Central Valley Regional Water Quality Control Board

28 April 2025

Michael Roberts
Episcopal Conference Center of Oakhurst
200 W. 4th Street, Suite 3100
Madera, CA 93637

CERTIFIED MAIL
7021 2720 0001 0065 4137

NOTICE OF APPLICABILITY

CENTRAL VALLEY WATER BOARD RESOLUTION R5-2023-0061; WAIVER OF WASTE DISCHARGE REQUIREMENTS, REPORTS OF WASTE DISCHARGE, AND/OR WATER RECYCLING REQUIREMENTS FOR SPECIFIC TYPES OF DISCHARGE WITHIN THE CENTRAL VALLEY REGION; EPISCOPAL CONFERENCE CENTER OF OAKHURST; WATER TREATMENT SYSTEM BACKWASH; MADERA COUNTY

On 25 January 2024, JSWWC Water & Wastewater Management (Operator) submitted an Application/Report of Waste Discharge (RWD) on behalf of the Episcopal Conference Center of Oakhurst (ECCO or Discharger) for coverage under Resolution R5-2023-0061, *Waiver of Waste Discharge Requirements, Reports of Waste Discharge, and/or Water Recycling Requirements for Specific Types of Discharge Within the Central Valley Region* (Low Threat Waiver) for the discharge of filter backwash water to land from its arsenic wellhead treatment system. The treatment system is intended to remove arsenic from a groundwater supply well (Well 3) at the ECCO Facility in Oakhurst, Madera County.

Notice of Applicability R5-2018-0085-0037 was issued to the Discharger on 13 February 2020 and provided regulatory coverage for the backwash water discharge under the previous Low Threat Waiver (R5-2018-0085), which expired on 5 December 2023. Resolution R5-2023-0061 was adopted by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) on 14 December 2023 and replaced resolution R5-2018-0085.

Based on information provided by the Operator, the discharge meets the required conditions for enrollment under the renewed Low Threat Waiver. A check for the application fee was received by the Central Valley Water Board on 9 May 2024. You are

hereby assigned **enrollee number R5-2023-0061-0031.** Please include this number on all correspondence related to this discharge.

A copy of the Low Threat Waiver is enclosed, and is available on the Central Valley Water Board's website at the following web address:

https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2023-0061.pdf

Please familiarize yourself with the contents of the Low Threat Waiver, including the Conditions of Discharge (Attachment A of the Low Threat Waiver). The discharge must be managed in accordance with the requirements listed in the Conditions of Discharge (Table 1, Category 13 – Filter backwash and system flushing from water treatment systems), the information submitted in the RWD, and this NOA. The Low Threat Waiver will expire on **14 December 2028**. Prior to this date, the Discharger shall contact the Central Valley Water Board and either cease the discharge or submit a new RWD and application fee to continue under a renewed waiver, or individual waste discharge requirements.

In accordance with the requirements in Attachment A of the Low Threat Waiver for filter backwash discharges (Table 1, Category 13), this NOA is accompanied by **Monitoring and Reporting Program (MRP) R5-2023-0061-0031** to ensure compliance with the conditions specified by the Low Threat Waiver.

PROJECT LOCATION

The Discharger owns the Episcopal Conference Center of Oakhurst at 43803 Highway 41 about a mile north of Oakhurst in Madera County as shown on Attachment A, Site Location Map.

The operative Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin.

DISCHARGE DESCRIPTION

The ECCO Water System (Water System No. 2000688) consists of three groundwater supply wells (Wells 1 through 3), three arsenic removal vessels, one 10-micron canister filter, one unlined retention basin, and two storage tanks as shown on Attachment B, ECCO Arsenic Removal Treatment System Flow Schematic.

