

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER R5-2018-0046

WASTE DISCHARGE REQUIREMENTS  
FOR  
CITY OF VISALIA  
WATER CONSERVATION PLANT  
TULARE COUNTY

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

**Background**

1. On 12 August 2016, the City of Visalia (City or Discharger) submitted a Report of Waste Discharge (RWD) for upgrades to its wastewater treatment facility (Facility, Water Conservation Plant or WCP) to include disinfected tertiary treatment and a discharge of up to 18 million gallons per day (mgd) to City-owned land and contracted users.
2. The City owns and operates the WCP and is responsible for compliance with these Waste Discharge Requirements (WDRs).
3. The WCP is located at 36°18'38.5" N, 119°24'14.8" W, in Section 6, T19S, R24E, MDB&M, and Section 5 T19S, R24E MDB&M as shown in Attachment A, which is incorporated herein.
4. WDRs Order R5-2014-0076, a National Pollutant Discharge Elimination System (NPDES) permit (NPDES No. CA0079189), adopted by the Central Valley Water Board on 6 June 2014, regulates the WCP's disinfected secondary-treated discharge to Mill Creek, and to adjacent City-owned land. Order R5-2014-0076 authorizes an average monthly flow of up to 20 mgd.
5. The City has upgraded the WCP to improve the treatment system and increase recycled water use. Because the City has not discharged to Mill Creek since August 2014, Order R5-2014-0076 (NPDES No. CA0079189) will be rescinded by a separate order.
6. Time Schedule Order R5-2014-0077 (TSO) was adopted in conjunction with Order R5-2014-0076, which required Visalia to come into compliance with the ammonia and copper limits in Order R5-2014-0076. The purpose of the plant upgrade and Report of Waste Discharge was to comply with the TSO. Accordingly, the TSO will be rescinded by a separate order.

**Wastewater Treatment and Disposal**

7. The WCP receives wastewater from the City of Visalia and the unincorporated community of Goshen in Tulare County.
8. Completed in January 2017, the upgraded WCP consists of two Parshall flumes, two bar screens, four grit tanks, five rectangular primary clarifiers, four fine screens, four rectangular aeration basins, ten membrane tanks (each housing eight membrane cassettes with expansion space), two recirculation lines, and two parallel channels housing six ultraviolet light (UV) banks (five duty and one standby) with expansion space for future flow increase. A site map and

process flow schematic are shown on Attachments A and B, respectively, which are incorporated herein.

9. The City's self-monitoring reports (SMRs) from 1 January 2017 through 31 August 2017 indicate that monthly average flow is about 11 mgd.
10. **Table 1** below shows wastewater influent characteristics, based on data contained in the City's SMRs from June 2014 through January 2017.

<u>Constituent</u>	<u>Unit</u>	<u>Min</u>	<u>Max</u>	<u>Average</u>
Biochemical Oxygen Demand	mg/L	190	540	341
Electrical Conductivity	umhos/cm	500	1,400	796
Total Suspended Solids	mg/L	98	1,562	414
pH	standard units	6.21	11	7.13

11. Table 2 shows a summary of data representing disinfected tertiary-treated effluent samples taken since the upgraded plant was brought online on 14 January 2017 compared to effluent samples taken from the adoption of R5-2014-0076 through 13 January 2017. The data shows an improvement in treatment for Biochemical Oxygen Demand (BOD), electrical conductivity (EC), total nitrogen, and total suspended solids. Total dissolved solids, boron, and chloride concentrations do not appear to have been affected much by the upgraded treatment facility.

<u>Constituent</u>	<u>Unit</u>	<i>Upgraded Plant<sup>1</sup></i>			<i>Old Plant<sup>2</sup></i>
		<u>Min</u>	<u>Max</u>	<u>Average</u>	<u>Average</u>
Biochemical Oxygen Demand	mg/L	3	21	6.7	10.1
Electrical Conductivity	umhos/cm	500	750	560	699
Total Nitrogen (as N)	mg/L	3	14	8.0	25.3
Total Dissolved Solids	mg/L	310	350	332	350
Total Suspended Solids	mg/L	0.4	14	2.8	12.5
Boron	mg/L	0.17	0.20	0.18	0.17
Chloride	mg/L	44	57	51.9	56.2

<sup>1</sup>. Upgraded Plant data represents 14 January 2017 – 30 June 2017

<sup>2</sup>. Old Plant data represents 4 June 2014 – 13 January 2017

12. The WCP will produce two categories of recycled water, Type 1 and Type 2 Discharge. Type 1 Discharge is disinfected tertiary-treated recycled water, which will be produced and discharged during normal operations. Type 2 Discharge is, at least, undisinfected secondary-treated recycled water. The City is only authorized to produce and discharge Type 2 Discharge in the event of a malfunction or planned maintenance of the UV disinfection system. Provision H.20 limits the duration the Discharger may discharge Type 2 Discharge and requires the City of Visalia to inform Central Valley Water Board staff in the event of a Type 2 Discharge.

13. Primary sludge is fed to seven primary digesters. Waste Activated Sludge (WAS) is processed through two 2-meter gravity belt thickeners; thickened WAS is then partially processed by a sludge disintegrator then fed into primary digestion tanks 3-7. Digested sludge from the seven primary digesters is then fed into the eighth digester for secondary digestion. Digested sludge is pumped from the secondary digester and dewatered by 2 screw presses. Dewatered sludge is applied to a 9-acre asphaltic-lined drying and stockpiling area for further drying and storage. Biosolids are removed by a permitted contractor and disposed of by either land application at an approved facility or landfill cover at an approved landfill.
  
14. In February 2017, the City submitted a report titled *General Order Notice of Intent for Disinfected Tertiary Reuse for State Water Resources Control Board (State Water Board) Order WQ 2016-0068-DDW Water Reclamation Requirements for Recycled Water Use* (NOI). The NOI contained a water balance for the initial requested flow rate of 18 mgd and the buildout flow rate of 22 mgd. The water balance shows that with the proposed reclamation area expansion that the City has enough disposal and reclamation capacity to accommodate flows up to 22 mgd. **Table 3** below describes the proposed disposal and reclamation areas.

Table 3—Discharge Locations

<u>Description</u>	<u>Acreage/Storage</u>
City farmland	996 acres
On-site Pond 2	84 acre-feet
On-site Pond 3	304 acre-feet
City-owned Basin No. 4	1,287 acre-feet
Potential contracted land	2,525 acres
Tulare Irrigation District (TID)	10,700 acres
City-owned farmland near the airport	664 acres
Landscape Reuse	253 acres

### **Industrial Discharge Pretreatment**

15. Industrial discharges to publicly-owned wastewater treatment facilities can cause one or more of the following problems if not adequately controlled:
  - a. *Interference or upset.* Discharges of high volumes or concentrations of certain pollutants can inhibit or interfere with the proper operation of the WCP, causing it to do an inadequate job of treating wastes. As a result, the facility could be prevented from meeting its permit requirements.
  
  - b. *Sludge Management.* Industrial pollutants, particularly metals and other toxic pollutants, can limit the sludge management alternatives available to the Discharger and increase the cost of sludge management and disposal. Additionally, biosolids contaminated with toxic pollutants could be rendered unsuitable for use as a soil amendment.
  
  - c. *Pass-through.* Some industrial pollutants may not receive adequate treatment and pass through the treatment system in concentrations that could unreasonably degrade groundwater quality and/or prevent recycling of domestic wastewater.

Additionally, the discharge of explosive, reactive, or corrosive wastes can cause damage to the wastewater collection system or the treatment works, and may also pose a threat to worker or public safety.

16. The City implements an industrial pretreatment program to regulate the discharge of industrial wastes into the wastewater collection system or treatment works to prevent damage to the sewer system or treatment works, inhibit or disrupt the treatment process, or cause violation of the effluent or groundwater limits of this Order. The City's Public Works Department implements and administers the City's pretreatment program consisting of 790 identified nondomestic dischargers. The City has identified 10 of the dischargers as "Significant Industrial Users" (4 of which are Categorical Industrial Users) as defined in 40 Code of Federal Regulations section 403.3(v). The remaining 780 users are classified as other non-significant industrial users and consist of industries such as food service establishments, dental facilities, dry cleaning facilities, laboratories, and photo processors.
17. The City's pretreatment program was approved by the Central Valley Water Board in 1985. The City of Visalia submitted an update to the pretreatment program in December 2013 and a local limits update in April 2014.

#### Site-Specific Conditions

18. Source water for the City of Visalia and Goshen comes from 72 groundwater wells owned and operated by the California Water Service Company (Cal Water). **Table 4** below summarizes data from the 2014 through 2016 Consumer Confidence Reports.

