



# California Regional Water Quality Control Board

## Los Angeles Region



Linda S. Adams  
Agency Secretary

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

320 W. 4th Street, Suite 200, Los Angeles, California 90013  
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger  
Governor

April 9, 2007

Ms. Shari London  
ConocoPhillips Company  
3611 South Harbor Blvd., Suite 200  
Santa Ana, CA 92704

Dear Ms. London:

**GENERAL WASTE DISCHARGE REQUIREMENTS FOR GROUNDWATER CLEANUP AT PETROLEUM HYDROCARBON FUEL, VOLATILE ORGANIC COMPOUND And/Or HEXAVALENT CHROMIUM IMPACTED SITES - 2292 THOMPSON BOULEVARD, VENTURA (ORDER NO. R4-2007-0019, SERIES NO. 004; CI NO. 9235)**

We have completed our review of your application for coverage under General Waste Discharge Requirements to inject non-hazardous ozone at the site referenced above in Ventura, California for groundwater cleanup and remediation.

Since February 1989, various subsurface investigations and remediation activities have been conducted at the subject site subsequent to the tank removal and replacement, which consisted of drilling and sampling numerous soil borings, installing ten groundwater monitoring wells, excavating contaminated soil, and conducting a high vacuum dual-phase extraction (HVDPE) pilot test. The analytical data from groundwater monitoring event conducted in third quarter 2005 indicated groundwater beneath the site was still impacted by TPHg (up to 120,000 µg/L), Benzene (up to 17,000 µg/L), and MTBE (up to 17,000 ug/L). The groundwater was present at depths ranging from approximately 21.3 feet to 24.6 feet below the tops of the well casings and the groundwater flow direction was to the southwest with a hydraulic gradient of 0.007 feet/foot.

Four remedial alternatives have been reviewed for clean up the soil and groundwater contaminations beneath the site: 1) Monitored natural attenuation, 2) Soil excavation and monitored natural attenuation, 3) Dual phase extraction, and 4) Vapor extraction and ozone injection. Based on an evaluation of current Site conditions and previous remediation activities and pilot testing, it is concluded that soil vapor extraction and ozone sparging represent a cost-effective method to mitigate the petroleum hydrocarbon impacted soil and groundwater beneath the Site. Therefore, the Discharger proposes to conduct ozone sparging to remediate adsorbed-phase petroleum hydrocarbons submerged beneath the groundwater surface and dissolved-phase petroleum hydrocarbons in groundwater.

A letter dated June 27, 2006 from Ventura County Division of Environmental Health approved Workplan for Remediation Pilot Testing dated April 17, 2006, and its Supplement dated June 19, 2006, for the injection of ozone to remediate impacted groundwater beneath the subject site.

*California Environmental Protection Agency*



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*Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.*

Groundwater monitoring wells shall not be used as injection points to avoid reduction of groundwater monitoring network, data bias, well screen clogging and alteration.

Regional Board staff has determined that the proposed discharge meets the conditions specified in Order No. R4-2007-0019, "*Revised General Waste Discharge Requirements for Groundwater Remediation At Petroleum Hydrocarbon Fuel, Volatile Organic Compound and/or Hexavalent Chromium Impacted Sites (General WDRs)*," adopted by the State Water Resources Control Board on March 1, 2007.

Enclosed are your Waste Discharge Requirements, consisting of General WDRs Board Order No. 2007-0019 and Monitoring and Reporting Program No. CI-9235 and Standard Provisions.

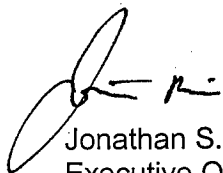
The Monitoring and Reporting Program requires you to implement the monitoring program on the effective date of this enrollment under Regional Board Order No. R4-2007-0019. All monitoring reports shall be sent to the Regional Board, ATTN: Information Technology Unit.

