

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2016-0027

WASTE DISCHARGE REQUIREMENTS

FOR
CALIFORNIA DEPARTMENT OF CORRECTIONS AND
CALIFORNIA PRISON INDUSTRY AUTHORITY
CORCORAN STATE PRISON AND
CALIFORNIA SUBSTANCE ABUSE TREATMENT FACILITY
WASTEWATER TREATMENT FACILITY AND DAIRY
KINGS COUNTY

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

1. In September 2004, the State of California Department of Corrections (CDC or Discharger) submitted a technical report *Wastewater Treatment Plant Improvements* to propose improvements (installation of a mechanical bar screens and the paving of eight sludge drying beds, and upgrade of the treatment system pumps) to the existing wastewater treatment facility (WWTF) serving the Corcoran State Prison (Prison) and the California Substance Abuse Treatment Facility (Treatment Facility).
2. The Prison is at 4001 King Avenue south/southeast of the community of Corcoran, as shown on Attachment A, which is attached hereto and made part of this Order by reference. The Treatment Facility is at 900 Quebec Avenue and is south of the Prison. The WWTF is west of both the Prison and the Treatment Facility and secondary treated wastewater from the WWTF is discharged to a land application area comprised of about 331 acres of farmland that are directly south of the Prison and Treatment Facility, as shown on Attachment B, which is attached hereto and made part of this Order by reference.
3. The California Prison Industry Authority (PIA or Discharger) operates a dairy that provides milk for other California Department of Correction facilities. The Dairy is at the northeast corner of the Prison property as shown on Attachment B. Dairy wastewater is stored in ponds, and discharged to the same 331-acre land application area used by the WWTF. In addition, under an agreement between the California Department of Corrections and the City of Corcoran, the WWTF also accepts up to 335 acre-feet annually of secondary treated wastewater from the nearby City of Corcoran.
4. The California Department of Corrections owns and operates the Prison and Treatment Facility that are serviced by the WWTF, and the PIA owns and operates the Dairy and both are responsible for compliance with these Waste Discharge Requirements (WDRs).
5. Both the Prison and the Treatment Facility are primarily in Section 36, T21S, R22E, Mount Diablo Baseline and Meridian (MDB&M), with the western portion of the

Treatment Facility also within the southeastern quarter of Section 35, T21S, R22E. The WWTF is to the west of the Prison in the approximate eastern half of Section 35, T21S, R22E. The Dairy is in the approximate northeastern quarter of Section 36, T21S, R22E. The land application area is in the northern half of Section 1, T22S, R22E.

6. The WWTF was commissioned in 1988 to serve the Prison and contained at the time a headworks, two clarifiers, one oxidation ditch, four unlined sludge drying beds, two effluent storage ponds, and a 268-acre land application area. The WWTF was expanded in 1997, with the construction of the Treatment Facility. The expansion activities included the construction of a second headworks, a third clarifier, and second oxidation ditch, four more unlined sludge drying beds, and increasing the land application area to the current 331 acres. The eight sludge drying beds were paved in 2004.
7. WDRs Order 95-267, adopted by the Central Valley Water Board on 8 December 1995, prescribes requirements for the WWTF and the Dairy. While the WWTF continues to operate within the parameters of Order 95-267, the Order is outdated and is not reflective of the current configuration and/or operations of the WWTF and the discharge of wastewaters to the current land application area. Therefore, Order 95-267 will be rescinded and replaced with this Order.

Existing WWTF and Discharge

8. The WWTF contains two separate headworks with self-cleaning bar screens, two oxidation ditches, three secondary clarifiers, eight paved sludge drying beds, three wastewater storage ponds, and a 331-acre land application area. Solids removed during the screening process are disposed of at an offsite landfill. The WWTF provides undisinfected secondary treatment of the wastewater.
9. WDR order 95-267 initially approved a discharge of up to 1.2 million gallons per day (mgd) from the WWTF, but allowed for an increase to 1.9 mgd following facility expansion. The discharge from the WWTF, the Dairy, and additional effluent received from the City of Corcoran have a combined flow limit of 2.01 mgd.
10. The Discharger measures the flow to the WWTF continuously and the flows since January 2014 through June 2015 are summarized in Table 1. The first value shown is the average with the range of the recorded flows shown in parentheses.

Table 1 - WWTF Flow Data

<u>Date</u>	<u>Monthly Flow</u> (millions of gallons per month [mgm])	<u>Daily Flow</u> (million gallons per day [mgd])
2014	47.5 (42.9 – 55.3)	1.58 (1.43 - 1.78)
2015	41.2 (36.6 – 43.3)	1.35 (1.28 – 1.44)
Average since 2014	44.5	1.47

11. Effluent results since January 2013 through November 2015 (35 sampling events) are summarized in Table 2.

Table 2 - WWTF Effluent Results

<u>Year</u>	<u>Electrical</u> <u>Conductivity</u> <u>umhos/cm¹</u>	<u>Biochemical</u> <u>Oxygen</u> <u>Demand</u> <u>mg/L²</u>	<u>Total</u> <u>Suspended</u> <u>Solids</u> <u>mg/L²</u>	<u>Settleable</u> <u>Solids</u> <u>mg/L²</u>	<u>pH</u> <u>mg/L²</u>	<u>Nitrate</u> <u>mg/L²</u>
2013	604	3.9	6.6	0.1	7.7	8.9
2014	594	39	77	13.8	7.6	0.6
2015	689	142	285	1.4	7.2	0.1
Average	614	47	77	5.8	7.6	2.5
<u>Effluent Limits</u>	500 + source	40/80	40/80	0.2/0.5	6-5 to 9.5	'---

1. umhos/cm = micromhos per centimeter.

2. mg/L = milligrams per liter;

12. Typically, the WWTF meets all of the effluent limits as illustrated by the 2013 results where there are no exceedances observed. However, biochemical oxygen demand (BOD), total suspended solids (TSS), and suspended solids (SS) have been exceeding the applicable limits since mid-2014 due to a failure of a Return Activated Sludge (RAS) pump. The Discharger received a new RAS pump in September 2015 and has difficulties in getting the correct parts installed. With the replacement of the RAS pump, it is anticipated that the BOD, TSS, and SS values will return the previous levels and meet the effluent limits for BOD, TSS, and SS. The electrical conductivity (EC) of the source water ranges from about 300 to 400 micromhos per centimeter (umhos/cm), and the result is the discharge is lower than the current source plus 500 umhos/cm limit.
13. Monitoring and Reporting Program 95-267 requires the analysis of the six constituents in Table 2 as well as recording the flow or discharge from the WWTF. Total nitrogen for loading purposes cannot be calculated using only nitrate as nitrate results. Central Valley Water Board staff requested the effluent be sampled for total Kjeldahl nitrogen (TKN) and nitrate as nitrogen and the Discharge provided the results in August 2015.

Total nitrogen in the effluent was 22 milligrams per liter (mg/L). Using the average flow in 2015 of 1.34 mgd, the nitrogen load was about 205 lbs/ac/yr.

Existing Dairy and Discharge

14. The dairy tracks its discharge to the land application area. In 2014, the Dairy reported that 36.1 million gallons or 98,797 gpd of dairy wastewater was discharged to six individual fields within the land application area, as shown on Attachment C, which is attached hereto and made part of this Order by reference. The six fields identified are identified as C1 through C6 as listed in Table 3. Fields C1 and C4 were double cropped combined with the flow from the WWTF in 2014, the combined flow from the Dairy and the WWTF in 2014 was 1.7 mgd, well within the 2.01 mgd limit.

Table 3 - Dairy Nitrogen Loading Results

<u>Land Application Area</u>	<u>Acres</u>	<u>Crop</u>	<u>Pounds of Nitrogen Applied</u>	<u>Pounds per acre per year (lbs/ac/yr¹)</u>
C1 ²	54	Wheat	5,642	104
C1 ²	55	Corn	9,722	181
C2	55	Alfalfa	5,746	104
C3	52	Alfalfa	4,705	90
C4 ²	55	Wheat	5,746	104
C4 ²	55	Corn	9,953	181
C5	58	Corn	11,308	194
C6	57	Corn	11,113	194

1. lbs/ac/yr = pounds per acre per year.

2. Land Application Area fields C1 and C4 were double cropped in 2014

15. The 2014 Annual Dairy Report indicated loading from the discharge of dairy wastewater and the application of manure to the individual parcels ranged from 90 to 194 pounds per acre per year (lbs/ac/yr). For fields C2 and C4 cropped with alfalfa, the nitrogen utilized by the crop (~480 lbs/ac/yr) is greater than the combined nitrogen load from the WWTF (about 205 lbs/ac/yr) and the Dairy (90 to 104 lbs/ac/yr). However, for parcels C1 and C4 double cropped with wheat and corn, the amount of nitrogen applied (205 lbs/ac/yr from the WWTF, and 285 lbs/ac/yr from the dairy for a total of 490 lbs/ac/yr) exceeds the typical uptake for the crops of corn and wheat combined, which can utilize about 375 lbs/ac/yr. Additionally, the nitrogen load to fields C5 and C6 cropped only in corn (~400 lbs/ac/yr) also exceeds the potential nitrogen uptake of 250 lbs/ac/yr. This Order contains Provision H.15 that requires the Discharger to prepare a Nutrient Management Plan and Land Application Area Specification F.14 that requires nitrogen be applied to the land application areas at agronomic rates. The application of wastewater and fertilizers at reasonable agronomic rates for nitrogen will preclude further degradation/pollution of groundwater for nitrate as nitrogen.

Sanitary System Overflow

16. 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” (SSO) is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the treatment facility. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered SSOs, provided that the waste is fully contained within these temporary storage/conveyance facilities.
17. On 2 May 2006, the State Water Resources Control Board (hereafter State Water Board) adopted a General Sanitary Sewer System Order (State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems) (the “General Order”). The General Order requires that all public agencies that own or operate sanitary sewer systems greater than one mile in length comply with the General Order. The Discharger’s collection system is greater than one mile in length. The Discharger has applied for, and is covered by, the General Order.

Site-Specific Conditions

18. The Discharger receives its water supply from the City of Corcoran groundwater supply wells. Results of sampling from 2013 through 2015 are shown in Table 4. Drinking water limits of maximum contaminant levels (MCL) for nitrate (as nitrate) is a Primary MCL and the value shown is the limit. The MCLs shown for the remaining constituents are Secondary MCLs developed as limits for the taste and odor (aesthetics) of drinking water. The two values listed display the “Consumer Acceptance Contaminant Level Ranges.” The first value listed is the “Recommended” Secondary MCL and the second value listed is the “Upper” Secondary MCL.

Table 4 - Supply Water Results

Date Sampled	Electrical	Total Dissolved				
	Conductivity <u>umhos/cm¹</u>	Solids <u>mg/L²</u>	Nitrate <u>mg/L²</u>	Chloride <u>mg/L²</u>	Sulfate <u>mg/L²</u>	Sodium <u>mg/L²</u>
Feb-13	354	192	21.2	27.5	34.1	62.6
Oct-13	389	230	11.2	31	20	60
Jun-14	362	200	7.3	30	27	67
Sep-15	420	250	2.7	30	27	67
<u>MCLs</u>	900/1600	500/900	45	250/500	250/500	

1. umhos/cm = micromhos per centimeter.
 2. mg/L = milligram per liter.

19. The geography at the Corcoran State Prison and the nearby site vicinity is generally flat with a slight drop to the southwest. The ground elevation at the WWTF and the land application area is about 200 feet above mean sea level.
20. According to the Federal Emergency Management Agency map number 06031C0525C; the southwest corner of the WWTF and the western half of the land application area are within a 100-year flood plain. However, levees have been constructed by the Army Corps of Engineers along Cross Creek and the Tule River to protect the community of Corcoran, and by default the Prison as well, from flooding.
21. According to the Web Soil Survey published by the United States Department of Agriculture Natural Resources Conservation Service, soils in the land application areas consist primarily of the Homeland fine sandy loam (~45 percent), Armona loam (~29 percent) and the Grangeville fine sandy loam (~9 percent). The Homeland fine sandy loam and the Armona loam are described as poorly drained, while the Grangeville fine sandy loam is described as "somewhat poorly drained." The irrigated capability of the Homeland fine sandy loam and the Armona loam is listed as a Class 3 soil with a "w" designation. The Class 3 designation indicates the soil has "severe limitations that reduce the choice of plants or that require special conservation practices or both," and the w designation indicates that "water in or on the soil interferes with plant growth or cultivation." The irrigated capability of the Grangeville fine sandy loam is listed as 2w, with the Class 2 designation indicating the soils have moderate limitations that restrict the choice of plants or require moderate conservation practices. The Homeland fine sandy loam is further described as slightly to strongly saline, the Armona loam as moderately to strongly saline, and the Grangeville fine sandy loam as slightly to moderately saline.
22. The WWTF and land application areas are in an arid climate characterized by hot dry summers and mild winters. The rainy season generally extends from November through April. Occasional rains occur during the spring and fall months, but summer months are dry. Based on publications from the Department of Water Resources and the Western Regional Climate Center, the average annual rainfall for the Hanford area is about 9.5 inches, with a 100-year-return-period wet year rainfall of about 20.65 inches. The mean reference evapotranspiration rate (ET_o) is about 65.6 inches per year for nearby Stratford.
23. As illustrated on both Attachments A and B, the land use in the vicinity of the Prison and the Treatment Facility is primarily agricultural, with the southern edge of the community of Corcoran about 1.5 miles northwest of the Prison and the Treatment Facility. Several confined animal units are present within five miles of the Prison, and the J.G. Boswell Company has a tomato processing facility a quarter of a mile west of the Prison and Treatment Facility.

