



California Regional Water Quality Control Board Central Valley Region

Katherine Hart, Chair



Matthew Rodriguez
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Edmund G. Brown Jr.
Governor

Mr. Kyle Kochanski
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19 October 2011

**NOTICE OF APPLICABILITY OF GENERAL ORDER NO. R5-2011-0149-035,
FORMER CHEVRON STATION 9-5840, 1101 B STREET, MARYSVILLE, YUBA COUNTY,
CLEANUP AND ABATEMENT ORDER NO. R5-2009-0706 (REVISED)**

Chevron USA, Incorporated (Chevron) submitted a Notice of Intent on 25 May 2011, requesting coverage under General Order No. R5-2008-0149, General Waste Discharge Requirements for In-Situ Groundwater Remediation at Sites with Volatile Organic Compounds, Nitrogen Compounds, Perchlorate, Pesticides, Semi-Volatile Compounds and/or Petroleum Compounds. Based on information in your submittals, it is our determination that this project meets the required conditions to be approved under Order R5-2008-0149. As such you are assigned Order No. R5-2008-0149-035.

Additionally, Chevron is currently monitoring wells related to the site investigation and cleanup under existing Monitoring and Reporting Program (MRP) No. R5-2009-0831. This approved remediation project as described herein will require groundwater monitoring in accordance with MRP No. R5-2008-0149-0821 (enclosed) in addition to the monitoring required under MRP No. R5-2009-0831.

Project Location:

The project is in the City of Marysville in Yuba County. The assessor's parcel number is 009-226-008-000.

Project Description:

On December 12, 1987, one 6,000-gallon waste oil and two 10,000-gallon gasoline underground storage tanks (UST) were removed from this site. Soil and groundwater samples collected from beneath the UST's indicated the presence of petroleum hydrocarbons. The primary constituents are total petroleum hydrocarbons as gasoline (TPH-g), diesel (TPH-d), and benzene. From 1988 to present, Chevron has completed a number of soil and groundwater investigations and cleanups. The contamination remains. Additional remediation efforts are required to expeditiously and cost-effectively clean up the impacts to soil and groundwater.

Chevron and their environmental consultant, Conestoga-Rovers & Associates (CRA), conducted a limited in-situ chemical oxidation pilot study and are proposing full-scale implementation for remediating the remaining petroleum impacts. Chevron and CRA propose to inject a solution consisting of potassium persulfate and hydrogen peroxide into the

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groundwater at one injection point downgradient of the dispenser islands. They will also be conducting the applicable sampling and reporting. The results will be evaluated by Central Valley Regional Water Quality Control Board (Board) staff. Adequate fail-safe alternates are contained within the Dischargers proposal, should adverse water quality conditions, such as the creation of Cr+6, occur.

No comments were received regarding the subject Order during the 30-day public comment period ending on 7 October 2011.

General Information:

1. The project will be operated in accordance with the requirements contained in the General Order No. R5-2008-0149 and in accordance with the information submitted in the Notice of Intent, and otherwise as specified in this Notice of Applicability.
2. The required annual fee (as specified in the annual billing you will receive from the State Water Resources Control Board) shall be submitted until this Notice of Applicability is officially revoked.
3. Injection of materials other than those specified in the Notice of Intent into the subsurface is prohibited, unless analysis, as specified in Order No. R5-2008-0149, of the injectant is provided and approval is given by Board staff.
4. Failure to abide by the conditions of the General Order and this Notice of Applicability can result in enforcement actions as authorized by provisions of the California Water Code.
5. The Dischargers shall comply with the attached Monitoring and Reporting Program (MRP), and any revisions thereto as ordered by the Executive Officer or directed by Board staff.

If you have any questions regarding this matter, please call Mike Smith at (916) 464-4728 or he can be reached by e-mail at msmith@waterboards.ca.gov.

