Chevron U.S.A. Pr.
6001 Bollinger Canyon
Building L
San Ramon, CA 94583
P.O. Box 5004
San Ramon, CA 94583-0804

Marketing – Northwest Region
Phone 510 842 9500

August 28, 1995

STID3585

Ms. Susan Hugo
Alameda Co. Dept. of Environmental Health
1131 Harbor Bay Pkwy, 2nd Floor
Alameda, CA 94502-6577

Re : Former Chevron Service Station 9-3575
5775 Broadway Ave., Oakland, California

Dear Ms. Hugo :

At the request of Chevron U.S.A. Products Co., Pacific Environmental Group (PEG) reviewed the results of all prior investigations and remediation activities and evaluated whether or not this site is a candidate for case closure. After reviewing the file, Pacific recommends case closure at this site. Based on their report, Chevron is requesting case closure.

Please review the enclosed report from PEG dated August 25, 1995. Once you have reviewed the report, please respond to Chevron's request for closure. If you have any questions or comments, please feel free to give me a call at (510) 842-8752.

Sincerely,
Chevron U.S.A. Products Co.

Kenneth Kan
Engineer

LKAN/93575R01

Enclosure

cc : Mr. Richard Hiett, RWQCB-San Francisco Bay Region
2101 Webster St., Suite 500, Oakland, CA 94612

Mr. Donald Chandler, Rockridge Homes, Inc.
17 Bonita Ave., Piedmont, CA 94611

Mr. Alfred Knoll, Knoll Enterprise
P.O. Box 30847, Oakland, CA 94604

Ms. Gail Jones, Riedel Environmental Services
4138 Lakeside Dr., Richmond, CA 94806

Ms. Bette Owen, Chevron USA Products Co.

PACIFIC
ENVIRONMENTAL
GROUP INC.

August 25, 1995
Project 920-013.6A

Mr. Kenneth Kan
Chevron U.S.A. Products Company
6001 Bollinger Canyon Road, Building L
San Ramon, California 94583-0804

Re: Case Closure Recommendation
Former Chevron U.S.A. Service Station 9-3575
5775 Broadway
Oakland, California

Dear Mr. Kan:

This letter, prepared by Pacific Environmental Group, Inc. (PACIFIC) for Chevron U.S.A. Products Company (Chevron), recommends case closure for the site referenced above. All tanks, pump islands, and hoists have been removed from the site.

Hydrocarbon concentrations in groundwater have been not detected in any of the three site monitoring wells since November 1994, with the exception of very low levels of toluene (1.1 parts per billion [ppb]) and xylenes (0.90 ppb) in Monitoring Well MW-2. Total oil and grease (TOG) concentrations in groundwater samples from all three on-site wells (MW-1 through MW-3) have been below method detection limits for all sampling events since November 1992 when sampling was initiated. The maximum benzene concentration reported in any on-site well (MW-3) has been 7.0 ppb in 1993. Since November 1993, benzene concentrations have declined or have been not detected.

Based on recent discussions with Ms. Susan Hugo of the Alameda County Environmental Health Department regarding site soil and groundwater conditions, and cumulative results of groundwater sampling, PACIFIC recommends closure at the site. This recommendation for closure has been prepared and organized sequentially in accordance with the *Alameda County Environmental Health Department Letter of Recommendation for UST Case Closure*, (Alameda County, June 21, 1995).

SITE DESCRIPTION

The former service station site is located at 5775 Broadway at Lawton Avenue in Oakland, California (Figure 1, Attachment A). The site, which was decommissioned in

April 1973, formerly contained six underground storage tanks (USTs): four 1,000-gallon, one 7,500-gallon, and one 6,000-gallon capacity USTs. A waste-oil tank was presumably removed from the site sometime prior to 1973. The site is currently an empty lot. The location of the former service station structures are shown on Figure 2 in Attachment A. Land use in the site vicinity is mixed commercial and residential.

PREVIOUS WORK

Four 1,000-gallon, one 7,500-gallon, and one 6,000-gallon USTs were removed from the site in April 1973. A waste-oil tank was apparently removed sometime prior to 1973.