When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to Compliance File No. CI-9235, which will assure that the reports are directed to the appropriate file and staff. Do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

We are sending a copy of Order No. R4-2007-0019 only to the applicant. A copy of the Order will be furnished to anyone who requests it, or on line at :  
[http://www.waterboards.ca.gov/losangeles/html/permits/gen\\_orders/R4-2007-0019/R4-2007-0019.pdf](http://www.waterboards.ca.gov/losangeles/html/permits/gen_orders/R4-2007-0019/R4-2007-0019.pdf)

If you have any questions, please contact Mr. Rod Nelson at (213) 576-6119.

Sincerely,



Jonathan S. Bishop  
Executive Officer

Enclosures: 1. Board Order No. R4-2007-0019  
2. Monitoring and Reporting Program No. CI-9235

cc: Mr. David Salter, Ventura County Division of Environmental Health  
Mr. Wayne Mazie, ATC Associates., Inc.

**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION  
MONITORING AND REPORTING PROGRAM NO. CI-9235  
FOR  
76 STATION NO. 1481  
2292 THOMPSON BOULEVARD, VENTURA  
(OZONE INJECTION FOR GROUNDWATER CLEANUP)  
(ORDER NO. R4-2007-0019, SERIES NO. 004)**

I. REPORTING REQUIREMENTS

- A. ConocoPhillips Company (hereinafter Discharger) shall implement this monitoring program on the effective date of Regional Board Order No. R4-2007-0019. The first monitoring report under this program, for April-June 2007, shall be received at the Regional Board by July 15, 2007. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

<u>Monitoring Period</u>	<u>Report Due</u>
January – March	April 15
April – June	July 15
July – September	October 15
October – December	January 15

- B. If there is no discharge or injection during any reporting period, the report shall so state. Monitoring reports must be addressed to the Regional Board, Attention: Information Technology Unit.
- C. By March 1<sup>st</sup> of each year, the Discharger shall submit an annual summary report to the Regional Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year. In addition, the Discharger shall explain the compliance record and the corrective actions taken, or planned, which may be needed to bring the discharge into full compliance with the waste discharge requirements (WDRs).
- D. Laboratory analyses – all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be provided each time a new and/or renewal certification is obtained from ELAP.

April 9, 2007

- E. The method limits (MLs) employed for effluent analyses shall be lower than the permit limits established for a given parameter, unless the Discharger can demonstrate that a particular ML is not attainable and obtains approval for a higher ML from the Regional Board Executive Officer (Executive Officer). The Discharger shall submit a list of the analytical methods employed for each test and the associated laboratory quality assurance/quality control (QA/QC) procedures upon request by the Regional Board.
- F. Groundwater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136. All QA/QC samples must be run on the same dates when samples were actually analyzed. The Discharger shall make available for inspection and/or submit the QA/QC documentation upon request by Regional Board staff.
- G. Each monitoring report must affirm in writing that "All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services, and in accordance with current United States Environmental Protection Agency (USEPA) guideline procedures or as specified in this Monitoring Program." Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report.
- H. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with WDRs. This section shall be located at the front of the report and shall clearly list all non-compliance with WDRs, as well as all excursions of effluent limitations.
- I. The Discharger shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- J. If the Discharger performs analyses on any groundwater samples more frequently than required by this Order using approved analytical methods, the results of those analyses shall be included in the report.
- K. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized to demonstrate compliance with the requirements and, where applicable, shall include results of receiving water observations.

II. INORGANICS/NUTRIENTS INJECTION MONITORING REQUIREMENTS

The quarterly reports shall contain the following information regarding injection activities:

1. Location map showing injection points used for the ozone injection. Groundwater monitoring wells shall not be used as injection points to avoid reduction of groundwater monitoring network, data bias, well screen clogging and alternation. Up to six injection points, CS-1 to -6, are proposed that can be referenced in the attached VTC Figure 4.
2. Written and tabular summary defining the quantity of ozone injected per month to the groundwater and a summary describing the days on which the injection system was in operation.

