28 February 2019

Ramzi Mansour
Kern County Public Works Department
2700 "M" Street, Suite 500
Bakersfield, CA 93307

CERTIFIED MAIL
7018 1830 0001 0015 1457

NOTICE OF APPLICABILITY (NOA), STATE WATER RESOURCES CONTROL BOARD ORDER WQ 2014-0153-DWQ-R5303, GENERAL WASTE DISCHARGE REQUIREMENTS FOR SMALL DOMESTIC WASTEWATER TREATMENT SYSTEMS, KERN COUNTY, REEDER TRACT CSA 39.8 WASTEWATER TREATMENT FACILITY, KERN COUNTY

On 28 June 2018, Kern County submitted a Report of Waste Discharge (RWD) for the Reeder Tract County Service Area (CSA) 39.8 Wastewater Treatment Facility (WWTF). Based on the information provided, the system treats and disposes of less than 100,000 gallons per day (gpd), and is therefore eligible for coverage under the State Water Resources Control Board (State Water Board) Water Quality Order 2014-0153-DWQ *General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems* (General Order). This letter serves as formal notice that the General Order is applicable to your system and the wastewater discharge described below. You are hereby assigned General Order **2014-0153-DWQ-R5303** for your system. Coverage under the General Order takes effect after Waste Discharge Requirements (WDRs) Order 88-096 have been rescinded.

You should familiarize yourself with the entire General Order and its attachments enclosed with this letter, which describe mandatory discharge and monitoring requirements. Sampling, monitoring, and reporting requirements applicable to your treatment and disposal methods must be completed in accordance with the appropriate treatment system sections of the General Order and the attached Monitoring and Reporting Program (MRP) 2014-0153-DWQ-R5303. This MRP was developed after consideration of your waste characterization and site conditions described in the attached memorandum.

DISCHARGE DESCRIPTION
Kern County (Discharger) owns the Reeder Tract CSA 39.8 WWTF that is regulated by WDRs 88-096 and allows a discharge of up to 0.04 million gallons per day (mgd) to a lined pond and nine acres of spray fields.

The WWTF is in Section 1, Township 27 South, Range 32 East and the disposal area is in Section 6, Township 27 South, Range 33 East, Mount Diablo Base & Meridian in Kern County. The WWTF and sprayfield are shown in Attachment A, which is incorporated by reference and considered part of this Notice of Applicability (NOA).

According to the RWD, the WWTF is designed for a flow of 40,000 gpd. The WWTF consists of a lined emergency bypass storage pond, a flow equalization tank, extended aeration tank, secondary effluent wet well, clarifier, flocculator, sand filter, flow meter, chlorine feed vault, lined storage pond (4.2 acre-ft capacity), sludge storage tank, two lined sludge drying beds, and nine acres of sprayfields. The wastewater treatment flow schematic is shown on Attachment B, which is incorporated by reference and considered part of this NOA.

FACILITY SPECIFIC REQUIREMENTS

The Discharger will maintain exclusive control over the discharge, and shall comply with the terms and conditions of this NOA, General Order 2014-0153-DWQ-R5303, with all attachments, and MRP 2014-0153-DWQ-R5303.

The Discharger shall comply with all the Prohibitions in the General Order, specifically, Prohibition A.1. that prohibits the direct or indirect discharge of any wastewater to surface waters or surface water drainage courses.

In accordance with Section B.1.a of the General Order, treated wastewater discharged to the sprayfields **shall not exceed 40,000 gpd as a monthly average**. Compliance with the flow limit shall be determined at the influent.

The General Order states in Section B.1.l that the Discharger shall comply with the setbacks described in Table 3. This table summarizes different setback requirements for wastewater treatment system equipment, activities, land application areas, and storage and/or treatment ponds from sensitive receptors and property lines where applicable. The Discharger shall comply with the applicable setback requirements, as summarized in the following table:

Equipment or Activity	Domestic Well	Flowing Stream[a]	Ephemeral Stream Drainage[b]	Property Line
Aerobic Treatment Unit, Treatment System, or Collection System[c]	150 ft[d]	50 ft[e]	50 ft	5 ft[e]
LAA (disinfected tertiary recycled water)[f]	50 ft[g]	25 ft	10 ft[h]	25 ft
Spray Irrigation (disinfected tertiary recycled water)[i]	No spray irrigation of any recycled water, other than disinfected tertiary recycled water, shall take place within 100 feet of a residence or a place where public exposure could be similar to that of a park, playground, or school yard.			

a A flowing stream shall be measured from the ordinary high water mark established by fluctuations of water elevation and indicated by characteristics such as shelving, changes in soil character, vegetation type, presence of litter or debris, or other appropriate means.

b Ephemeral Stream Drainage denotes a surface water drainage feature that flows only after rain or snowmelt and does not have sufficient groundwater seepage (baseflow) to maintain a condition of flowing surface water. The drainage shall be measured from a line that defines the limit of the ordinary high water mark (described in "a" above). Irrigation canals are not considered ephemeral streams drainage features. The ephemeral stream shall be a "losing stream" (discharging surface water to groundwater) at the proposed wastewater system site.

c Septic Tank, Aerobic Treatment Unit, Treatment System, or Collection System addresses equipment located below ground or that impedes leak detection by routine visual inspection.

d Setback established by Onsite Wastewater Treatment System Policy, section 7.5.6.

e Setback established by California Plumbing Code, Table K-1.

f Disinfected tertiary recycled water is defined in California Code of Regulations, title 22, section 60301.230.

g Setback established by California Code of Regulations, title 22, section 60310(a). A reduced setback is allowed as described in California Code of Regulation, title 22, section 60310(a) if all the conditions in the section are met and compliance is documented in the ROWD and NOA.
h See the attached technical memorandum for discussion about reducing the setback distance from 50 feet to 10 feet.
i Additional restrictions for spray irrigation of recycled water are contained in California Code of Regulations, title 22, section 60310(f)

The Discharger shall comply with the Aerobic Treatment Unit and Activated Sludge System requirements specified in Sections B.3 and B.4 of the General Order, respectively.

