

# MISSION VALLEY / ROCK COMPANY ASPHALT COMPANY READY MIX COMPANY

7999 ATHENOUR WAY SUNOL, CA 94586 (925) 862-2257

May 28, 2003

Mr. Scott Seery  
Alameda County Health Care Services  
1131 Harbor Bay Parkway Suite 250  
Alameda, CA 94502-6577

Alameda County  
JUN 0 2 2003  
Environmental Health

Dear Mr. Seery:

Submitted herewith is the first quarter Groundwater Monitoring Report prepared by Mission Valley Rock Company's consultant Tait Environmental Management Inc (T.E.M.). If you require further information or clarification please direct your correspondence to T.E.M with a copy to Mission Valley Rock Company at the above address.

Thank You,  
MISSION VALLEY ROCK CO.



W.M. Calvert

Alameda County  
JUN 03 2003  
Environmental Health

**Groundwater Monitoring Report  
First Quarter 2003**

Mission Valley Rock Company  
7999 Athenour Way  
Sunol, California

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

*May 15, 2003*

May 15, 2003

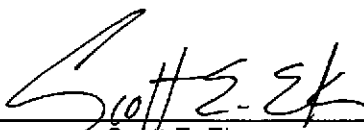
**Groundwater Monitoring Report  
First Quarter 2003**


Mission Valley Rock Company  
7999 Athenour Way  
Sunol, California

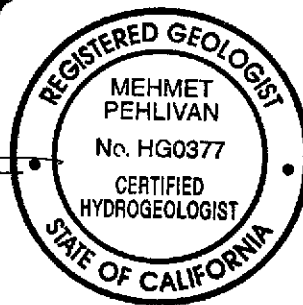
Prepared for:

Mr. Mort Calvert  
Mission Valley Rock Company  
7999 Athenour Way  
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Prepared by:

  
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Project No. EM-5009

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**Tait Environmental Management, Inc.**  
*Engineering • Environmental • Compliance*

**GROUNDWATER MONITORING REPORT - FIRST QUARTER 2003**  
**MISSION VALLEY ROCK COMPANY**  
**SUNOL, CALIFORNIA**

**1.0 INTRODUCTION**

Tait Environmental Management, Inc. (TEM) is pleased to submit this First Quarter 2003 Groundwater Monitoring Report for environmental services conducted at Mission Valley Rock Company (MVR) located at 7999 Athenour Way in Sunol, California (Site, see Figure 1). This report has been prepared by or under the direct supervision of a California Registered Geologist. The groundwater monitoring activities were conducted by TEM in accordance with the Alameda County Health Care Services Agency (ACHCSA) guidelines.

**2.0 WORK CONDUCTED DURING PRESENT QUARTER**

Work conducted by TEM during the First Quarter of 2003 included:

- Measured depth-to-groundwater in all monitoring wells (MW-1, MW-2, and MW-3) for evaluation of groundwater flow direction and presence of liquid phase hydrocarbons (LPH).
- Collected groundwater samples from each well for analysis of total petroleum hydrocarbons as diesel and gasoline (TPHd and TPHg, respectively); benzene, toluene, ethylbenzene, and total xylenes (BTEX); and methyl-tert-butyl ether (MTBE).
- Submitted to the client, *Site Assessment and Fourth Quarter Groundwater Monitoring Report*, March 26, 2003.

**3.0 GROUNDWATER MONITORING ACTIVITIES**

**3.1 Groundwater Elevation Monitoring**

On March 31, 2003 TEM measured and recorded static groundwater levels in three (3) groundwater monitoring wells using a product/water interface meter. The meter was decontaminated prior to use at each well using a mild detergent solution and two (2) de-ionized water rinses.

Water levels were measured from the top of the well casings representing the wellhead survey points. Liquid phase hydrocarbon (LPH) was not observed in monitoring wells MW-1, MW-2, or MW-3. LPH has historically been observed in monitoring well MW-2. A historical summary LPH thickness in well MW-2 is presented in Table 3 and plotted over time in Chart 6 (Appendix A).

Based on the data, the depth to groundwater measured at the Site averaged 2.40 feet below ground surface (bgs). The apparent groundwater flow direction is to the East with a groundwater gradient of approximately 0.02 ft/ft. Groundwater elevation data is summarized in Table 1 and shown on Figure 2. A historical summary of groundwater elevation data is summarized in Table 3 and shown in Chart 1 (Appendix A).



### **3.2 Groundwater Sampling**

Prior to collecting samples, groundwater was purged using a 12-volt DC submersible pump for each well. The polyethylene tubing for the pump discharge was discarded and replaced for each well. The pump was decontaminated prior to pumping each well, with a detergent bath followed by two (2) de-ionized water rinses.

A minimum of three (3) casing volumes of water were purged from each of the monitoring wells until measurements of temperature, pH, electrical conductivity, turbidity, dissolved oxygen, and oxygen reduction potential (ORP) stabilized. Groundwater was allowed to recharge to at least 80 percent of the static level prior to collecting the groundwater samples. Copies of the well sampling field data sheets are presented in Appendix B.

Groundwater samples were collected using a new disposable bailer for each well. The groundwater samples were placed in chilled cooler and hand delivered to the laboratory using chain-of-custody procedures.

The purged groundwater and decontamination water was stored onsite in one (1) Department of Transportation (DOT) approved 55-gallon steel drum pending the results of the laboratory analysis.

### **4.0 LABORATORY ANALYSES**

Groundwater samples collected from the groundwater monitoring wells were analyzed for:

- Volatile Organic Compounds (VOC's) using Method No. 8260B; and
- TPHd and TPHg using Method 8015B.

#### **4.1 Groundwater Analytical Results**

Laboratory analyses of the groundwater samples were conducted by Severn Trent Laboratories, Inc. (STL), a State-Certified laboratory located in Santa Ana, California. First Quarter 2003 groundwater sample analytical results are summarized in Table 2 and contoured in Figure 3 (MTBE). Laboratory reports are presented in Appendix C. A historical summary of groundwater sample analytical results is summarized in Table 4. Charts 2 through 5 present historic measurements of TPHd, TPHg, MTBE, and benzene, respectively (Appendix A).

### **5.0 SUMMARY**

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

- Groundwater samples were collected from groundwater monitoring wells MW-1, MW-2, and MW-3. The samples were submitted to STL under chain of custody protocol;
- Based on the data, the depth to groundwater measured at the Site averaged 2.40 feet bgs. The groundwater flow direction is to the East with a groundwater gradient of approximately 0.02 ft/ft;
- Liquid phase hydrocarbon was not observed in monitoring well MW-2 this quarter. Due to the lack of LPH, removal was not performed this quarter. Should LPH be present next quarter tabulation of LPH removal will resume;



- The depth to static groundwater at the Site has steadily increased since September 2002. Static groundwater this quarter was measured above the top of the screened interval in each well.
- The only TPHd concentrations (5.0 milligrams per Liter [mg/L]) was detected in the groundwater sample collected from well MW-2. The only TPHg concentrations (0.62 mg/L) was detected in the groundwater sample collected from wells MW-1;
- Benzene concentrations were only detected in well MW-1 at 1.2 micrograms per Liter (ug/L);
- Concentrations of MTBE were reported in the groundwater samples collected from well MW-2 and MW-3 at 14 ug/L and 92 ug/L, respectively;
- Interpretations of Charts 2 through 5 indicate that concentrations of TPHd have shown a steady decrease in all wells since September 2002 and are showing non-detect in wells MW-1 and MW-3. Concentrations of TPHg have decreased in all wells since December 2002 and are showing non-detect in wells MW-2 and MW-3. Concentrations of MTBE have remained non-detectable in well MW-1 since December 2000, whereas wells MW-2 and MW-3 are showing increases. Benzene has shown a slight increase in well MW-1. In general, the compounds of concern have remained within historically reported ranges or have steadily decreased.

#### **6.0 RECOMMENDATIONS**

Based on the data obtained, current regulatory guidelines, and the professional judgment of TEM, the following recommendations are presented for your consideration:

- Continue quarterly groundwater monitoring of all existing and future wells for dissolved hydrocarbons, BTEX/MTBE, and presence of LPH.

#### **7.0 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 laboratory reported all of the sample results to be within acceptable percent recoveries with no results exceeding the laboratory-established quality control parameters. The percent recoveries on the laboratory control sample (LCS) were well within the laboratories published QA/QC criteria. The results of the matrix spike (MS) and matrix spike duplicate (MSD) were also with acceptable limits. The samples arrived at the laboratory within the normal acceptable temperature range (4°C +/- 2°C) and were extracted and analyzed within acceptable holding times for each method and each sample. The QA/QC objectives for this project have been met.



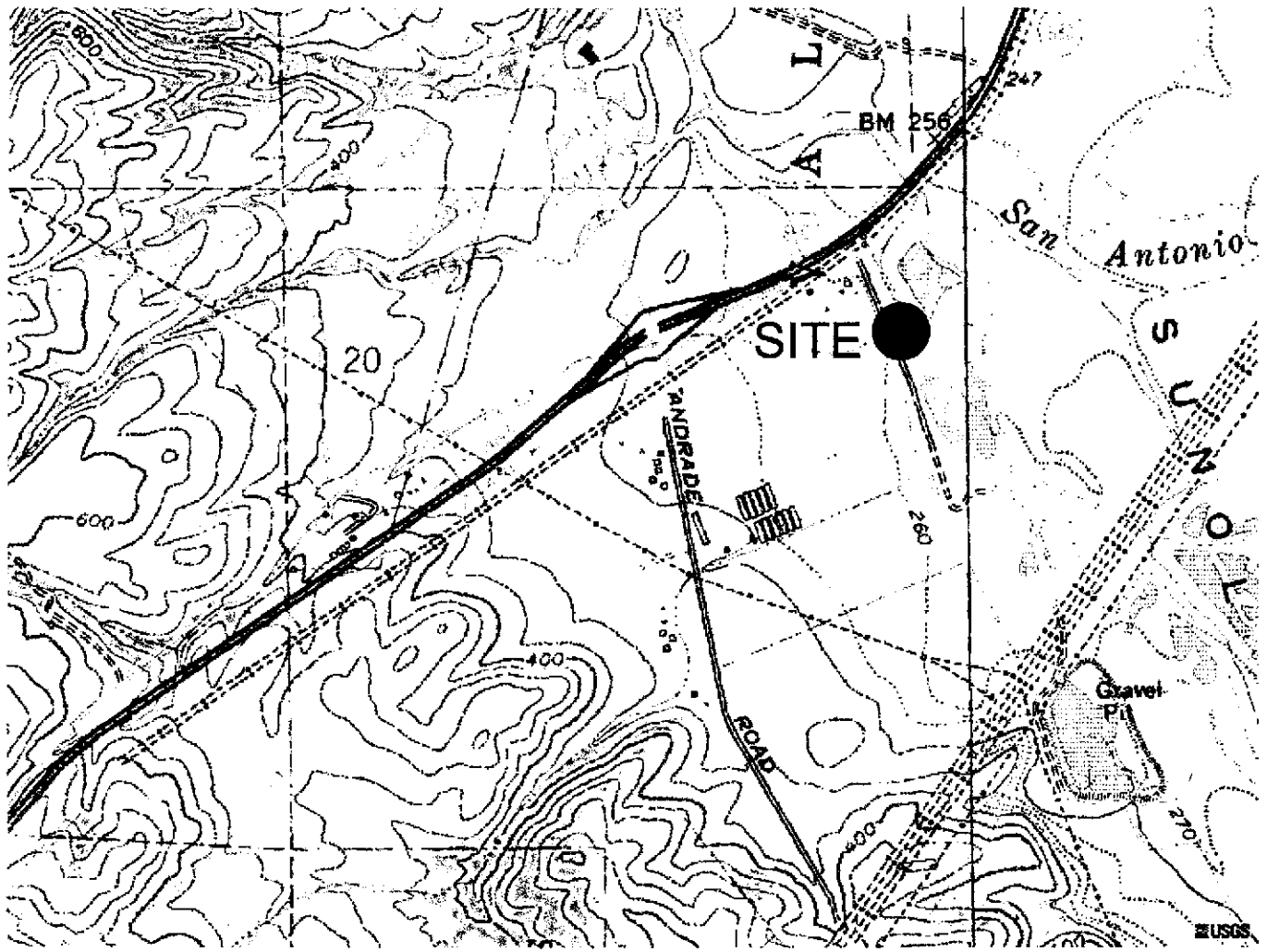
## **8.0 LIMITATIONS**

No investigation is considered thorough enough to exclude the presence of hazardous materials at a given site. Any opinions and/or recommendations presented apply to site conditions existing at the time of the performance of services.

