

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2009-_____

WASTE DISCHARGE REQUIREMENTS

FOR

CITY OF LOYALTON AND GRANDI RANCH
WASTEWATER TREATMENT FACILITY
SIERRA COUNTY

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

1. The City of Loyalton (City) submitted a Report of Waste Discharge (RWD) on 12 March 2009 for updating existing Waste Discharge Requirements (WDRs) for the City of Loyalton's wastewater treatment facility. The purpose of the update is to allow the Discharger to reconfigure the wastewater treatment system, add constructed wetlands to the treatment train, and change the land application area location.
2. These WDRs were prepared because the Discharger is responding to requirements in Cease and Desist Order (CDO) No. R5-2005-0089, adopted due to inadequate wastewater storage and/or disposal capacity at the City of Loyalton wastewater treatment and disposal facility.
3. For the purposes of this Order, the term "Wastewater Treatment Facility" (WWTF) shall mean the wastewater collection system, the wastewater treatment ponds, constructed wetlands, wastewater storage ponds, recycled water distribution piping, and the land application area. The location of the facility is shown on Attachment A, which is attached hereto and made part of this Order by reference.
4. The treatment area is located at 403 Poole Lane, Loyalton, in Section 11, T21N, R15E, MDB&M. The City of Loyalton owns and operates the WWTF: Grandi Ranch owns the Land Application Area (LAA). The LAA is also in Section 11, T21N, R15E, MDB&M. The City and Grandi Ranch are hereafter jointly referred to as "Discharger."
5. Several orders have been adopted regarding the wastewater treatment facility. They consist of:
 - a. WDRs Order No. 5-01-069 was adopted by the Central Valley Water Board on 16 March 2001. The Order describes the existing wastewater treatment facility. However, that facility does not have adequate storage and disposal capacity.
 - b. Water Recycling Requirements (WRRs) Order No. 5-01-051, issued to supplement the City of Loyalton's wastewater disposal capacity was adopted by the Central

Valley Water Board on 16 March 2001. The Order allowed recycled water to be applied on the Bar One Ranch.

- c. CDO No. R5-2005-0089 was adopted by the Central Valley Water Board on 24 June 2005. The Order required design and construction of a system that complies with the storage capacity requirements of the Central Valley Water Board and submittal of an RWD by 1 May 2009. Because Item No. 14, submittal of a *Wastewater Treatment System Improvement Report* by 1 May 2010, has not been completed, the CDO is not being rescinded at this time.
 - d. Continued use of Orders 5-01-069 and 5-01-051 is not consistent with the current plans and policies of the Central Valley Water Board, nor with the Discharger's need to increase capacity.
6. The Assessor's Parcel Number (APN) for the WWTF is 016-002-0510. The APN for Grandi Ranch is 016-020-097.
 7. The CDO requires the treatment facility improvements to be complete and operational by 1 May 2010. In order to meet the schedule, the Discharger has begun collecting bids, and construction is planned for the summer and fall of 2009. A critical item has been financing the project. The City has received a United States Department of Agriculture (USDA) Rural Development Grant and Loan package that includes \$1 million in grant funds and \$3.5 million in low interest loan funds. Repayment of the loan required an increase in the sewer fee from \$50/month to \$75/month. The increased fees were approved by the City Council in August 2008. The City successfully completed the Proposition 218 protest period on 18 November 2008. Financing for the project design and construction is in place.

Existing Facility, Facility Improvements, and Discharge

8. Wastewater treatment has been performed at the treatment system area since 1956. Originally, an Imhoff Tank (similar to a large septic tank) was used to settle solids; effluent from the Imhoff Tank was discharged to ponds for biological treatment and percolation of wastewater. The treatment system as it exists presently was constructed in 1996, and was a complete reconstruction of the previous facility.
9. The existing treatment system consists of an automated influent screen, flow meter, influent pump station, four aerated lagoons, a settling pond, and nine effluent rapid infiltration basins. An emergency storage basin also exists. The treatment system site plan is shown on Attachment B, which is attached hereto and made part of this Order by reference.
10. The facility was designed to treat an average flow of 172,000 gallons per day (gpd) and a peak daily flow of 756,000 gpd. Because inadequate wastewater disposal capacity existed

at the wastewater facility, the Discharger contracted to dispose of wastewater on the nearby Bar One Ranch. That discharge was authorized by WRRs Order No. 5-01-051.

11. The existing treatment system is being reconfigured, storage is being added, and a new LAA is being developed. The improvements are needed to provide the storage capacity required in CDO R5-2005-0089 and to address inflow and infiltration issues. The collection system allows significant inflow and infiltration of groundwater and some areas served by the collection system are within the 100-year flood zone. When flooded, surface water can enter the collection system. The Discharger plans the following improvements:

- a. Construct a new 80 acre LAA that will be used to grow alfalfa or other crops. The crop will be removed from the LAA.
- b. Replace the existing influent pump station pumps with new pumps that provide increased capacity.
- c. Convert seven of the nine existing rapid infiltration ponds into two 60-mil thick HDPE liner equipped effluent storage ponds that provide 120 ac•ft of treated wastewater storage.
- d. Convert the remaining two of the nine rapid infiltration ponds into a constructed wetland that will polish effluent from the treatment ponds during average flow conditions. (The wetland will be bypassed during high flow events.)
- e. Replace 2,000 linear feet of undersized and/or flat gradient sewer trunk main, which requires excessive maintenance and is more likely to cause sanitary sewer overflows.
- f. Replace 20 existing manhole lids with new gasketed frames and watertight covers within the 100-year floodplain to reduce inflow during flood events.
- g. Relocate a pipeline crossing that exists under Smithneck Creek. The existing pipeline has become exposed by channel erosion and could be damaged during a flood. The new crossing will be in a safer location and the pipe will be located further below the stream bed.
- h. Install a new on-site sodium hypochlorite generating disinfection system and piping for the LAA.

If funding allows, the project will also include the following:

- i. Install a liner in the existing unlined emergency storage pond.
- j. Install a new sewer line crossing beneath Highway 49 at the west side of Loyalton, and replace an additional 1,000 feet of undersized and/or flat gradient sewers.

