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185 Century Cir.  
Danville, Ca 94526  
Feb. 7, 1994

Alameda County  
Health Care Services  
Dept. Of Env. Health  
80 Swan Way, Room 200  
Oakland, CA. 94621

Attn: Scott Seery

Site: VIP Service Station  
3889 Castro Valley Blvd.  
Castro Valley, CA 94546

Subject: Reports Documenting Remediation Activities at Above Site

Gentlemen:

We are submitting following two reports documenting remediation activities that we have completed at above site for your record and information.

1. Soil Excavation Report # 0047. R1
2. Monitoring Well Installation Report # 0047.R2

Above reports are prepared by our consultant P & D Environmental. The remediation work had been carried out with very close contact and direction of Alameda County Health Dept.

Please provide your directions and recommendations for the site closure.

Thank you for assistance.

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

Sincerely,

*L. B. Patel / P. K. Gupta*  
L. B. Patel / and P. K. Gupta

Attachments: Above Reports

# P & D ENVIRONMENTAL

300 Monte Vista, #101  
Oakland, CA 94611  
Telephone (510) 658-6916

January 24, 1994  
Report 0047.R2

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

SUBJECT: [REDACTED]  
VIP Service  
3889 Castro Valley Blvd.  
Castro Valley, CA

Gentlemen:

P&D Environmental (P&D) is pleased to present this report documenting the permitting, installation, surveying, development, and sampling of three groundwater monitoring wells and the drilling and sampling of one exploratory soil boring at the subject site. This work was performed in accordance with P&D's proposal 081993.P1 dated August 19, 1993; P&D's proposal addenda 110993.P2 and 110993.P3 dated November 9, 1993; P&D's Workplan 0047.W1 dated September 10, 1993; and conditions set forth in the letter dated September 24, 1993 from Mr. Scott Seery of the Alameda County Department of Environmental Health (ACDEH) approving the workplan. A Site Location Map (Figure 1) is attached with this report.

## 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. A copy of the Site Plan provided by Accutite showing the sample collection locations is attached with this report as Figure 2.

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 soil sample results from the fuel tank pit are summarized in Table 1 and the groundwater sample results are summarized in Table 2.

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 soil sample results from beneath the dispenser islands are summarized in Table 3.

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 Tetrachloroethene in the EPA Method 8010 analysis; 2.7 ppm 2-Methylnaphthalene 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. The soil sample results for the sample from the waste oil tank pit are summarized in Table 4.

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. The sample collection locations are shown on the attached Site Plan, Figure 3. Documentation of excavation, stockpiled soil characterization and disposal, and backfilling of the pit are provided in P&D's report 0047.R1 dated December 13, 1993.

#### FIELD ACTIVITIES

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 locations of the monitoring wells and the exploratory soil boring are shown on the attached Site Plan, Figure 4. Prior to performing field work, a workplan was submitted to the ACDEH for review and approval, a permit was obtained from the Alameda County Zone 7 Water Agency, notification was provided to the ACDEH of the scheduled drilling date, Underground Safety Alert was notified for buried utility location, and a site health and safety plan was prepared.

#### Monitoring Well Installation and Soil Sampling

The borings for the monitoring wells were drilled using truck-mounted 8-inch outside diameter hollow stem auger drilling equipment. All of the borings for the monitoring wells were drilled to a total depth of 20.0 feet. The exploratory soil boring extended to a depth of 10.5 feet. Groundwater was not encountered in the exploratory soil boring, B1.

In the boreholes for the monitoring wells, soil samples were collected at a maximum of five foot intervals, using a California modified split spoon sampler lined with brass tubes driven by a 140 pound hammer falling 30 inches. Blow counts were recorded every six inches. In the exploratory soil boring, soil samples were collected between the depths of 9.0 and 10.5 feet. The soil samples were classified lithologically in the field in accordance with standard geologic

field techniques and the Unified Soil Classification System. In addition, the soil samples were evaluated in the field using a Foxboro Model OVA 108 Flame Ionization Detector (FID) which was calibrated using a gasoline standard. FID readings were recorded on the boring logs.

\* Detectable concentrations of organic vapors were recorded in all of the boreholes for the monitoring wells and in the exploratory soil boring. [REDACTED] with concentrations ranging from 5 to 150 ppm. [REDACTED] not detected [REDACTED] any other sample collection depth. However, petroleum hydrocarbon odors were encountered in drill cuttings from boreholes MW1, MW2 and B1 beginning at a depth of approximately 6 or 7 feet and extending to a depth of approximately 10.5 to 11.5 feet below grade.

\* The odors were qualitatively evaluated by P&D personnel in the field as follows. In borehole MW1 the petroleum hydrocarbon odors were interpreted by P&D personnel to resemble oil. [REDACTED] In borehole MW3, the petroleum hydrocarbon odors were interpreted by P&D personnel to resemble fresh gasoline.

Soil samples collected from above the water table at depths of 5 and 10 feet in boreholes MW1, MW2 and MW3, and at a depth of 10 feet in B1 were retained for laboratory analysis in the following manner. After sample collection, the ends of the brass tubes were wrapped in aluminum foil, covered with plastic endcaps, labeled, and placed in ziplock baggies. The capped brass tubes were then placed into a cooler with ice pending delivery to McCampbell Analytical Laboratory in Pacheco, California. McCampbell Analytical Laboratory is a State-certified hazardous waste testing laboratory. Chain of custody procedures were followed for all sample handling. Copies of the boring logs for boreholes MW1 through MW3 and B1 are attached with this report.

The groundwater monitoring wells were constructed using two-inch diameter Schedule 40 PVC pipe with 13 feet of screened PVC (0.010-inch factory slot) which was placed in the bottom of the borehole between the depths of 7 and 20 feet. A #2/16 Lonestar sack sand was placed into the annular space surrounding the PVC pipe to one foot above the top of the slotted interval. A one-foot thick layer of bentonite pellets was placed above the sand and hydrated. The remaining annular space was filled with a neat cement grout to the ground surface. The borehole for the exploratory boring, B1, was filled with neat cement to the ground surface.

The top of the PVC wellpipe for each well was secured with a water-tight locking plug and enclosed in a water-tight, locking vault. The vault is traffic rated, and was set slightly above grade to diminish the accumulation of surface water inside the vault. Well Construction Detail diagrams for wells MW1 through MW3 are attached with this report. Well Completion Reports for wells MW1 through MW3 were completed and forwarded to the Alameda County Zone 7 Water Agency, in accordance with permit requirements.

The rim to the vault and the top of the PVC well pipe for each of wells MW1 through MW3 were surveyed vertically to the nearest 0.01 foot relative to a Mean Sea Level (MSL) datum by Kier & Wright of Pleasanton, California. Kier & Wright is a State-licensed surveyor. The surveyed vault rim elevations for MW1, MW2 and MW3 are 181.12, 180.01 and 179.28 feet MSL, respectively. The surveyed top of the PVC well pipe elevations for MW1, MW2 and MW3 are 180.83, 179.70 and 178.98 feet MSL, respectively. A copy of the letter transmitting the elevations from Kier & Wright, including the surveyed elevations and a description of the MSL benchmark is attached with this report.

The hollow stem augers were steam cleaned prior to use in each borehole. Water generated during steam cleaning was placed into DOT-approved 55-gallon

drums and stored onsite pending appropriate disposal. Soil cuttings generated during drilling activities were stored onsite on a sheet of visqueen and covered pending appropriate disposal.

#### Monitoring Well Development

Wells MW1 through MW3 were developed on November 12, 1993 by surging and over-pumping until the water discharged from the wells was relatively clear. Prior to development, the wells were monitored for depth to water using an electric water level indicator, and for the presence of free product or sheen using a transparent bailer. The measured depth to groundwater in Wells MW1, MW2 and MW3 prior to development on November 12, 1993 was 11.53, 10.95 and 10.66 feet, respectively. Depth to water was measured relative to the top of the PVC well casing. No free product, sheen or petroleum hydrocarbon odors were detected in any of the wells, except for MW3, which exhibited petroleum hydrocarbon odors in water removed from the well during well development. The depth to water level measurements are summarized in Table 6.

A total of approximately 100 gallons was removed from each of the wells during well development. Water removed from the wells during development was placed into DOT-approved 55-gallon drums and stored onsite pending appropriate disposal.

#### Monitoring Well Purging and Sample Collection

On November 16, 1993 the wells were monitored for depth to water and the presence of free product and sheen using methods described above. The measured depth to water in wells MW1, MW2 and MW3 on November 16, 1993 was 11.63, 11.10 and 10.63 feet, respectively. No free product or sheen were observed in any of the wells. The depth to water level measurements are summarized in Table 5.

After the wells had been monitored, the wells were purged of a minimum of three casing volumes of water. During purging operations, the field parameters of pH, electrical conductivity and temperature were monitored. Once the field parameters had been observed to stabilize and a minimum of three casing volumes have been purged, groundwater samples were collected from the monitoring wells using a Teflon bailer. The bailer was cleaned using an Alconox solution and clean water rinse prior to each use. Copies of the data sheets used to record the field parameters during well purging are attached with this report.

The samples were transferred from the bailer to 40 milliliter Volatile Organic Analysis (VOA) vials and one liter amber bottles with Teflon-lined screw caps, as appropriate. The VOA vials were overturned and tapped to assure that air bubbles were not present. The sample bottles were then labeled and placed into a cooler with ice pending delivery to McCampbell Analytical Laboratory. Chain of custody procedures were observed for all sample handling.

#### 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. Based on review of the regional geologic maps provided in U.S. Geological Survey Open File Report 80-540, "Preliminary Geologic Map of the Hayward Quadrangle, Alameda and Contra Costa Counties, California" by Thomas Dibblee, Jr., 1980 the alluvial materials are inferred to be underlain at depth by bedrock materials of the Upper Cretaceous Panoche Formation. Additionally, the site is situated approximately 0.8 miles northeast of the inferred trace of

the East Chabot Fault and 1.7 miles northeast of the mapped trace of the active Hayward Fault.

Based upon interpretation of materials encountered in the boreholes for the monitoring wells MW1, MW2 and MW3 and the exploratory boring, B1, the site is underlain by black or brown silty clay which contains trace amounts of sand and fine gravel and extends to the approximate depths of 6 to 7 feet below grade. This black to brown silty clay is in turn underlain by gray silty clay materials measuring approximately one millimeter (mm) in diameter and extends to the approximate depths of 12 to 13 feet below grade. Additionally, based upon observations during drilling operations, this gray silty clay zone begins at a depth of approximately 6 to 7 feet, which extends to approximately 10.5 to 11.5 feet below grade.

In the vicinity of MW1, the gray silty clay zone is underlain by brown silty clay to a depth of 15 feet below grade. The overall silty clay horizon, varying in thickness from approximately 12.5 to 15 feet, is in turn underlain by a saturated fine-grained, poorly graded sand. This sand layer is interpreted as the first aquifer underlying the site. The sand layer is further underlain by brown silty clay to at least the maximum depths explored of 20.5 feet below grade.

Geologic cross-sections A-A', B-B', and C-C' show the interpreted distribution of subsurface materials at the site and are presented in Figure 5. The locations of the cross-sections are shown on Figure 4.

The groundwater surface elevations in the monitoring wells and groundwater flow direction at the site on November 16, 1993 are shown on Figure 4. WSW

#### LABORATORY ANALYTICAL RESULTS

The soil samples from boreholes MW1 through MW3 and B1 and the groundwater samples from monitoring wells MW1 through MW3 were analyzed for TPH-G using EPA Method 5030 in conjunction with Modified EPA Method 8015, and BTEX using EPA Method 8020. In addition, the soil sample from a depth of 10.0 feet in borehole MW3 and the groundwater sample from MW3 were analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH) using EPA Method 418.1; halogenated volatile organic compounds using EPA Method 8010; and for semi-volatile organic compounds using EPA Method 8270. At the request of Mr. Scott Seery, the soil sample from borehole MW1 at a depth of 10.0 feet was analyzed for TRPH because of the oil-like odor associated with the sample. Analysis was not performed for TPH-D because the results of previous analyses had not detected the presence of diesel-range compounds.

