

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2012-0045

WASTE DISCHARGE REQUIREMENTS

FOR
EL DORADO IRRIGATION DISTRICT
CAMINO HEIGHTS WASTEWATER TREATMENT FACILITY
EL DORADO COUNTY

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

1. El Dorado Irrigation District (hereafter “Discharger”) submitted a Report of Waste Discharge (RWD) in February 2011 for updating existing Waste Discharge Requirements (WDRs) for the Camino Heights Wastewater Treatment Facility (WWTF). Supplemental information was received in June and November 2011, and January 2012.
2. For the purposes of this Order, the term “Wastewater Treatment Facility” shall mean the wastewater collection system, the wastewater treatment and storage ponds, and the land application areas (LAAs).
3. The Discharger owns and operates the WWTF, and is responsible for compliance with the WDRs.
4. The WWTF is located at 2320 Los Trampas Drive, Camino in El Dorado County, approximately four miles east of Placerville in Section 12, T10N, R11E, MDB&M. The Assessor’s Parcel Numbers (APNs) are 048-471-11 and 049-471-12 for the treatment plant, and 048-420-28 and 048-420-42 for the LAAs. The general location of the WWTF is shown on Attachment A, which is attached hereto and made part of this Order by reference.
5. WDRs Order 5- 01-100, adopted by the Central Valley Water Board on 27 April 2001, prescribes requirements for the WWTF, and allows a monthly average dry weather influent flow (“ADWF”) of 60,000 gallons per day (gpd). The Discharger does not request to increase the monthly ADWF limit. The purpose of this update is to prescribe requirements for a new subsurface drip irrigation system and other facility improvements that were completed to comply with Cleanup and Abatement Order (CAO) R5-2007-0711.

Existing Facility and Discharge

6. The WWTF treats and disposes of domestic wastewater from the Camino Heights community, which has 121 sewer connections. The community has an estimated population of 315. Presently, 90 percent of wastewater is generated from the residential subdivision; there is a small contribution from a commercial area along Highway 50. In 2011, the monthly average influent flow was 18,000 gpd and ranged between 14,000 gpd and 26,000 gpd.

7. The existing WWTF consists of a mechanical bar screen, flow meters, three aerated ponds, a disinfection tank, sand filters, and LAAs. A current site plan is included in Attachment B, which is attached hereto and made part of this Order by reference.
8. The influent flows through the mechanical bar screen and is treated in aerated Ponds 1 through 3. All three treatment ponds are unlined and operated in series. Pond 3 is also used as a storage pond. The effluent from Pond 3 is pumped to a contact tank for disinfection by sodium hypochlorite. The disinfected wastewater flows through sand filters and then is applied to the LAAs. The filters are used to reduce clogging in the irrigation systems. Solid waste from the bar screen is hauled off site to a permitted landfill. The wastewater treatment process schematic is shown on Attachment C, which is attached hereto and made part of this Order by reference.
9. Based on the records, approximately 300 cubic yards of biosolids were removed from Pond 2 in December 2002. The current sludge depths in the ponds are unknown.
10. Design data for the existing ponds are summarized below.

<u>Pond</u>	<u>Surface Area (acres)</u>	<u>Depth (feet)</u>	<u>Volume (million gallons) ¹</u>
1	0.41	6.5	0.70
2	0.20	7.0	0.50
3	0.75	8.0	2.34

¹. The ponds volumes are calculated at two feet of freeboard.

Storm water diversion ditches were installed around all ponds.

11. The LAAs consist of a 4.4-acre spray field and a 1.5-acre subsurface drip irrigation field. The spray field has an approximate slope of 10 percent. A mixed stand of cedar, pine, oak and other plants grows in the LAAs. A tailwater collection system was installed at the downhill end of the LAAs (Attachment B) and the tailwater is returned to Pond 3. The irrigation pumps are automatically controlled to coincide with the irrigation schedule, or manually controlled by the Supervisory Control and Data Acquisition System, which controls the land application to the spray field or the subsurface drip irrigation field.
12. The subsurface drip irrigation system was installed in 2008 to increase disposal capacity during the wet season. The subsurface drip irrigation system consists of five zones, flush lines, and appurtenances. Five manifold lines distribute effluent into the drip lines. Each manifold is controlled automatically by valve and only one zone operates at a time. The automatic controller rotates through the zones on an as-needed basis to insure all zones are evenly used. The pump rate is 71 gallons per minute (gpm) for each zone and the maximum operation hours is 2.8 hours per day per zone (approximately 12,000 gpd per zone). The 1.5-acre drip irrigation field has a disposal capacity of 59,000 gpd. In 2011, the treated wastewater was applied to the drip irrigation field only from January through April with a monthly average of 6,100 gpd (4.5 inches per month). During the same period, the monthly average wastewater land application rate for the spray field was 24,000 gpd (6 inches per month).

13. The influent and effluent monitoring data for September 2009 through November 2011 are summarized below. The influent samples were collected at the headworks and effluent samples were collected from the disinfection tank. However, in a 27 April 2012 letter, the Discharger stated that the highest effluent EC levels may not be representative of effluent actually applied to the LAAs. Effluent is typically not discharged to the LAAs every month. Until recently, the standard operational practice was to keep treated effluent in the chlorine contact chamber and continue dosing it with sodium hypochlorite throughout the non-discharge season to prevent algae growth. The Discharger stated that this practice caused the EC level in the chlorine contact tank to increase substantially, and the operators continued to sample the water in the contact tank monthly as required by the monitoring and reporting program. Prior to resuming discharge to the LAAs, the operators reportedly would obtain an effluent sample from the chlorine contact tank for analysis, pump the relatively small volume of overly concentrated effluent back to the ponds, and then begin disinfecting effluent for discharge to the LAA. Therefore, effluent EC values in the following table have been corrected to remove the high EC values that are not representative of effluent applied to the LAAs.

Influent and Effluent Constituent Concentrations

<u>Constituent</u>	<u>Influent</u>			<u>Effluent</u>		
	<u>Minimum</u>	<u>Maximum</u>	<u>Average</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average</u>
Biochemical Oxygen Demand (mg/L)	74	2,010	639	3.0	18	8.0
Electrical Conductivity (µmhos/cm)	245	836	471	319	1,860	794
Total Nitrogen as N (mg/L)	19.3	217	60	0.9	8.4	4.3
Total Coliform Organisms (MPN/100 mL)	--	--	--	<2	<2	<2
pH (Std.)	7.5	9.5	8.0	7.3	8.5	8.1

14. The effluent average electrical conductivity (EC) of 794 µmhos/cm is less than the recommended Secondary Maximum Contaminant Level (MCL) of 900 µmhos/cm but is much greater than the influent average EC, which suggests a greater salinity increase during residence time in the treatment system than can reasonably be attributed to evapoconcentration. The reason for the salinity increase is not known.

To illustrate the level of salinity increase that apparently occurs at the WWTF, the EC monitoring data for wastewater Ponds 1, 2 and 3 for September 2009 through November 2011 are summarized below along with the corrected disinfected effluent results.

<u>Pond</u>	<u>Electrical Conductivity (µmhos/cm)</u>		
	<u>Minimum</u>	<u>Maximum</u>	<u>Average</u>
Pond 1	274	423	358
Pond 2	230	810	378
Pond 3	190	669	345
Disinfected Effluent	319	1,860	794

Therefore, this Order requires the Discharger to submit and implement an *Effluent Salinity Reduction Work Plan* to reduce salinity and implement any changes needed to do so.

Compliance Issues

15. CAO R5-2007-0711 was adopted on 31 May 2007. Before the CAO was issued, the ponds received significant seasonal surface water runoff and groundwater seepage through highly permeable Tertiary gravels and fractured bedrock from the area upslope of the unlined ponds and that resulted in inadequate wastewater storage capacity. The 2007 CAO was adopted because of a series of violations due to inadequate wastewater storage capacity, including spills to surface water, discharges of wastewater to the spray field during periods of precipitation and/or within 24 hours of a precipitation event, and land application without tailwater collection.
16. The CAO required the Discharger to submit a series of reports including: Revised Water Balance, Sprayfield Evaluation Report, Subsurface Drip System Completion Report, Background Groundwater Quality Study Report, Sprayfield Improvements Completion Report, and RWD. The Discharger submitted all of the required reports.
17. The RWD states that the Discharger has invested over one million dollars to reduce seasonal inflow into the ponds and to improve WWTF treatment and operation. The completed improvements include:
 - a. Installation of cut-off trenches above all three ponds to re-direct surface and subsurface flow away from the ponds.
 - b. Installation of a tailwater return system to capture all irrigation runoff.
 - c. Installation of a subsurface drip irrigation system within part of the existing sprayfield to increase disposal capacity. The design capacity of the drip system is 59,000 gpd.
 - d. Installation of sand filters at the disposal pump station to prevent plugging of drip emitters.
 - e. Replacement of a manual bar screen with a mechanical one.
 - f. Installation of a washer/compactor at the headworks.
 - g. Installation of a Supervisory Control and Data Acquisition System to monitor the WWTF remotely.
18. The Discharger's 14 February 2008 *Water Balance Geotechnical Support Report* indicated that the groundwater seepage into Pond 1 and 2 were not occurring after the

January 2007 installation of cut-off trenches above the ponds. The same report indicates the groundwater seepage rate for Pond 3 was 14.1 gallons per minute (gpm) (20,000 gpd) at a 95-percent confidence level for the months of February through May based on the Discharger's monthly reports from 2003 through 2007. The *Water Balance Geotechnical Support Report* recommends a groundwater seepage rate of 14 gpm for Pond 3 in a 100-year rainfall event.

