

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2007-0819
CALIFORNIA WATER CODE SECTION 13267

FOR

MR. AND MRS. ROGER AND LAURA JOHNSON, AND MR. GIL MOORE
EXPRESS LANE MARKET
SACRAMENTO COUNTY

Express Lane Market (Site) at 301 Pine Street in Galt, Sacramento County, is currently owned by Mr. Gil Moore and was previously owned by Mr. and Mrs. Roger and Laura Johnson. Mr. Gil Moore, and Mr. and Mrs. Roger and Laura Johnson are named as Dischargers in Cleanup and Abatement Order (CAO) No. R5-2005-0717 issued 17 November 2005. CAO No. R5-2005-0717 requires the Dischargers to complete investigation and remediation of a release of gasoline from a former underground tank system. This Monitoring and Reporting Program (MRP) supersedes the groundwater monitoring requirements of CAO No. R5-2005-0717, and compliance with this MRP or any subsequent MRP will satisfy the monitoring requirements in CAO No. R5-2005-0717.

Groundwater is approximately 60 feet below the ground surface (bgs). Initial soil investigations revealed concentrations of total petroleum hydrocarbons (TPH-G) up to 2,100 milligrams per kilogram (mg/kg); methyl tert butyl ether (MTBE) up to 390 mg/kg; and benzene, toluene, ethylbenzene, and total xylenes (BTEX) up to 100, 380, 91, and 510 mg/kg, respectively, at depths of up to 60 feet bgs. Initially groundwater contained concentrations of TPH-G up to 110,000 micrograms per liter (ug/l), MTBE up to 31,000 ug/l, and BTEX up to 48,000, 62,000, 5,500, and 38,000 ug/l, respectively. During the first quarter 2007 groundwater monitoring event, concentrations of petroleum constituents were detected at maximum concentrations of: TPH-G 60,000 ug/l, benzene 10,000 ug/l, toluene 2,900 ug/l, ethylbenzene 680 ug/l, total xylenes 2,400 ug/l, MTBE 50,000 ug/l, tert amyl methyl ether (TAME) 140 ug/l, and tert butyl alcohol (TBA) at 45,000 ug/l. The dissolved phase plume extends nearly 1,000 feet off-site and pollution has affected four private water supply wells that have subsequently been properly destroyed, and threatens one additional domestic water supply well. This pollution has impaired the beneficial uses of the underlying water resource.

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 remedial efforts are effective. Existing data and information about the site show the presence of various chemicals, including TPH-G, BTEX, MTBE, TAME, and TBA, emanating from the property resulting from the Dischargers' past operation of the underground storage tank system. The Dischargers shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer of this office. Compliance with the requirements established in this order will satisfy the monitoring required in CAO No. R5-2005-0717.

Prior to construction of any new groundwater monitoring or extraction wells, and prior to destruction of any groundwater monitoring or extraction wells, the Dischargers shall submit plans and specifications to the Regional Water 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.

GROUNDWATER MONITORING

- As shown on Figure 1, there are there are a total of 27 wells associated with the site. Site wells include: 17 groundwater monitoring wells (MW-1 through MW-13, MW-14S, MW-14I, MW-15S, and MW-15I), one recovery well (RW-1), one injection well (IW-1), 3 dual completion wells (DW-1 through DW-3), and 3 vapor extraction wells (VEW-1 through VEW-3). There are also 2 domestic wells (Beekman Well and LeVan Well) currently being monitored. The groundwater monitoring program for the 27 monitoring wells and any wells installed subsequent to the issuance of this MRP, shall follow the schedule below. Monitoring wells with free phase petroleum product or visible sheen shall be monitored, at a minimum, for product thickness and depth to water. The volume of extracted groundwater shall be provided in quarterly monitoring reports. A groundwater treatment system is currently non-operational, but once operational will discharge treated groundwater extracted from Well RW-1 through the City of Galt sanitary sewer. The Regional Water Board shall receive a copy of all sampling and reporting of the groundwater extraction system. Sample collection and analysis shall follow standard EPA protocol.

	SAMPLING FREQUENCY ¹											
	Quarterly						Semi-annually ²			Annually ³		
Wells	RW-1	MW-1	MW-3	MW-5	MW-9	MW-10	MW-2	MW-4	MW-7	MW-6	DW-1	DW-2
	MW-11	MW-12	MW-13	MW-14S	MW-14I		MW-8			DW-3	VEW-1	VEW-2
	MW-15S	MW 15I	Beekman Well	New Wells						VEW-3	IW-1	LeVan Well

¹ All wells shall be monitored quarterly for water levels and the presence and thickness of free product.

² Wells shall be sampled semi-annually during the first and third quarters.

³ Wells shall be sampled annually during the third quarter.

Constituents	EPA Analytical Method ⁷	Maximum Practical Quantitation Limit (µg/l) ⁵
TPH-G	8015M	50
TPH-D	8015M	50
Benzene	8020 or 8260B	0.5
Toluene	8020 or 8260B	0.5
Ethylbenzene	8020 or 8260B	0.5
Xylene	8020 or 8260B	0.5
MTBE	8260B	0.5
TBA	8260B	5
TAME	8260B	0.5
DIPE	8260B	0.5
ETBE	8260B	0.5
Ethanol	8260B	50
Methanol	8260B	100
1,2-Dichloroethane	8260B	1.0
Ethylene Dibromide	8260B	1.0
Total Lead ⁶	7421	10
PAHs ⁶	8270	---

⁵ For non-detect results. All concentrations between the Method Detection Limit and the Practical Quantitation Limit shall be reported as trace.

⁶ Analysis for TPH-D, PAHs, and total lead may be discontinued after two consecutive events of non-detect results.

⁷ Report all peaks identified by EPA Method 8260B within the normal course of analysis for chemicals of concern.

TPH-D = total petroleum hydrocarbons as diesel

PAH = polynuclear aromatic hydrocarbons

REPORTING

2. 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.
3. 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.
4. The Discharger shall submit a paper copy of the quarterly report to this Regional Water Board office and submit the quarterly electronic data reports, which conform to the requirements of the California Code of Regulations, Title 23, Division 3, Chapter 30, electronically over the internet to the Geotracker database system. Both the paper copy and the electronic submittal are due by the 1st day of the second month following the end of each calendar quarter 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 contour maps for all groundwater zones, if applicable;
 - (d) Concentration contour maps of TPH-G, benzene, MTBE, and TBA for all groundwater zones, if applicable;
 - (e) A table showing well construction details such as well number, groundwater zone being monitored, ground surface elevation, screen interval, bentonite interval, filter pack interval, and total depth of the well;
 - (f) A table showing historical lateral and vertical (if applicable) down-gradient 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) If applicable, the status of any ongoing remediation, including cumulative information on the 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; and

- (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.
5. The Fourth Quarter Groundwater Monitoring Report, due **1 February** of each year shall be an expanded report and will include the following additional information/items:
- (a) Both tabular and graphical summaries of all data obtained during the year;
 - (b) Groundwater contour maps and pollutant concentration contour 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) An identification of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program; and
 - (g) If desired, a proposal and rationale for any revisions to the groundwater sampling plan frequency and/or list of analytes.
6. 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.
7. The Discharger shall implement the above monitoring program as of the date of the Order.

Ordered by: _____
PAMELA C. CREEDON
Executive Officer

22 May 2007
(Date)