

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-0160

WASTE DISCHARGE REQUIREMENTS

FOR
FRIANT RANCH, A LIMITED PARTNERSHIP
FRESNO COUNTY WATERWORKS DISTRICT NO. 18
SWD INVESTMENTS, INC.
FRIANT RANCH WASTEWATER TREATMENT FACILITY
FRESNO COUNTY

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

1. Friant Ranch, L.P., a limited partnership, Fresno County Waterworks District No. 18, and SWD Investments, Inc., submitted a Report of Waste Discharge (RWD), dated December 2012, and applied for Waste Discharge Requirements (WDRs) to discharge up to an average dry weather flow of 0.80 million gallons per day (mgd) of treated wastewater from a proposed wastewater treatment facility (WWTF) to a storage pond. Treated wastewater in the storage pond is proposed to be used for landscape and agricultural irrigation on up to three "Use Areas." The RWD was deemed complete on 7 June 2013.
2. Included with the RWD was a report titled, *Groundwater Conditions at and in the Vicinity of the Beck Ranch, November 2012* (Groundwater Study) prepared by Kenneth D. Schmidt & Associates. The Groundwater Study evaluated whether or not a hydraulic connection exists between the San Joaquin River and an existing mining excavation proposed to be used as a storage pond for WWTF effluent.
3. The new WWTF will treat domestic wastewater generated from the proposed Friant Ranch master-planned community (referred to as Friant Ranch), the existing Millerton Lake Village Mobile Home Park, and will provide capacity to treat existing and planned future uses of the Friant Community Plan area. The WWTF will be built in phases. Phase 1 will be designed to treat and discharge up to 0.40 mgd. Phase 2, with an additional 0.40 mgd capacity, will be constructed as demand warrants.
4. Each entity shall hereafter be referred to individually ("Friant Ranch, L.P.," "WWD No. 18," or "SWD Investments, Inc.") or jointly as "Discharger." Friant Ranch, L.P., WWD No. 18, and SWD Investments, Inc., shall be responsible for compliance with these Waste Discharge Requirements as it applies to each entity's specific operation and identified responsibilities as described in [Findings 5 through 7](#) below.
5. Friant Ranch, L.P., the project developer, proposes to hire a third party to design, build and operate the WWTF, and plans to transfer ownership and operation of the

WWTF to WWD No. 18 at the time of startup. Friant Ranch, L.P., will be responsible for distribution and application of recycled water (through the Friant Ranch Homeowners Association) at Friant Ranch.

6. WWD No. 18 will be the public district charged with providing wastewater collection, treatment and disposal service to Friant Ranch and its surrounds. WWD No. 18 will have a long-term contractual relationship with Friant Ranch, L.P., to provide water and wastewater service to the new development as it is built. WWD No. 18 has annexed the land where Friant Ranch will be built into its service area. It is anticipated that WWD No. 18 will continue to hire a contractor to operate the WWTF even after ownership and operation of the WWTF has been transferred to WWD No. 18 from Friant Ranch, L.P. WWD No. 18 will be responsible for operation, through a contractor, of the WWTF and will deliver treated wastewater that meets certain specified requirements to a recycled water storage pond. WWD No. 18 will maintain operation and maintenance of the recycled water storage pond.
7. SWD Investments, Inc., owns the Beck property where the WWTF will be located, and where recycled water will be used for landscaping and agricultural uses. SWD Investments, Inc., will be responsible for distribution and application of recycled water to the landscape and agricultural areas on the Beck property.
8. The Friant Ranch project will be a mixed-use, master planned community development consisting of approximately 2,500 dwelling units, of which 2,270 will be age-qualified units (i.e., for active adults 55 years and older), 230 units will be non-age-qualified, and 250,000 square feet will be commercial space. Friant Ranch is in north central Fresno County and is comprised of a total of 942 acres; 482 of which are proposed for development and 460 acres of which will be dedicated as open space preserve.
9. The annual average wastewater flow at build-out of the development is expected to be 0.725 mgd, including the existing flows from the Millerton Lake Village Mobile Home Park, and accounting for the potential flow from the existing and planned future development within the Friant Community Plan area. The WWTF will be sized to treat an average dry weather flow of up to 0.80 mgd at full build-out.
10. The WWTF will treat wastewater to be used as recycled water for irrigation of landscaped open spaces within Friant Ranch and for agricultural and landscape irrigation on the Beck property, which is where the WWTF will be located.

Wastewater Treatment Facility

11. The WWTF will be southwest of Friant Ranch on a 144-acre parcel, known as the Beck property, on the west side of Friant Road opposite the south end of Friant Ranch. The WWTF will be approximately 2,900 feet east of the San Joaquin River and will treat domestic and commercial effluent to disinfected tertiary recycled water standards for unrestricted reuse and will provide for the use of recycled water for landscape and agricultural irrigation. A site map of the WWTF and Use Areas within

Friant Ranch and the Beck property is included on Attachment A and a process flow diagram is included on Attachment B, both of which are attached hereto and made part of this Order.

12. The WWTF will consist of advanced aerated biological processes, fully enclosed within a single building, facilitating odor control and reducing the aesthetic impacts of the treatment facility on the surrounding area. The process will include a Membrane Bioreactor (MBR), and disinfection will be by ultraviolet (UV) light radiation. Solids process facilities will consist of waste activated sludge (WAS) storage, WAS dewatering to approximately 20 to 25 percent solids, and dewatered cake transfer and load-out.
13. Sludge produced at the WWTF will be hauled off site for disposal at an authorized facility.
14. The WWTF will be constructed in two phases. The Phase 1 facilities will be designed to treat 0.40 mgd. Phase 2, with an additional 0.40 mgd capacity, will be constructed as demand warrants. During the initial phase of construction and operation, the WWTF service area is expected to include only residential development. In subsequent stages when commercial development is added, such development will be limited to restaurants, retail, professional offices, and similar uses. No industrial or heavy commercial businesses will be served.
15. During Phase 1, recycled water will be used for agricultural irrigation of alfalfa on 32 acres at the Beck property, and for landscape irrigation on up to 30 acres at Friant Ranch and 6 acres at the Beck property. At full build-out, recycled water will be used for agricultural irrigation of alfalfa on 38 acres at the Beck property, and for landscape irrigation on 85 acres at Friant Ranch and 20 acres at the Beck property. Surface water from the San Joaquin River is available, as needed, to supplement recycled water agricultural irrigation at the Beck property and recycled water landscape irrigation at Friant Ranch. Excess recycled water produced during months of low agronomic demand (typically October through March) will be stored in an unlined storage pond that exists on the Beck property. The storage pond has capacity to store 601-acre feet of water. Based on the water balance provided with the RWD, the maximum quantity of water that would actually be stored in the recycled water storage pond, with a 100-year return frequency rainfall event, is 358-acre feet of water. Thus, the recycled water storage pond has sufficient storage capacity.
16. A water balance included in the December 2012 RWD indicates the amount of recycled water that will be produced initially (Phase 1) is 448 acre-feet per year. At project build-out, the amount of recycled water that will be produced is 896 acre-feet per year. Based on the water balance, including total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns, the Use Areas and the recycled water storage pond provide sufficient

storage/disposal capacity for a discharge flow of 0.40 mgd initially, and 0.80 mgd at full build-out.

17. The source of the water for the development will be San Joaquin River water taken from Millerton Lake. The source water will be treated at a regional water treatment facility owned and operated by WWD No. 18. The current potable water supply delivered to the residents of the community of Friant is representative of the potable water supply that will be provided to Friant Ranch residents. The character of the potable water supply is summarized below.

Parameter	Units	Result
Ammonia	mg/L	ND
Calcium	mg/L	3.3
Electrical Conductivity	umhos/cm	39
Copper	ug/L	4.45
Iron	mg/L	ND
Zinc	ug/L	117.3
Manganese	mg/L	ND
Hardness	mg/L	11
Magnesium	mg/L	0.62
Nitrate	mg/L	ND
Phosphate	mg/L	ND
pH	std. units	7.4
Temperature	°C	21.2

18. Because this is a new WWTF, there is no existing effluent data available. However, the anticipated quality of the effluent can be estimated based on the quality of the potable water provided by WWD No. 18 to the current community of Friant, the proposed treatment process and data from existing similar WWTFs. The character of the estimated effluent quality is summarized below.

Parameter	Units	Result
Ammonia	mg/L	<1
BOD	mg/L	5 ¹
Chloride	mg/L	3
Copper	ug/L	4.45
Hardness	mg/L	<20
Iron	ug/L	<0.01
Lead	ug/L	<5.0

Parameter	Units	Result
Magnesium	mg/L	<2.0
pH	std. Units	6.0 – 9.0
Electrical Conductivity	umhos/cm	420
Total Dissolved Solids	mg/L	280
Total Coliform Organisms	MPN/100mL	<2.2/ ¹ <23/ ² <240
Total Suspended Solids	mg/L	5 ¹
Turbidity	NTU	<0.2 ³
Total Nitrogen	mg/L	<8.0
Zinc	mg/L	<0.02
Manganese	mg/L	<0.02

1. Daily maximum
2. 7-day median/30-day maximum/maximum anytime
3. 24-hr average

Sanitary Sewer Overflow

19. The sanitary sewer system collects wastewater and consists of sewer pipes, manholes, and/or other conveyance system elements that direct raw sewage to the treatment facility. A “sanitary sewer overflow” (SSO) is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the treatment facility. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered SSOs, provided that the waste is fully contained within these temporary storage/conveyance facilities.
20. SSOs consist of varying mixtures of domestic and commercial wastewater, depending on land uses in the sewage collection system. The most common causes of SSOs are grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and/or contractor-caused blockages.
21. SSOs often contain pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, suspended solids, and other pollutants. SSOs to surface waters can cause temporary exceedances of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair recreational use and aesthetic enjoyment of surface waters in the area.
22. On 2 May 2006, the State Water Resources Control Board (hereafter State Water Board) adopted General Sanitary Sewer Systems Order (State Water Board Water Quality Order No. 2006-0003-DWQ, “Statewide General Waste Discharge Requirements for Sanitary Sewer Systems”). The General Order requires all public agencies that own or operate sanitary sewer systems greater than one mile in length

to comply with this order. The Discharger's collection system (i.e., WWD 18) for the Friant Ranch project area will be greater than one mile in length; therefore, the Discharger will need to apply for coverage under the General Order