19. The CAO requires the Discharger to monitor freeboard levels in Pond 3 twice per week, to prepare monthly calculation of the volume of inflow and infiltration (I/I) entering the ponds between 1 October and 31 May each year, and to include the data in the monthly monitoring reports. The freeboard levels for Pond 3 have been reported and the monitoring data during the last two wet seasons are summarized below. However, the I/I calculations have not been reported in the monitoring reports.

Pond 3 Freeboard (feet)			
<u>Maximum Pond Depth: 12 feet</u>			
<u>Date</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Monthly Average</u>
12/2009	6.8	9.4	8.5
01/2010	7.7	11.4	9.6
02/2010	7.2	9.0	8.0
03/2010	6.0	9.0	7.9
12/2010	7.4	9.8	8.6
01/2011	3.6	7.2	5.7
02/2011	4.9	8.0	6.7
03/2011	3.2	5.3	4.8

The Pond 3 freeboard levels have met the two-foot requirement in the WDRs. The monitoring reports indicate that there have been no spills from Pond 3 since 2009.

20. The Discharger's January 2012 revised water balance demonstrates that the WWTF has a capacity for a monthly average dry weather influent flow of 60,000 gpd and a maximum wet weather peak influent flow of 76,000 gpd based on a 100-year return period 365-day precipitation event. The water balance indicates that the spray field has a capacity of 40,000 gpd and the drip irrigation system has a capacity of 59,000 gpd. The water balance includes the groundwater seepage into Pond 3 and the tailwater and storm water returned to the WWTF.

Wastewater Collection System

21. The Camino Heights community has approximately 9,000 feet of gravity flow sewer collection system.
22. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the WWTF. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges into these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within

these temporary storage/conveyance facilities and then properly disposed. Sanitary sewer overflow is also defined in State Water Resources Control Board (State Water Board) Order 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*.

23. Potential causes of sanitary sewer overflows include grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and/or contractor caused blockages.
24. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, nutrients, oxygen demanding organic compounds, oil and grease, and other wastes. Sanitary sewer overflows can cause temporary exceedance of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area.
25. The Discharger is currently covered under State Water Board Order 2006-0003-DWQ.

Site-Specific Conditions

26. The WWTF is in the Kyburz Hydrologic Sub Area within the American River Hydrologic Unit Area No. 514.35, as depicted on the interagency hydrologic maps prepared by the Department of Water Resources in August 1986.
27. Surface soils at the WWTF consist of clay and silty sands to a depth of approximately five feet below ground surface (bgs) based on the boring logs.
28. The average annual precipitation is 38.86 inches per year and the 100-year, 365-day precipitation event is 72.3 inches. The mean reference evapotranspiration rate is approximately 40 inches per year. All portions of the WWTF are outside the 100-year flood zone.
29. Surrounding land use is low density residential.
30. The municipal water supply is obtained from either the North Fork of the American River or Jenkinson Lake. Based on the Discharger's 2010 *Annual Water Quality Report*, the chemical character of the water supply is summarized below.

<u>Constituent</u>	<u>units</u>	<u>Water Supply</u>
Total Dissolved Solids	mg/L	45
Electrical Conductivity	µmhos/cm	64
Total Hardness	mg/L	16
Chloride	mg/L	4.3
Sodium	mg/L	4.9
Sulfate	mg/L	0.9
pH	Std.	7.7

Groundwater Considerations

31. In 2002, the Discharger installed five groundwater monitoring wells (MW1 through 5) to monitor shallow groundwater at the site. MW1 and MW5 were replaced by MW1A and MW5A in March 2004 (Attachment B) because they had gone dry. Monitoring well MW1A is upgradient of the ponds and the LAAs. Wells MW2, MW3 and MW4 are downgradient of the treatment ponds, and MW5A is downgradient of the LAAs. The following table presents a summary of the monitoring well construction details.

Monitoring Well ID	Depth (feet)	Screen Interval (feet, bgs)	Range of Depth to Water (feet, bgs)	Groundwater Elevation (feet) ²
MW1A	78	52-78	41 to 49	2,504.57
MW2	21.48	16 ¹ -21	13 to 21	2,477.53
MW3	20.52	15 ¹ -20	11 to 20	2,470.04
MW4	25.33	20 ¹ -20	11 to 18	2,484.07
MW5A	98	64-98	55 to 79	2,424.83

¹ Estimated based on the April 2008 *Background Groundwater Quality Study Report*.

² Groundwater elevations as reported in September 2011.

32. The two replaced wells MW1A and MW5A are deeper than the other wells, but all are screened in the first encountered groundwater. Based on groundwater elevations, groundwater generally flows from northeast to west or southwest with a hydraulic gradient of approximately 0.05 feet/foot.
33. Groundwater quality has been characterized by quarterly sampling of monitoring wells from October 2007 through September 2011. A summary of average concentrations is presented in the table below for select constituents, along with the water quality objectives.

Constituent	Upgradient Well		Downgradient Well			Water Quality Objective
	MW1A	MW2	MW3	MW4	MW5A	
TDS (mg/L)	168	659	482	437	498	500 ^{1,3}
Electrical Conductivity (µmhos/cm)	180	1026	749	623	624	900 ^{1,3}
Nitrate/Nitrite as N (mg/L)	1.2	0.7	0.9	0.9	3.6	10 ²
Chloride (mg/L)	7.2	124	52.8	107	118	250 ^{1,3}
Sodium (mg/L)	9.6	51	67.2	42	22.3	69 ³
Total Coliform Organisms (MPN/100 mL)	<1.8	141	662	23.4	<2.0	2.2 ⁴

¹ Secondary MCL.

² Primary MCL.

³ The most stringent Agricultural Water Quality Goal that may be appropriate to implement the Basin Plan's toxicity objective for agricultural use of groundwater. However, site-specific data are needed to determine what concentration will protect the agriculture beneficial use.

⁴ Basin Plan numeric water quality objective.

34. A discussion of groundwater constituents is presented below:

- a. The upgradient well MW1A has the lowest concentrations for the listed constituents except for nitrate as nitrogen compared to other wells. The average EC and average concentrations of TDS, chloride, sodium and total coliform in MW1A are less than Water Quality Objectives.
- b. The average EC in MW1A is much less than that in MW2, MW3 and MW4, which would typically indicate degradation from the discharge because MW2, MW3, and MW4 are directly downgradient of the unlined treatment ponds. However, the average EC in the ponds is much less than the EC in those wells. Therefore, the EC levels in MW2, MW3 and MW4 may not be the result of the discharge. The significant EC differences between MW-1A and the wells downgradient of the ponds indicate that the upgradient and downgradient monitoring wells may have different groundwater sources, which may be caused by the local geology (i.e., fractured bedrock in the Sierra Foothills). MW1A does not appear suitable to provide samples that are representative of background groundwater quality.
- c. The average chloride concentrations in all wells are less than 250 mg/L, which is the Secondary MCL for chloride. The average sodium concentrations are below 69 mg/L, which is the worst-case Agricultural Water Quality Goal for sodium. MW5A has the lowest average sodium concentration of all downgradient wells.
- d. All pH levels observed were within the Basin Plan limits. The concentrations of nitrate as nitrogen in all wells were below the 10 mg/L Primary MCL, which is the Basin Plan water quality objective.
- e. The total coliform organism concentrations in the upgradient well MW1 and the downgradient well MW5A are less than 2.2 MPN/100 mL, which is the Basin Plan numeric water quality objective. However, the other three downgradient monitoring wells have occasionally had total coliform organism concentrations greater than 2.2 MPN/100 mL. The groundwater coliform detections may be due to the wastewater percolation from the unlined ponds or cross-contamination of the monitoring wells during construction and/or subsequent sampling. To rule out cross-contamination of the monitoring wells as the cause of the coliform detections, this Order requires the Discharger to submit a *Groundwater Monitoring Well Disinfection Workplan* and a *Sampling and Analysis Plan* that defines appropriate sampling techniques to minimize potential re-contamination of the wells. If the coliform detections do not resolve quickly after workplan implementation or if coliform detections occur again, this Order requires the Discharger to identify the source of coliform organisms in groundwater. If the coliform organism detections are caused by the WWTF, then the Discharger is required to submit a workplan for additional treatment or control for coliform organisms. If it cannot be shown that the discharge is not the source of the coliform organisms in groundwater, the Discharger is required to fully implement the additional treatment and control within three years after recurrence of coliform detections in groundwater for two or more consecutive sampling events.

