

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2006-XXXX
CALIFORNIA WATER CODE SECTION 13267

FOR

NICOLETTI OIL, INC.
AND
EXXONMOBIL CORPORATION
NICOLETTI OIL DISTRIBUTION FACILITY
MERCED COUNTY

Nicoletti Oil, Inc. and ExxonMobil Corporation (hereafter jointly referred to as the Discharger) currently and/or previously owned and operated a bulk fuel and retail fuel distribution facility at 2801 Blossom Street in Dos Palos (the facility). The facility consists of five aboveground fuel storage tanks, fuel dispensers, associated aboveground and underground piping, an office building and warehouse, and car wash. Petroleum hydrocarbon releases from the fuel storage system have resulted in pollution of soil and groundwater beneath the facility, Blossom Street, and property along the north side of Blossom Street. This pollution impaired the beneficial use of this water resource as municipal and domestic water supply. Depth to groundwater is approximately 5 feet below ground surface. The Discharger operates a soil vapor extraction system to remove pollutants from the vadose zone and a groundwater extraction and treatment system to remediate polluted groundwater and separate phase hydrocarbons (SPH) floating on the water table.

This Monitoring and Reporting Program (MRP) is issued pursuant to Section 13267 of the California Water Code and is necessary to delineate groundwater pollutant plumes and determine whether remediation efforts are effective. Existing data and information about the site show the presence of various chemicals, including Total Petroleum Hydrocarbons as gasoline and diesel (TPHg and TPHd); benzene, toluene, ethylbenzene, and xylenes (BTEX); methyl tertiary butyl ether (MTBE); and tetraethyl lead emanating from the property and resulting from the Discharger's current or past operation. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

Prior to construction of any new groundwater monitoring or extraction wells, and prior to destruction of any groundwater monitoring or extraction wells, the Discharger shall submit plans and specifications to the Board for review and approval. Once installed, all new wells shall be added to the monitoring program and shall be sampled and analyzed according to the schedule below.

REMEDIATION SYSTEM MONITORING

Groundwater Pump and Treat System Monitoring

Influent samples shall be collected from two locations, one sample upstream of the stripper and a second sample downstream of the stripper and upstream of the first carbon vessel. System effluent samples shall be collected from the exiting sample port of the final treatment vessel prior to discharge. Influent and effluent samples shall be analyzed according to the following schedule:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Total Petroleum Hydrocarbons as Gasoline ¹	µg/L	Grab	Monthly	Quarterly
Total Petroleum Hydrocarbons as Diesel ¹	µg/L	Grab	Monthly	Quarterly
Volatile Organic Compounds ²	µg/L	Grab	Monthly	Quarterly
Electrical Conductivity	µmhos/cm	Grab	Monthly	Quarterly
Total Dissolved Solids	mg/l	Grab	Monthly	Quarterly
pH (Field)	pH units	Grab	Monthly	Quarterly
Temperature (Field)	°Celsius	Grab	Monthly	Quarterly
Total Volume of Water Treated	Gallons	Continuous	Monthly	Quarterly
Flow Rate at Time of Sampling	gpm	Grab	Monthly	Quarterly
Average Flow Rate (since last sampling)	gpm	Continuous	Monthly	Quarterly

¹Required analytical method shall be USEPA Method 8015M or 8260B.

²Required analytical method shall be either USEPA Method 8260B or 624. Analysis shall include benzene, toluene, ethylbenzene, and xylene (BTEX) and seven fuel oxygenates (di-isopropyl ether [DIPE], ethanol, ethyl tertiary butyl ether [ETBE], methanol, methyl tertiary butyl ether [MTBE], tertiary amyl methyl ether [TAME], and tertiary butyl alcohol [TBA]). The maximum detection limits must meet those specified in the Groundwater Monitoring section of the MRP.

Soil Vapor Extraction System Monitoring

A soil vapor extraction system (SVE) is being operated to remediate petroleum hydrocarbon vapors emanating from polluted soil and groundwater. Soil vapor is being extracted from 19 wells and treated via thermal destruction. Performance monitoring of the SVE system shall comply with the requirements of the SJVAPCD and include the parameters listed below. Chemical testing shall be performed on both influent and effluent vapor streams.