In 1989, Environmental Systems & Services (ESS) conducted an Environmental Hazard Assessment consisting of excavation of four trenches on site. ESS reported that no color or odor of petroleum hydrocarbons were noted in soil samples collected from the trenches.

In January 1990, Reidel Environmental Services (Reidel) conducted a site assessment utilizing Hydropunch® and cone penetrometer (CPT) investigative methods (Reidel, February 1, 1990). Selected soil and groundwater samples were collected and sent to a state-certified laboratory for analysis. Low levels of oil and grease, total petroleum hydrocarbons calculated as gasoline (TPH-g), and benzene, toluene, ethyl-benzene, and xylenes (BTEX compounds) were detected in groundwater (HP-1). Oil and grease (TOG) and xylenes were detected in soil samples (S-1, S-2, and S-3). TPH calculated as diesel (TPH-d) was not detected in soil or groundwater (Table 1, Summary of Analytical Results from Previous Investigations, Attachment B). Reidel recommended soil excavation as the appropriate remediation activity based on their opinion that the contamination was probably confined to the former (waste oil) UST excavation.

In March 1990, Reidel observed the excavation and disposal of approximately 114 tons of soil at the site (Reidel, March 19, 1990). No TPH-g, BTEX compounds, nor TOG were detected in soil samples (S-4 and S-5, Table 1, Summary of Analytical Results from Previous Investigations, Attachment B) collected from the excavation bottom. Reidel concluded that all soil contamination identified in the previous investigation had been removed.

In November 1991, six soil borings were drilled to bedrock (to depths of 6 to 17.5 feet), two near the south side of the former service station building, one located east of the former station building, one in the area of the former hoist, and two were located in the former UST excavation areas (Reidel, January 20, 1992). Soil samples were collected at five foot intervals and analyzed for TPH-g, BTEX compounds, TPH-d, and TOG. TPH-g, BTEX compounds, and TPH-d were not detected (Table 2, Analytical Results for Soil Samples, Attachment B). Excavation was conducted in November and December 1991 based on previously reported concentrations of TOG, until all side confirmation samples and all but one bottom confirmation samples were non-detect (Table 3, Analytical

Results of Confirmatory Soil Samples collected from the side of the Excavation, Attachment B). One bottom sample contained 15 parts per million (ppm) of TOG (Table 4, Analytical Results of Confirmatory Soil Samples collected from the bottom of the Excavation, Attachment B).

In August 1992, Resna installed three groundwater wells (Resna, January 6, 1993). Analysis of soil samples collected during drilling indicated no detectable concentrations of TPH-g and TPH-d, with the exception of a single detection of 1 ppm of TPH-d at Boring B-3 (Well MW-3) at a depth of 30.5 feet below ground surface (bgs). BTEX compounds and TOG were not detected in the soil samples (Table 1, Soil Analytical Results, Attachment B). TPH-g, BTEX compounds, and TOG were not detected in water samples from Wells MW-1 and MW-2. TPH-g at 53 ppb, benzene at 1.7 ppb, and toluene at 0.6 ppb were detected in Well MW-3. MW-3 was re-sampled approximately two weeks later and TPH-g, BTEX compounds, and TOG were not detected (Cumulative Table of Well Data and Analytical Results, Attachment C).

Quarterly groundwater monitoring has been conducted since the installation of the wells. Monitoring data indicates that TPH-g and benzene have not been detected in site wells since the third quarter of 1994 (Blaine Tech Services, 5/30/95). TOG has never been detected in the groundwater. Historical groundwater analytical data are presented as Attachment C.

INVESTIGATIVE METHODS

Soil has been sampled for analytical testing from Reidel Borings B-1 through B-6 (Reidel, November 1991), and Resna Borings B-1 through B-3 (Resna, August 1992). Reidel Borings B-1 through B-6 were drilled using 8-inch diameter hollow-stem augers and Resna Borings B-1 through B-3 were drilled using air-rotary drilling equipment. Soil samples were generally collected at 5-foot depth intervals using 2-inch diameter spilt spoon samplers . Soil samples were retained in 2.0-inch diameter brass tubes, sealed with aluminum foil, capped, secured with Teflon® tape, labeled, placed on ice in an insulated container, and delivered under chain-of-custody protocol to a state-certified laboratory for analysis.