III. GROUNDWATER MONITORING PROGRAM

The Discharger shall conduct groundwater monitoring at the site. Groundwater samples shall be collected from groundwater monitoring wells MW-9 and -11 (up-gradient); MW-7 and -2 (source area); MW-3 (down-gradient) on a quarterly basis to monitor the effectiveness of the in-situ groundwater remediation (refer to attached Figure 2). Hydrogen peroxide injection points shall not be used as monitoring points. Groundwater shall be monitored for the duration of the remediation in accordance with the following discharge monitoring program:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Total petroleum hydrocarbons as gasoline (TPHg) and as diesel (TPHd)	µg/L	Grab	• Bi-weekly/Quarterly <sup>1</sup>
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	µg/L	Grab	• Bi-weekly/Quarterly <sup>1</sup>
Methyl tertiary butyl ether (MTBE), Tertiary butyl alcohol (TBA), Tertiary amyl methyl ether (TAME), Di-isopropyl ether (DIPE), ether (ETBE)	µg/L	Grab	• Bi-weekly/Quarterly <sup>1</sup>

Ethanol Formaldehyde Acetone	µg/L	Grab	• Bi-weekly/Quarterly <sup>1</sup>
Total dissolved solids Boron Chloride Sulfate	mg/L	Grab	• Bi-weekly/Quarterly <sup>1</sup>
Oxidation-reduction potential	milivolts		• Bi-weekly/Quarterly <sup>1</sup>
Dissolved Oxygen	µg/L	Grab	• Bi-weekly/Quarterly <sup>1</sup>
Dissolved ferrous iron	µg/L	Grab	• Bi-weekly/Quarterly <sup>1</sup>
Total Chromium and chromium six <sup>2</sup>	µg/L	Grab	• Bi-weekly/Quarterly <sup>1</sup>
PH	pH units	Grab	• Bi-weekly/Quarterly <sup>1</sup>
Temperature	<sup>0</sup> F/ <sup>0</sup> C	Grab	• Bi-weekly/Quarterly <sup>1</sup>
Groundwater Elevation	Feet, mean sea level and below ground surface	In situ	• Bi-weekly/Quarterly <sup>1</sup>

<sup>1</sup> One week before injection; Bi-weekly for the first month following injection; and Quarterly thereafter

<sup>2</sup> The Discharger is required to monitor for total chromium and chromium six only when they are detected in the baseline test.

All groundwater monitoring reports must include, at a minimum, the following:

- a. Well identification, date and time of sampling;
- b. Sampler identification, and laboratory identification;
- c. Quarterly observation of groundwater levels, recorded to 0.01 feet mean sea level and groundwater flow direction.

#### IV. MONITORING FREQUENCIES

Monitoring frequencies may be adjusted to a less frequent basis or parameters dropped by the Executive Officer if the Discharger makes a request and the Executive Officer determines that the request is adequately supported by statistical trends of monitoring data submitted.

V. CERTIFICATION STATEMENT

Each report shall contain the following declaration:

"I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.

Executed on the \_\_\_\_\_ day of \_\_\_\_\_ at \_\_\_\_\_.

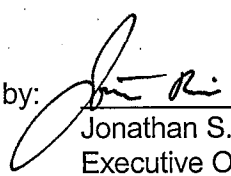
\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Title)"

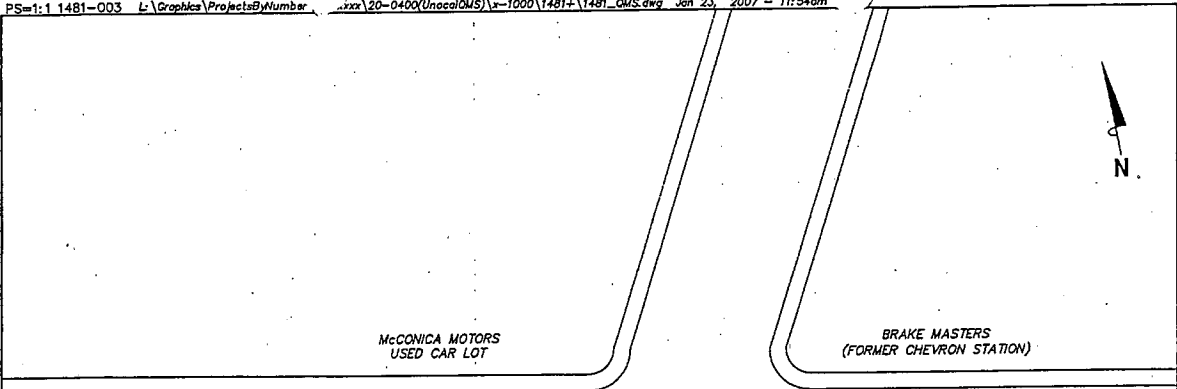
VI. PUBLIC DOCUMENTS

These records and reports are public documents and shall be made available for inspection during normal business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region.

