the log do not need to be submitted.

#### **Groundwater reporting**

1. The results of the groundwater monitoring specified on page 4. Results for the semiannual sampling event shall be reported in the quarterly report the sample was collected in. If there is insufficient water in the well(s) for sampling the monitoring well(s) shall be reported as dry.
2. For each monitoring well, provide a table showing depth, elevation, and constituent concentrations for at least five previous years, up through the current sampling event.
3. A groundwater contour map based on groundwater elevations for that sampling event. The map shall show the gradient and flow direction of groundwater flow. The map shall include the location of all monitoring wells and wastewater storage and/or disposal areas.

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

#### **Facility information**

1. The names and general responsibilities of all persons in charge of wastewater management and reuse.
2. The names and telephone numbers of persons to contact regarding the discharge for emergency and routine situations.
3. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (Standard Provision C.4).
4. A summary of any changes in processing that might affect waste characterization and/or discharge flow rates.

### **Solids reporting**

1. Annual production totals for solids (excluding trash and recyclables) in dry tons or cubic yards.
2. A description of disposal methods, including the following information related to the disposal methods used. If more than one method is used, include the percentage disposed of by each method.
  - a. For landfill disposal, include: the name and location of the landfill, and the Order number of WDRs that regulate it.
  - b. For land application, include: the location of the site, and the Order number of any WDRs that regulate it.
  - c. For incineration, include: the name and location of the site where incineration occurs, the Order number of WDRs that regulate the site, the disposal method of ash, and the name and location of the facility receiving ash (if applicable).
  - d. For composting, include: the location of the site, and the Order number of any WDRs that regulate it.
  - e. For animal feed, include: the location of the site, and the Order number of any WDRs that regulate it.

### **Source water reporting**

1. The results of annual monitoring for EC specified on page 3. Results must include supporting calculations, if required.

### **Land application site reporting**

1. The type of crop(s) grown at the Land Application Site, planting and harvest dates, and the quantified nitrogen and fixed dissolved solids uptakes (as estimated by technical references or, preferably, determined by representative plant tissue analysis).
2. The monthly and annual discharge volumes during the reporting year expressed as million gallons and inches.
3. A monthly balance for the reporting year that includes:
  - a. Monthly average  $ET_o$  (observed evapotranspiration) – Information sources include California Irrigation Management Information System (CIMIS) <http://www.cimis.water.ca.gov/>
  - b. Monthly crop uptake

- i. Crop water utilization rates are available from a variety of publications available from the local University of California Davis extension office.
  - ii. Irrigation efficiency – Frequently, engineers include a factor for irrigation efficiency such that the application rate is slightly greater than the crop utilization rate. A conservative design does not include this value.
  - c. Monthly average precipitation – this data is available at <http://www.cimis.water.ca.gov/> or at <http://www.ncdc.noaa.gov/oa/climate/online/ccd/nrmlprcp.html>.
  - d. Monthly average and annual average discharge flow rate.
  - e. Monthly estimates of the amount of wastewater percolating below the root zone (i.e., amount of wastewater applied in excess of crop requirements).
4. A summary of daily and cycle average BOD loading rates for the year.
  5. The total pounds of nitrogen applied to the Land Application Site, as calculated from the sum of the monthly loadings, and the total annual nitrogen loading to the Land Application Site in lbs/acre-year.
  6. The total pounds of fixed dissolved solids (FDS) that have been applied to the Land Application Site, as calculated from the sum of the monthly loadings, and the total annual FDS loading to the Land Application Site in lbs/acre-year.

The Discharger(s) shall implement the above monitoring program on the first day of the quarter following adoption of this Order.

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

\_\_\_\_\_  
(Date)

## GLOSSARY

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

**Table 1. Land Application Site Monitoring**

Wastewater Reuse Monitoring Data For Year: _____ Field/Parcel No. _____								
_____ acres								
Month	Crop	Water application				Nitrogen application		
		Water required	Effluent used	Other water used	Total irrigation water	As fertilizer	As effluent*	Total nitrogen applied
		(AF)	(AF)	(AF)	(AF)	(lbs/acre)	(lbs/acre)	(lbs/acre)
October								
November								
December								
Subtotal:								
January								
February								
March								
Subtotal:								
April								
May								
June								
Subtotal:								
July								
August								
September								
Subtotal:								
Annual Total:								
* calculated as (AF effluent/acre) x (2.72) x (X mg/L total nitrogen) = lbs nitrogen/acre								