<u>Table 4—Source Water</u>				
<u>Constituent/Parameter</u>	<u>Units</u>	<u>Year/s</u>	<u>Range</u>	<u>Average</u>
Electrical Conductivity	µmhos/cm	2014-2016	140-390	220
Total Dissolved Solids	mg/L	2014-2016	66-260	140
Chloride	mg/L	2014-2016	1.9-28	8
Sulfate	mg/L	2014-2016	2.8-23	8.6
Arsenic	mg/L	2014-2016	ND <sup>1</sup> -5	0.5
Fluoride	mg/L	2014-2016	ND-0.13	ND
Iron	ug/L	2014-2016	ND-170	6.1
Manganese	ug/L	2014-2016	ND-150	2.6
Nitrate as N	mg/L	2014-2016	0.6-6.6	3
Sodium	mg/L	2014-2016	6.2-46	18
Hardness	mg/L	2014-2016	21-160	75

<sup>1</sup> ND=non-detect.

19. According to Federal Emergency Management Agency (FEMA) Map Nos. 06107C0920E and 06107C0917E, the WCP is in Zone A. Areas in Zone A have a 1 percent annual chance of flooding, no depth or base flood elevations are given for Zone A.

20. The land surface in the vicinity of the WCP is generally flat. Elevation at the WCP is about 285 feet above mean sea level, sloping slightly to the west.
21. Area soils are moderately permeable alluvial deposits originating in the Sierra Nevada Mountains to the east. The surface soil is classified as Tagus fine sandy loam. The geology of the Visalia area generally consists of deep underlying metamorphic and granitic rock overlain by hundreds of feet of alluvium. More specifically, the first 100 feet below ground surface (bgs) contains interbedded sand zones that are periodically saturated depending on the lateral proximity to surface water (e.g., disposal and percolation ponds and canals). The interbedded sand zone is underlain by relatively thin saturated beds of sand mixed with clay, clayey silt, and silt that extend to depths of 240 to 275 feet bgs.
22. Regional land use data compiled by the California Department of Water Resources (DWR) indicate fodder crops of corn and alfalfa are the primary crops. A small percentage of land near the Facility contains walnut, pecan, and pistachio orchards.
23. The Visalia area is characterized as semi-arid with hot dry summers and cool winters. Annual precipitation in the vicinity of the WCP averages approximately 10-12 inches, the 100-year-return-period wet year rainfall is approximately 29 inches, and the reference evapotranspiration rate is approximately 53 inches per year.

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

24. The operative Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives (WQOs), contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. In accordance with Water Code section 13263, subdivision (a), these WDRs implement the Basin Plan.
25. The WCP lies within Detailed Analysis Unit (DAU) 242, within the Kaweah Basin Hydrologic Unit. The beneficial uses of underlying groundwater as set forth in the Basin Plan are: municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); industrial process supply (PRO); water contact recreation (REC-1); and non-contact water recreation (REC-2).
26. The WCP is in the Consolidated Hydrologic Area (No. 558.10) of the Kaweah Delta Hydrologic Unit, as depicted on hydrologic maps prepared by State Water Board in August 1986.
27. The Basin Plan establishes narrative WQOs for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric WQO for total coliform organisms. The narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses. Quantifying a narrative WQO requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative WQO is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative WQO.

28. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700  $\mu\text{mhos/cm}$ . There is however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000  $\mu\text{mhos/cm}$  if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.
29. The Basin Plan's narrative WQOs for chemical constituents require that MUN-designated waters at least meet the maximum contaminant levels (MCLs) established under California Code of Regulations, title 22 (Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
30. The Basin Plan's numeric WQO for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN-designated groundwater.
31. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin is 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 a mechanism to carry salts out of the basin is established. To limit the degradation, 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 electrical conductivity (EC) shall not exceed the EC of the source water plus 500  $\mu\text{mhos/cm}$ . When the source water is from more than one source, the EC shall be a weighted average of all sources.
  - b. Discharges to areas that may recharge good quality groundwater shall not exceed an EC of 1,000  $\mu\text{mhos/cm}$ , a chloride content of 175 mg/L, or a boron content of 1.0 mg/L.

### **Groundwater Conditions**

32. Regional groundwater underlying the area is first-encountered at about 145 feet bgs and flows to the south-southwest; according to the DWR Groundwater Information Center (GIC) Interactive map using data from Spring 2017.
33. The City has a groundwater monitoring network consisting of 18 monitoring wells which include cluster and individual wells which monitor the upper, unconfined aquifer and lower, confined aquifer. Fifteen monitoring wells are installed in the upper aquifer and three in the lower. Monitoring wells in the upper aquifer are screened in two different zones, from 66-160 feet bgs, and just above the aquitard at 223-248 feet bgs. Deep monitoring wells are screened below the aquitard from 267-303 feet bgs. Groundwater in the upper and lower aquifers flows generally to the southwest. A review of groundwater monitoring for the period 1 August 2014 through 31 January 2017 determined that monitoring wells MW-H2, J-2, N, O, and S show total nitrogen results in excess of 10 mg/L ranging from around 12 to 49 mg/L. Monitoring wells MW-N and S

show elevated electrical conductivity with results ranging from 910-1,000  $\mu\text{mhos/cm}$  and 1,100-1,300  $\mu\text{mhos/cm}$  respectively. The elevated total nitrogen concentrations from MW-J2 and O are likely from past activities at the WCP; however, other elevated total nitrogen results are likely from dairy and other agricultural activities. Well locations can be seen on the attached Site Location Map (Attachment A).

### **CV-SALTS Reopener**

34. The Central Valley Water Board is developing Basin Plan amendments to incorporate new programs for addressing ongoing salt and nitrate accumulation in the Central Valley. These programs would change how the Central Valley Water Board issues permits for discharges of salt and nitrate. For nitrate, dischargers that are unable to comply with stringent nitrate requirements will be required to take on alternate compliance approaches that involve providing replacement drinking water to persons whose drinking water is affected by nitrates. Dischargers could comply with the new nitrate program either individually or collectively with other dischargers. For salinity, dischargers that are unable to comply with stringent salinity requirements would instead need to meet performance-based requirements and participate in a basin-wide effort to develop a long-term salinity strategy for the Central Valley. Should the Central Valley Water Board adopt amendments to the Basin Plan, this Order may be amended or modified to incorporate any newly-applicable requirements.
34. The stakeholder-led Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative has been coordinating efforts to implement new salt and nitrate management strategies. The Central Valley Water Board expects dischargers that may be affected by new salt and nitrate management policies to coordinate with the CV-SALTS initiative.

### **Antidegradation Analysis**

35. Incorporated as part of the Basin Plan, the State Water Board's *Statement of Policy with Respect to Maintaining High Quality of Waters in California*, Resolution No. 68-16 (Antidegradation Policy) was adopted by the State Water Board in October 1968. Antidegradation Policy limits the Board's discretion to authorize the degradation of "high-quality waters." Pursuant to State Water Board Order No. WQ 91-10, the "high quality" of waters is determined on a constituent-by-constituent basis. In other words, an aquifer can be considered a "high-quality" water with respect to one constituent, but not others.
36. The Antidegradation Policy applies when an activity will result in discharges causing degradation to "high quality" waters. When applicable, the Policy requires that WDRs reflect best practicable treatment or control (BPTC) of wastes and that any degradation of high quality waters (a) will be consistent with the maximum benefit to the people of the State, and (b) will not result in an exceedance of water quality objectives. Alternatively, if an activity will not result in such degradation, the Antidegradation Policy will not apply, and the discharger need only demonstrate that it will use "best efforts" to control the discharge of waste.
37. Constituents of concern in the Facility's discharge that have the potential to degrade groundwater include organics, nutrients, and salts. This Order establishes terms and conditions of discharge to ensure that Facility discharges do not unreasonably affect present and anticipated uses of groundwater; and includes groundwater limitations that apply WQOs established in the Basin Plan to protect beneficial uses.

- a. With the conditions stipulated in this Order, the Facility's discharge is not expected to cause nuisance conditions or unreasonable degrade groundwater with constituents related to organic overloading. Since the new facilities were brought online in January 2017, the WCP has generated an effluent with a BOD concentration under 10 mg/L.
  - b. For nutrients such as nitrate, the Facility's potential for degradation depends not only on the quality of the treated effluent, but the ability of the vadose zone below the effluent storage ponds to provide an environment conducive to nitrification and denitrification to convert the effluent nitrogen to nitrate and the nitrate to nitrogen gas before it reaches the water table. Past groundwater monitoring indicates that the discharge has caused elevated nitrate conditions in groundwater underlying the evaporation/percolation ponds and former unlined sludge drying beds. The upgraded WCP includes nitrification and denitrification, an asphaltic lined sludge drying/storage area, and has generated effluent with a total nitrogen concentration under 10 mg/L since the new facilities were brought online in January 2017. The City is also increasing the acreage of reclamation and adding recycled water uses which will further reduce the concentrated nitrogen load to land.
  - c. For salinity, available groundwater monitoring indicates that the Facility's discharge has caused groundwater to contain EC above background concentrations. This Order includes an effluent EC limit of source water EC plus 500 umhos/cm, and a Monitoring and Reporting Program (MRP) that requires groundwater monitoring for EC. Since startup of the new facilities in January 2017, the effluent EC has dropped from an average of 699 umhos/cm to an average of 560 umhos/cm. The City has and is required to continue the implementation of a pretreatment program that includes salinity source control.
38. The WCP described in Findings 7-17, will provide treatment and control of the discharge that incorporates:
- a. Tertiary treatment of wastewater;
  - b. UV disinfection;
  - c. Recycling of wastewater for crop irrigation;
  - d. Recycling of wastewater for landscape irrigation;
  - e. An operation and maintenance manual;
  - f. Certified operators to ensure proper operation and maintenance;
  - g. A pretreatment program that includes effective salinity source control;
  - h. Source water and discharge monitoring; and
  - i. Groundwater monitoring

The Central Valley Water Board finds that the above-listed treatment and control measures constitute BPTC for the Facility's discharge.



