

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-XXXX

WASTE DISCHARGE REQUIREMENTS

FOR
CALAVERAS COUNTY WATER DISTRICT
DOUGLAS FLAT/VALLECITO WASTEWATER TREATMENT FACILITY
CALAVERAS COUNTY

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

1. On 26 June 2012, Calaveras County Water District (CCWD) (hereafter "Discharger") submitted a Report of Waste Discharge (RWD) to update existing Waste Discharge Requirements (WDRs) for the Douglas Flat/Vallecito Wastewater Treatment Facility (WWTF). Additional information was submitted in October 2012.
2. For the purposes of this Order, the term "Wastewater Treatment Facility" shall mean the wastewater collection system, the wastewater treatment units, the disinfection system, the storage pond, and the land application areas (LAAs).
3. The Discharger owns and operates the WWTF, and is responsible for compliance with the WDRs.
4. The facility is located on Holiday Mine Road off State Route 4 in Calaveras County (Sections 17 and 20, T3N, R14E, MDB&M), approximately 0.5 miles south of Douglas Flat and 1.5 miles northeast of Vallecito on Assessor's Parcel Numbers 66-040-01, 66-040-02, 66-024-07, 66-024-049 and 66-022-086. The location of the WWTF is shown on Attachment A, which is attached hereto and made part of this Order by reference.
5. WDRs Order 92-018, adopted by the Central Valley Water Board on 24 January 1992, prescribes requirements for the WWTF and allows a monthly average flow of 65,000 gallons per day (gpd). The Discharger is making significant improvements to the WWTF and has requested that the Board increase the flow limit to an average dry weather flow (ADWF) of 75,000 gpd.

Existing Facility and Discharge

6. The WWTF occupies approximately 96 acres and serves the Douglas and Vallecito communities, which had a combined estimated population of 610 in 2010. The total number of sewer connections at build-out is estimated to be 315, including 250 connections for existing residential, five connections for existing commercial, and 60 connections for infill. Based on one percent annual population growth, the

projected population in the service area for the year 2030 is 720, which will require approximately 45 infill sewer connections.

7. The existing WWTF has two parallel activated sludge treatment units (the Douglas Flat and Vallecito units), a chlorine disinfection system, an effluent storage pond, sludge drying beds, and approximately 60 acres of LAAs with a net area of 26 acres for irrigation. The Douglas Flat unit was built in 1970 and the Vallecito unit was added in 1987. Each treatment unit has an aeration basin, a secondary clarifier, and an anaerobic digester.
8. The effluent storage pond used to be two storage ponds operated in series. The Discharger recently converted the two ponds into one by removing the interior berm that separated the two ponds, which increased the total storage capacity. The storage pond and the LAAs are shown on Attachment B, which is attached hereto and made part of this Order by reference.
9. The combined effluent flows from the Douglas Flat and Vallecito treatment units are disinfected in a chlorine contact chamber. The disinfected wastewater is discharged into the effluent storage pond and then applied to the spray field LAAs via sprinkler systems. Solids and sludge are currently dried in the sludge drying beds on-site during summer months in order to meet the pathogen and vector attraction reduction requirements for Class B biosolids, but a new sludge handling system is under construction. All biosolids are currently applied as a soil amendment to offsite lands regulated under separate WDRs.
10. The storage pond is lined with clay. Design data for the effluent storage pond are summarized in the following table.

<u>Surface Area</u> ¹ <u>(acres)</u>	<u>Depth</u> <u>(feet)</u>	<u>Volume</u> ¹ <u>(acre-feet)</u>	<u>Effective Dates</u>
6.6	11.5	45.7	<u>Before 20 November 2012</u>
7.0	13.5	59.2	<u>After 20 November 2012</u>

¹ Measured at two feet of freeboard.

11. The LAAs are located within a small ridge between Coyote Creek and Little Dry Creek. The setback distances from the LAAs to Little Dry Creek and Coyote Creek are approximately 120 feet and 320 feet, respectively. The LAAs do not have tailwater or runoff control structures. Tailwater runoff from LAAs with sprinkler systems can be prevented by carefully timing and monitoring irrigation events to ensure that applied wastewater remains within the LAAs. The Discharger will apply the wastewater to the LAAs at rates that will prevent runoff. The brush and weed vegetation on the LAAs is maintained annually by the California Department of Forestry and Fire Protection.

