

California Regional Water Quality Control Board
North Coast Region

Monitoring and Reporting Program No. R1-2008-0033
(Replacing Monitoring and Reporting Program NO. 94-43)

Union Pacific Railroad Company

99 Frances Street
Santa Rosa, California

Sonoma County

MONITORING

The groundwater monitoring program includes a total of forty-six monitoring wells, fourteen extraction wells and one piezometer within the A-Zone, the B-zone, C-zone, and D-Zone.

GROUNDWATER MONITORING

1. Groundwater monitoring activities shall include depth to water measurements and the collection of groundwater samples for analysis of volatile organic compounds for each required monitoring well at the frequency established in Table 1. Depth to water measurements shall be determined to at least 0.01 foot increments. Samples from select wells will also be analyzed for 1,4-dioxane and lead.
2. Table 1 provides the detail of the frequency depth to water will be measured in each well and the frequency of sampling analyses to be performed from each well. All laboratory analyses must be performed at a state certified laboratory. Analytical methods for sample analyses shall achieve practical quantification reporting limits that are adequate for evaluating regulatory action levels for each constituent.

PERFORMANCE MONITORING

3. Designated remedial performance wells include MW-09(B), MW-39(B), MW-40(B), MW-42(B), E-202(B), E-205 (B), and E-206 (C). Performance monitoring parameters include dissolved oxygen, manganese, iron, sulfate, methane, ethane, ethene, chloride, total organic carbon, volatile fatty acids, hydrogen, alkalinity, electrical conductance, oxidation-reduction potential, pH, and temperature (collectively referred to as performance parameters). Designated wells shall be sampled for volatile organic compounds and performance parameters prior to injections, one month after injections and quarterly thereafter until the Executive Officer concurs that water quality conditions have returned to pre-injection (baseline) levels.

REPORTING

4. All data collected as designated performance monitoring, shall be submitted to the Regional Water Board no later than 45 days after each

sampling event. Baseline monitoring data and data collected one month following the initial injection shall be submitted collectively in a remedial system summary report as specified in C. 4 of Order No. R1-2008-0033. All other data shall be reported according to the schedule specified in No. 5. below.

5. Monitoring reports shall be submitted to the Regional Water Board at a semi-annual frequency. Monitoring reports shall be prepared by or under the supervision of a California Registered Engineer or Geologist. Monitoring reports shall be submitted according to the following schedule:

<u>Reporting Period</u>	<u>Due Date</u>
January through June	July 30
July through December	January 30

6. The following maps shall be submitted with each monitoring report:
 - a) A map of the site showing the quarterly groundwater flow pattern for each water bearing zone including the direction of the groundwater gradient and the location of all wells, and
 - b) A map of the site showing the chemical concentrations at each sampling point.
7. The results of each sampling event's groundwater elevation measurements shall be reported in a tabular form indicating the surveyed elevations of each reference point, depth to groundwater from the reference point and the actual groundwater elevation.
8. Sampling analytical and monitoring data from each sampling event shall be summarized in tabular form, including all previously collected data, signed laboratory reports, and field logs with instrument calibration records and measurements.
9. All monitoring reports, data and depth to groundwater measurements shall also be submitted electronically to the State Water Resources Control Board's Geographic Environmental Information Management System database (GeoTracker) as required by Title 23, Division 3, Chapter 16, Article 12 of the California Code of Regulations (i.e AB2886 electronic reporting requirements).¹

Ordered By _____
Catherine E. Kuhlman
Executive Officer
April 24, 2008

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¹ Information on AB2886 electronic reporting can be obtained on the Internet by following the Electronic Submittal of Information link on the GeoTracker home page at <http://geotracker.waterboards.ca.gov>.