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VIP SERVICE STATION
Patel, Lalji
385 Century Circle
Danville, CA 94526
July 22, 2002

Alameda County
Health Care Services
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **Subsurface Investigation Report # 0047.R28- VIP Services, 3889 Castro Valley Blvd, Castro Valley, CA**

Dear Mr. Scott O. Seery,

With reference to your letter dated April 16, 2001, please find attached following reports for your review and further instructions for the subject site.

1. P & D Environmental report # 0047.R28, dated July 2, 2002 related to "Subsurface Investigation Report" per the scope of which was accepted by your letter dated June 18, 2001. We understand that the work has delayed due to various problems of site access by the property owners.

2. P & D Environmental report # 0047.R29, dated July 8, 2002 related to "Groundwater Monitoring and Sampling Report" which covers semi-annual monitoring and sampling of groundwater wells MW1, MW2 and MW3 at the subject site.

3. P & D Environmental report # 0047.R27, dated November 2, 2001 related to "Groundwater Monitoring and Sampling Reports" which covers semi-annual monitoring and sampling of groundwater wells MW1, MW2 and MW3 at the subject site.

Please provide us instructions for further action at your earliest.

Should you have any questions regarding above subject, please contact us.

Thanks!

Sincerely,

L B Patel

L. B. Patel

Attachments: Above reports

P & D ENVIRONMENTAL
A Division of Paul H. King, Inc.
4020 Panama Court
Oakland, CA 94611
(510) 658-6916

Attachment to letter dated 7/22/02

July 2, 2002
Report 0047.R28

Mr. L.B. Patel
Mr. P. Gupta
VIP Service
385 Century Circle
Danville, CA 94526

SUBJECT: SUBSURFACE INVESTIGATION REPORT (P16-P27)
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA

Gentlemen:

P&D Environmental (P&D), a division of Paul H. King, Inc. is pleased to present this report documenting the drilling of 12 exploratory borings, designated as P16 through P27, for the collection of soil and groundwater grab samples in the vicinity of the subject site. This work was performed in accordance with P&D's Subsurface Investigation Work Plan (Work Plan 0047.W3, dated June 1, 2001). The work plan was approved by the Alameda County Department of Environmental Health (ACDEH) in a letter. A Site Location Map (Figure 1) and a Site Vicinity Map (Figure 2) showing the boring locations are attached with this report.

All work was performed under the direct supervision of an appropriately registered professional. This report is prepared in accordance with guidelines set forth in the document "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites" dated August 10, 1990 and "Appendix A – Workplan for Initial Subsurface Investigation" dated August 20, 1991.

BACKGROUND

It is P&D's understanding that the site was purchased by VIP Service in December, 1984. Prior to purchase of the property by VIP Service, the site was operated as a retail gasoline station for an undetermined period of time. The site was operated as a retail gasoline station from the time of purchase by VIP Service until the tanks were removed by Accutite on April 26, 1993. The underground tank system consisted of three 10,000 gallon capacity gasoline tanks, two dispenser islands, and one 550 gallon waste oil tank. It is P&D's understanding that the fuel tanks contained leaded and unleaded gasoline while in use by VIP Service. In addition, VIP Service reported that diesel fuel was not stored at the site at any time.

It is P&D's understanding that at the time of tank removal, eight soil samples were collected from the sidewalls of the fuel tank pit, and one soil sample was collected from the waste oil tank pit. Groundwater was reported to have been encountered in the fuel tank pit at a depth of approximately 11 feet. One water sample was collected from the water in the fuel tank pit. On April 28, 1993 Accutite returned to the site and collected seven soil samples from beneath the dispenser islands.

All of the samples were analyzed at Sequoia Analytical in Redwood City, California for Total Petroleum Hydrocarbons as Gasoline (TPH-G); Benzene, Toluene, Ethylbenzene and Xylenes (BTEX); and for Total Lead. In addition, the samples from the waste oil tank were analyzed for Total Petroleum Hydrocarbons as Diesel (TPH-D); Total Oil and Grease (TOG); Halogenated Volatile Organic Compounds using EPA Method 8010; Semi-Volatile Organic Compounds using EPA Method 8270; and for the metals Cadmium, Chromium, Lead, Nickel and Zinc.

The results of the soil samples collected from the fuel tank pit showed TPH-G concentrations ranging from 120 to 6,200 parts per million (ppm), and total lead results ranging from not detected to 13 ppm. The results of the water sample from the fuel tank pit showed 140 ppm TPH-G, and 0.095 ppm total lead.

The results of the soil samples collected from beneath the fuel dispensers showed TPH-G values ranging from not detected to 4.7 ppm, and total lead values ranging from not detected to 7.6 ppm.

The results of the sample collected from the waste oil tank pit showed 670 ppm TPH-G; 410 ppm TPH-D; 1,300 ppm TOG; 0.023 ppm 1,2-Dichloroethane and 0.0094 ppm Tetrachloroethylene in the EPA Method 8010 analysis; 2.7 ppm 2-Methylnapthalene and 3.8 ppm Naphthalene in the EPA Method 8270 analysis; and various metals concentrations, none of which exceeded ten times their respective STLC values. The laboratory identified the TPH-D results as being a "non-diesel mix," and indicated that the compounds reported as diesel were diesel-range gasoline and diesel-range oil compounds.

Between August 27 and November 1, 1993 P&D personnel collected stockpiled soil samples for stockpiled soil disposal characterization and oversaw the excavation of approximately 680 cubic yards of soil from the vicinity of the fuel tank pit in an effort to remove petroleum hydrocarbon-impacted soil. In addition, during this time the soil which was stockpiled by Accutite during the tank removal activities and during the subsequent soil excavation activities was disposed of at an appropriate disposal facility, and the tank pit backfilled and compacted. A total of eight confirmation soil samples were collected from the sidewalls of the tank pit on November 19, 1993 at a depth of 10 feet after over-excavation and prior to backfilling. The analytical results of the samples ranged from 33 to 3,200 ppm TPH-G. Documentation of excavation, stockpiled soil characterization and disposal, and backfilling of the pit are provided in P&D's report 0047.R1 dated January 24, 1994. The samples results associated with the removal of the tanks by Accutite are also summarized in P&D's report 0047.R1.

On November 10, 1993 P&D personnel oversaw the installation of three groundwater monitoring wells, designated as MW1 through MW3, and one exploratory soil boring, designated as B1, at the subject site. The wells were developed on November 12 and sampled on November 16, 1993. The results of the water samples showed that TPH-G was not detected in wells MW1 and MW2, and that BTEX was not detected in MW2. In well MW1, 0.0022 ppm of benzene was detected. In well MW3, TPH-G was detected at 12 ppm; BTEX was detected with benzene detected at 3.3 ppm; TRPH was not detected; EPA Method 8010 compounds were not detected except for 0.027 ppm 1,2-Dichloroethane; and EPA Method 8270 compounds were not detected except for 0.009

ppm Phenol, 0.006 ppm Benzyl Alcohol, 0.006 2-Methylphenol, 0.007 ppm 2,4-Dimethylphenol, 0.088 ppm Benzoic Acid, 0.042 ppm Naphthalene, and 0.015 2-Methylnapthalene.

Documentation of the monitoring well and soil boring installation and associated sample results are presented in P&D's report 0047.R2 dated January 24, 1994. The locations of the monitoring wells are shown in Figure 2.

In response to a letter dated March 18, 1994 from Mr. Scott Seery ACDEH which commented upon the results of the initial groundwater sampling associated with the installation of the monitoring wells at the subject site, a quarterly groundwater monitoring and sampling program was initiated.

In response to a request from the ACDEH, P&D personnel hand augered on June 9, 1995, 5 offsite exploratory boreholes designated as boreholes P1 through P5 in the downgradient direction from the subject site. The locations of the soil borings are shown in Figure 3. The results of the groundwater grab samples showed that no gasoline or BTEX were detected in borehole P4. Gasoline and BTEX were detected in boreholes P1, P2, P3 and P5. Documentation of the soil boring installation and associated sample results are presented in P&D's report 0047.R8 dated July 14, 1995. Based upon the sample results, Mr. Scott Seery of the ACDEH requested that further investigation be performed.

On November 17, 1995, P&D personnel hand augered 5 offsite exploratory boreholes designated as boreholes P6 through P10 for the collection of groundwater grab samples. The locations of the soil borings are shown in Figure 3. The results of the groundwater grab samples showed that no gasoline or BTEX were detected in boreholes P6, P8, and P10. Gasoline and BTEX were detected in boreholes P7, and P9. Documentation of the soil boring installation and associated sample results are presented in P&D's report 0047.R11 dated December 27, 1995. Based upon the sample results, Mr. Scott Seery of the ACDEH requested in a letter dated January 10, 1996 that further investigation be performed.

On August 8 and 9, 1996, P&D personnel hand augered 5 offsite exploratory boreholes designated as boreholes P11 through P15 for the collection of groundwater grab samples. The locations of the soil borings are shown in Figure 3. The results of the groundwater grab samples showed that no gasoline or BTEX were detected in boreholes P11, P13, P14, and P15. Gasoline was detected in borehole P12. Documentation of the soil boring installation and associated sample results are presented in P&D's report 0047.R15 dated October 9, 1996.

Based upon the sample results, Mr. Scott Seery of the ACDEH met with Mr. Patel of VIP Service and Paul King of P&D on November 8, 1996 to discuss corrective actions. In a letter dated November 8, 1996 Mr. Seery requested that a risk-based corrective action (RBCA) evaluation to be performed and that an underground utility survey be performed to identify utility trenches which could be potential conduits for petroleum hydrocarbon vapors.

On March 27, 1997 a magnetometer survey was performed to identify underground utilities in the vicinity of the subject site. In a report dated October 16, 1997, titled, "Risk-Based Corrective

Action Evaluation- Tier 2," P&D identified unacceptable levels of risk from subsurface petroleum hydrocarbons, based on the results of the RBCA evaluation. P&D recommended that soil gas samples be collected in the underground utility trenches to evaluate the actual presence of contaminants and thereby determine the actual risk posed by exposure to contaminants. Based on the report recommendations, the ACDEH requested that potential sensitive receptors and soil gas sample collection locations be identified in a letter dated February 2, 1998.

In response to the ACDEH request, P&D visually evaluated and recorded building foundation construction conditions, evaluated buried utility depths, identified potential sensitive receptors, and recommended locations for soil gas sample collection. P&D's findings were provided in a Potential Receptor Evaluation Report (report 0047.R21) dated May 20, 1998. Based on the report, the ACDEH requested that the soil gas samples be collected in a letter dated July 21, 1998.

In accordance with the ACDEH July 21, 1998 letter, P&D drilled 12 boreholes for the collection of offsite soil gas samples. Detectable concentrations of TPH-G, MTBE and benzene were present in soil gas samples collected from boreholes adjacent to the house at 3875 Castro Valley Boulevard. The boreholes were only approximately 2.5 feet deep because of the shallow depth of the utilities at these locations. Based on the MTBE and benzene concentrations at these shallow depths in these boreholes, P&D recommended that potential airborne MTBE and benzene concentrations be further evaluated with respect to the potential effects to occupants of the permanent structure at 3875 Castro Valley Boulevard. Documentation of the investigation is provided in P&D's Soil Gas Investigation Report (report 0047.R23) dated January 14, 2000.

On February 7, 2001 Mr. Scott Seery of the ACDEH, Mr. Chuck Headlee of the Regional Water Quality Control Board, San Francisco Bay Region, and Mr. Paul King of P&D met at the ACDEH offices. During the meeting, it was agreed that additional soil and groundwater grab samples would be collected to increase the density of information available for delineation of petroleum hydrocarbons in soil and groundwater in the immediate vicinity of the site. In a letter dated April 16, 2001 Mr. Seery requested a work plan for additional subsurface investigation.

FIELD ACTIVITIES

On October 17 and 18, 2001, P&D personnel drilled twelve boreholes in the vicinity of the subject site. A total of 25 soil samples and 12 groundwater samples were collected from the boreholes and analyzed.

Prior to performing field work, site access was obtained from the offsite property owner, a drilling permit was obtained from the Alameda County Department of Public Works (ACDPW), the drilling locations were marked with white paint, underground utilities were located by an underground utility locator, Underground Service Alert was notified for underground utility location, a health and safety plan was prepared, and notification of the scheduled drilling date was provided to the ACDPW. In addition, in accordance with discussions with the ACDEH, the ground surface elevations were surveyed and a scaled site vicinity map was prepared by Kier &

Wright of Pleasanton, California for the purpose of geologic cross section preparation. Kier & Wright are State-licensed surveyors.

Soil Boring Oversight and Soil and Groundwater Grab Sample Collection

On October 17 and 18, 2001 a total of 12 soil borings, designated as borings P16 through P27, were drilled for the collection of soil and groundwater grab samples in the vicinity of the subject site. The boreholes were each continuously cored to a total depth of between 10 to 18 feet by Vironex of San Leandro, California using Geoprobe push technology. The soil from all of the borings was logged in the field in accordance with standard geologic field techniques and the Unified Soil Classification System. All of the soil was evaluated with a 10.3 eV Photoionization Detector (PID) calibrated using a 100 ppm isobutylene standard. The PID values were recorded on the boring logs. Organic vapors were detected in all of the boreholes, and the maximum PID reading for the boreholes ranged from 255 to 1120 ppm. The total borehole depth, maximum PID value and associated depth for each borehole are summarized in Table 1. Copies of the boring logs are attached with this report. The locations of the soil borings are shown on the attached Site Vicinity Map, Figure 2.

A total of 25 soil samples were retained for laboratory analysis from the boreholes. Soil samples were collected at depths of 4.0 and 9.0 feet below the ground surface in all of the boreholes, with the exception of P21, P22 and P23. In P21, there was no sample recovery at a depth of 9.0 feet, and no sample was collected. In P22 and P23, samples were collected at depths of 4.0, 6.0 and 7.0 feet below the ground surface, based on lithology, odor, and associated PID values. All of the samples collected for laboratory analysis were retained in their cellulose acetate tubes in the following manner. The six-inch interval beginning at the sample collection depth was cut from the continuous core, and the ends of the sample were sequentially covered with Teflon sheets and plastic endcaps. The samples were then labeled, placed into a ziplock baggie, and stored in a cooler with ice pending delivery to the laboratory. Chain of custody documentation procedures were observed for all sample handling.

Groundwater was first encountered in all of the boreholes at depths ranging from 7.5 to 12.0 feet below the ground surface. Immediately prior to backfilling, the measured depth to water in the boreholes ranged from 5.0 to 9.8 feet below the ground surface. **Sheen and petroleum hydrocarbon odors were detected in water samples from the boreholes P16, P18, P19, P20, P22, P23, and P24.** Measured depth to groundwater was recorded on the boring logs, and is summarized in Table 1.

One groundwater grab sample was collected from each borehole using a stainless steel bailer or polyethylene tubing with a stainless steel footvalve. The water was transferred to VOAs, which were sealed with Teflon-lined septa and screwcaps. The VOAs were overturned and tapped to ensure that air bubbles were not present. The sample containers were labeled and stored in a cooler with ice pending delivery to the laboratory. Chain of custody documentation procedures were observed for all sample handling.

All drilling equipment was steam cleaned prior to use in each borehole. All sampling equipment was cleaned with an Alconox solution followed by a clean water rinse prior to use in each borehole. Following completion of sample collection activities, the boreholes were filled with neat cement grout. Soil and water generated during drilling was stored in two drums at the subject site pending characterization and disposal.

GEOLOGY AND HYDROGEOLOGY

Based on review of regional geologic maps from U.S. Geological Survey Professional Paper 943, "Flatland Deposits - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning," by E.J. Helley and K.R. Lajoie, 1979 the subject site is underlain by Late Pleistocene alluvium (Qpa). The alluvium is described as typically consisting of weakly consolidated, slightly weathered, poorly sorted, irregularly interbedded clay, silt, sand and gravel and is considered to overlie bedrock on the alluvial plain marginal to San Francisco Bay.

The subsurface materials encountered in the boreholes consisted of brown to gray silty clay or clay, with occasional fine-grained sand layers. The subsurface materials encountered in the boreholes were consistent with subsurface conditions encountered and documented during previous subsurface investigations in the vicinity of the site. A total of six geologic cross sections show subsurface conditions in the area of investigation. The locations of the geologic cross sections are shown in Figure 2. Geologic cross sections A-A', B-B', and C-C' are shown in Figure 4, and D-D', E-E' and F-F' are shown in Figure 5. Review of the geologic cross sections shows that in general, the site is underlain by fine-grained material (clay and silty clay), which is in turn underlain by coarse-grained material (silty sand or sand) at a depth of approximately 8 to 14 feet below the ground surface.