TEM is unable to report on or accurately predict events that may impact the site following conduct of the described services, whether occurring naturally or caused by external forces. TEM assumes no responsibility for conditions that 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, Mission Valley Rock Company. 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.





NORTH



1" = 2000'

**NOTES:**

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



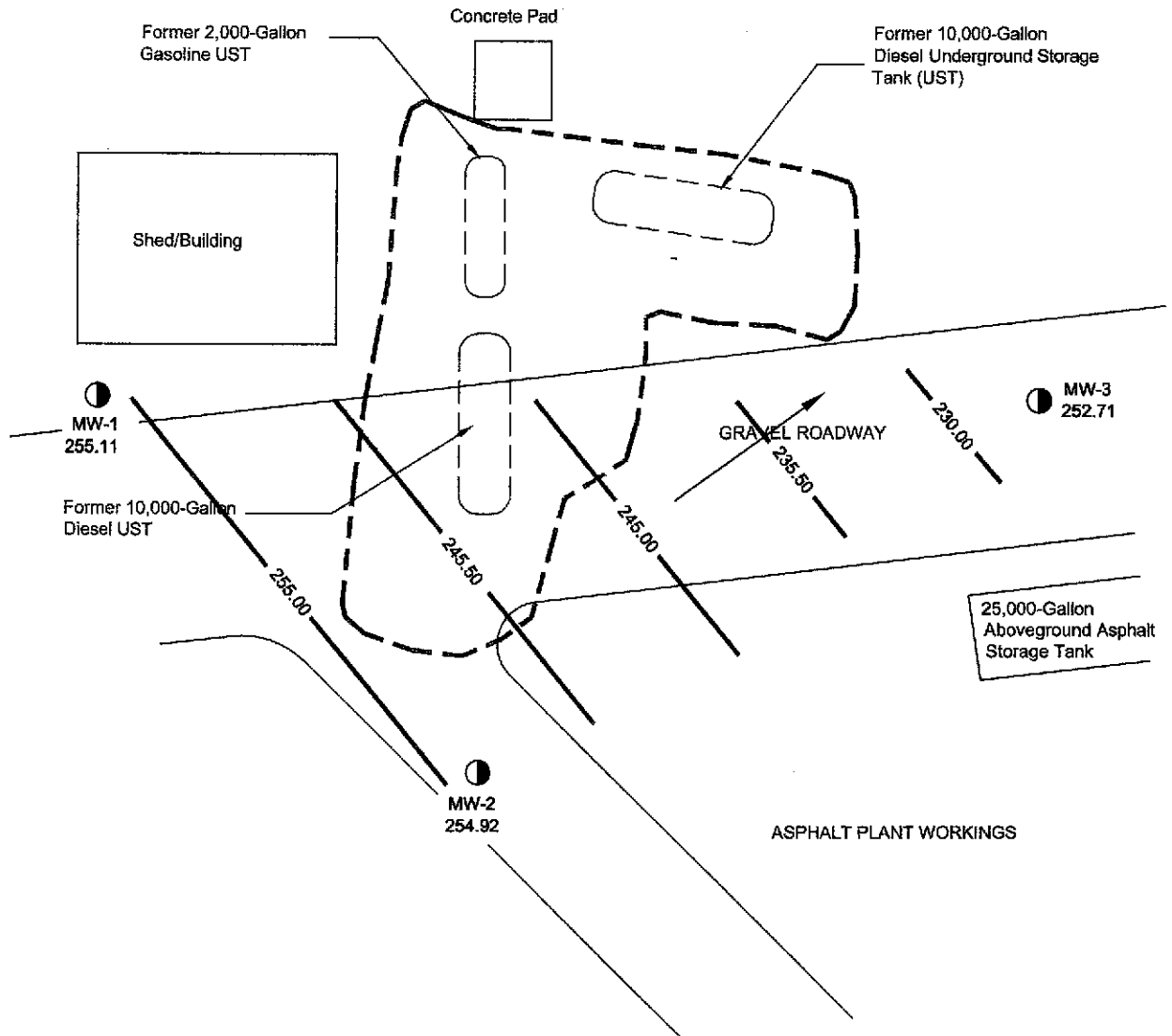
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ENVIRONMENTAL MANAGEMENT, INC.

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

PROJECT NO. EM-5009

FIGURE 1



**LEGEND**

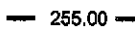
Base map referenced from Tank Protect Engineers

All locations and dimensions are approximate

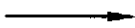


MW-1  
255.11

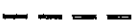
Groundwater monitoring well location with groundwater elevation in feet above mean sea level (ft-msl)



255.00 Groundwater elevation contour in feet-msl



General direction of groundwater flow



Approximate limits of former UST excavation



Scale (1" = 20')



North



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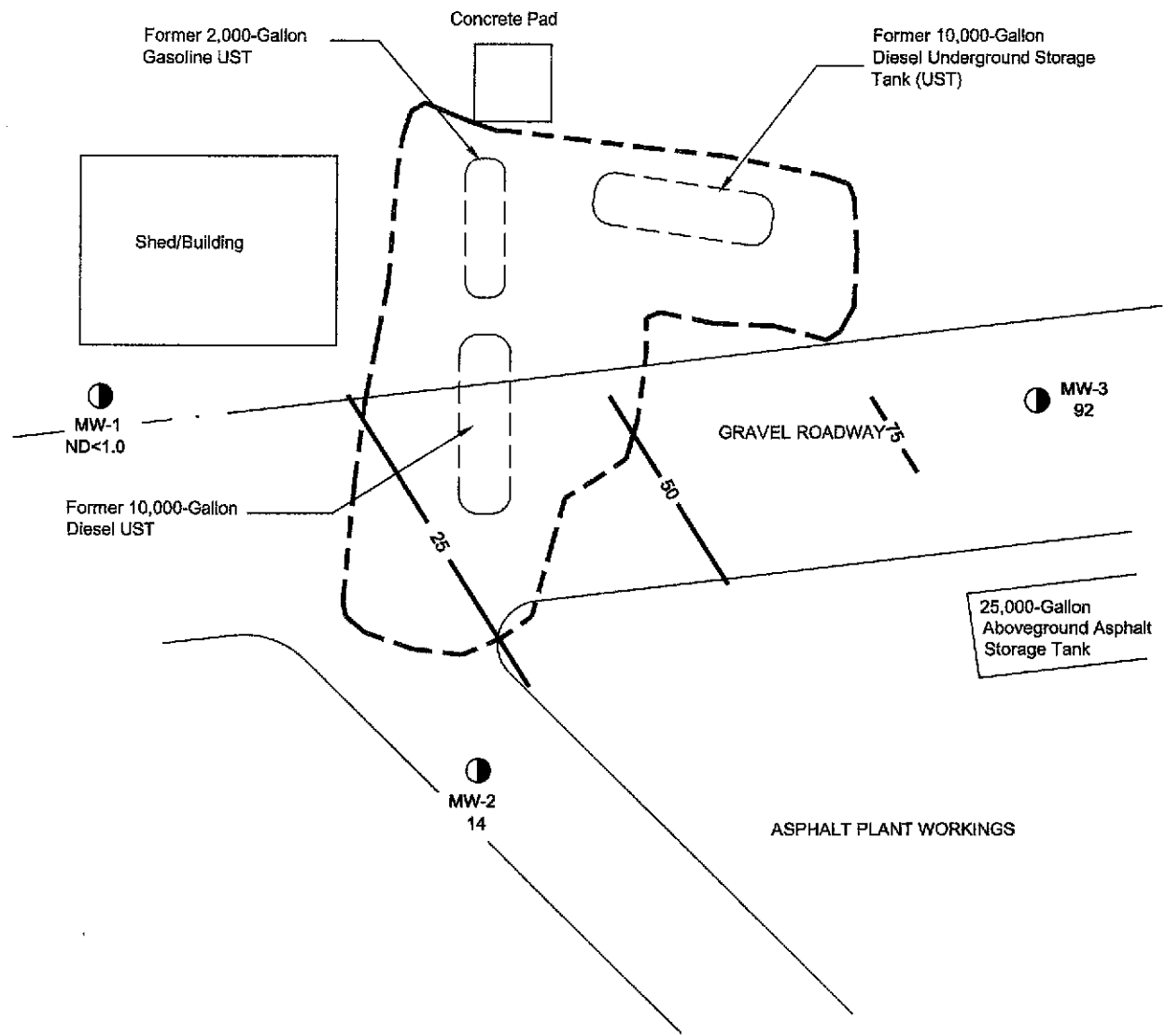
ENVIRONMENTAL MANAGEMENT, INC.

SITE PLAN WITH GROUNDWATER ELEVATION CONTOURS  
FIRST QUARTER (MARCH 31, 2003)

MISSION VALLEY ROCK CO.  
7999 ATHENOUR WAY  
SUNOL, CALIFORNIA

PROJECT NO. EM-5009

FIGURE 2



**LEGEND**

Base map referenced from Tank Protect Engineers.

All locations and dimensions are approximate.

MTBE concentrations reported in micrograms per Liter (ug/L).


 MW-2  
 14
   
 Groundwater monitoring well location and designation with dissolved MTBE concentrations


 25
   
 Dissolved MTBE concentration contours (contour interval 25 ug/L)


 Approximate limits of former UST excavations



Scale (1" = 20')



North


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SITE PLAN WITH DISSOLVED MTBE CONTOURS  
 THIRD QUARTER (MARCH 31, 2003)

MISSION VALLEY ROCK CO.  
 7999 ATHENOUR WAY  
 SUNOL, CALIFORNIA

PROJECT NO. EM-5009

FIGURE 3

**Table 1**  
**Well Construction and Groundwater Elevation Data**  
**First Quarter 2003**  
 Mission Valley Rock Company  
 Sunol, California

Well ID	Casing Diameter	Depth to LPH	Depth to Water	LPH Thickness	Total Depth	Screened Interval	Measuring Point Elevation	Groundwater Elevation	Comments
MW-1	2	ND	1.40	ND	17.70	5.0 - 20.0	256.51	255.11	Well Cover to be replaced 2nd Quarter, 2003
MW-2	2	ND	1.78	ND	17.80	5.0 - 20.0	256.70	254.92	Well Cover to be replaced 2nd Quarter, 2003
MW-3	2	ND	4.01	ND	16.75	5.0 - 20.0	256.72	252.71	Well Cover to be replaced 2nd Quarter, 2003

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 March 31, 2003.