## INFORMATION SHEET

INFORMATION SHEET - ORDER R5-2012-0122  
CITY OF LINDSAY, SWORLCO, LP, AND  
EDWARD AND EDNA BROWER REVOCABLE TRUST  
SWORLCO LAND APPLICATION SITE  
TULARE COUNTY

### Background

The City of Lindsay and Sworlco, LP, operate a Land Application Site for the discharge of citrus processing wastewater on the southwest corner of Road 188 and Avenue 240 in Tulare County. Wastewater discharged to the Land Application Site is from Sworlco's processing plants operated by California Citrus Pulp, Inc. (CCPI), which manufactures orange juice concentrate and Vita-Pakt, which processes fresh kiwi and citrus peels for purees and marmalades.

The Land Application Site consists of three contiguous parcels which total approximately 216 acres. The center parcel, Assessor's Parcel Number (APN) 197-050-005 is owned by Sworlco. The other two parcels APN 197-050-004 and 197-050-006 are owned by Edward and Edna Brower Revocable Trust (Trust) identified as a Co-Discharger in this Order. The City of Lindsay has signed a long term lease agreement with Edward and Edna Brower the trustees for the Trust to accept and manage the Land Application Site for the discharge of citrus processing wastewater until the year 2060.

The discharge of citrus processing wastewater to the Land Application Site is currently regulated by Waste Discharge Requirements (WDRs) Order 85-203, which authorizes an average monthly discharge of up to 0.45 million gallons per day (mgd) to the 216 acre Land Application Site. Order 85-203 is over 25 years old and is backlogged for review and updating. In March 2012 the Discharger submitted a Report of Waste Discharge to facilitate update of the Order, which identified improvements made to the effluent disposal line to increase the reliability and capacity of the line and to allow for future increases from Sworlco and/or discharges from additional food processing facilities.

### Existing Plant and Discharge

Wastewater discharged to the Land Application Site consists of condensate from the juice concentrate evaporators, refrigeration cooling water, and wash water. Average wastewater flows to the Land Application Site are about 0.3 million gallons per day (mgd). The City of Lindsay recently completed improvements in the effluent line to increase the capacity and reliability of the line. The following table presents wastewater quality data for the discharge collected from 2006 through 2011.

<u>Constituent</u>	<u>Unit</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average</u>
pH	s.u.	3.2	12.5	6.0
Electrical Conductivity (EC)	umhos/cm	300	3,600	1,600
Total Dissolved Solids (TDS)	mg/L	80	5,500	2,700
Biochemical Oxygen Demand (BOD)	mg/L	350	8,200	3,300
Nitrate as Nitrogen	mg/L	< 0.1	18	1.2
Total Kjeldahl Nitrogen	mg/L	8	200	52

Wastewater generated from both CCPI and Vita-Pakt is collected and combined in a single concrete lined sump at the CCPI Plant. The collected wastewater is screened to remove solids and discharged via a six mile long pipeline to two unlined holding ponds at the Land Application Site. The wastewater is blended with irrigation water at a ratio of 1 part wastewater to 4 parts well water prior to application on crops. The blended water is applied to the fields via flood irrigation. Crops grown in the fields include grains and alfalfa. In accordance with the lease agreement with the City of Lindsay the Trust through its connection with Brower Dairies, Inc., manages the farming operation within the Land Application Site including blending and distribution of wastewater as well as planting and harvesting of the crops. The City of Lindsay handles sample collection and recordkeeping.

Solids removed from the waste stream are collected and sold as cattle feed.

Source water for both CCPI and Vita-Pakt is provided by the City of Lindsay and is predominantly treated surface water from the Friant-Kern Canal. Groundwater from three municipal supply wells may be used to supplement supply during times when the demand is high (summer months) or when the canal is shut down for maintenance. The 2010 Consumer Confidence Report for the City of Lindsay reported the following concentrations (calculated as a flow-weighted average for all sources): EC of 573 umhos/cm, TDS of 285 mg/L, and nitrate (as N) of 2.9 mg/L.