Groundwater was first encountered in all of the boreholes at depths ranging from 7.5 to 12.0 feet below the ground surface. Immediately prior to backfilling, the measured depth to water in the boreholes ranged from 5.0 to 9.8 feet below the ground surface. Historically, the measured depth to water in the monitoring wells at the subject site has ranged from approximately from 6 to 10 feet below the ground surface. Historical groundwater flow direction at the subject site, as calculated from groundwater elevation data from the on-site monitoring wells, has ranged from southwesterly to northwesterly.

LABORATORY ANALYSIS

All of the samples were analyzed at McCampbell Analytical, Inc. (McCampbell) of Pacheco, California. McCampbell is a state-accredited hazardous waste testing laboratory. All of the soil and groundwater grab samples from the boreholes were analyzed for Total Petroleum Hydrocarbons (TPH) as Gasoline using EPA Method 5030 in conjunction with Modified EPA Method 8015, and for BTEX and MTBE by EPA Method 8020.

Review of the laboratory analytical results shows that MTBE was not detected in any of the soil or groundwater samples.

Review of the soil sample results at the 4.0-foot depth shows that TPH-G was either not detected or was detected at a concentration of less than 10 ppm in all of the boreholes, with the exception of boreholes P18, P19, and P26, where TPH-G was detected at concentrations of 15, 190 and 660 ppm, respectively. Review of the soil sample results at the 9.0-foot depth (and the 6.0 or 7.0-foot depth in boreholes P22 and P23) shows that TPH-G was detected at concentrations exceeding 1,000 ppm in boreholes P16, P22, P23 and P24. TPH-G was detected at concentrations less than 1,000 but greater than 100 ppm in boreholes P18, P19, P20, P23 and P27. Site Vicinity Maps showing TPH-G isoconcentration contours at the 4.0-foot and the 9.0-foot depth are attached with this report as Figures 6 and 7, respectively. Geologic cross sections showing TPH-G isoconcentration contours are also attached with this report as Figures 12 and 13.

Benzene was either not detected or was detected at a concentration of less than 1 ppm at the 4.0-foot depth, with the exception of borehole P26, where benzene was detected at a concentration of 5.5 ppm. Benzene concentrations less than 1 ppm but greater than or equal to 0.1 ppm were detected in boreholes P18, P19, P20, P22, P23 and P24.

Benzene was detected at a concentration of 26 ppm in borehole P22 at a depth of 6.0 feet, and was detected at a concentration of 0.57 ppm in the same borehole at a depth of 7.0 feet. Benzene was detected at concentrations between 10 and 1 ppm at the 9.0-foot depth (and the 6.0 and 7.0-foot depth in boreholes P16, P19, P20, P23, and P24. Benzene concentrations less than 1 ppm but greater than or equal to 0.1 ppm were detected in boreholes P18, P22 (at the 7.0-foot depth), P26 and P27. Site Vicinity Maps showing benzene isoconcentration contours at the 4.0-foot and the 9.0-foot depth are attached with this report as Figures 8 and 9, respectively. Geologic cross sections showing benzene isoconcentration contours are also attached with this report as Figures 14 and 15.

The laboratory analytical results for the soil samples are summarized in Table 2. Copies of the laboratory analytical reports and chain of custody documentation are attached with this report.

Review of the laboratory analytical results for the groundwater samples shows that TPH-G was detected at concentrations exceeding 100 ppm in samples from boreholes P20, P21, P22 and P23; at concentrations between 100 and 10 ppm in boreholes P16, P18, P19, P24 and P27; and at concentrations of less than 10 ppm and greater than 1 ppm in boreholes P17, P25 and P26. Benzene was detected at concentrations greater than 10 ppm in boreholes P21, P22, P23 and P24; at concentrations between 10 and 1.0 ppm in boreholes P19, P20, and P26; and at concentrations of less than 1.0 but greater than or equal to 0.1 ppm in boreholes P16, P18, P25 and P27. Site Vicinity Maps showing TPH-G and benzene isoconcentration contours in groundwater are attached with this report as Figures 10 and 11, respectively.

Review of the laboratory analytical reports for the groundwater samples shows that sheen was present on the samples from boreholes P16, P18, P19, P20, P21, P22, P23, and P24.

The laboratory analytical results for the groundwater grab samples are summarized in Table 3. Copies of the laboratory analytical reports and chain of custody documentation are attached with this report.

DISCUSSION AND RECOMMENDATIONS

Groundwater grab samples (P1 through P15) collected during previous investigations have resulted in the delineation of impacted groundwater in the vicinity of the subject site (see Figure 3). A Tier 2 RBCA evaluation resulted in a calculated unacceptable level of risk to potential offsite sensitive receptors. Evaluation of building foundation construction for potential offsite sensitive receptors located within the plume boundaries resulted in identification of the permanent building located at 3945 Castro Valley Boulevard as a sensitive receptor of concern. The foundation for the building consists of a slab-on-grade construction. Soil gas samples collected at a depth of 2.5 feet below the ground surface from utility trenches near where the utilities entered the building resulted in identification of petroleum hydrocarbons in the shallow soil gas, notably MTBE and benzene. Based on a February 7, 2001 meeting at the ACDEH, a work plan was requested to evaluate the impact of petroleum hydrocarbons to shallow soil immediately surrounding the former UST pit, with particular attention to the area immediately downgradient of the former UST pit and adjacent to the permanent building at 3945 Castro Valley Boulevard.

A total of 12 boreholes (P16 through P27) were drilled during the investigation documented in this report. Soil samples were collected from most of the boreholes at a depth of 4.0 and 9.0 feet, and one groundwater grab sample was collected from each borehole.

Review of Figure 6 (TPH-G in soil at 4.0-foot depth) shows that TPH-G concentrations exceeding 100 ppm were detected in shallow soil at two locations, notably at borehole P26 located adjacent to the permanent building at 3945 Castro Valley Boulevard. Review of Figure 7 (TPH-G in soil at 9.0-foot depth) shows that an area with TPH-G concentrations exceeding 1000 ppm was identified in boreholes P23 and P24, located approximately 20 feet upgradient from the permanent building at 3945 Castro Valley Boulevard. Review of Table 2 shows that this area with TPH-G concentrations exceeding 1,000 ppm includes the area surrounding borehole P22, if soil sample results from the 6.0-foot depth are used instead of soil sample results from the 7.0-foot depth. Figure 7 also shows that the extent of petroleum hydrocarbons in soil at the 9.0-foot depth appears to be limited as suggested by the sample results in boreholes P25 and P26.

Review of Figure 8 (benzene in soil at 4.0-foot depth) shows that benzene concentrations exceeding 1.0 ppm were detected in shallow soil at borehole P26, corresponding to the elevated shallow soil TPH-G concentrations at this location. Review of Figure 9 (benzene in soil at 9.0-foot depth) shows that an area with benzene concentrations exceeding 1.0 ppm was identified in boreholes P23 and P24, and appears to extend upgradient to encompass the former UST pit area. The benzene concentrations exceeding 1.0 ppm appear to partially correspond to the area of elevated TPH-G concentrations identified in boreholes P23 and P24. As with the TPH-G concentrations, review of Table 2 shows that this area with benzene concentrations exceeding 1.0 ppm includes the area surrounding borehole P22, if soil sample results from the 6.0-foot depth are used instead of soil sample results from the 7.0-foot depth. Figure 9 also shows that the extent of

petroleum hydrocarbons in soil at the 9.0-foot depth appears to be limited as suggested by the sample results in boreholes P25, P26 and P27.

Review of Figure 10 shows that TPH-G concentrations in groundwater exceeding 100 ppm appear to extend from the downgradient area of the former UST pit and extend to within approximately 20 feet of the permanent structure at 3945 Castro Valley Boulevard. Review of Figure 11 shows that benzene concentrations in groundwater exceeding 10 ppm approximately correspond in their downgradient extent with TPH-G concentrations exceeding 100 ppm (see Figure 10). Comparison of the distribution of TPH-G and benzene in water (Figures 10 and 11) with TPH-G and benzene concentrations in soil at the 9.0 foot depth (Figures 7 and 9) shows that elevated TPH-G and benzene concentrations are primarily located between the downgradient side of the UST pit and the boreholes P25, P26 and P27 located immediately upgradient of the permanent structure at 3945 Castro Valley Boulevard. The elevated TPH-G and benzene concentrations in the groundwater sample from borehole P21 (similar to concentrations encountered in boreholes P22 and P23) suggest that similar TPH-G and benzene concentrations may be encountered in soil at the 9.0-foot depth in borehole P21 as were encountered in boreholes P22 and P23.

Review of geologic cross sections showing TPH-G and benzene isoconcentration contours (Figures 12 through 15) show that with the exception of boreholes P19 and P26, elevated TPH-G and benzene concentrations are present in the fine sand layer located at a depth of approximately 8.0 to 14.0 feet below the ground surface, or the clay or silty clay located immediately above the fine sand layer. Review of the boring logs for boreholes P19 and P26 did not reveal conditions that would readily explain the presence of elevated TPH-G and benzene concentrations at the 4.0-foot depth.

Based on the results of this investigation, P&D recommends that alternative remedial actions be evaluated for mitigation of elevated concentrations of subsurface petroleum hydrocarbons present between the downgradient side of the former UST pit and the upgradient side of the permanent structure located at 3945 Castro Valley Boulevard.

LIMITATIONS

This report was prepared solely for the use of VIP Service. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgement based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly-revealed conditions must be evaluated and may invalidate the findings of this report.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities which is used in this report. This report presents our professional judgement based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental

Paul H. King
President
California Registered Geologist
Registration No.: 5901
Expires: 12/31/03

Attachments:
Tables 1, 2 & 3
Site Location Map (Figure 1)
Site Vicinity Map (Figure 2)
Site Vicinity Map Showing Previous Investigation Borehole Locations (Figure 3)
Geologic Cross Sections A-A', B-B', C-C' (Figure 4)
Geologic Cross Sections D-D', E-E', F-F' (Figure 5)
Site Vicinity Map Showing TPH-G in Soil at 4.0 Foot Depth (Figure 6)
Site Vicinity Map Showing TPH-G in Soil at 9.0 Foot Depth (Figure 7)
Site Vicinity Map Showing Benzene in Soil at 4.0 Foot Depth (Figure 8)
Site Vicinity Map Showing Benzene in Soil at 9.0 Foot Depth (Figure 9)
Site Vicinity Map Showing TPH-G in Groundwater (Figure 10)
Site Vicinity Map Showing Benzene in Groundwater (Figure 11)
Geologic Cross Sections A-A', B-B', C-C' TPH-G Isoconcentration Contrours (Figure 12)
Geologic Cross Sections D-D', E-E', F-F' TPH-G Isoconcentration Contrours (Figure 13)
Geologic Cross Sections A-A', B-B', C-C' Benzene Isoconcentration Contrours (Figure 14)
Geologic Cross Sections D-D', E-E', F-F' Benzene Isoconcentration Contrours (Figure 15)
Boring Logs (12)
Laboratory Analytical Reports
Chain of Custody Documentation

PHK/hcm
0047.R28

TABLE 1
SUMMARY OF LABORATORY ANALYTICAL RESULTS
GROUNDWATER GRAB SAMPLES
TPH-G, MTBE AND BTEX ANALYSIS
(Samples Collected on October 17 - 18, 2001)

Borehole No.	Total Borehole Depth (Feet)	Maximum PID Value and Depth (ppm/Feet)	Depth to First Encountered Groundwater (Feet)	Depth to Static* Water (Feet)
P16	14.0	309/11.0	9.5	9.4
P17	12.0	255/7.0	9.0	7.8
P18	12.0	1120/6.0	8.8	8.1
P19	12.5	844/6.5	9.0	7.2
P20	12.0	695/7.0	8.5	8.1
P21	14.0	309/11.0	12.0	9.3
P22	8.0	904/7.0	7.5	6.1
P23	10.0	940/7.0	8.0	5.4
P24	12.0	840/5.0	11.0	5.3
P25	12.0	487/7.0	11.5	6.1
P26	14.0	721/4.0	12.0	5.0
P27	18.0	729/5.0	None	9.8

* = Measured depth to water prior to grouting borehole.

TABLE 2
SUMMARY OF LABORATORY ANALYTICAL RESULTS
SOIL BORING SOIL SAMPLES
TPH-G, MTBE AND BTEX ANALYSIS
(Samples Collected on October 17 - 18, 2001)

Sample No.	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
P16-4.0	2.3	ND	0.025	0.025	0.079	0.068
P16-9.0	3500	ND<5.0	2.0	19	71	140
P17-4.0	ND	ND	ND	ND	ND	ND
P17-9.0	25[a,b]	ND	ND	0.58	0.13	0.082
P18-4.0	15	ND	0.27	0.23	0.84	1.7
P18-9.0	250	ND<0.1	0.36	2.2	8.7	27
P19-4.0	190	ND<0.1	0.66	2.8	2.8	14
P19-9.0	620	ND<1.0	2.4	14	14	60
P20-4.0	9.4	ND	0.32	0.16	0.31	1.2
P20-9.0	460	ND<1.0	2.3	16	10	52
P21-4.0	1.7	ND	ND	0.012	0.009	0.031
P22-4.0	6.0	ND	0.71	0.23	0.14	0.65
P22-6.0	3800	ND<3.0	26	78	68	270
P22-7.0	14	ND	0.57	0.68	0.30	1.6

TPH-G = Total Petroleum Hydrocarbons as Gasoline.
MTBE = Methyl tert-Butyl Ether.
ND = Not Detected.
a = Laboratory Analytical Report note: Heavier gasoline range compounds are significant (aged gasoline?).
b = No recognizable pattern
Results are in parts per million (ppm), unless otherwise indicated.

TABLE 2 (Continued)
SUMMARY OF LABORATORY ANALYTICAL RESULTS
SOIL BORING SOIL SAMPLES
TPH-G, MTBE AND BTEX ANALYSIS
(Samples Collected on October 17 - 18, 2001)

Sample No.	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
P23-4.0	2.0	ND	0.10	0.023	0.009	0.12
P23-6.0	430	ND<2.0	7.4	4.9	9.6	40
P23-7.0	2900	ND<5.0	8.6	67	59	320
P24-4.0	6.7	ND	0.65	0.18	0.088	0.40
P24-9.0	1100	ND<2.0	5.7	3.9	24	88
P25-4.0	2.2	ND	0.093	0.016	0.035	0.084
P25-9.0	1.8	ND	0.006	0.020	0.020	0.094
P26-4.0	660	ND<2.0	5.5	6.3	12	53
P26-9.0	2.5	ND	0.76	0.037	0.12	0.15
P27-4.0	ND	ND	0.055	0.076	0.009	0.024
P27-9.0	110	ND<0.2	0.17	1.6	2.0	7.6

TPH-G = Total Petroleum Hydrocarbons as Gasoline.
MTBE = Methyl tert-Butyl Ether.
ND = Not Detected.
a = Laboratory Analytical Report note: Heavier gasoline range compounds are significant (aged gasoline?).
b = No recognizable pattern
Results are in parts per million (ppm), unless otherwise indicated.

TABLE 3
SUMMARY OF LABORATORY ANALYTICAL RESULTS
GROUNDWATER GRAB SAMPLES
TPH-G, MTBE AND BTEX ANALYSIS
(Samples Collected on October 17 - 18, 2001)

Sample No.	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
P16	34[c]	ND<0.2	0.15	0.066	2.5	2.6
P17	9.4	ND<0.01	0.0051	0.037	0.26	0.18
P18	76[c]	ND<0.2	0.38	1.5	3.2	17
P19	73[c]	ND<0.2	2.0	8.3	3.5	16
P20	140[c]	ND<0.5	4.0	11	4.3	19
P21	120[c]	ND<0.5	12	0.97	4.3	18
P22	130[c]	ND<2.0	17	26	4.6	22
P23	130[c]	ND<2.0	17	19	4.4	22
P24	73[c]	ND<0.55	11	0.34	3.3	10
P25	4.6	ND<0.025	0.18	0.057	0.13	0.51
P26	8.0	ND<0.02	1.4	0.2	0.25	0.93
P27	49	ND<0.1	0.83	4.1	1.9	8.4

TPH-G = Total Petroleum Hydrocarbons as Gasoline.
MTBE = Methyl tert-Butyl Ether.
ND = Not Detected.
c = Laboratory Analytical Report note: lighter than water immiscible sheen is present.
Results are in parts per million (ppm), unless otherwise indicated.