Casing diameter reported in inches (in); depth to LPH, depth to water, total depths, and screened interval reported in feet below measuring point (ft-bmp); LPH thickness reported in feet; measuring point elevation and groundwater elevations reported in feet above mean sea level.

Total depth and depth to water measurements taken by Tait Environmental Management from designated measurement point.

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

LPH = Liquid Phase Hydrocarbons

ND = Not Detected

**Table 2**  
**Groundwater Sample Analytical Data**  
**First Quarter 2003**  
 Mission Valley Rock Company  
 Sunol, California

Well	Date	TPHd (mg/L)	TPHg (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
MW-1	03/31/2003	ND<1.0	<b>0.62</b>	<b>1.2</b>	ND<1.0	<b>12</b>	ND<1.0	ND<1.0
MW-2	03/31/2003	<b>5.0</b>	ND<0.10	ND<1.0	ND<1.0	ND<1.0	ND<1.0	<b>14</b>
MW-3	03/31/2003	ND<1.0	ND<0.10	ND<2.5	ND<2.5	ND<2.5	ND<2.5	<b>92</b>

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 March 31, 2003.

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

\* Only includes m,p-xylene, o-xylene was non-detect.

mg/L = Milligrams per Liter

ug/L = Micrograms per Liter

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

**Table 3**  
**Historical Groundwater Data**  
**First Quarter 2003**  
Mission Valley Rock Company  
Sunol, California

Well	Date	Depth (ft)	Groundwater Elevation	pH/Turbidity
MW-1	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	
MW-2	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	253.57*	0.10
	Jun-01	3.31	253.44*	0.06
	Sep-01	7.08	249.88*	0.34
	Dec-01	2.18	254.72*	0.26
	Mar-02	3.40	253.98*	0.90
	Jun-02	4.35	252.33*	0.08
	Sep-02	5.54	251.16	ND
Dec-02	4.30	252.40	ND	
Mar-03	1.78	254.92	ND	

**Table 3**  
**Historical Groundwater Data**  
**First Quarter 2003**  
 Mission Valley Rock Company  
 Sunol, California

Well	Date	Depth to water	Groundwater Elevation	LPH Thickness
MW-3	Jun-98	2.66	254.06	ND
	Jan-99	4.47	252.25	Slight Odor
	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	

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

**Table 4**  
**Historical Groundwater Sample Analytical Results**  
**First Quarter 2003**  
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<1.0*	0.37*	5.3	ND<1.0	2.7	ND<3.0	55
	Mar-01	ND<1.0*	0.7*	ND<1.0	ND<1.0	1.4	ND<1.0	ND<1.0
	Jun-01	ND<1.0*	0.17*	ND<1.0	ND<1.0	1.2	ND<1.0	ND<1.0
	Sep-01	ND<1.0*	0.73*	1.4	ND<1.0	7.6	1.2	ND<1.0
	Dec-01	1*	0.5*	15	ND<1.0	27	5.5	ND<1.0
	Mar-02	12*	29*	50	ND<25	960	290	ND<25
	Jun-02	ND<1.0*	1.4*	3.5	ND<1.0	42	7.9	ND<1.0
	Sep-02	1.4*	0.76*	ND<1.0	ND<1.0	4.3	1.1	ND<1.0
Dec-02	ND<1.0*	1.6*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	
Mar-03	ND<1.0*	0.62*	1.2	ND<1.0	12	ND<1.0	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*	7.1*	ND<50	ND<50	ND<50	ND<150	ND<250
	Mar-01	610*	3.3*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	9.0
	Jun-01	8.8*	1.8*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	6.7
	Sep-01	530*	7.0*	ND<50	ND<50	ND<50	ND<50	ND<50
	Dec-01	27*	0.31*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	62
	Mar-02	65*	0.13*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	30
	Jun-02	130*	0.46*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	24
	Sep-02	480*	0.29*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	16
Dec-02	61*	1.8*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	10	
Mar-03	5.0*	ND<0.10*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	14	



**Table 4**  
**Historical Groundwater Sample Analytical Results**  
**First Quarter 2003**  
Mission Valley Rock Company  
Sunol, California

Well	Date	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
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	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	1.6*	0.23*	ND<1.0	ND<1.0	ND<1.0	ND<3.0	80
	Mar-01	1.1*	0.14*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	83
	Jun-01	NS	NS	NS	NS	NS	NS	NS
	Sep-01	3.8*	ND<0.10*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	45
	Dec-01	3.1*	0.34*	1.4	1.1	10	3.8	45
	Mar-02	1.5*	ND<0.10*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	50
	Jun-02	ND<1.0*	0.16*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	36
	Sep-02	ND<1.0*	ND<0.10*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	43
Dec-02	ND<1.0*	ND<0.10*	ND<1.0	ND<1.0	ND<1.0	ND<1.0	41	
Mar-03	ND<1.0*	ND<0.10*	ND<2.5	ND<2.5	ND<2.5	ND<2.5	92	

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

\*Concentrations reported in milligrams per Liter (mg/L).

MTBE = Methyl-tert-Butyl Ether

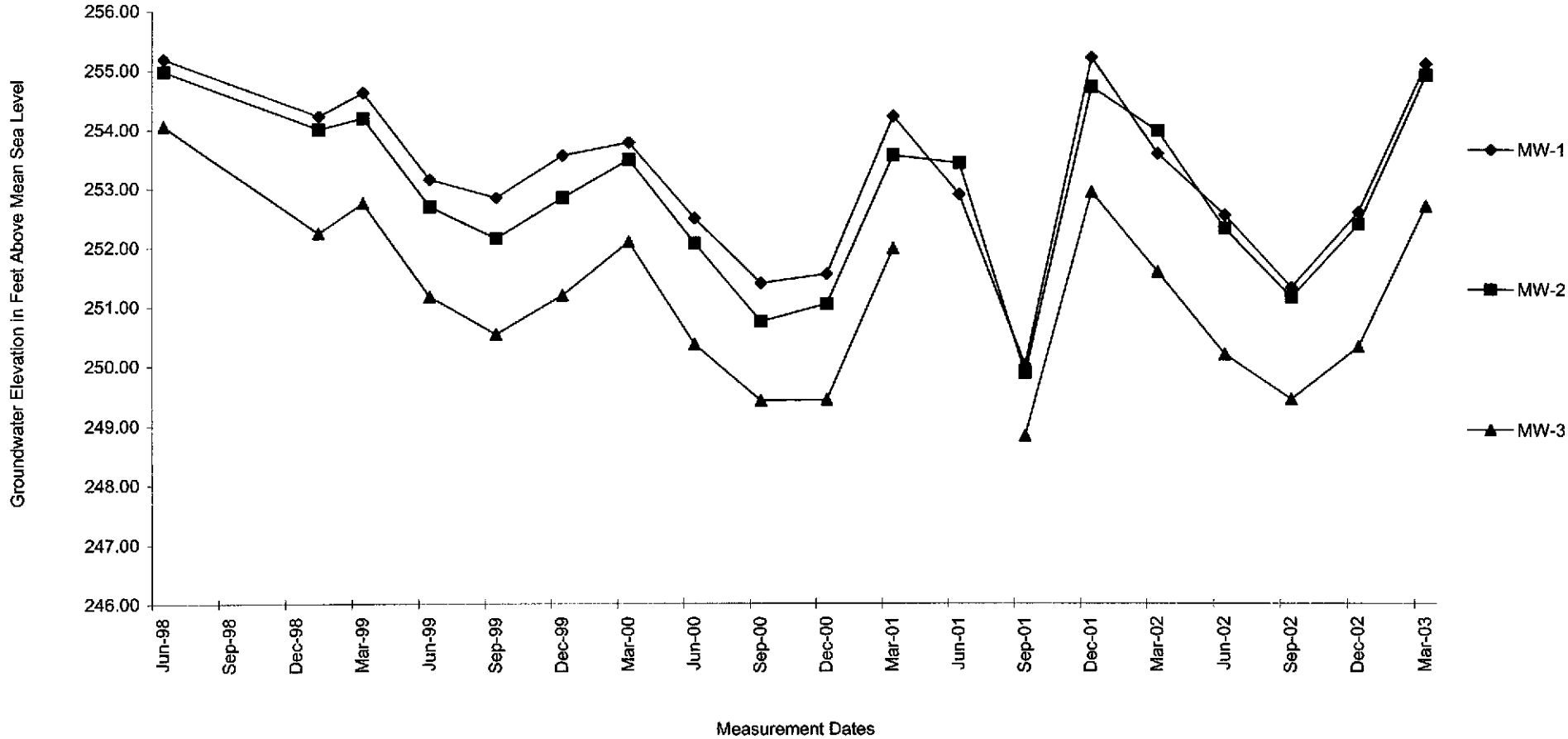
ND = Not Detected at or above corresponding reporting limit

NS = Not Sampled

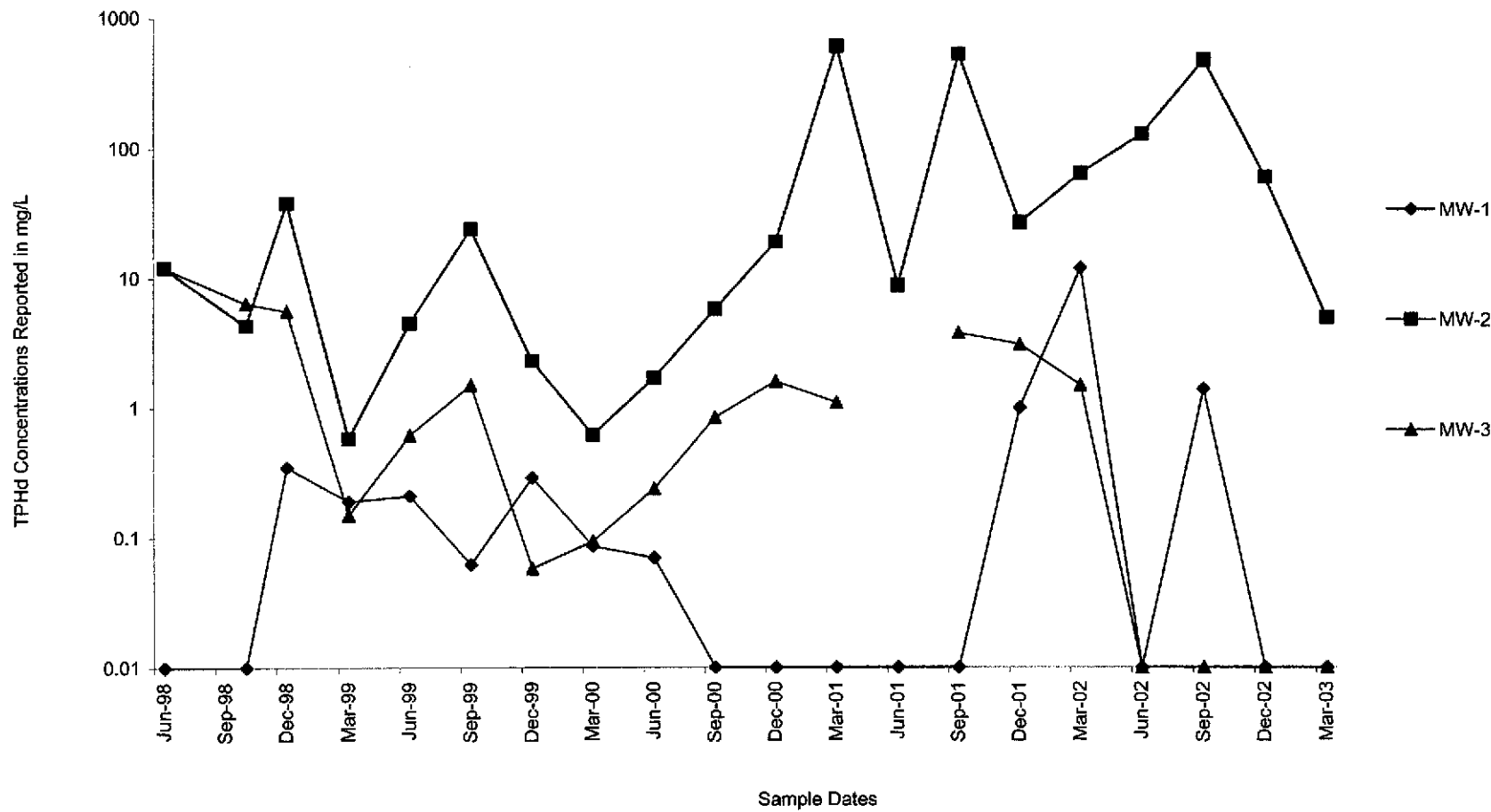
TPHd = Total Petroleum Hydrocarbons as Diesel

