Weiss Associates Environmental and Geologic Services

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will install another SOS well ✓

w.p. approved 8-8-95

COMPREHENSIVE SITE EVALUATION AND PROPOSED FUTURE ACTION PLAN

at

Chevron Service Station 9-6991
2920 Castro Valley Boulevard
Castro Valley, 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

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

Eric M. Nichols December 20, 1994
Registered Civil Engineer
No. 42695

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CONTENTS

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APPENDICES

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SUMMARY

The Chevron site at 2920 Castro Valley Boulevard in Castro Valley, California is an operating service station. In September 1990, two underground storage tanks (one waste oil and one product) were removed with their associated piping. The two remaining underground tanks were left in place and new product lines were installed. In September 1991, three monitoring wells were installed to define hydrogeologic conditions beneath the site and to determine the extent of petroleum hydrocarbons in soil and ground water. Three additional wells were installed in September 1992.

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

- ***The hydrocarbon plume is mitigated by natural processes.*** Continued low to non-detectable hydrocarbon concentrations in source area well MW-1 and downgradient wells MW-2 and MW-5 indicate that onsite hydrocarbons are not migrating and are being naturally attenuated and degraded.

- ***Source areas have been removed from the site:*** Approximately 700 cubic yards (cu yds) of soil was excavated during tank removal activities. Soil samples collected beneath the former underground storage tanks (USTs) and product lines indicated that only low concentrations of total petroleum hydrocarbons reported as gasoline (TPH-G), total petroleum hydrocarbons reported as diesel (TPH-D), benzene or total oil and grease (TOG) were present in the remaining unsaturated soil. Consistently decreasing hydrocarbon concentrations in ground water indicate that source removal was successful.

- ***Hydrocarbon concentrations in ground water are consistently low or non-detected.*** Hydrocarbon concentrations in quarterly ground water samples collected from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6 have been low or not detected for more than a year.

- ***Probable offsite source.*** The source of hydrocarbons in monitoring well MW-6 may not be the subject Chevron site because the concentrations in this offsite well have always been higher than in any onsite well, and two utility trenches are between the well and the Chevron site.

Therefore, 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. Chevron requests a gradual reduction in well sampling frequency, and establishment of a non-attainment area encompassing the residual plume associated with the Chevron station.

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INTRODUCTION

At the request of Chevron U.S.A (Chevron), Weiss Associates has prepared this site evaluation for operating Chevron Service Station 9-6991, located at 2920 Castro Valley Boulevard, Castro Valley, California. The objectives of this evaluation are to: 1) summarize all investigative and remedial actions performed at the site to date; 2) determine whether the site meets the Regional Water Quality Control Board - San Francisco Bay Region (RWQCB) criteria for establishment of a non-attainment area (NAA); 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

Operating Chevron Service Station 9-6991 is located on the northeast corner of the intersection of Castro Valley Boulevard and Anita Road in the southwest corner of a small shopping center. The shopping center parking lot abuts the site to the north and east. Commercial businesses are located across Castro Valley Boulevard to the south. A former service station occupied the northwest corner of the intersection directly across Anita Avenue from the site. The aboveground structures of the former service station, including the building and pump island foundations, are still in place.

The Chevron site is located in the Castro Valley ground water basin in an inter-ridge valley of the Diablo Range. Unconsolidated alluvial sediments of the valley floor overlie sedimentary rocks of the Chico Formation. The Chico Formation is considered to be a non-water-bearing formation based on historically poor ground water yields. Alluvial sediments beneath the site consist of clay, silt and sand, with the sand comprising the primarily unconfined, water-bearing units in the area. The principal ground water recharge areas are the hills surrounding Castro Valley. Regional ground water flow is generally to the southwest with outflow to the San Francisco Bay.

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SITE INVESTIGATIONS

1990 Tank Removal: On September 11, 1990, Golden West Builders excavated and removed one 1,000 gallon waste oil tank and one 6,000 gallon unleaded fuel (product) tank. Associated product lines were also removed. The two remaining USTs were left in place, and new product lines were installed. Scott Seery of the Alameda County Department of Environmental Health (ACDEH) and a representative of the Castro Valley Fire Department were present during the tank removal. No indications of leaks were observed when the product tank was visually inspected for perforations, signs of structural failure and corrosion.

Tank excavation soil samples collected by Groundwater Technology, Inc. (GTI) of Concord, California, showed a maximum of 2,000 parts per million (ppm) TOG in the waste oil tank pit and 1,000 ppm TPH-D in the southernmost product line trench. All soil samples analyzed for TPH-G contained less than 100 ppm or were non-detectable. (Appendix A, Appendix B). Ground water grab samples collected on September 11, 1990 from the UST excavation contained 54,000 parts per billion (ppb) TPH-G and 6,200 ppb benzene. Depth to water was approximately 11 ft below ground surface (bgs) in the UST excavation.

SOURCE

FP noted on GW collecting in pit

Pumped?

On September 18, 1990, GTI excavated additional soil in the waste oil tank pit and the southernmost product line trench. Soil samples were collected and analyzed for TPH-D and TOG until subsequent excavation and sample analyses showed that hydrocarbons were not detected or found only at low concentrations. Sampling was not conducted in the area of the southernmost product line because further excavation could not be performed beyond the sidewalk on Castro Valley Boulevard (Appendix A). The final dimensions of the product tank excavation were approximately 40 ft by 15 ft by 13 ft deep and approximately 40 ft by 16 ft by 15 ft deep for the waste oil tank excavation. Ground water grab samples collected on September 18, 1990 from the open waste oil tank excavation contained 1,400 ppb TPH-G. Approximately 700 cubic yards of excavated soil were disposed at an appropriate landfill facility and the UST, waste oil tank and product line excavations were backfilled with clean imported soil.

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1991 Well Installation: On September 24 and 30, 1991, GTI installed three 3/4-inch monitoring wells (MW-1, MW-2 and MW-3) to approximately 21 ft depth using a 2-inch diameter hydraulically-driven coring system. TPH-G and benzene were not detected in any of five soil samples from the borings for the wells. Ground water samples collected on October 8, 1991 from all three monitoring wells were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) and TPH-G. Ground water samples collected from MW-1, adjacent to the former waste oil tank, were also analyzed for TOG. Hydrocarbons were detected in all three wells with a maximum of 230 ppb TPH-G and 45 ppb benzene detected in MW-1, although no TOG was detected in this well. Analytic results for soil and ground water samples collected during well installation are presented in Appendix B and the boring logs are presented in Appendix C.

December 1991 Quarterly Monitoring and Sampling Activities: Ground water samples collected from monitoring wells MW-1, MW-2 and MW-3 on December 4, 1991 were analyzed for TPH-G, TPH-D, BTEX and TOG. The only hydrocarbons detected were in ground water samples collected from MW-1 and MW-2, with 3.9 ppb benzene and 170 ppb TPH-D in MW-1 and 30 ppb benzene, 130 ppb TPH-D and 440 ppb TPH-G in MW-2. No TPH-G was detected in the samples collected from MW-1. Since MW-1 is near the former waste oil tank, ground water samples were also analyzed for semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), cadmium, chromium, lead, nickel and zinc but none of these compounds were detected (Appendix B).

1992 Well Installation: Between September 25 and October 10, 1992, GTI installed monitoring wells MW-4, MW-5 and MW-6 to further evaluate the lateral extent of gasoline and diesel fuel hydrocarbons in the soil and ground water beneath the site, and to compare data collected from 3/4-inch-diameter monitoring wells with the data collected from 2-inch-diameter monitoring wells. Soil samples were analyzed for TPH-G, TPH-D and BTEX. No hydrocarbons were detected except for 5 ppm TPH-D in the MW-6 boring at 5 ft bgs. Analytic results for ground water samples collected on October 27, 1992 showed that the maximum concentrations of TPH-G and BTEX, 600 and 22 ppb respectively, were found in samples collected from monitoring well MW-6. Ground water collected from monitoring

plus trace T and X in MW-6 and X in both MW-4 + MW-5

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wells MW-1, MW-2 and MW-3 showed TPH-D concentrations of 54, 110 and 120 ppb, respectively. TPH-D was not detected in samples collected from wells MW-4, MW-5 and MW-6. Comparison of analytic results for ground water samples collected from monitoring wells MW-3 (3/4-inch-diameter) and adjacent well MW-4 (2-inch-diameter), showed no detectable TPH-G concentrations in the samples from either well. Ground water analytic results are summarized in Appendix B.