12. The facility is controlled by a Supervisory Control and Data Acquisition system. Alarms alert operators of any issues related to treatment processes, water levels, electrical failures, or other issues that may cause an interruption or potential bypass of the treatment system.
13. The following table summarizes recent influent flow rates.

Influent Flow Rates						
<u>Month</u>	<u>2007</u> <u>(mgd)</u>	<u>2008</u> <u>(mgd)</u>	<u>2009</u> <u>(mgd)</u>	<u>2010</u> <u>(mgd)</u>	<u>2011</u> <u>(mgd)</u>	<u>2012</u> <u>(mgd)</u>
January	0.057	0.063	0.062*	0.085*	0.088*	0.058
February	0.076	0.064	0.080*	0.085*	0.089*	0.055
March	0.055	0.046	0.076*	0.076*	0.116*	0.070
April	0.048	0.043	0.066*	0.081*	0.089*	0.067
May	0.045	0.048	0.073*	0.064*	0.070*	0.047
June	0.051	0.051	0.068*	0.065*	0.059*	0.046
July	0.053	0.053	0.064*	0.066*	0.083*	--
August	0.000	0.053	0.068*	0.064*	0.073*	--
September	0.048	0.050	0.066*	0.067*	0.057	--
October	0.041	0.047	0.063*	0.066*	0.055	--
November	0.039	0.046	0.062*	0.091*	0.055	--
December	0.038	0.058*	0.065*	0.119*	0.052	--
Yearly Average	0.046	0.052	0.068	0.077	0.074	0.057

* As discussed below, these flow rates are known to be erroneously high.

Some monthly average flows exceeded the current monthly average flow limit of 65,000 gpd. The annual averages from 2009 through 2011 are higher than in the years of 2007, 2008 and 2012. However, the Discharger stated that contractors had mistakenly calibrated the trapezoidal flume flow meters as Parshall flumes yearly between December 2008 and September 2011, when the Discharger corrected the error. The Discharger states that no new sewer connections have been added to the wastewater collection system during the last several years, so influent flow rates should not have changed significantly; therefore, the influent flow rates monitored during that period are not representative of actual influent rates due to the miscalibration.

14. The influent and effluent analytical results for January 2009 through December 2011 are summarized below. The influent samples were collected at the headworks and effluent samples were collected from the downstream of the disinfection tank.

Influent and Effluent Constituent Concentrations

Constituent	Influent			Effluent		
	Min.	Max.	Ave.	Min.	Max.	Ave.
Biochemical oxygen demand (mg/L) ¹	34	510	152	1	14	5.4
Total dissolved solids (mg/l) ¹	--	--	--	108	626	357
Electrical conductivity (µmhos/cm) ¹	--	--	--	264	989	589
Total coliform organisms (MPN/100 mL) ¹	--	--	--	<2	280	5
Nitrate nitrogen (mg/L) ²	--	--	--	19	19	19
Sodium (mg/L) ³	--	--	--	52	142	93
Chloride (mg/L) ³	--	--	--	38	58	51

1. Based on monthly monitoring reports.

2. Based on 2010 Annual Report.

3. Annual monitoring results.

Facility Improvements and Discharge

15. In October 2011, the Discharger received \$4.42 million in funding from the State Water Resources Control Board (State Water Board) for WWTF improvements, including the installation of membrane biological reactors (MBRs), an ultraviolet (UV) light disinfection system, and a belt press for sludge dewatering. The updated facility will be able to produce tertiary treated wastewater for potential beneficial reuse. The Discharger expects to complete construction of these improvements by December 2012.
16. The updated WWTF will consist of a grit removal unit, a flow equalization tank, two fine screens, two MBR units, a sludge holding tank, a sludge belt press, a dry sludge storage area, a UV disinfection system, the existing storage pond, and the existing spray field LAAs. A standby generator was installed to provide backup power. The updated WWTF will be controlled by the Supervisory Control and Data Acquisition system.
17. The new structures are located on the existing site; many of the old facilities are being converted or replaced. The existing 40,000- gallon Vallecito aeration tank will be used as a flow equalization basin. The new MBR units, the belt press, and the UV disinfection system were installed on the footprint of the existing drying beds, as shown on Attachment B.
18. The updated WWTF has two parallel 0.1-MGD MBR basins for redundancy to allow one unit to be temporarily taken out of service for maintenance. A typical MBR unit has three zones: anoxic, pre-aeration and membranes. The returned activated sludge is first introduced and mixed with the plant influent in the anoxic zone. Then, the mixed liquor is pumped into the pre-aeration zone where the wastewater is treated by conventional aeration. The pre-aeration zone effluent passes through the

membrane zone where the wastewater is separated from the activated sludge. A significant amount of air must be introduced below the membrane units for scouring.