12. Wastewater is collected by gravity to the treatment system headworks where it is pumped into the treatment ponds. The headworks sump is equipped with a high level alarm that is programmed to dial employees if alarm conditions exist.
13. Wastewater is metered using a flume and ultrasonic flow meters at the headworks. Additional flow meters will be installed at the irrigation pumping station, and at the land application area tailwater pumping station.
14. A wastewater treatment schematic of the proposed treatment system is presented on Attachment C, which is attached hereto and made part of this Order by reference. The following summarizes the treatment process:
 - a. Wastewater will be biologically treated in the mechanically aerated treatment ponds. Effluent from the aerated ponds will be discharged to a settling pond prior to discharge to a constructed wetland during normal flow conditions (the wetland will be bypassed during high flow conditions); effluent from the wetlands (or bypassed water) will be discharged to the lined storage ponds.
 - b. Wastewater in the 120 ac•ft storage ponds will have undergone biological treatment but will not be disinfected. This wastewater will be disinfected prior to land application. In this Order, wastewater that has been disinfected is termed “recycled water.”
 - c. Disinfection will be performed using sodium hypochlorite, which will be provided by an on-site generator. The unit will include two generating cells, hypochlorite storage for three days, two metering pumps, and a low chlorine residual alarm as part of the Supervisory Control and Data Acquisition (SCADA) system.
 - i. Because milking animals will not graze on the LAA, Title 22 does not require disinfection of the wastewater. However, because stormwater will be allowed to escape the LAA during the months wastewater is not applied (November through February), disinfection of wastewater is required by this Order.
 - ii. The disinfection criteria is consistent with Title 22 California Code of Regulations (CCR) Section 60301.225, disinfected secondary - 23 recycled water, which is defined as: recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30 day period.
15. Pond configurations will change as part of the facility upgrade. However, the footprint of the treatment area will not change. The existing wastewater ponds are described below:
 - a. Four aerated treatment ponds provide a combined capacity of 6.50 ac•ft.

- b. The settling pond provides a capacity of 1.52 ac•ft.
 - c. The emergency storage pond provides 14.66 ac•ft of capacity
 - d. The rapid infiltration basins provide a combined capacity of approximately 6.0 ac•ft. (Seven of the nine basins will be reconfigured into the 120 ac•ft storage ponds; the remaining two basins will be converted to constructed wetlands.)
16. Emergency electrical power is provided by an on-site emergency electrical generator. The existing generator is capable of running the headworks lift pumps, some of the mechanical aerators, and the exterior lighting at the WWTF. As part of the system improvements, additional emergency electrical generation will be added. In addition, the SCADA system will be provided with battery backup in case the emergency electrical generation fails.
17. Depending on the season and location where stormwater falls, it will be handled as follows:
- a. Stormwater that falls on the roadways surrounding the ponds at the treatment area drains into the ponds. Other stormwater falling on roofs and paved areas drains to the surrounding unpaved area where it infiltrates.
 - b. Stormwater that falls on the LAA during the wastewater application season (March through October) will be captured and reapplied to the LAA. Tailwater will be handled the same way. During the nonapplication season (November through February), stormwater that falls on the LAA will be allowed to escape to surface water drainage.
18. A history of flow rates since 1996 is presented below. On several occasions, the wastewater treatment facility has experienced elevated flows due to inflow and infiltration events. Flood events occurred in 1997 (exceeded 900,000 gpd) and 1999 (approximately 800,000 gpd); the influent pumps had difficulty keeping up with the influent flow.

<u>Time Period</u>	<u>Total (gallons)</u>	<u>Daily Average (gpd)</u>	<u>Max Day Event (gpd)</u>
Sept., '96 - Aug., '97	96,608,524	264,681	930,080
Sept., '97 - Aug., '98	64,192,685	175,870	343,200
Sept., '98 - Aug., '99	82,955,700	227,276	799,200
Sept., '99 - Aug., '00	70,368,033	192,290	344,400
Sept., '00 - Aug., '01	54,418,100	148,596	211,000
Sept., '01 - Aug., '02	49,864,587	136,615	189,500
Sept., '02 - Aug., '03	50,145,600	137,385	242,900
Sept., '03 - Aug., '04	50,504,233	137,990	245,800
Sept., '04 - Aug., '05	45,500,505	124,659	386,000
Sept., '05 - Aug., '06	57,621,438	157,867	330,550
Sept., '06 - Aug., '07	40,711,828	111,539	145,700
Sept., '07 - Aug., '08	43,403,267	118,568	194,050

19. Wastewater quality has been characterized by the Discharger. Based on samples collected in 2008, wastewater constituent concentrations are consistent with published values but may be diluted by inflow and infiltration. The data is presented below:

Date	Influent	Pond Effluent (sampled at weir vault)			
	BOD (mg/L)	NO3 as N (mg/L)	TDS (mg/L)	BOD (mg/L)	TKN (mg/L)
1/15/08	87	0.1	270	24.4	16.0
2/19/08	144	0.0	240	32.0	20.0
3/21/08	NR	ND	280	NR	15.0
4/15/08	194	0.4	290	24.4	9.9
5/22/08	213	ND	300	17.2	19.0
6/2/08	284	NR	NR	47	15.0
7/24/08	162	NR	NR	30.5	NR
8/19/08	176	0.2	360	23.6	10.0
9/16/08	241	0.6	340	35.4	10.2
10/21/08	232	0.4	330	26.1	19.1
11/18/08	257	0.1	280	17.1	11.8
12/23/08	198	ND	280	27.0	20.0
Average	199	0.3	297	27.7	15.1

Recycled Water Application

20. Disinfected wastewater is currently applied to approximately 60 acres on the Bar One Ranch. Because the Bar One Ranch has entered into a conservation agreement, expansion of recycled water application at that site is not possible and use of the Bar One Ranch will be discontinued. This Order rescinds WRRs Order No. 5-01-051. A new LAA will be developed at the Grandi Ranch, which is located adjacent to the WWTF. The location is shown on Attachment A. The City of Loyalton and Grandi Ranch have entered into an Effluent Reclamation Agreement. The initial term of the agreement is 20 years.
21. The Grandi Ranch will provide approximately 100 acres to the land application of recycled water. Approximately 80 of the acres can be used for the actual land application area. A center pivot irrigation system will be used to distribute the recycled water on the LAA.
22. The LAA will be graded to allow effective irrigation and minimize ponding. Beef cattle livestock are allowed to graze on the LAA when not irrigating. Otherwise, the crops will be cut and removed for sale as animal feed. Because milking animals will not be allowed to graze on the LAA, disinfection of the wastewater is not required.
23. Stormwater that falls on the LAA during the application season will be captured and reapplied. Because the recycled water is disinfected, stormwater that falls on the LAA during the non-application season (November through February) will be allowed to run-off.