Site Specific Conditions

23. The natural alluvial soils at the Beck property were completely removed in the process of exposing the weathered rock strata for mining. Following completion of the mining operation in 2010, the mining operator imported approximately 35,000 to 40,000 cubic yards of topsoil material onto the site as part of its reclamation efforts. The replacement soils consist largely of Greenfield sandy loam. Thus, surface soils on the Beck property are now primarily Greenfield sandy loam. The acreage designated for alfalfa production has been restored with a minimum of 3 to 4 feet of topsoil coverage over the base material, and has slopes of less than 10 percent.
24. Hard rock is present locally at the Beck property at very shallow depths. Above the hard rock is a zone of weathered hard rock, primarily decomposed granite. The shallowest zone is the alluvium, which has for the most part been completely removed at the Beck property as part of the mining operations.
25. The Friant Ranch site is generally undeveloped. The site consists of non-native grassland habitat utilized for cattle grazing. Surrounding land use is a mix of developed and undeveloped lands. The unincorporated community of Friant is to the north with commercial and residential development. Private undeveloped ranchland is to the south and east.
26. For the Friant Ranch site, elevation ranges from 300 to 694 feet (National Geodetic Vertical Datum). The topography is characterized by rolling grass-covered hillsides and meandering waterways. The soils of the site consist of alluvium derived primarily from plutonic rocks of the Sierra Nevada to the east. Some of the soils have developed a subsurface iron-silica hardpan at 2-6 feet below the surface that perches water during late winter and early spring creating seasonal pools in topographic depressions.
27. Both the Beck property and the Friant Ranch site experience a Mediterranean climate with hot, dry summers and cool, moist winters. Average summer temperatures (degrees Fahrenheit) range from highs in the upper 90s and lows in the 50s. Average winter temperatures range from highs in the low 60s and lows in the 30s. Average annual precipitation is approximately 15 inches, most of which falls between the months of October through March.
28. According to the Federal Emergency Management Agency maps (Map Number 06019C1030H), the WWTF is located within Zone X, an area outside the 0.2% annual chance of inundation (i.e., 500-year floodplain).
29. On-site precipitation runoff is the primary contributor to water retained in the Beck property storage pond. Over 50 acres of the site drain to the pond, which has a

surface area varying from zero to 46 acres depending upon water surface elevation, magnifying the effect of storm runoff on the water surface elevation of the pond.

30. Water in the proposed storage pond is ephemeral. In June 2012, the pond evaporated dry. In wetter years, a greater amount of precipitation collects in the storage pond and it has remained wet through the summer and into the rainy season.
31. The Discharger's Groundwater Study evaluated subsurface geologic conditions in the vicinity of the storage pond; compared the quality of San Joaquin River water, storage pond water, and shallow groundwater; and evaluated the effects that changes in river stage and precipitation have on surface water elevations in the storage pond. The Groundwater Study concluded the following:
 - a. Surface water elevation of the storage pond is sensitive to seasonal rainfall but has no correlation with the water surface elevation of the San Joaquin River.
 - b. The direction of shallow groundwater flow at the Beck property is toward a point west of the property. There is a groundwater-level trough in the area of off-site excavations to the west of the Beck property. Flow at the north end of the Beck property heads west-southwest, while flow from the south end of the Beck property heads west-northwest. Shallow groundwater flow at Friant Ranch is to the west-southwest toward the Beck property and the groundwater trough.
 - c. Shallow groundwater in the vicinity of the storage pond is consumed by evaporation in excavations west of the Beck property and does not reach the San Joaquin River. Recycled water stored in the Beck property excavation will have no effect on the San Joaquin River.
32. The main water-producing strata at and near the Beck Ranch are the weathered rock and hardrock. Little water production is possible from the remaining alluvial deposits, most of which were removed by the mining operations.

Groundwater Considerations

33. Shallow groundwater is characterized from three monitoring wells located on the Beck property. Samples from the three wells were taken in May of 2012. The wells are located around the perimeter of the storage pond area. Based on data submitted in the RWD, monitoring MW-1 and MW-2 are upgradient of the storage pond and MW-3 is downgradient of the storage pond. The characteristic of shallow groundwater near the storage pond area is summarized below.

Parameter	Units	MW-1	MW-2	MW-3
Calcium	mg/L	26	18	45
Magnesium	mg/L	9	15	12
Sodium	mg/L	30	27	48
Potassium	mg/L	5	7	8

Parameter	Units	MW-1	MW-2	MW-3
Carbonate	mg/L	<10	<10	<10
Bicarbonate	mg/L	110	160	280
Sulfate	mg/L	27	12	18
Chloride	mg/L	17	11	19
Nitrate as N	mg/L	8.4	3.6	<1
pH	std. units	7.8	7.8	7.3
Electrical Conductivity	umhos/cm	363	359	559
TDS	mg/L	260	200	290
Iron	mg/L	<0.05	0.07	0.07
Manganese	mg/L	0.02	0.17	0.78
Arsenic	ug/L	4	<2	<2

34. Groundwater samples for the shallow wells were shipped to the University of Arizona Laboratory of Isotope Geochronology for determination of deuterium and oxygen-18 (the stable isotopes of water). Stable isotopes are valuable in determining the source or sources of a particular body of water. The isotope concentrations in the shallow groundwater are heavier than river water, indicating that river water is not a source of groundwater near the storage pond.
35. Deep groundwater is characterized from a summary of data from ten local wells sampled in 2005 and 2006 by the California Department of Fish and Wildlife. These wells are in the fractured and hard rock zones below the alluvium. The summary of local deep groundwater data is summarized here.

Parameter	Units	Average Result
Calcium	mg/L	20.7
Magnesium	mg/L	10.6
Sodium	mg/L	24.9
Potassium	mg/L	5.1
Carbonate	mg/L	25.5
Bicarbonate	mg/L	108
Sulfate	mg/L	11.6
Chloride	mg/L	15
Nitrate as N	mg/L	3.7
pH	std. units	8.0
Electrical Conductivity	umhos/cm	306
TDS	mg/L	228

Parameter	Units	Average Result
Iron	mg/L	0.57
Manganese	mg/L	0.040
Arsenic	ug/L	4.63

Basin Plan, Beneficial Uses, and Water Quality Objectives

36. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to California Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
37. Local drainage is to the San Joaquin River. The beneficial uses of the San Joaquin River, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial process supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; wildlife habitat; migration of aquatic organisms; and spawning.
38. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.
39. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.
40. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in groundwater with a beneficial use of municipal and domestic supply.
41. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the maximum contaminant levels (MCLs) specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
42. The narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses.

43. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.
44. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an electrical conductivity (EC) less than 700 $\mu\text{mhos/cm}$. 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 waters having 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.
45. The Discharger estimates the annual nitrogen loading to the alfalfa and landscape areas at the Beck Property and Friant Ranch will be up to 129 pounds per acre per year (lbs/acre/year). Annual nitrogen uptake rates for alfalfa and bermuda grass, based on the *Western Fertilizer Handbook, 9th Edition* range between 225 lbs/acre/year for bermuda grass and 480 lbs/acre/year for alfalfa. The contribution of nitrogen from recycled water applied to alfalfa and the landscaping areas will be much less than the nitrogen uptake.

Antidegradation Analysis

46. State Water Resources Control Board Resolution 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
 - a. The degradation will not unreasonably affect present and anticipated future beneficial uses,
 - b. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives,
 - c. The degradation is consistent with the maximum benefit to the people of the state, and
 - d. The discharger employs best practicable treatment or control (BPTC) to minimize degradation.
47. The Discharger submitted an antidegradation analysis for chloride, copper, iron, manganese, lead, EC, total dissolved solids (TDS), total nitrogen, pH, total coliform organisms, and total trihalomethanes. Concentrations of these constituents in infiltrated water were estimated by performing a site-wide water balance, taking into account contributions from precipitation, treated wastewater and supplemental

surface water used for irrigation, and pond seepage. The Discharger concluded that the estimated concentrations of all constituents in infiltrated water will be below the corresponding background groundwater concentration, except for EC and TDS. However, this EC and TDS degradation will not affect the beneficial uses or cause the concentrations of EC and TDS in groundwater to exceed applicable water quality objectives.

48. Degradation of groundwater by some of the typical waste constituents associated with discharges from a municipal wastewater utility, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from reliance on numerous, concentrated individual wastewater systems, and the impact on water quality will be substantially less. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order.

Treatment and Control Practices

49. The WWTF described in Findings 11 through 18, will provide treatment and control of the discharge that incorporates:
- a. Disinfected tertiary wastewater treatment utilizing advanced activated sludge biological process with membrane bioreactors and UV disinfection;
 - b. Application of treated wastewater at rates that will not exceed reasonable agronomic demand in the areas where effluent will be recycled;
 - c. Sludge hauled off-site;
 - d. Certified operators to ensure proper operation and maintenance;
 - e. Source, effluent and groundwater monitoring;
 - f. Prohibited use of water softeners within Friant Ranch;
 - g. Regionalization of wastewater treatment for Friant Ranch, Millerton Lake Village Mobile Home Park, and capacity to treat existing and planned future uses in the Friant Community Plan Area; and
 - h. The WWTF will be fully enclosed in a building designed to resemble a barn that will have an odor control system.

These treatment or control practices can be considered BPTC for the purposes of Resolution 68-16.

Antidegradation Conclusion

50. This Order establishes groundwater limitations that allow some degradation, but that will not reasonably threaten present and future anticipated beneficial uses of groundwater or results in groundwater quality that exceeds water quality objectives

set forth in the Basin Plan. This Order also includes groundwater trigger concentrations that will serve as a means of assessing whether the discharge might potentially cause a violation of one or more groundwater limitations at a later date. If a trigger concentration is exceeded in a groundwater monitoring well downgradient of the storage pond, this Order requires the Discharger either demonstrate that the increasing trend will not result in exceedence of the groundwater limitation or implement additional treatment and control to ensure compliance with the groundwater limitation. Given the project location near the San Joaquin River, the high quality of groundwater, and the expected good quality of the discharge, the groundwater trigger concentrations are set at 70 percent of the Primary or Recommended Secondary Maximum Contaminant Levels.

51. This Order requires monitoring to evaluate potential groundwater impacts from the discharge and confirm that the BPTC measures are sufficiently protective of groundwater.
52. The discharge and the potential for groundwater degradation allowed in this Order is consistent with Resolution 68-16 since: (a) the limited degradation allowed by this Order will not unreasonably affect present and anticipated beneficial uses of groundwater, or result in water quality less than water quality objectives, (b) the limited degradation is of maximum benefit to the people of the State, and (c) the Discharger will implement BPTC to minimize degradation.