The laboratory analytical results of the soil samples collected from boreholes MW1 and MW2 show that TPH-G and benzene were not detected in any of the samples. However, 0.006 ppm toluene and 0.011 ppm xylenes were detected in the soil sample from MW2 at a depth of 10.0 feet. TPH-G and BTEX were detected in the soil samples from both 5.0 and 10.0 feet in borehole MW3, with TPH-G detected at concentrations of 25 and 28 ppm, respectively, and benzene detected at concentrations of 2.2 and 4.2 ppm, respectively. The results of the soil sample collected from B1 at a depth of 10.0 feet showed TPH-G and BTEX, with a TPH-G concentration of 210 ppm and a benzene concentration of 1.6 ppm.

In addition, the results of the soil sample collected at a depth of 10.0 feet in MW1 (which was analyzed for TRPH to evaluate the oil-like odor) did not

show detectable concentrations of TRPH and the results of the soil sample collected at a depth of 10.0 feet in MW3 showed that TRPH and Semi-volatile organic compounds (EPA Method 8270 compounds) were not detected; and EPA Method 8010 compounds were not detected except for 0.060 ppm 1,2-Dichloroethane.

The laboratory analytical results of the groundwater samples collected from the monitoring wells show 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-Methylnaphthalene.

#### DISCUSSION AND RECOMMENDATIONS

Based on observations of soil discoloration, elevated FID readings and petroleum hydrocarbon odors detected in the boreholes during drilling activities, the soil at this site appears to have been impacted by petroleum hydrocarbons beginning at a depth of 6 or 7 feet and extending vertically to a depth of approximately 10.5 to 11.5 feet. The depth of 10.5 to 11.5 feet is approximately coincident with the depth of the fuel tank pit. [REDACTED]

Based on the laboratory analytical results of the soil samples collected from the tank pit sidewalls following over-excavation activities, soil appears to be impacted by detectable concentrations of TPH-G in the vicinity of the tank pit. However, based on the laboratory analytical results of the soil samples collected from the boreholes for monitoring wells MW1 through MW3, and from the exploratory soil boring B1, the extent of TPH-G appears to be defined to the east by borehole MW1 and to the south by borehole MW2. The relatively low concentrations of TPH-G encountered in borehole MW3 indicate that the extent of petroleum hydrocarbons in soil has largely been defined to the southwest of the fuel tank pit.

The laboratory analytical results of the [REDACTED] collected at a depth of 10.0 feet in borehole MW3 did not show detectable concentrations of TRPH, EPA Method 8270 compounds or EPA Method 8010 compounds (with the exception of 0.060 ppm [REDACTED]), indicating that with one exception, waste oil constituents do not appear to be present in the soil at this location.

Based on the laboratory analytical results of the groundwater samples collected from the monitoring wells, groundwater appears to be impacted by petroleum hydrocarbons in the downgradient direction from the fuel tank pit. Based on the depth to water measurements collected on November 16, 1993 from the monitoring wells at the site after well development, the groundwater flow direction appears to be to the west-southwest.

P&D recommends that a quarterly groundwater monitoring and sampling program be initiated for the site. The wells should be monitored for depth to water and the presence of free product and sheen on a quarterly basis, and the wells purged and sampled on a quarterly basis. P&D recommends that the groundwater samples collected from all of the wells be analyzed for TPH-G and BTEX, and that the samples collected from MW3 be also analyzed on a quarterly basis for Halogenated Volatile Organic Compounds using EPA Method 8010 and on an annual basis for Semi-volatile Organic Compounds using EPA Method 8270.

*Fuel  
Pb scavenger*

DISTRIBUTION

Copies of this report should be distributed to Mr. Scott Seery at the Alameda County Department of Environmental Health, and to Mr. Richard Hiatt at the San Francisco Bay Regional Water Quality Control Board. Copies of the report should be accompanied by a transmittal letter signed by the principal executive officer of VIP Service.

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.



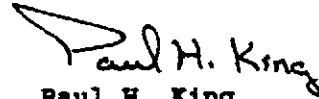
January 24, 1994  
Report 0047.R2

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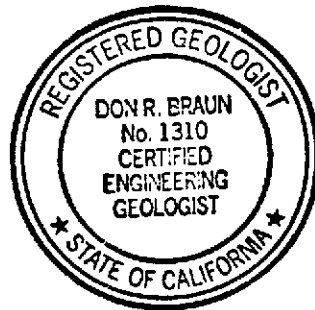
Should you have any questions, please do not hesitate to contact us at  
(510) 658-6916.

Sincerely,

P&D Environmental



Paul H. King  
Hydrogeologist



Don R. Braun  
Certified Engineering Geologist  
Registration No. : 1310  
Expires: 6/30/94

PHK  
0047.R2

Attachments: Tables 1, 2, 3, 4, 5, 6, 7 & 8  
Site Location Map (Figure 1)  
Site Plan Showing Accutite Sample Locations (Figure 2)  
Site Plan Showing Post-Excavation Sample  
Collection Locations (Figure 3)  
Site Plan Showing Well Locations (Figure 4)  
Geologic Cross Sections (Figure 5)  
Boring Logs  
Well Construction Details  
Report of Surveyed Elevations  
Well Sampling Purge Data Sheets  
Laboratory Analytical Results  
Chain of Custody Documentation

TABLE 1  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
FUEL TANK PIT SOIL SAMPLES  
(Samples Collected on April 26, 1993)

Sample No.	Total Lead	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
NE	5.8	4,000	47	300	85	490
NW	6.0	1,100	8.1	41	20	120
SE	13	6,200	92	360	110	610
SW	ND	120	4.1	5.4	1.7	8.5
EN	5.6	3,300	11	170	70	420
ES	ND	2,700	10	95	38	220
WN	8.0	290	3.4	16	4.7	26
WS	ND	330	4.5	12	5.7	30

TPH-G = Total Petroleum Hydrocarbons as Gasoline.  
ND = Not Detected.  
Results are in parts per million (ppm), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
FUEL TANK PIT GROUNDWATER SAMPLE  
(Sample Collected on April 26, 1993)

Sample No.	Total Lead	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Water-VIP	0.095	140	13	22	3.2	19

TPH-G = Total Petroleum Hydrocarbons as Gasoline.  
Results are in parts per million (ppm), unless otherwise indicated.

TABLE 3  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
DISPENSER ISLAND SOIL SAMPLES  
(Samples Collected on April 28, 1993)

Sample No.	Total Lead	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
I-1	ND	ND	0.0080	ND	ND	ND
I-2	ND	1.7	0.097	ND	0.052	0.020
I-3	ND	4.7	0.21	0.038	0.10	0.37
I-4	ND	3.4	0.27	0.031	0.14	0.45
I-5	ND	2.7	0.075	ND	0.058	0.12
I-6	7.6	ND	ND	ND	ND	ND
I-7	5.8	ND	0.020	ND	0.017	0.015

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

ND = Not Detected.

Results are in parts per million (ppm), unless otherwise indicated.

TABLE 4  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
WASTE OIL TANK PIT SOIL SAMPLE  
(Sample Collected on April 26, 1993)

Sample No.	Total Lead	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
WO*	21	670	7.3	21	8.7	44

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

\* = Total Petroleum Hydrocarbons as Diesel was reported at a concentration of 410 ppm, however 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; Total Oil and Grease was reported at a concentration of 1,300 ppm; 0.023 ppm 1,2-Dichloroethane and 0.0094 ppm Tetrachloroethene were detected in the EPA Method 8010 analysis; 2.7 ppm 2-Methylnaphthalene and 3.8 ppm Naphthalene were detected in the EPA Method 8270 analysis; and Cadmium, Chromium, Nickel and Zinc were reported at not detected, 41, 63, and 50 ppm, respectively.

Results are in parts per million (ppm), unless otherwise indicated.

TABLE 5  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
FUEL TANK PIT SOIL SAMPLES FOLLOWING OVER-EXCAVATION  
(Samples Collected on October 19, 1993)

Sample No.	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
TP1-10.0**	120	4.6	3.0	1.6	8.9
TP2-10.0	210	1.8	1.7	27	15
TP3-10.0	1,800	23	68	27	160
TP4-10.0	750	13	46	15	87
TP5-10.0	1,300	13	63	17	110
TP6-10.0	980	6.7	22	18	109
TP7-10.0	3,200	24	220	80	430
TP8-10.0	33	0.064	0.090	0.13	0.24

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

\*\* = TRPH was 120 ppm; EPA Method 8240 compounds were not detected except for 2.2 ppm benzene, 2.6 ppm ethylbenzene, 2.7 ppm toluene and 14 ppm total xylenes; EPA Method 8270 compounds were not detected except for 0.34 ppm Phenol.

Results are in parts per million (ppm), unless otherwise indicated.

TABLE 6  
WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW1	11/16/93	180.83	11.63	169.20
	11/12/93***		11.53	169.30
MW2	11/11/93	179.70	11.10	168.60
	11/12/93***		10.95	168.75
MW3	11/11/93	178.98	10.63	168.35
	11/12/93***		10.66	168.32

NOTES:

Elevations are in feet Mean Sea Level.

ft. = Feet.

\*\*\* = Depth to water measurements prior to groundwater monitoring well development.

TABLE 7  
SOIL BORING  
LABORATORY ANALYTICAL RESULTS  
(Samples Collected on November 10, 1993)

Sample Location	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes
MW1-5.0	ND	ND	ND	ND	ND
MW1-10.0****	ND	ND	ND	ND	ND
MW2-5.0	ND	ND	ND	ND	ND
MW2-10.0	ND	ND	0.066	ND	0.011
MW3-5.0	25	2.2	0.058	0.97	1.8
MW3-10.0*	28	4.2	0.087	1.0	1.7
B1-10.0	210	1.6	5.0	4.4	23

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

ND = Not Detected.

\*\*\*\* = TRPH not detected.

\* = TRPH not detected; EPA 8010 compounds not detected except for 0.050 ppm 1,2-Dichloroethane; EPA 8270 compounds not detected.

Results are in parts per million (ppm), unless otherwise specified.