TPHg = Total Petroleum Hydrocarbons as Gasoline

**Chart 1**  
**Groundwater Hydrograph - First Quarter 2003**  
 Mission Valley Rock Company  
 Sunol, California



**Chart 2**  
**Historical TPHd Concentrations - First Quarter 2003**  
 Mission Valley Rock Company  
 Sunol, California



**Chart 3**  
**Historical TPHg Concentrations - First Quarter 2003**  
 Mission Valley Rock Company  
 Sunol, California

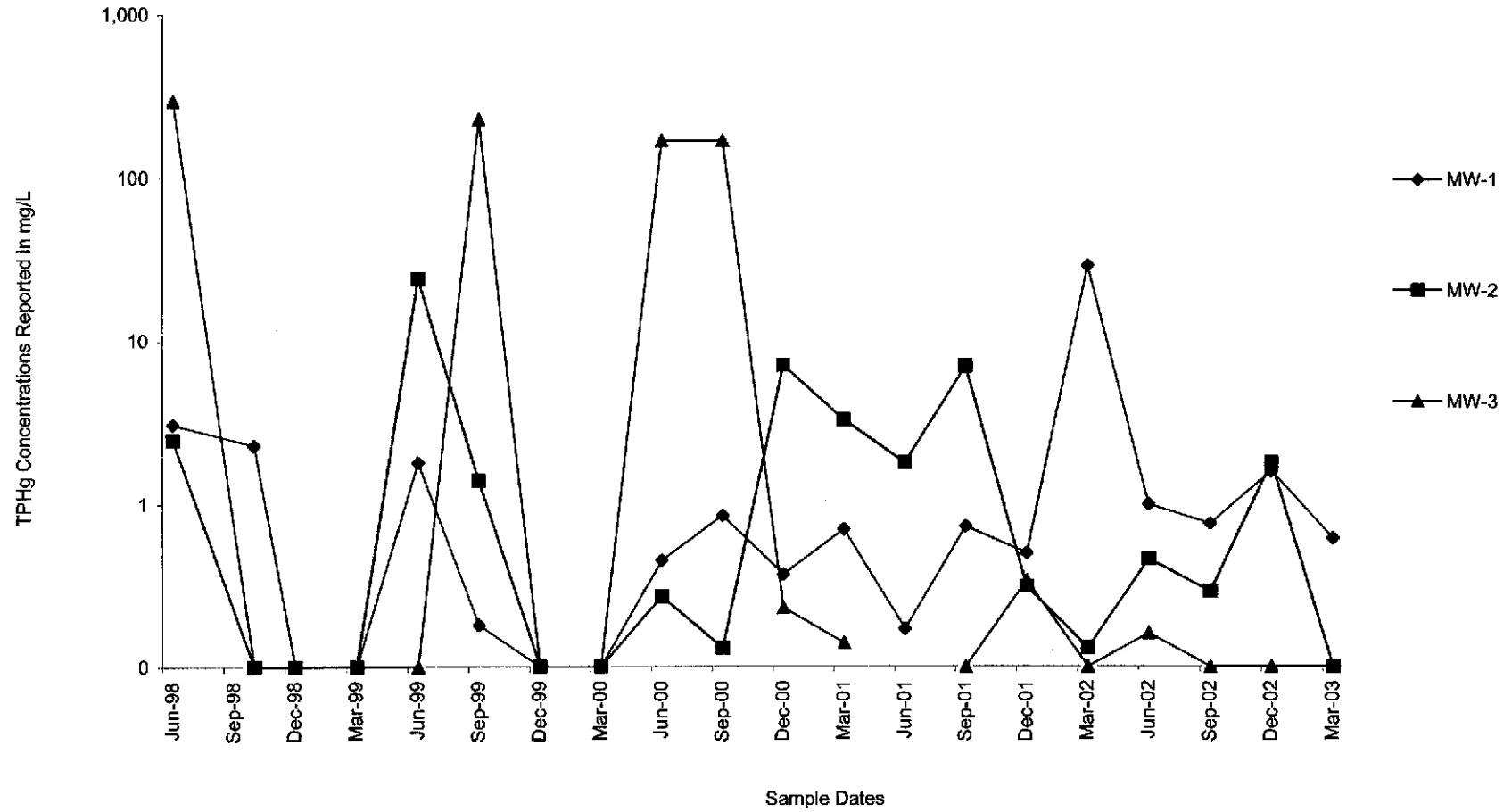
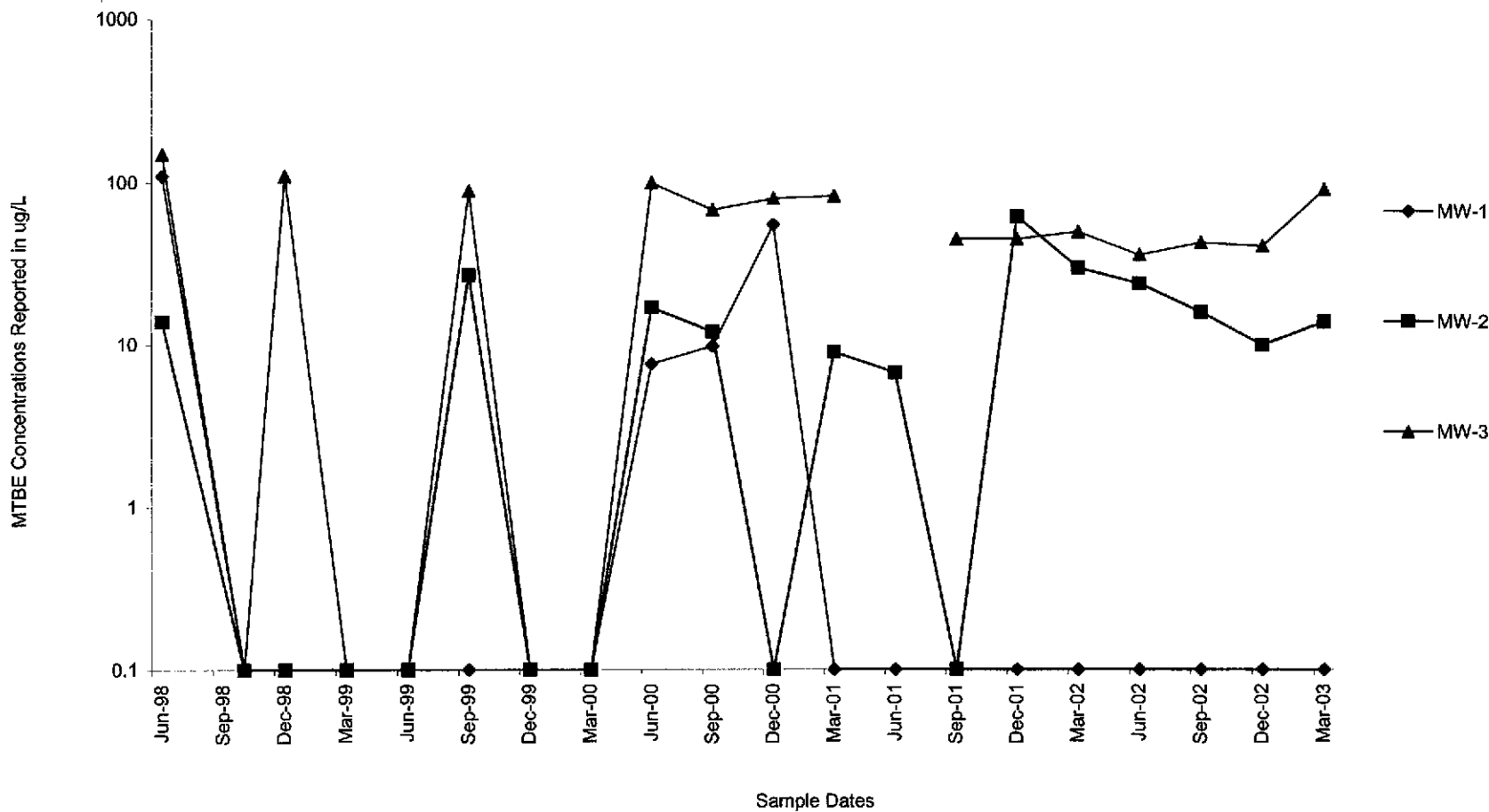
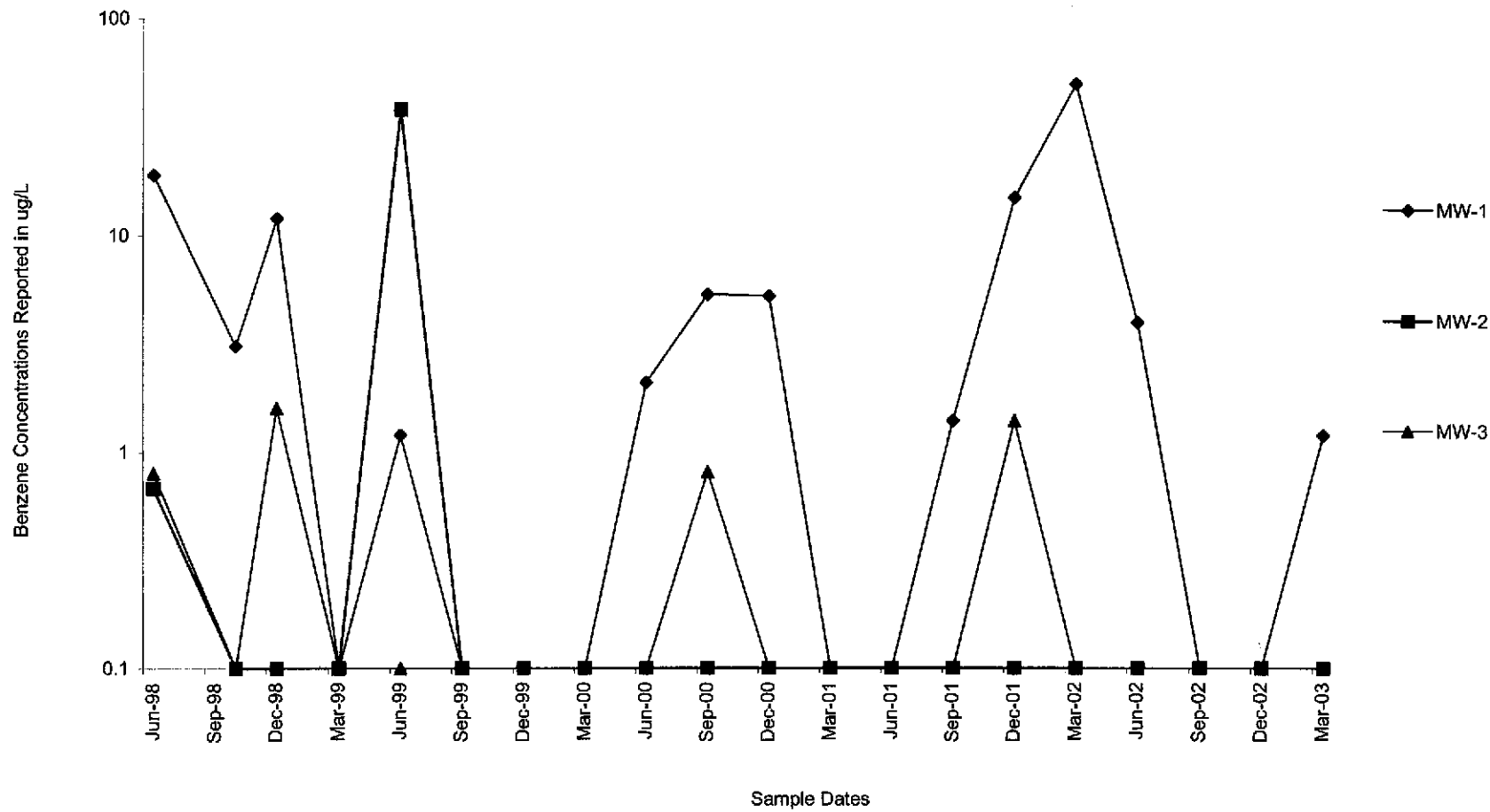