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<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Total Organic Vapors (using PID or FID)	ppm	Grab	Bi-weekly	Quarterly
Total Petroleum Hydrocarbons as Gasoline ¹	µg/L	Grab	Bi-weekly	Quarterly
Total Petroleum Hydrocarbons as Diesel ¹	µg/L	Grab	Bi-weekly	Quarterly
BTEX ²	µg/L	Grab	Bi-weekly	Quarterly
Temperature (Field)	°Celsius	Grab	Bi-weekly	Quarterly
System Vacuum (Field)	inches H ₂ O	Grab	Bi-weekly	Quarterly
Flow Rate at Time of Sampling	scfm	Grab	Bi-weekly	Quarterly
Average Flow Rate (since last sampling)	scfm	Continuous	Bi-weekly	Quarterly

¹Required analytical method shall be USEPA Method TO-3.

²Required analytical method shall be USEPA Method TO-15. Analysis shall include benzene, toluene, ethylbenzene, and xylene (BTEX). The maximum detection limits must meet those specified under USEPA Method TO-15.

For monitoring of SVE system operation, the Discharger shall perform the following:

- a. For each regularly scheduled O&M inspection of the system, monitor individual SVE well vapor flow rates (measured or estimated – as available) and vacuum measurements from monitoring wells and vapor wells not connected to the SVE system or paired with an SVE system well.
- b. Laboratory analytical reports indicating the concentration of petroleum hydrocarbon constituents in the gasoline range, naphthalene, and benzene in total SVE effluent.
- c. An estimate of the mass of total petroleum hydrocarbons removed from the ground during the quarter and cumulatively by the SVE system.

Soil Vapor Probe Monitoring

For all Site residential areas not within the influence of the SVE system (influence as determined by the presence of a measurable or predictable soil vacuum due to SVE system operation), implement a soil vapor monitoring program to assess whether volatile organic hydrocarbon concentrations in soil exceed acceptable concentrations. Until modification is approved in accordance with the terms of this MRP, the minimum scope of the soil vapor monitoring shall consist of quarterly sampling of the existing 3-foot soil vapor probes (NW-#-3) for which vacuum influence from the SVE system cannot be demonstrated. Samples shall be analyzed for benzene by USEPA Method TO-15 and for tetraethyl lead (TEL) by the modified NIOSH Method (2533 MOD) previously utilized for all such testing at the Site. Soil vapor probe monitoring reports shall be submitted along with groundwater monitoring reports.

In the event that an exceedance of the acceptable concentration of benzene or TEL is confirmed by subsequent sampling in a soil vapor probe in a given area, then a technical report shall be submitted containing a workplan which proposes a response, which may include modification or expansion of the remedial system. If the initial detection of benzene or TEL in a soil vapor sample exceeds ten times the acceptable concentration, then the confirmation sampling and analyses shall be completed within one month of the initial sampling and analysis and the results

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transmitted to the Regional Water Board forthwith. Upon Regional Water Board concurrence with the work plan, the approved work plan including any remediation system modification, shall be implemented forthwith.

GROUNDWATER MONITORING

As shown on Figure 1, there are 50 groundwater monitoring wells (tabulated below) and 32 vapor monitoring wells at the site. The groundwater monitoring program for monitoring wells not connected to the remediation system and any wells installed subsequent to the issuance of this MRP shall follow the test schedule below. Monitoring wells with SPH or visible sheen shall be monitored, at a minimum, for SPH thickness and depth to water. The volume of extracted groundwater and separate phase hydrocarbons also shall be provided in quarterly monitoring reports. The wells listed in the table below shall be monitored and sampled on a quarterly basis, if they are not connected to the groundwater remediation system. Sample collection and analysis shall follow standard EPA protocol.

Wells	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	
	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-A	MW-B	
	MW-C	MW-D	MW-E	MW-F	MW-G	MW-H	MW-J	MW-K	MW-L	
	MW-M	MW-N	MW-O	MW-P	MW-Q	MW-R	MW-S	MW-T	MW-U	
	MW-V	MW-W	MW-X	MW-Y	MW-Z	NW-1-GW	NW-2-GW			
	NW-3-GW		NW-4-GW		NW-5-GW		NW-6-GW			
	NW-7-GW		NW-8-GW		NW-9-GW					

