Now that there are plans to develop the site the onsite supply well will be used - (ice machines, food prep, drinking, etc)

Weiss Associates

COMPREHENSIVE SITE EVALUATION AND PROPOSED FUTURE ACTION PLAN

at

Chevron Service Station 9-7127
Highway I-580 and Grant Line Road
Tracy, California

prepared for

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

13 October, 1994

Weiss Associates

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prepared by

Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608

FOR

Cynthia N. Okano
Staff Engineer

Alison W. Watts
Senior Staff Geologist

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 practices. We make no other warranty, either expressed or implied, and are not responsible for the interpretation by others of these data.

REGISTERED PROFESSIONAL ENGINEER
ERIC M. NICHOLS
No. C 042695
Exp. 3/31/96
CIVIL
STATE OF CALIFORNIA

Eric M. Nichols, 13 October, 1994
Registered Civil Engineer
No. 42695

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SUMMARY

The Chevron site at Highway I-580 and Grant Line Road in Tracy, California is a former Chevron service station and is currently used for cattle-grazing. The station ceased operation in 1986 and the product dispensers were subsequently removed. In April 1991, Blaine Tech Services, Inc. (Blaine) oversaw the removal of the station's underground storage tanks (USTs) and associated product lines, and over-excavated areas suspected of containing hydrocarbon-impacted soil. Five monitoring wells were installed at the site in 1992-1993. Quarterly sampling was initiated in January 1994.

Review of historical monitoring and subsurface site investigation data shows that:

- ***The hydrocarbon plume is primarily contained onsite***: The highest concentrations of benzene have been detected in MW-1 and MW-3, in the southeast and central areas of the site. Samples collected from two wells, MW-5 and an onsite water-supply well, contained low to non-detectable levels of hydrocarbons. MW-5 is screened in a shallow water bearing zone 30 ft below ground surface (bgs). The water-supply well is apparently screened approximately 90 ft bgs. Low benzene concentrations were detected in a temporary boring installed to the north of the site. An additional monitoring well will be installed in this location to determine the extent of hydrocarbon impact in this area.

- ***All source areas have been removed from the site***: Soil samples taken after tank and product line excavation indicated that no total petroleum hydrocarbons reported as gasoline (TPH-G) were present in the remaining unsaturated soil. The excavated soil was remediated onsite. Stockpile sampling was performed in accordance with the direction of the Alameda County Department of Environmental Health (ACDEH). These soils were used for backfilling and compacting the excavations. The vertical extent of the excavation was limited by the underlying bedrock.

- ***The hydrocarbons present in the subsurface do not present a threat to human health:*** The area surrounding the site has a very low population density, and the primary land use is cattle grazing. The only known well in the vicinity of the plume, a water supply well located at the former Chevron site, is used for irrigation and stock watering, and is not used to supply drinking water.

To determine the full extent of the plume, and to assist in determining the direction of plume migration, Chevron will install an additional monitoring well to the north of the site. If, after installation of this well, and after additional monitoring has been performed, it appears that the plume is confined to the vicinity of the site, Chevron will request establishment of 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 former Chevron service station 9-7127, located at Highway I-580 and Grant Line Road, Tracy, California. The objectives of this evaluation are to: 1) address the request for additional investigation outlined in the July 19, 1994 letter to Chevron from Eva Chu, of the ACDEH; 2) Summarize all investigative and remedial actions performed at this site to date; 3) evaluate whether the site meets the proposed Regional Water Quality Control Board - San Francisco Bay Region (RWQCB) criteria for establishment of a non-attainment area; and 4) outline a recommended future action plan. This summary presents background on the site investigation and remediation activities, reviews the RWQCB criteria for establishment of a non-attainment area, and outlines the proposed future action plan. The site-specific information presented in this report was compiled from the reports listed in the References Section.

SITE HISTORY

SITE SETTING

The site is a former Chevron service station and is located at the southeast corner of the junction between Grant Line Road and Interstate 580 in Tracy, California (Appendix A). The site lies adjacent to the freeway and is situated within rolling foothills northwest of Tracy. With the exception of a water-supply well, all site structures have been removed. The site is currently used for cattle-grazing. Grant Line Road terminates at the south end of the site, creating a cul-de-sac which commuters use for daily parking.

The station was operational for 15 years, between 1971 and 1986. The service station had three underground storage tanks (two 9,500-gallon and one 5,750-gallon). However, based on the extent of backfill materials northeast of the tank complex, it appears that the fuel tank complex may have formerly contained a fourth tank. A 1,500-gallon waste oil tank and a 850-gallon heating fuel tank were located northeast of the station building. All tanks were constructed of single-walled fiberglass. The underground tanks and associated piping were removed on April 4, 1991.

The site is located in a small basin in the eastern foothills of the Diablo Range, in eastern Alameda County, California. The Diablo Range is a northwest-southeast trending range of mountains bounded to the west by the flatlands of the San Francisco Bay area, and to the east by the San Joaquin Valley. Site elevation is approximately 326 ft above mean sea level (msl). The site is underlain by approximately 6 to 17 ft of fill and Quaternary alluvial fan and fluvial deposits which overly bedrock. Bedrock in the vicinity of the site is derived from two formations, the Upper Cretaceous Panoche Formation and the Miocene Neroly Formation. The Panoche Formation was not encountered during drilling activities, but has been mapped to the northwest and west of the site. The Neroly Formation has been described as a marine blue to gray sandstone, which is pebbly in some locations.

SITE INVESTIGATIONS

1987 Subsurface Investigation/Soil Vapor Survey: In October 1987, EA Engineering, Science, and Technology, Inc. (EA) performed a soil vapor investigation at the site. Thirteen onsite and two offsite soil vapor points were sampled. These samples were taken at depths of 3 to 12 ft bgs. A maximum of 3,200 parts per million (ppm) benzene and 28,500 ppm TPH-G were detected in V4, at a depth of 3 ft bgs, located in the vicinity of the former gasoline tank complex and associated piping. Analytic data for soil and ground water are included in Appendix B. Based on the results of this survey, EA recommended installing five ground water monitoring wells onsite.

1987 Subsurface Investigation: In December 1987, Kleinfelder, Inc. drilled seven soil borings (B-1 through B-7) to depths ranging from 6 to 20 ft bgs. Kleinfelder encountered auger refusal at these depths due to the sandstone bedrock which underlies the surficial fill beneath the site. Soil samples collected from these borings contained maximum concentrations of 2,300 ppm TPH-G and 19 ppm benzene from B-4, at a depth of approximately 15 ft bgs. Boring B-4, located at the northeast end of the gasoline tank complex backfill, was drilled in what appeared to be an older, backfilled tank cavity. Kleinfelder also collected a water sample from an onsite tap (T-1) supplied by a well located near the southeast corner of the site. This water sample, collected on December 21, 1987, contained 2 parts per billion (ppb) benzene. No other hydrocarbon constituents were detected. A confirmation sample, collected on January 5, 1988 from tap T-2, located adjacent to the well-head, contained 4 ppb benzene. Locations of these sampling points are presented in Appendix A. Summary tables of hydrocarbon concentrations detected in soil during this investigation are presented in Appendix B, and the boring logs are included in Appendix C.

1987 Well Survey: In December 1987, Kleinfelder also conducted a well survey to identify documented water-supply wells (in addition to a water-supply well located on site) in the vicinity of the site. This survey identified two nearby wells: 1) one well located approximately one-half mile southeast (cross-gradient) of the site on the opposite side of a hill; and 2) another well located approximately 300 yards uphill (upgradient) of the site. This second well was reportedly damaged during the 1980 earthquake (along the Greenville Fault near Livermore) and is not used.

The only information regarding construction details of the onsite water supply well consisted of a verbal estimate given by Henning Brothers Drilling Company (Henning) of Modesto, California. Henning did not have any records of the onsite well but had installed several wells in the area and believed the total depth to be about 90 ft with the bottom 20 ft screened. There is no permit on file with the Alameda County Flood Control and Water Conservation District, Zone 7.

1988-1989 Water Supply Well Sampling: Additional water samples were collected from the onsite water supply well between January 1988 and May 1989, at various locations along the well piping and at the well-head. These water samples were collected by Kleinfelder and the results of these sampling events were reported in separate addenda. Benzene concentrations detected in these samples ranged from ND to 6.4 ppb.

1989 Carbon Adsorption Treatment System: In May 1989, Gettler-Ryan Inc. installed a carbon adsorption treatment system on the onsite water-supply well due to concentrations of benzene detected in water samples. Gettler-Ryan initially collected weekly water samples from the system effluent and analyzed for TPH-G and BTEX. After two months, samples were collected biweekly; beginning January 1990, samples were collected quarterly. No hydrocarbon constituents were detected in any of the effluent samples. what about influent sample?

1991 Tank/Line Removal and Over-excavation: On April 4, 1991, Golden West Builders removed the five underground storage tanks and the product lines from the site. Blaine Tech Services, Inc. (Blaine) visually inspected the tanks and collected and analyzed soils from the tank and product line excavations. No holes were observed in any of the tanks. A total of 33 soil samples were collected from the tank and product line excavations and from stockpiles of the excavated soils (8 samples from the tank excavation, 2 from the product line excavation, 2 from the dispenser island locations and 21 samples from stockpiled soil). TPH-G concentrations in the soil samples indicated that hydrocarbon-impacted soils were primarily limited to the northeast and southern portion of the tank complex. Concentrations in these areas ranged from 710 to 5,700 ppm TPH-G and ND to 30 ppm benzene. Approximately 400 cubic yards of soil were excavated during excavation of the tank and product lines.

Over-excavation of contaminated areas was performed to remove elevated levels of hydrocarbons, but was limited to a depth of approximately 14 ft bgs by bedrock. Two soil samples were collected from the floor of the gasoline tank pit and one soil sample was collected from the floor of the waste oil/fuel oil tank pit. Four soil samples were collected from the product line area.

Hydrocarbon concentrations ranged from 16 to 710 ppm TPH-G and 0.001 to 0.013 ppm benzene in the soil samples collected from the floor of the gasoline tank pit. No TPH-G, benzene, toluene, ethylbenzene, xylenes (BTEX), total petroleum hydrocarbons as diesel (TPH-D) or volatile organics were detected in the soil samples collected beneath the waste oil tank. 9.2 to 220 ppm TPH-G and 0.005 to 0.085 ppm benzene were detected in the soil samples collected from the product line area. An additional 300 cubic yards of soil were excavated during the over-excavation activities.

Soils generated from the excavation activities were stockpiled and aerated on site until concentrations were reduced to less than 10 ppm TPH-G. The aerated soils, along with clean overburden materials, were used to backfill the excavations.

1992 Well Installation: In December 1992, Pacific Environmental Group (PEG) drilled four borings and converted three of the borings into ground water monitoring wells (B-1 and MW-1 through MW-3) to define the ground water flow direction beneath the site and to investigate ground water conditions. Soil boring B-1 was drilled south of the former tank complex to determine the lateral extent of hydrocarbons in this area. This boring was drilled to 22 ft bgs and ground water was not encountered. No TPH-G was detected at concentrations greater than 4 ppm in soil samples collected from B-1.

Well MW-1 was drilled in the northern portion of the tank complex. The boring location was selected to determine the vertical extent of hydrocarbons beneath the former tank complex. TPH-G and benzene were not encountered in any soil samples above 24 ft bgs. TPH-G and benzene concentrations encountered at 24 ft bgs and 29 ft bgs are probably due to hydrocarbons in the ground water, which occurs at a depth of 26.5 to 28 ft bgs. Ground water was not sampled from MW-1 due to the presence of approximately 1.67 ft of separate-phase hydrocarbons (SPH). The well was bailed on a weekly basis through January 29, 1993 and the SPH was reduced to a sheen. A passive skimmer was installed in the well on January 29, 1993 to ensure the removal of any recurring SPH. The skimmer was emptied every two weeks after its installation. Approximately 7.75 liters of SPH have been

removed from the well via these methods. SPH removed from the well was stored in a double-contained storage drum pending disposal at Chevron's Richmond Refinery.

Additional exploratory soil borings were initially requested by ACDEH; however, after discussion with an ACDEH representative in the field, it was concluded that these borings were unnecessary based on the findings of well MW-1, which indicated that hydrocarbons beneath the tank complex had penetrated the underlying bedrock. Soils were not analyzed from the borings for wells MW-2 or MW-3 because these wells were not located in potential source areas and because chemical analysis of rock samples cannot be performed by standard methods. No odor was detected in either boring, with the exception of samples collected from near the water table in well MW-3 at a depth of approximately 30 ft bgs. Ground water samples collected from monitoring well MW-3 on December 28, 1992 contained 19,000 ppb TPH-G and 8,900 ppb benzene; no petroleum hydrocarbons were detected in the ground water sample collected from MW-2.

were these samples collected before or after carbon treatment system?

1993 Ground Water Sampling of the Onsite Water-Supply Well: At the request of Chevron, PEG initiated weekly ground water sampling of the onsite water-supply well in January 1993. Ground water samples were analyzed for TPH-G and BTEX compounds. No TPH-G or benzene was detected in any of the weekly water samples collected from January 1993 through March 1993, although low concentrations of toluene and xylene were detected in one sample collected on January 29, 1993.

could be contam from duct tape, etc.

1993 Well Installation: In May 1993, PEG supervised the installation of two offsite ground water monitoring wells (MW-4/B-2 and MW-5/B-4) and drilling of onsite soil boring B-3. Soil samples collected from well MW-5/B-4 were analyzed for TPH-G and BTEX compounds. No detectable TPH-G or BTEX compounds were present in the samples. No soil samples were collected from boring B-3 or well MW-4/B-2 because they were not drilled in areas of potential hydrocarbon sources. Ground water "grab" samples were collected from each borehole and analyzed for TPH-G and BTEX compounds. No TPH-G was detected in the ground water "grab" samples collected from borings MW-4/B-2 and MW-5/B-4. Benzene was detected in the "grab" sample collected from well MW-4/B-2 at a

concentration of 12 ppb. The ground water "grab" sample collected from boring B-3 contained TPH-G at a concentration of 96 ppb and benzene at a concentration of 1 ppb. This boring was backfilled with cement grout via tremie pipe. Ground water samples collected after well development from well MW-4/B-2 contained 300 ppb TPH-G and 56 ppb benzene. TPH-G and benzene were not detected in ground water samples collected from well MW-5/B-4. A site map with boring locations is illustrated in Appendix A. Summary tables of hydrocarbon concentrations detected in soil and ground water during this investigation are presented in Appendix B, and the boring logs are included in Appendix C.

REMEDIAL ACTIONS

As discussed in detail above, the underground tanks and associated product lines were removed from the site. All of the accessible hydrocarbon-impacted soil was removed and remediated before backfilling and compacting the excavations. The vertical extent of the excavation was restricted by the sandstone bedrock underlying the site. A carbon treatment system was installed in May 1989 to treat water from the water-supply well prior to use. Approximately 7.75 liters of SPH have been removed from MW-1 and no SPH are now present in the well. Recent sampling indicates that no TPH-G or benzene are present in water collected from the water supply well, and the carbon treatment system is no longer needed nor in use.

EVALUATION OF NON-ATTAINMENT AREA CRITERIA AND FUTURE ACTION PLAN

DISCUSSION OF CATEGORY I NON-ATTAINMENT AREA CRITERIA

In the following section, each of the criterion specified by the RWQCB for establishing a category I non-attainment area are considered for the subject site.

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.

Plume Location: The low hydrocarbon concentrations detected in the water-supply well, MW-2 and MW-5, indicate that the hydrocarbons detected in ground water at the site have not migrated significantly either to the east or west of the site, or vertically to the lower aquifer. Low levels of hydrocarbons detected in well MW-4 and boring B-3 indicate that limited plume migration has occurred to the north and south of the site. The absence of hydrocarbons detected in the most recent sampling of the water-supply well indicates that removal of the hydrocarbon source, including the SPH from monitoring well MW-1 have apparently reduced the onsite hydrocarbon concentrations enough to mitigate the impact to the lower aquifer level. – Needs add'l sampling to verify

No. because we don't know where supply well is screened relative to B-3 well & also, supply well is cross gradient from tank complex

Site Hydrogeology: The materials encountered during drilling consisted primarily of sand, clayey sand and clay-fill to depths of 2.5 to 17 ft bgs. These sediments are underlain by sandstone bedrock to the total depth explored. The overlying fill and alluvium thicken toward the south. Neroly Formation sandstone was first encountered from 2.5 ft bgs in the boring for well MW-2 to 17 ft bgs in boring B-1. Boring B-3 and well MW-5/B-4 were drilled outside the surficial fill area. The original tank

excavations appear to have been extended into bedrock to provide sufficient coverage for of the underground fuel storage tanks. Boring logs for all five wells are presented in Appendix C.