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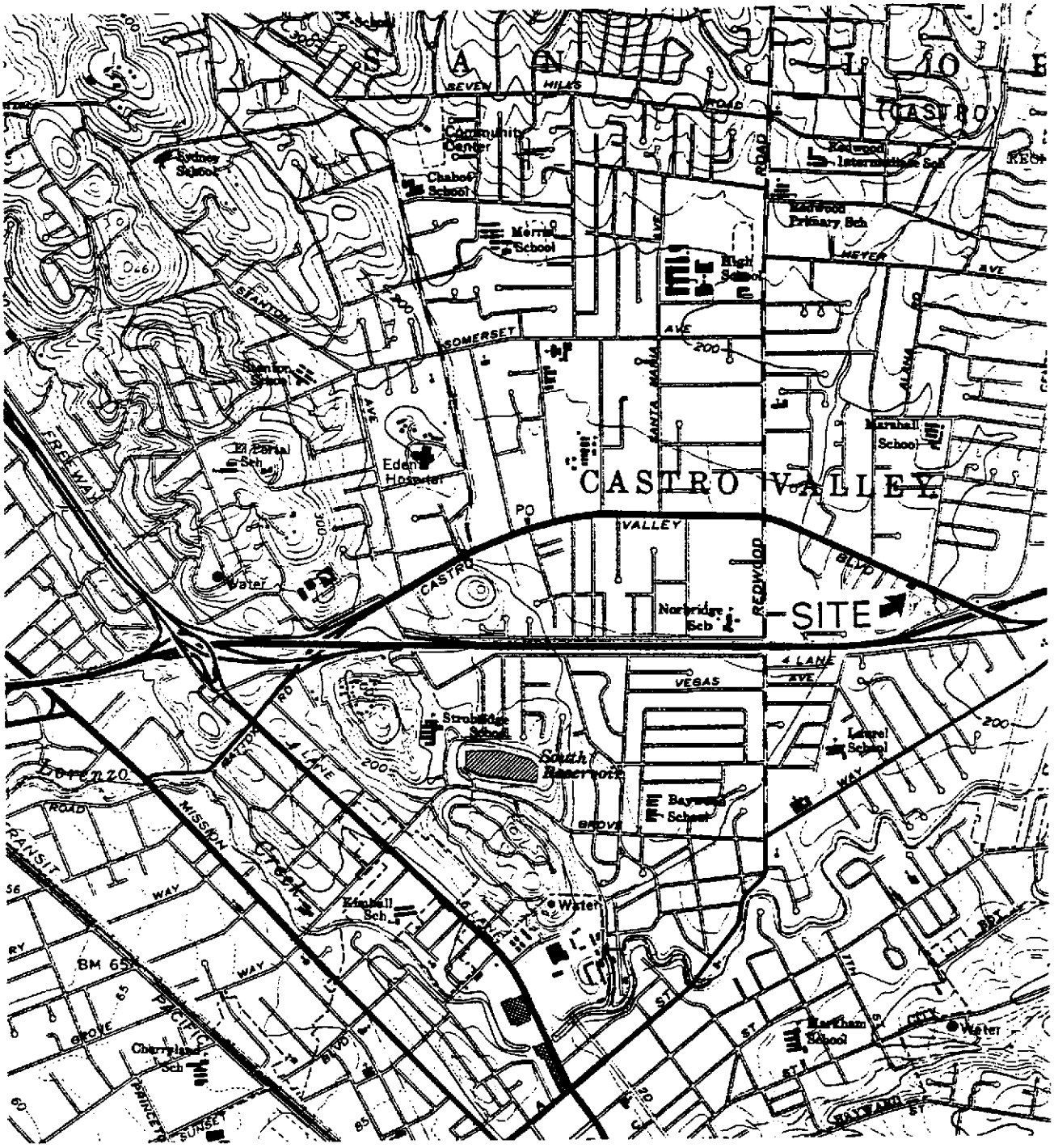

Base Map From
U.S. Geological Survey
Hayward, Calif.
7.5 Minute Quadrangle
Photorevised 1980

N

Scale in Feet
0 1000 2000 3000

Figure 1
SITE LOCATION MAP
VIP Service
3889 Castro Valley Blvd.
Castro Valley, California

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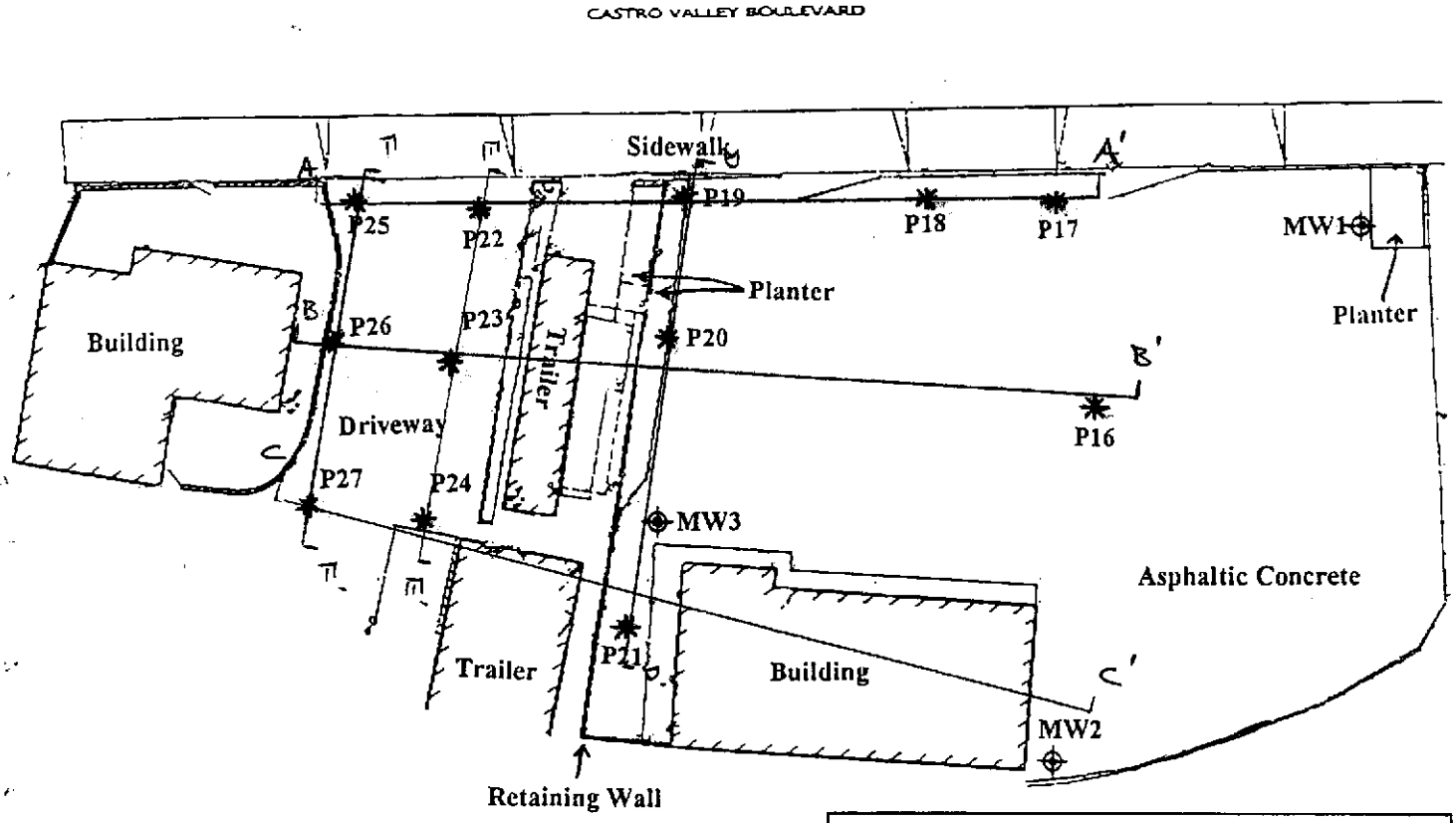

LEGEND

- Existing Groundwater Monitoring Well
- Borehole drilled on October 17-18, 2001
- F F' Geologic Cross Section Location

North

0 30 60

Scale in Feet

Base Map From
Kier & Wright
Pleasanton, CA
October 2001

Figure 2
Site Vicinity Map
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA

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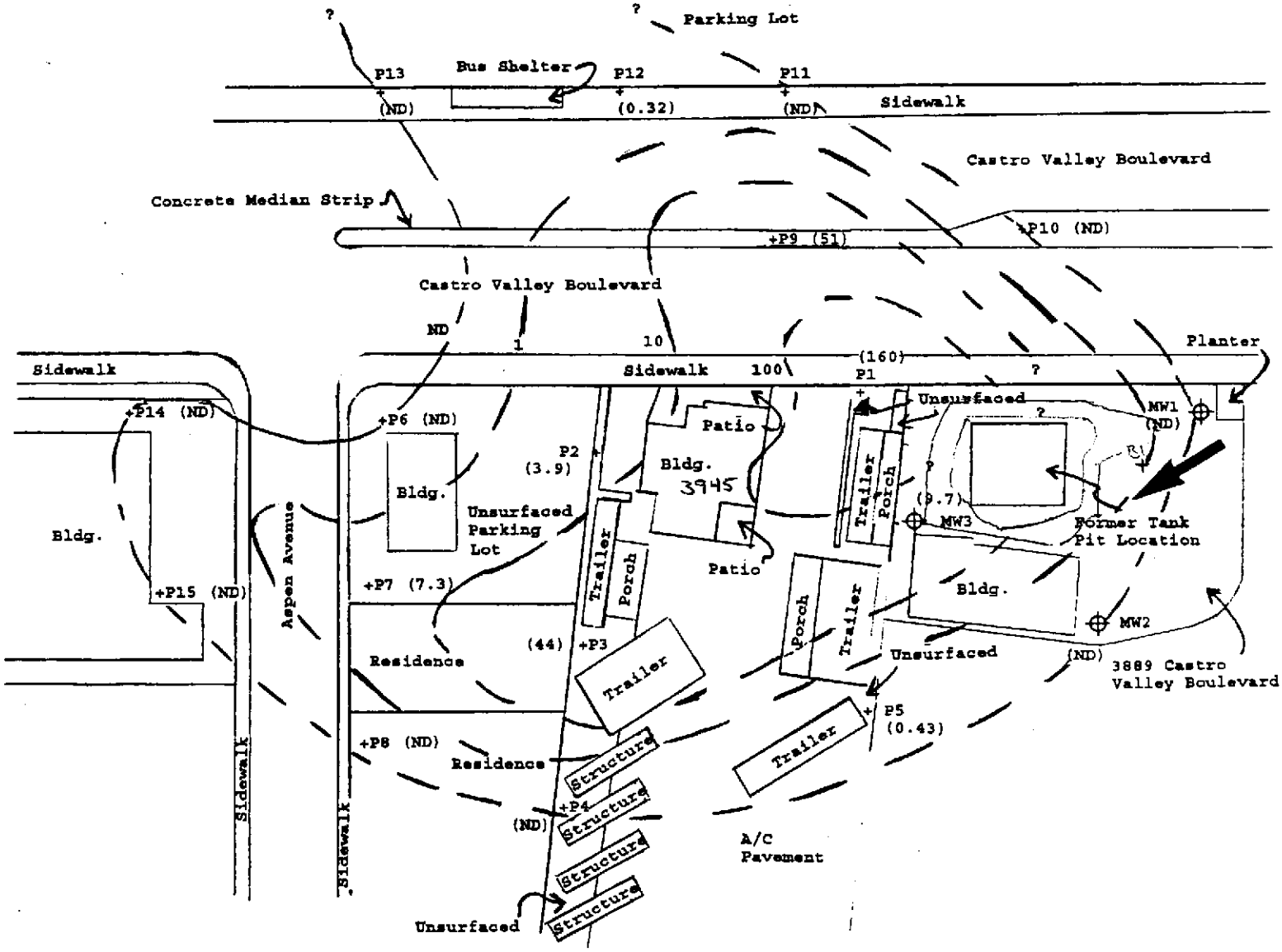


(9.7) ⊕ LEGEND
Existing Groundwater Monitoring Well and TPH-Gasoline Concentration in ppm on April 23, 1996.

(160) + Groundwater Grab Sample Collection Location and TPH-Gasoline Concentration on June 9, 1995 (P1-P5), November 17, 1995 (P6-P10), and August 8 and 9, 1996 (P11-P15)

Groundwater Isoconcentration Contour for TPH-Gasoline in ppm

Groundwater Flow Direction on April 23, 1996

North

0 30 60

Scale in Feet

Base Map From
P&D Environmental
October, 1993
January, 1995
June, 1995
Prepared Using a
Rolatape

Figure 3
SITE VICINITY MAP
VIP Service
3889 Castro Valley Blvd.
Castro Valley, California

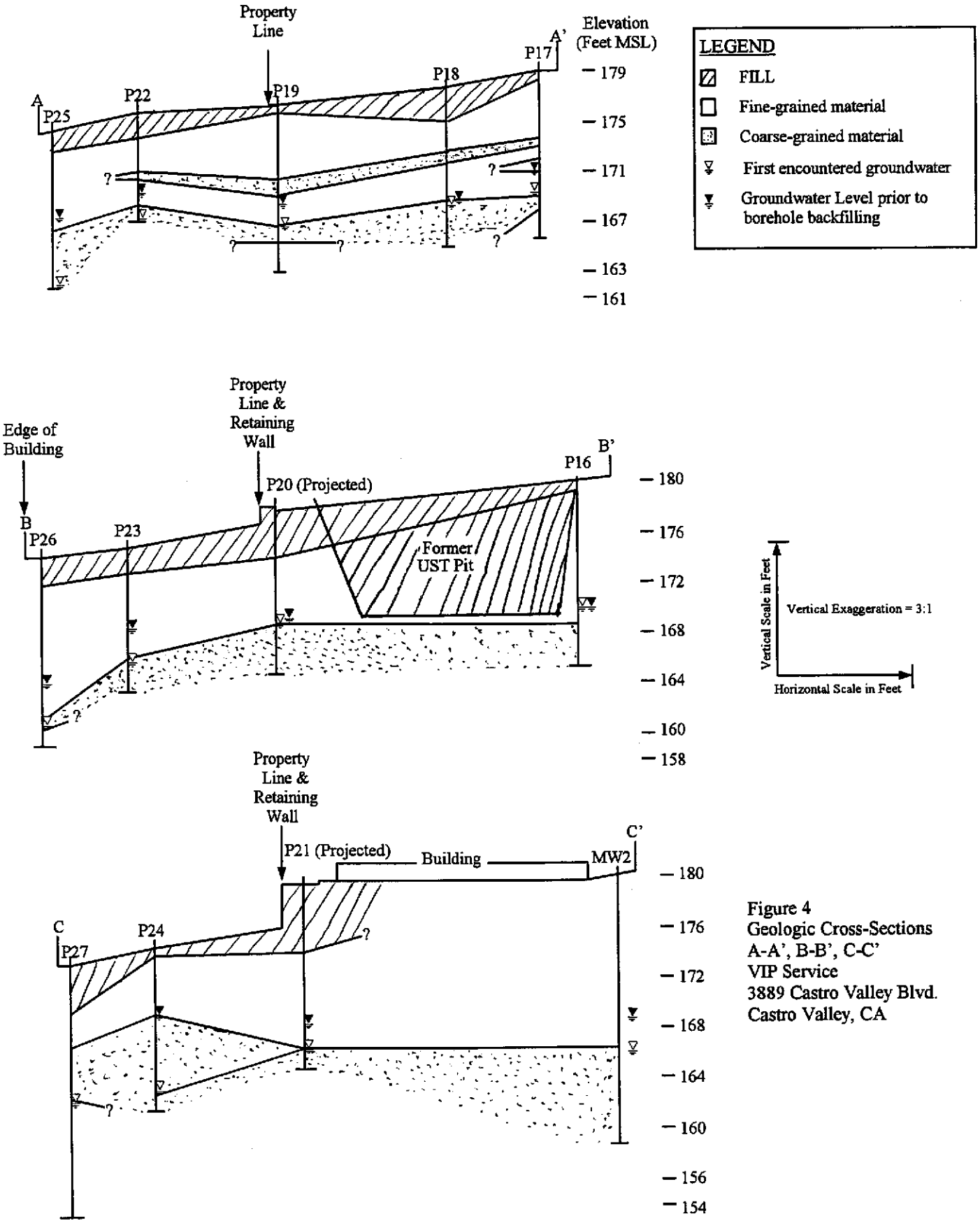
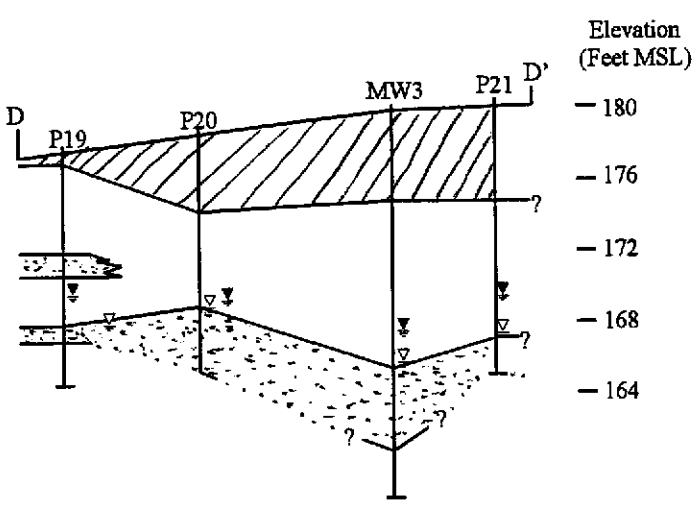
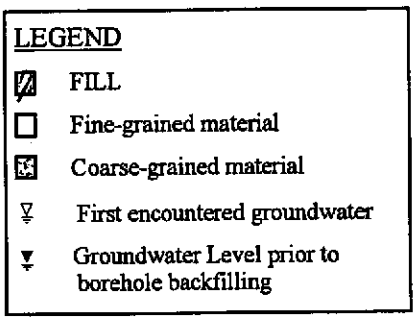
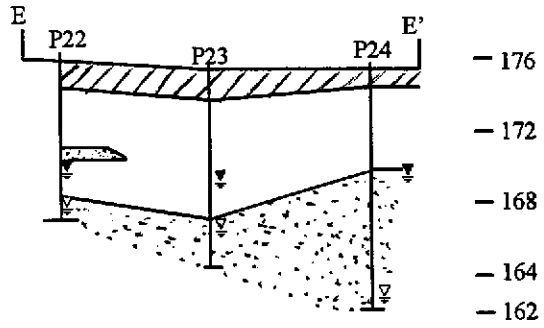
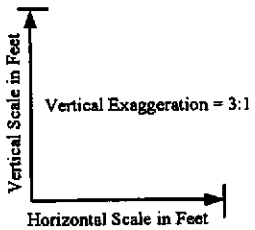