Resna Borings B-1 through B-3 were converted to monitoring wells (MW-1 through MW-3) by the installation of 2-inch diameter Schedule 40 PVC casing and 0.02-inch slotted well screen. Well construction details are contained on the boring logs included as Attachment D.

The soil and groundwater samples collected at the site were analyzed by California State-certified laboratories. Soils analysis has included TPH-g and TPH-d by EPA Method 8015 (modified), BTEX compounds by EPA Method 8020, total oil and grease by Standard Method 5520F, halogenated VOCs by EPA Method 8010, and the metals cadmium, chromium, lead, nickel, and zinc using EPA Method 6010. One soil sample

was analyzed for organic lead using California Department of Health Services (DHS) method described in the Luft Manual. Soil analytical data from borings are presented as Attachment B. Groundwater has been analyzed for TPH-g, BTEX, TOG, HVOCs and metals by the above cited methods. Groundwater analytical data are presented as Attachment C.

EXTENT OF HYDROCARBON PRESENCE IN SOIL AND GROUNDWATER

Data from site borings indicate that the extent of soil contamination was limited to small areas in the vicinity of the former USTs and hoists. Approximately 500 cubic yards of soil and bedrock has been excavated from five excavations on site (Figures 2 and 4, Attachment A). The excavations extended into bedrock.

Reidel reported that excavations at the site have successfully mitigated hydrocarbon presence in site soils. With the exception of a single detection of 15 ppm of TOG, all soil confirmation samples were non-detect for TOG, TPH-g, TPH-d, and benzene. ACDEH stated in a letter, dated March 13, 1992, that "further excavation is not required at this time".

Quarterly groundwater monitoring has been conducted since the installation of the wells in November 1992. Groundwater monitoring data through second quarter 1995 indicates that TPH-g and benzene have not been detected in site wells since the third quarter of 1994 (Blaine Tech Services, May 30, 1995). No separate-phase hydrocarbons have been detected in any on-site boring or well. TPH-g in groundwater has been detected in on-site Well MW-2 at a maximum concentration of 87 ppb in 1993. The maximum concentration of benzene reported in any well on site was 7.0 ppb in Well MW-3 in 1993. TOG has never been reported in the groundwater at the site.

HYDROGEOLOGIC SITE CONDITIONS

Bedrock consisting of weathered mudstone and metamorphic rock was encountered at between 5 and 25 feet bgs. Surface fill between 2 to 5-1/2 feet thick has been reported in the borings on site. At the location of Resna Boring B-2, approximately 5 feet of gravely sand was encountered between the fill and bedrock.

Depth to groundwater has been variable across the site from depths of approximately 15 to 40 feet on the northeast portion of the site and 11 to 26 feet on the southwest portion of the site. Groundwater was reported initially in Resna Borings B-1 and B-2 at depths of 27 and 41 feet bgs. Groundwater was not present in Boring B-3 during drilling nor in the bottom of the excavations during soil removal. Groundwater encountered at the site is seasonally perched on the surface of the bedrock and located within bedrock fractures. The groundwater flow direction at the site has been reported to the northeast and southeast (Attachment C).

BENEFICIAL USES OF GROUNDWATER

Site boring logs and excavations show that the small quantity of impacted groundwater is perched along the bedrock surface and is seasonal. The nature of bedrock beneath the site is likely not capable of producing sufficient quantities of groundwater for drinking water supply.

A 1/2-mile radius well search performed with the County of Alameda Public Works Agency indicated one domestic well within a 1/2-mile radius of the site. This well is located cross-gradient of the site and on the other side (north) of Highway 24 (Attachment E). It is not known if this well is currently in use. Sixteen groundwater monitoring wells (including the three on site) are located within 1/2-mile radius of the site. No other domestic, municipal, or industrial-use wells are located within a 1/2-mile of the site.