The Discharger shall comply with the Pond System requirements specified in Section B.5 of the General Order.

The General Order contains Section B.7 Land Application and/or Recycled Water Systems. The Discharger shall comply with these specifications when applying treated wastewater to the designated sprayfield area. Public contact with the sprayfields shall be precluded through use of fences, signs, and/or other appropriate means.

The General Order states is Section D.1.a that the discharge shall not exceed the effluent limitations described in Table 4. Effluent limitation selection is a two-step process. Step one is based upon the treatment technology employed; step two applied only to systems with a flow rate greater than 20,000 gpd and is based upon an evaluation of the need for a nitrogen effluent limit. The proposed discharge has a flow rate that exceeds 20,000 gpd and a nitrogen evaluation was conducted as described in Attachment 1 of the General Order. The Discharger shall comply with the applicable effluent limitations, as summarized in the following table:

Effluent Limitations Based on Technology Performance		
Activated Sludge, MBR, or similar (not including residential aerobic treatment units)		
Constituent	**Units**	**Limit**
BOD	mg/L	30 (monthly average), 45 (7-day average)
TSS	mg/L	30 (monthly average), 45 (7-day average)
Total Coliform Organisms	MPN/100mL	2.2 (7-day median), 23 (daily maximum)

BOD denotes biochemical oxygen demand; TSS denotes total suspended solids
mg/L denotes milligrams per liter

Provision E.1 of the General Order requires discharges enrolled under the General Order to prepare and implement the following reports within **90 days** of the issuance of the NOA (29 May 2019)

- Spill Prevention and Emergency Response Plan (Provision E.1.a)
- Sampling Analysis Plan (Provision E.1.b)
- Sludge Management Plan (Provision E.1.c)

A copy of the Spill Prevention and Emergency Response Plan, Sampling Analysis Plan, and Sludge Management Plan shall be maintained at the treatment facility and shall be presented to the Regional Water Board staff upon request. The General Order requires the Sludge Management Plan to be submitted to the Central Valley Water Board **within 90 days** of the issuance of this NOA.

Failure to comply with the requirements in this NOA, General Order 2014-0153-DWQ-R5303, with all attachments, and MRP 2014-0153-DWQ-R5303 could result in an enforcement action as authorized by provisions of the California Water Code. Discharge of wastes other than those described in this NOA is prohibited. If the method of waste disposal changes from that described in this NOA, you must submit a new Report of Waste Discharge describing the new operation.

As stated in Section E.2.w of the General Order, in the event of any change in control or ownership of the Facility or wastewater disposal areas, the Discharger must notify the succeeding owner or operator of the existence of this General Oder by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board Executive Officer.

The required annual fee specified in the annual billing from the State Water Board shall be paid until this NOA is officially terminated. You must notify this office in writing if the discharge regulated by the General Order ceases, so that we may terminate coverage and avoid unnecessary billing.

The Central Valley Water Board has gone to a Paperless Office System. All regulatory documents, submissions, materials, data, monitoring reports, and correspondence should 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 disk and mailed to the Central Valley Water Board office at 1685 E Street, Fresno, CA, 93706.

To ensure that your submittals are routed to the appropriate staff, the following information block should be included in any email used to transmit documents to this office:

Program: Non-15, WDID: 5D150303029, Facility Name: Kern County Reeder Tract CSA 39.8 WWTF, Order: 2014-0153-DWQ-R5303.

In order to conserve paper and reduce mailing costs, a paper copy of the General Order has been sent only to the Discharger. Others are advised that the General Order is available on the State Water Board's web site at:

https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/#General

The Central Valley Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. These programs, once effective, could change how the Central Valley Water Board permits discharges of salt and nitrate.

WDRs Order 88-096 are proposed to be rescinded at the 6/7 June 2019 meeting of the Central Valley Water Board. Upon rescission of your individual WDRs, coverage for your Facility under the General Order shall become applicable subject to this Notice of Applicability.