Water Recycling Regulatory Considerations

53. Undisinfected domestic wastewater contains human pathogens that are typically measured using total or fecal coliform organism as indicator organisms. The California Department of Public Health, Division of Drinking Water (CDPH), which has primary statewide responsibility for protecting public health, has established statewide criteria in Title 22, section 60301 et seq. for the use of recycled water.
54. A 1996 Memorandum of Agreement (MOA) between CDPH and the State Water Board on the use of recycled water establishes basic principles relative to the agencies and the regional water boards. In addition, the MOA allocates primary areas of responsibility and authority between these agencies, and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to the use of recycled water in California. This Order implements the applicable portions of the Title 22 water recycling regulation in accordance with the MOA.
55. On 3 February 2009, the State Water Board adopted Resolution 2009-0011, *Adoption of a Policy for Water Quality Control for Recycled Water* (Recycled Water Policy). The Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplies and reduce greenhouse gases.
56. On 23 April 2009, the Central Valley Water Board adopted Resolution R5-2009-0028, *In Support of Regionalization, Reclamation, Recycling and*

Conservation for Wastewater Treatment Plant. Resolution R5-2009-0028 encourages water recycling, water conservation, and regionalization of wastewater treatment facilities. It requires the municipal wastewater treatment agencies to document:

- a. Efforts to promote new or expanded wastewater recycling opportunities and programs;
- b. Water conservation measures; and
- c. Regional wastewater management opportunities and solutions (e.g., regionalization).

The distribution of disinfected tertiary recycled water by the Discharger is consistent with the intent of State Board Resolution 2009-0011 and Central Valley Water Board Resolution R5-2009-0028.

57. Section 60323 of Title 22 requires recyclers of treated municipal wastewater to submit an engineering report detailing the use of recycled water, contingency plans, and safeguards. The Discharger has not submitted a Title 22 Engineering Report to the Central Valley Water Board and CDPH. A provision requiring the Discharger to submit a written copy of the letter from CDPH approving the Title 22 Engineering Report (including approval of the design and field commissioning tests/demonstration and long term operation and maintenance of the UV disinfection system) and a copy of the approved Title 22 Engineering Report prior to the application of recycled water is included in this Order.

Title 27

58. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Title 27, section 20090 states in part:

The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:

* * *

(b) Wastewater - Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

- (1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;
- (2) the discharge is in compliance with the applicable water quality control plan; and

(3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

* * *

59. The discharge authorized herein (except for the discharge of residual sludge and solid waste), and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:
- a. The holding ponds and Use Areas are exempt pursuant to Title 27, section 20090(b) because:
 - i. The Central Valley Water Board is issuing WDRs.
 - ii. The discharge is in compliance with the Basin Plan, and;
 - iii. The treated effluent discharged to the storage pond and Use Areas do not need to be managed as hazardous waste.

California Environmental Quality Act

60. The proposed WWTF was reviewed as part of the Friant Ranch Specific Plan Environmental Impact Report (EIR), which was certified by the Fresno County Board of Supervisors in accordance with the California Environmental Quality Act (CEQA) at its regular meeting on 1 February 2011. A Notice of Determination was filed on 7 February 2011 (SCH # 2007101016).
61. Acting as a responsible agency pursuant to CEQA, the Central Valley Water Board concurs with the conclusion in the EIR that the discharge will not have a significant impact on water quality. The Central Valley Water Board further finds that since the EIR was certified there have been (1) no substantial changes to the proposed WWTF; (2) no substantial changes in the circumstances under which the proposed WWTF is being undertaken; and (3) no new information of substantial importance to the proposed WWTF has become available. (Pub. Resources Code, Section 21166.)
62. This Order includes effluent limitations for flow, total nitrogen, BOD, TSS, total coliform organisms, and turbidity. Compliance with these limitations and the associated monitoring and reporting requirements will mitigate any potentially significant impacts to water quality to a less than significant level.

Other Regulatory Considerations

63. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

64. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B as defined below:
- a. Category 2 threat to water quality: “Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance.”
 - b. Category B complexity, defined as: “Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units.”
65. The State Water Board adopted Order 97-03-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The wastewater treatment facility has a design capacity of less than 1.0 mgd; therefore, the Discharger is not required to obtain coverage under NPDES General Permit CAS000001.
66. Water Code section 13267(b) states:
- In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
- The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2013-0160 are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.
67. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.
68. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in 40 CFR 503, *Standard for the Use or Disposal of Sewage Sludge*, which establishes management criteria for protection of ground

and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria.

69. The Central Valley Water Board is using the Standards in 40 CFR 503 as guidelines in establishing this Order, but the Central Valley Water Board is not the implementing agency for 40 CFR 503 regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to the EPA.
70. 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.
71. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

Public Notice

72. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
73. The Dischargers and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.
74. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that pursuant to Water Code sections 13263 and 13267, the Fresno County Waterworks District No. 18, its 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. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2510 et seq., is prohibited.
3. 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 Waste Discharge Requirements*.

4. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.
5. Discharge of toxic substances into the wastewater treatment system or Use Areas such that biological treatment mechanisms are disrupted is prohibited.

B. Discharge Specifications

1. Prior to initiating discharge from the WWTF to the storage pond, Provision [G.11](#) must be satisfied.
2. After satisfying Provision [G.12](#), the average dry weather flow from the WWTF to the storage pond, as determined by measuring the flow at monitoring location EFF-001¹, shall not exceed 0.4 mgd.
3. After satisfying Provision [G.13](#), the average dry weather flow from the WWTF to the storage pond, as determined by measuring the flow at monitoring location EFF-001¹, shall not exceed 0.8 mgd.
4. 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.
5. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
6. The discharge shall remain within the permitted waste treatment/containment structures and Use Area at all times.
7. WWD No.18 shall operate all systems and equipment to optimize the quality of the discharge.
8. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
9. Public contact with wastewater shall be prevented through such means as fences, signs, or acceptable alternatives.
10. Objectionable odors shall not be perceivable beyond the limits of the WWTF property and Use Areas at an intensity that creates or threatens to create nuisance conditions.

¹ Monitoring location EFF-001 is described in Monitoring and Reporting Program R5-2013-0160.

11. A preventive maintenance program shall be provided to ensure that all equipment is kept in reliable operating conditions.
12. WWD No. 18 shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.
13. 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.
14. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications [B.13](#).
15. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
 - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
16. Vegetation management operations in areas in which nesting birds have been observed shall be carried out either before or after, but not during, the 1 April to 30 June bird nesting season.
17. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.

18. Wastewater contained in any unlined pond shall not have a pH less than 6.0 or greater than 9.0.

C. Effluent Limitations

1. As determined by collecting samples from monitoring location EFF-001¹, effluent discharged to the storage pond shall not exceed the following limits:

Constituent	Units	Average Monthly	Maximum Daily
BOD ₅ ¹	mg/L	10	20
Total Suspended Solids	mg/L	10	20
Total Nitrogen	mg/L	10	--

¹ 5-day biochemical oxygen demand at 20°C.

2. The arithmetic mean of BOD₅ and total suspended solids in effluent samples collected over a monthly period shall not exceed 10 percent of the arithmetic mean of the values for influent samples collected at approximately the same time during the same period (90 percent removal).
3. The turbidity of the filtered effluent prior to disinfection shall not exceed 0.2 NTU more than 5 percent of the time during a 24 hour period and shall never exceed 0.5 NTU.
4. The median concentration of total coliform organisms in disinfected tertiary recycled water shall not exceed the following:
 - a. a most probable number (MPN) of 2.2 total coliform bacteria per 100 milliliters utilizing the bacteriological results of the last seven days for which the analyses have been completed;
 - b. an MPN of 23 total coliform bacteria per 100 milliliters in more than one sample in any 30-day period; and
 - c. an MPN of 240 total coliform bacteria per 100 milliliters at any time.

D. Solids Disposal Specifications

Sludge, as used in this document, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has been treated and tested and shown to be capable of

¹ Monitoring location EFF-001 is described in Monitoring and Reporting Program R5-2013-0160.

being beneficially used as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities pursuant to federal and state regulations .

1. Sludge and solid waste shall be removed from screens, sumps, ponds, and clarifiers as needed to ensure optimal WWTF operation.
2. Treatment and storage of sludge generated by the WWTF shall be confined to the WWTF property.
3. Any handling and storage of residual sludge, solid waste, and biosolids at the WWTF shall be temporary (i.e., no longer than two years) 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. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for further treatment, disposal, or reuse at disposal sites (i.e., landfills, WWTF's, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy this specification.
5. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water board or the State Water Board except in cases where a local (e.g., county) program has been authorized by a regional water board. In most cases, this will mean the General Biosolids Order (State Water Resources Control Board Water Quality Order 2004-12-DWQ, "General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities"). For a biosolids use project to be covered by Order 2004-12-DWQ, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.
6. Use and disposal of biosolids shall comply with the self-implementing federal regulations of 40 Code of Federal Regulations part 503, which are subject to enforcement by the U.S. EPA, not the Central Valley Water Board. If during the life of this Order, the State accepts primacy for implementation of part 503, the Central Valley Water Board may also initiate enforcement where appropriate.
7. Any proposed change in sludge 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

Release of waste constituents associated with the discharge shall not cause or contribute to groundwater containing constituent concentrations in excess of the

concentrations specified below or in excess of natural background quality for the specified constituents, whichever is greater:

- (i) Nitrate as nitrogen of 10 mg/L¹.
- (ii) Electrical Conductivity of 900 umhos/cm².
- (iii) Total coliform organisms equal to or greater than 2.2 MPN/100 mL over any 7-day period.
- (iv) For constituents identified in Title 22 of the California Code of Regulations, the MCLs quantified therein^{1,2}.

¹ Primary MCLs applied as an instantaneous concentration.

² Secondary MCLs applied as an annual average concentration.

F. Ultraviolet Disinfection System Operating Specifications

1. Prior to initial discharge to the pond, WWD No. 18 shall submit to the Executive Officer a copy of the letter from CDPH stating that all the UV disinfection system pre-operation acceptance conditions specified by CDPH have been satisfied.
2. The facility shall be operated in accordance with an approved operations plan, which specifies clearly the operational limits and responses required for critical alarms. The operations plan must be approved by CDPH. A copy of the approved operations plan shall be maintained at the WWTF and be readily available to operations personnel and regulatory agencies.
3. WWD No. 18 shall provide continuous, reliable monitoring of UV dose, flow, UV transmittance, UV power, UV intensity, lamp age, and turbidity.
4. The quartz sleeves and cleaning system components shall be visually inspected per the manufacturer's operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.
5. The lamp sleeves shall be cleaned periodically as necessary to comply with these requirements and as required by CDPH.
6. Lamps shall be replaced as required by CDPH, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records shall be maintained.
7. A quick reference WWTF operation data sheet shall be posted at the WWTF and include the following information:
 - a. The alarm set points for tertiary turbidity, high flow, and UV dose.
 - b. The values of high turbidity, high flow, and low UV dose, when flow must be diverted to waste.