1993 Offsite Source Investigation: In March 1993, GTI performed a site reconnaissance, reviewed the public project files at the RWQCB and ACDEH, and reviewed Castro Valley Sanitary District maps to identify other possible sources of hydrocarbons in monitoring well MW-6. Two of the three monitoring wells on the 2896 Castro Valley Boulevard property, the auto appearance center immediately west of the Chevron site, contained hydrocarbons, according to the October 26, 1992 ground water monitoring report prepared by C-REM Engineers (GTI, 1993). The westward to southward gradient direction fluctuations at the 2896 Castro Valley Boulevard site are similar to those observed at the adjacent Chevron site. A 21" diameter storm sewer is beneath the north side of Castro Valley Boulevard. A 36" diameter storm sewer? line runs beneath the south side and is immediately adjacent to MW-6. Both sewer lines are between the Chevron site and monitoring well MW-6.

A quarterly ground water sampling program was initiated for MW-1, MW-2 and MW-3 in October 1991 and for MW-4, MW-5 and MW-6 in October 1992. For nine quarters, TPH-G, TPH-D and BTEX concentrations have been consistently low or not detected in all wells except MW-6. Analytic results from April 7, 1994 showed 190 ppb and 24 ppb TPH-G and benzene, respectively, in ground water samples from MW-6.

REMEDIAL ACTIONS

Excavation: Two USTs and associated piping were removed from the site in 1990 along with all accessible hydrocarbon-impacted soil. Since hydrocarbon concentrations in monitoring well MW-6 have been consistently higher than those observed in any of the onsite wells, an offsite source such as the former service station located at 2896 Castro Valley Boulevard, and migration conduits such as the

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two sewer lines beneath Castro Valley Boulevard, may be responsible for the hydrocarbons detected in that well.

EVALUATION OF NON-ATTAINMENT AREA CRITERIA AND FUTURE ACTION PLAN

DISCUSSION OF NON-ATTAINMENT AREA CRITERIA

The consistent low to non-detectable concentrations of TPH-G and benzene in all wells except MW-6 indicate that this site is an excellent candidate for the establishment of a non-attainment area (NAA). In the following section, each of the RWQCB criteria for establishment of a NAA is 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.

Site Hydrogeology: The sediments beneath the site consist primarily of clay and silty clay with lesser sand and gravel. Except for MW-1, clay and silty clay are present from the surface to about 15 ft depth. The sand and gravel encountered in the upper 15 ft of the MW-1 boring is probably backfill for the former waste oil tank excavation. Below 15 ft depth, the MW-1 sediments consist of clay, silty clay, silty sand and clayey gravel. In all wells, the water table is currently in clayey sediments approximately 10 to 12 ft bgs.

continued

Ground Water Flow: The depth to ground water in site wells has ranged historically from about 8.3 to 12.5 ft bgs. Although the interpreted ground water flow direction fluctuates between westward and

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southward, the direction has typically been southwestward with a gradient ranging between 0.01 and 0.04 ft per ft. A ground water elevation contour map is presented in Appendix A. Compiled water level data for MW-1 through MW-6 are presented in the Historical Groundwater Analytical Results and Monitoring Data table included in Appendix B.

Plume Location: Hydrocarbons in onsite wells are found only in trace concentrations in MW-1 and MW-2. The highest hydrocarbon concentrations have been consistently found in offsite well MW-6, across Castro Valley Boulevard and separated from the Chevron site by two utility trenches. It is possible that hydrocarbons in MW-6 are or have been migrating along the utility trenches from other potential sources such as the former service station at 2896 Castro Valley Boulevard.

Plume Stability: Low hydrocarbon concentrations were detected in onsite wells MW-1, MW-2 and MW-3 in 1991 and 1992. However, TPH-G has not been detected in any of these wells since December 1992 and benzene has been detected at only trace concentrations in wells MW-1 and MW-2 (8.5 to 1.4 ppb, respectively) and not at all in MW-3 since December 1992. The fact that no hydrocarbons have been detected in MW-5, downgradient of MW-1, indicates the hydrocarbon plume has not migrated offsite in this direction. These data indicate that hydrocarbons have been naturally attenuated by sorption, dispersion, volatilization through the unsaturated zone, and/or chemical and biological degradation. The hydrocarbons detected in MW-6 may originate from an offsite source.

Criterion b. Adequate source removal and/or isolation is undertaken to limit future migration of pollutants to ground water.

Source Removal: The gasoline and waste oil tanks and product piping were removed in September 1990 and were reported to be in good condition. In addition, seven hundred cubic yards of soil in the vicinity of the former tanks and product lines were excavated and disposed and the pits were backfilled with clean, imported soil. The highest TPH-G concentration in UST pit soil samples was 63 ppm. Although one initial waste oil tank pit sample contained 2,000 ppm TOG and one UST pit sample contained 1,000 ppm TPH-D, re-excavation and analysis of samples collected in these areas found a

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maximum of 780 ppm TOG, in the waste oil tank pit, and 140 ppm TPH-D in the UST pit. Elevated concentrations of TPH-G were not found in UST pit soil samples, and decreasing ground water hydrocarbon concentrations indicate that the former heavy hydrocarbon source is no longer an active source.

Criterion c. Dissolved phase cleanup is not cost-effective due to limited water quality impacts, environmental and human health risks and separate phases have been or are actively being removed.

Excavation, the only appropriate remedial technology for source removal at this site, has been successfully performed as discussed in the Remedial Actions section above. Benzene in ground water is now either not detected or is only slightly above the maximum contaminant level (MCL) for benzene in all onsite wells. Very low hydrocarbon concentrations in onsite wells do not warrant the expense or probable low efficiency associated with extracting hydrocarbon-impacted ground water.

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.

Very little risk to human health exists at this site:

- Benzene concentrations in onsite wells are either not detected or only slightly above its 1 ppb MCL and the higher hydrocarbon concentrations found at this site are all heavier, non-regulated hydrocarbons.
- The site is located at a small shopping center and the nearest residence is across Anita Avenue.
- The site is paved with up to 6 inches of asphalt.
- The site is not located within a major ground water basin and water from the upper, unconfined aquifer is not likely to be used as a drinking water supply.

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Our plan for containing and managing the remaining risks posed by residual hydrocarbons at this site includes: 1) continued ground water monitoring for hydrocarbons for a limited period of time; and 2) implementing a contingency plan if monitoring indicates significant migration and/or increasing concentrations in the plume. Chevron will continue to monitor MW-6 for several years to determine the status of the offsite hydrocarbon contamination. ?

Our proposed ground water monitoring schedule and Contingency Plan are presented in the Future Action Plan below.

FUTURE ACTION PLAN

Continued Ground Water Monitoring: Currently, six Chevron wells are monitored quarterly for hydrocarbons. Hydrocarbons have not been detected in MW-3, MW-4 and MW-5 for over 4 quarters. Continued quarterly monitoring in all of these wells will not yield additional information concerning any ground water contamination originating from the Chevron site. To ensure compatibility with regulatory concerns while reducing monitoring at this site Chevron plans to:

OK

1) Discontinue sampling wells MW-3 and MW-4. No hydrocarbons have been detected in these wells for four quarters and are upgradient of the site plume.

2) Discontinue sampling well MW-1 because downgradient well MW-5 can monitor hydrocarbons that may migrate from MW-1 area, and because hydrocarbon concentrations in MW-1 are low or not detected.
recent increases 12/94

3) Monitor and report analytical data from MW-5 semi-annually for 2 years at the seasonal high and low water table, then annually for one year at the seasonal high water table. Hydrocarbons have not been detected in this downgradient well for four quarters. The proposed monitoring schedule will provide additional data confirming that the plume is not migrating from the site.

4) Monitor and report analytical data from MW-2 semi-annually for 2 years at the seasonal high and low water table, then annually for one year at the seasonal high water table. This crossgradient well has had only trace hydrocarbon concentrations for four quarters.

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5) Monitor and report analytical data from well MW-6 semi-annually for 1 year at the seasonal high and low water table. If all the data continue to indicate that the hydrocarbons in MW-6 originate offsite or if concentrations approach the MCL for benzene, then reduce ground water monitoring to annual for 1 year. Monitoring will cease after 2 years if the contingency plan is not implemented during that time.

how will they indicate this?

