
Central Valley Regional Water Quality Control Board

24 August 2017

Pamela Hullinger, Director
University of California, Davis
California Animal Health and Food Safety Laboratory
18760 Road 112
Tulare, California 93274

CERTIFIED MAIL
7015 1520 0000 9052 7965

NOTICE OF APPLICABILITY (NOA), STATE WATER RESOURCES CONTROL BOARD ORDER WQ 2014-0153-DWQ-R5241, GENERAL WASTE DISCHARGE REQUIREMENTS FOR SMALL DOMESTIC WASTEWATER TREATMENT SYSTEMS, UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA ANIMAL HEALTH AND FOOD SAFETY (CAHFS) LABORATORY, TULARE COUNTY

On 25 April 2017, the University of California Davis (hereafter “Discharger”) submitted a Report of Waste Discharge (RWD) seeking coverage under the State Water Board’s *General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems*, Water Quality Order 2014-0153-DWQ (General Order) for a new California Animal Health and Food Safety (CAHFS) Laboratory in Tulare County. Based on the information provided, the system treats and disposes of less than 100,000 gallons of predominantly domestic wastewater per day, and is therefore eligible for coverage under the general and specific conditions of the 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-R5241** for your system.

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) No. 2014-0153-DWQ-R5241. This MRP was developed after consideration of your waste characterization and site conditions described in the attached memorandum.

DISCHARGE DESCRIPTION

The new CAHFS Laboratory (or Facility) is being constructed adjacent to the UC Davis Veterinary Medicine Teaching and Research Center approximately three miles south of Tulare at 18760 Road 112 in Tulare County, Section 6, Township 21 South, Range 25 East, Mount Diablo Baseline & Meridian.

The CAHFS Laboratory will provide diagnostic analysis for the dairy, cattle, and poultry industries in the Central Valley, and will consist of an office building and laboratory building, each with a separate septic tank and leach field disposal system. However, there will be an overflow pipe to connect the two systems in the event of a pump failure, to provide redundancy.

The Domestic septic system will collect domestic waste from the office building including the restrooms and breakroom/kitchen, while the Laboratory septic system will collect domestic waste from the restrooms and breakroom within the laboratory building as well as sinks and drains from the various laboratories, necropsy rooms, and crematory.

Both the Domestic and Laboratory septic systems will be equipped with a 4,500-gallon septic tank and leach field each with an effective area of approximately 3,000 square feet. Flows to the Domestic and Laboratory septic systems are estimated at 2,386 gallons per day (gpd) and 3,483 gpd, respectively, for a total combined flow of about 6,000 gpd.

The Laboratory septic system has the potential to collect wastes other than just domestic wastewater including blood and some laboratory chemicals. Samples were collected at a similar laboratory both before and after a necropsy examination to compare with typical domestic wastewater. Based on the results, biochemical oxygen demand (BOD) and nitrogen concentrations in the laboratory wastewater appear to be similar to what would be expected from a typical domestic wastewater.

The Laboratory septic system will have an effluent filter to prevent solids from discharging to the leach field and will be equipped with an Emergency Detention System (EDS) consisting of a 4,000-gallon holding tank to capture any wastes including hazardous waste, if necessary, before it enters the septic system for further treatment (i.e., neutralization, disinfection, etc.) or off-site disposal. All laboratory wastes including potentially hazardous wastes will be handled in accordance with the UC Davis Chemical Hygiene Plan, *Policies and Procedures for Hazardous Chemical Use, Storage, Transportation, and Disposal*.

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-R5241, with all attachments, and MRP No. 2014-0153-DWQ-R5241.

In accordance with the requirements of the General Order, discharges with flow rates less than 20,000 gpd are not required to meet a nitrogen effluent limitation.

The General Order states in Section B.1.I that the Discharger shall comply with the setbacks as described in Table 3. This table summarizes different setback requirements for wastewater 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:

Site Specific Applicable Setback Requirements		
Equipment or Activity	Domestic Well	Property Line
Septic Tank, Aerobic Treatment Unit, Treatment System, or Collection System ⁴	150 ft. ¹	5 ft. ³
Leach Field ⁵	100 ft. ^{2,3}	5 ft. ³

- ¹. Setback established by Onsite Wastewater Treatment System Policy, section 7.5.6.
- ². California Well Standards, part II, section 8. Site-specific conditions may allow reduced setback or require an increased setback. See discussion in Well Standards.
- ³. Setback established by California Plumbing Code, Table K-1.
- ⁴. Septic Tank, Aerobic Treatment Unit, Treatment System, or Collection System addresses equipment located below ground or that impedes leak detection by routine visual inspection.
- ⁵. Leach Field includes all subsurface dispersal systems, including mound systems except seepage pits.

