Fourth Quarter 2005
Groundwater Monitoring and Sampling Report

Mission Valley Rock Company
7999 Athenour Way
Sunol, California

Prepared by:
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1.0 INTRODUCTION

This report summarizes the Fourth 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 Fourth Quarter 2005 groundwater monitoring and sampling program.

2.0 OBJECTIVE AND SCOPE OF WORK

The objective of the proposed scope of work was to monitor and sample the existing groundwater monitoring wells at the Site.

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

- Groundwater Monitoring & Sampling
- Laboratory Analyses
- Report Preparation
- Non-hazardous Waste Disposal

3.0 BACKGROUND

In May of 1996, Tank Protect Engineering (TPE) removed two diesel and one gasoline underground storage tanks (USTs). During June of 1998, three 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 (TEM, 2000).

In June of 2000, TEM assumed the contract for environmental services at the Site. In December of 2002, eight soil borings (TB-1 through TB-8) were drilled and sampled at the Site using a direct-push rig. In January of 2005, eight additional soil borings were advanced at the Site using a hollow-stem auger drill rig. Six 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 Fourth Quarter 2000 through the present.

4.0 SITE HYDROGEOLOGY

The Site is located within the Sunol Valley at an elevation of approximately 260 feet above

mean sea level (USGS, 1989). The land surface at the Site has been disturbed by excavation activities; however, the natural surface slopes at a gradient of approximately 35 feet per mile toward San Antonio Creek to the east-northeast. San Antonio Creek flow is toward the northwest.

Drilling and sampling activities at the Site indicate that a clay layer is present below the surficial gravels to depths of 10 to 15 feet below ground surface (bgs), with the exception of the area at MW-2S/2M/2D, where the clay layer extends to a depth of 25 feet bgs (TEM, 2005). Soils below the clay layer to the maximum depth explored (30 feet bgs) consist primarily of gravelly sand and sandy gravel mixtures.

Based on the Fourth Quarter 2005 groundwater monitoring data, the depth to groundwater at the Site averaged 7.42 bgs. The apparent groundwater flow direction is to the southeast at a gradient of about 0.015 feet/foot (ft/ft). The flow direction is opposite to the regional northwestern groundwater flow direction in the Sunol Valley as reported by the Alameda County Health Care Services in their letter to Mission Valley Rock Company, dated November 3, 2005. The variation from the regional trend may reflect local conditions, and the groundwater levels at the site may be affected by excavation and pumping operations related to aggregate extraction at the Site.

5.0 GROUNDWATER MONITORING WELL PURGING AND SAMPLING

On December 12th, 2005, static groundwater levels were measured and recorded in the on-site 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). Prior to use at each well, the meter was decontaminated with a mild detergent solution and two de-ionized water rinses. Groundwater gauging and elevation data for the Fourth Quarter 2005 event are summarized in Table 1. Historical groundwater elevation data are summarized in Table 2. Groundwater sampling data sheets are presented in Appendix A.

On December 12th and 13th, 2005, the groundwater monitoring wells were sampled using a WaTerra inertial pump as part of the Fourth Quarter 2005 groundwater monitoring and sampling event. Approximately 65 gallons of purged groundwater were pumped into five steel 55-gallon drums during the sampling event. Groundwater samples were collected from the discharge end of the pump at low-flow levels and transferred into laboratory-supplied containers. Care was taken to ensure that no headspace was allowed into the containers.

Integrated Waste Management of Milpitas, California provided pick-up services for the drummed purge water generated by the monitoring activities. The drums were transported and disposed as non-hazardous water at Seaport Refining & Environmental in Redwood City, California on January 20, 2005. The Certificate of Disposal is contained in Appendix B.

Groundwater samples were collected from 14 wells. They were labeled, placed into an ice-chilled cooler (4°C), and transported under chain-of-custody protocols to SunStar Laboratories, Inc. (SunStar), a State-Certified laboratory for chemical analysis.

6.0 LABORATORY ANALYSES

The groundwater samples collected during the Fourth Quarter 2005 groundwater monitoring and sampling event were analyzed for:

- The diesel and gasoline fractions of Total Petroleum Hydrocarbons (TPH-d and TPH-g, respectively) using EPA Method No. 8015M.
- Volatile Organic Compounds (VOC's), including benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tertiary butyl ether (MTBE), and the other fuel oxygenates tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), di-isopropyl ether (DIPE), and ethyl tertiary-butyl ether (ETBE) using EPA Method No. 8260B.

Dissolved-phase TPH-g concentrations in the shallow groundwater zone are presented in Figure 4, and deep-zone TPH-g concentrations are contoured in Figure 5. A maximum benzene concentration of 640 micrograms per liter (μg/L) was detected in MW-7D. A maximum shallow MTBE concentration of 190 μg/L was detected in MW-6S, and dissolved-phase MTBE concentrations in shallow-zone wells are contoured in Figure 6. A maximum MTBE concentration in the deep-zone wells was 92 μg/L in MW-6D. Deep-zone MTBE isoconcentration contours are presented in Figure 7.

Fourth Quarter 2005 groundwater analytical results are summarized in Table 3, and a copy of the laboratory analytical report is presented in Appendix C. 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 obtained by TEM, groundwater levels averaged 7.42 feet bgs. The groundwater flow direction is to the southeast at a gradient of approximately 0.015 ft/ft.
- Fourteen (14) 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 150,000 µg/L was detected in well MW-7D.
- A maximum TPH-g concentration in groundwater of 1,300,000 µg/L was detected in well MW-7D.
- A maximum benzene concentration of 640 μg/L was detected in well MW-7D.
- A maximum MTBE concentration of 190 μg/L was detected in well MW-6S.

Based on groundwater sampling data, the BTEX concentrations were low except in well MW-7D, and fuel oxygenates other than MTBE were not detected above laboratory detection limits.

8.0 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. The laboratory reported the results to be within acceptable percent recoveries with no results exceeding the laboratory-established control limits.

9.0 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 it is 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. TEM is 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.

10.0 REFERENCES

Alameda County Health Care Services, November 3, 2005, *Fuel Leak Case No. RO0000207*, Mission Valley Rock and Asphalt, 7999 Anthenour Way, CA.

Tait Environmental Management, July 28, 2000, Second Quarter Report, June 2000, Mission Valley Rock Company, 7999 Athenour Way, Sunol, California 94586.

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FIGURES

TABLES

APPENDIX A

SAMPLING DATA SHEETS

APPENDIX B

CERTIFICATE OF DISPOSAL

APPENDIX C

LABORATORY REPORT