

0336



2325 SKYWAY DRIVE, SUITE C
SANTA MARIA, CALIFORNIA 93455
WWW.ATCASSOCIATES.COM
805.928.3000
FAX 805.928.6046

November 9, 2006

Project No. 79.75118.1081

Mr. Thomas Rejzek
County of Santa Barbara
Fire Prevention District
195 West Highway 246, Suite 102
Buellton, California 93427

RE: Quarterly Site Status Report - Third Quarter - 2006
76 Station No. 0535
1298 Coast Village Road
Montecito, California
LUFT Site No. 50575

Dear Mr. Rejzek:

On behalf of ConocoPhillips, ATC Associates, Inc. is pleased to submit this third quarter 2006 site status report for 76 Station No. 0535. The site is an active retail fueling facility located at the northwest corner of Coast Village Road and Olive Mill Road in Montecito, California. The Site maintains two 12,000-gallon unleaded gasoline underground storage tanks (USTs) and one 600-gallon waste oil UST. As of December 31, 2003, the site is owned and operated by an independent dealer. The general site location and layout are shown of Figure 1, Site Location Map and Figure 2, Site Plan.

Background

In November of 1993, a product line leak was reported at the site. The leak was located and repaired the following day. From November of 1993 through July of 1994, four soil borings were drilled and groundwater monitoring wells MW-1 through MW-4, and vapor extraction wells V-1 and V-2 were installed. Results of these investigations indicate that the upper 70-feet of subsurface soils consisted of poorly graded sand and gravelly sand with clay. Groundwater was encountered at a depth of approximately 50 feet below ground surface (bgs) and flowed to the southwest at an approximate gradient of 0.008 ft/ft. Analytical data of soil samples collected during site assessment indicate that the lateral extent of petroleum hydrocarbon-impacted soil was defined, and that hydrocarbon-impacted soil extended vertically to groundwater. In September of 1996, an off-site groundwater monitoring well (MW-7) was installed south of the site in the median of Coast Village Road.

Pacific Environmental Group, Inc. (PEG) performed feasibility testing at the site from July 29 through August 8, 1999, as proposed in PEG's *Interim Feasibility Testing Work Plan*, dated April 14, 1999. The results of the test were presented in a report prepared by PEG and submitted to the Santa Barbara County Fire Department (SBCFD) in August of 2000.

In December of 2000 and January of 2001, England Geosystem, Inc. completed additional on- and off-site assessment (boring B-13 and wells MW-8 through MW-12). Soil analytical results indicated that only the 25-

foot soil sample from boring B-13 had a detectable concentration of methyl tertiary butyl ether (MTBE). None of the other soil samples collected contained detectable concentrations of total petroleum hydrocarbons characterized as gasoline (TPHg); benzene, toluene, ethylbenzene, or total xylenes (BTEX) constituents; MTBE; or any of the additional fuel oxygenates tested. Groundwater analytical data indicated that the extent of groundwater impact has been defined in all directions to the extent feasible. The dissolved-phase hydrocarbon plume is centered below the USTs and dissolved-phase MTBE extends southward a short distance beyond the property line. Future ground water monitoring data will be used to evaluate the stability of the identified plume (England Geosystem, 2001).

England Geosystem submitted a *Revised Remedial Action Plan* to the SBCFD in February of 2001, proposing a permanent dual-phase extraction system. The SBCFD approved the remedial action plan in April of 2001. Following permitting activities, construction of the remediation system began in January of 2003 and was completed in May of 2003. Full-time vapor system operation began on August 12, 2003 and the emissions verification test (EVT) was conducted on September 4, 2003 in accordance with the Authority to Construct (ATC) permit number 10708. The system was subsequently shut down due to a noise complaint. On December 19, 2003, the VES manufacturer modified the emissions stack in an effort to decrease the noise output from the system. On June 8, 2004, the catalyst was added to the VES as another measure to decrease the noise output.

ATC prepared a document entitled "*Groundwater Monitoring Well Installation Work Plan*" dated, September 29, 2005, which summarized the proposed scope of work for the installation of groundwater monitoring well MW-1R. In a letter dated, November 15, 2005. Historic groundwater monitoring results have shown unusually high MTBE concentrations in groundwater samples collected from VI/MW-1, which are seemingly misrepresentative of the groundwater conditions at the Site. VI/MW-1 well construction details indicate that it is installed to a depth of 30 feet below ground surface (bgs) with a screen interval from 5-30 feet bgs. Historic groundwater data for this Site indicate that groundwater is typically present at approximately 50 feet bgs (Holguin, Fahan & Associates, Inc.).

