

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2008-\_\_\_\_\_

WASTE DISCHARGE REQUIREMENTS  
FOR  
FRESNO COUNTY SERVICE AREA NO. 34  
MILLERTON NEW TOWN WASTEWATER TREATMENT FACILITY  
FRESNO COUNTY

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

1. Fresno County Service Area No. 34 (hereafter Discharger or Fresno CSA # 34) was formed in 1986 to operate and maintain public utilities for the planned Millerton New Town development. When completed, Millerton New Town will comprise approximately 2,200 acres, with about 3,400 homes and related commercial uses and recreational developments on Millerton Road east of Friant. At full development, Millerton New Town including the WWTF and Use Areas will be in Sections 9, 10, 11, 14, 15, and 16, T11S, R21E, MDB&M, as shown on [Attachment A](#), which is attached hereto and made a part of this Order by reference.
2. The existing secondary wastewater treatment facility (WWTF) provides sewerage service for about 80 homes in the Brighton Crest development. The secondary WWTF has a constructed capacity of 0.056 million gallons per day (mgd) and consists of a septic tank effluent pumping (STEP) system, recirculating sand filter, and two evaporation ponds with 40 mil plastic lining to minimize percolation.
3. In October 2002 the Regional Water Board adopted revised Waste Discharge Requirements (WDRs) Order No. 02-193. Order No. 02-193 provided for expansion of the existing secondary WWTF on an interim basis until a new tertiary WWTF could be constructed, and allowed for the use disinfected tertiary recycled water for unrestricted irrigation of landscaped and open space areas within the Millerton New Town development including the Brighton Crest Golf Course.
4. In August 2007, the Discharger submitted a Report of Waste Discharge (RWD) to modify its existing Order. The modifications include: expansion of the site boundary covered by the Order to include the area north of Millerton Road that lies within the boundary of Fresno CSA # 34, and allow for the use of recycled water for fire protection and irrigation of residential lots. The Discharger also submitted a Master Reclamation Permit application for the distribution of recycled water under Fresno CSA #34 on land owned by individuals within Millerton New Town.
5. Order No. 02-193 does not reflect the expanded service area that includes the area north of Millerton Road including the proposed Lakeridge and Marina Estates developments or the conditions of a Master Reclamation permit for use of recycled water for irrigation of residential landscaping within the proposed development. The purpose of this Order is to

update WDRs to ensure the discharge is consistent with water quality plans and policies, to prescribe requirements that are effective in protecting existing and potential beneficial uses of receiving waters, and to reflect the Discharger's expanded service area.

### **Tertiary Wastewater Treatment Facility**

6. For the purposes of this Order, the new tertiary WWTF shall include the wastewater collection system, the treatment system, effluent storage ponds, recycled water distribution piping, and land application areas (Use Areas).
7. According to the RWD, the existing secondary WWTF will be replaced with a tertiary WWTF that will be expanded in phases to a final capacity of 1.07 mgd. The new tertiary WWTF will consist of headworks, a new secondary treatment process, coagulation/flocculation, filtration, disinfection, sludge handling facility, an emergency storage basin, lined effluent storage ponds, and a recycled water irrigation system. Phase 1 of the tertiary WWTF will have a capacity of 0.2 mgd. Subsequent phases (Phases 2 and 3) will have capacities of 0.5 mgd and 1.07 mgd, respectively. A system flowchart for the tertiary WWTF is presented in [Attachment B](#), which is attached hereto and made a part of this Order by reference. The project will also include dual plumbing to provide for wastewater recycling.
8. Construction on the first phase of the tertiary WWTF (Phase 1) has been completed. However, the tertiary WWTF will not be put into operation until the infrastructure for water recycling is completed and sufficient flows to the treatment plant warrant operation of the tertiary treatment system. Upon startup, flows to the existing secondary WWTF will be diverted to the new treatment plant and the secondary WWTF will be decommissioned.
9. Influent to the tertiary WWTF will be screened with duplex mechanical fine screens to remove solids, than stored in an enclosed aerated flow equalization tank. The flow equalization tank allows wastewater that enters the plant during high flow periods to be stored for processing when influent flows are reduced. The treatment system will operate at the average daily flow rate, which will reduce the required downstream treatment process capacity.
10. The new secondary treatment system will consist of four trickling filters operated in series. Wastewater will be sprayed over the plastic, cross-flow trickling filter media, where microorganisms remove organic compounds and convert them to carbon dioxide, water, and new cells. Prior to final clarification, a coagulant (polyaluminum hydroxychloride or aluminum chlorohydrate) will be added to the effluent to agglomerate fine particulates into larger particles to be removed during filtering.
11. The clarified effluent will be filtered using duplex sand filters to remove fine suspended solids remaining in the wastewater after clarification. The filters will be backwashed to flush out solids collected on the filter media. The backwash water will be returned to the treatment system at the flow equalization tank.