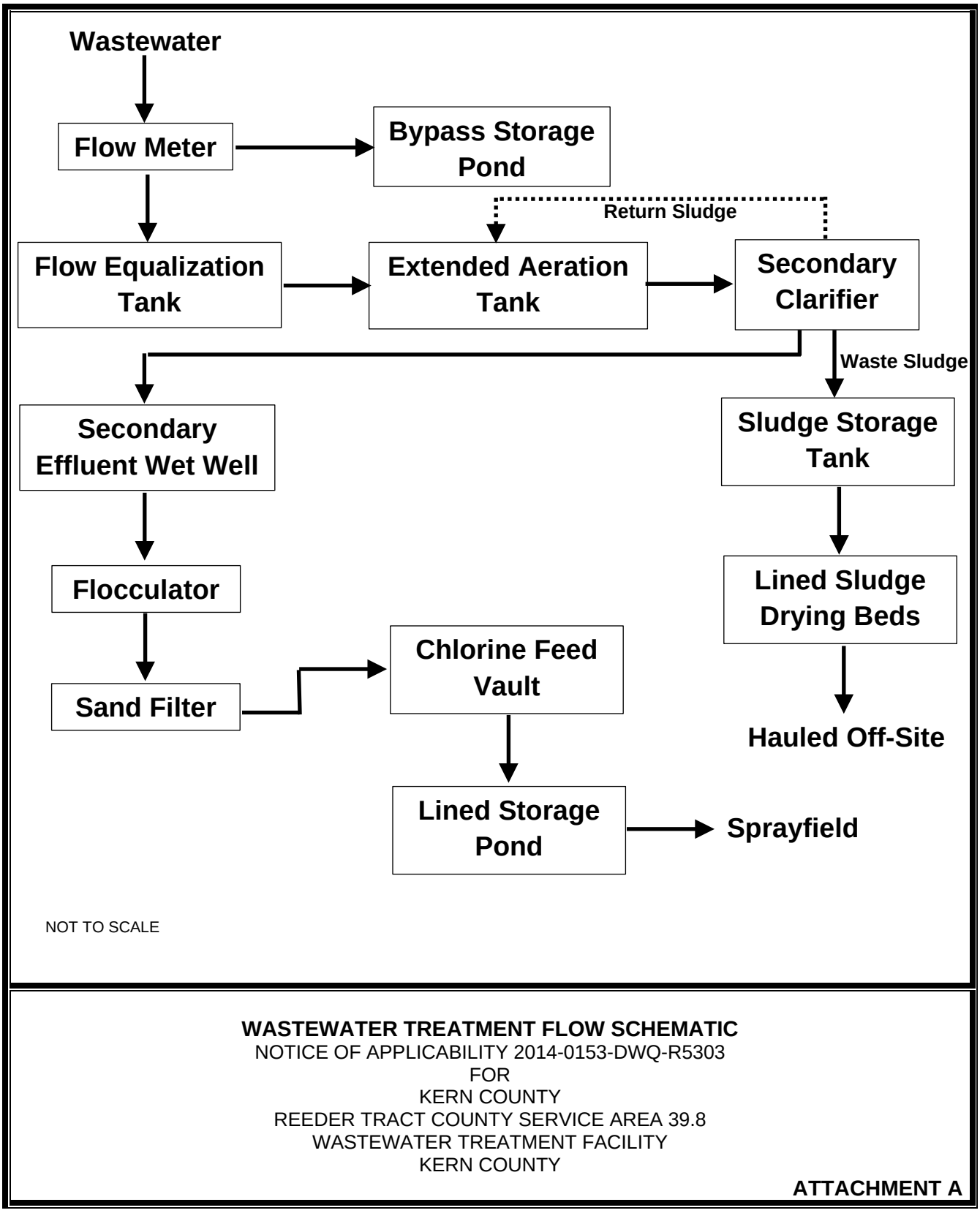
If you have any questions regarding this matter, contact Denise Soria at (559) 444-2488 or by email at dsoria@waterboards.ca.gov.

Original Signed By

Patrick Pulupa
Executive Officer

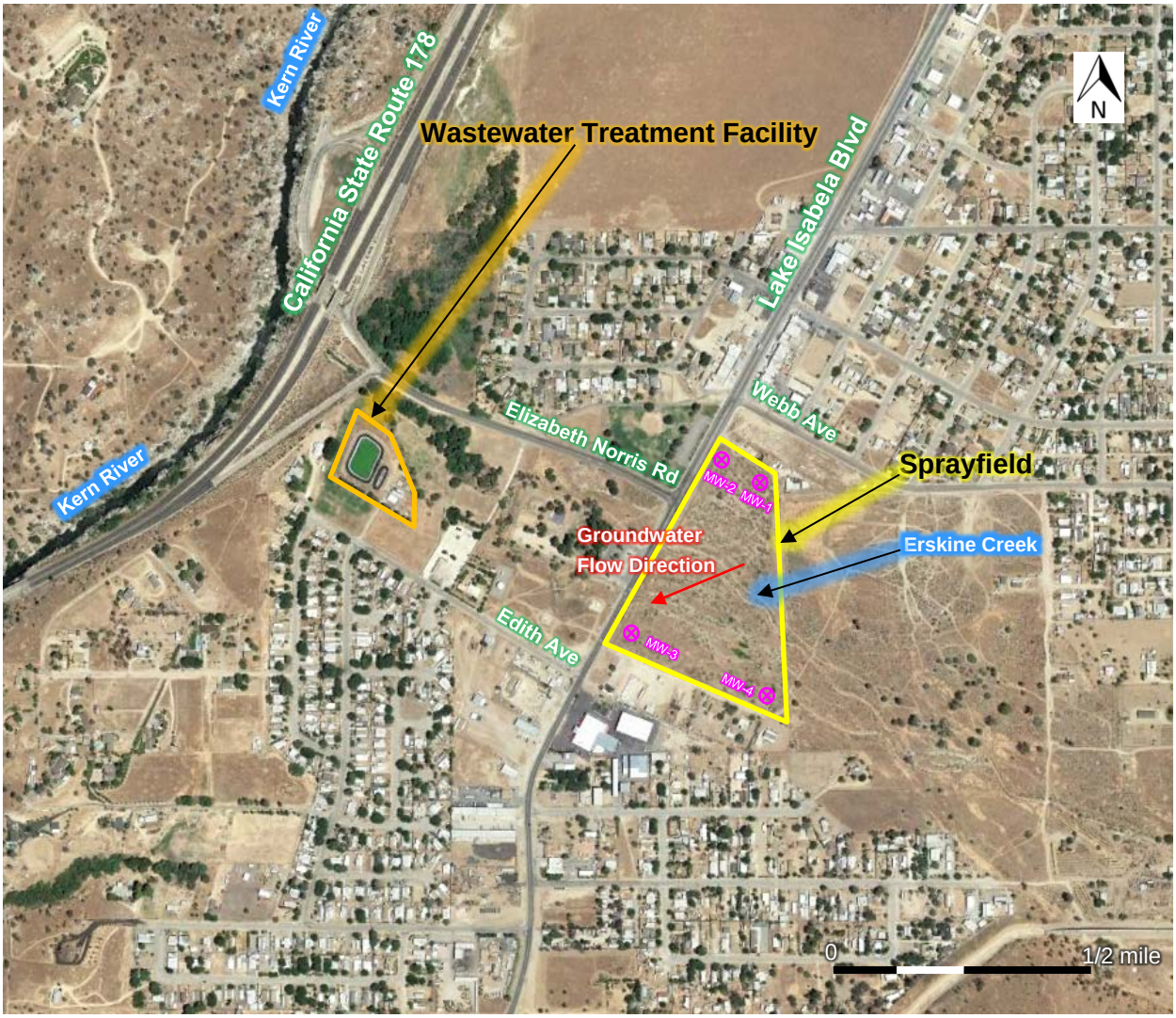
Attachments: Attachment A – Wastewater Treatment Flow Schematic
Attachment B – Facility Map
Monitoring and Reporting Program 2014-0153-DWQ-R5303
28 February 2019 Regional Water Board staff memorandum
State Water Resources Control Board Order WQ 2014-0153-DWQ
(Discharger Only)

