

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER R5-2015-0053
FOR
DELHI COUNTY WATER DISTRICT
WASTEWATER TREATMENT FACILITY
MERCED COUNTY

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

1. In June 2012, the Delhi County Water District (hereafter "District" or "Discharger") submitted a Report of Waste Discharge (RWD) to apply for revised Waste Discharge Requirements (WDRs) for the Delhi Wastewater Treatment Facility (WWTF), which serves the community of Delhi. The District submitted an amended RWD on 15 October 2014. The amended RWD was prepared by Quad Knopf, Inc., engineers. The District provides about 2,300 residential and commercial connections and serves about 7,500 residents.
2. The District owns and operates the WWTF and is responsible for compliance with these WDRs.
3. The WWTF is on about 48.3 acres at 8668 Pinewood Street southeast of Delhi (Section 15, T6S, R11E, MDB&M), as shown on Attachment A, which is attached hereto and made part of this Order by reference. The WWTF occupies Assessor's Parcel Numbers (APN) 046-220-004 and 046-220-015.
4. WDRs Order 97-013, adopted by the Central Valley Water Board on 24 January 1997, prescribes requirements for the WWTF. Order 97-013 allows a monthly average dry weather discharge flow of up to 0.8 million gallons per day (mgd) to 11.5 acres of evaporation/percolation ponds (8 acres of bottom area). Order 97-013 also allows a discharge up to 1.0 mgd if the District provides additional effluent disposal capacity. The Discharger's RWD proposes to increase the permitted WWTF flow to 1.2 mgd by rerating the treatment capacity to 1.2 mgd and adding an additional 2-acre evaporation/percolation pond. Therefore, Order 97-013 will be rescinded and replaced with this Order.

Existing Facility and Discharge

5. The WWTF consists of an Advanced Integrated Wastewater Pond SystemTM and evaporation/percolation ponds. The WWTF consists of a headworks, two advanced facultative ponds, two high rate ponds, two algal settling ponds, a maturation pond, and four evaporation/percolation ponds totaling 11.5 acres, as shown on Attachment B, which is attached hereto and made part of this Order by reference. The advanced facultative ponds have floating aerators to provide supplemental aeration. Treatment ponds are lined with a synthetic liner to limit percolation losses. Effluent from the maturation pond is discharged to the evaporation/percolation ponds.

6. To consistently meet biochemical oxygen demand (BOD) and total suspended solids (TSS) limits in Order 97-013, the District installed chemical coagulation equipment and upflow tube settlers in the outlet structures of the algal settling ponds and divided the maturation pond into three separate cells with tube settlers in the outlet structures. Subsequently in 2009, the District also installed a dividing wall and piping to separate the original high rate pond into two independent high rate ponds.
7. The District measures the flow to the WWTF continuously and the flows since January 2013 through June 2014 are summarized in the following table. The first value shown is the average with the range of the recorded flows shown in parentheses below.

Table 1 – WWTF Flow Data

<u>Date</u>	<u>Monthly Flow</u> (millions of gallons per month)	<u>Daily Flow</u> (million gallons per day)
2013	17.89 (17.2 - 18.4)	0.605 (0.572 - 0.774)
2014	17.26 (16.09 - 17.93)	0.572 (0.567 - 0.578)
Averages	17.68	0.59

The average flow of 0.59 million gallons per day (mgd) is below the 0.8 mgd of WDR 97-013.

8. The District analyzes effluent on a monthly basis in general accordance with Monitoring and Reporting Program (MRP) 97-013. Effluent values from the WWTF have been generally stable since improvements were completed to the WWTF in 2012. The following table summarizes the average values for selected constituents of concern from January 2012 through June 2014. The first value shown is the average with the range of the reported laboratory results shown in parentheses below.

Table 2 – Effluent Data

<u>Date</u>	<u>BOD</u> <u>mg/L¹</u>	<u>TSS</u> <u>mg/L¹</u>	<u>Electrical Conductivity</u> <u>umhos/cm²</u>	<u>Total Nitrogen</u> <u>mg/L¹</u>
2012	15 (7 - 31)	17 (7 - 22)	855 (770 - 931)	21 (7 - 28)
2013	11 (7 - 15)	13 (9 - 20)	749 (650 - 821)	17 (7 - 26)
2014	16 (9 - 20)	20 (15 - 22)	736 (693 - 766)	26 (18 - 33)
Averages	14	16	784	20
<u>Limit</u>	40/80	40/80	---	---

1. mg/L = milligrams per liter.

2. umhos/cm = micromhos per centimeter.

BOD and TSS results are well below a daily average of 40 mg/L and a daily maximum of 80 mg/L. The WWTF is performing to near its design standards with respect to BOD and TSS. While there is no effluent limit for total nitrogen, the WWTF was

designed to treat total nitrogen to a concentration of 10 mg/L. The current average of 20 mg/L is twice the concentration of the design treatment goal.

9. The Discharger analyzes effluent annually (typically in December of each year) for general minerals and the average values of select constituents from 2011 through 2013 are presented in the following table. The first number represents the average result, while the range of results is listed in parentheses below.

Table 3 – Effluent General Minerals Data

Sodium	Chloride	Sulfate	Total Hardness	Bicarbonate Alkalinity	Total Dissolved Solids
<u>mg/L</u>	<u>mg/L</u>	<u>mg/L</u>	<u>mg/L</u>	<u>mg/L</u>	<u>mg/L</u>
21	100	42	112	243	503
(18 – 23)	(93 – 110)	(36 – 47)	(104 – 120)	(200 – 290)	(470 – 560)

10. In 2012, the District installed a liner and underdrain system in its previously unlined algal drying beds to prevent the percolation of leachate to groundwater. The underdrain system discharges leachate back to the high rate ponds. The discharge point may be changed to the southern advanced facultative pond in the future. The District sells its algal solids to ALGIX, a Mississippi based company that produces bio-based feedstock for the renewable plastics industry (biodegradable plastic products). The District received approval for the transport and sale of the algal solids from the United States Environmental Protection Agency (EPA) in an e-mail dated 15 May 2013.

Planned Changes in the Facility and Discharge

11. The October 2014 RWD includes the results of a study that indicates that the WWTF, as modified as described in Finding 6, can successfully treat up to 1.2 mgd of wastewater with respect to BOD and TSS removal. From 18 June 2013 to 18 June 2014, the District treated all of its influent with only half of the WWTF treatment units. The average daily flow was 0.58 mgd and the maximum daily flow was 0.65 mgd. During this period, the WWTF easily met BOD and TSS limits in Order 97-013. The RWD concludes that the treatment capacity of the WWTF with all units on-line is 1.2 mgd. The study did not address how the proposed increase in flow would affect the WWTF ability to remove nitrogen.
12. A 31 October 2011 letter report by Condor Earth Technologies, Inc., indicates that the four existing evaporation/percolation ponds, if properly managed and maintained, have a disposal capacity of at least 1.0 mgd. A water balance conducted by Allied Engineers, Inc., indicates the addition of 2.0 acres of evaporation/percolation ponds would bring the WWTF disposal capacity up to 1.2 mgd. The District proposes to construct an additional 2.0 acres of evaporation/percolation ponds.
13. To account for higher algae production rates, the District proposes to construct a new 1.2 acre concrete-lined sloped algae drying and storage pad. Runoff from the sloped pad would be collected and pumped to the south advanced facultative pond.

14. Upon the completion of the changes described in Findings 12 and 13, and the requirements of Provision G.3, the treatment and disposal capacity of the WWTF will be 1.2 mgd.

Wastewater Collection System

15. A 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.
16. The District’s service area covers approximately 1,642 acres, or about 2.5 square miles. The District’s sanitary sewer system consists of approximately 22.3 miles of gravity pipe, 2.2 miles of force main, and 6 lift stations.
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. Supply water for the City of Delhi is provided by four groundwater supply wells within the community of Delhi. The quality of source water, based on the District’s 2012 and 2013 Consumer Confidence Reports are as follows. The first number represents the average result, while the range of results is listed in parentheses below. All of the 2013 results, except for nitrate as nitrogen, are from one sampling event and there is no range shown below in parentheses. One sample of one of the wells exceeded the Maximum Contaminant Level (MCL) for nitrate as nitrogen as shown in bold.