12. Following filtration, the treated effluent will be disinfected using a duplex feed system to pump a 12.5% solution of liquid sodium hypochlorite into the filtered effluent prior to discharge to the chlorine contact chamber. The system will provide for sufficient detention time to ensure a modal contact time of 90 minutes as required by Title 22.
13. Following treatment and disinfection the tertiary treated effluent will be discharged into lined effluent storage ponds with a permeability less than  $10^{-7}$  cm/sec, prior to irrigation of the landscaped Use Areas. The ponds will serve as source water for the irrigation pumping station that pressurizes the recycled water distribution system and provide storage during the winter months when irrigation is not needed due to rainfall or saturated soils. The RWD estimates that the required effluent storage capacity at build out would be about 368 acre-feet to provide for over 60 days of storage.
14. The WWTF currently has three ponds for effluent storage; a lined emergency storage pond (Pond 1), and two evaporation ponds (Ponds 2 and 3). The two evaporation ponds were constructed to store treated effluent from the secondary WWTF. To minimize percolation the ponds were lined with a 40 mil plastic lining and covered with a layer of soil to protect the liners from UV radiation. Pond 2 was recently enlarged and reconditioned with a new high-density polyethylene liner with a permeability less than  $10^{-7}$  cm/sec to provide for sufficient storage capacity for Phase 1 of the tertiary WWTF. According to the Discharger, Pond 3 will be abandoned and backfilled when the recycling operation begins. Current capacity of Pond 2 is 49 acre-feet. Additional effluent storage ponds will be constructed at selected locations within the Millerton New Town development to provide for additional storage capacity as the tertiary WWTF expands.
15. The Discharger currently disposes of sludge at the Fresno County landfill and will continue to do so until the WWTF reaches 0.056 mgd. Once the new tertiary WWTF goes online, wasted sludge will be pumped to an aerated sludge storage tank for digestion and initial thickening and trucked off-site for disposal at an approved receiving facility. Decant water from the sludge storage tanks will be returned to the treatment system at the headworks. The RWD indicates that in the future, a sludge dewatering unit, such as a centrifuge, screw, or belt press, will be added when the volume of sludge increases sufficiently to justify the capital cost and additional labor.
16. The WWTF is designed for continuous, reliable performance with provisions for component malfunction and primary power outages. These provisions include: a control system to monitor the status and performance of equipment and instrumentation utilized in the treatment process; an alarm and automatic dialer system to contact operating personnel if a problem is detected; all critical mechanical components in the process train have duplex units or spare parts available for immediate repair (in the event of a malfunction, the duplex unit will automatically be started by the control system) by-pass of all unit processes for routine maintenance and repair while maintaining full compliance with effluent discharge specifications; a standby power generator available for use during power failures; and by-pass to a lined emergency storage basin, in the event of a problem.

17. Self-monitoring data from January 2005 to December 2007 characterize the existing discharge as follows:

<u>Constituent/Parameter</u>	<u>Units<sup>1</sup></u>	<u>Influent</u>	<u>Effluent</u>
BOD <sub>5</sub> <sup>2</sup>	mg/L	55	4.7
Total Suspended Solids	mg/L	17	trace
EC <sup>3</sup>	µmhos/cm	NS <sup>4</sup>	420
Ammonia (as Nitrogen)	mg/L	NS <sup>4</sup>	6.7
Total Nitrogen <sup>5</sup>	mg/L	NS <sup>4</sup>	17.3

<sup>1</sup> mgd = million gallons per day. su = standard pH units. mg/L = milligrams per liter.  
 µmhos/cm = micromhos per centimeter

<sup>2</sup> 5-day biochemical oxygen demand (BOD<sub>5</sub>)

<sup>3</sup> Electrical conductivity at 25°C (EC)

<sup>4</sup> Not sampled

<sup>5</sup> Calculated by summing the concentrations of nitrate as nitrogen and TKN, and assuming the concentration of nitrite is negligible.

