

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2011-\_\_\_\_  
FOR  
TEJON-CASTAC WATER DISTRICT  
TEJON INDUSTRIAL COMPLEX NEW EAST  
WASTEWATER TREATMENT FACILITY  
KERN COUNTY

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

1. The Tejon-Castac Water District (hereafter Discharger) owns and operates the Tejon Industrial West wastewater treatment facility (West WWTF) on the West side of Interstate Five (I-5) at Laval Road. Waste Discharge Requirements (WDRs) Order R5-2008-0004 regulates the West WWTF and allows a monthly average discharge flow of 0.1 million gallons per day (mgd) of wastewater to two ponds (total storage capacity of 2.39 acres) and to 14 acres of Use Area.
2. The West WWTF provides sewerage for businesses at the Tejon Industrial Complex West. Such businesses include a hotel, gas stations, shower and restroom areas, convenience stores, and industrial warehouses.
3. On the East side of I-5, the TravelCenter of America WWTF (Existing East WWTF) is regulated by WDRs Order No. 5-01-002 that allows a monthly average discharge flow of 0.070 mgd of undisinfected secondary treated wastewater to four evaporation/percolation ponds.
4. The Existing East WWTF provides sewerage for a convenience store, gas station, laundry and shower facility, two restaurants, truck fueling station, maintenance shop, and a truck wash (Blue Beacon).
5. On July 2009, the Discharger submitted a Report of Waste Discharge (RWD) for a proposed new WWTF (New East WWTF) on the East side of I-5 at Wheeler Ridge Road that will have an initial design flow of 0.1 mgd. It is proposed that the New East WWTF will serve the discharge from the TravelCenter of America Complex as well as part of the flow from the Tejon Industrial Complex West (located on the West side of I-5). The New East WWTF will be expanded in phases to a build out capacity of 0.8 mgd.
6. The Existing East WWTF will continue to serve the Blue Beacon truck wash until it is relocated within the Tejon Industrial Complex East. The relocation is expected to take place in April 2011, at which time Blue Beacon will be connected to the New East WWTF. The Existing East WWTF will be used for emergency purposes only and will continue to be regulated under Order No. 5-01-002.
7. New WDRs reflecting the new facility are needed to ensure the discharge will comply with Central Valley Water Board Plans and policies.

### Wastewater Treatment Facility

8. The New East WWTF consists of: two fine screens (one millimeter), screw compactor, mixed anoxic basin, pre-aeration basin, two membrane bioreactor (MBR) basins, aerated sludge tanks, one ultraviolet disinfection unit, chlorine injection system, one 0.9 million gallon (MG) lined storage pond, one 2 MG unlined storage/percolation pond, and approximately 13 acres of Use Area on the east side of I-5. A site map of the WWTF is shown on [Attachment A](#) and a process flow schematic is shown on [Attachment B](#), both of which are attached hereto and made part of this Order by reference.
9. The WWTF will produce an effluent anticipated to meet coliform levels of 2.2 Most Probable Number per 100 milliliter (MPN/100 mL).
10. The Discharger proposes to expand the New East WWTF in increments of 0.1 mgd until it reaches an ultimate design flow of 0.8 mgd. Discharge Specification [D.1](#) further outlines conditions the Discharger has to comply with before increasing its flow to the next increment.
11. The Tejon Industrial Complex East will serve the same types of businesses as that of the Tejon Industrial Complex West. Therefore, the influent wastewater quality for the New East WWTF is expected to be similar to that of the West WWTF.
12. Average wastewater influent and effluent characteristics, based on self-monitoring data from January 2008 through November 2010 for the West WWTF, are as follows:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Influent</u>	<u>Effluent</u>
Daily Flow	mgd	0.056	---
pH	pH Units	---	7.53
Electrical Conductivity (EC)	µmhos/cm	---	1,301
Biochemical Oxygen Demand (BOD)	mg/L	536	21
Total Suspended Solids (TSS)	mg/L	441	30

13. According to the RWD, the New East WWTF will produce an effluent with average BOD and TSS concentrations of 10 mg/L, and an average total nitrogen concentration of less than 10 mg/L.
14. Sludge produced at the WWTFs is and will continue to be hauled off site for disposal at an authorized facility.