39. Even with effective source control and treatment, the discharges from wastewater utilities may nevertheless result in limited degradation of groundwater by constituents of concern typical of municipal wastewater (e.g., EC and nitrate). To the extent limited degradation results, it remains consistent with maximum benefit to the people of the State. As compared to reliance on numerous onsite wastewater treatment systems (OWTS), the Facility offers far superior technology, energy, water recycling and waste management advantages, as well as water quality impacts that are substantially less significant. Further, economic prosperity of Central Valley communities and associated industries is also of maximum benefit to the people of the State, and therefore sufficient reason to accommodate growth and some groundwater degradation provided terms of the Basin Plan are met. In any event, resulting degradation will not unreasonably affect present and anticipated beneficial uses of groundwater, or result in water quality less than WQOs.

### **Water Recycling Regulatory Considerations**

40. Undisinfected domestic wastewater contains pathogens harmful to humans that are typically measured by means of total or fecal coliform, as indicator organisms. The State Water Board's Division of Drinking Water (DDW), which has primary statewide responsibility for protecting water quality and the public health, has established statewide criteria for the use of recycled water. (See Title 22, § 60301 et seq.)
41. On 3 February 2009, the State Water Board adopted Resolution 2009-0011, Adoption of a Policy for Water Quality Control for Recycled Water (Recycled Water Policy). The Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplied and reduced greenhouse gases.
42. 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), which encourages water recycling, water conservation, and regionalization of wastewater treatment facilities. Specifically, Resolution No. R5-2009-0028 requires the municipal wastewater treatment agencies to document:
- i. Efforts to promote new or expanded wastewater recycling opportunities and programs;
  - ii. Water conservation measures; and
  - iii. Regional wastewater management opportunities and solutions (e.g., regionalization).

The distribution of disinfected tertiary recycled water by the City is consistent with the intent of State Water Board Resolution No. 2009-0011, and Central Valley Water Board Resolution No. R5-2009-0028.

43. Pursuant to Title 22, section 60323, recyclers of treated municipal wastewater are required to submit an engineering report detailing the use of recycled water, contingency plans, and safeguards.
44. The Discharger submitted a NOI in February 2017, and an amendment to the 2011 Title 22 Engineering Report (Engineering Report) to DDW for coverage under the General Order for the reclamation of disinfected tertiary recycled water generated by the Facility to about 12,600 acres. The 12,600 acres consists of city controlled use areas (i.e., City-owned Use Area, City-owned

farmland near the airport, City Park Plaza, and City Golf Course), which have a land area of 1,913 acres and an estimated irrigation demand of 8,576 ac-ft/yr, and Tulare Irrigation District Land; which has an estimated land area of 10,700 acres and an estimated irrigation demand of 24,546 ac-ft/yr. A 20 March 2018 DDW letter accepted the final amendment to the 2011 Engineering Report.

45. Adopted on 7 June 2016, *Water Reclamation Requirements for Recycled Water Use*, State Water Board Order WQ 2016-0068-DDW (Reclamation General Order) delegates the responsibility of administering water recycling programs to a designated Administrator. The City requested coverage under the Reclamation General Order for the use of undisinfected secondary recycled water and was issued a Notice of Applicability (NOA) by the Executive Officer on 28 September 2016 (WQ 2016-0068-R5001).
46. In February 2017, the City submitted a NOI for coverage under the Reclamation General Order and an amended Title 22 Engineering Report for the use of disinfected tertiary recycled water. In response to DDW's comments, the City submitted a revised Engineering Report dated 23 February 2018. In a letter dated 22 March 2018, DDW accepted the City's amendments. A NOA will be issued to rescind the 28 September 2016 NOA, and to authorize the reuse of disinfected tertiary-treated wastewater (Type 1 Discharge) and the limited reuse of undisinfected secondary-treated wastewater (Type 2 Discharge).

#### **Other Regulatory Considerations**

47. Pursuant to Water Code section 106.3, subdivision (a), it is "the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." Although this Order is not necessarily subject to Water Code section 106.3 because it does not revise, adopt or establish a policy, regulation or grant criterion (see § 106.3, subd. (b)), it nevertheless promotes that policy by requiring discharges to meet MCLs designed to protect human health and ensure that water is safe for domestic use.
48. Based on the threat and complexity of the discharge, the Facility is classified as 1B as defined below:
  - a. Category 1 threat to water quality: "Those discharges of waste that could cause the long-term loss of a designated beneficial use of the receiving water. Examples of long-term loss of a beneficial use include the loss of drinking water supply, the closure of an area used for water contact recreation, or the posting of an area used for spawning or growth of aquatic resources, including shellfish and migratory fish."
  - b. Category B complexity, defined as: "Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management units."
49. California Code of Regulations, title 27 (Title 27) prescribes requirements for the treatment, storage, processing, and disposal of solid waste, which includes "designated" waste per Water Code section 13173. However, certain discharges involving domestic sewage, wastewater and reuse are exempted from Title 27. Section 20090 of Title 27 provides in pertinent part as follows:

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

- (a) Sewage -Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, Title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable SWRCB-promulgated provisions of this division.
- (b) Wastewater -Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:
  - (1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;
  - (2) the discharge is in compliance with the applicable water quality control plan; and
  - (3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

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- (h) Reuse -Recycling or other use of materials salvaged from waste, or produced by waste treatment, such as scrap metal, compost, and recycled chemicals, provided that discharges of residual wastes from recycling or treatment operations to land shall be according to applicable provisions of this division.

50. The wastewater treatment units and discharge of effluent authorized herein, and the treatment and storage facilities associated with the discharge, are exempted from Title 27 pursuant to section 20090, subdivision (b), because:

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

51. The State Water Board's NPDES General Permit for Storm Water Dischargers Associated with Industrial Activities (Industrial General Permit), Order 2014-0057-DWQ (NPDES General Permit CAS000001) prescribes WDRs for storm water discharges associated with industrial activities; and requires submittal of a Notice of Intent by all affected industrial dischargers.

Because the Facility's stormwater is not discharged to jurisdictional Waters of the U.S., Industrial General Permit coverage is not required at this time.

52. The City is currently enrolled under the State Water Board's Waste Discharge Requirements General Order for Sanitary Sewer Systems, Order No. 2006-0003-DWQ, which applies to publicly owned or operated sanitary sewers systems in excess of one mile in length.
53. Water Code section 13267, subdivision (b)(1) provides that:

[T]he regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, ... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
54. The reports required by this Order and the separately-issued Monitoring and Reporting Program R5-2018-0046 (MRP), which is incorporated as part of this Order, are necessary to ensure compliance with the WDRs prescribed herein. The Discharger owns and operates the wastewater treatment facility that discharges the waste subject to this Order.
55. The Department of Water Resources (DWR) sets standards for the construction and destruction of groundwater wells (DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.
56. In accordance with the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq., the City certified its Final Environmental Impact Report (FEIR) on 3 February 2014. The WDRs prescribed in this Order are covered under the City's FEIR.
57. Additionally, the City's FEIR (SCH No. 2010081057) included an analysis under the Antidegradation Policy, which evaluated the potential impacts to groundwater quality and identified four constituents of concern (chloride, sodium, TDS, and EC). In the FEIR, the City determined that these constituents would not threaten to exceed Basin Plan WQOs.
58. The U.S. Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations. Codified as 40 Code of Federal Regulations part 503 (Standard for the Use or Disposal of Sewage Sludge), these regulations: establish management criteria for protection of ground and surface waters; set limits and application rates for heavy metals; and establishes stabilization and disinfection criteria.
59. Although this Order uses 40 Code of Federal Regulations part 503 standards as guidelines, the Central Valley Water Board is not the implementing authority under part 503. Accordingly,

the City may have separate and/or additional compliance, reporting, and permitting responsibilities with respect to the EPA.

60. Pursuant to Water Code section 13263, subdivision (g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

#### **Public Notice**

61. The above findings, as well as the information set forth in the attached Information Sheet, which is incorporated as part of this Order, were considered in establishing the conditions of discharge of this Order.
62. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and recommendations and an opportunity for a public hearing.
63. All comments pertaining to the discharge were heard and considered in a public meeting.