On February 7, 2006, ATC supervised the installation of groundwater monitoring well MW-1R which was screened from 37 ft to 57 ft bgs.

Background References:

England Geosystem, 2001, Additional Soil and Ground Water Assessment, 76 Station No. 00535, June 11, 2001;

Pacific Environmental Group, Inc., 2000, Quarterly Status Report - Four Quarter 1999, Tosco Service Station No. 0535, report dated January 12, 2000;

Pacific Environmental Group, Inc., 2001, Additional Soil and Ground Water Assessment, 76 Service Station No. 0535, June 11, 2001.

Work Performed during Quarter (Third Quarter 2006)

- Continued operation of the Vapor Extraction and Groundwater Treatment System. The *Third Quarter 2006 Vapor Extraction and Groundwater Treatment System O&M Report*, dated September 15, 2006 prepared by Environ Strategy Consultants, Inc. is included as an attachment to this report.
- Groundwater monitoring and sampling was conducted on August 15, 2006 by TRC. The *Quarterly Monitoring Report July through September 2006*, dated September 11, 2006, prepared by TRC is included as an attachment to this report.
- ATC submitted a status report for the second quarter of 2006

Groundwater Monitoring Results

The following summary is provided based on the information provided by TRC in their Quarterly Monitoring report:

- Total petroleum hydrocarbons as gasoline (TPHg) was detected in the groundwater sample collected from monitoring well MW-6 at a concentration of 66 micrograms per liter ($\mu\text{g/L}$).
- Methyl tertiary butyl ether (MTBE) was detected above SBCFD the investigation level ($5.0 \mu\text{g/L}$) in the groundwater samples collected from monitoring wells MW-1R ($12 \mu\text{g/L}$) and MW-2 ($8.5 \mu\text{g/L}$). MTBE was also detected in groundwater samples collected from monitoring wells MW-3 ($1.7 \mu\text{g/L}$) MW-4 ($2.2 \mu\text{g/L}$) and MW-6 ($1.3 \mu\text{g/L}$).
- Total xylenes were detected in the groundwater sample collected from monitoring well MW-6 below the SBCFD investigation level ($1,750 \mu\text{g/L}$) at a concentration of $3.6 \mu\text{g/L}$.
- 1,2-dichloroethane was detected in the groundwater sample collected from monitoring well MW-8 at a concentration of 0.67.

Remediation System Operation

The following summary is provided based on the information provided by ESC in their Third Quarter O&M report:

Groundwater Treatment:

- During the third quarter of 2006, 38,112 gallons of water were processed by the groundwater treatment system (monitoring wells MW-2, MW-4 and MW-6). The total amount of water processed since system startup on August 12, 2003 is 351,236 gallons.
- During each month of the quarter, four groundwater samples are collected from the treatment system: an influent sample and effluent samples from each of three stages of the treatment system (A, B, and C). The influent sample collected during the month of August 2006 had a MTBE concentration of $1,100 \mu\text{g/L}$ and a TBA concentration of $230 \mu\text{g/L}$. However, MTBE and TBA were not detected above their respective laboratory practical quantitation limits in the influent groundwater sample collected during the following month.

SVE system operation:

- The soil vapor extraction (SVE) system operated continuously with five wells (V-1, V-2, MW-2, MW-4 and MW-6) during the third quarter of 2006 for a total of 2,186 hours.
- On three occasions (June 5, July 17 and August 21, 2006) during the third quarter, soil vapor samples were collected from the pre-dilution influent vapor stream of the SVE system and analyzed for TPHg, benzene, toluene, ethylbenzene, total xylenes and MTBE by EPA test method 8015/8020 including MTBE. Based on the analytical results from these three separate events, the average TPHg, benzene, toluene, ethylbenzene, total xylenes and MTBE concentrations were 360, 3.4, 11, 1.1, 5.8 and 0.46 parts per million by volume (ppmv), respectively.
- Approximately 813 pounds of hydrocarbons were removed by the SVE system during the third quarter of 2006 and approximately 22,219 total pounds of hydrocarbons have been recovered from the site to date.