15. A water balance included in the July 2009 RWD, and calculated based on a 100-year wet year, indicates that a storage capacity of 2.9 MG and approximately 4.73 acres of Use Area would provide enough storage/disposal capacity for a discharge flow of 0.2 mgd. Treated wastewater will be primarily stored in the lined pond prior to being applied to the Use Area. Additional storage capacity will be provided by the unlined pond during winter months when recycled water disposal is not needed.

### **Sanitary Sewer Overflows**

16. 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.
17. 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 for both the West and New East WWTF is greater than one mile in length; therefore, the Discharger applied for, and the collection systems for both WWTF’s are covered by, the General Order.

### **Water Recycling**

18. Domestic wastewater contains pathogens harmful to humans that are typically measured by means of total or fecal coliform, as indicator organisms. The California Department of Public Health (CDPH), which has primary statewide responsibility for protecting public health, has established statewide criteria in Title 22, California Code of Regulations (CCR), Section 60301 et seq., (hereafter Title 22) for the use of recycled water and has developed guidelines for specific uses.
19. On 3 February 2009, the State Water Board adopted Resolution No. 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.
20. On 23 April 2009, the Central Valley Water Board adopted Resolution No. R5-2009-0028, *In support of Regionalization, Reclamation, Recycling and Conservation for Wastewater Treatment Plant* (Regionalization Resolution). The Regionalization Resolution encourages water recycling, water conservation, and regionalization of wastewater treatment facilities. It requires dischargers 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).
21. Title 22, Section 60323, requires recyclers of treated municipal wastewater to submit an engineering report detailing the use of recycled water, contingency plans, and safeguards. The Discharger has submitted a Title 22 Engineering Report to CDPH, but it has not been approved yet. A provision requiring the Discharger to submit a written copy of the letter from CDPH approving the Title 22 Engineering Report prior to the application of recycled water is included in this Order.

### **Site-Specific Conditions**

22. The Use Area consists of approximately 13 acres of which only a net of 5 acres will be utilized to grow turf grass.
23. Nitrogen uptake rates for different types of turf grass range between 225 and 260 lb/acre/year, based on the *Western Fertilizer Handbook, 9<sup>th</sup> Edition*.
24. Of the permitted flow of 0.1 mgd, approximately 0.017 mgd are needed for crop demand. At an average nitrogen concentration of 10 mg/L, the total nitrogen loading to the 5-acres of Use Area will be about 103 lbs/acre/year, which will not exceed the nutrient loading at agronomic rates, based on the current cropping pattern. The remainder of the flow will be discharged to the unlined storage/percolation pond.
25. At an average BOD concentration of 10 mg/L, the BOD loading to the 5-acres of Use Area will be less than 1 lb/acre/day.
26. The WWTF and Use Area are in an arid climate characterized by dry summers and mild winters. The rainy season generally extends from November through March. Occasional rains occur during spring and fall months, but summer months are dry. Average annual precipitation and evaporation in the discharge area are about 6 inches and 84 inches, respectively, according to information published by the California Department of Water Resources (DWR).
27. Soils in the vicinity of the WWTF are predominately Cerini Loam, followed by Guijarral Sandy Loam, according to the Web Soil Survey published by the United States Department of Agriculture Natural Resources Conservation Services. Both Cerini Loam and Guijarral Sandy Loam have been assigned a land capacity classification of 2e. These soils have moderate limitations that restrict the choice of plants or require moderate conservation practices. The main problem for these types of soils is the hazard of erosion unless close-growing plant cover is maintained.

28. Land uses in the vicinity of the WWTF are primarily agricultural. There are two commercial developments near the WWTF. The Tejon Industrial Complex West located southwest of the WWTF, and the New Tejon Industrial Complex East located south of the WWTF. The primary crops grown in the vicinity of the WWTF, according to the Kern County 2006 Land Use Map published by DWR, are almonds; onion and garlic; and vineyards. These are followed by oranges, tomatoes, melons, squashes, and cucumbers.
29. According to the Federal Emergency Management Agency maps (Map Number 06029C3150E), the WWTF is located within Zone X, an area outside the 1% annual chance of inundation (i.e. 100-year floodplain) with water depths of one foot or less.
30. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System General Industrial Storm Water Permit for the WWTF because all storm water runoff is retained onsite and does not discharge to a water of the United States.