Site Hydrology: Ground water was first encountered in the borings for wells MW-1, MW-2, MW-3 and MW-4/B-2 at approximate depths of 26.5 to 28 ft bgs, which is within the sandstone bedrock. In boring B-3 and well MW-5/B-4, located downgradient of the site and outside the surficial fill prism, ground water was encountered at approximately 14 to 15 ft bgs. The ground water flow direction appears to be variable, to the north or south, with a gradient of approximately 0.004 to 0.05 ft/ft. Compiled water level data for MW-1 through MW-5/B-4, B-1 and B-3 are presented in tables included in Appendix B. Ground water elevation contour maps are presented in Appendix A.

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 SPH discovered in monitoring well MW-1 was bailed and reduced to a sheen. The gasoline tanks and product piping removed in April 1991 were inspected and reported to be in good condition, and the hydrocarbon-impacted soil in the vicinity of the former tanks and product lines was excavated during tank removal and remediated prior to backfilling and compacting the excavations. There are no source areas remaining in the subsurface which require further remediation.

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 removed.

SPH encountered in MW-1 after installation have been removed, and no SPH have been detected at the site in over a year. Extensive excavation has successfully removed most of the source areas as

discussed in detail under the Remedial Actions section presented above. Other potential remedial options are discussed below. No other remedial options have been considered other than boiling of free product

Ground Water and Soil Vapor Extraction: Ground water extraction and treatment combined with soil vapor extraction and treatment is the most common and often 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 asymptotic extracted concentrations are frequently encountered, whereby hydrocarbon mass extracted by the system is balanced by hydrocarbon diffusion and desorption from low permeability materials in the plume. However, the remote location of the site presents significant technical difficulties; discharge of treated water would require either re-injection, or discharge to a surface point. In addition, these techniques would be hindered by the heterogeneity and low permeability of the surficial fill and bedrock under the site. can be transported to Chevron Refinery for recycling, as is purged water

In summary, results for the site to date indicate that the remediation which has been performed at the site has removed as much of the hydrocarbons as is technically and economically feasible. The area surrounding the site is used for cattle-grazing and has a very low population density. There is no direct threat to human health, and this site does not appear to warrant the expense and uncertainty associated with additional remedial technologies. what about air sparging...

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.

In September, 1993, Environmental Health Consultants performed an evaluation of the health risk associated with the low levels of hydrocarbons detected in the onsite water-supply well, based on concentrations detected between December 10, 1992 and September 9, 1993. The maximum benzene concentration detected during this time was 0.8 ppb. Water from the water-supply well is currently

exposure routes were identified; human consumption, and livestock consumption. After discussion with personnel at the ranch, the California Department of Food and Agriculture, and Dr. Frank Galey, a Veterinary Toxicologist at the University of California at Davis, the study reviewed California State and United States Environmental Protection Agency (USEPA) risk guidlines and concluded that the low levels of hydrocarbons detected in the well did not pose a threat to human health for the following reasons: 1) Benzene was not detected at concentrations exceeding California MCLs during the study period; 2) the water is not used for human consumption, therefore no direct human exposure route exists; and 3) benzene concentrations below the MCLs for human consumption would probably have no adverse effect upon the health of cows.

As discussed previously, the onsite water-supply well is not used for human consumption, and does not appear to be a risk to human health. Our plan for containing and managing the remaining risks posed by residual hydrocarbons identified in the shallow ground water at this site includes additional plume definition, 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.

FUTURE ACTION PLAN

Well Installation: Chevron will install an additional site well, MW-6, to the north of the former septic tank pit, near the location of boring B-3. Although review of the site data indicate that the southern extent of the plume may not be fully defined, additional investigation in this direction is not possible due to the presence of I-580, which runs near the southeast border of the site. The nearest possible well location in this direction is several hundred feet from the site, and probably would not provide any useful information.

isn't I-580 to North of property

Ground Water Monitoring and Sampling Schedule: Currently, all five wells at the site are monitored quarterly for hydrocarbons. Although the ground water gradient direction does appear to vary, we do

not feel that monthly ground water monitoring is necessary; the most effective method of determining the direction of plume transport is by mapping the hydrocarbon distributions. The hydrocarbon concentrations detected in the existing site wells indicate that most of the hydrocarbons remain in the central and eastern portions of the site, and that some migration has occurred to the north and south. Installation of MW-6 will assist in a more accurate determination of the plume distribution.

After installation of MW-6, we propose the following monitoring schedule:

1) Sample the six site wells and the water-supply well quarterly through summer 1995, to complete one additional year of quarterly monitoring after well installation.

2) Sample the six site wells and the water-supply well semi-annually in the winter and summer quarters through 1997.

3) A Monitoring and Sampling Report will be submitted to the ACDEH after each sampling event.

3) If, by the summer of 1997, it appears that no significant plume migration is occurring, and the hydrocarbon concentrations in ground water are decreasing due to natural biodegradation, a non-attainment area will be established at this site.

   If significant plume migration does occur, and appears to present a threat to human health or the surrounding aquifer, or if elevated concentrations are encountered in well MW-6, Chevron will re-evaluate this plan, and will establish an appropriate course of action.

CONCLUSIONS

Data collected at the site demonstrate the following points:

- The onsite hydrocarbon plume has not migrated significantly in either the horizontal or the vertical direction. Not demonstrated since supply well is x-grad.
- As much of the hydrocarbon-impacted soil as was technically feasible has been removed from the site.
- The ground water gradient is relatively flat (not confirmed) and the subsurface lithology is heterogeneous and underlain by sandstone bedrock.
- The site and vicinity is used for cattle-grazing and there is no threat to human health or further impact to the quality of the surrounding ground water.
- Additional remediation at this site is technically difficult and may have limited value. What about air sparge (enhance biodegradation at site (MW-13))

After review of the data summarized in this report, and consideration of the proposed NAA criteria, we have determined that this site is not a candidate for establishment of a non-attainment area at this time. We propose, therefore, to perform additional plume definition and quarterly monitoring to more fully establish the plume location, and to determine whether significant offsite transport is occurring. If it appears that the plume is contained onsite, and that natural biodegradation is occurring, we will request that a non-attainment area be established. A monitoring and contingency plan will be developed at that time based upon the plume configuration and current regulatory requirements.

We request, therefore, that the Alameda County Department of Environmental Health accept the future action plan outlined in this report, and consider the site a potential candidate for establishment of a non-attainment area.

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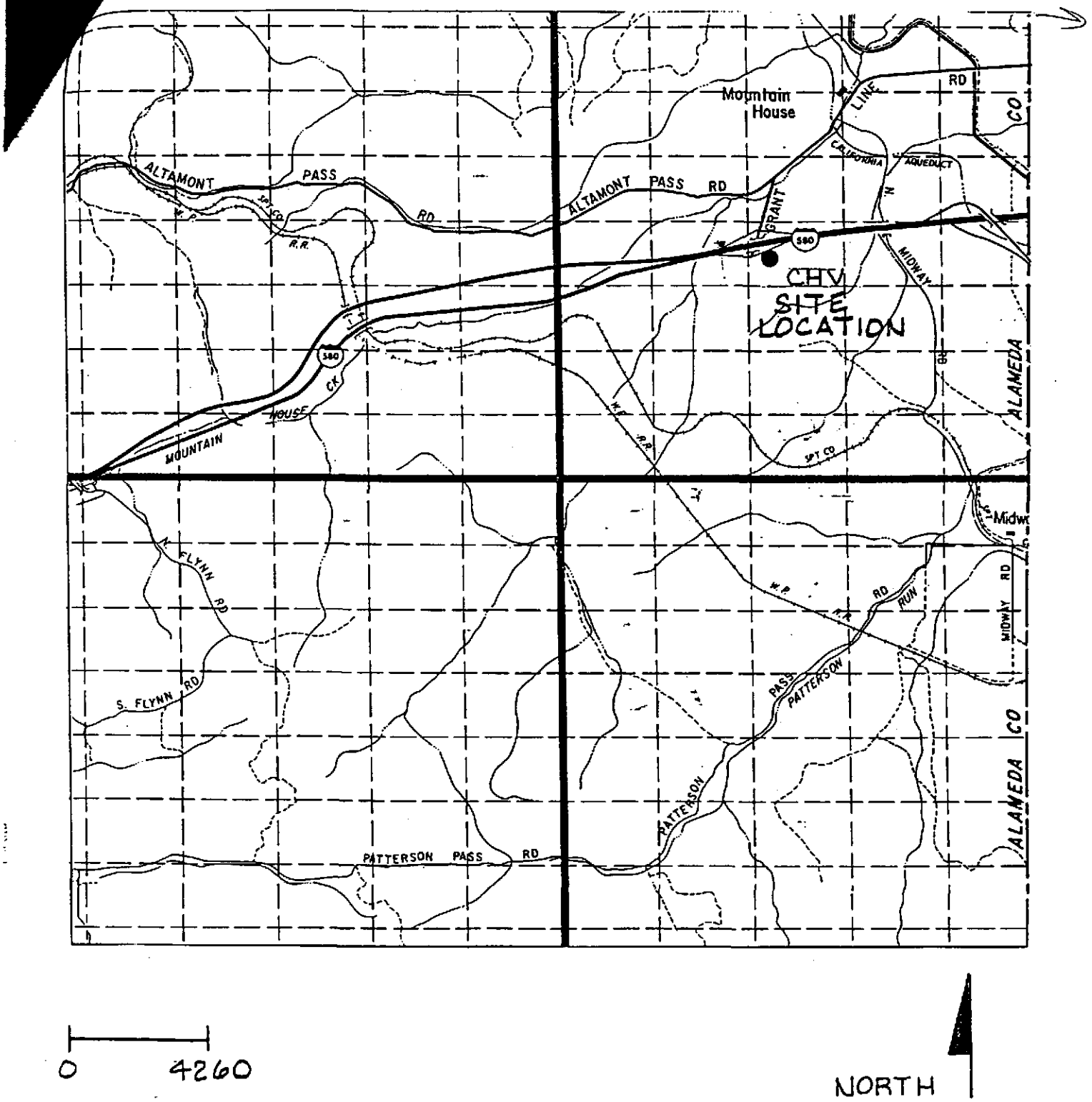


Figure 1: Location of Chevron Service Station 9-7127, Tracy, California.

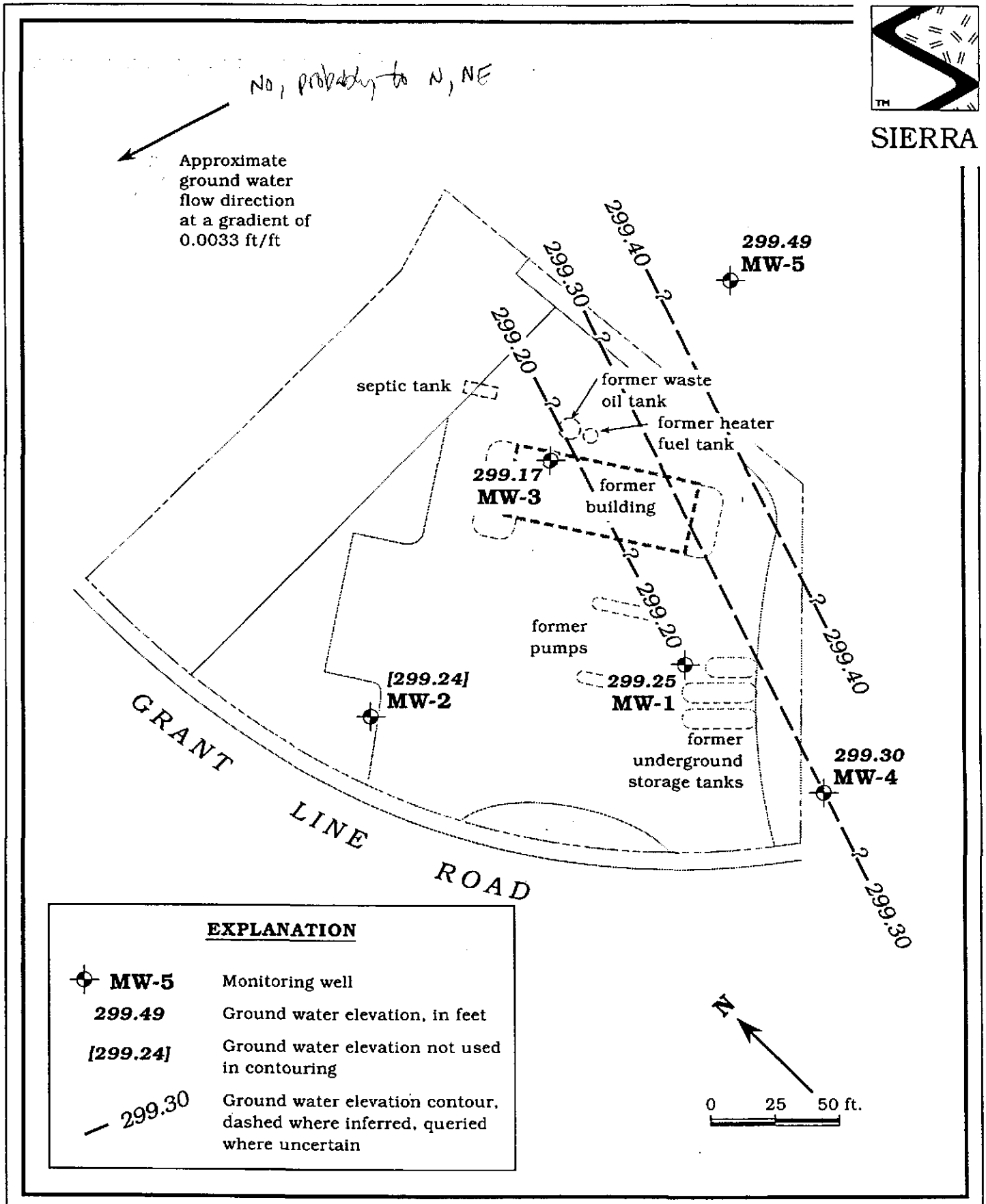
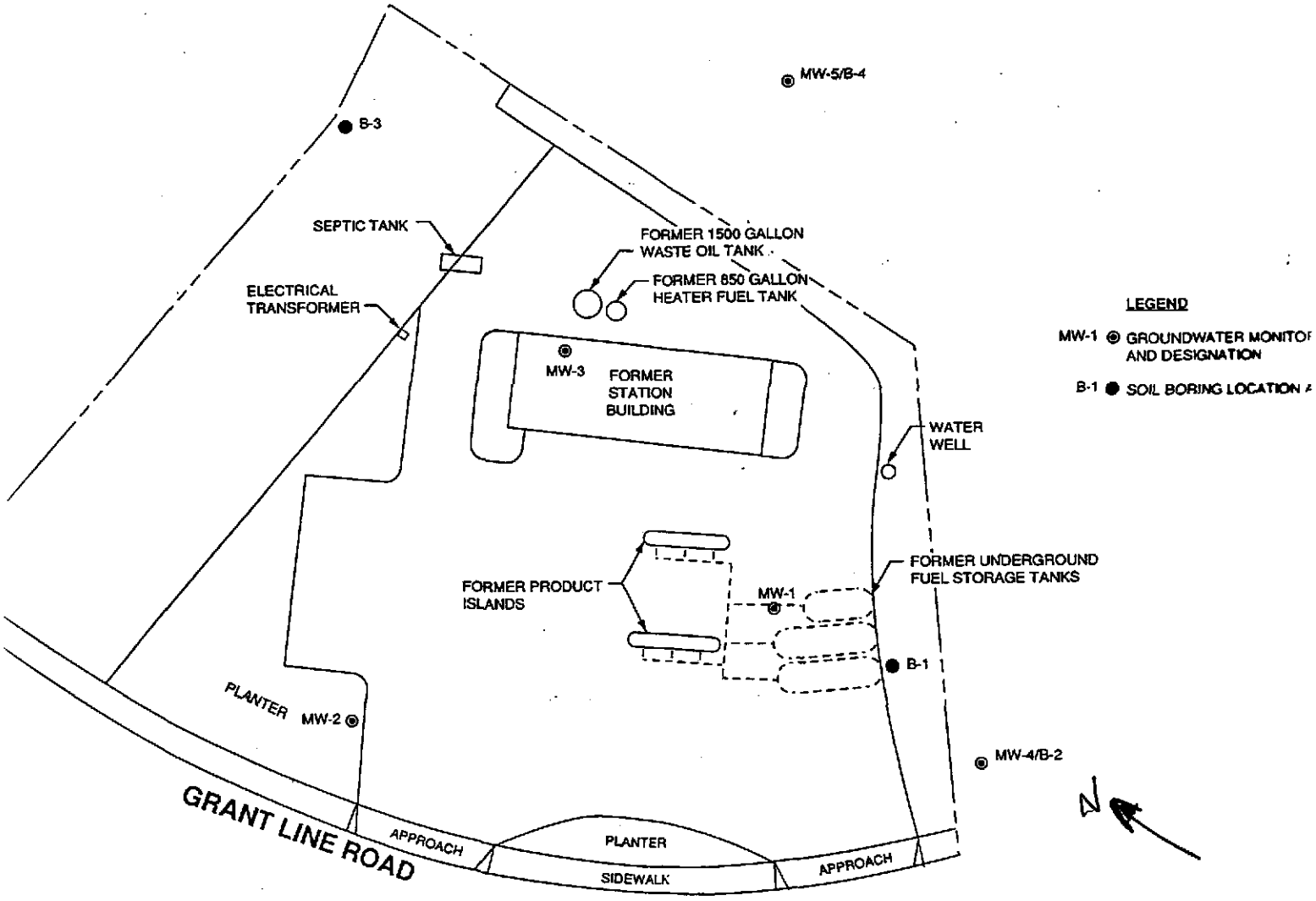