- 24. Effluent will be applied to the LAA at plant uptake rates for both nitrogen and water application. Irrigation tailwater will be controlled through such measures as controlling application and grading the area to prevent off-site drainage.
- 25. The RWD contains a water balance that demonstrates hydraulic capacity for the wastewater system. Because inflow and infiltration can significantly affect the amount of wastewater delivered to the system, the water balance included for a monthly average dry weather wastewater flow rate of 182,500 gallons/day, a monthly maximum average flow rate of 206,000 gallons/day an annual total wastewater flow rate of 66.61 million gallons. The water balance requires 117.6 ac•ft and 65 acres of land application area. The water balance does not require any wastewater to be applied from November through February.

Wastewater Collection System

- 26. The City of Loyalton wastewater collection system was constructed in 1956 and 1957. The original sewer main was constructed of vitrified clay pipe with rubber joints and precast concrete manholes. Most of the collection system was videologged in 1989. In 1996 the sewer interceptor main, which contained a number of serious leaks, was replaced with 12-inch diameter PVC pipe. The system generally consists of the following types of pipe:

<u>Pipe Material</u>	<u>Diameter (inches)</u>	<u>Length (linear feet)</u>
Vitrified Clay	6	16,000
Asbestos Cement	6	3,500
Vitrified Clay	8	3,200
Asbestos Cement	8	500
Vitrified Clay	10	1,700
<u>PVC</u>	<u>12</u>	<u>4,500</u>
Total		29,400

- 27. In response to the CDO, the wastewater collection system was investigated to determine the condition of the system and improvements that are needed. The City of Loyalton submitted a December 2005, *Analysis of Infiltration and Inflow* to the Central Valley Regional Water Board. The report identified the following issues:
 - a. No significant inflow (surface water entering the system through broken pipes or illegal connections) was observed.
 - i. An analysis of precipitation and wastewater flow rate was performed. The report determined that the increase in the amount of rain is not directly correlated with increased wastewater flow rate. Surface water inflow is considered a minor factor. However, when vented manholes become covered with surface water, the inflow can be increased substantially. To minimize such occurrences, the City plans to replace vented manholes in areas subject to flooding.

- b. Significant infiltration (groundwater leakage into the collection system) from broken pipe, leaky laterals, and/or illegal sump pump connections was observed. The quantity of infiltration is dependant on groundwater and pipe elevation. The report concludes that very shallow groundwater levels were largely responsible for the high flow rates reported in 1997 and 1999.
 - i. Planned repairs to the collection system are discussed in this Order.
 - ii. Ceasing illegal sump pump discharges is difficult. Without sump pumps, basements in the City would flood. Because there is no storm drain in the City, the only alternative to the wastewater system discharge would be to discharge groundwater on the street. That water would freeze in the winter creating hazards for the citizens.

28. Currently there are 98 manholes in the collection system. Manhole surveys were performed in October 1980 and June 2005 (a particularly wet spring) to survey the condition of the manholes and identify areas of major infiltration. Comparison of four critical manholes surveyed in 1980 and 2005 indicated wastewater flow rates had not increased in three of the four manholes. Manhole MH-18 contained significantly more wastewater flow and is being replaced as part of this project.
29. The sanitary sewer system collects wastewater and consists of sewer pipes, manholes, and/or other conveyance system elements that direct raw sewage to the treatment facility. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the treatment facility. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage/conveyance facilities. Sanitary sewer overflow is also defined in State Water Resources Control Board (State Water Board) Order No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*, which can be found at: http://www.waterboards.ca.gov/resdec/wqorders/2006/wqo/wqo2006_0003.pdf.
30. For this facility, any sanitary sewer overflows would consist of varying mixtures of domestic and commercial wastewater, depending on land uses in the sewage collection system. The chief 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.
31. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, and other pollutants. Sanitary sewer overflows can cause temporary exceedences 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.

32. The Discharger is expected to take all necessary steps to adequately maintain, operate, and prevent discharges from its sanitary sewer collection system. The City shall prepare and implement a *Sewer System Management Plan* (SSMP) consistent with State Water Board Order No. 2006-0003-DWQ.

Site-Specific Conditions

33. California Department of Water Resources reports annual precipitation in Loyalton to be approximately 16.69 inches; the 100 year return total is 30.24 inches. The mean evapotranspiration rate is approximately 39.5 inches per year. All portions of the WWTF are outside the 100-year flood zone, but portions of the collection system are within the 100-year flood zone.
34. Based on the National Resource Conservation Service soil survey, the soils at the LAA consist primarily of the James Canyon Silt Loam. The infiltration rate is estimated at 0.57 to 1.98 in/hr.

Groundwater Considerations

35. The Loyalton community obtains its potable water from groundwater. Water quality was sampled on 19 June 2009. The data are presented below:

<u>Analyte</u>	<u>Units</u>	<u>Result</u>
Calcium	mg/L	26
Magnesium	mg/L	9.9
Hardness	mg/L	100
Total Dissolved Solids	mg/L	190
Fixed Dissolved Solids	mg/L	150
Electrical Conductivity	umhos/cm	270

36. Three groundwater monitoring wells were installed at the WWTF. The installation date of the wells is unknown, however they had been installed by July, 1998. Based on a monitoring well design drawing, the well construction details are estimated below. The well locations are presented on Attachments A and B.

<u>Name</u>	<u>Location</u>	<u>Dia. (in.)</u>	<u>Depth (ft.)</u>	<u>Screen Int (ft. bgs)</u>	<u>Filter Pack</u>	<u>Elev. (Ft. msl)</u>
MW-1	Upgradient	4	25	12-22	10-25	4917.09
MW-2	Downgradient	4	25	12-22	10-25	4913.04
MW-3	Downgradient	4	25	12-22	10-25	4911.08

Dia denotes casing diameter. Screen Int denotes Screen Interval feet below ground surface. Elev. (ft. msl) denotes the elevation of the top of the well casing.