Failure to comply with the requirements in this NOA, General Order 2014-0153-DWQ-R5241, with all attachments, and MRP 2014-0153-DWQ-R5241 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. If flow to the Facility substantially increases and approaches 20,000 gpd, you must contact Central Valley Water Board Staff to determine if further analysis (e.g., Nitrogen Effluent Limit Evaluation) is required.

Provision E.1 of the General Order requires dischargers enrolled under the General Order to prepare and implement the following reports within **90 days** of the issuance of the NOA (24 August 2017):

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

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 Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) has gone to a Paperless Office System. All regulatory documents, submissions,

Pamela Hullinger
University of California Davis - CAHFS
2014-0153-DWQ-R5241

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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 emailed 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: 5C54NC00327, Facility Name: University of California, Davis California Animal Health and Food Safety (CAHFS) Laboratory, Order: 2014-0153-DWQ-R5241.

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:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2014/wqo2014_0153_dwq.pdf

If you have any questions regarding this matter, please contact Katie Carpenter by phone at (559) 445-5551 or by email at kcarpenter@waterboards.ca.gov.



Pamela C. Creedon
Executive Officer

Attachments: Monitoring and Reporting Program No. 2014-0153-DWQ-R5241
Technical Memorandum for University of California Davis, California
Animal Health and Food Safety Laboratory, Report of Waste Discharge
State Water Resources Control Board Order WQ 2014-0153-DWQ
(Discharger Only)

cc w/o attachments:

Tulare County Environmental Health Department, Visalia
Tulare County Planning and Development Services, Visalia
Lisa Moretti, University of California Davis, (via email)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 2014-0153-DWQ-R5241

FOR

UNIVERSITY OF CALIFORNIA DAVIS
CALIFORNIA ANIMAL HEALTH AND FOOD SAFETY LABORATORY
ONSITE WASTEWATER TREATMENT SYSTEM
TULARE 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. The 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 reports, 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 required by subdivision (b) of section 13399.2, or falsifying any information provided therein, is guilty of a misdemeanor and 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 University of California at Davis, California Animal Health and Food Safety Laboratory (CAHFS) owns and operates the wastewater system that is subject to the Notice of Applicability (NOA) of Water Quality Order 2014-0153-DWQ-R5241. 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 or flow weighted) shall be approved by 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.

SEPTIC TANK MONITORING

Monitoring of the septic tanks shall include the following:

<u>Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow Rate	Gallons per day	Metered ¹	Continuous	Annually

¹. Flow rate may be metered or estimated based on potable water supply meter readings or other approved method.

Septic tanks shall be inspected and/or pumped at least as frequently as described below. Inspections of sludge and scum depth are not required if the tanks are pumped at least annually.

<u>Parameter</u>	<u>Units</u>	<u>Measurement Type</u>	<u>Inspection/Reporting Frequency</u>
Sludge depth and scum thickness in each compartment of each tank	Feet	Staff Gauge	Annually
Distance between bottom of scum layer and bottom of outlet device	Inches	Staff Gauge	Annually
Distance between top of sludge layer and bottom of outlet device	Inches	Staff Gauge	Annually
Effluent filter condition (if equipped, clean as needed)	NA ¹	NA ¹	Annually

¹. NA = not applicable

Septic tanks shall be pumped when any one of the following conditions exists:

1. The combined thickness of sludge and scum exceeds one-third of the tank depth of the first compartment.
2. The scum layer is within 3 inches of the outlet device.
3. The sludge layer is within 8 inches of the outlet device.

If a septic tank is pumped during the year, the pumping report shall be submitted with the annual report. All pumping reports shall be submitted with the next regularly scheduled monitoring report. At a minimum, the record shall include the date, nature of service, service company name, and service company license number.