Proposed Monitoring and Sampling Schedule. Chevron Service Station #9-6991

	1995				1996				1997			
Well ID	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
MW-1	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	---	G&S	---	G&S	---	G&S	---	G&S	---	G&S	---	---
MW-3	---		---		---		---	---	---		---	---
MW-4					---		---	---	---		---	---
MW-5	---	G&S	---	G&S	---	G&S	---	G&S	---	G&S	---	---
MW-6	---	G&S	---	G&S	---	G&S	---	---	---	---	---	---

G&S = Gauging and Sampling

Contingency Plan: For each of the three sampling points, "baseline" and "trigger" conditions have been defined (appendix D). Should monitoring indicate that "trigger" conditions occur in any well for two consecutive monitoring periods, a Contingency Plan for increased ground water monitoring will go into effect. This plan will ensure that "baseline" conditions are maintained in all wells. Details of the contingency plan are presented in Appendix D.

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CONCLUSIONS

Data collected at the site demonstrate that:

- Quarterly ground water samples have been collected from wells MW-1, MW-2 and MW-3 since 1991 and from monitoring wells MW-4, MW-5 and MW-6 since 1992. Hydrocarbon concentrations in wells MW-1, MW-2, MW-3, MW-4 and MW-5 have been low or not detected for almost two years.

- The majority of the apparent hydrocarbon-carbon impacted soil has been removed from the site. The consistently decreasing hydrocarbon concentrations in ground water indicate that source removal was successful.

- The source of hydrocarbons in well MW-6 may not be the Chevron site since the concentrations in this offsite well have always been higher than in onsite wells. Two utility trenches are between MW-6 and the Chevron site, and may be acting as preferred migration pathways for hydrocarbons migrating from a source to the west.

Based on the data summarized in this report, it is apparent that no additional remedial measures are necessary. Declaring a downgradient plume boundary well as the attainment point for achievement of maximum contaminant levels (MCLs) will allow natural processes to continue to degrade and contain the plume. The proposed monitoring and contingency plan will ensure that the risks posed by the residual plume are contained and managed.

Therefore, Chevron requests that the ACDEH and the RWQCB consider redefining the area of attainment of water quality objectives to outside the site perimeter at monitoring well MW-5. Chevron will continue to monitor the interior of the non-attainment area at well MW-2 for three more years to further confirm the stable/decreasing hydrocarbon concentrations of this plume.

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REFERENCES

Groundwater Technology, Inc., November 11, 1991. Well Installation Report, Chevron Service Station No. 9-6991, 2920 Castro Valley Boulevard, Castro Valley, California.

Groundwater Technology, Inc., December 27, 1991. Quarterly Monitoring and Sampling Activities, Chevron Service Station No. 9-6991, 2920 Castro Valley Boulevard, Castro Valley, California.

Groundwater Technology, Inc., December 11, 1992. Environmental Assessment Report, Chevron Service Station No. 9-6991, 2920 Castro Valley Boulevard, Castro Valley, California.

Groundwater Technology, Inc., April 2, 1993. Groundwater Monitoring and Sampling Activities with June 4, 1993 Cover Letter from Chevron USA Products Company, Chevron Service Station No. 9-6991, 2920 Castro Valley Boulevard, Castro Valley, California.

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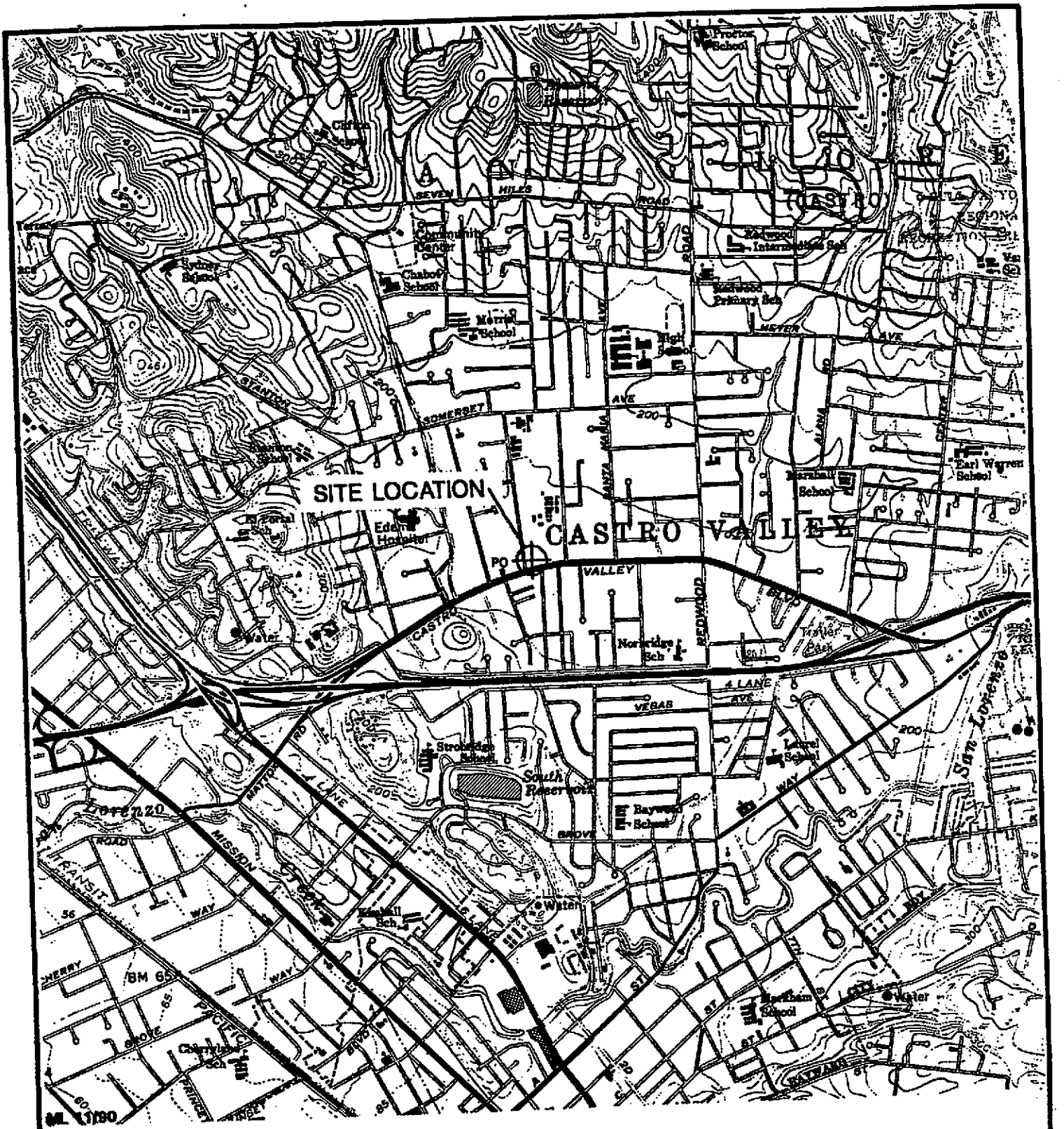