Groundwater Conditions

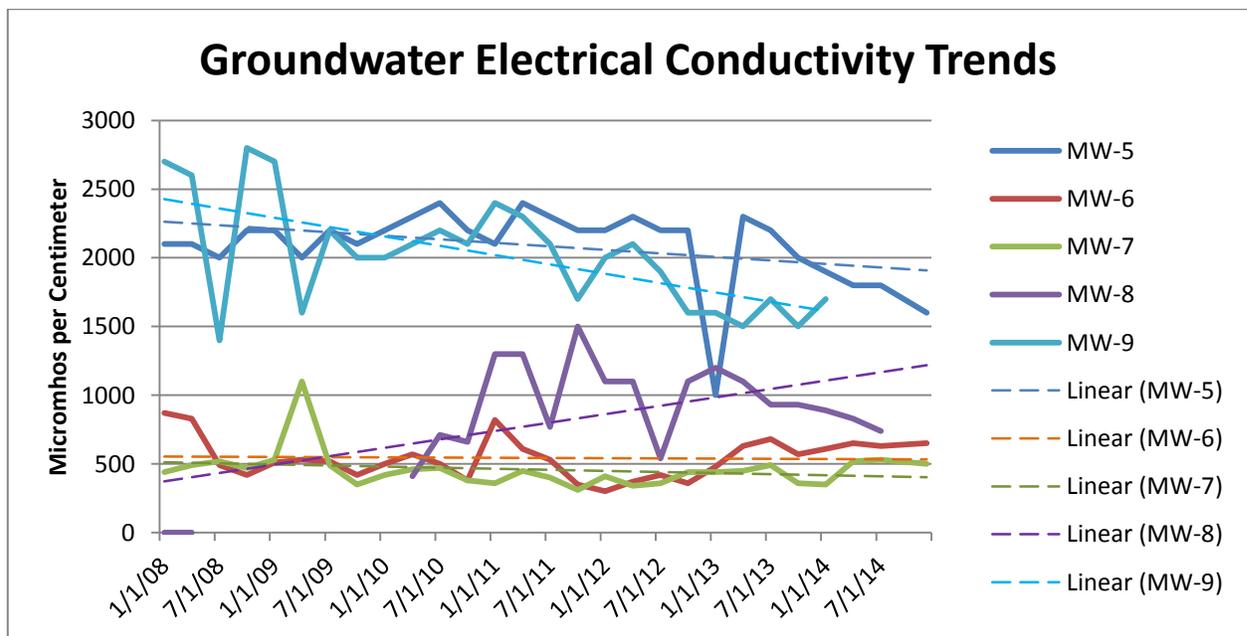
24. Regional groundwater is contained generally in two aquifers, the Lower Confined Aquifer and the Upper Unconfined Aquifer. The two aquifers are separated by a confining layer (Corcoran Clay or E Clay) present beneath the land application area at about 450 to 500 feet bgs and is reported to be 80 to 100 feet thick in this area. Although hydraulic continuity between aquifers is restricted, some agricultural wells within the vicinity are likely screened within the upper and lower aquifers to maximize well production. The potential exists for hydraulic continuity between the two aquifers resulting in lower quality water from the uppermost aquifer to migrate into the higher quality aquifers just above and below the E-clay.
25. The depth to first encountered groundwater in the vicinity of the Prison and the Treatment Facility is shallow, historically ranging from the ground surface (zero) to 20 feet below the ground surface (bgs). The general flow direction of the shallow groundwater is to the west/southwest. To protect crops grown in the area, much of the farmlands have tile drains to keep shallow groundwater from the root zones of the intended crops. Tile drains underlie the land application area at depth of seven to nine feet bgs. The drainage water is pumped to a canal, owned and operated by the J.G. Boswell Company and the Tulare Lake Drainage District.
26. The Discharger has a nine well groundwater monitoring network in place around the Dairy. However, wells MW-1 through MW-4, shallow wells installed to depths of just 15 feet bgs, have been dry since 2007. Five additional wells (MW-5 through MW-9) were installed a depths ranging from 26 to 31 feet bgs in 2007 and first sampled in January 2008. MW-5, MW-6, and MW-9 were installed west and downgradient of the dairy ponds, while MW-7 and MW-8 were installed as upgradient groundwater monitoring wells. The results since 2008 are summarized in Table 5.

Table 5 - On-Site Shallow Groundwater Results

Well	Nitrate as Nitrogen mg/L¹	TKN mg/L¹	Total Nitrogen mg/L¹	EC umhos/cm²	TDS mg/L¹	pH s.u.³
MW-5	9.8 (1 - 36)	1.9 (nd ⁴ - 2.8)	10.2 (9.2 - 11.8)	2132 (1000 - 2400)	1450 (1400 - 1500)	9.1 (9.0 - 9.2)
MW-6	2.9 (nd ⁴ - 28)	0.5 (nd ⁴ - 2.8)	2.3 (0.5 - 8.4)	531 (300 - 820)	342 (190 - 570)	8.2 (7.9 - 8.3)
MW-7	0.6 (nd ⁴ - 2.2)	0 (nd ⁴)	0.5 (0 - 0.9)	451 (310 - 1100)	272 (230 - 310)	8.7 (8.5 - 9.0)
MW-8	2.8 (nd ⁴ - 21)	0.33 (nd ⁴ - 1.3)	2.85 (0 - 3.9)	1079 (410 - 2600)	712 (540 - 910)	9.2 (8.9 - 9.5)
MW-9	11.8 (2.7 - 63)	2.4 (1.8 - 3.4)	23 (7.1 - 60)	1980 (600 - 2800)	1250 (900 - 1900)	9.1 (8.9 - 9.3)

1. mg/L = milligrams per liter.
2. umhos/cm = micromhos per centimeter.
3. s.u. = standard pH units.
4. nd = not detected above the laboratories detection reporting limit.

27. The results indicate EC and TDS are in excess of the Secondary “Upper” maximum contaminant levels (MCLs) in samples from downgradient MW-5 and MW-9, but EC and TDS also exceed the “Recommended” MCL for both constituents in upgradient MW-8. The lowest EC, TDS, and total nitrogen results are observed in downgradient MW-6 as well as in upgradient MW-7, both set along the northern side of the dairy. The wells are adjacent the City of Corcoran WWTF ponds, but the average EC of the City of Corcoran effluent is about 800 umhos/cm, much higher than the EC results reported for MW-6 and MW-7. The two wells appear to demonstrate the variability in groundwater quality observed in the area, which is further demonstrated when one reviews the regional groundwater quality in the area.
28. Groundwater data from 2008 through 2014 shows the EC concentrations have remained relatively stable in all five of the wells as shown on the following graph. With the exception of MW-8 (an upgradient well), the data indicate decreasing EC trends as shown below.



29. Regional groundwater results indicate poor water quality of the shallow or first encountered groundwater. The J.G. Boswell Company operates a tomato processing facility one quarter mile to the west at the intersection of 6th and Paris Avenues and has a 540-acre land application area one quarter mile west and downgradient of the WWTF (Attachment B). The J.G. Boswell discharge is regulated by WDRs R5-2008-0015 and in 2007 J.G. Boswell collected groundwater samples from five soil borings and from the tile drain system underlying the J.G. Boswell land application area. The samples were collected prior to any tomato wastewater being discharged to the 540-acre land application area. The findings of that shallow groundwater investigation are summarized in Table 6.

Table 6 - J.G. Boswell, 2007 Shallow Groundwater Results

<u>Sample No.</u>	<u>pH su¹</u>	<u>Electrical Conductivity umhos/cm²</u>	<u>Total Dissolved Solids mg/L³</u>	<u>Total Nitrogen mg/L³</u>	<u>Sulfate mg/L³</u>	<u>Chloride mg/L³</u>	<u>Sodium mg/L³</u>
No. 1	7.5	1,041	883	10	330	16.9	38
No. 2	8.0	7,780	5,195	23.7	1,909	769	1,341
No. 3	7.5	2,732	2,123	3.1	967	88.2	252
No. 4	7.9	1,840	1,990	6.9	418	242	252
No. 5	7.7	3,754	3,043	18.6	1,599	202	252
Tile Drain	7.9	3,628	2,078	0.5	1,038	319	352

1. s.u. = Standard pH units.
2. umhos/cm = micromhos per centimeter.
3. mg/L = milligrams per liter.

30. The results demonstrate the poor groundwater quality in the region and show a wide range of values for each constituent. Additional regional groundwater quality data can be found on the Water Quality Portal web site, a cooperative service provided by the United States Geological Survey (USGS), the Environmental Protection Agency, and the National Water Quality Monitoring Council. A review of the USGS files indicates 13 wells are present within a five-mile radius of the land application area, five of which are within three miles of the Prison and four of which are shallow groundwater monitoring wells with well depths from about 19 to 22 feet bgs. The results of the USGS wells within three miles of the land application area are shown in Table 7.

Table 7 - USGS Regional Groundwater Data

<u>Well ID</u>	<u>Date</u>	<u>Electrical Conductivity umhos/cm¹</u>	<u>Total Dissolved Solids mg/L²</u>	<u>Sulfate mg/L²</u>	<u>Nitrate as Nitrogen mg/L²</u>
355938119341601 Well Depth = 19.7 feet	1989	3,680	2,190	300	nd ³
360115119341501 Well Depth = 20.6 feet	1989	1,500	950	220	nd ³
360118119362401 Well Depth = 22.8 feet	1989	2,670	1,900	920	nd ³
360442119341701 Well Depth = 21.2 feet	1989	1,340	846	150	7.45
360502119351001 Well Depth = 180 feet	1958	1,110	616	nd ³	0.6

1. umhos/cm = micromhos per centimeter.
2. mg/L = milligrams per liter.
3. nd = not detected by the laboratory.

31. The results show that EC and TDS in shallow groundwater are elevated and similar to but even slightly higher than those observed in wells of similar depth at the Prison Dairy. The 1958 result from USGS well 360502119351001 is from a deeper well (180 feet as compared to around 25 feet), but the results were included to show that the underlying groundwater in 1958 exceeded the Secondary MCLs for EC and TDS. The results of the data from the nearby USGS wells and the shallow groundwater data from the J.G. Boswell site suggest that regional groundwater quality is of poor quality and the results in the Prisons groundwater monitoring wells around the dairy are similar to and lower than those observed in the site vicinity.

Basin Plan, Beneficial Uses, and Regulatory Considerations

32. *The Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2015* (the "Basin Plan") designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference, plans and policies of the State of California Water Resources Control Board. In accordance with Water Code section 13263(a), these waste discharge requirements implement the Basin Plan.
33. Surface drainage is to the south/southwest towards the Tule River, a Valley Floor Water. The WWTF and land application areas lie within the South Valley Floor Hydrologic Unit, specifically the Lake Sump Hydrologic Area (558.30). The Basin Plan designates the following beneficial uses for Valley Floor Waters: agricultural supply, industrial process supply, industrial service supply, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat, rare and endangered species habitat, and groundwater recharge.
34. The WWTF, dairy, and land application areas are in Detailed Analysis Unit 241 within the Tulare Lake hydrologic unit. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.
35. Shallow groundwater quality underlying and in the vicinity of the Prison and the Dairy is highly variable as discussed in the previous groundwater section. While the Tulare Lake Basin Plan designates the beneficial uses of groundwater in the region in part as municipal and domestic supply, the WWTF and Dairy are adjacent and within known areas of shallow perched groundwater with high EC and TDS values. A 2001 Department of Water Resources (DWR) map for the Lemoore/Corcoran area shows EC values for the shallow groundwater of the area. The current land application area is in an area shown with EC values up to 2,000 umhos/cm and areas about a mile west of the Dairy has EC values ranging from 4,000 to 10,000 umhos/cm. The groundwater quality presented on the DWR maps correlates with the results of the shallow groundwater monitoring wells that are present around the Dairy ponds. This

indicates that background groundwater quality is poor and that the groundwater quality observed in the Dairy monitoring wells is similar to if not better than the results observed in nearby regional groundwater monitoring wells.

36. 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.
37. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan establishes several salt management requirements, including:
 - a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum electrical conductivity (EC) in the discharge shall not exceed the EC of the source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources.
 - b. Discharges to areas that may recharge good quality groundwater shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L.
38. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, require waters designated as MUN to meet the State drinking water MCLs specified in Title 22 of the California Code of Regulations. 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.
39. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.
40. 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. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.
41. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an

EC less than 700 umhos/cm. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000 umhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

42. Title 22 is discussed in Findings 23 and 24 of WDRs Order 95-267 and indicates a Title 22 Report was not prepared for the project. Rather Finding 24 of Order 95-267 indicates Central Valley Water Board staff consulted with the Department of Health Services (now Division of Drinking Water), Kings County Health Department, and the Mosquito Abatement District, and their recommendations were “considered” for the use of reclaimed water. This Order contains Provision H.17 that requires the Dischargers to submit a Title 22 Report for the recycling of wastewater to the land application areas or to demonstrate that the current practices comply with the requirements of Title 22.
43. The Basin Plan encourages the land application of wastewater and identifies crop irrigation as a land application option where the opportunity exists to replace an existing use or proposed use of fresh water with recycled water.
44. Many surface waters and local groundwater supplies have been degraded with salt. In some areas, the high salinity is naturally occurring, but in many areas it is due to the acts of man. In 2006, the Central Valley Water Board, the State Water Board, and stakeholders began a joint effort to address salinity and nitrate problems in the region and adopt long-term solutions that will lead to enhanced water quality and economic sustainability. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is a collaborative basin planning effort aimed at developing and implementing a comprehensive salinity and nitrate management program.

Antidegradation Analysis

45. 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 does not result in water quality less than that prescribed in State and regional policies, including violation of one or more water quality objectives,
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses,
 - c. The Discharger employs best practicable treatment or control (BPTC) to minimize degradation, and
 - d. The degradation is consistent with the maximum benefit to the people of the State.

46. The WWTF was upgraded in 1997 and 2004 to improve effluent quality and treatment capacity, enlarge the land application area, and improve the sludge drying beds. Source water is from City of Corcoran groundwater wells that are installed beneath the Corcoran Clay and is of good water quality.
47. The Discharger has been monitoring groundwater quality around the dairy ponds at the site since 1994. While the groundwater EC and TDS results from onsite groundwater wells MW-5, MW-8, and MW-9 routinely exceed Secondary MCLs, the EC and TDS values of first encountered groundwater in the region (Findings 29 through 31) are greater than the EC and TDS of the discharge, and the regional groundwater results are similar to or higher than the groundwater results observed around the Dairy.
48. This Order establishes effluent and groundwater limitations for the WWTF that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan.
49. For organics, nutrients, and salts, current groundwater monitoring data from the wells around the Dairy indicate that groundwater quality is similar to or lower than that of first encountered shallow groundwater of the region. The Discharge of wastewater has not caused exceedances of water quality objectives and data back to 1958 indicates poor water quality with respect to organics and salts existed at that time.

For nitrate as nitrogen, current groundwater monitoring data indicates that the operation of the dairy ponds may have contributed to exceedances of the Primary MCL of 10 mg/L in MW-9. This Order contains Provision H.15, that requires the Discharge to submit a Nutrient Management Plan to manage the nitrogen load to the land application areas and Land Application Specification F.14 that requires nitrogen loading from both the WWTF and the Dairy to the land application areas to be at reasonable agronomic rates.

50. The Discharger provides BPTC of the discharge that incorporates:
 - a. Screening to remove excess solids from the WWTF waste stream.
 - b. Hauling of screened solids offsite for disposal at an approved landfill.
 - c. Two wastewater retention ponds to collect sludge.
 - d. Sludge removal and drying in paved sludge drying beds equipped with underdrains to collect leachate.
 - e. Three secondary clarifiers.
 - f. Two oxidation ditches.
 - g. A 331-acre land application area broken down into six fields. Crops grown and rotated in the individual fields to maximize nutrient uptake.

- h. Organic loading at rates unlikely to cause unacceptable groundwater degradation.
- i. Implementation of a Waste Management Plan for the dairy production area.
- j. Implementation of a Nutrient Management Plan for the land application areas;
- k. Visual inspections of all dairy waste storage areas during and after each significant rainfall event.
- l. Groundwater monitoring well and tile drain monitoring to monitor the potential impact of the discharge on groundwater.

Other Regulatory Considerations

- 51. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
- 52. 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, defined as: "Any discharger not included [as Category A] that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units."
- 53. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges from the Prison WWTF regulated by this Order are exempt from Title 27 pursuant to provisions that exempt wastewater. Title 27, section 20090 states in part:

(b) Wastewater - Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

- (1) The applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;

- (2) The discharge is in compliance with the applicable water quality control plan;
and
- (3) The wastewater does not need to be managed according to Chapter 11,
Division 4.5, Title 22 of this code as a hazardous waste.

- 54. The discharge from the Prison WWTF authorized herein is exempt from the requirements of Title 27 in accordance with Title 27, section 20090(b) because:
 - a. The Central Valley Water Board is issuing WDRs.
 - b. The discharge is in compliance with the Basin Plan, and;
 - c. The treated effluent discharged to the ponds and land application areas does not need to be managed as hazardous waste.
- 55. The State Water Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The wastewater treatment facility has a design capacity of more than 1.0 MGD, but all storm water from the WWTF and Dairy is collected and disposed of in an on-site storm water basin. The Discharger is therefore not required to obtain coverage under NPDES General Permit CAS000001.
- 56. Water Code section 13267(b) states:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
- 57. The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2016-0027 are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.
- 58. 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 74-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section

13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.

59. The action to adopt waste discharge requirements for the existing WWTF and dairy is exempt from the provisions of the California Environmental Quality (CEQA), in accordance with the California Code of Regulations, title 14, section 15301.
60. The Discharger certified a final environmental impact report (EIR) on 12 August 1994 in accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The EIR described the proposed expansion of the WWTF and the relocation of the land application area due to the construction of the Treatment Facility.
61. On 3 February 2009, the State Water Board adopted Resolution 2009-0011, *Adoption of a Policy for Water Quality Control for Recycled Water* (Recycled Water Policy). The Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplies and reduce greenhouse gases.
62. On 23 April 2009, the Central Valley Water Board adopted Resolution R5-2009-0028, *In Support of Regionalization, Reclamation, Recycling and Conservation for Wastewater Treatment Plant*. Resolution R5-2009-0028 encourages water recycling, water conservation, and regionalization of wastewater treatment facilities. It requires the municipal wastewater treatment agencies to document:
 - i. Efforts to promote new or expanded wastewater recycling opportunities and programs;
 - ii. Water conservation measures; and
 - iii. Regional wastewater management opportunities and solutions (e.g., regionalization).

The distribution of undisinfected secondary recycled water by the Discharger is consistent with the intent of State Board Resolution 2009-0011 and Central Valley Water Board Resolution R5-2009-0028.

63. 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.
64. 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.

65. 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

66. 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.
67. 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.
68. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that WDRs Order 95-267 is rescinded, and pursuant to Water Code sections 13263 and 13267, the California Department of Corrections, who operates the Prison and the Treatment Facility, and the Prison Industry Authority (Dischargers), who operates the Dairy, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted hereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*.
3. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2521(a), is prohibited.
4. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.
5. Discharge of toxic substances into the wastewater treatment system or land application areas such that biological treatment mechanisms are disrupted is prohibited.

6. All animals shall be prohibited from entering any surface water within the animal confinement area. (Title 27, § 22561.)
7. The disposal of dead animals in any liquid manure or wastewater retention ponds is prohibited. The disposal of dead animals at a dairy facility is prohibited except when federal, state or local officials declare a State of Emergency, and where all other options for disposal have been pursued and failed, and the onsite disposal complies with all state and local policies for disposal of dead animals.¹
8. The use of manure to construct containment structures or to repair, replace, improve, or raise existing containment structures is prohibited.
9. Under this General Order, the expansion of the existing milk cow dairy beyond the level as defined under the term “Expansion” is prohibited. “Expansion” is defined as, but not limited to, any increase in the existing herd size (i.e., by more than 15 percent of the maximum number of mature dairy cows) or an increase in the storage capacity of the retention ponds or acquisition of more acreage for reuse of nutrients from manure or process wastewater in order to accommodate an expansion of the existing herd size. “Expansion” does not include installation or modification of facilities or equipment to achieve compliance with the requirements of this Order so long as the modification or installation is sized to accommodate only the existing herd size.
10. The direct discharge of wastewater into groundwater via backflow through water supply or irrigation supply wells is prohibited.

B. Effluent Limitations

1. **Effectively immediately (Compliance shall be determined at EFF-001² and EFF-002²)**, effluent flows from the WWTF and the Prison Dairy shall not exceed the following limits:

Flow Measurement	Flow Limit
Average Flow from WWTF ¹	1.9 mgd
Flow from Dairy	0.11 mgd
Average Monthly Flow combined ²	2.01 mgd
Daily Maximum Flow combined	2.7 mgd

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

² As determined by the total flow during the calendar month divided by the number of days in that month.

1 In an emergency, guidance is provided by the Conditional Waiver of Waste Discharge Requirements for Disaster Related Wastes during a State of Emergency within the Central Valley Order 2013-0026.

2 Monitoring location EFF-001 and EFF-002 are described in Monitoring and Reporting Program R5-2016-0027.

2. The effluent from the WWTF shall not exceed the following:

<u>Constituent</u>	<u>Units</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
BOD	Milligrams per liter	40	80
TSS	Milligrams per liter	40	80
Settleable Solids	Milliliter per liter	0.2	0.5

3. The arithmetic mean of BOD and TSS in effluent samples (EFF-001) collected over a monthly period from the WWTF shall not exceed 20 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (80 percent removal).
4. As determined by collecting samples from monitoring location EFF-001; the 12-month rolling average EC of the discharge shall not exceed the 12-month rolling average of the EC of the source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a flow weighted average of all sources.

C. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.
2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
3. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
5. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
6. Public contact with wastewater shall be prevented through such means as fences, signs, or acceptable alternatives.
7. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that

less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.

8. All wastewater treatment, storage, and disposal ponds (for both the WWTF and the Dairy) 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.
9. In the Tulare Lake Basin, existing milk cow dairies in operation on or before 25 July 1975 shall be protected from inundation or washout from overflow from any stream channel during 20-year peak stream flows and existing milk cow dairies constructed after 25 July 1975 shall be protected from 100-year peak stream flows. Existing milk cow dairies that were expanded after 8 December 1984 shall be protected from 100-year peak stream flows.
10. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications C.7 and C.8.
11. All precipitation and surface drainage from outside of the existing milk cow dairy (i.e., "run on") shall be diverted away from any manured areas unless such drainage is fully contained. (Title 27, § 22562(b).)
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. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.

13. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.
14. Ponds designated to contain the 25-year, 24-hour storm event runoff must have a depth marker that clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation from a 25-year, 24-hour storm event.
15. Objectionable odors shall not be perceivable beyond the limits of the WWTF at an intensity that creates or threatens to create nuisance conditions.
16. As a means of discerning compliance with Discharge Specification C.12, the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or storage pond at the WWTF shall not be less than 1.0 mg/L for three consecutive sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Regional Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.
17. The effluent storage ponds at the WWTF shall not have a pH of less than 6.5 or greater than 9.5.
18. The Discharger shall monitor sludge accumulation in the wastewater treatment/storage ponds at least every five years beginning in 2016, and shall periodically remove sludge as necessary to maintain adequate storage capacity. Specifically, if the estimated volume of sludge in the reservoir exceeds five percent of the permitted reservoir capacity, the Discharger shall complete sludge cleanout within 12 months after the date of the estimate.

D. Groundwater Limitations

Release of waste constituents from any treatment, reclamation or storage component associated with the discharge shall not cause or contribute to groundwater:

1. Containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:
 - (i) Nitrate (as N) of 10 mg/L.
 - (ii) For constituents identified in Title 22, the MCLs quantified therein.
2. Containing Total Coliform Organisms over any 7-day period equaling or exceeding 2.2 MPN/100 milliliters (mL).

E. Sludge and Solids Disposal Specifications

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

1. Sludge and solid waste shall be removed from screens, sumps, ponds, and clarifiers as needed to ensure compliance with this Order.
2. Any handling and storage of residual sludge, solid waste, and biosolids at the WWTF shall be temporary (i.e., no longer than two years) and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.
3. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for further treatment, disposal, or reuse at disposal sites (i.e., landfills, WWTFs, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy this specification.
4. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water board or the State Water Board except in cases where a local (e.g., county) program has been authorized by a regional water board. In most cases, this will mean the General Biosolids Order (State Water Resources Control Board Water Quality Order 2004-12-DWQ, "General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities"). For a biosolids use project to be covered by Order 2004-12-DWQ, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.
5. Use and disposal of biosolids shall comply with the self-implementing federal regulations of 40 Code of Federal Regulations part 503, which are subject to enforcement by the U.S. EPA, not the Central Valley Water Board. If during the life of this Order, the State accepts primacy for implementation of part 503, the Central Valley Water Board may also initiate enforcement where appropriate.
6. Any proposed change in sludge use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

F. Land Application Area Specifications

The following specifications apply to use areas under the ownership or control of the Discharger:

1. Recycled water shall be managed in conformance with the regulations contained in Title 22, Division 4, Chapter 3, CCR.
2. All reclamation equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities. All reclamation distribution system piping shall be purple or adequately wrapped with purple tape.
3. Recycled water controllers, valves, and similar appurtenances shall be affixed with recycled water warning signs, and shall be equipped with removable handles, locking mechanisms, or some other means to prevent public access or tampering. The contents of the signs shall conform to Title 22, CCR, Section 60310. Quick couplers and sprinkler heads, if used, shall be of a type, or secured in a manner, that permits operation only by authorized personnel. Hose bibs that the public could use shall be eliminated.
4. Land application areas that are accessible to the public shall be posted with signs that are visible to the public and no less than four inches high by eight inches wide. Signs shall be placed at all areas of public access and around the perimeter of all land application areas and at above-ground portions of recycled water conveyances to alert the public of the use of recycled water. All signs shall display an international symbol similar to that shown in Attachment D, which is attached hereto and made a part of this Order by reference, and forms part of this Order, and shall include the following wording.

“RECYCLED WATER – DO NOT DRINK”

“AGUA DE DESPERDICIO RECLAMADA – POR FAVOR NO TOME”

Alternative language will be considered by the Executive Officer if approved by Department of Drinking Water.

5. Title 22 § 60304 (d), in part, allows for the use of undisinfected secondary treated wastewater for the surface irrigation of:
 - fodder and fiber crops and pasture for animals not producing milk for human consumption; and
 - seed crops not eaten by humans.

Crops grown in the land application area are fodder and fiber crops (alfalfa, corn, Sudan grass, etc.) used only for the feeding of cattle. The dairy cattle are not allowed to graze on the land application area.

6. The Discharger shall maintain a setback distance of 150 feet from the edge of the land application area to any domestic supply well.

7. Tailwater runoff and spray of wastewater shall not be discharged outside of the land application areas.
8. Land application of wastewater shall be managed to minimize erosion.
9. Recycled water shall not be allowed to escape from the authorized land application areas by airborne spray or by surface flow except in minor amounts such as that associated with good irrigation practices.
10. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.
11. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.
12. Workers shall be educated regarding proper hygienic procedures to ensure personal and public safety.
13. Potable water supply piping and recycled water piping shall not have any cross-connections. Supplementing recycled water with potable water shall not be allowed except through an air-gap separation or, if approved by the DPH, a reduced pressure principle backflow device.
14. Application of recycled water and dairy wastewater to the land application area shall not exceed the nitrogen or hydraulic loading reasonably necessary to satisfy the nitrogen or water uptake needs of the Use Areas considering the plant, soil, climate, and irrigation management system (i.e., generally accepted agronomic rates).
15. Areas irrigated with recycled water shall be managed to prevent breeding of mosquitoes. More specifically:
 - a. All applied irrigation water must infiltrate completely within 48 hours.
 - b. Ditches receiving irrigation runoff not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.
 - c. Low-pressure and un-pressurized pipelines and ditches, which are accessible to mosquitoes, shall not be used to store recycled water.
16. Process wastewater shall not be applied to land application areas during periods when the soil is at or above field moisture capacity unless consistent with a certified Nutrient Management Plan.
17. Land application areas shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.

18. No physical connection shall exist between recycled wastewater piping (from the WWTF or the Dairy) and any potable water supply system (including domestic wells), or between recycled water piping and any irrigation well that does not have an approved air gap or reduced pressure principle device.
19. There shall be at least a ten-foot horizontal and a one-foot vertical separation between all pipelines transporting recycled water and those transporting domestic supply, and the domestic supply pipeline shall be located above the recycled water pipeline.
20. A public water supply shall not be used as backup or supplemental source of water for a recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of California Code of Regulations, title 17, sections 7602(a) and 7603(a).
21. Any backflow prevention device installed to protect a public water system shall be inspected and maintained in accordance Title 17, section 7605.
22. Land application of wastes for nutrient recycling from existing milk cow dairies shall not cause the underlying groundwater to contain any waste constituent, degradation product, or any constituent of soil mobilized by the interactions between applied wastes and soil or soil biota, to exceed the groundwater limitations set forth in this Order.

G. Dairy Production Area Specifications

The Production area includes, but is not limited to, barns, milk houses, corrals, milk parlors, manure and feed storage areas, process water conveyances and any other area of the dairy facility that is not the land application area or the ponds.

1. All dirt or unpaved corrals shall be graded to promote drainage. Cow washing areas shall be paved (concrete or equivalent) and sloped to a drain. Water troughs, permanent feed racks, and mangers shall have paved access, and water troughs shall have a drain to carry water away from the corrals.
(Cal Code Regs., title 3, § 646.1.)
2. All milk rooms and milk barns shall be floored with concrete or other low permeability suitable material and be properly drained.
(Cal Code Regs , title 3, §§ 648(c) & 649(a).) All drainage that comes in contact with waste shall be directed to the wastewater retention ponds.
3. All drainage that has contacted feed is a waste and shall be directed to the wastewater retention ponds.

4. All roofs, buildings, and non-manured areas located in the production area of the existing milk cow dairy shall be constructed or otherwise designed so that clean rainwater is diverted away from manured areas and waste containment facilities, unless such drainage is fully contained in the wastewater retention ponds. (Title 27, § 22562(b).)
5. Roof drainage from barns, milk houses, or shelters shall not drain into the corrals unless the corrals are properly graded and drained. (Cal Code Regs., title 3, § 661.)
6. The animal confinement area (including corrals), and manure and feed storage areas shall be designed and maintained to convey all water that has contacted animal wastes or feed to the wastewater retention ponds and to minimize standing water as of 72 hours after the last rainfall and the infiltration of water into the underlying soils.
7. For Dischargers conducting individual groundwater monitoring, if the monitoring data indicate that the Dischargers Production Area may have discharges that violate the Groundwater Limitations of this Order or that such discharges may cause degradation to high quality waters, the Dischargers are required to implement management practices/activities (BPTC for high quality waters or best efforts for waters that are not high quality) that will bring the facility into compliance with Groundwater Limitations on a time schedule that is as short as practicable.

H. Provisions

1. The Discharger shall comply with MRP R5-2016-0027, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.
2. The Discharger (WWTF) shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions), which are attached hereto and made part of this Order. Additionally, The Discharger (Dairy) shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements General Order R5-2013- 0122 for Existing Milk Cow Dairies (Standard Provisions)* dated 3 May 2007, which is attached to and made part of this Order.
3. The Discharger shall comply with all applicable provisions of the California Water Code, Title 27, and the applicable Water Quality Control Plans.
4. The Discharger must at all times properly operate and maintain its WWTF and dairy systems of treatment and control (and related appurtenances) that are installed or used to achieve compliance with the conditions of this Order. Proper

operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This Provision requires the operation of back-up or auxiliary facilities or similar systems that are installed only when the operation is necessary to achieve compliance with the conditions of the Order.

5. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.
6. All technical reports and work plans required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of a person registered to practice in California pursuant to California Business and Professions Code Sections 6735, 7835, and 7835.1. As required by these laws, completed technical reports and work plans must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work. All reports required herein are required pursuant to Water Code section 13267.
7. 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.
8. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
9. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The

statement shall comply with the signatory paragraph of Standard Provision B. 3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

10. The Discharger shall provide certified wastewater treatment plant operators in accordance with Title 23, division 3, chapter 26.
11. The Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
12. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
13. The Discharger shall 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.
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. **By 21 October 2016**, the Dischargers shall submit a Nutrient Management Plan for the land application areas that receive effluent from the WWTF and dairy for Executive Officer approval. At a minimum the Plan must include procedures for monitoring the land application areas including daily records of wastewater applications and acreages, an action plan to deal with objectionable odors and/or nuisance conditions, a discussion on blending of wastewater and supplemental irrigation water, supporting data and calculations for monthly and annual water and nutrient balances, and management practices that will ensure wastewater, irrigation water, commercial fertilizers and soil amendments are applied at agronomic rates.

16. **By 21 October 2016**, the Dischargers shall submit a Salinity Management Plan for the land application areas that receive effluent from the WWTF and dairy, with salinity source reduction goals and an implementation time schedule for Executive Officer approval. The control plan shall identify any additional methods that could be used to further reduce the salinity of the discharge to the maximum extent feasible, include an estimate on load reductions that may be attained through the methods identified, and provide a description of the tasks, cost, and time required to investigate and implement various elements in the salinity control plan. The Discharger shall implement the plan in accordance with the approved schedule.
17. A Title 22 Report for the recycling of wastewater to the land application areas has not been prepared, but the recycling of the effluent from the WWTF and Dairy complies with the typical guidelines required of Title 22 reports. **By 22 May 2017**, the Dischargers shall prepare a Title 22 Report for the recycling of treated domestic wastewater to the land application areas, or alternatively, the Dischargers shall demonstrate that its current practices of recycling wastewater to the land application area comply with Title 22 Requirements. The Title 22 Report or the demonstration shall be submitted to the Department of Drinking Water for approval by the Department of Drinking Water and concurrence from the Central Valley Water Board Executive Officer.
18. **By 22 May 2017**, The Discharger shall submit a Waste Management Plan for the production area of the dairy facility, prepared in accordance with Attachment B of the Dairy General Permit R5-2013-0122. The Waste Management Plan shall provide an evaluation of the existing milk cow dairy's design, construction, operation, and maintenance for flood protection and waste containment and whether the facility complies with Discharge Prohibition A.10, Discharge Specifications C.7 through C.11, and Production Area Specifications G.1, G.4, and G.5. If the design, construction, operation, and/or maintenance of the dairy facility do not comply with these specifications and prohibition, the Waste Management Plan must propose modifications and a schedule for modifications that will bring the dairy facility into compliance. Certification that the modifications have been implemented shall be submitted in accordance with the Schedule of Tasks L.1 of the Dairy General Permit R5-2013-0122.
19. The Discharger shall continue to maintain coverage under, and comply with Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ and the Revised General WDRs Monitoring and Reporting Program Order 2006-0002-EXEC, and any subsequent revisions thereto as adopted by the State Water Board. Water Quality Order 2006-0003 and Order 2008-0002-EXEC requires 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.

20. If the Central Valley Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of an objective for groundwater, this Order may be reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for the problem constituents.
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 shall be familiar with its contents.
22. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order 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.

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

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

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on 21 April 2016.

Original signed by

PAMELA C. CREEDON, Executive Officer

WASTE DISCHARGE REQUIREMENTS ORDER R5-2016-0027
CALIFORNIA DEPARTMENT OF CORRECTIONS AND
CALIFORNIA PRISON INDUSTRY AUTHORITY
CORCORAN STATE PRISON AND CALIFORNIA SUBSTANCE ABUSE TREATMENT FACILITY
WASTEWATER TREATMENT FACILITY AND DAIRY
KINGS COUNTY

-31-

Order Attachments:

- A Site Vicinity Map
- B Facility Map
- C Groundwater Monitoring Locations
- D Wastewater Signage

Monitoring and Reporting Program R5-2016-0027
Information Sheet
Standard Provisions (1 March 1991)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2016-0027
FOR
CALIFORNIA DEPARTMENT OF CORRECTIONS AND
CALIFORNIA PRISON INDUSTRY AUTHORITY
CORCORAN STATE PRISON AND
CALIFORNIA SUBSTANCE ABUSE TREATMENT FACILITY
WASTEWATER TREATMENT FACILITY AND DAIRY
KINGS COUNTY

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

The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with **Standard Provisions and Reporting Requirements for Waste Discharge Requirements**, dated 1 March 1991 (Standard Provisions).

This MRP requires the Discharger to keep and maintain records for five years of the monitoring activities for the production and land application areas and to prepare and submit reports containing the results of specified monitoring as indicated below.

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

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

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request

this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

A glossary of terms used within this MRP is included on page 20.

WASTEWATER TREATMENT FACILITY AND DAIRY MONITORING POINTS

The Discharger shall monitor the following locations to demonstrate compliance with the requirements of this Order:

WWTF Monitoring Points

Monitoring Location Name	Monitoring Location Description
INF-001	Location where a representative sample of the WWTF's influent can be obtained prior to any additives, treatment processes, and plant return flow.
EFF-001	Location where a representative sample of the WWTF's effluent can be obtained prior to discharge into the effluent storage ponds.
TD-001	Location where a representative sample of the groundwater discharged from the tile drains underlying the land application area can be collected.
SPL-001	Location where a representative sample of the Prison's water supply can be obtained.

Dairy Monitoring Points

Monitoring Location Name	Monitoring Location Description
EFF-002	Location where a representative sample of the Dairy's pond discharge can be obtained prior to discharge to the land application areas.
MW-1 through MW-9	Groundwater Monitoring Wells MW-1 through MW-9 and any other wells added to the groundwater monitoring network.

WWTF INFLUENT MONITORING

Influent samples shall be collected at the inlet of the headworks at INF-001. Influent monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units¹</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Weekly	pH	s.u.	Grab
Twice Monthly	Electrical Conductivity	umhos/cm	24-hour composite
Twice Monthly	Biochemical Oxygen Demand	mg/L	24-hour composite

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units¹</u>	<u>Sample Type</u>
Twice Monthly	Total Suspended Solids	mg/L	24-hour composite
Monthly	Monthly Average Daily Flow	Mgd	Computed

1. mgd = million gallons per day; s.u. = standard pH units; umhos/cm = micromhos per centimeter; mg/L = milligrams per liter.

WWTF EFFLUENT MONITORING

The Discharger shall monitor treated effluent at EFF-001 as follows. Effluent samples shall be representative of the volume and nature of the discharges. Time of collection of the samples shall be recorded. Effluent monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units¹</u>	<u>Sample Type</u>
Continuous	Flow	Mgd	Meter
Weekly	pH	s.u.	Grab
Twice Monthly	Electrical Conductivity	umhos/cm	24-hour composite
Twice Monthly	Biochemical Oxygen Demand	mg/L	24-hour composite
Twice Monthly	Total Suspended Solids	mg/L	24-hour composite
Twice Monthly	Nitrate as nitrogen	mg/L	24-hour composite
Twice Monthly	Total Kjeldahl Nitrogen	mg/L	24-hour composite
Twice Monthly	Total Nitrogen	mg/L	Computed
Twice Monthly	Ammonia	mg/L	24-hour composite
Annually	Iron	ug/L	24-hour composite
Annually	Arsenic	ug/L	24-hour composite
Annually	Manganese	ug/L	24-hour composite
Annually	General Minerals ²	Varies ³	24-hour composite

1 mgd = million gallons per day; s.u. = standard pH units; umhos/cm = micromhos per centimeter; mg/L = milligrams per liter; ug/L = micrograms per liter.

2 Analysis for general minerals shall include at least the list of constituents listed in the Glossary that is presented on page 19.

3 Varies based on laboratory and constituent. Use mg/L or micrograms per liter (ug/L), whichever is appropriate.

WWTF POND MONITORING

Effluent pond monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units¹</u>	<u>Sample Type</u>
Weekly ²	Dissolved Oxygen ³	mg/L	Grab
Weekly	Freeboard	Feet ⁴	Observation

1. mg/L = milligrams per liter.

2. Measured between 8:00 and 9:00 am on the day of sample collection

3. Dissolved oxygen sample collected from within the upper one foot of all wastewater ponds containing effluent opposite the pond inlets.

4. To nearest tenth of a foot

Permanent markers (e.g., staff gauges) shall be placed in storage ponds. The markers shall have calibrations indicating water level at the design capacity and available operational freeboard.

The Discharger shall inspect the condition of the storage ponds once per week and write visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether dead algae, vegetation, scum, or debris are accumulating on the storage pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark green, dull green, yellow, gray, tan, brown, etc.).

WWTF SLUDGE/BIOSOLIDS MONITORING

Sludge and/or biosolids shall be sampled for the following constituents:

Arsenic	Lead	Nickel
Cadmium	Mercury	Selenium
Copper	Molybdenum	Zinc
Organic Nitrogen	Ammonia Nitrogen	Total Solids

Monitoring shall be conducted as required in Title 40 of the Code of Federal Regulations (40 CFR), Part 503.8(b)(4). The constituents listed above shall be monitored at the following frequency, depending on volume of sludge generated:

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

The Discharger shall demonstrate that treated sludge (i.e., biosolids) meets Class A or Class B pathogen reduction levels by one of the methods listed in 40 CFR, Part 503.32.

The Discharger shall track and keep records of the operational parameters used to achieve Vector Attraction Reduction requirements in 40 CFR, Part 503.33(b).

WWTF LAND APPLICATION AREA MONITORING

The Discharger shall perform routine monitoring and loading calculations for each discrete irrigation area within the Land Application Area. Data shall be collected and presented in tabular format in accordance with Table 1 on page 20.

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

DAIRY PRODUCTION AND LAND APPLICATION AREA MONITORING REQUIREMENTS

VISUAL INSPECTIONS

The Discharger shall conduct and record the inspections specified in the table below and maintain records of the results on-site for a period of five years.

Visual Inspections – Dairy Production Area

<u>Frequency</u>	<u>Inspection</u>
Weekly during the wet season (1 October to 30 April) and monthly between 1 May and 30 September.	Inspect all waste storage areas and note any conditions or changes that could result in discharges to surface water and/or from property under control of the Discharger. Note whether freeboard within each liquid storage structure is less than, equal to, or greater than the minimum required (two feet for above ground ponds and one foot for below ground ponds).
<u>Frequency</u>	<u>Inspection</u>
During and after each significant storm event ¹ .	Visual inspections of storm water containment structures for discharge, freeboard, berm integrity, cracking, slumping, erosion, excess vegetation, animal burrows, and seepage.
Monthly on the 1st day of each month.	Photograph each pond showing the height of wastewater relative to the depth marker and the current freeboard on that date. All photos shall be dated and maintained as part of the discharger's record.

1. A significant storm event is defined as a storm event that results in continuous runoff of storm water for a minimum of one hour, or intermittent runoff for a minimum of three hours in a 12-hour period.

Visual Inspections - Land Application Areas

<u>Frequency</u>	<u>Inspection</u>
Prior to each wastewater application.	Inspect the land application area and note the condition of land application berms including rodent holes, piping, and bank erosion. Verify that any field valves are correctly set to preclude off-property or accidental discharges of wastewater.
Daily when process wastewater is being applied.	Inspect the land application area and note the condition of land application berms including rodent holes, piping, and bank erosion; the presence (or lack) of field saturation, ponding, erosion, runoff (including tailwater discharges from the end of fields, pipes, or other conveyances), and nuisance conditions; and the conditions of any vegetated buffers or alternative conservation practices.

DAIRY NUTRIENT MONITORING

The Discharger shall monitor process wastewater, manure, and plant tissue produced at the facility, soil in each land application area, and irrigation water used on each land application area for the constituents and at the frequency as specified in the table below. This information is for use in conducting nutrient management on the individual land application areas and at the facility on the whole. It must be used to develop and implement the Nutrient Management Plan. The Discharger is encouraged to collect and use additional data, as necessary, to refine nutrient management.

Dairy Nutrient Monitoring - Process Wastewater

<u>Frequency</u>	<u>Task</u>
Each application.	Record the volume (gallons or acre-inches) and date of process wastewater application to each land application area.
Quarterly during one application event.	Field measurement of electrical conductivity. Laboratory analyses for nitrate-nitrogen (only when retention pond is aerated), un-ionized ammonia-nitrogen, total Kjeldahl nitrogen, total phosphorus, total potassium, and total dissolved solids.
Once every two years (biennially).	Laboratory analyses for general minerals (calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, and chloride).
Annually	Laboratory analyses of liquid process wastewater, prior to blending with irrigation water, for pH, total dissolved solids, electrical conductivity, nitrate-nitrogen, ammonium-nitrogen, total Kjeldahl nitrogen, total phosphorus, and total potassium.

Dairy Nutrient Monitoring - Manure

<u>Frequency</u>	<u>Task</u>
Once every two years (biennially).	Laboratory analyses for general minerals (calcium, magnesium, sodium, sulfur, chloride) and fixed solids (ash).
Twice per year.	Laboratory analyses for total nitrogen, total phosphorus, total potassium, and percent moisture.
Each application to each land application area.	Record the percent moisture and total weight (tons) applied.
Each offsite export of manure.	Record the percent moisture and total weight (tons) exported. Laboratory analyses for percent moisture.
Annually.	Record the total dry weight (tons) of manure applied annually to each land application area and the total dry weight (tons) of manure exported offsite.

Dairy Nutrient Monitoring – Irrigation Water

<u>Frequency</u>	<u>Task</u>
Each irrigation event for each land application area:	Record volume (gallons or acre-inches) ² and source (well or canal) of irrigation water applied and dates applied.
One irrigation event during each irrigation season during actual irrigation events:	For each irrigation water source (well and canal): Electrical conductivity, total dissolved solids, and total nitrogen. ³ Data collected to satisfy the groundwater monitoring requirements (below) can be used to satisfy this requirement

1. The Discharger shall monitor irrigation water (from each water well source and canal) that is used on all land application areas.
2. Initial volume measurements may be the total volume for all land application areas.
3. In lieu of sampling the irrigation water, the Discharger may provide equivalent data from the local irrigation district.

1. If conditions are not safe for sampling, the Discharger must provide documentation of why samples could not be collected and analyzed. For example, the Discharger may be unable to collect samples during dangerous weather conditions (such as local flooding, high winds, tornados, electrical storms, etc.). However, once the dangerous conditions have passed, the Discharger shall collect a sample of the discharge or, if the discharge has ceased, from the waste management unit from which the discharge occurred.
2. Discharge and sample analyses shall be conducted by a laboratory certified for such analyses by the California Department of Health Services. These laboratory analyses shall be conducted in accordance with the Title 40 Code of Federal Regulations Part 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants) or other test methods approved by the Executive Officer.
3. All discharges shall be reported as specified in the Reporting Requirements (Priority Reporting of Significant Events and Annual Reporting) below, as appropriate.
4. The rationale for all discharge sampling locations shall be included in the Annual Report (in the Storm Water Report for storm water discharges from land application areas).

DAIRY GENERAL MONITORING REQUIREMENTS

1. The Discharger shall comply with all the “Requirements Specifically for Monitoring Programs and Monitoring Reports” as specified in the Standard Provisions and Reporting Requirements.
2. Approved sampling procedures are listed on the Central Valley Water Board’s web site at http://www.waterboards.ca.gov/centralvalley/available_documents/index.html#confined.
When special procedures appear to be necessary at an individual dairy, the Discharger may request approval of alternative sampling procedures for nutrient management. The Executive Officer will review such requests and if adequate justification is provided, may approve the requested alternative sampling procedures.

3. The Discharger shall use clean sample containers and sample handling, storage, and preservation methods that are accepted or recommended by the selected analytical laboratory or, as appropriate, in accordance with approved United States Environmental Protection Agency analytical methods.
4. All samples collected shall be representative of the volume and nature of the material being sampled.
5. All sample containers shall be labeled and records maintained to show the time and date of collection as well as the person collecting the sample and the sample location.
6. All samples collected for laboratory analyses shall be preserved and submitted to the laboratory within the required holding time appropriate for the analytical method used and the constituents analyzed.
7. All samples submitted to a laboratory for analyses shall be identified in a properly completed and signed Chain of Custody form.
8. Field test instruments used for temperature, pH, electrical conductivity, ammonia nitrogen, un-ionized ammonia nitrogen, and dissolved oxygen may be used provided:
 - a. The operator is trained in the proper use and maintenance of the instruments;
 - b. The instruments are field calibrated prior to each monitoring event; and
 - c. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency.

DAIRY RECORD-KEEPING REQUIREMENTS

Dischargers shall maintain on-site for a period of five years, from the date they are created, all information as follows (Owners must maintain their own copies of this information):

1. All information necessary to document implementation and management of the Nutrient Management Plan, including the information described in Items 2 through 6 below;
2. All records for the production area including:
 - a. Records documenting the inspections required under the Monitoring Requirements above;
 - b. Records documenting any corrective actions taken to correct deficiencies noted as a result of the inspections required in the Monitoring Requirements above. Deficiencies not corrected in 30 days must be accompanied by an explanation of the factors preventing immediate correction;

- c. Records of the date, time, and estimated volume of any overflow or bypass of the wastewater storage or conveyance structures;
 - d. Records of mortality management and practices;
 - e. Steps and dates when action is taken to correct unauthorized releases as reported in accordance with Priority Reporting of Significant Events below; and
 - f. Records of monitoring activities and laboratory analyses conducted as required in Standard Provisions and Reporting Requirements D.5.
3. All records for the land application area including:
- a. Expected and actual crop yields;
 - b. Identification of crop, acreage, and dates of planting and harvest for each field;
 - c. Dates, locations, and approximate weight and moisture content of manure applied to each field;
 - d. Dates, locations, and volume of process wastewater applied to each field;
 - e. Whether precipitation occurred, or standing water was present, at the time of manure and process wastewater applications and for 24 hours prior to and following applications;
 - f. Dates, locations, and test methods for soil, manure, process wastewater, irrigation water, and plant tissue sampling;
 - g. Results from manure, process wastewater, irrigation water, soil, plant tissue, discharge (including tailwater), and storm water sampling;
 - h. Explanation for the basis for determining manure or process wastewater application rates, as provided in the Technical Standards for Nutrient Management established by the Order (Attachment C of Order No. R5-2007-0035);
 - i. Calculations showing the total nitrogen, total phosphorus, and potassium to be applied to each field, including sources other than manure or process wastewater (Nutrient Budget);
 - j. Total amount of nitrogen, phosphorus, and potassium actually applied to each field, including documentation of calculations for the total amount applied (Nutrient Application Calculations);
 - k. The method(s) used to apply manure and/or process wastewater;
 - l. Records documenting any corrective actions taken to correct deficiencies noted as a result of the inspections required in the Monitoring Requirements above. Deficiencies not corrected in 30 days must be accompanied by an explanation of the factors preventing immediate correction; and
 - m. Records of monitoring activities and laboratory analyses conducted as required in Standard Provisions and Reporting Requirements D.5.

4. A copy of the Discharger's site-specific Nutrient Management Plan;
5. Tracking Manifest forms (Attachment D of Order No. R5-2007-0035) for off-site exports of manure or process wastewater which includes information on the manure hauler, destination of the manure, dates hauled, amount hauled, and certification; and
6. All analyses of manure, process wastewater, irrigation water, soil, plant tissue, discharges (including tailwater discharges), surface water, storm water, subsurface (tile) drainage, and groundwater.

WWTF AND DAIRY GROUNDWATER MONITORING

The land application areas are underlain by a tile drain network at depths from seven to nine feet bgs. The discharge outlet is at the northwest corner of the land application area. The Discharger shall collect samples at the frequency listed in the following table.

Additionally, nine groundwater monitoring wells that are in the vicinity of the dairy ponds (MW-1 through MW-9) are monitored to record the depth to water and quality of the groundwater around the dairy. MW-1 and MW-4 have been dry since 2007, but should remain in place in case water levels rise in the future. MW-1 through MW-4 should be monitored for the presence of water during the quarterly groundwater monitoring events for MW-5 through MW-9. After measuring water levels and prior to collecting samples, each monitoring well (MW-5 through MW-9) shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

The Discharger shall monitor the tile drain and the all wells in its Groundwater Monitoring Network, and any additional wells installed pursuant to this MRP, for the following:

The Discharger shall monitor the tile drain discharge for the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units¹</u>	<u>Sample Type</u>
Quarterly	Depth to Groundwater	Feet ²	Measured
Quarterly	Groundwater Elevation	Feet ³	Computed
Quarterly	pH	s.u.	Grab
Quarterly	Electrical Conductivity	umhos/cm	Grab
Quarterly	Nitrate as nitrogen	mg/L	Grab
Quarterly	Total Kjeldahl Nitrogen	mg/L	Grab
Quarterly	Ammonia	mg/L	Grab
Quarterly	Total Nitrogen	mg/L	Computed
Quarterly	Arsenic	ug/L	Grab
Quarterly	Iron	ug/L	Grab
Quarterly	Manganese	ug/L	Grab

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u> ¹	<u>Sample Type</u>
Annually	General Minerals ⁴	Varies ⁵	Grab

1. s.u. = Standard pH units; umhos/cm = micromhos per centimeter; mg/L = milligrams per liter; ug/L=micrograms per liter.
2. To the nearest hundredth of a foot.
3. To the nearest hundredth of a foot above Mean Sea Level.
4. Analysis for general minerals shall include at least the list of constituents listed in the Glossary that is presented on page 19.
5. Varies based on laboratory and constituent. Use mg/L or micrograms per liter (ug/L), as appropriate.

SOURCE WATER MONITORING

For each source, the Dischargers shall calculate the flow-weighted average concentrations for the specified constituents utilizing monthly flow data and the most recent chemical analysis conducted in accordance with Title 22 drinking water requirements. Publically available data (such as Drinking Water Consumer Confidence Report) may be used in lieu of collecting samples of each water source.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u> ¹	<u>Sample Type</u>
Quarterly	Electrical Conductivity	umhos/cm	Computed average
Annually	General Minerals ²	Varies ³	Computed average

1. umhos/cm = micromhos per centimeter;
2. Analysis for general minerals shall include at least the list of constituents listed in the Glossary that is presented on page 19.
3. Varies based on laboratory and constituent. Use mg/L or micrograms per liter (ug/L), as appropriate.

WWTF REPORTING

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

- First Quarter Monitoring Report: **1 May**
- Second Quarter Monitoring Report: **1 August**
- Third Quarter Monitoring Report: **1 November**
- Fourth Quarter and Annual Monitoring Report: **1 February.**

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

The following information is to be included on all monitoring reports, as well as report transmittal letters:

- Discharger Name
- Facility Name
- Monitoring and Reporting Program Number

Contact Information (telephone number and email)

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

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

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

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

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

A. All Quarterly Monitoring Reports shall include the following:

Wastewater Reporting:

1. The results of influent and effluent monitoring specified on pages 2 and 3.
2. For each month of the quarter, calculation of the maximum daily flow and the monthly average flow.
3. For each month of the quarter, calculation of the 12-month rolling average EC of the discharge using the EC value for that month averaged with the EC values for the previous 11 months.
4. For each month of the quarter, calculation of the monthly average effluent BOD and TSS concentrations, and calculation of the percent removal of BOD and TSS compared to the influent.
5. A summary of the notations made in the pond monitoring log during each quarter. The entire contents of the log for the reporting period do not need to be submitted.

Pond Monitoring Reporting

1. The results of the monitoring specified on pages 3 and 4.

Groundwater Reporting:

1. The results of groundwater monitoring specified on pages 10 and 11.
2. For groundwater monitoring, a table showing constituent concentrations for the last five quarters, up through the current quarter.

Source Water Reporting

1. For each quarter, calculation of average EC of the source water for the most recent four quarters.

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

Wastewater Treatment Facility Information:

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

Sludge/Biosolids

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

1. The results of sludge monitoring specified on page 4.
2. The amount of sludge generated that year, in dry metric tons, and the amount accumulated from previous years.
3. Demonstrations of pathogen reduction methods and vector attraction reduction methods, as described in 40 CFR Parts 503.17 and 503.27, and certifications.

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

Land Application Area Reporting

1. The type of crop(s) grown in the Land Application Area, and the quantified hydraulic and nitrogen loading rates in accordance with Table 1 on page 21.
2. A summary of the notations made in the Land Application Area monitoring log during each quarter. The entire contents of the log do not need to be submitted.
3. In accordance with Provision H. 15 of WDR Order R5-2016-0027, the Discharger shall submit an updated copy of the Nutrient Management Plan once every two years from the adoption of the Order.

DAIRY REPORTING REQUIREMENTS

Priority Reporting of Significant Events (Prompt action required).

The Discharger shall report any noncompliance that endangers human health or the environment or any noncompliance with this Order, **within 24 hours** of becoming aware of its occurrence. The incident shall be reported to the Central Valley Water Board office, local environmental health department, and to the California Emergency Management Agency (CalEMA). During non-business hours, the Discharger shall leave a message on the Central Valley Water Board's voice mail. The message shall include the time, date, place, and nature of the noncompliance, the name and number of the reporting person, and shall be recorded in writing by the Discharger. CalEMA is operational 24 hours a day. A written report shall be submitted to the Central Valley Water Board office **within two weeks** of the Discharger becoming aware of the incident. The report shall contain a description of the noncompliance, its causes, duration, and the actual or anticipated time for achieving compliance.

The report shall include complete details of the steps that the Discharger has taken or intends to take, in order to prevent recurrence. All intentional or accidental spills shall be reported as required by this provision. The written submission shall contain:

1. The approximate date, time, and location of the noncompliance including a description of the ultimate destination of any unauthorized discharge and the flow path of such discharge to a receiving water body;
2. A description of the noncompliance and its cause;
3. The flow rate, volume, and duration of any discharge involved in the noncompliance;
4. The amount of precipitation (in inches) the day of any discharge and for each of the seven days preceding the discharge;
5. A description (location; date and time collected; field measurements of pH, temperature, dissolved oxygen and electrical conductivity; sample identification; date submitted to laboratory; analyses requested) of noncompliance discharge samples and/or surface water samples taken to comply with the Monitoring Requirements above for *Discharges (Including Off-Property Discharges) of Manure or Process Wastewater or Other Dairy Waste from the Production Area or Land Application Area and Storm Water Discharges to Surface Water from the Production Area*;
6. The period of noncompliance, including dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue;
7. A time schedule and a plan to implement corrective actions necessary to prevent the recurrence of such noncompliance; and
8. The laboratory analyses of the noncompliance discharge sample and/or upstream and downstream surface water samples shall be submitted to the Central Valley Water Board office within 45 days of the discharge.

DAIRY ANNUAL REPORTING

An annual monitoring report is due by **1 February of each year**. It will consist of a General Section, Groundwater Reporting Section, and a Storm Water Reporting Section as described below.

General Section

The General section of the annual report shall be completed on an annual report form provided by the Executive Officer (available on the Central Valley Water Board website at http://www.waterboards.ca.gov/centralvalley/available_documents/index.html#confined) and shall include all the information as specified below. This section of the annual report shall cover information on crops harvested during the previous calendar year, whether or not the crop was planted prior to this period.

1. Identification of the beginning and end dates of the annual reporting period;

2. Maximum and average number and type of animals, whether in open confinement or housed under roof during the reporting period;
3. Estimated amount of total manure (tons) and process wastewater (gallons or acre-inches) generated by the facility during the annual reporting period; a calculation of the total nitrogen, total phosphorus, total potassium, and total salt content measured as fixed solids of the solid waste; and total dissolved solids of the liquid waste;
4. Estimated amount of total manure (tons) and process wastewater (gallons or acre-inches) applied to each land application area during the annual reporting period and a calculation of the total nitrogen, total phosphorus, total potassium, and total salt content measured as fixed solids (ash) of the solid waste and total dissolved solids of the liquid waste;
5. Quantify the ratio of total nitrogen applied to land application areas and total nitrogen removed by crop harvest (nitrogen uptake).
6. Estimated amount of total manure (tons) and process wastewater (gallons or acre-inches) transferred to other persons by the facility during the annual reporting period; a calculation of the total nitrogen, total phosphorus, total potassium, and total salt content measured as fixed solids of the solid waste; and total dissolved solids of the liquid waste;
7. Total number of acres and the Assessor Parcel Numbers for all land application areas that were not used for application of manure or process wastewater during the reporting period;
8. Total number of acres and the Assessor Parcel Numbers of properties that were used for land application of manure and process wastewater during the annual reporting period;
9. Summary of all manure and process wastewater discharges from the production area to surface water or to land areas (land application areas or otherwise) when not in accordance with the facility's Nutrient Management Plan that occurred during the annual reporting period, including date, time, location, and approximate volume; a map showing discharge and sample locations; rationale for sample locations; and method of measuring discharge flows;
10. Summary of all storm water discharges from the production area to surface water during the annual reporting period, including the date, time, approximate volume, duration, and location; a map showing the discharge and sample locations; rationale for sample locations; and method of measuring discharge flows;
11. Summary of all discharges from the land application area to surface water that have occurred during the annual reporting period, including the date, time, approximate volume, location, and source of discharge (i.e., tailwater, process wastewater, or blended process wastewater); a map showing the discharge and sample locations; rationale for sample locations; and method of measuring discharge flows;
12. A statement indicating if the Nutrient Management Plan has been updated and whether the current version of the facility's Nutrient Management Plan was developed or approved by a certified nutrient management specialist as specified in Attachment C of Order No. R5-2007-0035;

13. Copies of all manure/process wastewater tracking manifests for the reporting period;
14. A statement indicating if there were any changes to third party agreements to receive manure or process wastewater. If there were any changes, submit copies of all new or revised written agreements with each third party that receives solid manure or process wastewater from the Discharger for its own use;
15. Copies of laboratory analyses of all discharges (manure, process wastewater, or tailwater), surface water (upstream and downstream of a discharge), and storm water, including Chain of Custody forms and laboratory quality assurance/quality control (QA/QC) results;
16. Tabulated analytical data for samples of manure, process wastewater, irrigation water, soil, and plant tissue. The data shall be tabulated to clearly show sample dates, constituents analyzed, constituent concentrations, and detection limits;
17. Results of the Record-Keeping Requirements for the production and land application areas specified in Record-Keeping Requirements 2.b, 2.c, 3.a, 3.b, 3.c, 3.d, 3.e, 3.j, and 3.l above.

Dairy Groundwater Reporting Section

Groundwater monitoring results shall be included with the annual reports.

1. Dischargers that monitor supply wells and subsurface (tile) drainage systems only shall submit information on the location of sample collection and all field and laboratory data, including all laboratory analyses (including Chain of Custody forms and laboratory QA/QC results).
2. Dischargers that have monitoring well systems shall include all laboratory analyses (including Chain of Custody forms and laboratory QA/QC results) and tabular and graphical summaries of the monitoring data. Data shall be tabulated to clearly show the sample dates, constituents analyzed, constituent concentrations, detection limits, depth to groundwater, and groundwater elevations. Due to the variable nature of the shallow groundwater quality of the region, the typical comparison of upgradient groundwater quality to downgradient groundwater quality is not valid. Rather, the data should be evaluated on an intra-well basis to establish trends of the constituents of concern. Should the data indicate the discharge of WWTF effluent and dairy wastewater is causing the exceedance of a water quality objective, then the Order can be re-opened to address the discharge.
3. Graphical summaries of groundwater gradients and flow directions shall also be included. A groundwater contour map based on groundwater elevations for that quarter. The map shall show the gradient and direction of groundwater flow under/around the facility and/or effluent disposal area(s). The map shall also include the locations of monitoring wells and wastewater storage and discharge areas. Each groundwater monitoring report shall include a summary data table of all historical and current groundwater elevations and analytical results. The groundwater monitoring reports shall be certified by a California

registered professional as specified in General Reporting Requirements C.9 of the Standard Provisions and Reporting Requirements of Order No. R5-2007-0035.

Storm Water Reporting Section

Storm water monitoring results will be included in the annual report. The report shall include a map showing all sample locations for all land application areas, rationale for all sampling locations, a discussion of how storm water flow measurements were made, the results (including the laboratory analyses, Chain of Custody forms, and laboratory QA/QC results) of all samples of storm water, and any modifications made to the facility or sampling plan in response to pollutants detected in storm water.

The annual report must also include documentation if no significant discharge of storm water occurred from the land application area(s) or if it was not possible to collect any of the required samples or perform visual observations due to adverse climatic conditions. If the storm water monitoring for any land application area indicates pollutants have not been detected in storm water samples, the Discharger may propose to the Executive Officer to reduce the constituents and/or sampling frequency for that area.

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

Ordered by: _____ *Original signed by:* _____
PAMELA C. CREEDON, Executive Officer
21 April 2016

(Date)

GLOSSARY

BOD ₅	Five-day biochemical oxygen demand												
CBOD	Carbonaceous BOD												
DO	Dissolved oxygen												
EC	Electrical conductivity at 25° C												
FDS	Fixed dissolved solids												
NTU	Nephelometric turbidity unit												
TKN	Total Kjeldahl nitrogen												
TDS	Total dissolved solids												
TSS	Total suspended solids												
Continuous	The specified parameter shall be measured by a meter continuously.												
24-Hour Composite	Unless otherwise specified or approved, samples shall be a flow-proportioned composite consisting of at least eight aliquots.												
Daily	Samples shall be collected every day.												
Twice Weekly	Samples shall be collected at least twice per week on non-consecutive days.												
Weekly	Samples shall be collected at least once per week.												
Twice Monthly	Samples shall be collected at least twice per month during non-consecutive weeks.												
Monthly	Samples shall be collected at least once per month.												
Bimonthly	Samples shall be collected at least once every two months (i.e., six times per year) during non-consecutive months												
Quarterly	Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in January, April, July, and October.												
Semiannually	Samples shall be collected at least once every six months (i.e., two times per year). Unless otherwise specified or approved, samples shall be collected in April and October.												
Annually	Samples shall be collected at least once per year. Unless otherwise specified or approved, samples shall be collected in October.												
mg/L	Milligrams per liter												
mL/L	Milliliters [of solids] per liter												
µg/L	Micrograms per liter												
µmhos/cm	Micromhos per centimeter												
mgd	Million gallons per day												
MPN/100 mL	Most probable number [of organisms] per 100 milliliters												
General Minerals	Analysis for General Minerals shall include at least the following:												
	<table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Alkalinity</td> <td style="width: 33%;">Chloride</td> <td style="width: 33%;">Sodium</td> </tr> <tr> <td>Bicarbonate</td> <td>Hardness</td> <td>Sulfate</td> </tr> <tr> <td>Calcium</td> <td>Magnesium</td> <td>TDS</td> </tr> <tr> <td>Carbonate</td> <td>Potassium</td> <td></td> </tr> </table>	Alkalinity	Chloride	Sodium	Bicarbonate	Hardness	Sulfate	Calcium	Magnesium	TDS	Carbonate	Potassium	
Alkalinity	Chloride	Sodium											
Bicarbonate	Hardness	Sulfate											
Calcium	Magnesium	TDS											
Carbonate	Potassium												

General Minerals analyses shall be accompanied by documentation of cation/anion balance.

Table 1. WWTF Reclamation Area Monitoring

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

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS
FOR
WASTE DISCHARGE REQUIREMENTS

1 March 1991

A. General Provisions:

1. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, or protect the Discharger from liabilities under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.
2. The provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.
3. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - a. Violation of any term or condition contained in this Order;
 - b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;
 - c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge;
 - d. A material change in the character, location, or volume of discharge.
4. Before making a material change in the character, location, or volume of discharge, the discharger shall file a new Report of Waste Discharge with the Regional Board. A material change includes, but is not limited to, the following:
 - a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements.
 - b. A significant change in disposal method, location or volume, e.g., change from land disposal to land treatment.
 - c. The addition of a major industrial, municipal or domestic waste discharge facility.
 - d. The addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste.

Waste Discharge to Land

5. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Board. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.
6. The discharger shall take all reasonable steps to minimize any adverse impact to the waters of the state resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance.
7. The discharger shall maintain in good working order and operate as efficiently as possible any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
8. The discharger shall permit representatives of the Regional Board (hereafter Board) and the State Water Resources Control Board, upon presentations of credentials, to:
 - a. Enter premises where wastes are treated, stored, or disposed of and facilities in which any records are kept,
 - b. Copy any records required to be kept under terms and conditions of this Order,
 - c. Inspect at reasonable hours, monitoring equipment required by this Order, and
 - d. Sample, photograph and video tape any discharge, waste, waste management unit, or monitoring device.
9. For any electrically operated equipment at the site, the failure of which would cause loss of control or containment of waste materials, or violation of this Order, the discharger shall employ safeguards to prevent loss of control over wastes. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means.
10. The fact that it would have been necessary to halt or reduce the permitted activity in Order to maintain compliance with this Order shall not be a defense for the discharger's violations of the Order.
11. Neither the treatment nor the discharge shall create a condition of nuisance or pollution as defined by the California Water Code, Section 13050.
12. The discharge shall remain within the designated disposal area at all times.

B. General Reporting Requirements:

1. In the event the discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the discharger shall notify the Board by telephone at **(916) 464-3291** [*Note: Current phone numbers for all three Regional Board offices may be found on the internet at http://www.swrcb.ca.gov/rwqcb5/contact_us.*] as soon as it or its agents

Waste Discharge to Land

have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing within **two weeks**. The written notification shall state the nature, time and cause of noncompliance, and shall include a timetable for corrective actions.

2. The discharger shall have a plan for preventing and controlling accidental discharges, and for minimizing the effect of such events.

This plan shall:

- a. Identify the possible sources of accidental loss or leakage of wastes from each waste management, treatment, or disposal facility.
- b. Evaluate the effectiveness of present waste management/treatment units and operational procedures, and identify needed changes of contingency plans.
- c. Predict the effectiveness of the proposed changes in waste management/treatment facilities and procedures and provide an implementation schedule containing interim and final dates when changes will be implemented.

The Board, after review of the plan, may establish conditions that it deems necessary to control leakages and minimize their effects.

3. All reports shall be signed by persons identified below:
 - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in 3a, 3b or 3c of this requirement if;
 - (1) the authorization is made in writing by a person described in 3a, 3b or 3c of this provision;
 - (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a waste management unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - (3) the written authorization is submitted to the Board

Waste Discharge to Land

Any person signing a document under this Section shall make the following certification:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of the those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

4. Technical and monitoring reports specified in this Order are requested pursuant to Section 13267 of the Water Code. Failing to furnish the reports by the specified deadlines and falsifying information in the reports, are misdemeanors that may result in assessment of civil liabilities against the discharger.
5. The discharger shall mail a copy of each monitoring report and any other reports required by this Order to:

California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Note: Current addresses for all three Regional Board offices may be found on the internet at http://www.swrcb.ca.gov/rwqcb5/contact_us.

or the current address if the office relocates.

C. Provisions for Monitoring:

1. All analyses shall be made in accordance with the latest edition of: (1) *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA 600 Series) and (2) *Test Methods for Evaluating Solid Waste* (SW 846-latest edition). The test method may be modified subject to application and approval of alternate test procedures under the Code of Federal Regulations (40 CFR 136).
2. Chemical, bacteriological, and bioassay analysis shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Board staff. The Quality Assurance-Quality Control Program must conform to EPA guidelines or to procedures approved by the Board.

Unless otherwise specified, all metals shall be reported as Total Metals.

3. The discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to

Waste Discharge to Land

complete the application for this Order. Records shall be maintained for a minimum of three years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

Record of monitoring information shall include:

- a. the date, exact place, and time of sampling or measurements,
 - b. the individual(s) who performed the sampling of the measurements,
 - c. the date(s) analyses were performed,
 - d. the individual(s) who performed the analyses,
 - e. the laboratory which performed the analysis,
 - f. the analytical techniques or methods used, and
 - g. the results of such analyses.
4. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated at least yearly to ensure their continued accuracy.
 5. The discharger shall maintain a written sampling program sufficient to assure compliance with the terms of this Order. Anyone performing sampling on behalf of the discharger shall be familiar with the sampling plan.
 6. The discharger shall construct all monitoring wells to meet or exceed the standards stated in the State Department of Water Resources *Bulletin 74-81* and subsequent revisions, and shall comply with the reporting provisions for wells required by Water Code Sections 13750 through 13755.22

D. Standard Conditions for Facilities Subject to California Code of Regulations, Title 23, Division 3, Chapter 15 (Chapter 15)

1. All classified waste management units shall be designed under the direct supervision of a California registered civil engineer or a California certified engineering geologist. Designs shall include a Construction Quality Assurance Plan, the purpose of which is to:
 - a. demonstrate that the waste management unit has been constructed according to the specifications and plans as approved by the Board.
 - b. provide quality control on the materials and construction practices used to construct the waste management unit and prevent the use of inferior products and/or materials which do not meet the approved design plans or specifications.
2. Prior to the discharge of waste to any classified waste management unit, a California registered civil engineer or a California certified engineering geologist must certify that the waste management unit meets the construction or prescriptive standards and performance goals in Chapter 15, unless an engineered alternative has been approved by the Board. In the case of an engineered alternative, the registered civil engineer or a certified engineering geologist must

Waste Discharge to Land

certify that the waste management unit has been constructed in accordance with Board-approved plans and specifications.

3. Materials used to construct liners shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the operating life, closure, and post-closure maintenance period of the waste management units.
4. Closure of each waste management unit shall be performed under the direct supervision of a California registered civil engineer or a California certified engineering geologist.

E. Conditions Applicable to Discharge Facilities Exempted from Chapter 15 Under Section 2511

1. If the discharger's wastewater treatment plant is publicly owned or regulated by the Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to California Code of Regulations, Title 23, Division 4, Chapter 14.
2. By-pass (the intentional diversion of waste streams from any portion of a treatment facility, except diversions designed to meet variable effluent limits) is prohibited. The Board may take enforcement action against the discharger for by-pass unless:
 - a. (1) By-pass was unavoidable to prevent loss of life, personal injury, or severe property damage. (Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a by-pass. Severe property damage does not mean economic loss caused by delays in production); and
 - (2) There were no feasible alternatives to by-pass, such as the use of auxiliary treatment facilities or retention of untreated waste. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a by-pass that would otherwise occur during normal periods of equipment downtime or preventive maintenance; or
 - b. (1) by-pass is required for essential maintenance to assure efficient operation; and
 - (2) neither effluent nor receiving water limitations are exceeded; and
 - (3) the discharger notifies the Board ten days in advance.

The permittee shall submit notice of an unanticipated by-pass as required in paragraph B.1. above.

3. A discharger that wishes to establish the affirmative defense of an upset (see definition in E.6 below) in an action brought for noncompliance shall demonstrate, through properly signed, contemporaneous operating logs, or other evidence, that:

Waste Discharge to Land

- a. an upset occurred and the cause(s) can be identified;
- b. the permitted facility was being properly operated at the time of the upset;
- c. the discharger submitted notice of the upset as required in paragraph B.1. above; and
- d. the discharger complied with any remedial measures required by waste discharge requirements.

In any enforcement proceeding, the discharger seeking to establish the occurrence of an upset has the burden of proof.

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 Board by **31 January**.
5. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to disposal. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.
6. Definitions
 - a. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper action.
 - b. The monthly average discharge is the total discharge by volume during a calendar month divided by the number of days in the month that the facility was discharging. This number is to be reported in gallons per day or million gallons per day.

Where less than daily sampling is required by this Order, the monthly average shall be determined by the summation of all the measured discharges by the number of days during the month when the measurements were made.
 - c. The monthly average concentration is the arithmetic mean of measurements made during the month.
 - d. The "daily maximum" **discharge** is the total discharge by volume during any day.

Waste Discharge to Land

- e. The “daily maximum” **concentration** is the highest measurement made on any single discrete sample or composite sample.
- f. A “grab” sample is any sample collected in less than 15 minutes.
- g. Unless otherwise specified, a composite sample is a combination of individual samples collected over the specified sampling period;
 - (1) at equal time intervals, with a maximum interval of one hour
 - (2) at varying time intervals (average interval one hour or less) so that each sample represents an equal portion of the cumulative flow.

The duration of the sampling period shall be specified in the Monitoring and Reporting Program. The method of compositing shall be reported with the results.

7. Annual Pretreatment Report Requirements:

Applies to dischargers required to have a Pretreatment Program as stated in waste discharge requirements.)

The annual report shall be submitted **by 28 February** and include, but not be limited to, the following items:

- a. A summary of analytical results from representative, flow-proportioned, 24-hour composite sampling of the influent and effluent for those pollutants EPA has identified under Section 307(a) of the Clean Water Act which are known or suspected to be discharged by industrial users.

The discharger is not required to sample and analyze for asbestos until EPA promulgates an applicable analytical technique under 40 CFR (Code of Federal Regulations) Part 136. Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto.

- b. A discussion of Upset, Interference, or Pass Through incidents, if any, at the treatment plant which the discharger knows or suspects were caused by industrial users of the system. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any

Waste Discharge to Land

additional limitations, or changes to existing requirements, may be necessary to prevent Pass Through, Interference, or noncompliance with sludge disposal requirements.

- c. The cumulative number of industrial users that the discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.
- d. An updated list of the discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:
 - (1) Complied with baseline monitoring report requirements (where applicable);
 - (2) Consistently achieved compliance;
 - (3) Inconsistently achieved compliance;
 - (4) Significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);
 - (5) Complied with schedule to achieve compliance (include the date final compliance is required);
 - (6) Did not achieve compliance and not on a compliance schedule;
 - (7) Compliance status unknown.

A report describing the compliance status of any industrial user characterized by the descriptions in items (d)(3) through (d)(7) above shall be **submitted quarterly from the annual report date** to EPA and the Board. The report shall identify the specific compliance status of each such industrial user. This quarterly reporting requirement shall commence upon issuance of this Order.