**IT IS HEREBY ORDERED** that the City of Visalia (City or Discharger), its agents, successors, and assigns, to meet the provisions contained in Division 7 of the Water Code and regulations adopted hereunder, shall comply with the following:

#### **A. Discharge Prohibitions**

1. Discharge of wastes to surface waters or surface water drainage courses, other than those specified in Finding 12 and Provision H.20, is prohibited.
2. Discharge of waste classified as "hazardous" under Title 22 (§ 6626.1 et seq.), is prohibited.
3. Except as expressly authorized under Standard Provision E.2 of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, 1 March 1991 ed. (SPRRs), bypass of untreated or partially treated waste is prohibited.
4. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.
5. The Discharger shall not allow toxic substances to be discharged into the wastewater treatment system such that biological treatment mechanisms are disrupted.

#### **B. Flow Limitations**

1. The average monthly flow shall not exceed 18.0 mgd until Provision H.19 is satisfied [Monitored at EFF-001].
2. After satisfying Provision H.19, the average monthly flow shall not exceed the increased certified design capacity up to a maximum flow of 22.0 mgd [Monitored at EFF-001].

**C. Effluent Limitation**

1. Effluent shall not exceed the following limitations [**compliance determined at EFF-002**]:

a. The effluent limitations specified below:

<b>Constituent<sup>1</sup></b>	<b>Units<sup>2</sup></b>	<b>Monthly Avg.</b>	<b>Daily Max.</b>
BOD	mg/L	10	20
TSS	mg/L	10	20
Total Nitrogen (as N)	mg/L	10	---
Chloride	mg/L	175	---
Boron	mg/L	1	---

<sup>1</sup> BOD = 5-day Biochemical Oxygen Demand; TSS = Total Suspended Solids

<sup>2</sup> mg/L = milligrams per liter

- b. The arithmetic mean of BOD<sub>5</sub> and TSS in effluent samples collected over a monthly period shall not exceed 10 percent of the arithmetic mean of the values for influent samples (sample location INF-001) collected at approximately the same time during the same period (90 percent removal).
- c. The 12-month rolling average electrical conductivity (EC) of the discharge shall not exceed the 12-month flow-weighted average EC of the source water plus 500 umhos/cm or a maximum of 1,000 umhos/cm, whichever is more stringent. When source water is from more than once source, the EC shall be a flow-weighted average of all sources.

2. Effluent shall not exceed the following limits for total coliform organisms: [**Compliance with the total coliform effluent limit is not required during a Type 2 Discharge as described in Finding 12**]

- a. The 7-day median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed a most probable number (MPN) of 2.2 per 100 milliliters. Compliance with this requirement will be determined each day utilizing the total coliform results of the last seven days for which the analyses have been completed.
- b. The number of total coliform bacteria shall not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period.
- c. The number of total coliform bacteria shall not exceed an MPN of 240 per 100 milliliters at any time.

**D. Discharge Specifications**

1. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations set forth in Section F of this Order.

2. Wastewater treatment, storage, and disposal shall not cause conditions of pollution or nuisance, per Water Code section 13050, subdivisions (l)-(m).
3. At all times, the discharge shall remain within the permitted waste treatment/containment structures, conveyance structures, and recycled water use areas at all times.
4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
5. 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.
6. Public contact with wastewater at the WCP shall be precluded through such means as fences, signs, or acceptable alternatives.
7. Objectionable odors shall not be perceivable beyond the limits of the WCP property at an intensity that creates or threatens to create nuisance conditions.
8. As a means of discerning compliance with Discharge Specification D.7, the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or storage pond shall not be less than 1.0 mg/L for three consecutive sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Central Valley Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.
9. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.
10. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
11. On or about **1 October** of each year, available pond storage capacity shall be at least equal the volume necessary to comply with Discharge Specifications D.9 and D.10.
12. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically,

- a. An erosion control plan shall be implemented to ensure that coves and irregularities are not created around the perimeter of the water surface.
- b. Weeds shall be minimized through control of water depth, harvesting, and herbicides.
- c. Dead algae, vegetation and other debris shall not accumulate on the water surface.
- d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
- e. Vegetation management operations in areas in which nesting birds have been observed shall be carried out either before or after, but not during, the April 1 to June 30 bird nesting season.

#### **E. Ultraviolet Disinfection System Specifications**

The following specifications are based on the disinfection system cited in Division of Drinking Water's *City of Visalia UV Operations Plan and Spot-Check Bioassay Testing of the Visalia Water Conservation Plant Ultraviolet Disinfection System June 2017 Ozonia Aquaray® HO VLS UV Disinfection System* technical memorandum dated 12 July 2017. No equivalents or substitutions will be accepted without DDW and the Central Valley Water Board Executive Officer approval of equivalent disinfection performance. The Operator shall comply with the following ultraviolet light disinfection system specification at the WCP when recycling disinfected tertiary-treated wastewater, as described in Finding 12, unless otherwise approved by DDW and the Central Valley Water Board Executive Officer.

1. The WCP shall be operated in accordance with an Operations Plan approved by DDW, which specifies clearly the operational limits and responses required for critical alarms. A copy of the approved operations plan shall be maintained at the site and be readily available to operations personnel and regulatory agencies.
2. The turbidity of the filtered effluent, prior to disinfection, shall not exceed 0.2 nephelometric turbidity units (NTU) as a daily average (95% of the time), and shall not exceed 0.5 NTU at any time.
3. The Discharger shall operate the UV disinfection system to provide a minimum UV dose per channel of 80 milijoules per square centimeter (mJ/cm<sup>2</sup>) at all times.
4. The following equation shall be used for each UV bank as part of the automatic UV disinfection control system for calculating UV dose:

$$D_B = CR \times 0.5 \times 10^A \times Q_{\text{Train}}^{(B + C \times \text{UVT} \times \text{UVT})} \times \text{EO}^D \times \text{UVT}^{(E \times \text{UVT})}$$

Where

$D_B$  = Reduction equivalent dose per Bank, mJ/cm<sup>2</sup>;

CR = 0.864

$Q_{\text{Train}}$  = Flow rate, mgd per lamp Bank; = Total flow/(# of channels x # of modules wide)



EO = Effective output factor;

**A** = 1.96447,

**B** = -1.07232,

**C** = 1.02541E-04,

**D** = 1.36148,

**E** = 2.63461E-03

**EO** = EOLL x FF x  $D_i$  x TF<sub>20</sub>:

Where,

TF<sub>20</sub> = (Temperature / 20)<sup>0.22512</sup>

End of Lamp Life (EOLL) = 0.90;

Fouling Factor (FF) = 0.88;

$D_i = A \times I^2 + B \times I + C = \text{Dimming Factor}$

Where,

**A** = -0.11918918,

**B** = 1.09342272,

**C** = -1.50730543

**I** = lamp current (Amp)

5. The WCP UV disinfection system is limited to the following operational parameter ranges:
  - a. Permit total plant flow up to 18 mgd.
  - b. UVTs at or above 53.6%,
  - c. The UV lamps must be maintained below the maximum value of 16,000 hours of operation.
6. To maintain a Design Lamp output Attenuation Factor of 0.9, the UV lamps must be replaced after 16,000 hours or operations.
7. To maintain a Fouling Factor of 0.88, the quartz sleeves must be cleaned/wiped once every twelve hours under normal operating conditions.
8. The Discharger shall provide continuous and reliable on-line monitoring of UV dose, flow, UV transmittance, temperature, UV power, lamp age, and turbidity.
9. UV transmittance meters, temperature sensors, and flow meters must be properly calibrated to ensure proper disinfection.
10. At least monthly, all UV transmittance meters, temperature sensors, and flow meters must be properly calibrated in accordance with the frequency and parameters specified in the approved Operations Plan.
11. Flow meters measuring flows through the UV reactor must be verified to determine accuracy at least monthly via checking the flow reading against other flow determination methods. Periodic water level checks shall be conducted to evaluate flow split and adjustment of the weir gates as needed.
12. The quartz sleeves and cleaning system components shall be visually inspected per the manufacturer's operations manual for physical wear (e.g., scouring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system. Quartz sleeves shall be cleaned or replaced periodically, as necessary to maintain system operation.

13. Lamp age and replacement records shall be maintained on-site.
14. The UV system must be operated with a built-in automatic reliability feature that must be triggered by critical alarm set points.
  - a. Conditions triggering an alarm and startup of the redundant UV bank include: UV dose goes below 84 mJ/cm<sup>2</sup>, failure of one bank of lamps, ballast failure, and multiple lamp failure.
  - b. Conditions that shall divert flow include: UV operational dose lower than 80 mJ/cm<sup>2</sup>, UV transmittance lower than 53.6%, complete UV channel failure, and/or flow above the maximum 69 inches per channel. Central Valley Water Board staff shall be notified within 24 hours of WCP shut down or flow diversion.
15. A quick reference Operation Data Sheet shall be posted at the WCP and include the following information:
  - a. The alarm set points for tertiary turbidity, high flow, and UV dose;
  - b. The set points at which high turbidity, high flow, and low UV dose requires diversion of flow;
  - c. The required frequency of calibration for all monitoring equipment measuring turbidity, flow, UV transmittance, and UV intensity;
  - d. The required frequency of mechanical cleaning/wiping and equipment inspection; and
  - e. The UV lamp age tracking procedures and replacement intervals.
16. Equipment substitutions are not acceptable without an adequate demonstration of equivalent disinfection performance.