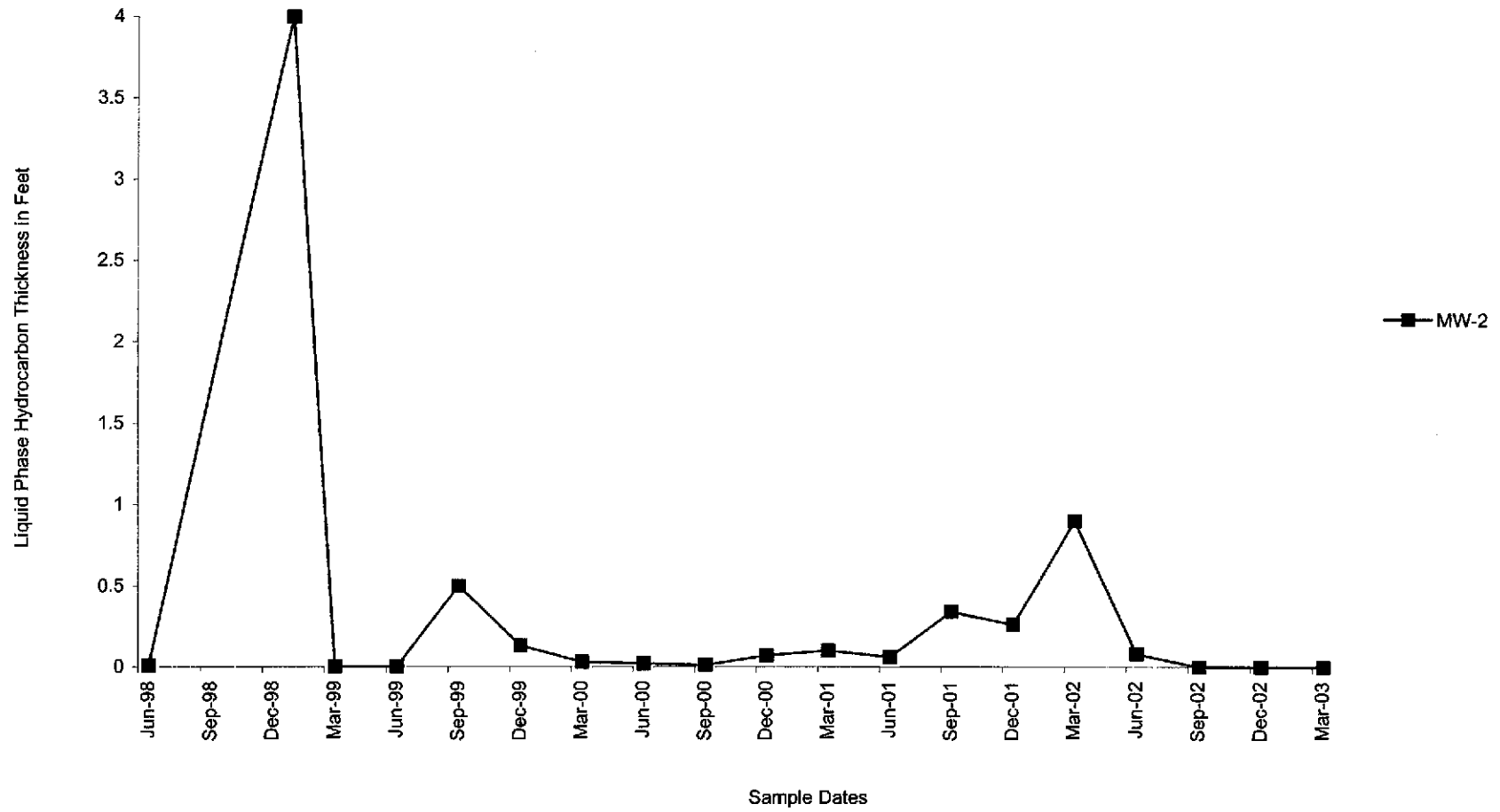
Chart 4  
Historical MTBE Concentrations - First Quarter 2003  
Mission Valley Rock Company  
Sunol, California



**Chart 5**  
**Historical Benzene Concentrations - First Quarter 2003**  
Mission Valley Rock Company  
Sunol, California



**Chart 6**  
**Historical Liquid Phase Hydrocarbon Thickness in Well MW-2 - First Quarter 2003**  
Mission Valley Rock Company  
Sunol, California





Groundwater Sampling Data Sheet

<b>Project Name:</b> Mission Valley Rock	<b>Date:</b> 03/31/2003
<b>Project No.:</b> EM-5009	<b>Prepared By:</b> Saeed Haider
<b>Well Identification:</b> MW-1	<b>Pump Intake Depth (ft-bmp):</b> ~10.00

**Measurement Point Description:** Top of casing at northside

Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)
Not Detected	1.40	17.70	16.30	Not Detected	2.6	7.8

<b>Well Diameter (in)</b>	<b>Gallons/Foot</b>				<b>Field Equipment:</b> Solinst Interface Meter; Horiba U-22 Water Parameter Meter				
	0.75	2	4	6	<b>Purge Method:</b> 12-Volt DC Whale Pump				
0.75	2	4	6	0.02	0.16	0.65	1.47	<b>Well Condition:</b> Good	

Time	Casing Volumes Purged	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
8:10	1	2.0	0.4	NA	7.6	16.2	323	2.05	12.33	NA	Light black color
8:18	2	6.0	0.8	NA	7.13	16.0	53	1.93	12.61	NA	Clear
8:20	3	8.0	1.0	NA	7.14	15.9	52	1.92	12.60	NA	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
8:05	8:20	0.5	8.0	3+	4.66	1.92	9:00	MW-1

**Notes:**





## Groundwater Sampling Data Sheet

TAIT Environmental Management, Inc

<b>Project Name:</b> Mission Valley Rock						<b>Date:</b> 03/31/2003							
<b>Project No.:</b> EM-5009						<b>Prepared By:</b> Saeed Haider							
<b>Well Identification:</b> MW-2						<b>Pump Intake Depth (ft-bmp):</b> ~10.00							
<b>Measurement Point Description:</b> Top of casing at northside													
Depth to LNAPL (ft-bmp)		Depth to Static Water Level (ft-bmp)		Well Total Depth (ft-bmp)		Water Column Height (ft)		LNAPL Thickness (ft)		One (1) Casing Volume (gallons)		Three (3) Casing Volumes (gallons)	
Not Detected		1.78		17.80		16.02		Not Detected		2.56		7.68	
Well Diameter (in)				Gallons/Foot				Field Equipment:					
				0.75	2	4	6	Solinst Interface Meter; Horiba U-22 Water Parameter Meter					
								Purge Method:					
								12-Volt DC Whale Pump					
0.75	2	4	6	0.02	0.16	0.65	1.47	Well Condition:					
								Well Box Cover Broken					
Time	Casing Volumes Purged	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations		
8:30	1	3	0.7	NA	7.02	17.1	295	1.61	13.03	NA	Blackish, Silty		
8:35	2	5	0.4	NA	7.05	17.0	292	1.51	12.87	NA	Blackish, Silty		
8:40	3	8	0.6	NA	7.03	17.6	292	1.52	12.74	NA	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					
8:28	8:40	0.7	8	3+	4.98	1.82	9:30	MW-2					

**Notes:**



Groundwater Sampling Data Sheet

<b>Project Name:</b> Mission Valley Rock	<b>Date:</b> 03/31/2003
<b>Project No.:</b> EM-5009	<b>Prepared By:</b> Saeed Haider
<b>Well Identification:</b> MW-3	<b>Pump Intake Depth (ft-bmp):</b> ~10.00

**Measurement Point Description:** Top of casing at northside

Depth to LNAPL (ft-bmp)	Depth to Static Water Level (ft-bmp)	Well Total Depth (ft-bmp)	Water Column Height (ft)	LNAPL Thickness (ft)	One (1) Casing Volume (gallons)	Three (3) Casing Volumes (gallons)
Not Detected	4.01	16.75	12.74	Not Detected	2.03	6.09

<b>Well Diameter (in)</b>	<b>Gallons/Foot</b>				<b>Field Equipment:</b> Solinst Interface Meter; Horiba U-22 Water Parameter Meter				
	0.75	2	4	6	<b>Purge Method:</b> 12-Volt DC Whale Pump				
0.75	2	4	6	0.02	0.16	0.65	1.47	<b>Well Condition:</b> Well Box Damaged	

Time	Casing Volumes Purged	Volume Purged (gallons)	Flow Rate (gpm)	Water Level (ft-bmp)	Ph	Temperature (°C)	Turbidity (NTU)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Observations
9:05	1	2.0	0.4	NA	7.30	18.7	325	2.05	13.20	NA	Silty
9:10	2	4.0	0.4	NA	7.05	19.6	257	1.79	12.70	NA	Clear
9:20	3	6.0	0.2	NA	7.16	18.8	226	2.03	13.27	NA	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
9:00	9:20	0.3	6.0	3	6.56	4.68	10:30	MW-3

**Notes:**

April 16, 2003

STL LOT NUMBER: **E3D030381**

Scott Ek  
Tait Environmental  
701 Park Center Dr  
Santa Ana, CA 92705

Dear Mr. Ek,

This report contains the analytical results for the four samples received under chain of custody by STL Los Angeles on April 3, 2003. These samples are associated with your MISSION ROCK - SUNOL project.