- e. A summary of the inspection and sampling activities conducted by the discharger during the past year to gather information and data regarding the industrial users. The summary shall include but not be limited to, a tabulation of categories of dischargers that were inspected and sampled; how many and how often; and incidents of noncompliance detected.

Waste Discharge to Land

- f. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:
- (1) Warning letters or notices of violation regarding the industrial user's apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations;
 - (2) Administrative Orders regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations;
 - (3) Civil actions regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations;
 - (4) Criminal actions regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
 - (5) Assessment of monetary penalties. For each industrial user identify the amount of the penalties;
 - (6) Restriction of flow to the treatment plant; or
 - (7) Disconnection from discharge to the treatment plant.
- g. A description of any significant changes in operating the pretreatment program which differ from the discharger's approved Pretreatment Program, including, but not limited to, changes concerning: the program's administrative structure; local industrial discharge limitations; monitoring program or monitoring frequencies; legal authority of enforcement policy; funding mechanisms; resource requirements; and staffing levels.
- h. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.
- i. A summary of public participation activities to involve and inform the public.
- j. A description of any changes in sludge disposal methods and a discussion of any concerns not described elsewhere in the report.

Duplicate signed copies of these reports shall be submitted to the Board and:

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

and

State Water Resource Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95812

Revised January 2004 to update addresses and phone numbers

INFORMATION SHEET

ORDER R5-2016-XXXX
 CALIFORNIA DEPARTMENT OF CORRECTIONS AND
 CALIFORNIA PRISON INDUSTRY AUTHORITY
 CORCORAN STATE PRISON AND CALIFORNIA SUBSTANCE ABUSE TREATMENT FACILITY
 WASTEWATER TREATMENT FACILITY AND DAIRY
 KINGS COUNTY

The California Department of Corrections, Corcoran State Prison and the California Substance Abuse Treatment Facility, own and operate a wastewater treatment facility (WWTF) that produces secondary non-disinfected effluent. The WWTF was commissioned in 1988 to serve the Prison only, but the WWTF was expanded in 1997 with the construction of the Substance Abuse Treatment Facility, and again in 2004 to expand the land application area and pave the sludge drying beds. Additionally, a dairy is present at the northeast corner of the Prison facility that is owned and operated by the Prison Industry Authority or PIA and that discharges its waste to the same land application area as does the WWTF.

WWTF effluent is discharged to about 331 acres of farm land (land application area) southeast of the WWTF. The land application areas are cropped rotationally with alfalfa, winter wheat, corn, etc., and crops are harvested. The WWTF also accepts secondary treated domestic sewage (up to 335 acre feet per year) from the City of Corcoran, mostly during non-irrigation periods. Dairy wastewater is discharged to the same 331-acre land application area from the Corcoran Prison dairy. The Dairy is at the northeast corner of the Prison facility and provides milk and other dairy products to CDC prisons throughout California. The Dairy and domestic wastes are stored in separate ponds, but are discharged to the same land application area. Both the discharge from the WWTF and the Dairy are regulated by Waste Discharge Requirements Order 95-267.

Effluent Characteristics

Effluent data from the WWTF since 2013 is presented below (27 samples). The exception is the total nitrogen result. The result for total nitrogen is from one sample collected in August 2015.

Table 1 - WWTF Effluent Results

<u>Year</u>	<u>Electrical Conductivity umhos/cm¹</u>	<u>Biological Oxygen Demand mg/L²</u>	<u>Total Suspended Solids mg/L²</u>	<u>Settleable Solids mg/L²</u>	<u>pH s.u.³</u>	<u>Total Nitrogen mg/L²</u>
2013	604	3.9	6.6	0.1	7.7	---
2014	594	39	77	13.8	7.6	---
2015	689	142	285	1.4	7.2	22
Average	614	47	77	5.8	7.6	---
Effluent Limits	500 + source	40/80	40/80	0.2/0.5	6-5 to 9.5	---

^{1.} umhos/cm = micromhos per centimeter.

^{2.} mg/L = milligrams per liter.

^{3.} s.u. – standard pH units

The discharge of wastewater from the WWTF complies with the effluent limits for electrical conductivity (EC), pH, and dissolved oxygen (DO), but has been exceeding the effluent limits for biochemical oxygen demand (BOD), total suspended solids (TSS), and settleable solids (SS) since August 2014 due to the failure of a recirculation pump. The pump has been ordered and

received (September 2015), but has yet to be installed. Once the recirculation pump is replaced, effluent BOD, TSS, and SS results should return to previous values that averaged 3.9, 6.6, and 0.1 mg/L, respectively in 2013, well within the limits.

The Dairy monitors its discharge to the land application area and follows the typical reporting format used by the Dairy General Order. In 2014, the Dairy reported that 36.1 million gallons or 98,797 gallons per day (GPD) of dairy wastewater was discharged to six individual fields within the land application area. The six fields are identified as C1 through C6 as listed in Table 2.

Table 2 - Dairy Nitrogen Loading Results

<u>Land Application Area</u>	<u>Acres</u>	<u>Crop</u>	<u>Pounds of Nitrogen Applied</u>	<u>Pounds per acre per year (lbs/ac/yr¹)</u>
C1 ²	54	Wheat	5,642	104
C1 ²	54	Corn	9,722	181
C2	55	Alfalfa	5,746	104
C3	52	Alfalfa	4,705	90
C4 ²	55	Wheat	5,746	104
C4 ²	55	Corn	9,953	181
C5	58	Corn	11,308	194
C6	57	Corn	11,113	194

¹. lbs/ac/yr = pounds per acre per year.

². Land Application Area fields C1 and C4 were double cropped in 2014

The 2014 Annual Dairy Report indicated loading of wastewater and manure to the individual parcels ranged from 90 to 194 pounds per acre per year (lbs/ac/yr). The estimated nitrogen load from the WWTF (based on the 22 milligrams per liter (mg/L) result from the August 2015 effluent sample) is about 205 lbs/ac/yr. For fields C2 and C4 cropped with alfalfa, the nitrogen utilized by the crop (~480 lbs/ac/yr for alfalfa) is greater than the combined nitrogen load from the WWTF and the Dairy (295 to about 309 lbs/ac/yr). For parcels C1 and C4 double cropped with wheat and corn, the amount of nitrogen applied (about 490 lbs/ac/yr) exceeds the typical uptake for the crops of corn and wheat combined, which can utilize about 375 lbs/ac/yr. Additionally, the nitrogen load to fields C5 and C6 cropped only in corn (~400 lbs/ac/yr) also exceeds the potential nitrogen uptake of 250 lbs/ac/yr. The potential uptake with respect to nitrogen can be increased by using other crops such as Sudan grass, clover grass, and vetch that can utilize from 300 to 400 lbs/ac/yr. Double cropping with Sudan grass in combination with wheat would have the potential to utilize up to 500 lbs/ac/yr and in combination with corn could utilize up to 575 lbs/ac/yr. This Order contains Provision G. 15 that requires the Discharger to prepare a Nutrient Management Plan and Land Application Area Specification F.14 that requires nitrogen be applied to the land application areas at agronomic rates.

Solids and Sludge/Biosolids Disposal

Solids removed by the WWTF bar screens are disposed of at an offsite landfill. WDR Order 95-267 contains sludge disposal specifications that indicate the Discharger must report any change in the use or disposal practices of sludge to the Executive Officer in at least 90 days in advance of

the change and that the use and disposal of sewage sludge shall comply with State laws and regulations.

Groundwater Occurrence and Quality

Groundwater is present underlying the Prison in both unconfined and confined aquifers. The Prison complex is underlain by the Corcoran Clay at a depth of about 500 feet bgs and is reported to be about 80 to 100 feet thick in this area. The depth to first encountered groundwater in the vicinity of the Prison and the land application areas is about 20 feet below the ground surface (bgs) and based on groundwater elevations in first encountered groundwater monitoring wells present around the dairy, the direction of groundwater flow is generally to the west/southwest.

The water quality of the upper unconfined first encountered groundwater is highly variable, with water quality that meets water quality objectives in one well, and then is almost unusable only a few hundred feet away. Due to the shallow groundwater depth and the typical poor water quality, the land application area is tile drained to keep the shallow groundwater out of the root zone. The drainage water is pumped to a canal (conveyance facility owned and operated by the J.G. Boswell Company and the Tulare Lake Drainage District), which drains to an evaporation Basin operated by the Tulare Lake Drainage District.

A nine well groundwater monitoring well network (MW-1 through MW-9) is present around the dairy. MW-1 through MW-4 have been dry since 2008. Monitoring wells MW-5 through MW-9 were installed in late 2007, with MW-7 and MW-8 installed along the eastern property line as upgradient wells and MW-5, MW-6, and MW-9 installed as downgradient wells. The results since January 2008 are presented below in Table 3.

Table 3 - Shallow Groundwater Quality – Dairy Area

Well	Nitrate as Nitrogen mg/L	TKN ug/L	Total Nitrogen mg/L	EC umhos/cm	TDS mg/L	pH s.u.
MW-5	9.8 (1 - 36)	1.9 (nd - 2.8)	10.2 (9.2 - 11.8)	2132 (1000 - 2400)	1450 (1400 - 1500)	9.1 (9.0 - 9.2)
MW-6	2.9 (nd - 28)	0.5 (nd - 2.8)	2.3 (0.5 - 8.4)	531 (300 - 820)	342 (190 - 570)	8.2 (7.9 - 8.3)
MW-7	0.6 (nd - 2.2)	0 (nd)	0.5 (0 - 0.9)	451 (310 - 1100)	272 (230 - 310)	8.7 (8.5 - 9.0)
MW-8	2.8 (nd - 21)	0.33 (nd - 1.3)	2.85 (0 - 3.9)	1079 (410 - 2600)	712 (540 - 910)	9.2 (8.9 - 9.5)
MW-9	11.8 (2.7 - 63)	2.4 (1.8 - 3.4)	23 (7.1 - 60)	1980 (600 - 2800)	1250 (900 - 1900)	9.1 (8.9 - 9.3)

The results display the variability of the quality of the encountered groundwater and at first glance, it appears the dairy ponds are affecting the EC and TDS results in groundwater. EC and TDS are

in excess of the MCLs in samples from downgradient MW-5 and MW-9 as might be expected, but EC and TDS results also exceed the MCL for both constituents in upgradient MW-8. The lowest EC, TDS, and total nitrogen results are observed in upgradient MW-7, with no exceedances of any MCL. However, downgradient MW-6 which is directly adjacent to and downgradient of one of the dairy retention ponds has the next lowest EC and TDS values that are well below the MCLs for EC and TDS. Both MW-6 and MW-7 were installed along the northern side of the dairy ponds. MW-6 and MW-7 are adjacent the City of Corcoran WWTF ponds, but the average EC of the City of Corcoran effluent is about 800 umhos/cm, much higher than the EC results reported for MW-6 and MW-7. The results from the monitoring wells around the Dairy demonstrate the variability in the groundwater quality of first encountered observed in the region. This variability is further demonstrated by reviewing groundwater data of a nearby tomato processing facility as discussed below.

The J.G Boswell Company operates its Corcoran Tomato Processing Plant a ¼ mile west of the WWTF and the 540 acres used for disposal/recycling of the tomato processing wastewater is a ¼ mile west of the WWTF at the southwest corner of the intersection of 6th and Paris Avenues. This land application area is also tile drained. The Boswell facility is regulated by WDRs Order R5-2008-0015. Shallow groundwater samples were collected from five shallow soil borings advanced within the Boswell land application area in 2007 to provide groundwater quality information during the preparation of WDR Order R5-2008-0015. J.G. Boswell also collected and analyzed a sample of the groundwater collected by a tile drain system. The results are shown in Table 4.

Table 4 - J.G. Boswell, 2007 Shallow Groundwater Results

<u>Sample No.</u>	<u>pH s.u</u>	<u>Electrical Conductivity umhos/cm</u>	<u>Total Dissolved Solids mg/L</u>	<u>Total Nitrogen mg/L</u>	<u>Sulfate mg/L</u>	<u>Chloride mg/L</u>	<u>Sodium mg/L</u>
No. 1	7.5	1,041	883	10	330	16.9	38
No. 2	8.0	7,780	5,195	23.7	1,909	769	1,341
No. 3	7.5	2,732	2,123	3.1	967	88.2	252
No. 4	7.9	1,840	1,990	6.9	418	242	252
No. 5	7.7	3,754	3,043	18.6	1,599	202	252
<u>Tile Drain</u>	7.9	3,628	2,078	0.5	1,038	319	352

In addition to the data from the J.G. Boswell wells, the United States Geological Survey (USGS) monitors or has monitored numerous shallow wells in the region, 13 of which are in a five mile radius of the Prison. The results from the USGS wells dating back to 1958 indicate that EC and TDS in shallow groundwater are elevated and similar to but even slightly higher than these observed in wells of similar depth at the Prison Dairy.

The EC and TDS results from the J.G. Boswell site and nearby USGS wells are similar to but even higher than Prison's groundwater monitoring results, while total nitrogen results are the same. The offsite data further illustrates the variable quality of the first encountered shallow groundwater

of the region and that the results from the Prisons monitoring wells are typical of the first encountered groundwater of the region.

Source Water

Source water is supplied by the City of Corcoran groundwater supply wells and the data from 2013 through 2015 (four samples) are shown in the following table. Drinking water limits of maximum contaminant levels (MCL) for nitrate (as nitrate) is a Primary MCL and the value shown is the limit. The MCLs shown for the remaining constituents are Secondary MCLs developed as limits for the taste and odor (aesthetics) of drinking water. The two values listed display the “Consumer Acceptance Contaminant Level Ranges.” The first value listed is the “Recommended” Secondary MCL and the second value listed is the “Upper” Secondary MCL.

Table 5 - Supply Water Results

Date Sampled	Electrical Conductivity <u>umhos/cm¹</u>	Total Dissolved Solids <u>mg/L²</u>	Nitrate <u>mg/L²</u>	Chloride <u>mg/L²</u>	Sulfate <u>mg/L²</u>	Sodium <u>mg/L²</u>
Feb-13	354	192	21.2	27.5	34.1	62.6
Oct-13	389	230	11.2	31	20	60
Jun-14	362	200	7.3	30	27	67
Sep-15	420	250	2.7	30	27	67
MCLs	900/1600	500/900	45	250/500	250/500	

1. umhos/cm = micromhos per centimeter.

2. mg/L = milligram per liter.

Compliance History

A review of the record indicates the Prison is typically compliant with the requirements of WDRs 95-267. The Prison has typically submitted its self-monitoring reports and/or groundwater monitoring reports complete and on time. The Prison is typically compliant with effluent limits, but BOD, TSS, and SS results have been over the limit since mid-2014. The exceedances are the result of a Return Activated Sludge Pump that went out. The Prison had difficulty in getting the correct pump ordered, but the pump has now been purchased and received (September 2015), and the Prison WWTF staff has indicated it will be back on line shortly. The effluent results for BOD, TSS, and SS are anticipated to return to their previous levels, which were well below the respective limits.

The record indicates the WWTF has been inspected six times since August 1997 and four Notices of Violation (NOVs) were issued in 2000, 2004, 2005, and 2009. The violations that led to the NOVs typically included:

- Violation of Discharge Specification B.3, exceeding the flow limit of 1.9 mgd.; and

- Violation of Discharge Specification B.11, for failing to report the freeboard of the effluent storage ponds..

Except as noted above, the discharge has generally complied with the effluent limits in WDR Order 95-267. A new flow meter was installed in 2004 and the discharge from the WWTF has been within the 1.9 mgd flow limit since 2005. Additionally, recent inmate populations at all State Prisons have been reduced, and the end result is the amount of effluent has decreased to about 1.47 mgd, well within the 1.9 mgd limit. A third retention pond was constructed in 2004, and there have been no issues with free board since the third effluent storage pond became operational.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2015 (Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the Basin, and incorporates, by reference, plans and policies adopted by the State Water Board. The beneficial uses of the underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.

While the Tulare Lake Basin Plan designates the beneficial uses of groundwater in the region as municipal and domestic, the WWTF and Dairy are adjacent and within known areas of shallow perched groundwater with high EC and TDS values. A 2001 Department of Water Resources (DWR) map for the Lemoore/Corcoran area shows EC values for the shallow groundwater of the area. The current land application area is in an area shown with EC values up to 2,000 umhos/cm. To the west about 1.5 miles west of the Dairy the 2001 DWR map depicts shallow groundwater with EC values ranging from 4,000 to 10,000 umhos/cm. The data presented on the DWR maps correlates with the data presented in Tables 6 through 8 in the Groundwater section. This indicates that background groundwater quality is poor and that the groundwater quality observed in the Dairy monitoring wells is similar to if not better than the results observed in nearby regional groundwater monitoring wells.

Antidegradation

State Water Board Resolution 68-16, the *Statement of Policy with Respect to Maintaining High Quality of Water in California* (Antidegradation Policy), requires the regional water boards to maintain high quality water of the State until it is demonstrated that any change in quality will not result in water quality less than that described in State and Regional Water Board policies or exceed water quality objectives, will not unreasonably affect beneficial uses and is consistent with the maximum benefit to the people of the State.

Constituents of concern in the discharge that have the potential to degrade groundwater include salts and nutrients. Ambient water quality in the vicinity of the Prison is of poor quality dating back to 1958, prior to the construction of the Prison and/or the WWTF. The wastewater quality is lower in concentration to that of the nearby first encountered groundwater quality. The discharge of

wastewater to the land application areas is not anticipated to degrade the underlying first encountered groundwater due to its existing poor quality

Degradation of groundwater by some of the typical waste constituents released with discharge from a domestic wastewater utility serving a State institution after effective source control, treatment, and control is consistent with maximum benefit to the people of the State. The technology, energy, and waste management advantages of domestic utility service far exceed any benefits derived from a Prison population otherwise reliant on numerous concentrated individual wastewater systems, and the impacts on water quality will be substantially less.

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

Title 27

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

The discharge of effluent and the operation of treatment or storage facilities associated with a sewage treatment and storage facility can be allowed without requiring compliance with Title 27, provided any resulting degradation of groundwater is in accordance with the Basin Plan and the waste need not be managed as hazardous waste.

CEQA

For the existing WWTF, the Discharger certified a final environmental impact report (EIR) on 12 August 1994 in accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The EIR described the proposed expansion of the WWTF and the relocation of the land application area due to the construction of the Substance Abuse Treatment Facility.

Proposed Order Terms and Conditions

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

The proposed Order would prohibit discharge to surface waters and water drainage courses.

The proposed Order would keep the monthly average daily discharge flow limit from the WWTF at 1.9 mgd, and the combined flow from both the WWTF and the Dairy at 2.01 mgd.

The proposed Order would prescribe effluent limits for BOD and TSS of 40 mg/L (monthly average), and 80 mg/L (daily maximum).

The proposed Order would prescribe effluent limits for EC of the EC of the source water plus 500 umhos/cm.

The discharge requirements regarding dissolved oxygen and freeboard are consistent with Central Valley Water Board policy for the prevention of nuisance conditions, and are applied to all such facilities.

The proposed Order contains Provision G.15 that requires the Dischargers to develop a Nutrient Management Plan to evaluate the organic content of the discharges and contains Discharge Specification F.14 to ensure the discharge of both WWTF and Dairy wastewater to the land application areas is at agronomic rates for the particular crops grown.

The proposed Order also contains Provision G.16 that requires the Dischargers to develop a Salinity Management Plan to evaluate the organic content of the discharge to the land application areas is not degrading the underlying groundwater with salts.

The proposed Order contains Provision G.17 that requires the Discharges to prepare a Title 22 Report for the discharge of domestic wastewater to the land application areas. Alternatively, the Dischargers shall demonstrate that its current practice of recycling wastewater to the land application area complies with current Title 22 Requirements.

The proposed Order prescribes groundwater limitations that ensure the discharge does not affect present and anticipated beneficial uses of groundwater. The limitations require that the discharge not cause or contribute to exceedance of these objectives or natural background water quality, whichever is greatest.

Monitoring Requirements

Section 13267 of the California Water Code authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State. Water Code Section 13268 authorizes assessment of civil administrative liability where appropriate.

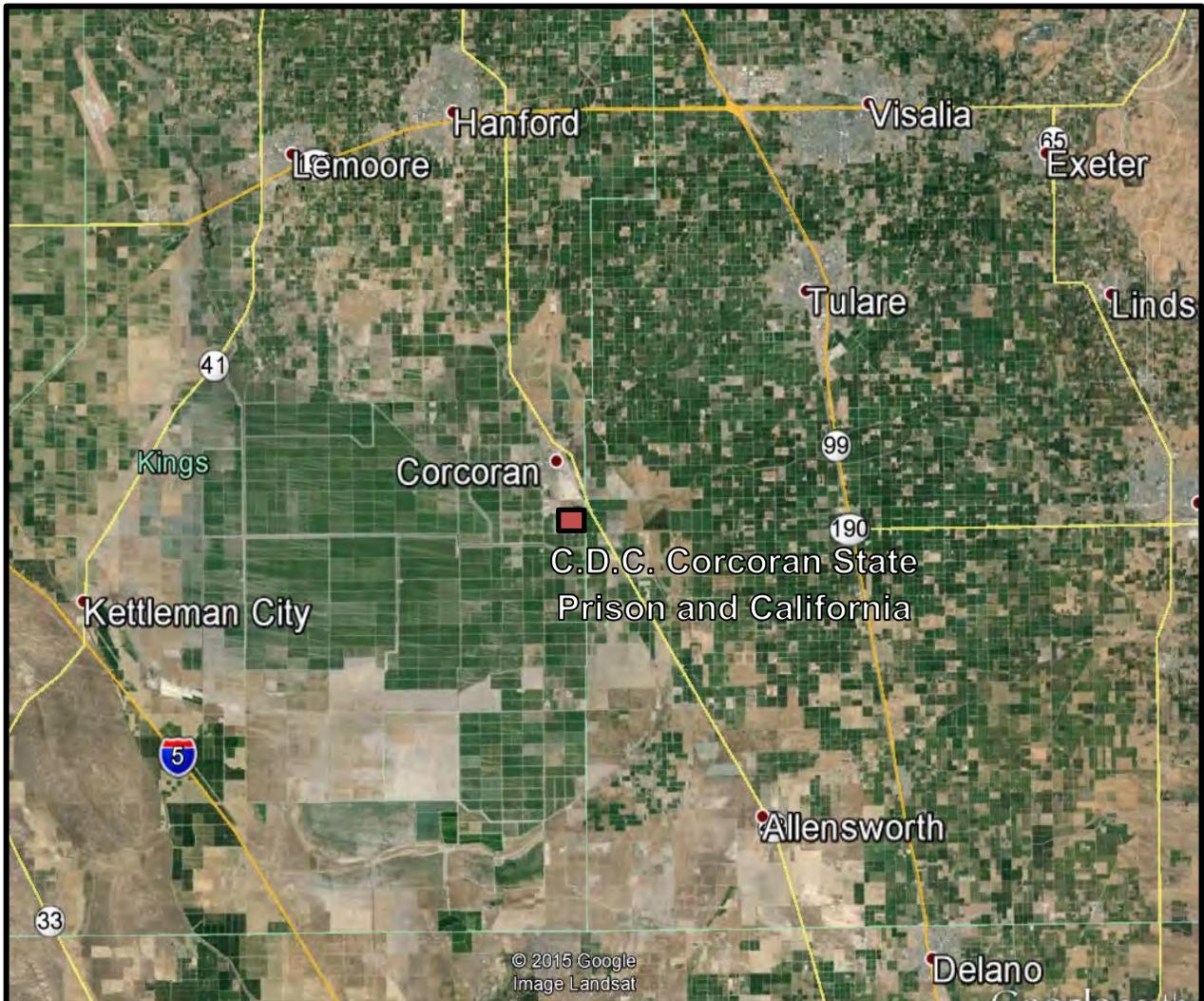
The proposed Order includes influent, effluent, groundwater, pond, source water, dairy loading, and solids and monitoring. The monitoring is necessary to evaluate the extent of the potential degradation from the discharge.

INFORMATION SHEET, ORDER R5-2016-XXXX
CALIFORNIA DEPARTMENT OF CORRECTIONS AND
CALIFORNIA PRISON INDUSTRY AUTHORITY
CORCORAN STATE PRISON AND CALIFORNIA SUBSTANCE ABUSE TREATMENT FACILITY
WASTEWATER TREATMENT FACILITY AND DAIRY
KINGS COUNTY

-9-

Reopener

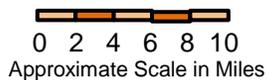
The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. The proposed Order would set limitations based on the information provided thus far. If applicable laws and regulations change, or once new information is obtained that will change the overall discharge and its potential to impact groundwater, it may be appropriate to reopen the Order.



SITE VICINITY MAP

ORDER R5-2016-0027
WASTE DISCHARGE REQUIREMENTS

FOR
CALIFORNIA DEPARTMENT OF CORRECTIONS AND
CALIFORNIA PRISON INDUSTRY AUTHORITY
CORCORAN STATE PRISON & SUBSTANCE ABUSE TREATMENT FACILITY
WASTEWATER TREATMENT FACILITY AND DAIRY
KINGS COUNTY



ATTACHMENT A



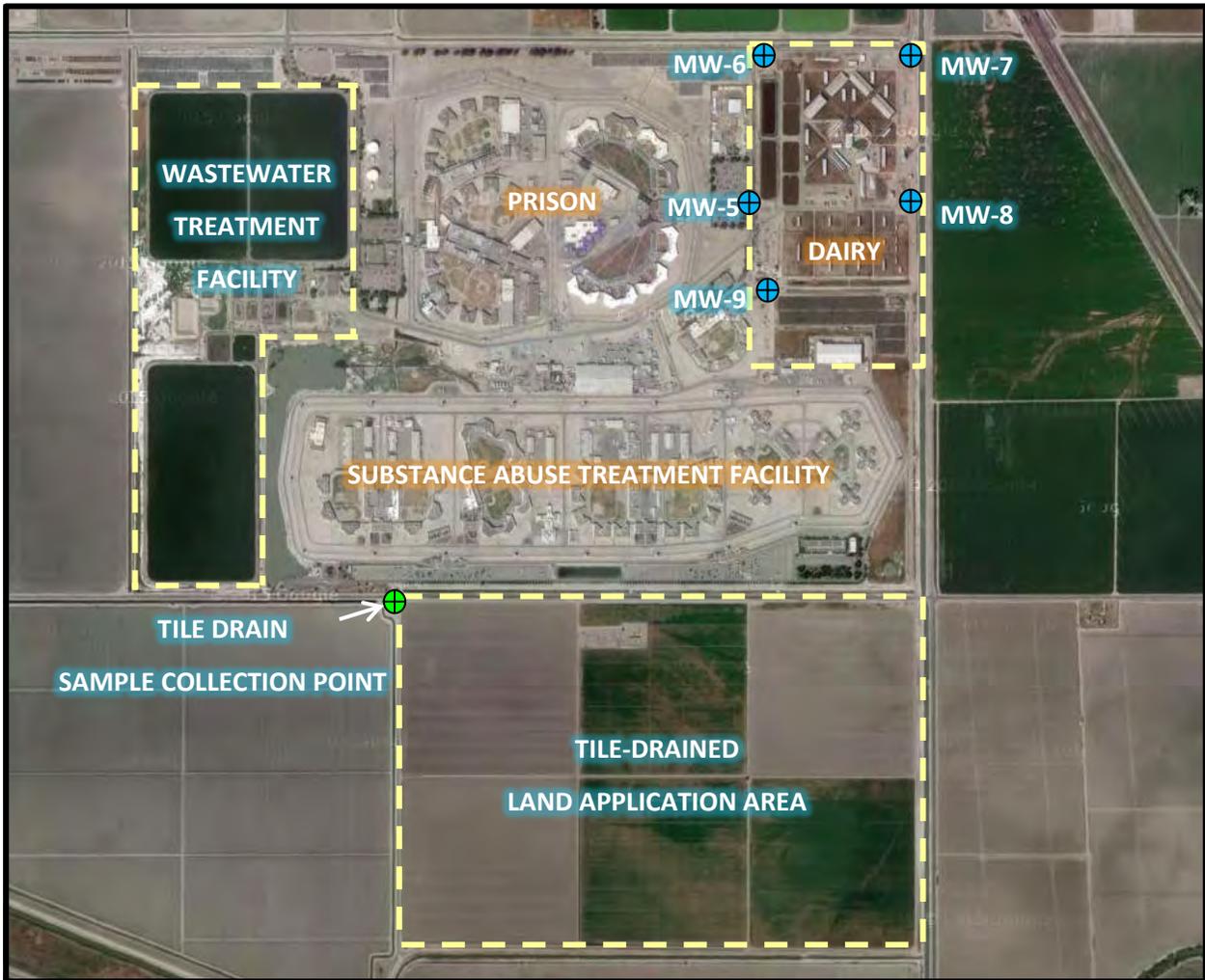
FACILITY MAP

ORDER R5-2016-0027
 WASTE DISCHARGE REQUIREMENTS

FOR
 CALIFORNIA DEPARTMENT OF CORRECTIONS AND
 CALIFORNIA PRISON INDUSTRY AUTHORITY
 CORCORAN STATE PRISON & SUBSTANCE ABUSE TREATMENT FACILITY
 WASTEWATER TREATMENT FACILITY AND DAIRY
 KINGS COUNTY



ATTACHMENT B



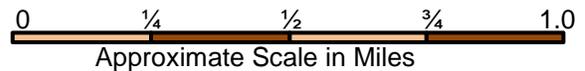
SITE MAP WITH GROUNDWATER MONITORING LOCATIONS

ORDER R5-2016-0027
WASTE DISCHARGE REQUIREMENTS

FOR
CALIFORNIA DEPARTMENT OF CORRECTIONS AND
CALIFORNIA PRISON INDUSTRY AUTHORITY
CORCORAN STATE PRISON & SUBSTANCE ABUSE TREATMENT FACILITY
WASTEWATER TREATMENT FACILITY AND DAIRY
KINGS COUNTY

⊕ - Groundwater Monitoring Well

⊕ - Tile Drain Sample Location





ATTACHMENT D

WASTEWATER SIGNAGE
WASTE DISCHARGE REQUIREMENTS
ORDER R5-2016-0027
CALIFORNIA DEPARTMENT OF CORRECTIONS AND
CALIFORNIA PRISON INDUSTRIES
CORCORAN STATE PRISON & SUBSTANCE ABUSE TREATMENT FACILITY
WASTEWATER TREATMENT FACILITY AND DAIRY
KINGS COUNTY