- c. The required frequency of calibration for all monitoring equipment measuring turbidity, flow, UV transmittance, and UV intensity.
 - d. The required frequency of mechanical cleaning/wiping and equipment inspection.
 - e. The UV lamp age tracking procedures and replacement intervals.
8. The UV system must be operated with a built-in automatic reliability feature that must be triggered when the system is below the target UV dose. Conditions that shall initiate WWTF shut down and divert flow include: UV operational dose lower than 80 mJ/cm^2 , UV transmittance at 254 nm lower than 65%, effluent total coliform greater than 240 MPN/100mL, turbidity prior to disinfection greater than 0.5 NTU, UV transmittance meter failure, intensity sensor failure, multiple lamp failure, or reactor failure. Central Valley Water Board staff shall be notified within 24 hours of WWTF shut down or flow diversion.
 9. UV transmittance meters, UV intensity sensors and flow meters must be properly calibrated to ensure proper disinfection.
 10. Flow meters measuring the flow through a UV reactor must be verified to determine accuracy at least monthly via checking the flow reading against other flow determination methods.
 11. Equivalent or substitutions of equipment are not acceptable without an adequate demonstration of equivalent disinfection performance.

G. Provisions

1. WWD No. 18 shall comply with Monitoring and Reporting Program No. R5-2013-0160, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.
2. WWD No. 18 shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
3. WWD No. 18 shall keep at the WWTF 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.
4. WWD No. 18 shall not allow pollutant-free wastewater to be discharged into the WWTF collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free

wastewater means storm water (i.e., inflow), groundwater (i.e., infiltration), cooling waters, and condensates that are essentially free of pollutants.

5. WWD No. 18 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 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 WWD No. 18 only when the operation is necessary to achieve compliance with the conditions of this Order.
6. 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 professional(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.
7. WWD No. 18 must comply with all applicable conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, WWD No. 18 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 WWD No. 18 will be in compliance. WWD No. 18 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. In the event of any change in control or ownership of the WWTF or Use Areas, WWD No. 18 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 Central Valley Water Board.
9. WWD No. 18 shall submit the technical reports and work plans applicable to it and that are required by this Order to Central Valley Water Board staff for consideration and incorporate comments they may have in a timely manner, as appropriate. WWD No. 18 shall proceed with all work required by the following provisions by the due dates specified.

10. All wastewater discharged to the recycled water storage pond shall be oxidized, filtered, and disinfected pursuant to the Title 22 statewide criteria for the use of recycled water, as determined by CDPH.
11. **At least 60 days prior** to initiating discharge from the WWTF to the recycled water storage pond, a written copy of the letter from CDPH approving the Title 22 Engineering Report (including approval of the design and field commissioning tests/demonstration and long term operation and maintenance of the UV disinfection system) and an approved copy of the Title 22 Engineering Report shall be submitted.
12. **At least 60 days prior** to initiating a discharge from the WWTF to the recycled water storage pond, WWD No. 18 shall submit an engineering certification showing that the WWTF and Use Areas have sufficient treatment, storage, and disposal capacity to handle an average dry weather flow of up to 0.40 mgd and can comply with the terms and conditions of this Order. This Provision will be considered satisfied following written acknowledgement from the Executive Officer that its criteria have been met.
13. **At least 60 days prior** to increasing the flow rate of the discharge from the WWTF to the recycled water storage pond from 0.40 mgd to 0.80 mgd, WWD No. 18 shall submit an engineering certification showing that the WWTF and Use Areas have sufficient treatment, storage, and disposal capacity to handle an average dry weather flow of 0.80 mgd and can comply with the terms and conditions of this Order. This Provision will be considered satisfied following written acknowledgement from the Executive Officer that its criteria have been met.
14. As a means of discerning compliance with Discharge Specifications [B.10](#), the dissolved oxygen (DO) content in the upper one foot of the recycled water storage pond shall not be less than 1.0 mg/L for three consecutive days. Should the DO be below 1.0 mg/L during a weekly sampling event, WWD No. 18 shall take all reasonable steps to correct the problem and commence daily DO monitoring until the problem has been resolved. If unpleasant odors originating are noticed in developed areas, or WWD No. 18 received one or more odor complaints, WWD No. 18 shall report the findings in writing within 5 days of the date and shall include a specific plan to resolve the low DO results to the Central Valley Water Board within 10 days of that date.
15. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by **31 January**.

16. WWD No. 18 shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.
17. WWD No. 18 shall provide certified WWTF operators in accordance with Title 23, division 3, chapter 26.
18. As described in the Standard Provisions, WWD No. 18 shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
19. WWD No. 18 shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
20. WWD No. 18 shall comply with the requirements of the Statewide General Waste Discharge Requirements (General WDRs) for Sanitary Sewer Systems (Water Quality Order 2006-0003), the Revised General WDRs Monitoring and Reporting Program (Water Quality Order 2008-0002-EXEC), and any subsequent revisions thereto. Water Quality Order 2006-0003 and Order 2008-0002-EXEC require the Discharger to notify the Central Valley Water Board and take remedial action upon the reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow.
21. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, WWD No. 18 shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
22. 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.
23. If the Central Valley Water Board determines that the discharge has a reasonable potential to cause or contribute to an exceedence of a water quality objective, or to

create a condition of nuisance or pollution, the Order may be reopened for consideration of additional requirements.

24. 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 indicated that groundwater limitations different than those prescribed herein are appropriate, this Order will be reopened to incorporate such limits.
25. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

IT IS HEREBY ORDERED that pursuant to Water Code sections 13263 and 13267, Friant Ranch, L.P., and SWD Investments, Inc., 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. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2510 et seq., is prohibited.
3. 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 Waste Discharge Requirements*.
4. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.
5. Discharge of toxic substances into the wastewater treatment system or Use Areas such that biological treatment mechanisms are disrupted is prohibited.

B. 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. A preventive maintenance program shall be provided to ensure that all recycled water conveyance and delivery equipment is kept in reliable operating conditions.

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 Use Areas at all times.
5. Friant Ranch, L.P., and SWD Investments, Inc., shall operate all systems and equipment to optimize the quality of the discharge.
6. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
7. Objectionable odors shall not be perceivable beyond the limits of the Use Areas at an intensity that creates or threatens to create nuisance conditions.

C. Water Recycling Specifications

1. For the purpose of this Order, "Use Area(s)" means an area with defined boundaries where recycled water is used or discharged.
2. Notwithstanding the following requirements, the production, distribution, and use of recycled water shall conform to an Engineering Report prepared pursuant to Title 22, section 60323 and approved by the CDPH.
3. The use of recycled water shall not cause pollution or nuisance, as defined by Water Code section 13050.
4. Application of recycled water shall be confined to the Use Areas identified in [Finding 15](#) and Attachment A.
5. The recycled water shall be at least disinfected tertiary 2.2 recycled water as defined in Title 22, section 60301.
6. Recycled water shall be used in compliance with Title 22, section 60304.
7. Tailwater runoff and spray of recycled water shall not be discharged outside of the Use Areas except in minor, incidental amounts that cannot reasonably be eliminated by implementation and good maintenance of best management practices.
8. Crops (which may include grasses and/or ornamental landscaping) shall be grown on the Use Areas, and cropping activities shall be sufficient to take up all of the nitrogen applied, including any fertilizers and manure.

9. With the exception of retained storm water, the volume of recycled water applied to the Use Areas shall not exceed reasonable agronomic rates based on the vegetation grown, pre-discharge soil moisture conditions, and weather conditions.
10. Hydraulic loading of recycled water and supplemental irrigation water (if any) shall be at reasonable agronomic rates designed to:
 - a. Maximize crop nutrient uptake;
 - b. Maximize breakdown of organic waste constituents in the root zone; and
 - c. Minimize the percolation of waste constituents below the root zone.
11. Use areas shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.
12. Use areas where public access is allowed shall be irrigated during periods of minimal use (typically between 9 p.m. and 6 a.m.).
13. Irrigation using recycled water shall not be performed within 24 hours of forecasted rain, during rainfall, within 24 hours after any measurable rainfall event, or when the ground is saturated.
14. The irrigation with recycled water shall be managed to minimize erosion within the Use Areas.
15. The Use Areas shall be managed to prevent breeding of mosquitoes. In particular:
 - a. There shall be no standing water 48 hours after irrigation ceases;
 - b. Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation; and
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.
16. Irrigation with disinfected tertiary recycled water shall not take place within 50 feet of any domestic water supply well unless all of the following conditions have been met:
 - a. A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from the ground and the surface.
 - b. The well contains an annular seal that extends from the surface into the aquitard.
 - c. The well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities.
 - d. The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well.

- e. The owner of the well approves of the elimination of the buffer zone requirement.
17. No impoundment of disinfected tertiary recycled water shall occur within 100 feet of any domestic water supply well.
 18. Spray irrigation with recycled water is prohibited when wind speed (including gusts) exceeds 30 mph.
 19. Sprinkler heads shall be of the type approved for recycled water and shall create a minimum amount of mist.
 20. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.
 21. All drinking fountains located within the Use Areas shall be protected by location and/or structure from contact with recycled water spray, mist, or runoff.
 22. Use Areas that are accessible to the public shall be posted with signs that are visible to the public and no less than four inches high by eight inches wide. Signs shall be placed at all areas of public access and around the perimeter of all Use Areas and at above-ground portions of recycled water conveyances to alert the public of the use of recycled water. All signs shall display an international symbol similar to that shown in [Attachment C](#) which is attached and forms part of this Order, and shall include the following wording:

“RECYCLED WATER – DO NOT DRINK”
“AGUA DE DESPERDICIO RECLAMADA – NO TOME”
 23. All recycling equipment, pumps, piping, valves, and outlets shall be marked to differentiate them from potable water facilities. All recycled water distribution system piping shall be purple pipe or adequately wrapped with purple tape.
 24. Recycled water controllers, valves, and similar appurtenances shall be affixed with recycled water warning signs, and shall be equipped with removable handles or locking mechanisms to prevent public access or tampering.
 25. Quick couplers, if used, shall be different than those used in potable water systems.
 26. Hose bibs and unlocked valves, if used, shall not be used in areas accessible to the public.
 27. No physical connection shall exist between recycled water piping and any potable water supply system (including domestic wells), or between recycled water piping

and any irrigation well that does not have an approved air gap or reduced pressure principle device.

28. There shall be at least a ten-foot horizontal and a one-foot vertical separation between all pipelines transporting recycled water and those transporting domestic supply, and the domestic supply pipeline shall be located above the recycled water pipeline.
29. A public water supply shall not be used as backup or supplemental source of water for a recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of California Code of Regulations, Title 17, sections 7602(a) and 7603(a).
30. Any backflow prevention device installed to protect a public water system shall be inspected and maintained in accordance Title 17, section 7605

D. Groundwater Limitations

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

- (i) Nitrate as nitrogen of 10 mg/L¹.
- (ii) Electrical Conductivity of 900 umhos/cm².
- (iii) Total coliform organisms equal to or greater than 2.2 MPN/100 mL over any 7-day period.
- (iv) For constituents identified in Title 22 of the California Code of Regulations, the MCLs quantified therein^{1,2}.

¹ Primary MCLs applied as an instantaneous concentration.

² Secondary MCLs applied as an annual average concentration.

