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**Second Quarter 2005  
Groundwater Monitoring and Sampling Report**

Mission Valley Rock Company  
7999 Athenour Way  
Sunol, California

Prepared by:  
**Tait Environmental Management, Inc.**

*July 29, 2005*

July 29 , 2005

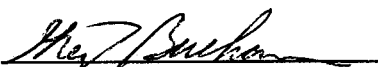
**Second Quarter 2005  
Groundwater Monitoring and Sampling Report**

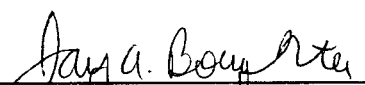
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7999 Athenour Way  
Sunol, California

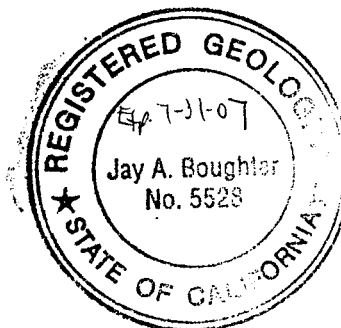
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Project No. EM-5009A

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**Second Quarter 2005  
Groundwater Monitoring and Sampling Report  
Mission Valley Rock Company  
Sunol, California**

## **1.0 INTRODUCTION**

This report summarizes the second quarter 2005 groundwater monitoring and sampling event conducted at the Mission Valley Rock Company (Site) located at 7999 Athenour Way in Sunol, California (Figure 1). The wells were sampled as part of the 2<sup>nd</sup> Quarter 2005 groundwater monitoring and sampling program.

## **2.0 OBJECTIVE**

The objective of the proposed scope of work was to:

Monitor and sample the existing groundwater monitoring wells at the Site.

## **3.0 SCOPE OF WORK**

The scope of work that Tait Environmental Management (TEM) developed to meet the objectives included the following tasks:

- Groundwater Monitoring & Sampling
- Laboratory Analyses
- Monitoring Well Survey
- Report Preparation

## **4.0 BACKGROUND**

In May of 1996, Tank Protect Engineering (TPE) removed two (2) diesel and one (1) gasoline underground storage tank (UST). During June of 1998, three (3) groundwater-monitoring wells (MW-1, MW-2, and MW-3) were installed at the Site. Quarterly groundwater-monitoring continued from January of 1999 through March of 2000.

In June of 2000, TEM assumed the contract for environmental services at the Site. In December of 2002, eight (8) soil borings (TB-1 through TB-8) were drilled and sampled at the Site using a direct-push rig. In January of 2005, 8 additional soil borings were advanced at the Site using a hollow-stem drill rig. Six (6) of the borings were converted to single, double, and triple completion groundwater monitoring wells for a total of 12 wells. Groundwater-monitoring well MW-2 was abandoned.

Quarterly groundwater monitoring and sampling have been conducted by TEM from the 4<sup>th</sup> quarter 2000 through the present.



#### **4.1 Site Geology**

Drilling and sampling activities indicate that a clay layer exists from the near-surface to between 10 and 15 feet bgs, with the exception of MW-2S/2M/2D, which contains clay to 25 feet bgs. The soils to total depth of the borings consist of gravelly sand and sandy gravel mixtures. Sand was found from approximately 10 to 20 feet bgs. in the boring containing MW-5S/5D. Refer to cross-sections A-A', B-B', and C-C' (Figures 6, 7, and 8).

#### **5.0 GROUNDWATER MONITORING WELL PURGING AND SAMPLING**

On May 4<sup>th</sup>, 2005, the groundwater monitoring wells were sampled using a 2" diameter electrical submersible pump as part of the second quarter 2005 groundwater monitoring and sampling event. Approximately 90 gallons of purged groundwater was pumped into steel 55-gallon drums prior to sampling. Static groundwater levels were measured and recorded in the onsite groundwater monitoring wells using an electrical product/water interface meter. Water levels were measured from the top of the well casing (representing the wellhead survey point). The meter was decontaminated prior to use at each well with a mild detergent solution and two (2) de-ionized water rinses. Groundwater samples were collected from the discharge end of the pump at low flow levels into laboratory-supplied containers. Care was taken to insure no headspace was allowed into the containers.

Groundwater samples were collected from thirteen (13) wells, labeled, and placed into an ice-chilled cooler (4°C). The samples were transported under chain-of-custody protocol to SunStar Laboratories, Inc. (SunStar), a State-Certified laboratory for chemical analysis.

Based on monitoring well data, the depth to groundwater measured at the Site averaged 2.37 feet bgs. The apparent groundwater flow direction is to the southeast at a gradient of approximately 0.017 ft/ft. Groundwater gauging and elevation data for the 2<sup>nd</sup> Quarter 2005 event is summarized in Table 1. Historical groundwater elevation data is summarized in Table 2. Groundwater sampling data sheets are presented in Appendix A.

#### **6.0 LABORATORY ANALYSES**

The groundwater samples collected during the groundwater monitoring and sampling event were analyzed for:

- The Diesel and Gasoline fraction of Total Petroleum Hydrocarbons (TPHd and TPHg, respectively) using EPA Method No. 8015M.
- Volatile Organic Compounds (VOC's) including benzene, toluene, ethylbenzene, total xylenes (BTEX); methyl-tert-butyl ether (MTBE), and the other fuel oxygenates Tert-amyl methyl ether (TAME), Tert-butyl alcohol (TBA), Di-isopropyl ether (DIPE), and Ethyl tert-butyl ether (ETBE) using EPA Method No. 8260B.

Dissolved-phase TPH-g concentrations in the shallow groundwater zone is presented in Figure 4, and deep zone concentrations are contoured in Figure 5. A benzene concentration of 2 µg/L



was detected in MW-6D. A maximum MTBE concentration of 1,600 µg/L was detected in MW-7S, and dissolved-phase MTBE concentrations in groundwater are reported and contoured in Figure 6.

Second Quarter 2005 groundwater analytical results are summarized in Table 3 and a copy of the laboratory analytical report is presented in Appendix B. Historical groundwater analytical results are summarized in Table 4.

## **7.0 SUMMARY OF ACTIVITIES AND FINDINGS**

Based upon the data presented in this report, previous investigations, current regulatory guidelines, and the judgment of TEM, the following is a summary of activities and findings:

- Based on the depth to water measurements (monitoring wells only) obtained by TEM, groundwater levels averaged 2.37 feet bgs. The groundwater flow direction to the southeast at a gradient of approximately 0.017 ft/ft.
- A total of 13 groundwater samples were collected from the monitoring wells at the Site, and they were delivered to SunStar for analysis.
- A maximum TPH-D concentration of 8,200 µg/L was detected in well MW-2S.
- A maximum TPH-G concentration in groundwater of 1,600 µg/L was detected in well MW-7S.
- A maximum benzene concentration of 2.0 µg/L was detected in well MW-6D.
- A maximum MTBE concentration of 1,600 µg/L was detected in well MW-7S.
- The other fuel oxygenates were not detected in the groundwater.

Based on groundwater sampling data, the BTEX concentrations were low, and fuel oxygenates other than MTBE were not detected above laboratory detection limits. The TPH-G, TPH-D, and MTBE concentrations were higher.

## **8.0 RECOMMENDATIONS**

Based on the work conducted to date, the data obtained during field activities, current regulatory guidelines, and the professional judgment of TEM, the following recommendation is presented for your consideration:

- TEM has proposed a combination of conventional pump-and-treat, and in-Situ Submerged Oxygen Curtain (ISOC) technologies to remediate the soil and groundwater beneath the Site.
- Continue to monitor the groundwater on a quarterly basis.



## **9.0 QUALITY ASSURANCE/QUALITY CONTROL**

To increase the confidence levels in the data obtained and minimize the likelihood that judgments were made from potentially erroneous data, a quality assurance/quality control (QA/QC) program was implemented. QA refers to management of actions designed to maintain precision, accuracy, completeness, and representativeness of the data developed from the project. QC refers to accepted formal procedures and activities specifically designed for the purpose of collecting data that are intended to be reliable and consistent for the Site conditions.

The program includes formal procedures for drilling, sampling, well installation, decontamination, instrument calibration, documentation of activities and calculations, and peer review. Routine QC procedures were performed by the laboratory and included daily calibration of instruments, percent surrogate recoveries and analysis of matrix spikes and matrix spike duplicates (Appendix D). The laboratory reported the results to be within acceptable percent recoveries with no results exceeding the laboratory-established control limits.

## **10.0 LIMITATIONS**

No investigation is considered thorough enough to exclude the presence of hazardous materials at a given site. Opinions and/or recommendations presented apply to Site conditions existing at the time of the performance of services and TEM is unable to report on or accurately predict events which may impact the Site following conduct of the described services, whether occurring naturally or caused by external forces. No responsibility is assumed by TEM for conditions we were not authorized to investigate, or conditions not generally recognized as environmentally unacceptable at the time services were performed. Services hereunder were performed in accordance with our agreement and understanding with, and solely for the use of, MVR. We are not responsible for the subsequent separation, detachment or partial use of this document. Any reliance on this report by a third party shall be at such party's sole risk.

## **11.0 REFERENCES**

*Groundwater Monitoring Report – Third Quarter 2002*, Mission Valley Rock Company, 7999 Athenour Way, Sunol, California, prepared by TEM, November 5, 2002.

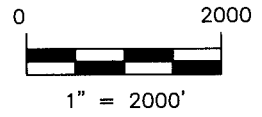
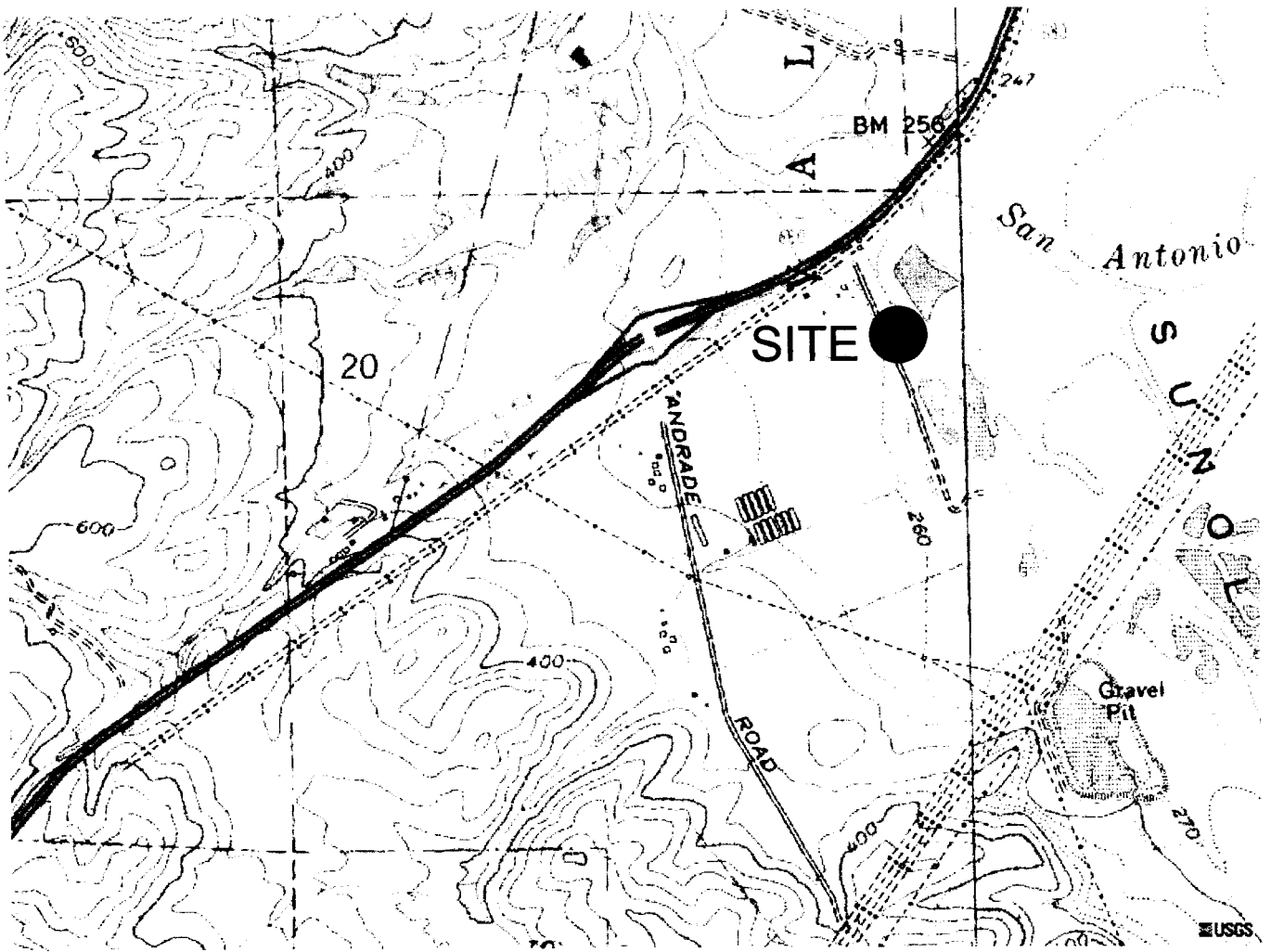
*Drinking Water Standards*, California Department of Health Services, January 31, 2001.