# P & D ENVIRONMENTAL

300 Monte Vista, #101  
Oakland, CA 94611  
Telephone (510) 658-6916



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

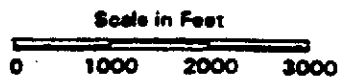
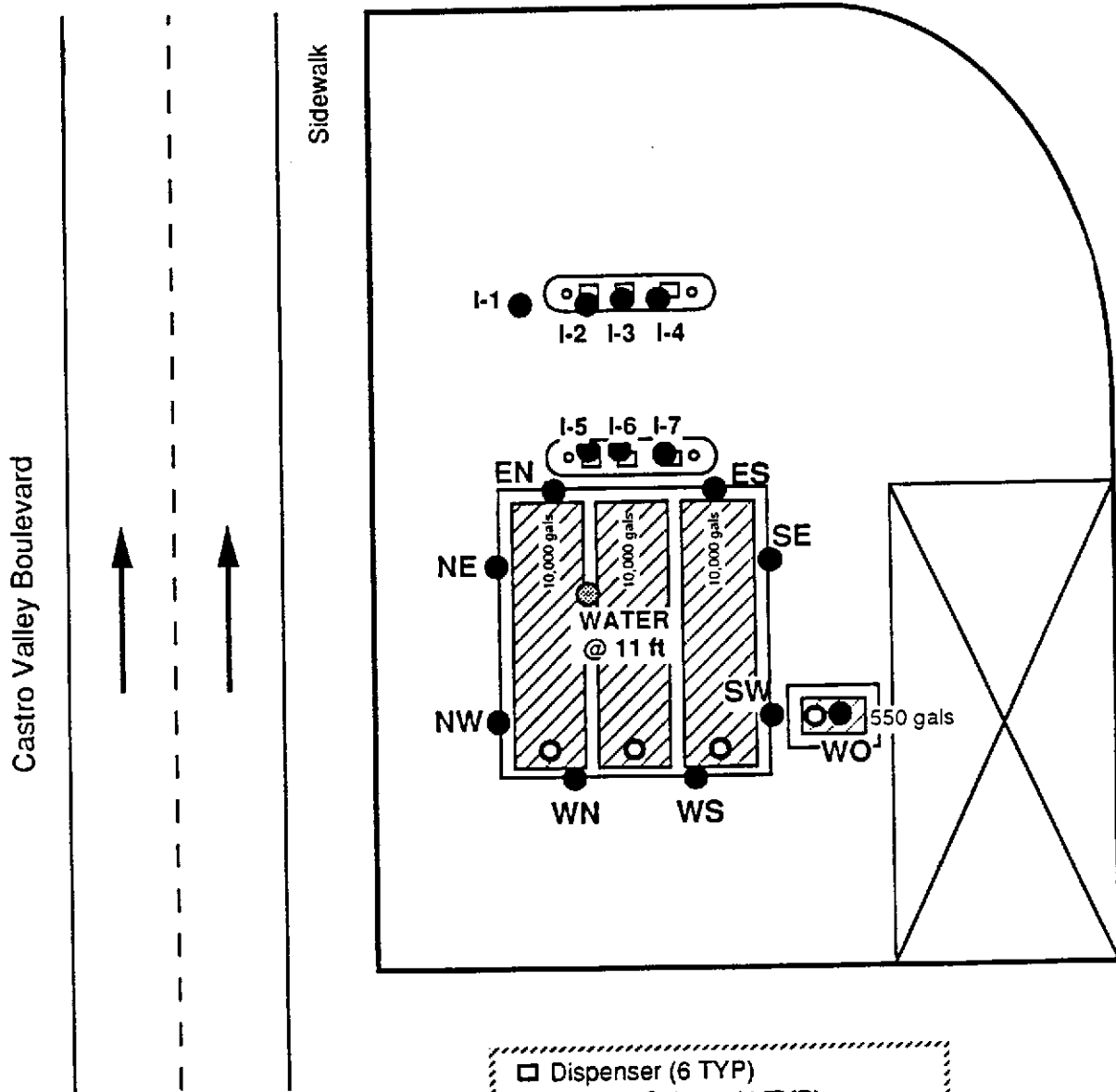


Figure 1  
**SITE LOCATION MAP**  
VIP Service  
3889 Castro Valley Blvd.  
Castro Valley, California



- Dispenser (6 TYP)
- Canopy Columns (4 TYP)
- Tank Fill Locations (4 TYP)
- Soil Sampling Locations (16 TYP)
- Water Sampling Location

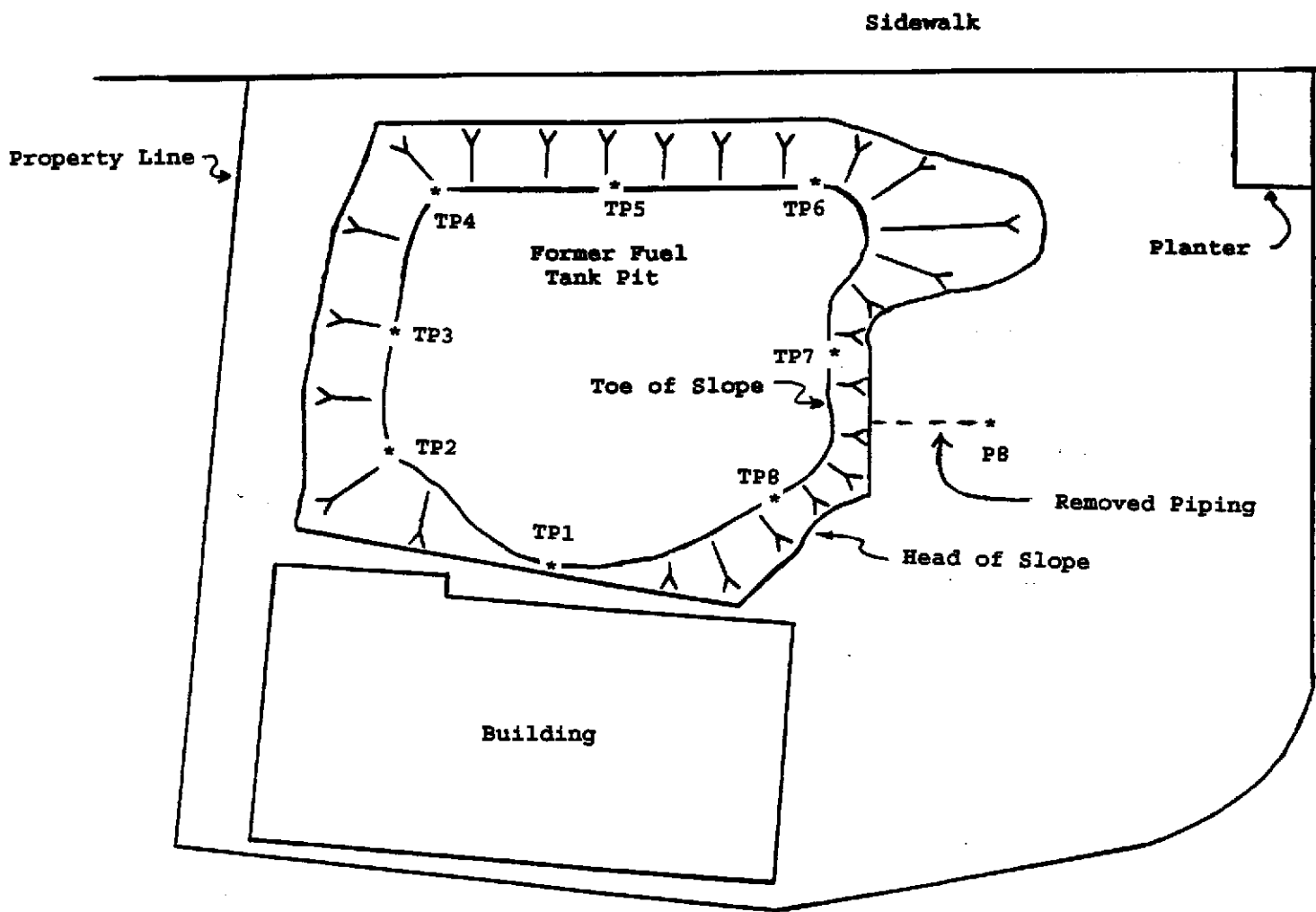
Figure 2  
SITE PLAN

Revisions	Date	Page	VIP Service Station c/o Patel, Lalji B. 385 Century Circle Danville, CA 94526	By:  <b>ACCUTITE</b>  35 South Linden Avenue South San Francisco California 94080
0	26 APR 93	1		
		of 1		
← Z	SCALE: 1"=20' (sampling locations only)		Site: VIP SERVICE STATION 3889 Castro Valley Blvd Castro Valley, CA	

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Oakland, CA 94611  
Telephone (510) 658-6916

Castro Valley Boulevard



### LEGEND

\* Sample Collection Location

0 10 20



Scale in Feet

North



Base Map From  
P&D Environmental  
October, 1993

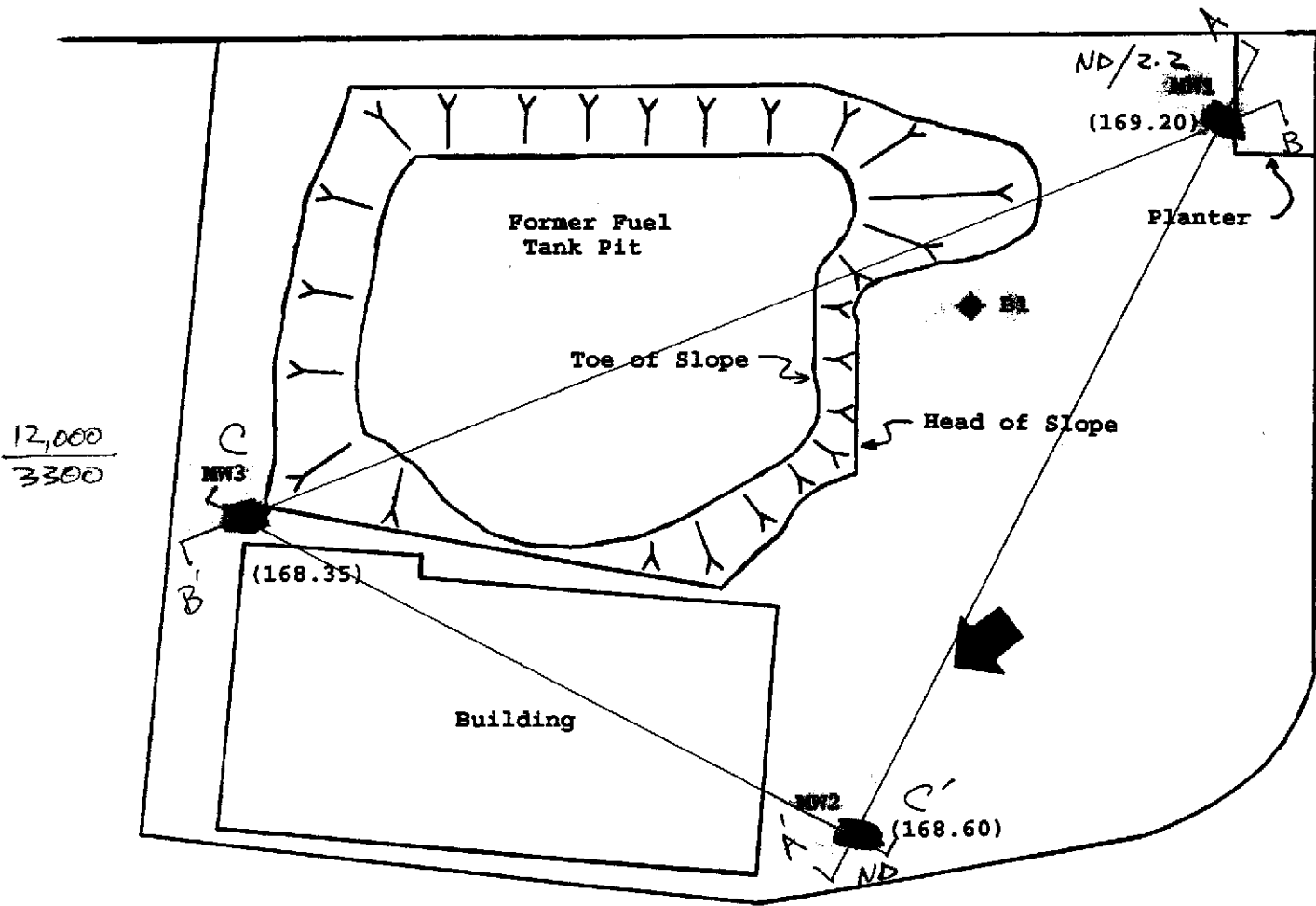
Figure 3  
SITE PLAN  
VIP Service  
3889 Castro Valley Blvd.  
Castro Valley, California