### **Groundwater Considerations**

31. Tecuya and Salt Creeks in the southwestern portion of the White Wolf Subarea exhibit Total Dissolved Solids (TDS) concentrations of 2,000 mg/L (approximate EC of 3,000  $\mu$ mhos/cm) and 10,000 mg/L (approximate EC of 15,000  $\mu$ mhos/cm), respectively. It appears that runoff from these creeks has affected groundwater in their fan areas, according to Resolution No. 70-178, *Water Quality Control Plan for Groundwater in the White Wolf Subarea*.
32. Resolution No. 70-178, further discusses that groundwater in the western and southwestern portion of the White Wolf Subarea adjacent to Tecuya Creek is of a sodium sulfate character where TDS concentrations ranges from 600 mg/L (approximate EC of 900  $\mu$ mhos/cm) to 2,000 mg/L (approximate EC of 3,000  $\mu$ mhos/cm).
33. Oil fields are major dischargers in the White Wolf Subarea. Five oil fields are located within or partially within the subarea. The North Tejon oil field is located in section 19 of Township 11 North, Range 19 West of SBB&M, and extends underneath the New East WWTF. Produced water from the North Tejon oil field has been characterized as having TDS concentrations over 37,000 mg/L (EC of 57,000  $\mu$ mhos/cm), chloride over 22,000 mg/L, and boron of 50 mg/L.
34. Regional maps in the Water Supply Report developed by the Kern County Water Agency and published in 2007 indicate the depth to groundwater is approximately 500 feet below ground surface (bgs) and TDS concentrations range between 1,000 mg/L and 1,500 mg/L in the unconfined aquifer, which is equivalent to an EC range of 1,500  $\mu$ mhos/cm and 2,300  $\mu$ mhos/cm (EC=TDS/0.65).

35. The District receives source water from the State Water Project (SWP), and two emergency supply wells. The quality of SWP source water from 2008 through 2010 based on Consumer Confidence Reports is tabulated below:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
EC	µmhos/cm	517	650	510
TDS	mg/L	278	360	280
Nitrate (as NO <sub>3</sub> )	mg/L	5	4.8	4.8
Chloride (Cl)	mg/L	74	98	61

36. The quality of source water from the two emergency supply wells (TA well and Rose replacement well) in 2010 is as follows:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Rose Replacement</u>	
		<u>TA Well</u>	<u>Well</u>
EC	µmhos/cm	1,360	1,170
TDS	mg/L	953	760
Nitrate (as NO <sub>3</sub> )	mg/L	1.26	---
Cl	mg/L	44.4	32

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

37. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004* (Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference, plans and policies of the State Water Board. In accordance with to Section 13263(a) of the California Water Code (CWC), these requirements implement the Basin Plan.
38. The Basin Plan specifies that municipal and domestic wastewater dischargers will be required to reclaim and reuse wastewater whenever reclamation is feasible.
39. The WWTF and Use Area are in Detailed Analysis Unit (DAU) No. 258 and immediately adjacent to DAU No. 261, within the Kern County Basin hydrologic unit. The Basin Plan identifies the beneficial uses of groundwater in both DAUs as municipal and domestic supply, agricultural supply, and industrial service supply. The Basin Plan also identifies DAU No. 258 as having industrial process supply beneficial uses.
40. The WWTF and Use Area are in the Arvin-Wheeler Ridge Hydraulic Area (No. 557.30) of the South Valley Floor Hydrologic Unit, as depicted on interagency hydrologic maps prepared by the DWR in August 1986. The nearest surface water is the Tecuya Creek. Surface water drainage from the WWTF and Use Area is by sheet flow onto several square miles of agricultural fields and would likely never reach a surface water except under severe flooding conditions.

41. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, require waters designated as domestic or municipal supply to meet the maximum contaminant levels (MCLs) specified in Title 22 of CCR. The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
42. The Basin Plan establishes narrative water quality objectives for Chemical Constituents, Taste and Odors, and Toxicity. The Toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.
43. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:
  - a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC of the effluent discharged to land shall not exceed the EC of the source water plus 500  $\mu\text{mhos/cm}$ . 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 groundwater shall not exceed an EC of 1,000  $\mu\text{mhos/cm}$ , a chloride content of 175 mg/L, or boron content of 1.0 mg/L.
44. Maximum salinity limits for most wastewater discharges for most areas are those described in [Finding 43.b](#). One exception is the White Wolf Subarea, where the subject discharge takes place. Relaxation of applicable effluent salinity limits in the White Wolf subarea is based on the class of irrigation water underlying the discharge.
45. The Basin Plan specifies that irrigation water (underlying groundwater in this case), with an EC between 1,000–3,000  $\mu\text{mhos/cm}$ , chlorides between 175–350 mg/L, sodium between 60–75 (percent base constituents), and boron between 0.5–2 mg/L, be considered Class II irrigation water. Based on the quality from the Discharger's backup source water well, underlying groundwater is considered Class II for EC. It is likely that the source water well is of better quality than first-encountered groundwater. Information in the Kern County Water Agencies 2007 Water Supply Report suggests unconfined groundwater underlying the facility has an EC between 1,500  $\mu\text{mhos/cm}$  and

2,300  $\mu\text{mhos/cm}$ . The Basin Plan requires that discharges to land in areas overlying Class II or poorer groundwater shall not exceed an EC of 2,000  $\mu\text{mhos/cm}$ .

### **Antidegradation Analysis**

46. State Water Board Resolution No. 68-16 (“Policy with Respect to Maintaining High Quality Water of the State”) (hereafter Resolution No. 68-16) prohibits degradation of groundwater unless it has been shown that:
  - a. 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;
  - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
  - c. The Discharger employs Best Practicable Treatment or Control (BPTC) to minimize degradation; and
  - d. The degradation is consistent with the maximum benefit to the people of the State.
  
47. Constituents of concern in the discharge 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 not unreasonably affect present and anticipated future beneficial uses of groundwater because:
  - a. For salinity, the Basin Plan specifies that the incremental EC of a discharge cannot exceed the EC of the source water plus 500  $\mu\text{mhos/cm}$ . The Basin Plan also specifies that discharges to the White Wolf Subarea cannot exceed an effluent EC limit of 2,000  $\mu\text{mhos/cm}$ . With a source water EC of 510  $\mu\text{mhos/cm}$ , except for emergencies, the average discharge EC of 1,301  $\mu\text{mhos/cm}$  exceeds the incremental increase Basin Plan limit for EC of source water plus 500  $\mu\text{mhos/cm}$ . However, the discharge as proposed meets the Basin Plan discharge limit for EC of 2,000  $\mu\text{mhos/cm}$  in the White Wolf Subarea. Underlying groundwater has an EC that ranges from 1,500  $\mu\text{mhos/cm}$  to 2,300  $\mu\text{mhos/cm}$ . Therefore, the EC of the discharge is less than the EC of underlying groundwater. EC degradation, should it occur, will not result in water quality that exceeds applicable water quality objectives for the White Wolf Subarea.
  - b. For nitrogen, the new WWTF is designed to remove total nitrogen and this Order includes effluent limits that require the effluent total nitrogen to be 10 mg/L or less. Application of wastewater at agronomic rates for both nutrient and hydraulic loading

should preclude degradation of groundwater by nitrogen. Therefore, any degradation that results from the discharge will result in groundwater quality that complies with applicable water quality objectives and protects beneficial uses.

- c. This Order includes extensive influent and effluent requirements to verify that the discharge does not cause violations of water quality objectives or impairment of beneficial uses.
48. Degradation of groundwater, should it occur, by constituents of concern (e.g. EC and nitrate) 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. Approximately 6,000 new jobs will be created at full build out of the Tejon Industrial Complex East. The project also supports the local economy by purchasing construction materials from local merchants and by hiring local contractors. 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 any groundwater degradation provided terms of the Basin Plan are met.