cc: Jason Nordine, Kern Sanitation Authority, Bakersfield (via email)



WASTEWATER TREATMENT FLOW SCHEMATIC
NOTICE OF APPLICABILITY 2014-0153-DWQ-R5303
FOR
KERN COUNTY
REEDER TRACT COUNTY SERVICE AREA 39.8
WASTEWATER TREATMENT FACILITY
KERN COUNTY

ATTACHMENT A



FACILITY MAP
NOTICE OF APPLICABILITY 2014-0153-DWQ-R5303
FOR
KERN COUNTY
REEDER TRACT COUNTY SERVICE AREA 39.8
WASTEWATER TREATMENT FACILITY
KERN COUNTY

ATTACHMENT B

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM 2014-0153-DWQ-R5303
FOR
KERN COUNTY
REEDER TRACT COUNTY SERVICE AREA 39.8
WASTEWATER TREATMENT FACILITY
KERN COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring a wastewater treatment system. This MRP is issued pursuant to Water Code section 13267. Kern County (Discharger) shall not implement any changes to this MRP unless and until a revised MRP is issued by the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) or Executive Officer.

Water Code section 13267 states, in part:

> "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 report, and shall identify the evidence that supports requiring that person to provide the reports."

Water Code section 13268 states, in part:

> "(a) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of section 13267, or failing or refusing to furnish a statement of compliance as require by subdivision (b) of section 13399.2, or falsifying any information provided therein, is guilty of a misdemeanor any may be liable civilly in accordance with subdivision (b).
>
> (b)(1) Civil liability may be administratively imposed by a regional board in accordance with article 2.5 (commencing with section 13323) of chapter 5 for a violation of subdivision (a) in an amount which shall not exceed one thousand dollars ($1,000) for each day in which the violation occurs."

The Discharger owns and operates the wastewater treatment facility that is subject to the Notice of Applicability (NOA) of Water Quality Order 2014-0153-DWQ-R5303. The reports are necessary to ensure that the Discharger complies with the NOA and General Order. Pursuant to Water Code section 13267, the Discharger shall implement this MRP and shall submit the monitoring reports described herein.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The name of the sampler, sample type (grab or composite), time, date, location, bottle type, and any preservative used for each sample shall be recorded on the sample chain of custody form. The chain of custody form must also contain all custody information including date, time, and to whom samples were relinquished. If composite samples are collected, the basis for sampling (time of flow weighted) shall be approved by the Central Valley Water Board staff.

Field test instruments (such as those used to test pH, dissolved oxygen, and electrical conductivity) may be used provided that they are used by a State Water Resources Control Board, Environmental Laboratory Accreditation Program certified laboratory, or:

1. The user is trained in proper use and maintenance of the instruments;

2. The instruments are field calibrated prior to monitoring events at the frequency recommended by the manufacturer;

3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and

4. Field calibration reports are maintained and available for at least three years.

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.

AEROBIC TREATMENT UNIT MONITORING

Influent Monitoring

Influent samples shall be taken from a location that provides representative samples of the WWTF's influent wastewater quality (i.e., prior to any treatment or return flows). At a minimum, influent monitoring shall consist of the following:

Constituent	Units	Sample Type	Sample Frequency	Reporting Frequency
Flow Rate	gpd	Metered	Continuous	Quarterly
Biochemical Oxygen Demand	mg/L	Grab	Quarterly	Quarterly
Total Suspended Solids	mg/L	Grab	Quarterly	Quarterly

mg/L denotes milligrams per liter.

Effluent Monitoring

Effluent samples shall be taken at an area that represents the effluent quality (after filtration and chlorination) distributed to the disposal area (sprayfield). At a minimum, effluent monitoring shall consist of the following:

Constituent	Units	Sample Type	Sample Frequency	Reporting Frequency
Biochemical Oxygen Demand	mg/L	Grab	Weekly	Quarterly
Total Suspended Solids	mg/L	Grab	Weekly	Quarterly
Electrical Conductivity	umhos/cm	Grab	Weekly	Quarterly
Total Nitrogen	mg/L	Grab	Quarterly	Quarterly

gpd denotes gallons per day. mg/L denotes milligrams per liter.