Figure 2. Monitoring Well Locations and Ground Water Elevation Contour Map - June 1, 1994 - Former Chevron Service Station #9-7127, Interstate 580 and Grant Line Road, Altamont Pass, California

7/6/94

MW-5 is only screened from 5-25' - could be above aquifer/dry

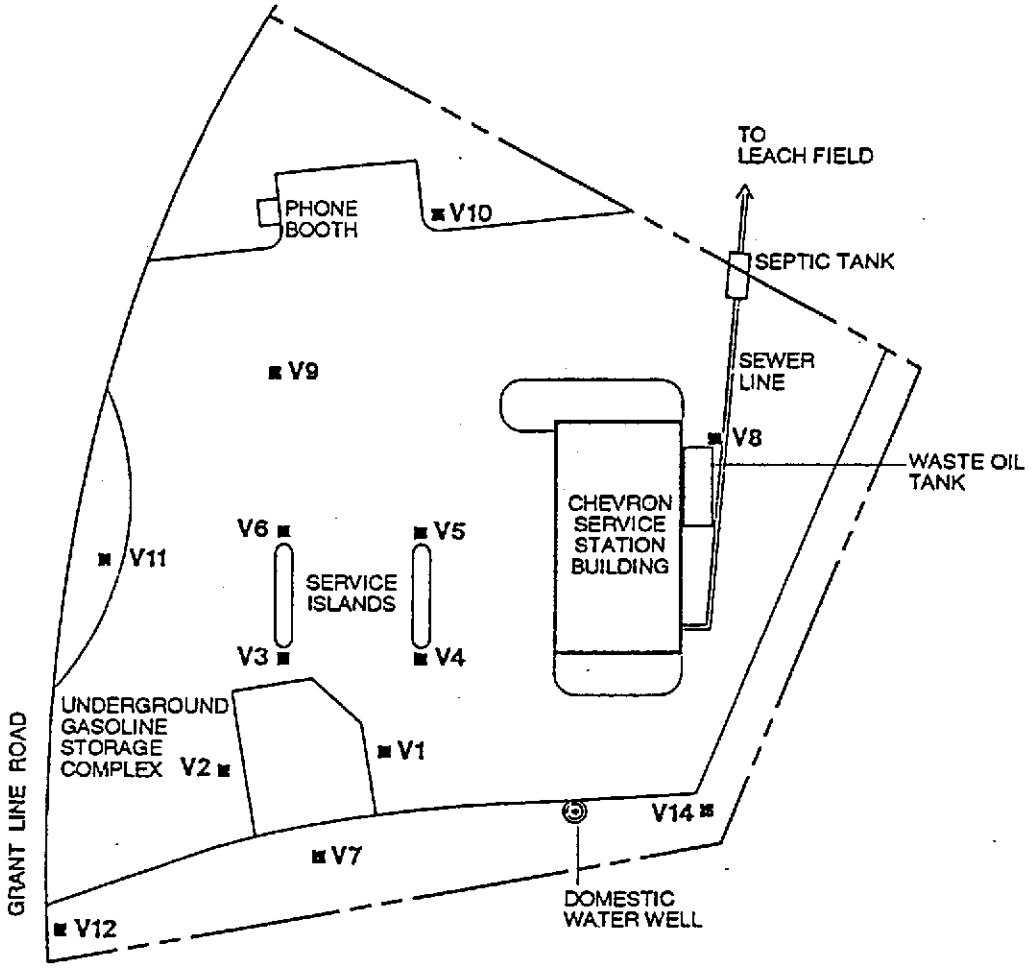


CIFIC
/IRONMENTAL
OUP, INC.

SCALE
0 30 60 FEET

FORMER CHEVRON USA SERVICE STATION 9-7127
I-580 at Grant Line Road
Tracy, California

SITE MAP



EXPLANATION

■ V15 Soil vapor sampling point location

N

Base Map: Kleinfelder and
EA, Engineering and Science

0 40 80

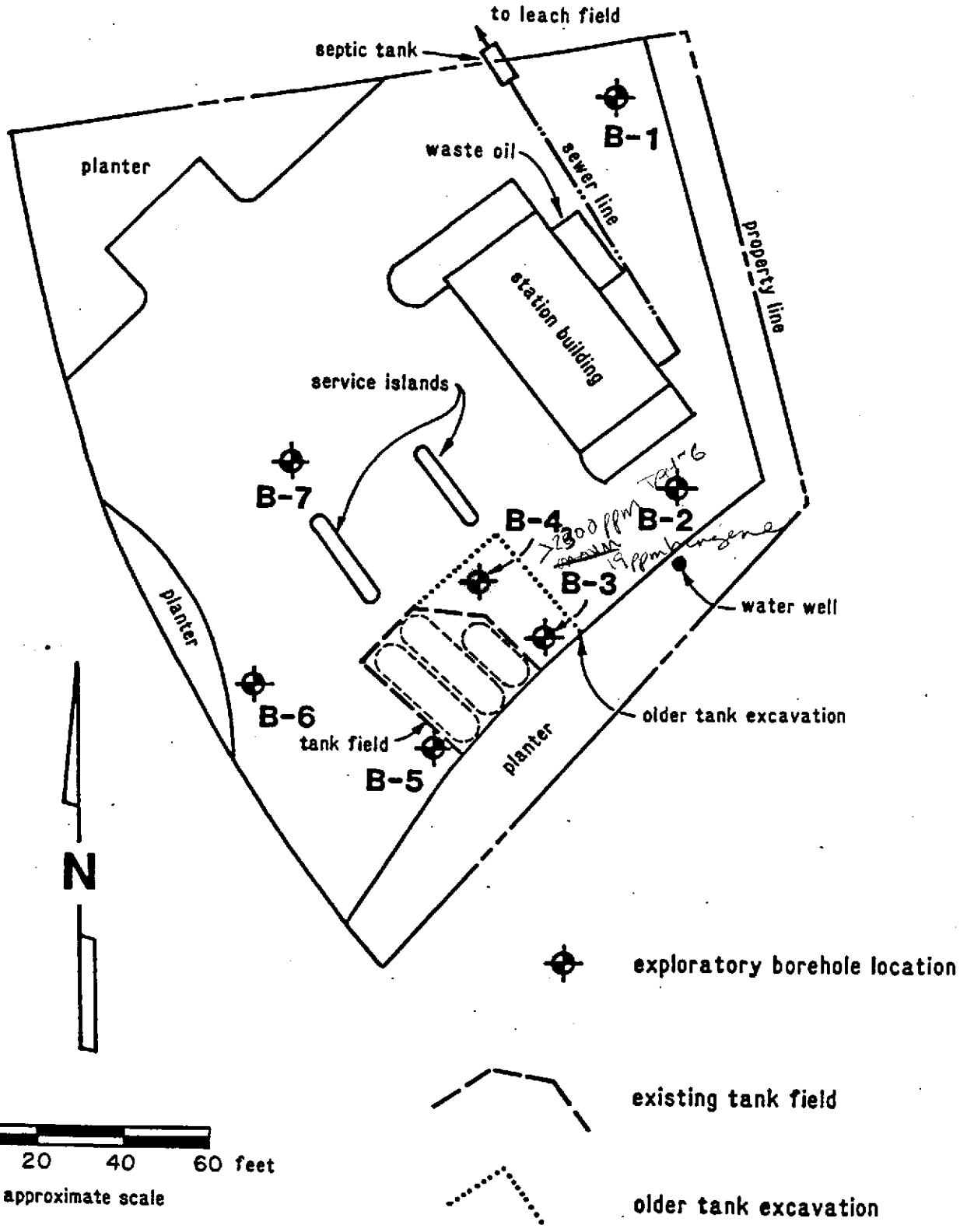
Scale in Feet

GeoStrategies Inc.

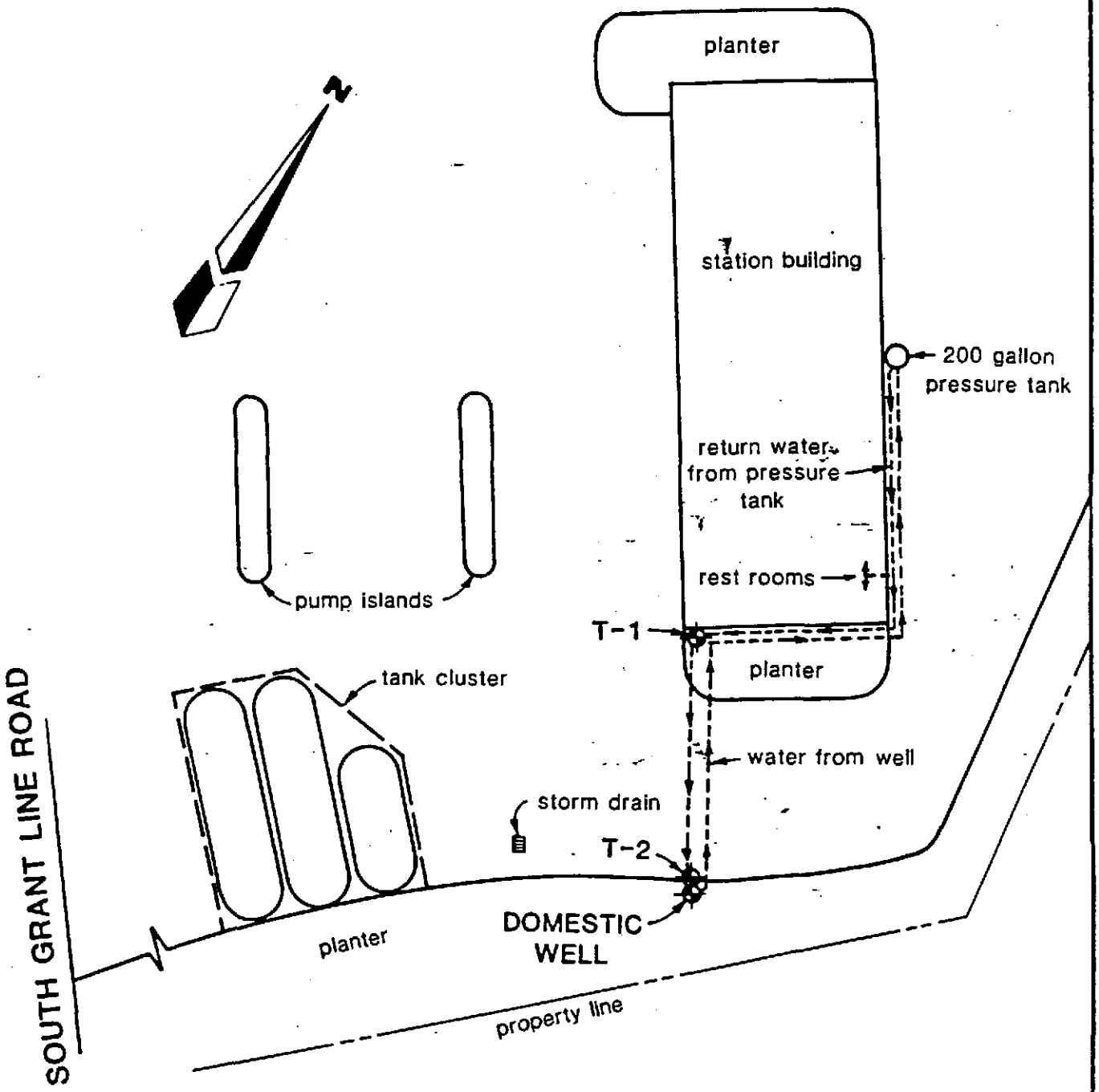
Soil Vapor Sampling Points Location Map
Chevron USA Service Station #7127
Grant Line Road
Tracy, California

PLATE 2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7251	RG/CEG 1262	8/89		



KLEINFELDER	SITE PLAN CHEVRON, USA STATION 7127 GRANT LINE ROAD TRACY, CALIFORNIA	PLATE 2
PROJECT NO. 10-1782-01		



LEGEND

T-2 ⊕ water sampling location

0 10 20 30 feet

approximate scale

NOTE: Plumbing system is diagrammatic only. Actual plumbing system layout was not available during this report preparation.

KLEINFELDER

PROJECT NO. 10-1782-01

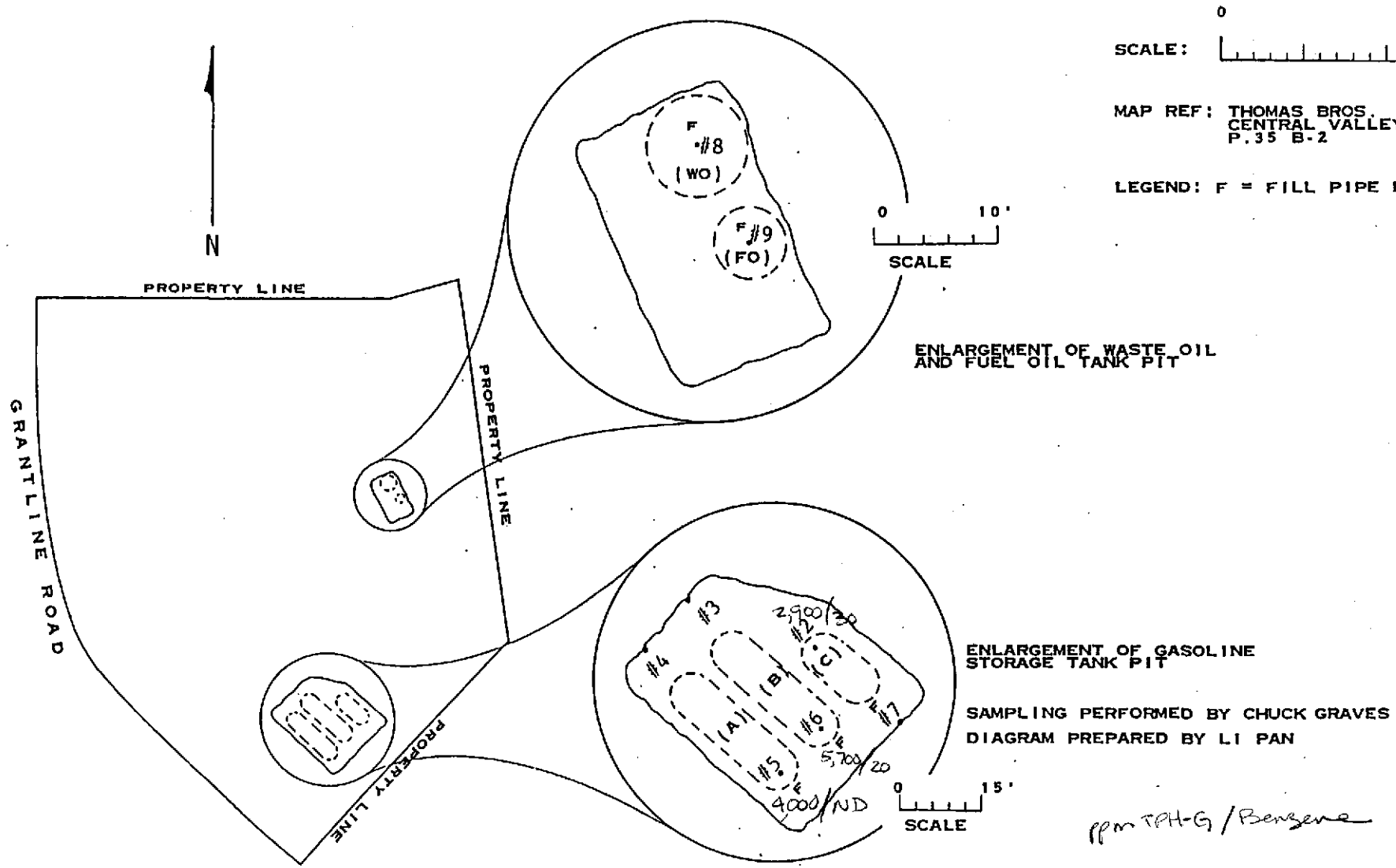
SAMPLING LOCATIONS
CHEVRON U.S.A. STATION # 7127
GRANT LINE ROAD
TRACY, CALIFORNIA