35. The Discharger's April 2008 *Background Groundwater Quality Study Report* states that the spatial variation in groundwater quality between the upgradient and downgradient wells could be a result of groundwater degradation by the WWTF or natural groundwater conditions. The report states that traditional inter-well methods to evaluate groundwater degradation do not appear valid at this site because of the significant concentration differences observed in the upgradient and downgradient wells that could be the result of naturally occurring conditions, and the fact that there is no pre-discharge water quality data for the downgradient monitoring wells. Therefore, the report does not recommend inter-well analysis for setting background values or for assessing groundwater degradation. The report states that intra-well trend analysis may be useful for detecting and estimating future significant trends in the time series data. This Order requires the Discharger to evaluate groundwater quality annually using intra-well statistical analysis methods to determine compliance with the Groundwater Limitations of this Order.

Basin Plan, Beneficial Uses, and Regulatory Considerations

36. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition (hereafter "Basin Plan") designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Board. Pursuant to Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
37. Surface water drainage is to Weber Creek, which is tributary to the South Fork of the American River. The beneficial uses of South Fork of the American River are municipal and domestic supply; hydropower generation; water contact and non-contact water recreation; warm freshwater habitat; cold freshwater habitat; spawning for cold water species; and wildlife habitat.
38. The Basin Plan designates the beneficial uses of underlying groundwater as municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
39. 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.
40. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, requires 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.
41. 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.

42. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater. The applicability of this objective to groundwater designated as MUN has been affirmed by State Water Board Order WQO-2003-0014 and by subsequent decisions of the Sacramento County Superior Court and California Court of Appeal, 3rd Appellate District.

Antidegradation Analysis

43. 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 groundwater unless it has been shown that:
 - a. The degradation is consistent with the maximum benefit to the people of the State.
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses.
 - c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and
 - d. The Discharger employs best practicable treatment or control (BPTC) to minimize degradation.
44. Degradation of groundwater by some of the typical waste constituents released with discharge from a municipal wastewater utility, after effective source control, treatment, and control 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 and foothill 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.
45. Constituents of concern that have the potential to degrade groundwater include salts (primarily EC, sodium, and chloride), nutrients, and coliform organisms, as discussed below:
 - a. The Secondary MCL for EC is 900 $\mu\text{mhos/cm}$ as a recommended level, 1600 $\mu\text{mhos/cm}$ as an upper level, and 2200 $\mu\text{mhos/cm}$ as a short-term maximum. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The most limiting agricultural water quality goal may be as low as 700 $\mu\text{mhos/cm}$ as a long-term

average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). However, the 700 $\mu\text{mhos/cm}$ agricultural water quality goal is not a site-specific goal or objective, but rather a general measure of electrical conductivity that was determined to protect salt-sensitive crops, such as beans, carrots, turnips, and strawberries under certain soil and climate conditions. Most other crops can tolerate higher EC concentrations without harm. Site specific levels of EC for the receiving waters to interpret the narrative chemical constituents objective in the Basin Plan for protection of agricultural supply are necessary. Overall, salinity of agricultural irrigation water must be maintained at levels in which growers do not need to take extra measures to minimize or eliminate any harmful impacts.

The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan Amendment that will establish a salt and nitrate Management Plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this Order to establish an agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS. A review of the Discharger's monitoring reports shows that the average effluent EC is 794 $\mu\text{mhos/cm}$, with a range from 319 $\mu\text{mhos/cm}$ to 1,860 $\mu\text{mhos/cm}$. The EC in the downgradient groundwater wells ranged from 623 $\mu\text{mhos/cm}$ to 1,026 $\mu\text{mhos/cm}$. Based on these results, there is not sufficient information to allow determination of the appropriate toxicity objective to protect agriculture beneficial uses. Some degradation may have occurred as a result of the discharge. This Order does not allow degradation beyond that which may already exist and requires the Discharger to determine site-specific water quality objectives for salinity to implement the narrative toxicity objective for agricultural use of groundwater.

Because the upgradient and downgradient monitoring wells may have different groundwater sources, it is not appropriate to set a numerical EC limitation for groundwater. The Groundwater Limitations of this Order prohibit any statistically significant EC increase in the downgradient wells and require the Discharger to evaluate groundwater EC annually using intra well statistical analysis methods. This Order includes a performance-based effluent limitation of 900 $\mu\text{mhos/cm}$ for EC as an annual average, which is subject to review and revision depending on the results of that study and the outcome of the Discharger's salinity reduction efforts.

- b. For nutrients such as nitrate, the potential for unreasonable degradation depends not only on the quality of the treated effluent, but the ability of the vadose zone below the effluent storage/disposal 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. Effluent and groundwater monitoring data for the wastewater treatment plant site do not indicate unreasonable 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 downgradient of the unlined ponds, so there is some threat that the discharge could cause a violation of the MCL

for nitrate, which 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 to protect the municipal and domestic use of groundwater.

- c. For coliform organisms, the potential for exceedance of the Basin Plan numeric water quality objective depends on the ability of vadose zone soils below the treatment and storage ponds and saturated soils within the shallow water-bearing zone to provide adequate filtration. Historically, total coliform organism detections in groundwater monitoring wells exceeded the Basin Plan limit of 2.2 MPN/100 mL. Groundwater monitoring data for the wastewater treatment plant indicates that the soils beneath the treatment and storage ponds may not provide sufficient filtration. However, sampling will continue to provide site-specific data to determine the threat. This Order requires the Discharger continue to disinfect treated effluent and sets an effluent limit of 23 MPN/100mL for total coliform organisms. Disinfection reduces the potential threat to groundwater quality, but the use of sodium hypochlorite also increases the salinity of the effluent and creates trihalomethanes, neither of which is desirable. Additionally, disinfection does not prevent coliform impacts at the treatment plant site because treatment takes place in unlined ponds prior to disinfection. Depending on the outcome of future groundwater data analysis, it may be necessary to provide less permeable liners for the treatment ponds and/or change the method of disinfection. It is therefore appropriate to adopt a numerical groundwater limitation of 2.2 MPN/100mL for total coliform organisms to protect the municipal and domestic use of groundwater and provide a time schedule to come into compliance with that limit.

46. The Discharger currently provides treatment and control of the discharge that incorporates:
 - a. Screening to remove solids and debris from the raw sewage;
 - b. Secondary treatment;
 - c. Disinfection of wastewater;
 - d. A tailwater return system to capture all irrigation runoff;
 - e. Installation of a Supervisory Control and Data Acquisition System to monitor the WWTF remotely.
47. Although some treatment and control has been implemented at the WWTF, the Discharger may need to propose and implement additional treatment or control, which may include installing liners in the treatment ponds, in order to comply with the Groundwater Limitations of this Order. This Order provides a time schedule for the Discharger to do so.

Other Regulatory Considerations

48. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B as defined below:
 - a. Category 2 threat to water quality: "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water

quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance.”

- b. Category B complexity: “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.”

49. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in California Code of Regulations, title 27 (“Title 27”), section 20380 et seq. Title 27 conditionally exempts certain activities from its provisions. To qualify for an exemption, the activity must meet, and continue to meet, specified preconditions. Section 20090 of Title 27 contains conditional exemptions that are relevant to the discharge:

- (a) Sewage – Discharges of domestic sewage or treated effluent which are regulated by WDRs, 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 leach fields if the following conditions are met:

- (1) the applicable regional water quality control board has issued WDRs, 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.

50. The discharge authorized herein and the treatment and storage facilities associated with the discharge, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27 as follows:

- a. Treatment Ponds 1, 2 and 3 are exempt from Title 27 pursuant to section 20090(a) because they are treatment ponds associated with a municipal domestic wastewater treatment plant.

- b. The LAAs are exempt from Title 27 pursuant to section 20090(b) because:

- i. The Central Valley Water Board is issuing WDRs.