Constituents	EPA Analytical Method	Maximum Practical Quantitation Limit (µg/l) ¹	Sampling Frequency
Depth to Groundwater	---	---	Quarterly
SPH Layer Thickness	---	---	Quarterly
Volatile Organic Compounds	8260B	0.5	Quarterly
Total Petroleum Hydrocarbons as Gasoline and Diesel	8015M	50	Quarterly
Benzene	8020 or 8260B	0.5	Quarterly
Toluene	8020 or 8260B	0.5	Quarterly
Ethylbenzene	8020 or 8260B	0.5	Quarterly
Xylene	8020 or 8260B	0.5	Quarterly
Organic Lead ²	---	0.25	Quarterly
MTBE	8260B	0.5	Quarterly
TBA	8260B	5.0	Quarterly
TAME	8260B	0.5	Quarterly
DIPE	8260B	0.5	Quarterly
ETBE	8260B	0.5	Quarterly
Ethanol	8260B	50	Quarterly
Methanol	8260B	100	Quarterly

¹ For nondetectable results, all concentrations between the Method Detection Limit and the Practical Quantitation Limit shall be reported as trace.

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²The Discharger shall analyze groundwater samples using a test method with the lowest commercially available practical quantitation limit. If organic lead is detected, the Discharger shall perform verification sampling within 30 days of submittal of the monitoring report.

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 Discharger shall notify Regional Water Board staff via e-mail or facsimile within 48 hours following (or, if planned, in advance of) any interruption of remediation system operation (either the groundwater pump & treat or SVE components, or both) of more than 96 hours or of aggregate interruptions of operation totaling more than 72 hours within any 2-week period. Such notification shall describe the reason for non-operation, the steps being taken to return to operational mode, and estimate the time of resumption of operation. In such instances, all necessary efforts shall be made to return the remediation system to full operation forthwith and any additional delays in restoring the remediation system to full operation shall be similarly reported with explanation.

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.

Quarterly groundwater monitoring reports, including remediation system operations and maintenance and soil vapor probe monitoring data, shall be submitted to the Board by the **1st day of the second month following the end of each calendar quarter (i.e., by 1 February, 1 May, 1 August, and 1 November)** until such time as the Executive Officer determines that the reports are no longer necessary. 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 elevation contour maps for all groundwater zones, if applicable;
- (d) isocontour 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;

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- (f) a table showing historical lateral and vertical (if applicable) flow directions and gradients;
- (g) cumulative data tables containing the water quality analytical results, depth to groundwater, and a summary of SPH layer thickness data;
- (h) a copy of the laboratory analytical data report;
- (i) if applicable, the status of any ongoing remediation, including:
 - 1) documentation that each well pump is performing extraction functions as designed;
 - 2) quarterly and cumulative information on the mass of pollutant removed from the subsurface by both systems;
 - 3) system operating times;
 - 4) a description of steps being taken to maximize the mass extraction rate of petroleum hydrocarbons;
 - 5) the effectiveness of the remediation system; and
 - 6) any field notes pertaining to the operation and maintenance of the system.
- (j) 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; and
- (k) copies of any correspondence with other regulatory agencies during the quarter pertaining to remediation system operation.

An Annual Report shall be submitted to the Regional Water Board by **1 February** of each year. This report shall contain an evaluation of the effectiveness and progress of the investigation and remediation, and may be substituted for the fourth quarter monitoring report. The Annual Report shall contain the following minimum information:

- (a) both tabular and graphical summaries of all data obtained during the year;
- (b) groundwater contour maps and pollutant concentration maps containing all data obtained during the previous year;
- (c) a discussion of the long-term trends in the concentrations of the pollutants in the groundwater monitoring wells;
- (d) an analysis of whether the pollutant plume is being captured by an extraction system or is continuing to spread;
- (e) 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;
- (f) the anticipated date for completion of cleanup activities;

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- (g) an identification of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;
- (h) if desired, a proposal and rationale for any revisions to the groundwater sampling plan frequency and/or list of analytes.

The results of any monitoring done more frequently than required at the locations specified in the MRP also shall be reported to the Regional Water Board. The Discharger shall implement the above monitoring program as of the date of the Order.