PLATE
3

TANK REMOVAL DIAGRAM

DIAGRAM ONE

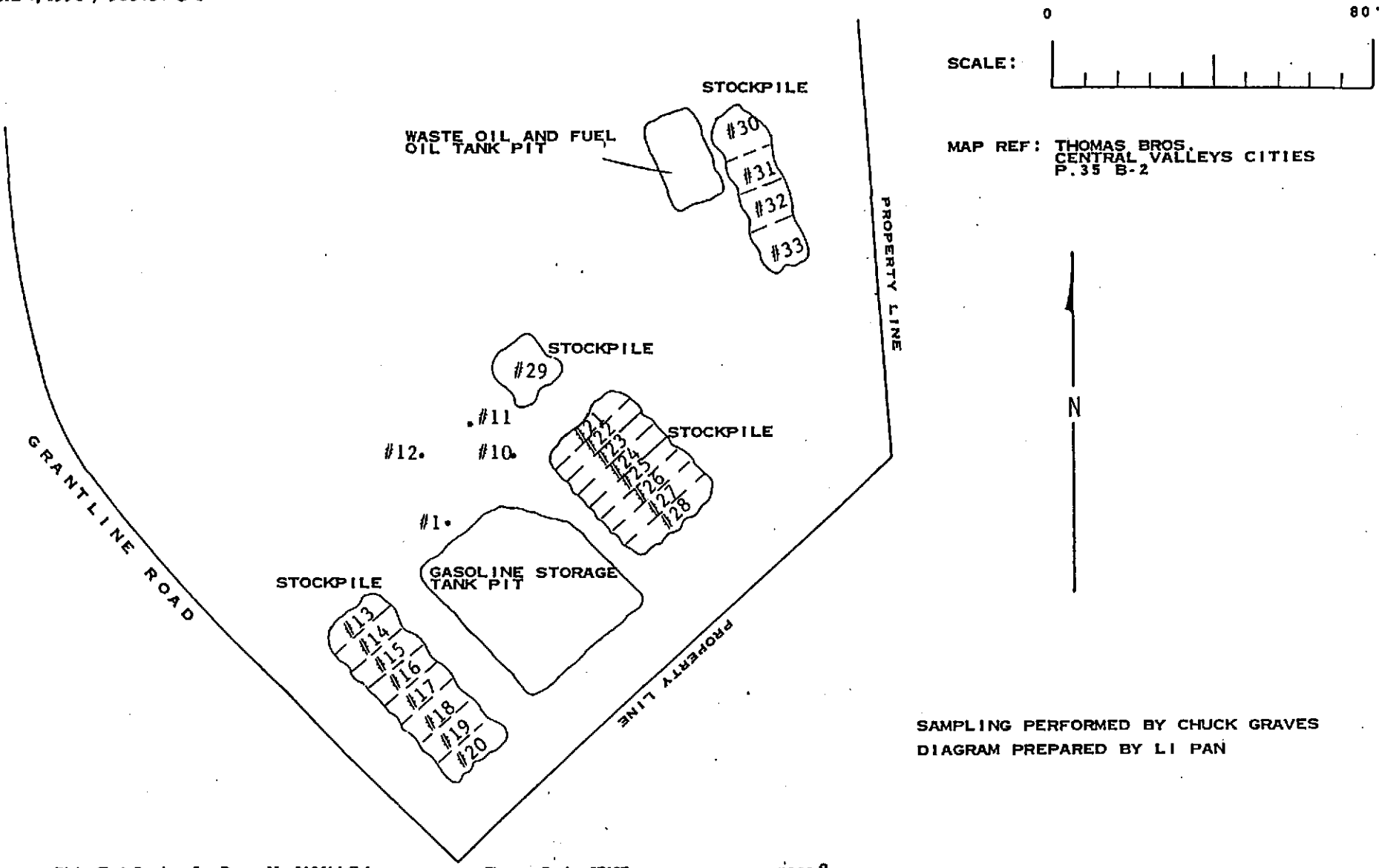
April 4, 1991 / 910404-G-1



TANK REMOVAL DIAGRAM

April 4, 1991 / 910404-G-1

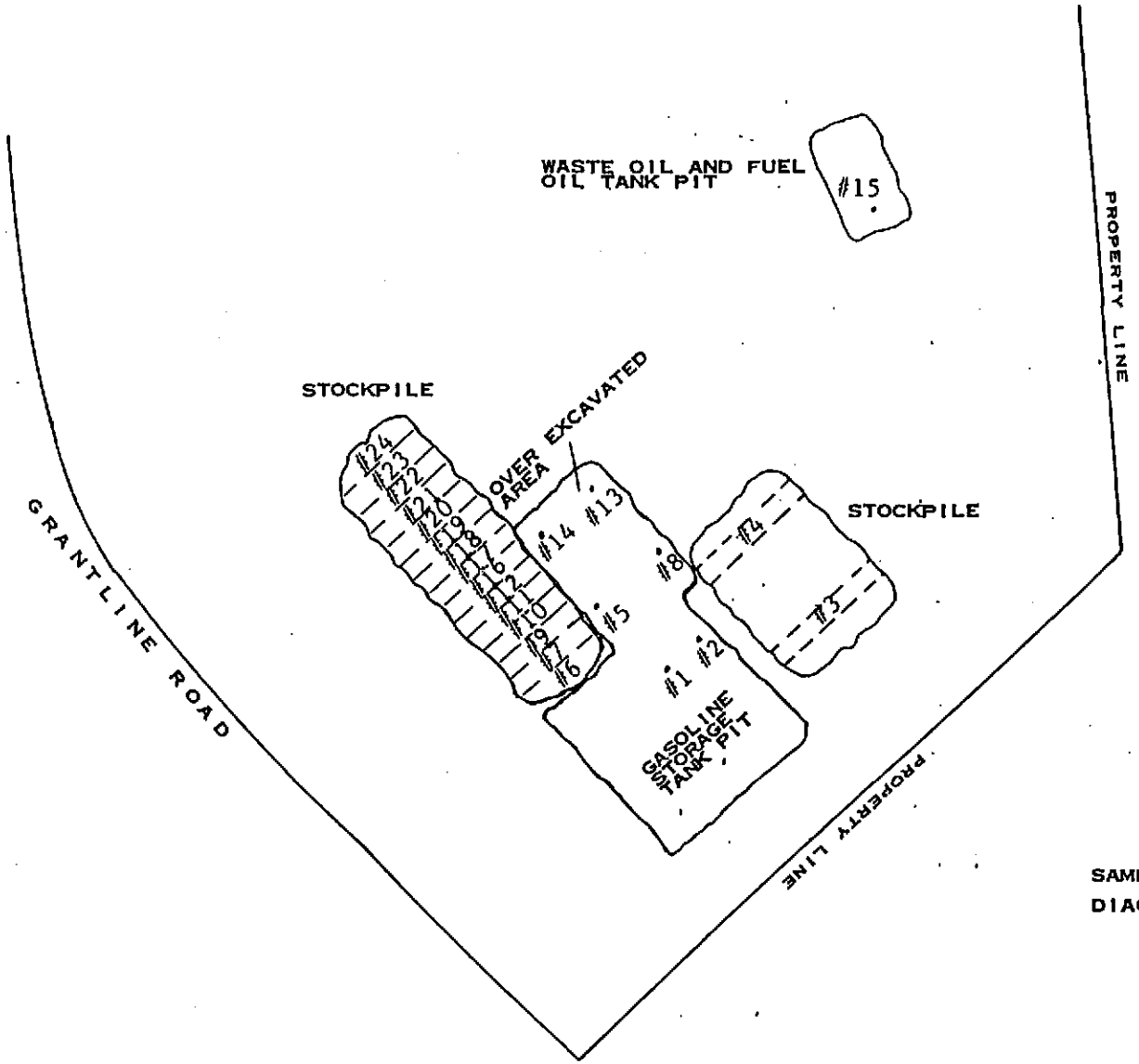
DIAGRAM TWO

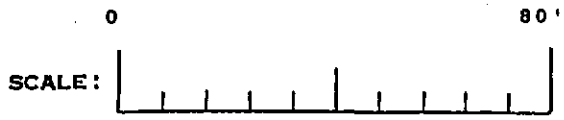


SAMPLING PERFORMED BY CHUCK GRAVES
DIAGRAM PREPARED BY LI PAN

ADDITIONAL EXCAVATION DIAGRAM

April 16, 1991 / 910416-V-1





MAP REF: THOMAS BROS. CENTRAL VALLEY CITIES P.35 B-2

SAMPLING PERFORMED BY FRED VAN DEN BROECK
DIAGRAM PREPARED BY LI PAN

TABLE 1

SUMMARY OF SOIL VAPOR MONITORING DATA
CHEVRON SERVICE STATION #7127
TRACY, CALIFORNIA

SAMPLE LOCATION	SAMPLE DEPTH	PRIOR TO BENZENE(1) (ppm)	BENZENE (ppm)	TOLUENE (ppm)	DETECTED HYDROCARBONS (ppm)
V1	3	<5	<1	<1	<5
V1/B	5	3700	650	3200	7500
V1/C	8	18000	600	2800	20000
V2	5	130	<5	30	160
V3	3	10	5	10	30
V3/B	5	<5	1	10	15
V4	3	20000	3200	5200	28500
V4/B	5	120	130	1900	2000
V5	5	1	<1	<5	<5
V5/B	7	620	40	<1	750
V6	5	1150	540	160	7300
V7	5	1300	<5	<5	1400
V8	3	<1	<1	<1	<1
V8/B	8	<1	<1	<1	<1
V9	8	1	<1	<10	10
V10	8	<1	<1	<1	<1
V11	5	<1	<1	<1	<1
V12	8	<1	<1	<1	<1
V13	12	20	<1	<1	25
V14	8	<1	<1	<1	<1
V15	12	<1	<1	<1	<1
BLANK	NA	<0.1	<0.1	<0.1	NA
BLANK	NA	<0.1	<0.1	<0.1	NA
Detection Limit		0.5	0.5	0.5	1

NA = Not Applicable
ppm = parts per million

(1) Quantification based on the volt-second:ppm response ratio for benzene.
Source: EA Engineering, Science, and Technology, Inc. report dated 11/13/87

(Note: See Plate 2 for sampling point locations.)

TANK REMOVAL & SOIL EXCAVATION
(PAGE 1)

TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS

NOTE: Analytical results are reported in Parts Per Million or Parts Per Billion

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	PPM TPH AS GAS	PPM BEN-ZENE	PPM TOL-UENE	PPM ETHYL BEN-ZENE	PPM XY-LENES	PPM TOTAL LEAD
AF	14.0	STANDARD	INTRFACE	SOIL	04/04/91	910404-G-1	#5	SEQUOIA	104-0738	4000	ND	41	66	310	13
Aop	13.5	LIA	SIDEWALL	SOIL	04/04/91	910404-G-1	#4	SEQUOIA	104-0737	1.0	0.0070	ND	0.0050	0.030	9.1
BF	14.0	STANDARD	INTRFACE	SOIL	04/04/91	910404-G-1	#6	SEQUOIA	104-0739	5700	20	220	110	560	80
Bop	14.0	LIA	SIDEWALL	SOIL	04/04/91	910404-G-1	#3	SEQUOIA	104-0736	ND	0.0070	0.016	0.012	0.030	7.7
CF	12.5	LIA	SIDEWALL	SOIL	04/04/91	910404-G-1	#7	SEQUOIA	104-0740	2.1	0.018	0.013	0.014	0.046	6.9
Cop	15.0	STANDARD	INTRFACE	SOIL	04/04/91	910404-G-1	#2	SEQUOIA	104-0735	2900	30	180	60	350	14
	13.0	ELECTIVE	CONFIRM	SOIL	04/16/91	910416-V-1	#1	SEQUOIA	104-2649	16	0.0090	0.014	0.021	0.17	3.6
	15.0	ELECTIVE	CONFIRM	SOIL	04/16/91	910416-V-1	#2	SEQUOIA	104-2650	110	0.013	0.063	0.096	0.41	8.1
PRODUCT LINE/DISPENSER PUMP ISLAND															
#1	2.5	LIA	INTRFACE	SOIL	04/04/91	910404-G-1	#1	SEQUOIA	104-0734	1200	3.3	17	17	86	17
#10	4.0	LIA	INTRFACE	SOIL	04/04/91	910404-G-1	#10	SEQUOIA	104-0743	3.3	0.20	0.043	0.060	0.16	7.7
#11	4.0	LIA	INTRFACE	SOIL	04/04/91	910404-G-1	#11	SEQUOIA	104-0744	750	12	33	19	110	9.5
#12	4.0	LIA	INTRFACE	SOIL	04/04/91	910404-G-1	#12	SEQUOIA	104-0745	15	0.23	0.19	0.26	1.3	6.9
#5	13.0	ELECTIVE	CONFIRM	SOIL	04/16/91	910416-V-1	#5	SEQUOIA	104-2653	230	ND	0.80	1.7	10	2.6
#8	14.0	ELECTIVE	CONFIRM	SOIL	04/16/91	910416-V-1	#8	SEQUOIA	104-2656	33	0.085	0.24	0.27	1.5	6.1
#13	15.0	ELECTIVE	CONFIRM	SOIL	04/16/91	910416-V-1	#13	SEQUOIA	104-2661	11	ND	0.047	0.044	0.31	6.1
#14	13.0	ELECTIVE	CONFIRM	SOIL	04/16/91	910416-V-1	#14	SEQUOIA	104-2662	9.2	0.0050	0.0060	0.030	0.13	3.6

Standard - The location conformed to established (professional or regulatory) definitions for the type of sample being collected. Example: a standard RWQCB interface sample.

LIA - The local implementing agency inspector chose a sampling location that was different from a standard (pre-defined) location.

Elective - Elective samples are not taken to comply with regulatory requirements, but to obtain information. Sampling locations may be chosen by the property owner, the contractor, a consultant, etc. The samples may or may not be analyzed.

TANK REMOVAL & OVEREXCAVATION
(PAGE 2)

TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS

NOTE: Analytical results are reported in Parts Per Million or Parts Per Billion

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	PPM TPH AS GAS	PPM BEN-ZENE	PPM TOL-UENE	PPM ETHYL BEN-ZENE	PPM XY-LENES	PPM TOTAL LEAD
WoM	11.0	STANDARD	INTRFACE	SOIL	04/04/91	910404-G-1	#8	SEQUOIA	104-0741	ND	ND	ND	ND	ND	3.3
FoM	11.0	STANDARD	INTRFACE	SOIL	04/04/91	910404-G-1	#9	SEQUOIA	104-0742	170	ND	ND	ND	2.7	1.7
#15	18.0	ELECTIVE	CONFIRM	SOIL	04/16/91	910416-V-1	#15	SEQUOIA	104-2663	ND	ND	ND	ND	ND	6.1
STOCK	6-12"	RWQCB	DISCRETE	SOIL	04/04/91	910404-G-1	#30	SEQUOIA	104-0763	ND	ND	ND	ND	ND	2.6
	6-12"	RWQCB	DISCRETE	SOIL	04/04/91	910404-G-1	#31	SEQUOIA	104-0764	ND	ND	ND	ND	ND	4.1
	6-12"	RWQCB	DISCRETE	SOIL	04/04/91	910404-G-1	#32	SEQUOIA	104-0765	ND	ND	ND	ND	ND	5.9
	6-12"	RWQCB	DISCRETE	SOIL	04/04/91	910404-G-1	#33	SEQUOIA	104-0766	ND	ND	ND	ND	ND	2.5

TABLE 2

SUMMARY OF SOILS ANALYTICAL DATA
CHEVRON SERVICE STATION #7127
TRACY, CALIFORNIA

SAMPLE ID	SAMPLE DEPTH*	BENZENE (ppm)	TOLUENE (ppm)	TOTAL XYLENES (ppm)	ETHYLBENZENE (ppm)	TPH (ppm)
B1-10	10	ND	ND	ND	ND	ND
B2-20	20	0.001	ND	4	0.003	0.8
B3-14	14	1.2	0.680	2	0.8	76
B4-15	15	19	85	140	28	2300
B5-5	5	0.076	0.007	0.030	0.002	0.5
B6-5	5	ND	ND	ND	ND	ND
B7-5	5	0.022	0.003	0.024	0.046	0.7
Detection Limit		0.5	0.5	0.5	0.5	1

TPH = Total Petroleum Hydrocarbons
* Feet below ground surface
ppm = parts per million
Benzene, Toluene, Total Xylenes and Ethylbenzene concentrations converted from ppb to ppm.

