
Central Valley Regional Water Quality Control Board

20 May 2016

Jessie Hudgins, Vice President
Valley Children's Hospital
9300 Valley Children's Place
Madera, California 93636

CERTIFIED MAIL
7015 1730 0000 9937 4589

NOTICE OF APPLICABILITY (NOA), STATE WATER RESOURCES CONTROL BOARD ORDER WQ 2014-0153-DWQ-R5205, GENERAL WASTE DISCHARGE REQUIREMENTS FOR SMALL DOMESTIC WASTEWATER TREATMENT SYSTEMS, VALLEY CHILDREN'S HOSPITAL, WASTEWATER TREATMENT FACILITY, MADERA COUNTY

On 18 April 2016, Valley Children's Hospital (hereafter VCH or "Discharger"), submitted a Report of Waste Discharge (RWD) for coverage under State Water Resources Control Board's *General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems*, Water Quality Order 2014-0153-DWQ (General Order). Based on the information provided, the system treats and disposes of less than 100,000 gallons of 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-R5205 for your system.

A copy of the General Order is available on the State Water Board's website at:

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

You should familiarize yourself with the entire General Order and its attachments, 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-R5205*. This MRP was developed after consideration of your waste characterization and site conditions described in the attached memorandum.

REGULATORY BACKGROUND

Valley Children's Hospital Wastewater Treatment Facility (WWTF) is currently regulated under Waste Discharge Requirements (WDRs) Order 95-244, which authorizes a monthly average daily discharge of up to 0.08 million gallons per day (mgd) to on-site septage pits.

On 29 April 2005 the Central Valley Water Board adopted Special Order R5-2005-0065, which modified the effluent limit for EC following implementation of salinity control measures including a switch from chlorine disinfection to ultraviolet light (UV) disinfection, and set an average monthly effluent limit of 10 mg/L for total nitrogen due to elevated nitrate concentrations in groundwater.

DISCHARGE DESCRIPTION

The WWTF treats wastewater from Valley Children's Hospital and associated medical offices at 9300 Valley Children's Place in Madera County, Township 12 South, Range 20 East, Sections 16 and 17 MDB&M.

Current flows to the WWTF average about 0.065 mgd. According to the RWD a proposed 15% Hospital expansion would increase flows to about 0.08 mgd, consistent with the current flow limit specified in Order 95-244. As discussed in the RWD, the Discharger is proposing to upgrade its wastewater treatment system to simplify operation of the system and eliminate hydraulic limitations to allow the system to handle additional flows from the Hospital associated with a proposed 15% expansion. All other systems will remain the same.

With the proposed upgrades, the treatment system will consist of a 50,000-gallon equalization tank, a 24,000-gallon anoxic tank, and 80,000-gallon aeration tank, a 15,500-gallon secondary clarifier, and an 18,000-gallon sludge-holding tank. The secondary effluent is further treated by filtration and ultraviolet (UV) disinfection before being conveyed to a series of thirty seepage pits for final 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, with all attachments, and MRP 2014-0153-DWQ-R5205.

Note that the General Order contains prohibitions, specifications, and provisions that apply to all wastewater systems, as well as those that apply to only specific treatment and/or disposal systems. In addition to the requirements that apply to all systems, specific requirements and effluent limits for this system are summarized below:

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 | Flowing Stream¹ | Property Line |
| Septic Tank, Aerobic Treatment Unit, Treatment System, or Collection System ² | 150 ft. ³ | 50 ft. ⁵ | 5 ft. ⁵ |
| Seepage Pit | 150 ft. ^{4,5} | 150 ft. ⁵ | 8 ft. ⁵ |

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

The General Order states in Section D.1.a that the discharge shall not exceed the effluent limitations as described in Table 4. This table summarizes effluent limitations for constituents based on treatment technologies and flow rates. The Discharger shall comply with the applicable effluent limitations, as summarized in the following table:

| Effluent Limitations Based on Technology Performance | | |
|--|-------------------|--|
| Activated Sludge, MBR¹, or similar (not including residential aerobic treatment units) | | |
| Constituent | Units | Limit |
| BOD ² | mg/L ³ | 30 (monthly average), 45 (7-day average) |
| TSS ⁴ | mg/L | 30 (monthly average), 45 (7-day average) |
| Total Nitrogen ⁵ | mg/L | 10 (monthly average) |

1. MBR = membrane bioreactor
2. BOD = biochemical oxygen demand
3. mg/L – milligrams per liter
4. TSS = total suspended solids
5. Total nitrogen limit set due to elevated nitrate concentrations in groundwater (see attached Technical Memorandum).

Failure to comply with the requirements in this NOA, General Order 2014-0153-DWQ, with all attachments, and MRP 2014-0153-DWQ-R5205 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.

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, 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: 5C201110001, Facility Name: Valley Children's Hospital WWTF,
Order: 2014-0153-DWQ-R5205.

Please note that WDRs Order 95-244 and Special Order R5-2005-0065 will be proposed for rescission at an upcoming 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, please contact Katie Carpenter by phone at (559) 445-5551 or by email at kcarpenter@waterboards.ca.gov.

for 
Pamela C. Creedon
Executive Officer

Attachments: Monitoring and Reporting Program No. 2014-0153-DWQ-R5205
Technical Memorandum for Valley Children's Hospital WWTF
State Water Resources Control Board General Order WQ 2014-0153-DWQ

cc w/o attachments:

Jason Sherrell, Central Cal Waterworks, Inc., Fresno
Dexter Marr, Madera County Environmental Health Department, Madera

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 2014-0153-DWQ-R5205

FOR

VALLEY CHILDREN'S HOSPITAL
WASTEWATER TREATMENT FACILITY
MADERA 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 Discharger owns and operates the wastewater system that is subject to this Notice of Applicability (NOA) of Water Quality Order 2014-0153-DWQ-R5205. 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.

ACTIVATED SLUDGE MONITORING

Effluent Monitoring

Samples shall be taken from a location that represents the effluent quality distributed to the disposal area. At a minimum, effluent monitoring shall consist of the following:

| <u>Parameter</u> | <u>Units</u> | <u>Sample Type</u> | <u>Sampling Frequency</u> | <u>Reporting Frequency</u> |
|-------------------------------|--------------|--------------------|---------------------------|----------------------------|
| Flow Rate | mgd | Metered | Continuous | Quarterly |
| pH | pH units | Grab | Weekly | Quarterly |
| Electrical Conductivity (EC) | umhos/cm | Grab | Weekly | Quarterly |
| BOD ₅ ¹ | mg/L | Composite | Weekly | Quarterly |
| Total Suspended Solids | mg/L | Composite | Weekly | Quarterly |
| Total Nitrogen | mg/L | Composite | Weekly | Quarterly |
| Gross Alpha / Gross Beta | pCi/L | Grab | Quarterly ² | Quarterly |

| <u>Parameter</u> | <u>Units</u> | <u>Sample Type</u> | <u>Sampling Frequency</u> | <u>Reporting Frequency</u> |
|---|--------------|--------------------|----------------------------|----------------------------|
| Zinc | mg/L | Grab | Quarterly ² | Quarterly |
| Formaldehyde | mg/L | Grab | Quarterly ² | Quarterly |
| Phenol | mg/L | Grab | Quarterly ² | Quarterly |
| General Minerals ³ | mg/L | Composite | Semi-Annually ⁴ | Semi-Annually |
| Metals ⁵ | ug/L | Composite | Semi-Annually ⁴ | Semi-Annually |
| Volatile Organic Compounds ⁶ | ug/L | Grab | Semi-Annually ⁴ | Semi-Annually |

1. 5-day Biochemical Oxygen Demand.

2. Samples to be collected in January, April, July, and October.

3. General Minerals analysis shall include; alkalinity (as CaCO₃), bicarbonate (as CaCO₃), boron, calcium, carbonate (as CaCO₃), chloride, hardness, iron, magnesium, manganese, nitrate as nitrogen, potassium, sodium, sulfate, and total dissolved solids.

4. Samples to be collected in April and October.

5. Metals analysis shall include; aluminum, antimony, arsenic, beryllium, cadmium, total chromium, chromium VI, copper, lead, mercury, nickel, selenium, silver, and thallium.

6. Volatile Organic Compounds shall be analyzed by EPA Method 624 or equivalent method approved by the Executive Officer.

DISINFECTION SYSTEM MONITORING

Samples of the disinfected effluent shall be taken at a location immediately down-stream of the disinfection system. At a minimum, disinfection monitoring shall consist of the following:

| <u>Parameter</u> | <u>Units</u> | <u>Sample Type</u> | <u>Sampling Frequency</u> | <u>Reporting Frequency</u> |
|--------------------------|--------------|--------------------|---------------------------|----------------------------|
| Total Coliform Organisms | MPN/100mL | Grab | Weekly | Quarterly |

In addition, to ensure proper operation of the system, the Discharger shall monitor the UV disinfection system in accordance with the manufacturer's specifications or with any requirements set by the State Water Resources Control Board's, Division of Drinking Water (DDW), whichever is more stringent. All maintenance, inspection, and replacement records shall be retained on-site.

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 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 | Quarterly | Quarterly |
| Nuisance Odor Condition | Quarterly | Quarterly |

| <u>Constituent</u> | <u>Inspection Frequency</u> | <u>Reporting Frequency</u> |
|--|-----------------------------|----------------------------|
| Saturated Soil Conditions ² | Quarterly | Quarterly |
| Plant Growth ³ | Quarterly | Quarterly |
| Vectors or Animal Burrowing ⁴ | Quarterly | Quarterly |
| Seepage Pit Condition ⁵ | Quarterly | Quarterly |

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.
5. Seepage pits shall be inspected to ensure they are allowing wastewater to infiltrate as designed. Visual inspection of the water level in the seepage pit is adequate.

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 any analytical data required by the entity accepting the waste. These records shall be submitted as part of the quarterly monitoring reports.

GROUNDWATER MONITORING

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:

| <u>Constituent</u> | <u>Units</u> | <u>Sample Type</u> | <u>Sampling/Reporting Frequency</u> |
|------------------------------|--------------|--------------------|-------------------------------------|
| Depth-to-water | 0.01 feet | Measurement | Quarterly ¹ |
| Groundwater Elevation | feet | Calculated | Quarterly ¹ |
| Temperature | °C or °F | Grab | Quarterly ¹ |
| pH | pH units | Grab | Quarterly ¹ |
| Electrical Conductivity (EC) | umhos/cm | Grab | Quarterly ¹ |
| Total Coliform Organisms | MPN/100mL | Grab | Quarterly ¹ |
| Nitrate as Nitrogen | mg/L | Grab | Quarterly ¹ |
| Gross Alpha / Gross Beta | pCi/L | Grab | Quarterly ¹ |

| <u>Constituent</u> | <u>Units</u> | <u>Sample Type</u> | <u>Sampling/Reporting Frequency</u> |
|---------------------------------|--------------|--------------------|-------------------------------------|
| Zinc ⁵ | mg/L | Grab | Annually ² |
| Phenol | mg/L | Grab | Annually ² |
| Formaldehyde | mg/L | Grab | Annually ² |
| General Minerals ^{3,5} | mg/L | Grab | Annually ² |
| Metals ^{4,5} | ug/L | Grab | Annually ² |
| Volatile Organic Compounds | ug/L | Grab | Annually ² |

1. Samples to be collected in January, April, July, and October.
2. Samples to be collected in October.
3. General Minerals analysis shall include; alkalinity (as CaCO₃), bicarbonate (as CaCO₃), boron, calcium, carbonate (as CaCO₃), chloride, hardness, iron, magnesium, manganese, nitrate as nitrogen, potassium, sodium, sulfate, and total dissolved solids.
4. Metals analysis shall include; aluminum, antimony, arsenic, beryllium, cadmium, total chromium, chromium VI, copper, lead, mercury, nickel, selenium, silver, and thallium.
5. Samples collected for metals shall be filtered with a 0.45 micron filter prior to preservation, digestion, and analysis.

The Discharger shall maintain its groundwater monitoring well network. If a groundwater monitoring well(s) is dry for more than four consecutive sampling events, the Discharger shall submit a work plan and proposed time schedule to replace the well(s).

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: 5C201110001, Facility Name: Valley Children's Hospital WWTF,
 Order: 2014-0153-DWQ-R5205

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

similar system. Electronic submittal to CIWQS, when implemented, will meet the requirements of our Paperless Office System.

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 and 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. If requested by staff, copies of laboratory analytical report(s) and chain of custody form(s).
4. A groundwater monitoring report prepared by a California licensed professional. This report may be prepared separately from the rest of the Quarterly Report. The report shall contain an analysis of groundwater data collected during the quarter. 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 tables 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.

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 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. 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.
4. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.
5. Describe maintenance activities for the UV disinfection system performed in the calendar year. The description shall address inspections performed, lamp bulb

replacement, lamp sleeve cleaning, and manufacturer recommended maintenance activities.

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:

"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:

for *Annice M. Wass*
PAMELA C. CREEDON, Executive Officer
5/20/16
DATE

Central Valley Regional Water Quality Control Board

TECHNICAL MEMORANDUM

TO: Lonnie M. Wass
Supervising Engineer

Clay Rodgers
Assistant Executive Officer

FROM: Kathleen Carpenter 
Engineering Geologist
PG 8014

Scott Hatton
Water Resource Control Engineer
RCE 67889

DATE: 20 May 2016

SUBJECT: APPLICABILITY OF COVERAGE UNDER STATE WATER RESOURCES CONTROL BOARD ORDER WQ2014-0153-DWQ, GENERAL WASTE DISCHARGE REQUIREMENTS FOR SMALL DOMESTIC WASTEWATER TREATMENT SYSTEMS, VALLEY CHILDREN'S HOSPITAL, WASTEWATER TREATMENT FACILITY, MADERA COUNTY

On 18 April 2016, Central Valley Water Board staff (staff) received a Report of Waste Discharge (RWD) from Valley Children's Hospital (Hospital or Discharger) for coverage under State Water Board's *General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems*, Water Quality Order 2014-0153-DWQ (General Order). The RWD includes a Form 200, and a technical report certified by Henry Liang (RCE C68442), a California registered professional civil engineer with AECOM.

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 Hospital's Wastewater Treatment Facility (WWTF) was designed to treat and dispose of the Hospital's wastewater on a temporary basis until a regional WWTF could be built. However, there have been several delays, and the regional WWTF for the Gunner Ranch West development is not expected to be built for several more years.

Due to the delay in construction of the regional WWTF, the Discharger is proposing to upgrade its WWTF to improve operation of the treatment system, better handle flows from the Hospital, and ensure proper treatment of its wastewater. The proposed upgrades will include:

1. Installation of a new 50,000-gallon flow equalization tank to provide for better management of flows into the treatment system;
2. Conversion of the existing equalization tank and sludge holding tank to create a 30,000-gallon anoxic tank; and
3. Conversion of the existing 18,000-gallon anoxic tank to create a larger sludge holding tank.

The proposed upgrades are expected to simplify operation of the treatment system and eliminate hydraulic limitations within the system to allow the system to handle additional flows from the Hospital associated with a proposed 15% expansion. All other components will remain the same.

The Hospital's WWTF is currently regulated under Waste Discharge Requirements (WDRs) Order 95-244, which authorizes a monthly average daily flow rate of up to 0.08 million gallons per day (mgd) to on-site septage pits. On 29 April 2005 the Central Valley Water Board adopted Special Order R5-2005-0065, which modified the effluent limit for EC following implementation of salinity control measures including a switch from chlorine disinfection to ultraviolet light (UV) disinfection, and set an average monthly effluent limit of 10 mg/L for total nitrogen due to elevated nitrate concentrations in groundwater.

POTENTIAL THREAT TO WATER QUALITY

With the proposed upgrades the treatment system will consist of a package plant with a 50,000-gallon equalization tank, a 24,000-gallon anoxic tank, and 80,000-gallon aeration tank, a 15,500-gallon secondary clarifier, and an 18,000-gallon sludge-holding tank. The secondary effluent is further treated by filtration and disinfected before being conveyed to a series of seepage pits for final disposal. Solids are collected in the sludge holding tank and allowed to thicken prior to being shipped off-site for further treatment and disposal at a regional wastewater treatment facility (currently the City of Madera's WWTF).

Current flows to the WWTF average about 65,000 gallons per day (gpd). According to the RWD the proposed 15% expansion would increase flows to about 80,000 gpd. This is consistent with the flow limit in the existing Order. With the proposed upgrades

streamlining the treatment process, the WWTF will be able to handle the increased flows from the Hospital.

The existing Special Order contains an average monthly effluent limit of 10 mg/L for total nitrogen, consistent with the primary Maximum Contaminant Level (MCL) for nitrate due to elevated concentrations of nitrate in groundwater. Table 1 below presents average nitrate concentrations in groundwater from existing monitoring wells.

TABLE 1. Nitrate as Nitrogen in Groundwater (2010 to 2015)

| <u>Monitoring Well</u> | <u>Minimum</u> | <u>Maximum</u> | <u>Average</u> |
|------------------------|----------------|----------------|----------------|
| MW-1 | 6.3 mg/L | 18 mg/L | 13.3 mg/L |
| MW-2 | 7.4 mg/L | 20 mg/L | 14.2 mg/L |
| MW-3 | 8 mg/L | 20 mg/L | 13.9 mg/L |
| MW-4 | 6.2 mg/L | 22 mg/L | 13.9 mg/L |
| MW-5 | 7.3 mg/L | 8.9 mg/L | 8.1 mg/L |
| MW-6R | 6.4 mg/L | 10 mg/L | 8.0 mg/L |

Given the potential threat to groundwater for nitrates the General Order will carry over the existing effluent limit for total nitrogen of 10 mg/L, and continue groundwater monitoring.

MONITORING REQUIREMENTS

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

- Effluent monitoring;
- Disinfection System Monitoring;
- Subsurface Disposal Area;
- Solids Disposal Monitoring; and
- Groundwater Monitoring.