### **Treatment and Control Practices**

49. The WWTF described in Finding [Nos. 8 through 15](#), will provide treatment and control of the discharge that incorporates:
- a. Tertiary treatment of wastewater to Title 22 2.2 MPN/100mL for Total Coliform Organisms;
  - b. UV Disinfection;
  - c. Nitrogen reduction of wastewater to less than the Nitrate MCL for drinking water;
  - d. Application of wastewater at rates that will not exceed reasonable agronomic demand in the areas where effluent will be recycled;
  - e. Sludge hauled off-site;
  - f. Certified operators to ensure proper operation and maintenance;
  - g. Source water and discharge monitoring; and
  - h. Salinity minimization.

The preceding treatment and control measures represent BPTC.

## **CEQA**

50. Kern County Planning Department adopted a Final Environmental Impact Report (EIR) (SCH # 2001101133) for the New East WWTF in accordance with the California Environmental Quality Act (CEQA) and filed a Notice of Determination on 10 November 2005.
51. 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. This Order includes effluent limits for BOD, TSS, EC, and nitrogen. Compliance with these limits and the associated monitoring and reporting requirements will mitigate any potentially significant impacts to water quality to a less than significant level.

## **Title 27**

52. CWC Section 13173 defines designated waste as either:
  - a. Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code.
  - b. Non-hazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or that could reasonably be expected to affect beneficial uses of the water of the state as contained in the appropriate water quality control plan.
53. Pursuant to Section 20090(a) of Title 27 CCR, the discharge of domestic sewage or treated wastewater associated with municipal wastewater treatment plants is exempt from Title 27, provided any resulting degradation of groundwater is in accordance with the Basin Plan and the waste need not be managed as a hazardous waste.
54. None of the wastes regulated by the proposed Order are hazardous wastes or required to be treated as hazardous wastes. As described under the Antidegradation Analysis section above, the authorized discharge of treated wastewater to land will not cause exceedances of Basin Plan requirements or applicable water quality objectives, and are thus exempt from Title 27 pursuant to Section 20090(a).

## **Other Regulatory Considerations**

55. 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.

### **General Findings**

56. Pursuant to CWC Section 13263(g), the discharge of waste is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.
57. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.
58. CWC Section 13267(b) states that:

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

59. The technical reports required by this Order and monitoring reports required by the attached Monitoring and Reporting Program (MRP) No. R5-2010-\_\_\_\_ are necessary to assure compliance with these waste discharge requirements. The Discharger operates the WWTF that discharges the waste subject to this Order.

### **Public Notice**

60. 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.
61. 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.
62. All comments pertaining to the discharge were heard and considered in a public meeting.

**IT IS HEREBY ORDERED** that pursuant to Sections 13263 and 13267 of the California Water Code, Tejon-Castac Water District 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 waste to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated wastes, except as allowed by Standard Provision E.2 in *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991, is prohibited.
3. Discharge of waste classified as 'hazardous', as defined in Section 2521(a) of Title 23, CCR, Section 2510 et seq., is prohibited. Discharge of waste classified as 'designated', as defined in CWC Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.

**B. Effluent Limitations**

1. Effluent shall not exceed the following limitations:

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

<sup>1</sup> Five day biochemical oxygen demand (BOD<sub>5</sub>)

<sup>2</sup> Total suspended solids (TSS)

The arithmetic mean of BOD<sub>5</sub> and TSS 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 times during the same period (90 percent removal).

2. The 12-month rolling average EC of the discharge shall not exceed the 12-month rolling average EC of the source water plus 500 µmhos/cm. Compliance with this effluent limitation shall be determined monthly. The Discharger shall comply with this limit in accordance with Provision H.22.
3. The monthly average EC of the discharge shall not exceed 2,000 µmhos/cm.
4. The Total Nitrogen of the discharge shall not exceed a monthly average of 10 mg/L.
5. The median concentration of total coliform organisms in disinfected tertiary recycled water shall not exceed the following (Title 22, Section 60301.230):

- 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.