SOURCE: Subsurface Environmental Investigation, January 6, 1988; Kleinfelder Inc.

(Note: See Plate 3 for boring locations.)

Table 2
Soil Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

Former Chevron U.S.A. Service Station 9-7127
Highway I-580 at Grant Line Road
Tracy, California

Boring Number	Sample Date	Sample Depth (feet)	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)
B-1	12/09/92	7	ND	ND	ND	ND	ND
		12.5	4.0	ND	ND	ND	0.015
		17.5	ND	ND	0.014	ND	0.025
		21.5	ND	ND	0.013	ND	0.018
MW-1	12/08/92	19	ND	ND	0.0056	ND	0.0079
		24	2,600	<5.0*	79	30	200
		29	8,100	21	560	150	840
		30.5	ND	ND	ND	ND	ND
		38.5	ND	ND	0.013	ND	0.024
Detection Limits:			1.0	0.005	0.005	0.005	0.005

ppm = Parts per million
ND = Not detected
* Elevated method reporting limit.

Table 1
Soil Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

Former Chevron U.S.A. Service Station 9-7127
Interstate 580 at Grant Line Road
Tracy, California

Boring Number	Date Sampled	Sample Depth (feet)	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)
MW-5/B-4	05/25/93	10	ND	ND	ND	ND	ND
		15	ND	ND	ND	ND	ND
SPOILS	05/25/93	N/A	ND	ND	ND	ND	ND
Detection Limits:			1.0	0.005	0.005	0.005	0.015

ppm = Parts per million
ND = Not detected
N/A = Not applicable

(1987 - 1989)

TABLE 3

SUMMARY OF GROUND-WATER ANALYTICAL DATA
CHEVRON SERVICE STATION #7127
TRACY, CALIFORNIA

SAMPLE DATE	SAMPLING POINT	BENZENE (ppb)	TOLUENE (ppb)	TOTAL XYLENES (ppb)	ETHYLBENZENE (ppb)	TPH (ppm)
12/21/87	T-1	2	ND	ND	ND	NT
01/05/88	T-2	4	ND	ND	ND	NT
01/08/88	T-2	1	ND	ND	ND	NT
01/08/88	T-2	1.1	ND	ND	ND	NT
01/21/88	Well	ND	ND	ND	ND	NT
02/19/88	T-1	ND	ND	ND	ND	ND
02/19/88	T-1	ND	ND	ND	ND	ND
02/19/88	Well	ND	ND	ND	ND	ND
02/19/88	TB	ND	ND	ND	ND	ND
03/14/89	Well #	3.7	0.8	NT	NT	ND
03/14/89	Well *	ND	ND	ND	NT	ND
03/14/89	T-2 #	2.7	0.4	NT	NT	ND
03/14/89	T-2 *	ND	ND	NT	NT	ND
03/14/89	T-3 #	1.4	0.4	NT	NT	ND
03/14/89	T-3 *	ND	ND	NT	NT	ND
03/14/89	TB *	ND	ND	NT	NT	ND
04/05/89	Well *	7	3	ND	NT	ND
04/05/89	Well #	6.4	2.3	1	NT	ND
04/05/89	T-2 *	6	3	3	NT	ND
04/05/89	T-2 #	5	1.5	0.7	NT	ND
04/05/89	T-3 *	2	ND	ND	NT	ND
04/05/89	T-3 #	2.3	0.6	ND	NT	ND
04/05/89	TB #	ND	ND	0.6	NT	ND
Detection Limit		0.5	0.5	0.5	0.5	1

TB = Trip Blank
NT = not tested
ppm = parts per million
ppb = parts per billion
* Analyzed by Med-Tox Associates, Inc.
# Analyzed by Clayton Environmental Consultants, Inc.
Well = samples collected from domestic well-head.

(Note: See Plate 4 for sampling point locations.)

TABLE 1

ANALYTICAL RESULTS OF WATER SAMPLES
CHEVRON, TRACY
concentrations in µg/l (ppb)

Sample Location	Sample Date	Purge Well Volumes	TPH as Gasoline	Benzene	Total Xylene	Toluene	Ethyl Benzene
Wellhead	3-14-89	3	ND (ND)	ND (3.7)	ND (ND)	ND (0.8)	ND (ND)
	4-5-89	0	ND	ND	ND	ND	ND
		3	ND	ND	ND	ND	ND
		6	ND (ND)	7.0 (6.4)	ND (1.0)	3.0 (2.3)	ND (ND)
	4-28-89	5	NT	5.0	ND	2.0	ND
	5-18-89	5	NT	ND	ND	ND	ND
Tap-2 (T-2)	3-14-89	3	ND (ND)	ND (2.7)	ND	ND (0.4)	ND
	4-5-89	0	ND	ND	ND	ND	ND
		3	ND	ND	ND	ND	ND
		6	ND (ND)	6.0 (5.0)	3.0 (0.7)	3.0 (1.5)	ND (ND)
	4-28-89	5	NT	4.0	ND	2.0	ND
	5-18-89	5	NT	ND	ND	ND	ND
Tap-3 (T-3)	3-14-89	3	ND (ND)	ND (1.4)	ND	ND (0.4)	ND (ND)
	4-5-89	0	ND	ND	ND	ND	ND
		3	ND	ND	ND	ND	ND
		6	ND (ND)	2.0 (2.3)	ND (ND)	ND (0.6)	ND (ND)
	4-28-89	5	NT	1.0	ND	ND	ND
	5-18-89	5	NT	ND	ND	ND	ND
Travel Blank	3-14-89	-	ND	ND	ND	ND	ND
	4-5-89	-	ND (ND)	ND (ND)	ND (0.6)	ND (ND)	ND (ND)
	4-28-89	-	NT	ND	ND	ND	ND
	5-18-89	-	NT	ND	ND	ND	ND
Detection Limit	-	-	100 (50)	0.5 (0.4)	2.0 (0.4)	0.5 (0.3)	0.5 (0.3)

ND = Not detected at or above laboratory limits of detection
NT = Compound not tested for in specific sampling round
Results and detection limits of duplicate analyses are shown in parentheses
Duplicate analyses were performed by Clayton Environmental. All other analyses were performed by Med-Tox Associates.

Table 4
Water Well Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

Former Chevron U.S.A. Service Station 9-7127
Highway I-580 at Grant Line Road
Tracy, California

Sample Date	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
01/07/93	ND	ND	ND	ND	ND
01/22/93	ND	ND	ND	ND	ND
01/29/93	ND	ND	3	ND	2
02/04/93	ND	ND	ND	ND	ND
02/12/93	ND	ND	ND	ND	ND
02/19/93	ND	ND	ND	ND	ND
02/26/93	ND	ND	ND	ND	ND
03/04/93	ND	ND	ND	ND	ND
03/11/93	ND	ND	ND	ND	ND
Detection Limits:	0.5	0.5	0.5	0.5	50

ppb = Parts per billion
ND = Not detected at or above limit of detection
* The trip blank (TB-1) also contained detectable xylenes at 0.9 ppb.

Table 1
Groundwater Elevation Data

Former Chevron U.S.A. Service Station 9-7127
Highway I-580 at Grant Line Road
Tracy, California

Well Number	Sample Date	Well Elevation (feet)	Depth to Water (feet, TOC)	Groundwater Elevation (feet)
MW-1	12/28/92	329.18	30.78*	299.09*
MW-2	12/28/92	327.22	28.59	298.63
MW-3	12/28/92	329.26	30.69	298.57

TOC = Top of casing
* Separate-phase hydrocarbons (1.67 feet) were reported; level measured represents the top of liquid.
Elevations relative to bench mark 477-R at 309.20 feet, USC & GS datum.

SIERRA

Table 1. Water Level Data and Well Construction Details - Former Chevron Service Station #9-7127, Interstate 580 at Grant Line Road, Altamont Pass Area, California

Well ID	Date Measured	DTW (ft)	TOC (ft)	GWE (msl)	Product Thickness* (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval
						<----------feet below grade---------->		
MW-1	2/15/94	29.77	329.17	299.40	0	22-37	---	---
MW-2	2/15/94	27.09	327.22	300.13	0	21-36	---	---
MW-3	2/15/94	29.87	329.28	299.41	0	22-37	---	---
MW-4	2/15/94	29.90	329.44	299.54	0	22 - 37	20 - 37	0 - 20
MW-5	2/15/94	25.10	312.88	287.78	0	5 - 25	4 - 25	0 - 4

EXPLANATION:

DTW = Depth to water
TOC = Top of casing elevation
GWE = Ground water elevation
msl = Measurements referenced relative to mean sea level
--- = Not available/not applicable

NOTES:

All top of casing elevations were surveyed by Tronoff Land Surveying, Davis, California on November 2, 1993.

* Product thickness was measured on and after February 15, 1994 with an MMC flexi-dip interface probe.

Well construction details for MW-1 through MW-3 not available for inclusion in this report.

Well construction details for MW-4 and MW-5 taken from the Well Installation Report prepared for Chevron by Pacific Environmental Group, Inc., December 3, 1993.

36904T.WL

Table 3
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

Former Chevron U.S.A. Service Station 9-7127
Highway I-580 at Grant Line Road
Tracy, California

Well Number	Sample Date	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-2	12/28/92	ND	ND	ND	ND	0.6*
MW-3	12/28/92	19,000	8,900	660	380	720
Detection Limits:		50	0.4	0.3	0.3	0.4

ppb = Parts per billion
ND = Not detected at or above limit of detection
* The trip blank (TB-1) also contained detectable xylenes at 0.9 ppb.

Table 2
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

Former Chevron U.S.A. Service Station 9-7127
Interstate 580 at Grant Line Road
Tracy, California

Boring Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
(Grab Sample) MW-4/B-2	05/21/93	ND	12	2	ND	1
B-3	05/21/93	96	1	0.5	ND	ND
(Grab Sample) MW-5/B-4	05/25/93	ND	ND	ND	ND	0.9
MW-4	05/25/93	300	56	10	0.8	3
MW-5	05/25/93	ND	ND	ND	ND	ND
Detection Limits:		50	0.5	0.5	0.5	0.5

ppb = Parts per billion
ND = Not detected at or above limit of detection.

SIERRA

Table 1. Water Level Data and Ground Water Analytic Results - Former Chevron Service Station #9-7127, Interstate 580 at Grant Line Road, Altamont Pass Area, California

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	Analytic Method	TPPH(G)	B	T	E	X
						<----------ppb---------->				
MW-1/										
329.17	2/15/94	29.77	299.40	0	8015/8020	99,000	20,000	24,000	2,000	9,800
Screened Interval	**4/21/94**	**29.85**	**299.32**	**0**	---	---	---	---	---	---
22-37'	**6/1/94**	**29.92**	**299.25**	**0**	**8015/8020**	**58,000**	**12,000**	**15,000**	**1,100**	**5,800**
	9/2/94			0.5						
MW-2/										
327.22	2/15/94	27.09	300.13	0	8015/8020	83	21	6	1	3
	4/21/94	**27.81**	**299.41**	**0**	---	---	---	---	---	---
21-36'	**6/1/94**	**27.98**	**299.24**	**0**	**8015/8020**	**<50**	**1.3**	**0.5**	**<0.5**	**<0.5**
	9/2/94					82	13	6	3.6	14
MW-3/										
329.28	2/15/94	29.87	299.41	0	8015/8020	23,000	11,000	1,700	540	1,000
	4/21/94	**29.96**	**299.32**	**0**	---	---	---	---	---	---
22-37'	**6/1/94**	**30.11**	**299.17**	**0**	**8015/8020**	**27,000**	**12,000**	**2,600**	**600**	**2,200**
	9/2/94					34,000	16,000	4,100	770	3,000
MW-4	5/21/93	---	---	---	8015/8020	<50	12	2	<0.5	1
	11/5/93	---	---	---	8015/8020	300	56	10	0.8	3
329.44	2/15/94	29.90	299.54	0	8015/8020	260	47	12	2	4
22-37'	**4/21/94**	**29.99**	**299.45**	**0**	---	---	---	---	---	---
	6/1/94	**30.14**	**299.30**	**0**	**8015/8020**	**880**	**200**	**23**	**2.8**	**9.6**
	9/2/94					1,700	250	27	6.4	15
MW-5	5/25/93	---	---	---	8015/8020	<50	<0.5	<0.5	<0.5	0.9
	11/5/93	---	---	---	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
312.88	2/15/94	25.10	287.78	0	8015/8020	<50	<0.5	1	<0.5	1
5-25'	**4/21/94**	**13.21**	**299.67**	**0**	---	---	---	---	---	---
	6/1/94	**13.39**	**299.49**	**0**	**8015/8020**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
	9/2/94					<50	3.2	1.8	<0.5	2.1
Trip Blank										
TB-LB	2/15/94	---	---	---	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	6/1/94	---	---	---	**8015/8020**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
	9/2									
Bailer Blank										
BB	2/15/94	---	---	---	8015/8020	<50	<0.5	<0.5	<0.5	<0.5

increasing [ ]

SIERRA

Table 1. Water Level Data and Ground Water Analytic Results - Former Chevron Service Station #9-7127, Interstate 580 at Grant Line Road, Altamont Pass Area, California (continued)

EXPLANATION:

DTW = Depth to water
TOC = Top of casing elevation
GWE = Ground water elevation
msl = Measurements referenced relative to mean sea level
TPPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
ppb = Parts per billion
--- = Not analyzed/Not applicable

ANALYTIC METHODS:

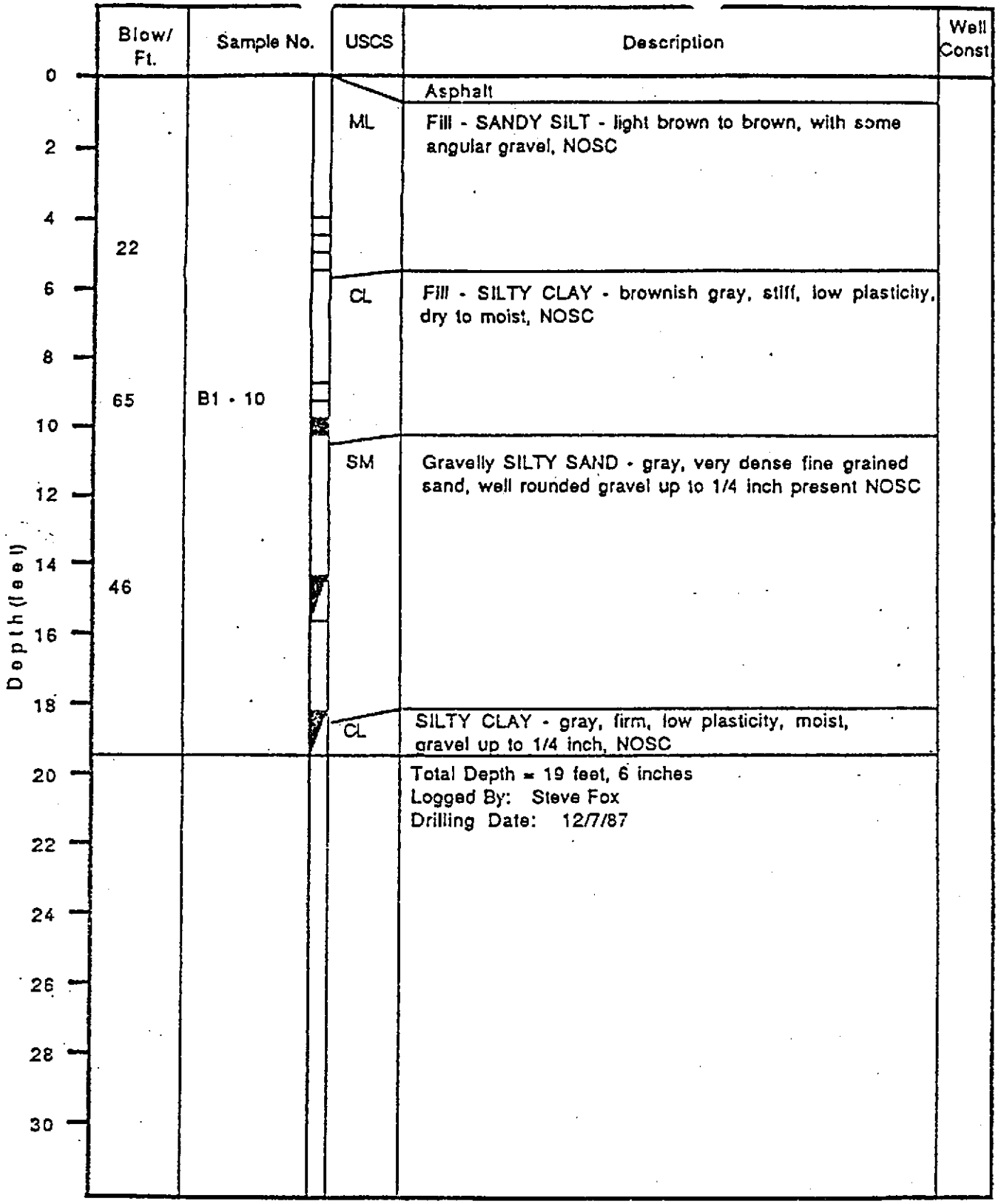
8015 = EPA Method 8015/5030 for TPPH(G)
8020 = EPA Method 8020 for BTEX

NOTES:

All top of casing elevations were surveyed by Tronoff Land Surveying, Davis, California on November 2, 1993.