*Environmental Protection Agency (EPA), Preliminary Remediation Goals (PRG's) for Region 9 (Residential Soils "Direct Contact Exposure Pathways)*, October 2002.

*Site Assessment and First Quarter 2005 Groundwater Monitoring and Sampling Report*, April 1, 2005.



**FIGURES**



**NOTES:**

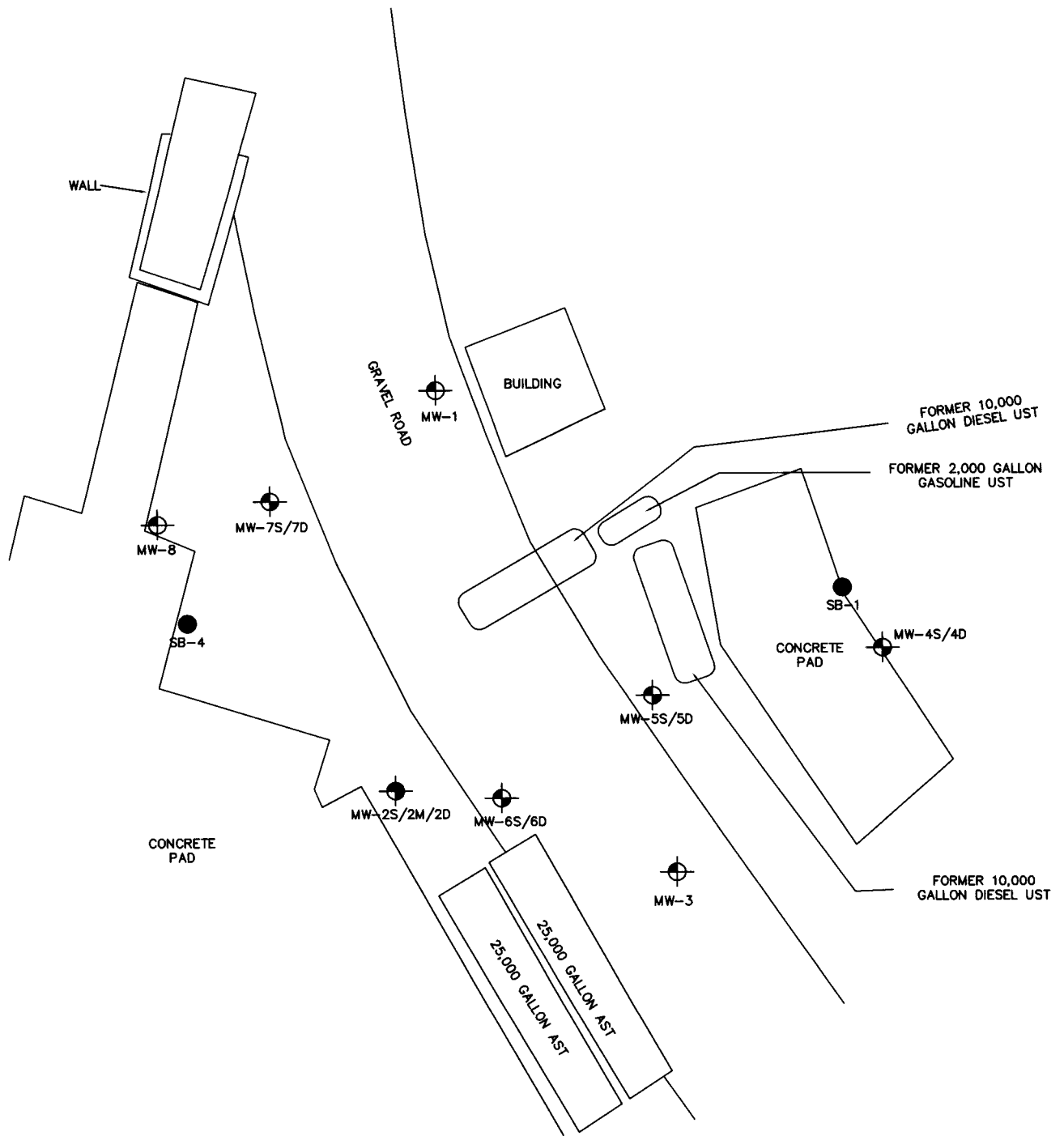
BASE MAP OBTAINED FROM TERRASERVER.COM, UNITED STATES GEOLOGICAL SURVEY (USGS), FREEMONT QUADRANGLE, ALAMEDA COUNTY, CALIFORNIA. PRINTED JULY 1, 1989.

**TMT** 701 NORTH PARKCENTER DRIVE  
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 ENVIRONMENTAL MANAGEMENT, INC.

**SITE VICINITY MAP**  
 MISSION VALLEY ROCK CO.  
 7999 ATHENOUR WAY  
 SUNOL, CALIFORNIA

PROJECT NO. EM-5009

FIGURE 1



**Legend:**

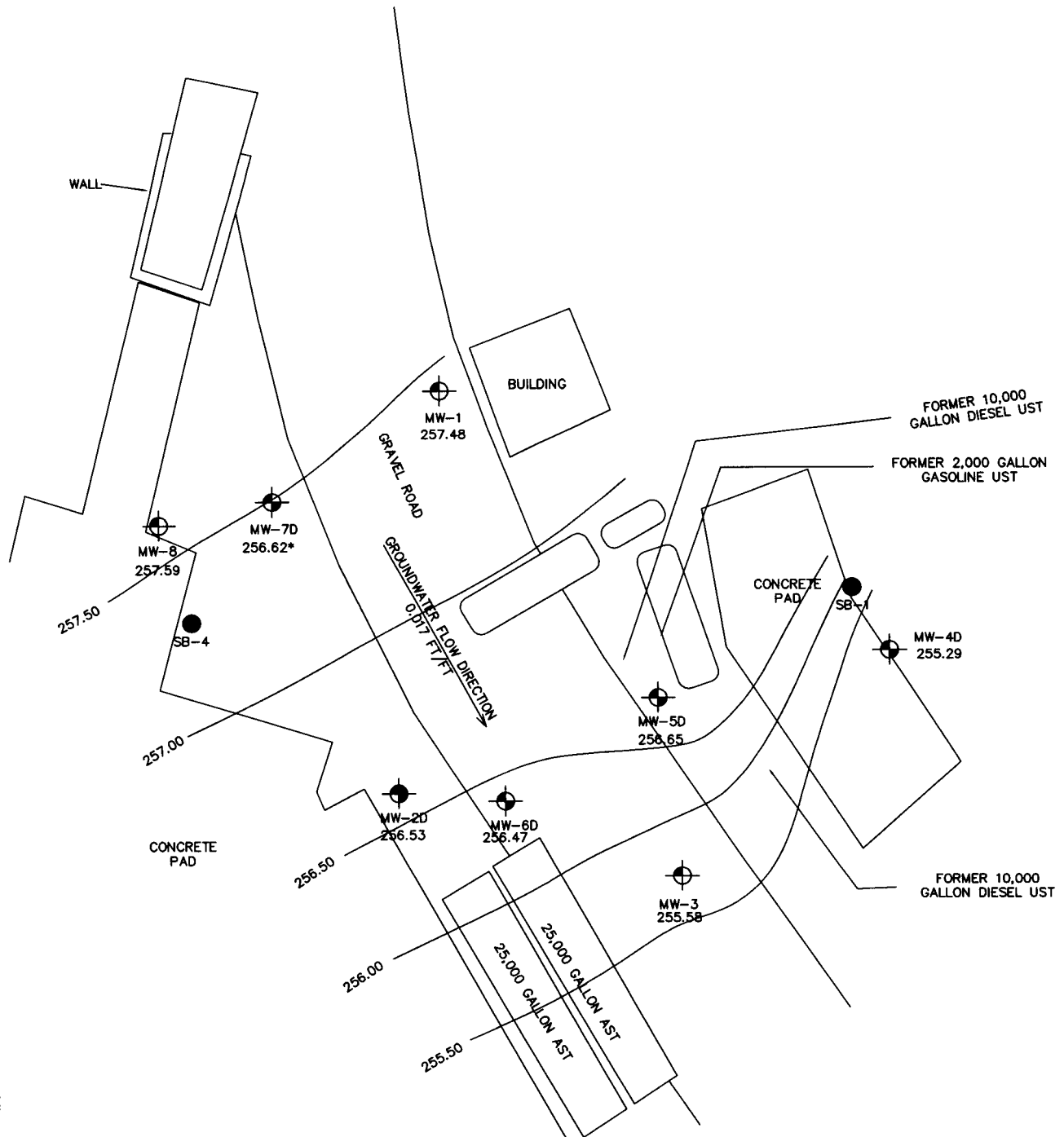
- Groundwater Monitoring Well - Single Completion  
 MW-1
- Groundwater Monitoring Well - Dual Nested  
 MW-7S/7D
- Groundwater Monitoring Well - Triple Nested  
 MW-2S/2M/2D
- Soil Boring  
 MW-1









SCALE: 1 INCH=30 FEET



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<b>ENVIRONMENTAL MANAGEMENT, INC.</b>	
<b>SITE PLAN</b> MISSION VALLEY ROCK 7999 ATHENOUR WAY SUNOL, CALIFORNIA	
PROJECT NO. EM-5009B	FIGURE 2



**Legend:**


-  GROUNDWATER MONITORING WELL - SINGLE COMPLETION  
MW-1
-  GROUNDWATER MONITORING WELL - DUAL NESTED  
MW-7S/7D
-  GROUNDWATER MONITORING WELL - TRIPLE NESTED  
MW-2S/2M/2D
-  GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION ABOVE SEA LEVEL  
MW-1  
257.48
-  GROUNDWATER ELEVATION NOT USED FOR CONTOURING  
MW-7D  
256.62\*
-  SOIL BORING  
SB-1