#### **F. Groundwater Limitations**

1. Release of waste constituents from any treatment, reclamation or storage component associated with the discharge shall not cause or contribute to groundwater:
  - a. Containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:
    - (i) Nitrate (as N) of 10 mg/L.
    - (ii) Total Coliform Organisms of 2.2 MPN/100 mL.
    - (iii) For constituents identified in Title 22, the primary and secondary MCLs quantified therein.

- b. Containing taste and odor-producing constituents, toxic substances, or any other constituent in concentrations that cause nuisance or adversely affect beneficial uses.

## **G. Solids Disposal Specifications**

For the purposes of this Order, “sludge” means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced 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 WCP; and “biosolids” refers to sludge that has been treated and tested and shown to be capable of being beneficially used as soil amendment for agriculture, silviculture, horticulture, and land reclamation activities pursuant to federal and state regulations.

1. Sludge and solid waste shall be removed from screens, sumps, aeration basins, ponds, clarifiers, etc., as needed to ensure optimal plant operation.
2. Any handling and storage of residual sludge, solid waste, and biosolids on property of the WCP shall be temporary (i.e., no longer than two years) and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.
3. Residual sludge, biosolids, and solid waste, and biosolids shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for further treatment, disposal, or reuse at disposal sites (i.e., landfill, composting sites, and soil amendment sites) operated in accordance with valid waste discharge requirements will satisfy this specification.
4. Use of biosolids as a soil amendment shall comply with valid WDRs issued by the Central Valley Water Board or another California Regional Water Quality Control Board, or the State Water Board, except in cases where a local (e.g., county) program has been authorized by a California Regional Water Quality Control Board. In most cases, the State Water Board’s *General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities*, Order No. 2004-12-DWQ (General Biosolids Order) will apply. Under the General Biosolids Order, a discharger must file a complete NOI and receive a NOA for each individual biosolids project.
5. Use and disposal of biosolids shall comply with the self-implementing federal regulations of 40 Code of Federal Regulations part 503 (Part 503), which are subject to enforcement by the U.S. EPA, not the Central Valley Water Board. If during the life of this Order, the State accepts primacy for implementation of Part 503, the Central Valley Water Board may also initiate enforcement where appropriate.
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.

## **H. Provisions**

1. The Discharger shall comply with the SPRRs, which are incorporated as part of this Order.

2. The Discharger shall comply with the separately-issued Monitoring and Reporting Program R5-2018-0046 (MRP), which is also incorporated as part of this Order (as well as any subsequent revisions to the MRP adopted by the Central Valley Water Board or approved by the Executive Officer). The submittal dates of self-monitoring reports shall be no later than the submittal dates specified in the MRP.
3. The Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
4. A copy of this Order and all its attachments (e.g., Information Sheet, SPRRs, etc.), and the operative MRP, shall be kept at the Facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
5. The Discharger shall not allow pollutant-free wastewater to be discharged into the WCP 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.
6. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing evidence of compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing 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.
7. 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.
8. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.
9. The Discharger shall continue to implement its approved pretreatment program.
11. The Discharger shall provide certified wastewater treatment plant operators in accordance with division 3, chapter 26 of California Code of Regulations, title 23 (Title 23).
12. In the event that the Discharger reports toxic chemical release data to the State Emergency Response Commission (SERC) pursuant to section 313 of the Emergency Planning and

Community Right to Know Act (42 U.S.C. § 11023), the Discharger shall also report the same information to the Central Valley Water Board within 15 days of the report to the SERC.

13. The Discharger shall maintain and operate ponds sufficiently to protect the integrity of containment levees and prevent overtopping or overflows. Unless a California registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard shall never be less than two feet (measured vertically). As a means of management and to discern compliance with this Provision, the Discharger shall install and maintain a permanent staff gage with calibration marks that indicates the water level at the design capacity and enables determination of available operational freeboard.
14. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by these provisions by the due dates specified.
15. 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 Business and Professions Code sections 6735, 7835 and 7835.1. As required by these laws, completed technical reports and work plans must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work. All reports required herein are required pursuant to Water Code section 13267.
16. The Discharger shall remain enrolled under and otherwise comply with the State Water Board's Waste Discharge Requirements General Order for Sanitary Sewer Systems, Order No. 2006-0003-DWQ; and also comply with the Revised General WDRs Monitoring and Reporting Program, State Water Board Order No. 2013-0058-EXEC (and any subsequent revisions thereto). Together, State Water Board Order Nos. 2006-0003-DWQ and 2013-0058-EXEC require the Discharger to notify the Central Valley Water Board and take remedial action upon the reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow.
17. 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.
18. 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 (SPRRs) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. If approved by the Executive Officer, the

transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

19. **Prior to initiating a discharge** in excess of 18 mgd, the City shall submit the following technical documentation for Executive Officer approval:
  - a. Evidence certified by the plant design engineer that the expanded tertiary treatment facilities are capable of treating in excess of 18 mgd up to a maximum of 22 mgd;
  - b. An acceptance letter from DDW for the expanded UV system;
  - c. Operational procedures for the expanded facility;
  - d. Compliance with the effluent limits in the WDRs; and
  - e. Sufficient discharge capacity to handle the new design flow up to the buildout capacity of 22 mgd.
20. The location of any Type 2 Discharge shall be limited to on-site Ponds 2 and 3, City-owned Basin No. 4, and Use Areas specified in separate reclamation requirements. The duration of a Type 2 Discharge shall be limited to the time required to respond to any malfunction or planned maintenance. In the event of a malfunction, the City must immediately (within 24 hours) notify the Central Valley Water Board. If maintenance is planned that will require a Type 2 Discharge, the City shall notify the Central Valley Water Board at least 24 hours in advance and provide the expected duration of the planned maintenance necessitating a Type 2 Discharge.
21. If the Central Valley Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of a WQO, or to create a condition of nuisance or pollution, this Order may be reopened for consideration of additional requirements.
22. The Central Valley Water Board will review this Order periodically and will revise its WDRs when necessary.

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

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and Title 23, section 2050 et seq. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the 30th day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filling petitions may be found on the Internet at: [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality), or will be provided upon request.

I, PATRICK PULUPA, 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 31 May 2018.

*ORIGINAL SIGNED BY*

\_\_\_\_\_  
PATRICK PULUPA, Executive Officer

Order Attachments:

Attachment A—Vicinity Map

Attachment B—Process Flow Diagram

Monitoring and Reporting Program R5-2018-0046

Information Sheet

Standard Provisions and Reporting Requirements for WDRs, 1 March 1991 edition

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2018-0046  
FOR  
CITY OF VISALIA  
WATER CONSERVATION PLANT  
TULARE COUNTY

This Monitoring and Reporting Program (MRP) is issued to the City of Visalia (Discharger) pursuant to Water Code section 13267.

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

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

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

If monitoring consistently shows no significant variation in magnitude of a constituent concentration 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 the requested reduction in monitoring frequency.

A glossary of terms used within this MRP is included on **page 10**.

<u>Monitoring Location Name</u>	<u>Monitoring Location Description</u>
INF-001	Location where a representative sample of the Water Conservation Plant's (WCP) influent can be obtained immediately upstream of the Parshall flume.
EFF-001	The Membrane Bioreactor (MBR) permeate discharge.
EFF-002	Location after all treatment where a representative sample of the WCP's effluent can be taken prior to discharge to any Discharge Location.



<u>Monitoring Location Name</u>	<u>Monitoring Location Description</u>
MW-A through MW-XXX	Groundwater Monitoring Wells MW-A through MW-XXX and any other wells added to the groundwater monitoring network.
SWS-001	Source Water Supply
UV-001	Ultraviolet light disinfection system.
PND-001 through PND-002	Location(s) opposite the inlet(s) of each Regulating Pond where a representative sample can be obtained from each regulation pond.
BIO-001	Location where a representative sample of biosolids can be obtained prior to removal to a licensed facility.