POND SYSTEM MONITORING

Wastewater Pond Monitoring

All wastewater and treated wastewater storage ponds (lined and unlined) shall be monitored as specified below:

Constituent	Units	Sample Type	Sample Frequency	Reporting Frequency
Dissolved Oxygen	mg/L	Grab	Monthly	Quarterly
Freeboard	0.1 feet	Measurement	Monthly	Quarterly
Odors	---	Observation	Monthly	Quarterly
Berm Condition	---	Observation	Monthly	Quarterly

mg/L denotes milligrams per liter.

DISINFECTION SYSTEM MONITORING

Samples shall be collected from immediately downstream of the disinfection system. At a minimum, disinfection system monitoring shall consist of the following:

Constituent	Units	Sample Type	Sample Frequency	Reporting Frequency
Total Coliform Organism	MPN/100 mL	Grab	Weekly	Quarterly

MPN/100 mL denotes most probable number per 100 mL sample.

LAND APPLICATION AREA MONITORING

The Discharger shall monitor LAAs when wastewater and/or supplemental irrigation water is applied. If wastewater/supplemental irrigation water is not applied during a reporting period, the monitoring report shall so state. LAA monitoring shall include the following:

Constituent	Units	Sample Type	Sample Frequency	Reporting Frequency
Supplemental Irrigation	gpd	Meter[a]	Monthly	Quarterly
Wastewater Flow[a]	gpd	Meter[a]	Monthly	Quarterly
Local Rainfall	Inches	Weather Station[b]	Monthly	Quarterly
Acreage Applied[c]	Acres	Calculated	Monthly	Quarterly
Application Rate	gal/acre/mo[d]	Calculated	Monthly	Quarterly
Soil Erosion Evidence	---	Observation	Monthly	Quarterly
Containment Berm Condition	---	Observation	Monthly	Quarterly
Soil Saturation/Ponding	---	Observation	Monthly	Quarterly
Nuisance Odors/Vectors	---	Observation	Monthly	Quarterly
Discharge Off-Site	---	Observation	Monthly	Quarterly

gpd denotes gallons per day
a. Meter requires meter reading, a pump run time meter, or other approved method.
b. Weather station may be site-specific station or nearby governmental weather reporting station.
c. Acreage applied denotes the acreage to which wastewater is applied.
d. Application rate may also be reported as inch/acre/month.

SOLIDS DISPOSAL MONITORING

The Discharger shall report the handling and disposal of all solids (e.g., screenings, grit, sludge, biosolids, etc.) generated at the wastewater system. Records shall include the name/contact information for the hauling company, the type and amount of waste transported, the date removed from the wastewater system, the disposal facility name and address, and copies of analytical data required by the entity accepting the waste. These records shall be submitted as part of the annual monitoring report.

GROUNDWATER MONITORING

Consistent with the Business and Professions Code, groundwater monitoring reports, well construction workplans, etc. shall be prepared under the supervision of a California licensed civil engineer or geologist. Prior to construction of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Regional Water Board's staff for review and approval. Once installed, all monitoring wells designated as part of the monitoring network shall be sampled and analyzed according to the schedule below.

The data from routine groundwater monitoring events shall be submitted annually. Analysis of the data and groundwater flow directions shall be performed at least annually and shall be performed

under the supervision of a California licensed professional (as described above). The Discharger may request a reduced monitoring and reporting schedule once adequate data has been collected to characterize the site. (Typically two years of sampling is required for adequate characterization.)

Prior to sampling, groundwater elevations shall be measured and the wells shall be purged of at least three well volumes and until pH and electrical conductivity have stabilized. No-purge, low-flow, or other sampling techniques are acceptable if they are described in an approved Sampling and Analysis Plan. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater elevations shall be calculated. Samples shall be collected using approved USEPA methods. Groundwater monitoring shall include, at a minimum, the following:

Constituent	Units	Sample Type	Sample Frequency	Reporting Frequency[4]
Groundwater Elevation[1]	0.01 Feet	Calculated	Semi-Annually	Annually
Depth to Groundwater	0.01 Feet	Measurement	Semi-Annually	Annually
Gradient	Feet/Feet	Calculated	Semi-Annually	Annually
Gradient Direction	Degrees	Calculated	Semi-Annually	Annually
pH	Std. Units	Grab	Semi-Annually	Annually
Total Dissolved Solids	mg/L	Grab	Semi-Annually	Annually
Nitrate as Nitrogen	mg/L	Grab	Semi-Annually	Annually
Sodium	mg/L	Grab	Semi-Annually	Annually
Chloride	mg/L	Grab	Semi-Annually	Annually
Total Coliform Organisms[2]	MPN/100 mL	Grab	Semi-Annually	Annually
Zinc[3]	mg/L	Grab	Semi-Annually	Annually
Phenol[3]	mg/L	Grab	Semi-Annually	Annually
Formaldehyde[3]	mg/L	Grab	Semi-Annually	Annually

MNP/100 mL denotes most probable number per 100 mL sample.
Std. Units denotes standard units.
mg/L denotes milligrams per liter.
1 Groundwater elevation shall be based on depth to water using a surveyed measuring point elevation on the well and a surveyed reference elevation.
2 Using a minimum of 15 tubes or three dilutions.
3 Monitoring of the constituents zinc, phenol, and formaldehyde are required only when recreational vehicles were allowed to discharge to the wastewater system in the previous 12 months.
4 Analysis of data by a California licensed professional is required at least annually.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the data, sample type (e.g., effluent, solids, etc.), and reported analytical or visual inspection results are readily discernible. The data shall be summarized to clearly illustrate compliance with the General Order and NOA as applicable. The results of any monitoring done more frequently than required at the locations specified in the MRP shall be reported in the next regularly scheduled monitoring report and shall be included in calculations as appropriate.