Summary of Site Information

Current phase of project:	Monitoring and Remediation
Frequency of ground water monitoring/sampling:	Quarterly/Quarterly
Minimum depth to groundwater [feet below top of casing (TOC)]:	44.45 at MW-1R*
Maximum depth to groundwater (feet below TOC)	46.20 at MW-10*
Average depth to groundwater (feet below TOC):	45.33*
Average groundwater elevation (feet):	18.84*
Average change in groundwater elevation since previous monitoring event (feet):	-0.25*
Approximate groundwater gradient and flow direction:	0.03 ft/ft to the south*
Significant change in groundwater conditions from previous monitoring event:	MTBE decreased in monitoring well MW-2 from 120 µg/L to 8.5 µg/L. An increase in influent concentrations of MTBE and TBA is discussed above in the Groundwater Treatment section.
Date groundwater monitoring initiated:	November 1993
Date groundwater monitoring ended:	On-going
Current remediation process utilized:	Dual Phase Extraction
Dates current remediation initiated:	August 12, 2003

Wells connected to remediation system(s) during the quarter:

Groundwater extraction:
(monitoring wells MW-2, MW-4 and MW-6)**

Soil Vapor Extraction wells (V-1, V-2, MW-2, MW-4 and MW-6)**

Disposal and Recovery Information

	<u>This Quarter</u>	<u>To Date</u>
Tons of soil transported from site:	0	172.40
Gallons of water recovered during DPE events and transported from the site:	0	0
Gallons of water transported offsite from groundwater sampling and well development activities:	193*	5,227
Gallons of water treated onsite and discharged:	38,112	351,236
Pounds of hydrocarbons recovered during DPE events:	813	22,219

* Data obtained from "Quarterly Monitoring Report July through September 2006" TRC. September 11, 2006.

** Data obtained from "Third Quarter 2006 Soil Vapor Extraction and Ozon Injection System O&M Report," Environ Strategy Consultants, Inc. September 15, 2006.

Work Proposed For Fourth Quarter 2006

- Continue operation of the vapor extraction and groundwater treatment system as recommended below.
- TRC will conduct fourth quarter groundwater monitoring and sampling activities.
- Submit quarterly site status report, including the results of the quarterly O&M events.

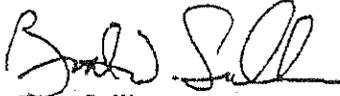
Recommendations

Relatively low hydrocarbon removal rates (5 to 6 pounds per day) have been realized since April 2004 and low levels of TPH-g and MTBE remain localized around well V1/MW-1. Based on these conditions, ATC recommends modifying the operational period of the vapor extraction system from continuous to cyclical while maintaining continuous operation of the groundwater extraction system. Alternative remediation strategies that have potential to expedite the removal and/or treatment of the residual hydrocarbon impact should be evaluated as well.

If you have any questions regarding this report or need additional information regarding this site, please contact me at 805-928-3000.

Respectfully submitted,

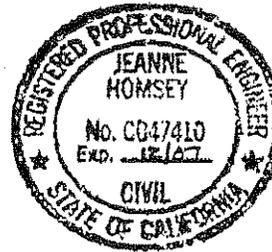
ATC Associates Inc.



Brett Sullivan
Project Geologist



Jeanne Homsey, P.E.
Principal Engineer



Attachments: Figure 1, Site Location Map
Figure 2, Site Plan

Third Quarter 2006, Vapor Extraction and Groundwater Treatment System O&M Report
dated, September 15, 2006 prepared by Environ Strategy Consultants, Inc.

