

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2011-0066
FOR
TEJON-CASTAC WATER DISTRICT
TEJON RANCH COMMERCE CENTER
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 discharge to the New East WWTF can be effected. Thereafter, 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. The Tejon Industrial Complex East and Tejon Industrial Complex West are now called Tejon Ranch Commerce Center.
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, 9th 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 Tejon Industrial Complex East located south of the WWTF. The primary crops grown in the vicinity of the WWTF, according 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 μ mhos/cm) and 10,000 mg/L (approximate EC of 15,000 μ 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 μ mhos/cm) to 2,000 mg/L (approximate EC of 3,000 μ 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 μ 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 µmhos/cm and 2,300 µmhos/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 ₃)	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>TA Well</u>	<u>Rose Replacement</u>
			<u>Well</u>
EC	µmhos/cm	1,360	1,170
TDS	mg/L	953	760
Nitrate (as NO ₃)	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. R5-2011-0066 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 ₅ ¹	mg/L	10	20
TSS ²	mg/L	10	20

¹ Five day biochemical oxygen demand (BOD₅)

² Total suspended solids (TSS)

The arithmetic mean of BOD₅ 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 (mJ/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 (mW/cm^2)

RED = RED calculated with the UV dose-monitoring equation (mJ/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. R5-2011-0066, 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:

<u>Task</u>	<u>Compliance Date</u>
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.	12 January 2012

- | | | |
|----|--|--|
| b. | Commence work plan. | 30 days following Executive Officer approval of Task a, but in no case later than 15 April 2012. |
| c. | Submit progress reports. | Monthly. |
| d. | Provide a technical report documenting all mitigation measures identified and implemented. | 15 October 2013 |
| e. | Achieve consistent compliance with Effluent Limitation B.2. | 15 May 2015 |

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 maybe 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 13 October 2011.

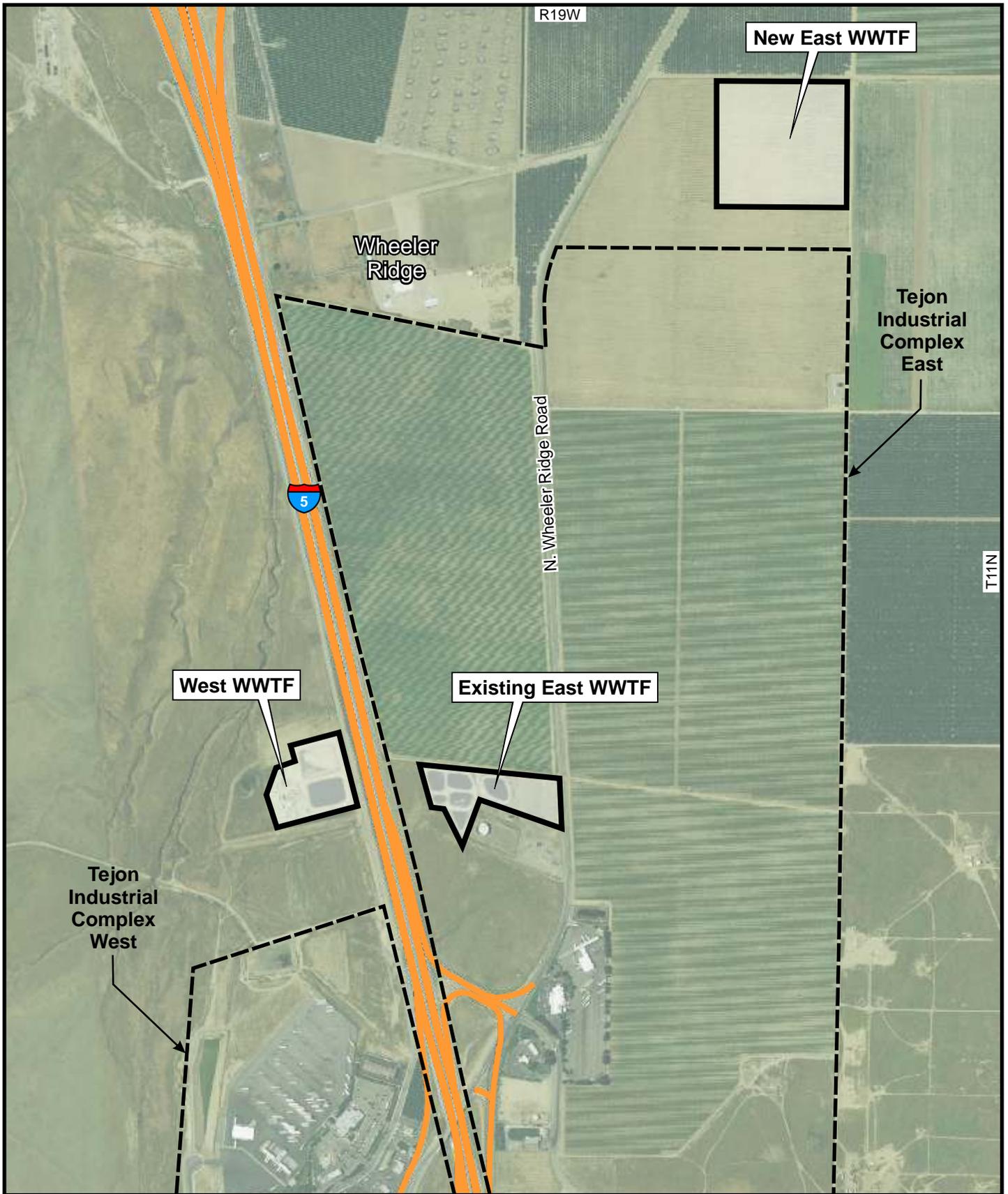
Original signed by

PAMELA C. CREEDON, Executive Officer

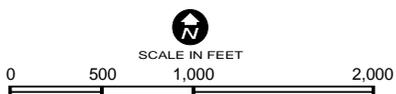
Order Attachments:

- A Site Location Map
 - B Flow Schematic
 - C Recycled Water Signage
- Monitoring and Reporting Program No. R5-2011-0066
Information Sheet
Standard Provisions (1 March 1991)

DMS/WDH: 10/13/2011

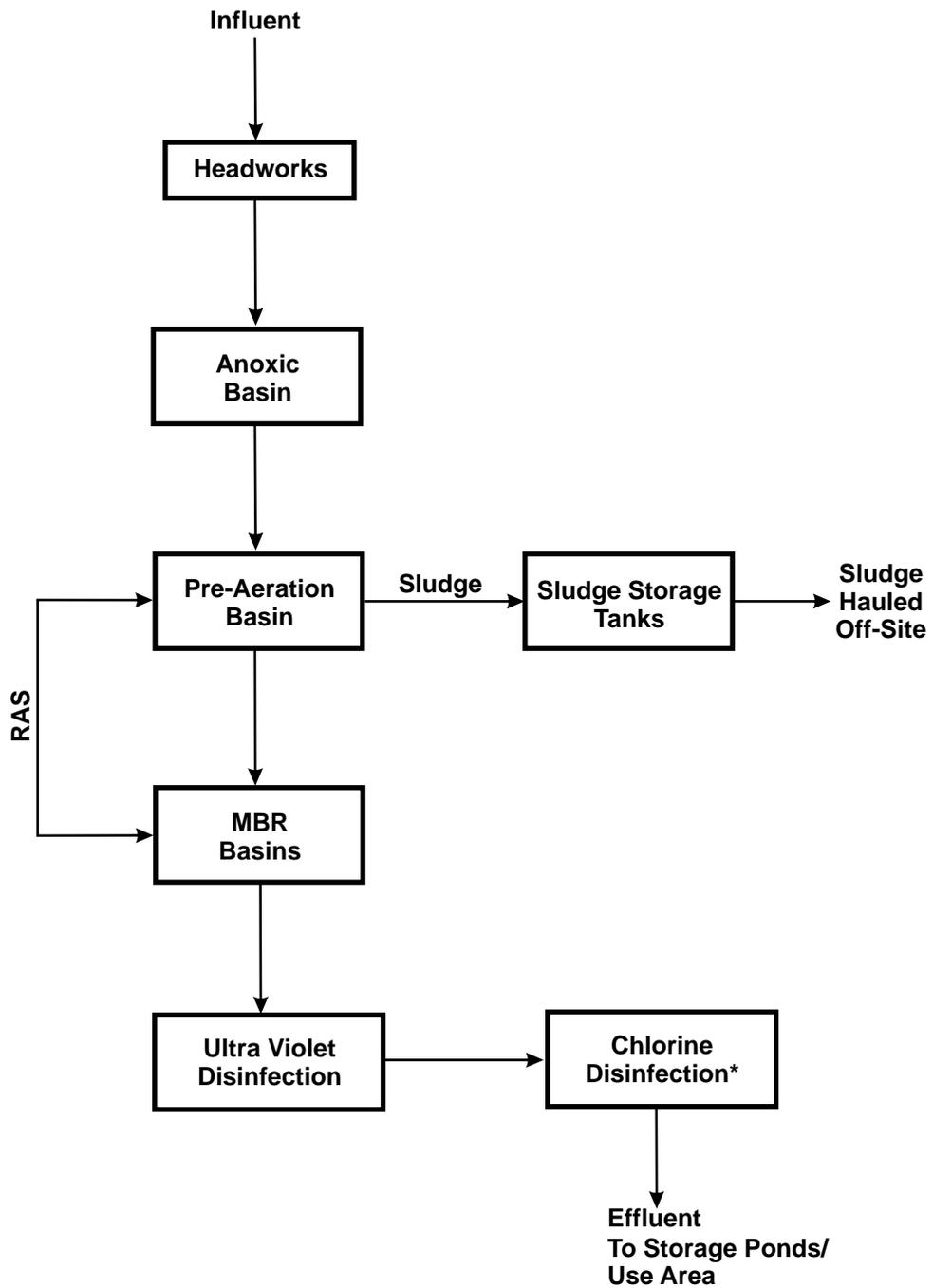


Map Source:
 NAIP Aerial Photograph (2005)
 Sections 30 & 31, T11N, R19W, SBB&M



SITE MAP
 WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2011-0066
 FOR
 TEJON-CASTAC WATER DISTRICT
 TEJON RANCH COMMERCE CENTER
 NEW EAST WASTEWATER TREATMENT FACILITY
 KERN COUNTY

ATTACHMENT A



*Interim chlorine disinfection until UV unit is validated by CDPH. Chlorination will continue after UV validation to control algae.

NOT TO SCALE

PROCESS FLOW DIAGRAM
 WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2011-0066
 FOR
 TEJON-CASTAC WATER DISTRICT
 TEJON RANCH COMMERCE CENTER
 NEW EAST WASTEWATER TREATMENT FACILITY
 KERN COUNTY

ATTACHMENT B



NONPOTABLE WATER INTERNATIONAL SYMBOL

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2011-0066

FOR

TEJON-CASTAC WATER DISTRICT

TEJON RANCH COMMERCE CENTER

NEW EAST WASTEWATER TREATMENT FACILITY

KERN COUNTY

ATTACHMENT C

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2011-0066
FOR
TEJON-CASTAC WATER DISTRICT
TEJON RANCH COMMERCE CENTER
NEW EAST WASTEWATER TREATMENT FACILITY
KERN COUNTY

This monitoring and Reporting Program (MRP) is required pursuant to California Water Code (CWC) Section 13267.

The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts or the Executive Officer issues a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer. All samples should be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with **Standard Provisions and Reporting Requirements for Waste Discharge Requirements**, dated 1 March 1991 (Standard Provisions).

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

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

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request the MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

A glossary of terms used within this MRP is included on [page 8](#) and a list of the constituents required for the monitoring of Priority Pollutants is included in Table 1, which is on [page 9](#).

INFLUENT MONITORING

Influent samples shall be collected at the inlet of the headworks of the WWTF. Time of collection of the sample shall be recorded. Influent monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Weekly	pH	pH Units	Grab
Weekly	EC	µmhos/cm	Grab
Weekly	BOD ₅	mg/L	24-hour composite
Weekly	TSS	mg/L	24-hour composite
Monthly	Monthly Average Discharge Flow	mgd	Computed

EFFLUENT MONITORING

Effluent samples shall be collected at a point in the system following treatment and before discharge to the effluent storage ponds or Use Area. Time of collection of the sample shall be recorded. Effluent monitoring shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Turbidity	NTU	Metered ¹
Continuous	Chlorine, Total Residual ²	mg/L	Metered
Daily ³	Total Coliform Organisms	MPN/100 mL	Grab
Weekly	pH	pH Units	Grab
Weekly	EC	µmhos/cm	Grab
Weekly	BOD ₅	mg/L	24-hour composite
Weekly	TSS	mg/L	24-hour composite
Monthly	TDS	mg/L	24-hour composite
Monthly	Total Nitrogen	mg/L	Computed
Monthly	Chloride	mg/L	24-hour composite
Monthly	Sodium	mg/L	24-hour composite
Quarterly	General Minerals	mg/L	24-hour composite
Once every 5 years ⁴	Priority Pollutants (see Table 1)	Varies ⁵	Varies

¹ In accordance with the requirements of Title 22, Section 60301.320, the Discharger shall report: a) the 24 hour average effluent turbidity; b). the percentage of time the effluent is greater than 5 NTU within a 24-hour period; and c). the instantaneous maximum effluent turbidity. If coagulation is not being used, the instantaneous maximum filter influent turbidity shall also be reported.

² The minimum total chlorine residual concentration for each calendar day shall be reported in the monthly self monitoring reports. The CT values (the product of total chlorine residual and modal contact time measured at the same point) for the following conditions shall be reported in the monthly self monitoring reports for each calendar day: (1) the modal contact time at the peak daily flow rate and the corresponding chlorine residual at the time; (2) the minimum total chlorine residual concentration and the corresponding modal contact time; (3) the maximum total residual chlorine concentration and the corresponding modal contact time; and (4) the modal contact time at the minimum daily flow rate and the corresponding total chlorine residual concentration

³ Excluding weekends and holidays.

⁴ Beginning in July 2012.

⁵ mg/L or µg/L, as appropriate.

POND MONITORING

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

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Weekly	DO ¹	mg/L	Grab
Weekly	Freeboard	Feet ²	Grab

¹ 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.

² To nearest tenth of a foot

The Discharger shall inspect the condition of the ponds weekly and record visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether grease, dead algae, vegetation, scum, or debris are accumulating on the pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark sparkling green, dull green, yellow, gray, tan, brown, etc.). A summary of the entries made in the log shall be included in the subsequent monitoring report.

SOURCE WATER MONITORING

For each source (either well or surface water supply), the Discharger shall calculate the flow-weighted average concentrations for the specified constituents utilizing monthly flow data and the most recent chemical analysis conducted in accordance with Title 22 drinking water requirements. Alternatively, the Discharger may establish representative sampling stations within the distribution system serving the same area as is served by the WWTF.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	Flow-Weighted EC	µmhos/cm	Computed average
Annually	General Minerals	mg/L	Computed average

BIOSOLIDS/SLUDGE MONITORING

Sludge shall be sampled for the following constituents:

Arsenic	Copper	Nickel
Cadmium	Lead	Selenium
Molybdenum	Mercury	Zinc

Monitoring shall be conducted: using the methods in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846) and updates thereto, as required in Title 40 of the Code of Federal Regulations (40 CFR), Part 503.8(b)(4). The constituents listed above shall be monitored at the following frequency, depending on volume generated:

<u>Volume Generated (dry metric tons/year)</u>	<u>Frequency</u>
0 to 290	Annually
290 to 1,500	Quarterly
1,500 to 15,000	Bimonthly (six samples per year)
Greater than 15,000	Monthly

The Discharger shall demonstrate that treated sludge (i.e., biosolids) meets Class A or Class B pathogens reduction levels by one of the methods listed in 40 CFR, Part 503.32. The Discharger shall track and keep records of the operational parameters used to achieve Vector Attraction Reduction requirements in 40 CFR, Part 503.33(b).

USE AREA MONITORING

The Discharger shall perform the routine monitoring and loading calculations for each discrete irrigation area within the Use Area. Data shall be collected and presented in tabular format in accordance with Table 2.

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

REPORTING

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

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

A transmittal letter shall accompany each monitoring report. The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

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

Discharger Name
Facility Name
MRP Number
Contact Information (telephone number and email)

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

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

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

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3. Monitoring data or discussions submitted concerning WWTF performance must also be signed and certified by the chief plant operator. If the chief plant operator is not in direct line of supervision of the laboratory function for a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

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

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

A. All Quarterly Monitoring Reports shall include the following:

Wastewater reporting

1. The results of influent, effluent, and pond monitoring specified on [page 2 and 3](#).
2. For each month of the quarter, calculation of the maximum daily flow and the monthly average flow.
3. For each month of the quarter, calculation of the 12-month rolling average EC of the discharge using the EC value for that month averaged with the EC values for the previous 11 months.
4. For each month of the quarter, calculation of the monthly average effluent BOD and TSS concentrations, and calculation of the percent removal of BOD and TSS compared to the influent.
5. A summary of the notations made in the pond monitoring log during each quarter. Copies of log pages covering the quarterly reporting period shall not be submitted unless requested by Central Valley Water Board staff.

Source water reporting

1. The results of source water monitoring specified on [page 3](#).
2. For each month of the quarter, calculation of the flow-weighted 12-month rolling average EC of the source water using monthly flow data and the source water EC values for the most recent four quarters.

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

Wastewater treatment facility information

3. The names, certificate grades, and general responsibilities of all persons in charge of wastewater treatment and disposal.
4. The names and telephone numbers of persons to contact regarding the WWTF for emergency and routine situations.
5. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (Standard Provision C.4).
6. A statement whether the current operation and maintenance manual, sampling plan, and contingency plan, reflect the WWTF as currently constructed and operated, and the dates when these documents were last reviewed for adequacy.

7. The results of an annual evaluation conducted pursuant to Standard Provision E.4 and a figure depicting monthly average discharge flow for the previous five calendar years.

Biosolids/Sludge monitoring

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

Use Area reporting

1. The type of crop(s) grown in the Use Area, and the quantified hydraulic and nitrogen loading rates in accordance with Table 2.
2. A summary of the notations made in the Use Area monitoring log during each quarter. The entire contents of the log do not need to be submitted.

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

Ordered by: _____ Original Signed by _____
PAMELA C. CREEDON, Executive Officer

_____ 31 October 2011 _____
(Date)

GLOSSARY

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

Table 1. Priority Pollutant Scan

<u>Inorganics</u> ¹	<u>Organics</u>		
Antimony	Acrolein	3-Methyl-4-Chlorophenol	Hexachlorobenzene
Arsenic	Acrylonitrile	Pentachlorophenol	Hexachlorobutadiene
Beryllium	Benzene	Phenol	Hexachlorocyclopentadiene
Cadmium	Bromoform	2,4,6-Trichlorophenol	Hexachloroethane
Chromium (III)	Carbon tetrachloride	Acenaphthene	Indeno(1,2,3-c,d)pyrene
Chromium (VI)	Chlorobenzene	Acenaphthylene	Isophorone
Copper	Chlorodibromomethane	Anthracene	Naphthalene
Lead	Chloroethane	Benzidine	Nitrobenzene
Mercury	2-Chloroethylvinyl Ether	Benzo(a)Anthracene	N-Nitrosodimethylamine
Nickel	Chloroform	Benzo(a)pyrene	N-Nitrosodi-n-Propylamine
Selenium	Dichlorobromomethane	Benzo(b)fluoranthene	N-Nitrosodiphenylamine
Silver	1,1-Dichloroethane	Benzo(g,h,i)perylene	Phenanthrene
Thallium	1,2-Dichloroethane	Benzo(k)fluoranthene	Pyrene
Zinc	1,1-Dichloroethylene	Bis(2-chloroethoxy) methane	1,2,4-Trichlorobenzene
Cyanide	1,2-Dichloropropane	Bis(2-chloroethyl) ether	
Asbestos	1,3-Dichloropropylene	Bis(2-chloroisopropyl) ether	<u>Pesticides</u>
	Ethylbenzene	Bis(2-Ethylhexyl)phthalate	Aldrin
	Methyl Bromide	4-Bromophenyl phenyl ether	alpha-BHC
<u>Dioxin Congeners</u>	Methyl Chloride	Butylbenzyl Phthalate	beta-BHC
2,3,7,8-TCDD	Methylene Chloride	2-Chloronaphthalene	gamma-BHC (Lindane)
1,2,3,7,8-PentaCDD	1,1,2,2-Tetrachloroethane	4-Chlorophenyl Phenyl Ether	delta-BHC
1,2,3,4,7,8-HexaCDD	Tetrachloroethylene (PCE)	Chrysene	Chlordane
1,2,3,6,7,8-HexaCDD	Toluene	Dibenzo(a,h)Anthracene	4,4'-DDT
1,2,3,7,8,9-HexaCDD	1,2-Trans-Dichloroethylene	1,2-Dichlorobenzene	4,4'-DDE
1,2,3,4,6,7,8-HeptaCDD	1,1,1-Trichloroethane	1,3-Dichlorobenzene	4,4'-DDD
OctaCDD	1,1,2-Trichloroethane	1,4-Dichlorobenzene	Dieldrin
2,3,7,8-TetraCDF	Trichloroethylene (TCE)	3,3'-Dichlorobenzidine	alpha-Endosulfan
1,2,3,7,8-PentaCDF	Vinyl chloride	Diethyl phthalate	beta-Endosulfan
2,3,4,7,8-PentaCDF	2-Chlorophenol	Dimethyl phthalate	Endosulfan Sulfate
1,2,3,4,7,8-HexaCDF	2,4-Dichlorophenol	Di-n-Butyl Phthalate	Endrin
1,2,3,6,7,8-HexaCDF	2,4-Dimethylphenol	2,4-Dinitrotoluene	Endrin Aldehyde
1,2,3,7,8,9-HexaCDF	2-Methyl-4,6-Dinitrophenol	2,6-Dinitrotoluene	Heptachlor
2,3,4,6,7,8-HexaCDF	2,4-Dinitrophenol	Di-n-Octyl Phthalate	Heptachlor epoxide
1,2,3,4,6,7,8-HeptaCDF	2-Nitrophenol	1,2-Diphenylhydrazine	Polychlorinated biphenyls
1,2,3,4,7,8,9-HeptaCDF	4-Nitrophenol	Fluoranthene	Toxaphene
OctaCDF		Fluorene	

¹ With the exception of wastewater samples, samples placed in an acid-preserved bottle for metals analysis must first be filtered. If filtering in the field is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain of custody form) to immediately filter then preserve the sample.

² Samples to be analyzed for volatile compounds and phthalate esters shall be grab samples; the remainder shall be 24-hour composite samples.

Table 2. Use Area Monitoring

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

INFORMATION SHEET

INFORMATION SHEET – ORDER NO. R5-2011-0066
TEJON-CASTAC WATER DISTRICT
TEJON RANCH COMMERCE CENTER
NEW EAST WASTEWATER TREATMENT FACILITY
KERN COUNTY

Background

Currently the Tejon-Castac Water District (hereafter Discharger) owns and operates the Tejon Industrial Complex West wastewater treatment facility (West WWTF) located 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-acre of Use Area on the west side of I-5. The West WWTF provides sewerage service for a hotel, gas stations, restaurants, shower and restroom areas, convenience stores, and industrial warehouses.

On July 2009, the Discharger submitted a Report of Waste Discharge for a proposed new WWTF (New East WWTF) on the East side of I-5 that will have an initial design flow of 0.1 mgd. The New East WWTF will serve the same types of businesses as that of the West WWTF. Therefore, the influent wastewater quality for the New East WWTF will be similar to that of the West WWTF. According to the RWD, the New East WWTF will produce an effluent with average biochemical oxygen demand (BOD) and total suspended solids (TSS) concentrations of 10 mg/L, and an average total nitrogen concentration of less than 10 mg/L.

The New East WWTF consists of: two 1 mm fine screens, a screw compactor, a mixed anoxic basin, a pre-aeration basin, two membrane bioreactor (MBR) basins, aerated sludge tanks, one ultraviolet disinfection unit, one 0.9 million gallon (MG) lined storage pond, one 2 MG unlined storage pond, and approximately 13 acres of Use Area on the east side of I-5.

The Discharger proposes to expand the New East WWTF in phases to a build out design capacity of 0.8 mgd in increments of 0.1 mgd. Discharge Specification D.1 outlines the conditions that the Discharger needs to comply with before increasing the flow.

Groundwater Conditions

Tecuya and Salt Creeks in the southwestern portion of the White Wolf Subarea exhibit total dissolved solids (TDS) concentrations of 2,000 and 10,000 mg/L, respectively. It appears that runoff from these creeks have affected groundwater in their fan areas, according to Resolution No. 70-178, *Water Quality Control Plan for Groundwater in the White Wolf Subarea*.

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 range from 600 to 2,000 mg/L.

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, chloride over 22,000 mg/L, and boron of 50 mg/L. Depth to groundwater is approximately 500 feet below ground surface (bgs). The TDS and Electrical Conductivity (EC) range from 1,000 mg/L to 1,500 mg/L and 1,500 $\mu\text{mhos/cm}$ to 2,300 $\mu\text{mhos/cm}$ (calculated $\text{EC}=\text{TDS}/0.65$), respectively, in the unconfined aquifer, according to water quality maps in the Water Supply Report developed by the Kern County Water Agency and published in 2007.

Source Water

Source water for the WWTF is provided by the State Water Project, and by two on-site wells in emergencies. The 2010 Consumer Confidence Report indicates that the source water is relatively good, with an average EC of about 510 $\mu\text{mhos/cm}$, and NO_3 (as NO_3) of 4.8 mg/L. Quality of water from the two wells is of poor quality. Average EC for the TA Well and Rose Replacement Well are about 1,360 $\mu\text{mhos/cm}$ and 1,170 $\mu\text{mhos/cm}$, respectively.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The Basin Plan identifies the greatest long-term water quality problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated by man's activities and particularly affected by intensive irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. The Central Valley Water Board encourages proactive management of waste streams by dischargers to control addition of salt through use. Thus the Basin Plan establishes an incremental effluent EC limit of 500 $\mu\text{mhos/cm}$ over source water EC as the measure of the maximum permissible addition of salt constituents through use. In addition, the Basin Plan states that discharges to areas that may recharge to 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.

Maximum salinity limits for most wastewater discharges for most areas are those mentioned. One exception is the White Wolf Subarea, where the subject discharge takes place. Relaxation of some effluent salinity limits in the White Wolf Subarea is based on the class of irrigation water underlying the discharge.

The Basin Plan specifies that irrigation waters (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 mg/L (percent base constituents), and boron between 0.5–2 mg/L, be considered Class II irrigation waters. Based on the quality from the Discharger's backup source water well, underlying groundwater is 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 specifies that discharges to land in areas overlying Class II or poorer groundwater shall not exceed an EC of 2,000 $\mu\text{mhos/cm}$. The quality of the effluent with respect to EC is generally better than groundwater. This order prescribes groundwater EC limitations pursuant to Title 22,

California Code of Regulations (CCR), where EC has secondary Maximum Contaminant Levels (MCLs) of 1,600 $\mu\text{mhos/cm}$ (upper limit) and 2,200 $\mu\text{mhos/cm}$ (short term limit). These groundwater limitation proscribes the discharge from causing groundwater EC to exceed background groundwater quality is appropriate.

Antidegradation

State Water Board Resolution No. 68-16 (“Policy with Respect to Maintaining High Quality Waters of 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.

Constituents of concern in the discharge that have the potential to degrade groundwater include salts and nutrients. This Order establishes term and conditions of discharge to ensure that the discharge does not unreasonably affect present and anticipated uses of groundwater.

The Order includes two monthly average EC effluent limits, an incremental limit of source water plus 500 $\mu\text{mhos/cm}$ and an overall cap limit of 2,000 $\mu\text{mhos/cm}$. The incremental EC effluent limit of source water plus 500 $\mu\text{mhos/cm}$ is general provision that applies to all discharges to land involving advance wastewater treatment. The monthly average EC effluent limit of 2,000 $\mu\text{mhos/cm}$ is included to ensure salinity loading rates to field crops will not adversely affect the crops that will be grown with the recycled water (turf grass). The Order also contains groundwater limitations that will ensure that discharges will not cause exceedances of water quality objectives established in the Basin Plant to protect beneficial uses. With respect to EC, the quality of the discharge is generally of better quality than underlying groundwater.

The WWTF provides nitrogen removal and the Order includes limits that require the effluent total nitrogen to be 10 mg/L or less. Nitrate (as N) represents only a portion of the total nitrogen in effluent. Other nitrogen species can include organic nitrogen, ammonia, and nitrite. Additional nitrogen losses will occur during the migration of effluent through the soil profile to groundwater. The total nitrogen limit of 10 mg/L will ensure that the nitrate (as N) concentration of the percolate will be less than the MCL of 10 mg/L. Groundwater Limitations in the Order also proscribe the discharge from causing the groundwater nitrate (as N)

concentration from exceeding the MCL. Therefore, any degradation that may result from the discharge will not exceed water quality objectives or impair beneficial uses.

Degradation of groundwater by EC (unlikely) and Nitrate (minimal should it occur) 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 project 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 groundwater degradation provided terms of the Basin Plan are met.

Treatment Technology and Control

The expansion project 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

Implementation of the above treatment, operation, maintenance, and monitoring measures, as required by this Order, represent the implementations of BPTC of the discharge.

CEQA

The Kern County Planning Department, as the lead agency for purposes of the California Environmental Quality Act (CEQA) (Public Resources Code section 21000, et, seq.) and the CEQA guidelines (Title 14, Division 6, California Code of Regulations, as amended), adopted a Final Environmental Impact Report (FEIR) and filed a Notice of Determination on 10 November 2005, State Clearinghouse Number 2001101133 for the New East WWTF.

Central Valley Water Board staff reviewed the FEIR and concurred with the conclusion that the discharge would not have a significant impact on water quality. This Order includes effluent limits for BOD, TSS, EC, and nitrogen. Compliance with these will mitigate any significant impacts to water quality.

Title 27

Title 27, CCR, section 20005 et seq. (Title 27) contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment to classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

Discharges of domestic sewage and treated effluent can be treated and controlled to a degree that will not result in unreasonable degradation of groundwater. For this reason, they have been conditionally exempted from Title 27 under Section 20090(a). None of the wastes regulated by the proposed Order are hazardous waste 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 and is thus exempt from Title 27 pursuant to Section 20090(a).

The Discharger hauls sludge/biosolids off-site to a facility authorized to handle sludge/biosolids.

Proposed Order Terms and Conditions

Discharge Prohibitions, Specifications and Provisions

The proposed Order prohibits discharge to surface waters and surface water drainage courses and cross connection between potable water and well water piping with recycled water piping.

The proposed Order includes a schedule for the increase of monthly average daily flow limit by increments of 0.1 mgd up to a final design flow of 0.8 mgd, and effluent limits for BOD₅ and TSS each of 10 mg/L monthly average and 20 mg/L daily maximum. These limitations are based on Basin Plan minimum performance standards for municipal facilities.

The proposed Order's provisions regarding pond dissolved oxygen, and freeboard are consistent with Central Valley Water Board policy for the prevention of nuisance conditions, and are applied to all such facilities.

The proposed Order prescribes groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedances of these objectives or natural background water quality, whichever is greater.

The proposed Order includes provisions that would require the Discharger to submit engineering certification that the WWTF has sufficient treatment, storage capacity for each expansion phase, a written copy of the Title 22 Engineering Report approval letter from DPH.

As the discharge will not immediately comply with the incremental EC limit of source water plus 500 $\mu\text{mhos/cm}$, the Order also includes a time schedule for the Discharger to implement salinity minimization measures to ensure compliance with the limit within two years.

Monitoring Requirements

Section 13267 of the CWC authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Section 13268 of the CWC authorizes assessment of civil administrative liability where appropriate.

The proposed Order includes influent and effluent monitoring requirements, pond monitoring, source water monitoring, sludge monitoring, and Use Area monitoring. This monitoring is necessary to characterize the discharge, evaluate compliance with effluent limitations prescribed by the Order.

Reopener

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

DMS/WDH: 10/13/2011