### INFLUENT MONITORING

Influent samples shall be collected at the inlet of the headworks at INF-001. 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
Daily	pH	standard units	Grab
Weekly	BOD 5-day @20°C	mg/L	24-hour Composite
Weekly	TSS	mg/L	24-hour Composite
Weekly	Electrical Conductivity	µmohs/cm	24-hour Composite
Monthly	Monthly Average Influent Flow	mgd	Computed

### EFFLUENT MONITORING

The Discharger shall monitor treated effluent at EFF-002, except for flow, which shall be monitored at EFF-001. Effluent 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 <sup>1</sup>
Daily	pH	standard units	Grab
Daily	Total Coliform <sup>2</sup>	MPN/100 mL	Grab
Weekly	BOD 5-day @20°C	mg/L	24-hour Composite
Weekly	TSS	mg/L	24-hour Composite
Weekly	Electrical Conductivity	µmhos/cm	24-hour Composite
Monthly	TDS	mg/L	24-hour Composite
Monthly	TKN	mg/L	24-hour Composite
Monthly	Nitrate (as Nitrogen)	mg/L	24-hour Composite

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Monthly	Ammonia (as Nitrogen)	mg/L	24-hour Composite
Monthly	Total Nitrogen	mg/L	Calculated
Monthly	Chloride	mg/L	24-hour Composite
Monthly	Sodium	mg/L	24-hour Composite
Monthly	Boron	mg/L	24-hour Composite
Annually	General Minerals	mg/L	24-hour Composite

<sup>1</sup> The effluent flow may be calculated by as follows: Effluent Flow = MBR Permeate Flow – Plant Recycle Flow

<sup>2</sup> The Discharger is not required to monitor for total coliform when the WCP is producing Type 2 Discharge.

### ULTRAVIOLET LIGHT DISINFECTION SYSTEM MONITORING

The Discharger shall monitor the ultraviolet light disinfection system as UV-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous <sup>1</sup>	Flow	mgd	Meter
Continuous <sup>1</sup>	Turbidity	NTU	Meter <sup>2,3</sup>
Continuous <sup>1</sup>	Number of ultraviolet light banks in operation	Number	Observation
Continuous <sup>1</sup>	Ultraviolet Light Transmittance	Percent (%)	Meter
Continuous <sup>1</sup>	Temperature	°C	Meter
Continuous <sup>1</sup>	Water Level	Inches	Meter
Continuous <sup>1</sup>	Ultraviolet Light Dose <sup>4,5</sup>	mJ/cm <sup>2</sup>	Calculated

<sup>1</sup> For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzers(s) is not in operation.

<sup>2</sup> The turbidity meter shall be stationed immediately after the MBR, prior to the ultraviolet light disinfection process.

<sup>3</sup> Report daily average turbidity and maximum turbidity. If the turbidity exceeds 0.5 NTU, the water shall either be diverted to on-site ponds 2 or 3, City-owned Basin No. 4, or returned to the plant for additional treatment.

<sup>4</sup> Report daily minimum ultraviolet light dose, daily average ultraviolet light dose, and weekly average ultraviolet light dose. For the daily minimum ultraviolet light dose, also report associated number of banks, channel flow, water temperature, and ultraviolet light transmittance used in the calculation. If effluent discharge has received less than the minimum ultraviolet light dose and is not diverted from discharging to the reclamation area distribution system, report the duration and dose calculation variables associated with each incident.

<sup>5</sup> Ultraviolet light dosage shall be reported in units of millijoules per square centimeter.

### POND MONITORING

When holding greater than one foot of water pond monitoring shall be collected at PND-001, PND-002, DL-002, DL-003, and DL-004 and include at least the following:

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

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Weekly	Odors	---	Observation
Weekly	Berm Condition	---	Observation

<sup>1</sup> If offensive odors are detected by Facility personnel, or brought to the attention of Facility personnel, the Discharger shall monitor the affected pond(s) daily (1/day) until the dissolved oxygen is > 1.0 mg/L.  
<sup>2</sup> To the nearest tenth of a foot.

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.

While in use, 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/s and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark green, dull green, yellow, gray, tan, brown, etc.). A summary of the entries made in the log shall be included in the subsequent monitoring report.

### GROUNDWATER MONITORING

After measuring water levels and prior to collecting samples, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of standing water within the well casing and screen, or additionally the filter pack pore volume. Groundwater monitoring of Monitoring Locations MW-A through MW-XX, and any new groundwater wells shall be analyzed for the following:

<u>Frequency<sup>1</sup></u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Semiannually	Depth to groundwater	feet below ground surface <sup>2</sup>	Measured
Semiannually	Groundwater Elevation	feet MSL <sup>3</sup>	Calculated
Semiannually	Gradient	feet/feet	Calculated
Semiannually	Gradient Direction	degrees	Calculated
Semiannually	pH	pH units	Grab
Semiannually	EC	umhos/cm	Grab
Semiannually	TDS	mg/L	Grab
Semiannually	TKN	mg/L	Grab
Semiannually	Nitrate (as Nitrogen)	mg/L	Grab
Semiannually	Ammonia Nitrate	mg/L	Grab
Semiannually	Total Nitrogen	mg/L	Grab
Semiannually	General Minerals <sup>4,5</sup>	mg/L	Grab

- 
- <sup>1</sup> Monitoring frequency for each new well shall be quarterly until at least 12 quarterly sample results have been reported, at which time, the Discharge may reduce the monitoring frequency to semiannually.
  - <sup>2</sup> To the nearest tenth of a foot.
  - <sup>3</sup> To the nearest tenth of a foot above mean Sea Level
  - <sup>4</sup> Groundwater monitoring well samples must be filtered. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24-hours with a request (documented on the chain-of-custody form) to immediately filter then preserve the sample.
  - <sup>5</sup> See glossary on page 10 for the list of the general mineral constituents.
- 

The Discharger shall maintain its groundwater monitoring well network. If a groundwater monitoring well(s) are dry for more than four consecutive sampling events, the Discharger shall determine if the well(s) are not necessary and can be removed from the monitoring network, or if the well(s) are still needed and must be replaced. If the well(s) are still needed, the Discharger shall submit a work plan and proposed time schedule to replace the well(s). The well(s) shall be replaced following written Executive Officer approval of the work plan and time schedule.

### SOURCE WATER MONITORING

For each source, the Discharger shall calculate the annual 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 WCP.

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<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Annually	Flow-Weighted EC	umhos/cm	Computed Average
Annually	General Minerals	mg/L	Grab <sup>1</sup>

---

<sup>1</sup> General Minerals is a grab sample and is not flow-weighted.

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### SLUDGE/BIOSOLIDS MONITORING

If intended for land application, biosolids shall be collected at BIO-001 and 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 prior to removal for disposal.

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). The Discharger needs to demonstrate that the facility where sludge is hauled to complies with Title 40 CFR, Part 503.

## REPORTING

### A. General Reporting Requirements

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

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

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

City of Visalia  
Water Conservation Plant  
R5-2018-0046  
[contact information—i.e., telephone number and email]

The Discharger shall continue to submit electronic self-monitoring reports (eSMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program web site (<http://ciwqs.waterboards.ca.gov/>). The Discharger shall maintain sufficient staffing and resources to ensure it submits eSMRs during the effective duration of this Order. This includes provision of training and supervision of individuals (e.g., Discharger personnel or consultant) on how to prepare and submit eSMRs. The CIWQS web site will provide additional directions for eSMR submittal in the event there will be service interruption.

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 reports must be retained for a minimum of three years in accordance with Standard Provision C.3 (SPRRs).

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 Business and Professions Code sections 6735, 7835 and 7835.1.

The Discharger shall submit eSMRs in accordance with the following requirements:

1. When CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data as an attachment under the Attachments tab.
2. The Discharger shall attach all laboratory analysis sheets, including quality assurance/quality control information, with all its eSMRs for which sample analyses were performed.
3. The Discharger shall attach or enter a cover letter with each eSMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation. Violations must also be entered into the CIWQS web site under the Violations tab for the reporting period in which the violation occurred.
4. SMRs must be submitted to the Central Valley Water Board, signed and certified as required by the Standard Provisions, through the CIWQS web site.

## **B. Quarterly Monitoring Reports**

All Quarterly Monitoring Reports shall include the following information:

### Wastewater Reporting

1. The results of Influent, Effluent, and Pond Monitoring specified on pages 2 through 4.
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 EC values for the previous 11 months.
4. For each month of the quarter, the amount of flow discharged to each discharge location (e.g., pond and Use Area) and the dates the discharge started and stopped at each location.
5. For each month of the quarter, calculation of the monthly average effluent BOD<sub>5</sub>, TSS, chloride, boron, and nitrogen concentrations, and calculation of the percent removal of BOD<sub>5</sub> and TSS compared to the influent.

6. 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.

#### Groundwater Reporting

1. The results of Groundwater Monitoring specified on pages 4 and 5.
2. For each monitoring well, a table showing constituent concentrations for at least two previous years, if available, through the current quarter.
3. A scaled groundwater contour map based on groundwater elevations for that quarter. The map shall show the gradient and direction of groundwater flow under/around the facility and/or effluent disposal area(s). The map shall also include the locations of monitoring wells and wastewater discharge areas.

#### Source Water Reporting

1. The results of Source Water Monitoring specified on page 5.
2. For each year, calculation of the flow-weighted 12-month annual average EC of the source water using flow data and the source water EC values for the previous 12 months.

### **C. Fourth Quarter Monitoring Reports**

In addition to information set forth above, Fourth Quarter Monitoring Reports shall also include the following information:

#### Wastewater Treatment Facility Information

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

6. A summary and discussion of the compliance record for the reporting period. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with this Order.