On average, the EC of the WWTF effluent is about 366 µmhos/cm over the source water.

18. The RWD anticipates effluent water quality from the tertiary WWTF will meet discharge specifications and those in Title 22, California Code of Regulations (CCR) section 60301 et seq., (hereafter Title 22) for disinfected tertiary recycled water.
19. Self-monitoring reports indicate that winter flows to the existing WWTF are not higher than summer flows, demonstrating insignificant inflow and infiltration to the collection system during winter months.

### **Sanitary Sewer Overflows**

20. A “sanitary sewer overflow” 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 sanitary sewer overflows, provided that the waste is fully contained within these temporary storage/conveyance facilities.
21. On 2 May 2006, the State Water Board adopted Statewide General Waste Discharge Requirements For Sanitary Sewer Systems Water Quality Order No. 2006-003-DWQ (General Order). The General Order requires all public agencies that own or operate sanitary sewer systems greater than one mile in length to comply with the order. The Discharger’s collection system is greater than one mile in length; therefore, the General Order is applicable.

### **Water Recycling**

22. As the effluent from the tertiary WWTF will be treated to meet the requirements for disinfected tertiary recycled water, it is approved for use on food crops, including all edible root crops, where the recycled water comes into contact with the edible portion of the crop; parks and playgrounds; school yards; residential landscaping; unrestricted access golf courses; and any other irrigation use not specified in Title 22, section 60304, and not prohibited by other sections of the CCR.
23. The term Use Area as used herein includes the Brighton Crest Golf Course, and open space and landscaped areas within the Millerton New Town development upon which recycled water will be used for irrigation. In addition, recycled water will be utilized for fire protection and irrigation of residential yards within Marina Estates and potential future development within the Brighton Crest subdivision. Areas that may receive recycled water are discussed in the accompanying Master Reclamation Permit Order No. [R5-2008-\\_\\_\\_\\_\\_](#).
24. According to the *Western Fertilizer Handbook*, the annual nitrogen uptake by turf grass in the proposed Use Area is greater than 150 lbs/acre. Based on current self-monitoring data from the existing secondary WWTF, the average nitrogen concentration of the effluent is about 17 mg/L, which is comparable with similar facilities with no industrial component. Based on a nitrogen concentration of 17 mg/L and a permitted average daily flow rate of 0.2 mgd (for Phase 1), the Discharger will need approximately 70 acres of land for water recycling. The existing Brighton Crest golf course will provide sufficient land for irrigation at agronomic rates during Phase 1 of the tertiary WWTF. At the proposed build out of 1.07 mgd, the Discharger will need an estimated 369 acres of land to meet nitrogen uptake rate for turf grass (based on the current nitrogen concentration of the effluent). This may change with operation of the new tertiary WWTF, which has the potential to provide nitrogen reduction, if required, to meet effluent limits. The Discharger has stated that the annual total nitrogen application to the Use Areas will not exceed 150 lbs/acre.

### **Site-Specific Conditions**

25. The discharge area is in an arid climate characterized by hot dry summers and mild winters. The rainy season generally extends from November through March. Occasional rains occur during the spring and fall months, but summer months are dry. Average annual precipitation and evaporation in the discharge area are about 14.3 inches and 79 inches, respectively, according to information published by California Department of Water Resources (DWR).
26. Topography in the area consists of moderately steep to gently sloping hills. Soils in the area range from sandy loam to clay underlain by decomposed granite and are generally of moderate permeability. Soil units are generally thin to moderately thick. The contact

between soil and the decomposed granite is often abrupt. Predominant soils in the project area include Sesame and Fallbrook. These soils have moderate to slow drainage.