Figure 4
Geologic Cross-Sections
A-A', B-B', C-C'
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA









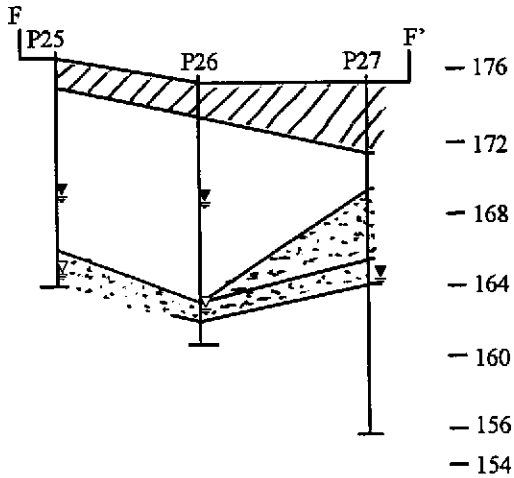


Figure 5
Geologic Cross-Sections
D-D', E-E', F-F'
VIP Service
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Castro Valley, CA

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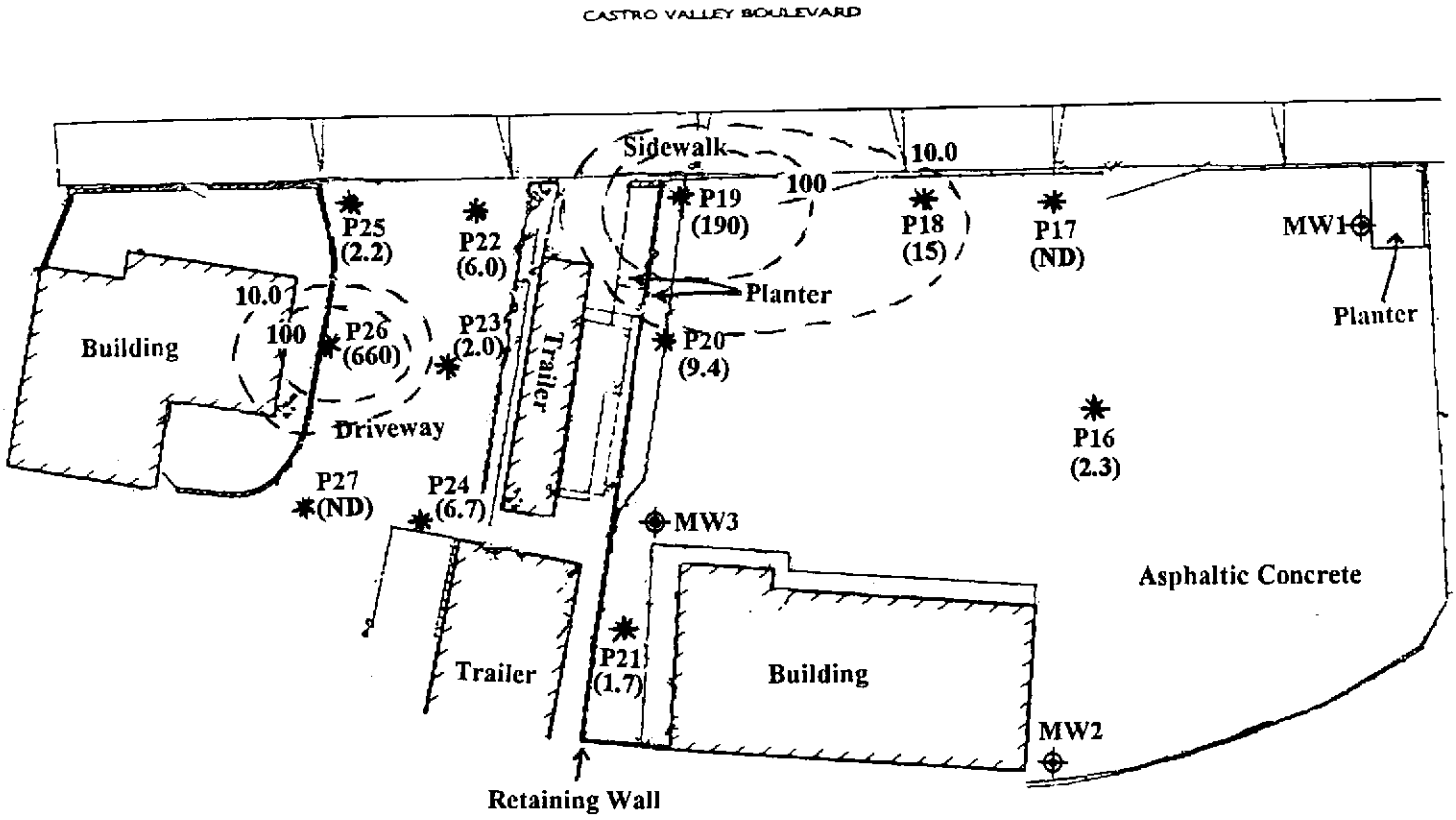

LEGEND

- Existing Groundwater Monitoring Well
- Soil Sample Collection Location and TPH-Gasoline Concentration in ppm at 4.0 foot depth on October 17-18, 2001 (2.3)
- Soil Isoconcentration Contour for TPH-Gasoline in ppm

North

0 30 60

Scale in Feet

Base Map From
Kier & Wright
Pleasanton, CA
October 2001

Figure 6
TPH-G IN SOIL AT 4.0 FOOT DEPTH
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA

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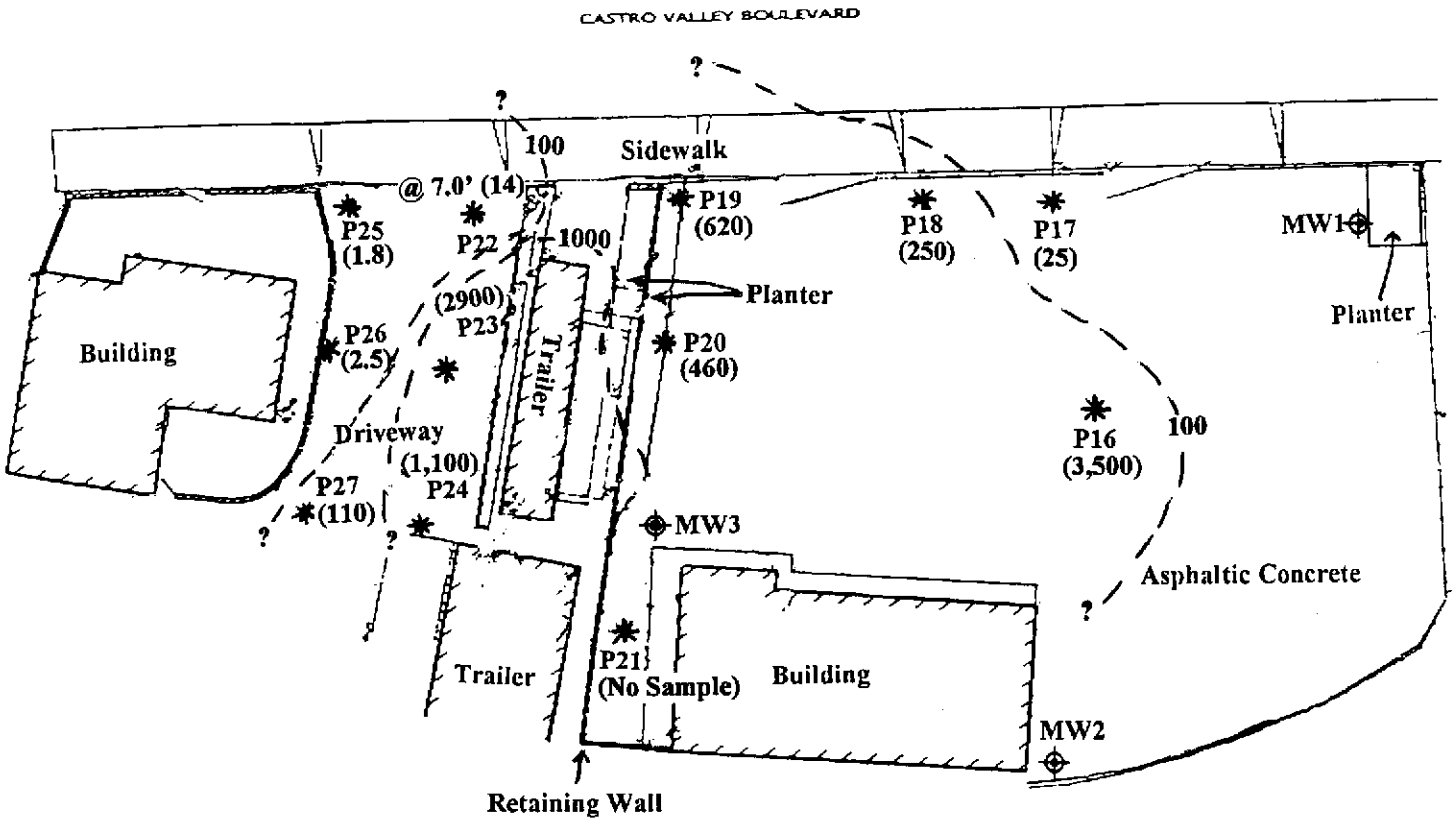

LEGEND

- Existing Groundwater Monitoring Well
- (460) Soil Sample Collection Location and TPH-Gasoline Concentration in ppm at 9.0 foot depth on October 17-18, 2001
- Soil Isoconcentration Contour for TPH-Gasoline in ppm

North

0 30 60

Scale in Feet

Base Map From
Kier & Wright
Pleasanton, CA
October 2001

Figure 7
TPH-G IN SOIL AT 9.0 FOOT DEPTH
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA

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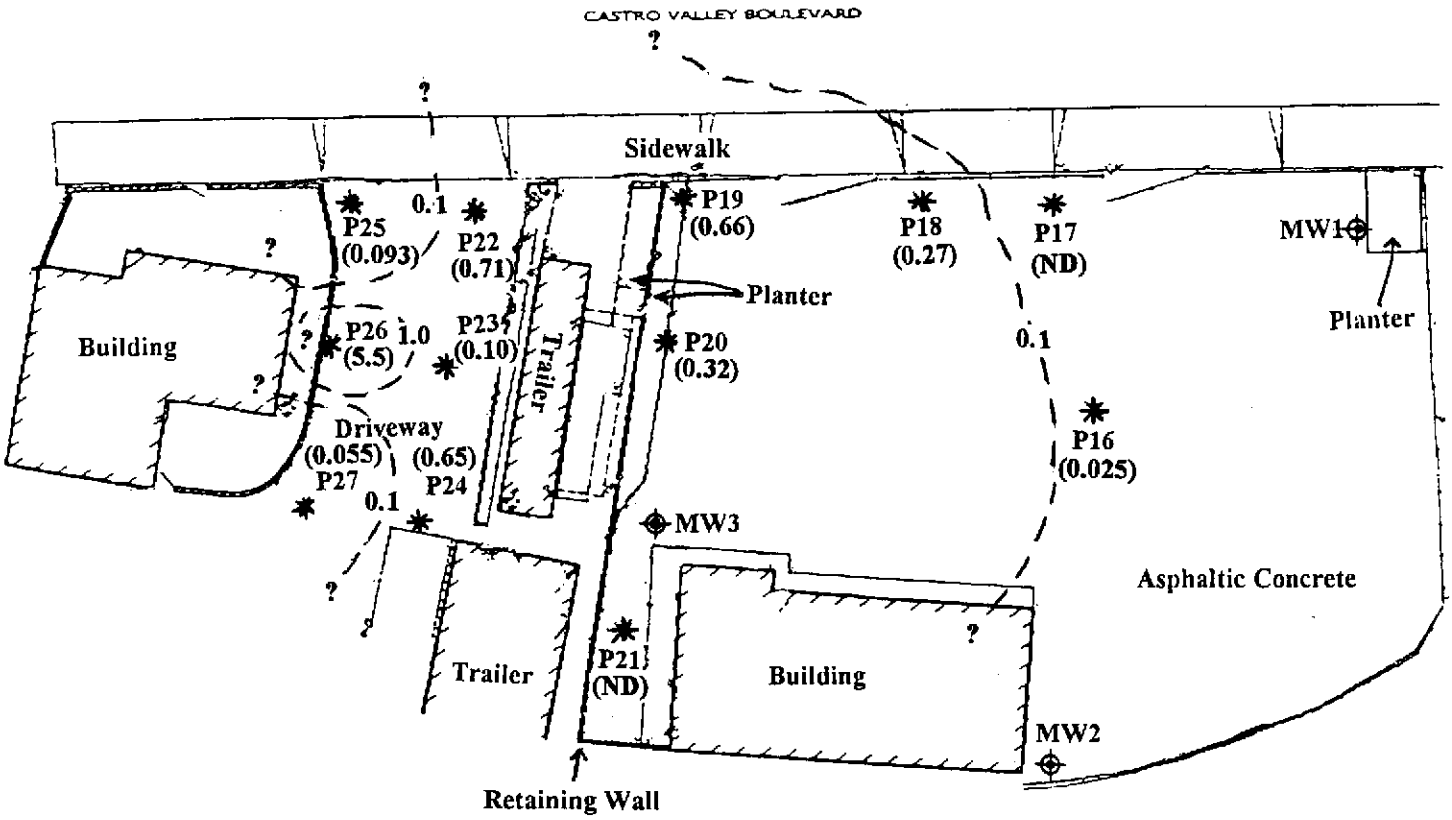