37. In response to the CDO, a June 2008 *Background Groundwater Quality Study* was submitted by the City of Loyalton. The report was prepared to determine if the wastewater discharge has degraded, or is likely to degrade groundwater quality. The report concluded the following:

- a. Quarterly groundwater monitoring has been performed at the wastewater treatment facility since 1 March 2003.
- b. Groundwater exists at a shallow depth, often very close to the land surface. Groundwater flows consistently to the northwest. Well No. MW-1 is considered upgradient.
- c. In general, groundwater quality at the wastewater facility is good. Degradation of groundwater quality is noted in Well MW-2, but the degradation is limited and is unlikely to result in exceedance of a Water Quality Objective (WQO). A summary of average concentrations is presented in the table below.

<u>Well</u>	<u>TDS</u> mg/L	<u>Na</u> mg/L	<u>Ca</u> mg/L	<u>Mg</u> mg/L	<u>K</u> mg/L	<u>Fe</u> mg/L	<u>Mn</u> mg/L	<u>Cl</u> mg/L	<u>SO₄</u> mg/L	<u>NO₃ as N</u> mg/L	<u>TKN</u> mg/L	<u>TCO</u> MPN/100 mL	<u>Fecal Col</u> MPN/100 mL
MW-1	165	11.3	27.3	12.3	2	0.97	0.46	2.0	6.25	0.53	1.6	8.7	1
MW-2	294	28.3	44	21.3	8	3.1	3.0	12	32	0.95	1.6	ND (2.0)	ND (2.0)
MW-3	164	13.3	25	12	2	0.5	0.04	5.25	ND (2.0)	0.56	1.3	ND (2.0)	ND (2.0)

TDS denotes Total Dissolved Solids. Na denotes sodium. Ca denotes calcium. Mg denotes magnesium. K denotes potassium. Fe denotes iron. Mn denotes manganese. Cl denotes chloride. SO₄ denotes sulfate. NO₃ as N denotes nitrate as nitrogen. TKN denotes total Kjeldahl nitrogen. TCO denotes total coliform organisms. Fecal Col denotes fecal coliform organisms. MPN/100mL denotes most probable number per 100 mL.

38. The groundwater quality trends are described below:

- a. None of the monitoring wells contained average nitrate as nitrogen concentrations that exceed the water quality limit (10 mg/L). The average background nitrate concentration in Well MW-1 (0.53 mg/L) is less than the downgradient value in Well MW-2 (0.95 mg/L) and approximately equal to the concentration in Well MW-3 (0.56 mg/L).
- b. None of the monitoring wells contain average Total Dissolved Solids (TDS) concentrations that exceed the TDS water quality screening value of 450 mg/L. The average background TDS concentration in Well MW-1 (165 mg/L) is less than the downgradient value in Well MW-2 (294 mg/L) and approximately equal to the concentration in Well MW-3 (164 mg/L).
- c. The bacteria samples collected indicate low Most Probable Numbers per 100 mL (MPN) values or non-detectable values for samples collected from the wells. Coliform was only reported in samples from Well MW-1, the upgradient well. Due to the easily contaminated nature of bacteria samples, the parameter only being

detected upgradient of the WWTF, and the fine-grained nature of the soil in the area, the source of the coliform is questionable. Because coliform organisms are normally filtered as they migrate through soil media, the presence of TCO in the wells is likely a result of contamination during well installation or sampling. TCO in groundwater does not appear to be problematic; however, continued monitoring is prudent.

39. Based on the average total nitrogen concentration in effluent (15.4 mg/L), and the flow rate (66.61 Mgal/year), the total nitrogen applied to the land application areas (80 acres) is expected to be approximately 106 lbs/acre•year. The Discharger plans to grow alfalfa (or a similar crop) in the LAA. According to the *Western Fertilizer Handbook*, alfalfa is capable of taking up 480 lbs/acre•year of nitrogen. When wastewater is properly applied to land, the alfalfa should take up all the applied nitrogen. Groundwater beneath land application areas is not anticipated to be degraded by nitrogen compounds as a result of the wastewater application.
40. Based on the average TDS concentration in effluent from the weir vault (297 mg/L), and the flow rate (66.61 Mgal/year), the total TDS applied to the 80 acre land application area is expected to be 2,052 lbs/acre•year. Because TDS consists of biodegradable dissolved solids and Fixed Dissolved Solids (FDS), the loading rate of FDS should be less than the TDS loading rate. Groundwater beneath land application areas and wastewater ponds may be degraded by FDS compounds as a result of the wastewater application. However, the degradation is consistent with the Antidegradation Policy as described in the Antidegradation section of this Order.
41. Three groundwater monitoring wells exist at the WWTF, additional wells are required in the new LAA. The groundwater monitoring network is presented in the attached Monitoring and Reporting Program (MRP).

Antidegradation Analysis

42. State Water Resources Control Board (State Board) Resolution No. 68-16 (hereafter Resolution 68-16 or the "Antidegradation Policy") requires the Central Valley Water Board in regulating the discharge of waste to maintain high quality waters of the state (i.e., background water quality) until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the state, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Central Valley Water Board's policies. Resolution 68-16 requires that any discharge that could degrade the waters of the state be regulated to assure use of best practicable treatment or control of the discharge to assure that pollution or nuisance will not occur, and the highest water quality consistent with maximum benefit to the people of the State will be maintained.
43. The Discharger has provided a limited antidegradation analysis. Staff's review of the information finds that effluent disposal has the potential to degrade underlying groundwater with respect to salinity constituents.