FIGURE 1
SITE LOCATION MAP

CHEVRON USA
CASTRO VALLEY, CALIFORNIA

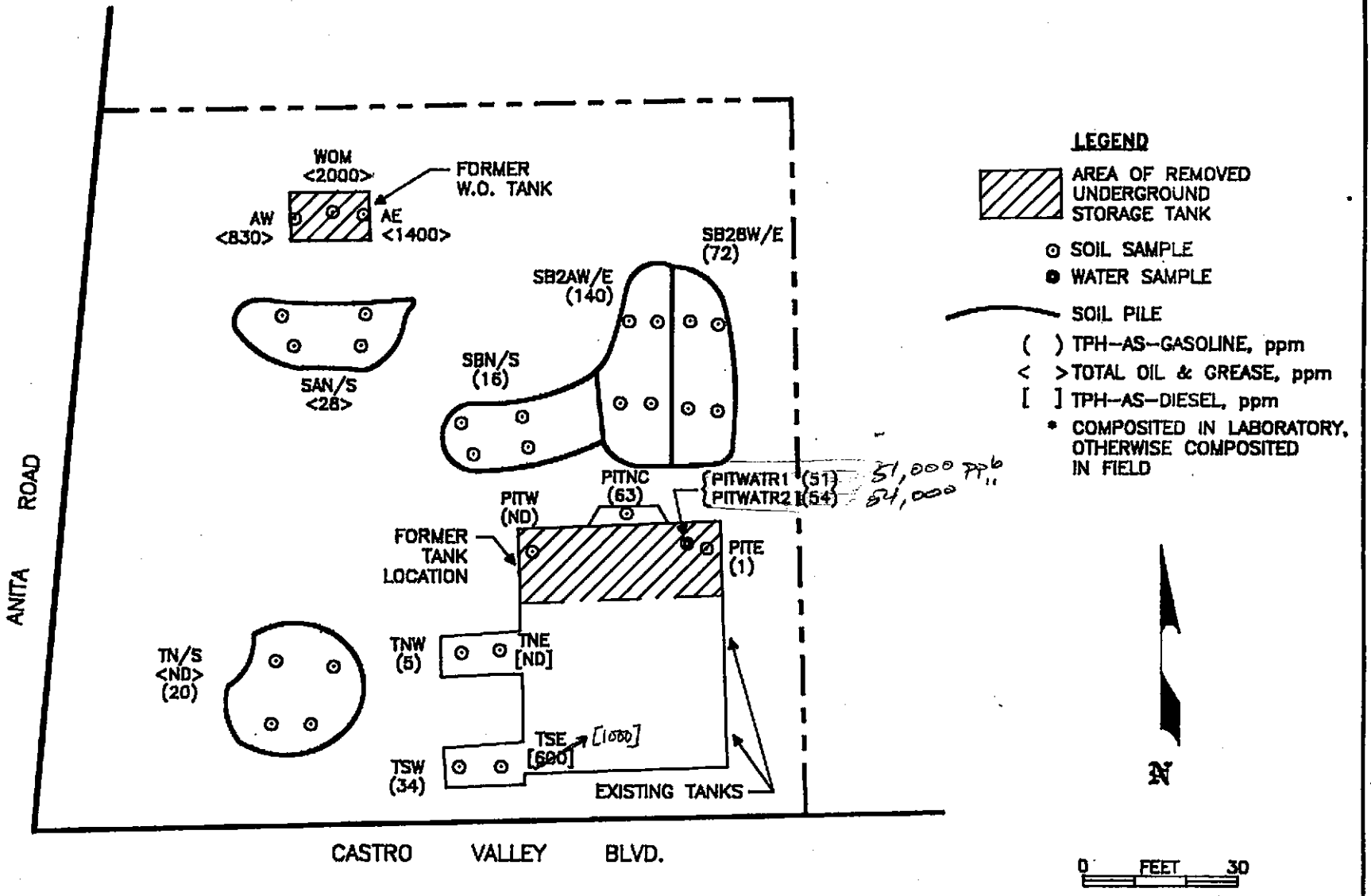


FIGURE 3
INITIAL SAMPLE LOCATIONS FOR
TANK EXCAVATIONS AND SOIL PILES
(9/11/90)

CHEVRON, USA
CASTRO VALLEY, CALIFORNIA

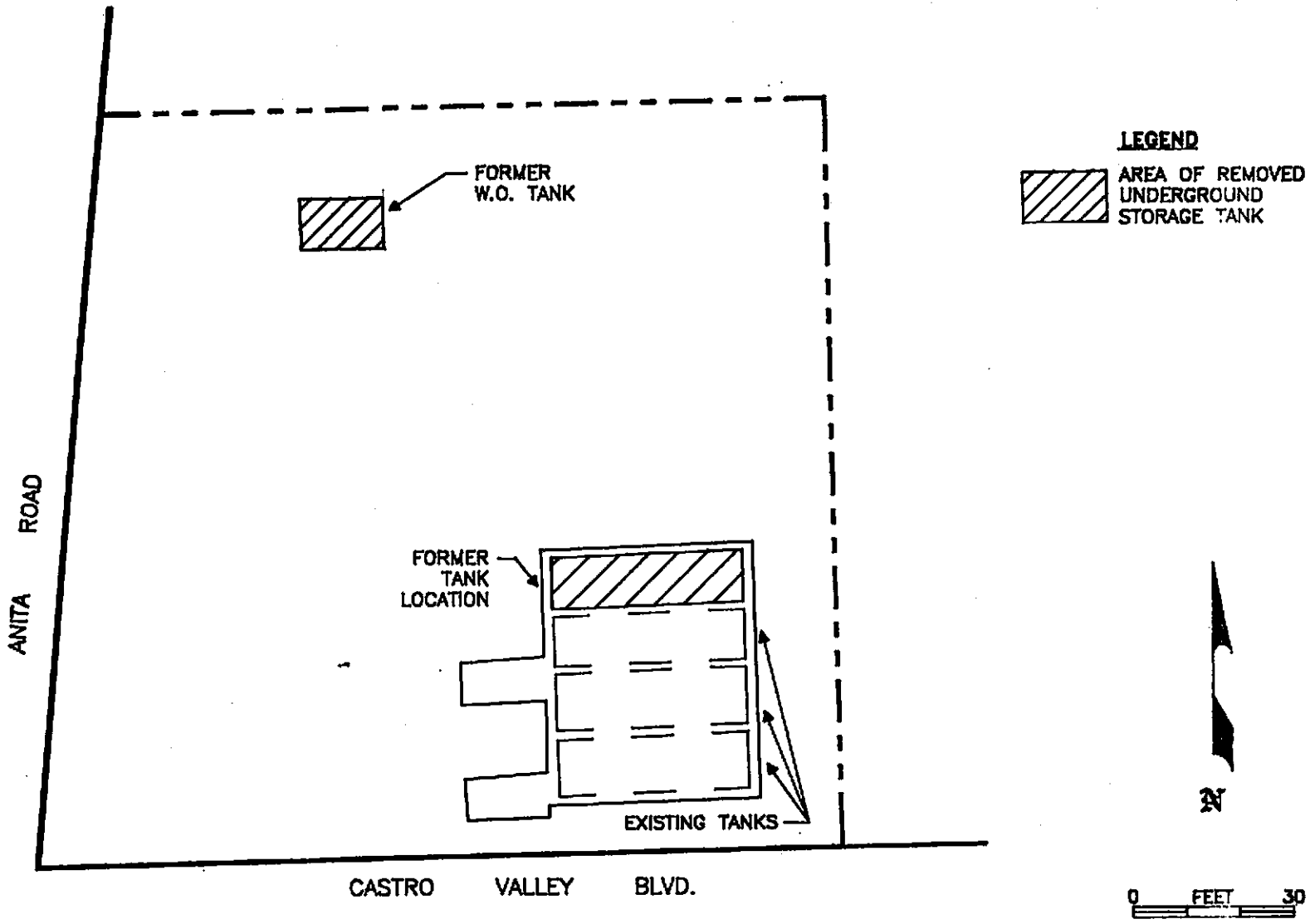


FIGURE 2
SITE PLAN
(TANK REMOVAL)