Table 4 - Supply Water Results

	Sodium <u>mg/L</u>	Chloride <u>mg/L</u>	Arsenic <u>ug/L¹</u>	Nitrate as Nitrogen <u>mg/L</u>	Electrical Conductivity <u>umhos/cm</u>	Total Dissolved Solids <u>mg/L</u>
2012	37 (29 – 42)	23 (11 – 27)	5.43 (2.6 – 6.9)	6.5 (1.4 – 10.4)	373 (290 – 420)	290 (190 – 360)
2013	35	24	4.2	6.5 (1.4 – 8.8)	430	290
MCLs	---	250	10	10	900	500

¹. ug/L = micrograms per liter

19. The nearest surface water body is the Merced River, which is tributary to the San Joaquin River. Surface water drainage is by sheet flow to the Merced River, as shown in Attachment A.
20. The WWTF is bordered on the north by the Turlock Irrigation District's Highland Canal and agricultural land, on the southwest by Highway 99 and the Southern Pacific railroad tracks, and on the southeast by agricultural land. There are three residences on Canal Drive about 900 feet southeast of the WWTF and a cold storage facility is about 600 feet south of the WWTF.
21. Soils in the area of the WWTF and the evaporation/percolation ponds consist almost entirely of the Delhi sand, according to the Web Soil Survey published by the United States Department of Agriculture Natural Resources Conservation Service. The Delhi sand has a land capability classification of 3s. Soils with a Class 3 rating have severe limitations that reduce the choice of plants or that require special conservation practices, or both. The subclass "s" shows that the soil has limitations within the root zone, such as shallowness of the root zone, a high content of stones, a low available water capacity, low fertility, and excessive salinity or sodicity.
22. Condor Earth Technologies Inc., submitted a report dated 28 May 2010 titled *Delhi Wastewater Treatment Facility Expansion Area Percolation Evaluation*. The report indicates the upper 6 to 10 feet of medium dense silty sand and poorly graded sand underlain by layers of loose to medium dense poorly graded to well graded sands, silt with interbedded poorly graded sands and silty clays to a depth of about 30 feet. The poorly graded sands are underlain by interbedded strata of silty sands, sandy silts, and silty sands with clay to 50 feet below ground surface. No prominent single continuous restricting layers were observed beneath the WWTF.
23. The WWTF is in an arid climate characterized by dry summers and mild winters. The rainy season generally extends from October through April. Average annual pan evaporation in the discharge area is about 69 inches, according to the National Oceanic and Atmospheric Administration Technical Report NWS 34, *Mean Monthly, Seasonal, and Annual Pan Evaporation for the United States*. The average annual precipitation in the discharge area is about 13 inches based on 29 years of data collected by the Western Regional Climate Center.
24. Land uses in the vicinity of the WWTF consist primarily of agriculture, with lesser usage by rural residential and industrial (Foster Farms to the east and southeast) sources. Primary crops grown in the area include almonds, sweet potatoes, field crops, and vineyards, according to the Merced County 2002 Land Use Map published by the Department of Water Resources (DWR).

Basin Plan, Beneficial Uses, and Water Quality Objectives

25. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting

waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to California Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.

26. The WWTF lies within the San Joaquin Valley Floor Hydrologic Unit, Turlock Hydrologic Area (No. 535.50), as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986. Local drainage is to the Merced River. The beneficial uses of the Merced River from Mc Swain Reservoir to the San Joaquin River, as stated in the Basin Plan, are municipal and domestic supply; agricultural stock watering; industrial service supply; industrial process supply; hydropower generation; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; warm and cold freshwater migration; warm and cold spawning; and wildlife habitat.
27. 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.
28. 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.
29. 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.
30. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
31. The list of crops in Finding 24 is not intended as a definitive inventory of crops that are or could be grown in the area where groundwater quality is potentially affected by the discharge, but it is representative of current and historical agricultural practices in the area.

Groundwater Conditions

32. The WWTF has a monitoring well network that consists of six shallow groundwater monitoring wells (MW-1 through MW-6). The groundwater beneath the WWTF is at about 30 to 40 feet bgs and is mounded near the evaporation/percolation ponds. California Department of Water Resource's maps of Lines of Equal Elevation indicate that areal groundwater flow is to the south/southeast towards the Merced River. The monitoring wells and their positions with respect to the WWTF are shown on Attachment B.

33. MW-1 though MW-3 were installed in June 1995 to serve the previous WWTF. At the time the wells were installed, the interpreted direction of groundwater flow was to the south/southwest. MW-1 was installed as an upgradient well and MW-2 and MW-3 were installed as downgradient wells with respect to the previous WWTF. However, the direction of groundwater flow was found to be highly variable due to mounding from the evaporation/percolation ponds. MW-4 was installed as a downgradient well in October 1997 at the southwest corner of the existing evaporation/percolation ponds. The District installed MW-5 offsite and to the east in 2008 to serve as an upgradient well. However, the groundwater elevation and analytical data from MW-5 indicate that it is actually downgradient of the WWTF with the flow being to the south/southeast. This correlates to the regional groundwater flow discussed in Finding 32. MW-6 was installed in December 2009 in the center of the WWTF evaporation/percolation ponds to monitor the quality of groundwater directly beneath the evaporation/percolation ponds.
34. MW-1 is still in the interpreted upgradient direction of the WWTF, but it is still adjacent a Turlock Irrigation District canal that affects (improves) its water quality. MW-2 is now situated upgradient of the existing evaporation/percolation ponds, and analytical results from this well currently provide upgradient groundwater quality results for the WWTF. However, the results in MW-2 vary considerably (EC results from 140 to 750 umhos/cm in 2013) and water quality is likely influenced by the nearby TID canal and mounding from the existing evaporation percolation ponds. Upon completion of the construction of the proposed evaporation/percolation pond, MW-2 will be downgradient of the proposed evaporation/percolation pond and groundwater quality in this well will no longer represent upgradient groundwater quality. MW-3 through MW-5 are all downgradient wells and the analytical results from each well indicate the wells are influenced by the discharge of wastewater to the evaporation/percolation ponds. MW-6 represents water quality directly beneath the WWTF.
35. The average results of groundwater monitoring well sampling from 2012 through February 2014 are presented below. Results shown in bold exceed the recommended Secondary or Primary MCLs for the constituent shown.

Table 5 – Groundwater Results

<u>Constituent</u>	<u>Units</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>MW-5</u>	<u>MW-6</u>	<u>MCL¹</u>
EC	umhos/cm	103	536	865	869	1,062	832	900/1600
TDS	mg/L	92	353	573	573	719	483	500/1000
Nitrate as nitrogen	mg/L	3.1	7.1	23	15	10	6.6	10
Sodium	mg/L	4.0	69	104	112	77	110	---
Chloride	mg/L	3.9	69	108	117	114	107	250/500

^{1.} Where there are two numbers the first number represents the Recommended MCL and the second number represents the Upper MCL. Values shown in bold font exceed the respective MCL.

36. EC values are less than the recommended Secondary MCL of 900 umhos/cm in all wells except MW-5, which exceeds the recommended MCL, but is less than the upper Secondary MCL for EC of 1,600 umhos/cm and more than the effluent average of 784 mg/L. Analytical data suggests the EC result in MW-5 may be the result of

previous discharge practices and or other sources. The average effluent EC in 2007 was 1,070 umhos/cm, while the average EC of effluent in 2014 was 736 umhos/cm, a decrease in the average value of over 300 umhos/cm. EC results in MW-3 and MW-4 in 2007 averaged 923 umhos/cm and 968 umhos/cm, respectively, but EC results in 2013 from MW-3 and MW-4 decreased and averaged 835 umhos/cm and 853 umhos/cm, respectively, about 100 umhos/cm less than the 2007 results. TDS values exceed the recommended MCL of 500 mg/L in all downgradient wells (MW-3, MW-4, and MW-5), but are less than the upper Secondary MCL of 1,000 mg/L. Like EC, TDS results likely represent past discharge practices as TDS concentrations in the past (2006 average of 570 mg/L) were higher than those currently recorded (2013 average of 470 mg/L).