44. The mineralization of water through use is on the low end of typical values. Potable water supplied to the City of Loyalton was sampled on 19 June 2009 (this data is presented in Finding No. 35). The TDS concentration was 190 mg/L. The average wastewater effluent TDS concentration for 2008 is approximately 297 mg/L. The incremental addition of dissolved salts through water usage at this facility (about 107 mg/L) falls below the normal range of salinity increase. Inflow and infiltration of high quality water are likely depressing the mineralization value, but even during the dry weather flow months (July, August, and September) of 2008, the average value of TDS in wastewater effluent remained low at 350 mg/L (no value for July was reported). During the dry weather discharge months, when inflow and infiltration is reduced, and therefore dilution is reduced, the mineralization rate remains below typical values.
45. The Central Valley Regional Water Board further finds that some degradation of the groundwater beneath the WWTF is consistent with the maximum benefit to the people of the state provided that:
- a. The degradation is confined within a specified boundary.
 - b. The Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating Best Practicable Treatment and Control (BPTC) measures.
 - c. The degradation is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order.
 - d. The degradation does not result in water quality less than that prescribed in the Basin Plan.
46. Some 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 is consistent with maximum benefit to the people of California. The technology, energy, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impact on water quality will be substantially less. Degradation of groundwater by constituents that can be effectively removed by conventional treatment is prohibited. When allowed, the degree of degradation permitted depends upon many factors (e.g., background water quality, the waste constituent, the beneficial uses and most stringent water quality objective, source control measures, and waste constituent treatability).
47. This Order acknowledges that some degradation may occur as a result of the application of treated wastewater to land, but the Regional Board finds that such degradation at this facility is consistent with the maximum benefit to the people of the state. Economic prosperity of local communities and associated industry is of benefit to the people of California, and therefore sufficient reason exists to accommodate growth and some

groundwater degradation, provided that the terms of the Basin Plan are met. State Board Resolution No. 77-1, *Policy with Respect to Water Recycling in California*, encourages recycling projects that replace or supplement the use of fresh water, and *The Water Recycling Law* (California Water Code (CWC) section 13500-13529.4) declares that utilization of recycled water is of primary interest to the people of the state in meeting future water needs. This Order is consistent with State Water Board policy.

Treatment and Control Practices

48. Resolution No. 68-16 requires the discharge to be regulated to assure use of best practicable treatment or control (BPTC). The Central Valley Water Board may not, in general, specify the manner of compliance; therefore, to implement Resolution No. 68-16, the Central Valley Water Board sets forth effluent and receiving water limitations. To be consistent with Resolution No. 68-16, the Discharger must assure that it is complying with the requirements of this Order and complying with the receiving water limits. The Discharger will provide treatment and control of the discharge that incorporates:
- a. Alarms to prevent system bypass or overflow.
 - b. Collection system improvements to reduce the potential for SSOs and control inflow and infiltration.
 - c. Emergency electrical generation at the WWTF.
 - d. Battery backup power for the SCADA system.
 - e. Synthetically lined wastewater storage ponds.
 - f. Disinfection of treated effluent prior to land application.
 - g. Application of recycled water at plant uptake (for nitrogen and water) rates.
 - h. An Operation and Maintenance (O&M) manual.
 - i. Certified operators to assure proper operation and maintenance.
49. In order to determine compliance with Resolution No. 68-16 it is appropriate to establish a schedule for sampling of groundwater monitoring wells and to formally determine background groundwater concentrations for selected constituents. If groundwater is degraded or there is evidence that the discharge may cause degradation, then the Discharger will be required to evaluate and implement additional BPTC measures for each conveyance, treatment, storage, and disposal component of the system. Completion of these tasks will ensure that BPTC and the highest water quality consistent with the maximum benefit to the people of the state will be achieved.
50. The discharge is consistent with Resolution No. 68-16 and the Basin Plan. Based on the results of the scheduled tasks, the Central Valley Water Board may reopen this Order to reconsider groundwater limitations and other requirements to comply with Resolution No. 68-16.

Basin Plan, Beneficial Uses, and Regulatory Considerations

51. The *Water Quality Control Plan for the Sacramento River and Sierra 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. These requirements implement the Basin Plan.
52. Surface water drainage from the WWTF is to Smithneck Creek and then the Middle Fork Feather River. The beneficial uses of the Middle Fork Feather River from the source to Little Last Chance Creek as stated in the Basin Plan, are agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; spawning, reproduction, and/or early development; and wildlife habitat. The facility lies within the Sierra Valley Hydrologic Unit Area No. 518.35, as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August.
53. The Basin Plan designates the beneficial uses of underlying groundwater as municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
54. The Basin Plan encourages water recycling.
55. The Basin Plan establishes numerical and narrative water quality objectives for surface water and groundwater within the basin. Numerical and narrative water quality objectives are maximum (i.e., least stringent) limits directly applicable to the protection of designated beneficial uses of the water. Controllable water quality factors are not allowed to cause further degradation of water quality in instances where other factors have already resulted in water quality objectives being exceeded. Controllable factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State are subject to the authority of the State or Regional Board, and that may be reasonably controlled. In addition, the water quality objectives do not require improvement over naturally occurring background concentrations.
56. The Basin Plan includes a water quality objective for Chemical Constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 CCR: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) of Section 64449, and 64449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that 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.

57. Constituents of concern that have the potential to degrade groundwater include salinity, nutrients, and coliform organisms, as discussed below:
- a. The salinity of the effluent currently averages approximately 297 mg/L (as characterized by TDS). The water supply in Loyalton is high quality, with a moderate hardness value. As a result, the residents do not use water softeners. As described in Finding No. 44, the salinity increase (from water supply to recycled water) is on the low end of typical salinity increases (150-380 mg/L are typical values). Minimizing degradation to the extent possible is consistent with the Antidegradation Policy and Basin Plan. Although limited degradation of groundwater quality by salinity is anticipated, the degradation will not impair the beneficial uses of groundwater due to increased salinity.
 - b. For nutrients such as nitrate, the potential for degradation depends on the quality of the treated effluent, the crop uptake capacity, and the potential for nitrification and denitrification before the nitrogen reaches the water table. Although groundwater is quite shallow at the wastewater treatment facility, there is not enough site-specific data to determine the threat. The nitrogen crop uptake rate for alfalfa is approximately 480 lbs/ac•year. As described in Finding No. 39, the wastewater application will only provide about 131 lbs/ac•year.
 - c. For coliform organisms, the potential for exceedance of the Basin Plan's numeric water quality objective depends on the disinfection performance and the ability of soil to provide adequate filtration. Groundwater has been monitored for coliform bacteria. As described in Finding No. 38.c, coliform is not normally detected in groundwater samples.
58. The Basin Plan contains narrative water quality objectives for Chemical Constituents, Tastes and Odors, and Toxicity. The Toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. The Chemical Constituents objective requires that groundwater "shall not contain chemical constituents in concentrations that adversely affect beneficial uses." The Tastes and Odors objective requires that groundwater "shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses." Chapter IV, Implementation, of the Basin Plan contains the "Policy for Application of Water Quality Objectives." This Policy specifies, in part, that numerical receiving water limitations will be established in Board orders which will, at a minimum, meet all applicable water quality objectives, that where compliance with narrative objectives is required (i.e., where the objectives are applicable to protect specified beneficial uses), the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives, and that compliance with narrative water quality objectives may be evaluated considering numerical criteria and guidelines developed and/or published by other agencies and organizations.