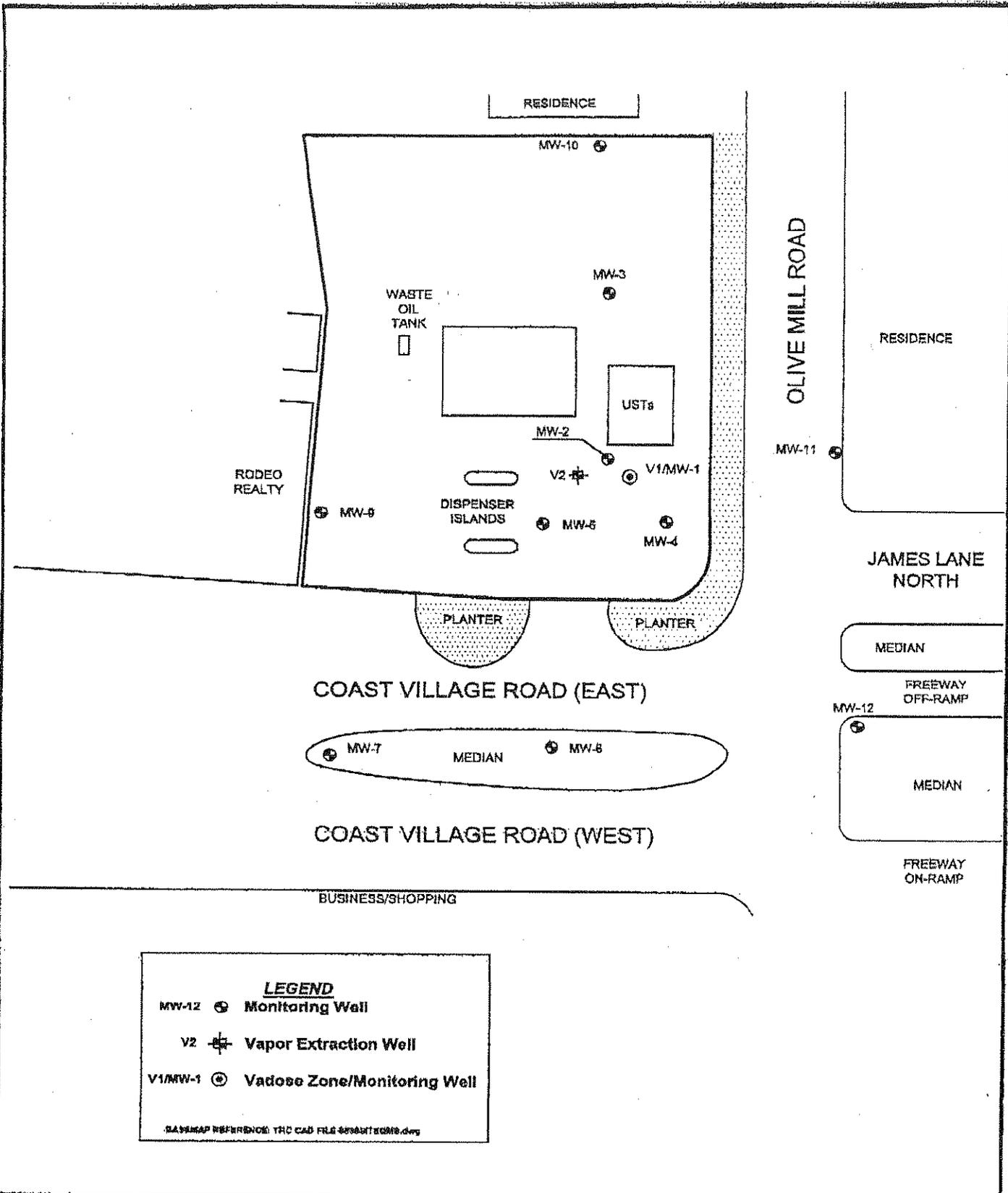
July 2006, Monthly Discharge Monitoring Report, dated August 7, 2006. Prepared by
Environ Strategy Consultants, Inc.

August 2006, Monthly Discharge Monitoring Report, dated September 7, 2006. Prepared by
Environ Strategy Consultants, Inc.

September 2006, Monthly Discharge Monitoring Report, dated October 9, 2006. Prepared by
Environ Strategy Consultants, Inc.

Quarterly Monitoring Report July through September 2006 TRC, dated September 11, 2006.
Prepared by TRC

Cc: Ms. Shari London, ConocoPhillips Company
Mr. John Price, Price Bros.
Mr. Larry Turner
Mr. Greg Stahl, Ground Zero Analysis, Inc.



LEGEND

MW-12 ⊕ Monitoring Well

V2 ⊕ Vapor Extraction Well

V1/MW-1 ⊕ Vadose Zone/Monitoring Well

BASEMAP REFERENCE: TRC CAD FILE 48360712008.dwg

SITE PLAN

76 STATION NO. 0535
1298 COAST VILLAGE DRIVE
MONTECITO, CALIFORNIA

PROJECT NUMBER: 79.76118.1081

DATE: 9/2005

FIGURE

APPROVED BY: CO

DRAWN BY: AH

2



2326 Skyway Drive, Suite C
Santa Maria, California 93455

environ strategy consultants, inc.