CHEVRON, USA
CASTRO VALLEY, CALIFORNIA

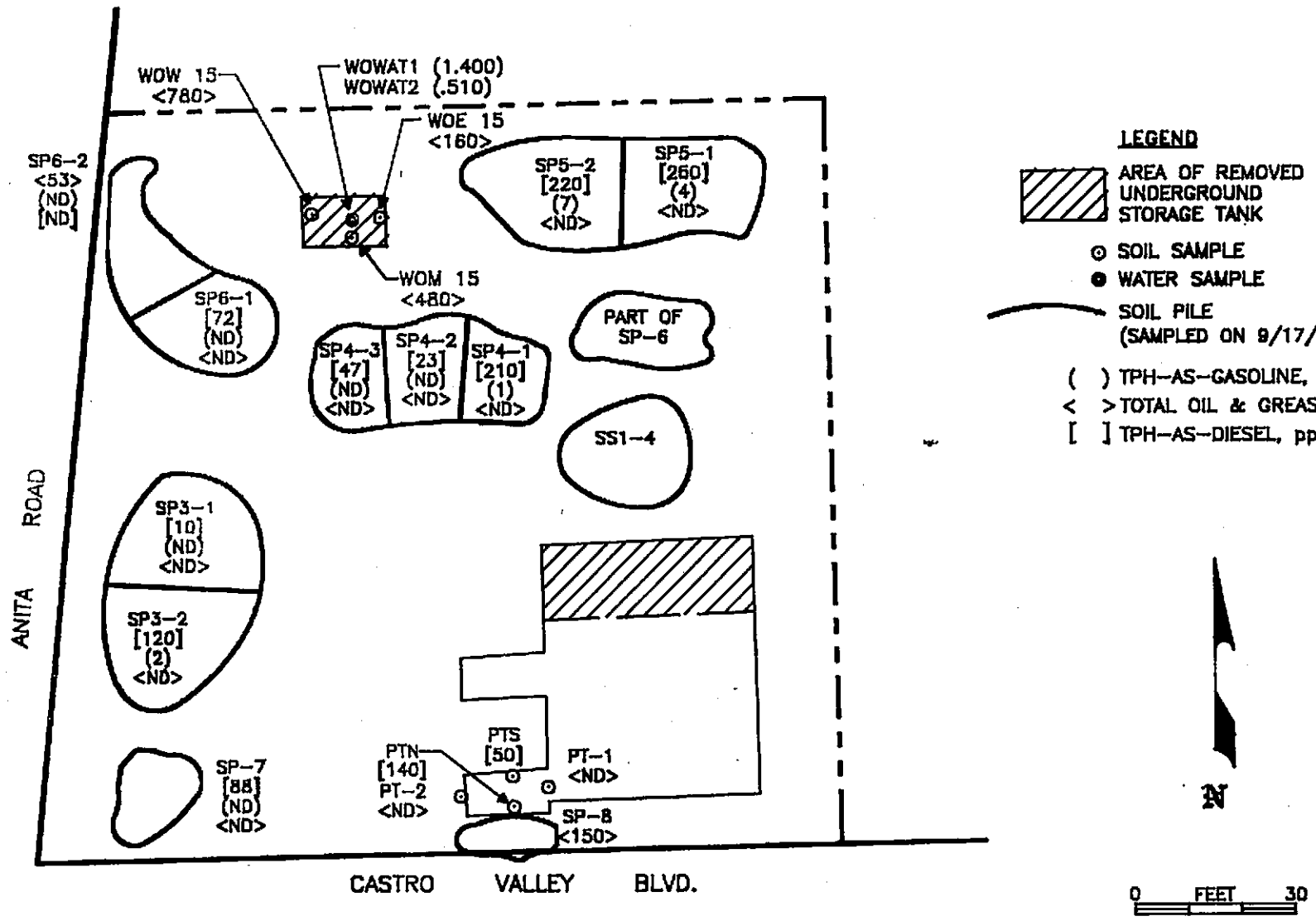
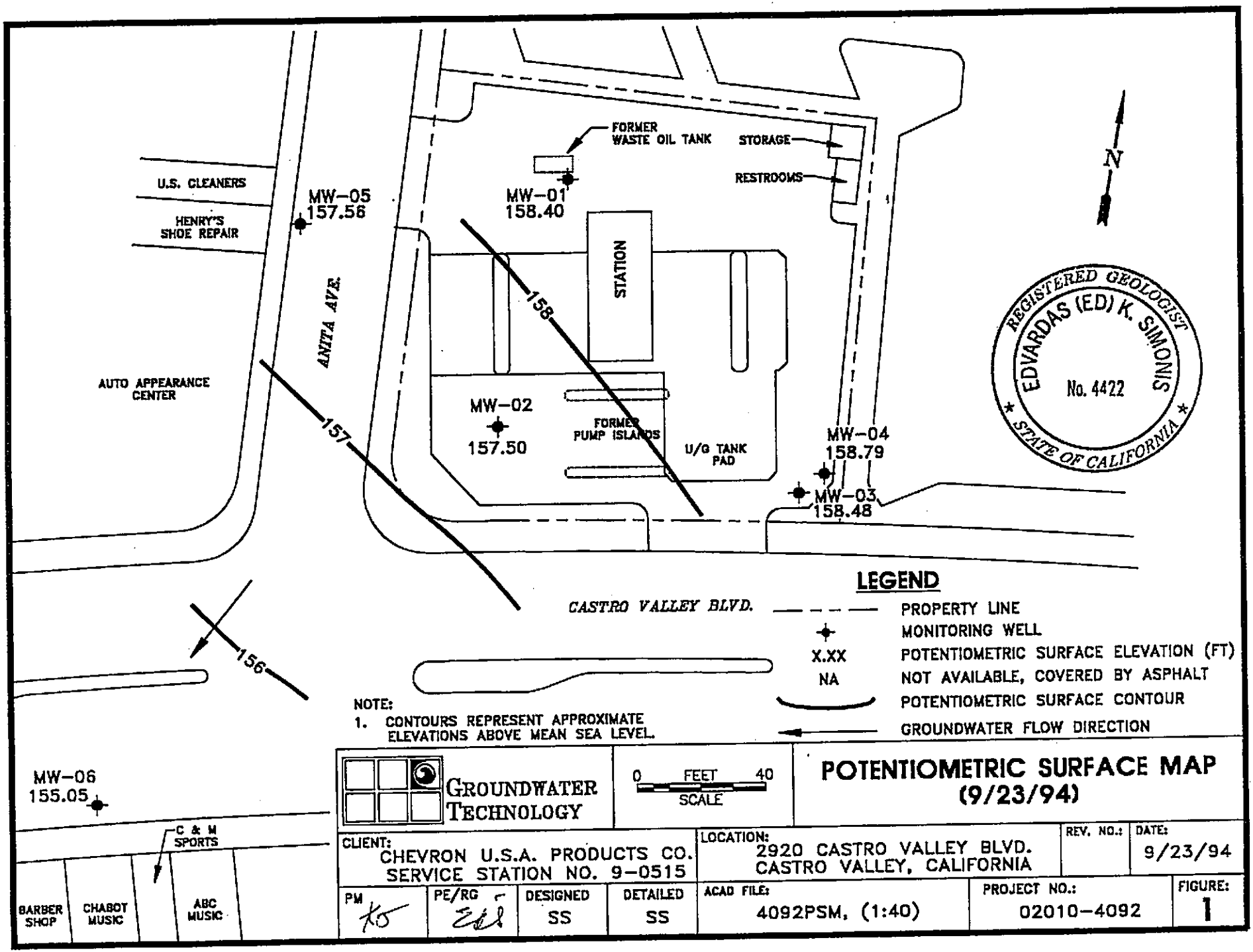


FIGURE 4
EXCAVATION AND SOIL PILE
SAMPLE LOCATIONS
(9/17-22/90)

CHEVRON, USA
CASTRO VALLEY, CALIFORNIA



GROUNDWATER TECHNOLOGY

0 FEET 40
SCALE

POTENTIOMETRIC SURFACE MAP (9/23/94)

CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION NO. 9-0515				LOCATION: 2920 CASTRO VALLEY BLVD. CASTRO VALLEY, CALIFORNIA	REV. NO.:	DATE: 9/23/94
PM: KS	PE/RG: Ed	DESIGNED: SS	DETAILED: SS	ACAD FILE: 4092PSM, (1:40)	PROJECT NO.: 02010-4092	FIGURE: 1

TABLE 2

TRENCH ANALYTICAL RESULTS

SAMPLE NUMBER	DEPTH	DATE	8015/8020 GAS	8015/8020 DIESEL	B	T	E	X
TNW	3	9/11/90	5	NS	.24	ND	.09	.24
TSW	3	"	52	NS	.16	ND	.57	.53
TNE	3	"	NS	ND	NS	NS	NS	NS
TSE	3	"	NS	1,000	NS	NS	NS	NS
TE	5	9/18/90	NS	150	.01	.01	.01	.02
TW	5		21	NS	.1	.01	.02	.1
PT-N7	7	9/21/90	ND	140	ND	ND	ND	ND
PT-S7	7	"	ND	58	ND	ND	ND	ND
PTS-1-7	7	"	ND	ND	ND	ND	ND	ND
PTS-2-7	7	"	ND	ND	ND	ND	ND	ND

ND = not detected at the Method Detection Limit (MDL)
Benzene MDL = .005 ppm; Toluene MDL = .005 ppm
Ethylbenzene MDL = .005 ppm; Xylenes MDL = .015 ppm
NS = Not Sampled

TABLE 3

EXCAVATION WATER ANALYTICAL RESULTS

SAMPLE NUMBER	DATE	8015/8020 GAS	8015/8020 DIESEL	B	T	E	X
PITWTR1	9/11/90	[illegible];000	NS	[illegible]	9,600	960	13,000
PITWTR2	"	54,000	NS	[illegible]	10,000	1,100	14,000
WOWAT1	9/18/90	1,400	NS	NS	NS	NS	NS
WOWAT2	"	510	NS	NS	NS	NS	NS

ND = not detected at the Method detection Limit (MDL)
Benzene MDL = .005 ppb Toluene MDL = .005 ppb
Ethylbenzene MDL = .005 ppb Xylenes MDL = .015 ppb
NS = Not Sampled

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS
(Results in milligrams per kilogram)

SAMPLE ID	SAMPLE DATE	DEPTH (ft)	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	TPH-AS-GASOLINE	OIL AND GREASE
MW-1A	09/24/91	9	<0.005	<0.005	<0.005	<0.005	<1	<50
MW-2A	09/24/91	5	<0.005	0.005	0.006	0.014	<1	NA
MW-2B	09/24/91	10	<0.005	<0.005	<0.005	<0.005	<1	NA
MW-3A	09/30/91	6	<0.005	<0.005	<0.005	<0.005	<1	NA
MW-3C	09/30/91	10	<0.005	<0.005	<0.005	<0.005	<1	NA