- ii. Based on evidence of salinity and total coliform groundwater degradation, the discharge may not currently be in compliance with the Basin Plan. However, to ensure compliance with the Antidegradation Policy, this Order requires that the Discharger comply with a time schedule to meet protective effluent limits for salinity, disinfect the groundwater monitoring wells and improve groundwater

sampling protocols to eliminate potential cross-contamination. If coliform organisms are still present in groundwater after a period of post-disinfection monitoring, this Order also requires the Discharger to implement additional treatment and/or improved containment as needed to ensure compliance with the Basin Plan.

- iii. The treated effluent discharged to the LAAs does not need to be managed as hazardous waste.

51. 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.
52. The State Board adopted Water Quality 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 plant has a design capacity of less than 1.0 mgd, and therefore the Discharger is not required to obtain coverage under NPDES General Permit CAS000001.
53. On 2 May 2006, the State Water Board adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems General Order No. 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 Discharger's collection system exceeds one mile in length, therefore the General Order is applicable.
54. Water Code section 13267(b) provides that:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state 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 R5-2012-0045 (MRP) are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

55. 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.

56. On 9 August 2007, El Dorado Irrigation District adopted a Notice of Exemption for installing a subsurface drip irrigation system on the existing LAAs pursuant to the California Environment Quality Act. The exemptions are categorical exemption pursuant to California Code of Regulations, title 14, section 15301, class 1(b) (existing sewerage facilities), and section 15303, New Construction or Conversion of Small Structures.
57. The action to adopt waste discharge requirements for this existing facility is exempt from the provisions of the California Environment Quality Act, in accordance with California Code of Regulations, title 14, section 15301, because the waste discharge requirements do not authorize an expansion of use beyond that which currently exists.
58. 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.
59. 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.
60. 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

61. 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.
62. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
63. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that Order 5-01-100 is rescinded except for the purpose of enforcement and, pursuant to Water Code sections 13263 and 13267, the El Dorado Irrigation 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:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated or partially treated waste is prohibited.
3. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.
4. Discharge of waste classified as "hazardous" under California Code of Regulations, title 23, section 2521, is prohibited.
5. Discharge of waste classified as 'designated', as defined in Water Code section 13173, 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.
7. Surfacing of wastewater outside and/or downgradient of the ponds or LAAs is prohibited.

B. Discharge Specifications:

1. The influent flows to the WWTF shall not exceed the following limits:

<u>Influent Flow Measurement</u>	<u>Influent Flow Limit</u>
Total Annual Flow ¹	23 million gallons
Average Dry Weather Flow ^{2,3}	60,000 gpd
Maximum Average Daily Flow ⁴	76,000 gpd

¹ Based on the calendar year (January through December).

² Dry weather is defined as the months of July through September, inclusive.

³ As determined by the total influent flow for the dry weather period divided by 92.

⁴ As determined by the total influent flow for the calendar month divided by the number of days in that month.

2. The monthly average effluent flow to the spray disposal field shall be no greater than 40,000 gpd.
3. The monthly average effluent flow to the subsurface drip irrigation field shall be no greater than 59,000 gpd.

4. The discharge shall not cause degradation of any water supply.
5. Neither the treatment nor the discharge shall cause a pollution or nuisance as defined by the Porter-Cologne Water Quality Control Act, section 13050.
6. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
7. Public contact with wastewater shall be precluded or controlled through such means as fences, signs, or acceptable alternatives.
8. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.
9. Objectionable odors originating at the facility shall not be perceivable beyond the limits of the property at an intensity that creates or threatens to create nuisance conditions.
10. As a means of discerning compliance with Discharge Specification B.9, 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 Central Valley Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.
11. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.
12. 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. If needed, the Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding.
13. All treatment, storage, and disposal facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
14. 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.

15. 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 a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard in Pond 3.
16. On or about **15 October** of each year, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specifications B.14 and B.15.

C. Land Application Area Specifications

1. Irrigation runoff (tailwater) and storm water runoff shall be completely contained within the designated LAAs or be returned to the WWTF, and shall not enter any surface water drainage course.
2. Irrigation of the spray field shall not be performed during precipitation, within 24 hours after any measurable precipitation event, or when the ground is saturated.
3. The Discharger shall cease spray irrigation of wastewater when winds exceed 30 mph.
4. The discharge of treated wastewater to the spray field shall be at reasonable agronomic rates designed to maximize uptake and breakdown of waste constituents in the root zone and minimize the percolation of waste constituents below the root zone.
5. 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	50
Edge of LAAs to public road	50
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.

6. The LAAs shall be managed to prevent breeding of mosquitoes. In particular:
 - a. There shall be no standing water 72 hours after irrigation ceases;
 - b. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store tailwater or storm water runoff.

D. Solids/Sludge Disposal Specifications

1. Sludge 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 facility. Biosolids refers to sludge that has undergone sufficient treatment and testing to qualify for reuse pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land recycling.
2. Sludge and solid waste shall be removed from screens, sumps, and ponds as needed to ensure optimal plant operation.
3. The Discharger shall monitor sludge accumulation in the wastewater treatment/storage ponds at least every five years **beginning in 2013**, and shall periodically remove sludge as necessary to maintain adequate storage capacity. Specifically, if the estimated volume of sludge in the treatment ponds exceeds 15 percent of the permitted pond capacity, the Discharger shall complete sludge cleanout within **12 months** after the date of the estimate.
4. 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.
5. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Division 2 of Title 27. Removal for further treatment, disposal, or reuse at disposal sites operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy this specification. This does not preclude land application of biosolids at the WWTF site in accordance with another Order (i.e., general or individual Waste Discharge Requirements).
6. 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.

7. 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.
8. Any proposed change in sludge use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

E. Effluent Limitations

With the exception of the pond pH limits, compliance with the following effluent limitations shall be determined based on analytical results for effluent samples obtained from the effluent monitoring point immediately downstream of the chlorine contact tank as shown on Attachment C.

1. **Effective immediately**, effluent discharged to the LAAs shall not exceed the following limits :

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Monthly Maximum</u>	<u>Annual Average</u>
BOD ₅ ¹	mg/L	40	60	--
Total Nitrogen as N	mg/L	10	--	--
Electrical Conductivity	µmhos/cm	--	--	900

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

2. Effective immediately, 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 23 MPN per 100 milliliters. Compliance with this requirement shall be determined based on all samples collected in 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.
3. Effective immediately, no wastewater contained in any pond shall have a pH of less than 6.5 or greater than 9.5.

F. Groundwater Limitations:

Compliance with the following limitations shall be determined annually based on statistical analysis of data from each downgradient compliance well using approved intrawell statistical methods. The current downgradient compliance wells are MW2, MW3, MW4, and MW5 as shown on Attachment B.

1. **Effective immediately**, release of waste constituents from any portion of the WWTF shall not cause groundwater to:
 - a. Exhibit an electrical conductivity level that constitutes a statistically significant increase over current groundwater quality.
 - b. Exceed a nitrate nitrogen concentration of 10 mg/L.
 - c. Exhibit a pH of less than 6.5 or greater than 8.4 pH units.
 - d. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that exceed applicable water quality objectives, cause nuisance or adversely affect beneficial uses.
2. **Effective 1 September 2016**, release of waste constituents from any portion of the WWTF shall not cause groundwater to:
 - a. Exceed a total coliform organism concentration of 2.2 MPN/100mL.

G. Provisions:

1. The following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared as described in Provision G.2.
 - a. By **1 March 2013**, the Discharger shall submit and implement an *Effluent Salinity Reduction Work Plan*. The plan shall evaluate sources of salinity in the disinfected effluent, describe available options to reduce salinity; and state the Discharger's specific plan for source control and/or operational changes.
 - b. By **1 December 2013**, the Discharger shall submit a *Local Agricultural Beneficial Use Study* that identifies crops that are currently grown or could be grown in the area around the WWTF and evaluate the groundwater salinity levels necessary to protect the beneficial uses of groundwater. The study shall evaluate how climate, river flow, background water quality, rainfall, and flooding affect salinity/EC requirements. Based on these factors, the study shall recommend site-specific numeric values for EC, TDS, sodium and chloride that fully protect the agricultural irrigation use of groundwater. The Central Valley Water Board will evaluate the recommendations, select appropriate values, reevaluate reasonable potential for salinity constituents, and reopen this Order to include appropriate effluent and/or groundwater limitations for these constituents.