LEGEND

- ⊕ Existing Groundwater Monitoring Well
- ✱ (0.27) Soil Sample Collection Location and Benzene Concentration in ppm at 4.0 foot depth on October 17-18, 2001
- Soil Isoconcentration Contour for Benzene in ppm

North

0 30 60

Scale in Feet

Base Map From
Kier & Wright
Pleasanton, CA
October 2001

Figure 8
BENZENE IN SOIL AT 4.0 FOOT DEPTH
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA

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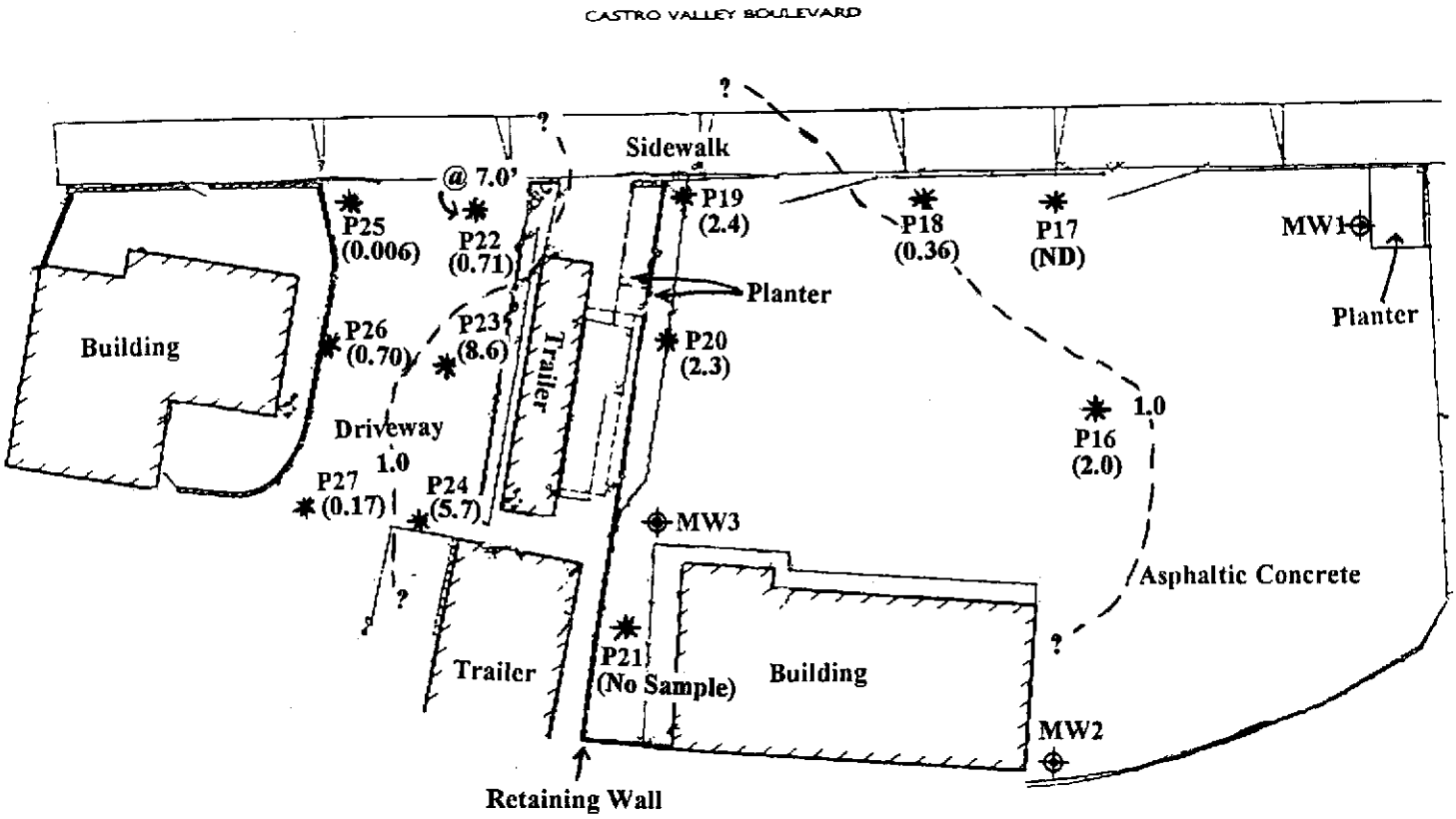

LEGEND

- Existing Groundwater Monitoring Well
- Soil Sample Collection Location and Benzene Concentration in ppm at 9.0 foot depth on October 17-18, 2001 (2.0)
- Soil Isoconcentration Contour for Benzene in ppm

North

0 30 60

Scale in Feet

Base Map From
Kier & Wright
Pleasanton, CA
October 2001

Figure 9
BENZENE IN SOIL AT 9.0 FOOT DEPTH
VIP Service
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Castro Valley, CA

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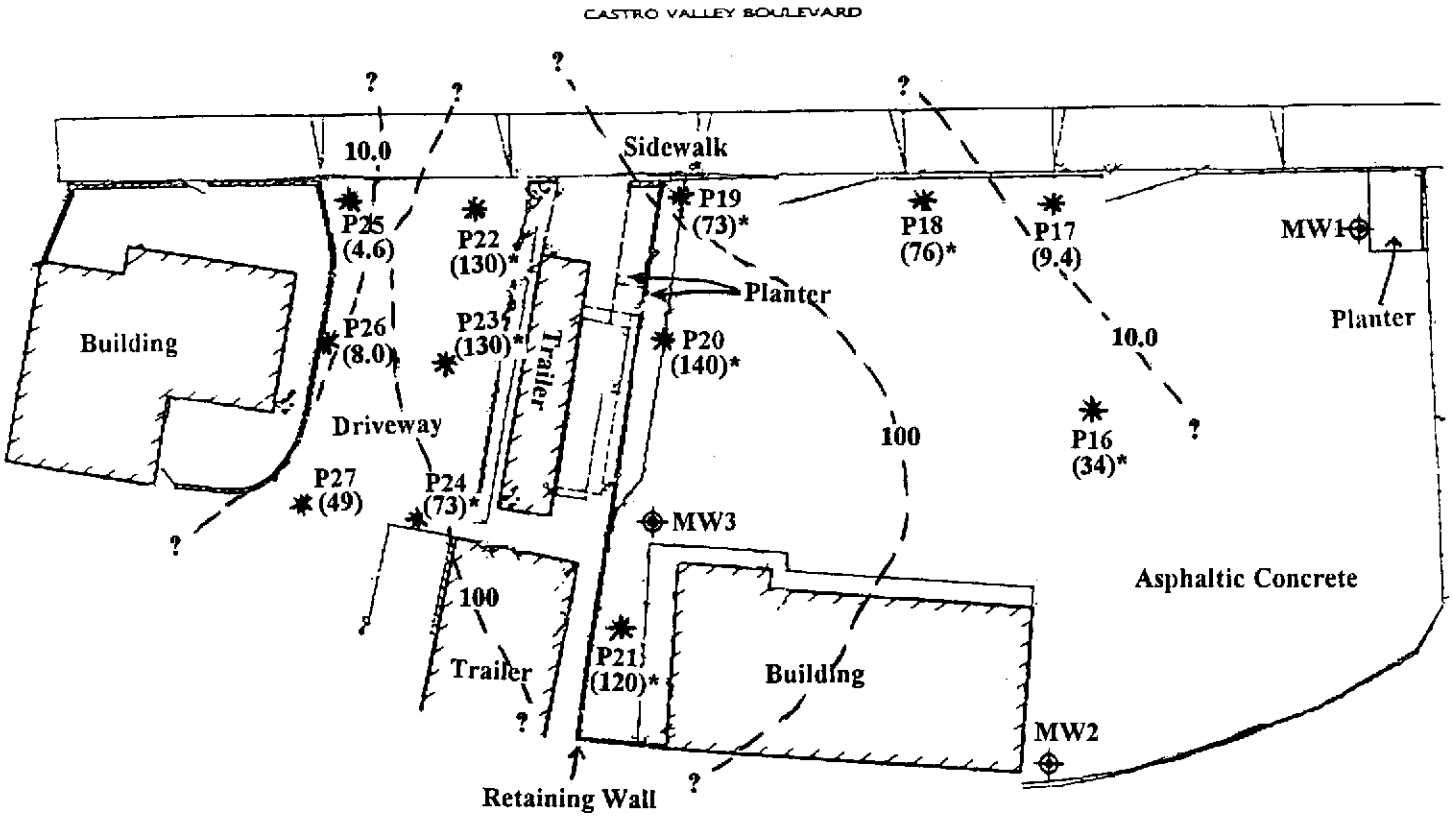

LEGEND

- Existing Groundwater Monitoring Well
- (49) Groundwater Grab Sample Collection Location and TPH-Gasoline Concentration in ppm on October 17-18, 2001
- Groundwater Isoconcentration Contour for TPH-Gasoline in ppm
- * Groundwater Grab Sample Collection Location with Sheen Present

North

0 30 60

Scale in Feet

Base Map From
Kier & Wright
Pleasanton, CA
October 2001

Figure 10
TPH-G IN GROUNDWATER
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA

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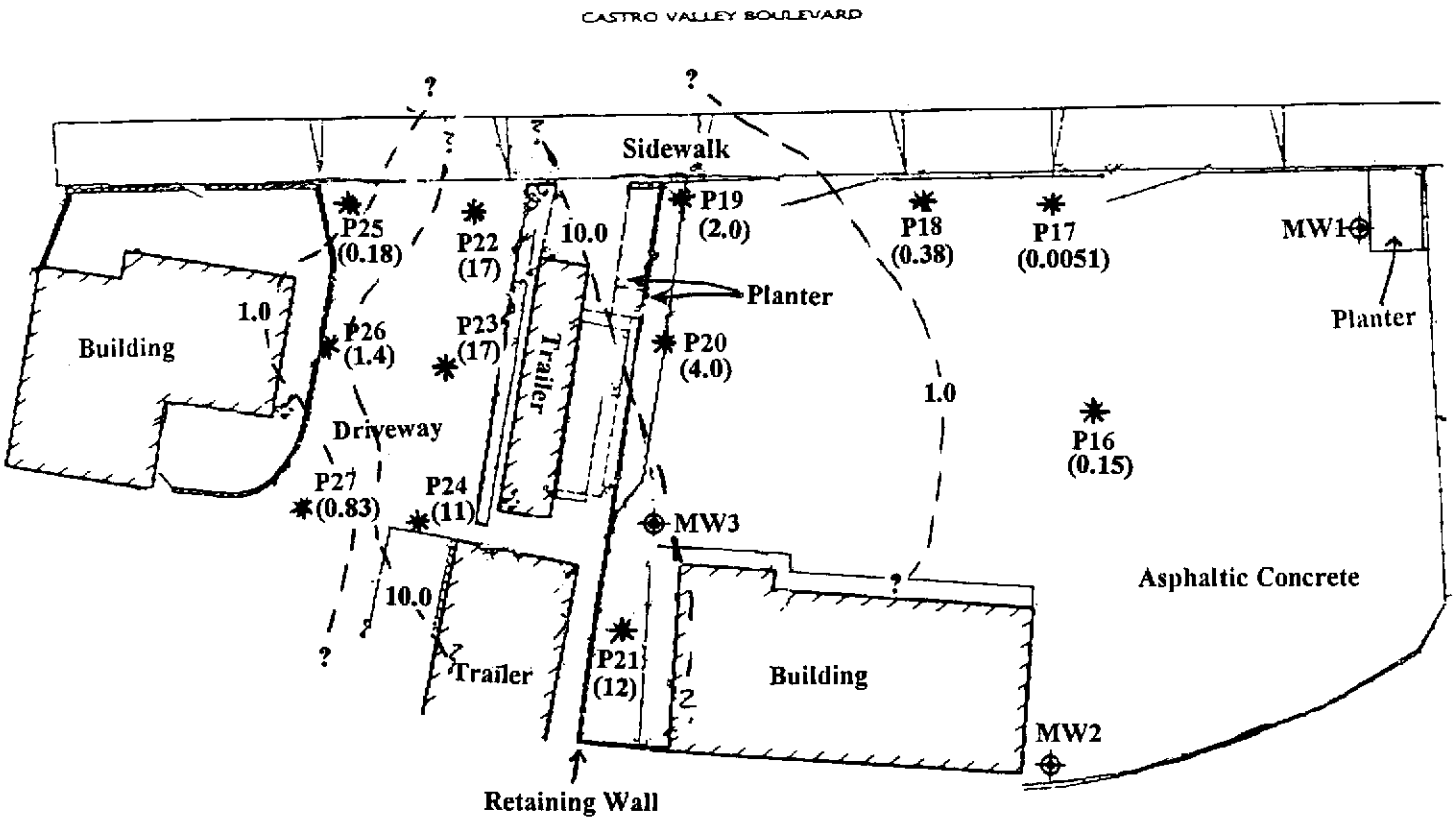


LEGEND

- Existing Groundwater Monitoring Well
- Groundwater Grab Sample Collection Location and Benzene Concentration in ppm on October 17-18, 2001
- Groundwater Isoconcentration Contour for Benzene in ppm

North

0 30 60

Scale in Feet

Base Map From
Kier & Wright
Pleasanton, CA
October 2001

Figure 11
BENZENE IN GROUNDWATER
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA

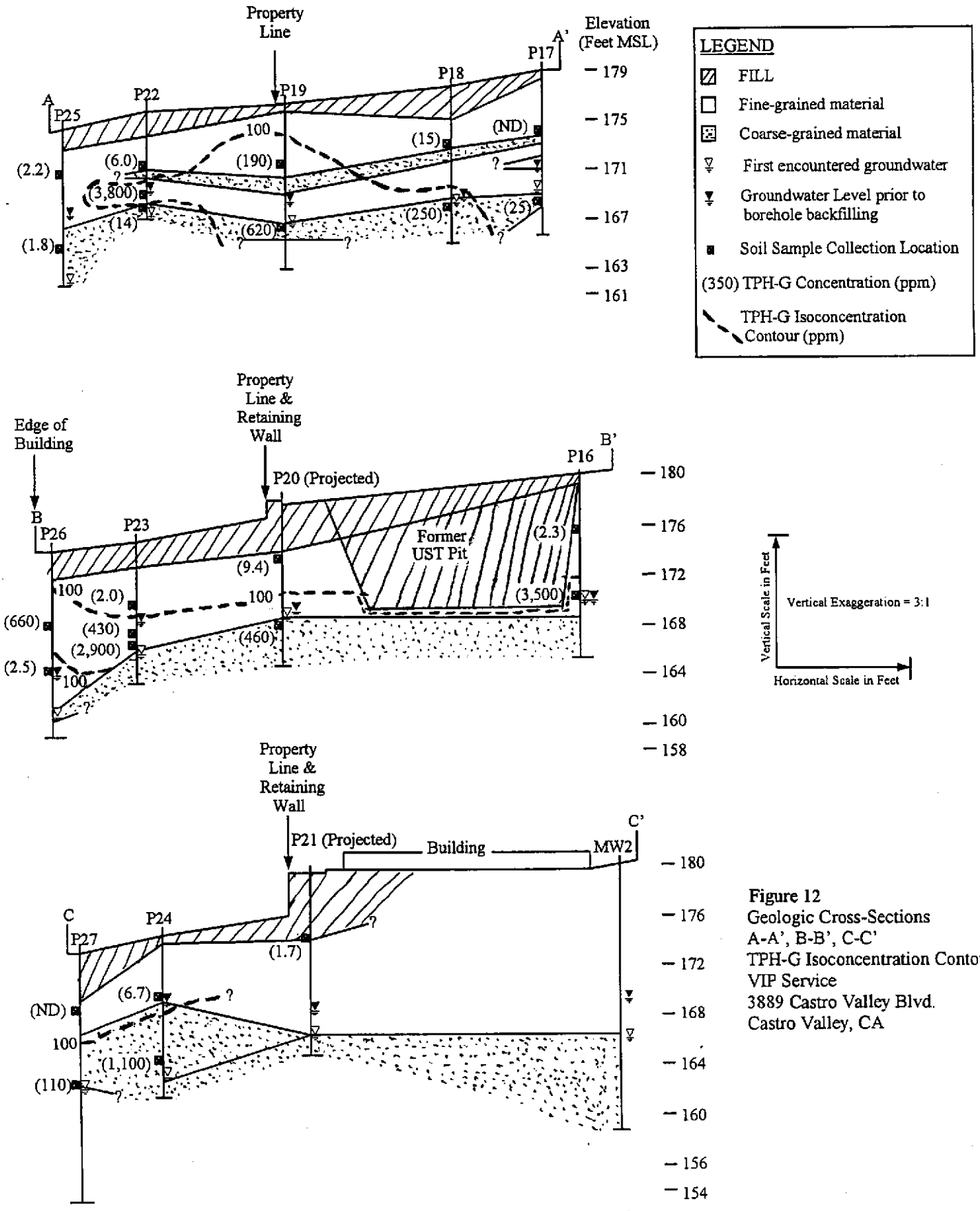
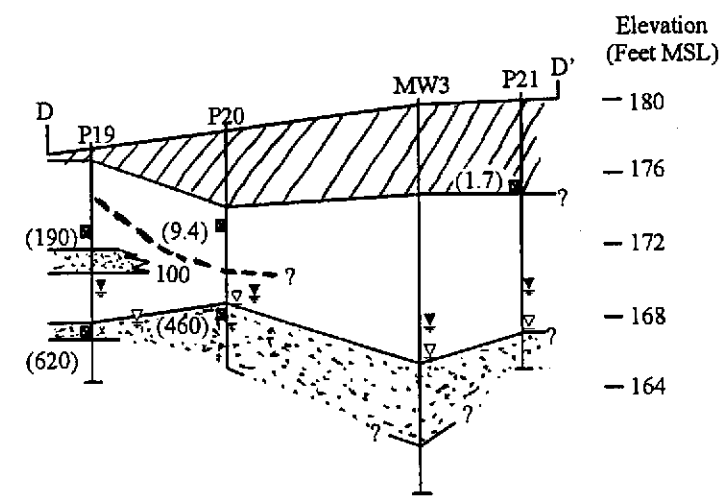
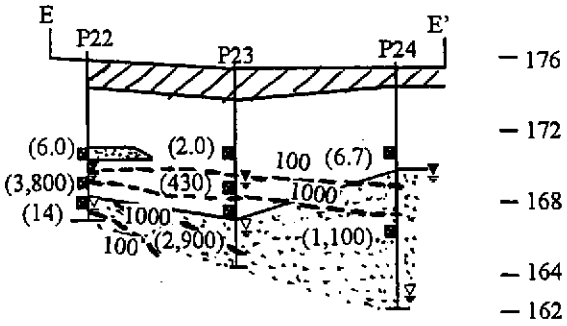