E. Provisions

1. Friant Ranch, L.P., and SWD Investments, Inc., shall comply with Monitoring and Reporting Program No. R5-2013-0160, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.
2. Friant Ranch, L.P., and SWD Investments, Inc., shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

3. Friant Ranch, L.P., and SWD Investments, Inc., shall keep at or near the Use Areas, 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.
4. 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 professional(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.
5. Friant Ranch, L.P., and SWD Investments, Inc., must comply with all applicable conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, Friant Ranch, L.P., and SWD Investments, Inc., 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 Friant Ranch, L.P., and SWD Investments, Inc., will be in compliance. Friant Ranch, L.P., and SWD Investments, Inc., 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.
6. In the event of any change in control or ownership of the Use Areas, Friant Ranch, L.P., and SWD Investments, Inc., 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 Central Valley Water Board.
7. 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.

8. Friant Ranch, L.P., and SWD Investments, Inc., shall submit the technical reports and work plans applicable to it and that are required by this Order to Central Valley Water Board staff for consideration and incorporate comments they may have in a timely manner, as appropriate. Friant Ranch, L.P., and SWD Investments, Inc., shall proceed with all work required by the following provisions by the due dates specified.
9. Friant Ranch, L.P., and SWD Investments, Inc., shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.
10. As described in the Standard Provisions, Friant Ranch, L.P., and SWD Investments, Inc., shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
11. Friant Ranch, L.P., and SWD Investments, Inc., shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
12. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, Friant Ranch, L.P., and SWD Investments, Inc., shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
13. If the Central Valley Water Board determines that the discharge has a reasonable potential to cause or contribute to an exceedence of a water quality objective, or to create a condition of nuisance or pollution, the Order may be reopened for consideration of additional requirements.
14. 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 indicated that groundwater limitations different than those prescribed herein are appropriate, this Order will be reopened to incorporate such limits.

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

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

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

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

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on 6 December 2013.

Original signed by:

PAMELA C. CREEDON, Executive Officer

Order Attachments:

- A. Site Map
- B. Process Flow Diagram
- C. Recycled Water Signage

Monitoring and Reporting Program R5-2013-0160

Information Sheet

Standard Provisions (1 March 1991) (separate attachment to Discharger only)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2013-0160

FRIANT RANCH, A LIMITED PARTNERSHIP
FRESNO COUNTY WATERWORKS DISTRICT NO. 18
SWD INVESTMENTS, INC.
FRIANT RANCH WASTEWATER TREATMENT FACILITY
FRESNO 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 and 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 may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration after at least 12 months of monitoring, the Discharger may request the 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 11](#).

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

Monitoring Location Name	Monitoring Location Description
INF-001	A location where a representative sample of the influent to the wastewater treatment facility (WWTF) can be collected prior to any WWTF return flows or treatment processes.
EFF-001	Location where a representative sample of the WWTF's effluent can be obtained prior to discharge to the treated storage pond. Effluent samples shall be collected prior to mixing wastewater with supplemental irrigation water.
UVS-001	Ultraviolet light disinfection system
PND-001	Storage Pond
WAA-001	Agriculture area at Beck Property where recycled water is applied
WAA-002	Landscape area at Beck Property where recycled water is applied
WAA-003	Landscape area at Friant Ranch where recycled water is applied
BIO-001	Biosolids generated at the WWTF
RGW-001	Groundwater monitoring well MW-1
RGW-002	Groundwater monitoring well MW-2
RGW-003	Groundwater monitoring well MW-3
SPL-001	San Joaquin River at a safe access point between the WWTF and the United State Geological Survey gauging station 11251000, approximately 1.5 miles upstream of the WWTF.

INFLUENT MONITORING

WWD No. 18 shall monitor domestic influent to the WWTF at INF-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
1/Month	BOD ₅	mg/L	Grab
1/Month	TSS	mg/L	Grab

EFFLUENT MONITORING

WWD No. 18 shall monitor effluent samples at EFF-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Continuous	Turbidity	NTU	Meter
1/Day	Total Coliform	MPN/100 mL	Grab
1/Week	pH	s.u. ¹	Grab
1/Week	EC	umhos/cm	Grab
1/Week	TDS	mg/L	Grab
1/Week	FDS	mg/L	Grab

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
1/Week	BOD ₅	mg/L	24-Hour Composite
1/Week	TSS	mg/L	24-Hour Composite
	Nitrogen Forms		
1/Quarter	Ammonia (as N)	mg/L	Grab
1/Quarter	Nitrate (as N)	mg/L	Grab
1/Quarter	TKN	mg/L	Grab
1/Quarter	Total Nitrogen	mg/L	Calculated
1/Year ²	General Minerals	mg/L	Grab
1/Year	Metals	Varies	Grab

1 pH standard units (s.u.).

2 Concurrent with groundwater monitoring.

ULTRAVIOLET LIGHT DISINFECTION SYSTEM MONITORING

WWD No. 18 shall monitor the ultraviolet light (UV) disinfection system at UVS-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Continuous	Number of UV light banks in operation	Number	Meter
Continuous	UV Transmittance	Percent (%)	Meter
Continuous	UV Power Setting	Percent (%)	Meter
Continuous	UV Intensity	mW/cm	Meter
Continuous	UV lamp hours of operation	Hours	Meter
Continuous	UV Dose	mW-sec/cm ²	Calculated

WWD No. 18 shall monitor the following: status of each UV reactor, on/off; status of each UV lamp, on/off; cumulative number of reactor on/off cycles; cumulative UV disinfection system power consumption; reactor power set point (if system has variable power input to lamps); liquid level in the UV disinfection reactor trains (if system has free water surfaces and where UV lamps can be exposed to air); and ground fault interruption.

In addition, WWD No. 18 shall monitor the UV disinfection system for any additional parameters in accordance with a UV disinfection system operation plan approved by the California Department of Public Health.

STORAGE POND MONITORING

WWD No. 18 shall monitor the storage pond at PND-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
1/Week	Dissolved Oxygen	mg/L	Grab ¹
1/Week	Freeboard	Feet ²	Observation
1/Quarter ³	Water Elevation	Feet	n/a

1 Samples shall be collected at a depth of one foot from the storage pond, opposite the inlet, and analyzed for DO. Samples shall be collected between 0700 and 0900 hours.

- 2 Freeboard shall be monitored to the nearest tenth of a foot.
- 3 Concurrent with groundwater monitoring.

In addition, WWD No. 18 shall inspect the condition of the ponds once per week and write visual 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 dead algae, vegetation, scum, or debris are accumulating on the disposal pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark sparkling green, dull green, yellow, gray, tan, brown, etc.). A **summary** of the entries made in the log during each month shall be submitted along with the quarterly monitoring report.

USE AREA MONITORING

SWD Investments, Inc., shall perform the following routine monitoring and loading calculations at WAA-001 and WAA-002 and Friant Ranch L.P., shall perform the following routine monitoring and loading calculations at WAA-003 when such areas are in use. In addition, SWD Investments, Inc., and Friant Ranch, L.P., shall each keep logs of routine monitoring observations (for example: areas of ponding, broken irrigation pipes, odors and/or flies within the Use Areas). 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>
1/Day	Application Area	Location/Acreage	n/a
1/Day	Recycled Water flow	Gallons or ac-ft	Metered
1/Day	Recycled Water loading	inches/day/acre	Calculated
1/Day	Supplemental irrigation	Gallons or ac-ft	Metered
1/Day	Precipitation	inches	Rain gauge ¹
1/Month	Total hydraulic loading rate ²	Inches/month/acre	Calculated
1/Month	Nitrogen Loading ³	lbs/acre	Calculated
1/Month	Salt Loading ³	lbs/acre	Calculated

- 1 National Weather Service data from the nearest weather station is acceptable.
- 2 Combined loading from wastewater, irrigation water, and precipitation.
- 3 Nitrogen and salt loading shall be calculated using the applied volume of wastewater, applied acreage, and average of the three most recent concentrations for total nitrogen and FDS.

SLUDGE MONITORING

To ensure that industrial and other discharges to the wastewater treatment facility are not interfering with treatment process, WWD No. 18 shall collect a composite sample of sludge annually at BIO-001, as set forth by Title 40 CFR Part 503.16. Any Notice of Necessary Information (NANI) form prepared for submittal to the United States Environmental Protection Agency shall be forwarded to the Regional Water Board.

Composite samples shall be collected at BIO-001 in accordance with the Environmental Protection Agency's *POTW Sludge Sampling And Analysis Guidance Document* (EPA/ 833B89100, August 1989) and test for metals:

Arsenic	Copper	Nickel
Cadmium	Lead	Selenium
Molybdenum	Mercury	Zinc

The control of pathogens and the reduction of vector attraction shall be achieved in accordance with the Environmental Protection Agency's *Control of Pathogens and Vectors In sewage Sludge* (EPA/625-R-92/013, July 2003).

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling, application, and disposal activities. The frequency of entries is discretionary; however, a log should be complete enough to serve as a basis for part of the annual report.

GROUNDWATER MONITORING

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for approval. Once installed, all new wells shall be managed as one compliance monitoring network.

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

The monitoring wells shall be purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Alternatively, low or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Samples shall be filtered using a 0.45-micron filter prior to preservation or digestion as appropriate. Groundwater monitoring for all monitoring wells at locations RGW-001 through RGW-003 shall include, at a minimum, the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
1/Quarter	Depth to Groundwater	feet	Measurement
1/Quarter	Groundwater Elevation	feet	Computed
1/Quarter	Electrical Conductivity	umhos/cm	Grab
1/Quarter	Ammonia as N	mg/L	Grab
1/Quarter	Nitrate as N	mg/L	Grab
1/Quarter	TKN	mg/L	Grab
1/Quarter	Total Nitrogen	mg/L	Computed
1/Quarter ¹	Total Coliform	MPN/100mL	Grab
1/Year	General Minerals	mg/L	Grab

1. Samples shall be collected once per quarter for the first year; then annually in the third quarter thereafter, unless directed to sample more frequently by the Executive Officer.

All samples shall be collected and analyzed using approved EPA methods within the specified holding periods. Groundwater elevations shall be calculated to determine groundwater gradient and downgradient directions.

GROUNDWATER TRIGGER CONCENTRATIONS

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

Constituent	Trigger Concentration
Nitrate as N	7.0 mg/L
Electrical Conductivity	630 umhos/cm

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

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

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

SAN JOAQUIN RIVER MONITORING

The Discharger shall monitor the San Joaquin River at SPL-001 for the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
1/Quarter	River Gauge	Feet	n/a
1/Year ¹	General Minerals	various	Grab

1. Concurrent with groundwater monitoring.

REPORTING

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

First Quarter Monitoring Report:	1 May
Second Quarter Monitoring Report:	1 August
Third Quarter Monitoring Report:	1 November
Fourth Quarter Monitoring Report:	1 February

A transmittal letter shall accompany each monitoring report. The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has 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:

Discharger: Fresno County Waterworks District No. 18, Friant Ranch, L.P., or SWD Investments, Inc.,
Facility: Wastewater Treatment Facility, Recycled Water Storage Pond or Use Areas
MRP: R5-2013-0160
Contact Information (telephone number and email)

In reporting monitoring data, the Discharger 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 complies with waste discharge requirements.