# P & D ENVIRONMENTAL

300 Monte Vista, #101  
Oakland, CA 94611  
Telephone (510) 658-6916

Castro Valley Boulevard

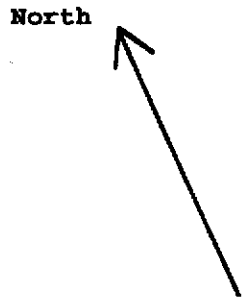
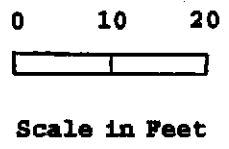
Sidewalk



### LEGEND

- Monitoring Well Location
- Exploratory Boring Location
- Groundwater Surface Elevation in Feet on November 16, 1993
- Groundwater Flow Direction

(746)  
TPHE  
benzene



Base Map From  
P&D Environmental  
October, 1993

Figure 4  
SITE PLAN  
VIP Service  
3889 Castro Valley Blvd.  
Castro Valley, California

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 Oakland, CA 94611  
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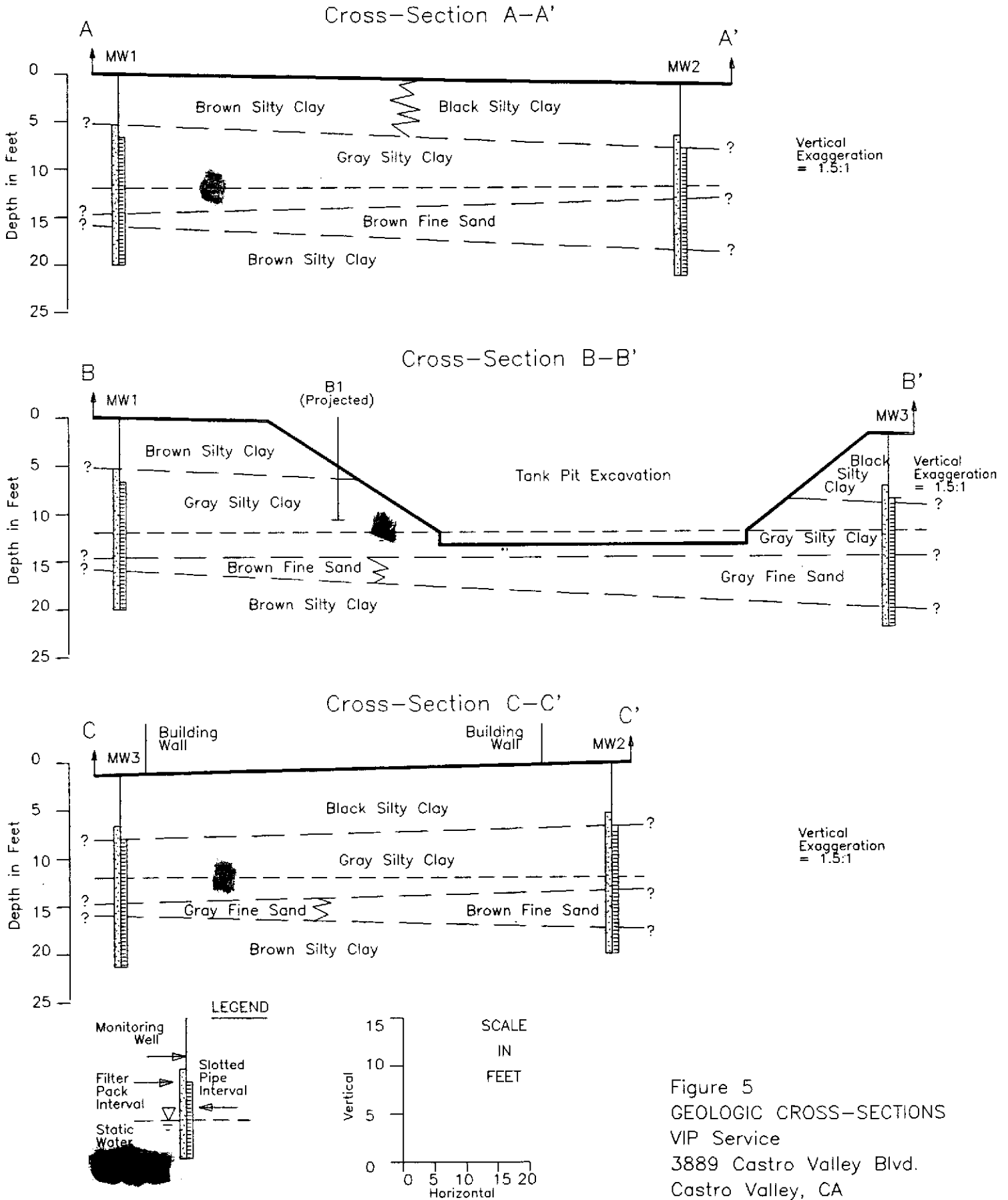


Figure 5  
 GEOLOGIC CROSS-SECTIONS  
 VIP Service  
 3889 Castro Valley Blvd.  
 Castro Valley, CA

Boring No: <b>01</b>		PROJECT NO: <b>0047</b>		PROJECT NAME: <b>VIP Service</b>	
Boring Location: <b>Dispenser area</b>		ELEVATION & DATUM: <b>NA</b>			
DRILLING AGENCY: <b>Great Sierra Exploration</b>		DRILLER: <b>Scott, Darron, Arturo</b>		DATE & TIME STARTED	DATE & TIME FINISHED
DRILLING EQUIPMENT: <b>CME 35</b>				<b>11/10/93</b>	<b>11/10/93</b>
COMPLETION DEPTH: <b>10.5 ft.</b>		BEDROCK DEPTH: <b>None Encountered</b>		LOGGED BY: <b>PHK</b>	CHECKED BY:
FIRST WATER DEPTH: <b>None encountered</b>		NO. OF SAMPLES:			

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	FID	BLOW COUNT PER 6"	REMARKS
0	Asphalt		No Well Constructed			Borehole drilled using 8" O.D. hollow stem augers. Sample collected using a California modified split-spoon sampler lined with brass tubes driven by a 140# hammer falling 30".  No groundwater encountered.
5	(CL); fine to coarse sand, dry to moist. No Petroleum Hydrocarbon (PHC) odor.	CL				
10	(CL); extensive macropores 1 mm diameter, moist, very stiff. Strong PHC gasoline odor.			150	6 10 6	
15						
20						
25						
30						

BORING NO: <b>MW1</b>		PROJECT NO: <b>0047</b>	PROJECT NAME: <b>VIP Service, Castro Valley</b>			
BORING LOCATION: <b>At northeast corner of property</b>		ELEVATION & DATUM: <b>Ground Surface = 181.12 ft. MSL</b>				
DRILLING AGENCY: <b>Great Sierra Exploration</b>		DRILLER: <b>Scott, Darron, Arturo</b>		DATE & TIME STARTED	DATE & TIME FINISHED	
DRILLING EQUIPMENT: <b>CME 75</b>				<b>11/10/93</b>	<b>11/10/93</b>	
COMPLETION DEPTH: <b>20 ft.</b>		BEDROCK DEPTH: <b>None Encountered</b>		LOGGED BY:	CHECKED BY:	
FIRST WATER DEPTH: <b>12 ft.</b>		NO. OF SAMPLES: <b>2</b>		<b>PHK</b>		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	FID	BLOW COUNT PER 8"	REMARKS
0	Asphalt		See Attached Diagram			Borehole drilled using 8" O.D. hollow stem augers. Samples collected using a California modified split-spoon sampler lined with brass tubes driven by a 140# hammer falling 30".
5	<b>Black SILTY CLAY (CL);</b> fine to coarse sand, minor gravel up to 1/4" diameter, dry, hard. No Petroleum Hydrocarbon (PHC) odor.	CL		0	12 17 24	
10	<b>Gray SILTY CLAY (CL);</b> extensive macropores 1 mm diameter, moist, very stiff. <del>Gray-Red</del>	▼		5	6 9 12	Groundwater later stabilized at 11.6 ft, on 11/16/93.
15	<b>14.0-15.0 ft. Brown CLAY (CL);</b> woody fragments, very stiff, <del>no PHC odor</del>	▼		0	8 13 25	
15	<b>15.0-15.5 ft. Brown fine SAND (SP);</b> <del>no PHC odor</del>	SP				
20	<b>Brown SILTY CLAY (CL);</b> fine sand, macropores 1-3 mm diameter, <del>very stiff. No PHC odor.</del>	CL		0	3 7 14	Borehole cleaned out to 20.0 ft. Monitoring well constructed in borehole on 11/10/93.
25						
30						



BORING NO: MBW2		PROJECT NO: 0047		PROJECT NAME: VIP Service, Castro Valley			
BORING LOCATION: At southern edge of property		ELEVATION & DATUM: Ground Surface = 180.01 ft. MSL					
DRILLING AGENCY: Great Sierra Exploration		DRILLER: Scott, Darron, Arturo		DATE & TIME STARTED		DATE & TIME FINISHED	
DRILLING EQUIPMENT: CME 75				11/10/93		11/10/93	
COMPLETION DEPTH: 20 ft.		BEDROCK DEPTH: None Encountered		LOGGED BY: PHK		CHECKED BY:	
FIRST WATER DEPTH: 12 ft.		NO. OF SAMPLES: 2					
DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	RID	BLOW COUNT PER 6"	REMARKS	
0	Asphalt		See Attached Diagram				
5	Black SILTY CLAY (CL); moist, very stiff. No Petroleum Hydrocarbon (PHC) odor.	CL		0	7 7 14	Borehole drilled using 8" O.D. hollow stem augers. Samples collected using a California modified split-spoon sampler lined with brass tubes driven by a 140# hammer falling 30".	
8	Grey SILTY CLAY (CL); moist, very stiff. Strong PHC odor.				5 7 12	11:00 am 11/10/93. Groundwater later stabilized at 11.1 ft, on 11/16/93.	
14	14.0 - 15.0 ft. Gradational change from brown fine SANDY SILT to SILTY fine SAND. No PHC odor.			0	10 29 42		
15	15.0 ft. Brown fine SAND (SP), dense. No PHC odor.	SP					
20	Brown SILTY CLAY (CL); fine sand, very stiff. No PHC odor.	CL		0	12 14 27	Borehole cleaned out to 20.0 ft. Monitoring well constructed in borehole on 11/10/93.	
25							
30							

BORGES NO: <b>0047</b>		PROJECT NAME: <b>VIP Service, Castro Valley</b>	
PROJECT NO: <b>0047</b>		ELEVATION & DATUM: <b>Ground Surface = 179.28 ft. MSL</b>	
BORING LOCATION: <b>At northwest corner of building</b>			
DRILLING AGENCY: <b>Great Sierra Exploration</b>	DRILLER: <b>Scott, Darron, Arturo</b>	DATE & TIME STARTED: <b>11/10/93</b>	DATE & TIME FINISHED: <b>11/10/93</b>
DRILLING EQUIPMENT: <b>CME 75</b>		LOGGED BY: <b>PHK</b>	CHECKED BY:
COMPLETION DEPTH: <b>20 ft.</b>	BEDROCK DEPTH: <b>None Encountered</b>		
FIRST WATER DEPTH: <b>13 ft.</b>	NO. OF SAMPLES: <b>2</b>		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	FID	BLOW COUNT PER 6"	REMARKS
0	Asphalt					
0 - 5	<b>Black SILTY CLAY (CL);</b> minor fine to coarse sand, trace gravel 1/4" diameter, moist, very stiff. <b>Slight Petroleum Hydrocarbon (PHC) odor.</b>	CL	See Attached Diagram	0	8 10 20	Borehole drilled using 8" O.D. hollow stem augers. Samples collected using a California modified split-spoon sampler lined with brass tubes driven by a 140# hammer falling 30".
5 - 10	<b>Light gray SILTY CLAY (CL);</b> minor macropores 1 mm diameter, moist, stiff. <b>Strong PHC odor.</b>	▼			4 5 10	
10 - 15	<b>Gray fine SAND (SP);</b> <b>dense.</b> No PHC odor.	SP		0	14 14 17	First groundwater encountered at 13 ft, 1:45 pm 11/10/93. Groundwater later stabilized at 10.6 ft, on 11/16/93.
15 - 20	<b>Brown SILTY CLAY (CL);</b> gray mottling at 15.3-15.5 ft.; fine sand, macropores 1 mm diameter, saturated, hard. No PHC odor.	CL		0	9 24 32	Borehole cleaned out to 20.0 ft. Monitoring well constructed in borehole on 11/10/93.
20 - 25						
25 - 30						