The likelihood for shallow site groundwater to be used as a drinking water source is extremely remote. Drinking water within the City of Oakland is provided by the City of Oakland which is pumped in from area surface water reservoirs. No drinking water is derived from shallow aquifers.

REMEDIATION ACTIVITIES AND EFFECTIVENESS

Site remedial activities have focused on source removal. Approximately 500 cubic yards of soil and bedrock have been removed from the site. All tanks, pump islands, and hoists have also been removed from the site.

Impact to groundwater has been very limited. Low levels of hydrocarbons have been intermittently present in the groundwater beneath the site since 1992, however, hydrocarbon concentrations have declined since then and are recently non-detectable. The bedrock has likely contained the plume, prevented extensive migration of hydrocarbons, and provided time for natural mechanisms (primarily biodegradation and volatilization), to degrade any residual hydrocarbons beneath the site.

The extent of the hydrocarbon plume in soil has been defined and was removed in 1991. Groundwater quality has been monitored since 1992 and the groundwater plume has been determined to have been decreasing in concentration since 1993.

RATIONALE FOR SITE CLOSURE

Request for closure at this site is based on the following rationale:

- The sources of hydrocarbons (former USTs, pump islands, and hoists) at this site were removed in 1973 or earlier and investigated in 1990 through 1992. Areas of soil contamination were excavated and removed from the site. With the exception of a single low detection of TOG (15 ppm), all soil confirmation samples collected at this site were non-detect for TOG, TPH-g, TPH-d, and benzene. Any residual

hydrocarbons remaining in soils/bedrock are contained by the bedrock and will likely biodegrade over time.

- The extent of the hydrocarbon plume in groundwater has been defined since 1992, and concentrations of hydrocarbons essentially have been not detected over the last two quarters of sampling. Historically, hydrocarbon impact to groundwater beneath the site has been limited to low concentrations, and these concentrations continue to decline and are essentially non-detectable currently. Residual concentrations remaining in groundwater will likely biodegrade over time.
- In the site vicinity, groundwater is not used as a drinking water resource.

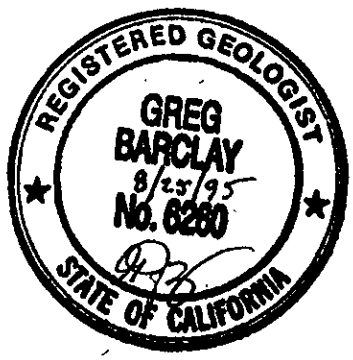
PACIFIC, based on the above data, recommends site closure.

Please call our office at (916) 858-2350 if you have any questions or comments regarding this report.

Sincerely,

Pacific Environmental Group, Inc.

Greg Barclay
Senior Geologist
RG 6260



REFERENCES

Sierra Environmental Services., *Quarterly Groundwater Sampling for First Quarter 1995 Report,* March 10, 1995.

Resna Industries, Inc., *Subsurface Environmental Investigation, Former Chevron Service Station 9-3575, 5775 Broadway, Oakland, California,* January 6, 1993.

Reidel Environmental Services, Inc., *Soil Investigation and Excavation Report, 5775 Broadway, Oakland, California,* January 20, 1992.

Reidel Environmental Services, Inc., *Site Assessment Report, Broadway and Lawton Avenue, Oakland, California,* February 1, 1990.

Reidel Environmental Services, Inc., *Final Report, Broadway and Lawton Avenue Site, Oakland, California,* March 19, 1990.

Blaine Tech Services, Inc., *2nd Quarter 1995 Monitoring at 9-3575,* May 30, 1995.