September 15, 2006

30 Hughes, Suite 209
Irvine, California 92618
tel 949.581.3222
fax 949.581.3207
Project No. 208-A

Mr. Bruce Cutting
Project Manager
ATC Associates Inc.
2325 Skyway Drive, Suite 1
Santa Maria, CA. 93455

Third Quarter 2006
Vapor Extraction and Groundwater Treatment
System O&M Report
76 Service Station No. 535
1298 Coast Village Road
Montecito, California

Dear Mr. Cutting:

Environ Strategy Consultants, Inc. is pleased to submit this remediation system operation and maintenance (O&M) report for 76 Service Station No. 535, located at 1298 Coast Village Road in Montecito, California. This report summarizes the soil and groundwater remediation system operation, field data and laboratory analytical results collected during the Third Quarter 2006.

A soil vapor extraction and groundwater treatment system is operated at the site to remediate fuel hydrocarbon-impacted soil and groundwater. Vapor extraction system performance data and analytical results are attached. Laboratory analytical reports are also attached in Appendix A.

	<u>Soil Vapor Extraction System</u>	<u>Groundwater Treatment System</u>
Equipment Information	Enviro Supply, Model No. TC 600	Three (3) 2,000 lb carbon vessels NEEP air stripper model: 2341P
Discharge Permit Information	SBCAPCD Permit No. 10708 Expiration Date: April 1, 2008 Discharge Limits: 118 ppm(v) ROC 2.56 ppm(v) Benzene	SBPWD Permit No. 06-047GW Expiration Date: January 31, 2007 Discharge Limits: 21,600 gpd <13 µg/L MTBE
Operation Data During Reporting Period: June 1, 2006 - August 31, 2006	Hours of Operation: 2,186 Pounds of Hydrocarbon Recovered: 813	Gallons of Groundwater Processed: 38,112
System Operation Data Since Startup: August 12, 2003	Total Hours of Operation: 16,001 Total Pounds of Hydrocarbon Recovered: 22,219	Total Gallons of Groundwater Processed: 351,236
Note:		

Third Quarter 2006 O&M Report

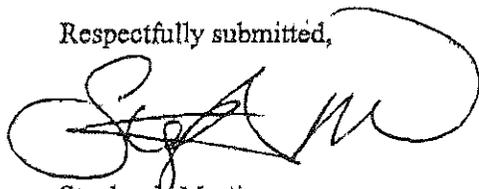
76 Station No. 0535

September 15, 2006

Page 2

Environ Strategy appreciates the opportunity to be of service. If you have any questions or require additional information regarding this report, please do not hesitate to call us at (949) 581-3222.

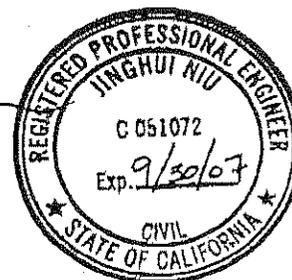
Respectfully submitted,



Stephanie Martinez
Project Coordinator



Jinghui Niu, P.E.
Principal Engineer



Attachments: Figure - Site Plan

Table 1 - Summary of Vapor Extraction System Monitoring Data

Table 2 - VES Hydrocarbon Well Concentrations

Table 3 - VES Influent and Well Analytical Data

Table 4 - Discharge Monitoring Analytical Data

Table 5 - Groundwater Treatment System Operation Data

Table 6 - Summary of Treatment System Monitoring Data

Graph 1 - VES System Performance

Graph 2 - VES Hydrocarbon Concentrations by Well

Graph 3 - VES Laboratory Analytical Data

Appendix A - Laboratory Analytical Reports

cc: Shari London, ConcocoPhillips Company (electronic copy)