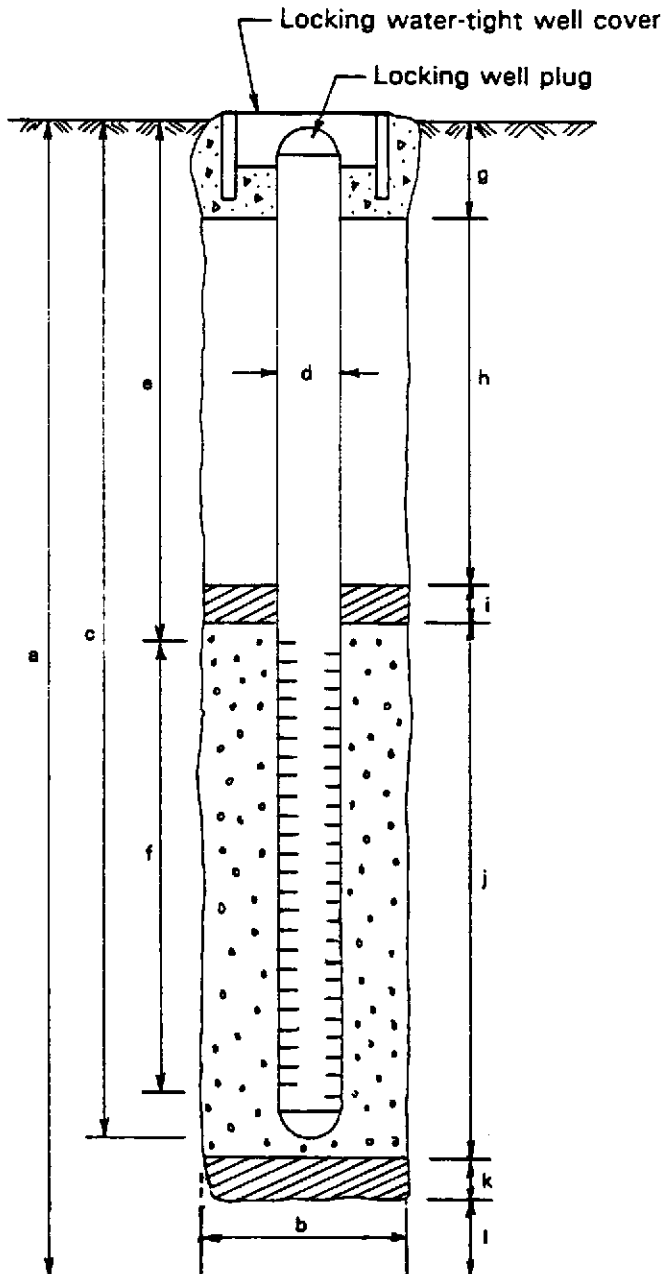
# P & D ENVIRONMENTAL

300 Monte Vista, #101  
Oakland, CA 94611  
Telephone (510) 658-6916

## WELL CONSTRUCTION DETAILS

PROJECT NUMBER 0045  
PROJECT NAME VIP Service  
COUNTY Alameda  
WELL PERMIT NO. 93634

BORING/WELL NO. MW1  
TOP OF CASING ELEV. 180.83 ft.  
GROUND SURFACE ELEV. 181.12 ft.  
DATUM Mean Sea Level



### EXPLORATORY BORING

- a. Total depth 20.0 ft.
- b. Diameter 8.0 in.  
Drilling Method Hollow Stem Auger

### WELL CONSTRUCTION

- c. Casing length 20.0 ft.  
Material Schedule 40 PVC
- d. Diameter 2.0 in.
- e. Depth to top perforations 7.0 ft.
- f. Perforated length 13.0 ft.  
Perforated interval from 7.0 to 20.0 ft.  
Perforation type Factory Slot  
Perforation size 0.010 inch
- g. Surface sanitary seal 1.0 ft.  
Seal material Concrete
- h. Sanitary seal 4.0 ft.  
Seal material Neat Cement Grout
- i. Filter pack seal 1.0 ft.  
Seal material Bentonite Pellet
- j. Filter pack length 14.0 ft.  
Filter pack interval from 6.0 to 20.0 ft.  
Pack material #2/16 Lonestar Sack Sand
- k. Bottom seal 0 ft.  
Seal material None
- l. Sluff in bottom of borehole 0 ft.

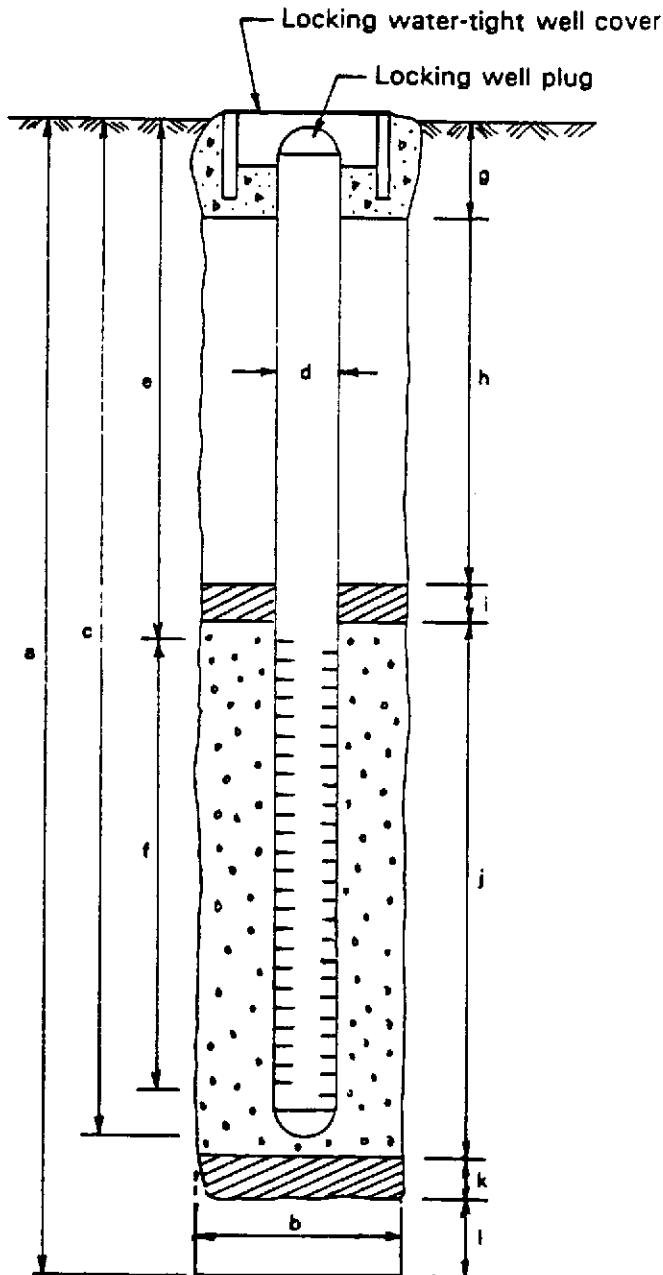
# P & D ENVIRONMENTAL

300 Monte Vista, #101  
Oakland, CA 94611  
Telephone (510) 658-6916

## WELL CONSTRUCTION DETAILS

PROJECT NUMBER 0045  
PROJECT NAME VIP Service  
COUNTY Alameda  
WELL PERMIT NO. 93634

BORING/WELL NO. MW2  
TOP OF CASING ELEV. 179.70 ft.  
GROUND SURFACE ELEV. 180.01 ft.  
DATUM Mean Sea Level



### EXPLORATORY BORING

- a. Total depth 20.0 ft.  
b. Diameter 8.0 in.  
Drilling Method Hollow Stem Auger

### WELL CONSTRUCTION

- c. Casing length 20.0 ft.  
Material Schedule 40 PVC  
d. Diameter 2.0 in.  
e. Depth to top perforations 7.0 ft.  
f. Perforated length 13.0 ft.  
Perforated interval from 7.0 to 20.0 ft.  
Perforation type Factory Slot  
Perforation size 0.010 inch  
g. Surface sanitary seal 1.0 ft.  
Seal material Concrete  
h. Sanitary seal 4.0 ft.  
Seal material Neat Cement Grout  
i. Filter pack seal 1.0 ft.  
Seal material Bentonite Pellet  
j. Filter pack length 14.0 ft.  
Filter pack interval from 6.0 to 20.0 ft.  
Pack material #2/16 Lonestar Sack Sand  
k. Bottom seal 0 ft.  
Seal material None  
l. Sluff in bottom of borehole 0 ft.

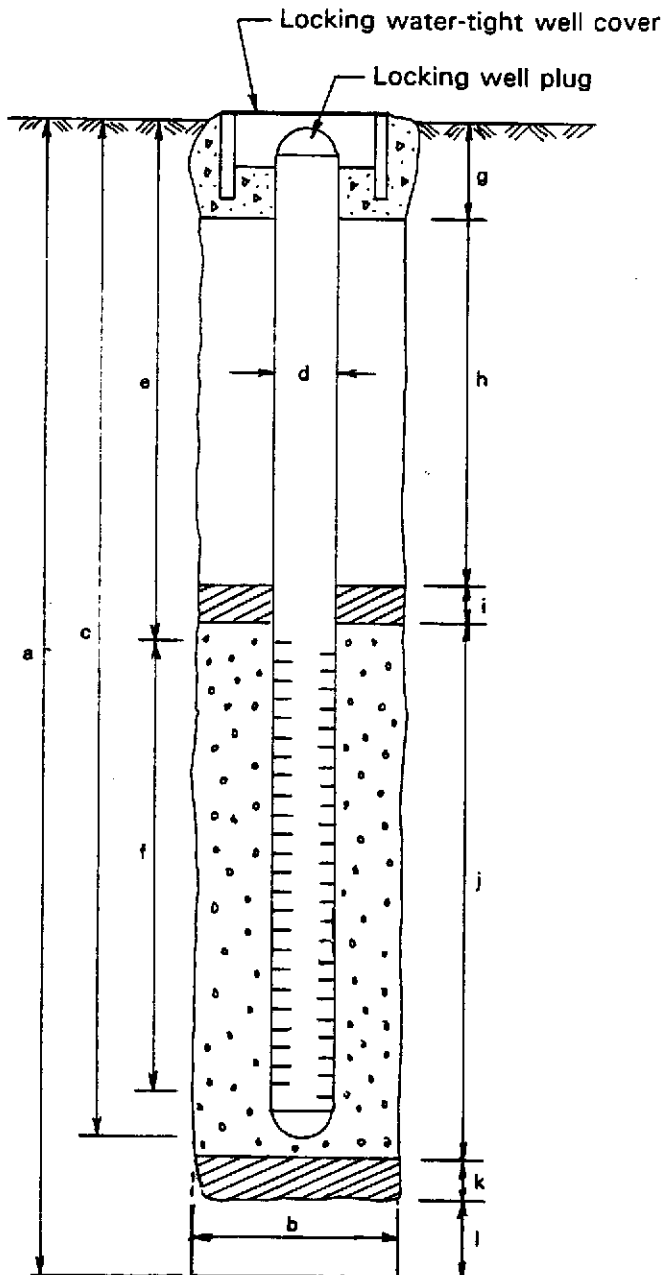
# P & D ENVIRONMENTAL

300 Monte Vista, #101  
Oakland, CA 94611  
Telephone (510) 658-6916

## WELL CONSTRUCTION DETAILS

PROJECT NUMBER 0045  
PROJECT NAME VIP Service  
COUNTY Alameda  
WELL PERMIT NO. 93634