Water Recycling

59. As noted above, State Water Board Resolution No. 77-1, *Policy with Respect to Water Recycling in California*, encourages recycling projects that replace or supplement the use of fresh water, and *The Water Recycling Law* (CWC sections 13500-13529.4) declares that utilization of recycled water is of primary interest to the people of the State in meeting future water needs.
60. The California Department of Public Health (CDPH) has established statewide water recycling criteria in Title 22, CCR, Section 60301 et. seq. (hereafter Title 22). The Discharger will treat the wastewater to secondary-23 recycled water standards and disinfect the effluent per Title 22 requirements.
61. A 1988 Memorandum of Understanding between CDPH and the State Water Board on the use of recycled water establishes basic principles relative to the two agencies and the California Water Boards. The Memorandum allocates primary areas of responsibility and authority between the agencies and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to use of recycled water.
62. Section 60323(a) of Title 22 states that no person shall produce or supply recycled water for direct reuse from a proposed water recycling plant unless an engineering report is submitted for review by CDPH. Irrigation of fodder crops is considered a beneficial reuse. The Discharger submitted a Title 22 Engineering Report to CDPH on 13 Marcy 2009. CDPH provided comments on the Title 22 Report on 21 July 2009; those comments are addressed in these WDRs. A response to the comments was provided by the Discharger on 23 July 2009.

Other Regulatory Considerations

63. On 2 May 2006, the State Water Board adopted Statewide General Waste Discharge Requirements For Sanitary Sewer Systems General Order No. 2006-0003-DWQ (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.
64. 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.
65. 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.

66. The State Water Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of stormwater associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. Because the design flow rate is less than one million gallons per day, the permit is not required.
67. A mitigated negative declaration was adopted by the City of Loyalton on 21 May 2008. With mitigation, no potentially significant impacts were identified in the Initial Study and Mitigated Negative Declaration. Mitigation measures related to water quality consist of the following:
- a. Avoid/minimize potential water quality impacts from construction material release. Mitigation will consist of preparing and implementing a Spill Prevention and Contingency Plan and Stormwater Pollution Prevention Plan. The Discharger has already obtained a construction stormwater permit. The requirement to evaluate the need to obtain a Water Quality Certification is included in this Order.
 - i. The State Water Board issued Water Quality Order (WQO) No. 2008-0182, *Statewide General Waste Discharge Requirements For Dredged Or Fill Discharges That Have Received State Water Quality Certification*. Work performed under authority of a Water Quality Certification must comply with the WQO No. 2008-0182.
68. The Central Valley Water Board finds that this Order contains requirements that, if complied with, implement the mitigation measures related to wastewater issues and will reasonably protect the beneficial uses of waters of the state and prevent nuisance.
69. Section 13267(b) of the CWC 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 attached Monitoring and Reporting Program No. R5-2009-_____ is necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

70. 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 CWC Section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.
71. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27 CCR Section 20380. While the WWTF is exempt from Title 27, the data analysis methods of Title 27 may be appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.
72. 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, CCR, Section 20380 et seq. The exemption, pursuant to Title 27 CCR Section 20090(a), is based on the following:
- a. The Regional Water Board has prepared these WDRs.
 - b. The discharge is in compliance with the applicable water quality control plan.
 - c. The wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.
 - d. The waste discharge requirements are consistent with water quality objectives.
 - e. The waste consists primarily of domestic sewage and treated effluent. The treatment and storage facilities described herein are associated with a municipal wastewater treatment facility.
 - f. Residual sludge and/or screenings will be disposed of off-site at a sanitary landfill.
73. Pursuant to CWC 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

74. The recommendations of the State Department of Public Health regarding the public health aspects of water recycling have been considered in preparation of this Order.
75. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, as well as the Central Valley Water Board's administrative record, were considered in establishing the following conditions of discharge.

76. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.

77. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Orders No. 5-01-069 and 5-01-051 are rescinded, and that pursuant to Sections 13263 and 13267 of the California Water Code, City of Loyalton and Grandi Ranch, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California 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 sewage from a sanitary sewer system at any point upstream of a wastewater treatment facility is prohibited. Discharge of treated recycled water downstream of the wastewater treatment facility, other than at the designated storage ponds or land application areas, is prohibited.
4. Discharge of waste classified as "hazardous" under Title 23 CCR Chapter 15, Section 2521, or "designated," as defined in Section 13173 of CWC is prohibited.
5. Application of recycled water in a manner or location other than that described herein is prohibited.
6. The use of recycled water for purposes other than irrigation as defined in Title 22 CCR Section 60304(c) and this Order is prohibited except that uses consistent with Title 22 and approved by the Central Valley Water Board Executive Officer, in writing, are acceptable.
7. Allowing milking animals to graze on the LAA is prohibited.
8. Application of recycled water to the land application area between 1 November and 28 February of each year is prohibited.

B. Discharge Specifications

1. The wastewater flow rate may not exceed any of the following limits:

<u>Title</u>	<u>Effective Dates</u>	<u>Units</u>	<u>Flow Limit</u>
Dry Weather Flow Rate	July, August, September	Gallons/day as a monthly average	182,500
Monthly Maximum Flow Rate	All year	Gallons/day as a monthly average	206,000
Annual Total Flow Rate	All year	Gallons/year	66,612,500