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

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

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3.

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

At any time henceforth, the State or Central Valley Water Board may notify the Discharger 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 shall submit hard copy monitoring reports.

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

Wastewater Reporting

1. The results of influent and effluent monitoring specified on pages [2 and 3](#), including the running 7-day median total coliform calculation.
2. For each day of the month, the maximum coliform detection, maximum turbidity, and the 95th percentile turbidity.
3. For each month of the quarter, calculation of the maximum daily flow, monthly average flow, and cumulative annual flow.
4. For each month of the quarter, calculation of the average monthly effluent EC and BOD.

Ultraviolet Light Disinfection Reporting

1. The results of the routine monitoring specified on [page 3](#).
2. For each day of the month, the minimum UV operational dose and minimum UV transmittance.

Storage Pond Monitoring Reporting

1. The results of the routine monitoring specified on pages [3 and 4](#).

Use Area Reporting

1. The results of the routine monitoring specified on [page 4](#).
2. Provide a Site Map of the Use Areas showing predominant features and applied acreages.
3. For each month of the quarter, calculation of the monthly hydraulic load on the Use Areas for recycled water use and supplemental irrigation water in millions of gallons or acre-feet.

4. A summary of the notations made in the Use Area monitoring log during each quarter. The entire contents of the log do not need to be submitted.

Groundwater Monitoring Reporting

1. The results of the routine monitoring specified on pages 5 and 6.

San Joaquin River Monitoring Reporting

1. The results of the routine monitoring specified on page 6.

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

Wastewater Reporting

1. The names and general responsibilities of all persons in charge of wastewater treatment and disposal.
2. The names and telephone numbers of persons to contact regarding the WWTF 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.

Sludge Monitoring Reporting

1. Annual production totals in dry tons or cubic yards.
2. A description of disposal methods, including location, and Order number of regulatory permit (if appropriate). If more than one method is used, include the percentage disposed of by each method.
3. Include the results of monitoring specified on pages 4 and 5.
4. A demonstration that off-site disposal of biosolids is consistent with Title 27, division 2.

Use Area

1. The type of crop(s) grown, planting and harvest dates, and the quantified nitrogen and fixed dissolved solids uptakes (as estimated by technical references or, preferably, determined by representative plant tissue analysis). Include any soil and/or tissue sampling results.
2. The monthly and annual discharge volumes during the reporting year expressed as million gallons or acre-feet and inches.
3. A monthly balance for the reporting year that includes:
 - a. Monthly crop uptake

- i. Crop water utilization rates are available from a variety of publications available from the local University of California Davis extension office.
 - ii. Irrigation efficiency – Frequently, engineers include a factor from irrigation efficiency such that the application rate is slightly greater than the crop utilization rate. A conservative design does not include this value.
 - b. Monthly average precipitation – this data is available at <http://www.cimis.water.ca.gov/> or at <http://www.ncdc.noaa.gov/oa/climate/online/ccd/nrmlprcp.html>.
 - c. Monthly average and annual average discharge flow rates.
 - d. Monthly estimates of the amount of recycled water percolating below the root zone (i.e., amount of recycled water applied in excess of crop requirements)
4. A summary of the hydraulic load on the Use Areas for recycled water use and supplemental irrigation water in acre-feet.

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

Original signed by:

Ordered by:

PAMELA C. CREEDON, Executive Officer

6 December 2013

(Date)

GLOSSARY

BOD ₅	Five-day biochemical oxygen demand																		
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.																		
1/Day	Samples shall be collected at least every day.																		
1/Week	Samples shall be collected at least once per week.																		
1/Month	Samples shall be collected at least once per month.																		
1/Quarter	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.																		
1/Year	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																		
mW-sec/cm ²	milliwatt second per square centimeter [equivalent to mJ/cm ² (millijoules per square centimeter)]																		
mW/cm	milliwatt per centimeter																		
General Minerals	Analysis for General Minerals shall include at least the following: <table border="0" style="width: 100%; margin-left: 20px;"> <tr> <td>Alkalinity (as CaCO₃)</td> <td>EC</td> <td>Phosphate</td> </tr> <tr> <td>Bicarbonate (as CaCO₃)</td> <td>Hardness (as CaCO₃)</td> <td>Potassium</td> </tr> <tr> <td>Boron</td> <td>Iron</td> <td>Sodium</td> </tr> <tr> <td>Calcium</td> <td>Magnesium</td> <td>Sulfate</td> </tr> <tr> <td>Carbonate (as CaCO₃)</td> <td>Manganese</td> <td>TDS</td> </tr> <tr> <td>Chloride</td> <td>pH</td> <td></td> </tr> </table> General Minerals analyses shall be accompanied by documentation of cation/anion balance.	Alkalinity (as CaCO ₃)	EC	Phosphate	Bicarbonate (as CaCO ₃)	Hardness (as CaCO ₃)	Potassium	Boron	Iron	Sodium	Calcium	Magnesium	Sulfate	Carbonate (as CaCO ₃)	Manganese	TDS	Chloride	pH	
Alkalinity (as CaCO ₃)	EC	Phosphate																	
Bicarbonate (as CaCO ₃)	Hardness (as CaCO ₃)	Potassium																	
Boron	Iron	Sodium																	
Calcium	Magnesium	Sulfate																	
Carbonate (as CaCO ₃)	Manganese	TDS																	
Chloride	pH																		
Metals	Analysis for metals shall include at least the follow: <table border="0" style="width: 100%; margin-left: 20px;"> <tr> <td>Antimony</td> <td>Cobalt</td> <td>Silver</td> </tr> <tr> <td>Arsenic</td> <td>Copper</td> <td>Thallium</td> </tr> <tr> <td>Barium</td> <td>Lead</td> <td>Vanadium</td> </tr> <tr> <td>Beryllium</td> <td>Mercury</td> <td>Zinc</td> </tr> <tr> <td>Cadmium</td> <td>Molybdenum</td> <td></td> </tr> </table>	Antimony	Cobalt	Silver	Arsenic	Copper	Thallium	Barium	Lead	Vanadium	Beryllium	Mercury	Zinc	Cadmium	Molybdenum				
Antimony	Cobalt	Silver																	
Arsenic	Copper	Thallium																	
Barium	Lead	Vanadium																	
Beryllium	Mercury	Zinc																	
Cadmium	Molybdenum																		

Chromium

Nickel

Chromium VI

Selenium

Metals analyses shall be filtered using a 0.45-micron filter prior to preservation or digestion.

INFORMATION SHEET

INFORMATION SHEET R5-2013-0160
FRIANT RANCH, L.P., FRESNO COUNTY WASTEWORKS
DISTRICT NO 18, SWD INVESTMENTS, INC.
FRIANT RANCH WASTEWATER TREATMENT FACILITY
FRESNO COUNTY

BACKGROUND

Friant Ranch, L.P., a limited partnership, Fresno County Waterworks District No. 18 (WWD No. 18), and SWD Investments, Inc., submitted a Report of Waste Discharge (RWD), dated December 2012, and applied for Waste Discharge Requirements (WDRs) to discharge up to an average dry weather flow of 0.80 million gallons per day (mgd) of treated wastewater from a proposed wastewater treatment facility (WWTF) to a storage pond. Treated wastewater in the storage pond is proposed to be used for landscape and agricultural irrigation on up to three "Use Areas." The RWD was deemed complete on 7 June 2013.

The new WWTF will treat domestic wastewater generated from the proposed Friant Ranch master-planned community (referred to as Friant Ranch), the existing Millerton Lake Village Mobile Home Park, and planned future uses of the Friant Community Plan area. The WWTF will be built in phases. Phase 1 will be designed to treat and discharge up to 0.40 mgd. Phase 2, with an additional 0.40 mgd capacity will be constructed as demand warrants.

Friant Ranch, L.P., the project developer, proposes to hire a third party to design, build and operate the WWTF, and plans to transfer ownership and operation of the WWTF to WWD No. 18 at the time of startup. Friant Ranch, L.P., will be responsible for distribution and application of recycled water (through the Friant Ranch Homeowners Association) at Friant Ranch.

WWD No. 18 will be the public district charged with providing wastewater collection, treatment and disposal service to Friant Ranch and its surrounds. WWD No. 18 will have a long-term contractual relationship with Friant Ranch, L.P. to provide water and wastewater service to the new development as it is built. WWD No. 18 has annexed the land where Friant Ranch will be built into its service area. It is anticipated that WWD No. 18 will continue to hire a contractor to operate the WWTF even after ownership and operation of the WWTF has been transferred to WWD No. 18 from Friant Ranch, L.P. WWD No. 18 will be responsible for operation, through a contractor, of the WWTF and will deliver treated wastewater that meets certain specified requirements to a recycled water storage pond. WWD No. 18 will maintain operation and maintenance of the recycled water storage pond.

SWD Investments, Inc., owns the Beck property where the WWTF will be located, and where recycled water will be used for landscaping and agricultural uses. SWD Investments, Inc., will be responsible for distribution and application of recycled water to the landscape and agricultural areas on the Beck property.

Wastewater

During the initial phase of construction and operation, the WWTF service area is expected to include only residential development. In subsequent stages when commercial development is added, such development will be limited to restaurants, retail, professional offices, and similar uses. No industrial or heavy commercial businesses will be served.

The WWTF will consist of advanced aerated biological processes, fully enclosed within a single building, facilitating odor control and reducing the aesthetic impacts of the treatment facility on the surrounding area. The process will include a Membrane Bioreactor (MBR), and disinfection will be by ultraviolet (UV) light radiation. Solids process facilities will consist of waste activated sludge (WAS) storage, WAS dewatering to approximately 20 to 25 percent solids, and dewatered cake transfer and load-out.

Because this is a new WWTF, there is no existing effluent data available. However, the anticipated quality of the effluent can be estimated based on the quality of the potable water provided by WWD No. 18 to the current community of Friant, the proposed treatment process and data from existing similar WWTFs. The character of the estimated effluent quality is summarized below.

Parameter	Units	Result
Ammonia	mg/L	<1
BOD	mg/L	5 ¹
Chloride	mg/L	3
Copper	ug/L	4.45
Hardness	mg/L	<20
Iron	ug/L	<0.01
Lead	ug/L	<5.0
Magnesium	mg/L	<2.0
pH	std. Units	6.0 – 9.0
Electrical Conductivity	umhos/cm	420
Total Dissolved Solids	mg/L	280
Total Coliform Organisms	MPN/100mL	<2.2/<23/<240 ²
Total Suspended Solids	mg/L	5 ¹
Turbidity	NTU	<0.2 ³
Total Nitrogen	mg/L	<8.0
Zinc	mg/L	<0.02
Manganese	mg/L	<0.02

1. Daily maximum
2. 7-day median/30-day maximum/maximum anytime
3. 24-hr average

Source Water

The source of the water for the development will be San Joaquin River water taken from Millerton Lake. The source water will be treated at a regional water treatment facility owned and operated by WWD No. 18. The current potable water supply delivered to the residents of the community of Friant is representative of the potable water supply that will be provided to Friant Ranch residents. The character of the potable water supply is summarized below.