$\overline{NA}$ = Not analyzed

TABLE 3
WATER SAMPLE ANALYTICAL RESULTS
SAMPLES COLLECTED ON OCTOBER 8, 1991
(Results in micrograms per liter)

WELL ID	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	TPH-AS-GASOLINE	OIL AND GREASE
MW-1	45	<0.5	0.9	9.1	230	<5000
MW-2	5.1	1.1	0.8	26	110	NA
MW-3	1.9	0.7	0.8	2.4	81	NA

$\overline{NA}$ = Not analyzed

TABLE 1
ANALYTICAL RESULTS FOR SOIL SAMPLES
COLLECTED ON SEPTEMBER 25, 1992
(Concentrations in parts per million)

DATE	SAMPLE ID	SAMPLE DEPTH (feet)	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	TPH-AS-GASOLINE	TPH-AS DIESEL
09/25/92	MW-4	5	<0.005	0.030	<0.005	<0.005	<1	<1
		10	<0.005	0.042	<0.005	<0.005	<1	<1
		20	<0.005	0.030	<0.005	<0.005	<1	<1
09/25/92	MW-5	5	<0.005	0.052	<0.005	<0.005	<1	<1
		10	<0.005	0.067	<0.005	<0.005	<1	<1
09/25/92	MW-6	5	<0.005	0.26	<0.005	0.011	<1	5
		10	<0.005	0.021	<0.005	<0.008	<1	<1

TPH = Total petroleum hydrocarbons

R2778A1.TW

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-6991
2920 Castro Valley Boulevard, Castro Valley, California

Well ID/ Elev.	Date	TOG	TPH-D	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
MW-1	10/08/91	<5000	---	230	45	<0.5	0.9	9.1	11.10	0.00	158.20
	11/04/91	---	---	340	120	<0.5	<0.5	6.1	11.03	0.00	158.27
169.30	12/04/91	<5000	170	<50	3.9	<0.5	<0.5	<0.5	11.05	0.00	158.25
	06/05/92	---	<50	100	26	0.6	0.5	1.0	11.04	0.00	158.26
	10/27/92	---	54	<50	11	<0.5	<0.5	<0.5	11.10	0.00	158.20
	12/30/92	---	170	<50	24	<0.5	<0.5	<0.5	---	---	---
	01/27/93	---	---	---	---	---	---	---	10.63	0.00	158.67
	03/05/93	---	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	03/17/93	---	---	---	---	---	---	---	10.71	0.00	158.59
	06/18/93	---	<50	<50	0.6	<0.5	<0.5	<1.5	11.01	0.00	158.29
	09/28/93	---	<50	<50	0.8	<0.5	<0.5	<1.5	11.95	0.00	157.35
	12/30/93	---	<50	<50	8.5	<0.5	<0.5	<0.5	10.96	0.00	158.34
	04/07/94	---	<10	<50	<0.5	<0.5	<0.5	<0.5	10.81	0.00	158.49
	05/31/94	---	<50	<50	1.0	<0.5	<0.5	<0.5	10.92	0.00	158.38
	09/23/94	---	<50	<50	1.3	<0.5	<0.5	<0.5	10.90	0.00	158.40
MW-2	10/08/91	---	---	110	5.1	1.1	0.8	26	11.95	0.00	157.20
	11/19/91	---	---	120	11	1.1	<0.5	17	11.75	0.00	157.40
169.15	12/04/91	---	130	440	30	2.5	<0.5	52	11.80	0.00	157.35
	06/05/92	---	130*	80	13	<0.5	<0.5	1.0	11.80	0.00	157.35
	10/27/92	---	110	54	13	<0.5	<0.5	<0.5	12.00	0.00	157.15
	12/30/92	---	92*	180	30	<0.5	<0.5	1.0	---	---	---
	01/27/93	---	---	---	---	---	---	---	10.91	0.00	158.24
	03/05/93	---	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	03/17/93	---	---	---	---	---	---	---	10.89	0.00	158.26
	06/18/93	---	<50	<50	1.4	<0.5	<0.5	<1.5	11.74	0.00	157.41
	09/28/93	---	<50	<50	0.6	<0.5	<0.5	<1.5	11.18	0.00	157.97
	12/30/93	---	<50	<50	0.9	<0.5	<0.5	<0.5	21.00	0.00	158.34
	04/07/94	---	<10	<50	<0.5	<0.5	<0.5	<0.5	10.75	0.00	158.40
	05/31/94	---	<50	<50	<0.5	<0.5	<0.5	<0.5	10.80	0.00	158.35
	09/23/94	---	120	<50	0.7	<0.5	<0.5	<0.5	11.65	0.00	157.50

GROUNDWATER TECHNOLOGY ®

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-6991
2920 Castro Valley Boulevard, Castro Valley, California

Well ID/ Elev.	Date	TOG	TPH-D	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
MW-3	10/08/91	---	---	81	1.9	0.7	0.8	2.4	8.27	0.00	160.84
	11/04/91	---	---	60	<0.5	<0.5	<0.5	<0.5	10.85	0.00	158.26
169.11	12/04/91	---	<50	<50	<0.5	<0.5	<0.5	<0.5	11.05	0.00	158.06
	06/05/92	---	170*	<50	<0.5	<0.5	<0.5	<0.5	11.15	0.00	157.96
	10/27/92	---	120	<50	<0.5	<0.5	<0.5	<0.5	11.60	0.00	157.51
	12/30/92	---	170*	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	01/27/93	---	---	---	---	---	---	---	9.11	0.00	160.00
	03/05/93	---	---	---	---	---	---	---	---	---	---
	03/17/93	---	---	---	---	---	---	---	9.95	0.00	159.16
	06/18/93	---	<50	<50	<0.5	<0.5	<0.5	<1.5	10.89	0.00	158.22
	09/28/93	---	<50	<50	<0.5	<0.5	<0.5	<1.5	9.62	0.00	159.49
	12/30/93	---	<50	<50	<0.5	<0.5	<0.5	<0.5	9.31	0.00	159.80
	04/07/94	---	<10	<50	<0.5	<0.5	<0.5	<0.5	8.81	0.00	160.30
	05/31/94	---	<50	<50	<0.5	<0.5	<0.5	<0.5	8.90	0.00	160.21
	09/23/94	---	<50	<50	<0.5	<0.5	<0.5	<0.5	10.63	0.00	158.48
MW-4	10/27/92	---	<50	<50	<0.5	0.6	0.5	4.3	11.39	0.00	157.79
169.18	12/30/92	---	<50	<50	<0.5	<0.5	<0.5	<0.5	10.13	0.00	159.05
	01/27/93	---	---	---	---	---	---	---	9.09	0.00	160.09
	03/05/93	---	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	03/17/93	---	---	---	---	---	---	---	9.90	0.00	159.28
	06/18/93	---	<50	<50	<0.5	<0.5	<0.5	<1.5	10.68	0.00	158.50
	09/28/93	---	<50	<50	<0.5	<0.5	<0.5	<1.5	9.36	0.00	159.82
	12/30/93	---	<50	<50	<0.5	<0.5	<0.5	<0.5	9.27	0.00	159.91
	04/07/94	---	<10	<50	<0.5	<0.5	<0.5	<0.5	8.81	0.00	160.37
	05/31/94	---	<50	<50	<0.5	<0.5	<0.5	<0.5	8.91	0.00	160.27
	09/23/94	---	<50	<50	<0.5	<0.5	<0.5	<0.5	10.39	0.00	158.79

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-6991
2920 Castro Valley Boulevard, Castro Valley, California