* Product thickness was measured on and after February 15, 1994 with an MMC flexi-dip interface probe.
Analytic data prior to February 15,1994 compiled from the Well Installation Report prepared for Chevron by Pacific Environmental Group, Inc., December 3, 1993.

36904T.WLG



B - 1

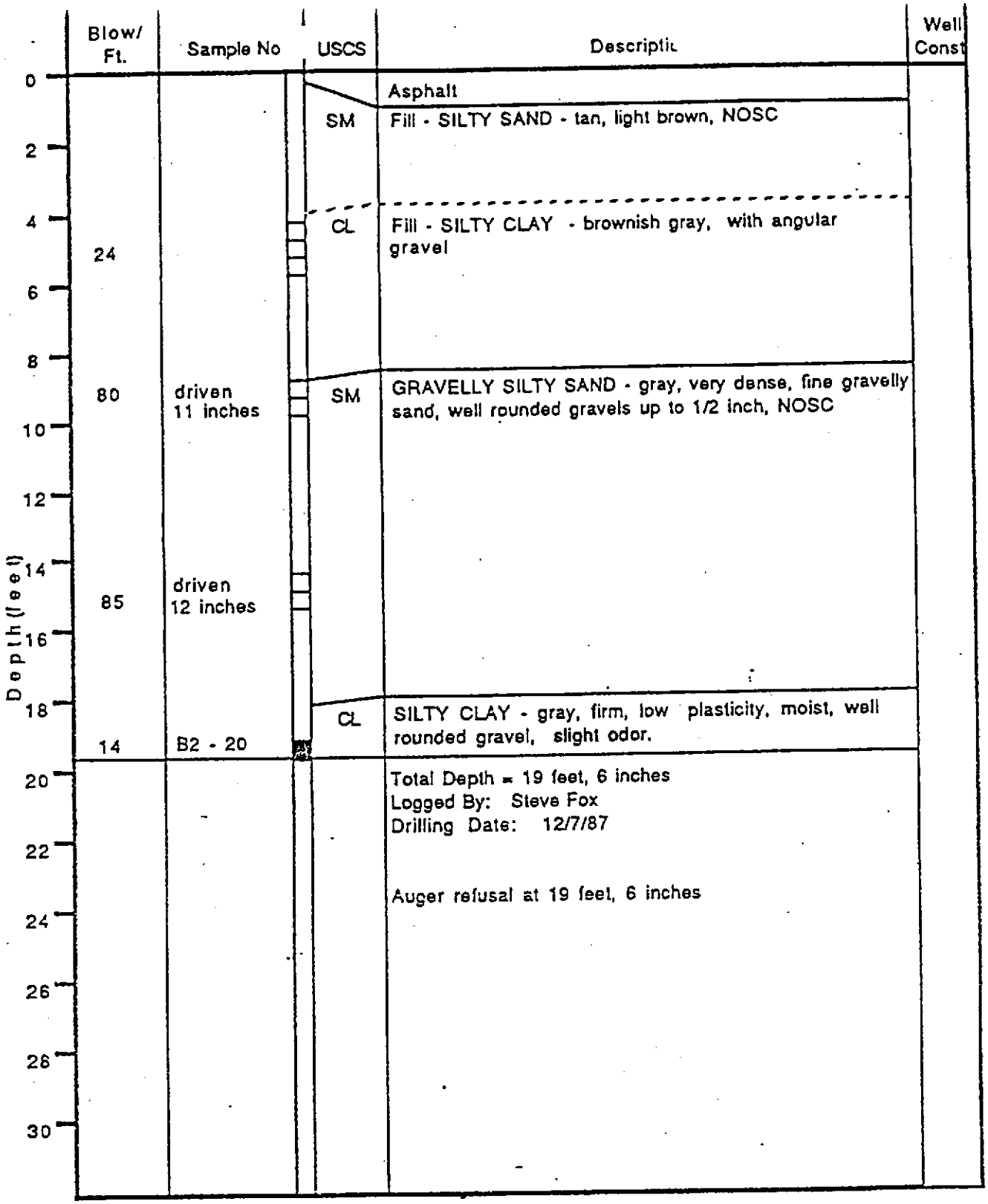
KLEINFELDER

CHEVRON, USA - STATION 7127
GRANT LINE ROAD
TRACY, CALIFORNIA

BORING LOG B-1

PLATE
A2

PROJECT NO. 10-1782-01



B - 2

KLEINFELDER

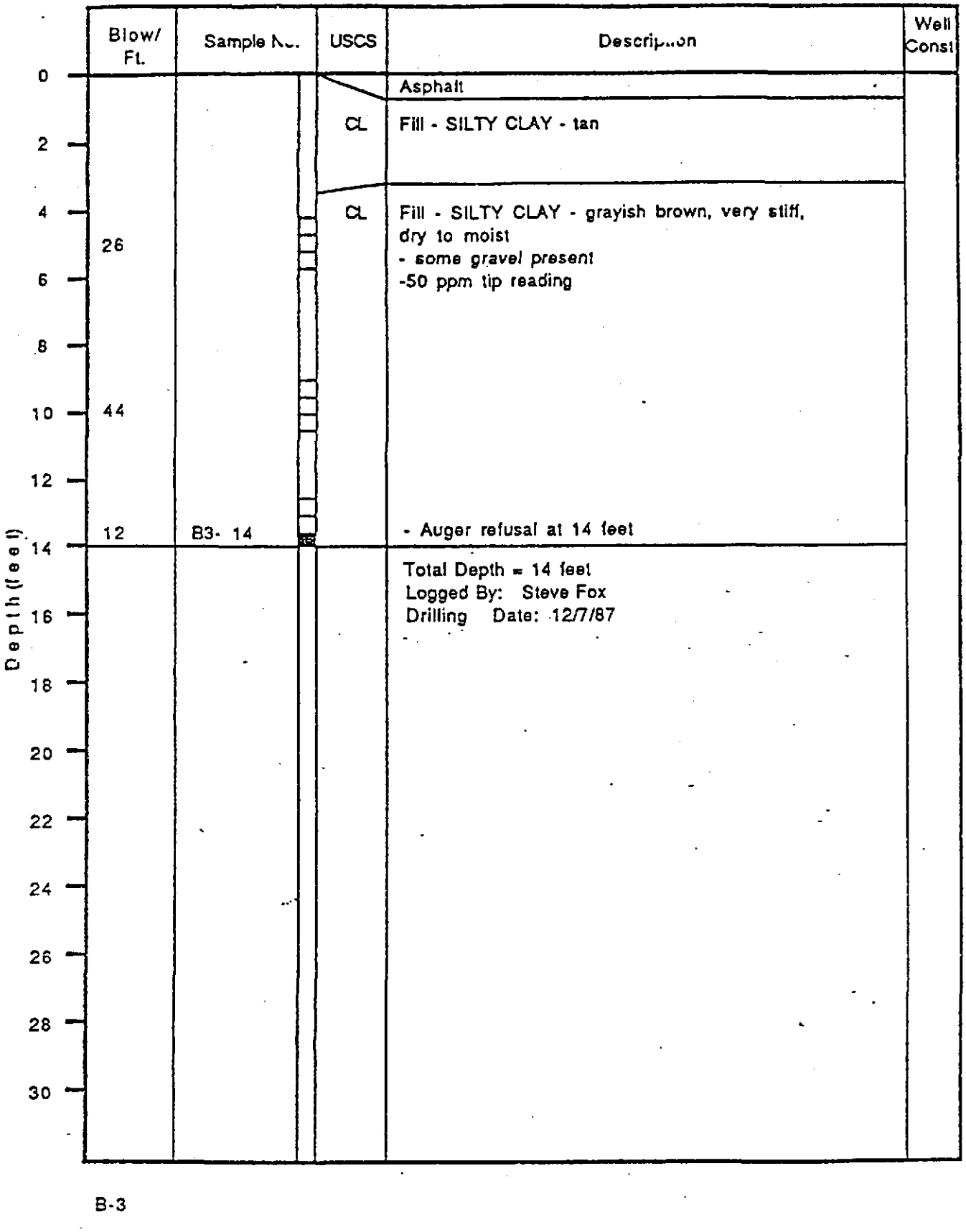
PROJECT NO. 10-1782-01

CHEVRON, USA - STATION 7127
GRANT LINE ROAD
TRACY, CALIFORNIA

BORING LOG B-2

PLATE

A3



B-3

KLEINFELDER

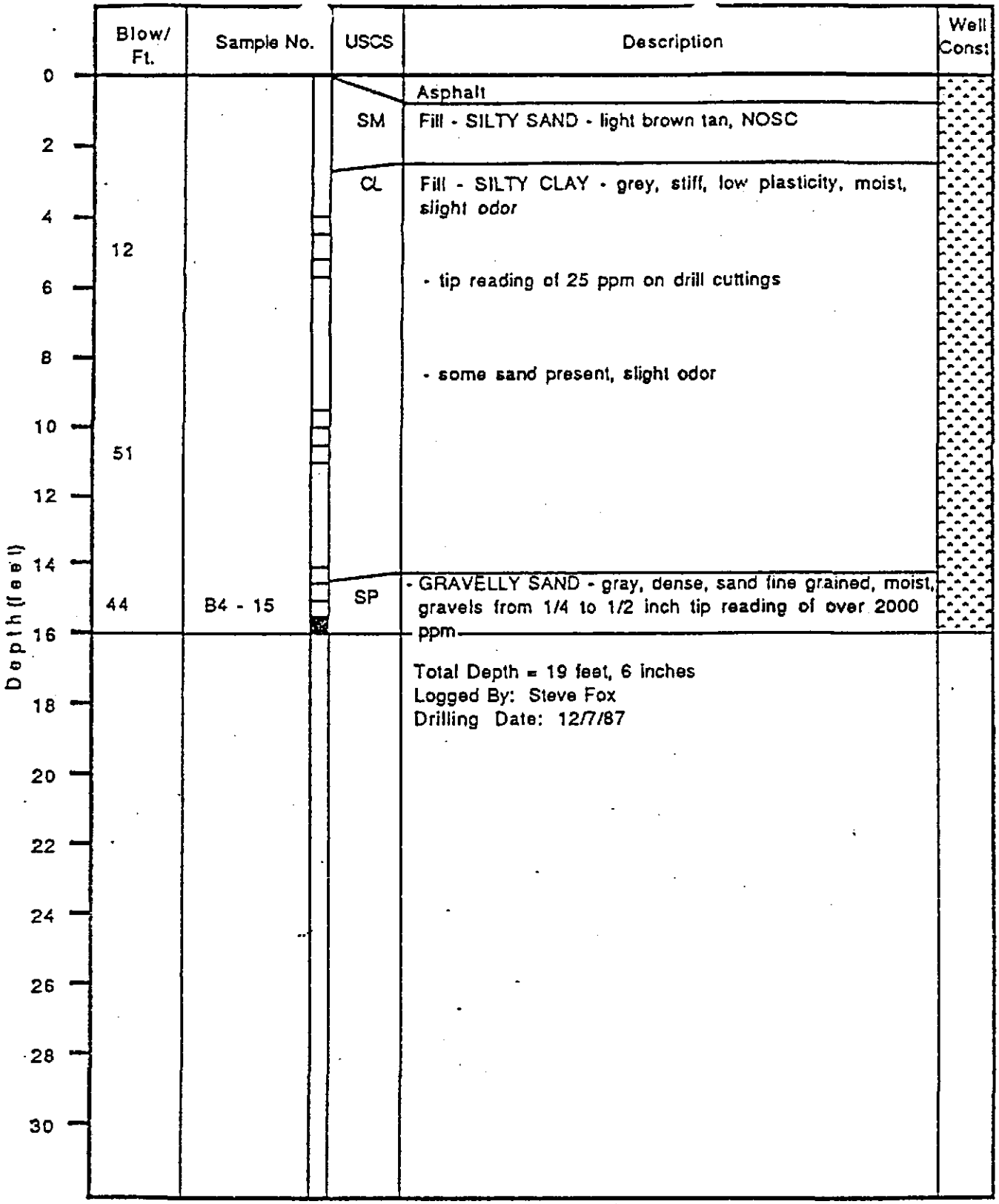
PROJECT NO. 10-1782-01

CHEVRON, USA - STATION 7127
GRANT LINE ROAD
TRACY, CALIFORNIA

BORING LOG B-3

PLATE

A4



B - 4

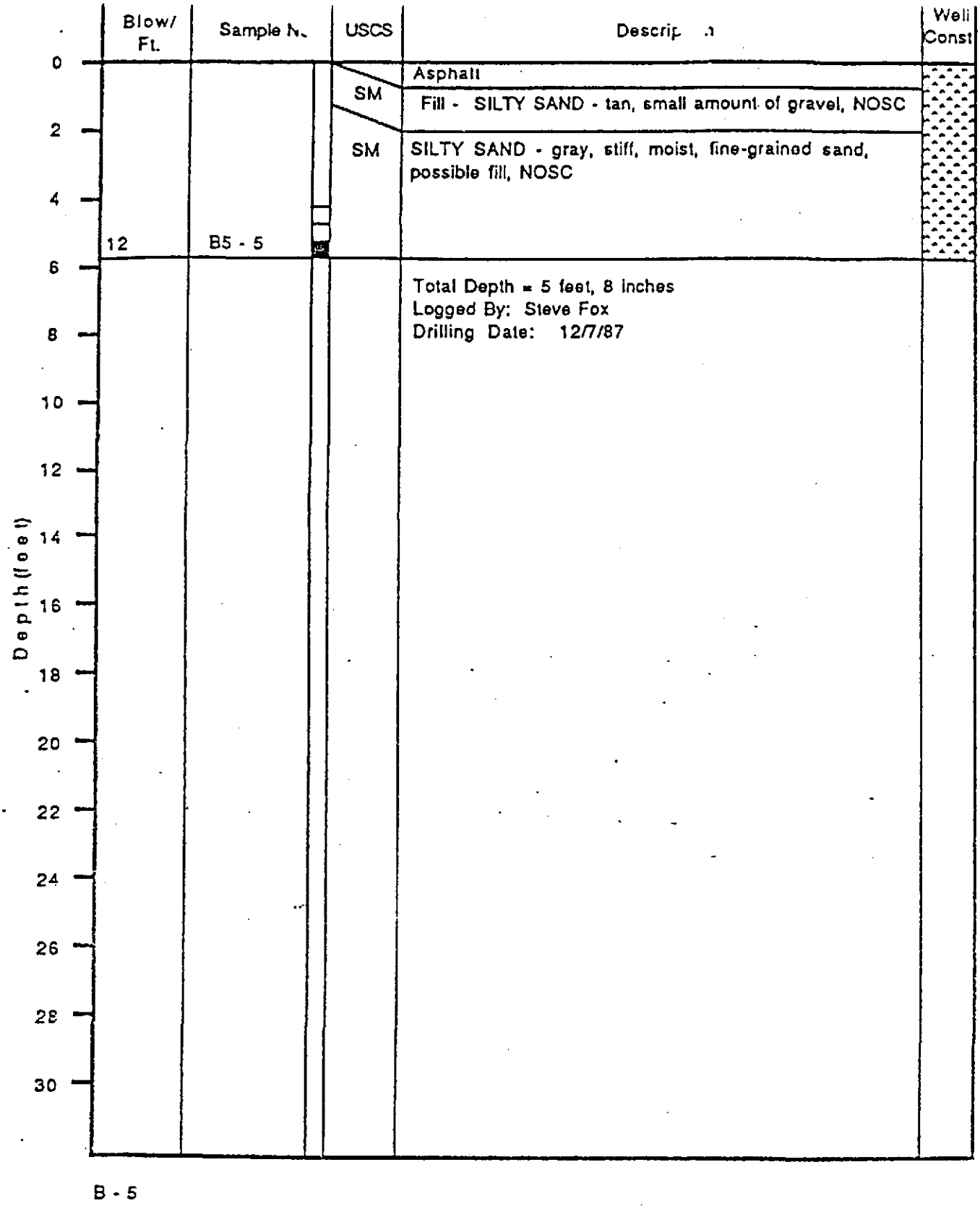
KLEINFELDER

PROJECT NO. 10-1782-01

CHEVRON, USA - STATION 7127
GRANT LINE ROAD
TRACY, CALIFORNIA

BORING LOG B-4

PLATE
A5



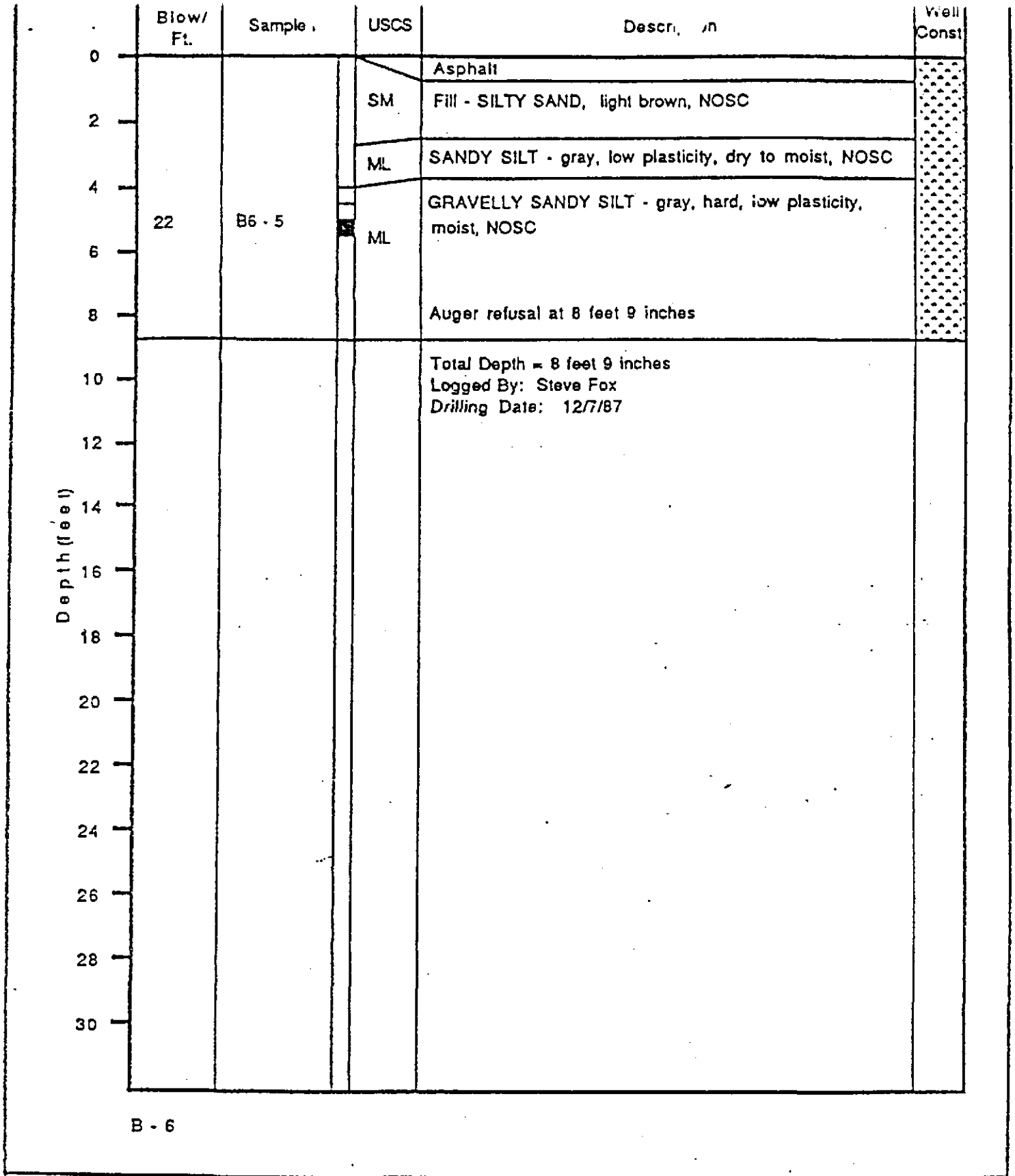
KLEINFELDER

PROJECT NO. 10-1782-01

CHEVRON, USA - STATION 7127
GRANT LINE ROAD
TRACY, CALIFORNIA

BORING LOG B-5

PLATE
A6



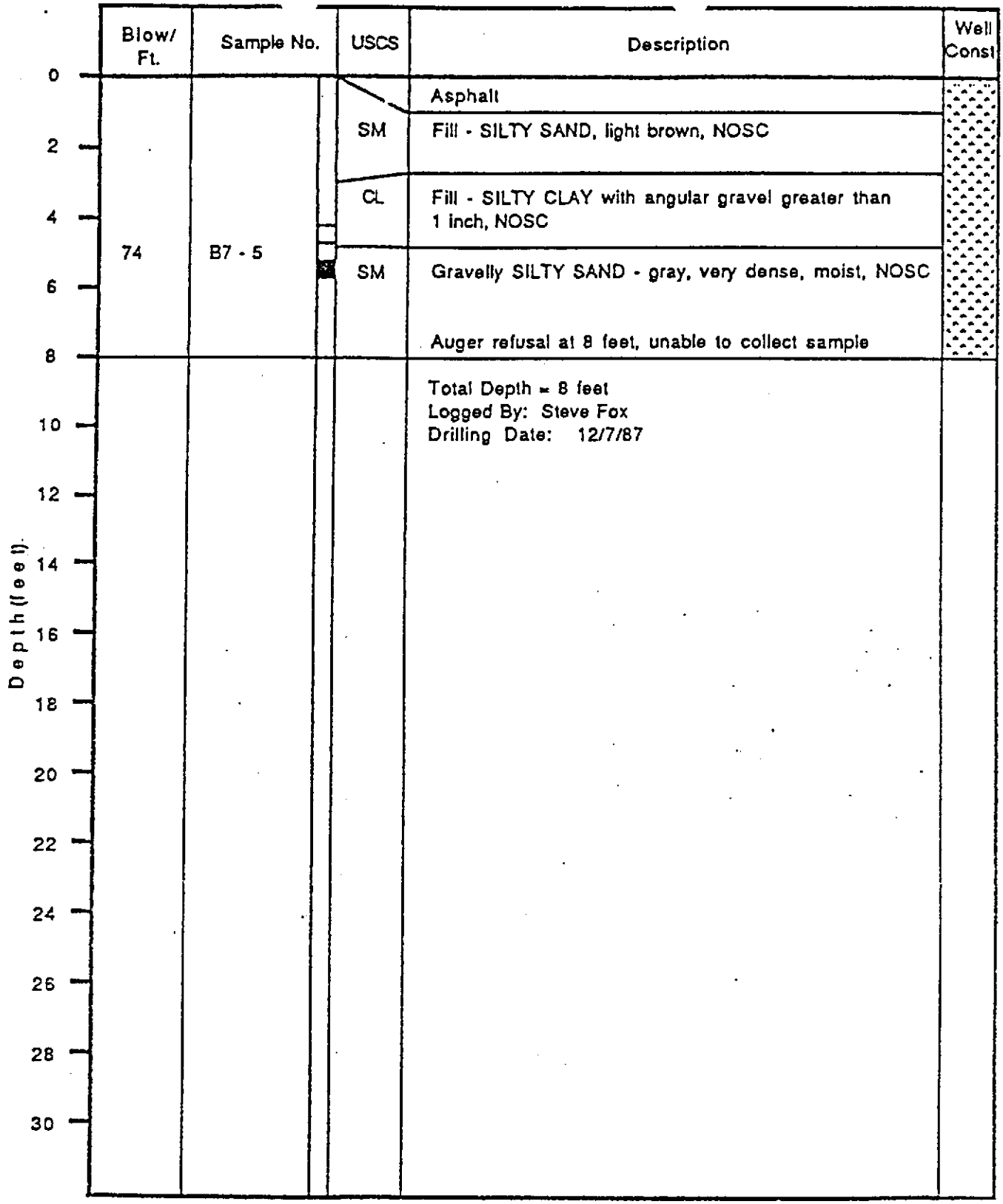
KLEINFELDER

PROJECT NO. 10-1782-01

CHEVRON, USA - STATION 7127
GRANT LINE ROAD
TRACY, CALIFORNIA

BORING LOG B-6

PLATE A7



B - 7

KLEINFELDER

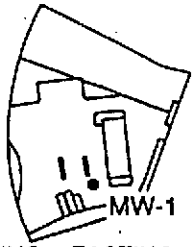
PROJECT NO. 10-1782-01

CHEVRON, USA - STATION 7127
GRANT LINE ROAD
TRACY, CALIFORNIA

BORING LOG B-7

PLATE
A8

LOCATION MAP



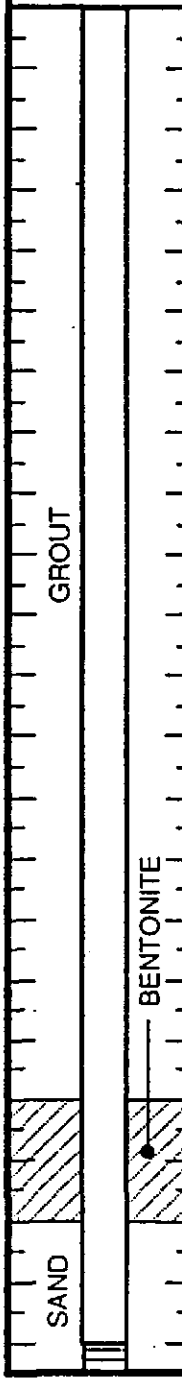
NORTHING	EASTING	ELEVATION
154.6	172.9	29.18

PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. MW-1
PAGE 1 OF 2

PROJECT NO. 325-04.01
LOGGED BY: RWNT
DRILLER: GREAT SIERRA
DRILLING METHOD: AIR ROTARY
SAMPLING METHOD: DRY CORE
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: #2-/16 Lonestar

CLIENT: CHEVRON
DATE DRILLED: 12-8-92
LOCATION: Grant Line Road
HOLE DIAMETER: 10"
HOLE DEPTH: 39.5'
WELL DIAMETER: 4"
WELL DEPTH: 38'
CASING STICKUP: ~2.3



CORE BOX	RUN	MOISTURE CONTENT	PID	ROD (%)	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
		Dp	0	0	1–2				SC	CLAYEY SAND - FILL: dark grayish brown; low to moderate plasticy; 40% clay; 15% silt; 45% fine to medium sand; weak subangular blocky; minor angular gravel fragments; loose; no product odor.
	1				3					
1			16		4–5				GC-SC	CLAYEY GRAVEL to CLAYEY SAND - FILL: dark gray; 60% clay; 10% silt; 30% medium to coarse sand with 1" angular gravel fragments throughout; minor iron oxide staining and caliche; medium dense; weak product odor.
					6					
	2			0	7				SC	CLAYEY SAND: dark greenish gray; low to medium plasticity; 50% clay; 15% silt; 35% medium to coarse sand; granular; loose texture; paleosol odor; no product odor.
					8–11					
				12	12					
	3				13					
			1		14				GC	SILTY GRAVEL: silica cemented 1/4 - 1 1/4" diameter rounded quartz pebbles; poor core recovery.
					15				SS	SANDSTONE - (Neroly Formation): very dark greenish brown; 80-90% medium quartz, feldspar and mafic mineral grains subrounded with 10-20% coarse rounded 1/4 - 1" diameter conglomeratic pebbles; minor mica; local 1/4" bandof white altered feldspar rich zone perpendicular TCA; sandstone is granular; poorly sorted and is derived from intermediate volcanic rocks (andesite); low hardness; no product odor.