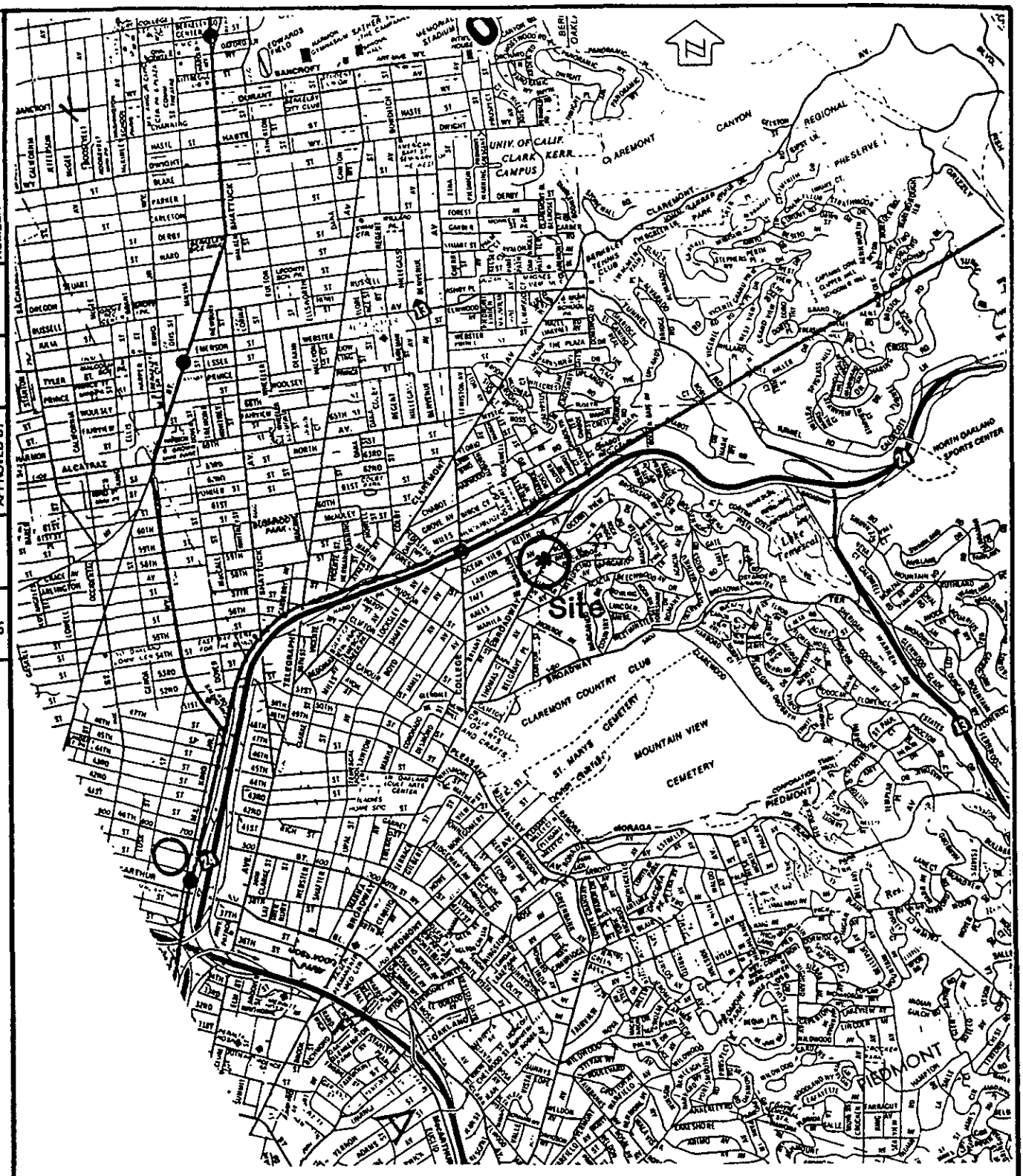
Alameda County Health Care Services Agency, *Re: 5775 Broadway Street, Oakland, CA 94618,* letter dated March 13, 1992.