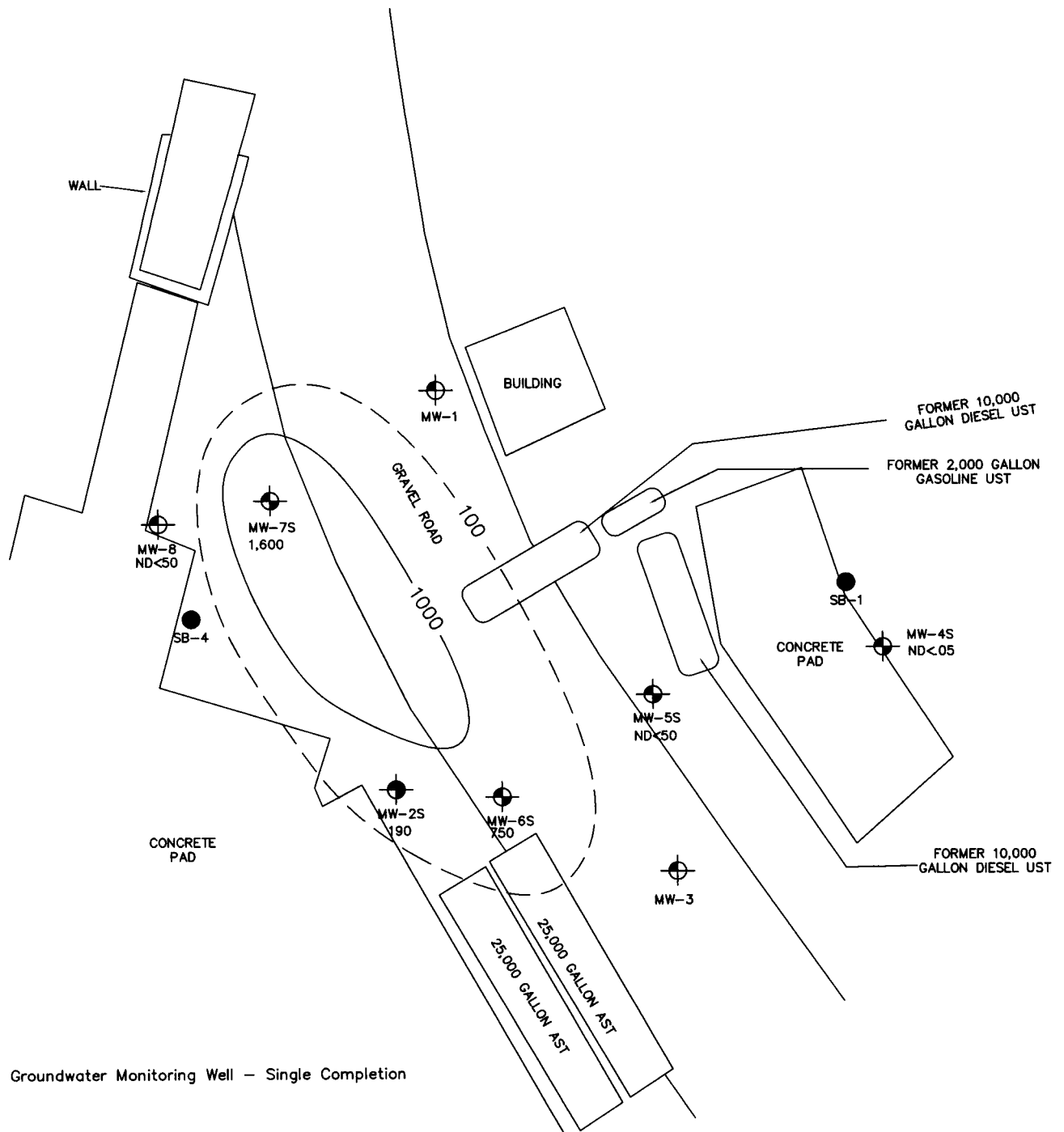


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



GROUNDWATER GAUGED ON MAY 4, 2005  
 M:\TEM2\clients\Mission Valley Rock\GW Monitoring 2nd Qtr 2005\Groundwater Contour Map Fig 3 08/03/05

	
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<b>2ND QUARTER 2005 GROUNDWATER CONTOUR MAP (DEEP ZONE)</b>	
MISSION VALLEY ROCK 7999 ATHENOUR WAY SUNOL, CALIFORNIA	
PROJECT NO. EM-5009B	FIGURE 3




**Legend:**

-  Groundwater Monitoring Well - Single Completion  
MW-1
-  Groundwater Monitoring Well - Dual Completion  
MW-4S
-  Groundwater Monitoring Well - Triple Completion  
MW-2S
-  GROUNDWATER MONITORING WELL WITH  
TPH-G CONCENTRATION MICROGRAMS  
PER LITER (ug/L)  
MW-2S  
190
-  TPH-G CONCENTRATION  
CONTOUR
-  TEMPORARY SOIL BORING  
SB-4

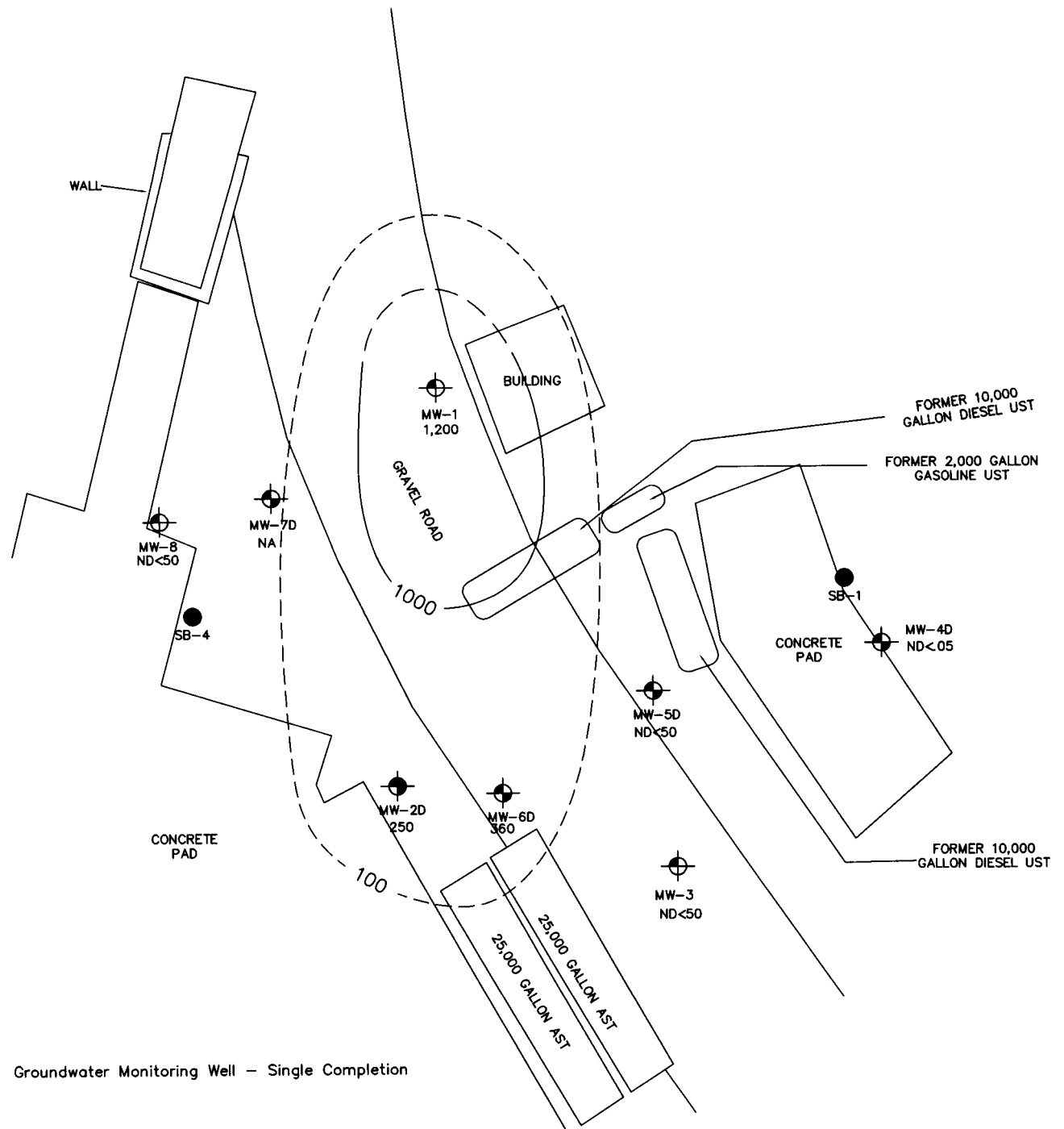


SCALE: 1 INCH=30 FEET









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	ENVIRONMENTAL MANAGEMENT, INC.
<b>2ND QUARTER 2005                  TPHG-CONCENTRATIONS                  IN GROUNDWATER (SHALLOW ZONE)</b>	
MISSION VALLEY ROCK 7999 ATHENOUR WAY SUNOL, CALIFORNIA	
PROJECT NO. EM-5009B	FIGURE 4

GROUNDWATER SAMPLES COLLECTED ON MAY 4, 2005



**Legend:**

-  Groundwater Monitoring Well - Single Completion
- MW-1
-  Groundwater Monitoring Well - Dual Completion
- MW-4D
-  Groundwater Monitoring Well - Triple Completion
- MW-2D
-  GROUNDWATER MONITORING WELL WITH TPH-G CONCENTRATION MICROGRAMS PER LITER (µg/L)
- MW-2D 250
-  TPH-G CONCENTRATION CONTOUR
-  TEMPORARY SOIL BORING
- SB-4



SCALE: 1 INCH=30 FEET

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








**2ND QUARTER 2005  
 TPHG-CONCENTRATIONS  
 IN GROUNDWATER (DEEP ZONE)**  
 MISSION VALLEY ROCK  
 7999 ATHENOUR WAY  
 SUNOL, CALIFORNIA