37. Nitrate as nitrogen concentrations exceed the primary MCL of 10 mg/L in MW-3 and MW-4, and are at the MCL in MW-5. The WWTF was designed to treat total nitrogen to 10 mg/L, but total nitrogen concentrations in effluent have averaged 20 mg/L since 2012. The highest concentrations are observed in MW-3, but the nitrate as nitrogen concentrations in MW-3 indicate an overall declining trend from a high of 49 mg/L in 1998, to as low as 8.4 mg/L in November 2013. Nitrate as nitrogen concentrations decrease in the downgradient wells MW-4 and MW-5, which are farther from MW-3. Nitrate as nitrogen has averaged 15 mg/L in MW-4, but has also indicated a declining trend in concentration similar to that in MW-3, while nitrate as nitrogen results in MW-5 have averaged about 10 mg/L and concentrations are stable.
38. There is limited data that suggests the discharge of wastewater is creating reducing conditions. When MW-5 was installed in 2008, Central Valley Water Board staff requested samples to be analyzed for arsenic and manganese. The District has analyzed samples from MW-5 for arsenic and manganese since February 2010 and arsenic has been detected 14 of 17 samples and manganese was detected in five of 11 samples. The levels are low with arsenic averaging 2.5 micrograms per liter (ug/L), and manganese averaging 0.27 ug/L, but samples have not been collected and analyzed for arsenic and manganese from the other five groundwater monitoring wells. Additionally, the nitrate as nitrogen concentration in MW-6 is just slightly lower than those in upgradient MW-2, but significantly less than the nitrate as nitrogen concentrations in MW-3 possibly indicating reducing conditions. This Order requires groundwater samples to be analyzed for general minerals and some metals such as arsenic and manganese.

Antidegradation Analysis

39. 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.
40. The WWTF was upgraded in 2012 to improve effluent quality and capture leachate from the dewatering of algal solids. The WWTF treats domestic wastewater from residential and commercial developments. Source water is of good quality and with the exception of nitrate as nitrogen, the minimal increases in organics, nutrients, and salts from domestic use will not cause wastewater to exceed water quality objectives. Discussion of relevant constituents follows:
- a. For salinity, the average effluent EC of 736 umhos/cm in 2014 is slightly greater than the most stringent water quality goals for use on the most salt sensitive crops, but the EC of the effluent is less than what can be applied for almost any crop grown in the area (Finding 24). 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. Additionally, the EC in effluent results indicate a decreasing trend since the various upgrades were completed to the WWTF, and the EC of the effluent is less than the recommended Secondary MCL of 900 umhos/cm. The discharge as authorized herein will not contribute to groundwater exceedances of water quality objectives for salinity. This Order contains Groundwater Limitations that limit groundwater EC degradation to background groundwater quality or the numerical MCLs in Title 22, whichever is greater.
 - b. Regarding nitrate as nitrogen, the WWTF is designed to remove total nitrogen to 10 mg/L. The average total nitrogen in effluent has averaged 20 mg/L since 2012 with results ranging from 7 to 33 mg/L. This Order includes an effluent limit that requires the effluent total nitrogen concentrations to be 10 mg/L or less and contains Provision G.6 that puts the District on a compliance schedule to treat total nitrogen to 10 mg/L, or demonstrate that a less restrictive limit will be protective of groundwater quality. Should the Discharger demonstrate that an effluent total nitrogen concentration greater than 10 mg/L is protective of the underlying groundwater quality, this Order will be re-opened for reconsideration of a new effluent total nitrogen limit. These actions will ensure the discharge does not cause or contribute to exceedances of water quality objectives for nitrate as nitrogen nor impair beneficial uses.
41. This Order establishes effluent and groundwater monitoring requirements 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.

42. The WWTF described in Findings 5 through 17, will provide treatment and control of the discharge that incorporates:
- a. Secondary treatment of wastewater;
 - b. Wastewater treatment for nitrogen removal;
 - c. Lined treatment components (high rate ponds, fermentation pits, advanced facultative ponds, and algal settling ponds) of the WWTF;
 - d. Lined algal drying beds with a leachate return system;
 - e. Dried algal solids hauled offsite;
 - f. An operation and maintenance manual;
 - g. Certified operators to ensure proper operation and maintenance; and
 - h. Source water, discharge, and groundwater monitoring.

The Board finds that the preceding treatment and control measures represent BPTC for this discharge.

43. Generally, limited degradation of groundwater by some of the typical waste constituents of concern (e.g., EC and nitrate) released with discharge from a municipal wastewater utility 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 municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impacts on water quality will be substantially less. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the state, and therefore provides sufficient reason to accommodate planned growth and allow for limited groundwater degradation.

Other Regulatory Considerations

44. 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.
45. 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.”

46. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt domestic sewage and wastewater. Title 27, section 20090 states in part:

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

(a) Sewage - Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, Title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable SWRCB-promulgated provisions of this division.

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

- (1) the applicable 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.

47. The discharge authorized herein and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:
 - a. The 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 evaporation/percolation ponds does not need to be managed as hazardous waste.

48. The State Water Board adopted Order 97-03-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The WWTF has a design capacity of more than 1.0 mgd (1.2 mgd), but all storm water from the WWTF is collected and disposed of onsite. The Discharger is therefore not required to obtain coverage under NPDES General Permit CAS000001.

49. Water Code section 13267(b)(1) 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 having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

50. The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2015-____ 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.

51. 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.

52. The District adopted a Mitigated Negative Declaration (SCH #2014021035) in accordance with the California Environmental Quality Act (CEQA) on 11 June 2014 for the proposed Wastewater Treatment Facility Improvement Project that will allow for a flow increase to 1.2 mgd upon approval of the Executive Officer.

53. Central Valley Water Board staff reviewed the Negative Declaration and concurs that the project will be an improvement over the former discharge and should not have a significant impact on water quality.

54. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in 40 Code of Federal Regulations part 503, Standards for the Use or Disposal of Sewage Sludge (503 regulations), which establish management criteria for protection of ground and surface waters, sets limits and application rates for heavy metals, and establishes stabilization and disinfection criteria. The Central Valley Water Board is not the implementing authority for the 503 regulations. The Discharger may have permitting and reporting responsibilities to EPA.
55. 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

56. 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.
57. 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.
58. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Waste Discharge Requirements Order 97-013 is rescinded and that pursuant to Water Code sections 13263 and 13267, the Delhi County Water District, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2510 et seq., is prohibited.
3. Treatment system bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*.
4. Discharge of waste at a location or in a manner different from that described in the Report of Waste Discharge or Findings herein is prohibited.

5. The Discharger shall not allow toxic substances to be discharged into the wastewater treatment system such that biological treatment mechanisms are disrupted.

B. Flow Limitations [Compliance shall be determined at EFF-001]

1. The monthly average dry weather flow shall not exceed 0.8 mgd until Provision G.3 is satisfied. Following approval by the Executive Officer, the monthly average dry weather flow shall not exceed 1.2 mgd.

C. Effluent Limitations [Compliance shall be determined at EFF-001]

1. The monthly average concentration of BOD in the discharge shall not exceed 40 mg/L, and the daily maximum concentration of BOD in the discharge shall not exceed 80 mg/L.
2. The monthly average concentration of total nitrogen in the discharge shall not exceed 10 mg/L. The Discharger shall achieve compliance with this limit in accordance with Provision G.6.
3. The arithmetic mean of BOD and TSS in effluent samples collected over a monthly period 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).

D. 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 evaporation/percolation ponds 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. Objectionable odors shall not be perceivable beyond the limits of the WWTF property at an intensity that creates or threatens to create nuisance conditions.