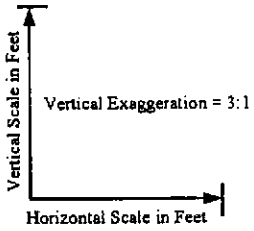
Figure 12
Geologic Cross-Sections
A-A', B-B', C-C'
TPH-G Isoconcentration Contours
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA



LEGEND

- FILL
- Fine-grained material
- Coarse-grained material
- First encountered groundwater
- Groundwater Level prior to borehole backfilling
- Soil Sample Collection Location
- (350) TPH-G Concentration (ppm)
- TPH-G Isoconcentration Contour (ppm)





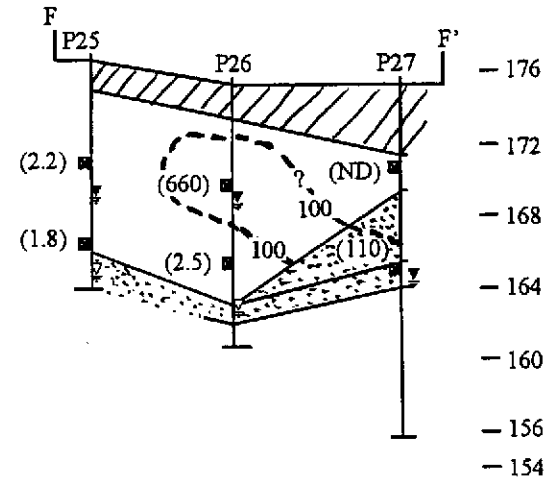


Figure 13
Geologic Cross-Sections
D-D', E-E', F-F'
TPH-G Isoconcentration Contours
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA

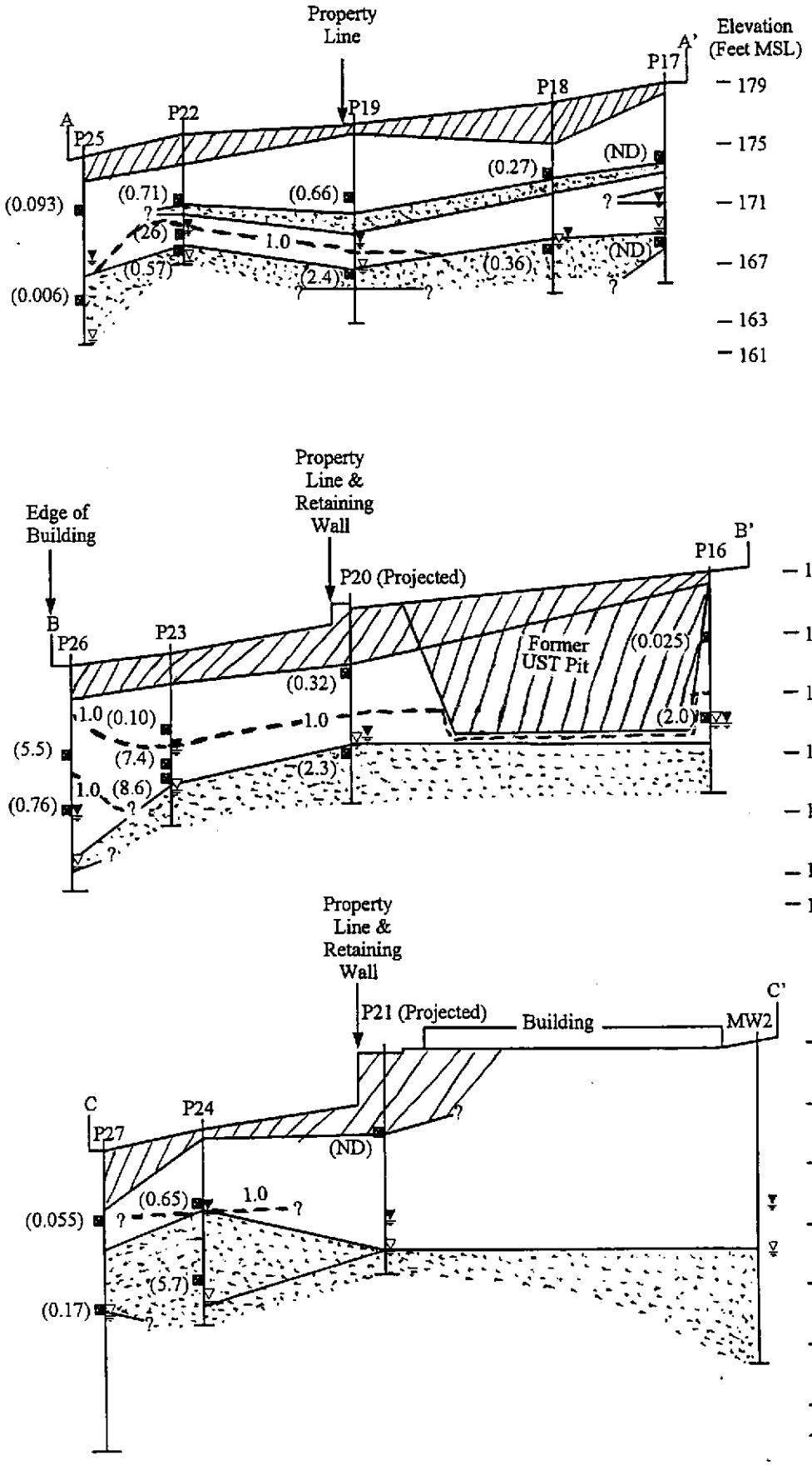
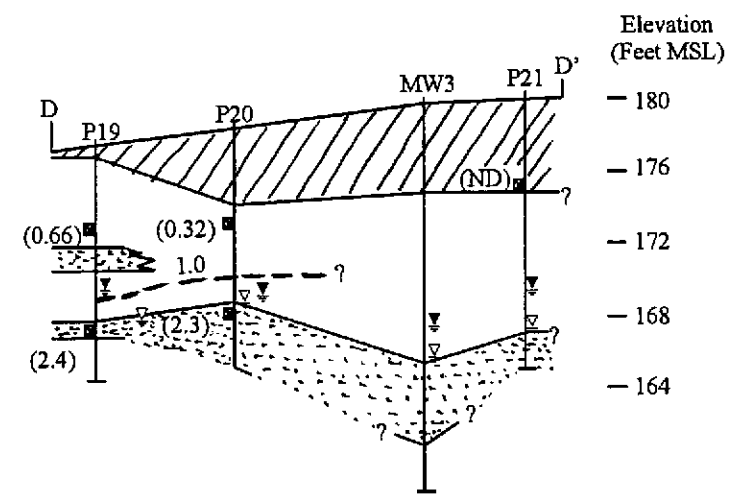
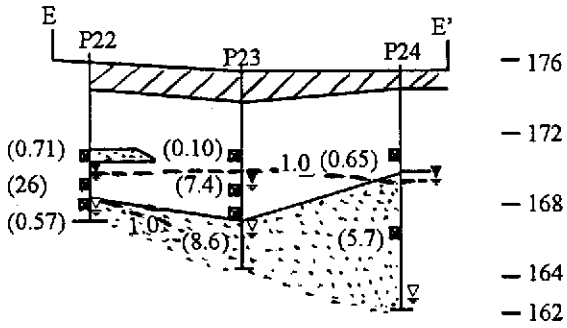


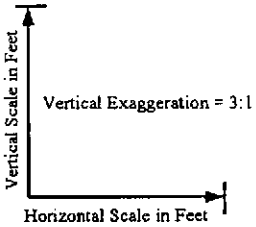
Figure 14
Geologic Cross-Sections
A-A', B-B', C-C'
Benzene Isoconcentration Contours
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA



LEGEND

- FILL
- Fine-grained material
- Coarse-grained material
- First encountered groundwater
- Groundwater Level prior to borehole backfilling
- Soil Sample Collection Location
- (26) Benzene Concentration (ppm)
- Benzene Isoconcentration Contour (ppm)





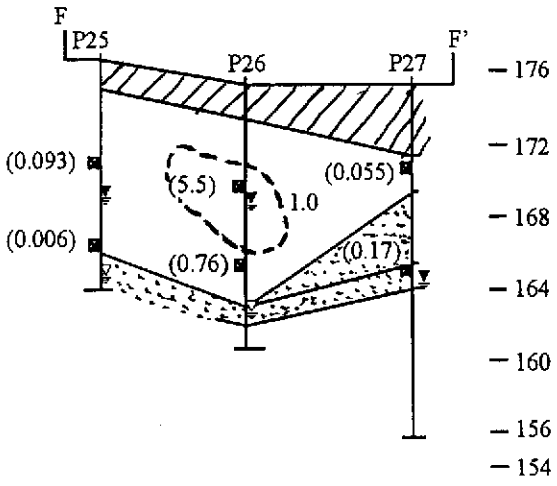


Figure 15
Geologic Cross-Sections
D-D', E-E', F-F'
Benzene Isoconcentration Contours
VIP Service
3889 Castro Valley Blvd.
Castro Valley, CA

P&D ENVIRONMENTAL

BORING NO.: P16	PROJECT NO.: 0047	PROJECT NAME: VIP SERVICE / CASTRO VALLEY	
BORING LOCATION: 3889 CASTRO VALLEY BLVD.		ELEVATION AND DATUM: 179.50 MSL	
DRILLING AGENCY: VIRONEX	DRILLER: BRIAN	DATE & TIME STARTED: 10/18/01	DATE & TIME FINISHED: 10/18/01
DRILLING EQUIPMENT: GEOPROBE 2.5" O.D.			
COMPLETION DEPTH: 14 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: RWP	CHECKED BY:
FIRST WATER DEPTH: 9.5 FEET	NO. OF SAMPLES: 2 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" Asphalt over 6" Baserock (FILL)	FILL	No well Constructed.		102	Ground surface elevation surveyed by Kier & Wright.
	SILTY CLAY & GRAVEL (CL); dark grayish brown, moist, firm – stiff, plastic, moderate Petroleum Hydrocarbon (PHC) odor.	CL			76	
					66	
			P16 – 4.0		45	
5	SILTY CLAY (CL); grey, moist, stiff, plastic, slight – moderate PHC odor	CL			42	
					105	
	SILTY CLAY (CL); olive grey, mottled grey, moist, firm, plastic, w/ wet silty sand at 9' - 10', w/ 8' - 9', moderate PHC odor	CL			91	
					94	
		▼ ▽	P16 – 9.0		67	First encountered ground water at 9.5'
10					--	
	SILTY SAND (SM/ML); olive grey, wet, grading to sandy silt w/ depth, strong PHC odor.	SM/ML			309	
					267	
					283	
15						Groundwater levels measured in a 1" diameter screened PVC pipe: 9.5' @ 13:30 9.4' @ 15:13 Groundwater sample collected: Slight sheen & moderate PHC odor present.
20						
25						
30						

P&D ENVIRONMENTAL

BORING NO.: P17	PROJECT NO.: 0047	PROJECT NAME: VIP SERVICE / CASTRO VALLEY	
BORING LOCATION: 3898 CASTRO VALLEY BLVD.		ELEVATION AND DATUM: 178.95 MSL	
DRILLING AGENCY: VIRONEX	DRILLER: BRIAN	DATE & TIME STARTED: 10/18/01	DATE & TIME FINISHED: 10/18/01
DRILLING EQUIPMENT: GEOPROBE 2.5" O.D.			
COMPLETION DEPTH: 12 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: RWP	CHECKED BY:
FIRST WATER DEPTH: 9 FEET	NO. OF SAMPLES: 2 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" Asphalt over 6" Baserock (FILL)	FILL	No well Constructed.		48	Ground surface elevation surveyed by Kier & Wright.
	SILTY CLAY (CL); dark greyish brown – dark grey, damp – moist, very stiff, plastic, slight – moderate Petroleum Hydrocarbon (PHC) odor.	CL			101	
					65	
	SANDY CLAY (CL); olive grey, mottled grey, moist, plastic, w/ calliche, slight – moderate PHC odor	CL	P17 – 4.0		92	
					94	Drilling easy throughout
5	SILTY SAND (SM); olive grey, moist, w/ subrounded fine gravel, slight – moderate PHC odor	SM			64	
		CL			54	
	SILTY CLAY (CL); olive grey, mottled grey, moist, firm – stiff, plastic, slight – moderate PHC odor	ML			255	First encountered ground water at 9.0'
		CL			235	
	SANDY SILT (ML); olive grey, moist, non-plastic, slight PHC odor.	SM/ML	P17 – 9.0		123	
10	SILTY CLAY (CL); olive gray, moist, firm, slight – moderate plastic, slight – moderate PHC odor.	CL			66	
					56	
	SILTY SAND (SM)/ SANDY SILT (ML); olive grey, wet, moderate – strong PHC odor.					Groundwater levels measured in a 1" diameter screened PVC pipe:
	SILTY CLAY (CL); olive grey, wet, soft, plastic, slight – moderate PHC odor.					9.0' @ 11:05 8.8' @ 11:45 8.75' @ 12:17 8.0' @ 13:52 7.8' @ 15:15
15						Groundwater sample collected: No sheen and no PHC odor present.
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P&D ENVIRONMENTAL

BORING NO.: P18 | PROJECT NO.: 0047 | PROJECT NAME: VIP SERVICE / CASTRO VALLEY

BORING LOCATION: 3889 CASTRO VALLEY BLVD. | ELEVATION AND DATUM: 179.50 MSL

DRILLING AGENCY: VIRONEX | DRILLER: BRIAN | DATE & TIME STARTED: 10/18/01 | DATE & TIME FINISHED: 10/18/01

DRILLING EQUIPMENT: GEOPROBE 2.5" O.D.