Parameter	Units	Result
Ammonia	mg/L	ND
Calcium	mg/L	3.3
Electrical Conductivity	umhos/cm	39
Copper	ug/L	4.45
Iron	mg/L	ND
Zinc	ug/L	117.3
Manganese	mg/L	ND
Hardness	mg/L	11
Magnesium	mg/L	0.62
Nitrate	mg/L	ND
Phosphate	mg/L	ND
pH	std. units	7.4
Temperature	°C	21.2

DISPOSAL METHODS

Solids

Sludge produced at the WWTF will be hauled off site for disposal at an authorized facility.

Wastewater

During Phase 1, recycled water will be used for agricultural irrigation of alfalfa on 32 acres at the Beck property, and for landscape irrigation on up to 30 acres at Friant Ranch and 6 acres at the Beck property. At full build-out, recycled water will be used for agricultural irrigation of alfalfa on 38 acres at the Beck property, and for landscape irrigation on 85 acres at Friant Ranch and 20 acres at the Beck property. Excess recycled water produced during months of low agronomic demand (typically October through March) will be stored in a 46.1 acre unlined storage pond that exists on the Beck property. The storage pond has capacity to store 601-acre feet of water. Based on the water balance provided with the RWD, the maximum quantity of water that would actually be stored in the recycled water storage pond, with a 100-year return frequency

rainfall event, is 358-acre feet of water. Thus, the recycled water storage pond has sufficient storage capacity.

GROUNDWATER CONDITIONS

The Dischargers submitted a report titled, *Groundwater Conditions at and in the Vicinity of the Beck Ranch, November 2012* (Groundwater Study) prepared by Kenneth D. Schmidt & Associates. The Groundwater Study evaluated subsurface geologic conditions in the vicinity of the storage pond; compared the quality of San Joaquin River water, storage pond water, and shallow groundwater; and evaluated the effects that changes in river stage and precipitation have on surface water elevations in the storage pond. The Groundwater Study concluded the following:

- a. Surface water elevation of the storage pond is sensitive to seasonal rainfall but has no correlation with the water surface elevation of the San Joaquin River.
- b. The direction of shallow groundwater flow at the Beck property is toward a point west of the property. There is a groundwater-level trough in the area of off-site excavations to the west of the Beck property. Flow at the north end of the Beck property heads west-southwest, while flow from the south end of the Beck property heads west-northwest. Shallow groundwater flow at Friant Ranch is to the west-southwest toward the Beck property and the groundwater trough.
- c. Shallow groundwater in the vicinity of the storage pond is consumed by evaporation in excavations west of the Beck property and does not reach the San Joaquin River. Recycled water stored in the Beck property excavation will have no effect on the San Joaquin River.

Shallow groundwater is characterized from three monitoring wells located on the Beck property. Samples from the three wells were taken in May of 2012. The wells are located around the perimeter of the storage pond area. Based on data submitted in the RWD, monitoring MW-1 and MW-2 are upgradient of the storage pond and MW-3 is downgradient of the storage pond. The characteristic of shallow groundwater near the storage pond area is summarized below.

Parameter	Units	MW-1	MW-2	MW-3
Calcium	mg/L	26	18	45
Magnesium	mg/L	9	15	12
Sodium	mg/L	30	27	48
Potassium	mg/L	5	7	8
Carbonate	mg/L	<10	<10	<10
Bicarbonate	mg/L	110	160	280
Sulfate	mg/L	27	12	18
Chloride	mg/L	17	11	19
Nitrate as N	mg/L	8.4	3.6	<1
pH	std. units	7.8	7.8	7.3

Parameter	Units	MW-1	MW-2	MW-3
Electrical Conductivity	umhos/cm	363	359	559
TDS	mg/L	260	200	290
Iron	mg/L	<0.05	0.07	0.07
Manganese	mg/L	0.02	0.17	0.78
Arsenic	ug/L	4	<2	<2

Deep groundwater in the vicinity of the WWTF and Friant Ranch is of similar high quality.

REGULATORY CONSIDERATIONS

Basin Plan

The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section 13263(a), waste discharge requirements must implement the Basin Plan. Local drainage is to the San Joaquin River. The beneficial uses of the San Joaquin River, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial process supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; wildlife habitat; migration of aquatic organisms; and spawning. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.

Treatment and Control Practices

The Discharger proposes the following treatment and control of the discharge:

- a. Disinfected tertiary wastewater treatment utilizing advanced activated sludge biological process with membrane bioreactors and UV disinfection;
- b. Application of treated wastewater at rates that will not exceed reasonable agronomic demand in the areas where effluent will be recycled;
- c. Sludge hauled off-site;
- d. Certified operators to ensure proper operation and maintenance;
- e. Source, effluent and groundwater monitoring;
- f. Prohibited use of water softeners within Friant Ranch;
- g. Regionalization of wastewater treatment for Friant Ranch, Millerton Lake Village Mobile Home Park, and capacity to treat existing and planned future uses in the Friant Community Plan Area; and

- h. The WWTF will be fully enclosed in a building designed to resemble a barn that will have an odor control system.

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

Antidegradation

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

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

Title 27

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

California Environmental Quality Act

The proposed WWTF was reviewed as part of the Friant Ranch Specific Plan Environmental Impact Report (EIR), which was certified by the Fresno County Board of Supervisors in accordance with the California Environmental Quality Act (CEQA) at its regular meeting on 1 February 2011. A Notice of Determination was filed on 7 February 2011 (SCH # 2007101016).

PROPOSED ORDER TERMS AND CONDITIONS

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

The proposed Order prohibits discharge to surface waters and drainage courses or the discharge of hazardous wastes.

The proposed Order sets effluent limitations for flow, BOD₅, total suspended solids, total nitrogen, turbidity, and total coliform organisms. Groundwater limitations are set at the primary and recommended secondary Maximum Contaminant Levels (MCL) for nitrate as Nitrogen, electrical conductivity, total coliform organisms, and the constituents identified in Title 22 of the California Code of Regulations, for which MCLs exist.

Application of waste constituents to the Use Areas shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering the

crop, soil, climate, and irrigation management system. The annual nutritive loading of the wastewater application area, including the nutritive value of organic and chemical fertilizers, and of the wastewater, shall not exceed the annual crop demand.

The proposed Order requires the submittal, prior to initialing discharge, of a Title 22 Engineering Report approved by the California Department of Public Health. Also prior to discharge, the Discharger shall demonstrate that the WWTF and Use Areas have sufficient capacity for the treatment and disposal for the permitted flow rate allowed by the Order.

Monitoring Requirements

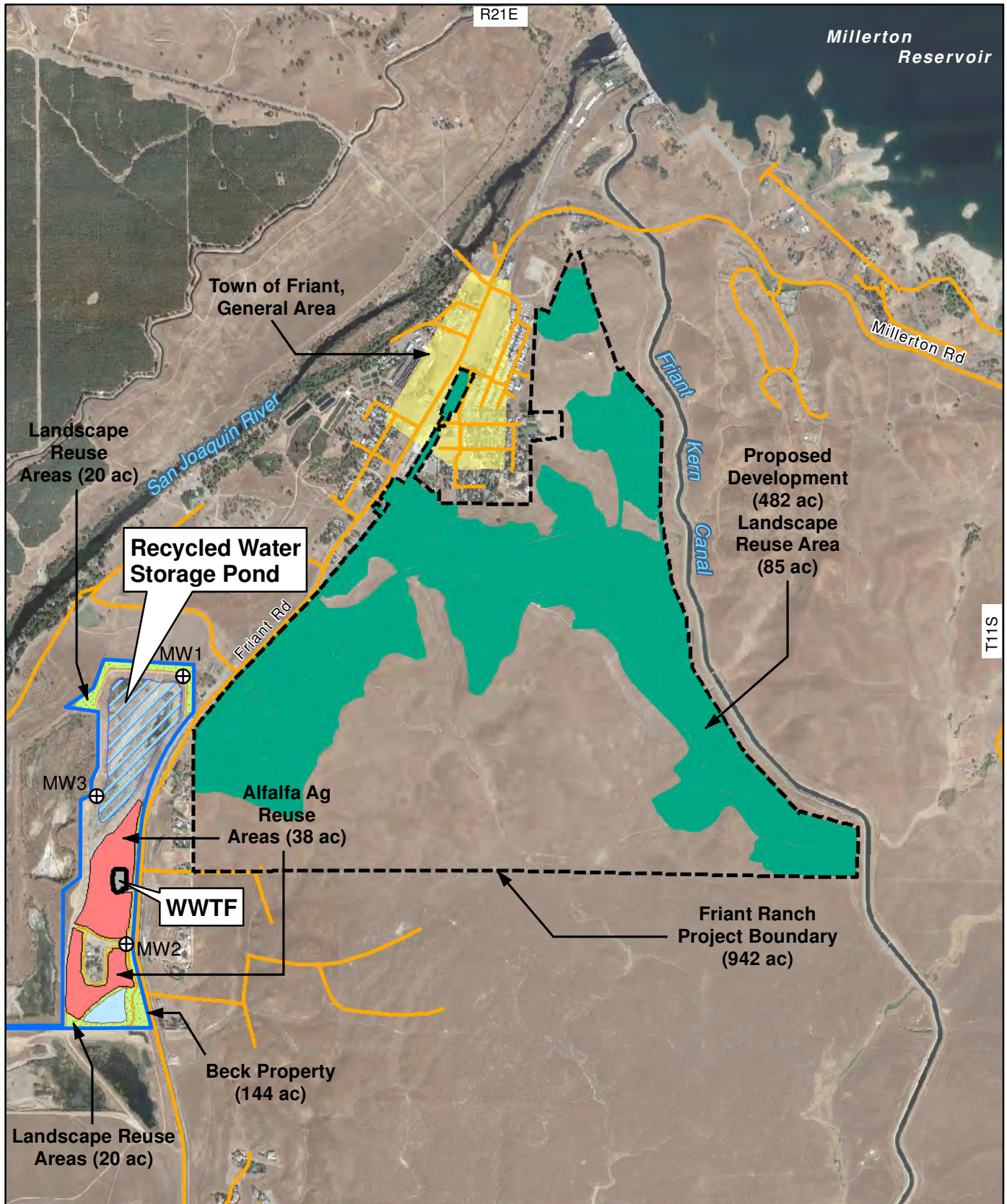
Water Code section 13267 authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information 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 for failure to submit required monitoring and technical reports.