TRC

QUARTERLY MONITORING REPORT OCTOBER THROUGH DECEMBER 2006

76 STATION 0535
1298 Coast Village Road
Santa Barbara, California
Prepared For:

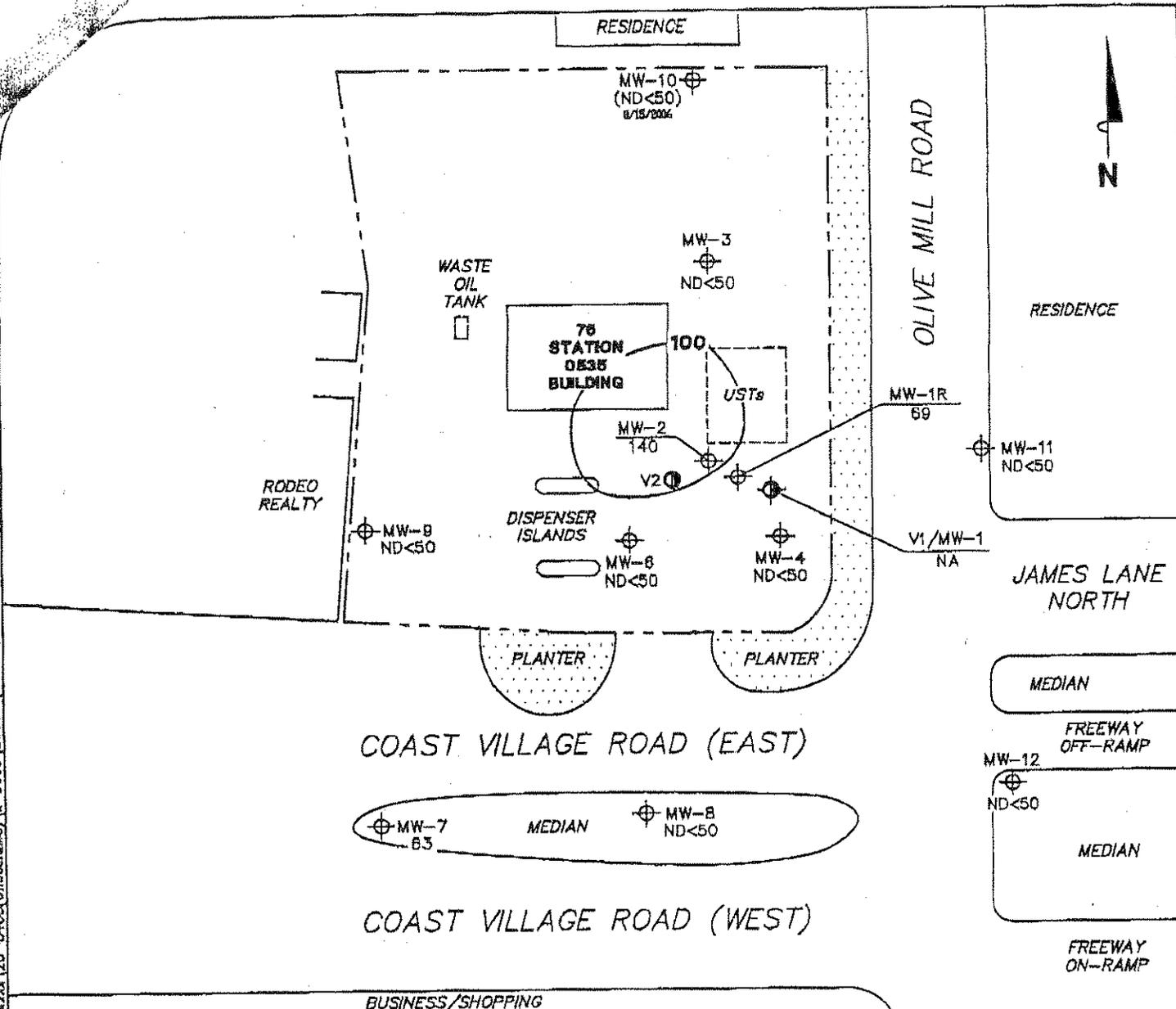
Ms. Shari London
CONOCOPHILLIPS COMPANY
3611 S. Harbor Blvd., Suite 200
Santa Ana, California 92704

By:



Senior Project Geologist, Irvine Operations
December 15, 2006

PS=1-1_0535-001\IRVINE-FST\Graphics\Project\Number\20-exr\20-0400(Unocel\MS) (e-0000) 0535+ 053551TECH\MS.DWG Dec 22, 2006 - 3:00pm bsdmldt



LEGEND

- MW-12 Monitoring Well with Dissolved-Phase TPH-G (GC/MS) Concentration ($\mu\text{g/l}$)
- V2 Vapor Extraction Well
- V1/MW-1 Vadose Zone Monitoring Well
- Dissolved-Phase TPH-G (GC/MS) Contour ($\mu\text{g/l}$)

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. $\mu\text{g/l}$ = micrograms per liter. ND = not detected at limit indicated on official laboratory report. UST = underground storage tank. () = representative of historical value.

**DISSOLVED-PHASE
TPH-G (GC/MS)
CONCENTRATION MAP
November 21, 2008**

76 Station 0535
1298 Coast Village Road
Santa Barbara, California

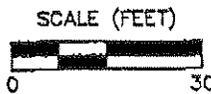


FIGURE 3