The arsenic removal system was installed to remove arsenic from Well 3 and consists of three 24-inch diameter media vessels filled with Layne RT™ arsenic removal media, an adsorptive media. Layne RT™ is described as a hybrid resin bead, which utilizes hydrous iron oxide to bind arsenic. Product information indicates that the filter media is designed

for a continual service flow of 3.75 gpm (5,400 gpd), peak flow of up to 7.5 gpm (10,800 gpd), and has a 2 to 3-year life span. High silica, phosphate, pH, and iron levels in the source water can shorten its lifespan. The backwash flows through a 10-micron canister filter prior to discharge to an unlined basin that is 12 ft x 13 ft x 5.5 ft, or approximately 6,400 cubic feet.

The initial data in a 2018 RWD submitted for the treatment system included three 2017 samples collected from Well 3. Observed arsenic concentrations from the 2017 samples are presented in Table 1.

Table 1 – Well No. 3 Arsenic Results

CONSTITUENT	DATE	UNITS	RESULT
Arsenic	February 2017	Micrograms per liter (µg/L)	3.87
Arsenic	July 2017	µg/L	29.48
Arsenic	October 2017	µg/L	18.94

Reported results of the filter backwash samples collected in 2019 and 2024 are summarized in Table 2. The results presented correspond to sampling events in which general mineral concentrations were analyzed along with arsenic.

Table 2 – Filter Backwash Analytical Results

CONSTITUENT	UNIT (SEE 1 BELOW)	RESULT 11/12/2019	RESULT 10/31/24
Arsenic	µg/L	< 2.0	9.48
Electrical Conductivity (EC)	µmhos/cm	414	1020
pH	s.u.	6.23	6.99
Total Dissolved Solids	mg/L	170	530
Hardness (as Ca CO_3)	mg/L	139	149
Sodium	mg/L	30.4	123
Calcium	mg/L	40.1	56.4
Chloride	mg/L	27.4	269
Sulfate	mg/L	10.8	24.8
Magnesium	mg/L	9.51	1.86
Manganese	µg/L	< 10	383

1. s.u. = standard pH units; µmhos/cm =micromhos per centimeter; mg/L = milligrams per kilter; µg/L = micrograms per liter.

A 14 February 2024 letter from the Operator indicates the system is backwashed “a couple of times” per year and produces about 540 gallons of backwash per event. Well 3 went offline starting in Fall 2022 and was put back into service in July 2023. Subsequent sampling of Well 3 conducted in October 2023 resulted in an elevated arsenic concentration of 15.2 ug/L, which is above the California Primary Maximum Contaminant Level of 10 ug/L. The Discharger contends that the observed elevated arsenic concentration was the result of reactivating Well No. 3 following a period of nonoperation. The Discharger resampled the well in January 2024 and the arsenic result was 4.96 µg/L. A sample was collected and analyzed for General Minerals in October 2024 as shown in Table 2 above.

Sampling results indicate detections of arsenic above and near the MCL of 10 µg/L in the backwash. Previous records do not indicate the frequency at which the filter media is replaced, and it’s unclear whether the observed concentrations are associated with saturated filter media that requires replacement/regeneration as recommended by the manufacturer. This NOA includes a requirement for the Discharger to maintain the treatment system components, including proper maintenance of the filter media, to achieve compliance with this NOA and the Low Threat Waiver. Furthermore, Monitoring and Reporting Program (MRP) R5-2023-0061-0031 requires the Discharger to report most recent filter media replacement/regeneration event and establish a frequency for future filter media replacement.

FACILITY SPECIFIC REQUIREMENTS AND EFFLUENT LIMITATIONS

The Low Threat Waiver and this NOA cover the discharge of well head treatment backwash as specified above. The Discharger shall comply with the requirements specified in the Low Threat Waiver, and the following facility specific requirements:

1. Discharge of filter backwash wastewater shall be conducted as described in the RWD and in accordance with the requirements contained in the Low Threat Waiver.
2. Discharge of filter backwash wastewater at a location or in a manner different from that described in the RWD and this NOA is prohibited.
3. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances [i.e., the filter media]) that are installed or used by the Discharger to achieve compliance with the conditions of this NOA and the Low Threat Waiver.
4. The Discharger shall comply with the attached Monitoring and Reporting Program (MRP) R5-2023-0061-0031.
5. The discharge shall not cause or threaten to cause conditions of contamination, nuisance, or pollution as defined in California Water Code section 13050.