COMPLETION DEPTH: 12 FEET | BEDROCK DEPTH: NONE ENCOUNTERED | LOGGED BY: RWP | CHECKED BY:

FIRST WATER DEPTH: 8.8 FEET | NO. OF SAMPLES: 2 SOIL, 1 WATER

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" Asphalt over 6" Baserock (FILL)	FILL	No well constructed.		171	Ground surface elevation surveyed by Kier & Wright.
	SILTY CLAY & GRAVEL (FILL); dark grayish brown – dark grey, moist, stiff, plastic, w/ brick fragments at 2.5', moderate Petroleum Hydrocarbon (PHC) odor.	FILL			176	
		CL			136	
	SILTY CLAY (CL); olive grey, mottled grey, moist, stiff, plastic, w/ decayed root at 3' moderate PHC odor		P18 – 4.0		120	
5		SC			107	Drilling easy throughout
	CLAYEY SAND (SC); olive grey, moist, firm – stiff, slight plastic, moderate PHC odor	CL			155	
					1120	
	SILTY CLAY (CL); olive grey, mottled grey, moist – very moist, stiff, plastic.	▼			319	
		▽			--	
			P18 – 9.0		436	First encountered ground water at 8.8'
10	SILTY CLAY (CL) & CLAYEY SAND (SC); olive grey, wet, slight plastic, grading coarser w/ depth, moderate – strong PHC odor	CL/ SC			696	
					411	
15						Groundwater levels measured in a 1" diameter screened PVC pipe: 8.3' @ 12:04 8.1' @ 13:56 8.1' @ 15:00
20						Groundwater sample collected: Slight – moderate sheen & moderate PHC odor present.
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P&D ENVIRONMENTAL

BORING NO.: P19	PROJECT NO.: 0047	PROJECT NAME: VIP SERVICE / CASTRO VALLEY	
BORING LOCATION: 3898 CASTRO VALLEY BLVD.		ELEVATION AND DATUM: 176.55 MSL	
DRILLING AGENCY: VIRONEX	DRILLER: BRIAN	DATE & TIME STARTED: 10/18/01	DATE & TIME FINISHED: 10/18/01
DRILLING EQUIPMENT: GEOPROBE 2.5" O.D.			
COMPLETION DEPTH: 12 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: RWP	CHECKED BY:
FIRST WATER DEPTH: 9 FEET	NO. OF SAMPLES: 2 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" Asphalt over 6" Baserock (FILL)	FILL	No well constructed.		193	Ground surface elevation surveyed by Kier & Wright.
	SILTY CLAY (CL); dark greyish brown – dark grey, damp – moist, very stiff – hard, plastic, slight – moderate Petroleum Hydrocarbon (PHC) odor.	CL			248	
					139	
	SILTY CLAY w/ SOME SAND (CL); olive grey, mottled grey, moist, very stiff, plastic, moderate PHC odor.	CL	P19 – 4.0		104	
5					571	
	SILTY CLAY w/ SOME CLAY (CL); olive grey, moist, slight plastic, moderate – strong PHC odor	CL			623	
					844	
	SILTY CLAY (CL); olive grey, moist, firm – stiff, plastic, moderate PHC odor	CL			214	
					318	First encountered ground water at 9.0'
	SILTY SAND (SM); olive grey, wet, moderate – strong PHC odor	SM	P19 – 9.0		288	
10		CL			294	Acetate liner split, by sharp rock lodged in sampling shoe
	SILTY CLAY (CL); olive grey, mottled grey, wet, soft, plastic, moderate – strong PHC odor.	CL			529	
	SANDY CLAY (CL); olive gray, wet, firm, moderate – strong PHC odor.	CL				
	SILTY CLAY (CL); olive grey, mottled grey, wet, soft, plastic, moderate – strong PHC odor.					Groundwater levels measured in a 1" diameter screened PVC pipe: 7.5' @ 10:11 7.35' @ 12:21 7.2' @ 13:58 Groundwater sample collected: Heavy sheen and strong PHC odor present.
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P&D ENVIRONMENTAL

BORING NO.: P20	PROJECT NO.: 0047	PROJECT NAME: VIP SERVICE / CASTRO VALLEY	
BORING LOCATION: 3898 CASTRO VALLEY BLVD.		ELEVATION AND DATUM: 177.7 MSL	
DRILLING AGENCY: VIRONEX	DRILLER: BRIAN	DATE & TIME STARTED: 10/18/01	DATE & TIME FINISHED: 10/18/01
DRILLING EQUIPMENT: GEOPROBE 2.5" O.D.			
COMPLETION DEPTH: 12 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: RWP	CHECKED BY:
FIRST WATER DEPTH: 8.5 FEET	NO. OF SAMPLES: 2 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" Asphalt over 6" Baserock (FILL)	FILL	No well constructed.		175	Ground surface elevation surveyed by Kier & Wright.
	CLAYEY GRAVEL & GRAVEL (FILL); dark grey brown, brown, damp	FILL			111	
					76	
	SILTY CLAY (CL); dark greyish brown, damp, very stiff – hard, plastic, moderate PHC odor	CL	P20 – 4.0		113	
5					152	
	SANDY CLAY (CL); olive grey, mottled grey, moist, plastic, w/ silty sand stringer at 6.75' moderate – strong PHC odor	CL			429	
					512	
	SILTY CLAY (CL); olive grey, mottled grey, very moist – wet, soft, plastic, moderate – strong PHC odor	CL			695	
					559	
	SILTY SAND (SM); olive grey, wet, grading finer with depth to fine sandy silt, moderate – strong PHC odor	SM	P20 – 9.0		501	First encountered ground water at 8.5'
10					529	
	CLAYEY SAND (SC); olive grey, wet, soft, plastic, moderate – strong PHC odor.	SC			456	
15						Groundwater levels measured in a 1" diameter screened PVC pipe: 8.3' @ 14:23 8.15' @ 15:00 8.10' @ 15:15
20						Groundwater sample collected: Heavy sheen and strong PHC odor present.
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P&D ENVIRONMENTAL

BORING NO.: P21	PROJECT NO.: 0047	PROJECT NAME: VIP SERVICE / CASTRO VALLEY	
BORING LOCATION: 3889 CASTRO VALLEY BLVD.		ELEVATION AND DATUM: 179.18 MSL	
DRILLING AGENCY: VIRONEX	DRILLER: BRIAN	DATE & TIME STARTED: 10/18/01	DATE & TIME FINISHED: 10/18/01
DRILLING EQUIPMENT: GEOPROBE 2.5" O.D.			
COMPLETION DEPTH: 14 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: RWP	CHECKED BY:
FIRST WATER DEPTH: 12FEET	NO. OF SAMPLES: 1 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	1" Asphalt over 6" Baserock (FILL)	FILL	No well constructed		102	Ground surface elevation surveyed by Kier & Wright
	CLAYEY GRAVEL & GRAVELLY CLAY (FILL); dark grayish brown/brown, moist, stiff, plastic, slight Petroleum Hydrocarbon (PHC) odor.	FILL			76	
					66	
5	SILTY CLAY (CL); dark greyish brown, moist, very stiff, plastic, slight PHC odor		P21 – 4.0		45	
	SILTY CLAY (CL); olive grey, mottled grey, moist, firm – stiff, plastic, slight – moderate PHC odor	CL			42	
	SILTY CLAY (CL); olive grey – dark grey brown, moist, very stiff – hard, plastic, slight – moderate PHC odor.	CL			105	
					94	
10		CL			91	
	SILTY CLAY (CL); olive gray, very moist, soft, plastic, slight – moderate PHC odors.	CL			67	No sample recovery at 9 feet
		CL			259	
	SILTY CLAY (CL); olive grey /dark, grey brown, very moist, firm – soft, plastic, moderate – strong PHC odors.				309	First encountered ground water at 12.0 feet.
		SM / SC			267	
15	SILTY SAND (SM) Interbedded w/ CLAYEY SAND (SC); olive grey, wet, w/ blebs of free product, moderate – strong PHC odor.				283	Groundwater levels measured in a 1" screened PVC pipe. 9.3' @ 9:39 9.25' @ 10:18 9.25' @ 12:21 9.25' @ 13:56 Groundwater sample collected. No record of sheen or odor.
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P&D ENVIRONMENTAL

BORING NO.: P22	PROJECT NO.: 0047	PROJECT NAME: VIP SERVICE / CASTRO VALLEY	
BORING LOCATION: WAGON WHEEL TRAILER PARK		ELEVATION AND DATUM: 175.2 MSL	
DRILLING AGENCY: VIRONEX	DRILLER: BRIAN	DATE & TIME STARTED: 10/17/01	DATE & TIME FINISHED: 10/17/01
DRILLING EQUIPMENT: GEOPROBE 2.5" O.D.			
COMPLETION DEPTH: 8 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: RWP	CHECKED BY:
FIRST WATER DEPTH: 7 FEET	NO. OF SAMPLES: 3 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" Asphalt over 6" Baserock (FILL)	FILL	No well Constructed.		1	Ground surface elevation surveyed by Kier & Wright.
	GRAVELLY CLAY & SANDY GRAVEL (FILL); yellow brown, damp, with angular medium gravel, slight Petroleum Hydrocarbon (PHC) odor.	FILL			19	
		CL			17	
					15	
5	SILTY CLAY (CL); dark greyish brown, damp – moist, hard, plastic, slight PHC odor	SM	P22 – 4.0		156	Easy drilling throughout
	SILTY SAND(SM); mottled olive grey & grey, damp – moist, moderate PHC odor	CL	P22 – 6.0		346	
					382	
		CL / SM	P22 – 7.0		904	First encountered ground water at 7.5'
10	SILTY CLAY (CL); mottled grey & olive grey, very moist, w/ caliche, moderate – strong PHC odor.					Groundwater levels measured in a 1" diameter screened PVC pipe.
	CLAYEY SAND (SC)/ FINE SANDY CLAY (CL); mottled olive gray & grey, very moist – wet, plastic, moderate – strong PHC odor.					7.3' @ 13:20 6.8' @ 13:25 6.6' @ 13:35 6.5' @ 13:50 6.1' @ 15.08
15	SILTY FINE SAND (SM); olive grey, wet, w/ some angular gravel, moderate – strong PHC odors.					Groundwater sample collected: Medium – heavy sheen w/ strong PHC odor present.
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P&D ENVIRONMENTAL

BORING NO.: P23	PROJECT NO.: 0047	PROJECT NAME: VIP SERVICE / CASTRO VALLEY	
BORING LOCATION: WAGON WHEEL TRAILER PARK		ELEVATION AND DATUM: 174.6 MSL	
DRILLING AGENCY: VIRONEX	DRILLER: BRIAN	DATE & TIME STARTED: 10/17/01	DATE & TIME FINISHED: 10/17/01
DRILLING EQUIPMENT: GEOPROBE 2.5" O.D.			
COMPLETION DEPTH: 10 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: RWP	CHECKED BY:
FIRST WATER DEPTH: 7.5 FEET	NO. OF SAMPLES: 3 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" Asphalt over 6" Baserock (FILL)	FILL	No well constructed.		5	Ground surface elevation surveyed by Kier & Wright.
	SILTY CLAY & GRAVEL (FILL); dark grayish brown/ brown, moist, w/ angular medium gravel, slight Petroleum Hydrocarbon (PHC) odor.	FILL			10	
		CL			16	
					37	
	SILTY CLAY (CL); dark greyish brown, moist, hard, plastic, slight PHC odor		P23 – 4.0		230	Easy drilling throughout
5					61	
	SILTY CLAY (CL); grey, moist – very moist, soft, plastic, w/ caliche, moderate – strong PHC odor	CL	P23 – 6.0		- -	
			P23 – 7.0		940	
	CLAYEY SAND (SC) interbedded w/ FINE SILTY SAND (SM); grey, very moist – wet, clayey sand: slight – moderate plastic; silty sand: strong PHC odor.	SC / SM			439	
10					40	First encountered ground water at 8.0'
						Groundwater levels measured in a 1" diameter screened PVC pipe. 7.3' @ 14:47 5.4' @ 16:32 Groundwater sample collected: Moderate – heavy sheen & strong PHC odor present.
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P&D ENVIRONMENTAL

BORING NO.: P24	PROJECT NO.: 0047	PROJECT NAME: VIP SERVICE / CASTRO VALLEY	
BORING LOCATION: WAGON WHEEL TRAILER PARK		ELEVATION AND DATUM: 174.9 MSL	
DRILLING AGENCY: VIRONEX	DRILLER: BRIAN	DATE & TIME STARTED: 10/17/01	DATE & TIME FINISHED: 10/17/01
DRILLING EQUIPMENT: GEOPROBE 2.5" O.D.			
COMPLETION DEPTH: 12 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: RWP	CHECKED BY:
FIRST WATER DEPTH: 11 FEET	NO. OF SAMPLES: 2 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" Asphalt over 6" Baserock (FILL)	FILL	No well Constructed.		28	Ground surface elevation surveyed by Kier & Wright.
	SILTY CLAY (CL); dark gray brown, damp – moist, hard, plastic, slight Petroleum Hydrocarbon (PHC) odor.	CL			19	
					25	
	SILTY CLAY (CL); mottled olive grey & grey, moist – very moist, soft, plastic, w/caliche at 4' - 5', slight – moderate PHC odor	CL	P24 – 4.0		10	
					387	Easy drilling throughout
5					840	
					775	
	SANDY CLAY (CL) Interbedded w/ CLAYEY SAND (SC) & SILTY SAND (SM); grey brown, very moist – wet, soft, clay portion: plastic, sand: w/ wet sand stringer at 6.5' and major wet sand layer at 11' - 12'	CL/ SC/ SM			197	Ground water at 6.75' (1 – 2" stringer)
					592	
			P24 – 9.0		205	
10					15	First encountered groundwater at 11.0'
		SM			13	
						Groundwater levels measured in a 1" diameter screened PVC pipe. 7.4' @ 16:13 5.4' @ 16:48 5.35' @ 16:55 5.3' @ 17:05 Groundwater sample collected: Medium – heavy sheen & strong PHC odor present.
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P&D ENVIRONMENTAL

BORING NO.: P25	PROJECT NO.: 0047	PROJECT NAME: VIP SERVICE / CASTRO VALLEY	
BORING LOCATION: WAGON WHEEL TRAILER PARK		ELEVATION AND DATUM: 174.4 MSL	
DRILLING AGENCY: VIRONEX	DRILLER: BRIAN	DATE & TIME STARTED: 10/17/01	DATE & TIME FINISHED: 10/17/01
DRILLING EQUIPMENT: GEOPROBE 2.5" O.D.			
COMPLETION DEPTH: 12 FEET	BEDROCK DEPTH: NONE ENCOUNTERED	LOGGED BY: RWP	CHECKED BY:
FIRST WATER DEPTH: 11.5 FEET	NO. OF SAMPLES: 2 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" Asphalt over 6" Baserock (FILL)	FILL	No well Constructed.		3	Ground surface elevation surveyed by Kier & Wright.
	SILTY CLAY & GRAVEL (FILL); dark grayish brown & reddish brown, damp – moist, w/ angular medium gravel, no Petroleum Hydrocarbon (PHC) odor.	FILL / CL			2 3	
5	SILTY CLAY (CL); dark greyish brown, damp – moist, hard, plastic, no PHC odor	CL	P25 – 4.0		2 3	Hard drilling throughout
	SILTY CLAY (CL); mottled grey & olive grey, moist, hard, plastic, w/ caliche at 6' - 7', moderate PHC odor	CL			22 102 487	
10	CLAYEY SAND (SC) Interbedded w/ SANDY CLAY; olive grey, moist – very moist, firm – hard, clay: plastic; w/ iron-stained sand, strong PHC odors	SM/ CL	P25 – 9.0		331 5	First encountered ground water at 11.5'
	SILTY SAND (SM)/ SANDY SILT (ML) Interbedded w/ SILTY CLAY (CL); olive grey & grey mottled olive grey, very moist – wet, soft, slight PHC odor.	SM/ ML/ CL			2	
15						Groundwater levels measured in a 1" diameter screened PVC pipe: 5.9' @ 11.49 6.35' @ 12:22 6.20' @ 12:35 6.1' @ 15:34 Groundwater sample collected: No record of sheen or odor
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P &D ENVIRONMENTAL