	4			16	16–17					
		Dry			18					@19': weak product odor increasing to strong product odor at 23'.
			3		19					
	5				20–21					
				32	22					

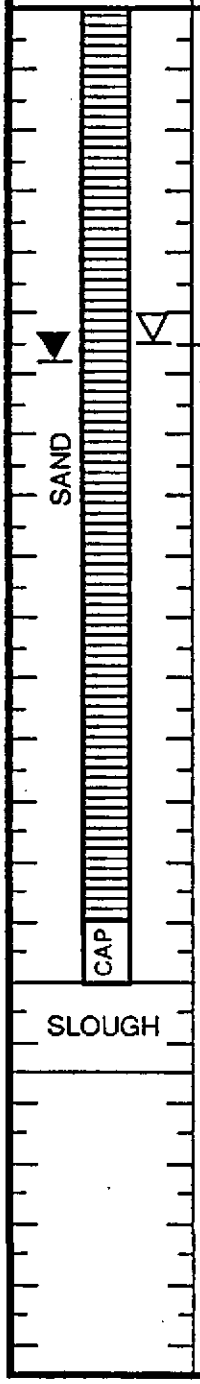
See Page One

PACIFIC ENVIRONMENTAL GROUP, INC.

WELL [redacted]-1
PAGE 2 OF 2

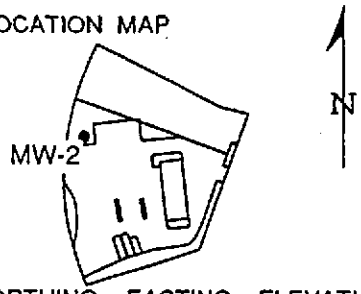
PROJECT NO. 325-04.01
LOGGED BY:
DRILLER:
DRILLING METHOD:
SAMPLING METHOD:
CASING TYPE:
SLOT SIZE:
GRAVEL PACK:

CLIENT:
DATE DRILLED:
LOCATION:
HOLE DIAMETER:
HOLE DEPTH:
WELL DIAMETER:
WELL DEPTH:
CASING STICKUP:



CORE BOX	RUN	MOISTURE CONTENT	PID	RQD (%)	DEPTH (FEET)	RECOVERY	SAMPLE ANALYZED	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
					23				SS	SANDSTONE (Neroly Formation): continued
	5	Dp-Mst	>200		24					@23': 1/2" altered epidotized vein at 35° TCA, horizontal parting common; very strong product odor at 25' and continues with depth.
					25					
	6			22	26					
2					27					
					28					
		Dp	>220		29					@29': bedding at 80° TCA.
	7	Dp		53	30					
					31					@31': moderate product odor; equigranular sandstone.
					32					@32': poor core recovery due to saturation of sandstone; weak product odor.
	8	Wt		0	33					
			70		34					
					35					
					36					
	9	Wt		12	37					
		Dp			38					@38': 5" bed of subrounded conglomerate pebbles from 1/4" to 2" diameter; no product odor.
			6		39					@39': 1mm wide chlorite veinlets at 12° TCA.
					40					BOTTOM OF BORING AT 39.5'
					41					
					42					
					43					
					44					

LOCATION MAP



NORTHING 270.1 | EASTING 131.9 | ELEVATION 27.22

PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. MW-2
PAGE 1 OF 2

PROJECT NO. 325-04.01
LOGGED BY: RWNT
DRILLER: GREAT SIERRA
DRILLING METHOD: AIR ROTARY
SAMPLING METHOD: DRY CORE
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: #2-/16 Lonestar

CLIENT: CHEVRON
DATE DRILLED: 12-10-92
LOCATION: Grant Line Road
HOLE DIAMETER: 8"
HOLE DEPTH: 37'
WELL DIAMETER: 2"
WELL DEPTH: 36'
CASING STICKUP: ~2.1

WELL COMPLETION	CORE BOX	RUN	MOISTURE CONTENT	PID	ROD (%)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
GROUT	1		Dp			1			SC	CLAYEY SAND - FILL: brown to dark brown; low plasticity; 25% clay; 15% silt; 60% medium sand; abundant subangular lithic fragments throughout; loose; no product odor.
						2				
						3			SS	SANDSTONE (Neroly Formation): >90% fine to medium sand as subangular quartz and mafic mineral grains and weakly altered feldspar; sucrosic texture; weak alteration; moderate to hard; no product odor.
						4				@2-5.5': moderate alteration evident as iron oxide surrounding up to 10% rounded 1/4 - 1" conglomeratic pebbles; 50% pebbles from 2-3'.
		1				5				
						6				@5': bedding attitude at 55° TCA.
					16	7				
				0		8				
						9				
						10				
		2	Dp			11				
					8	12				
				0		13				
						14				@14-19': loose; unconslidated sandstone; no core recovery.
						15				
		3	Mst			16				
					0	17				
						18				
				0		19				
						20				@20': pebbles; brown to dark brown; matrix is >90% quartz and altered chloritic minerals; ~5-20% intergranular porosity; angular grains; pebbles are subangular, 1/4 - 1" diameter pebbles weathered by iron oxide and manganese oxide; hard; no product odor.
		4				21				
SAND	2				100	22				

BENTONITE

See Page One

PACIFIC ENVIRONMENTAL GROUP, INC.