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 disk and mailed to the appropriate regional water board office, in this case 1685 E Street, Fresno, CA, 93706.

To ensure that your submittals are routed to the appropriate staff, the following information block should be included in any email used to transmit documents to this office:

Program: Non-15, WDID: 5D150303029, Facility Name: Kern County Reeder Tract CSA 39.8 WWTF, Order: 2014-0153-DWQ-R5303.

A. Quarterly Monitoring Reports

Quarterly reports shall be submitted to the Central Valley Water Board on the **first day of the second month after the quarter ends** (e.g. the January-March Quarterly Report is due by May 1st). The reports shall bear the certification and signature of the Discharger's authorized representative. At a minimum, the quarterly reports shall include:

1. Results of all required monitoring.

2. A comparison of monitoring data to the discharge specifications, applicable effluent limits, disclosure of any violations of the NOA and/or General Order, and an explanation of any violation of those requirements. (Data shall be presented in tabular format.)

3. Copies of laboratory analytical report(s) and chain of custody form(s).

B. Annual Report

Annual Reports shall be submitted to the Central Valley Water Board by **March 1st following the monitoring year**. The Annual Report shall include the following:

1. Tabular and graphical summaries of all monitoring data collected during the year.

2. An evaluation of the performance of the wastewater treatment facility, including discussion of capacity issues, nuisance conditions, system problems, and a forecast of the flows anticipated in the next year. A flow rate evaluation as described in General Order (Provision E.2.c) shall also be submitted.

3. Copies of laboratory analytical report(s) and chain of custody form(s).

4. A discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into compliance with the NOA and/or General Order.

5. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

6. The name and contact information for the wastewater operator responsible for operation, maintenance, and system monitoring.

7. A groundwater monitoring report prepared by a California licensed professional. This report may be prepared separately from the rest of the Annual Report. The report shall contain an analysis of groundwater data collected during the year. The analysis shall include a description of the sample events, copies of the field logs, purge method and volume, groundwater elevation and trend, a groundwater elevation map for each sample event, summary table showing results for parameters measured, comparison of groundwater quality parameters to standards in the NOA, chain-of-custody forms, calibration logs for field equipment used, and a general evaluation of any impacts the wastewater discharge is having on groundwater quality.

A letter transmitting the monitoring reports shall accompany each report. The letter shall report violations found during the reporting period, and actions taken or planned to correct the violations and prevent future violations. The transmittal letter shall contain the following penalty of perjury statement and shall be signed by the Discharger or the Discharger's authorized agent:

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

The Discharger shall implement the above monitoring program on the first day of the month following the rescission of Order 88-096.

ORIGINAL SIGNED BY

Ordered by: _____
PATRICK PULUPA, Executive Officer

2/28/2019

_____
(Date)

TO: Scott J. Hatton
Supervising Engineer

FROM: Alexander S. Mushegan
Senior Engineer
RCE No. 84208

REGISTERED PROFESSIONAL ENGINEER
ALEXANDER MUSHEGAN
No. 84208
CIVIL
STATE OF CALIFORNIA

Denise Soria
Staff Engineer DMS

DATE: 28 February 2019

SUBJECT: **APPLICABILITY FOR COVERAGE UNDER STATE WATER RESOURCES CONTROL BOARD ORDER WQ 2014-0153-DWQ, GENERAL WASTE DISCHARGE REQUIREMENTS FOR SMALL DOMESTIC WASTEWATER TREATMENT SYSTEMS, KERN COUNTY, REEDER TRACT CSA 39.8 WASTEWATER TREATMENT FACILITY, KERN COUNTY**

Waste Discharge Requirements (WDRs) Order 88-096 regulates the discharge of treated domestic wastewater from the Reeder Tract County Service Area (CSA) 39.8 wastewater treatment facility (WWTF) for a flow of up to 0.04 million gallons per day (mgd) to a lined pond and sprayfield. On 28 June 2018, Kern County (Discharger) submitted a Form 200 and a Report of Waste Discharge (RWD) for the Reeder Tract CSA 39.8 WWTF. WDRs Order 88-096 needs to be updated to ensure the discharge is consistent with Central Valley Water Board plans and policies. This memorandum provides a summary of Central Valley Water Board staff's review of the RWD and the applicability of the discharge to be covered under the State Water Resources Control Board (State Water Board) Water Quality Order 2014-0153-DWQ, General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems (General Order).

DESCRIPTION OF DISCHARGE

The WWTF and sprayfield are located at APNs 263-010-28-00-2 and 263-060-10-00-4, respectively (see **Attachment B** of the Notice of Applicability [NOA]). According to the RWD, the proposed WWTF services about 261 homes in the Reeder Tract development and has a design capacity of 40,000 gpd. The WWTF produces disinfected tertiary-treated wastewater. The WWTF consists of a lined emergency bypass storage pond, a flow equalization tank, extended aeration tank, secondary effluent wet well, clarifier, flocculator, sand filter, flow meter, chlorine feed vault, lined storage pond (4.2 acre-ft capacity), sludge storage tank, two lined sludge drying beds, and nine acres of sprayfields. Sludge is hauled off-site to Liberty

Composting Inc. The wastewater treatment flow schematic is shown on **Attachment A** of the NOA.

Monthly average flows at the WWTF ranged from 29,765 to 74,830 gallons per day (gpd) according to Self-Monitoring Reports (SMRs) from January 2017 through December 2018. Monthly flows at the WWTF are tabulated in Table 1.