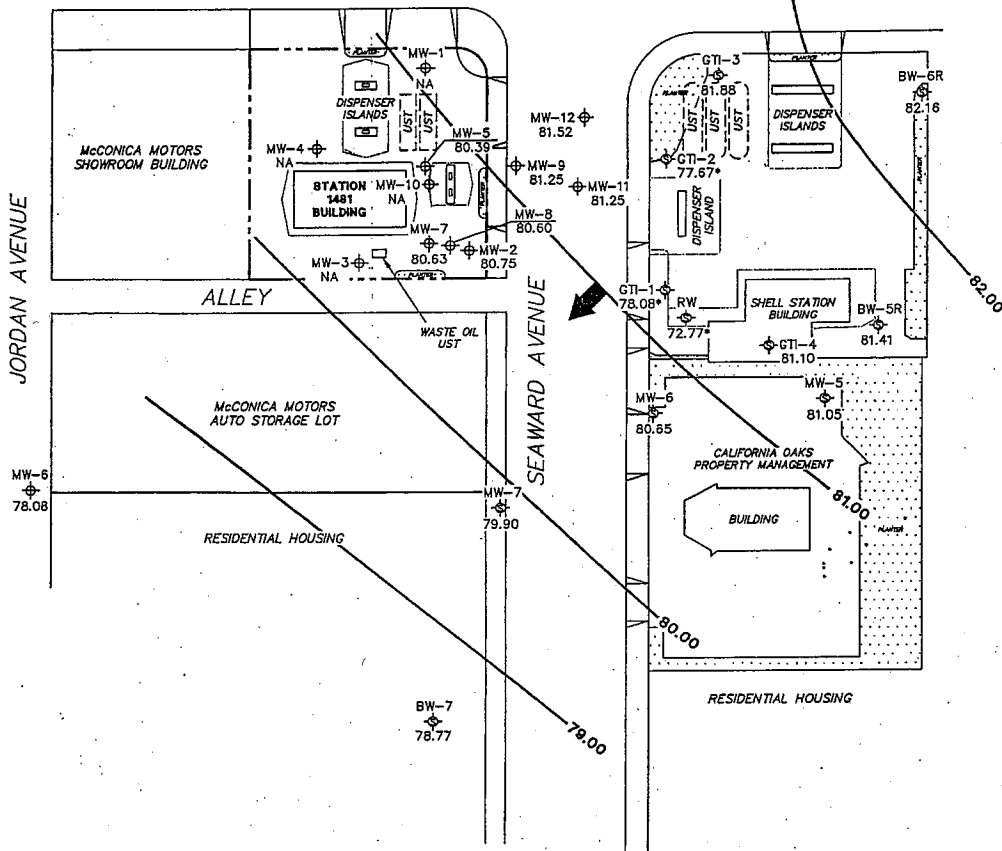
Ordered by:

  
\_\_\_\_\_  
Jonathan S. Bishop  
Executive Officer

Date: April 9, 2007



THOMPSON BOULEVARD



NOTES:

Contour lines are interpretive and based on fluid levels measured in monitoring wells. Elevations are in feet above mean sea level. UST = underground storage tank. Shell Station data provided by Thrifty Oil. \* = not included in groundwater contour interpretation. Gauged on 12/13/2006.