The proposed Order includes monitoring requirements for WWTF effluent, wastewater application area, storage pond, and groundwater wells. This Order also includes groundwater trigger concentrations that will serve as a means of assessing whether the discharge might potentially cause a violation of one or more groundwater limitations at a later date. If a trigger concentration is exceeded in a groundwater monitoring well downgradient of the storage pond, this Order requires the Discharger either demonstrate that the increasing trend will not result in exceedence of the groundwater limitation or implement additional treatment and control to ensure compliance with the groundwater limitation. Given the project location near the San Joaquin River, the high quality of groundwater, and the expected good quality of the discharge, the groundwater trigger concentrations are set at 70 percent of the Primary or Recommended Secondary Maximum Contaminant Levels.

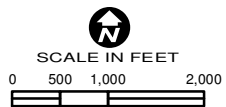
This monitoring is necessary to characterize the discharge, and evaluate compliance with effluent limitations and discharge specifications prescribed in the Order.

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.

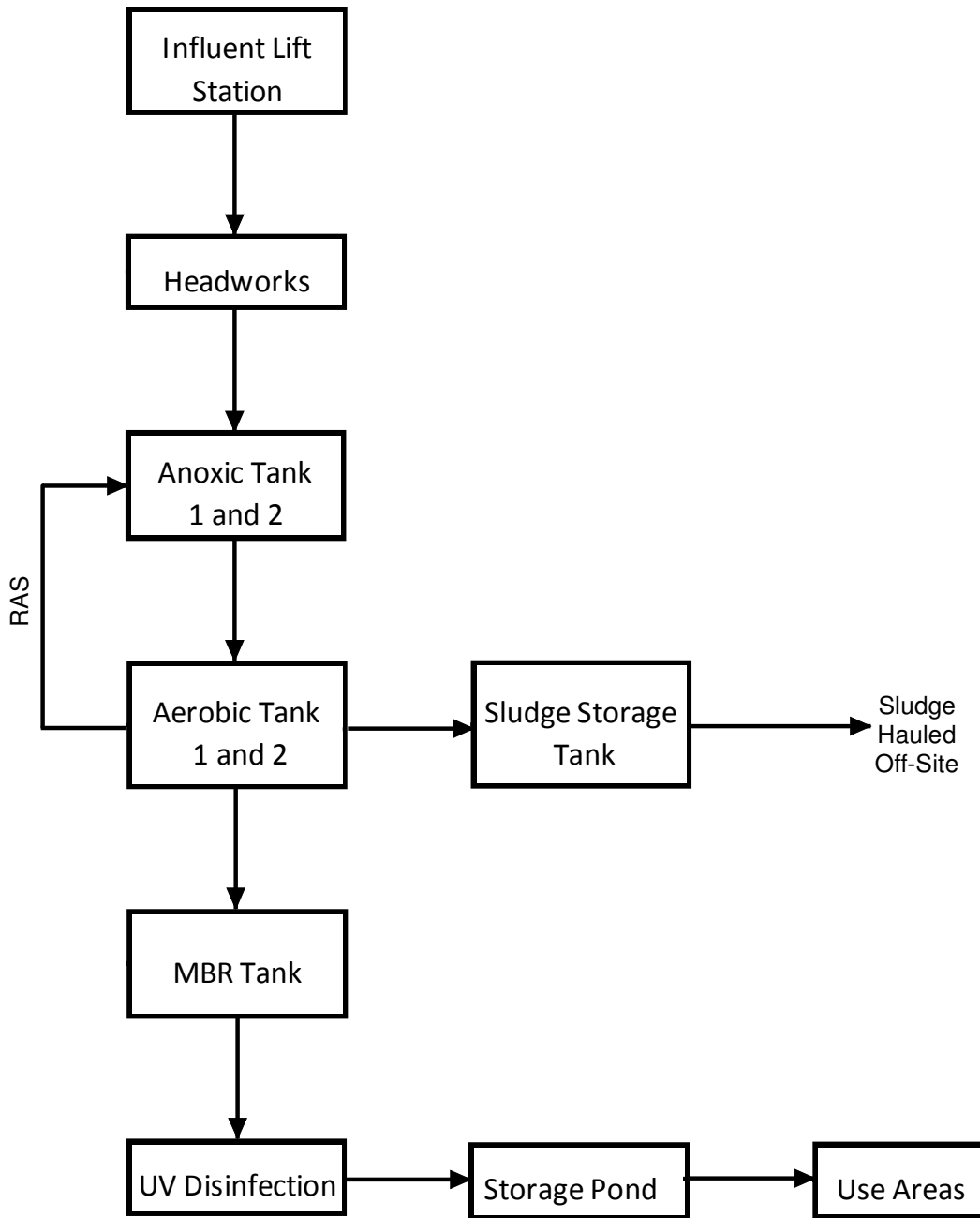


Map Source:
 USDA NAIP Aerial 2012
 Sections 7, 8, 17, 18, 19 & 20 T11S, R21E
 Sections 13, 24 T11S R20E
 MDB&M



SITE MAP
 WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2013-0160
 FOR
 FRIANT RANCH, A LIMITED PARTNERSHIP
 FRESNO COUNTY WATERWORKS DISTRICT NO. 18
 SWD INVESTMENTS, INC.
 FRIANT RANCH WASTEWATER TREATMENT FACILITY
 FRESNO COUNTY

ATTACHMENT A



NOT TO SCALE

PROCESS FLOW DIAGRAM
 WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2013-0160
 FOR
 FRIANT RANCH, A LIMITED PARTNERSHIP
 FRESNO WATERWORKS DISTRICT NO. 18
 SWD INVESTMENTS, INC.
 FRIANT RANCH WASTEWATER TREATMENT FACILITY
 FRESNO COUNTY

ATTACHMENT B



ATTACHMENT C

RECYCLED WATER SIGNAGE
WASTE DISCHARGE REQUIREMENTS
ORDER R5-2013-0160
FRIANT RANCH, L.P., FRESNO COUNTY WATERWORKS DISTRICT NO. 18,
SWD INVESTMENTS, INC.
FRIANT RANCH WASTEWATER TREATMENT FACILITY
FRESNO COUNTY

**Native American Contacts
Fresno County
October 12, 2012**

Big Sandy Rancheria of Mono Indians
Elizabeth Hutchins Kipp, Chairperson
P.O. Box 337 / 37302 Western Mono
Auberry , CA 93602
ck@bigsandyrancheria.com
(559) 855-4003
(559) 855-4129 Fax

Dumna Wo-Wah Tribal Government
Robert Ledger SR., Tribal Chairperson
2216 East Hammond Street Dumna/Foothill
Fresno , CA 93602 Mono
ledgerrobert@ymail.com
559-519-1742 - office

Cold Springs Rancheria of Mono Indians
Robert Marquez, Chairperson
P.O. Box 209 Mono
Tollhouse , CA 93667
(559) 855-5043
559-855-4445 - FAX

Sierra Nevada Native American Coalition
Lawrence Bill, Interim Chairperson
P.O. 125 Mono
Dunlap , CA 93621 Foothill Yokuts
(559) 338-2354 Choinumni

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road Mono
Clovis , CA 93619
rwgoode911@hotmail.com
(559) 299-3729 Home
(559) 355-1774 - cell

Choinumni Tribe; Choinumni/Mono
Lorrie Planas
2736 Palo Alto Choinumni
Clovis , CA 93611 Mono

Santa Rosa Rancheria
Rueben Barrios Sr., Chairperson
P.O. Box 8 Tache
Lemoore , CA 93245 Tachi
(559) 924-1278 Yokut
(559) 924-3583 Fax

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410 Yokuts
Friant , CA 93626-0177
(559) 325-0351
(559) 217-9718 - cell
(559) 325-0394 FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed Tribal affiliation contacts for California counties served by the California Regional Quality Water Boards for Tulumne, Merced, Mariposa, Madera, Fresno, Kings, Tulare and Kern counties.

**Native American Contacts
Fresno County
October 12, 2012**

Kings River Choinumni Farm Tribe
John Davis, Chairman
1064 Oxford Avenue Foothill Yokuts
Clovis , CA 93612-2211 Choinumni
(559) 307-6430

Chowchilla Tribe of Yokuts
Jerry Brown
10553 N. Rice Road North Valley Yokuts
Fresno , CA 93720
559-434-3160

Dunlap Band of Mono Historical Preservation Soc
Mandy Marine, Board Chairperson
P.O. Box 18 Mono
Dunlap , CA 93621
mandy_marine@hotmail.
com
559-274-1705

Kings River Choinumni Farm Tribe
Stan Alec
2248 Vartikian Foothill Yokuts
Clovis , CA 93611 Choinumni
559-297-1787
559-647-3227 - cell

Cold Springs Rancheria of Mono Indians
Tina Williams, Environmental Coordinator
P.O. Box 209 Mono
Tollhouse , CA 93667
coldsprgstribes@netptc.net
(559) 855-5043
(559) 855-4445 - Fax

The Choinumni Tribe of Yokuts
Rosemary Smith, Chairperson
1505 Barstow Choinumni
Clovis , CA 96311 Foothill YoKut
monoclovis@yahoo.com

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct. Foothill Yokuts
Salinas , CA 93906 Mono
kwood8934@aol.com Wuksache
831-443-9702

Traditional Choinumni Tribe
David Alvarez, Chairperson
2415 E. Houston Avenue Choinumni
Fresno , CA 93720
davealvarez@sbcglobal.net
(559) 292-5057 - Fax
(559) 323-6231
(559) 292-5057 FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed Tribal affiliation contacts for California counties served by the California Regional Quality Water Boards for Tulumne, Merced, Mariposa, Madera, Fresno, Kings, Tulare and Kern counties.

**Native American Contacts
Fresno County
October 12, 2012**

Frank Marquez
P.O. Box 565 Mono
Friant , CA 93626 Foothill Yokut
francomarquez@pmr.org
559-213-6543 - cell
559-822-3785

Santa Rosa Tachi Rancheria
Lalo Franco, Cultural Coordinator
P.O. Box 8 Tachi
Lemoore , CA 93245 Tache
(559) 924-1278 - Ext. 5 Yokut
(559) 924-3583 - FAX

Dumna Wo-Wah Tribal Government
Eric Smith, Cultural Resource Manager
2216 East Hammond Street Dumna/Foothill
Fresno , CA 93602 Mono
nuem2007@yahoo.com
559-519-1742 - office

Dumna Wo-Wah Tribal Government
John Ledger, Assistant Cultural Resource Manager
2216 East Hammond Street Dumna/Foothill
Fresno , CA 93602 Mono
ledger17bonnie@yahoo.com
559-519-1742 - office

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed Tribal affiliation contacts for California counties served by the California Regional Quality Water Boards for Tulumne, Merced, Mariposa, Madera, Fresno, Kings, Tulare and Kern counties.