### C. Ultraviolet (UV) Disinfection System Specifications

1. The Discharger shall provide continuous, reliable monitoring of flow, UV intensity, UV dose, and turbidity.
2. The Discharger shall operate the UV disinfection systems to provide a minimal UV dose of 82 millijoules per square centimeter ( $\text{mJ}/\text{cm}^2$ ) at all times. UV dose equations approved by CDPH must be used as part of the automatic UV disinfection control system for calculating UV dose.
3. The equation to be used as part of the automatic UV disinfection control system for calculating UV dose shall be the following:

$$\text{RED}_{\text{calc}} = 10^{[2.2414 - 0.7663 \times \log(Q) + 0.5534 \times \log(0.636 \times S)]}$$

Where:

S = Measured UV sensor value ( $\text{mW}/\text{cm}^2$ )  
RED = RED calculated with the UV dose-monitoring equation ( $\text{mJ}/\text{cm}^2$ )  
Q = Flow rate (gallons per minute [gpm])

4. The quartz sleeves and cleaning system components shall be visually inspected per the manufacturer's operation manual for physical wear (scoring, solarization, seal leaks, etc.) and to check the efficacy of the cleaning system.
5. The quartz sleeves shall be cleaned at fixed intervals to ensure the minimum required UV dose delivery is consistently achieved. Cleaning intervals shall not be established based on the presence of coliform organisms.
6. Lamps shall be replaced per the manufacturer's recommendation, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.
7. The Discharger shall comply with all of CDPH's acceptance conditions for the UV disinfection system in use at the WWTF.

8. Prior to initial discharge to the ponds, the Discharger 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.
9. 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. The operations plan is part of the Engineering Report, Appendix G, which shall become an enforceable part of the permit. A copy of the approved operations plan shall be maintained at the treatment plant and be readily available to operations personnel and regulatory agencies.
10. A quick reference plant operation data sheet shall be posted at the treatment plant 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, and UV intensity.
  - d. The required frequency of mechanical cleaning/wiping and equipment inspection.
  - e. The UV lamp age tracking procedures and replacement intervals.
11. 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 divert flow include: inability to meet the minimum UV dose, intensity sensor failure, multiple lamp failure, or reactor failure.
12. There shall be no bypassing of untreated or partially treated wastewater from the plant or any intermediate unit processes to the point of use.
13. Any discharge of untreated or partially treated wastewater to the use area, and the cessation of same, shall be reported immediately by telephone to the Central Valley Regional Water Board, California Department of Public Health, and the local health officer.
14. The plant shall be provided with a sufficient number of qualified personnel to operate the filtrations and disinfection facility effectively so as to achieve the required level of treatment at all times. The number and type of operational personnel shall be described in the operations plan that is part of the Engineering Report, Appendix G, which shall become an enforceable part of the permit.

15. A preventive maintenance program shall be provided to ensure that all equipment is kept in reliable operating conditions. A preventive maintenance program is a required part of the Engineering Report operations plan, Appendix G, which shall become an enforceable part of the permit.
16. UV intensity sensors and flow meters must be properly calibrated to ensure proper disinfection.
17. The plant shall have a minimum of one reference UV intensity sensor on site at all times. Measurements made by each duty UV intensity sensor shall be checked at least monthly using a reference UV intensity sensor. For all UV intensity sensors in use, the ratio of the duty UV sensor intensity to the reference UV sensor intensity must be less than or equal to 1.2. If the calibration ratio is greater than 1.2, the failed duty UV sensor must be replaced by a properly calibrated sensor and recalibrated by a qualified facility. The reference UV intensity sensors shall be recalibrated at least annually by a qualified facility using a National Institute of Standards and Technology (NIST) traceable standard.
18. 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.
19. Equivalent or substitutions of equipment are not acceptable without an adequate demonstration of equivalent disinfection performance.

#### **D. Discharge Specifications**

1. The monthly average discharge flow shall not exceed
  - a. 0.1 mgd until Provision 21.a is satisfied.
  - b. 0.2 mgd until Provision 21.b is satisfied.
  - c. 0.3 mgd until Provision 21.c is satisfied.
  - d. 0.4 mgd until Provision 21.d is satisfied.
  - e. 0.5 mgd until Provision 21.e is satisfied.
  - f. 0.6 mgd until Provision 21.f is satisfied.
  - g. 0.7 mgd until Provision 21.g is satisfied.

2. 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.
3. Objectionable odors shall not be perceivable beyond the limits of the WWTF property at an intensity that creates or threatens to create nuisance conditions.
4. 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.
5. On or about **1 October** of each year, available effluent pond storage capacity shall at least equal the volume necessary to comply with Discharge Specification D.4.
6. 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.
7. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of groundwater limitations.

#### **E. Recycling Specifications**

The following specifications apply to the Use Area under the ownership or control of the Discharger:

1. Recycled water shall be managed in conformance with the regulations contained in Title 22, Division 4, Chapter 3, CCR.
2. All reclamation equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities. All reclamation distribution system piping shall be purple or adequately wrapped with purple tape.

3. Recycled water controller, valves, and similar appurtenances shall be affixed with recycled water warning signs, and shall be equipped with removable handles, locking mechanisms, or some other means to prevent public access or tampering. The contents of the signs shall conform to Title 22, CCR, Section 60310. Quick couplers and sprinkler heads, if used, shall be of a type, or secured in a manner, that permits operation only by authorized personnel. Hose bibbs that the public could use shall be eliminated.
4. Public contact with recycled water shall be controlled using 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](#), which is attached hereto and made part of this Order by reference, and present the following wording:

**“RECYCLED WATER – DO NOT DRINK”**

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

5. Disinfected tertiary recycled water 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.
6. The Discharger shall maintain the following setback distances from areas irrigated with recycled water:

<u>Setback Distance (feet)</u>	<u>To</u>
50	Edge of land application area to domestic well
100	Wastewater/recycled water storage reservoir to domestic well
50	Application areas to surface water

7. Recycled water shall not be allowed to escape from the authorized Use Area by airborne spray or by surface flow except in minor amounts such as that associated with good irrigation practices.
8. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.

9. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.
10. Workers shall be educated regarding proper hygienic procedures to ensure personal and public safety.
11. Potable water supply piping and recycled water piping shall not have any cross-connections. Supplementing recycled water with potable water shall not be allowed except through an air-gap separation or, if approved by the CDPH, a reduced pressure principle backflow device.
12. Areas irrigated with recycled water shall be managed to prevent nuisance conditions or breeding of mosquitoes. More specifically:
  - a. All applied irrigation water must infiltrate completely within a 48-hour period;
  - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation; and
  - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.
13. Application of waste constituents to the Use Area shall be at reasonable agronomic rates to preclude creation of pollution, nuisance, or degradation of groundwater, considering soil, climate, and nutrient demand. The annual nutrient loading of the Use Area, including the nutritive value of organic and chemical fertilizers and recycled water, shall not exceed crop demand.

## **F. 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 quality for reuse pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land recycling.

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 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 or a local (e.g., county) program authorized by a regional 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 Recycling Activities"). For a biosolids use project to be authorized by the General Biosolids Order, the Discharger must file a complete 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.

## **G. Groundwater Limitations**

1. Release of waste constituents from any treatment or storage component associated with the discharge shall not cause or contribute to groundwater:
  - a. Containing constituent concentrations in excess of the concentrations specified below or natural background quality whichever is greater:
    - (i) Nitrate as nitrogen of 10 mg/L.
    - (ii) Total Coliform Organisms of 2.2 MPN/100 mL.
    - (iii) 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.

## **H. Provisions**

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions), which are part of this Order.
2. The Discharger shall comply with MRP No. R5-2011-\_\_\_\_, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer. The submittal date of Discharger self-monitoring reports shall be no later than submittal dates specified in the MRP.
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 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. 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 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 California Water Code Section 13267.
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 Central Valley Water Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when