BORING/WELL NO. MW3  
TOP OF CASING ELEV. 178.98 ft.  
GROUND SURFACE ELEV. 179.28 ft.  
DATUM Mean Sea Level



### EXPLORATORY BORING

- a. Total depth 20.0 ft.
- b. Diameter 8.0 in.  
Drilling Method Hollow Stem Auger

### WELL CONSTRUCTION

- c. Casing length 20.0 ft.  
Material Schedule 40 PVC
- d. Diameter 2.0 in.
- e. Depth to top perforations 7.0 ft.
- f. Perforated length 13.0 ft.  
Perforated interval from 7.0 to 20.0 ft.  
Perforation type Factory Slot  
Perforation size 0.010 inch
- g. Surface sanitary seal 1.0 ft.  
Seal material Concrete
- h. Sanitary seal 4.0 ft.  
Seal material Neat Cement Grout
- i. Filter pack seal 1.0 ft.  
Seal material Bentonite Pellet
- j. Filter pack length 14.0 ft.  
Filter pack interval from 6.0 to 20.0 ft.  
Pack material #2/16 Lonestar Sack Sand
- k. Bottom seal 0 ft.  
Seal material None
- l. Sluff in bottom of borehole 0 ft.

November 12, 1993  
Job No. 93583

Table of Elevations  
V.I.P. Service Station  
3889 Castro Valley Boulevard  
Castro Valley, California

<u>Well No.</u>	<u>Elevation</u>	
	<u>@ Cut X N. Rim Box</u>	<u>@ Mark on PVC Casing</u>
MW-1	181.12	180.83 (South side)
MW-2	180.01	179.70 (South side)
MW-3	179.28	178.98 (East side)

Benchmark: "CVB-ASPEN" An Alameda County disc stamped "CVB-ASPEN-1977" on Castro Valley Blvd. at Aspen Ave. Disc is in top of D.I. 3.0' Easterly of the Easterly return of the Southeasterly corner of Castro Valley Blvd. and Aspen Ave.

Elevation = 170.27 Feet M.S.L.











McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553  
 Tele: 510-798-1620 Fax: 510-798-1622

P & D Environmental 300 Monte Vista, # 101 Oakland, CA 94611	Client Project ID: # 0045; VIP Service, Castro Valley	Date Sampled: 11/10/93
	Client Contact: Paul King	Date Received: 11/11/93
	Client P.O:	Date Extracted: 11/11-11/23/93
		Date Analyzed: 11/11-11/23/93

**Total Recoverable Petroleum Hydrocarbons as Oil & Grease (with Silica Gel Clean-up) by Scanning IR Spectrometry\***

EPA method 418.1 or 9073; Standard Methods 5520 C&F

Lab ID	Client ID	Matrix	TRPH <sup>+</sup>
33059	MW1-10.0	S	ND
33063	MW3-10.0	S	ND
Detection Limit unless otherwise stated; ND means Not Detected	W	5 mg/L	
	S	50 mg/kg	

\*water samples are reported in mg/L and soils in mg/kg

+ If TPH(d) is not requested then all positive results are run by direct injection chromatography with FID detection. The following comments pertain to these GC results: a) gasoline-range compounds (C6-C12) present; b) diesel range compounds (C10-C23) present; c) oil-range compounds (> C18) present; d) other patterned solvent(?); e) isolated peaks; f) GC compounds are absent or insignificant relative to TRPH inferring that complex biologically derived molecules (lipids?) are the source of IR absorption.

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553

Tele: 510-798-1620 Fax: 510-798-1622

P & D Environmental 300 Monte Vista, # 101 Oakland, CA 94611	Client Project ID: # 0045; VIP Service, Castro Valley	Date Sampled: 11/10/93
		Date Received: 11/11/93
	Client Contact: Paul King	Date Extracted: 11/11-11/17/93
	Client P.O.:	Date Analyzed: 11/11-11/17/93

## Volatile Halocarbons

EPA method 601 or 8010

Lab ID	33063			
Client ID	MW3-10.0'			
Matrix	S			
Compound <sup>(1)</sup>	Concentration*	Concentration*	Concentration*	Concentration*
Bromodichloromethane	ND			
Bromoform <sup>(2)</sup>	ND			
Bromomethane	ND			
Carbon Tetrachloride <sup>(3)</sup>	ND			
Chlorobenzene	ND			
Chloroethane	ND			
2-Chloroethyl Vinyl Ether <sup>(4)</sup>	ND			
Chloroform <sup>(5)</sup>	ND			
Chloromethane	ND			
Dibromochloromethane	ND			
1,2-Dichlorobenzene	ND			
1,3-Dichlorobenzene	ND			
1,4-Dichlorobenzene	ND			
1,1-Dichloroethane	ND			
1,2-Dichloroethane	60			
1,1-Dichloroethene	ND			
cis 1,2-Dichloroethene	ND			
trans 1,2-Dichloroethene	ND			
1,2-Dichloropropane	ND			
cis 1,3-Dichloropropene	ND			
trans 1,3-Dichloropropene	ND			
Methylene Chloride <sup>(6)</sup>	ND			
1,1,2,2-Tetrachloroethane	ND			
Tetrachloroethene <sup>(7)</sup>	ND			
1,1,1-Trichloroethane	ND < 25			
1,1,2-Trichloroethane	ND			
Trichloroethene	ND			
Trichlorofluoromethane	ND			
Vinyl Chloride <sup>(8)</sup>	ND			
% Recovery Surrogate	102			
Comments				

Detection limit unless otherwise stated: water, ND &lt; 0.5ug/L; soil, ND &lt; 10ug/kg.

\* water samples are reported in ug/L, soil samples in ug/kg and all TCLP extracts in ug/L

(1) IUPAC allows "ylene" or "ene", ex ethylene or ethene; (2) tribromomethane; (3) tetrachloromethane; (4) (2-chloroethoxy) ethene; (5) trichloromethane; (6) dichloromethane; (7) perchlorethylene, PCE or perclor; (8) chloroethene; (9) unidentified peak(s) present.

DHS Certification No. 1644

 Edward Hamilton, Lab Director

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 11/11-11/12/93

Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.000	1.825	1.936	2.03	90	95	5.9
Benzene	0.000	0.178	0.192	0.2	89	96	7.6
Toluene	0.000	0.184	0.204	0.2	92	102	10.3
Ethylbenzene	0.000	0.178	0.194	0.2	89	97	8.6
Xylenes	0.000	0.566	0.612	0.6	94	102	7.8
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	0.0	23.8	23.8	20.8	114	114	0.0

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 11/23/93

Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.000	1.789	1.803	2.03	88	89	0.8
Benzene	0.000	0.206	0.220	0.2	103	110	6.6
Toluene	0.000	0.202	0.214	0.2	101	107	5.8
Ethylbenzene	0.000	0.202	0.212	0.2	101	106	4.8
Xylenes	0.000	0.618	0.646	0.6	103	108	4.4
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	0.0	18.9	19.2	20.8	91	92	1.6

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

## QC REPORT FOR EPA 8010/8020/EDB

Date: 11/16/93

Matrix: Soil

Analyte	Concentration (ug/kg)				% Recovery		
	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
1,1-DCE	0	112	110	100	112	110	1.8
Trichloroethene	0	84	84	100	84	84	0.0
EDB	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	0	105	106	100	105	106	0.2
Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobz (PID)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

# P & D ENVIRONMENTAL

300 Monte Vista, #101  
Oakland, CA 94611  
Telephone (510) 658-6916

Inv. #1796  
APD 36

## CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NUMBER: 0045		PROJECT NAME: VIP Service - Castro Valley			NUMBER OF CONTAINERS	ANALYSIS(ES):					PRESERVATIVE	REMARKS
SAMPLED BY: (PRINTED AND SIGNATURE) Paul W. King						TPH-Gas BTEX	TOG (4161)	EPA 8010	EPA 8210	111111		
SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION								
MW1-5.0	11/1/93		Soil		1	X					ICE	Normal Turn Around
MW1-10.0	"		"		1	X	X				"	" " "
MW2-5.0	"		"		1	X					"	" " "
MW2-10.0	"		"		1	X					"	" " "
MW3-5.0	"		"		1	X					"	" " "
MW3-10.0	"		"		1	X	X	X	X		"	" " "
												33058
												33059
												33060
												33061
												33062
												33063
RELINQUISHED BY: (SIGNATURE) Paul W. King		DATE 11/1/93	TIME 0830	RECEIVED BY: (SIGNATURE) E. Hamilton		TOTAL NO. OF SAMPLES (THIS SHIPMENT) 6		LABORATORY: McCampbell Analytical				
RELINQUISHED BY: (SIGNATURE) E. Hamilton		DATE 11/1/93	TIME 1010	RECEIVED BY: (SIGNATURE) Paul W. King		TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 6		LABORATORY CONTACT: Est Hamilton		LABORATORY PHONE NUMBER: (510) 798-1620		
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)		SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES (X) NO						
					REMARKS: Please call as soon as you have mw3-5.0 results and mw1-10.0 results.							



## McCAMPBELL ANALYTICAL

SAMPLE ID: MW3-10.0  
 AEN LAB NO: 9311134-01  
 AEN WORK ORDER: 9311134  
 CLIENT PROJ. ID: 1796

DATE SAMPLED: 11/10/93  
 DATE RECEIVED: 11/12/93  
 REPORT DATE: 12/02/93

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for BNAs	EPA 3550	-		Extrn Date	11/18/93
EPA 8270 - Soil matrix	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/Kg	11/18/93
Acenaphthylene	208-96-8	ND	330	ug/Kg	11/18/93
Anthracene	120-12-7	ND	330	ug/Kg	11/18/93
Benzidine	92-87-5	ND	1600	ug/Kg	11/18/93
Benzoic Acid	65-85-0	ND	1600	ug/Kg	11/18/93
Benzo(a)anthracene	56-55-3	ND	330	ug/Kg	11/18/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/Kg	11/18/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/Kg	11/18/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/Kg	11/18/93
Benzo(a)pyrene	50-32-8	ND	330	ug/Kg	11/18/93
Benzyl Alcohol	100-51-6	ND	660	ug/Kg	11/18/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/Kg	11/18/93
Bis(2-chloroethyl) Ether	111-44-4	ND	330	ug/Kg	11/18/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/Kg	11/18/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/Kg	11/18/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/Kg	11/18/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/Kg	11/18/93
4-Chloroaniline	106-47-8	ND	660	ug/Kg	11/18/93
2-Chloronaphthalene	91-58-7	ND	330	ug/Kg	11/18/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/Kg	11/18/93
Chrysene	218-01-9	ND	330	ug/Kg	11/18/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/Kg	11/18/93
Dibenzofuran	132-64-9	ND	330	ug/Kg	11/18/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/Kg	11/18/93
1,2-Dichlorobenzene	95-50-1	ND	330	ug/Kg	11/18/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/Kg	11/18/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/Kg	11/18/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/Kg	11/18/93
Diethyl Phthalate	84-66-2	ND	330	ug/Kg	11/18/93
Dimethyl Phthalate	131-11-3	ND	330	ug/Kg	11/18/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/Kg	11/18/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/Kg	11/18/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/Kg	11/18/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/Kg	11/18/93
Fluoranthene	206-44-0	ND	330	ug/Kg	11/18/93
Fluorene	86-73-7	ND	330	ug/Kg	11/18/93
Hexachlorobenzene	118-74-1	ND	330	ug/Kg	11/18/93
Hexachlorobutadiene	87-68-3	ND	330	ug/Kg	11/18/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/Kg	11/18/93