- 27. The WWTF is not within a 100-year floodplain according to Federal Emergency Management Agency maps, and all storm water runoff within the WWTF property will be contained on site.
- 28. Land use in the vicinity of the WWTF and Use Area is primarily residential, recreational, and rangeland.

**Groundwater Considerations**

- 29. Regional groundwater is contained in fractured bedrock and to a lesser extent in alluvial/weathered bedrock deposits. Groundwater typically flows northeast to southwest. Depth to water is variable, with shallow groundwater encountered at depths less than 10 feet below grade on portions of the Use Area.
- 30. Two monitoring wells were installed to monitor groundwater following installation of the effluent storage ponds. These monitoring wells were last sampled between 1997 and 1998. Based on data collected, groundwater in the area was generally of good quality, except for nitrates with average EC, chloride, and nitrate as nitrogen concentrations of 300 µmhos/cm, 15 mg/L and 12 mg/L, respectively. The average nitrate concentration at 12 mg/L exceeds the primary maximum contaminant level (MCL) for nitrate as nitrogen of 10 mg/L. Due to the low volume of the initial stage of the WWTF, and the fact that the effluent storage ponds were lined, the WWTF would not appear to be the source of the nitrate in groundwater. With replacement of the existing pond liner with a new high-density polyethylene liner with a permeability less than 10<sup>-7</sup> cm/sec and application of recycled water at agronomic rates, further degradation of groundwater for nitrates is not expected.
- 31. Source water for the majority of the development at Millerton New Town is and will be surface water from Millerton Lake. For Marina Estates, source water will be from groundwater provided by a community supply well:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Millerton New Town</u>	
		<u>Potable Water Supply</u>	<u>Marina Estates Well Water</u>
EC	µmhos/cm	58	250
Chloride	mg/L	4.5	23
Sodium	mg/L	8.7	50
Total Dissolved Solids	mg/L	52	150
Nitrate (as Nitrogen)	mg/L	- - -	ND

ND = Not detected

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

32. 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 Board. Pursuant to Section 13263(a) of the California Water Code (CWC), these waste discharge requirements implement the Basin Plan.
33. The WWTF and Use Areas lie within the San Joaquin Basin, specifically the Millerton Lake Hydrologic Area (No. 540.12), as depicted on interagency hydrologic maps prepared by the California Department of Water Resources (DWR) in 1986. The Basin Plan designates the beneficial uses of groundwater as municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
34. Surface water drainage is to Millerton Lake, and White Fox Creek, which enters Little Dry Creek, a tributary of the San Joaquin River, below Friant Dam. The Basin Plan designates the beneficial uses as: potential municipal and domestic supply, agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, potential cold freshwater habitat, and wildlife habitat.
35. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the MCLs specified in Title 22. The Basin Plan recognizes that the Regional 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.
36. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity. The toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.
37. The Water Quality Control Plan for the Tulare Lake Basin, Second Edition, contains salt management requirements that have been successfully implemented for several decades. Widespread and long-term compliance with these requirements justify them as appropriate best practicable control measures for salinity applicable to discharges in the Sacramento River and San Joaquin River Basins. The Tulare Basin Plan establishes several salt management requirements, including:

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

These effluent limits are considered best practicable treatment or control (BPTC).

38. Land use in the vicinity is primarily residential, recreational, and rangeland. The rockiness of the soil, the low to moderate water holding capacity, and limited water available for irrigation makes this area unsuitable for cultivation for agriculture. Because of the low potential for growing salt sensitive crops, an EC limit in groundwater of 900  $\mu\text{mhos/cm}$ , based on Title 22 Table 64449 B, which establishes recommended, upper, and short term ranges for EC of 900 and 1,600  $\mu\text{mhos/cm}$  for drinking water is appropriate to protect beneficial uses of underlying groundwater.

#### **Antidegradation Analysis**

39. State Water Resources Control Board Resolution No. 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
  - a. The degradation is consistent with the maximum benefit to the people of the State;
  - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
  - c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives; and
  - d. The discharger employs best practicable treatment or control (BPTC) to minimize degradation.
40. Degradation of groundwater by some of the typical waste constituents released with discharge from a municipal wastewater utility after effective source control, treatment, and control is consistent with 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 a community otherwise reliant on numerous concentrated individual wastewater systems, and the impact on water quality will be substantially less. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and therefore sufficient reason to accommodate growth and groundwater degradation provided terms of the Basin Plan are met.