the Discharger will be in compliance. The Discharger 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 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 Central Valley Water Board.
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 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 California 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.
10. As a means of discerning compliance with Discharge Specifications [D.3](#), the dissolved oxygen (DO) content in the upper one foot of any wastewater pond shall not be less than 1.0 mg/L for three consecutive days. Should the DO be below 1.0 mg/L during a weekly sampling event, the Discharger shall take all reasonable steps to correct the problem and commence daily DO monitoring in the affected ponds until the problem has been resolved. If unpleasant odors originating from affected ponds are noticed in developed areas, or if the Discharger received one or more odor complaints, the Discharger 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.
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 condition 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 submit the technical reports and work plans required by this Order for Central Valley Water Board staff consideration and incorporate comments they may have in a timely manner, as appropriate. The Discharger shall proceed with all work required by the following provisions by the due dates specified.
13. All wastewater discharged shall be oxidized, coagulated (if necessary), filtered, and disinfected pursuant to CDPH reclamation criteria, CCR, Title 22, Division 4, Chapter 3, (Title 22), or equivalent. The maximum filtration rate shall not exceed 5 gpm/ft.
14. The chlorine disinfection process following filtration shall provide a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow.
15. When coagulation is used, the turbidity of disinfected tertiary recycled waster that is passed through undisturbed soil or a filter media shall not exceed the following (Title 22, Section 60301.320);
  - a. an average of 2.0 NTU within a 24-hour period;
  - b. 5.0 NTU more than five percent of the time within a 24 hour period; and
  - c. 10 NTU at any time.
16. When coagulation is not used, (i.e., direct filtration mode):
  - a. The turbidity of the influent to the filtration unit (prior to filtration) shall not exceed 5.0 NTU for more than 15 minutes and never exceed 10 NTU; and
  - b. The effluent turbidity (following filtration) shall not exceed 2.0 NTU at any time.
17. The turbidity of disinfected tertiary recycled water that is passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane shall not exceed the following (Title 22, Section 60301.320):
  - a. 0.2 NTU more than five percent of the time within a 24 hour period, and;
  - b. 0.5 NTU at any time.
18. The use of recycled water shall comply with the provisions of Title 22 CCR. Further, the District and/or Users must obtain written approval from the Executive Officer prior to use of recycled water for uses other than those specified in this Order.
19. The Use Area parcels shall be graded to prevent ponding along public roads or other public areas and prevent runoff onto adjacent properties.

20. **By 15 April 2012**, the Discharger shall submit a Title 22 Engineering Report in accordance with CCR Title 22 Section 60323. The Discharger shall not recycle its effluent until CDPH has approved the Discharger's Title 22 Engineering Report and a written copy of the approval letter from CDPH is provided to the Central Valley Water Board.
21. **At least 60 days prior** to initiating an increase in the monthly average flow for the following increments, the Discharger shall submit an engineering certification showing that the WWTF has sufficient treatment, storage, and disposal capacity to comply with the other terms and conditions of this Order. Each subpart of this Provision will be considered satisfied following written acknowledgement from the Executive Officer that its criteria have been met.
- a. From 0.1 mgd up to 0.2 mgd.
  - b. From 0.2 mgd up to 0.3 mgd.
  - c. From 0.3 mgd up to 0.4 mgd.
  - d. From 0.4 mgd up to 0.5 mgd.
  - e. From 0.5 mgd up to 0.6 mgd.
  - f. From 0.6 mgd up to 0.7 mgd.
  - g. From 0.7 mgd up to 0.8 mgd.
22. Salinity Minimization. The Discharger shall comply with Effluent Limitation B.2 according to the following compliance schedule:

<b><u>Task</u></b>	<b><u>Compliance Date</u></b>
a. Submit a technical report in the form of a work plan and time schedule to identify sources of effluent salinity and a time schedule to implement mitigation measures to reduce salinity and ensure that the discharge consistently meets Effluent Limitation B.2.	<b>12 January 2012</b>
b. Commence work plan.	<b>30 days</b> following Executive Officer

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|  | approval of Task a, but<br>in no case later than<br><b>15 April 2012.</b> |
| c. Submit progress reports.  | Monthly.  |
| d. Provide a technical report<br>documenting all mitigation<br>measures identified and<br>implemented. | <b>15 October 2013</b>  |
| e. Achieve consistent<br>compliance with Effluent<br>Limitation B.2.                                   | <b>15 April 2014</b>  |

Technical reports submitted pursuant to the Provision shall be prepared in accordance with Provision H.6 and are subject to Executive Officer approval as to adequacy.

23. If the Central Valley Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of an objective for groundwater, this Order may be reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for the potential 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

Order Attachments:

- A Site Location Map
  - B Flow Schematic
  - C Recycled Water Signage
- Monitoring and Reporting Program No. R5-2011-\_\_\_\_\_  
Information Sheet  
Standard Provisions (1 March 1991)

DMS/WDH: 9/6/2011