STL Los Angeles certifies that the test results provided in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of the report. NELAP Certification Number for STL Los Angeles is 01118CA.

Any matrix related anomaly is footnoted within the report. A cooler receipt temperature between 2-6 degrees Celsius is within EPA acceptance criteria. The temperature(s) of the cooler received for this project can be found on the Project Receipt Checklist. All applicable quality control procedures met method-specified acceptance criteria except as noted on the following page.

Preliminary results were sent via facsimile on Monday, April 14, 2003.

This report shall not be reproduced except in full, without the written approval of the laboratory.

This report contains **000039** pages.

**Severn Trent Laboratories, Inc.**

**STL Los Angeles** • 1721 South Grand Avenue, Santa Ana, CA 92705-4808

Tel 714 258 8610 Fax 714 258 0921 • [www.st-linc.com](http://www.st-linc.com)



**CASE NARRATIVE**

There was insufficient sample volume provided to prepare a project-specific MS/MSD for the Extractable Petroleum Hydrocarbons analysis. A duplicate LCS has been prepared to provide accuracy and precision measurement for the samples in this project.

If you have any questions, please feel free to call me at (714) 258-8610.

Sincerely,

*Marisol Tabirara*

Marisol Tabirara  
Project Manager

cc: Project File

000002



# Analytical Report

**ANALYTICAL REPORT**

MISSION ROCK - SUNOL

Lot #: E3D030381

Scott Ek

Tait Environmental

SEVERN TRENT LABORATORIES, INC.

Marisol Tabirara  
Project Manager

April 16, 2003

# EXECUTIVE SUMMARY - Detection Highlights

E3D030381

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
<b>MW-1 03/31/03 09:00 001</b>				
TPH (as Gasoline)	0.62	0.10	mg/L	SW846 8015B
Acetone	24	10	ug/L	SW846 8260B
Benzene	1.2	1.0	ug/L	SW846 8260B
2-Butanone	7.9	5.0	ug/L	SW846 8260B
tert-Butylbenzene	1.2	1.0	ug/L	SW846 8260B
Ethylbenzene	12	1.0	ug/L	SW846 8260B
Isopropylbenzene	2.0	1.0	ug/L	SW846 8260B
n-Propylbenzene	6.4	1.0	ug/L	SW846 8260B
<b>MW-2 03/31/03 09:30 002</b>				
TPH (as Diesel)	5.0	1.0	mg/L	SW846 8015B
Methyl tert-butyl ether	14	1.0	ug/L	SW846 8260B
n-Propylbenzene	1.0	1.0	ug/L	SW846 8260B
<b>MW-3 03/31/03 10:30 003</b>				
Methyl tert-butyl ether	92	2.5	ug/L	SW846 8260B

# METHODS SUMMARY

E3D030381

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Extractable Petroleum Hydrocarbons	SW846 8015B	SW846 3510
Volatile Organics by GC/MS	SW846 8260B	SW846 5030E/826
Volatile Petroleum Hydrocarbons	SW846 8015B	SW846 5030

## References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.



# SAMPLE SUMMARY

E3D030381

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FLAP2	001	MW-1	03/31/03	09:00
FLAQA	002	MW-2	03/31/03	09:30
FLAQE	003	MW-3	03/31/03	10:30
FLAQG	004	TRIP BLANK	03/28/03	

## NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

TAIT ENVIRONMENTAL

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #....: E3D030381-001 Work Order #....: FLAP21AD Matrix.....: WATER  
 Date Sampled....: 03/31/03 09:00 Date Received...: 04/03/03 15:50 MS Run #.....: 3094153  
 Prep Date.....: 04/03/03 Analysis Date...: 04/03/03  
 Prep Batch #....: 3094373 Analysis Time...: 20:53  
 Dilution Factor: 1  
 Analyst ID.....: 004648 Instrument ID...: MSJ  
 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Acetone	24	10	ug/L
Benzene	1.2	1.0	ug/L
Bromobenzene	ND	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	7.9	5.0	ug/L
n-Butylbenzene	ND	1.0	ug/L
sec-Butylbenzene	ND	1.0	ug/L
tert-Butylbenzene	1.2	1.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
2-Chlorotoluene	ND	1.0	ug/L
4-Chlorotoluene	ND	1.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
Dibromomethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
1,3-Dichloropropane	ND	1.0	ug/L
2,2-Dichloropropane	ND	1.0	ug/L
1,1-Dichloropropene	ND	1.0	ug/L

(Continued on next page)

TAIT ENVIRONMENTAL

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #...: E3D030381-001 Work Order #...: FLAP21AD Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	12	1.0	ug/L
Hexachlorobutadiene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Isopropylbenzene	2.0	1.0	ug/L
p-Isopropyltoluene	ND	1.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Methyl tert-butyl ether	ND	1.0	ug/L
Naphthalene	ND	1.0	ug/L
n-Propylbenzene	6.4	1.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,3-Trichlorobenzene	ND	1.0	ug/L
1,2,4-Trichloro- benzene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
1,1,2-Trichlorotrifluoro- ethane	ND	1.0	ug/L
1,2,4-Trimethylbenzene	ND	1.0	ug/L
1,3,5-Trimethylbenzene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
m-Xylene & p-Xylene	ND	1.0	ug/L
o-Xylene	ND	1.0	ug/L
Tert-amyl methyl ether	ND	2.0	ug/L
Tert-butyl ethyl ether	ND	2.0	ug/L
t-Butanol	ND	25	ug/L
Isopropyl ether	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	84	(75 - 130)
1,2-Dichloroethane-d4	91	(65 - 135)
Toluene-d8	95	(80 - 130)



TAIT ENVIRONMENTAL

Client Sample ID: MW-1

GC Semivolatiles

Lot Sample #...: E3D030381-001    Work Order #...: FLAP21AA    Matrix.....: WATER  
Date Sampled...: 03/31/03 09:00    Date Received...: 04/03/03 15:50    MS Run #.....:  
Prep Date.....: 04/04/03    Analysis Date...: 04/07/03  
Prep Batch #...: 3094410    Analysis Time...: 12:01  
Dilution Factor: 1  
Analyst ID.....: 356074    Instrument ID...: G02  
Method.....: SW846 8015B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	<u>LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND		1.0	mg/L
<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>		
Benzo(a)pyrene	RECOVERY	LIMITS		
	93	(70 - 125)		

TAIT ENVIRONMENTAL

Client Sample ID: MW-2

GC/MS Volatiles

Lot-Sample #....: E3D030381-002    Work Order #....: FLAQAIAD    Matrix.....: WATER  
 Date Sampled....: 03/31/03 09:30    Date Received...: 04/03/03 15:50    MS Run #.....: 3094153  
 Prep Date.....: 04/03/03    Analysis Date...: 04/03/03  
 Prep Batch #....: 3094373    Analysis Time...: 19:18  
 Dilution Factor: 1  
 Analyst ID.....: 004648    Instrument ID...: MSJ  
 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Acetone	ND	10	ug/L
Benzene	ND	1.0	ug/L
Bromobenzene	ND	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
n-Butylbenzene	ND	1.0	ug/L
sec-Butylbenzene	ND	1.0	ug/L
tert-Butylbenzene	ND	1.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
2-Chlorotoluene	ND	1.0	ug/L
4-Chlorotoluene	ND	1.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L
1,2-Dibromoethane (EDB)	ND	1.0	ug/L
Dibromomethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
1,3-Dichloropropane	ND	1.0	ug/L
2,2-Dichloropropane	ND	1.0	ug/L
1,1-Dichloropropene	ND	1.0	ug/L

(Continued on next page)

TAIT ENVIRONMENTAL

Client Sample ID: MW-2

GC/MS Volatiles

Lot-Sample #....: E3D030381-002 Work Order #....: FLAQAIAD Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Hexachlorobutadiene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Isopropylbenzene	ND	1.0	ug/L
p-Isopropyltoluene	ND	1.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Methyl tert-butyl ether	14	1.0	ug/L
Naphthalene	ND	1.0	ug/L
n-Propylbenzene	1.0	1.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,3-Trichlorobenzene	ND	1.0	ug/L
1,2,4-Trichloro- benzene	ND	1.0	ug/L
1,1,1 Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
1,1,2-Trichlorotrifluoro- ethane	ND	1.0	ug/L
1,2,4-Trimethylbenzene	ND	1.0	ug/L
1,3,5-Trimethylbenzene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
m-Xylene & p-Xylene	ND	1.0	ug/L
o-Xylene	ND	1.0	ug/L
Tert-amyl methyl ether	ND	2.0	ug/L
Tert-butyl ethyl ether	ND	2.0	ug/L
t-Butanol	ND	25	ug/L
Isopropyl ether	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	95	(75 - 130)
1,2-Dichloroethane-d4	96	(65 - 135)
Toluene-d8	94	(80 - 130)

TAIT ENVIRONMENTAL

Client Sample ID: MW-2

GC Volatiles

Lot-Sample #...: E3D030381-002    Work Order #...: FLAQALAC    Matrix.....: WATER  
Date Sampled...: 03/31/03 09:30    Date Received...: 04/03/03 15:50    MS Run #.....: 3097252  
Prep Date.....: 04/04/03    Analysis Date...: 04/04/03  
Prep Batch #...: 3097475    Analysis Time...: 20:56  
Dilution Factor: 1  
Analyst ID.....: 001464    Instrument ID...: G15  
Method.....: SW846 8015B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>
TPH (as Gasoline)	ND	0.10	mg/L
<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>	
a,a,a Trifluorotoluene (TFT)	74	(70 - 130)	



TAIT ENVIRONMENTAL

Client Sample ID: MW-2

GC Semivolatiles

Lot-Sample #...: E3D030381-002    Work Order #...: FLAQA1AA    Matrix.....: WATER  
 Date Sampled...: 03/31/03 09:30    Date Received...: 04/03/03 15:50    MS Run #.....:  
 Prep Date.....: 04/04/03    Analysis Date...: 04/07/03  
 Prep Batch #...: 3094410    Analysis Time...: 12:40  
 Dilution Factor: 1  
 Analyst ID.....: 356074    Instrument ID...: G02  
 Method.....: SW846 8015B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	5.0	1.0	mg/L
<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	
Benzo(a)pyrene	86	(70 - 125)	

**NOTE(S) :**

The pattern does not match diesel. C range-C10 to beyond C24.