- c. By **1 March 2013**, Discharger shall submit a *Groundwater Monitoring Well Disinfection Workplan* and a *Sampling and Analysis Plan*. The disinfection workplan shall provide detailed procedures for well disinfection, and include a schedule to complete the work by **1 September 2013**. The *Sampling and Analysis Plan* shall propose groundwater sampling techniques designed to minimize cross-contamination of the monitoring wells and groundwater samples with coliform organisms.
 - d. By **1 October 2013**, the Discharger shall submit a report documenting completion of monitoring well disinfection in accordance with the approved *Disinfection Workplan* and implementation of the approved *Sampling and Analysis Plan*.
 - e. If the coliform detections in groundwater do not resolve after monitoring well disinfection or if coliform detections occur again in two or more consecutive groundwater monitoring events after **September 2016**, then within **240** days of the recurrence, the Discharger shall submit a *Groundwater Coliform Investigation and Source Identification Report* that describes in detail the scope and specific methods that will be used to determine the source of coliform organisms in groundwater. If the WWTF is found to be the source or another source cannot be proven, then the Discharger shall submit and implement a workplan for additional treatment or control for coliform organisms to ensure compliance with the groundwater coliform limitation listed in Groundwater Limitation F.2 no later than **three** years from the date of the recurrence of coliform detection in groundwater.
2. If groundwater monitoring results show that the discharge of waste is causing groundwater to contain any waste constituents other than coliform organisms in concentrations statistically greater than the Groundwater Limitations of this Order, within **120** days of the request of the Executive Officer, 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 or control for each waste constituent that exceeds a Groundwater Limitation. 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 from the date of workplan approval.
 3. At least **180** days prior to any sludge removal and disposal, the Discharger shall submit a *Sludge Cleanout Plan*. The plan shall include a detailed plan for sludge removal, drying, and disposal. The plan shall specifically describe the phasing of the project, measures to be used to control runoff or percolate from the sludge as it is drying, and a schedule that shows how all dried biosolids will be removed from the site prior to the onset of the rainy season (**1 October**). If the Discharger proposes to land apply biosolids at the effluent recycling site, the report shall include a Report of Waste Discharge and filing fee to apply for separate waste discharge requirements.

4. 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**.
5. 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.
6. 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.
7. The Discharger shall comply with the Monitoring and Reporting Program R5-2012-0045, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
8. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which is attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
9. 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.
10. 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.

11. The Discharger shall use the best practicable treatment and control, including proper operation and maintenance, to comply with this Order.
12. The Discharger shall report to the Central Valley Water Board any toxic chemical release data reported 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 provide certified wastewater treatment plant operators in accordance with Title 23, division 3, chapter 26.
14. 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.
15. 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.
16. At least **90** days prior to termination or expiration of any lease, contract, or agreement involving disposal or reclamation areas, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
17. The Discharger shall submit to the Central Valley Water Board on or before each compliance report due date the specified document, or if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is reported, then the Discharger shall state the reasons for noncompliance and shall provide a schedule to come into compliance.
18. 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.

19. In the event of any change in control or ownership of the facility or land application areas, 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 this office.
20. 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 California Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
21. 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 at each land application property shall be familiar with its contents.
22. 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 or with the WDRs 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.
23. The Central Valley Water Board will review this Order periodically and may revise requirements when necessary.

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.

WASTE DISCHARGE REQUIREMENTS ORDER R5-2012-0045
EL DORADO IRRIGATION DISTRICT
CAMINO HEIGHTS WASTEWATER TREATMENT FACILITY
EL DORADO COUNTY

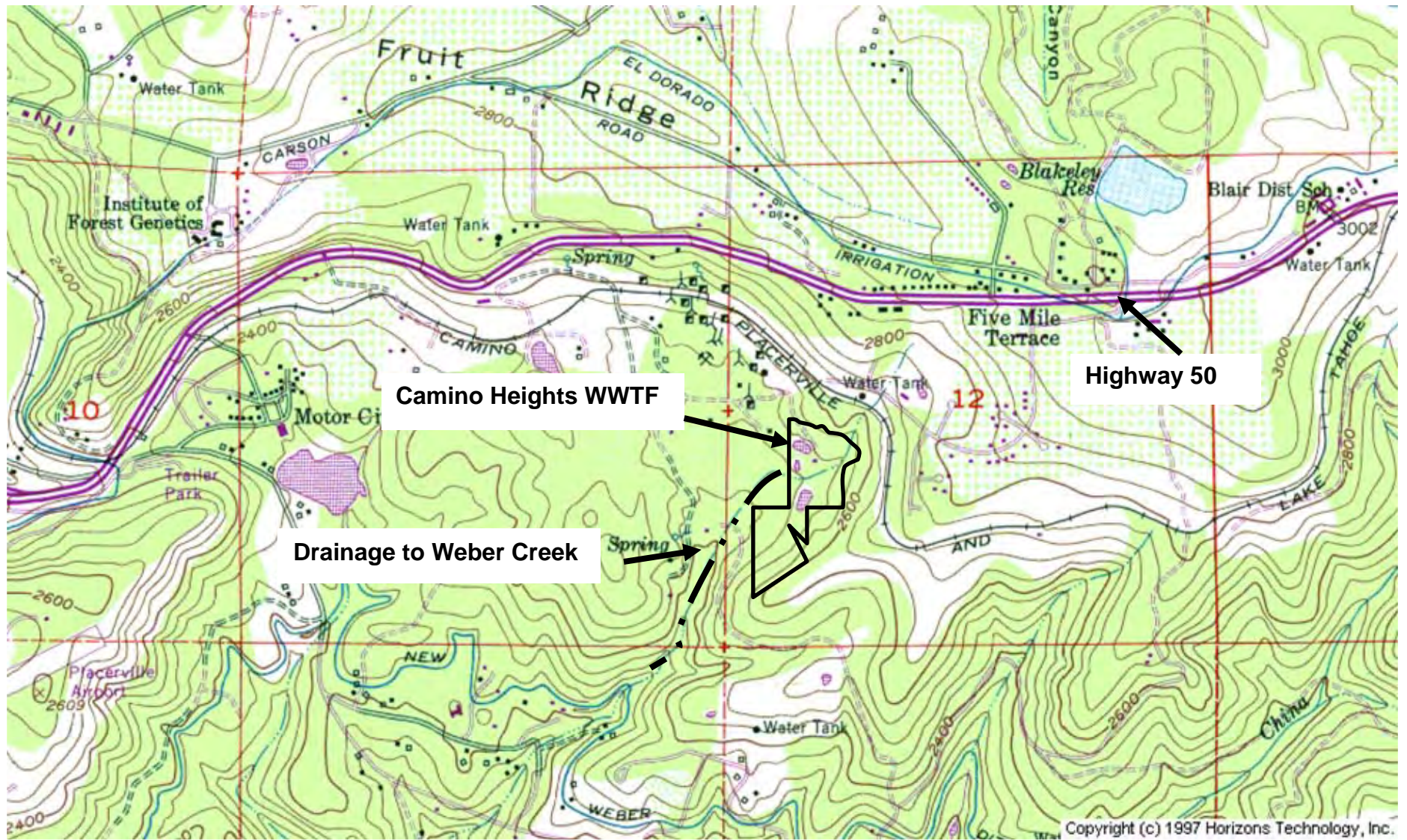
26

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 8 June 2012.