PROJECT NO. EM-5009B

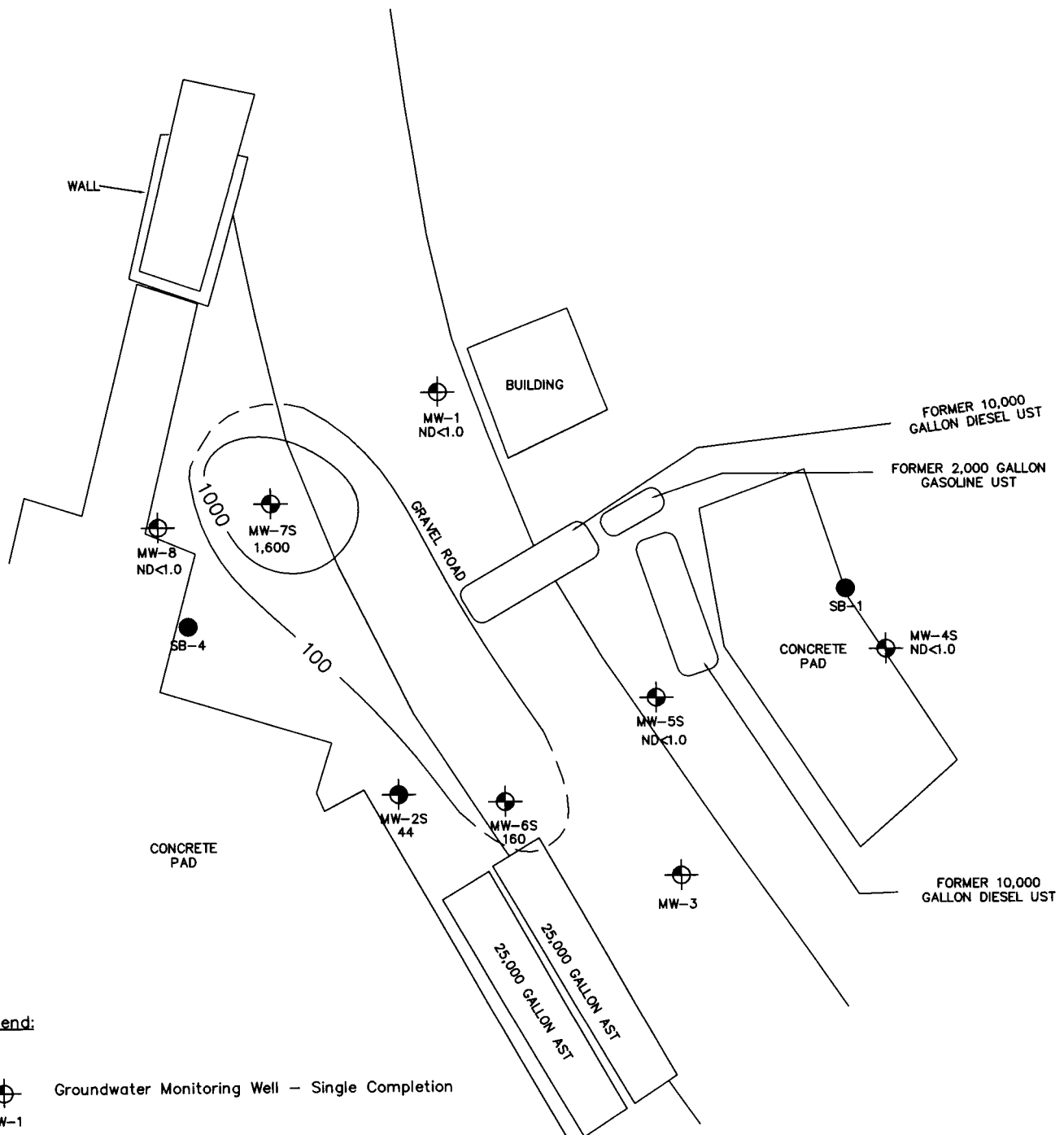
FIGURE 5

GROUNDWATER SAMPLES COLLECTED ON MAY 4, 2005


**Legend:**

-  Groundwater Monitoring Well - Single Completion
-  MW-1
-  Groundwater Monitoring Well - Dual Completion
-  MW-4S
-  Groundwater Monitoring Well - Triple Completion
-  MW-2S
-  GROUNDWATER MONITORING WELL WITH  
MTBE CONCENTRATION MICROGRAMS  
PER LITER (ug/L)
-  MW-2S  
44
-  MTBE CONCENTRATION  
CONTOUR
-  TEMPORARY SOIL BORING

GROUNDWATER SAMPLES COLLECTED ON MAY 4, 2005



SCALE: 1 INCH=30 FEET

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ENVIRONMENTAL MANAGEMENT, INC.	
<b>2ND QUARTER 2005                  MTBE CONCENTRATIONS                  IN GROUNDWATER (SHALLOW ZONE)</b>	
MISSION VALLEY ROCK 7999 ATHENOUR WAY SUNOL, CALIFORNIA	
PROJECT NO. EM-5009B	FIGURE 6

**TABLES**



**Table 1**  
**Well Construction Details and Groundwater Elevation Data**  
**Second Quarter 2005**  
 Mission Valley Rock Company  
 Sunol, California

Well ID	Casing Diameter (inches)	Depth to Water (feet below TOC)	Total Depth (feet below TOC)	Screened Interval (feet bgs)	Measuring Point Elevation (feet MSL)	Groundwater Elevation (feet MSL)
MW-1	2	1.20	17.45	5.0 - 20.0	258.68	257.48
MW-2S	2	1.98	8.48	3.0-8.0	258.84	256.86
MW-2M	2	2.32	18.70	14.0-19.0	258.99	256.67
MW-2D	2	2.38	29.60	25.0-30.0	258.91	256.53
MW-3	2	3.50	14.50	5.0-20.0	259.08	255.58
MW-4S	2	3.73	8.71	3.0-8.0	259.14	255.41
MW-4D	2	3.93	23.15	17.0-22.0	259.22	255.29
MW-5S	2	2.50	8.00	3.0-8.0	259.43	256.93
MW-5D	2	2.75	22.65	17.0-22.0	259.40	256.65
MW-6S	2	1.96	14.75	5.0-15.0	258.75	256.79
MW-6D	2	2.80	28.90	24.5-29.5	259.27	256.47
MW-7S	2	1.44	8.35	5.0-8.0	258.82	257.38
MW-7D	2	1.45	22.55	20.0-25.0	258.07	256.62
MW-8	2	1.25	15.05	5.0-15.0	258.84	257.59

Screened intervals are approximated. Screened interval in wells is lower than the measured total depth due to silting in the bottom of wells. The measurement point for the above three wells is the north side of the top of casing. Depth to water and total depth measurements taken by Tait Environmental Management, Inc. personnel on May 4, 2005. Total depth and depth to water measurements taken by Tait Environmental Management from designated measurement point. groundwater elevation = Measurement Point Elevation - Depth to Water. TOC = Top of Casing

**Table 2**  
**Historical Groundwater Gauging Data**  
 Mission Valley Rock Company  
 Sunol, California

Well	Top of Casing Elevation (Feet)	Date	Depth to Water (feet below TOC)	Groundwater Elevation (feet MSL)	LPH Thickness (feet)	
MW-1	256.51	Jun-98	1.32	255.19	ND	
		Jan-99	2.28	254.23	ND	
		Mar-99	1.88	254.63	ND	
		Jun-99	3.35	253.16	ND	
		Sep-99	3.66	252.85	ND	
		Dec-99	2.94	253.57	ND	
		Mar-00	2.72	253.79	Odor	
		Jun-00	4.01	252.50	Slight Odor	
		Sep-00	5.11	251.40	Slight Odor	
		Dec-00	4.95	251.56	ND	
		Mar-01	2.28	254.23	ND	
		Jun-01	3.60	252.91	ND	
		Sep-01	6.50	250.01	ND	
		Dec-01	1.29	255.22	ND	
		Mar-02	2.91	253.60	ND	
		Jun-02	3.95	252.56	ND	
		Sep-02	5.18	251.33	ND	
		Dec-02	3.90	252.61	ND	
		Mar-03	1.40	255.11	ND	
		Jun-03	2.65	253.86	ND	
		Sep-03	4.67	251.84	ND	
		Dec-03	4.60	251.91	ND	
			258.68	Jan-05	3.41	255.27
MW-2	256.7	Jun-98	1.72	254.98	0.005	
		Jan-99	2.69	254.01	4.00	
		Mar-99	2.50	254.20	ND	
		Jun-99	4.00	252.70	Sheen	
		Sep-99	4.54	252.16	0.50	
		Dec-99	3.85	252.85	0.13	
		Mar-00	3.20	253.50	0.03	
		Jun-00	4.62	252.08	0.02	
		Sep-00	5.95	250.75	>0.01	
		Dec-00	5.65	251.05	0.07	
		Mar-01	3.21	253.49	0.10	
		Jun-01	3.31	253.39	0.06	
		Sep-01	7.08	249.62	0.34	
		Dec-01	2.18	254.52	0.26	
		Mar-02	3.40	253.30	0.90	
		Jun-02	4.35	252.35	0.08	
		Sep-02	5.54	251.16	ND	
		Dec-02	4.30	252.40	ND	
		Mar-03	1.78	254.92	ND	
		Jun-03	3.10	253.60	ND	
		Sep-03	5.02	251.68	ND	
		Dec-03		NM	NM	NM
				1/5/05		Abandoned
MW-2S	258.84	1/17/05	4.25	254.59	ND	
MW-2M	258.99	1/17/05	4.68	254.16	ND	
MW-2D	258.91	1/17/05	4.75	254.09		

**Table 2**  
**Historical Groundwater Gauging Data**  
 Mission Valley Rock Company  
 Sunol, California

Well	Top of Casing Elevation (Feet)	Date	Depth to Water (feet below TOC)	Groundwater Elevation (feet MSL)	LPH Thickness (feet)
MW-3	256.72	Jun-98	2.66	254.06	ND
		Jan-99	4.47	252.25	Slight Odor
MW-3	259.08	Mar-99	3.96	252.76	Sheen
		Jun-99	5.54	251.18	ND
		Sep-99	6.18	250.54	Sheen
		Dec-99	5.52	251.20	Odor
		Mar-00	4.61	252.11	Odor
		Jun-00	6.35	250.37	Very Slight Odor
		Sep-00	7.30	249.42	Very Slight Odor
		Dec-00	7.29	249.43	ND
		Mar-01	4.73	251.99	ND
		Jun-01	NM	NM	NM
		Sep-01	7.89	248.83	ND
		Dec-01	3.77	252.95	ND
		Mar-02	5.12	251.60	ND
		Jun-02	6.52	250.20	ND
		Sep-02	7.28	249.44	ND
		Dec-02	6.40	250.32	ND
		Mar-03	4.01	252.71	ND
		Jun-03	5.13	251.59	ND
		Sep-03	5.13	251.59	ND
		Dec-03	7.2	249.52	ND
		Jan-05	5.81	253.27	ND
MW-4S	259.14	1/17/05	4.62	254.52	ND
MW-4D	259.22	1/17/05	5.96	253.26	ND
MW-5S	259.43	1/17/05	4.57	254.86	ND
MW-5D	259.40	1/17/05	5.15	254.25	ND
MW-6S	258.75	1/17/05	4.30	254.45	ND
MW-6D	259.27	1/17/05	5.17	254.10	ND
MW-7S	258.82	1/17/05	3.42	255.40	ND
MW-7D	258.07	1/17/05	5.50	252.57	ND
MW-8	258.84	1/17/05	3.45	255.39	ND

Depth to water and liquid phase hydrocarbon (LPH) thickness reported in feet below measurement point.

Groundwater elevations reported in feet above mean sea level (msl).

Adjusted groundwater elevation = Measurement Point Elevation - Depth to Water + (LPH Thickness x 0.75)

NM = Not Measured

ND = Not Detected

TOC = Top of Casing

MSL = Mean Sea Level

LPH = Liquid-Phase Hydrocarbon

**Table 3**  
**Groundwater Analytical Results**  
**Second Quarter 2005**  
Mission Valley Rock Company  
Sunol, California

Well	Date	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
MW-1	5/4/2005	ND<50	1200	ND<0.50	ND<0.50	8.5	1.2	ND<1.0
MW-2S	5/4/2005	8200	190	ND<0.50	ND<0.50	ND<0.50	ND<0.50	44
MW-2M	5/4/2005	ND<50	610	ND<0.50	ND<0.50	16	10.6	32
MW-2D	5/4/2005	ND<50	250	ND<0.50	ND<0.50	4.6	1.6	72
MW-3	5/4/2005	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	190
MW-4S	5/4/2005	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
MW-4D	5/4/2005	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
MW-5S	5/4/2005	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
MW-5D	5/4/2005	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	10
MW-6S	5/4/2005	ND<50	750	ND<0.50	ND<0.50	3.0	ND<0.50	160
MW-6D	5/4/2005	ND<50	360	2.0	ND<0.50	ND<0.50	ND<0.50	360
MW-7S	5/4/2005	520	1600	ND<0.50	ND<0.50	31	18.4	1600
MW-7D	5/4/2005	NA	NA	NA	NA	NA	NA	NA
MW-8	5/4/2005	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0

Notes:

Analyses for Total Petroleum Hydrocarbons as Gasoline and Diesel (TPHg and TPHd, respectively) were performed using EPA Method No. 8015M.

Analyses for benzene, toluene, ethylbenzene, total xylenes, and methyl-tert-butyl ether (MTBE) were performed using EPA Method No. 8260B.