8. As a means of discerning compliance with Discharge Specification D.7, the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or storage pond shall not be less than 1.0 mg/L for three consecutive weekly sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Central Valley Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.
9. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.
10. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
11. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications D.9 and D.10.
12. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
 - a. An erosion control 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. The Discharger shall periodically monitor sludge accumulation in the wastewater treatment/storage ponds and shall remove sludge as necessary to maintain adequate treatment and storage capacity.

E. 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 mL.

F. 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.

G. Provisions

1. The Discharger shall comply with MRP R5-2015-0053, 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 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.
3. Upon completion of the construction of the additional 2-acre evaporation/percolation pond and the 1.2 acre lined algal solids drying and storage pad described in Findings 12 and 13 and **at least 60 days prior** to initiating an increase in the monthly average flow to greater than 0.8 mgd, the District shall submit an engineering certification that it has constructed the proposed improvements as designed and has 1.2 mgd of treatment, storage, and disposal capacity to comply with the terms and conditions of this Order. This Provision will be considered satisfied following written acknowledgement from the Executive Officer that this Provision's criteria have been met.
4. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.

5. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.
6. The Discharger shall comply with Effluent Limitation C.2 and Discharge Specification D.2 in accordance with the following compliance schedule:

Task	Task Description	Due date
a.	Submit a plan and implementation schedule to conduct an effluent nitrogen evaluation. The evaluation shall be designed to determine the effluent nitrogen level to ensure compliance with Groundwater Limitations of this Order and provide appropriate supporting technical evidence. The plan and implementation schedule shall be subject to the approval of the Executive Officer.	19 January 2016
b.	Implement the approved plan and time schedule required by Task a.	In accordance with the approved schedule, but by no later than 17 October 2016
c.	<p>Submit the results of the effluent nitrogen evaluation with either:</p> <ul style="list-style-type: none"> i. Appropriate technical information supporting a demonstration that discharge at existing total nitrogen concentrations will not cause or continue to contribute to violations of the Groundwater Limitations of this Order. Upon Executive Officer written concurrence with the demonstration, this provision shall be considered satisfied and the Order will be reopened to consider, as appropriate, modification or removal of Effluent Limitation C.2, <p style="text-align: center;">Or</p> <ul style="list-style-type: none"> ii. A proposed total nitrogen effluent limit and appropriate technical information supporting a demonstration that discharge at the proposed limit will not cause or continue to contribute to violations of the Groundwater Limitations of this Order. The proposed limit and technical information shall also be accompanied by a Report of Waste Discharge (RWD) including a work plan and time schedule describing measures the District will implement to comply with the proposed limit. Upon Executive Officer written concurrence with the results and RWD, the Order will be reopened for consideration of the proposed limit, 	In accordance with the approved schedule, but by no later than 18 April 2017

	Or	
	iii. A RWD with work plan and time schedule describing the measures the District will implement to meet a total nitrogen effluent limit of 10 mg/L. The work plan and time schedule are subject to Executive Officer approval.	
d.	The District shall begin implementation of the work plan and time schedule required by Task Item c.ii. or c.iii, as appropriate.	In accordance with the approved schedule, but by no later than 17 October 2017
e.	The District shall complete implementation of the work plan and submit an engineering certification that the measures proposed in Task c have been completed and implemented as designed.	In accordance with the approved schedule, but by no later than 17 April 2020

This provision shall be considered satisfied upon the Executive Officer approval of the technical report described in Task c.i. or consideration of a revised nitrogen limit by the Central Valley Water Board pursuant to Task c.ii.

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. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger when the operation is necessary to achieve compliance with the conditions of this Order.

9. The Discharger shall provide certified wastewater treatment plant operators in accordance with Title 23, division 3, chapter 26.
10. 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.
11. 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."
12. 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.
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. In the event of any change in control or ownership of the WWTF, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
16. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a

discharge without requirements, a violation of the Water Code. 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.

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

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

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

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

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on 17 April 2015.

Original signed by

PAMELA C. CREEDON, Executive Officer

INFORMATION SHEET

ORDER R5-2015-0053
DELHI COUNTY WATER DISTRICT
WASTEWATER TREATMENT FACILITY
MERCED COUNTY

The Delhi County Water District (District) owns and operates a wastewater treatment facility (WWTF) that serves about 2,300 residential and commercial connections in the unincorporated community of Delhi. The current WWTF was constructed in 1997 to replace an older WWTF at the same location.

Background

The current WWTF opened in 1998. Waste Discharge Requirements (WDRs) Order 97-013 authorizes the discharge to land of up to 0.8 million gallons per day (mgd) of undisinfected secondary effluent to evaporation/percolation ponds. Based on the engineer's design criteria, the WDRs include a monthly average limit of 40 milligrams per liter (mg/L) for both 5-day biochemical oxygen demand (BOD) and total suspended solids (TSS), and allow an increase in flow up to 1.0 mgd once additional disposal capacity is provided. The WDRs do not contain salinity effluent limits.

The WWTF uses the Advanced Integrated Wastewater Pond System technology designed by Oswald Engineering Associates, Inc., and in 1998 the WWTF consisted of a headworks, two advanced facultative ponds with one fermentation pond in each advanced facultative pond that is divided into three cells, one high rate pond, two algal settling ponds, a maturation pond, and four evaporation/percolation ponds. The District has made improvements to the WWTF system since 1998 including, but not limited to, installing chemical coagulation equipment and upflow tube settlers in the outlet structures of the algal settling ponds and dividing the maturation pond into three separate cells with tube settlers in the outlet structures, and installing a center dividing wall in the high rate pond to form two separate high rate ponds in accordance with the original design of the WWTF.

Effluent Characteristics

Historically, the discharge from the WWTF has had difficulty meeting the effluent limits for BOD and TSS. The effluent BOD and TSS limits for the discharge include a daily average of 40 mg/L and a daily maximum of 80 mg/L. From 2006 through 2007, the average BOD and TSS results were 104 mg/L and 90 mg/L, respectively. To address the BOD and TSS concentrations in effluent, the District began adding coagulants in 2008 and embarked on upgrading the WWTF as described above. With the combination of coagulants and the improvements to the WWTF, effluent quality for BOD and TSS has improved, as shown on the following table.

Effluent Data - 2012 through June 2014

<u>Date</u>	<u>BOD</u> <u>Milligrams per</u> <u>Liter</u>	<u>TSS</u> <u>Milligrams per</u> <u>Liter</u>	<u>Electrical</u> <u>Conductivity</u> <u>Micromhos per</u> <u>centimeter.</u>	<u>Total</u> <u>Nitrogen</u> <u>Milligrams per</u> <u>Liter</u>
2012	15 (7 - 31)	17 (7 - 22)	855 (770 - 931)	21 (7 - 28)

Effluent Data - 2012 through June 2014 (continued)

<u>Date</u>	<u>BOD</u> Milligrams per <u>Liter</u>	<u>TSS</u> Milligrams per <u>Liter</u>	<u>Electrical Conductivity</u> Micromhos per centimeter	<u>Total Nitrogen</u> Milligrams per Liter
2013	11 (7 - 15)	13 (9 - 20)	749 (650 - 821)	17 (7 - 26)
2014	16 (9 - 20)	20 (15 - 22)	736 (693 - 766)	26 (18 - 33)
Averages	14	16	784	20
<u>Limit</u>	40/80	40/80	---	---

The EC results have improved as well averaging 855 umhos/cm in 2012 and showing a steady decreasing trend to an average of 736 umhos/cm for the first half of 2014. Total nitrogen results are however, higher than anticipated. The WWTF is designed to treat total nitrogen to 10 mg/L, but the average is currently double the design treatment concentration for total nitrogen as discussed in greater detail below.

Solids and Sludge/Biosolids Disposal

Solids removed by the WWTF bar screens are disposed of at the Merced County landfill. WDR Order 97-013 contains sludge disposal specifications that indicate the District 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. The District sells dried algae to Algix, a Mississippi based company that makes biodegradable products with algal solids. The United States Environmental Protection Agency has approved the sale of the dried algal solids.