## McCAMPBELL ANALYTICAL

SAMPLE ID: MW3-10.0  
 AEN LAB NO: 9311134-01  
 AEN WORK ORDER: 9311134  
 CLIENT PROJ. ID: 1796

DATE SAMPLED: 11/10/93  
 DATE RECEIVED: 11/12/93  
 REPORT DATE: 12/02/93

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Hexachloroethane	67-72-1	ND	330	ug/Kg	11/18/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/Kg	11/18/93
Isophorone	78-59-1	ND	330	ug/Kg	11/18/93
2-Methylnaphthalene	91-57-6	ND	330	ug/Kg	11/18/93
Naphthalene	91-20-3	ND	330	ug/Kg	11/18/93
2-Nitroaniline	88-74-4	ND	1600	ug/Kg	11/18/93
3-Nitroaniline	99-09-2	ND	1600	ug/Kg	11/18/93
4-Nitroaniline	100-01-6	ND	1600	ug/Kg	11/18/93
Nitrobenzene	98-95-3	ND	330	ug/Kg	11/18/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/Kg	11/18/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/Kg	11/18/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/Kg	11/18/93
Phenanthrene	85-01-8	ND	330	ug/Kg	11/18/93
Pyrene	129-00-0	ND	330	ug/Kg	11/18/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/Kg	11/18/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/Kg	11/18/93
2-Chlorophenol	95-57-8	ND	330	ug/Kg	11/18/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/Kg	11/18/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/Kg	11/18/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/Kg	11/18/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/Kg	11/18/93
2-Methylphenol	95-48-7	ND	330	ug/Kg	11/18/93
4-Methylphenol	106-44-5	ND	330	ug/Kg	11/18/93
2-Nitrophenol	88-75-5	ND	330	ug/Kg	11/18/93
4-Nitrophenol	100-02-7	ND	1600	ug/Kg	11/18/93
Pentachlorophenol	87-86-5	ND	1600	ug/Kg	11/18/93
Phenol	108-95-2	ND	330	ug/Kg	11/18/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/Kg	11/18/93
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/Kg	11/18/93

ND = Not detected

\* = Indicates value above reporting limit

## QUALITY CONTROL DATA

DATE EXTRACTED: 11/18/93

AEN JOB NO: 9311134

CLIENT PROJ. ID: 1796

INSTRUMENT: 11

## SURROGATE STANDARD RECOVERY SUMMARY

METHOD: EPA 8270  
(SOIL MATRIX)

Date Analyzed	SAMPLE IDENTIFICATION		Nitro-benzene-d <sub>5</sub>	SURROGATE		RECOVERY (PERCENT)		
	Sample Id.	Lab Id.		2-Fluoro-biphenyl	Terphenyl-d <sub>14</sub>	Phenol-d <sub>5</sub>	2-Fluoro-phenol	2,4,6-Tribromo-phenol
11/18/93	MW3-10.0	01A	57.9	67.0	90.5	69.7	65.1	82.2

## QC LIMITS (01/08/92)

<u>ANALYTE</u>	<u>PERCENT RECOVERY</u>
Nitrobenzene-d <sub>5</sub>	(23-120)
2-Fluorobiphenyl	(30-115)
Terphenyl-d <sub>14</sub>	(18-137)
Phenol-d <sub>5</sub>	(24-113)
2-Fluorophenol	(25-121)
2,4,6-Tribromophenol	(19-122)

## QUALITY CONTROL DATA

DATE EXTRACTED: 11/18/93  
 DATE ANALYZED: 11/18/93  
 CLIENT PROJ. ID: 1796

AEN JOB NO: 9311134  
 SAMPLE SPIKED: 9311134-01A  
 INSTRUMENT: 11

MATRIX SPIKE RECOVERY SUMMARY  
 METHOD: EPA 8270  
 (SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Sample Result (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
Phenol	3,330	ND	3,080	2,450	83.0	22.8
2-Chlorophenol	3,330	ND	2,560	1,940	65.6	27.6
1,4-Dichlorobenzene	3,400	ND	2,020	1,960	58.5	3.0
N-Nitroso-di-n-propylamine	3,320	ND	2,600	1,860	61.2	33.2
1,2,4-Trichlorobenzene	3,330	ND	2,190	1,890	61.3	14.7
4-Chloro-3-methylphenol	3,270	ND	3,010	2,570	85.3	15.8
Acenaphthene	3,330	ND	2,870	2,390	79.0	18.3
4-Nitrophenol	3,300	ND	2,290	2,340	70.2	2.2
2,4-Dinitrotoluene	3,330	ND	2,420	2,400	72.4	0.8
Pentachlorophenol	3,380	ND	2,140	1,930	60.2	10.3
Pyrene	3,320	ND	2,800	2,930	86.3	4.5

## QC LIMITS (CLP LIMITS)

Analyte	Percent Recovery	RPD
Phenol	(26- 90)	35
2-Chlorophenol	(25-102)	50
1,4-Dichlorobenzene	(28-104)	27
N-Nitroso-di-n-propylamine	(41-126)	38
1,2,4-Trichlorobenzene	(38-107)	23
4-Chloro-3-methylphenol	(26-103)	33
Acenaphthene	(31-137)	19
4-Nitrophenol	(11-114)	50
2,4-Dinitrotoluene	(28- 89)	47
Pentachlorophenol	(17-109)	47
Pyrene	(35-142)	36

MS = Matrix Spike  
 MSD = Matrix Spike Duplicate  
 RPD = Relative Percent Difference  
 ND = Not Detected

\*\*\* END OF REPORT \*\*\*



P & D Environmental 300 Monte Vista, # 101  Oakland, CA 94611	Client Project ID: # 0045; VIP Service, Castro Valley	Date Sampled: 11/10/93
	Client Contact: Paul King	Date Received: 11/11/93
	Client P.O.:	Date Extracted: 11/12/93
		Date Analyzed: 11/13/93

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline\*, with 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) <sup>+</sup>	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
33057	B1-10.0'	S	210,a	1.6	5.0	4.4	23	96
Detection Limit unless otherwise stated; ND means Not Detected	W	50 ug/L	0.5	0.5	0.5	0.5	0.5	
	S	1.0 mg/kg	0.005	0.005	0.005	0.005	0.005	

\*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

# cluttered chromatogram; sample peak co-elutes 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 are significant; no recognizable pattern; 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 phase is present.

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 11/13/93

Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.000	1.927	1.936	2.03	95	95	0.5
Benzene	0.000	0.182	0.186	0.2	91	93	2.2
Toluene	0.000	0.198	0.200	0.2	99	100	1.0
Ethylbenzene	0.000	0.180	0.182	0.2	90	91	1.1
Xylenes	0.000	0.578	0.578	0.6	96	96	0.0
TPH (diesel)	20	324	335	300	101	105	3.2
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$





P & D Environmental 300 Monte Vista, # 101  Oakland, CA 94611	Client Project ID: # 0047; VIP Service-Castro Valley	Date Sampled: 11/16/93
		Date Received: 11/16/93
	Client Contact: Paul King	Date Extracted: 11/17/93
	Client P.O:	Date Analyzed: 11/17/93

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline\*, with 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) <sup>+</sup>	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
33138	MW1	W	ND,f	2.2	ND	ND	ND	97
33139	MW2	W	ND	ND	ND	ND	ND	95
33140	MW3	W	12,000,a	3300	660	240	1600	92
Detection Limit unless otherwise stated; ND means Not Detected	W	50 ug/L	0.5	0.5	0.5	0.5	0.5	
	S	1.0 mg/kg	0.005	0.005	0.005	0.005	0.005	

\*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L  
 # cluttered chromatogram; sample peak co-elutes 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 are significant; no recognizable pattern; 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 phase is present.



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553  
Tele: 510-798-1620 Fax: 510-798-1622

P & D Environmental 300 Monte Vista, # 101  Oakland, CA 94611	Client Project ID: # 0047; VIP Service- Castro Valley	Date Sampled: 11/16/93
	Client Contact: Paul King	Date Received: 11/16/93
	Client P.O:	Date Extracted: 11/16-11/21/93
		Date Analyzed: 11/16-11/21/93

## Volatile Halocarbons

EPA method 601 or 8010

Lab ID	33140			
Client ID	MVE3			
Matrix				
Compound <sup>(1)</sup>	Concentration*	Concentration*	Concentration*	Concentration*
Bromodichloromethane	ND			
Bromoform <sup>(2)</sup>	ND			
Bromomethane	ND			
Carbon Tetrachloride <sup>(3)</sup>	ND			
Chlorobenzene	ND			
Chloroethane	ND			
2-Chloroethyl Vinyl Ether <sup>(4)</sup>	ND			
Chloroform <sup>(5)</sup>	ND			
Chloromethane	ND			
Dibromochloromethane	ND			
1,2-Dichlorobenzene	ND			
1,3-Dichlorobenzene	ND			
1,4-Dichlorobenzene	ND			
1,1-Dichloroethane	ND			
1,2-Dichloroethane	27			
1,1-Dichloroethene	ND			
cis 1,2-Dichloroethene	ND			
trans 1,2-Dichloroethene	ND			
1,2-Dichloropropane	ND			
cis 1,3-Dichloropropene	ND			
trans 1,3-Dichloropropene	ND			
Methylene Chloride <sup>(6)</sup>	ND			
1,1,2,2-Tetrachloroethane	ND			
Tetrachloroethene <sup>(7)</sup>	ND			
1,1,1-Trichloroethane	ND			
1,1,2-Trichloroethane	ND			
Trichloroethene	ND			
Trichlorofluoromethane	ND			
Vinyl Chloride <sup>(8)</sup>	ND			
% Recovery Surrogate	89			
Comments				

Detection limit unless otherwise stated: water, ND &lt; 0.5ug/L; soil, ND &lt; 10ug/kg.

\* water samples are reported in ug/L, soil samples in ug/kg and all TCLP extracts in ug/L

(1) IUPAC allows "ylene" or "ene"; ex ethylene or ethene; (2) tribromomethane; (3) tetrachloromethane; (4) (2-chloroethoxy) ethene; (5) trichloromethane; (6) dichloromethane; (7) perchlorethylene, PCE or perclor; (8) chloroethene; (9) unidentified peak(s) present.