19. The new UV disinfection system consists of three banks of lights, with two banks scheduled for online operation and one bank provided as backup. The UV disinfection system provides a minimum dose of 80 mJ/cm² at 65 percent UV transmittance. UV disinfection is preferable to chlorine disinfection because it reduces effluent salinity and prevents the formation of chlorination by-products.
20. Raw wastewater will be mechanically screened and then conveyed to the equalization tank, a MBR unit, and the UV disinfection system. The disinfected wastewater will be discharged into the storage pond and then applied to the LAAs. Solid waste from the fine screen and the waste activated sludge will be dewatered by the 0.7-meter belt filter press. The dewatered sludge will be tested and stored in a roofed dry sludge storage area on site in order to meet the requirements for Class B biosolids, and then removed for off-site disposal. The dry sludge storage area has a concrete floor with curbs to prevent leachate infiltration and runoff.
21. The RWD projected the treated wastewater quality for the updated WWTF as follows:

<u>Parameter</u>	<u>Units</u>	<u>Influent</u>	<u>Effluent</u>
Total carbonaceous BOD	mg/L	175	0.82
Total suspended solids	mg/L	175	ND
Nitrate nitrogen	mg/L	--	6.9
<u>Total coliform organisms</u>	MPN/100 mL	--	2.2 ¹ , 23 ²

¹ As a 7-day median.

² Daily maximum.

22. In order to obtain the storage capacity for the proposed ADWF limit of 75,000 gpd, the Discharger increased the pond berm height by two feet in November 2012. On 13 December 2012, the Discharger submitted a Storage Pond Expansion Completion Report, which indicates that the pond storage capacity was increased from 45.7 ac-ft. to 59.2 ac-ft. at two feet of freeboard. The water balance, based on the completion of the storage pond expansion, shows that the WWTF has sufficient capacity for an ADWF of 75,000 gpd (based on the months of July through September) and an annual total influent flow rate of 32.9 million gallons.

Site-Specific Conditions

23. The potable water supply for the Douglas Flat/Vallecito communities is provided by Union Public Utility District. The raw potable water comes from McKay's Point Dam. Based on Union Public Utility District's Consumer Confidence Reports in 2008 and 2010, the chemical character of the potable water supply is summarized below.

<u>Parameter</u>	<u>Units</u>	<u>Annual Water Supply Analytical Results</u>		
		<u>2008</u>	<u>2010</u>	<u>Average</u>
Total dissolved solids	mg/L	72	80	76
Electrical conductivity	umhos/cm	61	104	82
Total hardness	mg/L	22	35	29
Chloride	mg/L	5.0	6.4	5.7
Sodium	mg/L	6.8	10	8.4
Sulfate	mg/L	5.0	12	8.4

24. The wastewater treatment plant and the effluent storage pond are located on the west side of the valley of Coyote Creek at an approximate elevation of 1,880 feet mean sea level (MSL). The LAAs are across a small ridge with southeast-facing slopes in the watershed of Little Dry Creek. The LAA elevations range between 1,880 feet and 2,000 feet MSL. All areas of the facilities are outside of the 100-year flood zone.
25. The facility site is underlined by Miocene/Pliocene age Valley Springs Formations and younger Mehrten Formations, and unconsolidated alluvium or dredge tailings. Alluvium extends to a depth of 45 feet below ground surface (bgs) along the ridge. Bedrock was encountered at a depth of 22 feet bgs near Coyote Creek.
26. Annual precipitation in the vicinity averages approximately 33.4 inches, the 100-year total annual precipitation is approximately 61 inches, and the reference evapotranspiration rate is approximately 53 inches per year.
27. Surrounding land uses are primarily agricultural and residential.

Groundwater Considerations

28. In July and August 2012, the Discharger installed three groundwater monitoring wells MW-1, MW-2 and MW-3, as shown on Attachment B. MW-1 is upgradient of the WWTF, and MW-2 and MW-3 are downgradient of the effluent storage pond and the LAAs, respectively. Based on the monitoring well boring logs, soils at the existing WWTF are typically cobbles and loose gravels, and soft sandstone or volcanic ash of the Valley Springs Formation. The following table presents a summary of the monitoring well construction details.