41. Constituents of concern that have the potential to degrade groundwater include salts and nutrients. This Order establishes terms and conditions of discharge to ensure that the discharge does not unreasonably affect present and anticipated uses of groundwater and includes groundwater limitations that apply water quality objectives established in the Basin Plan to protect beneficial uses. The discharge will likely not impair the beneficial uses of groundwater because:
- a. Effluent will be applied at agronomic rates reflecting the seasonal hydraulic and nutrient requirements of the Use Area. With storage in lined ponds and application at agronomic rates, no degradation of groundwater for nitrates is expected to occur.
  - b. The EC of the effluent will be less than 550 umhos/cm, which is consistent with the Tulare Lake Basin Plan's limit of 500 umhos/cm plus source in accordance with the 2007 Salinity Guidance, which reasoned that the numerical limits in the Tulare Lake Basin Plan, for municipal discharges are applicable as BPTC, even if the discharge is not conducted in the Tulare Lake Basin.

#### **Treatment and Control Practices**

42. The Discharger provides treatment and control of the discharge that incorporates:
- a. alarm and automatic flow diversion systems to prevent system bypass or overflow;
  - b. tertiary treatment of the wastewater;
  - c. lined effluent storage ponds;
  - d. disinfection of the treated effluent;
  - e. recycled water use at agronomic rates;
  - f. appropriate biosolids storage and disposal practices;
  - g. an operation and maintenance (O&M) manual; and
  - h. certified operators to ensure proper operation and maintenance.
43. This Order establishes groundwater limitations for the WWTF that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan.

#### **Other Regulatory Considerations**

44. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in Title 40, Code of Federal Regulations, Part 503, Standards 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. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to EPA. The RWD states that all biosolids will be hauled to a separate permitted facility.

45. As the discharge consists of treated municipal sewage and incidental discharges from treatment and storage facilities associated with a municipal wastewater treatment plant, and as these discharges are regulated by waste discharge requirements consistent with applicable water quality objectives, the Facility and its discharge is exempt from containment pursuant to Title 27, Section 20090(a).
46. State Water Board Resolution No. 77-1, Policy with Respect to Water Recycling in California, encourages recycling projects that replace or supplement the use of fresh water, and the Water Recycling Law (California Water Code Section 13500-13529.4) declares that utilization of recycled water is of primary interest to the people of the State in meeting future water needs.
47. A 1988 Memorandum of Agreement (MOA) between the Department of Public Health (DPH) (formerly Department of Health Services) and the State Water Resources Control Board (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.
48. The Discharger intends to recycle effluent on golf courses and other landscaped areas within the Millerton New Town development. Title 22 requires recyclers of treated municipal wastewater to submit an engineering report detailing the use of recycled water, contingency plans, and safeguards. Water recycling is regulated under a separate Master Reclamation Permit, Order No. [R5-2008-\\_\\_\\_\\_\\_](#).

#### CEQA

49. On 18 December 1984, Fresno County, in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et, seq.) and the State CEQA guidelines (Title 14, Division 6, California Code of Regulations, as amended), certified an Environmental Impact Report (EIR) and approved the Millerton Specific Plan. The EIR was amended in 1999, 2000, and 2004 to include additional areas within the Millerton Specific Plan area. The EIR determined that potential impacts to water quality relative to the WWTF and the use of recycled water would be reduced to less than significant given the mitigation measures adopted as part of the Millerton Specific Plan on 20 April 1999.
50. The Regional Water Board as responsible agency pursuant to CEQA reviewed and considered the EIR prepared by the Discharger. Specific mitigation measures related to the distribution and use of recycled water are discussed in Master Reclamation Permit Order No. [R5-2008-\\_\\_\\_\\_\\_](#). Mitigation measures intended to mitigate or avoid environmental effects on water quality associated with the WWTF that were identified by the lead agency are listed below, followed by the applicable requirements in brackets:

Mitigation Measures

1. All development that occurs within the Specific Plan area must utilize a community sewer system, with effluent treated to tertiary level. [[County Responsibility, Effluent limitations B.2 through B.4, B.6, B.7, and B.8, and Discharge Specifications C.2](#)]
  2. Reliability and design requirements for the treatment process and distribution must adhere to established engineering standards for Department of Public Health criteria. [[County Responsibility, Prohibition A.5, and Provision F.1 \(Standard Provisions\)](#)]
  3. Wastewater treatment facilities shall comply with the regulation and guidelines governing wastewater treatment and effluent reuse, and approved by Fresno County Public Works Department, Fresno County Department of Health, The Regional Water Board, and Department of Public Health. [[County Responsibility, Discharge Specifications C.2, and Provision F.1 \(Standard Provisions\)](#)]
  4. To the greatest extent possible, reclaimed water shall be reused for irrigation of golf courses and other landscaped areas. [[County Responsibility, Discharge Specifications C.3, and Provision F.14](#)]
  5. Areas for use of reclaimed water shall be constructed to allow for landscaping, golf course use, and protection of wetlands. [[County Responsibility, Provision F.14](#)]
  6. Appropriate measures shall be taken to ensure protection of public health. Typical measures include: setbacks, irrigation at night, positive controls to avoid irrigation run-off, and appropriate cross-connection control requirements with respect to potable water. [[Prohibition A.5, Discharge Specifications C.1 through C.8](#)]
  7. Effluent shall not be applied to any permanent wetland areas that would result in a surface water drainage, which would require a NPDES permit. [[Prohibition A.1](#)]
  8. Compliance with an effluent monitoring program established by the Regional Water Board consistent with waste discharge requirements and State Health Wastewater Reclamation Criteria. [[Provision F.2](#)]
51. This Order contains additional requirements that will mitigate or avoid environmental effects on water quality, specifically:
- a. Prohibits cross-connections between potable water supply and piping containing recycled water that does not have an appropriate air gap or reduced pressure principle device;
  - b. Sets effluent limits for flow, biochemical oxygen demand, total suspended solids, electrical conductivity, turbidity, and total coliform organisms; and

- c. Establishes a Monitoring and Reporting Program, which includes routine sampling and analysis of the discharge and source water.

### **General Findings**

52. Pursuant to CWC 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.
53. The Regional Water Board will review this Order periodically and will revise requirements when necessary.
54. California Water Code Section 13267(b) states that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."
55. The technical reports required by this Order and the attached Monitoring and Reporting Program No. R5-2008-\_\_\_\_\_ are necessary to assure compliance with these waste discharge requirements. The Discharger operates the Facility that discharges the waste subject to this Order.
56. The California Department of Water Resources set standards for the construction and destruction of groundwater wells, as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 94-81 (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to California Water Code Section 13801, apply to all monitoring wells.

### **Public Notice**

57. 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.
58. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided

an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

59. All comments pertaining to the discharge were heard and considered in a public meeting.

**IT IS HEREBY ORDERED** that, Waste Discharge Requirements Order No. R5-2002-193 is rescinded and that, pursuant to Sections 13263 and 13267 of the California Water Code, the County of Fresno and its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, shall comply with the following:

**A. Prohibitions**

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated wastes, except as allowed by Provision E.2 of Standard Provisions and Reporting Requirements, is prohibited.
3. Discharge of waste classified as 'hazardous', as defined in Section 2521(a) of Title 23, California Code of Regulations, Section 2510 et seq., is prohibited. Discharge of waste classified as 'designated,' as defined in California Water Code Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.
4. Application of treated wastewater in a manner or location other than that described herein is prohibited.
5. Cross-connections between any potable water supply and piping containing recycled water are prohibited. As such, no physical connection shall exist between recycled water piping and any domestic water supply well, or between recycled water piping and any irrigation well that does not have an air gap or reduced pressure principle device.

**B. Effluent Limitations**

1. Until the tertiary WWTF is in operation, discharge from the existing secondary WWTF shall not exceed:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Flow	mgd	0.056	- - -
BOD <sub>5</sub> <sup>1</sup>	mg/L	40	80
TSS <sup>2</sup>	mg/L	40	80

<sup>1</sup> 5-day Biochemical Oxygen Demand

<sup>2</sup> Total Suspended Solids

2. The discharge from the tertiary WWTF shall not exceed the following limitations:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Flow	mgd	0.2	
BOD <sub>5</sub> <sup>1</sup>	mg/L	10	20
TSS <sup>2</sup>	mg/L	10	20

<sup>1</sup> 5-day Biochemical Oxygen Demand

<sup>2</sup> Total Suspended Solids

3. Upon completion of Phase 2 of the tertiary WWTF and satisfaction of [Provision F.16](#), the monthly average daily discharge flow shall be increased up to 0.5 mgd.
4. Upon completion of Phase 3 of the tertiary WWTF and satisfaction of [Provision F.17](#), the monthly average daily discharge flow shall be increased up to 1.07 mgd.
5. The average EC of the discharge shall not exceed 550 µmhos/cm calculated on a monthly basis. This performance-based limit may be re-opened to evaluate the EC limit in the event the Discharger provides sufficient evidence to demonstrate that exceedence of the EC limit is the result of an increase of the source water EC (e.g, increased use of groundwater).
6. Effluent discharged from the tertiary WWTF shall comply with the following limits for total coliform organisms:
  - a. The median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which the analyses have been completed.
  - b. The number of total coliform bacteria shall not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period.
  - c. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.
7. For recycled water - Turbidity filtered through undisturbed soil or a filter media shall not exceed any of the following:
  - a. An average of 2.0 NTU within a 24-hour period.
  - b. 5.0 NTU more than 5 percent of the time within a 24-hour period.
  - c. 10.0 NTU at any time.

8. For recycled water - Turbidity filtered through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane shall not exceed any of the following:
  - a. An average of 0.2 NTU more than 5 percent of the time within a 24-hour period.
  - b. 0.5 NTU at any time.

### **C. Discharge Specifications**

1. Wastewater treatment and use of recycled water shall not cause pollution or a nuisance as defined by Section 13050 of the CWC.
2. The Discharger shall treat the wastewater such that it complies with Title 22 CCR, Section 60301.230 ("Disinfected Tertiary Recycled Water"), and shall not cause or contribute to any violations of [Master Reclamation Permit, Order No. R5-2008-\\_\\_\\_\\_\\_](#).
3. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge. The wastewater shall be filtered at all times.
4. Objectionable odors shall not be perceivable beyond the limits of the WWTF, or effluent storage ponds at an intensity that creates or threatens to create nuisance conditions.
5. Public contact with wastewater effluent shall be controlled using fences, signs, and/or other appropriate means. Signs of a size no less than four inches high by eight inches wide with proper wording (shown below) shall be placed at all areas of public access and around the perimeter of all areas used for effluent disposal or conveyance to alert the public of the use of recycled water. All signs shall display an international symbol similar to that shown in [Attachment C](#), a part of this Order, and present the following wording:

**“RECYCLED WATER – DO NOT DRINK”**

**“AGUA DE DESPERDICIO RECLAMADA – POR FAVOR NO TOME”**

6. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
7. Effluent storage ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the winter. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

8. On or about **1 October** of each year, the available effluent storage pond capacity shall at least equal the volume necessary to comply with [Discharge Specification C.6](#).
9. Ponds shall be managed to prevent breeding of mosquitoes. In particular,
  - a. An erosion control plan should assure that coves and irregularities are not created around the perimeter of the water surface.
  - b. Weeds shall be minimized through control of water depth, harvesting, and herbicides.
  - c. Dead algae, vegetation and other debris shall not accumulate on the water surface.
  - d. 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.

#### **D. Sludge Specifications**

Sludge 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 screening material 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 undergone sufficient treatment and testing to qualify for reuse pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation.

1. Sludge and solid waste shall be removed from screens, sumps, aeration basins, ponds, clarifiers, etc. as needed to ensure optimal plant 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 on property of 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 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. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control 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 quality control board or State Water Board. In most cases, this means the General Biosolids Order (State Water Board Water Quality Order No. 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 authorized by the General Biosolids Order, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.
6. 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**

1. Release of waste constituents from any treatment, storage, or recycling component associated with the discharge shall not cause or contribute to groundwater:
  - a. Containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:
    - (i) Nitrate as nitrogen of 10 mg/L.
    - (ii) Electrical Conductivity of 900  $\mu$ mhos/cm.
    - (iii) Total Coliform Organisms of 2.2 MPN/100 mL.
    - (iv) For constituents identified in Title 22, the MCLs quantified therein.
  - b. Containing taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

#### **F. Provisions**

1. The Discharger shall comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as Standard Provisions.
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. [R5-2008-\\_\\_\\_\\_\\_](#), which is part of this Order, and any revisions thereto as adopted by the Regional Water Board or approved by the Executive Officer. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger self-monitoring reports.
3. The Discharger 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. The Discharger shall not allow pollutant-free wastewater to be discharged into the Facility 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. The Discharger 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 the Discharger only when the operation is necessary to achieve compliance with the conditions of the Order.
6. All technical reports 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. To demonstrate compliance with sections 415 and 3065 of Title 16, CCR, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports 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.
7. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Regional Water Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Regional 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 land or waste treatment and storage facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the appropriate Regional Water Board office.

9. 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 Regional 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 California Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Regional Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
10. As a means of discerning compliance with [Discharge Specification C.4](#), the dissolved oxygen content in the upper zone (1 foot) of effluent in the effluent storage ponds shall not be less than 1.0 mg/L for three consecutive sampling events. Should the DO be below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Regional Water Board and propose a remedial approach to resolve the low DO results **within 30 days**.
11. The Discharger shall maintain and operate all ponds sufficient to protect the integrity of containment levees and prevent overtopping or overflows. Unless a California 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). As a means of management and to discern compliance with this Provision, the Discharger shall install and maintain in each pond permanent markers with calibration that indicates the water level at design capacity and enables determination of available operational freeboard.
12. The Discharger shall obtain coverage under, and comply with, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-003-DWQ.
13. Prior to operation and use of the new tertiary WWTF the Discharger shall submit an Operations and Maintenance (O&M) plan. At a minimum the submittal shall contain a detailed operations plan for the WWTF and recycled Use Areas, including methods and procedures for implementation of regulations regarding recycled water use and maintenance of equipment and emergency backup systems to maintain compliance with the conditions of this Order and DPH requirements.
14. Prior to initiating recycling operations the, Discharger shall enter into recorded covenants with the landowners of land to be dedicated for water recycling which will provide for mandatory recycled water use for irrigation purposes. The covenants shall run with the land and be binding upon all successors and assigns. Should a land owner wish to remove a covenant from a property, a substitute property of equal or greater

irrigatable area shall be offered for approval by the Discharger with concurrence by the Executive Officer.

15. Prior to initiating recycling operations, the Discharger shall establish sufficient disposal capacity for Phase I recycled water operations by submitting copies of recorded covenants. This provision will be considered satisfied following written acknowledgement from the Executive Officer that the Discharger has established adequate disposal capacity.
16. Upon completion of Phase 2 of the tertiary WWTF (described in [Finding 7](#)) and at least **120 days** prior to discharging more than **0.2 mgd**, the discharger shall submit an engineering certification that it has sufficient treatment, storage, and disposal capacity to comply with the terms and conditions of this Order. Disposal capacity will be established by submitting copies of recorded covenants specified in [Provision F.14](#). This provision will be considered satisfied following written acknowledgement from the Executive Officer that the criteria have been met.
17. Upon completion of Phase 3 of the tertiary WWTF (described in [Finding 7](#)) and at least **120 days** prior to discharging more than **0.5 mgd**, the discharger shall submit an engineering certification that it has sufficient treatment, storage, and disposal capacity to comply with the terms and conditions of this Order. Disposal capacity will be established by submitting copies of recorded covenants specified in [Provision F.14](#). This provision will be considered satisfied following written acknowledgement from the Executive Officer that the criteria have been met.
18. If the Regional Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of an objective for groundwater, this Order may be reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for the problem constituents.

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

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PAMELA C. CREEDON, Executive Officer