### **Groundwater Conditions**

According to the Department of Water Resources Groundwater Elevation Maps (Spring 2009), first-encountered groundwater beneath the Land Application Site occurs in an unconfined zone at about 45 feet below ground surface (bgs). A deeper confined zone occurs at about 180 feet bgs. Typically, both the shallow and deeper aquifers in the vicinity of the Land Application Site flow to the west-southwest. In recent years, groundwater monitoring in the vicinity of the site has shown occasional shifts to the northwest, possibly from over pumping due to drought conditions.

Historically, Lindsay Olive Growers discharged its highly saline olive brine wastewater to two groups of ponds owned and operated by the City of Lindsay, identified as the Eastside and Westside Brine Ponds in the vicinity of the Land Application Site. Wastewater, characterized by excessive concentrations of sodium and chloride, migrated from the ponds, polluting groundwater. Groundwater investigations have identified an extensive plume of highly saline groundwater that has impaired the beneficial uses of groundwater in the area. Analytical data from monitoring wells in the vicinity of the Land Application Site, for the years 1999 through 2011, show EC, TDS, and chloride concentrations ranging from 2,000 to 4,000 umhos/cm, 1,200 to 3,000 mg/L, and 300 to 1,200 mg/L, respectively. The highest concentrations of these constituents have been detected up-gradient of the site, in MW-13 on the northeast boundary between the Former Eastside Brine Ponds and the Land Application Site.

Average nitrate as nitrogen (NO<sub>3</sub>-N) concentrations in groundwater range from 1.8 mg/L in MW-1 closest to the wastewater holding ponds to 17.2 mg/L in MW-12 down-gradient of the Land Application Site but immediately adjacent to the Brower Dairy wastewater lagoon. Nitrate as nitrogen concentrations in up-gradient monitoring well MW-13 ranges from 10 to 15 mg/L.

Monitoring well MW-1, immediately adjacent to the wastewater holding ponds, shows evidence of reducing conditions with manganese concentrations exceeding secondary MCLs ranging from 0.67 to 2.3 mg/L, and low nitrate and high alkalinity at 1.8 mg/L and 700 mg/L, respectively. However, reducing conditions appear to be limited to the area adjacent to the wastewater holding ponds, since manganese concentrations are below secondary MCLs in monitoring wells down-gradient of MW-1 and the Land Application Site and alkalinity concentrations are also lower. In addition, iron concentrations in monitoring wells at the Land Application Site, including MW-1, are all below the secondary MCL of 0.3 mg/L.

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

The Basin Plan identifies the greatest long-term water quality problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated by man's activities and particularly affected by intensive irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including the following discharge limits:

- a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC of the effluent discharged to land shall not exceed the EC of the source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources.
- b. Discharges to areas that may recharge good quality groundwater shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or boron content of 1.0 mg/L.

The Basin Plan establishes narrative water quality objectives for groundwater for Chemical Constituents, Taste and Odors, and Toxicity. The Toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.

The Basin Plan Chemical Constituents water quality objective requires, at a minimum, waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of CCR. 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.

### **Antidegradation**

As discussed previously under groundwater conditions, groundwater quality underlying the area has been degraded for salinity since prior to 1968 as a result of the discharge of olive brine wastewater by the former Lindsay Olive Growers. Constituents of concern in the discharge (those with the greatest potential to affect beneficial uses) include organics, nutrients, and salts.

- a. For organics, with an average BOD concentration of 3,300 mg/L, the average BOD loading rate to the Land Application Site at 0.45 mgd would be about 57 lbs/acre/day. Groundwater data for the area shows some evidence of reducing conditions in MW-1 adjacent to the two

wastewater holding ponds with elevated alkalinity, and manganese concentrations above the secondary MCL of 0.05 mg/L. However, reducing conditions do not appear to be extensive, since monitoring wells both cross- and down-gradient of the ponds and the Land Application Site show no evidence of reducing conditions with lower alkalinity concentrations and manganese and iron concentrations below secondary MCLs.

To minimize the potential for reducing and/or nuisance conditions, this Order sets a BOD loading limit for the Land Application Site, and requires the Discharger(s) to prepare a Nutrient and Wastewater Management Plan. In addition, this Order requires continued groundwater monitoring around the ponds and the Land Application Site.