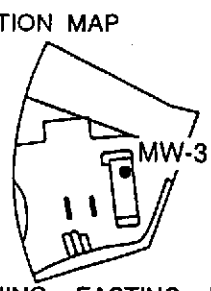
WELL MW-2
PAGE 2 OF 2

PROJECT NO. 325-04.01
LOGGED BY:
DRILLER:
DRILLING METHOD:
SAMPLING METHOD:
CASING TYPE:
SLOT SIZE:
GRAVEL PACK:

CLIENT:
DATE DRILLED:
LOCATION:
HOLE DIAMETER:
HOLE DEPTH:
WELL DIAMETER:
WELL DEPTH:
CASING STICKUP:

WELL COMPLETION	CORE BOX	RUN	MOISTURE CONTENT	PID	RQD (%)	DEPTH (FEET)	RECOVERY/SAMPLE ANALYZED	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
SAND / CAP	2	5	Dp-Mst	0	6	23–27			SS	SANDSTONE (Neroly Formation): continued
			Wt	0		28–29				@25-26': sandy claystone; brown to dark brown; fine sandy texture; horizontal platy fracturing; rare mineral grain solution cavities; moderate hardness; no product odor. @27.5': parting common at 80° TCA. @28.5-29.3': sandy claystone; brown to dark brown; fine sandy texture; horizontal platy fracturing; rare mineral grain solution cavities; moderate hardness; no product odor.
	3	6	Mst		0	30–31				@31.5': bedding at 75° TCA.
			Wt	0		32–34				@33.3-34': brecciated claystone as described above; rare biotite; moderate hardness; crushed fracturing; no product oodor. @34-36': Neroly Formation; intense parting at 76° TCA.
		7	Dp		0	35				
			Wt	1		36–37				@36-36.2': brecciated claystone as described above; rare biotite; moderate hardness; crushed fracturing; no product oodor.
						38–44				BOTTOM OF BORING AT 37'

LOCATION MAP



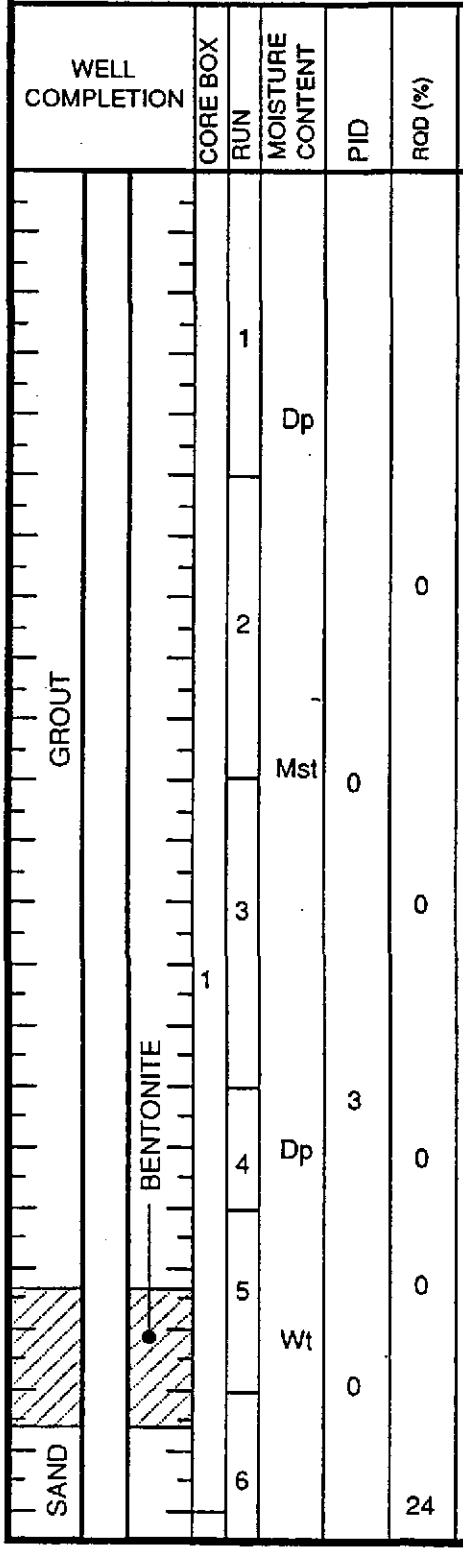
NORTHING	EASTING	ELEVATION
220.3	242.3	29.26

PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. MW-3
PAGE 1 OF 2

PROJECT NO. 325-04.01
LOGGED BY: RWNT
DRILLER: GREAT SIERRA
DRILLING METHOD: AIR ROTARY
SAMPLING METHOD: DRY CORE
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: #2-/16 Lonestar

CLIENT: CHEVRON
DATE DRILLED: 12-10-92
LOCATION: Grant Line Road
HOLE DIAMETER: 8"
HOLE DEPTH: 40'
WELL DIAMETER: 2"
WELL DEPTH: 37.5'
CASING STICKUP: ~2.3



LITHOLOGY / REMARKS

CLAYEY SAND - FILL: moderate plasticity; 50% clay; 10% silt; 40% fine to medium sand; occasional to 3" angular lithic fragments throughout; minor roots; soft; no product odor.
@1': 3-4" asphalt layer

SANDY CLAY - FILL: yellowish brown; medium plasticity; 65% clay; 10% silt; 25% fine to medium sand; subangular blocky peds; calcium carbonate and iron oxide blebs and fracture fills; in part lithified with low hardness; minor rounded to 1" pebbles; rare manganese oxide; stiff; no product odor.

SAND (Neroly Formation): black; <15% fines; 85% fine to medium, subangular, volcanically derived sand; poorly graded; massive; weathered feldspar grains; weakly oxidized; poor recovery; loose; no product odor.

CONGLOMERATIC SANDSTONE (Neroly Formation): matrix as sand above, but lithified in part; subrounded pebbles to 2" diameter; minor calcium carbonate and iron oxide around pebble edges; intense fracturing; as strong iron oxide alteration throughout matrix from 16-17' and 20-21'.

@17-18': rounded 2" diameter pebbles recovered; no sand matrix.

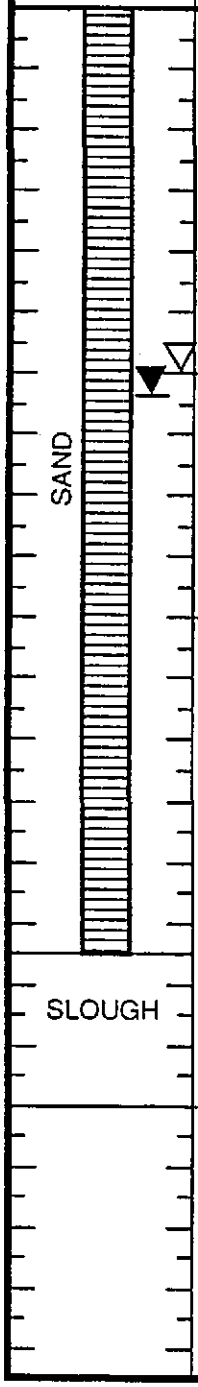
@21': see next page.

See Page One

PACIFIC ENVIRONMENTAL GROUP, INC.

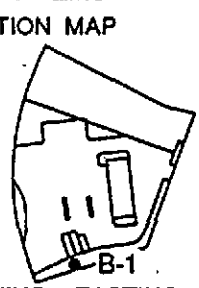
PROJECT NO. 325-04.01
LOGGED BY:
DRILLER:
DRILLING METHOD:
SAMPLING METHOD:
CASING TYPE:
SLOT SIZE:
GRAVEL PACK:

CLIENT:
DATE DRILLED:
LOCATION:
HOLE DIAMETER:
HOLE DEPTH:
WELL DIAMETER:
WELL DEPTH:
CASING STICKUP:



CORE BOX	RUN	MOISTURE CONTENT	PID	RQD (%)	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
			16		23				SS	SANDSTONE (Neroly Formation): black; 90% subangular quartz and weathered mafic minerals; minor feldspar grains fine to medium grained; 10% fines; sucrosic texture; homogeneous; moderate to intense fracturing; weakly weathered; low hardness; no product odor.
					24					@22-24': slight clay enriched zone; brittle subhorizontal parting.
					25					
2		Dp			26					@23.5': bedding at 62° TCA with perpendicular fracture running at 77° TCA.
	7				27					
				6	28					@28': bedding at 77° TCA with similar high angle fracture perpendicular to bedding at 25° TCA; increased hardness due to cementation; parting common along bedding planes at 75° and 83° TCA.
		Dp	1		29					
					30					@30': slight product odor.
					31					
	8			0	32					
					33					
					34					
			0		35					
3					36					@36': bedding at 55° TCA.
					37					
	9	Mst-Dp		0	38					@38': high angle fractures at 30° TCA and 11° TCA.
					39					
			2		40					
					41					BOTTOM OF BORING AT 40'
					42					
					43					
					44					

LOCATION MAP



NORTHING	EASTING	ELEVATION
154.6	172.9	29.18

PACIFIC ENVIRONMENTAL GROUP, INC.

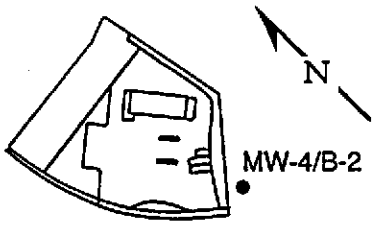
BORING NO.B-1
PAGE 1 OF 1

PROJECT NO. 325-04.01
LOGGED BY: RWNT
DRILLER: GREAT SIERRA
DRILLING METHOD: AIR ROTARY
SAMPLING METHOD: DRY CORE
CASING TYPE: NA
SLOT SIZE: NA
GRAVEL PACK: NA

CLIENT: CHEVRON
DATE DRILLED: 12-9-92
LOCATION: Grant Line Road
HOLE DIAMETER: 6"
HOLE DEPTH: 22'
WELL DIAMETER: NA
WELL DEPTH: NA
CASING STICKUP: NA

WELL COMPLETION	CORE BOX	RUN	MOISTURE CONTENT	PID	ROD (%)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
Back Filled With Grout			Mst			1			SP	SAND - FILL: variable color from yellow to dark yellowish brown; no plasticity; 15% clay; 15% silt; 70% fine to medium sand; subrounded; minor wood fragments; local rooted peds of gray clay; loose; no product odor.
						2				
			Dp			3			SM	SILTY SAND - FILL: brown; low plasticity; 15% clay; 25% silt; 60% fine to medium sand; loose; subrounded gravel to 1/2" diameter; no product odor.
						4				
				0		5			SC	CLAYEY SAND - FILL: low plasticity; dark grayish brown; 30% clay; 15-20% silt 50-55% fine to medium sand; abundant angular to 1-1/2" diameter gravel fragments; no product odor.
	1	1	Mst			6				
				0		7			CL	CLAY - FILL: very dark greyish brown; low plasticity; subangular conglomeratic pebbles in dark gray sandy clay matrix; 60% clay; 20% silt; 20% fine to coarse sand; silty texture; angular coarse sand fragments throughout; rare iron oxide blebs; soft; no product odor.
			Mst			8				
						9				
		2				10				
						11				
				2		12				
			Mst-Wt	11		13			SM	SILTY SAND - FILL: grayish green; no to low plasticity; 15% silt;10% clay; 75% medium to coarse sand; subrounded coarse sand pebbles; loose; slight product odor.
		3				14				
						15				SANDSTONE (Neroly Formation): variable color from white to very dark gray brown; 10% clay;10% silt; 80% medium quartz and weathered mafic minerals and iron oxide altered feldspars, subangular; abundant to 1/2" clastic fragments; weak fracturing; intragranular porosity; hard; no to weak product odor.
						16				
				15		17			SS	
		4				18				@19': very dark gray; 10% fines; 90% fine to medium sand; subangualr granular sucrosic texture; weak fracturing and alteration; dense; no to weak product odor.
						19				
			Dp		26	20				@20': bedding at 77° TCA.
						21				@22': moderate product odor.
				>200		22				BOTTOM OF BORING AT 22'

LOCATION MAP



PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. MW-4/B-2
PAGE 1 OF 1

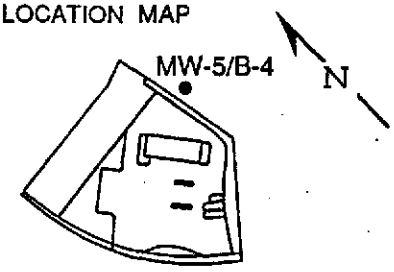
PROJECT NO. 325-04.04
LOGGED BY: AFW
DRILLER: Great Sierra
DRILLING METHOD: AIR
SAMPLING METHOD: CORE
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2 X 12 Sand

CLIENT: Chevron
DATE DRILLED: 5-21-93
LOCATION: Grant Line Road
HOLE DIAMETER: 8 7/8"
HOLE DEPTH: 37'
WELL DIAMETER: 2"
WELL DEPTH: 37"
CASING STICKUP: 3'

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
GROUT	Dp	0	push	6			SC	CLAYEY SAND - FILL: dark brown; 30-40% fines; abundant lithic fragments; loose; no product odor.
	Dp	0.1		10			SS	SANDSTONE (Neroly Formation): olive green >90% fine to medium sand; subangular quartz, lithic fragments, and weakly altered feldspar; faint product odor.
BENTONITE SAND	Wt	2.0		30				@30': as above; no product odor.

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44

LOCATION MAP



PACIFIC ENVIRONMENTAL GROUP, INC.

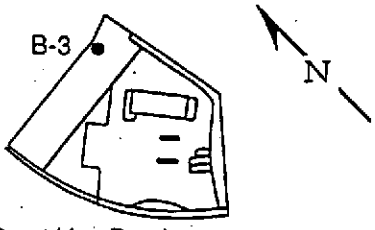
WELL NO. MW-5/B-4
PAGE 1 OF 1

PROJECT NO. 325-04.04
LOGGED BY: CJM
DRILLER: Great Sierra
DRILLING METHOD: AIR
SAMPLING METHOD: CORE
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2 X 12 SAND

CLIENT: Chevron
DATE DRILLED: 5-25-93
LOCATION: Grant Line Road
HOLE DIAMETER: 8 7/8"
HOLE DEPTH: 25'
WELL DIAMETER: 2"
WELL DEPTH: 25'
CASING STICKUP: 3'

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
GROUT, BENTONITE, SAND				2–24			SS	SANDSTONE: greenish brown; 90% coarse sand; lithic fragments; no product odor.
	Mst	0		10				@10': grayish brown; 90% coarse to medium sand; subrounded to subangular; lithic fragments; hard to very hard; no product odor.
	Wt	0		16				
				26				BOTTOM OF BORING 25'

LOCATION MAP



PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. B-3
PAGE 1 OF 1

PROJECT NO. 325-04.04
LOGGED BY: CJM
DRILLER: Great Sierra
DRILLING METHOD: AIR
SAMPLING METHOD: CORE
CASING TYPE: NA
SLOT SIZE: NA
GRAVEL PACK: NA

CLIENT: Chevron
DATE DRILLED: 5-21-93
LOCATION: Grant Line Road
HOLE DIAMETER: 94 mm
HOLE DEPTH: 25'
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
Backfilled With Cement	Mst	0		2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24			SS	SANDSTONE (Neroly Formation): green; >85% coarse sand; subangular; lithic fragments; moderate to hard no product odor.
	Dp	0						@15': bluish/green; 90% medium to fine sand; quartz; no lithic fragments; moderate to hard, no product odor.
				26, 28, 30, 32, 34, 36, 38, 40, 42, 44				BOTTOM OF BORING 25'