TAIT ENVIRONMENTAL

Client Sample ID: MW-3

GC/MS Volatiles

Lot-Sample #...: E3D030381-003 Work Order #...: FLAQELAD Matrix.....: WATER  
 Date Sampled...: 03/31/03 10:30 Date Received...: 04/03/03 15:50 MS Run #.....: 3094153  
 Prep Date.....: 04/03/03 Analysis Date...: 04/03/03  
 Prep Batch #...: 3094373 Analysis Time...: 19:42  
 Dilution Factor: 2.5  
 Analyst ID.....: 004648 Instrument ID...: MSJ  
 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Acetone	ND	25	ug/L
Benzene	ND	2.5	ug/L
Bromobenzene	ND	2.5	ug/L
Bromochloromethane	ND	2.5	ug/L
Bromoform	ND	2.5	ug/L
Bromomethane	ND	5.0	ug/L
2-Butanone	ND	12	ug/L
n-Butylbenzene	ND	2.5	ug/L
sec-Butylbenzene	ND	2.5	ug/L
tert-Butylbenzene	ND	2.5	ug/L
Carbon disulfide	ND	2.5	ug/L
Carbon tetrachloride	ND	2.5	ug/L
Chlorobenzene	ND	2.5	ug/L
Dibromochloromethane	ND	2.5	ug/L
Bromodichloromethane	ND	2.5	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	2.5	ug/L
Chloromethane	ND	5.0	ug/L
2-Chlorotoluene	ND	2.5	ug/L
4-Chlorotoluene	ND	2.5	ug/L
1,2-Dibromo-3-chloro- propane	ND	5.0	ug/L
1,2-Dibromoethane (EDB)	ND	2.5	ug/L
Dibromomethane	ND	2.5	ug/L
1,2-Dichlorobenzene	ND	2.5	ug/L
1,3-Dichlorobenzene	ND	2.5	ug/L
1,4-Dichlorobenzene	ND	2.5	ug/L
Dichlorodifluoromethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	2.5	ug/L
1,2-Dichloroethane	ND	2.5	ug/L
1,1-Dichloroethene	ND	2.5	ug/L
cis-1,2-Dichloroethene	ND	2.5	ug/L
trans-1,2-Dichloroethene	ND	2.5	ug/L
1,2-Dichloropropane	ND	2.5	ug/L
1,3-Dichloropropane	ND	2.5	ug/L
2,2-Dichloropropane	ND	2.5	ug/L
1,1-Dichloropropene	ND	2.5	ug/L

(Continued on next page)

TAIT ENVIRONMENTAL

Client Sample ID: MW-3

GC/MS Volatiles

Lot-Sample #...: E3D030381-003    Work Order #...: FLAQE1AD    Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
cis-1,3-Dichloropropene	ND	2.5	ug/L
trans-1,3-Dichloropropene	ND	2.5	ug/L
Ethylbenzene	ND	2.5	ug/L
Hexachlorobutadiene	ND	2.5	ug/L
2-Hexanone	ND	12	ug/L
Isopropylbenzene	ND	2.5	ug/L
p-Isopropyltoluene	ND	2.5	ug/L
Methylene chloride	ND	2.5	ug/L
4-Methyl-2-pentanone	ND	12	ug/L
<b>Methyl tert-butyl ether</b>	<b>92</b>	<b>2.5</b>	<b>ug/L</b>
Naphthalene	ND	2.5	ug/L
n-Propylbenzene	ND	2.5	ug/L
Styrene	ND	2.5	ug/L
1,1,1,2-Tetrachloroethane	ND	2.5	ug/L
1,1,2,2-Tetrachloroethane	ND	2.5	ug/L
Tetrachloroethene	ND	2.5	ug/L
Toluene	ND	2.5	ug/L
1,2,3-Trichlorobenzene	ND	2.5	ug/L
1,2,4-Trichloro- benzene	ND	2.5	ug/L
1,1,1-Trichloroethane	ND	2.5	ug/L
1,1,2-Trichloroethane	ND	2.5	ug/L
Trichloroethene	ND	2.5	ug/L
Trichlorofluoromethane	ND	5.0	ug/L
1,2,3-Trichloropropane	ND	2.5	ug/L
1,1,2-Trichlorotrifluoro- ethane	ND	2.5	ug/L
1,2,4-Trimethylbenzene	ND	2.5	ug/L
1,3,5-Trimethylbenzene	ND	2.5	ug/L
Vinyl chloride	ND	5.0	ug/L
m-Xylene & p-Xylene	ND	2.5	ug/L
o-Xylene	ND	2.5	ug/L
Tert-amyl methyl ether	ND	5.0	ug/L
Tert-butyl ethyl ether	ND	5.0	ug/L
t-Butanol	ND	62	ug/L
Isopropyl ether	ND	5.0	ug/L
<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	
Bromofluorobenzene	94	(75 - 130)	
1,2-Dichloroethane-d4	97	(65 - 135)	
Toluene-d8	94	(80 - 130)	



TAIT ENVIRONMENTAL

Client Sample ID: MW-3

GC Semivolatiles

Lot-Sample #....: E3D030381-003    Work Order #....: FLAQE1AA    Matrix.....: WATER  
Date Sampled...: 03/31/03 10:30    Date Received...: 04/03/03 15:50    MS Run #.....:  
Prep Date.....: 04/04/03    Analysis Date...: 04/07/03  
Prep Batch #....: 3094410    Analysis Time...: 13:19  
Dilution Factor: 1  
Analyst ID.....: 356074    Instrument ID...: G02  
Method.....: SW846 8015B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	<u>UNITS</u>
TPH (as Diesel)	ND	1.0	mg/L
<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>	
Benzo(a)pyrene	<u>RECOVERY</u>	<u>LIMITS</u>	
	90	(70 - 125)	



TAIT ENVIRONMENTAL

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: E3D030381-004 Work Order #...: FLAQGLAC Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Hexachlorobutadiene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Isopropylbenzene	ND	1.0	ug/L
p-Isopropyltoluene	ND	1.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Methyl tert-butyl ether	ND	1.0	ug/L
Naphthalene	ND	1.0	ug/L
n-Propylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,3-Trichlorobenzene	ND	1.0	ug/L
1,2,4-Trichloro- benzene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
1,1,2-Trichlorotrifluoro- ethane	ND	1.0	ug/L
1,2,4-Trimethylbenzene	ND	1.0	ug/L
1,3,5-Trimethylbenzene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
m-Xylene & p-Xylene	ND	1.0	ug/L
o-Xylene	ND	1.0	ug/L
Tert-amyl methyl ether	ND	2.0	ug/L
Tert-butyl ethyl ether	ND	2.0	ug/L
t-Butanol	ND	25	ug/L
Isopropyl ether	ND	2.0	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Bromofluorobenzene	83	(75 - 130)
1,2-Dichloroethane-d4	100	(65 - 135)
Toluene-d8	95	(80 - 130)

SEVERN  
TRENT

STL

QA/QC



# QC DATA ASSOCIATION SUMMARY

E3D030381

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	WATER	SW846 8015B		3094410	
	WATER	SW846 8015B		3097475	3097252
	WATER	SW846 8260B		3094373	3094153
002	WATER	SW846 8015B		3094410	
	WATER	SW846 8015B		3097475	3097252
	WATER	SW846 8260B		3094373	3094153
003	WATER	SW846 8015B		3094410	
	WATER	SW846 8015B		3097475	3097252
	WATER	SW846 8260B		3094373	3094153
004	WATER	SW846 8260B		3094373	3094153

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E3D030381  
 MB Lot-Sample #: E3D040000-373

Work Order #...: FLC2G1AA

Matrix.....: WATER

Prep Date.....: 04/03/03

Analysis Time...: 17:42

Analysis Date...: 04/03/03

Prep Batch #...: 3094373

Instrument ID...: MSJ

Dilution Factor: 1

Analyst ID.....: 004648

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromobenzene	ND	1.0	ug/L	SW846 8260B
Bromochloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L	SW846 8260B
1,2-Dibromoethane (EDB)	ND	1.0	ug/L	SW846 8260B
Dibromomethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	2.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
1,3-Dichloropropane	ND	1.0	ug/L	SW846 8260B
2,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E3D030381

Work Order #...: FLC2G1AA

Matrix.....: WATER

PARAMETER	RESULT	REPORTING		METHOD
		LIMIT	UNITS	
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B
p-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B
Naphthalene	ND	1.0	ug/L	SW846 8260B
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,2,4-Trichloro- benzene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichlorotrifluoro- ethane	ND	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
Tert-amyl methyl ether	ND	2.0	ug/L	SW846 8260B
Tert-butyl ethyl ether	ND	2.0	ug/L	SW846 8260B
t-Butanol	ND	25	ug/L	SW846 8260B
Isopropyl ether	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Bromofluorobenzene	81	(75 - 130)
1,2-Dichloroethane-d4	91	(65 - 135)
Toluene-d8	89	(80 - 130)

**NOTE(S):**  
 Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: E3D030381  
MB Lot-Sample #: E3D070000-475  
Analysis Date...: 04/04/03  
Dilution Factor: 1

Work Order #...: FLGE81AA  
Prep Date.....: 04/04/03  
Prep Batch #...: 3097475  
Analyst ID.....: 001464

Matrix.....: WATER  
Analysis Time...: 15:59  
Instrument ID...: G15

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
TPH (as Gasoline)	ND	0.10	mg/L	SW846 8015B
<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>		
a,a,a-Trifluorotoluene (TPT)	83	(70 - 130)		

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: E3D030381  
MB Lot-Sample #: E3D040000-410

Work Order #...: FLDAA1AA

Matrix.....: WATER

Analysis Date...: 04/07/03  
Dilution Factor: 1

Prep Date.....: 04/04/03

Analysis Time...: 10:04

Prep Batch #...: 3094410

Instrument ID...: G02

Analyst ID.....: 356074

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
TPH (as Diesel)	ND	1.0	mg/L	SW846 8015B
<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>		
Benzo (a) pyrene	99	(70 - 125)		

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E3D030381      Work Order #...: FLC2G1AC      Matrix.....: WATER  
 LCS Lot-Sample#: E3D040000-373  
 Prep Date.....: 04/03/03      Analysis Date...: 04/03/03  
 Prep Batch #...: 3094373      Analysis Time...: 16:55  
 Dilution Factor: 1      Instrument ID...: MSJ  
 Analyst ID.....: 004648

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Benzene	104	(75 - 125)	SW846 8260B
Chlorobenzene	105	(75 - 125)	SW846 8260B
1,1-Dichloroethene	106	(65 - 135)	SW846 8260B
Toluene	110	(75 - 125)	SW846 8260B
Trichloroethene	114	(75 - 135)	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Bromofluorobenzene	99	(75 - 130)
1,2-Dichloroethane-d4	93	(65 - 135)
Toluene-d8	109	(80 - 130)

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E3D030381      Work Order #...: FLC2G1AC      Matrix.....: WATER  
 LCS Lot-Sample#: E3D040000-373  
 Prep Date.....: 04/03/03      Analysis Date...: 04/03/03  
 Prep Batch #...: 3094373      Analysis Time...: 16:55  
 Dilution Factor: 1      Instrument ID...: MSJ  
 Analyst ID.....: 004648

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>METHOD</u>
Benzene	10.0	10.4	ug/L	104	SW846 8260B
Chlorobenzene	10.0	10.5	ug/L	105	SW846 8260B
1,1-Dichloroethene	10.0	10.6	ug/L	106	SW846 8260B
Toluene	10.0	11.0	ug/L	110	SW846 8260B
Trichloroethene	10.0	11.4	ug/L	114	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
Bromofluorobenzene	99	(75 - 130)
1,2-Dichloroethane-d4	93	(65 - 135)
Toluene-d8	109	(80 - 130)

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: E3D030381      Work Order #...: FLGE81AC      Matrix.....: WATER  
 LCS Lot-Sample#: E3D070000-475  
 Prep Date.....: 04/04/03      Analysis Date...: 04/04/03  
 Prep Batch #...: 3097475      Analysis Time...: 15:31  
 Dilution Factor: 1      Instrument ID...: G15  
 Analyst ID.....: 001464

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
TPH (as Gasoline)	109	(70 - 140)	SW846 8015B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
a, a, a-Trifluorotoluene (TFT)	117	(70 - 130)