6. Discharge or runoff of filter backwash wastewater from storage and/or application areas to adjacent lands, surface waters, or surface water drainage courses is prohibited.
7. Failure to abide by the conditions of the Low Threat Waiver R5-2023-0061, and this NOA could result in enforcement actions, as authorized by provisions of the California Water Code.
8. The Discharger shall notify the Central Valley Water Board of any change in agreement or proposed use of the discharge of backwash wastewater as described in the RWD and this NOA.

Please review this Notice of Applicability carefully to ensure that it completely and accurately reflects the facility name, location, and details of the proposed discharge. Failure to comply with the requirements of the Low Threat Waiver, this NOA or attached MRP may result in enforcement action as authorized by provisions of the California Water Code, which could include civil liability.

All monitoring reports and other correspondence should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50 MB should be emailed to: centralvalleyfresno@waterboards.ca.gov.

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
Facility Name: Episcopal Conference Center of Oakhurst – Filter Backwash Disposal
Place ID: 862974
Order: R5-2023-0061-0031

Documents that are 50MB or larger should be transferred to a CD, DVD, or flash drive and mailed to:

Central Valley Regional Water Board – Fresno Office
1685 E Street
Fresno, CA 93706.

All documents, including responses to inspections and written notifications, submitted to comply with this Waiver shall be directed, via the paperless office system, to the Compliance and Enforcement Unit, attention to Omar Mostafa. Mr. Mostafa can be reached at (559) 445-5197 or Omar.Mostafa@waterboards.ca.gov. Questions regarding the permitting aspects of the Waiver, and notification for termination of coverage under the Waiver, shall be directed, via the paperless office system, to the WDR Permitting Unit, attention Jeff Pyle. Mr. Pyle can be reached at (559) 445-445-5145 or by email at Jeffrey.Pyle@waterboards.ca.gov.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Resources Control Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Resources Control Board must receive the petition by 5:00 p.m., 30 days after the date of this NOA, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Resources Control Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the internet at Copies of the laws and regulations applicable to filing petitions (https://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

Original signed by Alex S. Mushegan
For Patrick Pulupa
Executive Officer

Attachments:

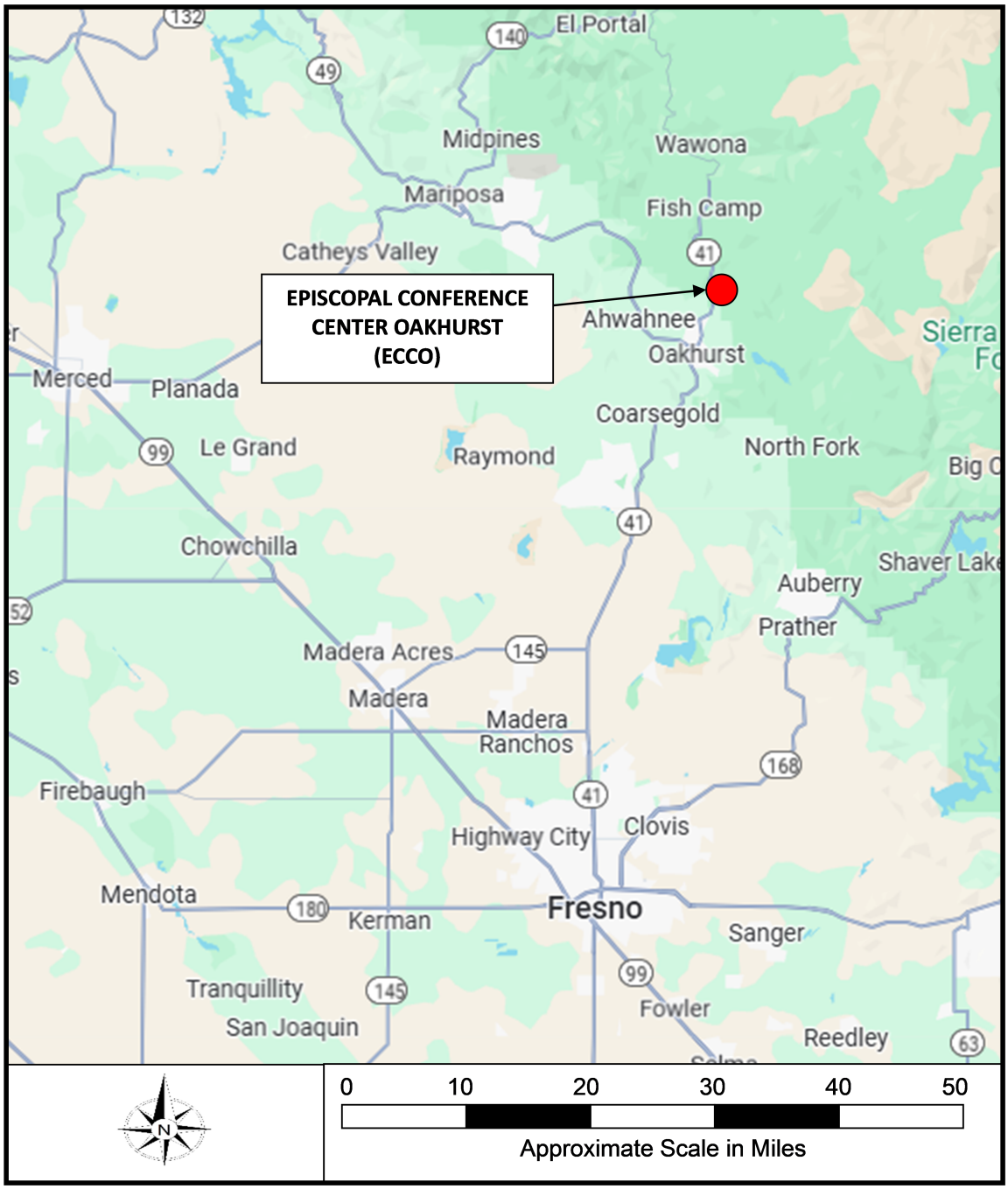
- Attachment A – Site Location Map
- Attachment B – ECCO Treatment System Flow Schematic

Enclosures:

- Monitoring and Reporting Program R5-2023-0061-0031
- Central Valey Water Board Resolution No. R5-2023-0061 (Discharger only)

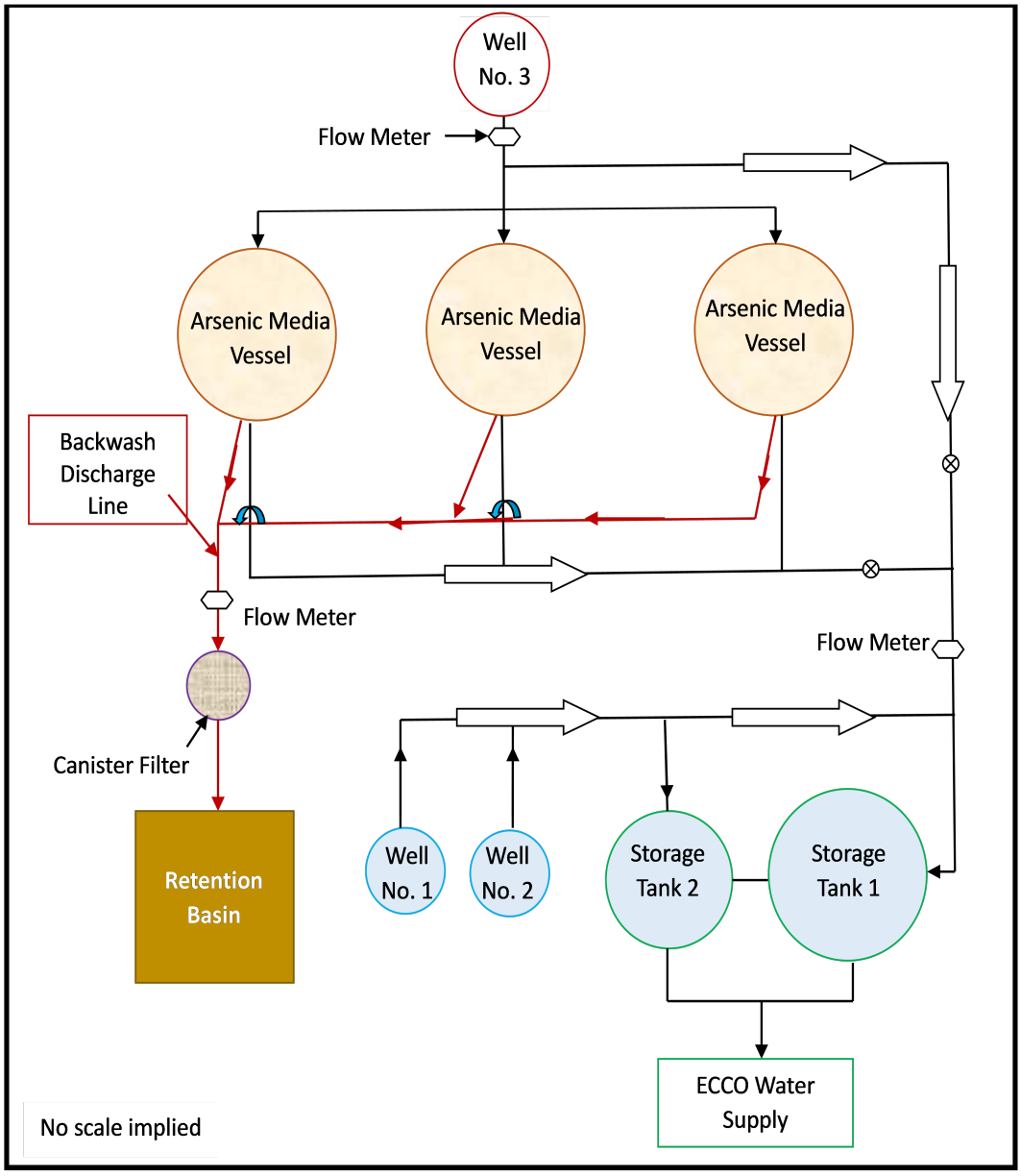
cc's:

- Chris Moskal, State Water Resources Control Board, OCC, Sacramento (via email)
- DWQ-WDR@waterboards.ca.gov
- Orlando Gonzalez, State Water Resources Control Board, DDW (via email)
- Omar Mostafa, Central Valley Water Board, Fresno (via email)
- Madera County Department of Public Works (via email)
- Jared Steeley, JSWWC Water & Wastewater Management, Denair (via email)



ATTACHMENT A – SITE LOCATION MAP

NOTICE OF APPLICABILITY R5-2023-0061-0031



ATTACHMENT B – ECCO TREATMENT SYSTEM FLOW SCHEMATIC

NOTICE OF APPLICABILITY R5-2023-0061-0031

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2023-0061-0031 FOR THE EPISCOPAL CONFERENCE CENTER OF OAKHURST WATER TREATMENT SYSTEM BACKWASH MADERA COUNTY

On 28 April 2025, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) Executive Officer issued the Episcopal Conference Center in Oakhurst (ECCO, or Discharger) Notice of Applicability (NOA) R5-2023-0061-0031, for coverage under Resolution R5-2023-0061, *Waiver of Waste Discharge Requirements, Reports of Waste Discharge, and/or Water Recycling Requirements for Specific Types of Discharge Within the Central Valley Region* (Low Threat Waiver or Waiver). The NOA regulates the discharge of backwash filter water from the Discharger's arsenic removal water treatment system to land.

This Monitoring and Reporting Program (MRP) is issued pursuant to California 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.

Section 13267 of the California Water Code 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."*

Section 13268 of the California Water Code 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 and 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 the treatment system that is subject to Notice of Applicability R5-2023-0061-0031 (NOA), and monitoring reports are necessary to ensure the Discharger complies with the NOA and the conditions specified in the Low Threat Waiver. Pursuant to Water Code section 13268, the Discharger shall implement this MRP and shall submit the monitoring reports described herein.

A glossary of terms used in this MRP is included on the last page.

I. GENERAL MONITORING REQUIREMENTS

A. FLOW MONITORING

Hydraulic flow rates shall be measured at the monitoring points specified in this MRP. All flow monitoring systems shall be appropriate for the conveyance system (i.e., open channel flow or pressure pipeline) and liquid type. The measurements may be based on flow meter readings or pump run time estimate. The method of measurement must be specified. Unless otherwise specified, each flow meter shall be equipped with a flow totalizer to allow reporting of cumulative volume as well as instantaneous flow rate. Flow meters shall be calibrated at the frequency recommended by the manufacturer; typically, at least once per year and records of calibration shall be maintained for review upon request.

B. MONITORING AND SAMPLING LOCATIONS

Samples shall be obtained at the monitoring points specified in this MRP. The Executive Officer shall approve any proposed changes to sampling locations prior to implementation of the change.

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

Table 1 – ECCO Monitoring Locations

Monitoring Location	Monitoring Location Description
EFF-001	Location after the canister filter where a representative sample of the effluent quality discharged to the retention basin can be collected.
BASIN-01	Retention basin used for discharge of backwash water from the ECCO arsenic treatment/removal system.

C. SAMPLING AND SAMPLE ANALYSIS PLAN

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. Except as specified otherwise in this MRP, grab samples will be considered representative of water, wastewater, soil, solids/sludges and groundwater. The time, date, and location of each sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to measure pH, temperature, electrical conductivity, dissolved oxygen, wind speed, and precipitation) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated at the frequency recommended by the manufacturer;
3. The instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the “Reporting” section of this MRP.

Laboratory analytical procedures shall comply with the methods and holding times specified in the following (as applicable to the medium to be analyzed):

- *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA);
- *Test Methods for Evaluating Solid Waste* (EPA);
- *Methods for Chemical Analysis of Water and Wastes* (EPA);
- *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA);
- *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and
- *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125).

Approved editions shall be those that are approved for use by the United States Environmental Protection Agency (EPA) or the State Water Resources Control Board (State Water Board), Division of Drinking Water’s Environmental Laboratory Accreditation Program (ELAP). The Discharger may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

II. SPECIFIC MONITORING REQUIREMENTS

A. ARSENIC WATER TREATMENT SYSTEM BACKWASH (EFF-01)

Effluent samples shall be collected at monitoring location EFF-01. At a minimum, effluent monitoring shall consist of the following:

Table 2 - Arsenic System Backwash Monitoring

Constituent	Units	Sample Type	Sample Frequency	Reporting Frequency (see 3 below)
Flow Rate	Gpd	Meter	Continuous	Annually
Electrical Conductivity	µmhos/cm	Grab	Once per event (see 1 below)	Annually
Arsenic	ug/L	Grab	Once per event (see 1 below)	Annually
General Minerals	Various	Grab	1/three years (see 2 below)	Annually

1. Samples shall be collected once during each backwash event.
2. Sample shall be collected once every three years starting in 2025.
3. If no backwash events occurred during the year, the Annual Report shall so state.

B. BASIN MONITORING (BASIN-01)

The Discharger shall inspect the retention basin (BASIN-01) prior to and during each backwash event. The results of the inspection shall be included as part of the annual monitoring reports. Basin monitoring shall include the following:

Table 3 - Basin Monitoring

Constituent	Units	Sample Type	Reporting Frequency
Freeboard	Feet	Measurement	Annually
Nuisance, Odors, and/or Vectors	N/A	Observation	Annually
Berm Condition	N/A	Observation	Annually

C. SOLIDS DISPOSAL REQUIREMENTS

The Discharger shall report the handling and disposal of all solids associated with the water treatment system and discharge of backwash water (e.g., filter media/material, sludge from the unlined basin, etc.). Records shall include the name/contact information for the hauling company, the type and amount of waste transported, the date removed, 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 annual monitoring report. The Discharger shall include in the annual monitoring report the date the arsenic removal media was last replaced and/or regenerated.

III. REPORTING REQUIREMENTS

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 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to the following address:

Central Valley Regional Water Quality Control Board
Region 5 – Fresno Office
1685 “E” St.
Fresno, California 93706

To ensure that your submittal is routed to the appropriate staff person, the following information should be included in the body of the email or transmittal sheet:

Program: Non-15
Facility: Episcopal Conference Center Oakhurst Arsenic System Backwash
Order: MRP R5-2023-0061-0031
County: Madera
Place ID: 862974

A transmittal letter shall accompany each monitoring report. The letter shall include a discussion of all violations of this MRP during the reporting period and actions taken or planned for correcting each violation. If the Discharger has previously submitted a report describing corrective actions taken and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the Discharger or the Discharger’s authorized agent certifying under penalty of perjury that the report is true, accurate and complete to the best of the signer’s knowledge.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, groundwater, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

Laboratory analysis reports shall be included in the monitoring reports. All laboratory reports must also be retained for a minimum of three years. For a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

Monitoring information shall include the method detection limit (MDL) and the Reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

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

A. ANNUAL MONITORING REPORTS

The Annual Monitoring Report shall be submitted to the Central Valley Water Board by **February 1st of each year**. The report shall bear the certification and signature of the Discharger or his/her authorized representative. At a minimum, the annual report shall include the following information.

1. Results of all required monitoring data presented in tabular format.
2. Copies of all laboratory analytical report(s) and chain of custody form(s) for in-house and contracted laboratory analyses.
3. The names and contact information for the operator(s) responsible for operation, maintenance, and monitoring of the arsenic treatment system and discharge of backwash water.
4. A discussion and summary of the compliance record for the reporting period identifying all corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into compliance with the NOA and/or Low Threat Waiver.
5. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

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

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Resources Control Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Resources Control Board must receive the petition by 5:00 p.m., 30 days after the date of this MRP, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Resources Control Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the internet (http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided on request.

The Discharger shall implement the above monitoring program upon the date of issuance of NOA R5-2023-0061-0031.

Ordered by:

Original signed by Alex S. Mushegan
For PATRICK PULUPA, Executive Officer

28 April 2025
(Date)

GLOSSARY

CaCO3	Calcium carbonate
EC	Electrical conductivity at 25° C
Continuous	The specified parameter shall be measured by a meter continuously.
Daily	Every day except weekends or holidays
Annually	Once per year
mg/L	Milligrams per liter
µmhos/cm	Micromhos per centimeter
gpd	Gallons per day
gpm	Gallons per minute
General Minerals	Analysis shall include; alkalinity (as CaCO3), bicarbonate (asCaCO3), boron, calcium, carbonate (as CaCO3), chloride, iron, magnesium, manganese, nitrate as N, phosphate, potassium, sodium, sulfate, and verification that the analysis is complete (i.e., cation/anion balance).