Groundwater Occurrence

The WWTF and evaporation/percolation ponds are within the Turlock groundwater sub basin that forms a part of the San Joaquin Valley Groundwater Basin. The Basin is reported to contain three general primary water bearing zones: an uppermost unconfined aquifer (Modesto Formation); a semi-confined aquifer (Turlock Lake Formation); and a confined aquifer beneath the Corcoran Clay layer.

Groundwater in the vicinity of the WWTF is about 30 to 40 feet bgs and generally flows to the south/southeast towards the Merced River situated about a mile south/southeast of the WWTF. However, the direction of groundwater flow varies locally due to mounding caused by the discharge of wastewater to the evaporation/percolation ponds and water deliveries in the TID canal present along the northern boundary of the WWTF.

The District has installed six groundwater monitoring wells since 1995 to create the existing groundwater monitoring well network. All of the monitoring wells are set in the upper unconfined aquifer. In 1995, prior to construction of the new WWTF, the District installed three monitoring wells (MW 1 through MW 3) to characterize groundwater influenced by the former WWTF. At the time of installation, the interpreted direction of groundwater flow was to

the west/southwest and MW-1 was installed as an upgradient well at the northeast corner of the WWTF property adjacent to a canal. MW-1 is still upgradient of the WWTF, but it is adjacent to a Tulare Irrigation District canal that affects water quality (improves) in MW-1. MW-2 and MW-3 were installed as down to crossgradient wells to monitor groundwater south and west of the percolation ponds of the former WWTF. MW-2 is directly adjacent to, but upgradient of, the existing evaporation/percolation ponds. Analytical results from this well currently provide upgradient groundwater quality results for the WWTF. However, MW-2 will be downgradient of the proposed evaporation/percolation pond and groundwater quality in this well will no longer represent upgradient groundwater quality. MW-3 is downgradient of the lined advanced facultative ponds and is adjacent the algal drying beds. The algal drying beds were installed in 2008, but were not lined. In 2012, the algal drying beds were lined and equipped with an underdrain to remove leachate, which is pumped back into the WWTF.

Groundwater elevations were found to be highly variable due to mounding from the percolation ponds and the discharge from the Turlock Irrigation District canal. In 1997, the District installed an additional well (MW-4) at the southwest corner of the site and adjacent to the evaporation/percolation ponds. Again, groundwater elevation data from the four wells indicated that the groundwater direction was variable and was influenced by the use of the percolation ponds and nearby irrigated agriculture. In November 2008, well MW-5 was installed southeast of the WWTF as an intended upgradient well in an effort to establish background groundwater quality. However, based on groundwater elevations and analytical results obtained from MW-5, the District's groundwater consultant determined MW-5 was actually downgradient of the WWTF and showed signs of groundwater degradation (TDS, EC, nitrates as nitrogen) from the WWTF. The District installed MW-6 in December 2009 directly in the center of the evaporation/percolation ponds to assess groundwater quality directly beneath them and to evaluate those findings with respect to the concentrations observed in the other wells.

Groundwater Conditions

The average results from 2012 through the first quarter of 2014 (nine quarterly monitoring events) are presented in the following table. Results shown in bold exceed the respective maximum contaminant level (MCL).

Groundwater Results

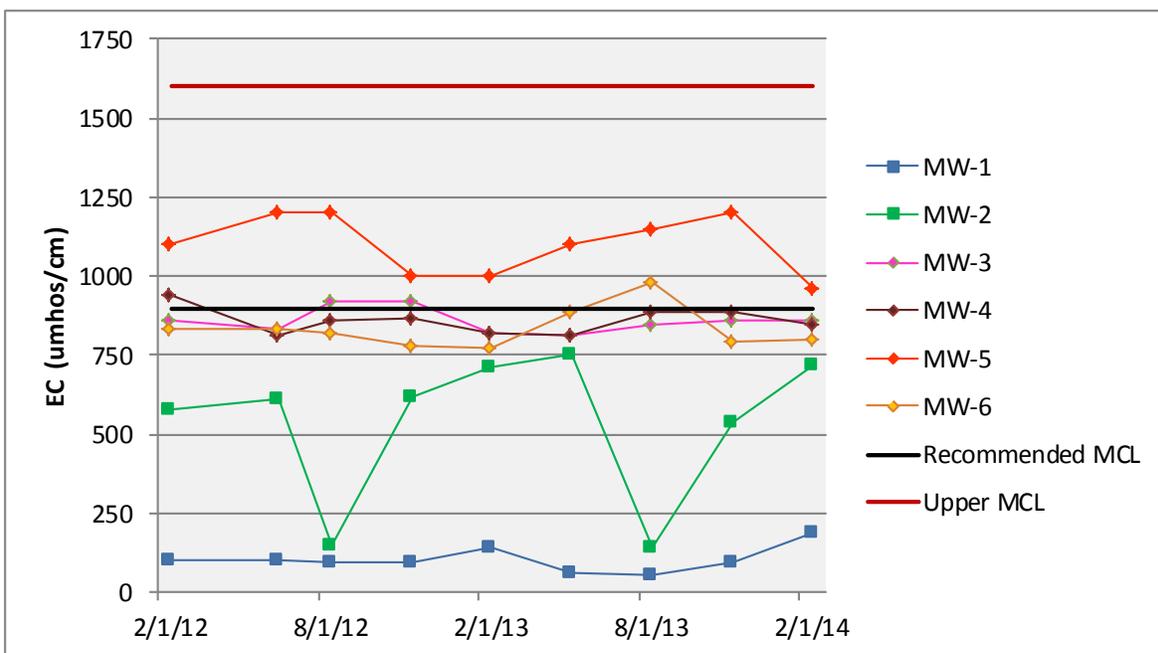
<u>Constituent</u>	<u>Units</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>MW-5</u>	<u>MW-6</u>	<u>MCL</u> ¹
EC	umhos/cm	103	536	865	869	1,062	832	900/1600
TDS	mg/L	92	353	573	573	719	483	500/1000
Nitrate as nitrogen	mg/L	3.1	7.1	23	15	10.4	6.6	10
Sodium	mg/L	4.0	69	104	112	77	110	---
Chloride	mg/L	3.9	69	108	117	114	107	250/500

¹ Where there are two numbers the first number represents the Recommended MCL and the second number represents the Upper MCL. Values shown in bold font exceed the respective MCL.

Groundwater results are compared to various water quality objectives to assess degradation/pollution. Water quality objectives are discussed in detail in the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition, revised October 2011 (Basin Plan)*. Typical water quality objectives include State drinking water primary and secondary MCLs.

The results from the down gradient wells (MW-3 through MW-5) shown in the above table are all greater than the results from MW-2, indicating the discharge has degraded groundwater. However, most of the increases do not exceed water quality objectives with the exception of EC, TDS, and nitrate as nitrogen.

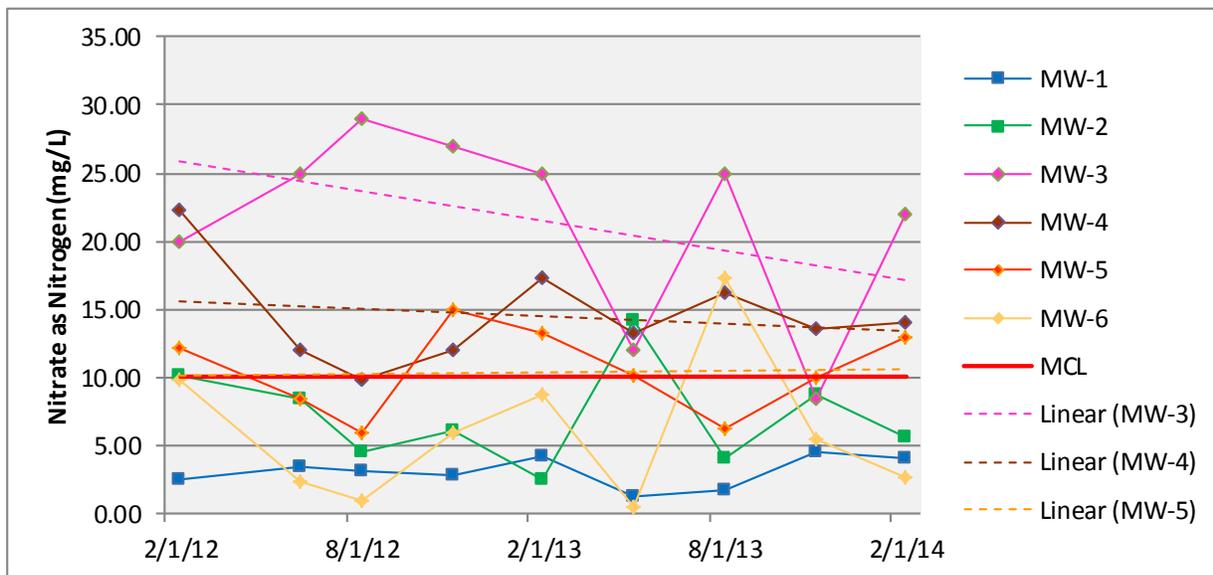
The highest EC results are from downgradient MW-5 with the average result (1,062 umhos/cm) exceeding the recommended MCL of 900 umhos/cm, but it is less than the upper Secondary MCL of 1,600 umhos/cm for EC. Review of effluent EC data indicates the EC results in MW-5 are likely the result of past EC concentrations in effluent. The average EC of the discharge in 2007 was 1,070 umhos/cm, while the average EC of the discharge in 2013 was 736 umhos/cm. The EC results in downgradient wells MW-3 through MW-5 appear to be the result of past discharges from the WWTF or an offsite source. The average EC results in MW-3 and MW-4 are less than the recommended Secondary MCL of 900 umhos/cm. With the exception of MW-2, all of the EC concentrations are generally stable without significant variation in concentration. The significant variation in MW-2 is likely due to the water deliveries in the TID canal to the north.



The average TDS results are similar to the EC results, but all of the TDS results in downgradient wells exceed the recommended Secondary MCL of 500 mg/L and are less than the upper Secondary MCL of 1,000 mg/L. MW-5 has the highest average TDS result, and

based on historical data, the results in the downgradient wells appears to be due to the past discharge to the evaporation/percolation ponds having higher TDS results than the current discharge.

Nitrate as nitrogen concentrations exceed the MCL in downgradient wells MW-3 and MW-4, and are equal to the MCL in MW-5. The highest concentrations are in MW-3 (average 23 mg/L), but overall, the concentrations are decreasing in MW-3, as shown on the graph below. Nitrate as nitrogen concentrations in groundwater decrease as one moves southeast with the average concentration in MW-4 being 15 mg/L, and nitrate as nitrogen results from MW-4 also exhibit an overall decreasing trend in concentration. Nitrate as nitrogen in MW-5 has typically been right at the MCL and now averages 10 mg/L.



Monitoring of nitrate as nitrogen, nitrite as nitrogen, total Kjeldahl nitrogen (TKN), ammonia, and total nitrogen is included in Monitoring and Reporting Program R5-2015-0053 for both effluent and groundwater monitoring, and Provision G.6 requires the District to either treat the effluent to the total nitrogen limit of 10 mg/L or demonstrate that a higher value will be protective of the underlying groundwater.

Source Water

Source water is supplied by four groundwater supply wells and the data was presented in 2012 and 2013 Consumer Confidence Reports for the City of Delhi. Source water quality for 2012 and 2013 are summarized in the following table. The first number listed is the average concentration and the values within the parentheses underneath are the range of the reported results.

Supply Water Results

	Sodium <u>mg/L</u>	Chloride <u>mg/L</u>	Arsenic <u>ug/L</u>	Nitrate as Nitrogen <u>mg/L</u>	Electrical Conductivity <u>umhos/cm</u>	Total Dissolved Solids <u>mg/L</u>
2012	37 (29 – 42)	23 (11 – 27)	5.43 (2.6 – 6.9)	6.4 (1.4 – 10.4)	373 (290 – 420)	290 (190 – 360)
2013	35 (na)	24 (na)	4.2 (na)	6.4 (1.3 – 8.7)	430 (na)	290 (na)

Compliance History

The District has a long history of submitting self-monitoring reports and/or groundwater monitoring reports that are incomplete and/or late. The District did not submit quarterly groundwater monitoring reports in 2009 or the first two quarters of 2010. The District provided all of the reports in question upon request. The submittal of the SMRs and groundwater monitoring reports improved with generally no late reports through 2013. However, in 2014, no SMRs were received until 14 July 2014 (January through May 2014 SMRs were submitted late), and only one of three groundwater monitoring reports had been submitted as of December 2014.

Discharge Specification B.5 of WDRs Order 97-013 requires the effluent to meet the following limits for biochemical oxygen demand (BOD) and total suspended solids (TSS):

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD/TSS	mg/L	40	80

The District routinely exceeded the limits for BOD and TSS (BOD and TSS averaged 104 mg/L and 90 mg/L, respectively, in 2006 and 2007) until 2008 when the District began using coagulants. The District has since completed upgrades to the WWTF and the discharge has been compliant with the BOD and TSS limits, with no exceedances of the limits since July 2011.

The record indicates the WWTF has been inspected five times since June 1994 and three Notices of Violation (NOVs) were issued in 1999 (two) and another in 2007. The violations that led to the NOVs typically included:

- Violation of Discharge Specification B.5, exceeding the BOD and TSS effluent limits; and
- Violation of Provision E.1, failing to comply with Monitoring and Reporting Program 97-013 (late and/or incomplete SMRs).

Except as noted above, the discharge has, since January 2012, generally complied with the effluent limits in WDR Order 97-013, but the District still submits its SMRs late.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition, revised October 2011* (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.

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.

Degradation of groundwater by some of the typical waste constituents released with discharge from a municipal wastewater utility after effective source control, treatment, and control is consistent with maximum benefit to the people of the State. The technology, energy, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impacts on water quality will be substantially less. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and therefore, sufficient reason to accommodate growth and groundwater degradation provided terms of the Basin Plan are met.

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. The discharge appears to have polluted groundwater with nitrate as nitrogen, but the existing and proposed algal drying beds are/will be lined and equipped with leachate return systems that send the leachate back into the algal settling ponds of the WWTF.

CEQA

For the existing WWTF, the Discharger adopted a Negative Declaration in February 1996 in accordance with the California Environmental Quality Act (Public Resources Code Section 21000, et seq.). For the proposed improvements to the WWTF, the District adopted a Mitigated Negative Declaration (SCH #2014021035) in accordance with the California Environmental Quality Act (CEQA) on 11 June 2014. Central Valley Water Board staff reviewed the Mitigated Negative Declaration and concurred that the proposed project would be an improvement to the previous discharge.

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 at 0.8 mgd, until the District complies with the requirements of Provision G.3, at which time the flow can be increased to 1.2 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 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 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 CWC 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, and solids and algal solids/biosolids monitoring. The monitoring is necessary to evaluate the extent of the potential degradation from the discharge.

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.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2015-0053
FOR
DELHI COUNTY WATER DISTRICT
WASTEWATER TREATMENT FACILITY
MERCED 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).

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 9.

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

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 evaporation/percolation ponds.
PND-1 through PND-5	Evaporation/percolation Ponds Nos. 1 through 5, and any other percolation ponds added to the disposal system.
MW-1 through MW-6	Groundwater Monitoring Wells MW-1 through MW-6 and any other wells added to the groundwater monitoring network.
DSW-1 through DSW-4	Location where representative samples of the District's water supply can be obtained.

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>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Weekly	pH	pH Units	Meter/Grab
Twice Monthly	EC	umhos/cm	24-hour composite
Twice Monthly	TDS	mg/L	24-hour composite
Twice Monthly	BOD ₅	mg/L	24-hour composite
Twice Monthly	TSS	mg/L	24-hour composite
Monthly	Monthly Average Daily Flow	mgd	Computed
Annually	Iron	mg/L ¹	24-hour composite
Annually	Arsenic	mg/L ¹	24-hour composite
Annually	Manganese	mg/L ¹	24-hour composite
Annually	General Minerals	mg/L ¹	24-hour composite

¹ mg/L or ug/L, as appropriate.