Original Signed

PAMELA C. CREEDON
Executive Officer

APPROVED
Author _____
Senior _____

Enclosures: General Order R5-2008-0149 and MRP No. R5-2008-0149-0821

cc: Mr. Mark Owens, SWRCB, UST Cleanup Fund, Sacramento
Mr. Clark Pickell, Yuba County Environmental Health Department
Mr. Morgan Hargrave, Conestoga-Rovers & Associates, Rancho Cordova
Ms. Nicole Gleason, Downey Brand LLP, 621 Capitol Mall, 18th Floor, Sacramento, CA
95814

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2008-0149-0821
FOR
IN-SITU GROUNDWATER REMEDIATION AT SITES WITH VOLATILE ORGANIC
COMPOUNDS, NITROGEN COMPOUNDS, PERCHLORATE, PESTICIDES,
SEMI-VOLATILE COMPOUNDS AND/OR PETROLEUM HYDROCARBONS
FOR
FORMER CHEVRON STATION 9-5840
1101 B STREET, MARYSVILLE
YUBA COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring a potassium persulfate and hydrogen peroxide injection system. This MRP is issued pursuant to Water Code Section 13267, and has been prepared based on Attachment C, a part of General Order R5-2008-0149. These monitoring and reporting requirements are in addition to those listed in MRP No. R5-2009-0831.

No changes to this MRP shall be implemented (except sample location/frequency) unless and until a revised MRP is issued by the Executive Officer of the Central Valley Water Quality Control Board (Board). As appropriate, Board staff shall approve specific sample station locations prior to implementation of sampling activities.

PROJECT

- 1. Parties Submitting a Notice of Intent under General Order R5-2008-0149:**
Chevron USA, Incorporated (Chevron; hereafter referred to as the "Discharger").
- 2. Project Location:** The project is an active service station at 1101 B Street in Marysville, Yuba County. The assessor's parcel number is 07-41-300-002.
- 3. Project Description:** Fueling operations at the former Chevron service station have caused pollution of soil and groundwater by petroleum constituents. The primary constituents are total petroleum hydrocarbons as gasoline (TPH-g), total petroleum hydrocarbons as diesel, (TPH-d), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). The petroleum impacts were found after removal of underground storage tanks (USTs) in 1987. From 1988 to present, Chevron has completed several soil and groundwater investigations and cleanups. Past remedial measures included soil excavation during the removal of the USTs and soil vapor extraction. Although the remedial measures were moderately successful, additional remedial efforts are required to more expeditiously and cost-effectively clean up impacts to groundwater.

The Discharger proposes to inject a solution consisting of potassium persulfate and hydrogen peroxide at the location identified as injection well IW-1 seen in the attached Figure A1. The Discharger will also be conducting the applicable sampling and reporting. Adequate fail-safe alternates (stop injection and monitor the unintended byproducts' total and dissolved concentrations as aquifer conditions return to baseline) are to be contained

within the Discharger's proposal, should adverse water quality conditions, such as the creation of hexavalent chromium (Cr+6), occur.

LEGAL REQUIREMENTS

4. CWC section 13267 states, in relevant part:

(a) A regional board ... in connection with any action relating to any plan or requirement authorized by this division, may investigate the quality of any waters of the state within its region.

(b)(1) 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 ... 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.

The Discharger has submitted a Notice of Intent to the Board indicating that they are responsible for the project subject to Order R5-2008-0149. The reports required herein are necessary to ensure compliance with Order R5-2008-0149.

5. CWC section 13268 states, in relevant part:

(a)(1) Any person failing or refusing to furnish technical or monitoring program reports ... 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.

...

(c) Any person discharging hazardous waste, as defined in Section 25117 of the Health and Safety Code, who knowingly fails or refuses to furnish technical or monitoring program reports as required by subdivision (b) of Section 13267, or who knowingly falsifies any information provided in those technical or monitoring program reports, is guilty of a misdemeanor, may be civilly liable in accordance with subdivision (d)...

(d)(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 (c) in an amount which shall not exceed five thousand dollars (\$5,000) for each day in which the violation occurs.

It is Hereby Ordered that the Discharger shall comply with the following Monitoring and Reporting Program requirements:

GENERAL REQUIREMENTS

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

GROUNDWATER MONITORING

2. As shown on Figure 1, there are 17 monitoring wells associated with this site. As listed in Table 1, eight existing monitoring wells are subject to this MRP. Groundwater monitoring wells with free-phase petroleum product or visible sheen shall be monitored, at a minimum, for product thickness and depth-to-water (DTW). Sample collection and analysis shall follow standard Environmental Protection Agency (EPA) protocol.

There will be two treatment zone wells (MW-20 and MW-24), three transition zone wells (MW-9, MW-11, and MW-15), two compliance zone wells (MW-12 and MW14), and one background well (MW-18).