INFLUENT MONITORING

Samples of the influent to the Laboratory septic tank shall be taken at an area that represents the wastewater quality entering the system following a necropsy examination. At a minimum, influent monitoring shall consist of the following:

<u>Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Biochemical Oxygen Demand	mg/L	Grab	Semi-annually ¹	Annually
Total Nitrogen	mg/L	Grab	Semi-annually ¹	Annually
Volatile Organic Compounds ²	ug/L	Grab	Semi-annually ¹	Annually
Formaldehyde	mg/L	Grab	Semi-annually ¹	Annually

mg/L denotes milligrams per liter. ug/L denotes micrograms per liter.

¹. Collect samples semi-annually in April and October.

². VOC analysis to be done using method 8260.

SUBSURFACE DISPOSAL AREA

Monitoring shall be sufficient to determine if wastewater is evenly applied, the disposal area is not saturated, burrowing animals and/or deep rooted plants are not present, and odors are not present. Inspection of dosing pump controllers, automatic distribution valves, etc. is required to maintain optimum treatment in the disposal area. Monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Inspection Frequency</u>	<u>Reporting Frequency</u>
Pump Controllers, Automatic Valves, etc. ¹	Semi-annually	Annually
Nuisance Odor Condition	Semi-annually	Annually
Saturated Soil Conditions ²	Semi-annually	Annually
Plant Growth ³	Semi-annually	Annually
Vectors or Animal Burrowing ⁴	Semi-annually	Annually

1. All pump controllers and automatic distribution valves shall be inspected for proper operation as recommended by the manufacturer.
2. Inspect a disposal area for saturated conditions.
3. Shallow-rooted plants are generally desirable, deep-rooted plants such as trees shall be removed as necessary.
4. Evidence of animals burrowing shall be immediately investigated and burrowing animal populations controlled as necessary.

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.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, 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 should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed 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: 5C54NC00327, Facility Name: University of California Davis (CAHFS) Laboratory, Order: 2014-0153-DWQ-R5241.

During the life of this General Order, either the State Water Resources Control Board (State Water Board) or the Central Valley Water Board may require the Administrator to electronically submit reports using the State Water Board's California Integrated Water Quality System (CIWQS) program, GeoTracker program, or similar system. Electronic submittal to CIWQS, when implemented, will meet the requirements of our Paperless Office System. Until directed otherwise, the Administrator shall submit reports using our Paperless Office System.

A. Annual Report

Annual reports shall be submitted to the Central Valley Water Board by **March 1st following the monitoring year**. The reports shall bear the certification and signature of the Discharger's authorized representative. At a minimum, the Annual report shall include:

1. Tabular and graphical summaries of all monitoring data collected during the year.
2. An evaluation of the performance of the wastewater treatment system, 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 the General Order (Provision E.2.c), shall also be submitted.
3. If requested by staff, 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.

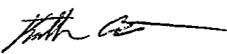
A letter transmitting the monitoring reports shall accompany each report. The letter shall report violations found during the reporting period, and actions taken or planned to correct the violations and prevent future violations. The transmittal letter shall contain the following penalty of perjury statement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

Central Valley Regional Water Quality Control Board

TECHNICAL MEMORANDUM

TO: Clay Rodgers
Assistant Executive Officer

FROM: Scott Hatton 
Senior Water Resource Control Engineer
RCE 67889

Kathleen Carpenter 
Engineering Geologist
PG 8014

DATE: 24 August 2017

SUBJECT: APPLICABILITY OF COVERAGE UNDER STATE WATER RESOURCES CONTROL BOARD ORDER WQ 2014-0153-DWQ, GENERAL WASTE DISCHARGE REQUIREMENTS FOR SMALL DOMESTIC WASTEWATER TREATMENT SYSTEMS, UNIVERSITY OF CALIFORNIA DAVIS, CALIFORNIA ANIMAL HEALTH AND FOOD SAFETY LABORATORY, ONSITE WASTEWATER TREATMENT SYSTEMS, TULARE COUNTY

On 25 April 2017, Central Valley Water Board staff (staff) received a Report of Waste Discharge (RWD) from the University of California at Davis (Discharger). The RWD requested coverage under the State Water Board's *General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems*, Water Quality Order 2014-0153-DWQ (General Order) for the new California Animal Health and Food Safety (CAHFS) Laboratory in Tulare County. The RWD includes a Form 200, and a technical report with septic system design plans prepared and signed by Ronald McLaughlin (RCE 63339), a California registered civil engineer with Merrick & Company. Additional details on the wastewater system design and laboratory hazardous waste and chemical handling procedures were submitted on 7 June 2017.

