

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2015-0012-037 Rev. 1

FOR  
IN-SITU GROUNDWATER REMEDIATION  
AND DISCHARGE OF TREATED GROUNDWATER TO LAND

DAVIS ENTERPRISE  
302 G STREET  
DAVIS, YOLO COUNTY

This Revised Monitoring and Reporting Program (MRP) describes requirements for monitoring a groundwater remediation 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 Executive Officer. As appropriate, California Regional Water Quality Control Board, Central Valley Region staff shall approve specific sample station locations prior to implementation of sampling activities.

All samples should be representative of the volume of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

### GROUNDWATER MONITORING

A monitoring well associated with this pilot study is shown on Figure 5-1 and listed in Table 1 below. The groundwater monitoring program for this well and any treatment system monitoring well(s) installed subsequent to the issuance of this MRP, shall follow the schedule below. Sample collection and analysis shall follow standard EPA protocol.

The monitoring well(s) shall be sampled according to the schedule in Table 1 and the samples analyzed by the methods in Table 2, as follows:

**Table 1: Sampling Schedule**

<b>Well Number<sup>1</sup></b>	<b>Frequency<sup>2</sup></b>	<b>Monitoring Objective</b>
MW-4D	Semi-annual	Treatment Zone <sup>3</sup>
New Monitoring Wells	Quarterly for one year then semi-annual thereafter	Treatment or Compliance

<sup>1</sup> Well number as shown on Figure 5-1.

<sup>2</sup> Constituent suite components listed in Table 2.

<sup>3</sup> Wells sampled to evaluate remediation progress inside the treatment zone.

**Table 2: Analytical Methods**

<b>Constituent</b>	<b>Method<sup>1</sup></b>	<b>Maximum Practical Quantitation Limit (µg/L)<sup>2</sup></b>
Volatile Organic Compounds	EPA 8260B	0.5
Title 22 Metals Total	EPA 200.8	Varies
Total Dissolved Solids	EPA 160.1	10,000
Cations (Ca, Mg, Na, K, Fe, Mn, Si)	EPA 200.8	Varies
Ferrous Iron	SM 3500	200
Anions (Cl, SO <sub>4</sub> , NO <sub>2</sub> , NO <sub>3</sub> , F, PO <sub>4</sub> )	EPA 300.0	Varies

- 1 Or an equivalent EPA Method that achieves the maximum Practical Quantitation Limit.
- 2 All concentrations between the Method Detection Limit and the Practical Quantitation Limit shall be reported as an estimated value.

**FIELD SAMPLING**

In addition to the above sampling and analysis, field sampling and analysis shall be conducted each time a monitoring well is sampled. The sampling and analysis of field parameters shall be as specified in Table 3.

**Table 3: Field Sampling Requirements**

<b>Parameters</b>	<b>Units</b>	<b>Type of Sample</b>
Groundwater Elevation	Feet, Mean Sea Level	Measurement
Oxidation-Reduction Potential	Millivolts	Grab
Electrical Conductivity	uhmos/cm	Grab
Dissolved Oxygen	mg/L	Grab
pH	pH Units (to 0.1 units)	Grab
Temperature	Degrees Celcius	Grab
Turbidity	NTU	Grab

All well(s) that are purged shall be purged until pH, temperature, conductivity and dissolved oxygen are within 10% of the previous value.

Field test instruments (such as those used to test pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and

4. Field calibration reports are submitted as described in item (b) of the "Reporting" section of this MRP.

## REPORTING

When reporting the data, the Discharger shall arrange the information in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner as to illustrate clearly the compliance with this Order. The results of any monitoring completed more frequently than required at the locations specified in the Monitoring and Reporting Program shall also be reported to the Central Valley Water Board.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports shall be prepared by a registered professional Civil Engineer or Geologist or their subordinate and signed by the registered professional.

The Discharger shall submit semi-annual electronic data reports, which conform to the requirements of the California Code of Regulations, Title 23, Division 3, Chapter 30. The semi-annual reports shall be submitted electronically over the internet to the Geotracker database system by **1 March** and **1 September**, until such time as the Executive Officer determines that the reports are no longer necessary.

Each semi-annual report shall include the following minimum information:

- (a) a description and discussion of the groundwater sampling event and results, including trends in the concentrations of pollutants and groundwater elevations in the wells, how and when samples were collected, and whether the pollutant plume(s) is delineated;
- (b) field logs that contain, at a minimum, water quality parameters measured before, during, and after purging, method of purging, depth of water, volume of water purged, etc.;
- (c) groundwater contour maps for all groundwater zones, if applicable;
- (d) pollutant concentration maps for all groundwater zones, if applicable;
- (e) a table showing well construction details such as well number, groundwater zone being monitored, coordinates (longitude and latitude), ground surface elevation, reference elevation, elevation of screen, elevation of bentonite, elevation of filter pack, and elevation of well bottom;
- (f) a table showing historical lateral and vertical (if applicable) flow directions and gradients;

- (g) cumulative data tables containing the water quality analytical results and depth to groundwater;
- (h) a copy of the laboratory analytical data report;
- (i) A discussion of the long-term trends in the concentrations of the pollutants in the groundwater monitoring wells;
- (j) An analysis of whether the pollutant plume is being effectively treated;
- (k) A description of all remedial activities conducted during the year, an analysis of their effectiveness in removing the pollutants, and plans to improve remediation system effectiveness;
- (l) The status of any ongoing remediation, including an estimate of the cumulative mass of pollutant removed from or treated in the subsurface, system operating time, the effectiveness of the remediation system, and any field notes pertaining to the operation and maintenance of the system; and
- (m) If applicable, the reasons for and duration of all interruptions in the operation of any remediation system, and actions planned or taken to correct and prevent interruptions.

A letter transmitting the monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

The Discharger shall implement the above monitoring program as of the effective date of the Order. This order is effective upon the date of signature.

Ordered by:

Original Digitally Signed by John J. Baum on  
Date: 2021.08.25 09:27:57 -07'00'

---

For PATRICK PULUPA, Executive Officer