- b. For nitrogen, nitrate (as N) concentrations in groundwater exceed the MCL of 10 mg/L both up-gradient and down-gradient of the Land Application Site. With an average nitrogen concentration of 52 mg/L, the nitrogen load to the Land Application Site at a maximum proposed volume of 120 million gallons annually would be about 240 lbs/acre/year. This loading rate is less than the annual nitrogen uptake for alfalfa and double cropped fields of wheat and corn silage. Given the potential for nitrogen losses within the wastewater holding ponds, and an expected nitrogen load to the Land Application Site that is less than crop requirements, the nitrogen concentration of the discharge reaching groundwater is not expected to cause further degradation for nitrates.
- c. For salinity, groundwater has been degraded for salinity since prior to 1968, due to the former discharge of olive brine wastewater from the Lindsay Olive Growers Plant. Groundwater underlying the Land Application Site typically contains EC, TDS, and chloride concentrations in excess of water quality objectives. With an average EC of 1,600 umhos/cm, the EC of the discharge is of better quality than underlying groundwater at 2,000 to 4,000 umhos/cm and is not expected to cause further degradation of groundwater for salinity. Further, a portion of the EC of the discharge is from organic sources or from constituents beneficial for plant growth (particularly calcium, magnesium, potassium, phosphorus, nitrate, and ammonia) which will be further treated in the soil and removed by crops, and as such is not anticipated to contribute to groundwater degradation exceeding water quality objectives.

This Order establishes terms and conditions to ensure that the discharge does not unreasonably affect present and anticipated future beneficial uses of groundwater or result in groundwater quality worse than background or the water quality objectives set forth in the Basin Plan. This Order is consistent with the Antidegradation policy because the discharge is not expected to result in groundwater degradation.

#### **CEQA**

On 12 April 1985, Tulare County, in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et, seq.) and the State CEQA guidelines (Title 14, Division 6, California Code of Regulations, as amended) adopted a Negative Declaration for the discharge of citrus processing wastewater to approximately 216 acres of agricultural land.

### **Title 27**

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

- a. The Central Valley Water Board is issuing WDRs;
- b. The discharge is in compliance with the Basin Plan; and
- c. The treated effluent does not need to be managed as hazardous waste.

In addition, the reuse of process wastewater for irrigation as authorized by this Order is exempt from Title 27 under section 20090(h) for Reuse, since the wastewater is contained and treated to make it suitable for direct beneficial reuse and is discharged in a manner consistent with crop requirements.

## **Proposed Order Terms and Conditions**

### **Discharge Prohibitions, Specifications and Provisions**

The proposed Order prohibits discharge to surface waters and drainage courses. The proposed Order limits monthly average discharge flow to 0.45 million gallons per day (mgd).

The proposed Order includes a cycle BOD loading limit such that the loading to the Land Application Site shall not exceed 100 lbs BOD/acre/day in order to prevent nuisance conditions and limit the potential for reducing conditions to develop in soil. In addition, the proposed Order requires the Discharger(s) to prepare a Salinity Control Plan and a Nutrient and Wastewater Management Plan to control the salinity of the discharge and ensure application at agronomic rates.

The proposed Order requires monitoring of the wastewater ponds to reduce the potential for nuisance conditions and organic overloading. The Order also requires a detailed accounting of wastewater application to the Land Application Site. For each discrete area to which wastewater is applied, the Order requires calculated hydraulic loading rates, and loading rates for biochemical oxygen demand, nutrients, and salt.

The proposed Order would prescribe groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedances of these objectives or natural background water quality, whichever is greater. The proposed Order sets a groundwater limit for nitrate at the Primary MCL of 10 mg/L.