2. Only disinfected secondary-23 recycled water as defined in CCR, Title 22 Section 60301.225 may be applied to the LAA. Application of more highly treated water is acceptable.
3. Wastewater treatment and use of recycled water shall not cause pollution or a nuisance as defined by Section 13050 of the CWC.
4. Public contact with wastewater and recycled water shall be precluded or controlled through such means as fences, signs, or acceptable alternatives.
5. 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.
6. Objectionable odors originating at the facility shall not be perceivable beyond the limits of the property owned by the Discharger.
7. As a means of discerning compliance with Discharge Specification B.6, the dissolved oxygen content in the upper one foot of any wastewater treatment or storage pond shall not be less than 1.0 mg/L.
8. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.
9. All treatment and storage facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
10. Wastewater and recycled water ponds shall be managed to prevent breeding of mosquitoes. In particular,
 - 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, or debris shall not accumulate on the water surface.
11. The facility shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow, design seasonal precipitation, inflow, and infiltration. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
 12. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of containment levees 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 containing wastewater or recycled water shall never be less than two feet as measured vertically from the water surface to the lowest point of overflow.
 13. 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.11 and B.12.
 14. All recycled water conveyance and distribution piping and equipment shall comply with California Department of Public Health requirements and the American Water Works Association (AWWA) *Guidelines for Distribution of Non-Potable Water* and *Guidelines for the On-site Retrofit of Facilities Using Disinfected Tertiary Recycled Water*.
 15. A use supervisor shall be appointed by the Discharger. The use supervisor shall be responsible for installation, operation, and maintenance of the recycled water system, prevention of potential hazards, implementing these requirements, and coordination with the cross-connection control program of the water purveyor or the Sierra County Environmental Health Department.

C. Effluent Limitations

1. Effective immediately, effluent discharged from the effluent pump station shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>
BOD ₅	mg/L	40
Total Nitrogen	mg/L	10
FDS	mg/L	350

BOD₅ denotes 5-day Biochemical Oxygen Demand. FDS denotes Fixed Dissolved Solids.

2. Effluent immediately downstream of the disinfection system shall not exceed the following limits for total coliform organisms:

- a. The median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed a most probable number (MPN) of 23 per 100 milliliters utilizing the bacteriological results of the last three samples collected, and
 - 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. No stored wastewater or recycled water shall have a pH less than 6.5 or greater than 10.0.

D. General Solids 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/or land recycling.
2. Sludge and solid waste shall be removed from screens, sumps, and ponds as needed to ensure optimal plant operation.
3. Treatment and storage of sludge shall be confined to the treatment facility property, and shall be conducted in a manner that precludes infiltration of waste constituents into soils in a mass or at concentrations that will violate the Groundwater Limitations of this Order.
4. Any storage of residual sludge, solid waste, and biosolids at the facility shall be temporary, and the waste shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or at concentrations 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 Title 27 CCR Division 2. Removal for further treatment, disposal, or reuse at disposal sites operated in accordance with valid waste discharge requirements issued by a California Water Board will satisfy this specification.
6. Use and disposal of biosolids shall comply with the self-implementing Federal regulations of 40 CFR 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 40 CFR 503, the Central Valley Water Board may also initiate enforcement where appropriate.

E. Water Recycling Specifications

1. Application of recycled water shall be confined to the designated application area as defined in this Order.
2. Recycled water shall be used in compliance with Title 22, Division 4, Chapter 3, Article 3, *Uses of Recycled Water*.
3. Public contact with recycled water shall be controlled through use of fences, signs, and/or other appropriate means. All use areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches by 8 inches and include the following wording, "Recycled Water – Do Not Drink." The size and content of these signs shall be as described in Section 60310(g) of Title 22.
4. Recycled water controllers, valves, and similar appurtenances shall be affixed with recycled water warning signs, and shall be equipped with removable handles or locking mechanisms to prevent public access or tampering. Quick couplers, if used, shall be of a type, or secured in a manner, that permits operation only by authorized personnel. Hose bibs shall not be used.
5. Application of recycled water shall comply with the following setback requirements:

<u>Setback Definition</u>	<u>Minimum Setback (feet)</u>
Edge of land application area to domestic well	100
Wastewater/Recycled water storage pond to domestic well	100
Spray irrigation to residence or exposure similar to park, playground, or school yard.	100
Impoundment of undisinfected secondary wastewater to domestic well	150
Land Application Area to Surface Water ¹	50

¹. Excluding ditches used exclusively for tailwater return from the land application area.

6. Any use of recycled water shall comply with the following:
 - a. Any irrigation runoff shall be confined to the recycled water use area, unless the runoff does not pose a public health threat and is authorized by the regulatory agency.
 - b. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.
 - c. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.

7. Any connection between the recycled water conveyance system and any potable water conveyance system, groundwater supply well, or surface water supply source for the purpose of supplementing recycled water shall be equipped with a CDPH-approved backflow prevention device.
8. Application rates for recycled water shall not exceed nitrogen and water uptake rates considering the plant, soil, climate, and irrigation management system in accordance with the water balance submitted with the RWD.
9. Irrigation runoff (e.g., tailwater) shall be completely contained within the designated land application area and shall not enter any surface water drainage course or stormwater drainage system.
10. Sprinkler heads shall be of the type approved for recycled water and shall create a minimum amount of mist.
11. Irrigation of land application areas with recycled water shall not be performed within 24 hours of a forecasted storm, during a storm, or within 24 hours after any precipitation event, nor when the ground is saturated.
12. Wastewater shall not be applied to the LAA until the disinfection system is operable and all applied wastewater complies with Effluent Limitation C.2.
13. Land application areas shall be managed to prevent breeding of mosquitoes. In particular:
 - a. There shall be no standing water 48 hours after application of recycled water;
 - b. Tailwater ditches must be maintained essentially free of emergent, marginal, or floating vegetation, and;
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.

F. Groundwater Limitations

1. Release of waste constituents from any portion of the WWTF and land application areas shall not cause groundwater to:
 - a. Contain any of the following constituents in concentrations greater than listed or greater than natural background quality, whichever is greater. Note that background conditions have not yet been established for the land application areas.

<u>Constituent</u>	<u>Units</u>	<u>Limitation</u>
Chloride	mg/L	106
Total Coliform Organisms	MPN/100 mL	<2.2
Fixed Dissolved Solids	mg/L	450 ¹

<u>Constituent</u>	<u>Units</u>	<u>Limitation</u>
Nitrate (as N)	mg/L	10
Bromoform	µg/L	4
Bromodichloromethane	µg/L	0.27
Chloroform	µg/L	1.1
Dibromochloromethane	µg/L	0.37

¹ A cumulative impact limit that accounts for dissolved constituents.