Depth to water and total depth measurements taken by Tait Environmental Management, Inc. personnel on May 4th, 2005.

Total xylene concentrations were determined by adding m,p-xylene and o-xylene from laboratory report.

NM = Not Measured

mg/L = Milligrams per Liter

ug/L = Micrograms per Liter

ND = Non-detect at or above corresponding laboratory reporting limit.

**Table 4**  
**Historical Groundwater Analytical Results**  
Mission Valley Rock Company  
Sunol, California

Well	Date	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-1	Jun-98	0.1	3,100	19	2.3	91	48	110
	Oct-98	0.1	2,300	3.1	4.2	5.0	15	ND<0.50
	Dec-98	350	ND<50	12	7.5	20	6.2	ND<5.0
	Mar-99	190	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	Jun-99	210	1,800	1.2	0.9	1.5	4.6	ND<0.5
	Sep-99	62	180	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.5
	Dec-99	290	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	Mar-00	86	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	Jun-00	70	450	2.1	ND<0.5	2.1	1.4	7.6
	Sep-00	ND<50	850	5.4	ND<0.50	9.4	2.6	9.8
	Dec-00	ND<1,000	370	5.3	ND<1.0	2.7	ND<3.0	55
	Mar-01	ND<1,000	700	ND<1.0	ND<1.0	1.4	ND<1.0	ND<1.0
	Jun-01	ND<1,000	170	ND<1.0	ND<1.0	1.2	ND<1.0	ND<1.0
	Sep-01	ND<1,000	730	1.4	ND<1.0	7.6	1.2	ND<1.0
	Dec-01	1000	500	15	ND<1.0	27	5.5	ND<1.0
	Mar-02	12000	29000	50	ND<25	960	290	ND<25
	Jun-02	ND<1,000	1400	3.5	ND<1.0	42	7.9	ND<1.0
	Sep-02	1400	760	ND<1.0	ND<1.0	4.3	1.1	ND<1.0
	Dec-02	ND<1,000	1600	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	Mar-03	ND<1,000	620	1.2	ND<1.0	12	ND<1.0	ND<1.0
	Jun-03	ND<1,000	0.61	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	Sep-03	ND<1,000	1.2	ND<1.0	ND<1.0	6.4	ND<1.0	ND<1.0
Dec-03	ND<1,000	0.49	ND<1.0	ND<1.0	3.0	ND<1.0	ND<1.0	
1/17/05	ND<50	63	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	
MW-2	Jun-98	12,000	2,500	0.68	ND<0.50	1.2	0.57	14
	Oct-98	4,300	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	Dec-98	38,000	ND<5,000	ND<50	ND<50	51	190	ND<500
	Mar-99	580	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	Jun-99	4,500	24,000	38	27	41	98	ND<0.5
	Sep-99	24,000	1,400	ND<0.50	ND<0.50	ND<0.50	ND<0.50	27
	Dec-99	2,300	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	Mar-00	620	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	Jun-00	1,700	270	ND<0.5	ND<0.5	ND<0.5	ND<0.5	17
	Sep-00	5,800	130	ND<0.50	ND<0.50	ND<0.50	0.94	12
	Dec-00	19,000	1700	ND<50	ND<50	ND<50	ND<150	ND<250
	Mar-01	610000	3300	ND<1.0	ND<1.0	ND<1.0	ND<1.0	9.0
	Jun-01	8800	1800	ND<1.0	ND<1.0	ND<1.0	ND<1.0	6.7
	Sep-01	530000	7000	ND<50	ND<50	ND<50	ND<50	ND<50
	Dec-01	27000	310	ND<1.0	ND<1.0	ND<1.0	ND<1.0	62
	Mar-02	65000	130	ND<1.0	ND<1.0	ND<1.0	ND<1.0	30
	Jun-02	130000	460	ND<1.0	ND<1.0	ND<1.0	ND<1.0	24
	Sep-02	480000	290	ND<1.0	ND<1.0	ND<1.0	ND<1.0	16
	Dec-02	61000	1800	ND<1.0	ND<1.0	ND<1.0	ND<1.0	10
	Mar-03	5000	ND<100	ND<1.0	ND<1.0	ND<1.0	ND<1.0	14
Jun-03	8.1	360	ND<1.0	ND<1.0	ND<1.0	ND<1.0	20	
Sep-03	85	12	ND<1.0	ND<1.0	ND<1.0	ND<1.0	15	
Dec-03	NM	NM	NM	NM	NM	NM	NM	
	1/17/05	Abandoned						
MW-2S	1/17/05	1100	730	ND<0.50	ND<0.50	1.0	3.5	50
MW-2M	1/17/05	4100	3300	6.5	1.7	89	82.2	38

**Table 4**  
**Historical Groundwater Analytical Results**  
Mission Valley Rock Company  
Sunol, California

Well	Date	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-2D	1/17/05	1800	1000	6.5	ND<0.50	80	71	62
MW-3	Jun-98	12,000	300	0.80	ND<0.50	ND<0.50	ND<0.50	150
	Oct-98	6400	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	Dec-98	5,600	ND<100	1.6	1.4	ND<1.0	ND<1.0	110
	Mar-99	150	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	Jun-99	620	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	Sep-99	1,500	230		ND<0.50	ND<0.50	ND<0.50	89
	Dec-99	58	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	Mar-00	94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	Jun-00	240	170	ND<0.5	0.52	ND<0.5	ND<0.5	100
	Sep-00	850	170	0.81	ND<0.50	ND<0.50	ND<0.50	68
	Dec-00	1600	230	ND<1.0	ND<1.0	ND<1.0	ND<3.0	80
	Mar-01	1100	140	ND<1.0	ND<1.0	ND<1.0	ND<1.0	83
	Jun-01	NS	NS	NS	NS	NS	NS	NS
	Sep-01	3800	ND<100	ND<1.0	ND<1.0	ND<1.0	ND<1.0	45
	Dec-01	3100	340	1.4	1.1	10	3.8	45
	Mar-02	1500	ND<100	ND<1.0	ND<1.0	ND<1.0	ND<1.0	50
	Jun-02	ND<1000	160	ND<1.0	ND<1.0	ND<1.0	ND<1.0	36
	Sep-02	ND<1000	ND<1000	ND<1.0	ND<1.0	ND<1.0	ND<1.0	43
	Dec-02	ND<1000	ND<100	ND<1.0	ND<1.0	ND<1.0	ND<1.0	41
	Mar-03	ND<1000	ND<100	ND<2.5	ND<2.5	ND<2.5	ND<2.5	92
Jun-03	1200.0	ND<100	ND<2.0	ND<2.0	ND<2.0	ND<2.0	93	
Sep-03	ND<1000	ND<100	ND<2.0	ND<2.0	ND<2.0	ND<2.0	65	
Dec-03	5700	190	ND<2.0	ND<2.0	ND<2.0	ND<2.0	56	
	1/17/05	ND<50	590	ND<0.50	ND<0.50	ND<0.50	ND<0.50	47
MW-4S	1/17/05	ND<50	65	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
MW-4D	1/17/05	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
MW-5S	1/17/05	ND<50	ND<50	ND<0.50	4.5	ND<0.50	ND<0.50	ND<1.0
MW-5D	1/17/05	ND<50	210	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
MW-6S	1/17/05	2800	1600	6.1	ND<0.50	3.6	2.3	160
MW-6D	1/17/05	2100	1200	10	ND<0.50	1.6	2.2	180
MW-7S	1/17/05	ND<50	12000	10	89	590	1670	ND<1.0
MW-7D	1/17/05	ND<50	23000	350	1000	1800	5200	ND<1.0
MW-8	1/17/05	ND<50	120	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0

Concentrations reported in micrograms per Liter (ug/L).

MTBE = Methyl-tert-Butyl Ether

ND = Not Detected at or above corresponding reporting limit

NS = Not Sampled

TPHd = Total Petroleum Hydrocarbons as Diesel

TPHg = Total Petroleum Hydrocarbons as Gasoline

NM: Not Measured

**APPENDIX A**  
**SAMPLING DATA SHEETS**



Project Name: <u>MVK</u>					Date: <u>5/4/05</u>						
Project No.: <u>EM2509</u>					Prepared By: <u>Saeed</u>						
Well Identification: <u>MW-1</u>					Weather: <u>-</u>			Screen:			
Measurement Point Description: <u>TOC</u>					Pump Intake: <u>✓</u>						
Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume			
	<u>1.20</u>	<u>17.45</u>	<u>16.25</u>	<u>-</u>	<u>2.6</u>	<u>7.5</u>					
Well Diameter (in)		Gallons/Foot				Field Equipment: <u>Solinst</u>					
		0.75	2	4	6	Purge Method:					
0.75	2	4	6	0.02	0.16	0.65	1.47	Well Condition:			
Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity ( <u>ms</u> )	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
<u>1:02</u>		<u>3</u>	<u>-</u>	<u>6.1</u>	<u>7.1</u>	<u>63.5</u>	<u>64</u>	<u>3.6</u>	<u>-</u>	<u>-</u>	<u>clear</u>
<u>1:05</u>		<u>6</u>	<u>-</u>	<u>8.7</u>	<u>7.3</u>	<u>63.7</u>	<u>9</u>	<u>3.7</u>	<u>-</u>	<u>-</u>	<u>clear</u>
<u>1:07</u>		<u>8</u>	<u>-</u>	<u>10.95</u>	<u>7.2</u>	<u>63.5</u>	<u>9</u>	<u>3.6</u>	<u>-</u>	<u>-</u>	<u>clear</u>
Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification			
<u>1:10</u>	<u>1:07</u>	<u>0.6</u>	<u>8</u>	<u>-</u>			<u>12:45</u>	<u>MW-1</u>			
Notes: <u>7:45</u>											





Groundwater Sampling Data Sheet

Project Name: <i>Mission Valley Rock</i>					Date: <i>5/4/05</i>	
Project No.:					Prepared By: <i>Speed</i>	
Well Identification: <i>MW-2S</i>					Weather: <i>Cloudy</i>	
Measurement Point Description: <i>TOC</i>					Screen:	
Pump Intake:						

Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume
	<i>1.98</i>	<i>8.48</i>	<i>6.5</i>		<i>1.0</i>	<i>3.12</i>		

Well Diameter (in)	Gallons/Foot				Field Equipment: <i>Solinst</i>	
	0.75	<i>2</i>	4	6	Purge Method: <i>Vail Pump</i>	
	0.02	<i>0.16</i>	0.65	1.47	Well Condition: <i>Good</i>	

Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (mS)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
<i>8:50</i>	<i>a</i>	<i>1</i>	<i>-</i>	<i>2.5</i>	<i>7.4</i>	<i>63.8</i>	<i>14</i>	<i>3.7</i>	<i>-</i>	<i>-</i>	<i>clear</i>
<i>8:51</i>		<i>2</i>	<i>-</i>	<i>2.9</i>	<i>7.3</i>	<i>63.3</i>	<i>6</i>	<i>3.6</i>	<i>-</i>	<i>-</i>	<i>clear</i>
<i>8:53</i>		<i>4</i>	<i>-</i>	<i>3.6</i>	<i>7.2</i>	<i>63.3</i>	<i>2</i>	<i>3.6</i>	<i>-</i>	<i>-</i>	<i>clear</i>

Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification
							<i>11:30</i>	<i>MW-2S</i>

Notes:

0.5 feet below measuring point



Project Name: <i>Mission Valley Rock</i>					Date: <i>5/4/05</i>						
Project No.:					Prepared By: <i>Sreed</i>						
Well Identification: <i>MW-2 MW-2M</i>					Weather: <i>Cloudy</i> Screen:						
Measurement Point Description:					Pump Intake:						
Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume			
	<i>2.32</i>	<i>18.7</i>		<i>16.38</i>	<i>2.62</i>	<i>6.86</i>					
Well Diameter (in)				Gallons/Foot				Field Equipment: <i>Solinst</i>			
				0.75	2	4	6	Purge Method:			
0.75	2	4	6	0.02	0.16	0.65	1.47	Well Condition:			
Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity ( <i>ms</i> )	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
<i>9:01</i>		<i>2.5</i>	<i>-</i>	<i>2.9</i>	<i>7.3</i>	<i>63.6</i>	<i>1.8</i>	<i>3.6</i>	<i>-</i>	<i>-</i>	<i>clear</i>
<i>9:03</i>		<i>5.0</i>	<i>-</i>	<i>3.2</i>	<i>7.2</i>	<i>63.4</i>	<i>9</i>	<i>3.6</i>	<i>-</i>	<i>-</i>	<i>clear</i>
<i>9:07</i>		<i>7.0</i>	<i>-</i>	<i>3.8</i>	<i>7.2</i>	<i>63.4</i>	<i>2</i>	<i>3.6</i>	<i>-</i>	<i>-</i>	<i>clear</i>
Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification			
							<i>10:00</i>	<i>MW-2M</i>			
Notes:											

ft-bmp = feet below measuring point



Project Name: <u>Mission Valley Rock</u>					Date: <u>5/4/05</u>	
Project No.:					Prepared By: <u>Speed</u>	
Well Identification: <u>MW-2D</u>					Weather: <u>cloudy</u> Screen:	
Measurement Point Description: <u>TOZ</u>					Pump Intake:	

Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume
	<u>2.38</u>	<u>29.6</u>	<u>27.22</u>		<u>4.35</u>	<u>13.0</u>		

Well Diameter (in)				Gallons/Foot				Field Equipment: <u>Solinst</u>			
				0.75	2	4	6	Purge Method:			
0.75	2	4	6	0.02	0.16	0.65	1.47	Well Condition:			

Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (µS)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
<u>9:15</u>		<u>5</u>	<u>1</u>	<u>2.9</u>	<u>7.2</u>	<u>63.6</u>	<u>16</u>	<u>3.8</u>	-	-	<u>clear</u>
<u>9:20</u>		<u>10</u>	<u>1</u>	<u>3.6</u>	<u>7.3</u>	<u>63.5</u>	<u>36</u>	<u>3.7</u>	-	-	<u>clear</u>
<u>9:25</u>		<u>15</u>	<u>1</u>	<u>15.2</u>	<u>7.3</u>	<u>63.5</u>	<u>2</u>	<u>3.7</u>	-	-	<u>clear</u>

Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification
<u>9:12</u>	<u>9:25</u>	<u>1.0</u>	<u>15</u>	<u>3</u>			<u>10:45</u>	<u>MW-2D</u>

Notes:

ft-bmp = feet below measuring point



Project Name: <i>Missouri Valley Rock</i>					Date:				
Project No.: <i>EM 2509</i>					Prepared By:				
Well Identification: <i>MW-3</i>					Weather:			Screen:	
Measurement Point Description: <i>TOC</i>					Pump Intake:				

Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume
	<i>3.5</i>	<i>14.5</i>	<i>11</i>	<i>-</i>	<i>1.75</i>	<i>5.28</i>		

Well Diameter (in)		Gallons/Foot				Field Equipment: <i>Solinst</i>			
		0.75	<i>2</i>	4	6	Purge Method: <i>Vail Pump</i>			
0.75	<i>2</i>	4	6	0.02	<i>0.16</i>	0.65	1.47	Well Condition: <i>Good</i>	

Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity ( <i>ms</i> )	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
<i>10:00</i>		<i>2</i>	<i>1</i>	<i>3.5</i>	<i>7.1</i>	<i>62.9</i>	<i>450</i>				
<i>10:02</i>		<i>4</i>	<i>1</i>	<i>6.7</i>	<i>7.3</i>	<i>63.7</i>	<i>210</i>				
<i>10:05</i>		<i>6</i>	<i>1</i>	<i>8.1</i>	<i>7.3</i>	<i>63.7</i>	<i>55</i>				
<i>10:07</i>		<i>8</i>	<i>1</i>				<i>40</i>				

Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification
<i>9:57</i>	<i>10:07</i>	<i>1.0</i>	<i>8</i>	<i>4</i>			<i>11:45</i>	<i>MW-3</i>

Notes:

ft-bmp = feet below measuring point



<b>Project Name:</b> Mission Valley Rock.	<b>Date:</b> 5/4/05
<b>Project No.:</b> GM 2009	<b>Prepared By:</b> Seefeld
<b>Well Identification:</b> <del>MW-45</del> MW-45	<b>Weather:</b> Cloudy
<b>Measurement Point Description:</b>	<b>Screen:</b>
<b>Pump Intake:</b>	

Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume
	3.73	8.71	4.98	0.7	0.7	2.3		

<b>Well Diameter (in)</b>	<b>Gallons/Foot</b>				<b>Field Equipment:</b> Solinst			
	0.75	2	4	6	<b>Purge Method:</b>			
0.75	2	4	6	0.02	0.16	0.65	1.47	<b>Well Condition:</b>

Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (mS)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
10:19		1	—	4.5	7.3	63.8	27	3.8	—	—	Clear
10:20		2	—	5.7	7.3	63.7	6	3.8	—	—	Clear
10:21		3	—	8	—	—	—	—	—	—	

Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification
10:19							11:10	MW-45

**Notes:**

ft-bmp = feet below measuring point



<b>Project Name:</b> <u>EM 2509 Mission Valley Rock</u>		<b>Date:</b> <u>5/4/05</u>	
<b>Project No.:</b> <u>EM 2509</u>		<b>Prepared By:</b> <u>Saeed</u>	
<b>Well Identification:</b> <u>MW-4D</u>		<b>Weather:</b>	<b>Screen:</b>
<b>Measurement Point Description:</b> <u>TOC</u>		<b>Pump Intake:</b>	

Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume
-	3.93	23.15	19.22	-	3.07	9.2		

<b>Well Diameter (in)</b>				<b>Gallons/Foot</b>				<b>Field Equipment:</b> Solinst			
				0.75	2	4	6	<b>Purge Method:</b>			
0.75	2	4	6	0.02	0.16	0.65	1.47	<b>Well Condition:</b>			

Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (mS)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
8:10		3	2.0	5.27	7.4	63.7	14	3.66	-	-	clear
8:13		6	1.0	5.29	7.4	64.1	10	3.67	-	-	clear
8:16		9	1.0	5.31	7.2	64.1	6	3.67	-	-	clear

Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification
8:07	8:16	1.0	9.0	3.0			8:30	MW-4D

**Notes:**

ft-bmp = feet below measuring point



<b>Project Name:</b> MUR.	<b>Date:</b> 5/4/65
<b>Project No.:</b> CM 2509.	<b>Prepared By:</b> Saeed
<b>Well Identification:</b> MW-55	<b>Weather:</b> cloudy <span style="float:right"><b>Screen:</b></span>
<b>Measurement Point Description:</b>	<b>Pump Intake:</b>

Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume
	2.5	8.0	5.5	—	0.88	2.64		

<b>Well Diameter (in)</b>	<b>Gallons/Foot</b>				<b>Field Equipment:</b> Solinst			
	0.75	2	4	6	<b>Purge Method:</b>			
0.75	2	4	6	0.02	0.16	0.65	1.47	<b>Well Condition:</b>

Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (mS)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
10:35		3		3	7.3	63.9	—	—	—	—	
		6		— DRY —							
		9									

Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification
10:33	10:35						12:30	MW-55

**Notes:** well went dry.

ft-bmp = feet below measuring point



Groundwater Sampling Data Sheet

**Project Name:** MUR  
**Date:** 5/3/05  
**Project No.:** MW-5D  
**Prepared By:**  
**Well Identification:** MW-5D  
**Weather:**  
**Measurement Point Description:**  
**Pump Intake:**

Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume
	2.75	22.65	19.9	-	3.18	9.55	-

Well Diameter (in)	Gallons/Foot			Field Equipment:	
	0.75	2	4	6	Solinst
6	0.02	0.16	0.65	1.47	Purge Method:
					Well Condition:

Time	Casing's screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (µm/s)	Dissolved Oxygen (mg/L)	ORP (mV)	Obs
10:45		4		7.5	7.1	63.7	64				
10:48		8		12.3	6.9	63.5	5				
				16.5							

well water dry  
 Purge start  
 Purge end  
 Note:

Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification
							12:15	MW-5D





# Groundwater Sampling Data Sheet

<b>Project Name:</b> MUR				<b>Date:</b>							
<b>Project No.:</b>				<b>Prepared By:</b>							
<b>Well Identification:</b> MW-65				<b>Weather:</b>							
<b>Measurement Point Description:</b>				<b>Pump Intake:</b>							
<b>Depth to LNAPL (ft-bmp)</b>	<b>Depth to Static Water Level (ft-bmp)</b>	<b>Well Total Depth (ft-bmp)</b>	<b>Water Column Height (ft)</b>	<b>LNAPL Thickness (ft-bmp)</b>	<b>One (1) Casing Volume (gallons)</b>	<b>Three (3) Casing Volumes (gallons)</b>	<b>Above Screen Volume</b>	<b>Screen Volume</b>			
	1.96	14.75	12.79	-	2.04	6.13					
<b>Well Diameter (in)</b>			<b>Gallons/Foot</b>			<b>Field Equipment:</b> Solinst					
			0.75	2	4	<b>Purge Method:</b>					
			0.02	0.16	0.65	<b>Well Condition:</b>					
0.75	2	4	6	0.02	0.16	0.65	1.47				
<b>Time</b>	<b>Casing / Screen</b>	<b>Volume Purged (gallons)</b>	<b>Flow Rate (gpm)</b>	<b>Water Level (ft-bmp)</b>	<b>Ph</b>	<b>Temperature (°C)</b>	<b>Turbidity (NTU)</b>	<b>Conductivity</b>	<b>Dissolved Oxygen (mg/L)</b>	<b>ORP (mV)</b>	<b>Observations</b>
12:00		3.0		4.5	7.1	63.5	64				Clear
12:03		6.0		8.5	6.9	63.7	-				Dry
				DRY							
<b>Purge Start Time</b>	<b>Purge End Time</b>	<b>Average Flow (gpm)</b>	<b>Total Gallons Purged</b>	<b>Total Casing Volumes Purged</b>	<b>80% Recovery Water Level Depth</b>	<b>Water Level at Sampling Time (ft-bmp)</b>	<b>Sample Collection Time</b>	<b>Sample Identification</b>			
11:58	12:03		8.5				1:45	MW-65			
<b>Notes:</b>											