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.  
 Bold print denotes control parameters



LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: E3D030381      Work Order #...: FLGE81AC      Matrix.....: WATER  
 LCS Lot-Sample#: E3D070000-475  
 Prep Date.....: 04/04/03      Analysis Date...: 04/04/03  
 Prep Batch #...: 3097475      Analysis Time...: 15:31  
 Dilution Factor: 1      Instrument ID...: G15  
 Analyst ID.....: 001464

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>METHOD</u>
TPH (as Gasoline)	1.00	1.09	mg/L	109	SW846 8015B
<u>SURROGATE</u>		<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>		
a,a,a-Trifluorotoluene (TFT)		117	(70 - 130)		

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.  
 Bold print denotes control parameters.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: E3D030381      Work Order #...: FLDA1AC-LCS      Matrix.....: WATER  
 LCS Lot-Sample#: E3D040000-410      FLDA1AD-LCSD  
 Prep Date.....: 04/04/03      Analysis Date...: 04/07/03  
 Prep Batch #...: 3094410      Analysis Time...: 10:43  
 Dilution Factor: 1      Instrument ID...: G02  
 Analyst ID.....: 356074

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
TPH (as Diesel)	107	(70 - 125)			SW846 8015B
	106	(70 - 125)	1.0	(0-25)	SW846 8015B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Benzo (a) pyrene	99	(70 - 125)
	98	(70 - 125)

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: E3D030381      Work Order #...: FLDA01AC-LCS      Matrix.....: WATER  
 LCS Lot-Sample#: E3D040000-410      FLDA01AD-LCSD  
 Prep Date.....: 04/04/03      Analysis Date...: 04/07/03  
 Prep Batch #...: 3094410      Analysis Time...: 10:43  
 Dilution Factor: 1      Instrument ID...: G02  
 Analyst ID.....: 356074

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>RPD</u>	<u>METHOD</u>
TPH (as Diesel)	5.00	5.33	mg/L	107		SW846 8015B
	5.00	5.28	mg/L	106	1.0	SW846 8015B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Benzo(a)pyrene	99	(70 - 125)
	98	(70 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.  
 Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #....: E3D030381      Work Order #....: FLA3T1AC-MS      Matrix.....: WATER  
 MS Lot-Sample #: E3D030414-010      FLA3T1AD-MSD  
 Date Sampled...: 04/01/03 11:10      Date Received...: 04/03/03 18:30      MS Run #.....: 3094153  
 Prep Date.....: 04/04/03      Analysis Date...: 04/04/03  
 Prep Batch #...: 3094373      Analysis Time...: 02:01  
 Dilution Factor: 100      Analyst ID.....: 004648      Instrument ID...: MSJ

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	99	(75 - 125)			SW846 8260B
	100	(75 - 125)	1.2	(0-25)	SW846 8260B
Chlorobenzene	102	(75 - 125)			SW846 8260B
	98	(75 - 125)	4.1	(0-25)	SW846 8260B
1,1-Dichloroethene	99	(65 - 135)			SW846 8260B
	101	(65 - 135)	2.1	(0-25)	SW846 8260B
Toluene	108	(75 - 125)			SW846 8260B
	101	(75 - 125)	6.0	(0-25)	SW846 8260B
Trichloroethene	0.0 MSB	(75 - 135)			SW846 8260B
	0.0 MSB	(75 - 135)	0.0	(0-25)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	101	(75 - 130)
	101	(75 - 130)
1,2-Dichloroethane-d4	89	(65 - 135)
	96	(65 - 135)
Toluene-d8	107	(80 - 130)
	105	(80 - 130)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.  
 Bold print denotes control parameters  
 MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E3D030381      Work Order #...: FLA3T1AC-MS      Matrix.....: WATER  
 MS Lot-Sample #: E3D030414-010      FLA3T1AD-MSD  
 Date Sampled...: 04/01/03 11:10      Date Received...: 04/03/03 18:30      MS Run #.....: 3094153  
 Prep Date.....: 04/04/03      Analysis Date...: 04/04/03  
 Prep Batch #...: 3094373      Analysis Time...: 02:01  
 Dilution Factor: 100      Analyst ID.....: 004648      Instrument ID...: MSJ

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT		
					RECVRY	RPD	METHOD
Benzene	ND	1000	991	ug/L	99		SW846 8260B
	ND	1000	1000	ug/L	100	1.2	SW846 8260B
Chlorobenzene	ND	1000	1020	ug/L	102		SW846 8260B
	ND	1000	983	ug/L	98	4.1	SW846 8260B
1,1-Dichloroethene	ND	1000	990	ug/L	99		SW846 8260B
	ND	1000	1010	ug/L	101	2.1	SW846 8260B
Toluene	ND	1000	1080	ug/L	108		SW846 8260B
	ND	1000	1010	ug/L	101	6.0	SW846 8260B
Trichloroethene	4900	1000		ug/L	0.0		SW846 8260B
			Qualifiers: MSB				
	4900	1000		ug/L	0.0	0.0	SW846 8260B
			Qualifiers: MSB				

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Bromofluorobenzene	101	(75 - 130)
	101	(75 - 130)
1,2-Dichloroethane-d4	89	(65 - 135)
	96	(65 - 135)
Toluene-d8	107	(80 - 130)
	105	(80 - 130)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.  
 Bold print denotes control parameters  
 MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: E3D030381      Work Order #...: FLA4R1AE-MS      Matrix.....: WATER  
 MS Lot-Sample #: E3D030415-023      FLA4R1AF-MSD  
 Date Sampled...: 04/01/03 12:27      Date Received...: 04/03/03 18:30      MS Run #.....: 3097252  
 Prep Date.....: 04/04/03      Analysis Date...: 04/04/03  
 Prep Batch #...: 3097475      Analysis Time...: 19:08  
 Dilution Factor: 1      Analyst ID.....: 001464      Instrument ID...: G15

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
TPH (as Gasoline)	97	(70 - 140)			SW846 8015B
	99	(70 - 140)	1.6	(0-25)	SW846 8015B
<u>SURROGATE</u>		<u>PERCENT RECOVERY</u>		<u>RECOVERY LIMITS</u>	
a, a, a-Trifluorotoluene (TFT)		118		(70 - 130)	
		121		(70 - 130)	

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.  
 Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: E3D030381      Work Order #...: FLA4R1AE-MS      Matrix.....: WATER  
 MS Lot-Sample #: E3D030415-023      FLA4R1AF-MSD  
 Date Sampled...: 04/01/03 12:27      Date Received...: 04/03/03 18:30      MS Run #.....: 3097252  
 Prep Date.....: 04/04/03      Analysis Date...: 04/04/03  
 Prep Batch #...: 3097475      Analysis Time...: 19:08  
 Dilution Factor: 1      Analyst ID.....: 001464      Instrument ID...: G15

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT		
					RECVRY	RPD	METHOD
TPH (as Gasoline)	ND	1.00	0.974	mg/L	97		SW846 8015B
	ND	1.00	0.989	mg/L	99	1.6	SW846 8015B

SURROGATE	PERCENT RECOVERY		RECOVERY LIMITS
	118	121	(70 - 130)
a, a, a-Trifluorotoluene (TFT)			(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.  
 Bold print denotes control parameters

**STL LOS ANGELES**  
PROJECT RECEIPT CHECKLIST

Date: 04/08/03

Quantims Lot #: E3D030381  
Client Name: TAIT  
Received by: AB  
Delivered by:  Client  Airborne  Fed Ex  DHL  
 UPS  DES  Other

Quote #: \_\_\_\_\_  
Project: MISSION ROCK  
Date/Time Received: 04/08/03 @ 1550  
 DHL  In-House Courier  Rey B.

Initial / Date

AB 04/08/03

Custody Seal Status:  Intact  Broken  None

Custody Seal #(s): \_\_\_\_\_  No Seal #

Sample Container(s):  STL-LA  Client  N/A

Temperature(s) (Cooler/blank) in °C: 5.5 Correction factor -0.2°C (Corrected Temp.) 5.3

Thermometer Used : ID: B  IR (Infra-red)  Digital (Probe)

Samples:  Intact  Broken  Other

Anomalies:  No  Yes (See Clouseau)

Labeled by \_\_\_\_\_  
Labeling checked by \_\_\_\_\_

Turn Around Time:  RUSH-24HR  RUSH-48HR  RUSH-72HR  NORMAL

Short-Hold Notification:  Ph  Wet Chem  Metals (Filter/Pres)  Encore  N/A

Outside Analysis(es) (Test/Lab/Date Sent Out) : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\*\*\*\*\* LEAVE NO BLANK SPACES ; USE N/A \*\*\*\*\*

Fraction	<u>1-3</u>	<u>4</u>															<u>PH</u> <u>N/A</u>
VOAH 1*	<u>6</u>	<u>3</u>															
<u>LAGs</u>	<u>2</u>																

h: HCl na: Sodium Hydroxide zna: Zinc Acetate/Sodium Hydroxide s: H2SO4 n: HNO3 n/f: HNO3-Field filtered n/l: HNO3-Lab filtered  
CGJ: Clear Glass Jar CGB: Clear Glass Bottle AGJ: Amber Glass Jar AGB: Amber Glass Bottle PB: Poly Bottle E: Encore Sampler V: VOA SL: Sleeve  
\* Number of VOA's w/ Headspace present

LOGGED BY/DATE: AB 04/08/03 REVIEWED BY/DATE: MR 4/3/03



# Chain of Custody Record

**SEVERN  
TRENT** **STL**

**Severn Trent Laboratories, Inc.**

STL-4124 (0901)

Client <b>TATI ENVIRONMENTAL MGMT.</b>		Project Manager <b>SCOT EIC.</b>		Date <b>3/31</b>	Chain of Custody Number <b>107152</b>
Address <b>701 N. PARK CH. DR.</b>		Telephone Number (Area Code)/Fax Number <b>714-560-8200</b>		Lab Number <b>E3D030381</b>	Page <b>1</b> of <b>1</b>

City <b>Santa Ana</b>	State <b>CA</b>	Zip Code	Site Contact <b>SAEED</b>	Lab Contact <b>-</b>	Analysis (Attach list if more space is needed)
Project Name and Location (State) <b>MISSION ROCK - SUNOL.</b>			Carrier/Waybill Number		

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives							Special Instructions/ Conditions of Receipt			
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc2/NaOH	TOTAL				
MW-1	3/31	9:00	X				6			2			8	8260B	8015M-TPH-9	8015M-TPH-9	
MW-2	3/31	9:30	X				6			2			8				
MW-3	3/31	10:30	X				6			2			8				
Trip Blank														24 Bottle			

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown	Sample Disposal <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	(A fee may be assessed if samples are retained longer than 1 month)
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Turn Around Time Required <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 7 Days <input type="checkbox"/> 14 Days <input type="checkbox"/> 21 Days <input type="checkbox"/> Other <b>Normal</b>	QC Requirements (Specify)
---	---------------------------

1. Relinquished By <i>[Signature]</i>	Date <b>3/31/03</b>	Time	1. Received By <i>[Signature]</i>	Date <b>4-3-03</b>	Time <b>13:45</b>
2. Relinquished By <i>[Signature]</i>	Date <b>4-3-03</b>	Time <b>14:00</b>	2. Received By <i>[Signature]</i>	Date <b>07/02/03</b>	Time <b>1550</b>
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments