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COMPREHENSIVE SITE EVALUATION AND PROPOSED FUTURE ACTION PLAN

at

Chevron Service Station 9-0020
1633 Harrison Street
Oakland, California

prepared for

Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, California 94583-0804

December 20, 1994

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prepared by

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Weiss Associates' work for Chevron U.S.A. Products Company, P.O. Box 5004, San Ramon, California, was conducted under my supervision. To the best of my knowledge, the data contained herein are true and accurate and satisfy the specified scope of work prescribed by the client for this project. The data, findings, recommendations, specifications, or professional opinions were prepared solely for the use of Chevron U.S.A. in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either expressed or implied, and are not responsible for the interpretation by others of these data.

James W. Carmody December 20, 1994
Certified Engineering Geologist
No. 1576

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SUMMARY

The Chevron site at 1633 Harrison Street in Oakland, California is a former Chevron service station. The station was abandoned in 1972 and all of the structures and underground storage tanks were removed from the site. Subsequent subsurface investigations indicated the presence of petroleum hydrocarbons in the subsurface and a ground water/soil vapor extraction (SVE) system was installed in 1993. The site has been used as a parking lot since December, 1975.

Review of the site investigation data and analysis of the remediation system performance shows that:

- ***The plume is contained by natural processes, and no significant plume migration occurs with or without ground water extraction:*** Samples collected from offsite wells MW-15 and MW-16, located downgradient of the site, indicate that the plume has not migrated significantly, either before or after activation of the ground water extraction system. The remnant hydrocarbon plume is restricted to the area between wells MW-7 and MW-15.

- ***The site has been remediated to the extent feasible:*** Well MW-7 is the only onsite well where petroleum hydrocarbons have historically been detected in ground water samples. The dewatering and SVE system, installed in wells MW-4 and MW-7 to mitigate the impacted soils in the vicinity of MW-4 and MW-7, was shutdown after 6 months of operation due to low flow rates.

- ***All potential source area soils have been removed from the site:*** Hydrocarbon-impacted soil in the shallow subsurface in the vicinity of well MW-4 was excavated and approximately 150 cubic yards of soil was disposed of offsite.

Therefore, we submit that:

- The remaining hydrocarbons present at the site are contained in the vicinity of the site and do not present a threat to human health or to the quality of the surrounding aquifer.

- All economically and technically feasible measures have been taken to reduce the contaminant plume.

Chevron requests that Alameda County Department of Environmental Health (ACDEH) approve shutdown of the remedial extraction system, allow a gradual reduction in well sampling frequency, and consider establishing a non-attainment area at this site.

INTRODUCTION

At the request of Chevron, U.S.A (Chevron) Weiss Associates (WA) has prepared this site evaluation for Chevron Service Station #9-0020, located at 1633 Harrison Street, Oakland, California. The objectives of this evaluation are to: 1) Summarize all investigative and remedial actions performed at the site to date; 2) evaluate whether the site meets the Regional Water Quality Control Board-San Francisco Bay Region (RWQCB) criteria for establishment of a non-attainment area; and 3) outline a recommended future action plan. The site-specific information presented in this evaluation was compiled from the reports listed in the References Section of this report.

SITE HISTORY

SITE SETTING

The former service station is located at the southwest corner of the intersection of 17th and Harrison Streets in Oakland, California. The site is located in a mixed retail, office, residential and light industrial area of downtown Oakland. The aboveground structures of the former station, including the pump island foundations, have been removed. According to Chevron records, the service station facilities, including underground storage tanks and lines, were removed prior to 1972. The site has apparently been occupied and operated as a parking lot since December 1, 1975.

The area is underlain by Quaternary marine and non-marine alluvial deposits consisting of layers of sand and gravel interspersed with thick sections of sand and clay. The uppermost strata in this area is the Merritt Sand, which underlies the site. The aquifers in the area are predominantly unconfined. Ground water flow direction at the site is northeastward toward Lake Merritt, a lagoon on the eastern edge of the San Francisco Bay. Lake Merritt and the tidal inlet connecting the lake to the Alameda Estuary are the nearest surface drainages to the site, with Lake

Merritt located less than 1,500 ft east of the site. The surface elevation at the site is approximately 30 ft above mean sea level (msl).

SITE INVESTIGATIONS

1988 Soil Vapor Survey: In January 1988, EA Engineering, Science, and Technology, Inc. of Lafayette, California, performed a soil vapor survey at the site. Total volatile hydrocarbons were detected in concentrations from 1 to 140 parts per million volume (ppmv) in 22 soil vapor samples collected from 11 locations. Laboratory analysis indicated that the compounds detected in these vapor samples were primarily low-boiling compounds (peaks eluting prior to benzene) which appeared to be composed predominantly of a single polar compound, most probably methanol. Methanol is a common product of bacterial metabolism. The highest concentration of the low-boiling compound (140 ppmv) was found near the waste oil tank.

1988 Well Installation: In October 1988, Western Geologic Resources, Inc. (WGR) of San Rafael, California installed onsite ground water monitoring wells MW-1 (B-1), MW-2 (B-2) and MW-3 (B-3) to a depth of approximately 30 feet below ground surface (bgs). Total fuel hydrocarbons (TFH) were detected at 12 parts per million (ppm) in one soil sample collected at a depth of 19 ft bgs from boring B-2. No TFH were detected in any other soil samples. No aromatic hydrocarbons were detected in any soil samples. Neither TFH nor aromatic hydrocarbons were detected in any of the ground water samples. However, the following halocarbons were detected in ground water samples: carbon tetrachloride in MW-1 (18 ppb), MW-2 (3 ppb) and MW-3 (8 ppb); tetrachloroethylene (PCE) in MW-2 (34 ppb) and MW-3 (84 ppb); trichloroethylene (TCE) in MW-2 (3 ppb) and MW-3 (3 ppb); trans-1-2-Dichloroethylene (1,2-DCE) in MW-2 (10 ppb) and MW-3 (5 ppb). Summary tables of concentrations detected in soil and ground water during this investigation are presented in Appendix B, and the boring logs for wells MW-1, MW-2 and MW-3 are presented in Appendix C.

1989 Subsurface Investigation: Between April 11 and 19, 1989, WGR supervised the drilling of nine soil borings (B-4 through B-12) to further assess the horizontal and vertical extent of petroleum hydrocarbons and halocarbons in the subsurface. Five of the soil borings (B-8 through

B-12) were completed as ground water monitoring wells MW-4 through MW-8, respectively, to depths between 26 and 33 feet. Borings B-4 through B-7 were drilled to the top of the water table to investigate the vadose zone along the upgradient property line. Hydrocarbon odors were noted in soil samples from borings B-4, B-8, B-9, B-10, B-11 and B-12, most notably in the vadose zone from 10 to 21 ft below ground surface (bgs) and just above first water, at about 21 ft bgs.

Total purgeable petroleum hydrocarbons, reported as diesel (TPH-D), were detected in unsaturated soil samples from boring B-8/MW-4 and B-11/MW-7. TPH-G was detected at 600 ppm in soil samples collected from B-8/MW-4 at depths of 4.5 ft and 9.6 ft bgs. 1,1,1-trichloroethane (TCA) was detected at 0.1 ppm in the soil sample collected from boring B-8/MW-4 at 9.6 ft bgs. Oil and grease were detected at 80 ppm in a saturated soil sample collected at 21 ft bgs from boring B-9/MW-5. No hydrocarbons were detected in any other unsaturated soil samples. Up to 50,000 ppm TPH-G were detected in saturated soil samples from boring B-11/MW-7 at 23.5 ft below grade. The sample collected from 21 ft bgs from B-9/MW-5 was also analyzed for total chromium (Cr), zinc (Zn), cadmium (Cd), and total lead (Pb). None of these metals were detected at concentrations exceeding the Total Threshold Limit Concentration (TTLC).

Ground water samples collected on April 23, 1989 from monitoring well MW-7, located downgradient from the former underground fuel tanks, showed TPH-G at 8,400 ppb and benzene at 100 ppb. No TPH-G was detected in the ground water samples collected from any other well. Total oil and grease was detected at 3 ppm in ground water samples collected from monitoring wells MW-7 and MW-8 but was not detected in any other well. Carbon tetrachloride was detected from 2 ppb to 35 ppb in ground water samples collected from all of the monitoring wells, with the highest concentration detected in the sample from well MW-4. Chloroform was detected at 7 ppb to 11 ppb in samples from all of the monitoring wells, with the highest concentration detected in the sample from well MW-4. PCE and 1,2-DCE were detected in ground water samples from wells MW-2 (38 ppb and 10 ppb, respectively), MW-3 (110 ppb and 11 ppb, respectively), MW-5 (4 ppb and 2 ppb, respectively) and MW-8 (3 ppb and 4 ppb, respectively). TCE was detected in samples from wells MW-2 and MW-3, both at a concentration of 3 ppb. Cd was detected at 0.008 ppm in the ground water sample collected from well MW-8. Cr was detected in samples from all wells at low levels ranging from 0.005 ppm to 0.031 ppm. Pb was detected in samples from wells

MW-1 (0.018 ppm), MW-7 (0.18 ppm) and MW-9 (0.007 ppm). Zn was detected in samples from all of the wells at concentrations ranging from 0.087 ppm to 7.5 ppm. Analytic results for soil and ground water sampling are presented in Appendix B, and the boring logs for wells MW-4 through MW-8 are presented in Appendix C.

1990 Offsite Subsurface Investigation and Well Survey: From June 18 through 21, 1990, WGR installed offsite ground water monitoring wells MW-9, MW-10, MW-11 and MW-12 to a maximum depth of 29.5 ft bgs, cross- and downgradient from the Chevron site. No TPH-G, benzene, toluene, ethylbenzene and total xylenes (BTEX) or halocarbons were detected in any of the soil samples collected and analyzed from borings B-13 through B-16. TPH-G and BTEX were detected at 5,700 ppb and 47 ppb, respectively, in ground water samples collected from MW-9 only, located downgradient from the site. Halocarbons, including carbon tetrachloride, chloroform, PCE, TCE and 1,2-DCE, were detected in ground water samples collected from wells MW-10, MW-11 and MW-12 with a maximum concentration of 73 ppb PCE detected in samples collected from MW-11, located cross-gradient from the site.

A search of registered wells within one-half mile of the site was conducted by the County of Alameda Public Works Agency using their computer database. Ninety-six wells were located within a one-half mile radius of the site. Most of these wells are monitoring or test wells. No drinking water wells and only one irrigation well were identified. The irrigation well is located more than one quarter of a mile southeast and cross gradient of the site. The locations of the wells are illustrated in a site map presented in Appendix A and the owners, well locations and uses are listed in tables presented in Appendix B.

1991 Additional Offsite Well Installation and Investigation: On October 3, 1991, Pacific Environmental Group, Inc. (PEG), installed downgradient ground water monitoring well MW-13 to evaluate the extent of petroleum hydrocarbons in the ground water, and ~~upgradient~~ crossgradient monitoring well MW-14 to investigate suspected sources of halogenated volatile organic compounds (HVOCs). In addition, four soil borings (B-A through B-D) were drilled to assess the extent of hydrocarbons in the subsurface in the vicinity of monitor well MW-7. Soil samples collected from the drill cuttings were analyzed for TPH-G and BTEX; soil samples collected from MW-14 were also

analyzed for HVOCs. No HVOCs, BTEX compounds or halocarbons were detected in soil samples collected from wells MW-13 and MW-14. TPH-G at 120 ppm were detected in the 26 ft depth soil sample from boring B-D. No HVOCs were detected in ground water samples collected from MW-13 and low concentrations of HVOCs were detected in ground water samples collected from all other monitor wells during the routine quarterly monitoring event on November 15, 1991. TPH-G were detected in ground water samples collected from MW-4 (97 ppb), MW-7 (3,300 ppb), MW-9 (4,000 ppb) and MW-13 (3,100 ppb). Benzene was detected in ground water samples collected from MW-7 (150 ppb), MW-9 (8.8 ppb) and MW-13 (68 ppb). Analytic results for soil and ground water are presented in Appendix B and the boring logs for wells MW-13 and MW-14 are presented in Appendix C.

Upgradient Source Investigation: During the October 1991 investigation described above, PEG also performed a reconnaissance of possible upgradient sources of HVOCs. Hallmark Cleaners, a dry cleaning business located approximately 60 ft upgradient of the former Chevron service station, was identified in a previous WGR report as a possible source for carbon tetrachloride and other halocarbons detected in the on- and offsite monitoring wells. According to the Oakland Fire Marshalls' Office records, no permits are on file for an above or below-ground storage tank at Hallmark Cleaners but it was mentioned that permits are required only for the storage of flammable substances; carbon tetrachloride is not a flammable substance. The City of Oakland Building Department does not maintain records of storage tank installations. During a pre-field site inspection on September 30, 1991, PEG personnel visited Hallmark Cleaners and spoke to an employee of the business. It was determined that, presently, there are no above-ground storage tanks, and the dry cleaning does not occur at the site but that the clothes are sent to another location to be cleaned.

based on what?

Other businesses in the immediate vicinity which may use or store halocarbons include printers, dry-cleaners, machine shops and manufacturers. A large number of printers are located in the vicinity of the site, a knitwear manufacturer is located upgradient of the site, and various automobile repair facilities are located nearby. The number of businesses in the immediate vicinity upgradient of the site which may be potential sources of halogenated volatile organics appears to be extensive.

1992 Excavation: Between January 7 and 22, 1992, PEG oversaw the excavation of 150 cubic yards of soil from the vicinity of MW-4. Soil samples were collected from the excavation bottom and sidewalls to determine the final extent of the excavation. Over-excavation was performed as necessary. Additionally, a 30-ft long trench extending 5 ft in depth was excavated across the area of the former underground storage tanks to confirm that the tanks had been removed from the site. No underground storage tanks were observed although construction debris, including piping and concrete slabs, was found beneath the surface in the area of the former tanks. Approximately 150 cubic yards of soil, including an estimated 27 cubic yards of discolored soil, were excavated and disposed of offsite at an approved landfill. The excavations were backfilled with compacted Class II aggregate road base rock. Final excavation samples were analyzed for TPH-G, TPH-D and BTEX. In addition, three excavation samples were analyzed for HVOCs. These constituents were identified in only one sample collected from the southern sidewall at 8 ft bgs, where 310 ppm TPH-G, 270 ppm TPH-D but no benzene were detected. Laboratory analysis indicated that the TPH-D chromatogram was of a non-standard diesel pattern and may indicate the presence of weathered gasoline. Diesel was never marketed at this site. Further excavation to the south was precluded by the foundation of an adjacent building that paralleled the excavation sidewall to a depth of about 10 ft. However, no hydrocarbons were detected in the 5 ft and 10 ft depth samples collected from the southern sidewall. The final dimensions of the soil excavation were approximately 20 ft by 12 ft by 14 ft deep. With the exception of the small area near the 8 ft depth sample from the southern excavation sidewall, all hydrocarbon-affected soil in the vicinity of MW-4 was removed.

1992 Evaluation of Chlorinated Hydrocarbon Distribution: In October 1992, Geraghty & Miller, Inc. (GM) of Richmond, California, reviewed documents pertaining to the presence of chlorinated hydrocarbons in the soil and ground water beneath the Chevron site. Their objective was to determine if the data suggested that the chlorinated hydrocarbons detected in ground water beneath the Chevron facility may have emanated from a source located hydraulically upgradient (west) of the site. GM presented the following observations:

1) The highest chlorinated hydrocarbon concentrations in ground water were detected in water samples collected from wells located along the upgradient property boundary.

2) 1,1,1-trichloroethane (TCA) is the only chlorinated hydrocarbon detected in soil samples collected at the site above the ground water table; the 9.6 ft depth sample collected from boring B-8 (MW-4) contained 0.1 ppm TCA.

3) Chlorinated hydrocarbons, including TCA, were not detected in soil samples collected after excavation of soil in the vicinity of boring B-8 (MW-4).

4) A number of potential sources of chlorinated hydrocarbons, e.g., dry-cleaning and automotive businesses, have been identified upgradient of the site.

Based on these observations, GM concluded that the source of chlorinated hydrocarbons in the ground water is probably located upgradient of the Chevron facility. In a letter from Jennifer Eberle, Hazardous Materials Specialist, ACDEH, to Nancy Vukelich, Chevron U.S.A., dated November 4, 1992, Ms. Eberle stated that the ACDEH accepted this conclusion. The site wells are therefore no longer sampled for HVOCs.

1992 Additional Environmental Assessment and Well Installation: Between November 11 and December 8, 1992, Groundwater Technology, Inc. (GTI) of Concord, California, installed offsite ground water monitoring wells MW-15 and MW-16 to delineate the extent of the hydrocarbon plume in the downgradient direction. No TPH-G or BTEX were detected in either soil or ground water samples collected from these wells. Ground water samples were also collected from the existing wells at this time. Benzene was detected only in monitor wells MW-7 (810 ppb), MW-9 (380 ppb) and MW-13 (1,400 ppb). TPH-G was detected in water samples collected from wells MW-7 (11,000 ppb), MW-9 (9,900 ppb) and MW-13 (87,000).

A database file review by Environmental Risk Information and Imaging Services (ERIIS) reported 67 leaking underground storage tanks (LUSTs) within a 1-mile radius of the site. According to the ERIIS map, illustrating the locations of Federal- and State-reported hazardous waste and toxic chemical sites, there are five LUST sites within two blocks of the Chevron site. The closest LUST site is at the Harrison Street Garage, 1432 Harrison Street, south of the Chevron site. The ERIIS map also shows four facilities that have registered hazardous waste activities under the Resource Conservation and Recovery Act.

1993 Dewatering and Soil Vapor Extraction (SVE) System Installation: In June 1993, GM installed a dewatering system and a SVE remediation system in wells MW-4 and MW-7 to mitigate

impacted soils in the vicinity of well MW-7 at approximately 22 ft below grade. GM began operating the system in July 1993. During the initial system startup, it was determined that the catalytic unit would not pass the initial startup criteria stated in the Bay Area Air Quality Management District (BAAQMD) air permit. The very low flow rate of less than 4 cubic ft per minute (cfm) and the rapid drop in concentrations caused an apparent destruction efficiency of less than 90%, the minimum efficiency required by the air permit. The low flow rate necessitates the dilution of the process air stream to bring the total flow up to approximately 35 scfm. This dilution of the influent is the cause of the apparent low destruction efficiency. The treatment system was shut off and discharge from the dewatering system ceased on December 12, 1993.

Discussion of Ground Water Sampling: Sixteen soil borings have been drilled onsite, eight of which have been converted to ground water monitoring wells (MW-1 through MW-8). Eight additional monitoring wells have been installed offsite (MW-9 through MW-16). Ground water samples have been collected and analyzed for petroleum hydrocarbons on a quarterly basis since November of 1988. Data from this monitoring program indicate that:

1) Hydrocarbons are present in ground water in the northeast corner of the site, extending offsite into Harrison Street, but do not appear to extend downgradient past MW-15.

2) The chlorinated hydrocarbons detected in ground water apparently originate from an unknown offsite source.

REMEDIAL ACTIONS

Excavation: The soil excavation program, as described above, removed as much of the hydrocarbon-impacted soil in the vicinity of well MW-4 as possible. With the exception of a narrow zone at the southern sidewall, where a soil sample collected at a depth of 8 ft bgs contained 310 ppm TPH-G but no benzene, all hydrocarbon-affected soil in the vicinity of well MW-4 was removed. No significant hydrocarbon concentrations were encountered in the unsaturated soil in any other area of the site.

Dewatering/SVE System Operation: As described above, an attempt to extract soil vapor from wells MW-4 and MW-7 was made in July 1993. The very low flow rate of less than 4 cfm and the rapid drop in concentrations caused an apparent destruction efficiency of less than 90%, the minimum efficiency required by initial startup air permit criteria. The dewatering system could also only extract low ground water yields: between system startup on July 1, 1993 and December 12, 1993, only 462 gallons of hydrocarbon-impacted ground water were removed at pumping rates ranging from 0.004 to 0.02 gallons per minute (gpm). The treatment system was shut off and dewatering system discharge ceased on December 12, 1993. Monthly ground water influent sampling indicated that TPH-G concentrations dropped from 4,400 ppb on July 15, 1993 to 220 ppb on September 9, 1993. Although the pump was shut down for a month and a half between the first and second sampling events, there was no significant increase in hydrocarbon concentration. Hydrocarbon concentrations remained relatively unchanged during the third and fourth sampling events. Ground water sampling results, average pumping rates, and influent concentrations for each month of system operation are presented in Appendix B.

The effectiveness of augmenting the existing SVE system with additional wells has been evaluated. However, it was determined that the low permeability sediments encountered at the site would still limit the effectiveness of the extraction system, and the limited benefit derived would not justify the additional cost.

EVALUATION OF NON-ATTAINMENT AREA CRITERIA AND FUTURE ACTION PLAN

DISCUSSION OF NON-ATTAINMENT AREA CRITERIA

The distribution of the remaining hydrocarbons and the site hydrogeologic and chemical conditions indicate that this site is a candidate for reduced action and establishment of a non-attainment area (NAA). In the following section, RWQCB Category I and II criteria for establishment of a NAA are considered for determining the most appropriate combination of cleanup and plume management options at the site to reasonably protect the beneficial uses of ground water and limit any potential human health and environmental risks.

Category I, criterion a. The Discharger has demonstrated (e.g. pump tests, ground water monitoring, transport modeling) and will verify (e.g. ground water monitoring) that no significant pollution migration will occur due to hydrogeologic or chemical characteristics.

mod. to high permeability sands 12-22' bgs

Site Hydrogeology: The site is underlain by relatively homogeneous, stratified, low-to-high-estimated permeability unconsolidated sediments, which appear to correlate between borings. The vadose zone is characterized as having overall low-to-moderate-estimated permeability and is composed of alternating silty sands and clayey sands. The first water-bearing zone appears to be unconfined? and is composed of sand, with some interbedded silty sands. This zone is generally characterized as moderate-to-high estimated permeability. However, the low ground water flow rates achieved by the extraction system in well MW-7 indicate that the effective permeability may be lower than estimated in the boring logs. The lower confining layer of the first water-bearing zone consists of low-estimated permeability silty clays and silty sands encountered at the base of many of the ground water monitor wells. ok 29-34' silty clay silty sand but gw is ~23' (first) +~20' (stable)

disagree

Ground Water Flow: Water levels in site wells have been measured since 1988 and, ok during that period, the interpreted ground water flow direction has been consistently to the east with a gradient of approximately 0.003 to 0.004 ft/ft. Compiled water level data for MW-1 through MW-16 are

presented in the Historical Groundwater Analytical Results and Monitoring Data presented in Appendix B. The uppermost potentiometric surface lies approximately 19.5 to 21.5 ft bgs.

Plume Location: The hydrocarbon plume is located on the downgradient portion of the property and has moved offsite into the intersection area of 17th and Harrison Streets. The plume does not appear to extend upgradient to the west of MW-7, or downgradient to MW-15. The cross-gradient extent of the plume is defined by wells MW-10 and MW-12.

Plume Stability: Hydrocarbons were detected in the vicinity of monitor well MW-7 approximately four years before pumping began in July 1993. Hydrocarbons have probably been present at the site since the underground storage tanks were removed in 1972. During this time, and possibly for some unknown length of time prior to station demolition, hydrocarbons were present in the soil and ground water at the site without any form of engineered hydraulic containment. Since only very low concentrations of hydrocarbons have been detected in downgradient monitor wells MW-15 and MW-16, the hydrocarbon plume is contained in the vicinity of the site. It appears, therefore, that onsite hydrocarbons are prevented from migrating to these downgradient wells by natural attenuation mechanisms, including sorption, dispersion, volatilization through the unsaturated zone, and/or chemical and biological degradation, and that the hydraulic containment provided by ground water extraction is not necessary to prevent further migration of the plume.

A more detailed description of the hydrogeology and ground water chemistry at the site can be found in the subsurface investigation reports (Western Geologic Resources, Inc., 1989 and Pacific Environmental Group, Inc., 1992).

Category I, criterion b. Adequate Source Removal and/or isolation is undertaken to limit future migration of pollutants to ground water.

Source Removal: No spill has ever been documented at the site, and the source for the hydrocarbons detected in ground water has never been determined. The underground gasoline storage tanks were removed prior to 1972. Hydrocarbon-impacted soil in the vicinity of monitor well MW-4 was excavated and approximately 150 cubic yards of soil was disposed of offsite.

Hydrocarbon-impacted soils were detected in well MW-7 in the capillary fringe, at a depth of approximately 20 ft bgs.

Category I, criterion c. *Dissolved phase cleanup is not cost-effective due to limited water quality, environmental and human health risks and separate phases have been or are actively being remediated.*

Over 6 years of ground water analyses indicate that the plume in the vicinity of well MW-7 has not significantly migrated. In addition, the extent of water quality impacts at this site are contained within the present well network and there is asphalt covering the entire area containing hydrocarbons in soil or ground water, and ground water is not readily accessible from the surface. Separate-phase hydrocarbons have never been found at this site. Since ground water is not a source of drinking water and asphalt covers the entire site, environmental and human health risks are negligible. Because the source of hydrocarbons in ground water has been removed and the hydrocarbon concentrations in ground water are conducive to natural biodegradation, additional active remediation would not be a cost-effective remedial alternative at this site. The ground water/soil vapor extraction system operated at the site has not retrieved significant hydrocarbons from the subsurface, and continued operation of this system is unlikely to provide additional benefit to ground water quality.

Category I, criterion d. *An acceptable plan is submitted and implemented for containing and managing the remaining human health, water quality and environmental risks, if any, posed by residual soil and ground water pollution.*

Our plan for containing and managing the remaining risks posed by residual hydrocarbons at this site includes continued ground water monitoring for hydrocarbons within the plume for a limited period of time and a contingency plan to be implemented if monitoring indicates significant downgradient migration and/or increasing concentrations in the plume. The proposed schedule for continued monitoring is presented in the Future Action Plan below.

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why continue w/category II ?

Category II, criterion a. An appropriate cleanup program including adequate source removal and free product removal has been fully implemented and reliably operated for a period of time which is adequate to understand both the hydrogeology of the site and pollutant dynamics. how bout this?

As summarized in previous sections, extensive site characterization has been performed: 16 monitoring wells have been installed and over ~~six~~ 5 years of sampling has been performed. A dewatering/SVE system was installed in wells MW-4 and MW-7 in June 1993. Low flow rates prevented the system to pass initial startup criteria as required by the air permit. The dewatering system extracted ground water from wells MW-4 and MW-7 for 6 months. During the 6 months of system operation, influent sampling indicated that TPH-G concentrations dropped from 4,400 ppb in July 1993 to 220 ppb in September 1993. Although the pump was shut down for a month and a half between the first and second sampling events, there was no significant increase in hydrocarbon concentrations. Hydrocarbons concentrations remained relatively unchanged during the third and fourth sampling events. Only 462 gallons of hydrocarbon-impacted ground water was removed during the six months of operation. Pumping rates ranged from 0.004 to 0.02 gpm.

Category II, criterion b. Ground water pollutant concentrations have reached an asymptotic level (the mass removed from the groundwater is no longer significant) using appropriate technology.

Due to very low flow rates, less than 500 gallons of water were removed from the subsurface during six months, and soil vapor flow was insufficient to meet the permit requirement for the catalytic oxidizer. Continued extraction of either water or soil vapor would not retrieve significant hydrocarbon mass.

Category II, criterion c. Best available technologies are not technically or economically feasible to achieve further significant reduction in pollutant concentrations.

Monitoring data indicates that impacted ground water remains in the vicinity of the original source, and that engineered containment is not necessary to prevent offsite migration. The stable plume does not warrant the expense or uncertainty associated with any technologies to extract hydrocarbons from impacted soil or ground water at this site. Data collected at the site indicates that the remediation which has been performed at the site to date has removed as much of the

hydrocarbons as is technically and economically feasible. Furthermore, natural processes are effectively controlling and remediating the ground water plume. The following remedial technologies have been performed at this site.

Excavation: As discussed above, a portion of the site was excavated during excavation/over-excavation of hydrocarbon-impacted soil in the vicinity of monitor well MW-4.

Ground Water/Soil Vapor Extraction: Ground water extraction and treatment combined with soil vapor extraction and treatment is the most common and single most effective technology for controlling and remediating ground water hydrocarbon plumes. Ground water/soil vapor extraction is initially very effective at reducing plume mass and concentrations. However, it has been demonstrated that hydrocarbon concentrations eventually approach "asymptotic" conditions, apparently because the hydrocarbon mass extracted by the system is balanced by hydrocarbon diffusion and desorption from low permeability materials in the plume. At this point, continued extraction removes small additional quantities of hydrocarbon mass, but does little or nothing to further reduce plume concentrations.

Review of the system performance data for this site shows very restricted air flow rates obtained in the low permeability sediments. Flow rates observed upon startup of the SVE system were less than 5 cfm, significantly lower than anticipated. Dewatering pumping rates at this site ranged from 0.004 to 0.02 gpm. Dewatering system ground water analytic results indicate that hydrocarbon concentrations declined significantly shortly after system startup, but did not continue to decline.

Category II, criterion d. *An acceptable plan is submitted and implemented for containing and managing the remaining human health, water quality and environmental risks, if any, posed by residual soil and ground water pollution.*

As discussed under the Category I criteria, our plan for containing and managing the remaining risks posed by residual hydrocarbons at this site includes continued ground water monitoring and a contingency plan.

FUTURE ACTION PLAN

Operation of the extraction system is costly, is ineffective due to low air and ground water flow rates, and does not appear to be of benefit to ground water quality in the area. Chevron proposes, therefore, to leave the extraction system shut off while carefully monitoring the ground water at the site.

Currently nine wells are sampled each quarter: MW-1 through MW-4, MW-9, MW-10, MW-13, MW-15 and MW-16. Monitoring of wells MW-5, MW-6, MW-8, MW-11, MW-12, MW-14 has been suspended with the approval of the ACDEH. **Well MW-7 contains an extraction system, and cannot be monitored.** Chevron proposes establishment of a non-attainment area (NAA), and recommend the following monitoring schedule:

try the sample port!

1) Continue quarterly monitoring of wells MW-15 and MW-16 for one year, these two wells will serve as "boundary wells" to monitor hydrocarbon concentrations downgradient of the proposed NAA.

2) **Perform quarterly monitoring of wells MW-7 and MW-13 for one year.** These wells will serve as "guard wells" to ensure that concentrations within the plume are not increasing markedly.

3) After one year reduce the monitoring frequency of these wells to semi-annual.

4) After one year, reduce the monitoring frequency to annual. Continue annual monitoring for two additional years to complete four years of monitoring after establishment of the NAA.

5) After this period, if the contingency plan is not activated, Chevron plans to cease monitoring.

Proposed Monitoring and Sampling Schedule. Chevron Service Station #9-0020

	1995				1996				1997 & 1988			
Well ID	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
MW-1	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	G&S	G&S	G&S	G&S	---	G&S	---	G&S	---	G&S	---	---
MW-9	---	---	---	---	---	---	---	---	---	---	---	---
MW-10	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	G&S	G&S	G&S	G&S	---	G&S	---	G&S	---	G&S	---	---
MW-15	G&S	G&S	G&S	G&S	---	G&S	---	G&S	---	G&S	---	---
MW-16	G&S	G&S	G&S	G&S	---	G&S	---	G&S	---	G&S	---	---

G&S = Gauging and Sampling

Contingency Plan: For each of these sampling points, "baseline" and "trigger" concentrations have been defined. Should monitoring indicate that "trigger" concentrations are met or exceeded in any well for two consecutive monitoring periods, **a contingency plan for re-initiating ground water extraction and increasing monitoring will go into effect.** This plan will ensure that "baseline" concentrations are re-attained and maintained in all wells. Details of the contingency plan are presented **in Appendix D.**

CONCLUSIONS

Over six years of data collected at the site demonstrate the following points;

- Hydrocarbon concentrations in ground water have remained essentially unchanged over the past six years, and possibly over the past 20 years (the station was demolished in 1972);

- Hydrocarbon concentrations decreased by two orders of magnitude in well MW-7 after initiation of ground water dewatering/extraction activities. However, hydrocarbon concentrations in the well did not continue to decline, indicating that asymptotic conditions may have been reached.

- Hydrocarbon-impacted soil has been removed from the site, and no other appropriate or cost-effective technologies exist that might significantly accelerate cleanup of this plume; and

- The plume is contained in the vicinity of the site and no significant plume migration occurs with or without the dewatering/SVE system.

Based on the data summarized in this report, it is apparent that continued operation of the existing remedial system will not provide any additional health or ground water quality benefits.

This site meets all the proposed RWQCB criteria for establishing a non-attainment area. Setting the downgradient plume boundary as the point of compliance with maximum concentration levels (MCLs) would allow the extraction system to remain off and natural processes to contain and slowly degrade the plume. The proposed monitoring and contingency plan will ensure that the risks posed by the residual plume are contained and managed.

Chevron requests that ACDEH and the RWQCB accept that drinking water standards cannot be attained at this site, and establish a non-attainment area around the remaining hydrocarbon plume in the northeastern portion of the site. Chevron recommends discontinuing the remediation system, as outlined above, while carefully monitoring the non-attainment area boundary at downgradient wells MW-15 and MW-16 to ensure that the integrity of the offsite aquifer is maintained.

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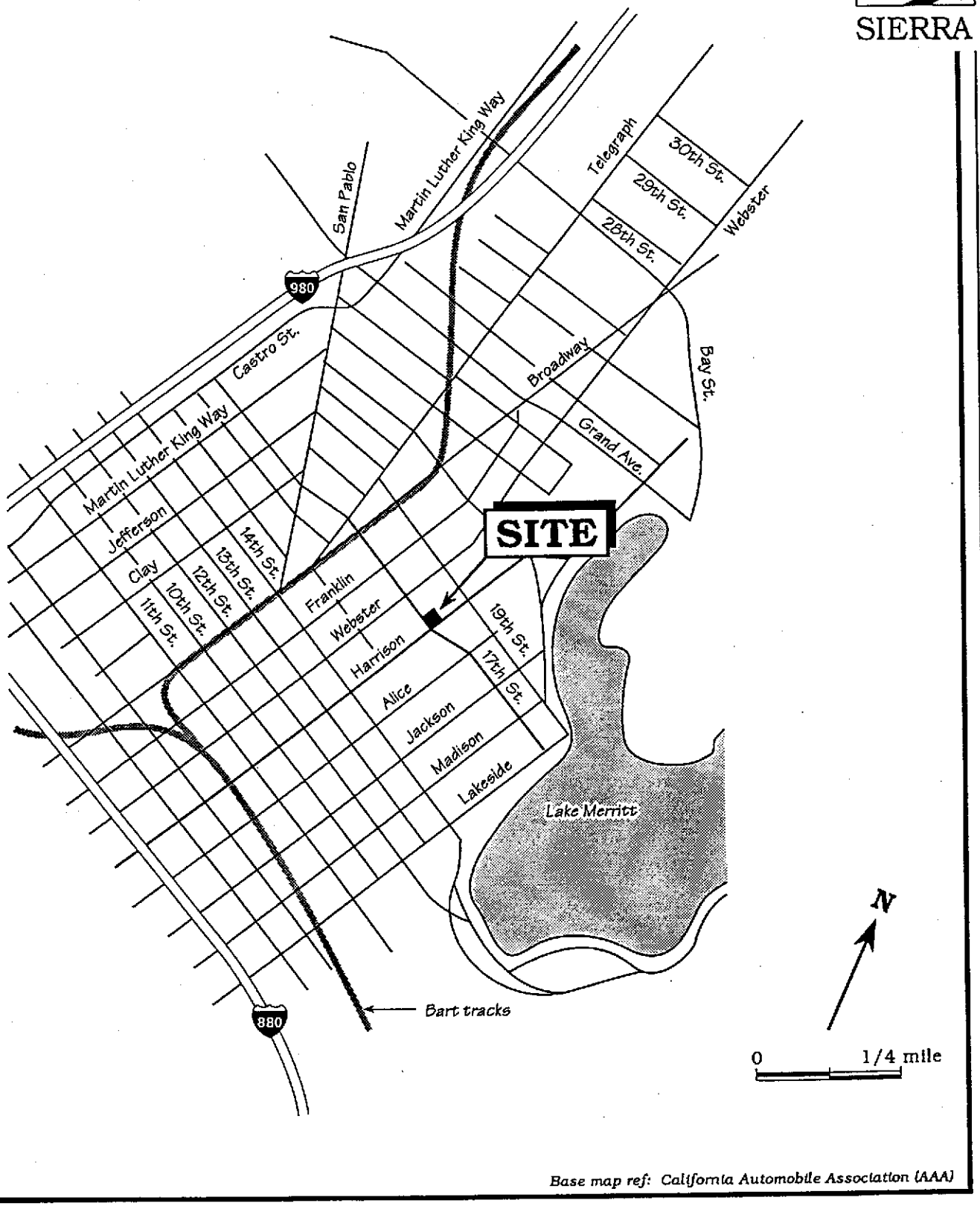
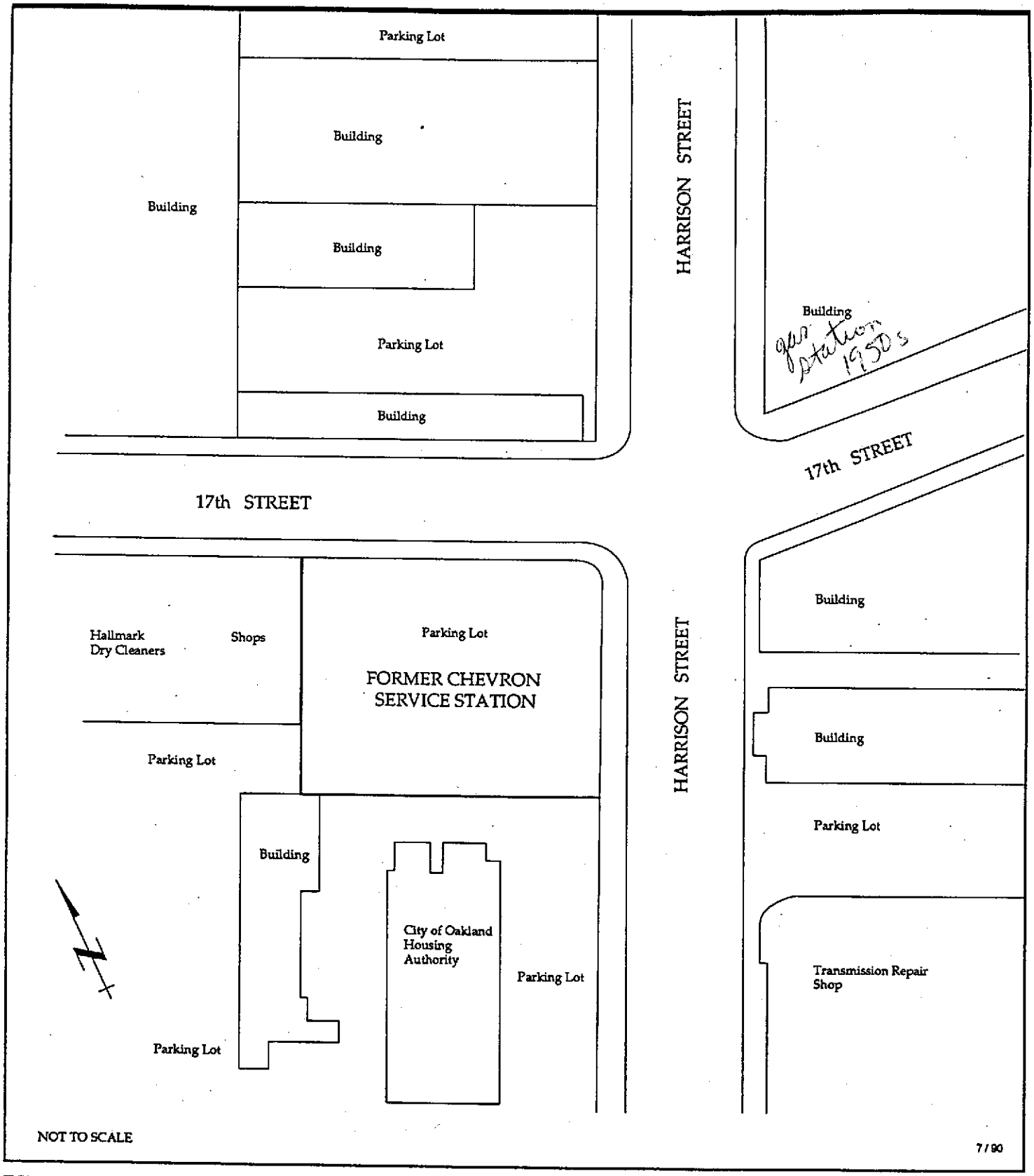


Figure 1. Site Location Map – Chevron Service Station #9-0020, 17th Street and Harrison Street, Oakland, California



Vicinity Map
Former Chevron Service Station #90020
1633 Harrison Street,
Oakland, California

FIGURE
2

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04

1988 SOIL VAPOR SURVEY

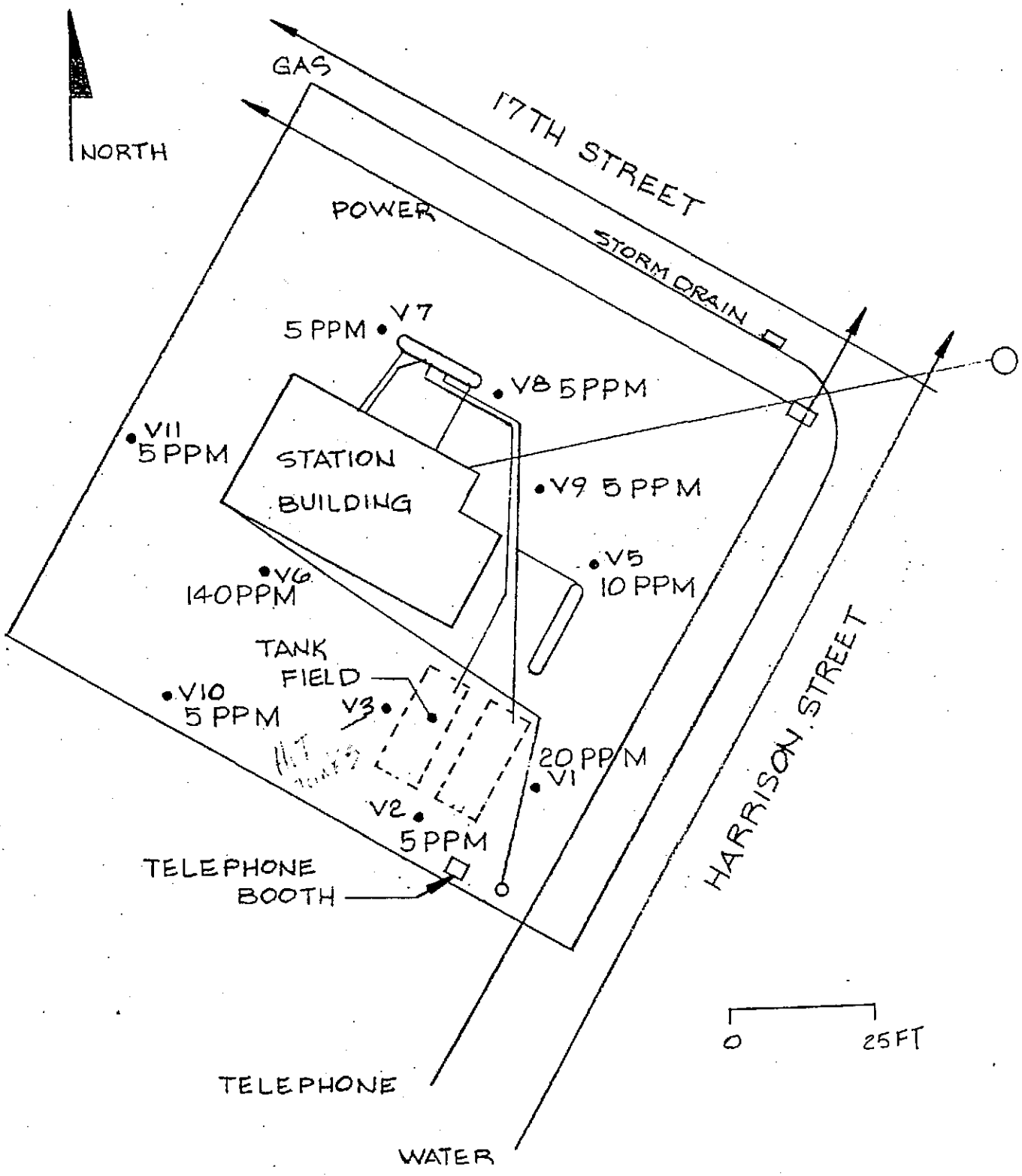
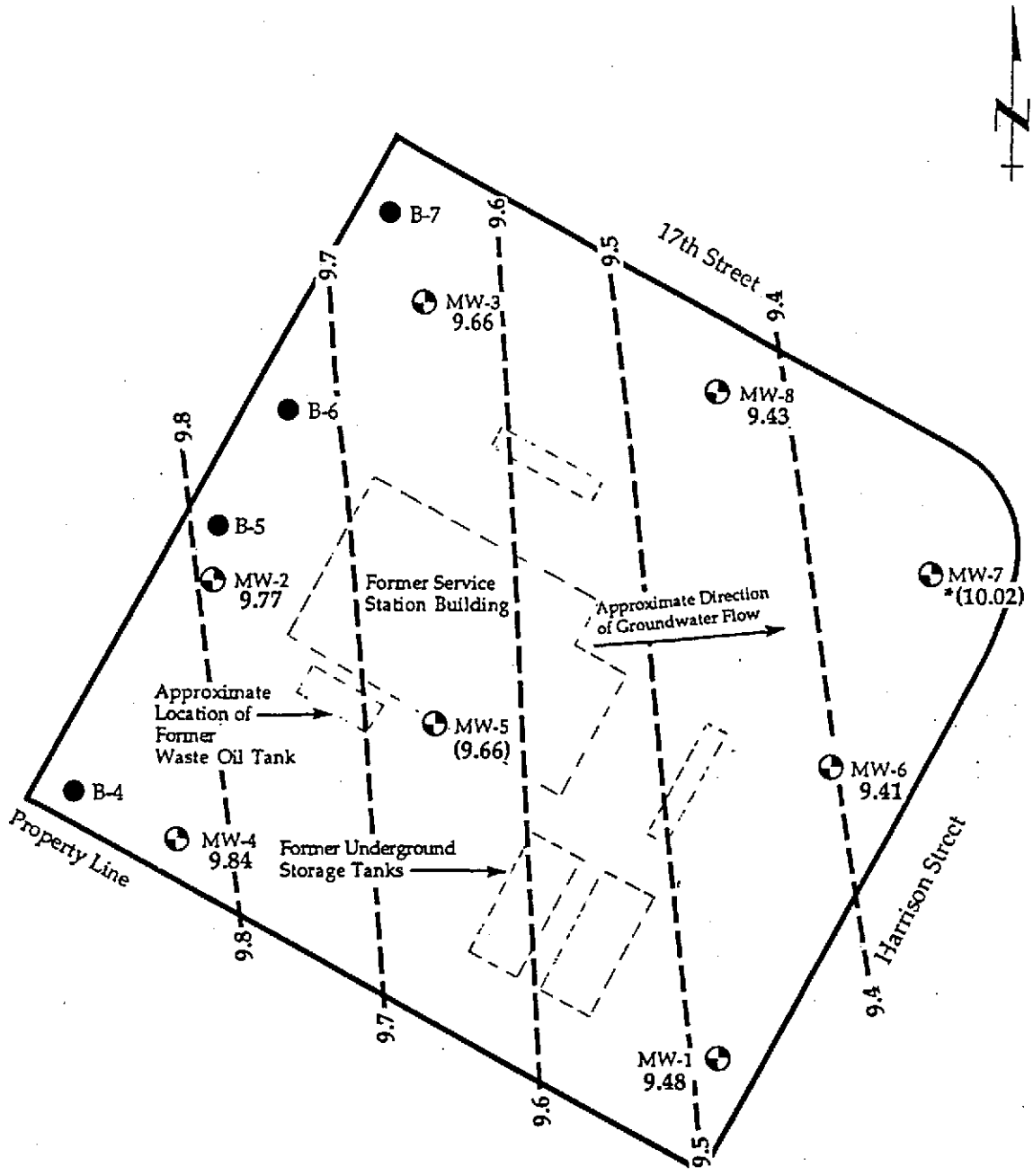


Figure 4. Concentrations of total detected hydrocarbons at each sample point at Chevron Service Station 9-0020, Oakland, California.

1989 SUBSURFACE INVESTIGATION



SCALE: 1"=25'

LEGEND

MW-1 9.48	Monitoring Well Location Static Water Level Elevation (MSL) 23 April 1989
B-4	Boring Location
9.4	Groundwater Elevation Contour, Feet Above Mean Sea Level, Dashed Where Inferred
*	Anomalous Elevation Not Used

Potentiometric Surface of the Shallow Water-Bearing Zone
23 April 1989, Chevron SS #90020, Oakland, California

FIGURE
4

WESTERN GEOLOGIC RESOURCES, INC.

1-012.02

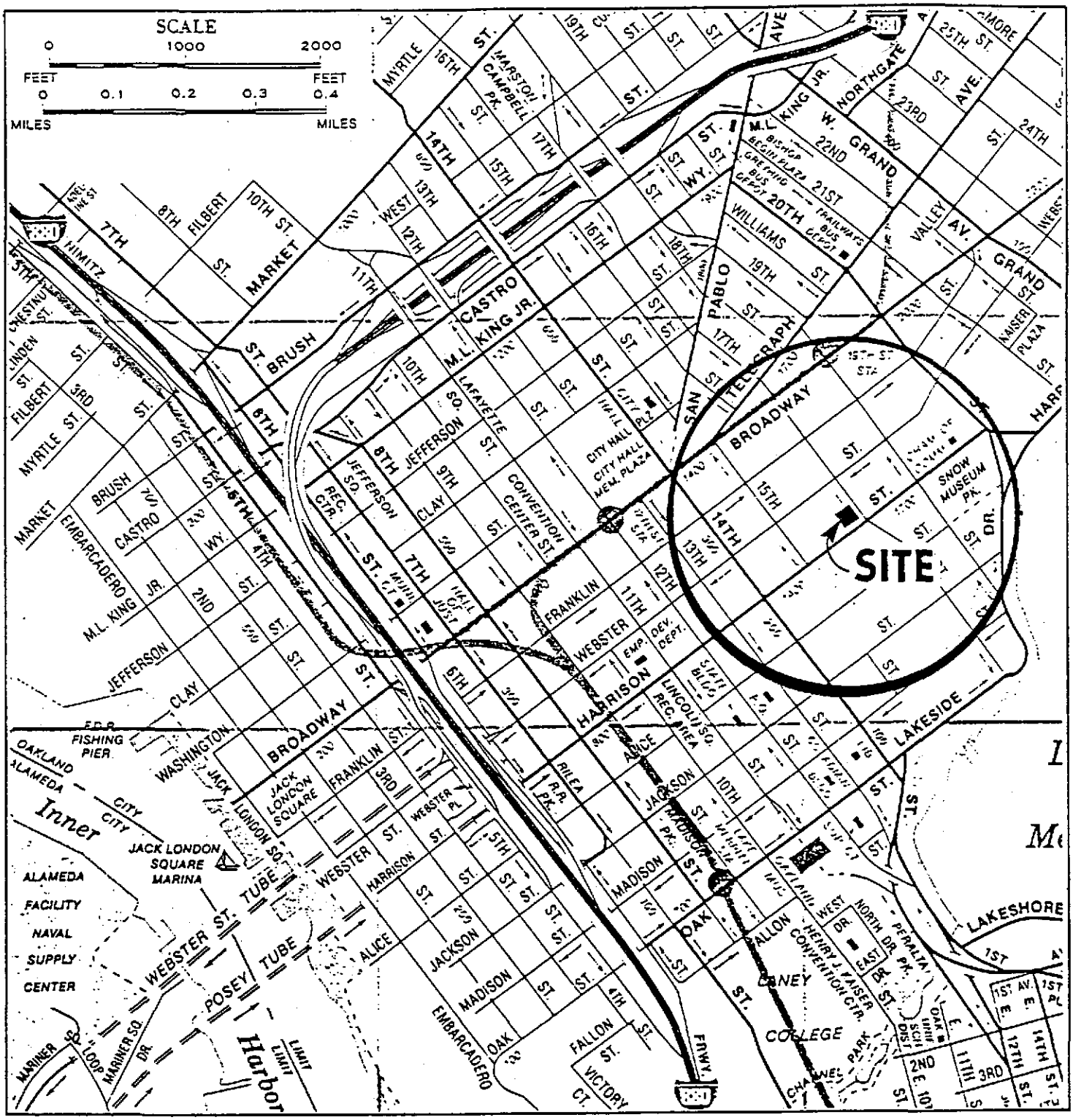
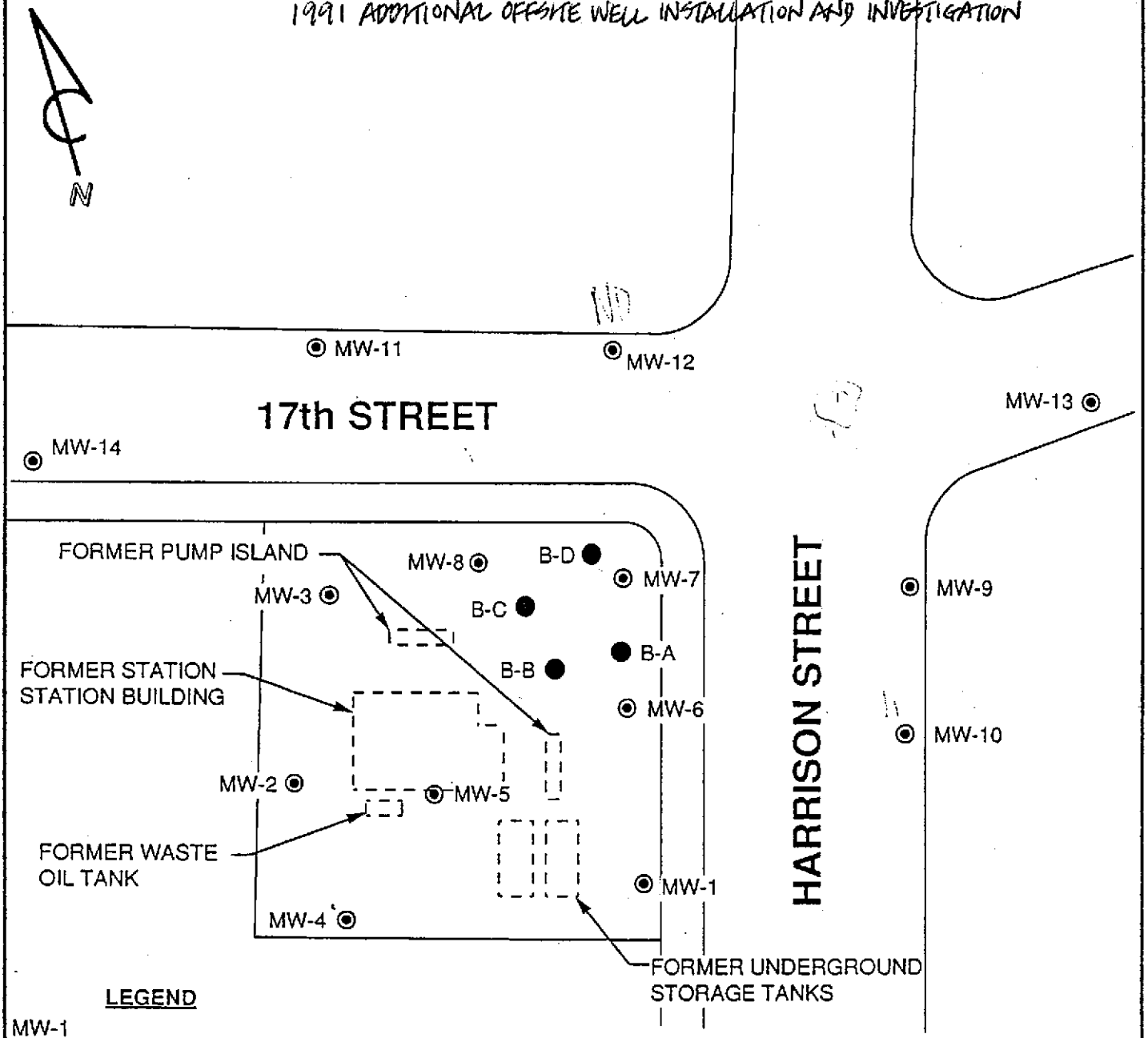


Figure 1. Site Location with 1/4-Mile Radius Well Canvas Area
Chevron SS #90020, Oakland, California.

1991 ADDITIONAL OFFSITE WELL INSTALLATION AND INVESTIGATION



LEGEND

MW-1 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

B-A ● SOIL BORING LOCATION AND DESIGNATION

SCALE

0 40 80 FEET

PACIFIC ENVIRONMENTAL GROUP, INC.

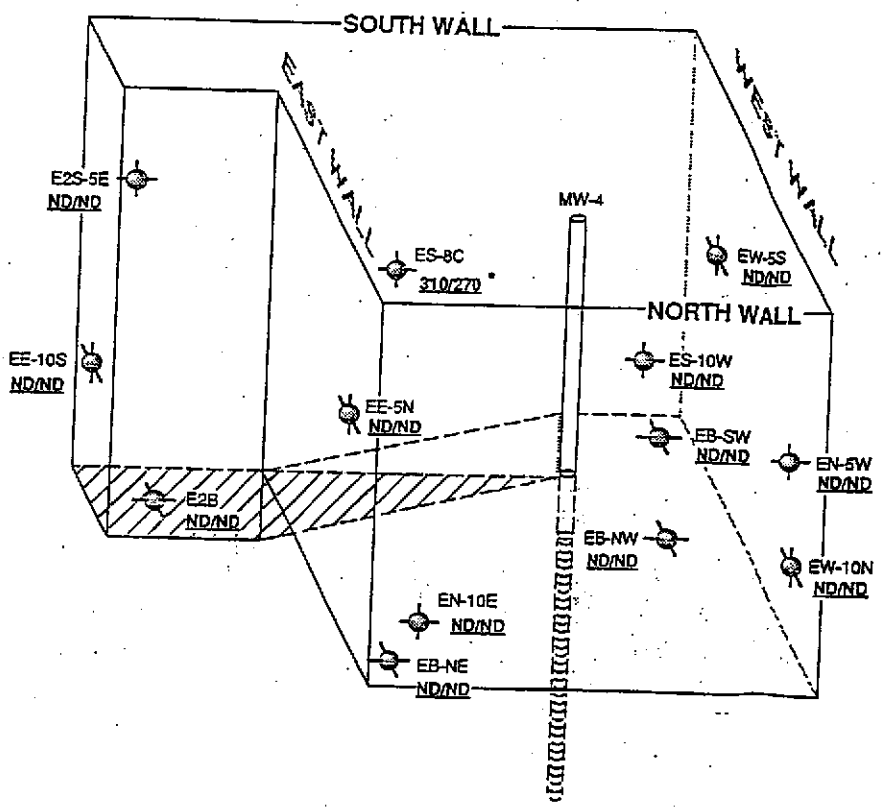
FORMER CHEVRON USA STATION 9-0020
1633 Harrison Street at 17th Street
Oakland, California

SITE MAP

FIGURE: 2

PROJECT: 320-90.01

1992 EXCAVATION SAMPLING LOCATIONS



LEGEND

MW-4 GROUNDWATER MONITORING WELL LOCA AND DESIGNATION

EN-10E SOIL SAMPLE LOCATION AND DESIGNATI

North Wall	South Wall	East Wall
EN-5W	E2S-5E	EE-5N
EN-10E	ES-8C	EE-10S
--	ES-10W	

West Wall	Bottom of Excavation
EW-5S	EB-NE
EW-10N	EB-NW
	EB-SW
	E2B

310/270 GASOLINE/DIESEL CONCENTRATION IN SO PARTS PER MILLION, 1-9-92

ND NON-DETECTABLE LEVELS

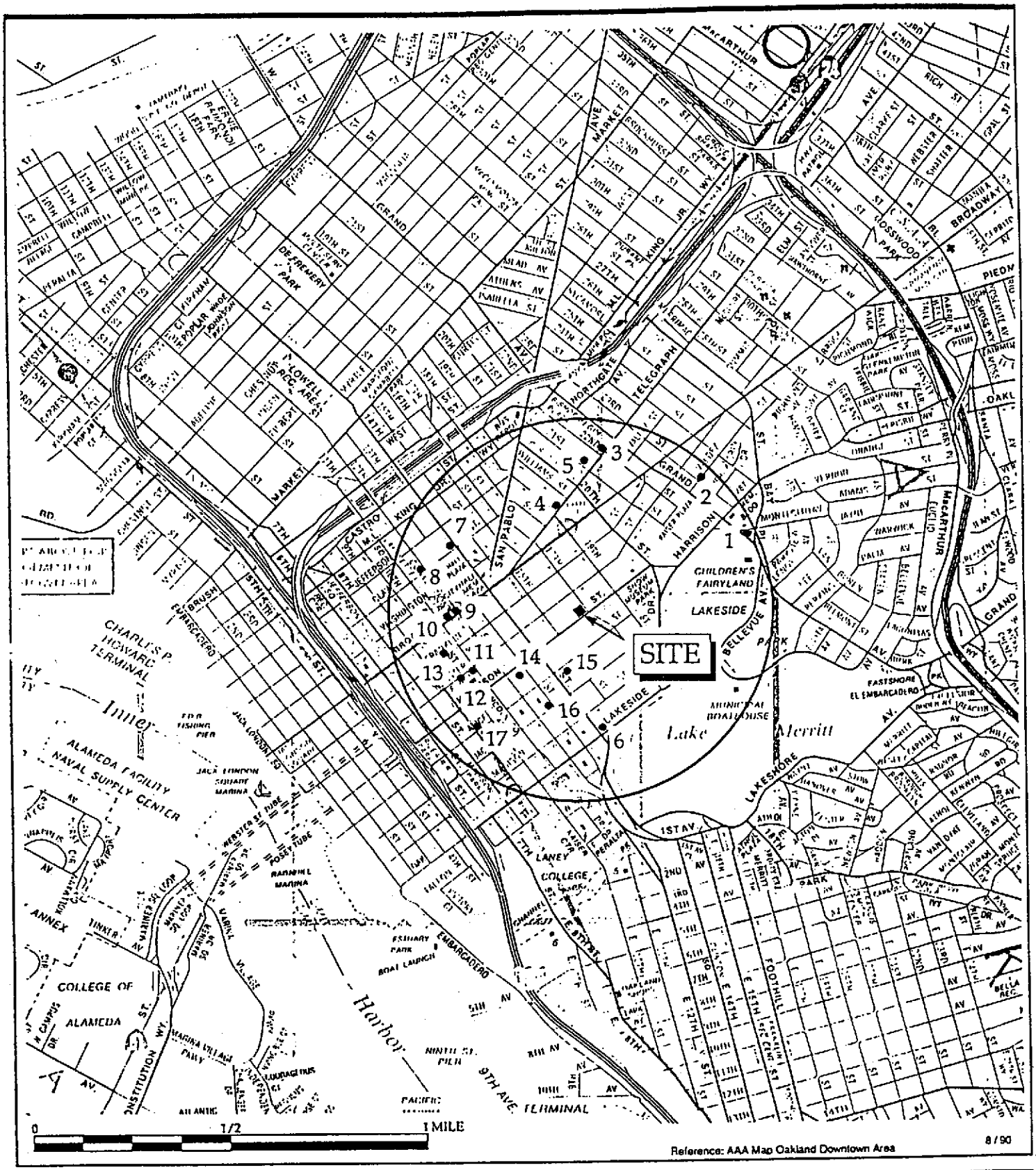
* NON-TYPICAL DIESEL CHROMATOGRAPH PATTERN WAS OBSERVED

PACIFIC VIRONMENTAL GROUP, INC.

SCALE 0 4 8 FEET

FORMER CHEVRON USA STATION 9-0020
1633 Harrison Street at 17th Street
Oakland, California

GASOLINE/DIESEL CONCENTRATION MAP



LEGEND

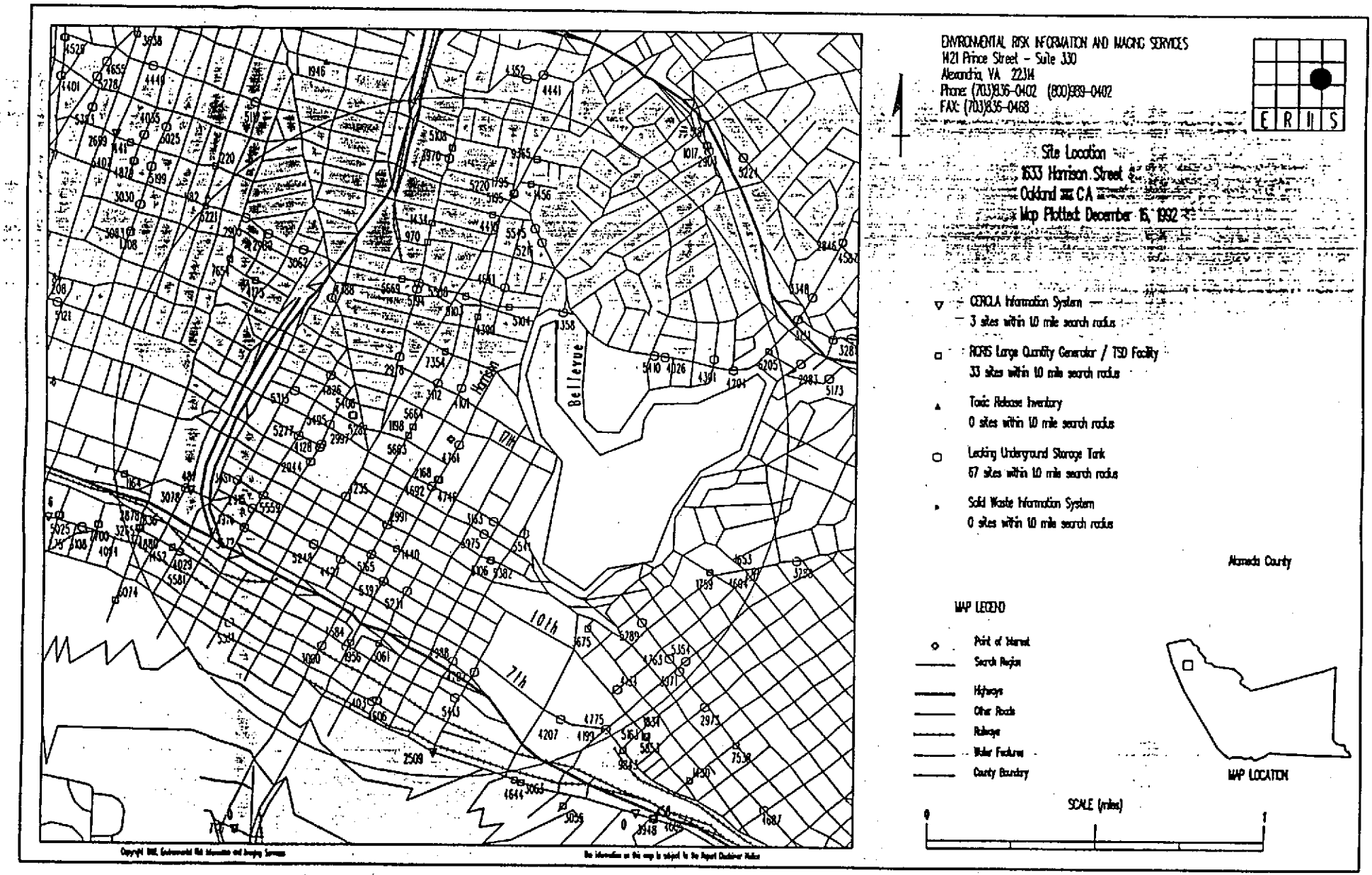
- 1 Map Location Number keyed to Table 5

Wells Located Within One-Half Mile Radius of
Former Chevron Service Station #90020
1633 Harrison Street
Oakland, California

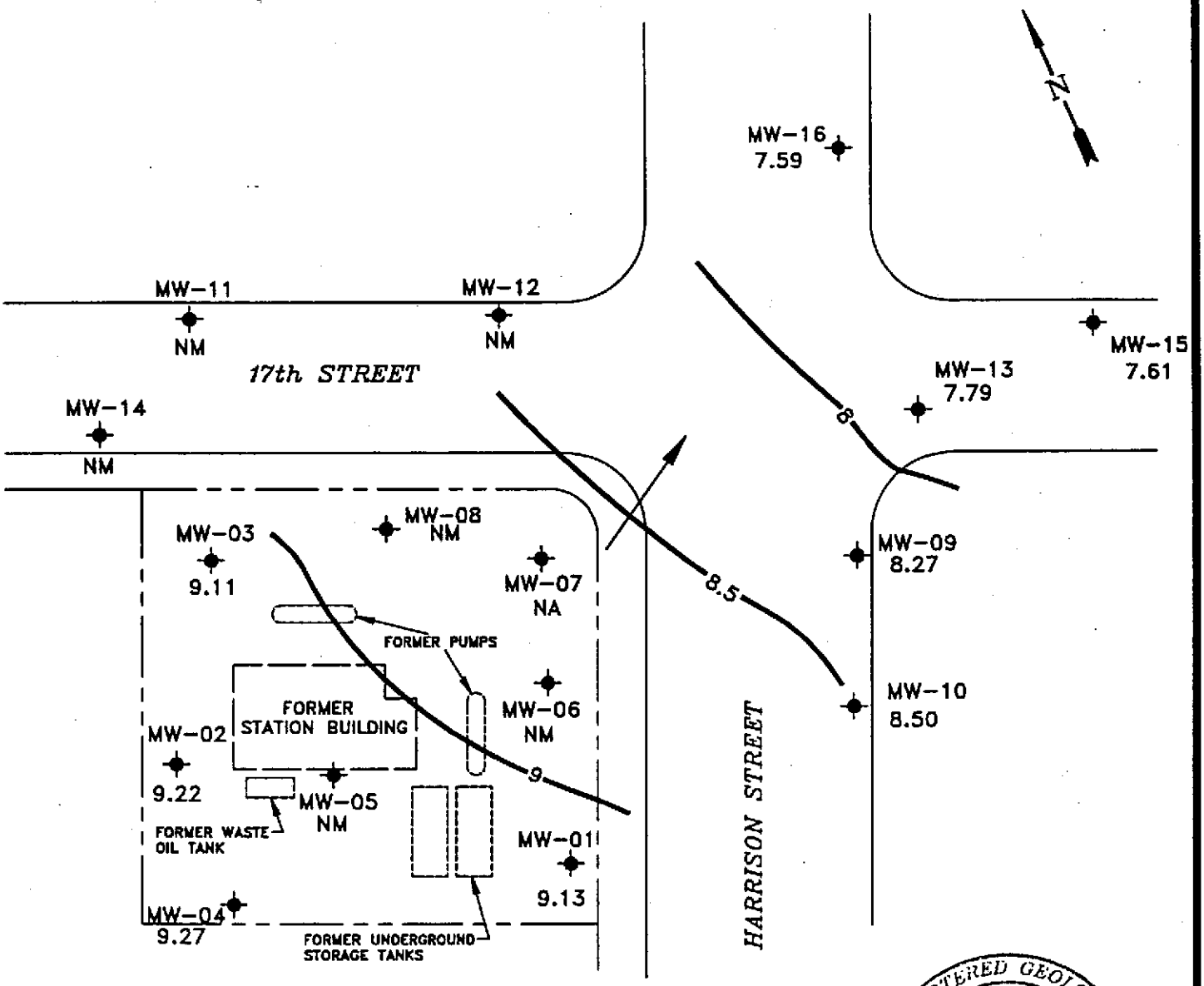
FIGURE
9

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04


ENVIRONMENTAL RISK INFORMATION AND IMAGING SERVICES
1421 Prince Street - Suite 330
Alexandria, VA 22314
Phone: (703)836-0402 (800)989-0402
FAX: (703)836-0468
E R I S
Site Location
1633 Harrison Street
Oakland, CA
Map Plotted: December 15, 1992
CORCLA Information System
3 sites within 1.0 mile search radius
RCRIS Large Quantity Generator / TSD Facility
33 sites within 1.0 mile search radius
Toxic Release Inventory
0 sites within 1.0 mile search radius
Leaking Underground Storage Tank
67 sites within 1.0 mile search radius
Solid Waste Information System
0 sites within 1.0 mile search radius
Alameda County
MAP LEGEND
Point of Interest
Search Region
Highways
Other Roads
Railways
Water Features
County Boundary
MAP LOCATION
SCALE (miles)
0
1
Bellevue
Harrison
17th
10th
7th
Copyright 1992, Environmental Risk Information and Imaging Services
Use information on this map is subject to the Report Disclaimer Notice

ERIS Map



REGISTERED GEOLOGIST
EDVARDAS (ED) K. SIMONIS
No. 4422
STATE OF CALIFORNIA

LEGEND

— — — —	PROPERTY LINE
✦	MONITORING WELL
NA	NOT AVAILABLE
NM	NOT MONITORED PER CLIENT REQUEST
X.XX	POTENTIOMETRIC SURFACE ELEVATION (FT)
⌒	POTENTIOMETRIC SURFACE CONTOUR
←	GROUNDWATER FLOW DIRECTION

NOTE:
1. CONTOURS REPRESENT APPROXIMATE ELEVATIONS ABOVE MEAN SEA LEVEL.

GROUNDWATER TECHNOLOGY

0 FEET 40
SCALE

POTENTIOMETRIC SURFACE MAP (9/7/94)

CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION No. 9-0020	FILE: 4081PSM, (1:40)	PROJECT NO.: 02010-4081	PM KC	PE/RG
LOCATION: 1633 HARRISON STREET OAKLAND, CALIFORNIA	REV.	DES. SS	DET. SS	DATE: 9/8/94	FIGURE: 1

TABLE 1 CONCENTRATIONS OF HYDROCARBON CONSTITUENTS IN SOIL VAPOR AT CHEVRON SS 9-0020, 17TH AND HARRISON, OAKLAND, CALIFORNIA, 17 DECEMBER 1987

Sample Location	Depth (ft)	Peaks Prior to Benzene[a] (ppm)[b]	Benzene (ppm)	Toluene (ppm)	o-Xylene (ppm)	m,p-Xylene (ppm)	Ethyl-benzene (ppm)	Peaks Not Otherwise Identified (ppm)[b]	Total Volatile Hydro-carbons (ppm)[b]
V1/A	3.0	1-5	<1	<1	<1	<1	<1	<1	1-5
V1/B	5.5	5	<1	<1	<1	<1	<1	<1	5
V1/C	8.0	5	<1	1-5	<1	1-5	<1	1-5	10
V1/D	10.5	1-5	<1	<1	<1	<1	<1	<1	1-5
V1/E	13.0	5	<1	<1	<1	<1	<1	<1	5
V2/A	3.0	1-5	<1	<1	<1	<1	<1	<1	1-5
V2/B	8.0	1-5	<1	<1	<1	<1	<1	<1	1-5
V3/A	3.0	10	<1	<1	<1	<1	<1	<1	10
V3/B	5.5	10	<1	<1	<1	<1	<1	<1	10
V3/C	8.0	5	<1	<1	<1	<1	<1	<1	5
V3/D	10.5	1-5	<1	<1	<1	<1	<1	<1	1-5
V4	3.0	15	<1	<1	<1	<1	<1	<1	15
V5	3.0	10	<1	<1	<1	<1	<1	<1	10
V6/A	3.0	20	<1	<1	<1	<1	<1	<1	20
V6/B	8.0	140	<1	<1	<1	<1	<1	<1	140
V6/C	13.0	1-5	<1	<1	<1	<1	<1	<1	1-5
V7	3.0	1-5	<1	<1	<1	<1	<1	1	5
V8	3.0	1-5	<1	<1	<1	<1	<1	<1	1-5
V9/A	3.0	1-5	<1	<1	<1	<1	<1	<1	1-5
V9/B	8.0	1-5	<1	<1	<1	<1	<1	1	5
V10	8.0	1-5	<1	<1	<1	<1	<1	<1	1-5
V11	8.0	5	<1	<1	<1	<1	<1	<1	5

a. Early peaks from blank data subtracted from total peaks prior to benzene.
b. Quantified on the basis of the V-sec:ppm response ratio for benzene (see text).

1986 SOIL VAPOR SURVEY

CHV21:82X

WGR

TABLE 1. Analytic Results for Soil Samples
Former Chevron Service Station 90020, Oakland, CA

Sample ID	Date	FC	THF	Benzene	Toluene	Xylenes	E-Benzene
			<-----ppm----->				
B-1- 5.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-1-10.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-1-15.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-1-20.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-1-29.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-1-34.0	26 Oct 88				NA		
B-2- 5.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-2-10.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-2-15.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-2-19.0	26 Oct 88	OIL	12	<0.3	<0.3	<0.3	<0.3
B-2-20.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-2-25.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-2-30.0	26 Oct 88				NA		
B-3- 5.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-3-10.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-3-15.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-3-20.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-3-25.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-3-30.0	26 Oct 88	---	<10	<0.3	<0.3	<0.3	<0.3
B-3-34.0	26 Oct 88				NA		

Notes:
FC - Fuel characterization
THF - Total fuel hydrocarbons
E-Benzene - Ethyl benzene
NA - Not Analyzed

Table 2. ANALYTIC RESULTS FOR SOIL SAMPLES
Former Chevron SS #90020
Oakland, California
WGR Project # 1-012.01

SAMPLE ID	DEPTH (ft)	TPPH	BENZENE	TOLUENE	XYLENES	E-BENZENE	CT	PCE	TCE	TCA
		<--------			PPM					-------->
B-4	6.0	<5.0	<0.005	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005
B-4	16.0	<2.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-4	23.2	<2.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-5	9.5	<2.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-5	14.5	<2.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-5	22.0	<2.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-6	9.5	<2.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-6	14.5	<1.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-6	22.0	<1.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-7	4.2	<1.0	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001
B-7	9.2	<1.0	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001
B-7	14.0	<0.5	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001
B-7	21.6	<0.5	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001
B-8	4.5	600	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001
B-8	9.6	600	<0.01	<0.01	<0.020	<0.01	<0.01	<0.01	<0.01	0.1
B-8	9.6	450	<0.02	<0.02	<0.040	<0.02	<0.02	<0.02	<0.02	0.090
B-8	14.5	<1.0	<0.02	<0.02	<0.004	<0.02	<0.02	<0.02	<0.02	<0.002
B-8	22.5	<1.0	<0.02	<0.02	<0.004	<0.02	<0.02	<0.02	<0.02	<0.002
B-8	29.5	<1.0	<0.02	<0.02	<0.004	<0.02	<0.02	<0.02	<0.02	<0.002
B-8	34.5	<1.0	<0.02	<0.02	<0.004	<0.02	<0.02	<0.02	<0.02	<0.002
B-9	9.0	<0.5	<0.005	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005
B-9	14.0	<0.5	<0.005	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005
B-9	21.0	<0.1	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-9	29.5	<0.5	<0.005	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005
B-9	33.5	<5.0	<0.005	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005

Table 2 (continued)

SAMPLE ID	DEPTH (ft)	TPPH	BENZENE	TOLUENE	XYLENES	E-BENZENE	CT	PCE	TCE	TCA
		<--------			PPM					-------->
B-10	9.5	<1.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-10	14.5	<1.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-10	21.5	<1.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-10	27.0	<1.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-11	9.5	<0.1	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-11	14.25	<2.0	<0.0002	<0.0002	<0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
B-11	19.25	680	<0.01	<0.01	0.950	0.140	<0.010	<0.010	<0.010	<0.010 *
B-11	23.50	45,000	<0.1	4.0	12	3.500	<0.1	<0.1	<0.1	0.2
B-11	23.50	50,000	<0.2	4.1	20	5.0	<0.2	<0.2	<0.2	<0.2
B-11	29.50	<1.0	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001
B-12	9.50	<1.0	<0.002	0.003	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-12	14.50	<2.0	<0.005	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005
B-12	21.00	<1.0	<0.002	0.003	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-12	24.25	<1.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
B-12	27.50	<1.0	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002

SAMPLE ID	DEPTH (ft)	O & G	Cd	Cr	Pb	Zn
		<----------		PPM		---------->
B-9	21.0	80	<10	27	<1	17

NOTES

E-Benzene = Ethylbenzene

TPPH = Total purgeable petroleum hydrocarbons analyzed by Central Coast

PPB = Parts per billion

PPM = Parts per million

CT = Carbon Tetrachloride

PCE = Tetrachloroethene

TCE = Trichloroethene

TCA = 1,1,1-Trichloroethane

O&G = Oil and gas

Cd = Cadmium

Cr = Chromuim

Pb = Lead

Zn = Zinc

* = Chlorobenzene at 0.07 ppm

TABLE 4. Analytic Results: Soil Samples
Former Chevron Service Station #90020
1633 Harrison Street
Oakland, California

Boring ID #	Date	EPA Method	Depth (ft)	FC	TPPH	Benzene	Toluene	E-Benzene	Xylenes
				<------------	------------	------------	ppm	------------	------------>
B-13-16.0	18 Jun 90	8015/8020	16.0	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-13-21.0	18 Jun 90	8015/8020/8010	21.0	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-13-28.0	18 Jun 90	8015/8020	28.0	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-14-16.0	19 Jun 90	8015/8020	16.0	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-14-21.5	19 Jun 90	8015/8020/8010	21.5	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-14-29.5	19 Jun 90	8015/8020	29.5	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-15-16.0	20 Jun 90	8015/8020	16.0	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-15-19.5	20 Jun 90	8015/8020/8010	19.5	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-15-25.2	20 Jun 90	8015/8020	25.2	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-16-6.2	21 Jun 90	8015/8020	6.2	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-16-10.6	21 Jun 90	8015/8020	10.6	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-16-15.6	21 Jun 90	8015/8020	15.6	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-16-18.8	21 Jun 90	8015/8020/8010	18.8	---	<1.0	<0.005	<0.005	<0.005	<0.005
B-16-25.6	21 Jun 90	8015/8020	25.6	---	<1.0	<0.005	<0.005	<0.005	<0.005

NOTES:

FC = Fuel Characterization
TPPH = Total Purgeable Petroleum Hydrocarbons
E-Benzene = Ethylbenzene
Xylenes = Total Xylenes
ft = feet
ppm = parts-per-million
< = Less than listed detection limit
--- = Not characterized
All samples analyzed by Pace, Inc., Novato, California

Table 1
Soil Analytical Results - Petroleum Hydrocarbons

Former Chevron Service Station 9-0020
1633 Harrison Street at 17th Street
Oakland, California

Boring Number	Sample Depth (feet)	Sample Date	TPH-Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)
MW-13	15 - 16.5	10/03/91	ND	ND	ND	ND	ND
	20 - 21.5	10/03/91	ND	ND	ND	ND	ND
	25 - 26.5	10/03/91	ND	ND	ND	ND	ND
MW-14	10 - 11.5	10/03/91	ND	ND	ND	ND	ND
	20 - 21.5	10/03/91	ND	ND	ND	ND	ND
	25 - 26.5	10/03/91	ND	ND	ND	ND	ND
B-A	10 - 11.5	10/05/91	ND	ND	ND	ND	ND
	15 - 16.5	10/05/91	ND	ND	ND	ND	ND
	20 - 21.5	10/05/91	ND	ND	ND	ND	ND
	25 - 26.5	10/05/91	ND	ND	ND	ND	ND
	30 - 31.5	10/05/91	ND	ND	ND	ND	ND
B-B	10 - 11.5	10/05/91	ND	ND	ND	ND	ND
	15 - 16.5	10/05/91	ND	ND	ND	ND	ND
	20 - 21.5	10/05/91	ND	ND	ND	ND	ND
	25 - 26.5	10/05/91	ND	ND	ND	ND	ND
B-C	10 - 11.5	10/05/91	ND	ND	ND	ND	ND
	15 - 16.5	10/05/91	ND	ND	ND	ND	ND
	20 - 21.5	10/05/91	ND	ND	ND	ND	ND
	25 - 26.5	10/05/91	ND	ND	ND	ND	ND
	28.5 - 30	10/05/91	ND	ND	ND	ND	ND
B-D	10 - 11.5	10/05/91	ND	ND	ND	ND	ND
	15 - 16.5	10/05/91	ND	ND	ND	ND	ND
	20 - 21.5	10/05/91	ND	ND	ND	ND	ND
	25 - 26.5	10/05/91	120	ND	0.16	0.14	1.8
	28.5 - 30	10/05/91	ND	ND	ND	ND	ND

TPH = total petroleum hydrocarbons
ppm = parts per million
ND = not detected

Table 2
Soil Analytical Results - Halogenated Volatile Organics

Former Chevron Service Station 9-0020
1633 Harrison Street at 17th Street
Oakland, California

Well Number	Sample Depth (feet)	Sample Date	Halogenated Volatile Organics (ppb)
MW-14	10 - 11.5	10/03/91	All ND
	20 - 21.5	10/03/91	All ND
	25 - 26.5	10/03/91	All ND

ND = Not detected

1992 EXCAVATION SAMPLING RESULTS

Table 1
Soil Analytical Results
Low Boiling Hydrocarbons

Former Chevron Service Station 9-0020
1633 Harrison Street at 17th Street
Oakland, California

Sample Date: January 9, 1992

Sample ID	TPH-gasoline (ppm)	TPH-diesel (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)
ES-10W	ND	ND	ND	ND	ND	ND
ES-8C	310	270*	ND	ND	0.88	2.8
EE-5N	ND	ND	ND	ND	ND	ND
EE-10S	ND	ND	ND	ND	ND	ND
EN-5W	ND	ND	ND	ND	ND	ND
EN-10E	ND	ND	ND	ND	ND	ND
EW-5S	ND	ND	ND	ND	ND	ND
EW-10N	ND	ND	ND	ND	ND	ND
EB-NE	ND	ND	ND	ND	ND	ND
EB-NW	ND	ND	ND	ND	ND	ND
EB-SW	ND	ND	ND	ND	ND	ND
E2S-5E	ND	ND	ND	ND	ND	ND
E2B	ND	ND	ND	ND	ND	ND
SP1	14**	ND	ND	ND	ND	0.09
SP2	14**	ND	ND	ND	ND	0.07
SP3	5***	ND	ND	0.014	0.025	71

* = Diesel range concentration reported. A non-standard diesel pattern was observed in chromatogram.
** = Gasoline range concentration reported. A non-standard gasoline pattern was observed in the chromatogram.
*** = Gasoline range concentration reported. The majority of peaks were observed in the diesel range of the chromatogram.
ppm = parts per million
SP1, SP2 and SP3 are composite soil samples from the spoils pile (SP3 sampled on January 22, 1992).

TABLE 1
ANALYTICAL RESULTS OF SOIL SAMPLES
COLLECTED ON NOVEMBER 11 AND DECEMBER 8, 1992
(Concentrations in parts per million)

DATE	SAMPLE ID	SAMPLE DEPTH (feet)	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	TPH-AS-GASOLINE	TOTAL ORGANIC CARBON
11/11/92	MW-15	20	<0.005	<0.005	<0.005	<0.005	<1	120
		30	<0.005	<0.005	<0.005	<0.005	<1	--
12/08/92	MW-16	10	<0.005	<0.005	<0.005	<0.005	<1	--
		20	<0.005	<0.005	<0.005	<0.005	<1	60

TPH = Total petroleum hydrocarbons

R2779A1.TW

GROUNDWATER TECHNOLOGY

Table 1: Flow Totalizer Readings
Former Chevron Service Station #9-0020
1633 Harrison Street, Oakland, California.

Date	Totalizer Reading (Gallons)		Gallons Discharged This Period	Cumulative Gallons	Days Since Previous Reading	Average Discharge Rate (GPM)	Notes
1-Jul-93	0		0	0		0	System nonoperational
14-Jul-93	2,059	(a)	0	0		0	System startup
19-Jul-93	2,218		159	159	5	0.02	O&M, collect air samples
22-Jul-93	2,218		0	159	3	0.00	Shut off system; sump pump failure
9-Sep-93	2,466		248	407	49	0.004	Restart system; collect GW system samples
14-Oct-93	2,492		26	433	35	0.001	Collect GW system samples
17-Nov-93	2,501		9	442	34	0.000	Collect GW system samples
12-Dec-93	2,521		20	462	25	0.001	System off on arrival; no samples collected
							55 gal. discharged this reporting period

(a) Meter not zeroed when system began operation.

GPM = Gallons per minute

GROUND WATER TREATMENT SYSTEM

GROUND WATER TREATMENT SYSTEM.

Table 2: Groundwater Analytical Results
Former Chevron Service Station #9-0020
1633 Harrison Street, Oakland, California.

Sample	Date	TPH as Gasoline (µg/L) (a)	Benzene (µg/L) (b)	Toluene (µg/L) (b)	Ethylbenzene (µg/L) (b)	Xylenes (µg/L) (b)
Influent	15-Jul-93	4,400	330	260	170	900
	9-Sep-93	220	6	11	9	56
	14-Oct-93	100	7	4	2	15
	17-Nov-93	390	12	8	5	40
Intermediate	15-Jul-93	NS	NS	NS	NS	NS
	9-Sep-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)
	14-Oct-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)
	17-Nov-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)
Effluent	15-Jul-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)
	9-Sep-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)
	14-Oct-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)
	17-Nov-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)
Trip Blank	15-Jul-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)
	9-Sep-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)
	14-Oct-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)
	17-Nov-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)

(a) Analyzed by USEPA Method 8015, modified.
(b) Analyzed by USEPA Method 8020.

TPH Total petroleum hydrocarbons
µg/L Micrograms per liter
ND( ) Laboratory method detection limit; limit in parentheses
NS Not sampled

No samples were collected in December 1993; the groundwater treatment system was off.

Project No. RC0136.003

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-1	11/03/88	<1,000[1]	<1.0	<1.0	<1.0	<1.0	---	20.40	0.0	9.42
	02/02/89	---	---	---	---	---	---	20.71	0.0	9.11
29.82	02/10/89	<100	<0.2	<0.2	<0.2	<0.4	---	---	---	---
	04/23/89	---	---	---	---	---	---	20.34	0.0	9.48
	04/24/89	<50	<0.5	<1.0	<1.0	<1.0	<3,000	---	---	---
	07/28/89	<50	<0.1	<0.5	<0.2	<0.5	<3,000	20.58	0.0	9.24
	10/30/89	<500	<0.3	<0.3	<0.3	<0.6	---	20.52	0.0	9.30
	01/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.77	0.0	9.05
	04/18/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.95	0.0	8.87
	06/22/90	---	---	---	---	---	---	21.00	0.0	8.82
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.94	0.0	8.88
	11/13/90	<50	<0.5	<0.5	<0.5	<0.5	---	20.98	0.0	8.84
	05/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	20.64	0.0	9.18
	08/27/91	110[2]	<0.5	<0.5	<0.5	<0.5	---	20.79	0.0	9.03
	11/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	20.75	0.0	9.07
	02/20/92	<50	0.5	0.6	<0.5	0.9	---	20.90	0.0	8.92
	06/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	20.64	0.0	9.18
29.82	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	20.84	0.0	8.98
	04/07/93	<50	<0.5	<0.5	<0.5	<1.5	---	19.91	0.0	9.91
	06/09/93	---	---	---	---	---	---	19.85	0.0	9.97
	09/10/93	---	---	---	---	---	---	---	---	---
	09/27/93	<50	<0.5	<0.5	<0.5	<0.5	---	20.35	0.0	9.47
	12/17/93	<50	<0.5	<0.5	<0.5	<0.5	---	20.68	0.0	9.14
	03/10/94	<50	<0.5	<0.5	<0.5	<0.5	---	20.57	0.0	9.25
	06/16/94	<50	<0.5	<0.5	<0.5	<0.5	---	20.55	0.0	9.27
	09/07/94	<50	<0.5	<0.5	<0.5	<0.5	---	20.69	0.0	9.13

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-2	11/03/88	<1,000[1]	<1.0	<1.0	<1.0	<1.0	---	20.89	0.0	9.70
	02/02/89	---	---	---	---	---	---	21.21	0.0	9.38
30.59	02/10/89	<100	<0.2	<0.2	<0.2	<0.4	---	---	---	---
	04/23/89	---	---	---	---	---	---	20.82	0.0	9.77
	04/24/89	<50	<0.5	<1.0	<1.0	<1.0	<3,000	---	---	---
	07/28/89	<100	<0.2	<1.0	<0.2	<0.4	<3,000	21.02	0.0	9.57
	10/30/89	<500	<0.3	<0.3	<0.3	<0.6	---	20.96	0.0	9.63
	01/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	21.25	0.0	9.34
	04/18/90	<50	<0.3	<0.3	<0.3	<0.6	---	21.53	0.0	9.06
	06/22/92	---	---	---	---	---	---	21.57	0.0	9.02
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	21.55	0.0	9.04
	11/13/90	<50	<0.5	0.8	<0.5	0.9	---	21.54	0.0	9.05
	05/15/91	83[2]	<0.5	<0.5	<0.5	<0.5	---	21.15	0.0	9.44
	08/27/91	97[2]	<0.5	<0.5	<0.5	<0.5	---	21.27	0.0	9.32
	11/15/91	<50	0.5	1.5	0.8	3.6	---	21.30	0.0	9.29
	02/20/92	<50	<0.5	<0.5	<0.5	<0.5	---	21.43	0.0	9.13
	06/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	21.18	0.0	9.41
30.56	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	21.47	0.0	9.09
	04/07/93	66*	<0.5	<0.5	<0.5	<1.5	---	20.53	0.0	10.03
	06/09/93	<50	<0.5	<0.5	<0.5	<0.5	---	20.45	0.0	10.11
	09/10/93	---	---	---	---	---	---	---	---	---
	09/27/93	---	---	---	---	---	---	20.97	0.0	9.59
	12/17/93	<50	<0.5	<0.5	<0.5	<0.5	---	21.31	0.0	9.25
	03/10/94	<50	<0.5	<0.5	<0.5	<0.5	---	21.23	0.0	9.33
	06/16/94	<50	<0.5	<0.5	<0.5	<0.5	---	21.21	0.0	9.35
	09/07/94	<50	<0.5	<0.5	<0.5	<0.5	---	21.34	0.0	9.22

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-3	11/03/88	<1,000[1]	<1.0	<1.0	<1.0	<1.0	---	20.54	0.0	9.55
	02/02/89	---	---	---	---	---	---	20.85	0.0	9.24
30.09	02/10/89	<100	<0.2	<0.2	<0.2	<0.4	---	---	---	---
	04/23/89	---	---	---	---	---	---	20.43	0.0	9.66
	04/24/92	<50	<0.5	<1.0	<1.0	<1.0	<3,000	---	---	---
	07/28/89	<100	<0.2	<1.0	<0.2	<0.4	<3,000	20.64	0.0	9.45
	10/30/89	<500	<0.3	<0.3	<0.3	<0.6	---	20.61	0.0	9.48
	01/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.88	0.0	9.21
	04/18/90	<50	<0.3	<0.3	<0.3	<0.6	---	21.15	0.0	8.94
	06/22/90	---	---	---	---	---	---	21.20	0.0	8.89
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	21.18	0.0	8.91
	11/13/90	51[2]	<0.5	<0.5	<0.5	<0.5	---	21.15	0.0	8.94
	05/15/91	85[2]	<0.5	<0.5	<0.5	<0.5	---	20.91	0.0	9.18
	08/27/91	91[2]	<0.5	<0.5	<0.5	<0.5	---	20.89	0.0	9.20
	11/15/91	<50	<0.5	0.7	<0.5	1.3	---	21.02	0.0	9.07
	02/02/92	<50	<0.5	<0.5	<0.5	0.9	---	21.07	0.0	9.02
	06/15/92	50[2]	<0.5	<0.5	<0.5	<0.5	---	20.82	0.0	9.27
30.08	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	21.07	0.0	9.07
	04/07/93	<50	<0.5	<0.5	<0.5	<1.5	---	20.13	0.0	9.95
	06/09/93	<50	<0.5	<0.5	<0.5	<0.5	---	20.05	0.0	10.03
	09/10/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	09/27/93	---	---	---	---	---	---	20.58	0.0	9.50
	12/17/93	<50[5]	<0.5	<0.5	<0.5	<0.5	---	21.01	0.0	9.07
	03/10/94	<50	<0.5	<0.5	<0.5	1.1	---	20.86	0.0	9.22
	06/16/94	<50	<0.5	<0.5	<0.5	<0.5	---	20.87	0.0	9.21
	09/07/94	<50	<0.5	<0.5	<0.5	<0.5	---	20.97	0.0	9.11

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-4	04/23/89	---	---	---	---	---	---	21.33	0.0	9.84
	04/24/89	<50	<0.5	<1.0	<1.0	<1.0	<3,000	---	---	---
31.17	07/28/89	<50	<0.1	<0.5	<0.1	<0.2	<3,000	21.58	0.0	9.59
	10/30/89	<500	<0.3	<0.3	<0.3	<0.6	---	21.54	0.0	9.63
	01/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	21.82	0.0	9.35
	04/18/90	<50	<0.3	<0.3	<0.3	<0.6	---	22.09	0.0	9.08
	06/22/90	---	---	---	---	---	---	22.12	0.0	9.05
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	22.11	0.0	9.06
	11/13/90	<50	<0.5	1	0.5	1	---	22.10	0.0	9.07
	05/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	21.71	0.0	9.46
	08/27/91	<50	<0.5	<0.5	<0.5	<0.5	---	21.87	0.0	9.30
	11/15/91	97	<0.5	0.9	<0.5	1.9	---	21.80	0.0	9.37
	02/20/92	<50	<0.5	<0.5	<0.5	<0.5	---	21.99	0.0	9.18
	06/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	21.74	0.0	9.43
31.17	12/16/92	<50	0.7	0.5	0.5	1.3	---	22.05	0.0	9.12
	04/07/93	<50	<0.5	<0.5	<0.5	<1.5	---	21.11	0.0	10.06
	06/09/93	---	---	---	---	---	---	---	---	---
	09/10/93	---	---	---	---	---	---	---	---	---
	09/27/93	<50	<0.5	<0.5	<0.5	<0.5	---	21.54	0.0	9.63
	12/17/93	<50	<0.5	<0.5	<0.5	<0.5	---	21.89	0.0	9.28
	03/10/94	---	---	---	---	---	---	---	---	---
	06/16/94	---	---	---	---	---	---	20.54	0.0	10.63
	09/07/94	<50	<0.5	<0.5	<0.5	<0.5	---	21.90	0.0	9.27

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-5	04/23/89	---	---	---	---	---	---	20.62	0.0	9.66
	04/24/89	<50	<0.5	<1.0	<1.0	<1.0	<3,000	---	0.0	---
	07/28/89	<100	<0.2	<1.0	<0.2	<0.4	<3,000	20.86	0.0	9.42
30.28	10/30/89	<500	<0.3	<0.3	<0.3	<0.6	---	20.82	0.0	9.46
	01/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	21.07	0.0	9.21
	04/18/90	<50	<0.3	<0.3	<0.3	<0.6	---	21.35	0.0	8.93
	06/22/90	---	---	---	---	---	---	21.38	0.0	8.90
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	21.36	0.0	8.92
	11/13/90	<50	<0.5	1	<0.5	1	---	21.35	0.0	8.93
	05/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	21.29	0.0	8.99
	08/27/91	94	3.0	5.0	1.5	5.5	---	21.11	0.0	9.17
	11/15/91	<50	0.9	1.7	<0.5	2.2	---	21.18	0.0	9.10
	02/20/92	<50	<0.5	<0.5	<0.5	<0.5	---	21.25	0.0	9.03
	06/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	21.00	0.0	9.28
30.28	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	21.23	0.0	9.05
	04/07/93	<50	<0.5	<0.5	<0.5	<1.5	---	20.31	0.0	9.97
	06/09/93	---	---	---	---	---	---	---	---	---
	09/10/93	---	---	---	---	---	---	---	---	---
	09/27/93	---	---	---	---	---	---	20.76	0.0	9.52
	Suspended									

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-6	04/23/89	---	---	---	---	---	---	20.05	0.0	9.41
	04/24/89	<50	<0.5	<1.0	<1.0	<1.0	<3	---	---	---
	07/28/89	<100	<0.2	<1.0	<0.2	<0.4	<3	20.30	0.0	9.16
29.46	10/30/89	<500	<0.3	<0.3	<0.3	<0.6	---	20.32	0.0	9.14
	01/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.51	0.0	8.95
	04/18/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.72	0.0	8.74
	06/22/90	---	---	---	---	---	---	20.77	0.0	8.69
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.74	0.0	8.72
	11/13/90	<50	3	5	0.5	2	---	20.75	0.0	8.71
	05/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	20.61	0.0	8.85
	08/27/91	180	6.1	12	3.8	14	---	20.53	0.0	8.93
	11/15/91	<50	<0.5	0.6	<0.5	<0.5	---	20.53	0.0	8.93
	02/20/92	<50	0.9	1.1	<0.5	1.4	---	20.69	0.0	8.77
	06/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	20.38	0.0	9.08
29.45	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	20.57	0.0	8.88
	04/07/93	<50	<0.5	<0.5	<0.5	<1.5	---	19.59	0.0	9.86
	06/09/93	<50	<0.5	<0.5	<0.5	<0.5	---	19.50	0.0	9.95
	09/10/93	---	---	---	---	---	---	---	---	---
	09/27/93 Suspended	---	---	---	---	---	---	20.07	0.0	9.38

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-7	04/23/89	---	---	---	---	---	---	18.99	0.0	10.02
	04/24/89	8,400[3]	100	260	160	1,300	3[4]	---	---	---
29.01	07/28/89	7,000[3]	230	90	70	440	<3,000	19.94	0.0	9.07
(D)	07/28/89	6,000[3]	280	180	58	430	---	---	---	---
	10/30/89	10,000[3]	570	55	160	400	---	19.97	0.0	9.04
(D)	10/30/89	9,900[3]	520	82	180	410	---	---	---	---
	01/09/90	3,400[3]	290	72	9	200	---	20.15	0.0	8.86
	04/18/90	6,800[3]	350	140	110	400	---	20.37	0.0	8.64
	06/22/90	---	---	---	---	---	---	20.40	0.0	8.61
	08/09/90	11,000[3]	360	130	14	660	---	20.38	0.0	8.63
	11/13/90	6,500	230	110	97	460	---	20.41	0.0	8.60
	05/15/91	4,600	180	55	46	300	---	20.47	0.0	8.54
	08/27/91	7,000	220	53	63	340	---	20.14	0.0	8.87
	11/15/91	3,300	150	19	4.9	200	---	20.22	0.0	8.79
	02/20/92	5,200	520	150	100	380	---	20.32	0.0	8.69
	06/15/92	10,000	760	430	320	1,100	---	19.98	0.0	9.03
29.01	12/16/92	11,000	810	350	280	1,100	---	20.14	0.0	8.87
	04/07/93	150	1.4	0.9	0.9	4.5	---	19.14	0.0	9.87
(7-14-93) P+T started →	06/09/93	180	4	1	1	3	---	19.05	0.0	9.96
	09/10/93	---	---	---	---	---	---	---	---	---
	09/27/93	---	---	---	---	---	---	---	---	---
(12-12-93) P+T stopped →	12/17/93	---	---	---	---	---	---	---	---	---
	03/10/94	---	---	---	---	---	---	---	---	---
	06/16/94	---	---	---	---	---	---	---	---	---
	09/07/94	---	---	---	---	---	---	---	---	---

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-8	04/23/89	---	---	---	---	---	---	20.14	0.0	9.43
	04/24/89	<50	<0.5	<1.0	<1.0	<1.0	3,000	---	---	---
29.57	04/24/89	<50	<0.5	<1.0	<1.0	<1.0	---	---	---	---
	07/28/89	<100	<0.2	<1.0	<0.2	<0.4	<3,000	20.37	0.0	9.20
	10/30/89	<500	<0.3	<0.3	<0.3	<0.6	---	20.32	0.0	9.25
	01/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.60	0.0	8.97
	04/18/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.87	0.0	8.70
	06/22/90	---	---	---	---	---	---	20.34	0.0	9.23
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.89	0.0	8.68
	11/13/90	<50	<0.5	0.8	<0.5	2	---	20.86	0.0	8.71
	05/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	20.49	0.0	9.08
	08/27/91	73[2]	<0.5	<0.5	<0.5	<0.5	---	20.60	0.0	8.97
	11/15/91	<50	<0.5	0.7	<0.5	2.1	---	20.62	0.0	8.95
	02/20/92	<50	<0.5	<0.5	<0.5	<0.5	---	20.80	0.0	8.77
	06/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	20.48	0.0	9.09
29.57	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	20.68	0.0	8.89
	04/07/93	<50	<0.5	<0.5	<0.5	<1.5	---	19.70	0.0	9.87
	06/09/93	<50	<0.5	<0.5	<0.5	<0.5	---	19.60	0.0	9.97
	09/10/93	---	---	---	---	---	---	---	---	---
	09/27/93	---	---	---	---	---	---	20.22	0.0	9.35
	Suspended									

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-9	06/22/90	5,700[3]	47	31	280	530	<1,000	20.80	0.0	7.87
	08/09/90	8,000[3]	<0.3	17	210	480	---	20.74	0.0	7.93
	11/13/90	6,400	<3	20	240	450	---	20.78	0.0	7.89
28.67	05/15/91	5,700	2	16	190	390	---	20.48	0.0	8.19
	08/27/91	6,700	<3	31	180	350	---	20.55	0.0	8.12
	11/15/91	4,000	8.8	26	150	280	---	20.57	0.0	8.10
	02/20/92	3,400	13	30	230	460	---	21.77	0.0	6.90
	06/15/92	4,500	19	72	280	560	---	20.37	0.0	8.30
28.68	12/16/92	9,900	380	220	380	1,300	---	20.29	0.0	8.39
	04/07/93	8,700	51	150	360	1,000	---	19.32	0.0	9.36
	06/09/93	8,900	170	160	350	1,100	---	19.16	0.0	9.52
	09/10/93	4,600	110	63	190	350	---	---	---	---
	09/27/93	---	---	---	---	---	---	19.94	0.0	8.74
	12/17/93	4,600	92	85	180	300	---	20.31	0.0	8.37
	03/10/94	3,300	8.0	29	120	170	---	20.30	0.0	8.38
	06/16/94	2,900	4.8	16	85	64	---	20.26	0.0	8.42
	09/07/94	2,900	<0.5	9.9	70	75	---	20.41	0.0	8.27
MW-10	06/22/90	<50[3]	<0.5	<0.5	<0.5	<0.5	<1,000	20.48	0.0	8.12
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.45	0.0	8.15
	11/13/90	<50	<0.5	2	0.5	2	---	20.47	0.0	8.13
28.60	05/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	20.15	0.0	8.45
	08/27/91	<50	<0.5	<0.5	<0.5	<0.5	---	20.27	0.0	8.33
	11/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	20.33	0.0	8.27
	02/20/92	<50	2.0	2.2	<0.5	2.1	---	21.45	0.0	7.15
	06/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	21.30	0.0	7.30
28.62	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	20.17	0.0	8.45
	04/07/93	<50	<0.5	<0.5	<0.5	<1.5	---	19.26	0.0	9.41
	06/09/93	<50	<0.5	<0.5	<0.5	<0.5	---	19.07	0.0	9.55
	09/10/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	09/24/93	---	---	---	---	---	---	19.72	0.0	8.90
	12/17/93	<50	<0.5	<0.5	<0.5	<0.5	---	20.07	0.0	8.55
	03/10/94	<50	<0.5	<0.5	<0.5	<0.5	---	19.97	0.0	8.65
	06/16/94	<50	<0.5	<0.5	<0.5	<0.5	---	19.98	0.0	8.64
	09/07/94	<50	<0.5	<0.5	<0.5	<0.5	---	20.12	0.0	8.50

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-11	06/22/90	<50[3]	<0.5	<0.5	<0.5	<0.5	<1,000	21.03	0.0	8.34
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	21.02	0.0	8.35
29.37	11/13/90	76	0.6	1	0.9	4	---	20.93	0.0	8.44
	05/15/91	78[2]	<0.5	<0.5	<0.5	<0.5	---	20.61	0.0	8.76
	08/27/91	110[2]	<0.5	<0.5	<0.5	<0.5	---	20.70	0.0	8.67
	11/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	20.68	0.0	8.69
	02/20/92	<50	1.9	2.1	1.0	4.4	---	21.91	0.0	7.46
	06/15/92	---	---	---	---	---	---	20.56	0.0	8.81
29.39	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	20.75	0.0	8.64
	04/07/93	<50	<0.5	<0.5	<0.5	<1.5	---	19.83	0.0	9.56
	06/09/93	<50	<0.5	<0.5	<0.5	<0.5	---	19.67	0.0	9.72
	09/10/93	---	---	---	---	---	---	---	---	---
	09/27/93	<50	<0.5	<0.5	<0.5	<0.5	---	20.33	0.0	9.06
	12/17/93	<50	<0.5	<0.5	<0.5	<0.5	---	20.73	0.0	8.66
	03/10/94	---	---	---	---	---	---	20.69	0.0	8.70
	06/16/94	<50	<0.5	<0.5	<0.5	<0.5	---	20.56	0.0	8.83
	Suspended									
MW-12	06/22/90	<50[3]	<0.5	<0.5	<0.5	<0.5	<1,000	20.45	0.0	7.98
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	20.43	0.0	8.00
28.43	11/13/90	<50	<0.5	<0.5	<0.5	<0.5	---	20.45	0.0	7.98
	05/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	20.07	0.0	8.36
	08/27/91	56[2]	<0.5	<0.5	<0.5	<0.5	---	20.15	0.0	8.28
	11/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	20.25	0.0	8.18
	02/20/92	<50	2.5	3.1	0.7	3.0	---	21.37	0.0	7.06
	06/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	19.90	0.0	8.53
28.43	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	19.80	0.0	8.63
	04/07/93	<50	<0.5	<0.5	<0.5	<1.5	---	18.75	0.0	9.68
	06/09/93	---	---	---	---	---	---	---	---	---
	09/10/93	---	---	---	---	---	---	---	---	---
	09/27/93	---	---	---	---	---	---	19.63	0.0	8.80
	Suspended									

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

started P&T 7-14-93 →
stopped P&T 12-13-93 →

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-13	11/15/91	3,100	68	40	110	270	---	21.07	0.0	7.56
	02/20/92	3,100	120	50	240	400	---	22.17	0.0	6.46
28.63	06/15/92	3,200	35	33	210	300	---	20.67	0.0	7.96
28.62	12/16/92	87,000	1,400	540	2,400	11,000	---	20.34	0.0	8.28
	04/07/93	1,500	72	12	70	160	---	19.41	0.0	9.21
	06/09/93	210	6	2	7	16	---	19.20	0.0	9.42
	09/10/93	73	3	<0.5	2	3	---	---	---	---
	09/27/93	---	---	---	---	---	---	20.35	0.0	8.27
	12/17/93	640	43	12	12	37	---	20.76	0.0	7.86
	03/10/94	540	44	22	10	69	---	20.69	0.0	7.93
	06/16/94	1,800	63	12	18	64	---	20.67	0.0	7.95
	09/07/94	1,400	59	12	22	50	---	20.83	0.0	7.79
MW-14	11/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	20.33	0.0	9.13
	02/20/92	<50	1.3	1.8	1.1	5.2	---	21.41	0.0	8.05
29.46	06/15/92	---	---	---	---	---	---	---	---	---
29.45	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	20.66	0.0	8.79
	04/07/93	---	---	---	---	---	---	---	---	---
	06/09/93	---	---	---	---	---	---	---	---	---
	09/10/93	---	---	---	---	---	---	---	---	---
	09/27/93 Suspended	---	---	---	---	---	---	20.26	0.0	9.19
MW-15	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	19.74	0.0	8.30
28.04	04/07/93	<50	1.3	<0.5	<0.5	<1.5	---	18.80	0.0	9.24
	06/09/93	<50	<0.5	<0.5	<0.5	<0.5	---	18.60	0.0	9.44
	09/10/93	---	---	---	---	---	---	---	---	---
	09/27/93	<50	2	<0.5	<0.5	<0.5	---	19.93	0.0	8.11
	12/17/93	<50	<0.5	<0.5	<0.5	<0.5	---	20.32	0.0	7.72
	03/10/94	<50	<0.5	<0.5	<0.5	<0.5	---	20.29	0.0	7.75
	06/16/94	<50	<0.5	<0.5	<0.5	<0.5	---	20.31	0.0	7.73
	09/07/94	<50	<0.5	<0.5	<0.5	<0.5	---	20.43	0.0	7.61

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
MW-16	12/16/92	---	---	---	---	---	---	19.58	0.0	8.74
28.32	12/21/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	04/07/93	<50	<0.5	6.8	<0.5	<0.5	---	18.41	0.0	9.91
	06/09/93	<50	<0.5	<0.5	<0.5	<0.5	---	18.25	0.0	10.07
	09/10/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	09/27/93	---	---	---	---	---	---	20.16	0.0	8.16
	12/17/93	---	---	---	---	---	---	---	---	---
	03/10/94	<50	<0.5	<0.5	<0.5	<0.5	---	20.55	0.0	7.77
	06/16/94	<50	0.9	0.7	<0.5	<0.5	---	20.65	0.0	7.67
	09/07/94	150	1.3	0.8	1.2	3.6	---	20.73	0.0	7.59
Rinsate	12/17/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	03/10/94	<50	<0.5	0.8	<0.5	0.6	---	---	---	---

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	DTW (ft)	SPT (ft)	WTE (ft)
TBLB	11/03/88	---	<1.0	<1.0	<1.0	<1.0	---	---	---	---
	02/10/89	<50	<0.1	<0.1	<0.1	<0.2	---	---	---	---
	04/24/89	<50	<0.5	<0.5	<1.0	<1.0	---	---	---	---
	07/28/89	<50	<0.1	<0.1	<0.1	<0.2	---	---	---	---
	10/30/89	<500	<0.3	<0.3	<0.3	<0.6	---	---	---	---
	01/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	---	---	---
	04/18/90	<50	<0.3	<0.3	<0.3	<0.6	---	---	---	---
	06/22/90	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	---	---	---	---
	11/13/90	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	05/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	08/27/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	11/15/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	02/20/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	06/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/16/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	04/07/93	<50	<0.5	<0.5	<0.5	<1.5	---	---	---	---
	06/09/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	09/10/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	09/27/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/17/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	03/10/94	<50	<0.5	0.6	<0.5	0.6	---	---	---	---
	06/16/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	09/07/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---

NOTES FOR TABLE 1
CHEVRON SERVICE STATION No. 9-6991
1633 HARRISON STREET, OAKLAND, CALIFORNIA

Concentrations in parts per billion.
All elevations are presented as feet above mean sea level.

TPH-G = Total petroleum hydrocarbons-as-gasoline
TOG = Total oil and grease
DTW = Depth to groundwater
SPT = Separate-phase hydrocarbon thickness
WTE = Water-table elevation
TB-LB = Trip blank/Lab blank
--- = Not applicable, not sampled, not measured
(D) = Duplicate analysis
* = Gasoline range concentration reported. The chromatogram indicates only a single peak in the gasoline range.
1 = Analyzed for total fuel hydrocarbons
2 = Laboratory reported that peaks did not match typical gasoline pattern.
3 = Fuel characterized as gasoline
4 = Acetone and 2-butanone were detected at 5 ppb and 160 ppb, respectively.

TABLE 2
HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR HALOGENATED VOLATILE ORGANICS
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID	Date	Carbon Tet	Chloro-form	PCE	TCE	1,2,-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	1,2-DCA	1,2-DCP	MC	Other[a] HVOCs
MW-1	11/03/88	18.0	7.0	<1.0	<1.0	---	<1.0	---	<1.0	<1.0	---	---	---
	02/10/89	17.0	6.0	<0.2	<0.2	---	<0.2	<0.2	<0.2	<0.2	---	---	---
	04/24/89	16.0	6.0	<1.0	<1.0	<1.0	---	---	<1.0	<1.0	---	---	---
	07/28/89	20.0	6.4	<0.1	<0.1	---	<0.1	<0.1	0.3	<0.1	---	---	---
	10/30/89	11.0	4.9	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	---	---	---
	01/09/90	24.0	7.2	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	---	---	---
	04/18/90	23.0	5.5	<0.5	<0.5	<0.5	---	---	1.4	<0.5	<0.5	<0.5	---
	08/09/90	32.0	11.0	0.7	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/13/90	24	7	60.7	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---
	05/15/91	15	5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	08/27/91	18	4.2	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	11/15/91	21	7.9	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	02/20/92	24	7.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	06/15/92	10	3.2	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
MW-2	11/03/88	3.0	2.0	34.0	3.0	---	10.0	---	<1.0	<1.0	---	---	---
	02/10/89	1.4	1.0	17.2	<0.2	---	<0.2	6.3	<0.2	<0.2	---	---	---
	04/24/89	2.0	2.0	38.0	3.0	9.0	---	---	<1.0	<1.0	---	---	---
	07/28/89	3.7	2.0	46.0	2.6	---	<0.2	<0.2	<0.2	<0.2	---	---	---
	10/30/89	1.4	2.6	53.0	1.1	14.0	---	---	<0.5	<0.5	---	---	---
	01/09/90	3.6	3.9	78.0	5.3	16.0	---	---	<0.5	<0.5	---	---	---
	04/18/90	1.5	2.7	130.0	3.9	19.0	---	---	<0.5	<0.5	<0.5	<0.5	---
	08/09/90	2.1	2.1	74.0	6.1	15.0	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/13/90	<0.5	2	40	4	---	<0.5	10	<0.5	<0.5	<0.5	<0.5	---
	05/15/91	2	2	56	6	---	<0.5	15	<0.5	<0.5	<0.5	<0.5	ND
	08/27/91	1.1	0.9	46	3.9	---	---	8.0	<0.5	<0.5	<0.5	<0.5	ND
	11/15/91	0.6	1.1	58	3.1	---	<0.5	6.3	<0.5	<0.5	<0.5	<0.5	ND
	02/20/92	11	<2.5	62	3.1	---	<2.5	4.3	<2.5	<2.5	<2.5	<2.5	ND
	06/15/92	<0.5	1.2	45	3.1	---	<0.5	4.8	<0.5	<0.5	<0.5	<0.5	ND

TABLE 2
HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR HALOGENATED VOLATILE ORGANICS
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID	Date	Carbon Tet	Chloro-form	PCE	TCE	1,2,-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	1,2-DCA	1,2-DCP	MC	Other[a] HVOCs
MW-3	11/03/88	8.0	6.0	84.0	3.0	---	5.0	---	<1.0	<1.0	---	---	---
	02/10/89	5.8	4.0	53.0	1.9	---	<0.2	9.0	<0.2	<0.2	---	---	---
	04/24/89	7.0	6.0	110.0	3.0	11.0	---	---	<1.0	<1.0	---	---	---
	07/28/89	8.6	5.0	49.0	2.1	---	<0.2	11.0	<0.2	<0.1	---	---	---
	10/30/89	5.6	5.3	62.0	0.7	8.2	---	---	<0.5	<0.5	---	---	---
	01/09/90	8.6	6.1	81.0	73.8	8.7	---	---	<0.5	<0.5	---	---	---
	04/18/90	7.6	5.8	120.0	2.4	11.0	---	---	<0.5	<0.5	<0.5	<0.5	---
	08/09/90	11.0	6.7	81.0	5.1	11.0	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/13/90	7	5	43	4	---	<0.5	9	<0.5	<0.5	<0.5	<0.5	---
	05/15/91	6	4	46	3	---	<0.5	8	<0.5	<0.5	<0.5	<0.5	ND
	08/27/91	5.5	3.8	43	2.6	---	---	8.1	<0.5	<0.5	<0.5	<0.5	c,d,e,f
	11/15/91	6.3	5.0	67	3.4	---	0.8	7.4	0.9	<0.5	<0.5	<0.5	ND
	02/20/92	2.8	4.0	96	3.0	---	<2.5	6.1	<2.5	<2.5	<2.5	<0.5	ND
	06/15/92	5.0	3.9	86	2.9	---	<0.5	7.5	<0.5	<0.5	<0.5	<0.5	ND
MW-4	04/24/89	35.0	11.0	<1.0	<1.0	<1.0	---	---	<1.0	<1.0	---	---	---
	07/28/89	32.0	9.3	<0.1	<0.1	---	<0.1	<0.1	<0.1	<0.1	---	---	---
	10/30/89	32.0	8.5	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	---	---	---
	01/09/90	36.0	9.8	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	---	---	---
	04/18/90	41.0	9.5	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	---
	08/09/90	38.0	11.0	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/13/90	40	11	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---
	05/15/91	35	10	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	08/27/91	28	6.1	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	11/15/91	23	9.1	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	02/20/92	400	140	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	06/15/92	38	11	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND

TABLE 2
HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR HALOGENATED VOLATILE ORGANICS
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID	Date	Carbon Tet	Chloro-form	PCE	TCE	1,2,-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	1,2-DCA	1,2-DCP	MC	Other[a] HVOCs
MW-5	04/24/89	4.0	5.0	4.0	<1.0	2.0	---	---	<1.0	<1.0	---	---	---
	07/28/89	5.6	4.0	5.3	0.3	---	0.2	2.3	0.5	<0.2	---	---	---
	10/30/89	2.9	2.0	2.7	<0.5	0.86	---	---	<0.5	<0.5	---	---	---
	01/09/90	8.2	4.6	7.8	0.6	3.1	---	---	<0.5	<0.5	---	---	---
	04/18/90	6.3	2.8	2.6	<0.5	1.7	---	---	<0.5	<0.5	<0.5	<0.5	---
	08/09/90	11.0	4.8	6.0	<0.5	2.3	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/13/90	7	3	5	<0.5	---	<0.5	1	<0.5	<0.5	<0.5	<0.5	---
	05/15/91	4	2	3	<0.5	---	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	ND
	08/27/91	3.3	1.1	2.3	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/15/91	5.7	2.8	5.5	<0.5	---	<0.5	1.7	<0.5	<0.5	<0.5	<0.5	ND
	02/20/92	4.0	2.0	3.9	<0.5	---	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	ND
	06/15/92	4.0	2.0	5.0	<0.5	---	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	ND
MW-6	04/24/89	13.0	7.0	<1.0	<1.0	<1.0	---	---	<1.0	<1.0	---	---	---
	07/28/89	9.6	4.0	<0.2	<0.2	---	<0.2	<0.2	0.5	0.6	---	---	---
	10/30/89	8.2	3.6	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	---	---	---
	01/09/90	10.0	4.2	<0.5	<0.5	<0.5	---	---	<0.5	1.8	---	---	---
	04/18/90	11.0	3.8	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	---
	08/09/90	20.0	6.6	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/13/90	15	5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---
	05/15/91	11	4	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	08/27/91	8.0	2.2	2.4	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	11/15/91	13	5.4	<0.5	<0.5	---	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	ND
	02/20/92	11	4.0	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	06/15/92	9.6	4.2	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND

TABLE 2
HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR HALOGENATED VOLATILE ORGANICS
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID	Date	Carbon Tet	Chloro-form	PCE	TCE	1,2,-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	1,2-DCA	1,2-DCP	MC	Other[a] HVOCs
MW-7	04/24/89	3.0	9.0	<1.0	<1.0	<1.0	---	---	<1.0	<1.0	---	---	---
	07/28/89	<2.0	<10.0	<2.0	<2.0	---	<2.0	<2.0	<10.0	6.0	---	---	---
	07/28/89[b]	<5.0	<20.0	<5.0	<5.0	---	<5.0	<0.5	<5.0	<5.0	---	---	---
	10/30/89	<1.0	3.9	<1.0	<1.0	<1.0	---	---	<1.0	6.4	---	---	---
	10/30/89[b]	<1.0	3.1	<1.0	<1.0	<1.0	---	---	<1.0	6.2	---	---	---
	01/09/90	<0.5	3.0	<0.5	<0.5	<0.5	---	---	<0.5	8.4	---	---	---
	04/18/90	<0.5	3.2	<0.5	<0.5	<0.5	---	---	<0.5	7.7	0.6	0.6	---
	08/09/90	3.3	7.7	<0.5	<0.5	<0.5	---	---	<0.5	8.4	<0.5	1.8	---
	11/13/90	0.6	3	<0.5	<0.5	---	<0.5	<0.5	<0.5	4	<0.5	<0.5	---
	05/15/91	2	2	<0.5	<0.5	---	<0.5	<0.5	<0.5	3	<0.5	<0.5	ND
	08/27/91	0.7	2.8	<0.5	<0.5	---	---	<0.5	<0.5	2.7	<0.5	<0.5	ND
	11/15/91	0.8	2.7	<0.5	<0.5	---	<0.5	<0.5	<0.5	3.1	<0.5	0.8	ND
	02/20/92	2.2	1.9	<0.5	<0.5	---	<0.5	<0.5	<0.5	3.3	<0.5	<0.5	ND
	06/15/92	1.1	1.8	<0.5	<0.5	---	<0.5	<0.5	<0.5	4.5	<0.5	<0.5	ND
MW-8	04/24/89	2.0	3.0	6.0	<1.0	4.0	---	---	<1.0	<1.0	---	---	---
	04/24/89[b]	2.0	2.0	6.0	<1.0	3.0	---	---	<1.0	<1.0	---	---	---
	07/28/89	2.3	2.0	5.6	<0.2	---	<0.2	3.8	<0.2	<0.2	---	---	---
	10/30/89	2.5	2.6	8.0	<0.5	5.5	---	---	<0.5	<0.5	---	---	---
	01/09/90	4.9	3.9	19.0	0.9	6.6	---	---	<0.5	<0.5	---	---	---
	04/18/90	3.8	2.8	17.0	0.6	5.7	---	---	<0.5	<0.5	<0.5	<0.5	---
	08/09/90	5.3	4.4	27.0	1.2	9.2	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/13/90	3	2	21	0.7	---	<0.5	6	<0.5	<0.5	<0.5	<0.5	---
	05/15/91	2	2	30	0.9	---	<0.5	6	<0.5	<0.5	<0.5	<0.5	ND
	08/27/91	1.4	1.1	32	1.0	---	---	4.7	<0.5	<0.5	<0.5	<0.5	ND
	11/15/91	1.5	1.9	50	<0.5	---	<0.5	5.8	<0.5	<0.5	2.0	<0.5	ND
	02/20/92	1.3	2.3	68	2.4	---	<0.5	7.6	<0.5	<0.5	<0.5	<0.5	ND
	06/15/92	0.7	1.9	46	1.6	---	<0.5	5.6	<0.5	---	<0.5	<0.5	ND

TABLE 2
HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR HALOGENATED VOLATILE ORGANICS
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID	Date	Carbon Tet	Chloro-form	PCE	TCE	1,2,-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	1,2-DCA	1,2-DCP	MC	Other* HVOCs
MW-9	06/22/90	<0.5	<0.5	<0.5	<0.5	---	<0.5	---	<0.5	<0.5	<0.5	<0.5	---
	08/09/90	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	<0.5	0.71	<0.5	<0.5	---
	11/13/90	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	1	<0.5	<0.5	---
	05/15/91	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	ND
	08/27/91	<0.5	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	11/15/91	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	ND
	02/20/92	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	06/15/92	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
MW-10	06/22/90	9.6	8.9	<0.5	<0.5	---	<0.5	---	<0.5	<0.5	<0.5	<0.5	---
	08/09/90	11.0	7.8	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/13/90	5	4	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---
	05/15/91	5	4	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	08/27/91	6.9	3.4	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	11/15/91	2.7	3.3	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	02/20/92	3.3	3.4	3.0	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	06/15/92	4.5	2.9	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
MW-11	06/22/90	4.6	6.5	73	1.3	---	<0.5	8.9	<0.5	<0.5	<0.5	<0.5	---
	08/09/90	8.1	6.8	84	2.0	4.6	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/13/90	<0.5	<0.5	39	<0.5	---	<0.5	2	5	<0.5	<0.5	<0.5	---
	05/15/91	1	3	7	0.5	---	<0.5	2	<0.5	<0.5	<0.5	<0.5	ND
	08/27/91	4.1	3.3	73	1.0	---	---	2.4	<0.5	<0.5	<0.5	<0.5	ND
	11/15/91	3.3	3.6	64	0.9	---	<0.5	2.3	<0.5	<0.5	<0.5	<0.5	ND
	02/20/92	<2.5	<2.5	62	<2.5	---	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	ND
	06/15/92	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 2
HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR HALOGENATED VOLATILE ORGANICS
Chevron Service Station No. 9-0020
1633 Harrison Street, Oakland, California

Well ID	Date	Carbon Tet	Chloro-form	PCE	TCE	1,2,-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	1,2-DCA	1,2-DCP	MC	Other[a] HVOCs
MW-12	06/22/90	6.0	7.3	7.4	<0.5	---	<0.5	13	<0.5	<0.5	<0.5	<0.5	---
	08/09/90	8.0	7.0	6.7	<0.5	5.8	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/13/90	<0.5	<0.5	9	<0.5	---	<0.5	3	3	<0.5	<0.5	<0.5	---
	05/15/91	4	4	10	<0.5	---	<0.5	3	<0.5	<0.5	<0.5	<0.5	ND
	08/27/91	3.1	2.6	10	<0.5	---	---	2.3	<0.5	<0.5	<0.5	<0.5	ND
	11/15/91	1.9	3.5	8.9	<0.5	---	<0.5	5.9	<0.5	<0.5	<0.5	<0.5	ND
	02/20/92	3.3	3.4	3.7	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	06/15/92	2.2	3.7	13	<0.5	---	<0.5	4.5	<0.5	<0.5	<0.5	<0.5	ND
MW-13	11/15/91	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	[g]
	02/20/92	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	06/15/92	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
MW-14	11/15/91	<0.5	5.5	33	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	02/20/92	<0.5	4.3	38	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
	06/15/92	---	---	---	---	---	---	---	---	---	---	---	---
Trip Blank	11/03/88	<1.0	<1.0	<1.0	<1.0	---	<1.0	---	<1.0	<1.0	---	---	---
	02/10/89	<0.1	<0.5	<0.1	<0.1	---	<0.1	<0.1	<0.1	<0.1	---	---	---
	04/24/89	<1.0	<1.0	<1.0	<1.0	<1.0	---	---	<1.0	<1.0	---	---	---
	07/28/89	<0.1	<0.5	<0.1	<0.5	<0.1	---	<0.1	<0.1	<0.1	---	---	---
	10/30/89	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	---	---	---
	01/09/90	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	---	---	---
	04/18/90	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	---
	06/22/90	<0.5	<0.5	<0.5	<0.5	---	<0.5	---	<0.5	<0.5	<0.5	<0.5	---
	08/09/90	<0.5	<0.5<	<0.5	<0.5	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/13/90	<0.5	0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---
	05/15/91	---	---	---	---	---	---	---	---	---	---	---	---
	08/27/91	---	---	---	---	---	---	---	---	---	---	---	---
	11/15/91	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	---	ND
	02/20/92	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	---	ND
	06/15/92	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND

Carbon Tet	=	Carbon Tetrachloride
PCE	=	Tetrachloroethene
TCE	=	Trichloroethene
1,2-DCE	=	1,2-Dichloroethene
t-1,2-DCE	=	trans-1,2-Dichloroethene
c-1,2-DCE	=	cis-1,2-Dichloroethene
1,1,1-TCA	=	1,1,1-Trichloroethane
1,2-DCA	=	1,2-Dichloroethane
1,2-DCP	=	1,2-Dichloropropane
MC	=	Methylene chloride (dichloromethane)

Other HVOCs	=	Other halogenated volatile organic compounds
---	=	Not applicable, not analyzed, not sampled
ND	=	Not detected above method detection limit
a	=	The tabulated analytical results for ground water prior to May 15, 1991 do not specify whether other HVOCs were detected
b	=	Duplicate analyses
c	=	Trichlorofluoromethane was detected at 1.4 ppb
d	=	1,1-Dichloroethene was detected at 1.3 ppb
e	=	1,1-Dichloroethane was detected at 0.5 ppb
f	=	Chlorobenzene was detected at 0.7 ppb
g	=	1,1-Dichloroethane was detected at 0.6 ppb

TABLE 5. Wells Located Within One-Half Mile Radius Of
Former Chevron Service Station #90020
1633 Harrison Street
Oakland, California
(See Figure 9 for Well Locations)

Map Location No.	Owner	Well Location	Number of Wells	Year Drilled	Use
1	Chevron USA	210 Grand Ave. Oakland	9	1989-90	Monitor
2	Morrison & Forester	2302 Valdez St. Oakland	4	1989	Monitor
3	Texaco	2225 Telegraph Ave. Oakland	9	1989	Monitor
4	Carter-Hawley-Hale	1911 Telegraph Ave. Oakland	1	1988	Test
5	Bank of America	21st & Broadway Oakland	1	1988	Monitor
6	Lakeside Corp. (Bechtel)	244 Lakeside Dr. Oakland	1	1977	Irrigation
7	Five City Center, City of Oakland	14th & Clay Sts. Oakland	3	1988	Destroyed
8	General Services Administration	12th & Clay Sts. Oakland	3	1989	Monitor
9	APC Building	12th & Broadway Oakland	3	1988	Monitor
10	Bramalea-APC	1111 Broadway Oakland	3	1988	Monitor
11	City of Oakland	11th & Webster Sts. Oakland	5	1987-88	Monitor, Test

TABLE 5. Wells Located Within One-Half Mile Radius Of
Former Chevron Service Station #90020 (continued)
1633 Harrison Street
Oakland, California

Map Location No.	Owner	Well Location	Number of Wells	Year Drilled	Use
12	City of Oakland, Oakland Redevelopment Agency	10th & Webster Sts. Oakland	7	1987-88	Monitor, Test
13	City of Oakland	10th & Franklin Sts. Oakland	2	1988	Test
14	City of Oakland, Frank Mar Comm. Housing	Pacific Renaissance Plaza 13th & Harrison Sts. Oakland	39	1989	Monitor, Injection, Extraction
15	Moose Club	14th & Alice Sts. Oakland	1	1927	Abandoned 1984
16	Alameda County Services	165 13th St. Oakland	4	1989	Monitor
17	Fire Station #12	9th & Alice Sts. Oakland	1	1989	Monitor

NOTES:

Total Number of Wells = 96

According to the ERIIS report, the LUST sites are:

MAP ID	FACILITY	LOCATION	PROBLEM
4761	Chevron	1633 Harrison Street	Tank Leak
4692	Chevron	301 14th Street	Tank Leak
4746	Harrison Street Garage	1432 Harrison Street	Tank Leak
3112	Kaiser Regional/Parking	1901 Franklin Street	Tank Leak
4101	PG&E	1919 Webster Street	Tank Leak

According to the ERIIS report, the RCRIS sites are:

MAP ID/ EPA ID NO.	FACILITY	LOCATION	WASTE CODES REPORTED
1198 CAD 981980030	AT&T, Oakland Main	1587/1601 Franklin Street	
2168 CAD 982039125	Roy's Auto Body	1432 Harrison Street	F003, F005

Table continues next page

MAP ID/ EPA ID NO.	FACILITY	LOCATION	WASTE CODES REPORTED
5663 CAT 080015431	Pacific Bell	1519 Franklin Street	D002, D004
5664 CAT 080015449	Pacific Bell	1587 Franklin Street	D002, D004

The hazardous waste codes, as summarized in the ERIIS report, are:

D002: A solid waste that exhibits the characteristic of corrosivity but is not listed as a hazardous waste in 40 CFR, Part 261, Subpart B.

D004: Arsenic. Maximum concentration is 5.0 milligrams per liter.

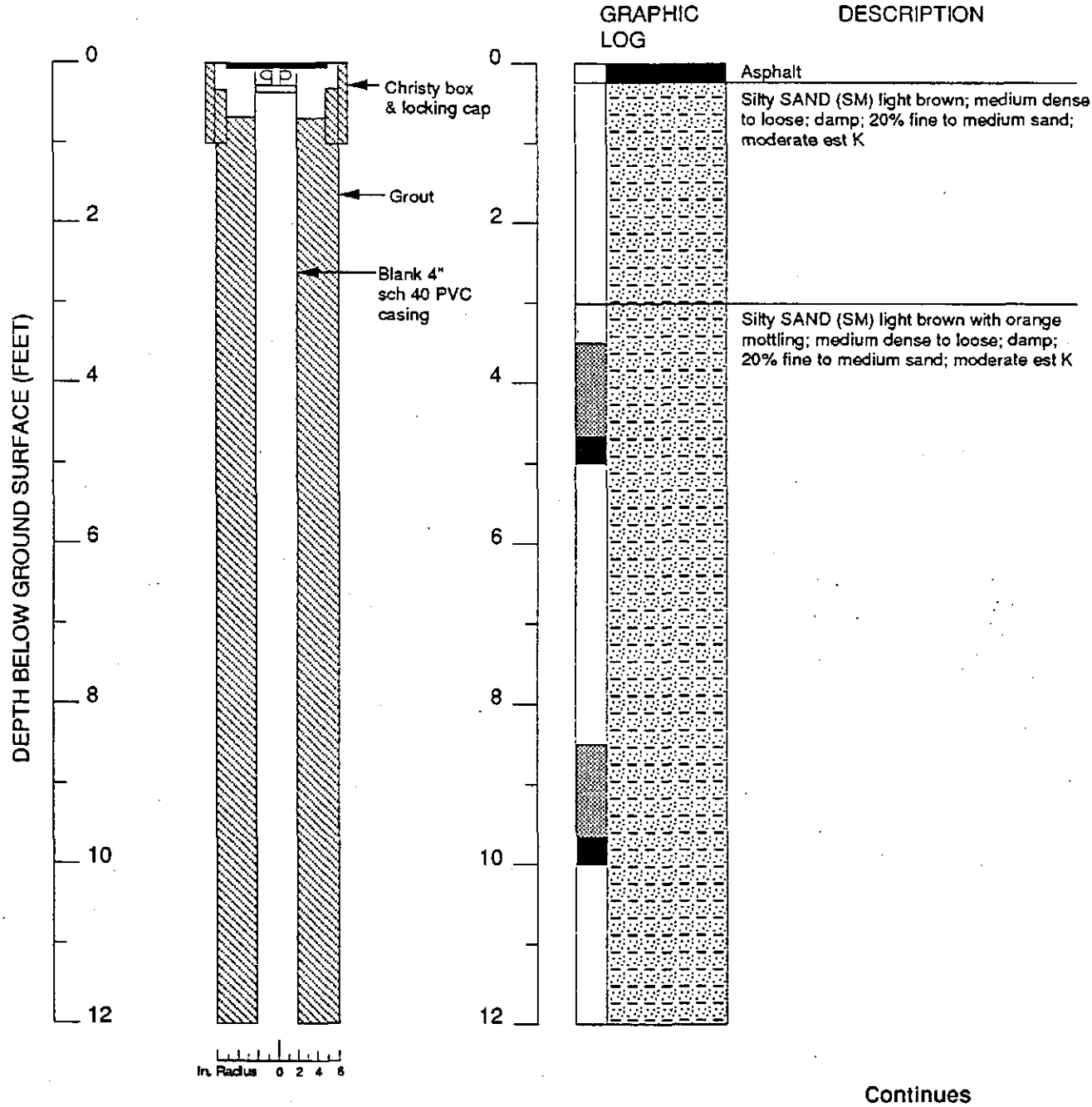
F003: Spent non-halogenated solvents; Xylenes, acetone, ethyl acetate, ethylbenzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, and cyclohexanone. All spent solvent mixtures containing before use one or more of the above halogenated solvents and a total of 10 percent or more of those solvents listed in F001, F002, F004, and F005.

F005: Spent non-halogenated solvents; Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane. All spent solvents mixture containing before use a total of 10 percent of one or more of the non-halogenated solvents listed above or listed in F001, F002, or F004.

APPENDIX C

BORING LOGS

MONITOR WELL MW-1



Continues

EXPLANATION

- Water level during drilling (date)
- Water level (date)
- Contact (dotted where approx.)
- Gradational (hachured), uncertain (dashed) contact
- Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- Grab sample

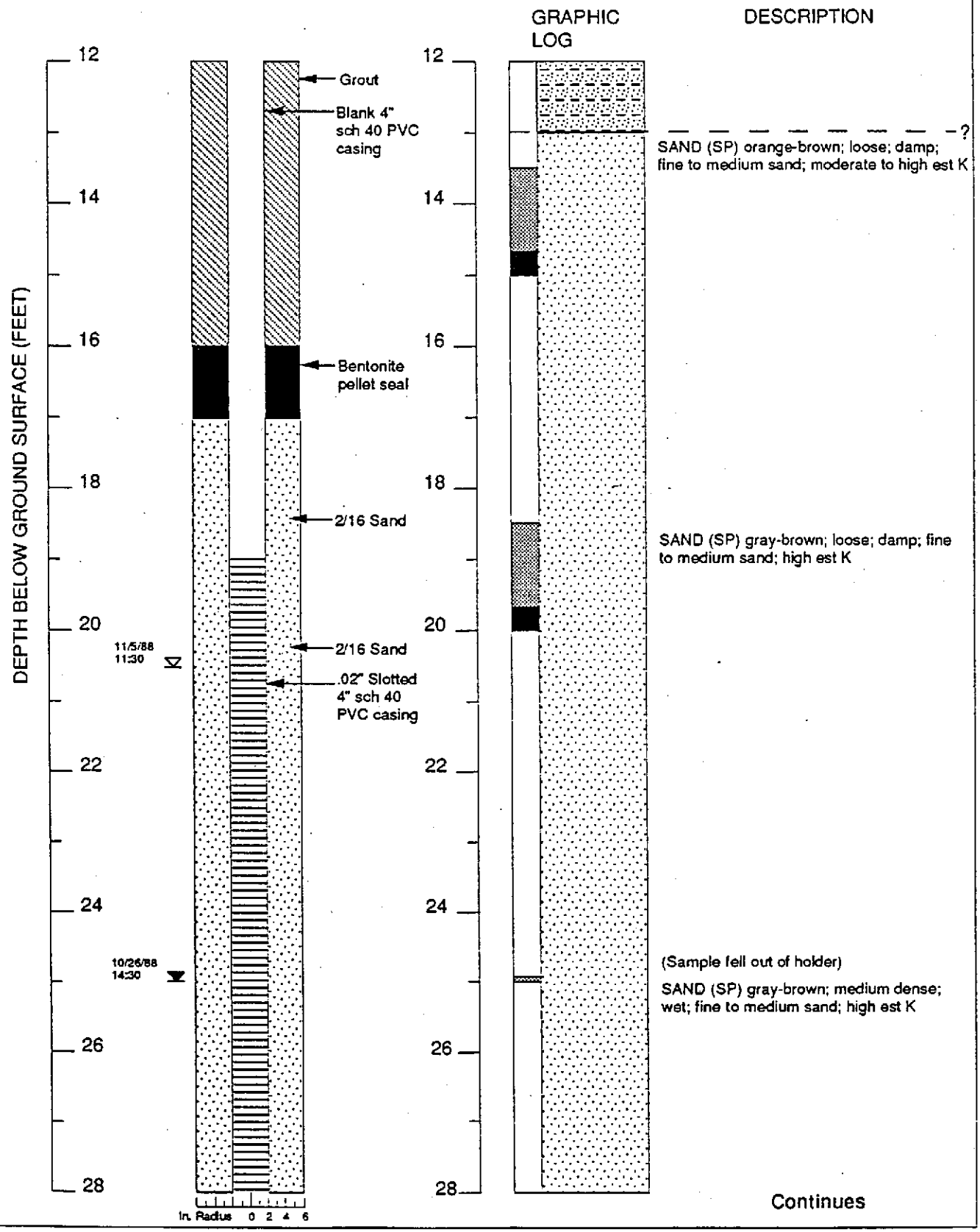
est K = Estimated permeability (hydraulic conductivity)

Logged by: Gail Jones
Supervisor: Tom Howard
Drilling Company: All Terrain
Driller: Wes
Drilling Method: Hollow stem auger
Dates Drilled: 10/26/88
Well Head Completion: Christy box & locking cap
Type of Sampler: 2" split barrel
TD: Drill depth

Boring Log and Well Completion Details MW-1
WGR Project No.: 1-012.01

Chevron Facility #90020
Oakland, CA

MONITOR WELL MW-1 (cont.)

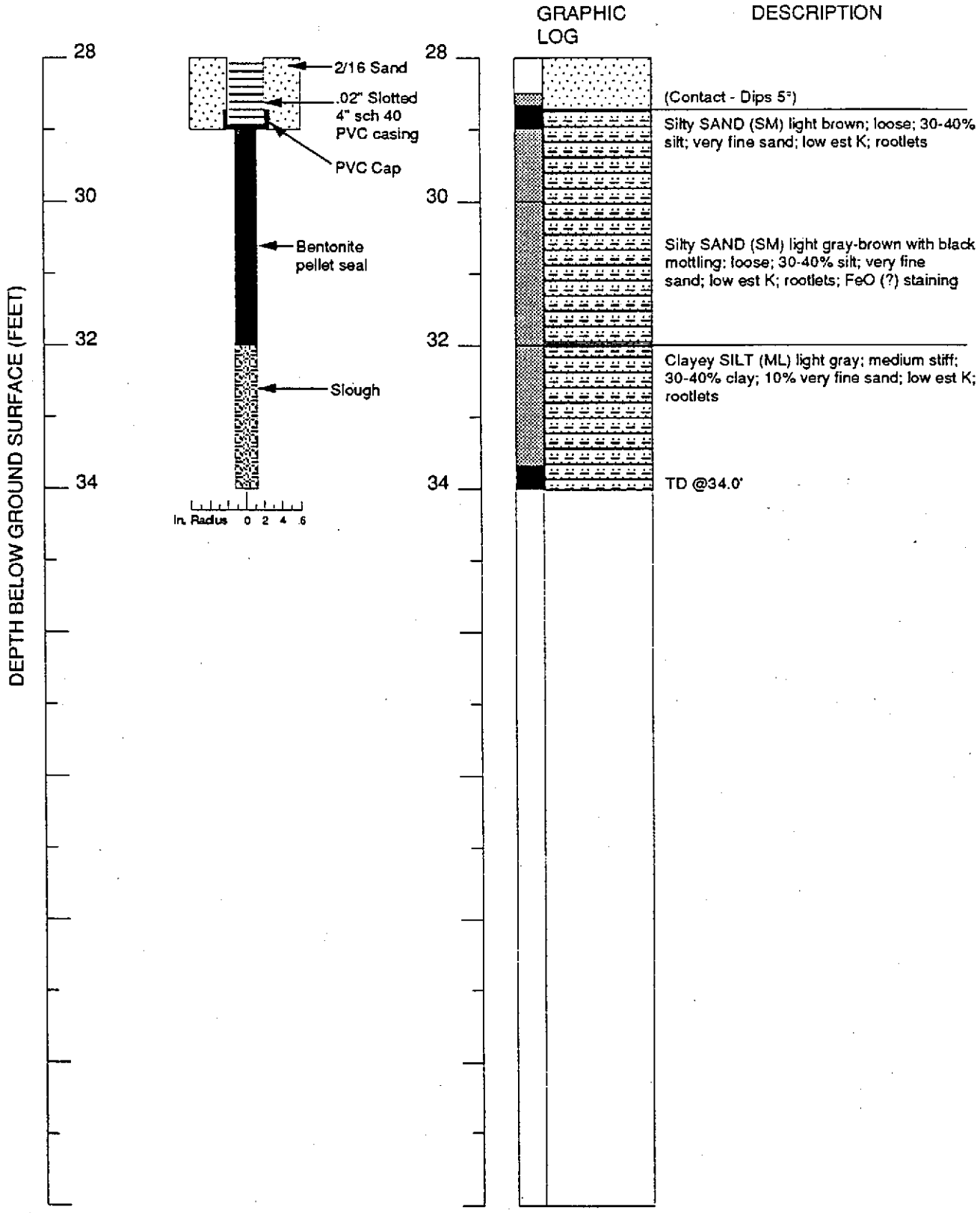


Continues

Boring Log and Well Completion Details MW-1 (cont.)
WGR Project No.: 1-012.01

Chevron Facility #90020
Oakland, CA

MONITOR WELL MW-1 (cont.)

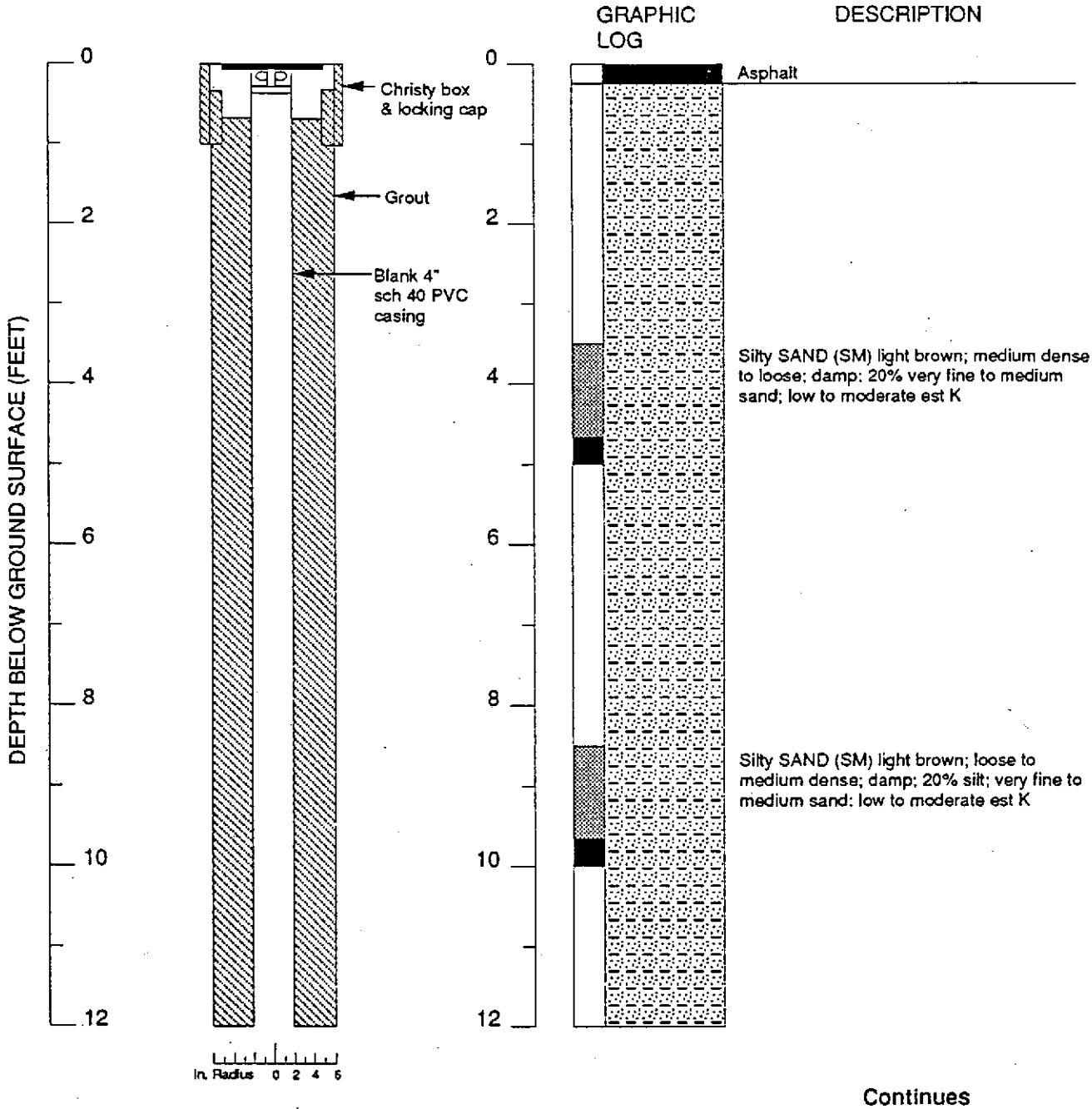


Boring Log and Well Completion Details MW-1 (cont.)
WGR Project No.: 1-012.01

Chevron Facility #90020
Oakland, CA

WGR

MONITOR WELL MW-2



Continues

EXPLANATION

- Water level during drilling (date)
- Water level (date)
- Contact (dotted where approx.)
- Gradational (hachured), uncertain (dashed) contact
- Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- Grab sample

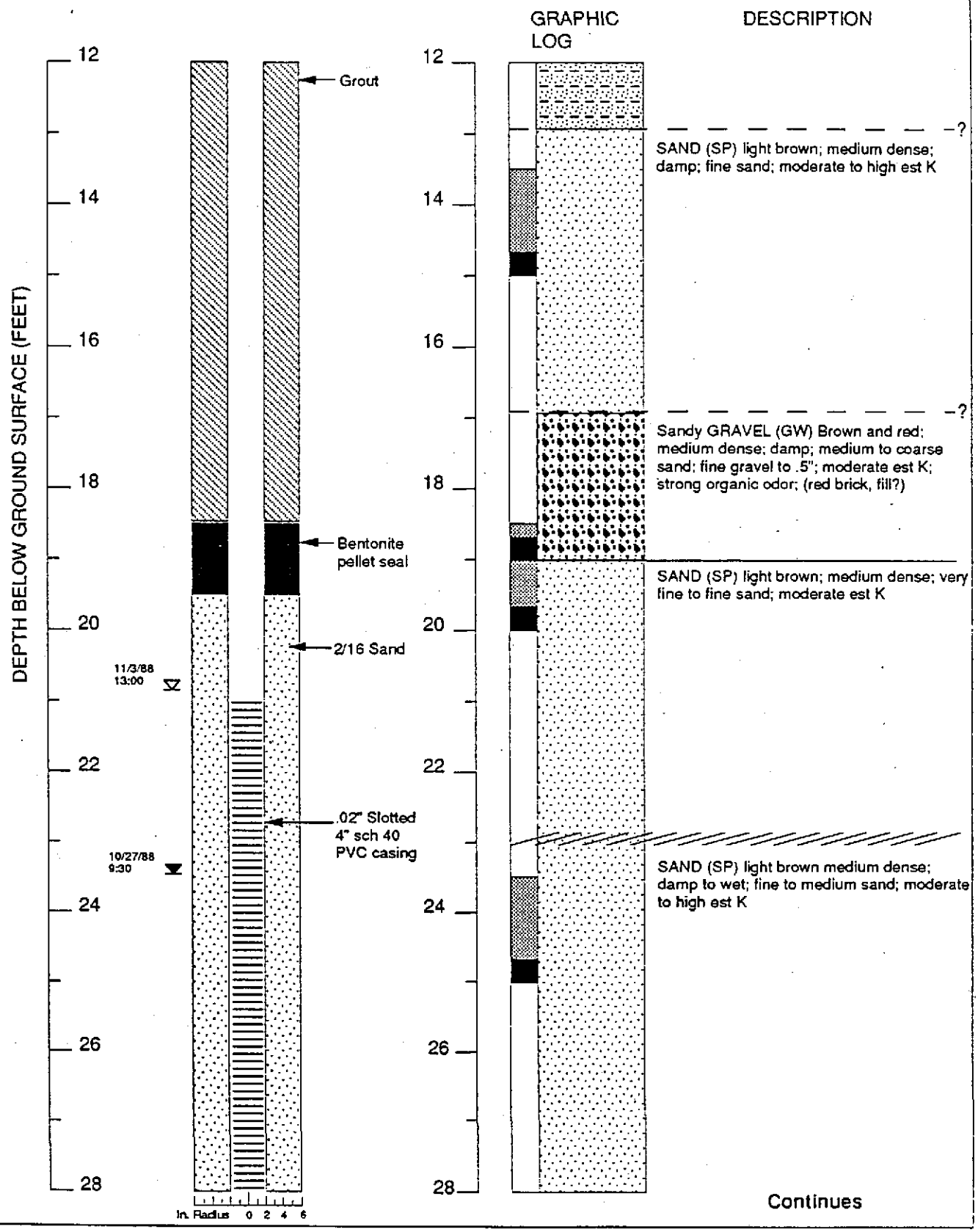
est K = Estimated permeability (hydraulic conductivity)

Logged by: Gail Jones
Supervisor: Tom Howard
Drilling Company: All Terrain
Driller: Wes
Drilling Method: Hollow stem auger
Dates Drilled: 10/27/88
Well Head Completion: Christy box & locking cap
Type of Sampler: 2" split barrel
TD: Drill depth = 33.0 ft

Boring Log and Well Completion Details MW-2
WGR Project No.: 1-012.01

Chevron Facility #90020
Oakland, CA

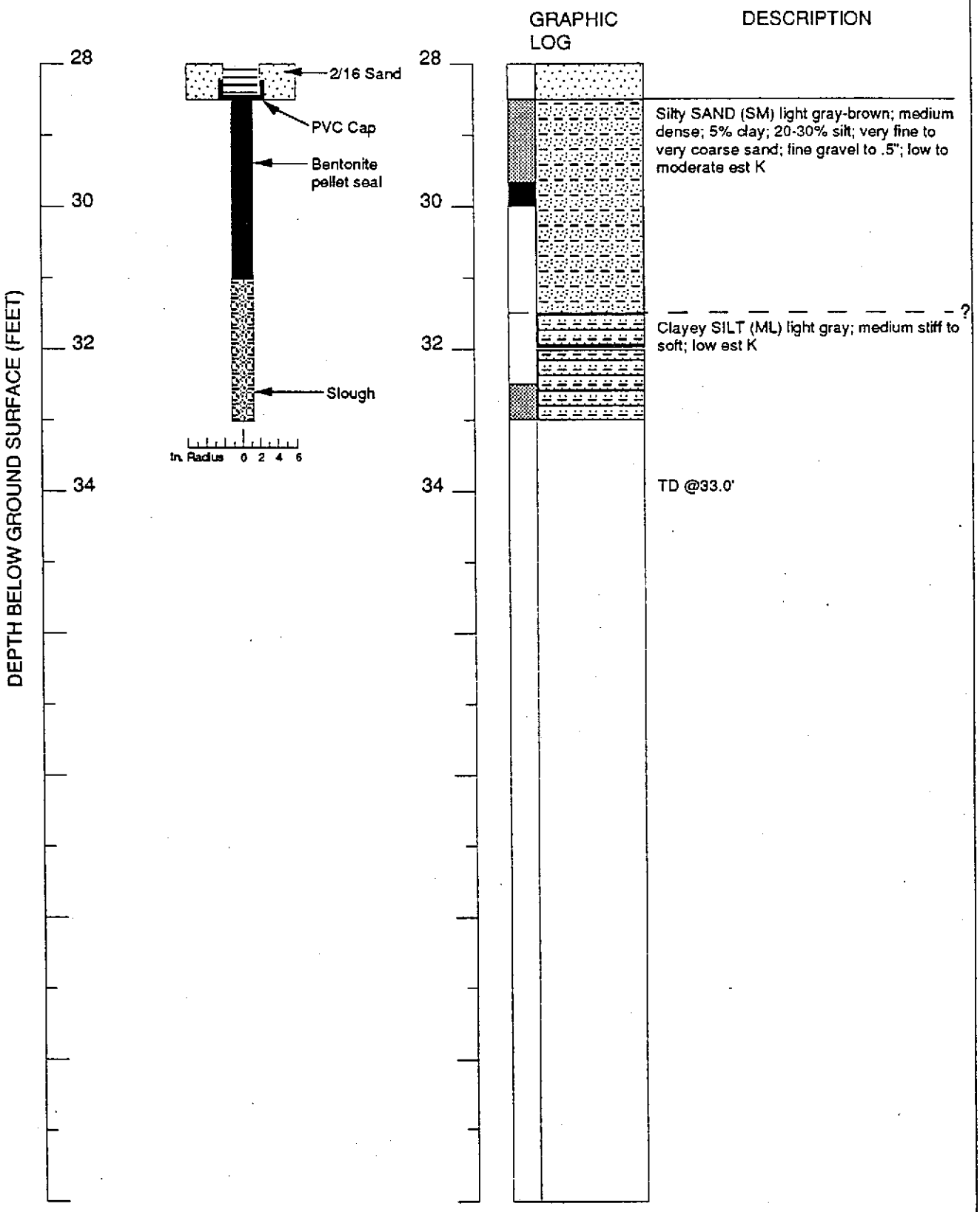
MONITOR WELL MW-2 (cont.)



Boring Log and Well Completion Details MW-2 (cont.)
WGR Project No.: 1-012.01

Chevron Facility #90020
Oakland, CA

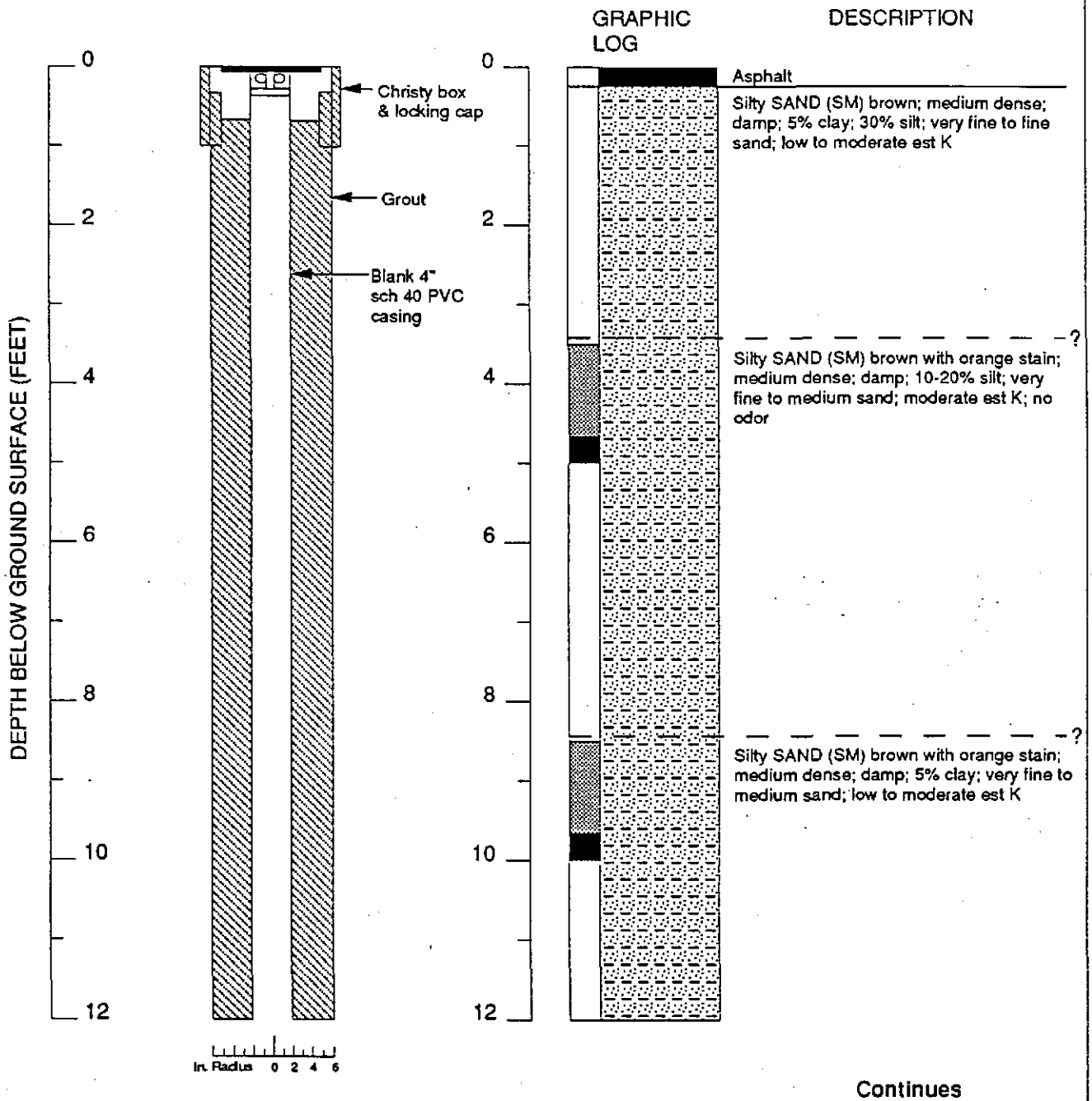
MONITOR WELL MW-2 (cont.)



Boring Log and Well Completion Details MW-2 (cont.)
WGR Project No.: 1-012.01

Chevron Facility #90020
Oakland, CA

MONITOR WELL MW-3



EXPLANATION

- Water level during drilling (date)
- Water level (date)
- Contact (dotted where approx.)
- Gradational (hachured), uncertain (dashed) contact
- Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- Grab sample

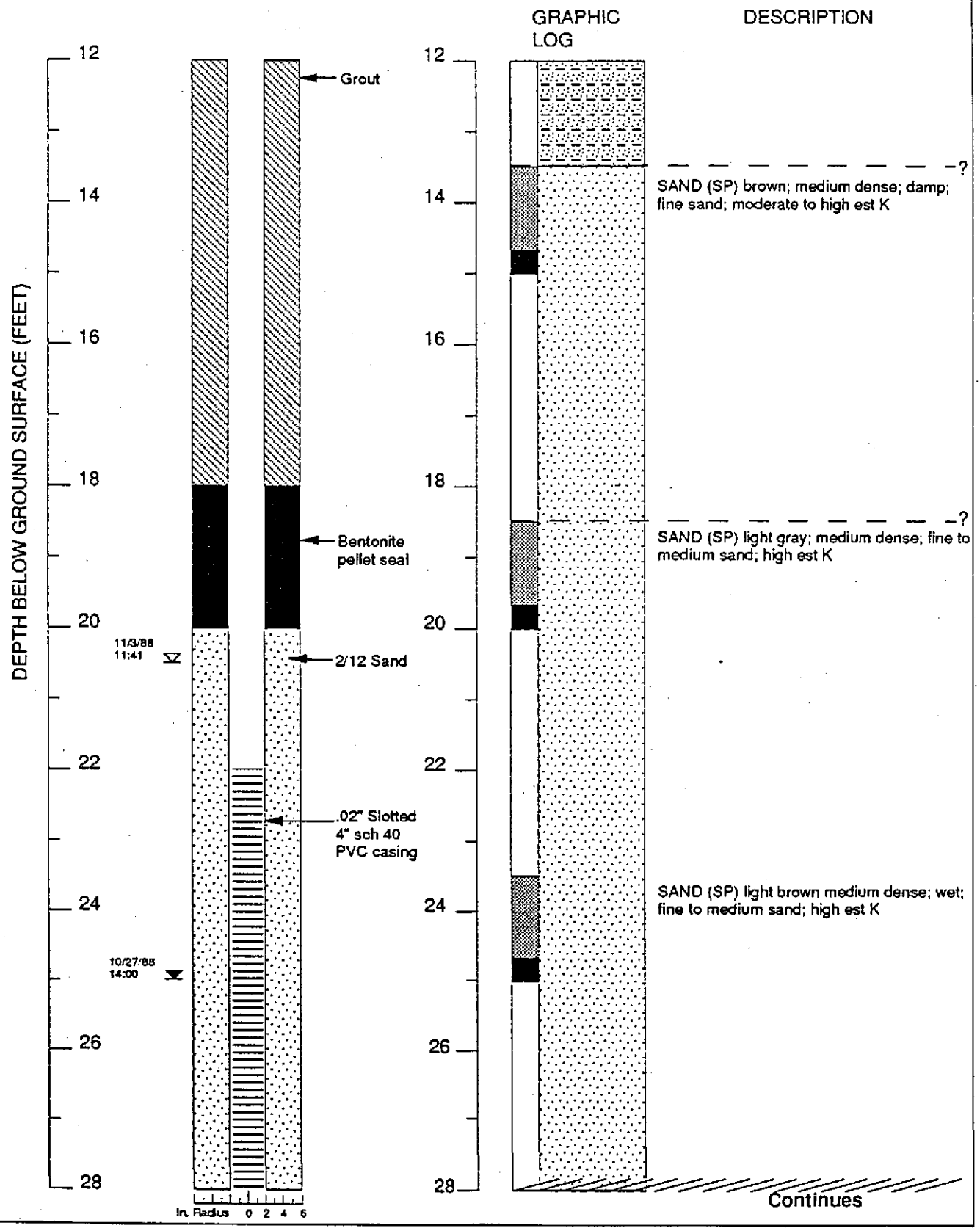
est K = Estimated permeability (hydraulic conductivity)

Logged by: Gail Jones
Supervisor: Tom Howard
Drilling Company: All Terrain
Driller: Wes
Drilling Method: Hollow stem auger
Dates Drilled: 10/27/88
Well Head Completion: Christy box & locking cap
Type of Sampler: 2" split barrel
TD: Drill depth = 35.5 ft

Boring Log and Well Completion Details MW-3
WGR Project No.: 1-012.01

Chevron Facility #90020
Oakland, CA

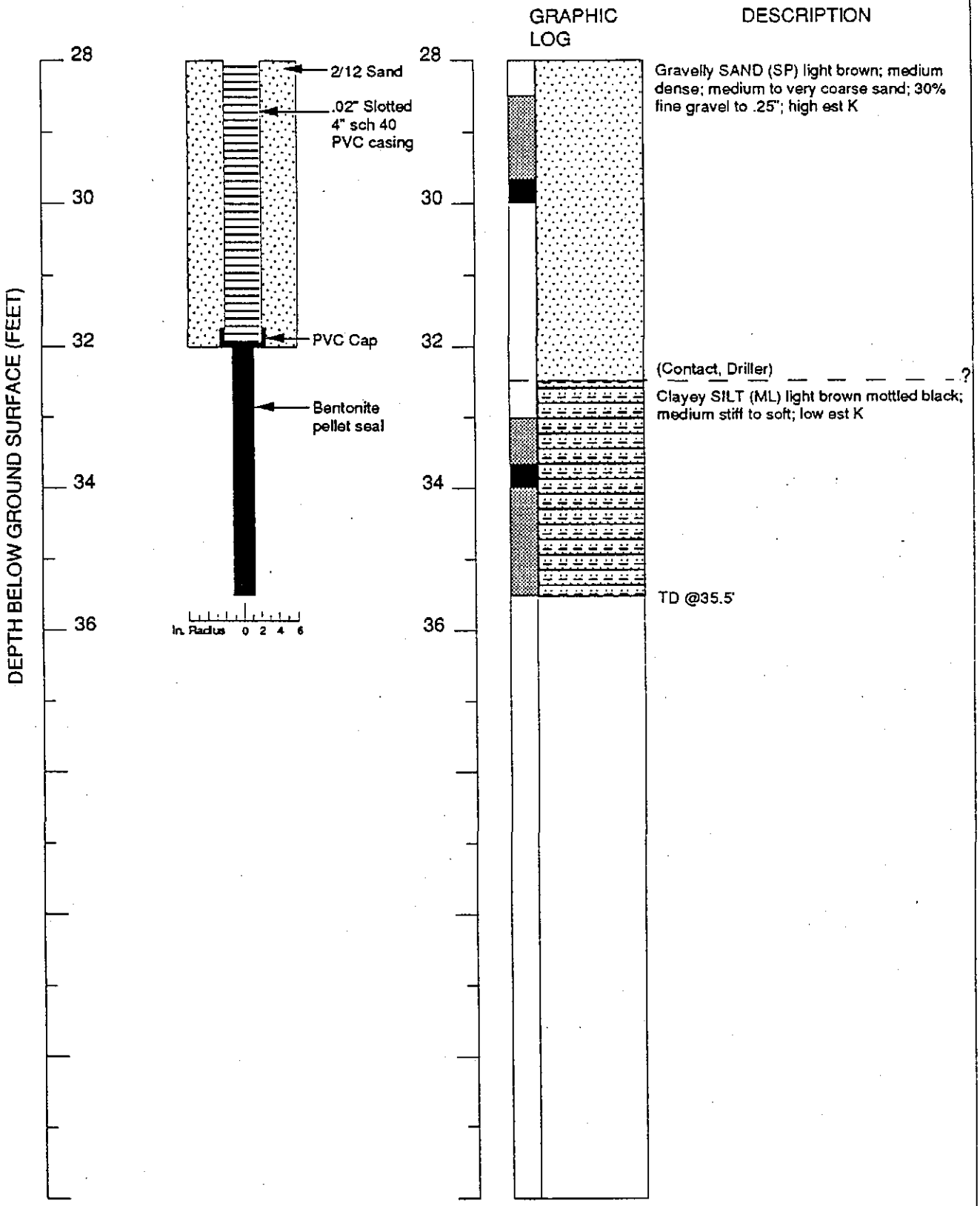
MONITOR WELL MW-3 (cont.)



Boring Log and Well Completion Details MW-3 (cont.)
WGR Project No.: 1-012.01

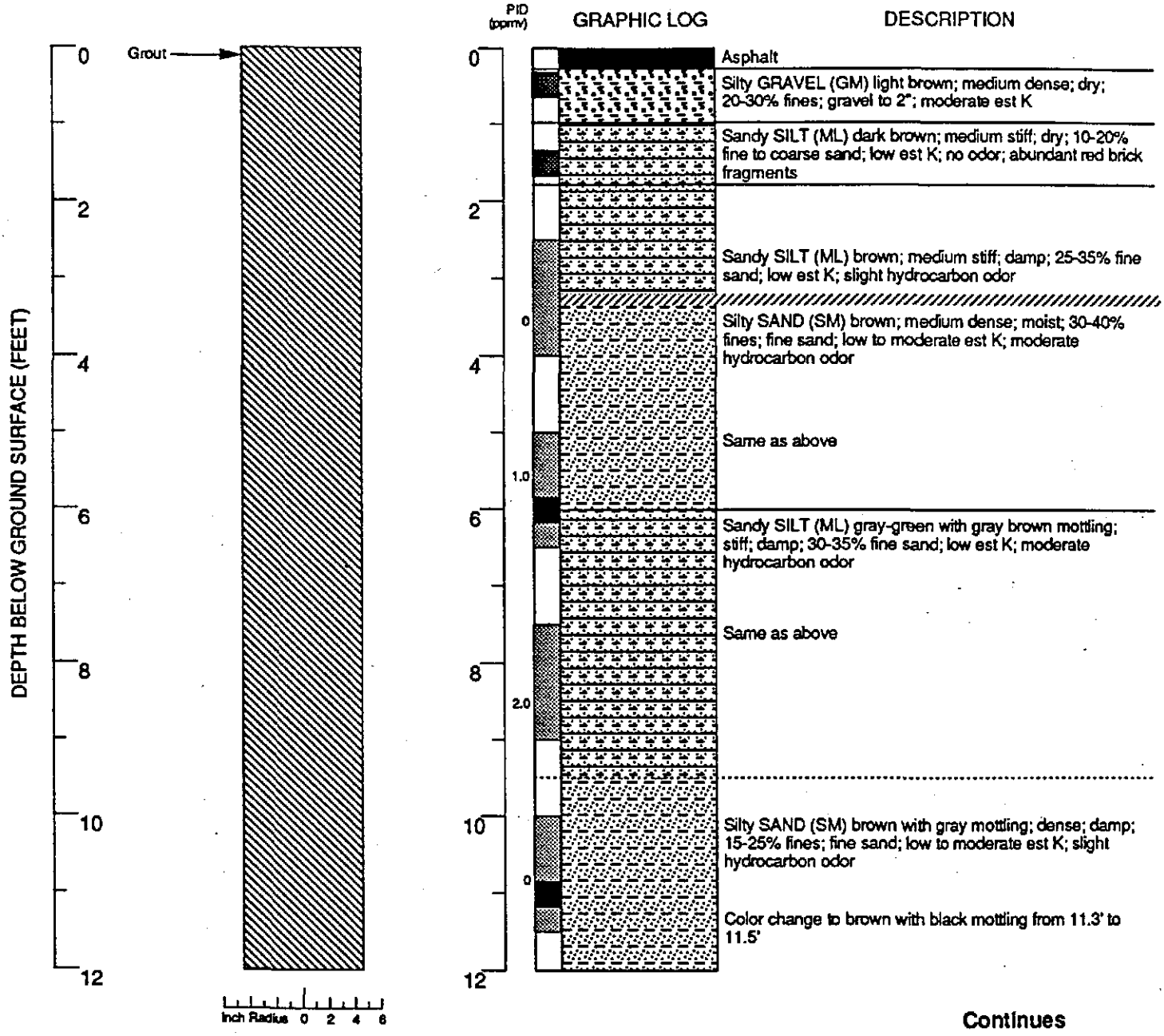
Chevron Facility #90020
Oakland, CA

MONITOR WELL MW-3 (cont.)



Boring Log and Well Completion Details MW-3 (cont.)
WGR Project No.: 1-012.01

Chevron Facility #90020
Oakland, CA



Continues

Logged by:	Mike Edmonson	Drilling Company:	Exploration Geoservices	Well Head Completion:	None
Supervisor:	Tom Howard	Drilling Method:	9" Hollow stem auger	Type of Samplers:	2" & 1.4" split barrel
Date Drilled:	4/11/89	Driller:	Dave Yeager	TD (Total Depth):	24.0 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

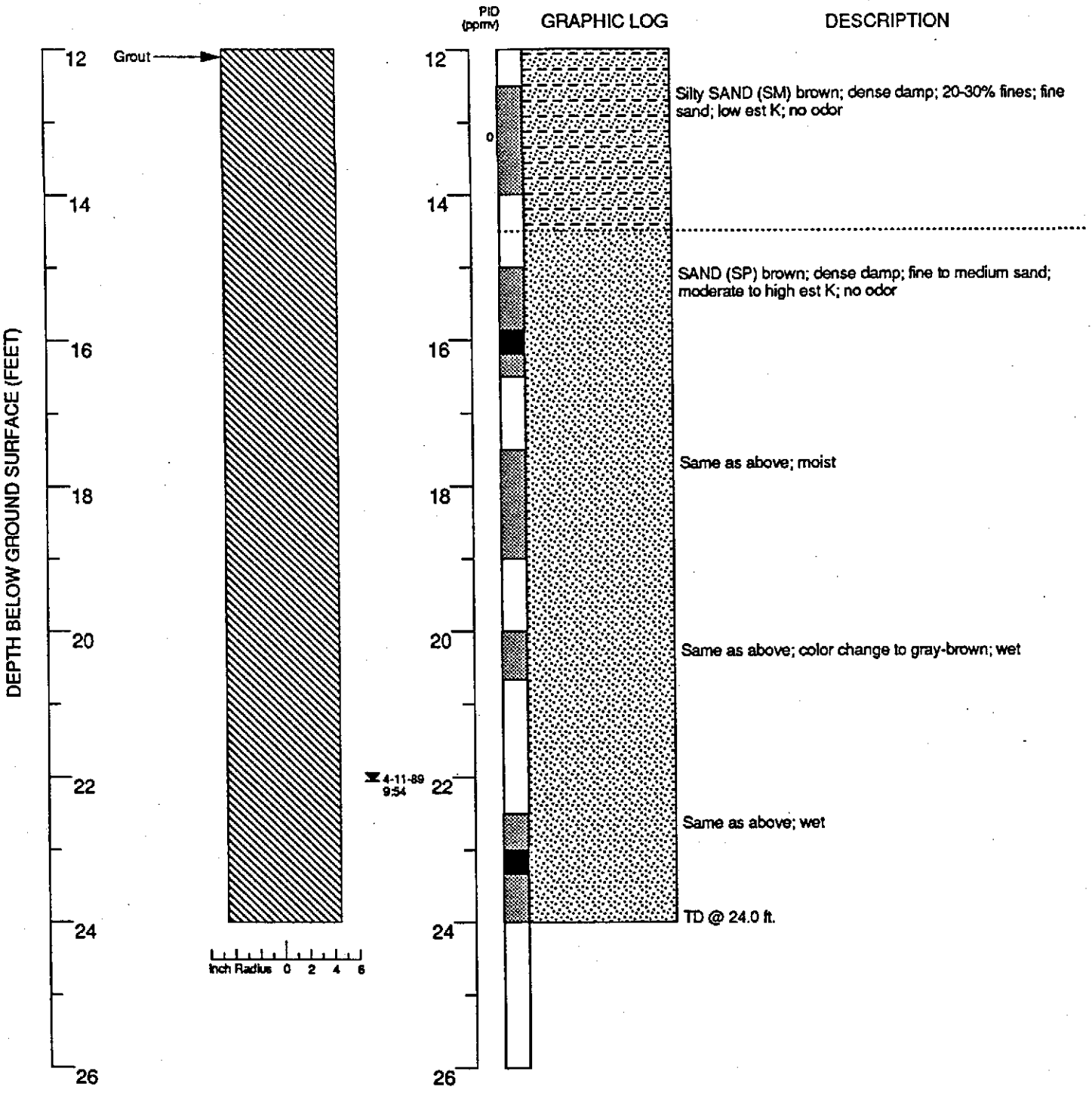
Boring Log B-4
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

BORING

4

WESTERN GEOLOGIC RESOURCES, INC.



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

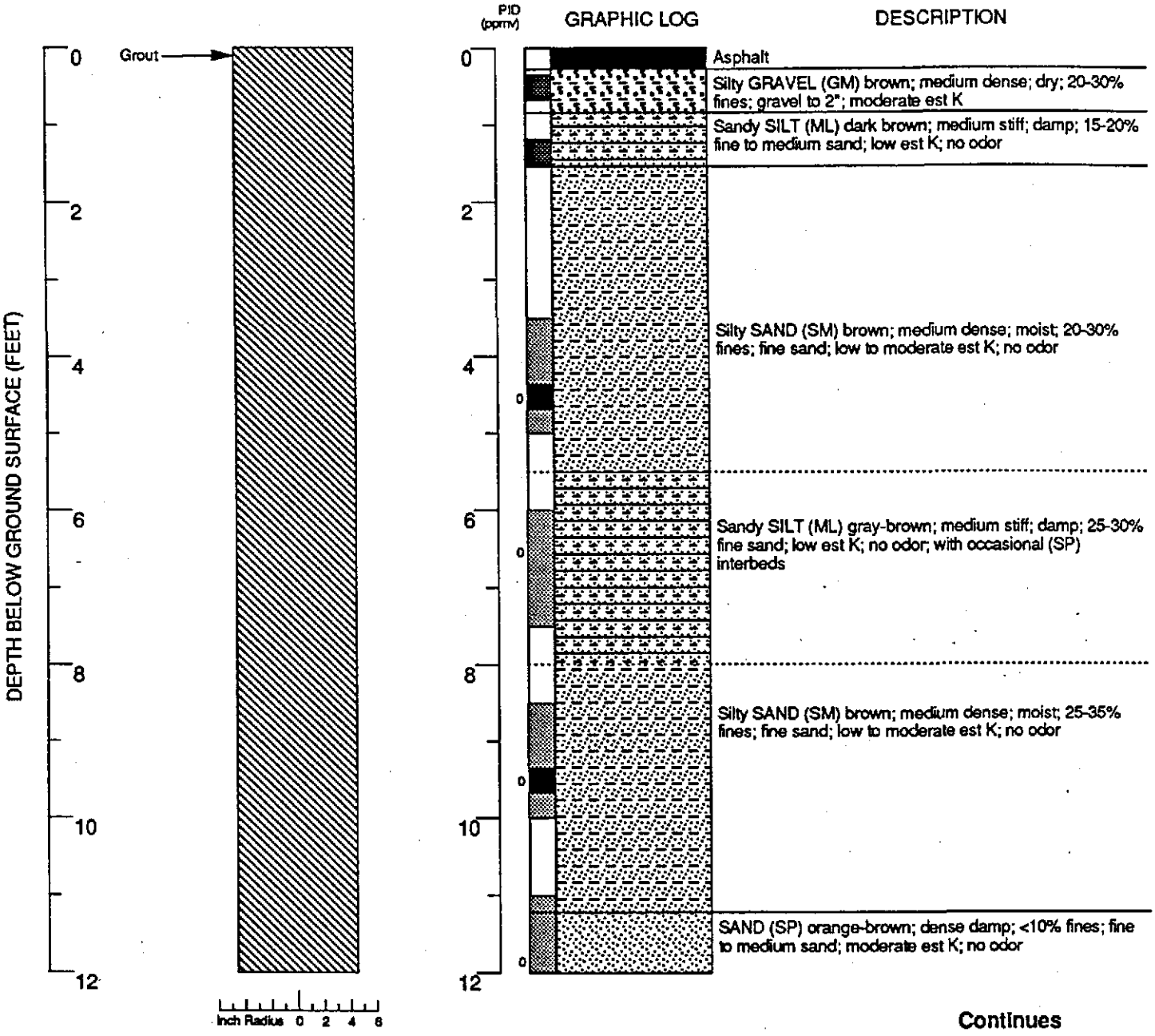
Boring Log B-4 (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

BORING

4

WESTERN GEOLOGIC RESOURCES, INC.



Logged by:	Mike Edmonson	Drilling Company:	Exploration Geoservices	Well Head Completion:	None
Supervisor:	Tom Howard	Drilling Method:	9" Hollow stem auger	Type of Samplers:	2" & 1.4" split barrel
Dates Drilled:	4/11/89	Driller:	Dave Yeager	TD (Total Depth):	22.5 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

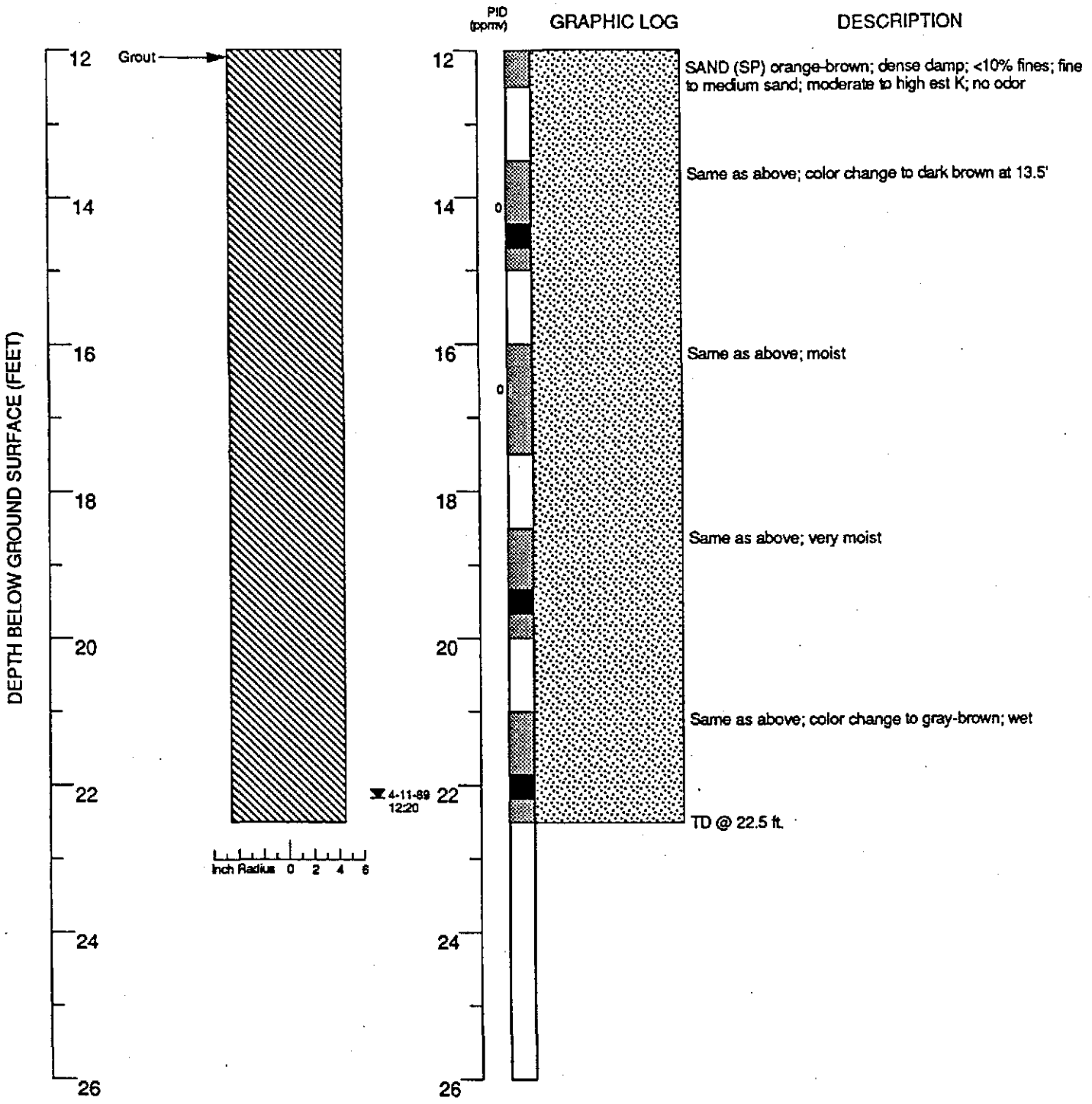
Boring Log B-5
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

BORING

5

WESTERN GEOLOGIC RESOURCES, INC.



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery.
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

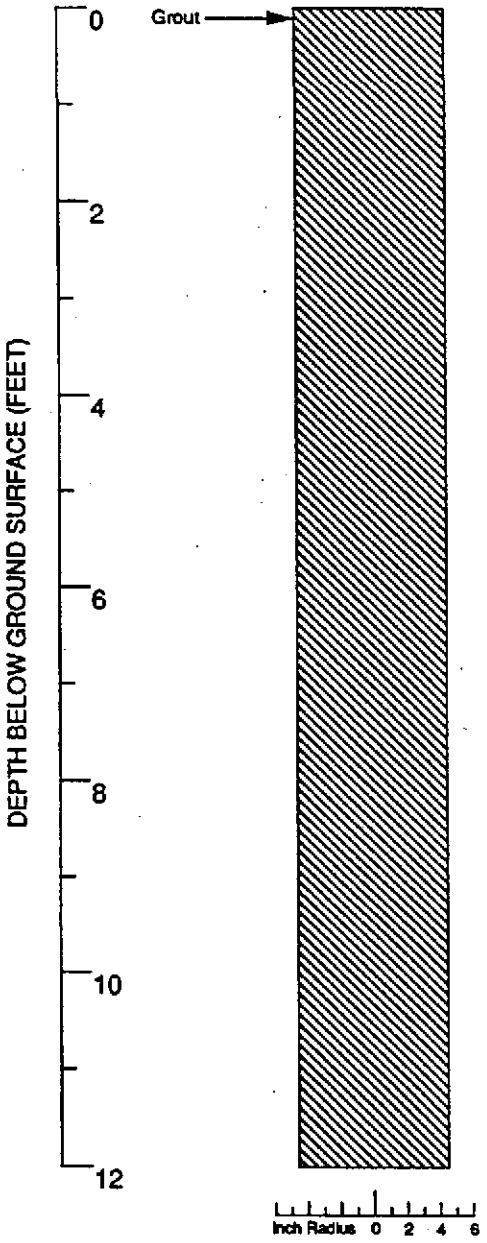
Boring Log B-5 (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

BORING

5

WESTERN GEOLOGIC RESOURCES, INC.



PID (ppm)	GRAPHIC LOG	DESCRIPTION
0		Asphalt
		Silty GRAVEL (GM) brown; medium dense; dry; 20-30% fines; gravel to 2"; moderate est K
		Sandy SILT (ML) dark brown; medium stiff; damp; 15-20% fine to medium sand; low est K; no odor
0		Silty SAND (SM) brown; medium dense; moist; 15% fines; moderate est K; no odor
0		Sandy SILT (ML) orange-brown to light brown; stiff; damp; 20-40% fine to medium sand; low est K; no odor
		Same as above
0		Silty SAND (SM) light gray-brown; medium dense; damp; 25-35% fines; moderate est K; no odor
		Sandy SILT (ML) light gray-brown; stiff; 30-35% fines; fine to medium sand; low to moderate est K; no odor

Continues

Logged by:	Dave Reichard	Drilling Company:	Exploration Geoservices	Well Head Completion:	None
Supervisor:	Tom Howard	Drilling Method:	9" Hollow stem auger	Type of Samplers:	2" & 1.4" split barrel
Dates Drilled:	4/11/89	Driller:	Dave Yeager	TD (Total Depth):	22.7 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR: No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K: Estimated permeability (hydraulic conductivity)

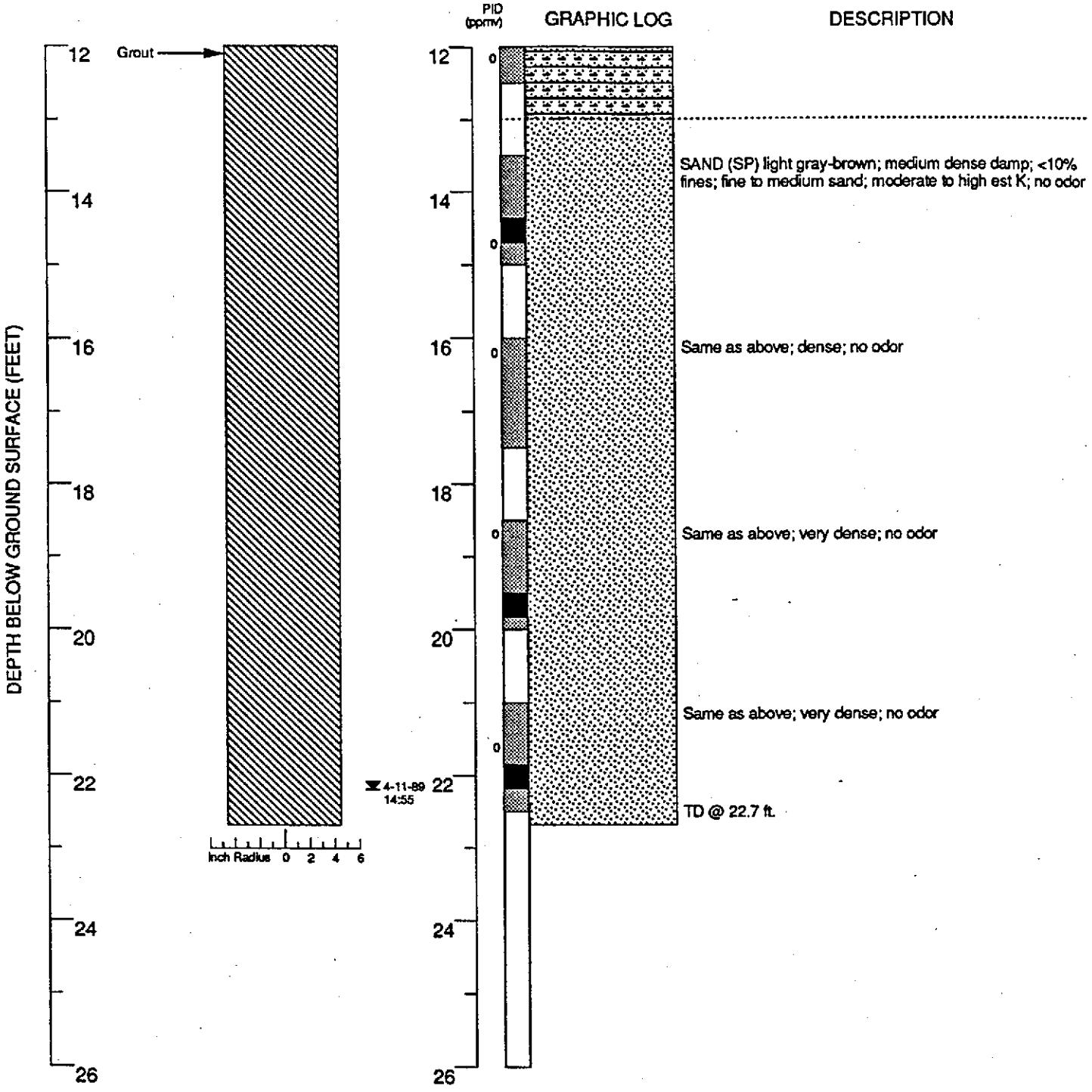
Boring Log B-6
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

BORING

6

WESTERN GEOLOGIC RESOURCES, INC.



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

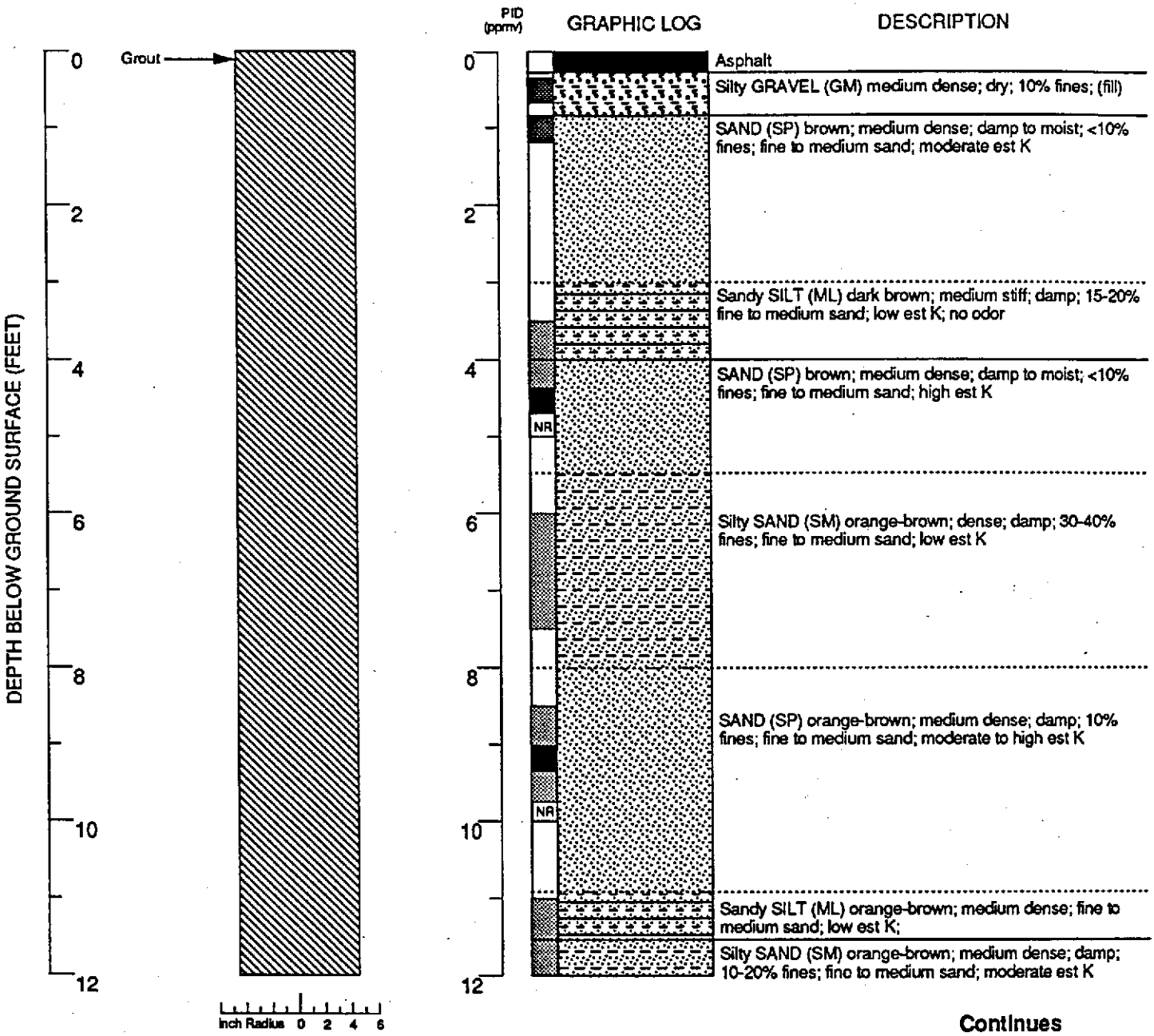
Boring Log B-6 (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

WESTERN GEOLOGIC RESOURCES, INC.

BORING

6



Continues

Logged by:	Dave Reichard	Drilling Company:	Exploration Geoservices	Well Head Completion:	None
Supervisor:	Tom Howard	Drilling Method:	9" Hollow stem auger	Type of Sampler:	2" split barrel
Dates Drilled:	4/12/89	Driller:	Dave Yeager	TD (Total Depth):	22.7 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR — No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity)

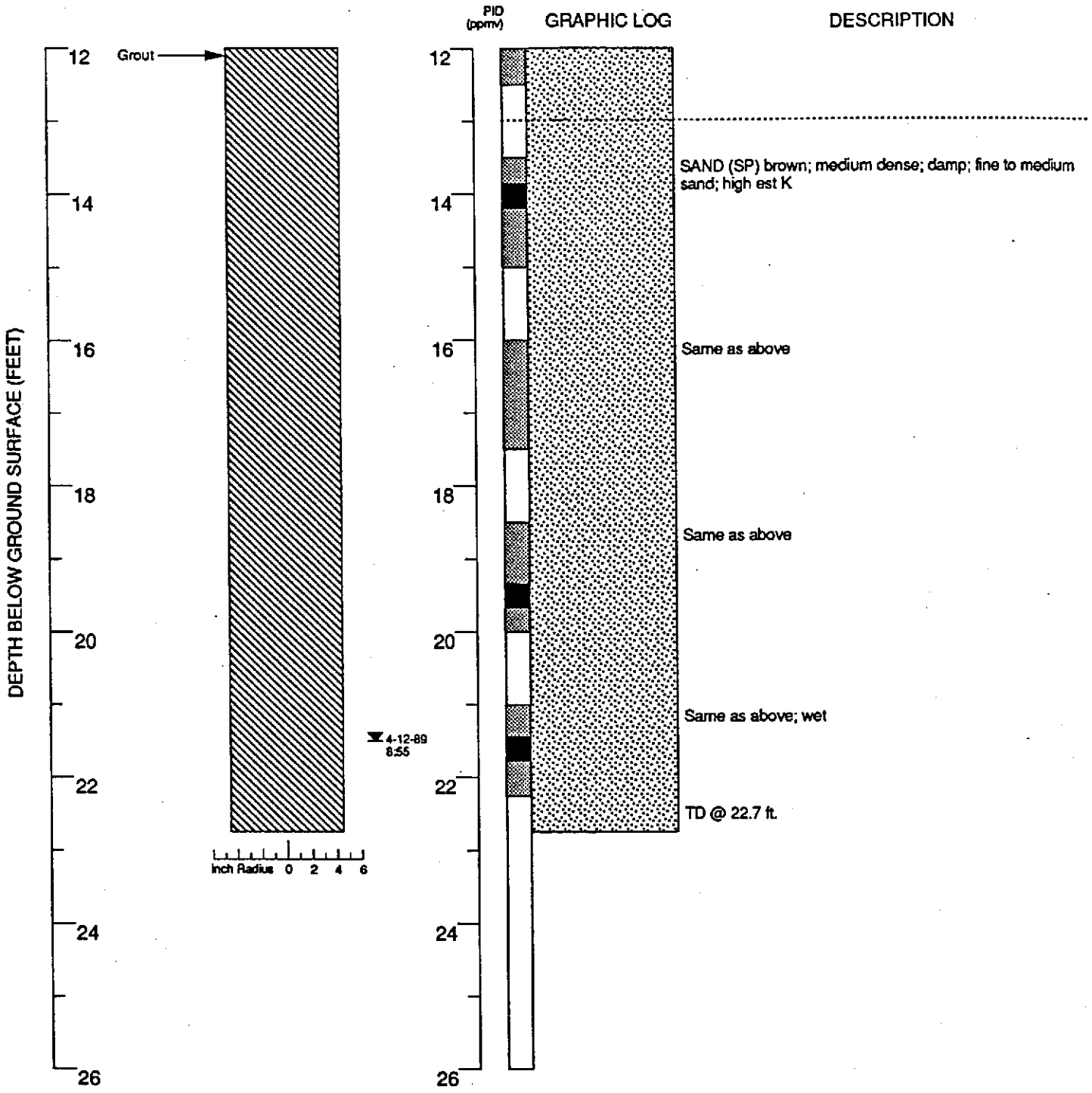
Boring Log B-7
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

BORING

7

WESTERN GEOLOGIC RESOURCES, INC.



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

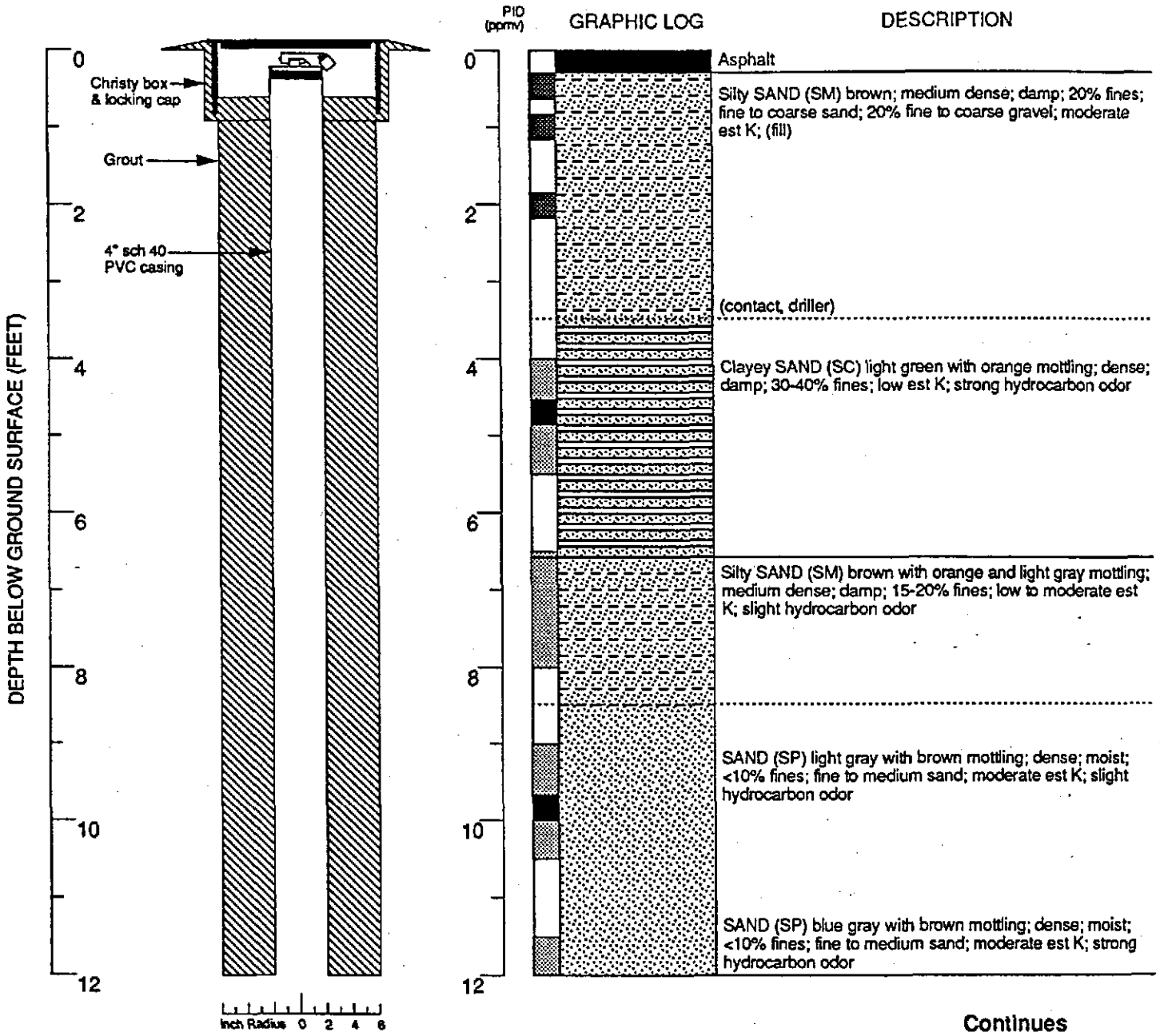
Boring Log B-7 (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

BORING

7

WESTERN GEOLOGIC RESOURCES, INC.



Continues

Logged by:	Dave Reichard	Drilling Company:	Exploration Geoservices	Well Head Completion:	Christy box & locking cap
Supervisor:	Tom Howard	Drilling Method:	12" Hollow stem auger	Type of Samplers:	2" & 1.4" split barrel
Dates Drilled:	4/12/89	Driller:	Dave Yeager	TD (Total Depth):	36.5 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR — No recovery
- Grab sample
- Contacts
- ..... Dotted where approximate
- – – – Dashed where uncertain
- ////// Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity)

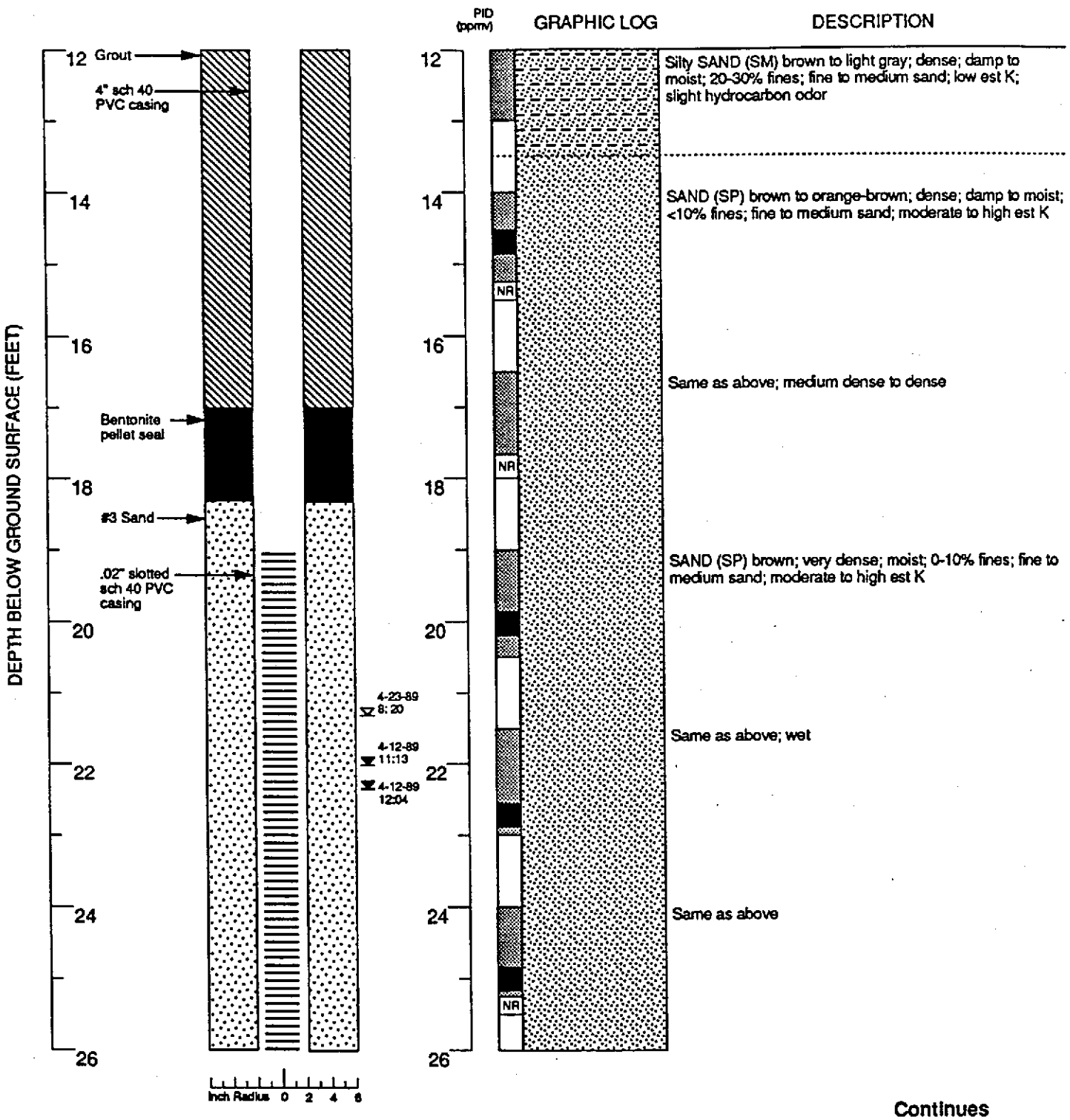
Boring Log and Well Completion Details
MW-4 (Boring B-8)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

MONITOR WELL

4

WESTERN GEOLOGIC RESOURCES, INC.



Continues

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

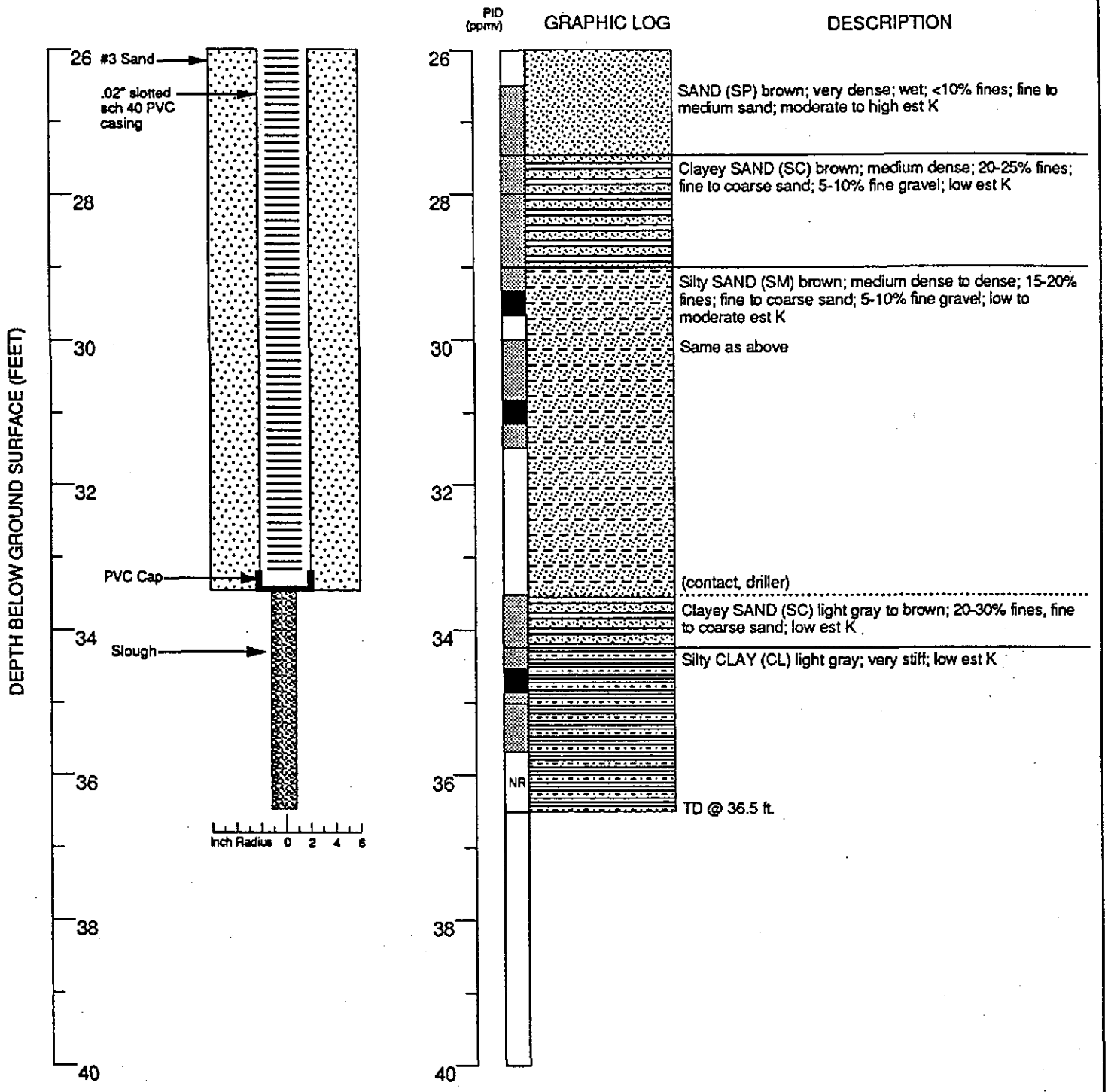
Boring Log and Well Completion Details
MW-4 (Boring B-8) (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

WESTERN GEOLOGIC RESOURCES, INC.

MONITOR WELL

4



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- No recovery
- grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity)

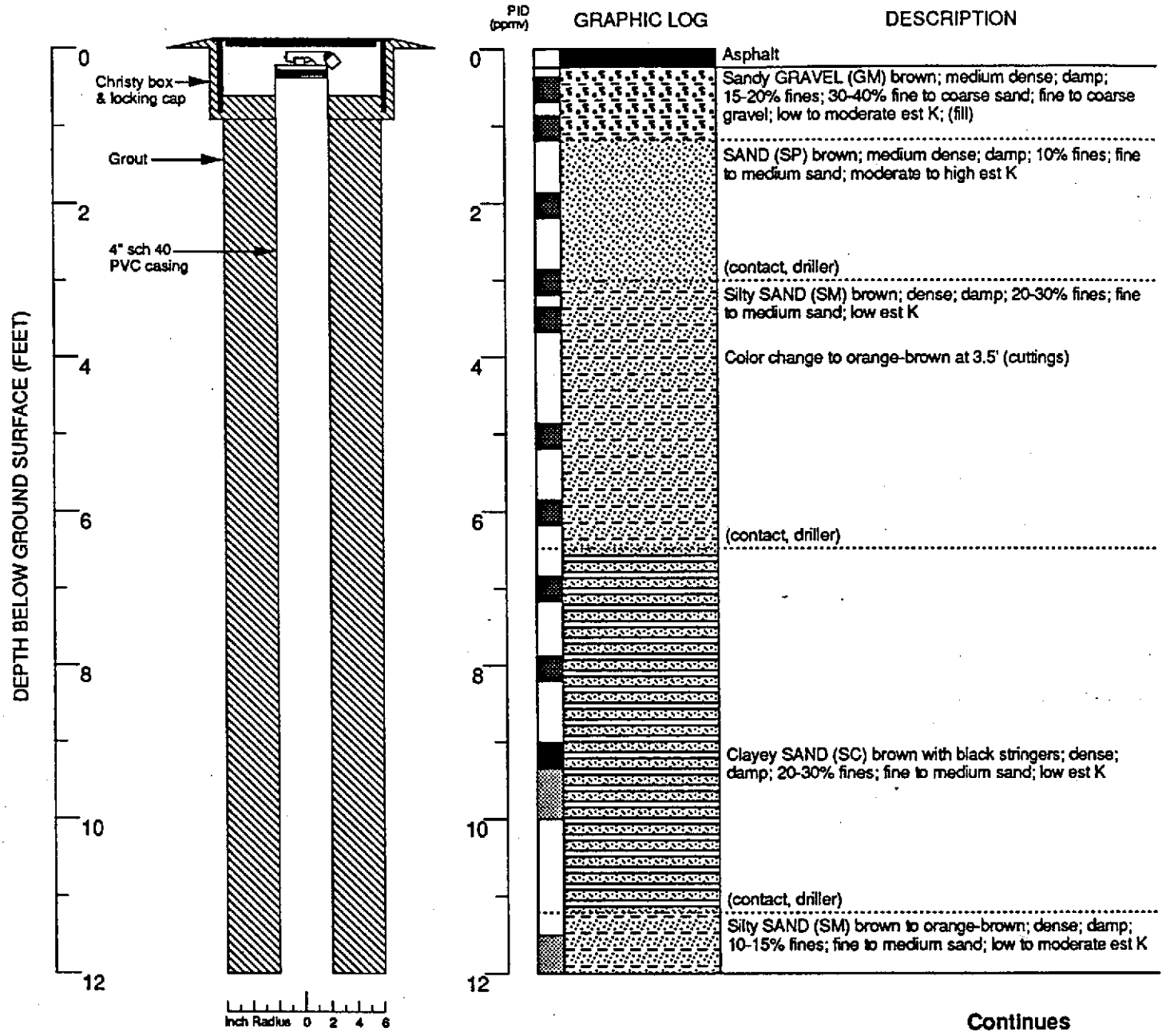
Boring Log and Well Completion Details
MW-4 (Boring B-8) (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

WESTERN GEOLOGIC RESOURCES, INC.

MONITOR WELL

4



Logged by:	Richard Baldwin	Drilling Company:	Exploration Geoservices	Well Head Completion:	Christy box & locking cap
Supervisor:	Tom Howard	Drilling Method:	12" Hollow stem auger	Type of Samplers:	2" & 1.4" split barrel
Dates Drilled:	4/14/89	Driller:	Dave Yeager/Troy Foster	TD (Total Depth):	34.0 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR: No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K: Estimated permeability (hydraulic conductivity)

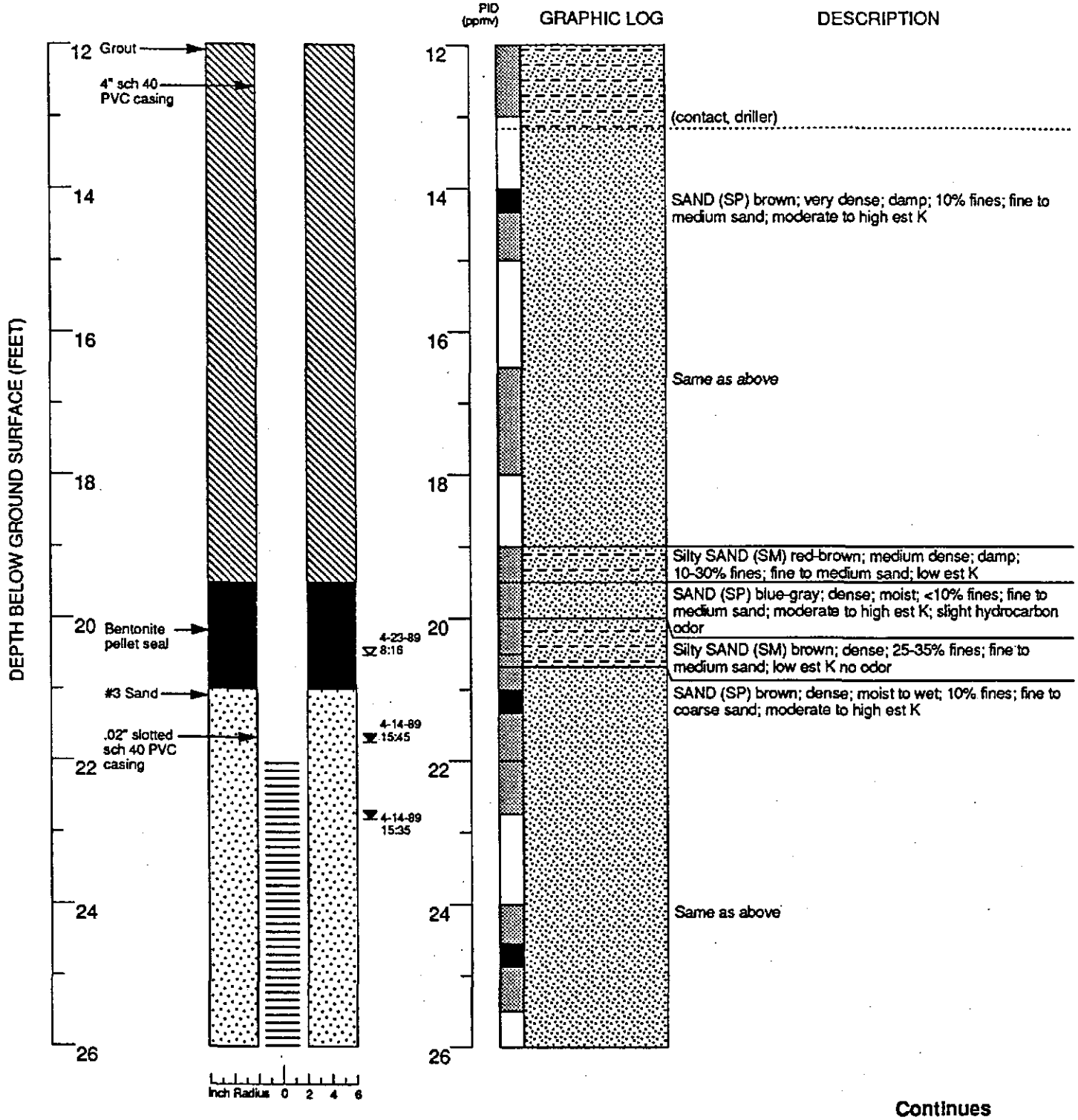
Boring Log and Well Completion Details
MW-5 (Boring B-9)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

MONITOR WELL

5

WESTERN GEOLOGIC RESOURCES, INC.



Continues

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

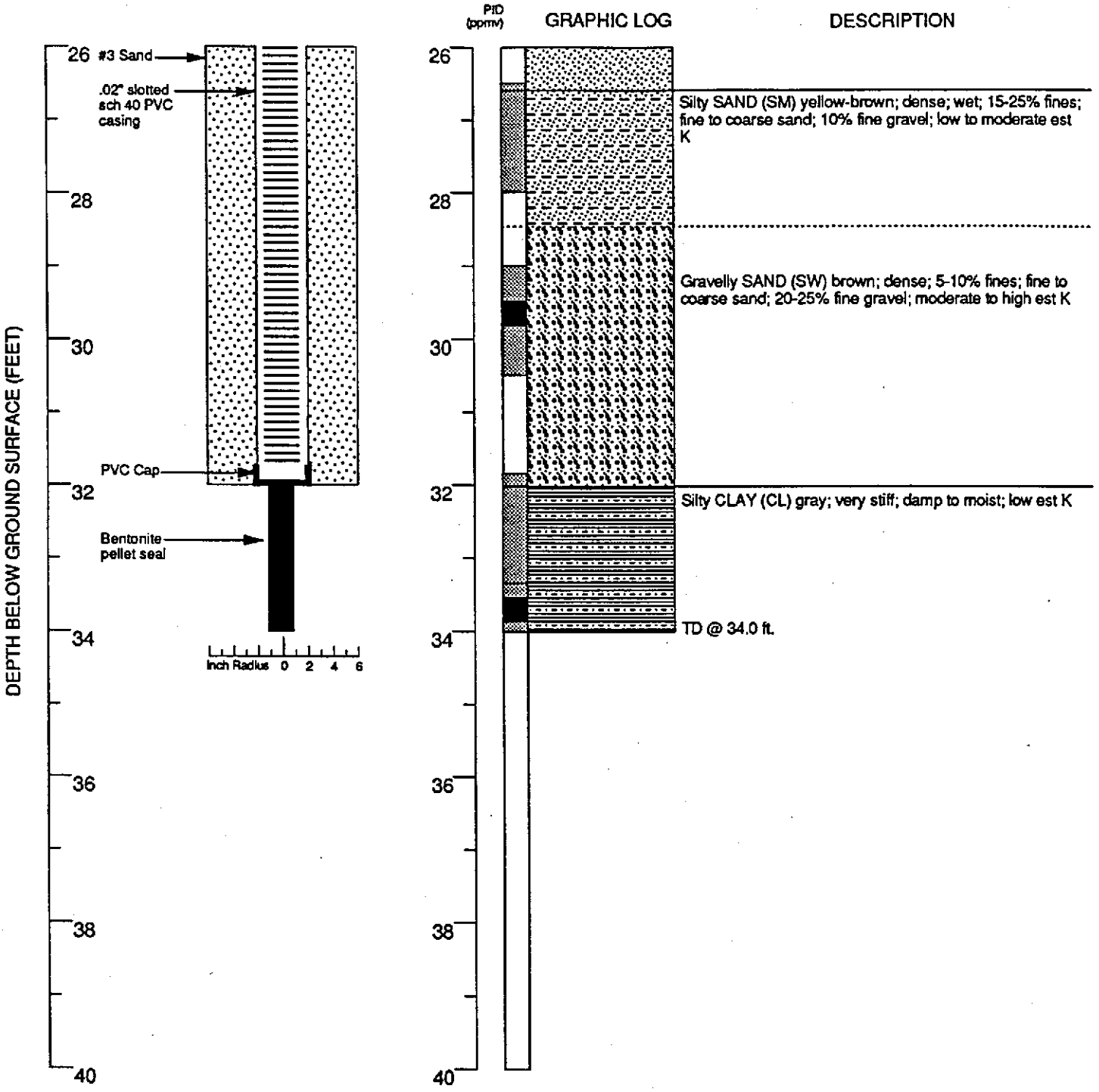
Boring Log and Well Completion Details
MW-5 (Boring B-9) (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

MONITOR WELL

5

WESTERN GEOLOGIC RESOURCES, INC.



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

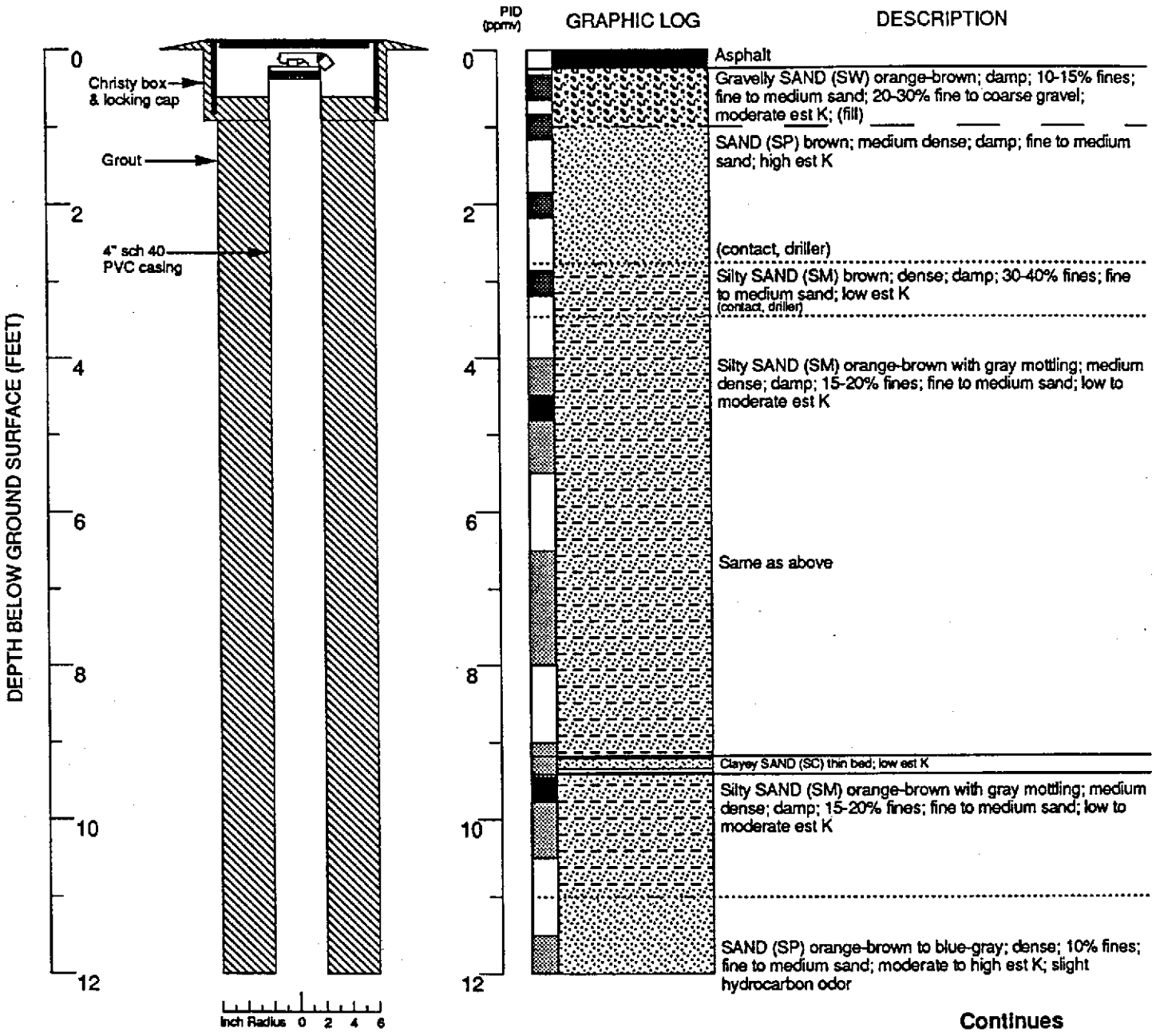
Boring Log and Well Completion Details
MW-5 (Boring B-9) (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

WESTERN GEOLOGIC RESOURCES, INC.

MONITOR WELL

5



Logged by:	Richard Baldwin	Drilling Company:	Exploration Geoservices	Well Head Completion:	Christy box & locking cap
Supervisor:	Tom Howard	Drilling Method:	12" Hollow stem auger	Type of Samplers:	2" & 1.4" split barrel
Dates Drilled:	4/13/89	Driller:	Dave Yeager/Troy Foster	TD (Total Depth):	29.5 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR: No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K: Estimated permeability (hydraulic conductivity)

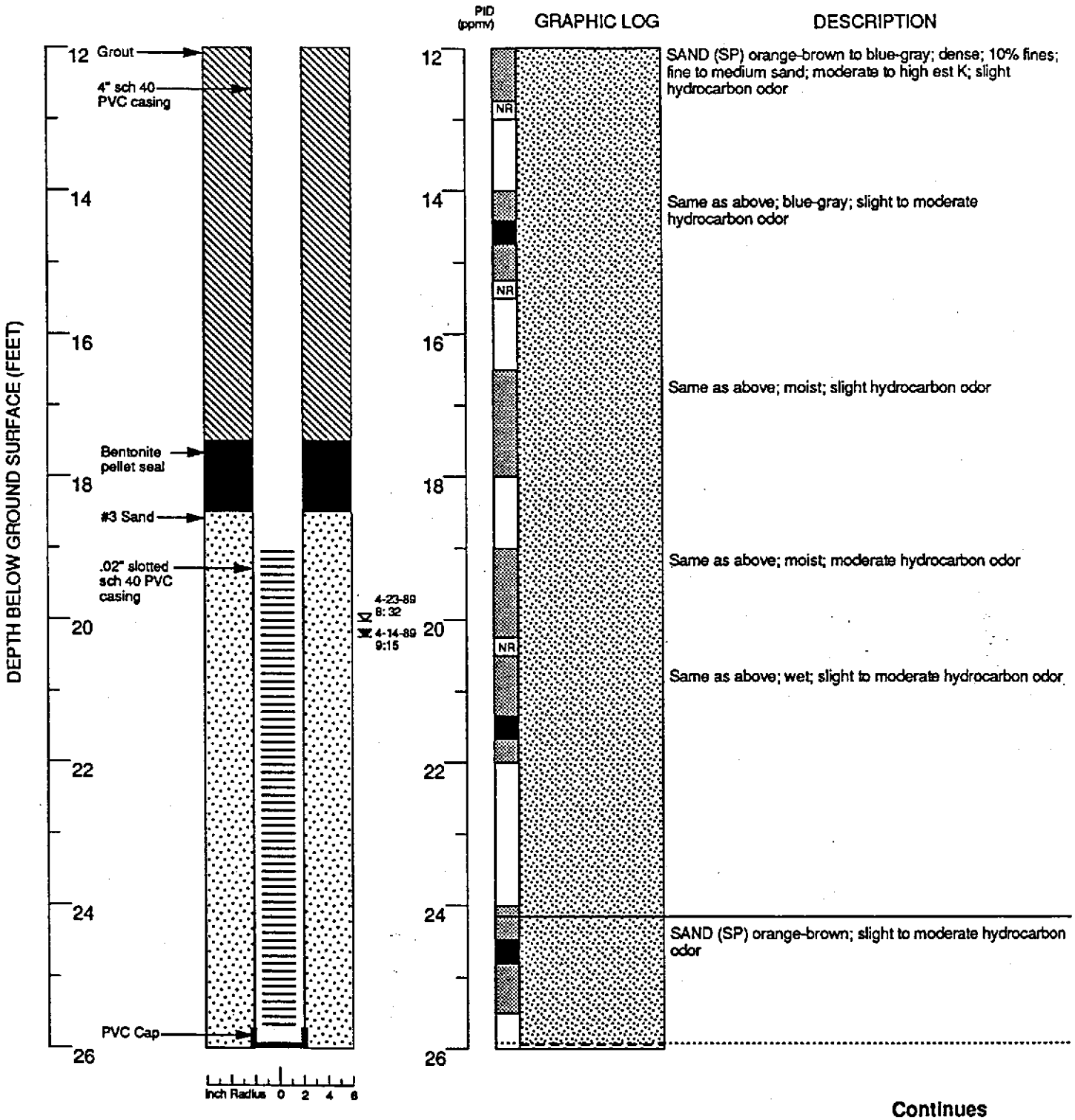
Boring Log and Well Completion Details
MW-6 (Boring B-10)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

WESTERN GEOLOGIC RESOURCES, INC.

MONITOR WELL

6



Continues

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

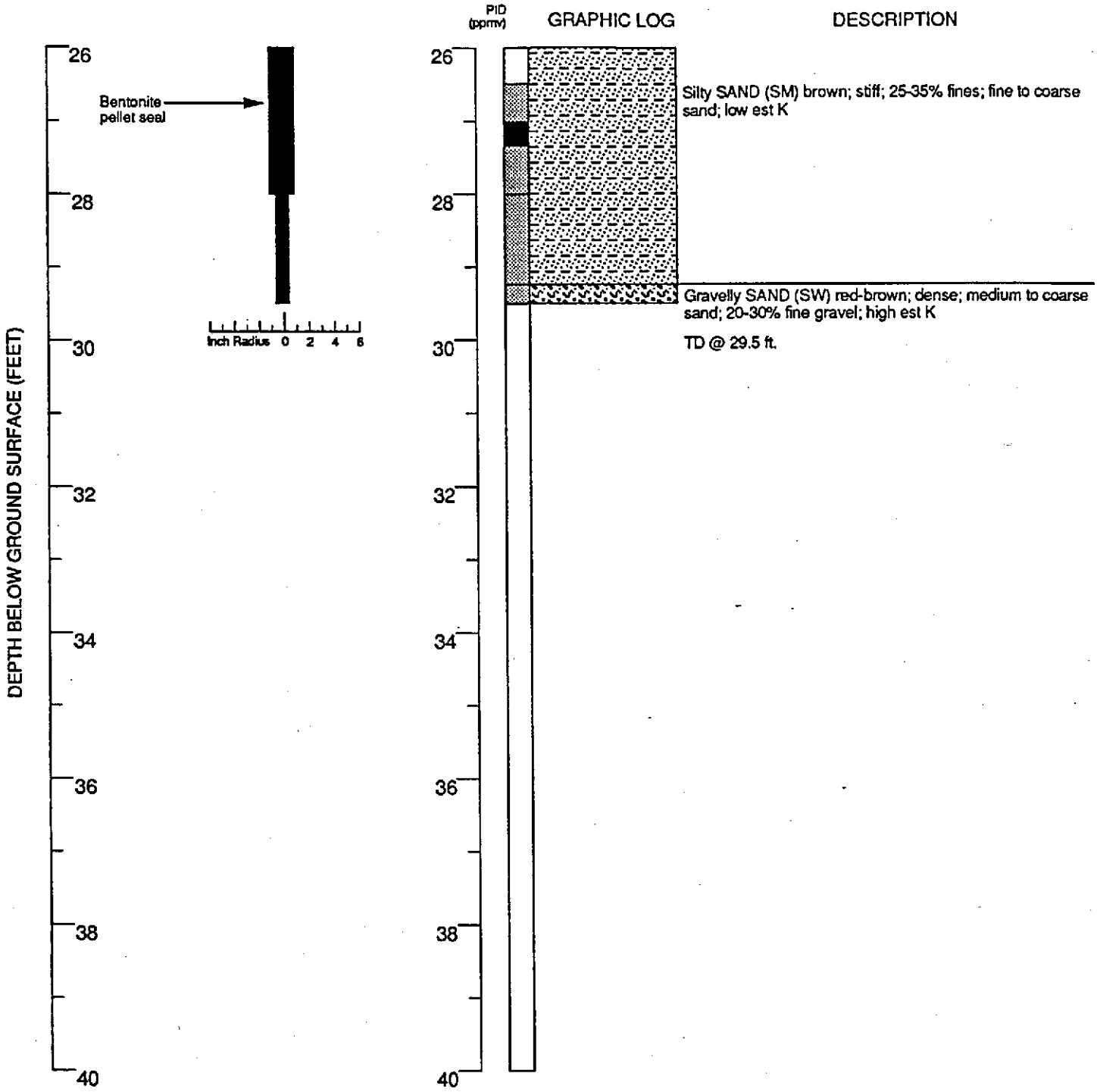
Boring Log and Well Completion Details
MW-6 (Boring B-10) (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

WESTERN GEOLOGIC RESOURCES, INC.

MONITOR WELL

6



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

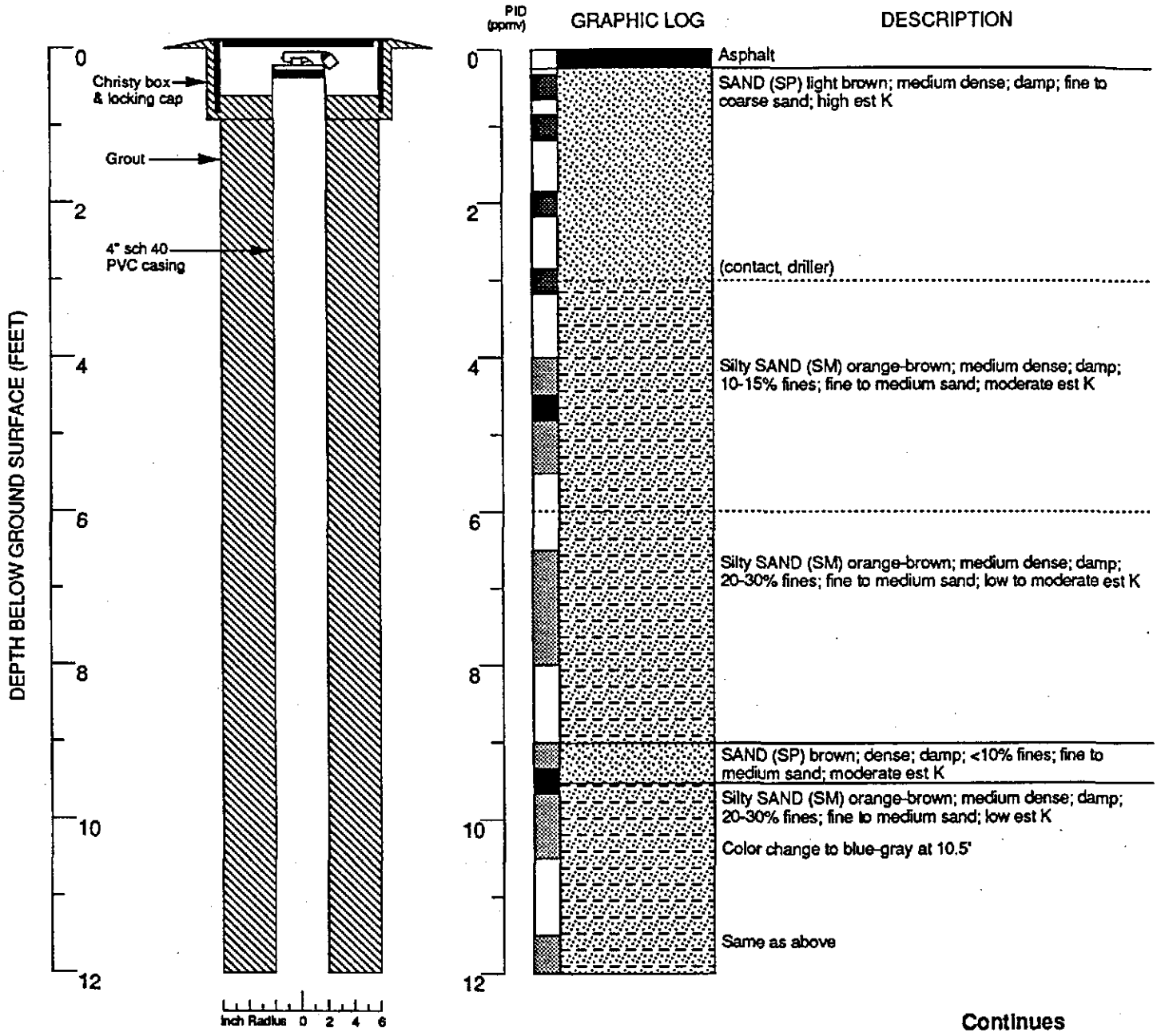
Boring Log and Well Completion Details
MW-6 (Boring B-10) (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

WESTERN GEOLOGIC RESOURCES, INC.

MONITOR WELL

6



Logged by:	Richard Baldwin	Drilling Company:	Exploration Geoservices	Well Head Completion:	Christy box & locking cap
Supervisor:	Tom Howard	Drilling Method:	12" Hollow stem auger	Type of Samplers:	2" & 1.4" split barrel
Dates Drilled:	4/13/89	Driller:	Dave Yeager/Troy Foster	TD (Total Depth):	31.0 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR — No recovery
- Grab sample
- Contacts
- ..... Dotted where approximate
- – – – Dashed where uncertain
- ////// Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity)

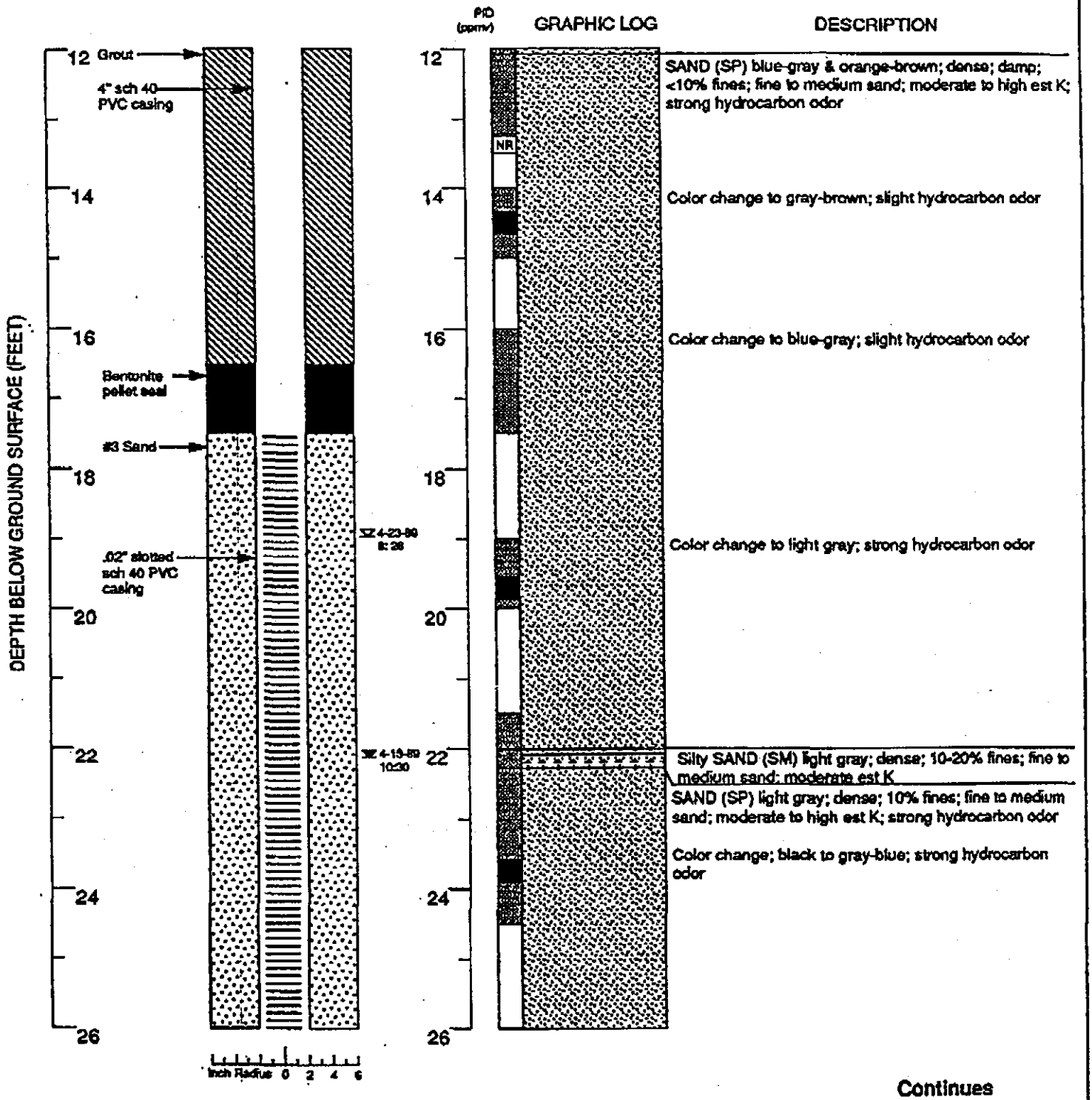
Boring Log and Well Completion Details
MW-7 (Boring B-11)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

MONITOR WELL

7

WESTERN GEOLOGIC RESOURCES, INC.



EXPLANATION

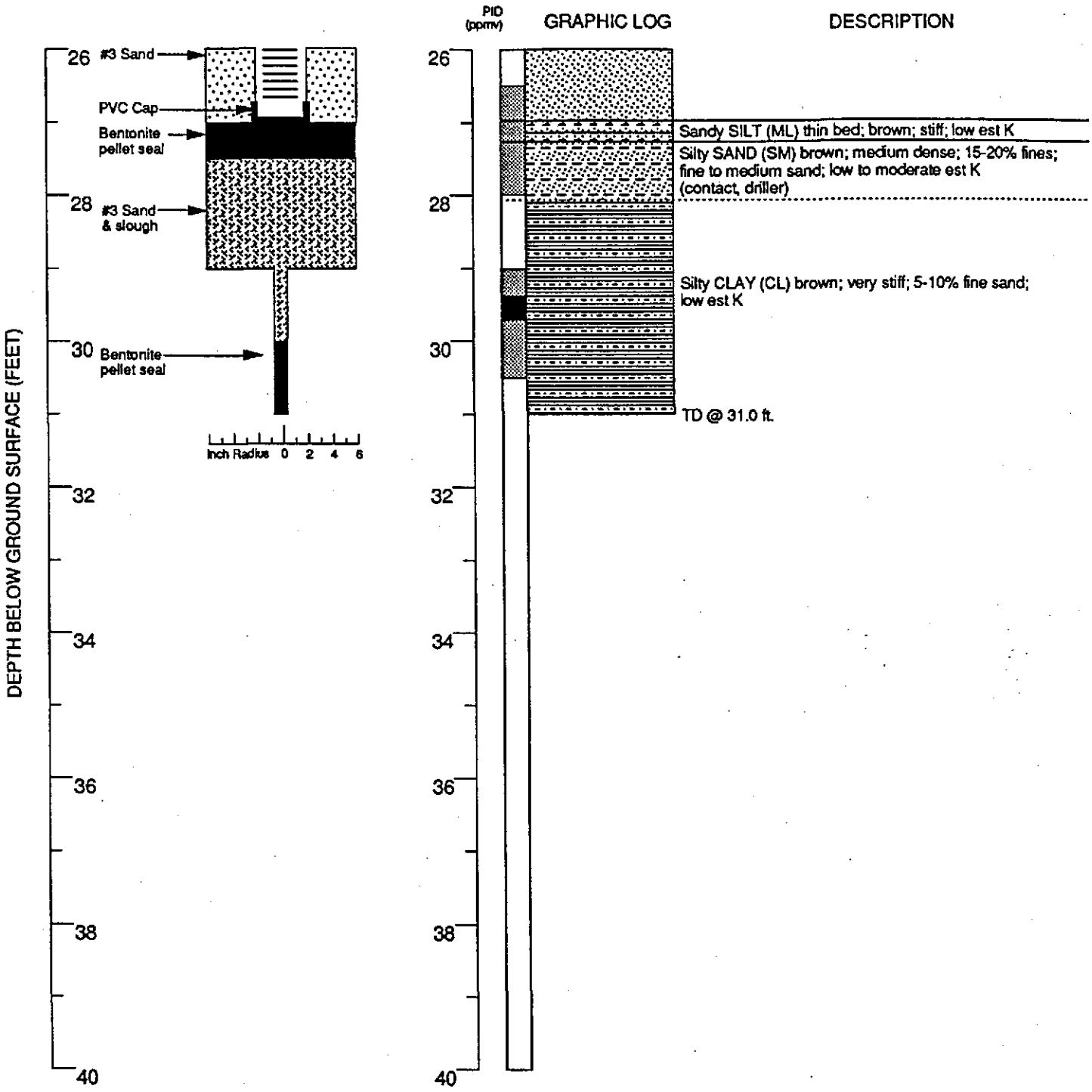
- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

Boring Log and Well Completion Details
MW-7 (Boring B-11) (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

MONITOR WELL

7



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

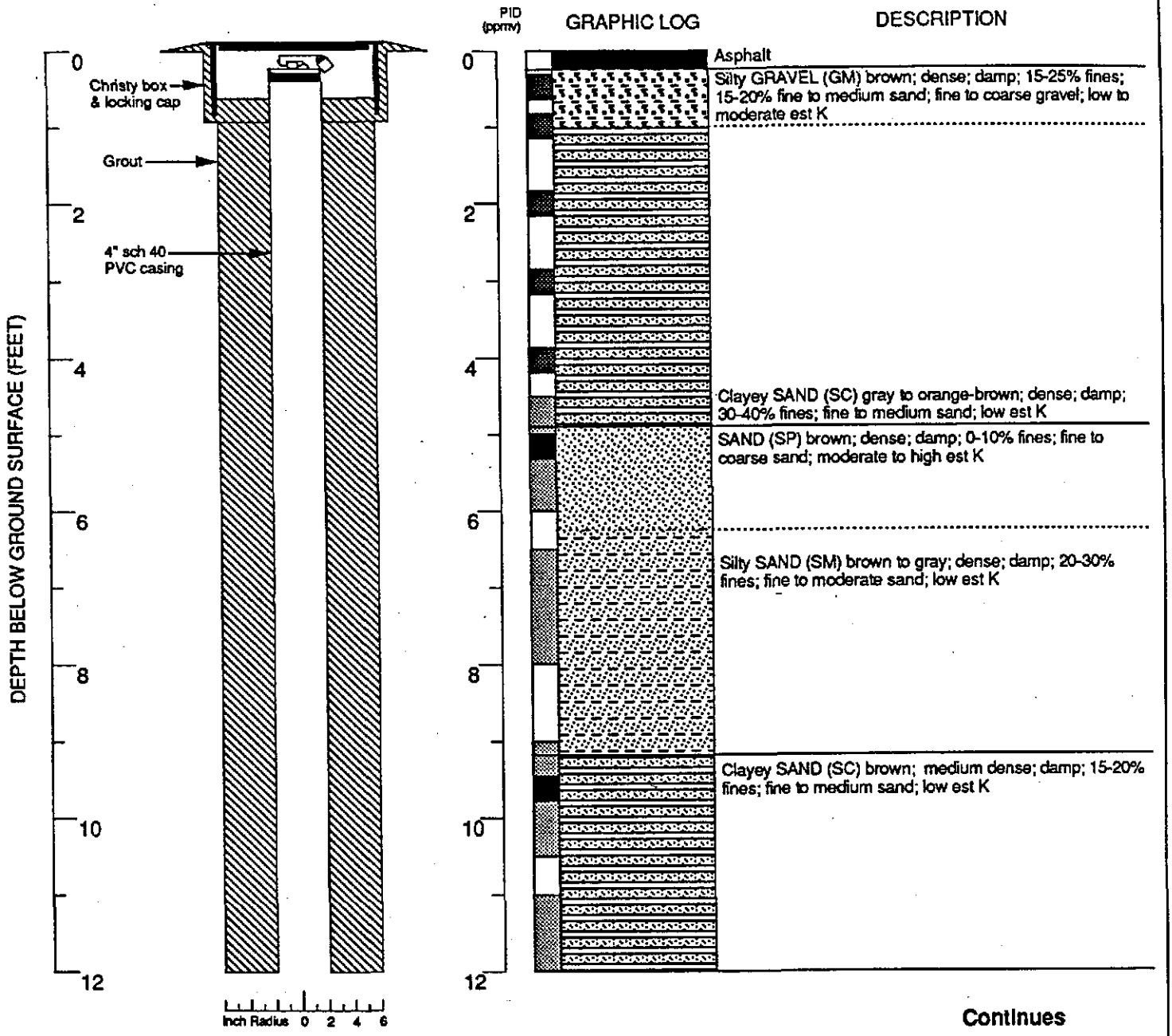
Boring Log and Well Completion Details
MW-7 (Boring B-11) (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

WESTERN GEOLOGIC RESOURCES, INC.

MONITOR WELL

7



Logged by:	Richard Baldwin	Drilling Company:	Exploration Geoservices	Well Head Completion:	Christy box & locking cap
Supervisor:	Tom Howard	Drilling Method:	12" Hollow stem auger	Type of Samplers:	2" & 1.4" split barrel
Dates Drilled:	4/19/89	Driller:	Dave Yeager/Troy Foster	TD (Total Depth):	28.0 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR: No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K: Estimated permeability (hydraulic conductivity)

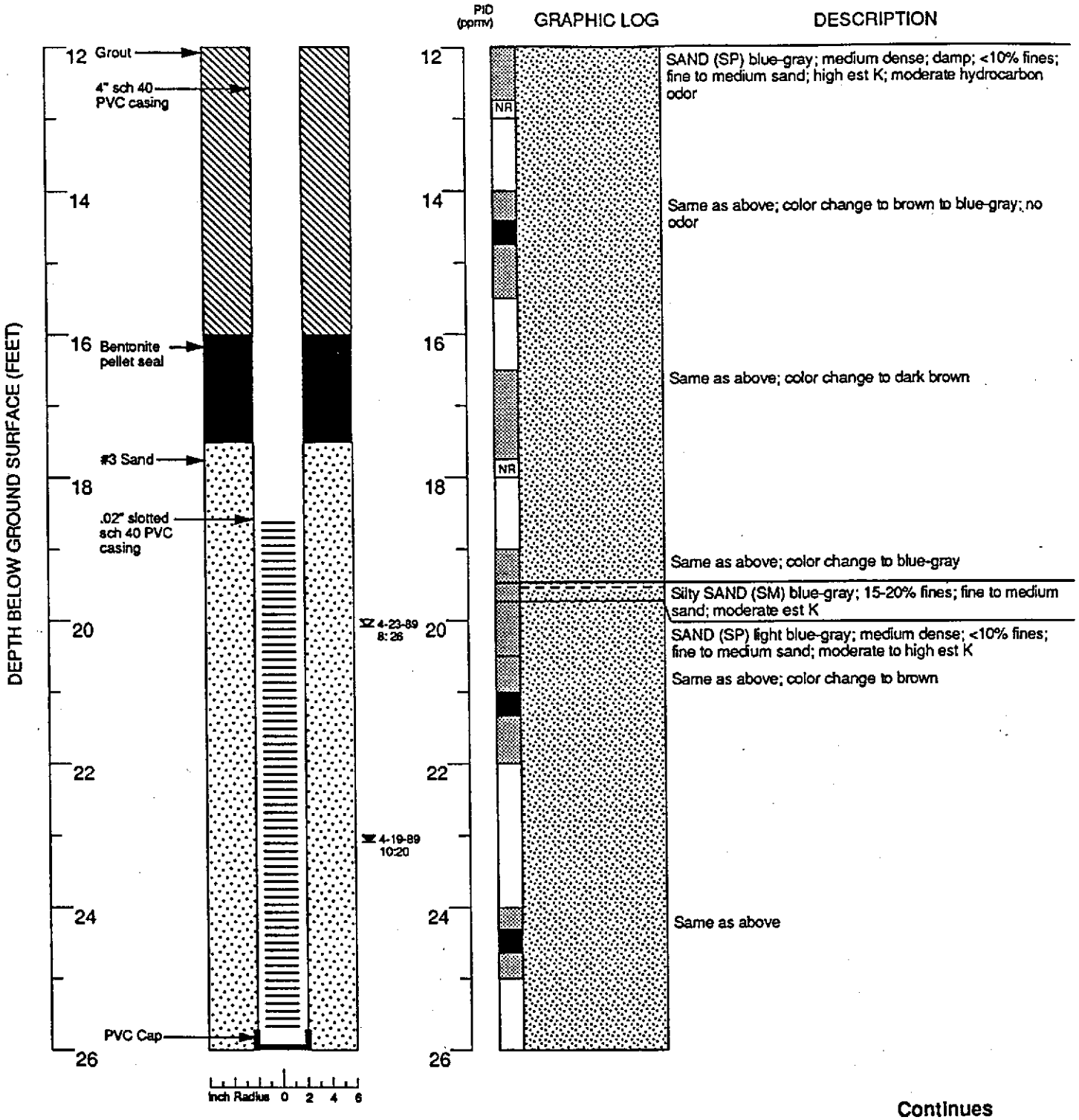
Boring Log and Well Completion Details
MW-8 (Boring B-12)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

MONITOR WELL

8

WESTERN GEOLOGIC RESOURCES, INC.



Continues

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

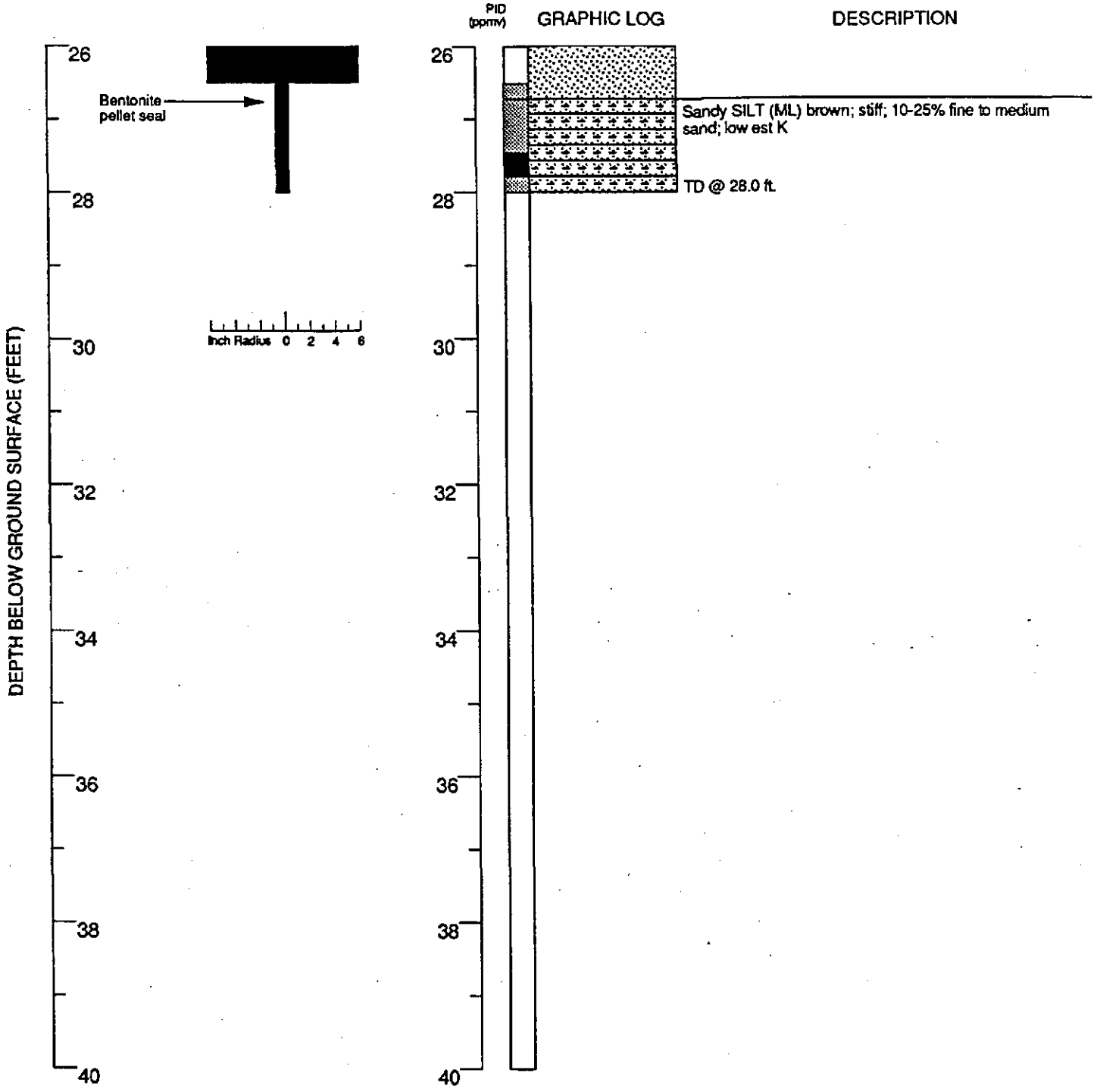
Boring Log and Well Completion Details
MW-8 (Boring B-12) (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

WESTERN GEOLOGIC RESOURCES, INC.

MONITOR WELL

8



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- NR No recovery
- Grab sample
- Contacts
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K Estimated permeability (hydraulic conductivity)

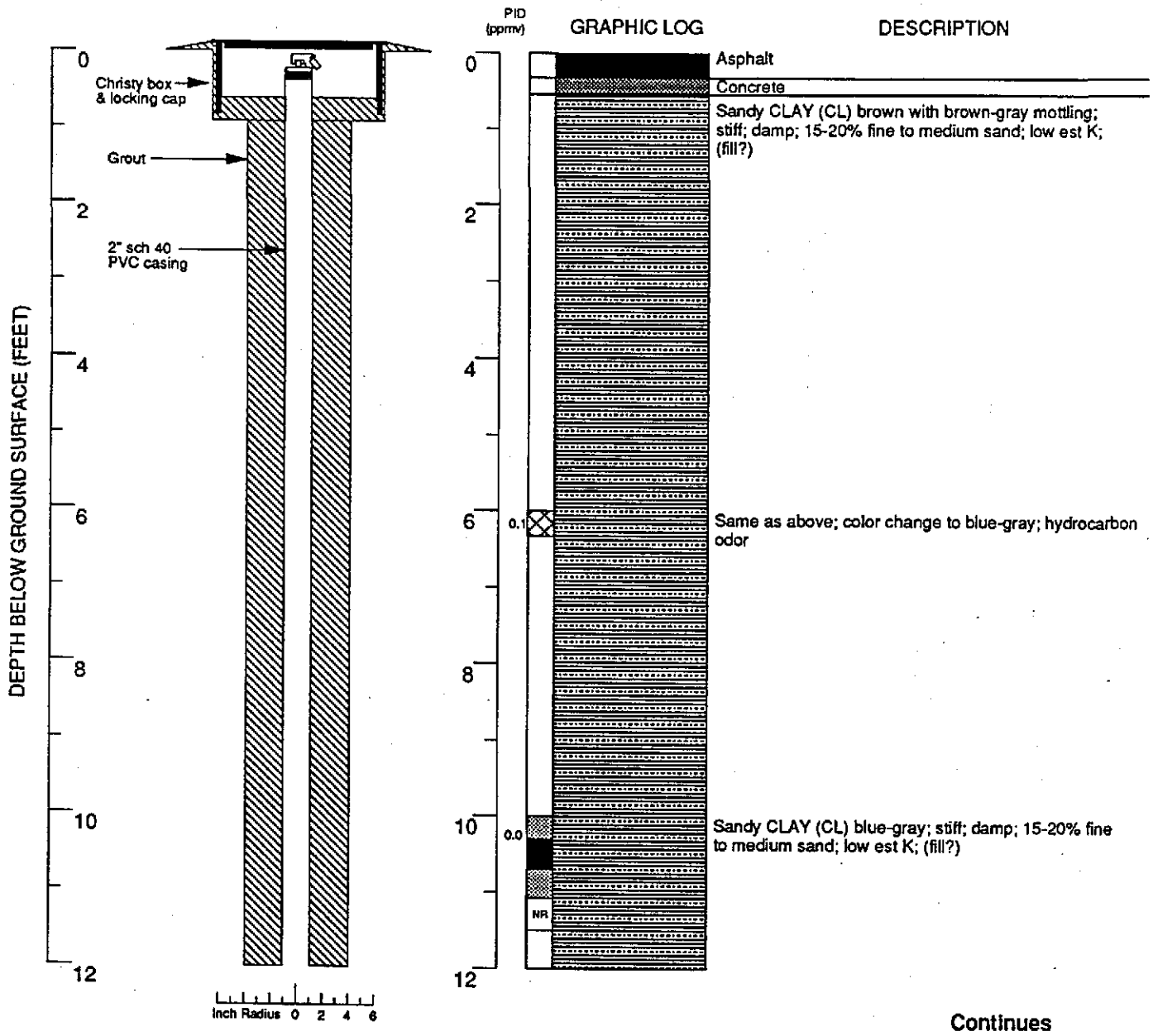
Boring Log and Well Completion Details
MW-8 (Boring B-12) (cont.)
WGR Project No.: 1-012.02

Chevron Facility #90020
Oakland, CA

WESTERN GEOLOGIC RESOURCES, INC.

MONITOR WELL

8



Logged by:	Julie Noffke	Drilling Company:	B & F Drilling Co., Inc.	Well Head Completion:	Christy box & locking cap
Project Mgr:	Len Niles	Drilling Method:	8" Hollow stem auger	Type of Sampler:	2" split barrel
Dates Drilled:	6/20/90	Driller:	Bruce Cox	TD (Total Depth):	27.5 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

- est K: Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR: No recovery

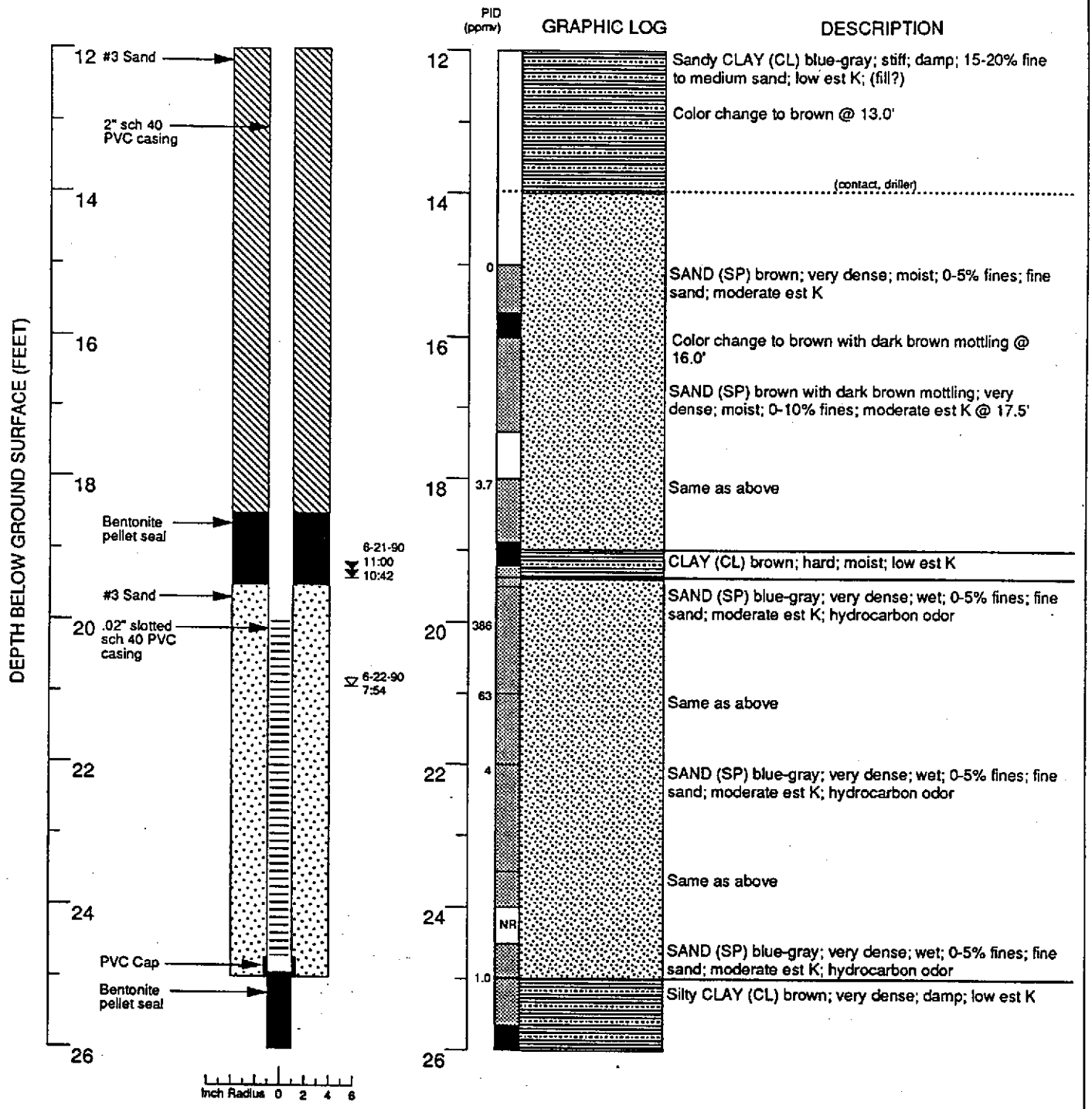
Boring Log and Well Completion Details
MW-9 (Boring B-16)

Chevron Service Station #90020
Oakland, California

MONITOR WELL
9

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04



Continues

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary

NR — No recovery

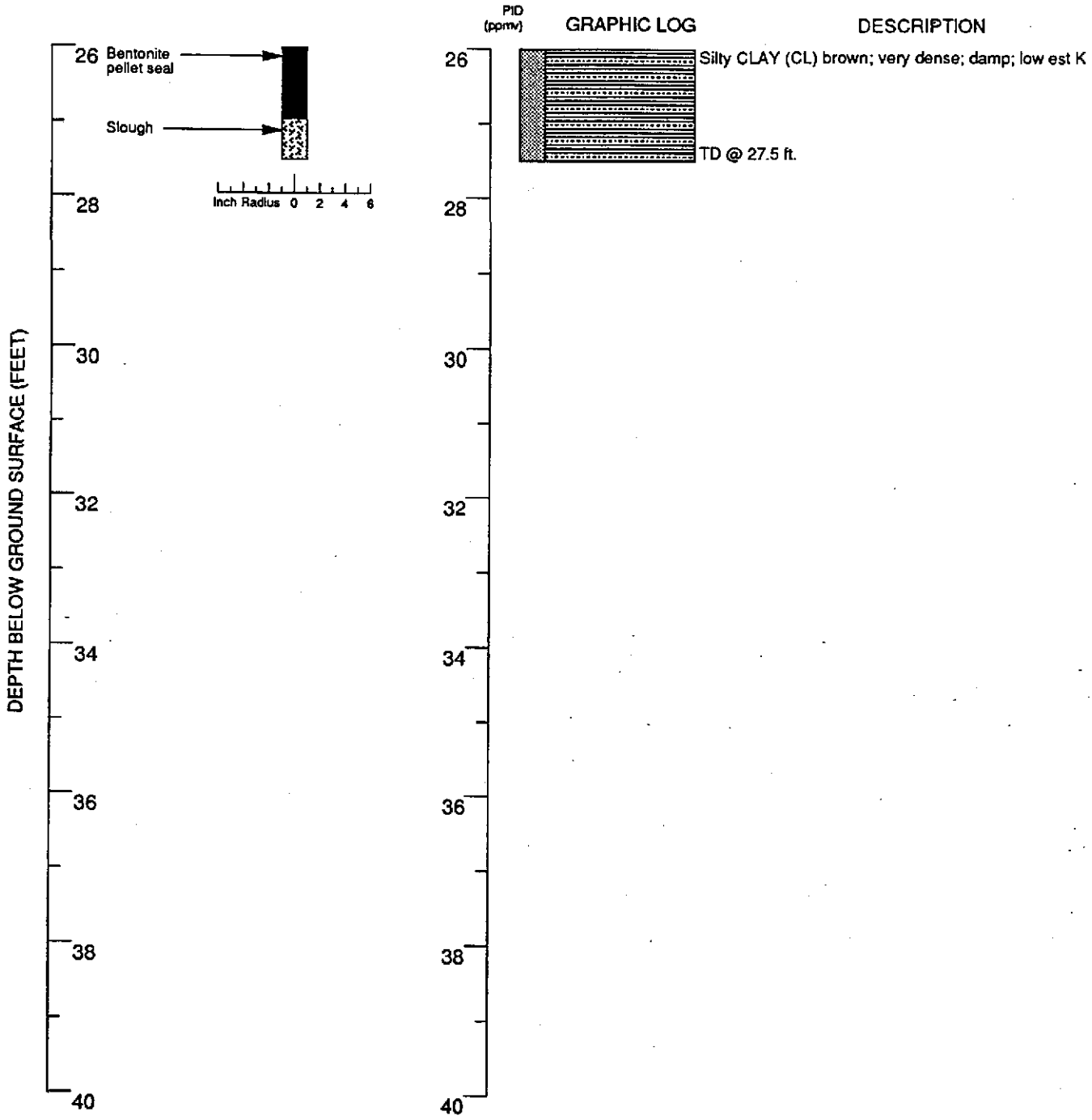
Boring Log and Well Completion Details
MW-9 (Boring B-16)

Chevron Service Station #90020
Oakland, California

MONITOR WELL
9

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary

NR — No recovery

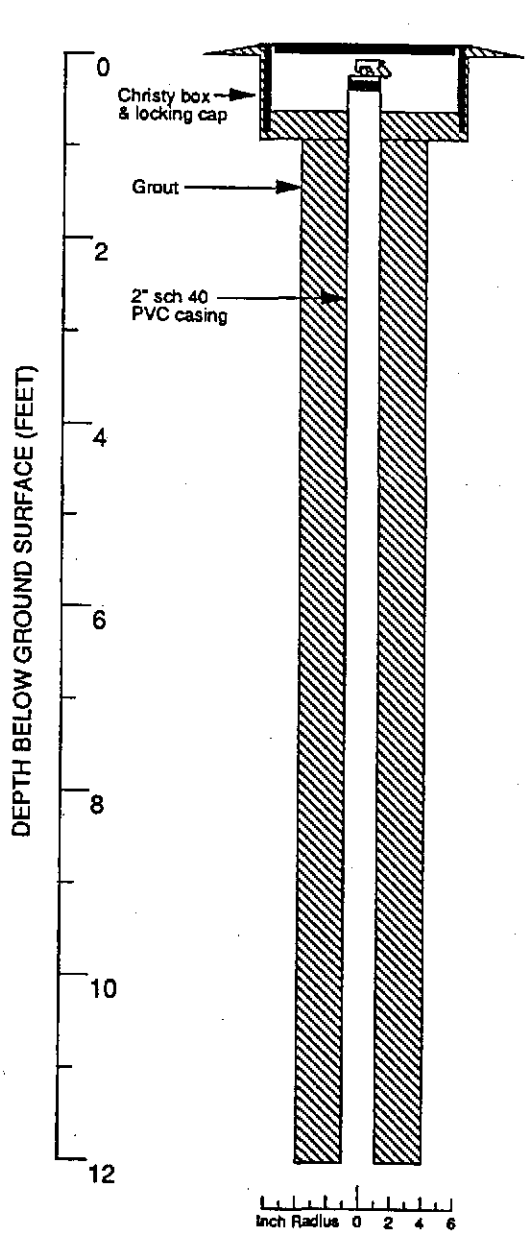
Boring Log and Well Completion Details
MW-9 (Boring B-16)

Chevron Service Station #90020
Oakland, California

MONITOR WELL
9

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04



PID (ppmv)	GRAPHIC LOG	DESCRIPTION
0		Asphalt
		Concrete
2		Sandy CLAY (CL) brown; stiff; damp; 10-15% fine sand; low est K; (from cuttings)(fill?)
4		Same as above; 15-25% sand @ 3.5'
1.5		Sandy CLAY (CL) brown with gray mottling; stiff; damp; 25-35% fine sand; low est K; (from cuttings) (fill?)
6		
8		Same as above; damp; 15-20% sand @ 8.0'; (from cuttings)(fill?)
10		Sandy CLAY (CL) brown with gray mottling; very stiff; damp; 15-20% fine sand; low est K; (fill?)
1.0		
NR		
12		

Continues

Logged by:	Justin Power	Drilling Company:	B & F Drilling Co., Inc.	Well Head Completion:	Christy box & locking cap
Project Mgr:	Len Niles	Drilling Method:	8" Hollow stem auger	Type of Sampler:	2" split barrel
Dates Drilled:	6/20/90	Driller:	Bruce Cox	TD (Total Depth):	27.0 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

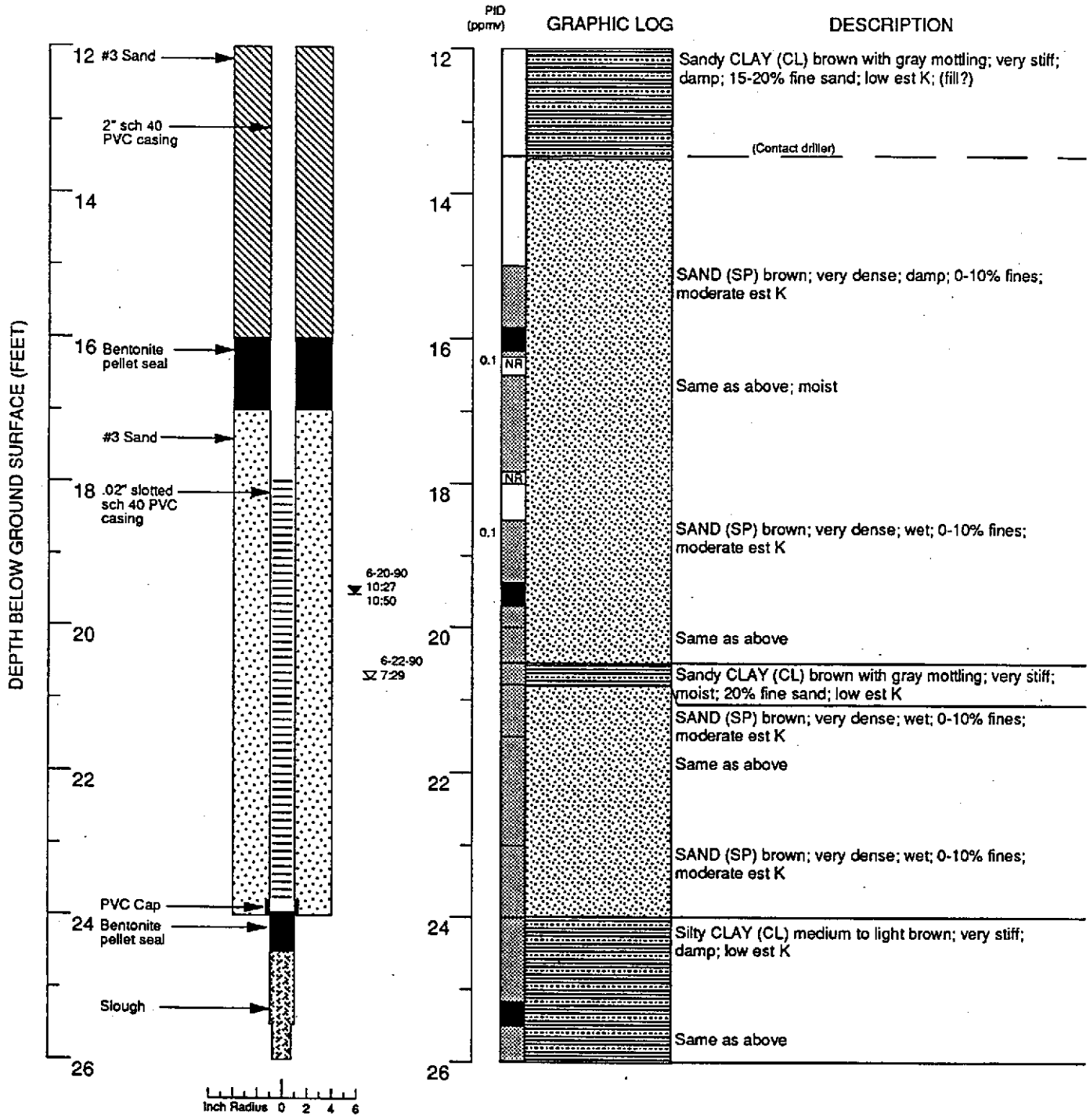
Boring Log and Well Completion Details
MW-10 (Boring B-15)

Chevron Service Station #90020
Oakland, California

MONITOR WELL
10

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04



Continues

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

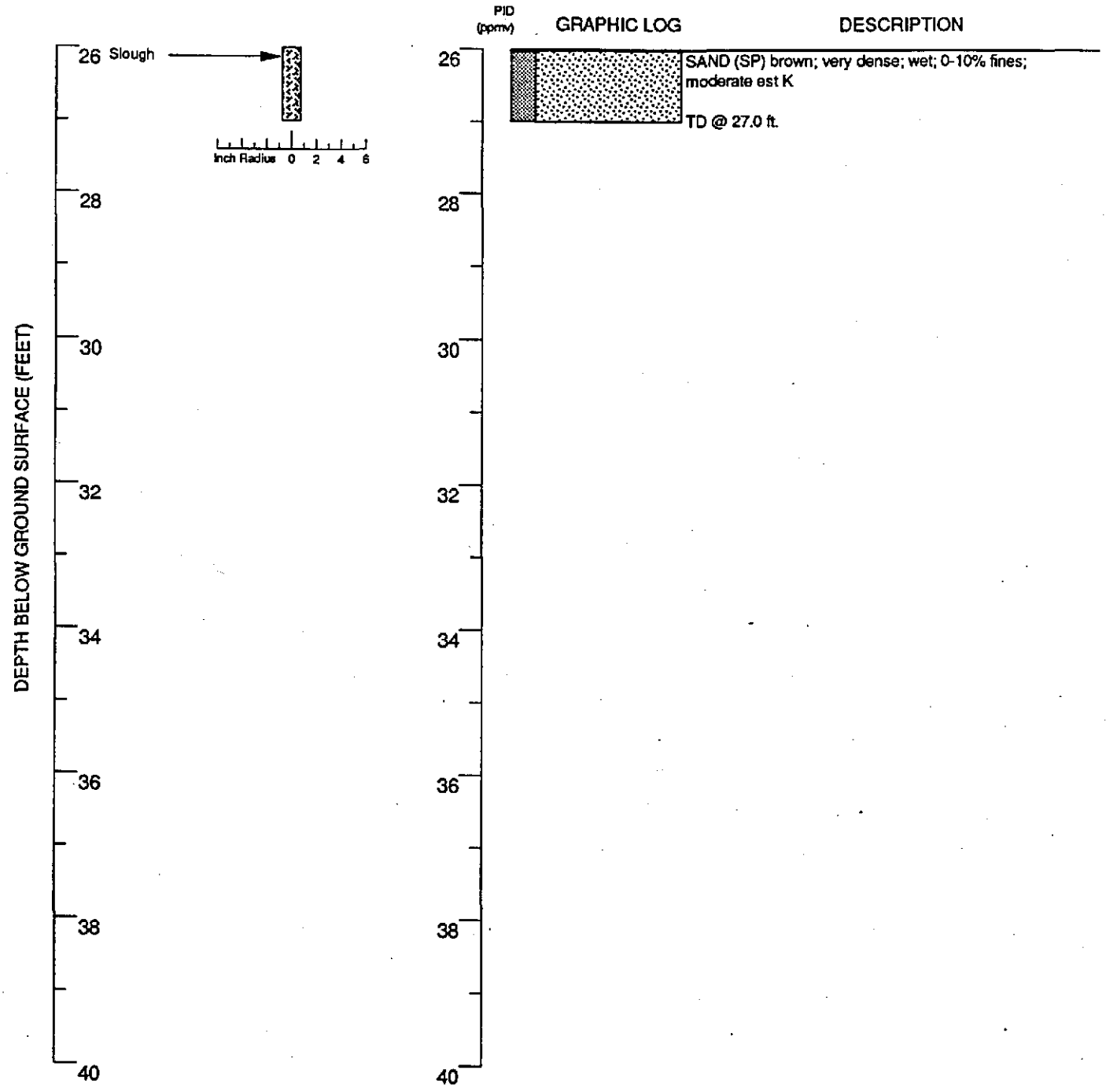
Boring Log and Well Completion Details
MW-10 (Boring B-15)

Chevron Service Station #90020
Oakland, California

MONITOR WELL
10

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

- est K: Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR: No recovery

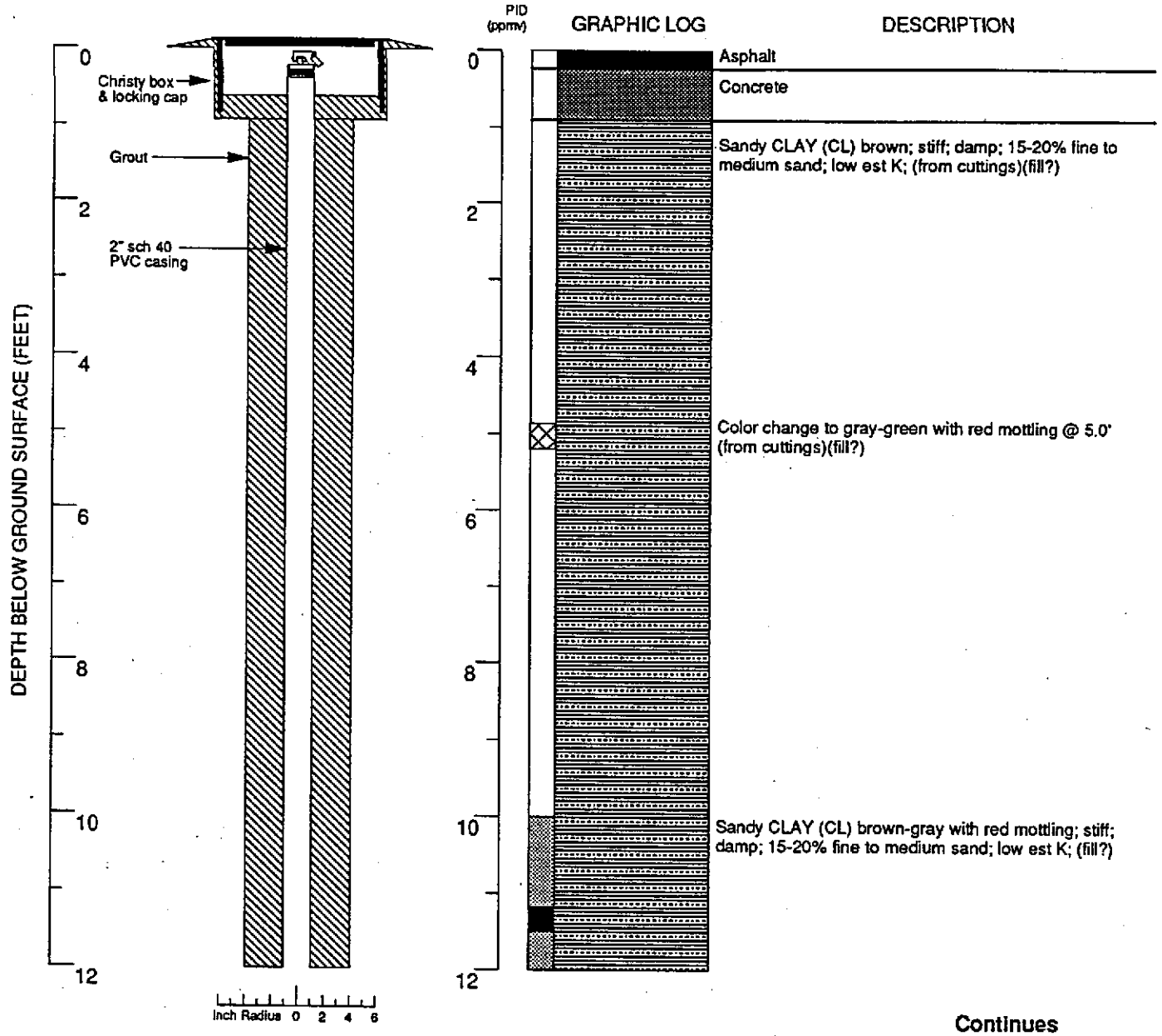
Boring Log and Well Completion Details
MW-10 (Boring B-15)

Chevron Service Station #90020
Oakland, California

MONITOR WELL
10

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04



Logged by:	Julie Noffke	Drilling Company:	B & F Drilling Co., Inc.	Well Head Completion:	Christy box & locking cap
Project Mgr:	Len Niles	Drilling Method:	8" Hollow stem auger	Type of Sampler:	2" split barrel
Dates Drilled:	6/18/90	Driller:	Bruce Cox	TD (Total Depth):	29.5 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample
- Contacts: Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

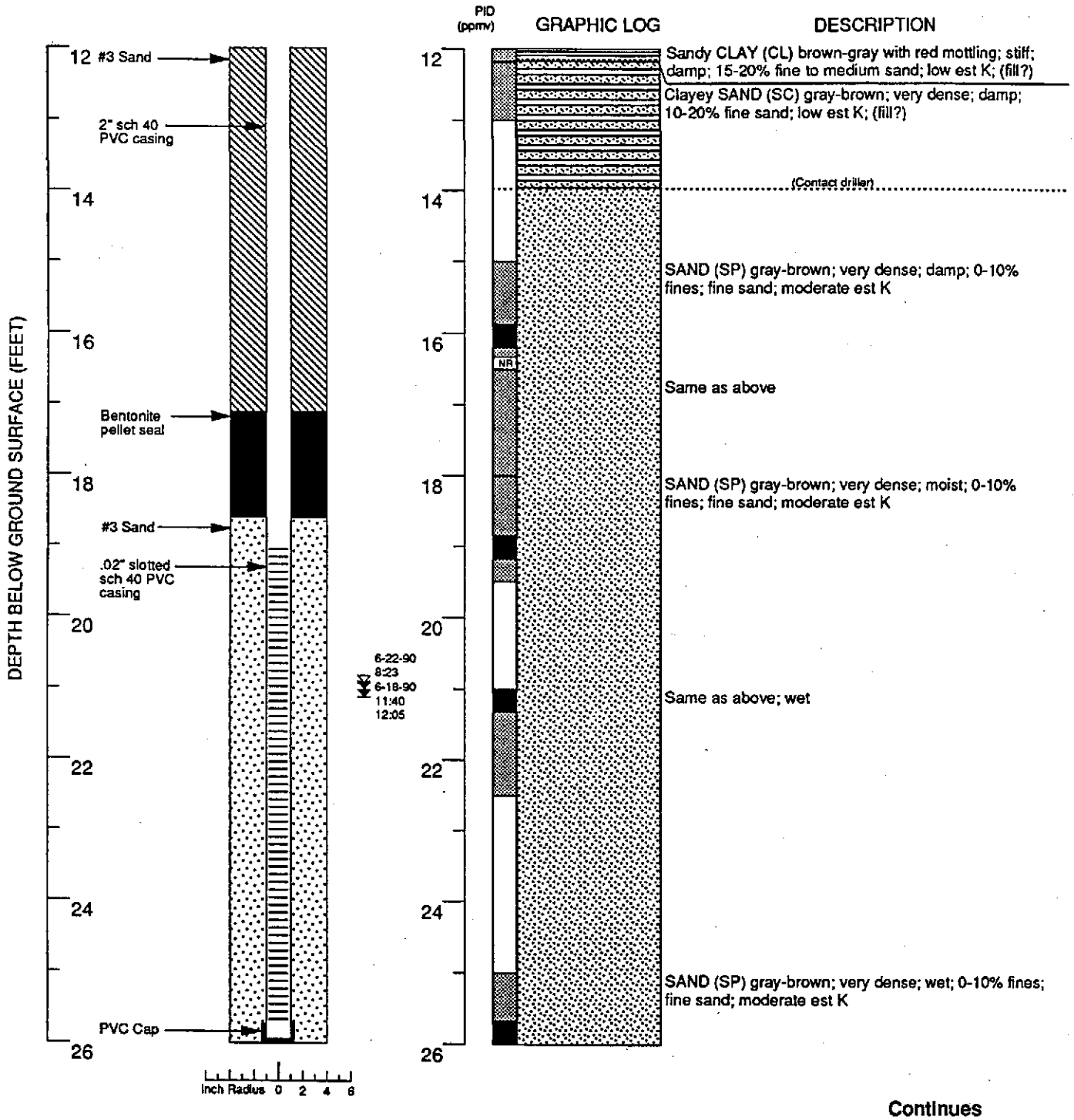
Boring Log and Well Completion Details
MW-11 (Boring B-13)

Chevron Service Station #90020
Oakland, California

MONITOR WELL
11

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample
- Contacts: Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

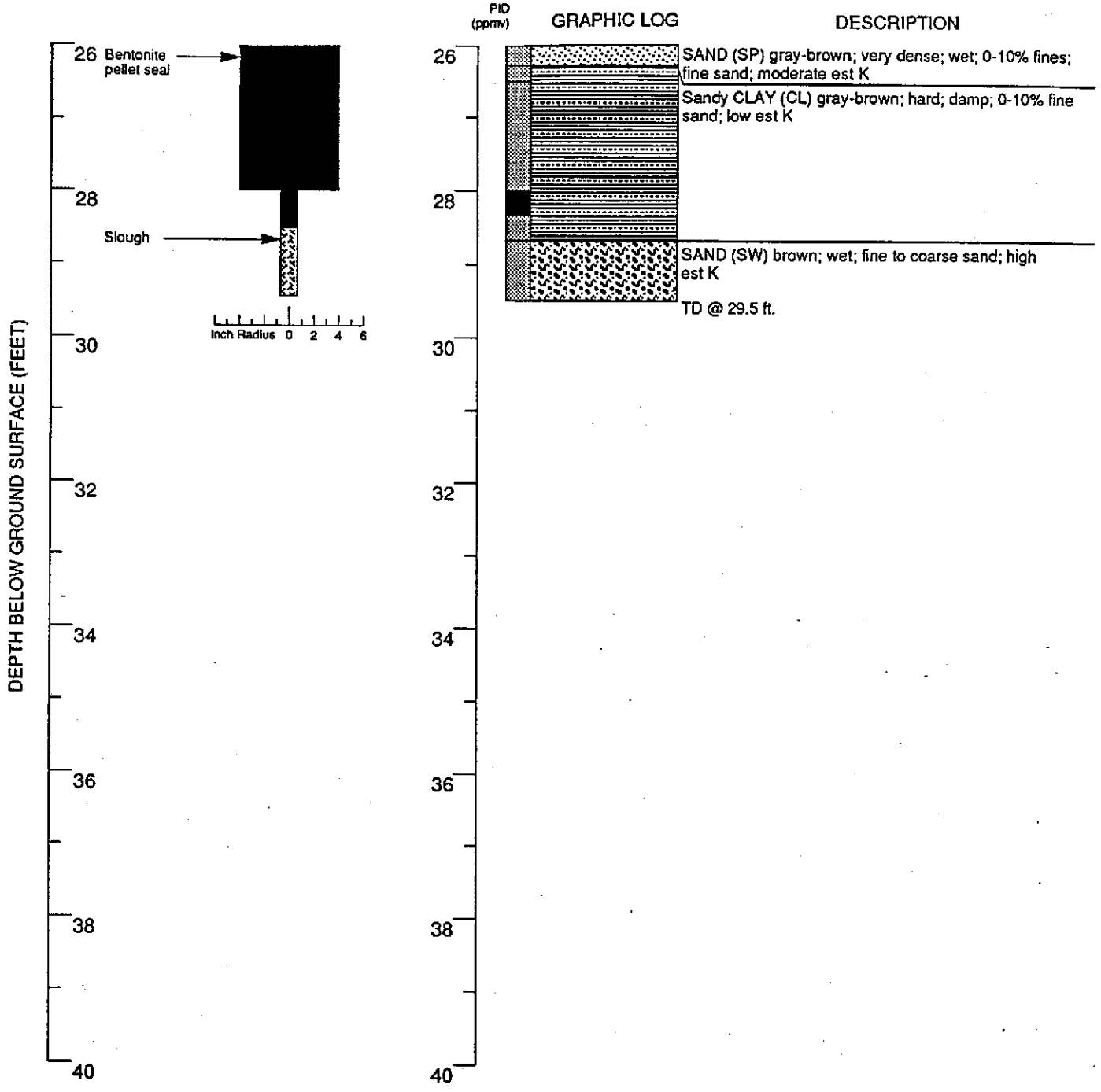
Boring Log and Well Completion Details
MW-11 (Boring B-13)

Chevron Service Station #90020
Oakland, California

MONITOR WELL
11

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample
- Contacts: Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

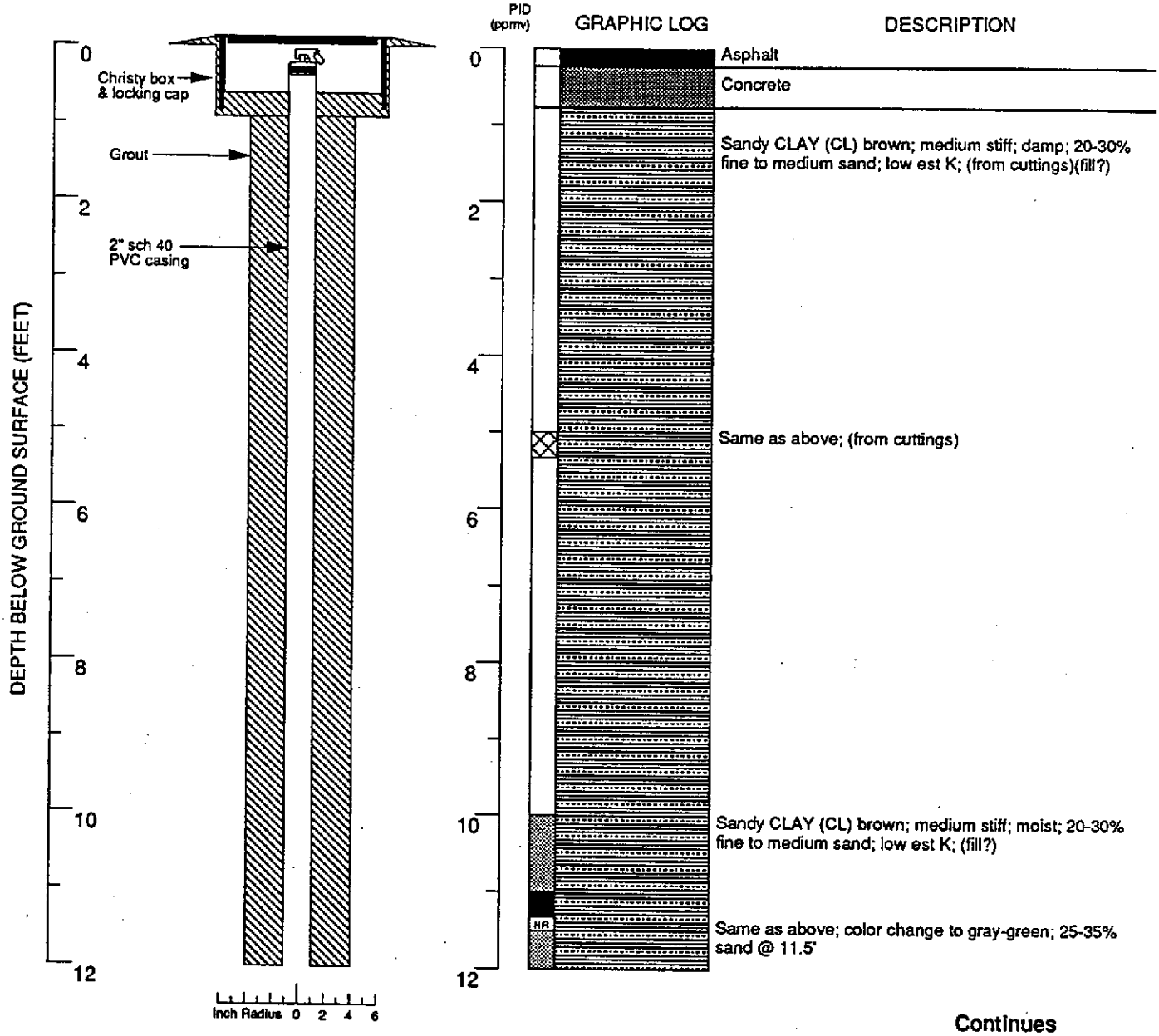
Boring Log and Well Completion Details
MW-11 (Boring B-13)

Chevron Service Station #90020
Oakland, California

MONITOR WELL
11

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04



Logged by:	Joel Coffman	Drilling Company:	B & F Drilling Co., Inc.	Well Head Completion:	Christy box & locking cap
Project Mgr:	Len Niles	Drilling Method:	8" Hollow stem auger	Type of Sampler:	2" split barrel
Dates Drilled:	6/19/90	Driller:	Bruce Cox	TD (Total Depth):	29.5 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

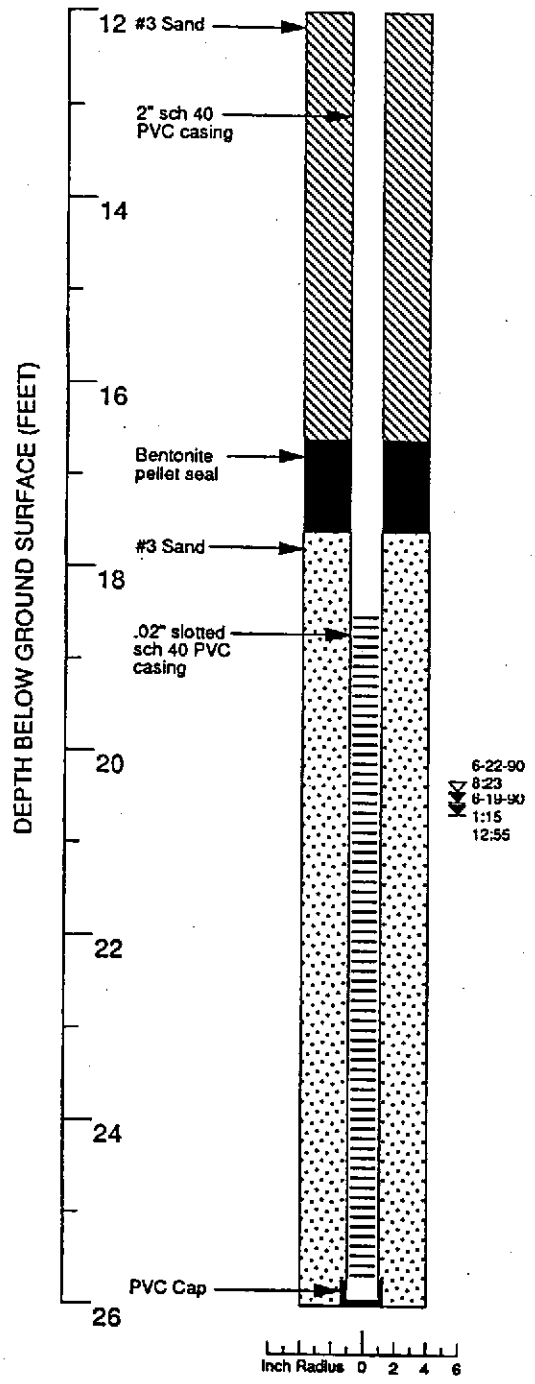
Boring Log and Well Completion Details
MW-12 (Boring B-14)

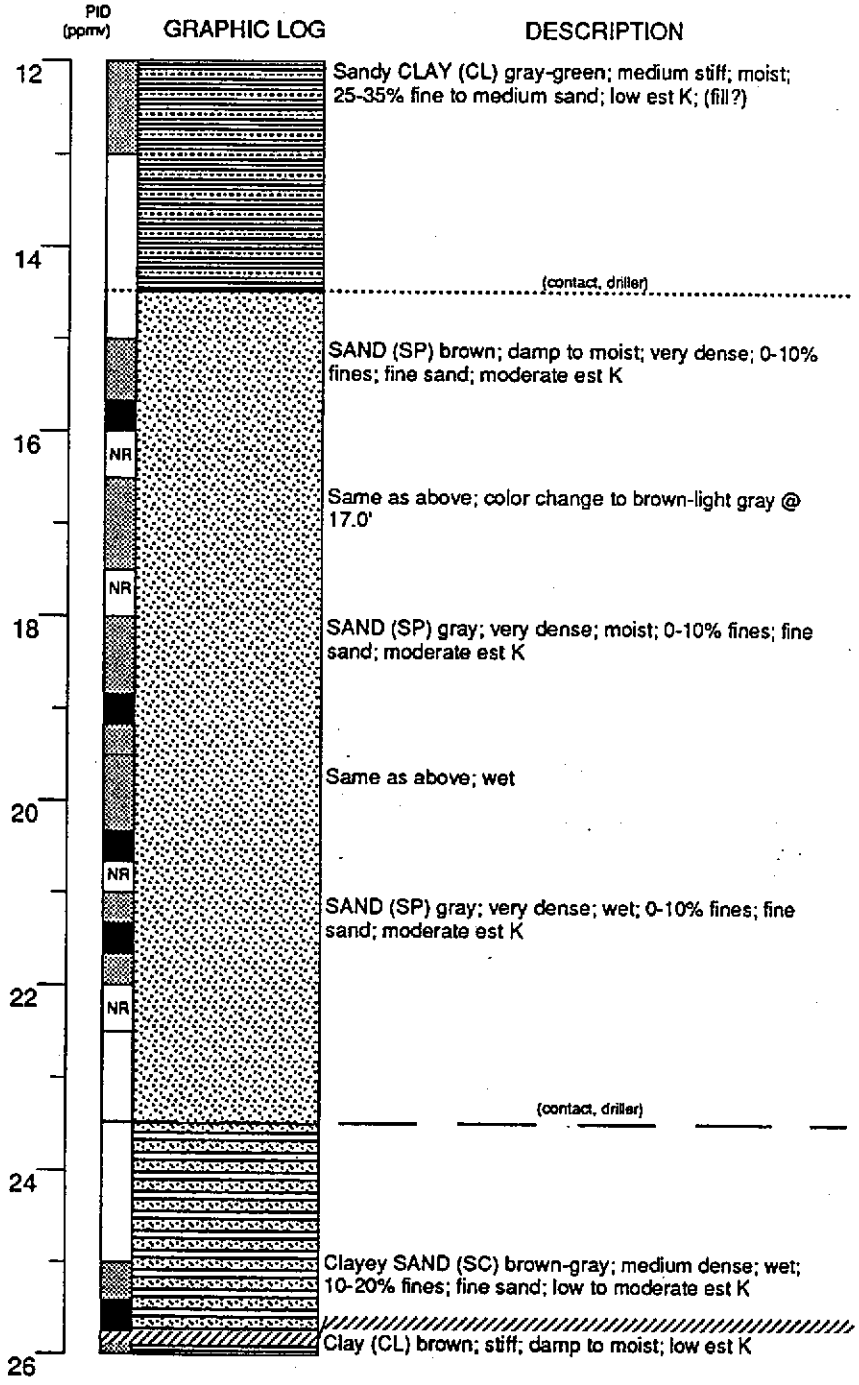
Chevron Service Station #90020
Oakland, California

MONITOR WELL
12

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04





Continues

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary

NR — No recovery

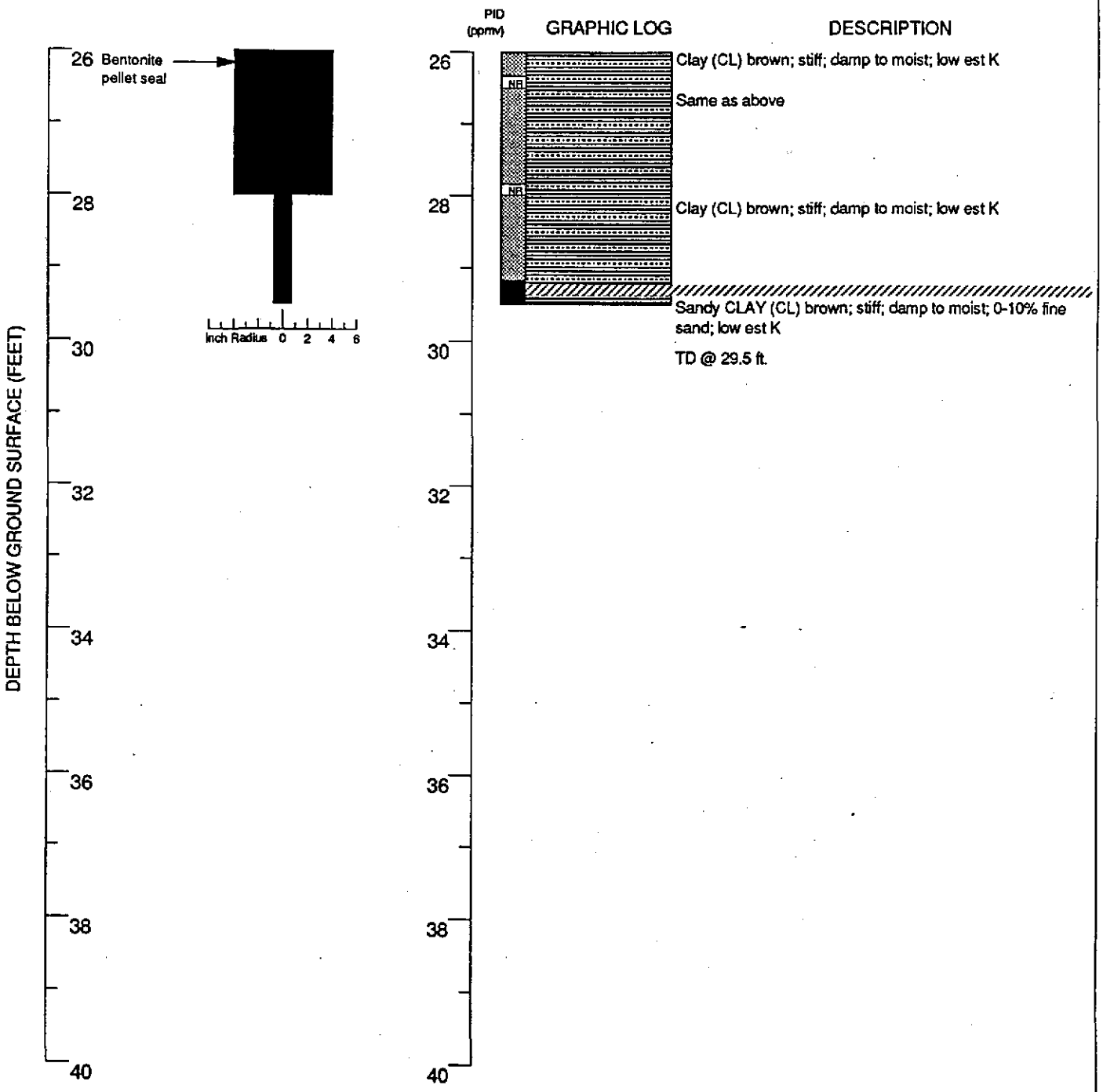
Boring Log and Well Completion Details
MW-12 (Boring B-14)

Chevron Service Station #90020
Oakland, California

MONITOR WELL **12**

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04



EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample
- Contacts: Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

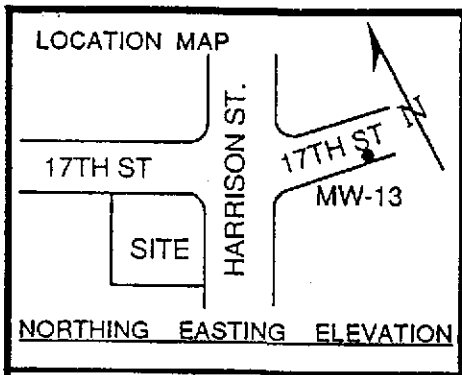
Boring Log and Well Completion Details
MW-12 (Boring B-14)

Chevron Service Station #90020
Oakland, California

MONITOR WELL
12

WESTERN GEOLOGIC RESOURCES, INC.

1-012.04



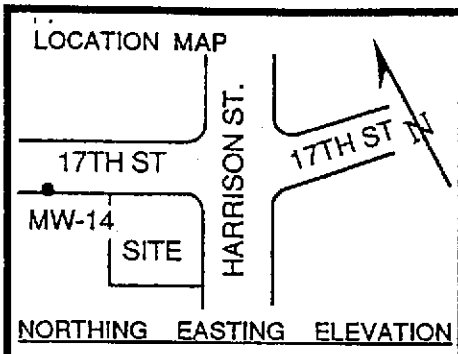
PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. MW-13
PAGE 1 OF 1

PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2 x 12 SAND

CLIENT: Chevron USA
DATE DRILLED: 10-3-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 28'
WELL DIAMETER: 2"
WELL DEPTH: 28'
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
				0				ASPHALT CONCRETE
NEAT CEMENT	Dp			2			SM	SILTY SAND; yellow brown; 15-20% silty fines; medium sand; well sorted sand; dense; no product odor. @4.5': 6" thick concrete slab
	Dp	0	push	4				
				6			ML	SANDY SILT; dark brown; low plasticity; silty fines; 20-30% fine to medium sand; stiff; no product odor.
				8			SM	SILTY SAND; yellow brown; 15-20% silty fines; medium sand; well sorted sand; very dense; no product odor.
	Dp	0	49	10				
				12				
				14				
	Dp	0	>50	16				
				18				
BENTONITE				20				
SAND	Dp/ Wt	0	>50	22				@21': color change to light gray; no product odor.
				24				
	Wt	1.4	45	26				@25': increase in fines to 30-40%; faint product odor.
	Dp	0		28			ML	SANDY SILT; light brown; low plasticity; silty fines; 20-30% fine sand; stiff; no product odor.
				30				BOTTOM OF BORING AT 28'
				32				
				34				
				36				
				38				
				40				
				42				
				44				

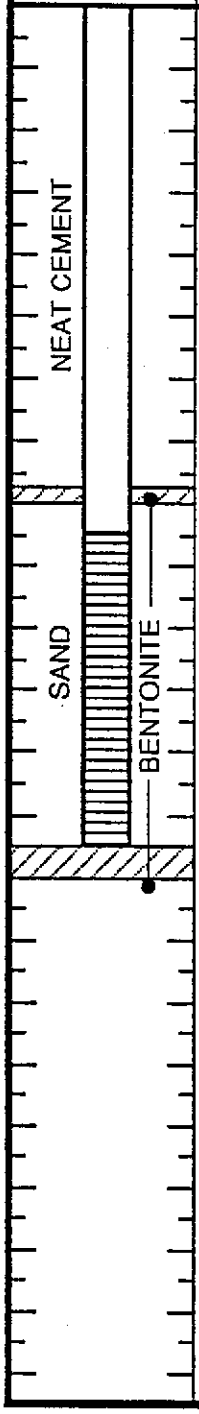


PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. MW-14
PAGE 1 OF 1

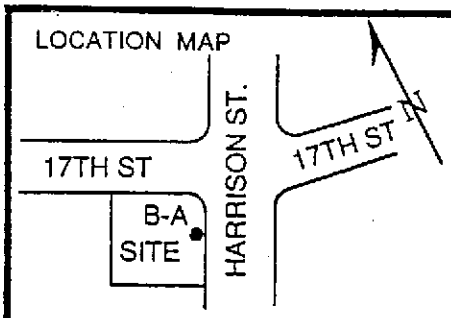
PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2 x 12 SAND

CLIENT: Chevron USA
DATE DRILLED: 10-3-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 28.5'
WELL DIAMETER: 2"
WELL DEPTH: 27'
CASING STICKUP: NA



MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	SOIL TYPE	LITHOLOGY / REMARKS
				ASPHALT CONCRETE
			GM	SILTY GRAVEL - FILL; light gray; 20-30% silty fines; coarse gravel to 1"; very dense; no product odor.
			SM	SILTY SAND - yellowish brown; 15-20% silty fines; medium sand; well sorted sand; loose; no product odor.
Dp	0	5		@8': 4" thick concrete slab.
Dp	0	30		@10.5': change in color to light gray.
Dp/ Mst	0	>50	SP-SM	SAND to SILTY SAND; yellowish brown; 5-10% silty fines; medium sand; well sorted sand; very dense; no product odor.
Wt	0	>50		@20': wet; no product odor.
Wt	0	>50 push		
Dry			ML	SILT; light tan; silty fines; 0-5% very fine sand; very stiff; no product odor.
				BOTTOM OF BORING AT 28.5'

LOCATION MAP



NORTHING EASTING ELEVATION

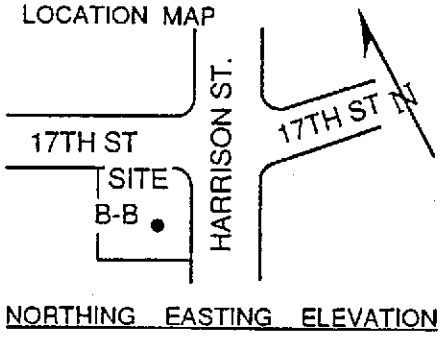
PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. B-A
PAGE 1 OF 1

PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: NA
SLOT SIZE: NA
GRAVEL PACK: NA

CLIENT: Chevron USA
DATE DRILLED: 10-5-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 31.5'
WELL DIAMETER: NA
WELL DEPTH: NA
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
NEAT CEMENT				2			SM	ASPHALT SILTY SAND; reddish brown; 15-20% silty fines; minor clay; medium sand; very dense; no product odor.
	Dp	0	49	6				
				8				
	Dp	0	40	10			SC	CLAYEY SAND; reddish brown; 20-25% clayey fines; fine to medium sand; dense; no product odor.
				12				
				14			SW-SM	SAND to SILTY SAND; light gray; 5-10% silty fines; medium sand; very dense; moderate product odor.
	Dp	7.5	>50	16				
				18				
▽	Dp	18.2	>50	20				@20': moderate product odor.
				22				
				24				
	Wt	0	>50	26				@25': light brown; no product odor.
	Wt	0	40	28				
	Dp			30				
				32			GW	GRAVEL; reddish brown; 0-5% fines; 0-5% sand; fine gravel to 1/2"; well rounded; dense; no product odor.
				34			ML	SILT; light brown; low plasticity; 10-15% fine sand; very stiff; no product odor.
				36				BOTTOM OF BORING AT 31.5'
				38				
				40				
				42				
				44				



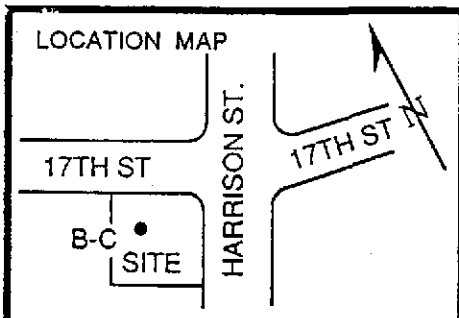
PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. B-B
PAGE 1 OF 1

PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: NA
SLOT SIZE: NA
GRAVEL PACK: NA

CLIENT: Chevron USA
DATE DRILLED: 10-5-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 34'
WELL DIAMETER: NA
WELL DEPTH: NA
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
NEAT CEMENT				2			SM	ASPHALT SILTY SAND; light brown; 20-30% silty fines; fine to medium sand; very dense; no product odor.
	Dp	0	49	6				
	Dp	0	40	10			SW-SM	SAND to SILTY SAND; light brown; 5-10% silty fines; medium sand; very dense; no product odor.
	Dp	1.0	>50	16				@15': change in color to light gray; faint product odor.
	Dp	1.0	>50	20				@20': change in color to light brown; no product odor.
	Wt	0	>50	26				@25': change in color to light gray; no product odor.
			20	30		?		@30': lost sample; hammer broke; drilled down to 34' to retrieve.
				34				BOTTOM OF BORING AT 34'
				44				



PACIFIC ENVIRONMENTAL GROUP, INC.

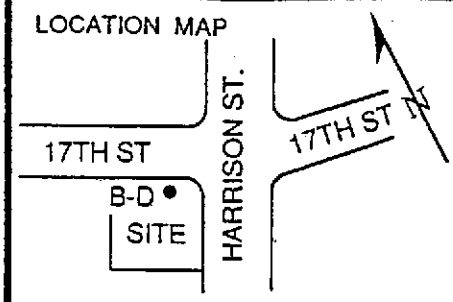
BORING NO. B-C
PAGE 1 OF 1

PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: Continuous Core
CASING TYPE: NA
SLOT SIZE: NA
GRAVEL PACK: NA

CLIENT: Chevron USA
DATE DRILLED: 10-5-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 30'
WELL DIAMETER: NA
WELL DEPTH: NA
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
NEAT CEMENT	Dp			2			SM	ASPHALT SILTY SAND; reddish brown; 15-20% silty fines; medium sand; very dense; no product odor.
	Dp	0	push	4				
				6				
	Dp	0	push	8				
				10				
	Dp	0	push	12				
				14				
				16			SW-SM	SAND to SILTY SAND; light gray; 5-10% silty fines; medium sand; very dense; no product odor.
	Dp	0	push	18				
				20				
				22				@21': color change to light brown.
	Wt	0	push	24				
				26				
				28			ML	SILT; light gray; low plasticity; 2-5% fine gravel; very stiff; no product odor.
				30				
				32				BOTTOM OF BORING AT 30'
				34				
				36				
				38				
				40				
				42				
				44				

LOCATION MAP



NORTHING EASTING ELEVATION

PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. B-D
PAGE 1 OF 1

PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: Continuous Core
CASING TYPE: NA
SLOT SIZE: NA
GRAVEL PACK: NA

CLIENT: Chevron USA
DATE DRILLED: 10-5-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 30'
WELL DIAMETER: NA
WELL DEPTH: NA
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
NEAT CEMENT	Dp			2			SM	ASPHALT SILTY SAND; reddish brown; 20-25% silty fines; medium sand; very dense; no product odor.
	Dp	0	push	6				
	Dp	0	push	10				
	Dp	0	push	14			SW-SM	SAND to SILTY SAND; light gray; 5-10% silty fines; medium sand; very dense; faint product odor.
	Dp	6.9	push	20				
▽	Wt			22				
	Wt	428	push	24				
	Wt			28			GW	GRAVEL; black; 0-5% fines; 0-5% fine sand; fine gravel to 1/2" well rounded; very dense; no product odor.
	Dp	0		30			ML	SILT; light brown; low plasticity; silty fines; 10-15% fine sand; very stiff; no product odor.
				32				
				34				BOTTOM OF BORING AT 30'
				36				
				38				
				40				
				42				
				44				

GROUNDWATER TECHNOLOGY

Drilling Log

Monitoring Well MW-15

Project CHV/1633 Harrison Street Owner Chevron U.S.A. Products Co.
Location Oakland, California Project No. 02020 2779 Date drilled 11/11/92
Surface Elev. 28.53 ft. Total Hole Depth 30 ft. Diameter 8.5 inches
Top of Casing 28.04 ft. Water Level Initial 20 ft. Static 12/16/92 19.74 ft.
Screen: Dia 2 in. Length 15 ft. Type/Size 0.020 in.
Casing: Dia 2 in. Length 13 ft. Type SCH 40 PVC
Filter Pack Material Lapis Lustre #3 Rig/Core Type Mobile B-53/Split Spoon
Drilling Company Kvilhaug Well Drilling Method Hollow Stem Auger Permit # 92286
Driller Mike Crocao Log By Chip Hurley
Checked By David Kleesattel License No. RG# 5136 D. Kleesattel

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Approximately 1-foot of concrete
2						Reddish brown sandy CLAY, 50% clay, 20% medium sand, 20% fine sand, 10% silt, moist.
4		1	6 10 12		CL	
6						
8						
10		2	22 40 50			Reddish brown clayey SAND, 60% medium sand, 20% clay, 15% fine sand, 5% silt, moist.
12						
14		1	34 40 50		SC	
16						
18						
20		7	25 45 50			▽ Encountered groundwater at 20 feet on 11/11/92
22						
24						

GROUNDWATER TECHNOLOGY

Drilling Log

Monitoring Well MW-15

Project CHV/1633 Harrison Street Owner Chevron U.S.A. Products Co.
Location Oakland, California Project No. 02020 2779 Date drilled 11/11/92

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24					SC	Tan silty CLAY, 55% clay, 45% silt, moist.
26		4	7 11 15			
28					CL	
30		1	5 8 13			End of boring at 30 feet. Installed groundwater monitoring well.
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						
52						
54						
56						

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well MW-16

Project CHV/1633 Harrison Street Owner Chevron U.S.A. Products Co.
Location Oakland, California Project No. 02020 2779 Date drilled 12/08/92
Surface Elev. 28.59 ft. Total Hole Depth 31.5 ft. Diameter 8.5 inches
Top of Casing 28.32 ft. Water Level Initial 20 ft. Static 12/16/92 19.74 ft.
Screen: Dia 2 in. Length 15 ft. Type/Size 0.020 in.
Casing: Dia 2 in. Length 15 ft. Type SCH 40 PVC
Filter Pack Material Lapis Lustre #3 Rig/Core Type Mobile B-53/Split Spoon
Drilling Company Kvilhaug Well Drilling Method Hollow Stem Auger Permit # 92286
Driller Rod Fowler Log By Chip Hurley
Checked By David Kleesattel License No. RG# 5136

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Approximately 6 inches asphalt and 4 inches concrete
2						
4		1	27			Reddish brown sandy CLAY, 50% clay, 20% coarse sand,
6			18		CL	20% fine sand, 10% silt, moist
8			18			
10		2	50			
12			24			
14						
16		1	50			Reddish brown clayey SAND, 60% sand, 30% clay, 10% silt.
18			25		SC	
20		7	50			Encountered groundwater at 20 feet on 12/8/92
22			45			
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well **MW-16**

Project *CHV/1633 Harrison Street* Owner *Chevron U.S.A. Products Co.*
Location *Oakland, California* Project No. *02020 2779* Date drilled *12/08/92*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24					SC	
26		1.4	28 28 30		CL	Gray/brown silty CLAY, 55% clay, 45% silt, wet.
28						
30		0.3	50		SM	Gray silty SAND, 60% sand, 30% silt, 10% clay, saturated.
32						End of boring at 31.5 feet. Installed groundwater monitoring well.
34						
36						
38						
40						
42						
44						
46						
48						
50						
52						
54						
56						

APPENDIX D

CONTINGENCY PLAN

APPENDIX D
CONTINGENCY PLAN

This contingency plan will ensure that the hydrocarbon plume remains in compliance with the cleanup goals for the site. Ground water monitoring and sampling will be performed to ensure that cleanup goals are not exceeded near the downgradient boundary and compliance with cleanup goals is maintained.

Wells MW-7 and MW-13 will serve as a "guard points" and wells MW-15 and MW-16 will serve as "boundary wells" to ensure that compliance is maintained. Ground water from these four wells will be sampled and analyzed for hydrocarbons quarterly for one year, semi-annually for one year, then annually for three years. After that, if cleanup goals continue to be maintained, monitoring will cease.

If this ground water monitoring indicates that certain conditions have been met, a contingency plan will be triggered. These conditions and contingency plan responses are summarized in Table D-1. In general, each monitoring well is assigned a "baseline" hydrocarbon concentration which represents a typical concentration detected during the last several years, and a "trigger" concentration which represents a significant concentration increase that may lead to non-compliance with the cleanup goal. As Table D-1 shows, the baseline hydrocarbons concentration for the downgradient boundary wells is <0.5 ppb of benzene, and the trigger concentration is 4 ppb benzene. When a trigger concentration is met or exceeded for two consecutive monitoring periods the contingency plan will go into effect.

When triggered, the contingency plan calls for three responses: 1) The ACDEH is notified; 2) ground water monitoring is increased to quarterly in all four wells; and 3) monitoring will continue while a suitable remedial action is identified. The additional quarterly monitoring will continue while any remedial actions are conducted, and for two years after the remediation is discontinued, to ensure that baseline concentrations are maintained.

Table D-1. Contingency Plan for Maintaining Compliance, Chevron SS#9-0020, 1633 Harrison Street, Oakland, California. All concentrations are for benzene unless otherwise noted.

	Monitoring Well	Baseline Concentration	Trigger Concentration	Response to Trigger Concentration[1]	Additional Monitoring
Guard Point Wells	MW-7	<1,000 ppb	2,000 ppb	1) Notify ACDEH 2) Resume quarterly monitoring in all four wells 3) Identify, approve and implement suitable remedial action	Quarterly monitoring of MW-7, MW-13, MW-15, MW-16
	MW-13	<50 ppb	200 ppb		
Downgradient Boundary Wells	MW-15	<0.5 ppb	4 ppb		
	MW-16	<0.5 ppb	4 ppb		

Footnotes:

[1] Response is triggered when the trigger concentration is met or exceeded for two consecutive sampling events, or when concentrations are increasing at a rate such that the trigger concentration might be met or exceeded before the next sampling event. Response is continued until baseline concentrations are re-attained for two consecutive quarters.