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>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter ¹
Weekly	pH	pH Units	Grab
Twice Monthly	EC	umhos/cm	Grab
Twice Monthly	TDS	mg/L	Grab
Twice Monthly	BOD ₅	mg/L	Grab
Twice Monthly	TSS	mg/L	Grab
Twice Monthly	Nitrate as nitrogen	mg/L	Grab
Twice Monthly	TKN	mg/L	Grab
Twice Monthly	Total Nitrogen	mg/L	Computed
Twice Monthly	Ammonia	mg/L	Grab
Annually	Iron	mg/L ²	Grab
Annually	Arsenic	mg/L ²	Grab
Annually	Manganese	mg/L ²	Grab
Annually	General Minerals	mg/L ²	Grab

¹ One year from the adoption of this Order.

² mg/L or ug/L, as appropriate.

POND MONITORING

A permanent marker (e.g., staff gages) shall be placed in the evaporation/percolation ponds. The marker shall have calibrations indicating water level at the design capacity and available operational freeboard. Pond monitoring at PND-01 and PND-05 shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Weekly	DO ¹	mg/L	Grab ²
Weekly	Freeboard	Feet ³	Observation
Weekly	Odors	---	Observation

¹ Should the DO be below 1.0 mg/L for three consecutive weekly sampling events, the Discharger shall report the findings to the Central Valley Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.

² DO shall be measured between 8:00 am and 10:00 am and shall be taken opposite the pond inlet at a depth of approximately one-foot.

³ To the nearest tenth of a foot.

The Discharger shall inspect the condition of the evaporation/percolation ponds weekly and record visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether grease, dead algae, vegetation, scum, or debris are accumulating on the 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.). A summary of the entries made in the log shall be included in the subsequent monitoring report.

SOURCE WATER MONITORING

The Discharger shall submit source water monitoring data for the four Delhi Supply Wells (DSW-1 through DSW-4). For each source (either well or surface water supply), the Discharger 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. Alternatively, the Discharger may establish representative sampling stations within the distribution system serving the same area as is served by the WWTF.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly Title 22 Monitoring Requirements	Flow-Weighted EC General Minerals ¹	umhos/cm mg/L	Meter/Computed Average Grab

¹ Source water samples analyzed for calcium, magnesium, and potassium (from the Glossary, General Minerals, page 9) shall be filtered prior to collection in the appropriately preserved containers provided by the laboratory. If field filtering is not feasible, samples shall be collected in the appropriate unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the samples.

GROUNDWATER MONITORING

After measuring water levels and prior to collecting samples, each monitoring well (MW-1 through MW-6) 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 all wells in its Groundwater Monitoring Network, and any additional wells installed pursuant to this MRP, for the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	Depth to Groundwater	Feet ¹	Measured
Quarterly	Groundwater Elevation	Feet ²	Computed
Quarterly	pH	pH Units	Grab
Quarterly	EC	umhos/cm	Grab
Quarterly	Nitrate as nitrogen ³	mg/L	Grab
Quarterly	TKN ³	mg/L	Grab
Quarterly	Ammonia ³	mg/L	Grab
Quarterly	Total Nitrogen	mg/L	Computed
Quarterly	Arsenic ^{3,4}	mg/L ⁵	Grab
Quarterly	Iron ^{3,4}	mg/L ⁵	Grab
Quarterly	Manganese ^{3,4}	mg/L ⁵	Grab
Annually	General Minerals ³	mg/L ⁵	Grab

1. To the nearest hundredth of a foot.
 2. To the nearest hundredth of a foot above Mean Sea Level.
 3. Groundwater samples collected and analyzed for nitrate as nitrogen, TKN, ammonia, arsenic, iron, manganese, calcium, magnesium, and potassium shall be filtered prior to collection in the appropriately preserved containers provided by the laboratory. If field filtering is not feasible, samples shall be collected in the appropriate unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the samples.
 4. Arsenic, iron, and manganese shall be analyzed quarterly for two years (eight quarters) from the adoption of this Order, after which the frequency shall change to semi-annually.
 5. mg/L or ug/L, as appropriate.

SLUDGE/BIOSOLIDS MONITORING

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

Arsenic	Lead	Nickel
Cadmium	Mercury	Selenium
Copper	Molybdenum	Zinc

Monitoring shall be conducted: using the methods in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846) and updates thereto, as required in Title 40 of the Code of Federal Regulations (40 CFR), Part 503.8(b)(4).

The Discharger shall demonstrate that treated sludge (i.e., biosolids) meets Class A or Class B pathogens reduction levels by one of the methods listed in 40 CFR, Part 503.32. The Discharger shall track and keep records of the operational parameters used to achieve Vector Attraction Reduction requirements in 40 CFR, Part 503.33(b). The Discharger needs to demonstrate that the facility where sludge is hauled to complies with Title 40 CFR, Part 503.

REPORTING

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

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

The Central Valley Water Board has gone to a Paperless Office System. All regulatory documents, submissions, materials, data, monitoring reports, and correspondence shall be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be mailed to: centralvalleyfresno@waterboards.ca.gov. Documents that are 50MB or larger should be transferred to a disc and mailed to the appropriate regional water board office, in this case 1685 E Street, Fresno, CA, 93706.

Program: Non-15, WDID: 5C240101001, Facility Name: Delhi County Water District WWTF, Order: R5-2015-_____

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, and 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.

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.

In the future, the State or Central Valley Water Board may notify the District to electronically submit and upload monitoring reports using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site <http://www.waterboards.ca.gov/ciwqs/index.html> or similar system.

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 page 3.

Source Water Reporting

1. For each quarter, calculation of average EC of the source water for the most recent four quarters specified on page 4.

Groundwater Reporting:

1. The results of groundwater monitoring specified on page 4.
2. For each monitoring well, a table showing constituent concentrations for the last five quarters, up through the current quarter.
3. 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.

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

Source Water Reporting

1. The results of the monthly and annual monitoring for the constituents specified on page 4.

Sludge/Biosolids Monitoring

1. Annual production totals in dry tons or cubic yards.
2. A description of disposal methods, including the following information, if applicable, related to the disposal methods used. If more than one method is used, include the percentage disposed of by each method.
 - a. For landfill disposal, include: the name and location of the landfill, and the Order number of WDRs that regulate it.
 - b. For land application, include: the location of the site, and the Order number of any WDRs that regulate it.
 - c. For incineration, include: the name and location of the site where incineration occurs, the Order number of 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.