Table 1. Wastewater Flows

		2017			2018		
Month	Units	Min	Max	Ave	Min	Max	Ave
January	gpd	24,296	50,227	34,769	25,347	43,368	32,663
February	gpd	24,227	41,112	30,860	19,478	38,942	29,765
March	gpd	25,652	39,181	30,490	25,810	42,431	31,090
April	gpd	27,564	48,843	33,011	2,422	62,090	32,493
May	gpd	23,130	45,955	33,392	27,827	41,696	33,477
June	gpd	28,876	41,789	35,147	25,779	39,810	31,466
July	gpd	28,519	43,036	35,871	27,824	55,933	35,812
August	gpd	32,016	50,021	37,850	25,530	704,960	74,830
September	gpd	28,940	47,342	36,302	27,221	40,736	33,888
October	gpd	30,491	54,298	38,903	26,996	40,858	32,922
November	gpd	27,637	42,897	33,469	27,828	45,258	33,768
December	gpd	23,769	43,065	30,103	29,281	42,292	35,100

The monthly average effluent quality for electrical conductivity, biochemical oxygen demand (BOD), and total suspended solids (TSS), based on SMRs from January 2017 through December 2018, are tabulated below.

Table 2. Monthly Average Effluent Quality

	2017			2018		
Month	EC umhos/cm	BOD mg/L	TSS mg/L	EC umhos/cm	BOD mg/L	TSS mg/L
January	723	9	7	750	<2	2
February	794	11	11	771	5	6
March	802	6	10	760	11	24
April	783	7	8	761	4	19
May	765	3	4	742	<2	5
June	752	2	3	742	3	3
July	717	2	5	734	3	4
August	695	<2	4	867	97	57
September	735	2	3	759	<2	4
October	733	<2	5	768	<2	4
November	732	2	2	769	3	4
December	757	5	5	739	3	3

Effluent BOD and TSS concentrations for August 2018 exceeded both the daily maximum and monthly average limits of 20 mg/L and 10 mg/L, respectively, as prescribed in WDRs Order 88-096. According to the August 2018 SMR, there was temporary construction at the WWTF. During that time, the influent wastewater was treated at the lined emergency bypass storage pond and then pumped through the filtration and chlorination treatment systems, bypassing the flow equalization tank, extended air tank, and secondary clarifier.

According to Order 88-096, treated effluent was used for landscape irrigation at the WWTF and to irrigate forage crops at the sprayfield, this is no longer the case. According to the Discharger, treated wastewater is only used for disposal at the sprayfield (i.e., no crops are grown at the sprayfield). As described in Finding 7 of the General Order, application of treated wastewater to land that does not meet the definition of beneficial use is allowed and is therefore not subject to the Title 22 requirements. However, it appears the sprayfield is not fenced off to preclude public contact and is in an area where the public can access the sprayfield (immediately adjacent to Lake Isabela Boulevard); therefore, it is appropriate to require the Discharger to continue to disinfect its wastewater and monitor for pathogens (e.g., total coliform limit).

In April 2018, the Discharger began influent and effluent monitoring at the WWTF to characterize nitrogen in the wastewater. Collected data are tabulated in Table 3.

Table 3. Influent and Effluent Nitrogen Data

	Constituent	Units	4/18/2018	4/25/2018	4/30/2018	5/7/2018
Influent	Nitrate + Nitrite as N	mg/L	0.13	4.74	4.97	7.45
	Total Kjeldahl Nitrogen	mg/L	84	82	81	66
	Ammonia as Nitrogen	mg/L	73	49	62	45
	Total Nitrogen[1]	mg/L	84	87	86	73
Effluent	Nitrate + Nitrite as N	mg/L	41	38	38	29
	Total Kjeldahl Nitrogen	mg/L	3.7	3.3	3.1	1.8
	Ammonia as Nitrogen	mg/L	0.1	0.061	0.034	0.036
	Total Nitrogen[1]	mg/L	44	42	41	31
	Nitrogen Reduction[2]	%	47	52	52	58

1 Total Nitrogen is calculated as the sum of Nitrate as N and Total Kjeldahl Nitrogen
2 Nitrogen Reduction is calculated as [(Influent Total Nitrogen – Effluent Total Nitrogen)/(Influent Total Nitrogen)]x100

According to the September 2008 Federal Emergency Management Agency Map (Map Number 06029C1426E), a portion of the WWTF is in Zone X and the sprayfield is in Zone AE. Areas in Zone X are outside of the 1 percent annual chance floodplain. No depth or base flood elevations are shown in the FEMA maps for this zone. Areas in Zone AE have a 1 percent chance of flooding and a 26 percent chance of flooding over the life of a 30-year mortgage. According to the FEMA map, base flood elevations at the sprayfield range from 2,465 through 2,479 feet.

Erskine Creek cuts across the sprayfield and drains into the Kern River. The sprayfield consists of rough grading with berms around the perimeter to prevent runoff. According to the engineering drawing in Appendix F of the RWD, the berm has a 2(H):1(V) slope and is one foot high. The edge of the sprayfield has a setback distance ranging from 68.5 feet to 75 feet from

the property line, and about 10 feet from the berm. Sprinklers adjacent to the berm are partial throw sprinklers that spray 180 degrees.

The RWD does not address the setback distances from Erskine Creek for the irrigation of the sprayfield with disinfected tertiary-treated wastewater. Table 3 of the General Order requires a setback distance of 50 feet from high-water mark of an ephemeral stream. According to the General Order, this setback distance is based on best professional judgement and not based on specific regulatory requirements (e.g., Title 22, plumbing code, etc.). General Order B.1.l.v. allows setbacks not based on a regulatory requirement be revised by the Regional Water Board Executive Officer based on site-specific conditions. Staff is unaware of any reported nuisance conditions since issuance of WDRs 88-096. Furthermore, the Discharger has implemented control measures to prevent runoff of wastewater into Erskine Creek (e.g., berming the sprayfield area and installing 180 degrees sprinklers away from the creek). Staff recommends a setback distance of 10 feet with a prohibition of runoff from the sprayfield into Erskine Creek.