BORING NO.: P26	PROJECT NO.: 0047	PROJECT NAME: VIP SERVICE / CASTRO VALLEY	
BORING LOCATION: WAGON WHEEL TRAILER PARK		ELEVATION AND DATUM: NONE	
DRILLING AGENCY: VIRONEX		DRILLER: BRIAN	DATE & TIME STARTED: 10/17/01 / DATE & TIME FINISHED: 10/17/01
DRILLING EQUIPMENT: GEOPROBE			
COMPLETION DEPTH: 14.0 FEET	BEDROCK DEPTH: NONE ENCOUNTERED		LOGGED BY: PHK / CHECKED BY:
FIRST WATER DEPTH: 12.0 FEET	NO. OF SAMPLES: 2 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" Asphalt over 6" Baserock (FILL)	FILL	No well constructed.		6	Ground surface elevation surveyed by Kier & Wright.
	SANDY GRAVEL & SILTY CLAY (FILL); mottled olive gray and dark gray brown, moist, clay, plastic. No Petroleum Hydrocarbon (PHC) odor.	FILL			9	
	SILTY CLAY (CL); dark, grayish brown, moist, hard, plastic, grading sandy with depth, with decayed root-let, slight-moderate PHC odor.	CL	P26 - 4.0		7	
5					721	
	SANDY CLAY (SM); olive gray, mottled gray, moist, hard, plastic, sand: very fine, grading wet and sandy below 11 feet; with silty sand stringer at approxi-mately 7.5 feet. Slight-strong PHC odors.				281	Hard drilling throughout.
					18	
					2	
		CL	P26 - 9.0		2	
10	SILTY SAND (SM), olive gray, wet, very fine - fine grade. Slight PHC odor.				7	
					23	
	SILTY CLAY (CL); mottled orange brown and olive gray, very moist, soft. No PHC odors.	SM			669	First encountered ground water at 12.0 feet.
	SANDY CLAY (CL); grayish brown, moist-damp, hard, plastic. No PHC odors.	CL			2	
		CL			5	
15						Groundwater levels measured as follows: 9.7 feet @ 10:50 7.6 feet @ 11:00 5.4 feet @ 11:20 5.1 feet @ 12:26 5.0 feet @ 15:22 Groundwater sample col-lected: No sheen & No PHC odor present.
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P & D ENVIRONMENTAL

BORING NO.: P27	PROJECT NO.: 0047	PROJECT NAME: VIP SERVICE / CASTRO VALLEY	
BORING LOCATION: WAGON WHEEL TRAILER PARK		ELEVATION AND DATUM: NONE	
DRILLING AGENCY: VIRONEX		DRILLER: BRIAN	DATE & TIME STARTED: 10/17/01 / DATE & TIME FINISHED: 10/17/01
DRILLING EQUIPMENT: GEOPROBE			
COMPLETION DEPTH: 18.0 FEET	BEDROCK DEPTH: NONE ENCOUNTERED		LOGGED BY: PHK / CHECKED BY:
FIRST WATER DEPTH: 9.0 FEET	NO. OF SAMPLES: 2 SOIL, 1 WATER		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID	REMARKS
	2" Asphalt over 6" Baserock (FILL)	FILL	No well constructed.		1	Ground surface elevation surveyed by Kier & Wright.
	SILTY CLAY & SANDY CLAY (CL); dark gray brown, mottled olive gray, moist, plastic. No Petroleum Hydrocarbon (PHC) odors.	FILL			1	
	SANDY CLAY (CL); olive gray, mottled gray, moist-damp, hard, plastic, sand: very fine, strong PHC odors.	CL	P28 - 4.0		33	
5					519	
	CLAYEY SAND (SC)/SANDY CLAY (CL); olive gray, mottled gray, moist, hard, plastic, sand: very fine, with occasional interbedded silty fine sand. Clay: slight-moderate plastic. Strong PHC odors.	SC/ CL			729	Hard drilling throughout.
					493	
					483	
					393	
	SILTY SAND (SM)/SANDY SILT (ML); olive gray, moist, very fine grade, strong PHC odors.	SM/ML	P26 - 9.0		11	
10					1	
	SANDY CLAY (CL); olive gray, mottled gray, moist, hard, plastic, sand: very fine grade, with pebbles at 12-12.5 feet. No PHC odors.	CL			3	Groundwater did not initially enter the borehole.
					6	
	SILTY CLAY (CL); gray brown, mottled gray and orange brown, moist, hard, plastic, no PHC odors.	CL			2	
	SANDY CLAY (CL); olive gray, mottled gray, moist, hard, plastic, sand: very fine grade. Medium PHC odors.	CL			4	
15					111	
	SILTY CLAY (CL); grey brown, moist, hard, plastic. No PHC odors.	CL			8	
					3	
20						Groundwater Levels measured as follows: Dry @ 11:00 16.15 feet @ 12:28 15.20 feet @ 12:49 9.8 feet @ 15:20 9.8 feet @ 15:30 Groundwater sample collected: No sheen and no PHC odor present.
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P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0047; VIP Service/Castro Valley	Date Sampled: 10/17-10/18/01
		Date Received: 10/19/01
	Client Contact: Paul King	Date Extracted: 10/19-10/24/01
	Client P.O:	Date Analyzed: 10/19-10/24/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
81363	P16-4.0	S	2.3,a	ND	0.025	0.025	0.079	0.068	---#
81364	P16-9.0	S	3500,a	ND<5.0	2.0	19	71	140	---#
81365	P17-4.0	S	ND	ND	ND	ND	ND	ND	108
81366	P17-9.0	S	25,b,j	ND	ND	0.58	0.13	0.082	---#
81367	P18-4.0	S	15,a	ND	0.27	0.23	0.84	1.7	---#
81368	P18-9.0	S	250,a	ND<0.1	0.36	2.2	8.7	27	---#
81369	P19-4.0	S	190,a	ND<0.1	0.66	2.8	2.8	14	---#
81370	P19-9.0	S	620,a	ND<1.0	2.4	14	14	60	---#
81371	P20-4.0	S	9.4,a	ND	0.32	0.16	0.31	1.2	---#
81372	P20-9.0	S	460,a	ND<1.0	2.3	16	10	52	---#
81373	P21-4.0	S	1.7,a	ND	ND	0.012	0.009	0.031	115
81374	P22-4.0	S	6.0,a	ND	0.71	0.23	0.14	0.65	---#
81375	P22-7.0	S	14,a	ND	0.57	0.68	0.30	1.6	111
81376	P22-6.0	S	3800,a	ND<3.0	26	78	68	270	---#
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0047; VIP Service/Castro Valley	Date Sampled: 10/17-10/18/01
		Date Received: 10/19/01
	Client Contact: Paul King	Date Extracted: 10/19-10/24/01
	Client P.O:	Date Analyzed: 10/19-10/24/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
81377	P23-4.0	S	2.0,a	ND	0.10	0.023	0.009	0.12	---#
81378	P23-7.0	S	2900,a	ND<5.0	8.6	67	59	320	101
81379	P23-6.0	S	430,a	ND<2.0	7.4	4.9	9.6	40	---#
81380	P24-4.0	S	6.7,a	ND	0.65	0.18	0.088	0.40	---#
81381	P24-9.0	S	1100,a	ND<2.0	5.7	3.9	24	88	---#
81382	P25-4.0	S	2.2,a	ND	0.093	0.016	0.035	0.084	---#
81383	P25-9.0	S	1.8,a	ND	0.006	0.020	0.020	0.094	---#
81384	P26-4.0	S	660,a	ND<2.0	5.5	6.3	12	53	---#
81385	P26-9.0	S	2.5,a	ND	0.76	0.037	0.12	0.15	113
81386	P27-4.0	S	ND	ND	0.055	0.076	0.009	0.024	109
81387	P27-9.0	S	110,a	ND<0.2	0.17	1.6	2.0	7.6	112
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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QC REPORT

EPA 8015m + 8020

Date: 10/19/01-10/20/01 **Extraction:** EPA 5030 **Matrix:** Soil

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 101901					Instrument:	GC-3	
Surrogate1	ND	99.000	100.000	100.00	99	100	1.0
Xylenes	ND	0.323	0.332	0.30	108	111	2.7
Ethylbenzene	ND	0.106	0.108	0.10	106	108	1.9
Toluene	ND	0.102	0.105	0.10	102	105	2.9
Benzene	ND	0.095	0.097	0.10	95	97	2.1
MTBE	ND	0.090	0.094	0.10	90	94	4.3
TPH (gas)	ND	0.830	0.860	1.00	83	86	3.6

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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203499 2pd95

ICE/t° ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ✓ PRESERVATION ✓ APPROPRIATE CONTAINERS ✓

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 0047

PROJECT NAME: VIP Service / Castro Valley

SAMPLED BY: (PRINTED AND SIGNATURE) Roger W Papler

ANALYSIS(ES): EPA 8015M + 8020 TPH-G, BTEX & MTBE*

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	EPA 8015M + 8020 TPH-G, BTEX & MTBE*	PRESERVATIVE	REMARKS	
P16-4.0	18 Oct 2001		S	Borehole P16 at 4.0'	1	X	Ice	Normal TAT	81363
P16-9.0			S	P16 at 9.0'	1	X			81364
P17-4.0			S	P17 at 4.0'	1	X			81365
P17-9.0			S	P17 at 9.0'	1	X			81366
P18-4.0			S	P18 at 4.0'	1	X			81367
P18-9.0			S	P18 at 9.0'	1	X			81368
P19-4.0			S	P19 at 4.0'	1	X			81369
P19-9.0			S	P19 at 9.0'	1	X			81370
P20-4.0			S	P20 at 4.0'	1	X		81377	81371
P20-9.0			S	P20 at 9.0'	1	X		81378	81372
P21-4.0			S	P21 at 4.0'	1	X		81379	81373
* P21-9.0			S	P21 at 9.0'	1	X			
P22-4.0	17 Oct 2001		S	P22 at 4.0'	1	X			81374
P22-7.0 / P22-~~9.0~~ 6.0			S	P22 at 7.0' / *P22 at ~~9.0~~ 6.0'	1	X			81375
P23-4.0			S	P23 at 4.0'	1	X			81376
P23-7.0 / P23-~~9.0~~ 6.0			S	P23 at 7.0' / **P23 at ~~9.0~~ 6.0'	1	X			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	
RW Papler	10/19	12:15	B. Butts	TOTAL NO. OF SAMPLES (THIS SHIPMENT): ~~16~~ 15
				TOTAL NO. OF CONTAINERS (THIS SHIPMENT): ~~16~~ 15
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY: McCampbell Analytical
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	LABORATORY CONTACT: Angela
B. Butts	10/19	2:00pm	[signature]	LABORATORY PHONE NUMBER: (925) 798-1620

SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES (✓) NO

PLEASE FAX ANALYTICAL RESULTS TO (510) 223-8351 & (510) 658-4074

REMARKS: PLEASE FAX COC IMMEDIATELY AFTER LAB SIGNATURE → (510) 223-8351
~~Pls. perform MTBE confirmation analysis using EPA 8260 for any positive MTBE results.~~ Please HOLD P22-7.0 & P23-7.0
*Please analyze upper portion (6-6.5') / **Please ~~analyze~~ lower portion (6.5-7')

* Sample Not Received

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Oakland, CA 94611
(510) 658-6916

28344 zpd 95

CHAIN OF CUSTODY RECORD

PAGE 2 OF 2

PROJECT NUMBER:	PROJECT NAME:
0047	VIP Service / Castro Valley

SAMPLED BY: (PRINTED AND SIGNATURE)

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): EPA 8015M + 8020 TPH-d, BTEX & MTBE	PRESERVATIVE	REMARKS
P24 - 4.0	12 Oct 2001		S	Borehole P24 at 4.0'	1	X	Ice	Normal TAT
P24 - 9.0			S	P24 at 9.0'	1	X		81380
P25 - 4.0			S	P25 at 4.0'	1	X		81381
P25 - 9.0			S	P25 at 9.0'	1	X		81382
P26 - 4.0			S	P26 at 4.0'	1	X		81383
P26 - 9.0			S	P26 at 9.0'	1	X		81384
P27 - 4.0			S	P27 at 4.0'	1	X		81385
P27 - 9.0			S	P27 at 9.0'	1	X		81386
								81387

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)
Dave Parker	10/19	12:45	B. Butts
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)
B. Butts	10/19	2:00 PM	

REMARKS: sw pg 1 of 2 *

TOTAL NO. OF SAMPLES (THIS SHIPMENT) *
TOTAL NO. OF CONTAINERS (THIS SHIPMENT) *

LABORATORY: McCampbell Analytical

LABORATORY CONTACT: Angela

LABORATORY PHONE NUMBER: (925) 798-1620

SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (✓)NO

YC.

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0047; VIP Service/Castro Valley	Date Sampled: 10/17-10/18/01
		Date Received: 10/19/01
	Client Contact: Paul King	Date Extracted: 10/19-10/25/01
	Client P.O:	Date Analyzed: 10/19-10/25/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
81338	P16-W	W	34,000,a,h,i	ND<200	150	66	2500	2600	106
81339	P17-W	W	9400,a,i	ND<10	5.1	37	260	180	112
81340	P18-W	W	76,000,a,h,i	ND<200	380	1500	3200	17,000	113
81341	P19-W	W	73,000,a,h,i	ND<200	2000	8300	3500	16,000	104
81342	P20-W	W	140,000,a,h,i	ND<500	4000	11,000	4300	19,000	112
81343	P21-W	W	120,000,a,h,i	ND<500	12,000	970	4300	18,000	102
81344	P22-W	W	130,000,a,h,i	ND<2000	17,000	26,000	4600	22,000	106
81345	P23-W	W	130,000,a,h,i	ND<2000	17,000	19,000	4400	22,000	102
81346	P24-W	W	73,000,a,h,i	ND<550	11,000	340	3300	10,000	107
81347	P25-W	W	4600,a,i	ND<25	180	57	130	510	---#
81348	P26-W	W	8000,a,i	ND<20	1400	200	250	930	117
81349	P27-W	W	49,000,a,i	ND<100	830	4100	1900	8400	107
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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QC REPORT

EPA 8015m + 8020

Date: 10/19/01-10/20/01 **Extraction:** EPA 5030 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 101701					Instrument:	GC-3	
Surrogate1	ND	112.0	105.0	100.00	112	105	6.5
Xylenes	ND	34.8	33.4	30.00	116	111	4.1
Ethylbenzene	ND	11.6	11.1	10.00	116	111	4.4
Toluene	ND	11.5	10.9	10.00	115	109	5.4
Benzene	ND	11.0	10.4	10.00	110	104	5.6
MTBE	ND	10.1	9.6	10.00	101	96	5.1
TPH (gas)	ND	85.8	86.0	100.00	86	86	0.2

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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CHAIN OF CUSTODY RECORD

28341 2pd 94

PAGE 1 OF 1

PROJECT NUMBER:	PROJECT NAME:
0047	VIP Service / Castro Valley

SAMPLED BY: (PRINTED AND SIGNATURE) Roger W. Papler

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TPH-G, BTEX & MTBE	PRESERVATIVE	
P16-W	10/1/01		W	Borehole P16	5	X	Ice	Normal TAT
P17-W			W	P17	5	X		
P18-W			W	P18	5	X		
P19-W			W	P19	5	X		
P20-W			W	P20	5	X		
P21-W			W	P21	5	X		
P22-W	10/1/01		W	P22	5	X		
P23-W			W	P23	5	X		
P24-W			W	P24	5	X		
P25-W			W	P25	5	X		
P26-W			W	P26	5	X		
P27-W			W	P27	5	X		

81338
81339
81340
81341
81342
81343
81344
81345
81346
81347
81348
81349

VOAs | O&G | METALS | OTHER

ICE/T ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓

PRESERVATION APPROPRIATE ✓
CONTAINERS ✓

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)
R W Papler	10/1	17:15	B. Butts
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)
B. Butts	10/1	2:00 pm	Monica Vuncs

TOTAL NO. OF SAMPLES (THIS SHIPMENT): 17
TOTAL NO. OF CONTAINERS (THIS SHIPMENT): 72

LABORATORY: McCampbell
LABORATORY CONTACT: Angela
LABORATORY PHONE NUMBER: (925)-798-1620

SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (✓)NO

PLEASE FAX COC → (510) 223-8351 IMMEDIATELY AFTER LAB SIGNATURE & FAX ANALYTICAL RESULTS → (510) 223-8351 and (510) ask: 9074

REMARKS: · samples P22W, P23W & P24W Not Preserved
· Please perform MTBE Confirmation Analysis using EPA 8260 to confirm any positive MTBE results