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 the 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 the 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.

**D. Pretreatment Reporting**

The Discharger shall submit annual and quarterly pretreatment reports as required by Standard Provision E.7 (SPRRs).

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  
PATRICK PULUPA, Executive Officer

31 May 2018  
(Date)



### GLOSSARY

BOD <sub>5</sub>	Five-day biochemical oxygen demand @ 20° C
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
ug/L	Micrograms per liter
umhos/cm	Micromhos per centimeter
mgd	Million gallons per day
MPN/100 mL	Most probable number [of organisms] per 100 milliliters
General Minerals	Analysis for General Minerals shall include at least the following:
	Alkalinity                      Chloride                      Sodium
	Bicarbonate                      Hardness                      Sulfate
	Calcium                      Magnesium                      TDS
	Carbonate                      Potassium                      Nitrate
	General Minerals analyses shall be accompanied by documentation of cation/anion balance

ORDER R5-2018-0046  
CITY OF VISALIA  
WATER CONSERVATION PLANT  
TULARE COUNTY

**INFORMATION SHEET**

BACKGROUND

The City of Visalia (City) owns and operates a wastewater treatment facility also known as the Water Conservation Plant (WCP) that produces disinfected tertiary treated wastewater. The WCP serves the City of Visalia and adjacent unincorporated community of Goshen in Tulare County.

Waste Discharge Requirements Order R5-2014-0076 (NPDES No. CA0079189) was adopted on 6 June 2014. Along with adoption of the Order, the Central Valley Water Board adopted Time Schedule Order (TSO) R5-2014-0077 which required Visalia to come into compliance with the ammonia and copper limits in Order R5-2014-0076.

On 16 June 2016, the City submitted a Notice of Intent (NOI) with an appended Title 22 Engineering report for coverage under WQ 2016-0068-DDW, *State Water Resources Control Board Order, Water Reclamation Requirements for Recycled Water Use* (General Order) for expanding the reclamation area by 168 acres and consideration of providing recycled water to five dairies adjacent to the discharge conveyance canal and percolation pond.

On 12 August 2016 the City submitted a Report of Waste Discharger (RWD) describing a plant upgrade to disinfected tertiary treatment. The purpose of the upgraded WCP is to comply with the TSO.

A 28 September 2016 NOA for coverage under the General Order makes the City of Visalia responsible for administration of the Recycled Water Program for undisinfected secondary effluent and allows for an expansion of 168 acres of fodder crops and the potential use of up to 2,500 acres of property adjacent to the City's wastewater discharge conveyance canal and percolation pond pending approval of a Nutrient Management Plan and/or Waste Management Plan.

On 14 February 2017, the City submitted a NOI for coverage under the General Order and amended Title 22 Engineering report for an expanded reclamation area to use disinfected tertiary wastewater.

On 18 January 2017, the City notified Central Valley Water Board staff the membrane bioreactor (MBR) and ultraviolet light (UV) disinfection system processes were put into service and old processes taken offline.

On 1 September 2017, a State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW) letter transmits a DDW memorandum pertaining to the City of Visalia UV operations plan and spot-check bioassay. The memorandum establishes conditional acceptance of the 2012 NWRI UV dose equation and 16,000-hour lamp age factor for the Ozonia Aquaray 3X HO VLS UV Disinfection System.

On 16 February 2018, DDW staff witnessed UV disinfection system critical alarms testing at the WCP. The City successfully demonstrated that the critical alarms were functional for its operations. On 21 February 2018, the City submitted a revised final UV Operations Plan to address DDW comments in the 1 September 2017 DDW letter. On 20 March 2018, the DDW issued a letter documenting its acceptance of the UV Operations Plan and Completion of Critical Alarms Testing.

On 22 March 2018 the DDW issued a letter documenting its acceptance of the City of Visalia final amendment to the 2011 Title 22 Recycled Water Engineering Report for the WCP.

### *WCP Upgrade*

The WCP was upgraded to a tertiary treatment facility and now consists of two mechanical bar screens, four grit tanks, five primary clarifiers, four fine screens, four aeration basins, ten membrane tanks, and two parallel UV channels.

## REGULATORY CONSIDERATIONS

### *Groundwater*

The WCP is in the Consolidated Hydrologic Area (No. 558.10) of the South Valley Floor Hydrologic Unit, as depicted on hydrologic maps prepared by State Water Resources Control Board in August 1986. Regional groundwater underlying the area is first-encountered at about 145 feet below ground surface (bgs) and flows to the south southwest; according to the Department of Water Resources (DWR) Groundwater Information Center (GIC) Interactive map using data from Spring 2017.

The City has a groundwater monitoring network consisting of 18 monitoring wells which include cluster and individual wells which monitor the upper, unconfined aquifer and lower, confined aquifer. Fifteen monitoring wells are installed in the upper aquifer and three in the lower. Monitoring wells in the upper aquifer are screened in two different zones, from 66-160 feet bgs, and just above the aquitard at 223-248 feet bgs. Deep monitoring wells are screened below the aquitard from 267-303 feet bgs.

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

The Water Quality Control Plan for the Tulare Lake Basin, Second Edition, *revised July 2016* (Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting waters of the Basin, and incorporates by reference, plans and policies adopted by the State Water Board. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), water contact recreation (REC1), and non-contact water recreation (REC2).

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 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. The stakeholder-led Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative has been coordinating efforts to implement new salt and nitrate management strategies. Until then, the Basin Plan establishes several salt management requirements, including the following limits:

1. The maximum EC of the effluent discharged to land shall not exceed the EC of source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources.

2. Discharges to areas that may recharge to good quality groundwater shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L.

### CV-SALTS

The Central Valley Water Board is developing amendments to the Basin Plan to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the waters and soils of the Central Valley as part of the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative. The Salinity Control Program currently being developed would subject dischargers that do not meet stringent salinity numeric values (700  $\mu\text{S}/\text{cm}$  EC as a monthly average to protect the AGR beneficial use and 900  $\mu\text{S}/\text{cm}$  EC as an annual average to protect the MUN beneficial use) to performance-based salinity requirements, and would require these dischargers to participate in a basin-wide Prioritization and Optimization Study to develop a long-term strategy for addressing salinity accumulation in the Central Valley.

The level of participation required of dischargers whose discharges do not meet stringent salinity requirements will vary based on factors such as the amount of salinity in the discharge, local conditions, and type of discharge. The Board anticipates that the CV-SALTS initiative will result in regulatory changes that will be implemented through conditional prohibitions and modifications to many WDRs region-wide, including the WDRs that regulate discharges from the City of Visalia WCP. More information regarding this regulatory planning process can be found at the following link: [https://www.waterboards.ca.gov/centralvalley/water\\_issues/salinity/](https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)

### *Antidegradation Policy*

State Water Board Resolution No. 68-16, the Statement of Policy with Respect to Maintaining High Quality Waters in California (*State Antidegradation Policy*) generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality 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.

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

This Order is consistent with the Anti Degradation Policy in that: (a) the Discharge has implemented Best Practicable Treatment and Control to minimize degradation; (b) the degradation will not unreasonably affect present and anticipated future beneficial uses of groundwater, or result in water quality less than water quality objectives; and (c) the limited degradation is of maximum benefit to the people of the State.

### *California Environmental Quality Act*

The City of Visalia acted as the lead agency for the project pursuant to California Environmental Quality Act (CEQA). The City approved the Final Environmental Impact Report (EIR) in 2013 for and filed a Notice of Determination (SCH#2010081057) on 3 February 2014. Mitigation measures were not related to water quality issues. Acting as a responsible agency pursuant to CEQA, the Central Valley Water Board concurs with the conclusion in the Final EIR that the discharge will not have a significant impact on water quality.

### *California Code of Regulations , Title 27*

Unless the Board finds that the discharge of designated waste is exempt from Title 27 of the California Code of Regulations, the release of designated waste is subject to full containment requirements. Here, the discharge is exempt from the requirements of Title 27 pursuant to the sewage and wastewater exemptions found in Title 27, sections 20090(a), (b), and (h).

## PROPOSED ORDER

### *Discharge Prohibitions, Specifications and Provisions*

The proposed Order prohibits the discharge of waste to surface waters and to surface water drainage courses other than described in the findings, and prohibits the cross connection between potable water and well piping with recycled water piping.

The proposed Order restricts the discharge to a dry weather monthly average daily flow limit of 18 mgd. This Order sets effluent limits for BOD and TSS of 10 mg/L as monthly averages and 20 mg/L as daily maximum. The Order also includes effluent limitations for nitrogen, chloride, boron, electrical conductivity, and total coliform.

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

The proposed Order prescribes groundwater limitations that ensure the discharge does not affect present and anticipated beneficial uses of groundwater.