Original signed by

PAMELA C. CREEDON, Executive Officer

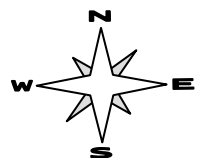
LF/alo: 5/9/2012

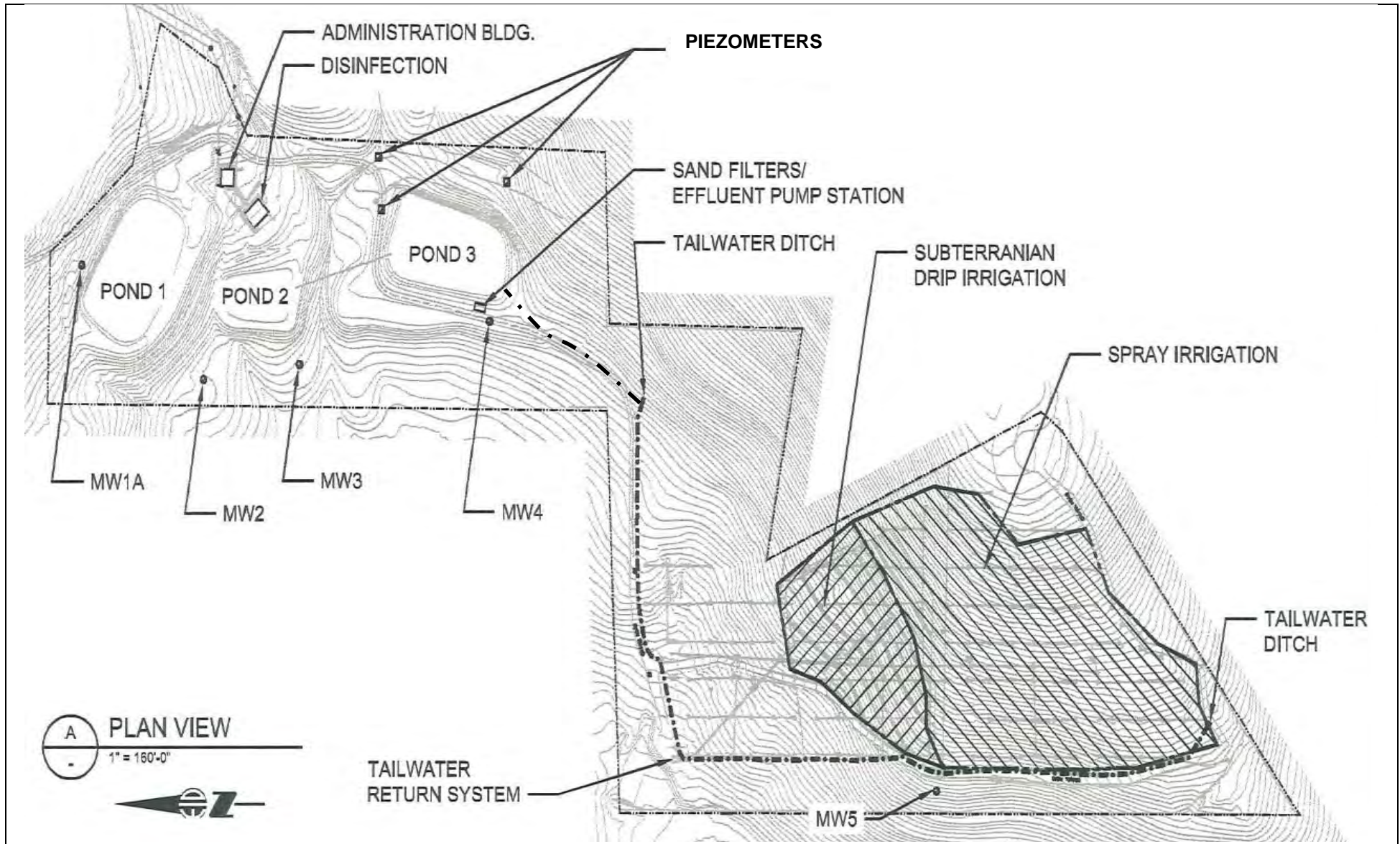


Drawing Reference:
USGS 7.5' Quadrangle,
Camino, CA

SITE LOCATION MAP
EI DORADO IRRIGATION DISTRICT
CAMINO HEIGHTS WWTF
EI DORADO COUNTY

Scale:
1 inch=1,600 feet

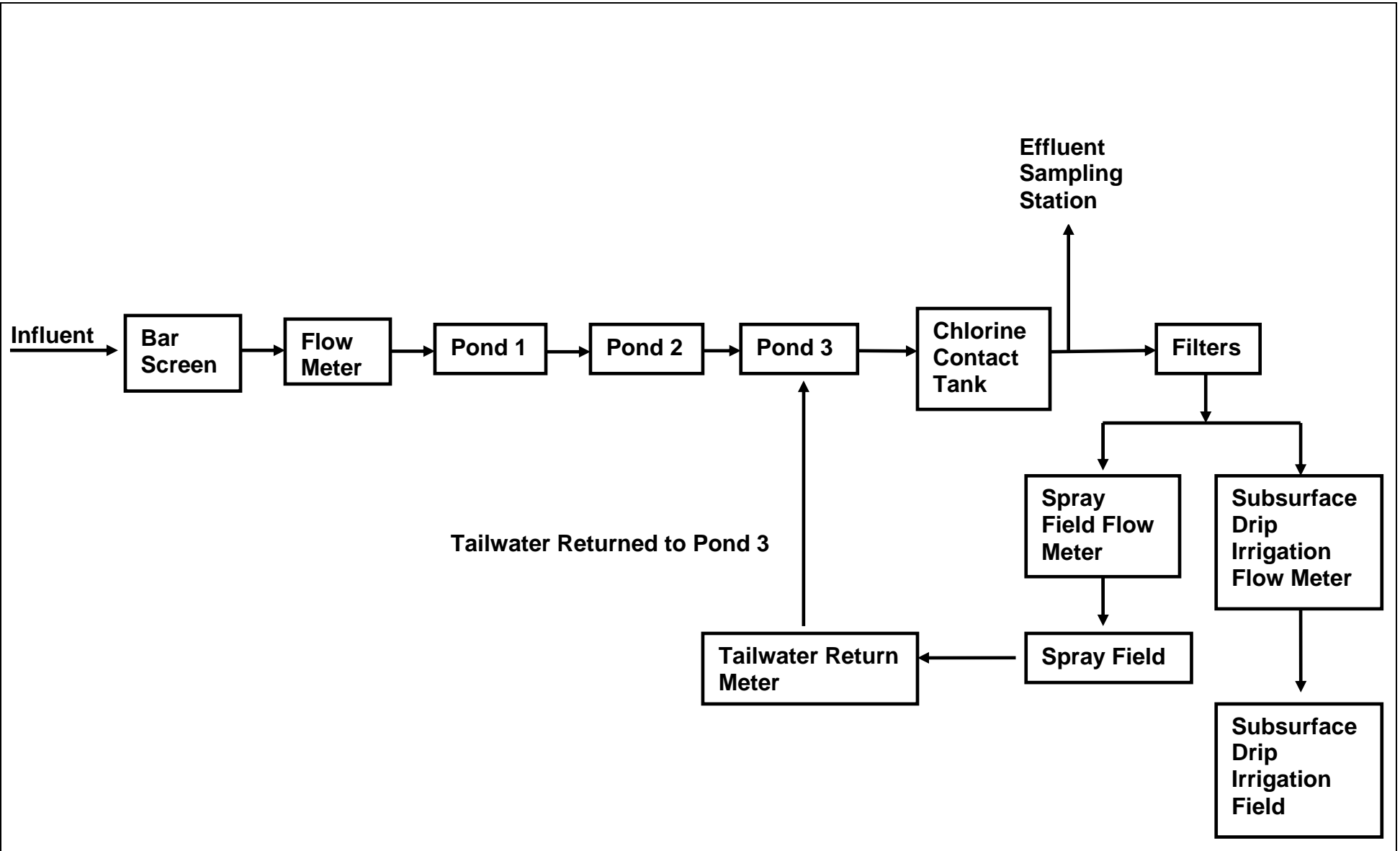




Drawing Reference:
 Camino Heights WWTF
 Report of Waste Discharge Supplement
 November 2011

SITE PLAN
 EI DORADO IRRIGATION DISTRICT
 CAMINO HEIGHTS WWTF
 EI DORADO COUNTY

No Scale



Drawing Reference:
El Dorado Irrigation District
Report of Waste Discharge Supplement
November 2011

PROCESS SCHEMATIC
EI DORADO IRRIGATION DISTRICT
CAMINO HEIGHTS WWTF
EI DORADO COUNTY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2012-0045

FOR
EL DORADO IRRIGATION DISTRICT
CAMINO HEIGHTS WASTEWATER TREATMENT FACILITY
EL DORADO COUNTY

This Monitoring and Reporting Program (MRP) presents requirements for monitoring of wastewater influent, ponds, effluent, land application areas (LAAs), groundwater, sludge, and water supply. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

Central Valley Water Board staff shall approve specific sampling locations prior to any sampling activities. All samples shall be representative of the volume and nature of the discharge. The time, date, and location of each sample shall be recorded on the sample chain of custody form.

Field testing instruments (such as those used to test pH and dissolved oxygen) may be used provided that:

- 1 The operator is trained in proper use and maintenance of the instruments;
- 2 The instruments are calibrated prior to each monitoring event;
- 3 The instruments are serviced and/or calibrated by the manufacturer at the recommended frequency;
- 4 Field calibration reports are submitted as described in the "Reporting" section of this MRP.

INFLUENT MONITORING

Influent samples shall be collected at the headworks prior to treatment. Grab samples will be considered to be representative of the influent. Influent monitoring shall include, at a minimum the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	gpd	Meter Observation	Daily	Monthly
BOD ₅ ¹	mg/L	Grab	Monthly	Monthly
Electrical Conductivity	µmhos/cm	Grab	Monthly	Monthly

¹ 5-day biochemical oxygen demand.

POND MONITORING

Samples shall be collected from an established sampling station located in an area that will provide a sample representative of the wastewater in each pond. Freeboard shall be measured vertically from the surface of the pond water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 feet. Monitoring of all ponds shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
pH	Standard Units	Grab	Weekly	Monthly
Dissolved Oxygen ¹	mg/L	Grab	Weekly	Monthly
Electrical Conductivity	µmhos/cm	Grab	Monthly	Monthly
Freeboard	0.1 feet	Measurement	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly
Berm condition ²	--	Observation	Weekly	Monthly

¹ Samples shall be collected at a depth of one foot, opposite the inlet.