<b>Project Name:</b>					<b>Date:</b>						
<b>Project No.:</b>					<b>Prepared By:</b>						
<b>Well Identification:</b> MW-6D					<b>Weather:</b>			<b>Screen:</b>			
<b>Measurement Point Description:</b>					<b>Pump Intake:</b>						
Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume			
	2.80	28.90	26.1	-	4.17	12.52					
<b>Well Diameter (in)</b>				<b>Gallons/Foot</b>		<b>Field Equipment:</b> Solinst					
				0.75	2	4	6	<b>Purge Method:</b>			
0.75	2	4	6	0.02	0.16	0.65	1.47	<b>Well Condition:</b>			
Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (µS)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
12:25		4	4/	9.8	7.1	63.5	3	3.6	-	-	clear
12:29		8	8	18	7.4	63.1	64	3.8	-	-	cloudy
12:31		13	1/3	24	7.1	63.4	3	3.8	-	-	clear
Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification			
12:22	12:31		13.0	-			1:45	MW-6D			
<b>Notes:</b>											

ft-bmp = feet below measuring point



# Groundwater Sampling Data Sheet

Project Name: <b>MVR</b>				Date: <b>5/4/05</b>							
Project No.: <b>EM 250F</b>				Prepared By: <b>Saeed</b>							
Well Identification: <b>MW-75</b>				Weather: <b>-</b>		Screen: <b>-</b>					
Measurement Point Description:				Pump Intake: <b>-</b>							
Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume			
	1.44	8.35	6.91	-	1.10	3.3	-	-			
Well Diameter (in)			Gallons/Foot		Field Equipment: <b>Solinst</b>						
0.75	2	4	6	0.75	2	4	6	Purge Method: <b>Vail Pump</b>			
0.75	2	4	6	0.02	0.16	0.65	1.47	Well Condition: <b>-</b>			
Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (µS)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
12:51		1.5		5.6	7.1	63.5	8	3.6	-	-	clear
		2									
		4									
Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification			
12:50			2.5				2:15	MW-75			
Notes: well went <u>dry</u>											

... feet below measuring point



<b>Project Name:</b>				<b>Date:</b>			
<b>Project No.:</b>				<b>Prepared By:</b>			
<b>Well Identification:</b> MW-7BD				<b>Weather:</b>		<b>Screen:</b>	
<b>Measurement Point Description:</b>				<b>Pump Intake:</b>			

Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume
	1.45	22.55						

<b>Well Diameter (in)</b>				<b>Gallons/Foot</b>				<b>Field Equipment:</b> Solinst			
				0.75	2	4	6	<b>Purge Method:</b>			
0.75	2	4	6	0.02	0.16	0.65	1.47	<b>Well Condition:</b>			

Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (_____)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations

Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification

**Notes:** Could not fish the dedicated tube from the poor well. Tube is ≈ 18" inside the casing.

ft-bmp = feet below measuring point



<b>Project Name:</b> MVR	<b>Date:</b> 5/4/05
<b>Project No.:</b> EM 2501	<b>Prepared By:</b> Saeed
<b>Well Identification:</b> MW-8	<b>Weather:</b> -
<b>Measurement Point Description:</b> TOE	<b>Screen:</b>
<b>Pump Intake:</b>	

Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft-bmp)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)	Above Screen Volume	Screen Volume
	1.25	15.05	13.8	-	2.2	6.6		

<b>Well Diameter (in)</b>	<b>Gallons/Foot</b>			<b>Field Equipment:</b> Solinst				
	0.75	2	4	6	<b>Purge Method:</b>			
0.75	2	4	6	0.02	0.16	0.65	1.47	<b>Well Condition:</b>

Time	Casing / Screen	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (mS)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
1:03		3		6	7.2	63.6	38				
1:06		4		DRY							

Purge Start Time	Purge End Time	Average Flow (gpm)	Total Gallons Purged	Total Casing Volumes Purged	80% Recovery Water Level Depth	Water Level at Sampling Time (ft-bmp)	Sample Collection Time	Sample Identification
1:01	1:05		4				1:50	MW-8

Notes:

ft-bmp = feet below measuring point

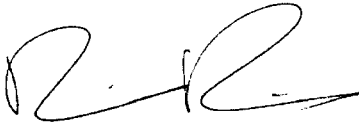
**APPENDIX B**  
**LABORATORY REPORT**

12 May 2005

Greg Buchanan  
Tait Environmental  
701 N. Parkcenter Drive  
Santa Ana, CA 92705  
RE: Mission Valley Rock

Enclosed are the results of analyses for samples received by the laboratory on 05/05/05 14:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Dorning", with a stylized flourish at the end.

Dennis Dorning For John Shepler  
Laboratory Director

Tait Environmental  
701 N. Parkcenter Drive  
Santa Ana CA, 92705

Project: Mission Valley Rock  
Project Number: EM2509  
Project Manager: Greg Buchanan

**Reported:**  
05/12/05 10:48

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-4D	T500546-01	Water	05/04/05 08:30	05/05/05 14:20
MW-4S	T500546-02	Water	05/04/05 09:00	05/05/05 14:20
MW-6S	T500546-03	Water	05/04/05 09:30	05/05/05 14:20
MW-2M	T500546-04	Water	05/04/05 10:00	05/05/05 14:20
MW-2D	T500546-05	Water	05/04/05 10:30	05/05/05 14:20
MW-6D	T500546-06	Water	05/04/05 11:20	05/05/05 14:20
MW-2S	T500546-07	Water	05/04/05 11:30	05/05/05 14:20
MW-3	T500546-08	Water	05/04/05 11:45	05/05/05 14:20
MW-5S	T500546-09	Water	05/04/05 12:30	05/05/05 14:20
MW-5D	T500546-10	Water	05/04/05 12:15	05/05/05 14:20
MW-1	T500546-11	Water	05/04/05 12:45	05/05/05 14:20
MW-8	T500546-12	Water	05/04/05 13:15	05/05/05 14:20
MW-7S	T500546-13	Water	05/04/05 14:15	05/05/05 14:20

SunStar Laboratories, Inc.



Dennis Dorning For John Shepler, Laboratory Director

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Tait Environmental  
 701 N. Parkcenter Drive  
 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

**Reported:**  
 05/12/05 10:48

**MW-1**  
**T500546-11 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015**

Diesel Range Hydrocarbons	ND	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/05/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	"
<b>Ethylbenzene</b>	<b>8.5</b>	0.50	"	"	"	"	"	"	"
m,p-Xylene	ND	1.0	"	"	"	"	"	"	"
<b>o-Xylene</b>	<b>1.2</b>	0.50	"	"	"	"	"	"	"
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	"
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	"
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	"
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	"
<b>C6-C12 (GRO)</b>	<b>1200</b>	50	"	"	"	"	"	"	"

Surrogate: Toluene-d8	99.8 %	87.6-115	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	108 %	80-112	"	"	"	"	"	"
Surrogate: Dibromofluoromethane	103 %	78.6-122	"	"	"	"	"	"

SunStar Laboratories, Inc.



Dennis Doring For John Shepler, Laboratory Director

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Tait Environmental  
701 N. Parkcenter Drive  
Santa Ana CA, 92705

Project: Mission Valley Rock  
Project Number: EM2509  
Project Manager: Greg Buchanan

Reported:  
05/12/05 10:48

**MW-2S**  
**T500546-07 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015**

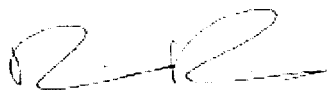
<b>Diesel Range Hydrocarbons</b>	<b>8.2</b>	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/05/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	"
Ethylbenzene	ND	0.50	"	"	"	"	"	"	"
m,p-Xylene	ND	1.0	"	"	"	"	"	"	"
o-Xylene	ND	0.50	"	"	"	"	"	"	"
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	"
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	"
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	"
<b>Methyl tert-butyl ether</b>	<b>44</b>	1.0	"	"	"	"	"	"	"
<b>C6-C12 (GRO)</b>	<b>190</b>	50	"	"	"	"	"	"	"

Surrogate: Toluene-d8	102 %	87.6-115	"	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	111 %	80-112	"	"	"	"	"	"	"
Surrogate: Dibromofluoromethane	106 %	78.6-122	"	"	"	"	"	"	"

SunStar Laboratories, Inc.



Dennis Dorning For John Shepler, Laboratory Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tait Environmental  
701 N. Parkcenter Drive  
Santa Ana CA, 92705

Project: Mission Valley Rock  
Project Number: EM2509  
Project Manager: Greg Buchanan

Reported:  
05/12/05 10:48

**MW-2M**  
**T500546-04 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015**

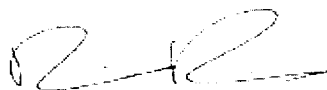
Diesel Range Hydrocarbons	ND	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/05/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	"
<b>Ethylbenzene</b>	<b>16</b>	0.50	"	"	"	"	"	"	"
<b>m,p-Xylene</b>	<b>8.8</b>	1.0	"	"	"	"	"	"	"
<b>o-Xylene</b>	<b>1.8</b>	0.50	"	"	"	"	"	"	"
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	"
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	"
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	"
<b>Methyl tert-butyl ether</b>	<b>32</b>	1.0	"	"	"	"	"	"	"
<b>C6-C12 (GRO)</b>	<b>610</b>	50	"	"	"	"	"	"	"

Surrogate: Toluene-d8	102 %	87.6-115	"	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	110 %	80-112	"	"	"	"	"	"	"
Surrogate: Dibromofluoromethane	103 %	78.6-122	"	"	"	"	"	"	"

SunStar Laboratories, Inc.



Dennis Dorning For John Shepler, Laboratory Director

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Tait Environmental  
 701 N. Parkcenter Drive  
 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

**Reported:**  
 05/12/05 10:48

**MW-2D**  
**T500546-05 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015**

Diesel Range Hydrocarbons	ND	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/05/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	"
<b>Ethylbenzene</b>	<b>4.6</b>	0.50	"	"	"	"	"	"	"
<b>m,p-Xylene</b>	<b>1.1</b>	1.0	"	"	"	"	"	"	"
<b>o-Xylene</b>	<b>0.56</b>	0.50	"	"	"	"	"	"	"
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	"
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	"
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	"
<b>Methyl tert-butyl ether</b>	<b>72</b>	1.0	"	"	"	"	"	"	"
<b>C6-C12 (GRO)</b>	<b>250</b>	50	"	"	"	"	"	"	"

Surrogate: Toluene-d8		102 %		87.6-115	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene		109 %		80-112	"	"	"	"	"
Surrogate: Dibromofluoromethane		99.0 %		78.6-122	"	"	"	"	"

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 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

Reported:  
 05/12/05 10:48

**MW-3**  
**T500546-08 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Extractable Petroleum Hydrocarbons by 8015**

Diesel Range Hydrocarbons	ND	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/05/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>190</b>	1.0	"	"	"	"	"	"	
C6-C12 (GRO)	ND	50	"	"	"	"	"	"	

Surrogate: Toluene-d8 101 % 87.6-115 " " " "

Surrogate: 4-Bromofluorobenzene 104 % 80-112 " " " "

Surrogate: Dibromofluoromethane 100 % 78.6-122 " " " "

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 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

Reported:  
 05/12/05 10:48

**MW-4S**  
**T500546-02 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Extractable Petroleum Hydrocarbons by 8015**

Diesel Range Hydrocarbons	ND	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/05/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
C6-C12 (GRO)	ND	50	"	"	"	"	"	"	

Surrogate: Toluene-d8		102 %	87.6-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	80-112		"	"	"	"	
Surrogate: Dibromofluoromethane		100 %	78.6-122		"	"	"	"	

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 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

Reported:  
 05/12/05 10:48

**MW-4D**  
**T500546-01 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Extractable Petroleum Hydrocarbons by 8015**

Diesel Range Hydrocarbons	ND	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/05/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
C6-C12 (GRO)	ND	50	"	"	"	"	"	"	

Surrogate: Toluene-d8		102 %	87.6-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	80-112		"	"	"	"	
Surrogate: Dibromofluoromethane		99.0 %	78.6-122		"	"	"	"	

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 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

Reported:  
 05/12/05 10:48

**MW-5S**  
**T500546-09 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015**

Diesel Range Hydrocarbons	ND	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/05/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
C6-C12 (GRO)	ND	50	"	"	"	"	"	"	

Surrogate: Toluene-d8	100 %	87.6-115	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	80-112	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane	103 %	78.6-122	"	"	"	"	"	"	

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 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