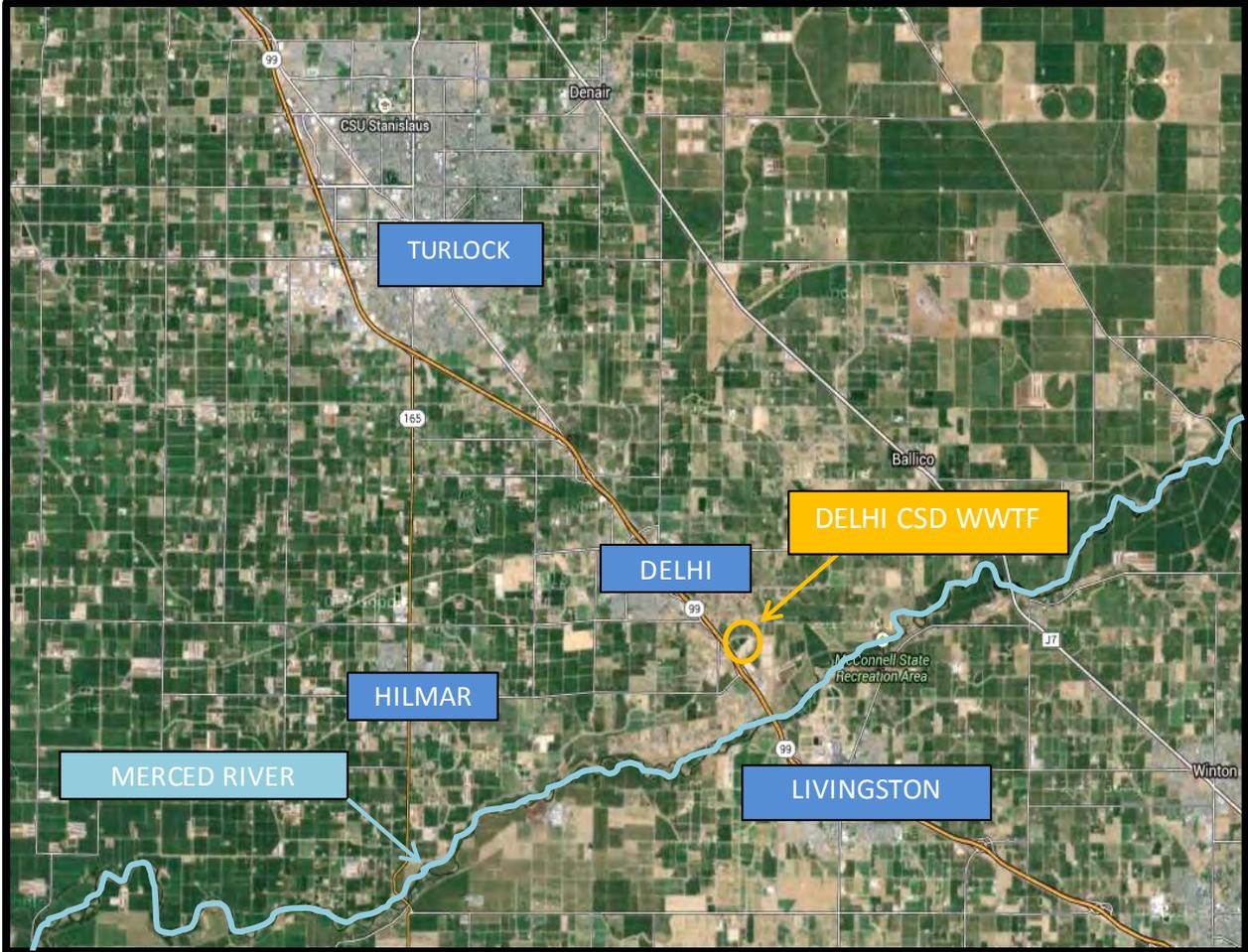
The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by: _____ *Original signed by*
PAMELA C. CREEDON, Executive Officer
17 April 2015

(Date)

GLOSSARY

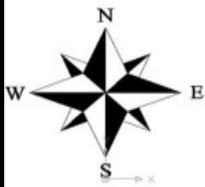
BOD ₅	Five-day biochemical oxygen demand		
CBOD	Carbonaceous BOD		
DO	Dissolved oxygen		
EC	Electrical conductivity at 25° C		
FDS	Fixed dissolved solids		
NTU	Nephelometric turbidity unit		
TKN	Total Kjeldahl nitrogen		
TDS	Total dissolved solids		
TSS	Total suspended solids		
Continuous	The specified 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:		
	Alkalinity	Chloride	Sodium
	Bicarbonate	Hardness	Sulfate
	Calcium	Magnesium	TDS
	Carbonate	Potassium	
	General Minerals analyses shall be accompanied by documentation of cation/anion balance.		



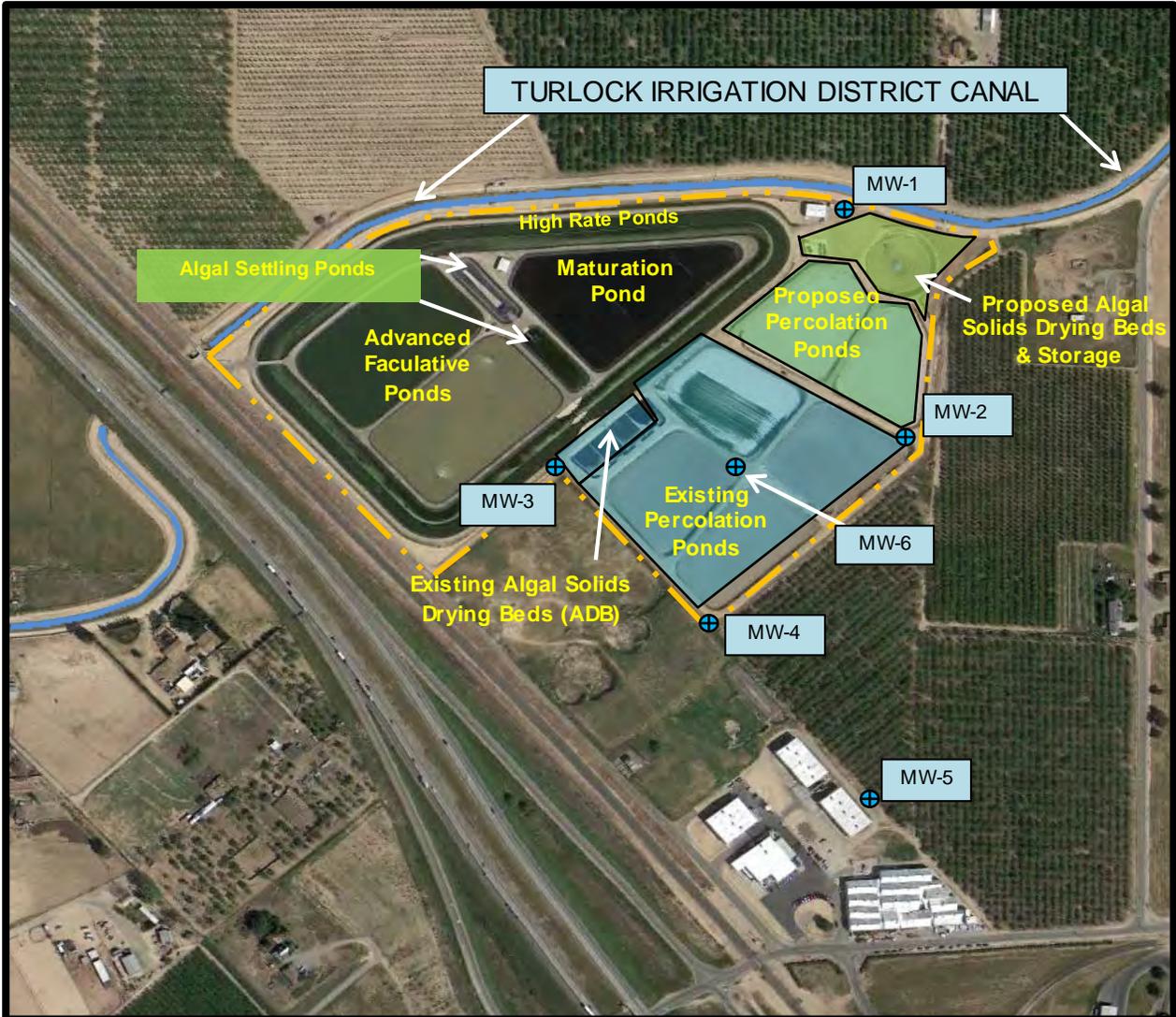
SITE VICINITY MAP

ORDER R5-2015-0053
WASTE DISCHARGE REQUIREMENTS

FOR
DELHI COUNTY WATER DISTRICT
WASTEWATER TREATMENT FACILITY
MERCED COUNTY



ATTACHMENT A



SITE MAP

ORDER R5-2015-0053
 WASTE DISCHARGE REQUIREMENTS
 FOR
 DELHI COUNTY WATER DISTRICT
 WASTEWATER TREATMENT FACILITY
 MERCED COUNTY



Approximate Scale in Feet

LEGEND

-  MW-6 - Groundwater Monitoring Well.
-  - Property Boundary
-  - Existing Percolation Pond/ADB
-  - Proposed Percolation Pond/ADB

ATTACHMENT B