**LEGEND**

- MW-12 ⊕ Monitoring Well with Groundwater Elevation (feet)
- BW-8 ⊕ Former Thrifty Monitoring Well
- 82.00 — Groundwater Elevation Contour
- ➔ General Direction of Groundwater Flow

GROUNDWATER ELEVATION CONTOUR MAP  
December 28, 2006

76 Station 1481  
2292 Thompson Boulevard  
Ventura, California

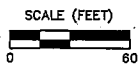
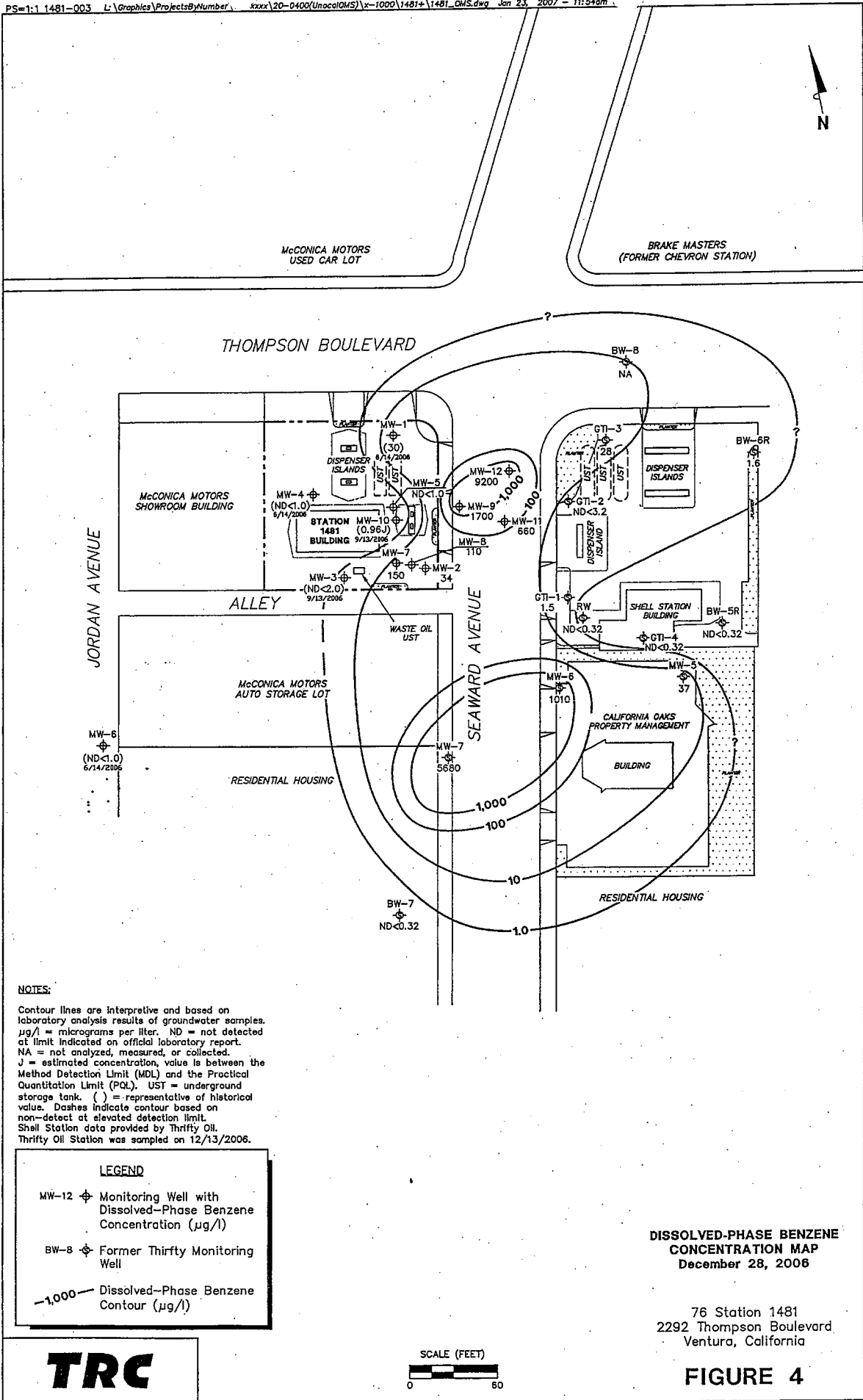


FIGURE 2





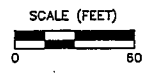
**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. µg/l = micrograms per liter. ND = not detected at limit indicated on official laboratory report. NA = not analyzed, measured, or collected. J = estimated concentration, value is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL). UST = underground storage tank. ( ) = representative of historical value. Dashes indicate contour based on non-detect at elevated detection limit. Shell Station data provided by Thrifty Oil. Thrifty Oil Station was sampled on 12/13/2006.