The groundwater monitoring wells 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 Frequency and Constituent Suite

Well Number ¹	Frequency ²	Constituent Suite(s) ³	Monitoring Objective
MW-12 and MW-14	1 week pre-injection, 2 days post injection, and 1,3, and 7 weeks post injection, quarterly	Suites A, B, and C	Compliance ⁴
MW-20 and MW-24		Suites A, B, and C	Treatment Zone ⁵
MW-9, MW-11, and MW-15		Suites A, B, and C	Transition Zone ⁶
MW-18		Suite A, B, and C	Background ⁷

¹ Well numbers as shown on Figure A1.

² i.e., weekly, monthly, quarterly, annually, other.

³ Constituent suite components listed in Table 2.

⁴ Wells used to determine compliance with water groundwater limitations.

⁵ Wells sampled to evaluate in-situ bioremediation progress inside the treatment zone.

⁶ Wells sampled to evaluate migration of pollutants within the treatment zone.

⁷ Wells used to develop background concentrations.

Table 2: Analytical Methods

Constituent	Method ¹	Maximum Practical Quantitation Limit (µg/L) ²	Frequency
Suite A			
TPHg, TPHd	EPA 8015	50	As indicated in Table 1
BTEX	EPA 8260B	0.50 (1.0 for total xylenes)	
Suite B			
Chloride	EPA 6500	300	As indicated in Table 1
Sulfide	Hatch 8131	30	As indicated in Table 1
Nitrate	EPA 6500	300	As indicated in Table 1
Sulfate	EPA 6500	200	As indicated in Table 1
Total Organic Carbon	EPA 415	300	As indicated in Table 1
Total Dissolved Solid	EPA 160.1	10,000	As indicated in Table 1
Suite C			
Metals, total and dissolved ³	EPA 200, 600, 6000/7000	Various	As indicated in Table 1

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.

³ Metals include ferrous and ferric iron, barium, total chromium, hexavalent chromium, copper, lead, magnesium, manganese, mercury, molybdenum, and nickel, arsenic

FIELD SAMPLING

- In addition to the above sampling and analysis, groundwater elevation, electrical conductivity, ORP, DO, pH, and water temperature will be measured and analyzed in the field each time a monitoring well is sampled. The sampling and analysis of field parameters is specified in Table 3.

Table 3: Field Sampling Requirements

Parameters	Units	Type of Sample
Groundwater Elevation	Feet, Mean Sea Level	Measurement
Water Temperature	Degrees Celsius	Grab
Electrical Conductivity	uhmos/cm	Grab
Oxygen-Reduction Potential	Millivolts	Grab
Dissolved Oxygen	mg/L	Grab
pH	pH Units (to 0.1 units)	Grab

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.

DISCHARGE MONITORING

4. The Discharger shall monitor the amendments that are injected into the groundwater according to the requirements specified in Table 4. Each amendment addition shall be recorded individually, along with information regarding the time over which the amendment was injected into the aquifer.

Table 4: Discharge Monitoring Requirements

Parameters	Units	Type of Sample
Potassium Persulfate Injected Hydrogen Peroxide Injected	gallons per event	Measured

REPORTING

5. 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. In addition, the Discharger shall notify the Regional Board within 48 hours of any unscheduled shutdown of any soil vapor and/or groundwater extraction system. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall also be reported to the Regional Board.
6. As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports shall be prepared by a registered professional or their subordinate and signed by the registered professional.
7. The Discharger shall submit quarterly electronic data reports, which conform to the requirements of the California Code of Regulations, Title 23, Division 3, Chapter 30. The quarterly reports shall be submitted electronically over the internet to the Geotracker database system by the **15th day of the month** following the end of each calendar quarter, **15 April, 15 July, 15 October, and 15 January**, until such time as site conditions and

Regional Board staff determine that modification to the reporting requirements are applicable. And, hard copies of quarterly reports shall also be submitted to the Board by the 15th day of the month following the end of each calendar quarter. Each quarterly 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
 - d) pollutant concentration maps for all groundwater zones
 - e) cumulative data tables containing the water quality analytical results and depth to groundwater
 - f) a copy of the laboratory analytical data report, which may be submitted in an electronic format
 - g) the status of any ongoing remediation, including an estimate of the cumulative mass of pollutant removed from the subsurface, system operating time, the effectiveness of the remediation system, and any field notes pertaining to the operation and maintenance of the system
 - h) 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
 - i) tabular and graphical summaries of all data obtained during the year
 - j) groundwater contour maps and pollutant concentration maps containing all data obtained during the previous year
 - k) a discussion of the long-term trends in the concentrations of the pollutants in the groundwater monitoring wells
 - l) an analysis of whether the pollutant plume is being effectively treated
 - m) 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
 - n) an identification of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program
 - o) desired, a proposal and rationale for any revisions to the groundwater sampling plan frequency and/or list of analytes.
8. 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 on the first day of the month following adoption of this Order.