DHS Certification No. 1644

 Edward Hamilton, Lab Director

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 11/16-11/17/93

Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	115.3	115.0	100	115.3	115.0	0.3
Benzene	0	10.9	10.8	10	109.0	108.0	0.9
Toluene	0	10.7	10.6	10	107.0	106.0	0.9
Ethyl Benzene	0	10.4	10.5	10	104.0	105.0	1.0
Xylenes	0	33.1	32.6	30	110.3	108.7	1.5
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 11/22-11/23/93

Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	110.1	113.3	100	110.1	113.3	2.9
Benzene	0	11.2	10.5	10	112.0	105.0	6.5
Toluene	0	10.6	10.1	10	106.0	101.0	4.8
Ethyl Benzene	0	10.6	10	10	106.0	100.0	5.8
Xylenes	0	32.6	30.6	30	108.7	102.0	6.3
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	0	25500	25200	23700	108	106	1.2

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553  
Tele: 510-798-1620 Fax: 510-798-1622

## QC REPORT FOR EPA 8010/8020/EDB

Date: 11/16/93

Matrix: Water

Analyte	Concentration (ug/L)				% Recovery		
	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
1,1-DCE	0.0	4.6	4.8	5.0	92	96	4.3
Trichloroethene	0.0	4.6	4.4	5.0	92	88	4.4
EDB	0.0	4.3	4.3	5.0	86	86	0.0
Chlorobenzene	0.0	5.2	5.1	5.0	104	102	1.9
Benzene	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA
Chlorobz (PID)	NA	NA	NA	NA	NA	NA	NA

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

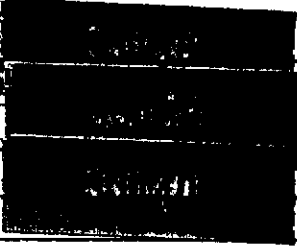
$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

**P & D ENVIRONMENTAL**

300 Monte Vista, #101  
Oakland, CA 94611  
Telephone (510) 658-6916

Inw.#1814  
APD38

**CHAIN OF CUSTODY RECORD**

PROJECT NUMBER: 0047		PROJECT NAME: VIP Service - Castro Valley			NUMBER OF CONTAINERS	ANALYSIS(ES): TPH- <del>5</del> BTEX TOC (418.1) EPA 8010 EPA 8270	PRESERVATIVE	REMARKS
SAMPLED BY: (PRINTED AND SIGNATURE) Ahmad Ghandour <i>Ahmad Ghandour</i>								
SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION				
MW1	11/16/93		water		2	X	ICE	Normal Turn Around
MW2	11/16/93		"		2	X	"	" " "
MW3	11/16/93		"		8	X X X X	"	" " "
								
ICE/T <input checked="" type="checkbox"/>		PRESERVATIVE <input checked="" type="checkbox"/>		HEAD SPACE <input checked="" type="checkbox"/>		CONTAINERS <input checked="" type="checkbox"/>		
GOOD CONDITION <input checked="" type="checkbox"/>		APPROPRIATE <input checked="" type="checkbox"/>		HEAD SPACE <input checked="" type="checkbox"/>		CONTAINERS <input checked="" type="checkbox"/>		
RELINQUISHED BY: (SIGNATURE) <i>Ahmad Ghandour</i>		DATE 11/16/93	TIME 2:00 pm	RECEIVED BY: (SIGNATURE) <i>[Signature]</i>		TOTAL NO. OF SAMPLES (THIS SHIPMENT) 3	LABORATORY: McCampbell Analytical	
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 12	LABORATORY PHONE NUMBER: (510) 798-1620	
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)		LABORATORY CONTACT: Ed Hamilton		
						SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES (X) NO		
REMARKS:								

# CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 23, 1993

ChromaLab File # 9311201

Submission #: 9311000201

MCCAMPBELL ANALYTICAL, INC.

Attn: Ed Hamilton

Project Name: PD/VP

Project No: 0047

Date Sampled: November 16, 1993

Method of Analysis: EPA 825

Date Submitted: November 16, 1993

Matrix: Water

Date Analyzed: November 23, 1993

Reporting Limit: see below

Sample I.D.: 3

Dilution Factor: None

COMPOUND NAME	Sample mg/l	MDL mg/l	Spike Recovery
PHENOL	0.009	0.002	78% 87%
BIS(2-CHLOROETHYL) ETHER	N.D.	0.002	-----
2-CHLOROPHENOL	N.D.	0.002	86% 87%
1,3-DICHLOROBENZENE	N.D.	0.002	-----
1,4-DICHLOROBENZENE	N.D.	0.002	-----
BENZYL ALCOHOL	0.006	0.004	-----
1,2-DICHLOROBENZENE	N.D.	0.002	-----
2-METHYLPHENOL <i>o-cresol</i>	0.006	0.002	-----
BIS(2-CHLOROISOPROPYL) ETHER	N.D.	0.002	-----
4-METHYLPHENOL <i>p-cresol</i>	0.005	0.002	-----
N-NITROSO-DI-N-PROPYLAMINE	N.D.	0.002	99% 85%
HEXACHLOROETHANE	N.D.	0.002	-----
NITROBENZENE	N.D.	0.002	-----
ISOPHORONE	N.D.	0.002	-----
2-NITROPHENOL	N.D.	0.002	-----
2,4-DIMETHYLPHENOL <i>xylenol</i>	0.007	0.002	-----
BENZOIC ACID	0.088	0.010	-----
BIS(2-CHLOROETHOXY) METHANE	N.D.	0.002	-----
2,4-DICHLOROPHENOL	N.D.	0.002	-----
1,2,4-TRICHLOROBENZENE	N.D.	0.002	101% 90%
NAPHTHALENE	0.042	0.002	-----
4-CHLOROANILINE	N.D.	0.004	-----
HEXACHLOROBUTADIENE	N.D.	0.002	-----
4-CHLORO-3-METHYLPHENOL	N.D.	0.004	101% 105%
2-METHYLNAPHTHALENE	0.015	0.002	-----
HEXACHLOROCYCLOPENTADIENE	N.D.	0.002	-----
2,4,6-TRICHLOROPHENOL	N.D.	0.002	-----
2,4,5-TRICHLOROPHENOL	N.D.	0.002	-----
2-CHLORONAPHTHALENE	N.D.	0.002	-----
2-NITROANILINE	N.D.	0.010	-----
DIMETHYL PHTHALATE	N.D.	0.002	-----
ACENAPHTHYLENE	N.D.	0.002	-----
3-NITROANILINE	N.D.	0.010	-----
ACENAPHTHENE	N.D.	0.002	96% 91%
2,4-DINITROPHENOL	N.D.	0.010	-----
4-NITROPHENOL	N.D.	0.010	-----
DIBENZOFURAN	N.D.	0.002	-----

(continued on next page)



# CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

Page 2

ChromaLab File # 9311201

Project Name: PD/VP

Project No: 0047

Sample I.D.: NW 3

Method of Analysis: EPA 625

Matrix: water

COMPOUND NAME	Sample mg/l	MDL mg/l	Spike Recovery
2,4-DINITROTOLUENE	N.D.	0.002	-----
2,6-DINITROTOLUENE	N.D.	0.002	101% 85%
DIETHYL PHTHALATE	N.D.	0.002	-----
4-CHLORO-PHENYL PHENYL ETHER	N.D.	0.002	-----
FLUORENE	N.D.	0.002	-----
4-NITROANILINE	N.D.	0.010	-----
4,6-DINITRO-2-METHYL PHENOL	N.D.	0.010	-----
N-NITROSODIPHENYLAMINE	N.D.	0.002	-----
4-BROMOPHENYL PHENYL ETHER	N.D.	0.002	-----
HEXACHLOROBENZENE	N.D.	0.002	-----
PENTACHLOROPHENOL	N.D.	0.010	121% 118%
PHENANTHRENE	N.D.	0.002	-----
ANTHRACENE	N.D.	0.002	-----
DI-N-BUTYL PHTHALATE	N.D.	0.002	-----
FLUORANTHENE	N.D.	0.002	-----
PYRENE	N.D.	0.002	97% 86%
BUTYLBENZYLPHTHALATE	N.D.	0.002	-----
3,3'-DICHLOROBENZIDINE	N.D.	0.004	-----
BENZO (A) ANTHRACENE	N.D.	0.002	-----
BIS (2-ETHYLHEXYL) PHTHALATE	N.D.	0.002	-----
CHRYSENE	N.D.	0.002	-----
DI-N-OCTYLPHTHALATE	N.D.	0.002	-----
BENZO (B) FLUORANTHENE	N.D.	0.002	-----
BENZO (K) FLUORANTHENE	N.D.	0.002	-----
BENZO (A) PYRENE	N.D.	0.002	-----
INDENO (1,2,3 C,D) PYRENE	N.D.	0.002	-----
DIBENZO (A,H) ANTHRACENE	N.D.	0.002	-----
BENZO (G,H,I) PERYLENE	N.D.	0.002	-----

ChromaLab, Inc.



Alex Tam  
Analytical Chemist



Eric Tam  
Lab Director

# CHAIN OF CUSTODY RECORD

**MCCAMPBELL ANALYTICAL**

110 2nd AVENUE, # D7

PACHBCO, CA 94553

(510) 798-1620

FAX (510) 798-1622

TURN AROUND TIME:

 RUSH 24 HOUR 48 HOUR 5 DAY

REPORT TO:

*EA*

BILL TO:

*NAI*

PROJECT NUMBER:

*0047 1814*

PROJECT NAME:

*PA/HP*

PROJECT LOCATION:

SAMPLER SIGNATURE:

SAMPLE ID	LOCATION	SAMPLING		# CONTAINERS	TYPE CONTAINERS	MATRIX						METHOD PRESERVED				
		DATE	TIME			WATER	SOIL	AIR	SLUDGE	OTHER	HCL	HNO3	OTHER			
<i>new 3</i>		<i>11-16-98</i>		<i>1</i>	<i>L</i>	<i>X</i>							<i>X</i>			

ANALYSIS REQUEST															OTHER					
<i>BTEX &amp; TPH as Gasoline (602/8020 &amp; 8015)</i>																				
<i>TPH as Diesel (8015)</i>																				
<i>Total Petroleum Oil &amp; Grease (820 ENF/850 MF)</i>																				
<i>Total Petroleum Hydrocarbons (418L)</i>																				
<i>EPA 601/8010</i>																				
<i>EPA 602/8020</i>																				
<i>EPA 608/8080</i>																				
<i>EPA 608/8080 - PCBs Only</i>																				
<i>EPA 624/8240/8560</i>																				
<i>EPA 625/8275</i>														<i>X</i>						
<i>CAH - 17 Metals</i>																				
<i>EPA - Priority Pollutant Metals</i>																				
<i>LEAD (7240/7421/239.2/600)</i>																				
<i>ORGANIC LEAD</i>																				
<i>PCI</i>																				

COMMENTS

RELINQUISHED BY: <i>[Signature]</i>	DATE <i>11-16-98</i>	TIME <i>15:00</i>	RECEIVED BY: <i>Gary Cook</i>
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY LABORATORY:

REMARKS:

P & D ENVIRONMENTAL

300 Monte Vista, #101  
Oakland, CA 94611  
Telephone (510) 658-6916

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 0047		PROJECT NAME: VIP Service - Castro Valley			NUMBER OF CONTAINERS	ANALYSIS(ES):				PRESERVATIVE	REMARKS		
SAMPLED BY: (PRINTED AND SIGNATURE) Ahmad Ghandour <i>Ahmad Ghandour</i>						TPH-Gas BTEX	TOX (418.i)	EPA 8010	EPA 8270				
SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION									
MW1	11/16/93		water		2	X				ICE	Normal Turn Around		
MW2	11/16/93		"		2	X				"	" " " "		
MW3	11/16/93		"		8	X	X	X	X	"	" " " "		
ICE/T <input checked="" type="checkbox"/> GOOD CONDITION <input checked="" type="checkbox"/> HEAD SPACE ABSENT <input checked="" type="checkbox"/>				PRESERVATIVE <input checked="" type="checkbox"/> APPROPRIATE <input checked="" type="checkbox"/> CONTAINERS <input checked="" type="checkbox"/>				VOAS <input checked="" type="checkbox"/> O&G <input checked="" type="checkbox"/> METALS <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>					
RELINQUISHED BY: (SIGNATURE) <i>Ahmad Ghandour</i>		DATE 11/16/93	TIME 2:00 PM	RECEIVED BY: (SIGNATURE) <i>Ed Hamilton</i>		TOTAL NO. OF SAMPLES (THIS SHIPMENT) 3	LABORATORY: McCampbell Analytical						
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 12	LABORATORY CONTACT: Ed Hamilton				LABORATORY PHONE NUMBER: (510) 798-1620		
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)		SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO							
REMARKS:													