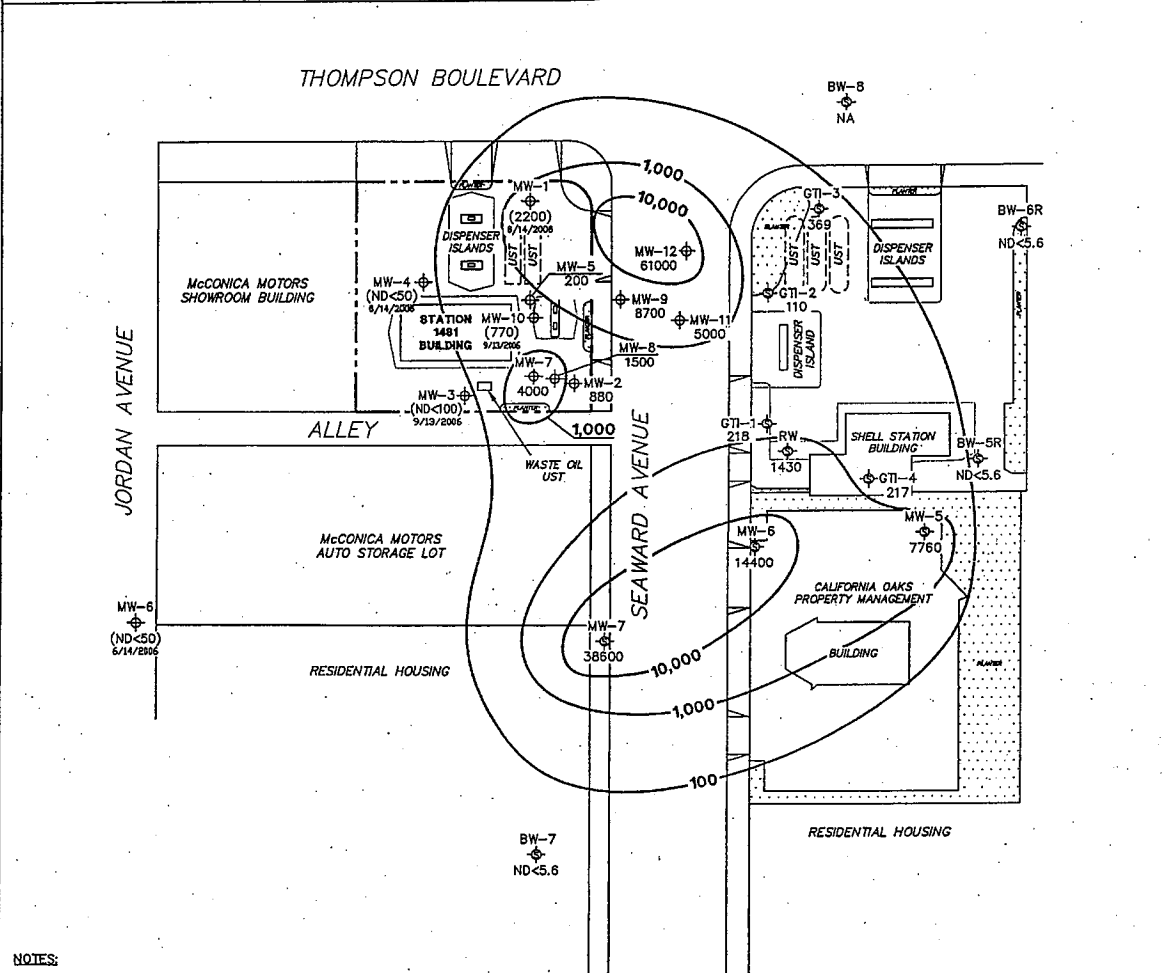
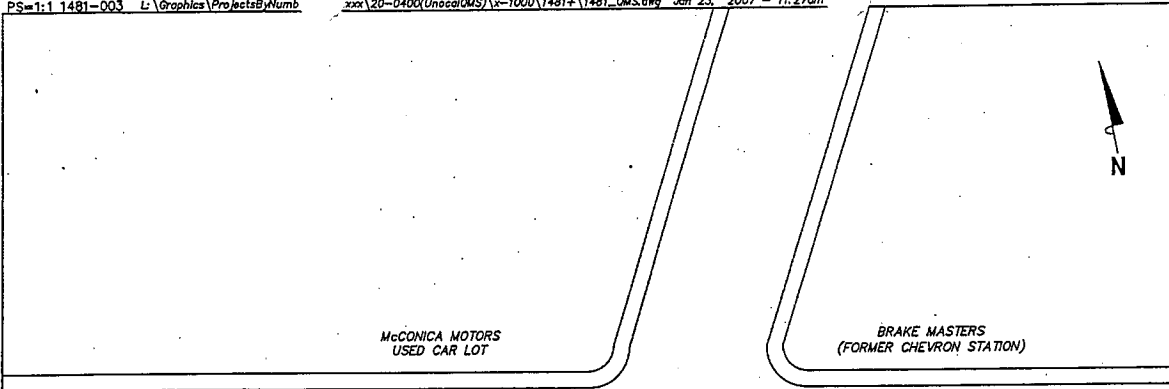
LEGEND	
MW-12 ⊕	Monitoring Well with Dissolved-Phase Benzene Concentration (µg/l)
BW-8 ⊕	Former Thirty Monitoring Well
-1,000-	Dissolved-Phase Benzene Contour (µg/l)