Ordered by:

Original Signed
PAMELA C. CREEDON Executive Officer

(Date)

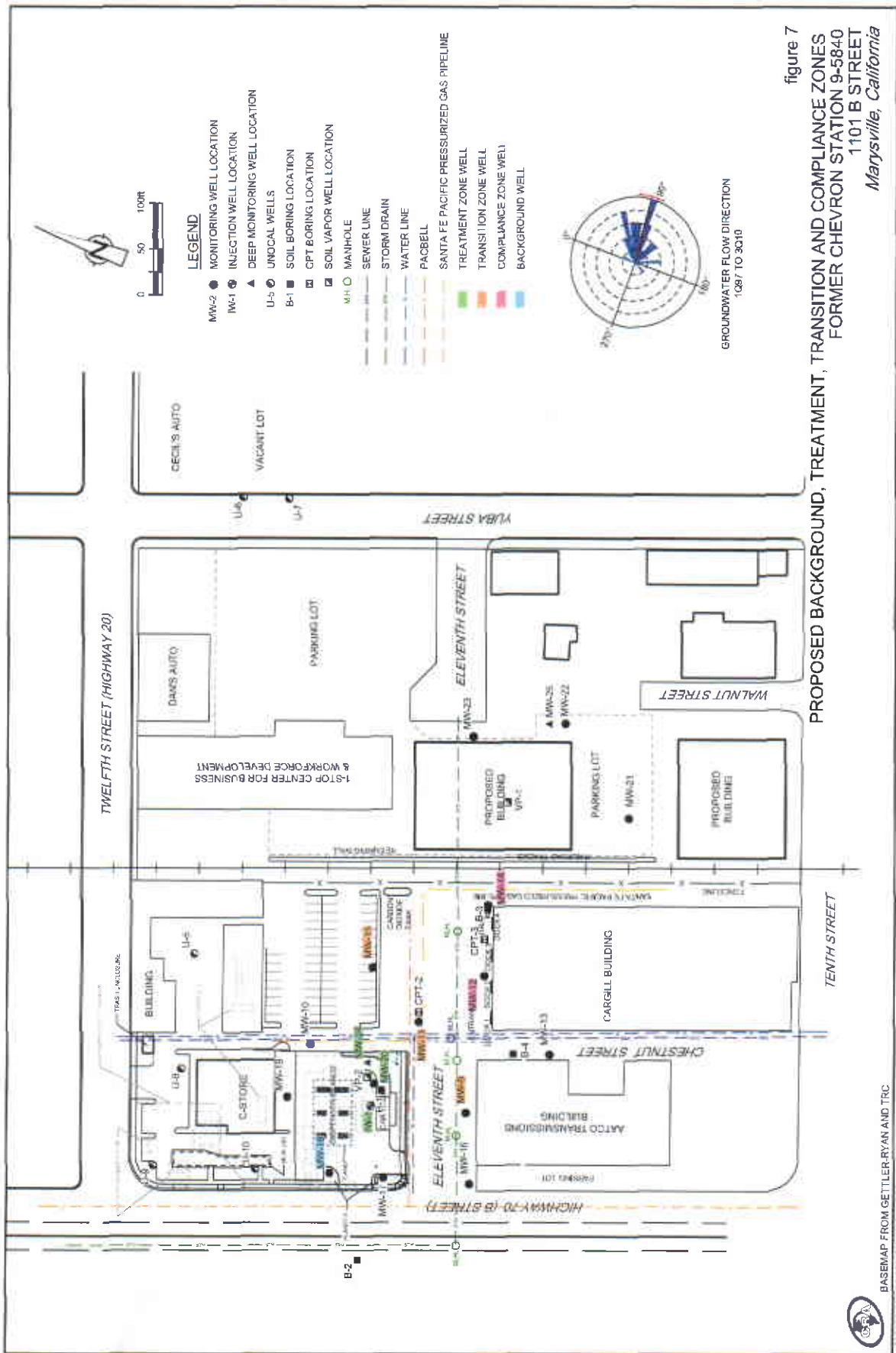


figure 7

BASEMAP FROM GETTLER-RYAN AND TRC
111708-10320001/2004002 FEB 02/2011