Ordered by:

PAMELA C. CREEDON, Executive Officer

(Date)

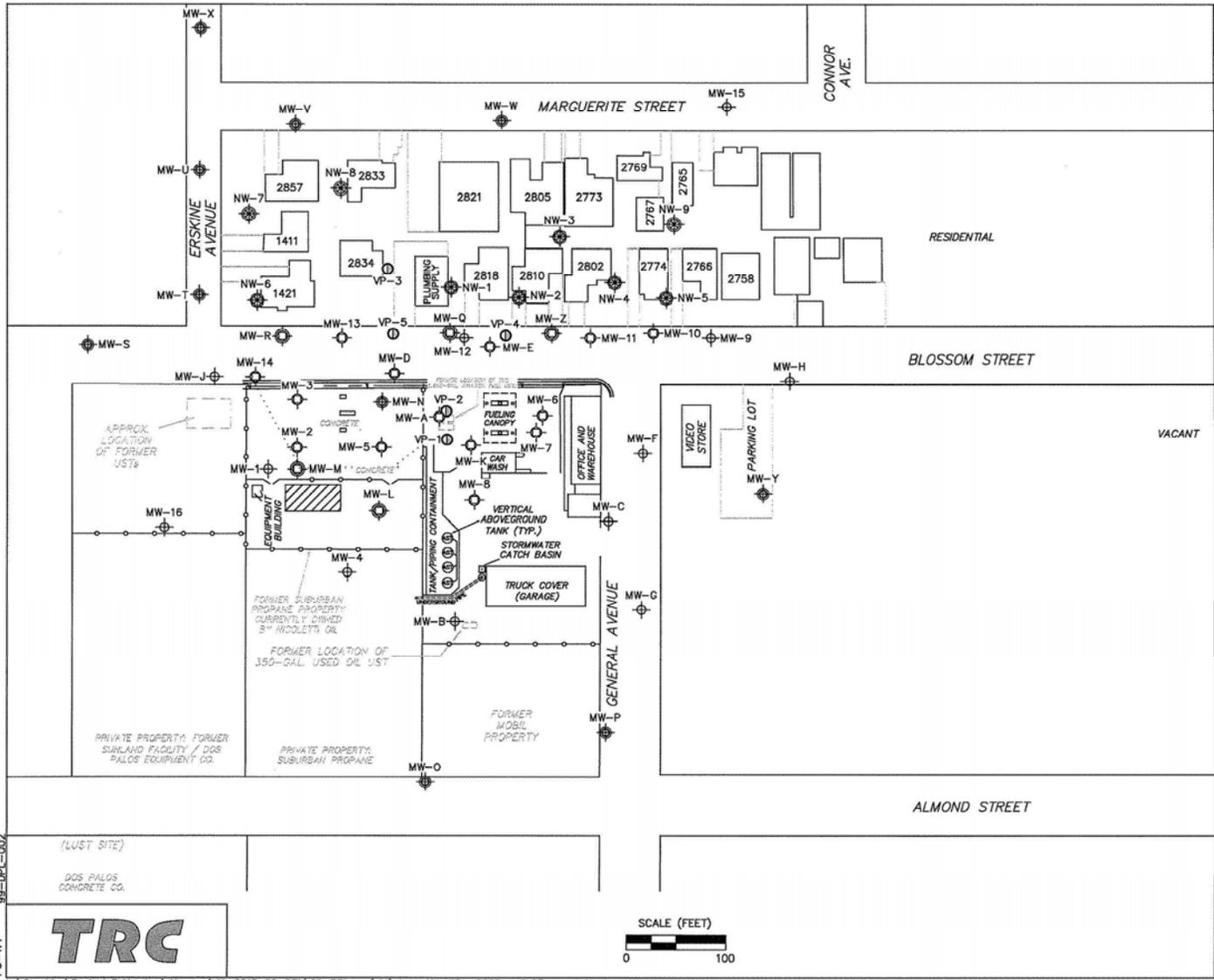
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LEGEND

MW-16 Monitoring Well

MW-T Clustered Monitoring Well

MW-14 Remedial Well

MW-Z Clustered Remedial Well

VP-5 Vapor Well

NW-9 Nested Well

Remedial System Compound

SOURCE:
 June 1997 site plan, Krazen Engineers, July 1998 "As-Built" site plan by Nicoletti Oil Inc., and well surveys completed by Doble-Thomas Associates from 2003 to 2006.

- NOTES:**
1. Well MW-1 off the northeast corner of the northern diesel dispenser that was paved over not shown.
 2. Cluster wells consist of a 4-inch groundwater well and 2-inch vadose zone well.
 3. Nested wells consist of a 1, 2, and 3-foot vapor probes and one 2-inch groundwater well.

SITE PLAN

Nicoletti Oil/Former Mobil Bulk Plant
 99-DPL
 2801 Blossom Street
 Dos Palos, California

PS=1:1
 99-DPL-002