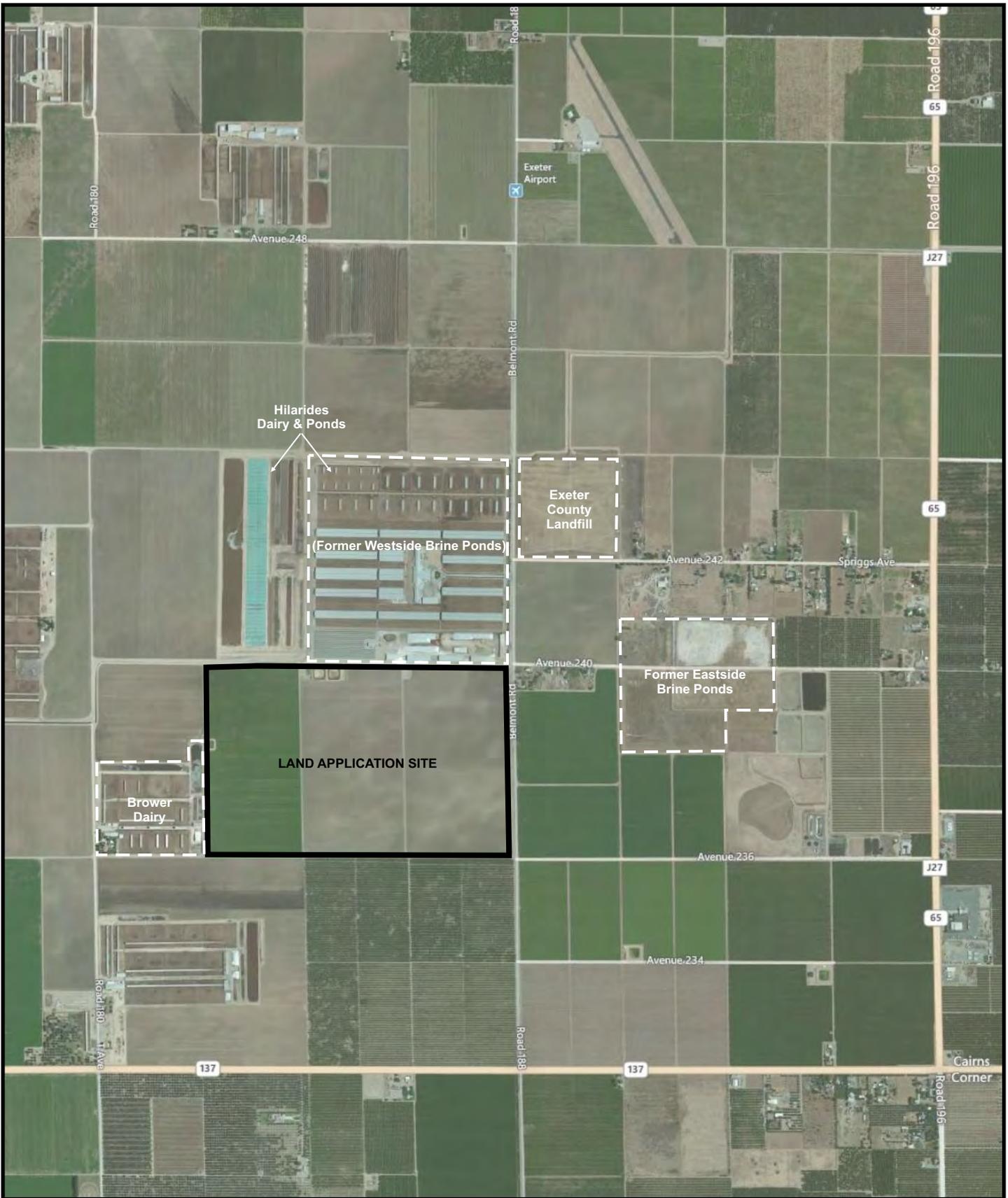
### **Monitoring Requirements**

Water Code section 13267 authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State. In recent years, there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Water Code section 13268 authorizes the assessment of administrative civil liability where appropriate. The proposed Order includes effluent and pond monitoring requirements. In addition, the proposed Order requires groundwater monitoring and monitoring of the Land Application Site and loading calculations for organics, nutrients, and salts.

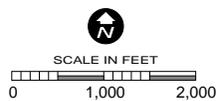
This monitoring is necessary to characterize the discharge, and evaluate compliance with effluent limitations and discharge specifications prescribed in the Order.

**Reopener**

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. It may be appropriate to reopen the Order if new technical information is provided or if applicable laws and regulations change.



Map Source:  
 ESRI's ArcGIS Online Premium Services  
 Section 4, T20S, R26E, MDB&M



**SITE MAP**  
 WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2012-0122  
 FOR  
 CITY OF LINDSAY, SWORLCO, LP, AND  
 EDWARD AND EDNA BROWER REVOCABLE TRUST  
 SWORLCO LAND APPLICATION SITE  
 TULARE COUNTY

**ATTACHMENT A**