- b. Exhibit a pH of less than 6.5 or greater than 8.4 pH units.
- c. Impart taste, odor, toxicity, or color that creates nuisance or impairs any beneficial use.

G. Provisions

1. All of the following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared as described in Provision G.3.
 - a. The Discharger shall determine if the following permits are required based on the construction activities:
 - i. If the project will involve the disturbance or discharge of dredged or fill material into surface waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be required from the U.S. Army Corps of Engineers. If a Section 404 permit is required by the Corps, a Water Quality Certification must be obtained from the Regional Board as required under Section 401 of the Clean Water Act. A Water Quality Certification must be obtained prior to initiation of project activities. The applicant is also advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements
 - ii. If groundwater dewatering is required, evaluate the following permitting alternatives:
 - I. If dewatering of groundwater is required, and the groundwater will be discharged to land, the proponent may apply for coverage under Resolution No. R5-2008-0182, *Waiver of Reports of Waste Discharge and Waste Discharge Requirements for Specific Types of Discharge*.
 - II. If discharging groundwater to surface water, the proponent may be required to file a dewatering permit covered under WDRs Order No. R5-2008-0081 (NPDES CAG995001) *General Order for Dewatering and Other Low Threat Discharges to Surface Waters*.

- b. By **1 May 2010**, the Discharger shall submit a *Groundwater Monitoring Workplan and Well Construction Evaluation* prepared in accordance with, and including the items listed in, the first section of Attachment D: “*Requirements for Monitoring Well Installation Workplans and Monitoring Well Installation Reports.*” The workplan shall describe installation of groundwater monitoring wells at the LAA. The wells shall be designed to ensure that background water quality is adequately characterized and any potential water quality impacts from the discharges are detected. The system shall be designed to yield samples representative of the uppermost portion of the first aquifer underlying the site.
- c. By **1 May 2010**, the Discharger shall submit an updated *Operation and Maintenance Plan* (O&M Plan) for the WWTF. (An O&M Plan was submitted in response to CDO No. R5-2005-0089 but the WWTF configuration is significantly changing.) A copy of the O&M Plan shall be kept at the facility for reference by operating personnel. Key personnel shall be familiar with its contents. The O&M Plan shall provide the following:
 - i. Operation and Control of Wastewater Treatment - A description of the wastewater treatment equipment; operational controls; treatment requirements/effluent limitations; flow diagrams including valve/gate locations; operation of the treatment systems during start-up, normal operation, by-pass, shut-down, and draining procedures; potential operational problems including a troubleshooting guide.
 - ii. Sludge Handling - A description of the biosolids handling equipment, operational controls, control tests and observations related to process control, potential operational problems including a troubleshooting guide, and disposal procedures.
 - iii. Operation and Control of Recycled Water Distribution System – A description of the recycled water distribution system, operational controls, flow diagrams including valve/gate locations; potential operational problems including a troubleshooting guide and backflow and cross-connection controls.
 - iv. Personnel - Recommended staffing requirements, staff qualifications, training requirements and schedule, and operator certification requirements.
 - v. Maintenance – Maintenance procedures, equipment record system, scheduling and use of the maintenance record system, inventory system, special tools, warranty provisions and expiration dates, maintenance cost and budgeting system, maintenance schedule of all equipment.
 - vi. Emergency Response – A description of the vulnerability analysis including emergencies such as power outage, severe weather, or flooding. An equipment and telephone list for emergency personnel and equipment vendors. Coordination procedures with fire, police, and health department personnel, and an emergency operating plan.

- vii. Safety – A general discussion of the hazards of collection systems, mechanical equipment, explosion, pathogens, oxygen deficiencies, chemical and electrical hazards, etc.
 - viii. Appendices – Shall include flow diagrams, valve/gate locations, copy of WDRs, miscellaneous form samples, manufacturers' manuals, and a list of reference materials.
- d. By **2 August 2010**, the Discharger shall submit a *Monitoring Well Installation Report* prepared in accordance with, and including the items listed in, the second section of Attachment D. The report shall describe the installation of any wells, describe well development, and explain any deviation from the approved workplan.
- e. By **3 August 2012**, the Discharger shall submit a *Background Groundwater Quality Study Report*. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data and calculation of the concentration in background monitoring wells. Determination of background quality shall be made using the methods described in Title 27 CCR, Section 20415(e)(10), and shall be based on data from at least eight consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare the calculated background concentration with the interim numeric limitations set forth in Groundwater Limitation F.1.a. Where background concentrations are statistically greater than the interim limitations specified in Groundwater Limitation F.1.a, the report shall recommend final groundwater limitations which comply with Resolution 68-16 for the waste constituents listed therein. Subsequent use of a concentration as a final groundwater limitation will be subject to the discretion of the Executive Officer.
2. If groundwater monitoring results show that the discharge of waste is causing groundwater to contain waste constituents in concentrations statistically greater than WQOs or background water quality then, 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 and control for each waste constituent listed in the Groundwater Limitation F.1.a of this Order. 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.
3. 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.

4. The Discharger shall comply with Monitoring and Reporting Program No. R5-2009-_____, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
5. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements," dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
6. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with discharge limits specified in this order.
7. The Discharger shall provide certified wastewater treatment facility operators in accordance with Title 23 CCR, Division 3, Chapter 26.
8. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
9. Upon the reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow, the Discharger shall take any necessary remedial action to (a) control or limit the volume of sewage discharged, (b) terminate the sewage discharge as rapidly as possible, and (c) recover as much as possible of the sewage discharged (including wash down water) for proper disposal. The Discharger shall implement all applicable remedial actions including, but not limited to, the following:
 - a. Interception and rerouting of sewage flows around the sewage line failure.
 - b. Vacuum truck recovery of sanitary sewer overflows and wash down water.
 - c. Use of portable aerators where complete recovery of the sanitary sewer overflows are not practicable and where severe oxygen depletion is expected in surface waters.
 - d. Cleanup of sewage-related debris at the overflow site.
10. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."

11. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal system 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.
12. 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 being reported, then the Discharge 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.
13. In the event of any change in control or ownership of the facility or wastewater disposal 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. 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. Transfer shall be approved or disapproved by the Executive Officer.
14. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
15. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. 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 recession of this Order.
16. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

17. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

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 [REDACTED].

PAMELA C. CREEDON, Executive Officer

TRO 9/10/09