² Containment berms shall be observed for signs of seepage or surfacing water along the exterior toe of the berms.

EFFLUENT MONITORING

Effluent monitoring is required only during months when effluent is discharged to the LAAs. Effluent samples shall be representative of the treated wastewater prior to discharge to the LAAs after full chlorine contact has been achieved. The effluent samples shall be obtained from the effluent monitoring point immediately downstream of the chlorine contact tank. At a minimum, effluent monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Total Coliform Organisms ¹	MPN ² /100 mL	Grab	Weekly	Monthly
Electrical Conductivity	µmhos/cm	Grab	Weekly	Monthly
Total Nitrogen	mg/L	Grab	Monthly	Monthly
BOD ₅	mg/L	Grab	Monthly	Monthly
pH	pH units	Grab	Monthly	Monthly
Standard Minerals ²	mg/L	Grab	Annually	Annually

¹ Using a minimum of 15 tubes or three dilutions.

² Standard minerals shall include, at a minimum, the following elements/compounds: boron, calcium, chloride, iron, magnesium, manganese, potassium, sodium, sulfate, total dissolved solids, total alkalinity (including alkalinity series), and hardness.

LAND APPLICATION AREA MONITORING

The LAA monitoring program applies to the subsurface drip irrigation area and the spray field. The monitoring shall be conducted daily when the LAAs are used. Evidence of erosion, field saturation, irrigation runoff, or the presence of nuisance conditions shall be noted in the report. Effluent monitoring results shall be used in calculations to determine loading rates at the LAAs. Monitoring of the LAAs shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow to each LAA ¹	gpd	Meter Observation	Daily	Monthly
Acreage Applied	Acres	Calculated	Daily	Monthly
Water Application Rate ²	Inches/day	Calculated	Daily	Monthly
Storm Water and Tailwater Return Flow	gpd	Meter Observation	Daily	Monthly
Rainfall ³	Inches	Observation	Daily	Monthly
Total Nitrogen Loading Rate ²	lbs/ac/month	Calculated	Monthly	Monthly
LAA Berm Condition	NA	Observation	Weekly	Monthly

¹ Flows to the subsurface drip irrigation area and the spray field shall be monitored separately.

² Average calculated for each LAA.

³ Rainfall data collected from the weather station that is nearest to the LAAs or a properly maintained on-site rain gauge.

At least **once per week** when the LAAs are being used, the LAAs shall be inspected to identify any equipment malfunction or other circumstances that might allow tailwater or storm water runoff to leave the irrigation area and/or create ponding conditions that violate the Waste Discharge Requirements. A daily log of each inspection shall be kept at the facility and be submitted with the monthly monitoring reports. Photocopies of entries into an operator's field log are acceptable. The monthly report shall clearly states whether or not the LAAs were used during that month.

GROUNDWATER MONITORING

This monitoring program applies to all existing groundwater monitoring wells MW1A, MW2, MW3, MW4, and MW5A, and any wells subsequently installed under direction of the Central Valley Water Board. Sampling of well MW-1A is not required, but it shall be monitored for groundwater elevation. Groundwater sampling shall be conducted quarterly for two years and then can be changed to semi-annually. Semi-annual groundwater monitoring shall occur in the first and the third quarter of each calendar year. Prior to sampling, groundwater elevations shall be measured. Depth to groundwater shall be measured to the nearest 0.01 feet. Water table elevations shall be calculated and used to determine groundwater gradient and direction of flow. Samples shall be collected and analyzed using approved EPA methods or other methods approved by the Central Valley Water Board. Groundwater monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Groundwater Elevation ¹	0.01 Feet	Calculated	Quarterly ⁴	Semi-annually
Depth to Groundwater	0.01 Feet	Measurement	Quarterly ⁴	Semi-annually
Gradient	Feet/Foot	Calculated	Quarterly ⁴	Semi-annually
Gradient Direction	Degrees	Calculated	Quarterly ⁴	Semi-annually
Total Coliform Organisms ²	MPN/100mL	Grab	Quarterly ⁴	Semi-annually
pH	Standard Units	Grab	Quarterly ⁴	Semi-annually

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Electrical Conductivity	µmhos/cm	Grab	Quarterly ⁴	Semi-annually
Total Dissolved Solids	mg/L	Grab	Quarterly ⁴	Semi-annually
Nitrate as N	mg/L	Grab	Quarterly ⁴	Semi-annually
Standard Minerals ³	mg/L	Grab	Annually	Semi-annually

¹ Groundwater elevation shall be based on depth-to-water using a surveyed measuring point elevation on the well and a surveyed reference elevation.

² Using a minimum of 15 tubes or three dilutions.

³ Standard Minerals shall include, at a minimum, the following elements and compounds: boron, calcium, chloride, iron, magnesium, manganese, nitrogen, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

⁴ Sampling shall be conducted quarterly for eight consecutive quarters and semi-annually thereafter.

SLUDGE MONITORING

The Discharger shall monitor sludge accumulation in the wastewater treatment and storage ponds at least every five years **beginning in 2013**.

A composite sample of sludge shall be collected at least once per year when sludge is removed from the wastewater treatment system for disposal in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and analyzed for cadmium, copper, nickel, chromium, lead, and zinc.

Sludge sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

WATER SUPPLY MONITORING

A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Water supply monitoring shall include at least the following for each water source used during the previous year. As an alternative to annual water supply monitoring, the Discharger may submit results of the most current Department of Public Health Consumer Confidence Report.

<u>Constituent</u>	<u>Units</u>	<u>Sampling and Reporting Frequency</u>
Total Dissolved Solids	mg/L	Annually
Electrical Conductivity	µmhos/cm	Annually
pH	Standard Units	Annually
Standard Minerals ¹	mg/L	Annually

¹ Standard Minerals shall include, at a minimum, the following elements/compounds: boron, calcium, chloride, iron, magnesium, manganese, nitrogen, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, reservoir, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

As required by the Business and Professions Code sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Engineer or Geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Monthly reports shall be submitted to the Regional Board by the **1st day of the second month** following the end of the reporting period (i.e. the January monthly report is due by 1 March). At a minimum, the reports shall include:

1. Results of the influent, effluent, ponds, and LAA monitoring (effluent monitoring is only required during months when effluent is discharged to the LAAs);
2. Average daily influent flow for the month, the maximum average daily influent flow for the year to date, and cumulative annual influent flow to date;
3. If effluent was discharged to the LAAs, the calculated median effluent total coliform concentration for the month. A rolling four-week median concentration shall be used to determine compliance with the effluent limit for months during which discharge to the LAAs did not occur every week, otherwise the median of all results for the month shall be calculated;
4. Copies of inspection logs;
5. A comparison of the monitoring data to the discharge specifications and an explanation of any violation of those requirements;
6. Copies of laboratory analytical report(s); and
7. Copies of current calibration logs for all field test instruments.

B. Semi-Annual Monitoring Report

Semi-annual monitoring reports shall be submitted to the Central Valley Water Board by the **1st day of August** (for the first six months of the year) and **February the following year** (for the last six months of the year). The Semi-Annual Monitoring Reports shall include the following:

1. Results of groundwater monitoring for all monitoring and sampling events during the last six months;
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
3. For each monitoring event:
 - a. Calculation of groundwater elevations, determination of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any; and
 - b. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable).
4. A comparison of the monitoring data to the groundwater limitations and an explanation of any violation of those requirements;
5. Summary data tables and graphs of historical and current water table elevations and analytical results;
6. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and
7. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

In addition to the monthly and semi-annual monitoring reports, an Annual Report shall be prepared. The Annual Report shall be submitted to the Central Valley Water Board by **1 February** each year. The Annual Report shall include the following:

1. The results from annual monitoring of the effluent, groundwater, and water supply;
2. Average dry weather influent flow for the year, the maximum average daily influent flow for the year, and total annual influent flow for the year;
3. Tabular summaries of data collected during the year;
4. A digital database (Microsoft Excel) containing historic groundwater and effluent data;
5. An evaluation of the performance of the WWTF, including discussion of capacity issues, infiltration and inflow rates, nuisance conditions, and a forecast of the flows anticipated in

the next year;

6. An *Annual Groundwater Quality Evaluation Report*, which shall determine if the discharge has caused or is likely to cause violation of the Groundwater Limitations of the WDRs. The evaluation shall be based on historic groundwater data using intra-well methods described in Title 27, section 20415(e)(10). The report shall identify constituents of concern, and evaluate the impacts of WWTF operation and changes in groundwater quality. A comparison of the groundwater concentrations and annual average effluent concentrations is required. All groundwater evaluations shall be prepared under the direct supervision of a registered Professional Engineer or Geologist and signed by the registered professional;
7. Effective **2013** and every five years thereafter, an evaluation of sludge volume as percentage of permitted pond capacity;
8. If applicable, sludge sampling results and the volume of sludge removed during the year; and the means of off-site sludge disposal;
9. A discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements;
10. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;
11. A copy of the certification for each certified wastewater treatment plant operator working at the facility and a statement about whether the Discharger is in compliance with California Code of Regulations, title 23, division 3, chapter 26;
12. A forecast of influent flows, as described in Standard Provision No. E.4; and
13. A statement of when the O&M Manual was last reviewed for adequacy, and a description of any changes made during the year.