Well ID/ Elev.	Date	TOG	TPH-D	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
MW-5	10/27/92	---	<50	74	<0.5	<0.5	0.6	7.1	9.95	0.00	157.46
167.41	12/30/92	---	<50	<50	<0.5	<0.5	<0.5	<0.5	9.20	0.00	158.21
	01/27/93	---	---	---	---	---	---	---	9.61	0.00	157.80
	03/05/93	---	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	03/17/93	---	---	---	---	---	---	---	9.51	0.00	157.90
	06/18/93	---	<50	<50	<0.5	<0.5	<0.5	<0.5	9.85	0.00	157.56
	09/28/93	---	<50	<50	<0.5	<0.5	<0.5	<1.5	9.86	0.00	157.55
	12/30/93	---	<50	<50	<0.5	<0.5	<0.5	<0.5	10.33	0.00	157.08
	04/07/94	---	<10	<50	<0.5	<0.5	<0.5	<0.5	9.72	0.00	157.69
	05/31/94	---	<50	<50	<0.5	<0.5	<0.5	<0.5	9.73	0.00	157.68
	09/23/94	---	<50	<50	<0.5	<0.5	<0.5	<0.5	9.85	0.00	157.56
MW-6	10/27/92	---	<50	600	22	22	24	130	12.54	0.00	153.92
166.46	12/30/92	---	470*	1,700	170	16	46	160	10.20	0.00	156.26
	01/27/93	---	---	---	---	---	---	---	10.02	0.00	156.44
	03/05/93	---	150*	480	76	0.9	3.1	7.1	---	---	---
	03/17/93	---	---	---	---	---	---	---	10.67	0.00	155.79
	06/18/93	---	51	240	37	3.4	2.9	18	11.83	0.00	154.63
	09/28/93	---	120	150	11	1.2	1.3	4.3	11.56	0.00	154.90
	12/30/93	---	290*	680	77	5.1	5.5	13	11.65	0.00	154.81
	04/07/94	---	<10	190	24	2.9	1.9	8.0	11.12	0.00	155.34
	05/31/94	---	---	---	---	---	---	---	---	---	---
	09/23/94	---	---	---	---	---	---	---	11.41	0.00	155.05

GROUNDWATER TECHNOLOGY ®

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-6991
2920 Castro Valley Boulevard, Castro Valley, California

Well ID/ Elev.	Date	TOG	TPH-D	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
TBLB	10/08/91	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	11/04/91	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	12/04/91	---	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	06/05/92	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	12/30/92	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	01/27/93	---	<50	---	---	---	---	---	---	---	---
	03/05/93	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	03/17/93	---	---	---	---	---	---	---	---	---	---
	06/18/93	---	---	<50	<0.5	<0.5	<0.5	<1.5	---	---	---
	09/28/93	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	12/30/93	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	04/07/94	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	05/31/94	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	09/23/94	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
RINSATE	12/30/93	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	---

DTW = Depth to water
SPT = Separate-phase hydrocarbons thickness
WTE = Water table elevation in feet above mean sea level
TOG = Total oil and grease
TPH-G = Total petroleum hydrocarbons-as-gasoline
TPH-D = Total petroleum hydrocarbons-as-diesel fuel
--- = Not applicable/not sampled/not measured
* = The pattern of peaks observed are not typical of diesel.
Results in parts per billion

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well MW-1

Project CHV/2920 Castro Valley Blvd. Owner Chevron U.S.A. Inc.

Location Castro Valley, CA Project Number 020301038

Date Drilled 9/24/91 Total Depth of Hole 21.0 ft. Diameter 2 in.

Top of Casing ____ Water Level Initial 11 ft. Static ____

Screen: Dia .75 in. Length 15 ft. Slot Size .020 in.

Casing: Dia .75 in. Length 3.0 ft. Type SCH 80 PVC

Filter Pack Material No 2/12 Labis Lustre Rig/Core Type ____

Drilling Company Power Core Dril./Mon. Method Percussion Hammer / PID

Driller Michael Nosewicz Log By Glen Mitchell

Geologist/Engineer David Kleesattel License No 5136

See Site Map For Boring Location

NOTES:

Depth (feet)	Well Completion	PID (ppm)	Sample ID	Graphic Log	Soil Class	Description (Color, Texture, Structure)
0		PID				Six inches ASPHALT
2					GC	light gray clayey GRAVEL (loose, dry)
4					SC	Brown clayey SAND (loose, dry)
6		0				Tan gravelly SAND (loose, moist)
8					SP	
10		0	A			
12					GP	Encountered water 9/24/91 (09:32 hours)
14					CL	Tan sandy gravel (loose, saturated)
16					GC	Mottled tan and dark brown silty CLAY (soft, saturated)
18					CL	Tan clayey GRAVEL (loose, saturated)
20					GC	Dark brown silty CLAY (soft, saturated)
22					CL	Tan clayey GRAVEL (loose, saturated)
24						Mottled tan and gray silty CLAY (firm, moist)
26						End of boring at 21.0 feet. Constructed monitoring well.

11/11/1991 gtbasic oct

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well MW-2

Project CHV/2920 Castro Valley Blvd. Owner Chevron U.S.A. Inc.

Location Castro Valley, CA Project Number 020301038

Date Drilled 9/24/91 Total Depth of Hole 21.0 ft. Diameter 2 in.

Top of Casing ____ Water Level Initial 11 ft. Static ____

Screen: Dia .75 in. Length 15 ft. Slot Size .020 in.

Casing: Dia .75 in. Length 6.0 ft. Type SCH 80 PVC

Filter Pack Material No 2/12 Labis Lustre Rig/Core Type ____

Drilling Company Power Core Dril./Mon. Method Percussion Hammer / PID

Driller Michael Nosewicz Log By Glen Mitchell

Geologist/Engineer David Kleesattel License No 5136

See Site Map For Boring Location

NOTES:

Depth (feet)	Well Completion	PID (ppm)	Sample ID	Graphic Log	Soil Class	Description (Color, Texture, Structure)
0		PID				ASPHALT
						gravel FILL
2		8				Gray brown silty CLAY (firm, moist)
						Dark gray silty CLAY (firm, moist)
4						
6		4.4	A		CL	Mottled gray and tan silty CLAY (firm, moist) Grades with minor gravel
8						
10		1.0 .4	B			Encountered water 9/24/91 (12:00 hours)
12		89.0				Gray brown clayey SILT with fine sand (firm, moist)
14					ML	
16						Tan silty SAND (hard, saturated)
						Gray clayey fine SAND (hard, saturated)
18					SC	Gray and rusty sandy CLAY (saturated)
20						Gray silty CLAY (saturated)
					CL	
22						End of boring at 21.0 feet. Constructed groundwater monitoring well.
24						
26						

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well MW-3

Project CHV/2920 Castro Valley Blvd. Owner Chevron U.S.A. Inc.

Location Castro Valley, CA Project Number 020301038

Date Drilled 9/30/91 Total Depth of Hole 20.0 ft. Diameter 2 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia .75 in. Length 15 ft. Slot Size .020 in.

Casing: Dia .75 in. Length 5.0 ft. Type SCH 80 PVC

Filter Pack Material No 2/12 Labis Lustre Rig/Core Type ____

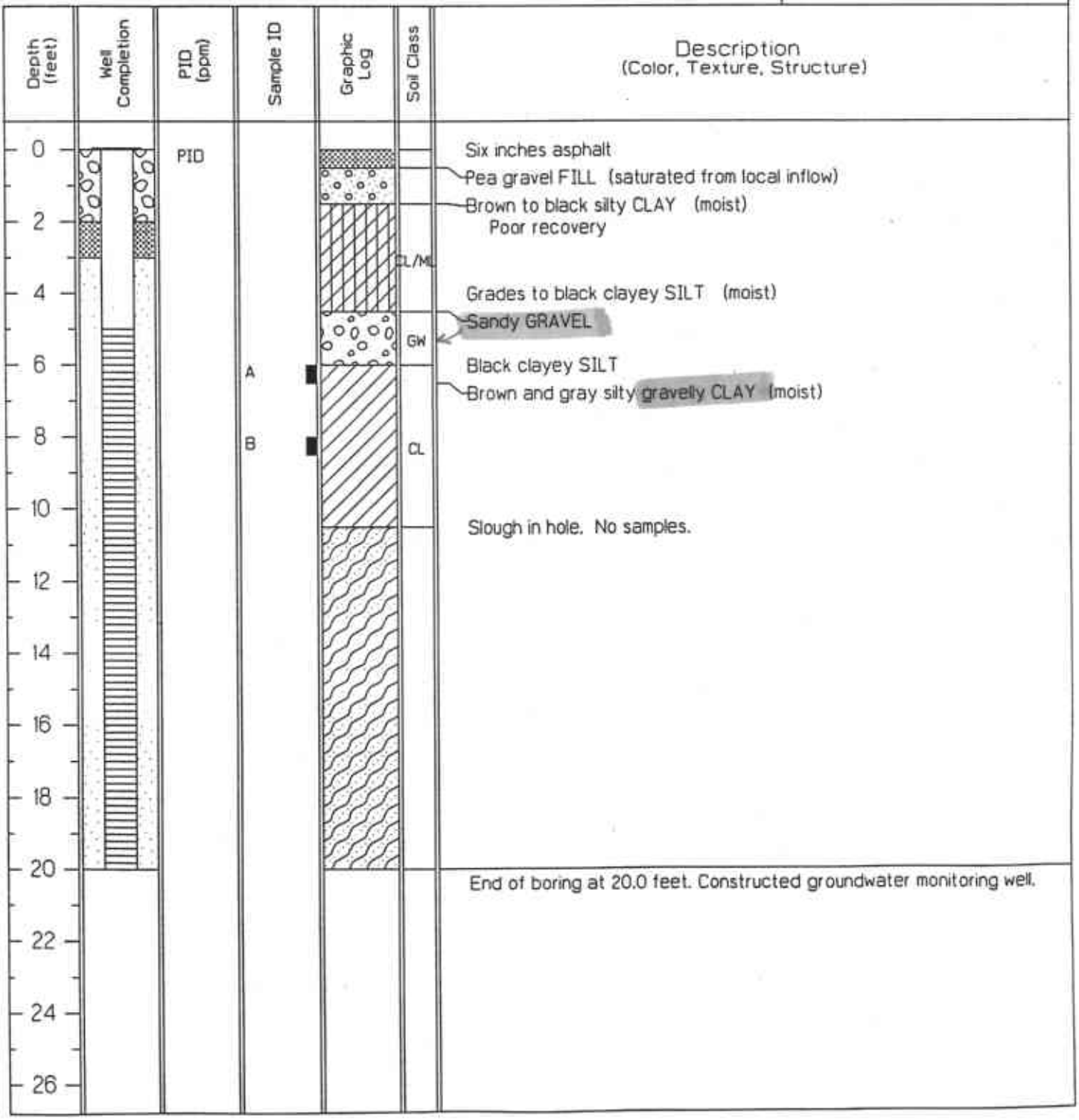
Drilling Company Power Core Dril./Mon. Method Percussion Hammer / PID