**Reported:**  
 05/12/05 10:48

**MW-5D**  
**T500546-10 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015**


Diesel Range Hydrocarbons	ND	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/05/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	"
Ethylbenzene	ND	0.50	"	"	"	"	"	"	"
m,p-Xylene	ND	1.0	"	"	"	"	"	"	"
o-Xylene	ND	0.50	"	"	"	"	"	"	"
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	"
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	"
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	"
<b>Methyl tert-butyl ether</b>	<b>10</b>	1.0	"	"	"	"	"	"	"
C6-C12 (GRO)	ND	50	"	"	"	"	"	"	"

Surrogate: Toluene-d8		102 %		87.6-115	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene		106 %		80-112	"	"	"	"	"
Surrogate: Dibromofluoromethane		104 %		78.6-122	"	"	"	"	"

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 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

**Reported:**  
 05/12/05 10:48

**MW-6S**  
**T500546-03 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015**

Diesel Range Hydrocarbons	ND	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/06/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	"
<b>Ethylbenzene</b>	<b>3.0</b>	0.50	"	"	"	"	"	"	"
m,p-Xylene	ND	1.0	"	"	"	"	"	"	"
o-Xylene	ND	0.50	"	"	"	"	"	"	"
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	"
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	"
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	"
<b>Methyl tert-butyl ether</b>	<b>160</b>	1.0	"	"	"	"	"	"	"
<b>C6-C12 (GRO)</b>	<b>750</b>	50	"	"	"	"	"	"	"

Surrogate: Toluene-d8		99.2 %		87.6-115	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene		91.5 %		80-112	"	"	"	"	"
Surrogate: Dibromofluoromethane		113 %		78.6-122	"	"	"	"	"

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Tait Environmental  
 701 N. Parkcenter Drive  
 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

Reported:  
 05/12/05 10:48

**MW-6D**  
**T500546-06 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Extractable Petroleum Hydrocarbons by 8015**

Diesel Range Hydrocarbons	ND	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

<b>Benzene</b>	<b>2.0</b>	0.50	ug/l	1	5050521	05/05/05	05/05/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	1.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>190</b>	1.0	"	"	"	"	"	"	
<b>C6-C12 (GRO)</b>	<b>360</b>	50	"	"	"	"	"	"	

Surrogate: Toluene-d8	102 %	87.6-115	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	80-112	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane	101 %	78.6-122	"	"	"	"	"	"	

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 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

Reported:  
 05/12/05 10:48

**MW-7S**  
**T500546-13 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015**

<b>Diesel Range Hydrocarbons</b>	<b>0.52</b>	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/06/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>31</b>	0.50	"	"	"	"	"	"	
<b>m,p-Xylene</b>	<b>16</b>	1.0	"	"	"	"	"	"	
<b>o-Xylene</b>	<b>2.4</b>	0.50	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
<b>C6-C12 (GRO)</b>	<b>1600</b>	50	"	"	"	"	"	"	

Surrogate: Toluene-d8	100 %	87.6-115	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	80-112	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane	102 %	78.6-122	"	"	"	"	"	"	

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 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

Reported:  
 05/12/05 10:48

**MW-8**  
**T500546-12 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Extractable Petroleum Hydrocarbons by 8015**

Diesel Range Hydrocarbons	ND	0.050	mg/l	1	5050520	05/05/05	05/07/05	EPA 8015m	
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**Volatile Organic Compounds by EPA Method 8260B**

Benzene	ND	0.50	ug/l	1	5050521	05/05/05	05/06/05	EPA 8260B	
Toluene	ND	0.50	"	"	"	"	"	"	"
Ethylbenzene	ND	0.50	"	"	"	"	"	"	"
m,p-Xylene	ND	1.0	"	"	"	"	"	"	"
o-Xylene	ND	0.50	"	"	"	"	"	"	"
Tert-amyl methyl ether	ND	2.0	"	"	"	"	"	"	"
Tert-butyl alcohol	ND	10	"	"	"	"	"	"	"
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	"
Methyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	"
C6-C12 (GRO)	ND	50	"	"	"	"	"	"	"

Surrogate: Toluene-d8		102 %	87.6-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	80-112		"	"	"	"	
Surrogate: Dibromofluoromethane		104 %	78.6-122		"	"	"	"	

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Tait Environmental  
701 N. Parkcenter Drive  
Santa Ana CA, 92705

Project: Mission Valley Rock  
Project Number: EM2509  
Project Manager: Greg Buchanan

Reported:  
05/12/05 10:48

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5050520 - EPA 3510C GC</b>										
<b>Blank (5050520-BLK1)</b> Prepared: 05/05/05 Analyzed: 05/07/05										
Diesel Range Hydrocarbons	ND	0.050	mg/l							
<b>LCS (5050520-BS1)</b> Prepared: 05/05/05 Analyzed: 05/07/05										
Diesel Range Hydrocarbons	22.7	0.050	mg/l	20.0		114	75-125			
<b>Matrix Spike (5050520-MS1)</b> Source: T500546-01 Prepared: 05/05/05 Analyzed: 05/07/05										
Diesel Range Hydrocarbons	21.9	0.050	mg/l	20.0	ND	110	75-125			
<b>Matrix Spike Dup (5050520-MSD1)</b> Source: T500546-01 Prepared: 05/05/05 Analyzed: 05/07/05										
Diesel Range Hydrocarbons	23.5	0.050	mg/l	20.0	ND	118	75-125	7.05	20	

SunStar Laboratories, Inc.



Dennis Dorning For John Shepler, Laboratory Director

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Tait Environmental  
701 N. Parkcenter Drive  
Santa Ana CA, 92705

Project: Mission Valley Rock  
Project Number: EM2509  
Project Manager: Greg Buchanan

Reported:  
05/12/05 10:48

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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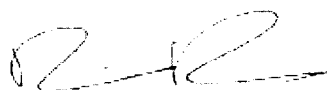
**Batch 5050521 - EPA 5030 GCMS**

<b>Blank (5050521-BLK1)</b>										
Prepared & Analyzed: 05/05/05										
Benzene	ND	0.50	ug/l							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
m,p-Xylene	ND	1.0	"							
o-Xylene	ND	0.50	"							
Tert-amyl methyl ether	ND	2.0	"							
Tert-butyl alcohol	ND	10	"							
Di-isopropyl ether	ND	2.0	"							
Ethyl tert-butyl ether	ND	2.0	"							
Methyl tert-butyl ether	ND	1.0	"							
C6-C12 (GRO)	ND	50	"							
Surrogate: Toluene-d8	40.3		"	40.0		101	87.6-115			
Surrogate: 4-Bromofluorobenzene	44.3		"	40.0		111	80-112			
Surrogate: Dibromofluoromethane	40.7		"	40.0		102	78.6-122			

<b>LCS (5050521-BS1)</b>										
Prepared: 05/05/05 Analyzed: 05/06/05										
Benzene	106	0.50	ug/l	100		106	75-125			
Toluene	111	0.50	"	100		111	75-125			
Surrogate: Toluene-d8	40.7		"	40.0		102	87.6-115			
Surrogate: 4-Bromofluorobenzene	44.4		"	40.0		111	80-112			
Surrogate: Dibromofluoromethane	41.0		"	40.0		102	78.6-122			

<b>Matrix Spike (5050521-MS1)</b>										
Source: T500545-05 Prepared: 05/05/05 Analyzed: 05/06/05										
Benzene	112	0.50	ug/l	100	ND	112	75-125			
Toluene	118	0.50	"	100	ND	118	75-125			
Surrogate: Toluene-d8	40.4		"	40.0		101	87.6-115			
Surrogate: 4-Bromofluorobenzene	38.6		"	40.0		96.5	80-112			
Surrogate: Dibromofluoromethane	40.8		"	40.0		102	78.6-122			

SunStar Laboratories, Inc.



Dennis Dorning For John Shepler, Laboratory Director

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Tait Environmental  
 701 N. Parkcenter Drive  
 Santa Ana CA, 92705

Project: Mission Valley Rock  
 Project Number: EM2509  
 Project Manager: Greg Buchanan

Reported:  
 05/12/05 10:48

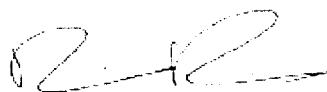
**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5050521 - EPA 5030 GCMS**

<b>Matrix Spike Dup (5050521-MSD1)</b>	<b>Source: T500545-05</b>		<b>Prepared: 05/05/05</b>		<b>Analyzed: 05/06/05</b>				
Benzene	116	0.50	ug/l	100	ND	116	75-125	3.51	20
Toluene	121	0.50	"	100	ND	121	75-125	2.51	20
<i>Surrogate: Toluene-d8</i>	<i>41.5</i>		<i>"</i>	<i>40.0</i>		<i>104</i>	<i>87.6-115</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>44.1</i>		<i>"</i>	<i>40.0</i>		<i>110</i>	<i>80-112</i>		
<i>Surrogate: Dibromofluoromethane</i>	<i>41.8</i>		<i>"</i>	<i>40.0</i>		<i>104</i>	<i>78.6-122</i>		

SunStar Laboratories, Inc.



Dennis Dorning For John Shepler, Laboratory Director

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Tait Environmental  
701 N. Parkcenter Drive  
Santa Ana CA, 92705

Project: Mission Valley Rock  
Project Number: EM2509  
Project Manager: Greg Buchanan

**Reported:**  
05/12/05 10:48

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

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SunStar Laboratories, Inc.



Dennis Dorning For John Shepler, Laboratory Director

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SunStar Laboratories, Inc.  
 3002 Dow Ave., Ste. 212  
 Tustin, CA 92780  
 714-505-4010

### Chain of Custody Record

T500546

Client: TATT ENV.  
 Address: 701 N. PARK CH-DR.  
 Phone: 714-560-8200 Fax: \_\_\_\_\_  
 Project Manager: Greg Buchanan

Date: 5/4/05 Page: 1 Of \_\_\_\_\_  
 Project Name: MISSION VALLEY ROCK  
 Collector: SAEED Client Project #: EM 2507  
 Batch #: \_\_\_\_\_ EDF #: \_\_\_\_\_

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	Laboratory ID #	Comments/Preservative	Total # of containers
MW-4D	5/4/05	8:30	H <sub>2</sub> O	VOCs/MSL			✓			✓	✓			5	01	
MW-4S	"	8:30	"	"			✓			✓	✓			5	02	
MW-6S	"	9:30	"	"			✓			✓	✓			5	03	
MW-2M	"	10:00	"	"			✓			✓	✓			5	04	
MW-2D	"	10:30	"	"			✓			✓	✓			4	05	
MW-6D	"	11:00	"	"			✓			✓	✓			4	06	
MW-2S	"	11:30	"	"			✓			✓	✓			4	07	
<del>MW-3S</del>																
MW-3		11:45	"	"			✓			✓	✓			4	08	
MW-5S		12:30	"	"			✓			✓	✓			4	09	
MW-5D		12:15	"	"			✓			✓	✓			4	10	
MW-1		12:45	"	"			✓			✓	✓			4	11	
MW-8		1:15	"	"			✓			✓	✓			4	12	
MW-7S		2:15	"	"			✓			✓	✓			4	13	

Relinquished by: (signature) <u>Handy</u>	Date / Time <u>5/4/05</u>	Received by: (signature) <u>Saeed</u>	Date / Time <u>5/4/05 4:20</u>	Total # of containers	52	Notes
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time	Chain of Custody seals Y/N	<input checked="" type="checkbox"/>	
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time	Seals intact? Y/N	<input checked="" type="checkbox"/>	
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time	Received good condition	<input checked="" type="checkbox"/>	92
				Turn around time:	<u>Normal</u>	

Sample disposal Instructions: Disposal @ \$2.00 each \_\_\_\_\_ Return to client \_\_\_\_\_ Pickup \_\_\_\_\_