This memorandum provides a summary of staff's review of the RWD and the applicability of this discharge to be covered under the General Order.

DESCRIPTION OF DISCHARGE

The CAHFS Laboratory will provide diagnostic sample analysis for the dairy, cattle, and poultry industries in the Central Valley. The CAHFS Laboratory will consist of an office building and a laboratory building, each with a separate septic tank and leach field disposal system. However, there will be an overflow pipe to connect the two systems in the event of a pump failure and provide redundancy for the system.

The Domestic septic system will collect domestic waste from the office building including the restrooms and breakroom/kitchen, while the Laboratory septic system will collect domestic waste from the restrooms and breakroom within the laboratory building as well as sinks and drains from the various laboratories, necropsy rooms, and crematory.

Both the Domestic and Laboratory septic systems will be equipped with a 4,500-gallon septic tank and leach field, each with an effective disposal area of 3,000 square feet. Flows to the Domestic and Laboratory septic systems are estimated at 2,386 gallons per day (gpd) and 3,483 gpd, respectively. The Laboratory septic system will also have an effluent filter to prevent solids from discharging to the leach field and will be equipped with an Emergency Detention System (EDS) consisting of a 4,000-gallon holding tank that can be manually operated to capture any wastes including hazardous waste, if necessary, before it enters the septic system for further treatment (i.e., neutralization, disinfection, etc.) or off-site disposal. All laboratory wastes including potentially hazardous wastes will be handled in accordance with the UC Davis Chemical Hygiene Plan, *Policies and Procedures for Hazardous Chemical Use, Storage, Transportation, and Disposal*.

POTENTIAL THREAT TO WATER QUALITY

Percolation tests were conducted within the proposed disposal area. The average percolation rate in the upper soil (above six feet bgs) was about 1.3 minutes per inch (min/in). According to Table 5: *Minimum Depth to Groundwater and Minimum Soil Depth from the Bottom of the Dispersal System*, in the General Order, the minimum depth to groundwater requirement for percolation rates between 1 min/in and 5 min/in is 20 feet bsg. Depth-to-groundwater ranges from about 60 to 100 feet below site grade (bsg), based on data collected from wells in the vicinity of the disposal area.

The Laboratory septic system has the potential to collect wastes other than just domestic wastewater including blood and some laboratory chemicals. To evaluate wastewater quality for the Laboratory septic system, the Discharger collected samples from a similar laboratory both before and after a necropsy dissection was performed and analyzed them for typical waste constituents including biochemical oxygen demand (BOD), nitrogen, and volatile organic compounds (VOCs). Table 1 compares these results with those for a typical domestic waste stream from the General Order.

TABLE 1. Wastewater Quality

<u>Constituent</u>	<u>Units</u>	<u>Typical Domestic Wastewater¹</u>	<u>Before Necropsy</u>	<u>After Necropsy</u>
pH	s.u.	6.5 – 8.5	6.9	6.8
Biochemical Oxygen Demand (BOD)	mg/L	200 – 290	150	220
Total Nitrogen	mg/L	35 – 100	35	37
Acetone	mg/L	- - -	2	1.6
Toluene	mg/L	- - -	0.01	0.02

1. Typical domestic wastewater quality from Table 1 in the General Order.

Based on the results, BOD and nitrogen concentrations in the laboratory wastewater appear to be similar to what would be expected from a typical domestic wastewater. Low levels of acetone and toluene were detected in the laboratory samples. However, it was unclear if they were introduced from the lab or as a cross contamination during the analysis. Given the nature of the discharge from the Laboratory septic system the, NOA should include periodic monitoring for BOD, total nitrogen, and VOCs.

Based on the design, the average combined daily flow for both septic systems will be less than 6,000 gpd. In accordance with the requirements in the General Order, discharges with flow rates less than 20,000 gpd are not required to meet a nitrogen effluent limitation.

MONITORING REQUIREMENTS

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

- Septic Tank monitoring;
- Subsurface Disposal Area; and
- Solids Disposal Monitoring

"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 as of the date of this MRP.

Ordered by:

Clay L. Rodgers
for PAMELAC. CREEDON, Executive Officer
8/24/17
DATE