Driller Michael Nosewicz Log By Greg Mischel

Geologist/Engineer David Kleesattel License No RG 5136

See Site Map For Boring Location

NOTES:



GROUNDWATER TECHNOLOGY

Drilling Log

Monitoring Well MW-4

Project CHV/2920 Castro Valley Blvd. Owner Chevron U.S.A. Products Co.
Location Castro Valley, CA Project No. 02020 2778 Date drilled 09/25/92
Surface Elev. 169.43 ft. Total Hole Depth 21.5 ft. Diameter 8 inches
Top of Casing 169.18 ft. Water Level Initial 14 ft. Static 10/27/92 11.39 ft.
Screen: Dia 2 in. Length 15 ft. Type/Size 0.020 in.
Casing: Dia 2 in. Length 5 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 # 92365
Driller Joel Visil Log By Jason Fedota
Checked By David Kleesattel License No. RG# 5136 David 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 to 24						
6		0	9 11 13			Orange mottled brown CLAY (stiff and moist)
10		0	7 11 16		CL	Orange mottled brown silty CLAY (stiff and moist)
14						*Encountered groundwater at 14 feet on 09/25/92.*
16		0	4 6 10			Orange mottled brown silty CLAY (saturated).
20			10 11 12			Orange mottled brown silty CLAY (saturated).
22						End of boring at 21.5 feet. Installed groundwater monitoring well.

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well **MW-5**

Project *CHV/2920 Castro Valley Blvd.* Owner *Chevron U.S.A. Products Co.*
Location *Castro Valley, CA* Project No. *02020 2778* Date drilled *10/08/92*
Surface Elev. *168.0 ft.* Total Hole Depth *21.5 ft.* Diameter *8 inches*
Top of Casing *167.41 ft.* Water Level Initial *13 ft.* Static *10/27/92 9.95 ft.*
Screen: Dia *2 in.* Length *15 ft.* Type/Size *0.020 in.*
Casing: Dia *2 in.* Length *5 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 # *92365*
Driller *Joel Visil* Log By *Jason Fedota*
Checked By *David Kleesattel* License No. *RG# 5136* *David Kleesattel*

See Site Map For Boring Location

COMMENTS:

Orginal soilboring for MW-5 was abandoned on September 25, 1992, because flowing sands obstructed installation of the well. The second boring for MW-5 was relocated approximately 5 feet from the orginal boring on October 10, 1992.

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						
2						
4						
6		0	3 5 5		CL	Dark brown CLAY (soft and moist) (abundant roots)
8						
10		0	4 6 8			Orange mottled brown silty CLAY (soft and moist)
12						*Encountered groundwater at 13 feet on 09/25/92.*
14						
16		0	9 9 11		GC	Brown clayey sandy GRAVEL (loose and saturated).
18						
20			10 10 12		SC	Brown gravelly clayey fine SAND (loose and saturated).
22						End of boring at 21.5 feet. Installed groundwater monitoring well.
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well MW-6

Project CHV/2920 Castro Valley Blvd. Owner Chevron U.S.A. Products Co.
Location Castro Valley, CA Project No. 02020 2778 Date drilled 09/25/92
Surface Elev. 166.68 ft. Total Hole Depth 26.5 ft. Diameter 8 inches
Top of Casing 166.46 ft. Water Level Initial 15 ft. Static 10/27/92 12.54 ft.
Screen: Dia 2 in. Length 15 ft. Type/Size 0.020 in.
Casing: Dia 2 in. Length 9 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 # 92365
Driller Joel Visil Log By Jason Fedota
Checked By David Kleesattel License No. RG# 5136 David F. 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						
2						
4						
6		0	4 5 8			Black CLAY (soft and moist)
8					CL	
10		0	4 6 7			Brown sandy silty CLAY (soft and moist)
12						
14						
16		0	9 9 12			▽ Encountered groundwater at 15 feet on 09/25/92 (0925).
18						Brown gravelly silty fine to medium SAND (saturated)
20		0	7 10 11		SM	
22						Orange mottled brown sandy silty CLAY (stiff and [redacted]
24					CL	

GROUNDWATER TECHNOLOGY

Drilling Log

Monitoring Well MW-6

Project CHV/2920 Castro Valley Blvd. Owner Chevron U.S.A. Products Co.
Location Castro Valley, CA Project No. 02020 2778 Date drilled 09/25/92

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		0	8 27 40		CL SC	Brown silty clayey SAND (firm and saturated)
26						End of boring at 26.5 feet. Installed groundwater monitoring well.
28						
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						
52						
54						
56						

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APPENDIX D

CONTINGENCY PLAN

This Contingency Plan will ensure compliance with the cleanup goals for the site. No hydrocarbons other than BTEX, TPH-D and TPH-G have been detected in site ground water at any time. Therefore, only hydrocarbon analyses will be performed to ensure that cleanup goals are not exceeded near the downgradient boundary and that compliance with monitoring goals is maintained.

Wells MW-2 and MW-5(Table D-1) will serve as "boundary wells" to ensure compliance with cleanup goals. Ground water from wells MW-2 and MW-5 will be sampled and analyzed for hydrocarbons semi-annually during the spring and fall quarters through summer 1996, then once during the spring of 1997. To confirm that offsite sources are primarily responsible for the hydrocarbons detected in MW-6, this well will be sampled semi-annually during the seasonal high and low water table through 1995, then annually through 1996. If monitoring goals are maintained at these wells, monitoring will cease.

If monitoring data indicate that certain trigger concentrations have occurred, this contingency plan will be implemented. These trigger concentrations and Contingency Plan responses are summarized in Table D-1. A "baseline" benzene concentration has been determined for each well based on trends over the last several years. A "trigger" concentration has been determined which represents a significant concentration increase that may indicate possible future non-compliance with cleanup goals. If a trigger concentration occurs in two consecutive sampling events, or if concentrations are increasing at a rate such that the trigger concentration might be met or exceeded before the next sampling event, the contingency plan will be implemented.

If triggered, this Contingency Plan calls for three responses:

1) The ACDEH will be notified;

2) All three wells will be sampled in the following quarter; and

3) Periodic monitoring will continue until an appropriate course of action, identified by Chevron and approved by the ACDEH has been implemented.

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Table D-1. Contingency Plan, Chevron Service Station #9-6991, 2920 Castro Valley Boulevard, Castro Valley, California. All conditions are for benzene unless otherwise noted.

	Monitoring Well	Baseline Concentration (benzene, ppb)	Trigger Concentration (benzene, ppb)	Response to Trigger Concentration[1]	Additional Monitoring
Boundary Wells	MW-2 MW-5	7 <0.5	40 2	1. Notify ACDEH 2. Sample MW-2, MW-5 and MW-6 in the next quarter 3. Identify an appropriate course of action.	Quarterly monitoring of MW-2, MW-5 and MW-6
Offsite Source Well	MW-6	65	150		

Footnotes:

[1] Response is triggered when the trigger concentration is met or exceeded for 2 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.

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Weiss Associates