<u>Monitoring Well ID</u>	<u>Depth (feet)</u>	<u>Screen Interval (feet, bgs)</u>	<u>Range of Depth to water (feet)</u>	<u>Groundwater Elevation (feet, msl)¹</u>
MW-1	30	15-30	21.77 to 22.25	1903.18
MW-2	44.5	29.5-44.5	7.93 to 8.44	1875.19

Monitoring <u>Well ID</u>	Depth <u>(feet)</u>	Screen Interval <u>(feet, bgs)</u>	Range of Depth <u>to water</u> <u>(feet)</u>	Groundwater <u>Elevatio</u> <u>n (feet, msl)</u> ¹
MW-3	25	10-25	14.6 to 14.84	1867.64

¹: Data recorded on 5 September 2012.

29. The Discharger has performed groundwater monitoring three times since the wells were installed: in August and September 2012. During that period, the groundwater gradients ranged from 0.004 to 0.02 feet/foot; groundwater flowed from north to south. Groundwater analytical data from the three groundwater sampling events are summarized below.

<u>Well ID</u>	<u>Date</u>	<u>TDS (mg/L)</u>	<u>FDS (mg/L)</u>	<u>Nitrate nitrogen (mg/L)</u>	<u>Total Kjeldahl nitrogen (mg/L)</u>	<u>Total coliform organisms (MPN/100 ml)</u>	<u>Sodium (mg/L)</u>	<u>Chloride (mg/L)</u>
MW-1	8/8/2012	326	249	4.3	<1.0	>1600	26	35
	9/4/2012	310	238	4.5	<1.0	920	25	32
	9/5/2012	329	251	4.6	<1.0	79	23	34
	Average	322	246	4.5	<1.0	--	25	34
MW-2	8/8/2012	231	196	0.37	<1.0	4.0	9.0	4.8
	9/4/2012	233	200	0.34	<1.0	<1.8	12	5.0
	9/5/2012	232	193	0.37	<1.0	<1.8	9.6	4.8
	Average	232	196	0.36	<1.0	--	10	4.9
MW-3	8/8/2012	422	354	0.23	<1.0	920	7.9	4.6
	9/4/2012	409	353	0.22	<1.0	<1.8	8.2	4.2
	9/5/2012	415	359	0.024	<1.0	23	8.3	4.5
	Average	415	355	0.16	<1.0	--	8.1	4.4

30. Based on the limited groundwater monitoring completed to date, a discussion of groundwater conditions at the WWTF site is presented below:
- Although the discharge may have caused some groundwater degradation, the TDS concentrations in all monitoring wells were less than the recommended secondary maximum concentration limit (MCL) of 500 mg/L for TDS.
 - Based on the limited groundwater monitoring data above, the discharge does not appear to have degraded groundwater quality with respect to nitrate nitrogen. The groundwater nitrate nitrogen concentrations in all wells were less than the primary MCL of 10 mg/L for nitrate nitrogen.
 - The first monitoring event data showed high levels of total coliform in MW-1 and MW-2. However, the data for subsequent monitoring events indicate declining trends. Based on the available data, it appears that the groundwater samples collected during well construction may have been cross-contaminated. Although the past practices posed some threat of groundwater degradation from coliform organisms, the new WWTF does not.

Basin Plan, Beneficial Uses, and Regulatory Considerations

31. The Water Quality Control Plan for the *Sacramento River and San Joaquin River Basins*, Fourth Edition (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
32. Local drainage is to Coyote Creek and Little Dry Creek, which are tributary to the New Melones Reservoir. The beneficial uses of New Melones Reservoir, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; hydropower generation; water contact recreation; non-contact water recreation; cold freshwater habitat; and wildlife habitat.
33. The Basin Plan designates the beneficial uses of underlying groundwater as municipal and domestic supply, agricultural supply, and industrial supply.
34. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.
35. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.
36. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
37. In summary, 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 water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.
38. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.

39. 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.