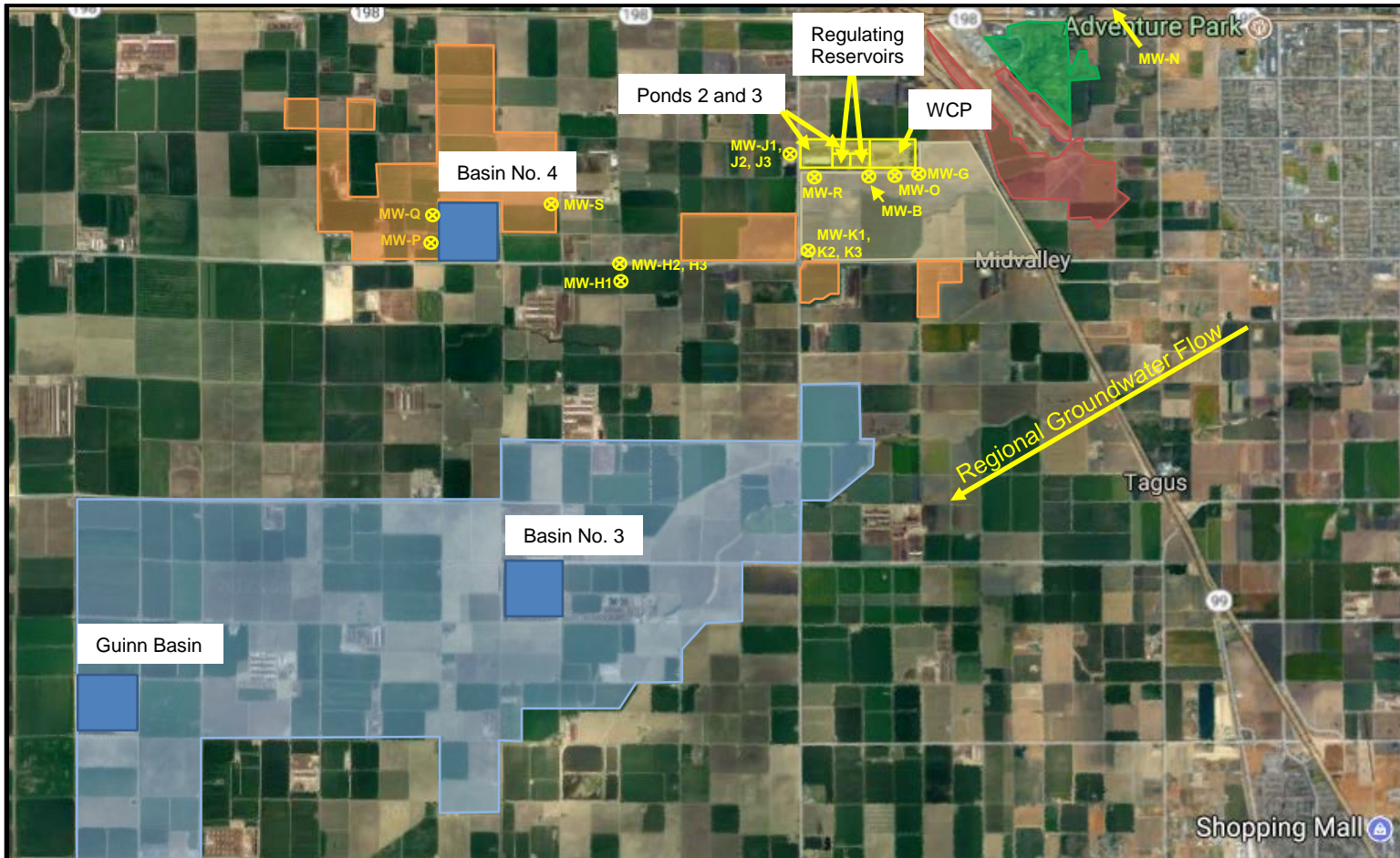
### *Monitoring Requirements*

Section 13267 of the Water Code authorizes the Central Valley Water Board to require the City to submit monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State.

The proposed Order includes influent and effluent monitoring requirements, pond monitoring, source water monitoring, UV disinfection system monitoring, biosolids/sludge monitoring, and groundwater monitoring. This monitoring is necessary to characterize the discharge, evaluate compliance with effluent limitations prescribed by the Order, and evaluate groundwater quality and the extent of degradation, if any, caused by the discharge.

*Reopener Provision*

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



Anderson Basin

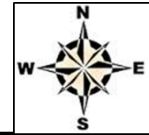
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 Google Earth  
 Map Data:  
 © 2017 Google

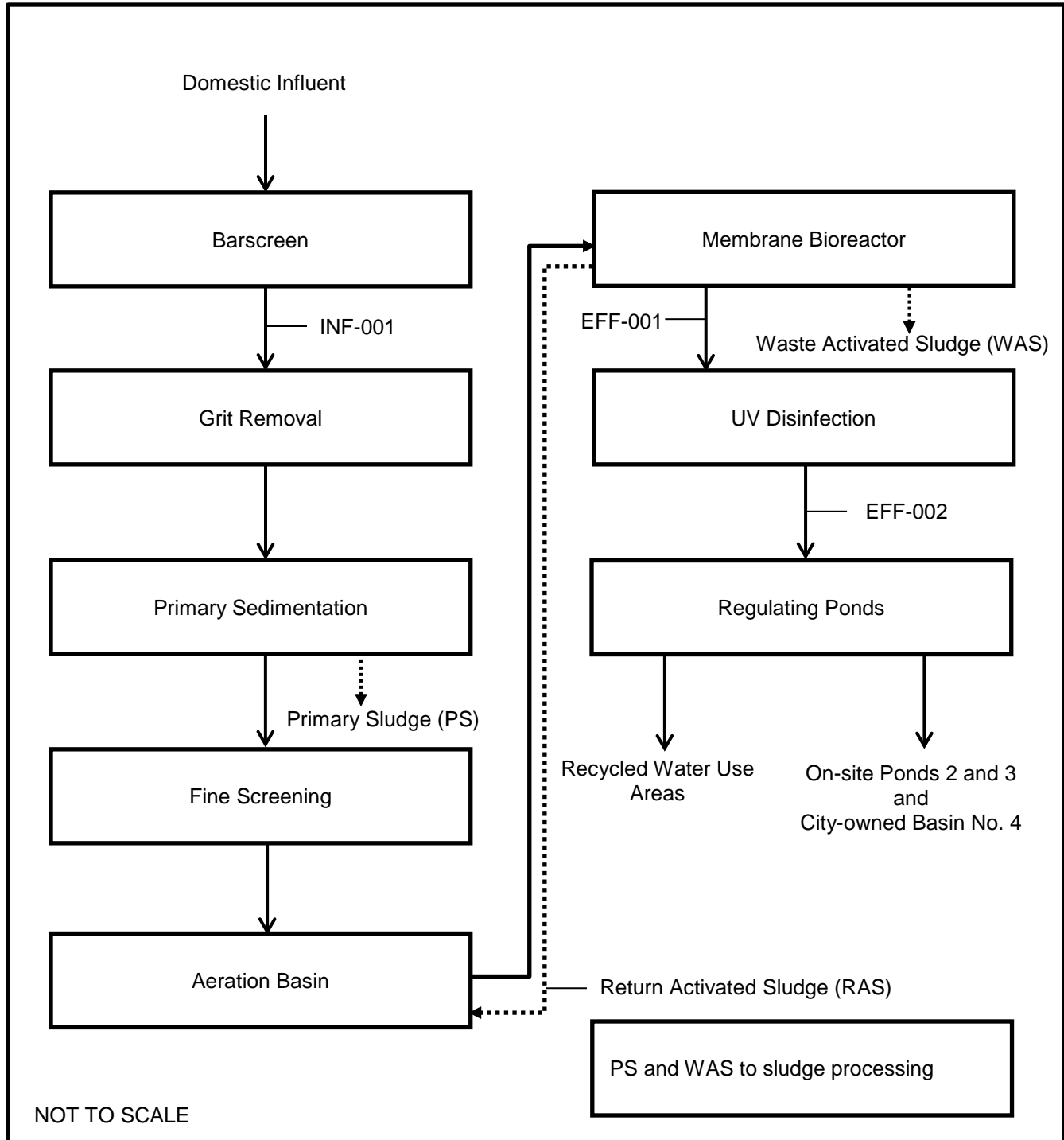
**ATTACHMENT A**  
**SITE LOCATION MAP**  
  
 CITY OF VISALIA  
 WATER CONSERVATION PLANT  
 TULARE COUNTY

**Legend**

- City Agricultural Reuse
- City Agricultural Reuse
- City Landscape Reuse
- Contracted Users
- TID Reuse Area

0      1      2  
 Approximate Scale in Miles





<u>Symbol</u>	<u>Description</u>
→	Wastewater
<u>Sampling Points</u>	
INF-001	Influent
EFF-001	MBR
EFF-002	Effluent

**PROCESS FLOW DIAGRAM**

ORDER R5-2018-0046  
WASTE DISCHARGE REQUIREMENTS  
FOR  
CITY OF VISALIA  
WATER CONSERVATION PLANT  
TULARE COUNTY

**ATTACHMENT B**