POTENTIAL THREAT TO WATER QUALITY

There are four groundwater monitoring wells (MW-1 through MW-4) located on each of the four corners of the sprayfield (see **Attachment B** of the NOA for locations). Groundwater elevation at the sprayfield based on data from October 2018 is shown in Table 4.

Table 4. Groundwater Elevation (October 2018)

Well	Top of Well Elevation (feet)	Groundwater Elevation (feet)	Depth to Groundwater (feet)
Well 1	2,468.5	2,434	34.5
Well 2	2,463.5	2,433.5	30
Well 3	2,462.5	2,432.5	30
Well 4	2,476.0	2,433.5	42.5

Based on groundwater elevation it appears that groundwater below the sprayfield generally flows in the southwest direction. Quality of groundwater based on data provided in the SMRs are tabulated in Table 5.

Table 5. Groundwater Quality from Monitoring Wells

Date	Well 1[1]		Well 4[1]		Well 2[2]		Well 3[2]	
	Nitrate as N *mg/L*	Depth to GW *feet*	Nitrate as N *mg/L*	Depth to GW *feet*	Nitrate as N *mg/L*	Depth to GW *feet*	Nitrate as N *mg/L*	Depth to GW *feet*
1/10/2017	3.4	38	0.74	47	4.7	34	3.2	30
4/10/02017	25	22	2.3	33	26	19	27	18
7/6/2017	10.6	21	0.61	32	17.2	17	29.3	18
10/5/2017	7.9	27	1.8	40	8.5	24	8.7	23
1/16/2018	6.9	30	0.96	42	7.1	26	8.8	25
4/2/2018	5.4	27	1	38	3.8	22	9.8	22
7/3/2018	3.7	27	0.89	40	2.4	28	13	28
10/2/2018	2	34	0.4	42	4	30	6.5	30
Min	2	21	0.4	32	2.4	17	3.2	18
Max	25	38	2.3	47	26	34	29.3	30
Ave	**8.1**	28.3	**1.1**	39.3	**9.2**	25	**13.3**	24.3

1 Upgradient monitoring well
2 Downgradient monitoring well

All four groundwater monitoring wells are located inside the sprayfield area making it difficult to determine a true upgradient groundwater monitoring well. Generally, with groundwater flow direction being in the southwest direction, Well 1 and Well 2 can be considered upgradient wells.

Historically, the Reeder Tract was an unsewered area. High groundwater and impacts by nitrates due to failures of individual on-site waste disposal systems resulted in the adoption of two local moratoria by Kern County Board of Supervisors. The first, Resolution No. 84-174, placed a moratorium on new septic tank systems in the southern portion of Reeder Tract. The second, Resolution No. 85-357, expanded the local moratorium to include the entire Reeder Tract.

NITROGEN LIMIT EVALUATION

Attachment 1 of the General Order includes five site-specific considerations that shall be considered when evaluating a discharge and the need for nitrogen control. These five site-specific considerations include: flow, groundwater depth, percolation rate, wastewater strength, and if nitrogen is of concern in the area. The proposed flow is greater than 20,000 gpd and, therefore, a nitrogen effluent limit evaluation is required for the WWTF.

According to the 1987 *Percolation Test Results Reeder Tract Wastewater Treatment Plant* Report, the percolation rate at the sprayfield, based on two boring tests, ranges from 2 to 48 minutes per inch. Groundwater depth at the sprayfield ranges from 17 to 47 feet below ground surface based on data provided in the SMRs. Based on the percolation rates and depth to groundwater, the discharge complies with the conditions defined in Table 5 of the General Order.

Both the storage pond and the emergency bypass pond are each lined with a 60-mil high density polyethylene (HDPE) single liner. According to Ken County, the liner was installed in the early 1990's and was last repaired four years ago. In addition, a groundwater monitoring well network exists around the sprayfield.

Influent and effluent nitrogen monitoring was not required by Monitoring and Reporting Program 88-096. However, Kern County took influent and effluent samples for nitrogen in April 2018. Effluent total nitrogen concentrations at the WWTF based on four sampling events, as shown in Table 3, range from 31 to 44 mg/L. The June 2018 RWD briefly states that effluent nitrogen concentrations are close to meeting 50 percent reduction for nitrogen, as presented in Finding 8 of the General Order. As shown in Table 3, the percent reduction for nitrogen at the WWTF ranges from about 47 to 57 percent.

Since 1) the storage and emergency bypass ponds are lined, 2) the influent domestic wastewater quality does not exceed typical domestic wastewater strength, 3) the percolation rate satisfies the minimum depth to groundwater specified in Table 5 of the General Order, 4) the WWTF has a groundwater monitoring well network, and 5) the WWTF provides approximately 50 percent nitrogen removal, nitrogen limits are not necessary at this time.

MONITORING REQUIREMENTS

Monitoring requirements included in the following sections from Attachment C of the General Order are appropriate for this discharge:

- Aerobic Treatment Unit Monitoring
- Pond System Monitoring
- Disinfection System Monitoring
- Land Application Area Monitoring
- Solids Disposal Monitoring
- Groundwater Monitoring

COMMENTS

The Central Valley Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. These programs, once effective, could change how the Central Valley Water Board permits discharges of salt and nitrate.