Antidegradation Analysis

40. State Water Resources Control Board Resolution 68-16 (*Policy with Respect to Maintaining High Quality Waters of the State*) (hereafter "Resolution 68-16") prohibits degradation of high-quality water unless it has been shown that:
- a. The degradation is consistent with the maximum benefit to the people of the state.
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses.
 - c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and
 - d. The discharger employs best practicable treatment or control (BPTC) to minimize degradation.
41. Degradation of groundwater by some of the typical waste constituents associated with discharges from a municipal wastewater utility, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from reliance on numerous, concentrated individual wastewater systems, and the impact on water quality will be substantially less. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order.
42. The Discharger has been monitoring groundwater quality at the site since 2012. Based on the data available, it is not possible to determine pre-1968 groundwater quality. Therefore, determination of compliance with Resolution 68-16 for this facility is based on existing background groundwater quality.

43. Constituents of concern that have the potential to degrade groundwater include salts (primarily TDS, sodium, and chloride), nutrients, and coliform organisms, as discussed below:
- a. The Secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum. The current effluent TDS average of 357 mg/L and groundwater TDS averages (from 322 to 425 mg/L) are less than the recommended Secondary MCL of 500 mg/L. The RWD did not project the effluent TDS concentration of the updated WWTF; however, it is expected to be less than the current level due to the elimination of chlorine disinfection. Therefore, the discharge is not likely to degrade groundwater quality due to increased salinity.
 - b. For nutrients such as nitrate, the potential for degradation depends not only on the quality of the treated effluent, but on the ability of the vadose zone below the effluent storage pond to provide an environment conducive to nitrification and denitrification, which converts the effluent nitrogen to nitrate and the nitrate to nitrogen gas before it reaches the water table. The projected effluent total nitrogen of the updated WWTF is 6.9 mg/L and the nitrate nitrogen concentration of background groundwater averages 4.5 mg/L. Effluent and groundwater monitoring data to date for the wastewater treatment plant site do not indicate degradation due to nitrate, and the plants grown at the LAAs should remove most of the nitrogen in the applied wastewater. However, groundwater is shallow, so there is some threat that the discharge could cause degradation for nitrate. The primary MCL for nitrate is 10 mg/L as nitrogen. It is therefore appropriate to adopt an effluent limit of 10 mg/L total nitrogen and a groundwater limit of 10 mg/L nitrate as nitrogen.
 - c. Because the WWTF provides a high level of containment and disinfection prior to discharge, coliform organisms do not pose a threat to groundwater quality. Although the current disinfection system is capable of achieving the highest level of pathogen reduction, it is not necessary to require that level of disinfection at this time. This Order requires that the disinfected effluent contain no more than 23 MPN/100 mL of total coliform organisms as a monthly median.
44. After the upgrades described in Finding 15 are completed, the Discharger will provide treatment and control of the discharge that incorporates:
- a. Tertiary treatment;
 - b. UV light disinfection;
 - c. Reinforced concrete treatment structures;
 - d. A clay-lined effluent storage pond;
 - e. A Supervisory Control and Data Acquisition System to monitor the WWTF remotely; and
 - f. Certified operators to assure proper operation and maintenance.

45. The treatment or control measures described in Finding 44 are considered BPTC for this small community. This Order establishes limitations that ensure the protection of present and anticipated future beneficial uses, and that are consistent with the Basin Plan and the policies contained therein. The limited degradation that may occur as a result of this discharge is consistent with the maximum benefit to the people of the state as described in Finding 41. Therefore, this Order is consistent with Resolution 68-16. Should groundwater monitoring data reveal degradation beyond that anticipated in this Order, the Discharger may be required to evaluate and implement additional treatment or control measures.

Other Regulatory Considerations

46. Based on the threat and complexity of the discharge, the facility is determined to be classified as 3B as defined below:
- a. Category 3 threat to water quality: "Those discharges of waste that could degrade water quality without violating water quality objectives, or could cause a minor impairment of designated beneficial uses as compared with Category 1 and Category 2."
 - b. Category B complexity, defined as: "Any discharger not included [as 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."
47. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt domestic sewage, wastewater, and reuse. Title 27, section 20090 states in part:

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

(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 regional water quality control board 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.
48. The discharge authorized herein, and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:
 - a. The treatment system and effluent storage pond are exempt pursuant to Title 27, section 20090(a) because they are treatment and storage facilities associated with a municipal domestic wastewater treatment plant.
 - b. The spray field LAAs are exempt pursuant to Title 27, section 20090(b) because:
 - i. The Central Valley Water Board is issuing WDRs.
 - ii. The discharge is in compliance with the Basin Plan, and;
 - iii. The treated effluent discharged to the ponds does not need to be managed as hazardous waste.
49. Although the WWTF is exempt from Title 27, the statistical data analysis methods of Title 27, section 20415(e) are appropriate for determining whether the discharge complies with Groundwater Limitations specified in this Order.
50. The State Water Board adopted Order 97-03-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The wastewater treatment facility has a design capacity of less than 1.0 MGD. The Discharger is therefore not required to obtain coverage under NPDES General Permit CAS000001.
51. On 2 May 2006, the State Water Board adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems General Order 2006-0003-DWQ (the General Order). The General Order requires all public agencies that own or operate sanitary sewer systems greater than one mile in length to comply with the Order. The WWTF includes more than one mile of sewer lines and is regulated under General Order 2006-0003-DWQ.

52. Water Code section 13267(b) states:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2013-XXXX are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

53. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.
54. On 5 April 2011, the Calaveras County Water District adopted a Negative Declaration for the MBR improvement project pursuant to the California Environmental Quality Act ("CEQA"). The Calaveras County Water District's CEQA analysis of the project, defined as the replacement and reconstruction of the two package treatment units, influent screen, disinfection system and sludge handling facility, concluded that it would have no impact on hydrology and water quality. This Order places additional regulatory requirements on the operation of the WWTF that will ensure the continued protection of groundwater and the environment. This action is therefore exempt from the provisions of CEQA in accordance with California Code of Regulations, title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting ... of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review.
55. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in 40 CFR 503, *Standard for the Use or Disposal of Sewage Sludge*, which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria.
56. The Central Valley Water Board is using the Standards in 40 CFR 503 as guidelines in establishing this Order, but the Central Valley Water Board is not the implementing

agency for 40 CFR 503 regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to the EPA.

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

Public Notice

58. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
59. 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 an opportunity for a public hearing.
60. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Order 92-018 is rescinded except for purposes of enforcement and, pursuant to Water Code sections 13263 and 13267, the Calaveras County Water District, its agents, successors, and assigns, in order 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 is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2510 et seq., is prohibited.
3. Discharge of waste classified as 'designated', as defined in Water Code section 13173, is prohibited.
4. Treatment system bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*.
5. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.

6. Discharge of toxic substances into the wastewater treatment system or land application areas such that biological treatment mechanisms are disrupted is prohibited.

B. Flow Limitations

1. **Effectively immediately**, influent flows to the WWTF shall not exceed the following limits:

<u>Influent Flow Measurement</u>	<u>Flow Limit</u>
Total Annual Flow ¹	32.9 MG
<u>Average Dry Weather Flow ²</u>	75,000 gpd

¹ As determined by the total flow for the calendar year.

² As determined by the total flow for the months of July through September, inclusive, divided by 92 days.

C. Effluent Limitations

1. Effluent discharged to the effluent storage pond shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average Limit ²</u>	<u>Monthly Maximum Limit</u>	<u>Annual Average Limit</u>
BOD ₅ ¹	mg/L	40	80	--
Total Nitrogen as N	mg/L	10	--	--

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

² Based on the average of all monitoring results for the calendar month.

2. Prior to discharge to the LAAs, effluent shall not exceed the following limits for total coliform organisms:
 - a. The monthly median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed a most probable number (MPN) of 23 per 100 milliliters. Compliance with this requirement will be determined using weekly monitoring data for each calendar month.
 - b. The number of total coliform bacteria shall not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30-day period.

Compliance with this requirement shall be determined based on samples obtained at the effluent sampling location shown on Attachment C.

3. No wastewater contained in any pond shall have a pH of less than 6.5 or greater than 10.0.

D. Groundwater Limitations

Discharge of waste constituents from any portion of the WWTF shall not cause groundwater to:

1. Contain constituents in concentrations in excess of the following:
 - a. Nitrate as nitrogen of 10 mg/L.
 - b. For constituents identified in Title 22, the Primary and Secondary MCLs established therein.
2. Contain taste or odor-producing constituents, toxic substances, or any other constituents, in concentrations that cause nuisance or adversely affect beneficial uses.

Compliance with these limitations shall be determined annually based on intrawell comparison of downgradient well concentrations to the specified limitation using approved statistical methods.

E. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.
2. The discharge shall not cause degradation of any water supply.
3. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
4. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
5. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
6. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
7. Public contact with wastewater shall be prevented through such means as fences, signs, or acceptable alternatives.

8. Objectionable odors shall not be perceivable beyond the limits of the WWTF property at an intensity that creates or threatens to create nuisance conditions.
9. As a means of discerning compliance with Discharge Specification E.8., the dissolved oxygen (DO) content in the upper one foot of any wastewater pond shall not be less than 1.0 mg/L for three consecutive weekly 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 Regional Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.
10. 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.
11. The 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.
12. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications E.10 and E.11.
13. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
 - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

- d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
- 14. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.
- 15. Wastewater contained in any pond shall not have a pH less than 6.0 or greater than 9.0.

F. Land Application Area Specifications

- 1. Application of waste constituents to the LAAs shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the LAAs, including the nutritive value of organic and chemical fertilizers and wastewater shall not exceed the annual demand of the vegetation grown.
- 2. Wastewater shall not be discharged to the LAAs in a manner that causes wastewater to stand for greater than 48 hours.
- 3. Any irrigation runoff shall be confined to the LAAs and shall not enter any surface water drainage course or storm water drainage system.
- 4. Irrigation of the LAAs shall not be performed during precipitation or when the ground is saturated.
- 5. The Discharger shall cease spray irrigation of wastewater when winds exceed 30 mph.
- 6. Application of effluent shall comply with the following setback requirements:

<u>Setback Definition</u> ¹	<u>Minimum Irrigation Setback (feet)</u>
Edge of LAAs to property boundary	25
Edge of LAAs to public road	30
Edge of LAAs to irrigation well	100
Edge of LAAs to domestic well	100
Edge of LAAs to manmade or natural surface water drainage course ² or spring	50

¹ As defined by the wetted area produced during irrigation.

² Excluding ditches used exclusively for tailwater return and drainages that do not discharge to surface waters.

G. Solids Disposal Specifications

Sludge, as used in this document, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially used as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities pursuant to federal and state regulations .

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

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 following reports shall be submitted pursuant to Water Code section 13267 and shall be prepared as described in Provision H.4:
 - a. By **1 July 2013**, the Discharger shall submit an *Improvements Completion Report* that certifies completion of the construction work for MBR units, UV disinfection system and other improvements, certifies that operation of the new treatment and effluent pumping system has begun.
 - b. By **1 July 2013**, the Discharger shall submit a *Tailwater and LAA Setback Operational Procedure Plan* that describes in detail how the discharge will be managed and monitored to comply with the tailwater and the LAA setback requirements of this Order.
2. If groundwater monitoring results show that the discharge of waste is causing groundwater to contain waste constituents in concentrations statistically greater than the groundwater limitations of this Order then, within **120 Days**, the Discharger shall submit a BPTC Evaluation Workplan that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of each component of the facility's waste treatment and disposal system to determine best practicable treatment and control. The workplan shall contain a preliminary evaluation of each component of the WWTF and effluent disposal system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable, and shall not exceed one year after receipt of comments on the workplan.
3. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by **31 January**.
4. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly

stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.

5. 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 the foregoing provisions by the due dates specified.
6. The Discharger shall comply with Monitoring and Reporting Program R5-2013-XXXX, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.
7. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
8. The Discharger shall 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 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.
9. The Discharger shall 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 includes 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 when the operation is necessary to achieve compliance with the conditions of this Order.
10. The Discharger shall provide certified wastewater treatment plant operators in accordance with Title 23, division 3, chapter 26.

11. As described in the Standard Provisions, 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.
12. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
13. The Discharger shall comply with the requirements of the Statewide General Waste Discharge Requirements (General WDRs) for Sanitary Sewer Systems (Water Quality Order 2006-0003), the Revised General WDRs Monitoring and Reporting Program (Water Quality Order 2008-0002-EXEC), and any subsequent revisions thereto. Water Quality Order 2006-0003 and Order 2008-0002-EXEC require the Discharger to notify the Central Valley Water Board and take remedial action upon the reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow.
14. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
15. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
16. In the event of any change in control or ownership of the WWTF, the Discharger must 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.
17. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. The Executive

Officer will submit transfer requests to the Central Valley Water Board so that the Board may consider transferring the ownership of this Order at one of its regularly scheduled meetings.

18. A copy of this Order including the MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
19. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

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

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

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

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify 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 _ 2013.

PAMELA C. CREEDON, Executive Officer