A letter transmitting the self-monitoring reports shall accompany each report. The letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: _____ Original signed by _____
PAMELA C. CREEDON, Executive Officer
8 June 2012

(Date)

LF/alo: 5/10/2012

INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER R5-2012-0045
EL DORADO IRRIGATION DISTRICT
CAMINO HEIGHTS WASTEWATER TREATMENT FACILITY
EL DORADO COUNTY

Background

The Camino Heights Wastewater Treatment Facility (WWTF) treats and disposes of domestic wastewater from the Camino Heights community, which has 121 sewer connections. The community has an estimated population of 315. Presently, 90 percent of wastewater is generated from the residential subdivision; there is a small contribution from the commercial area along Highway 50. The general location of the WWTF is shown on Attachment A.

In 2011, the monthly average influent flow was 18,000 gallons per day (gpd) and ranged between 14,000 gpd and 26,000 gpd. The existing WWTF consists of a mechanical bar screen, flow meters, three aerated ponds, a disinfection tank, sand filters, and land application areas (LAAs). A current site plan is included in Attachment B. The influent via the mechanical bar screen is treated by three aerated Ponds 1 through 3. All three treatment ponds are unlined and operated in series. Pond 3 is also used as a storage pond. The effluent from Pond 3 is pumped to a contact tank for disinfection by sodium hypochlorite. The disinfected wastewater flows through sand filters and then is applied to the LAAs. The filters are used to reduce clogging in the irrigation system. The LAAs consist of a 4.4-acre spray field and a 1.5-acre subsurface drip irrigation field. A tailwater collection system was installed at the downhill end of the LAAs and the tailwater is returned to Pond 3. The wastewater treatment process schematic is shown on Attachment C.

Waste Discharge Requirements (WDRs) Order 5-01-100, adopted by the Central Valley Water Board on 27 April 2001, prescribes requirements for the WWTF, and allows a monthly average dry weather influent flow ("ADWF") of 60,000 gpd. The Discharger does not request to increase the monthly ADWF limit. The purpose of this update is to prescribe requirements for the new subsurface drip irrigation system and other facility improvements that were completed to comply with Cleanup and Abatement Order (CAO) R5-2007-0711.

CAO R5-2007-0711 was adopted on 31 May 2007. Before the CAO was issued, the ponds received significant seasonal surface water runoff and groundwater seepage through highly permeable Tertiary gravels and fractured bedrock from the area upslope of the unlined ponds and that resulted in inadequate wastewater storage capacity. The 2007 CAO was adopted because of a series of violations due to inadequate wastewater storage capacity, including spills to surface water, discharges of wastewater to the spray field during periods of precipitation and/or within 24 hours of a precipitation event, and land application without tailwater collection.

The CAO required the Discharger to submit a series of reports including: Revised Water Balance, Sprayfield Evaluation Report, Subsurface Drip System Completion Report, Background Groundwater Quality Study Report, Sprayfield Improvements Completion Report, and RWD. The Discharger submitted all of the required reports.

The Discharger has investigated over one million dollars to reduce seasonal inflow into the ponds and to improve WWTF treatment and operation. The improvements include:

- a. Installation of cut-off trenches above all three ponds to re-direct surface and subsurface flow away from the ponds.
- b. Installation of a tailwater return system to capture all irrigation runoff.
- c. Installation of a subsurface drip irrigation system on the existing LAAs to increase disposal capacity. The design capacity of the drip system is 59,000 gpd.
- d. Installation of sand filters at the disposal pump station to prevent plugging of drip emitters.
- e. Replacement of a manual bar screen with a mechanical one.
- f. Installation of a washer/compactor at the headworks.
- g. Installation of a Supervisory Control and Data Acquisition System to monitor the WWTF remotely.

Groundwater Conditions

In 2002, the Discharger installed five groundwater monitoring wells (MW1 through 5). MW1 and MW5 were replaced by MW1A and MW5A in March 2004 (Attachment B) because they had gone dry. Monitoring well MW1A is upgradient of the ponds and the LAAs. Wells MW2, MW3 and MW4 are downgradient of the treatment ponds, and MW5A is downgradient of the LAAs.

The two replaced wells MW1A and MW5A are deeper than the other wells, but all are screened in the first encountered groundwater. Surface soils at the WWTF consist of clay and silty sands to a depth of approximately five feet below ground surface (bgs) based on the boring logs. Based on groundwater elevations, groundwater generally flows from northeast to west or southwest with a hydraulic gradient of approximately 0.05 feet/foot.

The upgradient well MW1A has the lowest concentrations for the listed constituents except for nitrate as nitrogen compared to other wells. The average EC and average concentrations of TDS, chloride, sodium and total coliform in MW1A are less than Water Quality Objectives.

The average EC in MW1A is much less than that in MW2, MW3 and MW4, which would typically indicate degradation from the discharge because MW2, MW3, and MW4 are directly downgradient of the unlined treatment ponds. However, the average EC in the ponds is much less than the EC in those wells. Therefore, the EC levels in MW2, MW3 and MW4 may not be the result of the discharge. The significant EC differences between MW-1A and the wells downgradient of the ponds indicate that the upgradient and downgradient monitoring wells may have different groundwater sources, which may be caused by the local geology (i.e.,

fractured bedrock in the Sierra Foothills). MW1A does not appear suitable to provide samples that are representative of background groundwater quality.

The total coliform organism concentrations in the upgradient well MW1 and the downgradient well MW5A are less than 2.2 MPN/100 mL, which is the Basin Plan numeric water quality objective. However, the other three downgradient monitoring wells have occasionally had total coliform organism concentrations greater than 2.2 MPN/100 mL. The groundwater coliform detections may be due to the wastewater percolation from the unlined ponds or cross contamination of the monitoring wells during construction and/or subsequent sampling. To rule out cross-contamination of the monitoring wells as the cause of the coliform detections, this Order requires the Discharger to submit a Groundwater Monitoring Well Disinfection Workplan and a Sampling and Analysis Plan that defines appropriate sampling techniques to minimize potential re-contamination of the wells. If the coliform detections do not resolve quickly after workplan implementation or if coliform detections occur again, this Order requires the Discharger to identify the source of coliform organisms in groundwater. If the coliform organism detections are caused by the WWTF, then the Discharger is required to submit a workplan for additional treatment or control for coliform organisms. If it cannot be shown that the discharge is not the source of the coliform organisms in groundwater, the Discharger is required to fully implement the additional treatment and control within three years after recurrence of coliform detections in groundwater for two or more consecutive sampling events.

Discharge Prohibitions, Specifications and Provisions

The Discharger's water balance indicates that the WWTF will provide the following capacities:

<u>Influent Flow Measurement</u>	<u>Influent Flow Limit</u>
Total Annual Flow ¹	23 million gallons
Average Daily Dry Weather Flow ^{2, 3}	60,000 gpd
<u>Maximum Average Daily Flow ⁴</u>	76,000 gpd

¹ Based on the calendar year (January through December).

² Dry weather is defined as the months of July through September, inclusive.

³ As determined by the total influent flow for the dry weather period divided by 92.

⁴ As determined by the total influent flow for the calendar month divided by the number of days in that month.

This Order prescribes groundwater limitations that implement water quality objectives for groundwater from the Basin Plan.

The Provisions require submittal of certain technical reports to reduce effluent salinity and to disinfect the groundwater monitoring wells.

INFORMATION SHEET
WASTE DISCHARGE REQUIREMENTS ORDER R5-2012-0045
EL DORADO IRRIGATION DISTRICT
CAMINO HEIGHTS WASTEWATER TREATMENT FACILITY
EL DORADO COUNTY

The Monitoring and Reporting Program is designed to verify compliance with effluent limitations, groundwater limitations, and operational requirements of the WDRs.

LF/alo:5/10/12