**DISSOLVED-PHASE BENZENE CONCENTRATION MAP**  
December 28, 2006

76 Station 1481  
2292 Thompson Boulevard  
Ventura, California



**FIGURE 4**



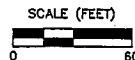
**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. TPH-G (GC/MS) = total petroleum hydrocarbons with gasoline distinction utilizing EPA Method 8260B. TPH-G = total petroleum hydrocarbons as gasoline. µg/l = micrograms per liter. ND = not detected at limit indicated on official laboratory report. NA = not analyzed, measured, or collected. UST = underground storage tank. ( ) = representative of historical value. Shell Station data provided by Thrifty Oil Company; TPH-G results obtained using EPA Method 8015. Thrifty Oil Station was sampled on 12/13/2006.

LEGEND	
MW-12	Monitoring Well with Dissolved-Phase TPH-G (GC/MS) Concentration (µg/l)
BW-8	Former Thrifty Monitoring Well with Dissolved-Phase TPH-G Concentration (µg/l)
-10,000-	Dissolved-Phase TPH-G (GC/MS) Contour (µg/l)

**DISSOLVED-PHASE  
TPH-G (GC/MS)  
CONCENTRATION MAP  
December 28, 2006**

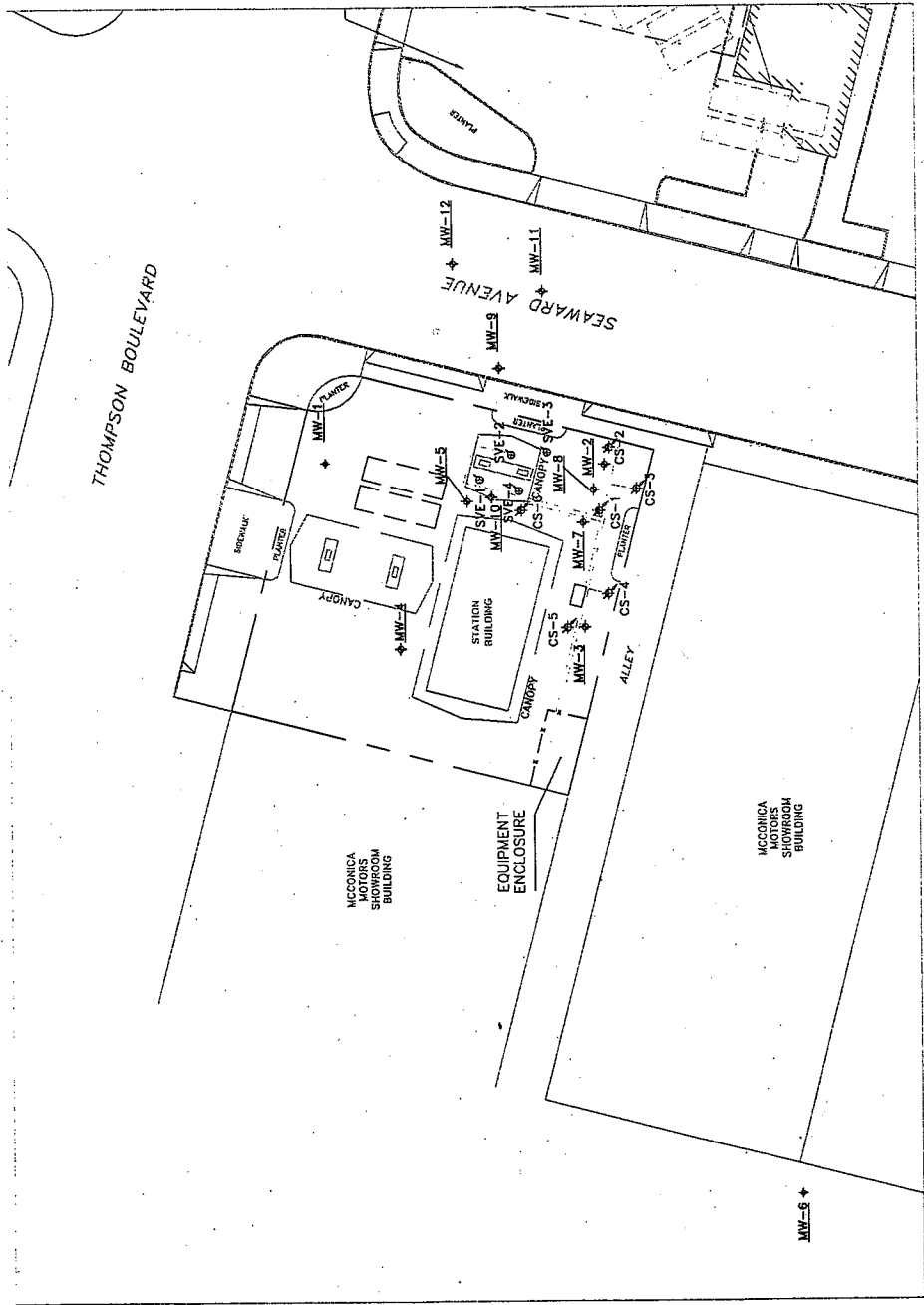
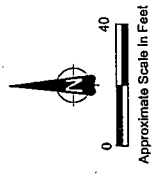
76 Station 1481  
2292 Thompson Boulevard  
Ventura, California



**FIGURE 3**

**LEGEND**

- MW-7 GROUNDWATER MONITORING WELL
- CS-1 OZONE SPARGE WELL
- CS-2 PROPOSED OZONE SPARGE WELL
- SVE-1 PROPOSED SVE WELL
- UNDERGROUND STORAGE TANK
- USED OIL UNDERGROUND STORAGE TANK
- DISPENSER ISLAND
- FORMER UNDERGROUND STORAGE TANK
- REMEDIATION PIPING



**Proposed Remediation Wells and System Layout**

76 Station No. 1481  
 2292 Thompson Boulevard  
 Ventura, California

PROJECT NUMBER: 7675118.2450  
 DATE: 12/2005  
 APPROVED BY: ALS  
 DRAWN BY: LJC

FIGURE 4  
 2325 Skyway Drive, Suite C  
 Santa Maria, California 93455