Attachments: Attachment A - Site Maps
Attachment B - Soil Analytical Data
Attachment C - Groundwater Elevation and Analytical Data
Attachment D - Boring Logs
Attachment E - Well Search

cc: Ms. Susan Hugo, Alameda County Environmental Health Department, Hazardous Materials Division
Mr. Richard Hiett, Regional Water Quality Control Board - San Francisco Bay Region

ATTACHMENT A

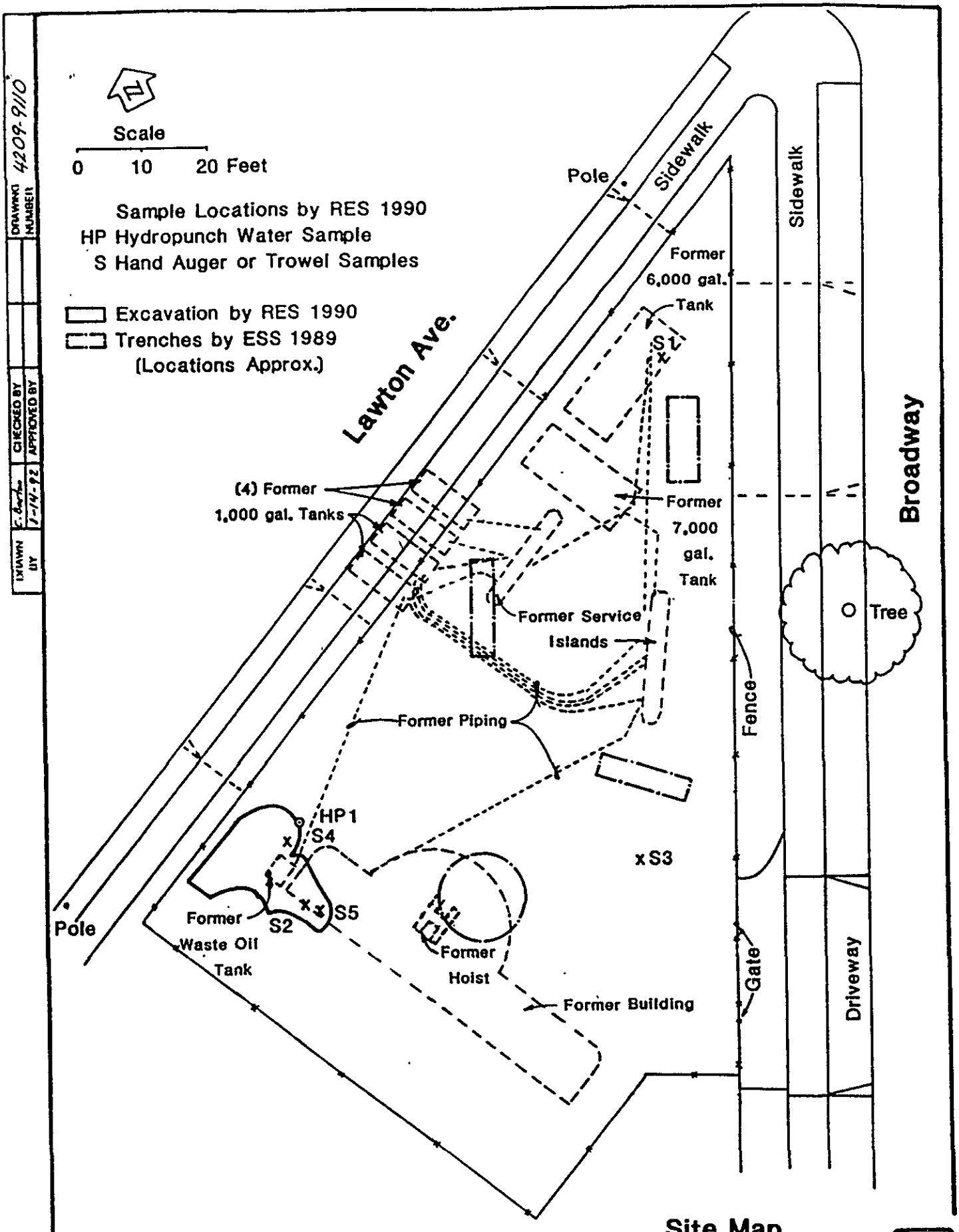
SITE MAPS



Site Location Map
5775 Broadway, Oakland

RIEDEL ENVIRONMENTAL SERVICES, INC. Richmond, California

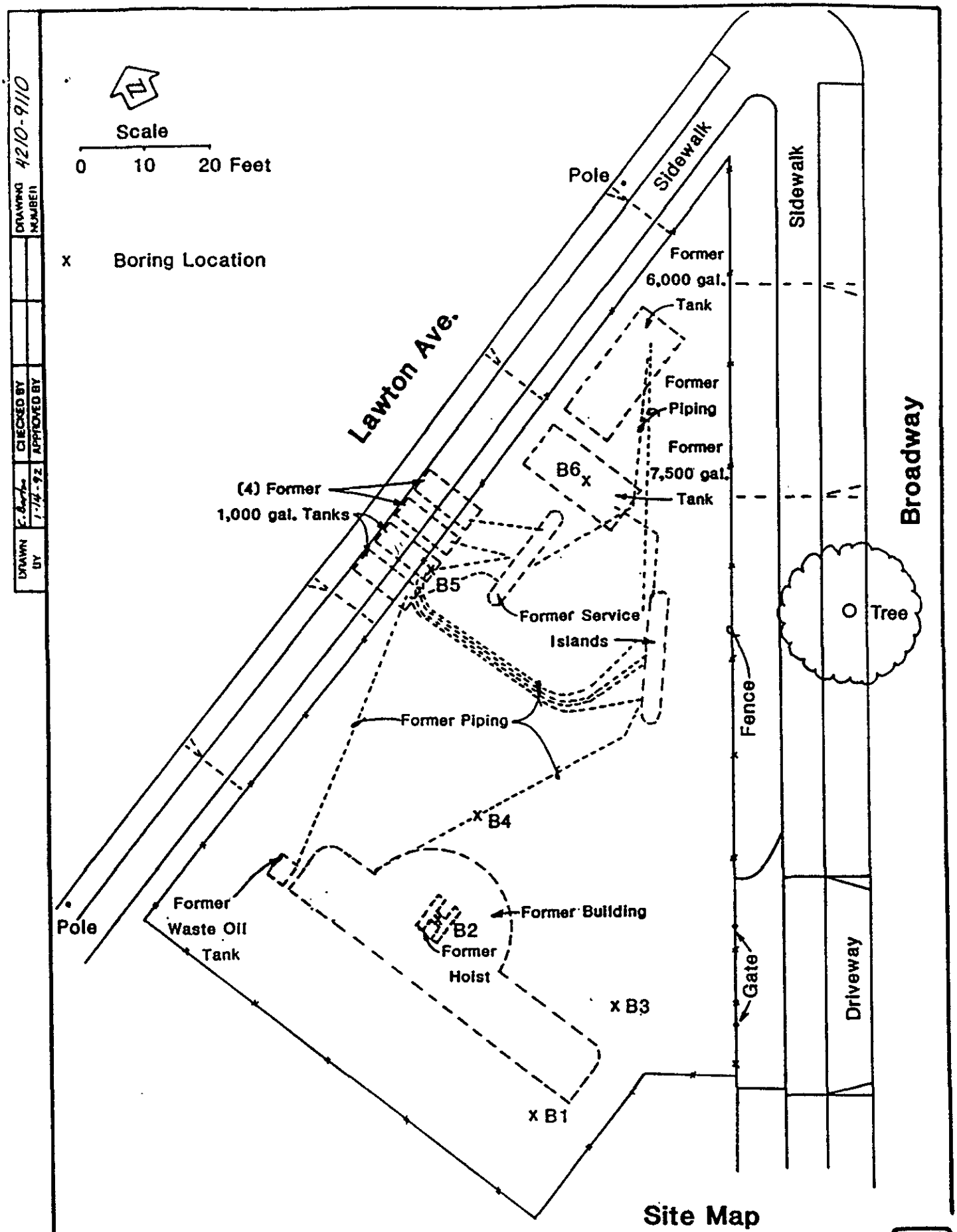
FIGURE 1



RIEDEL ENVIRONMENTAL SERVICES, INC. Richmond, California

Site Map
with Previous Excavations and Sample Locations

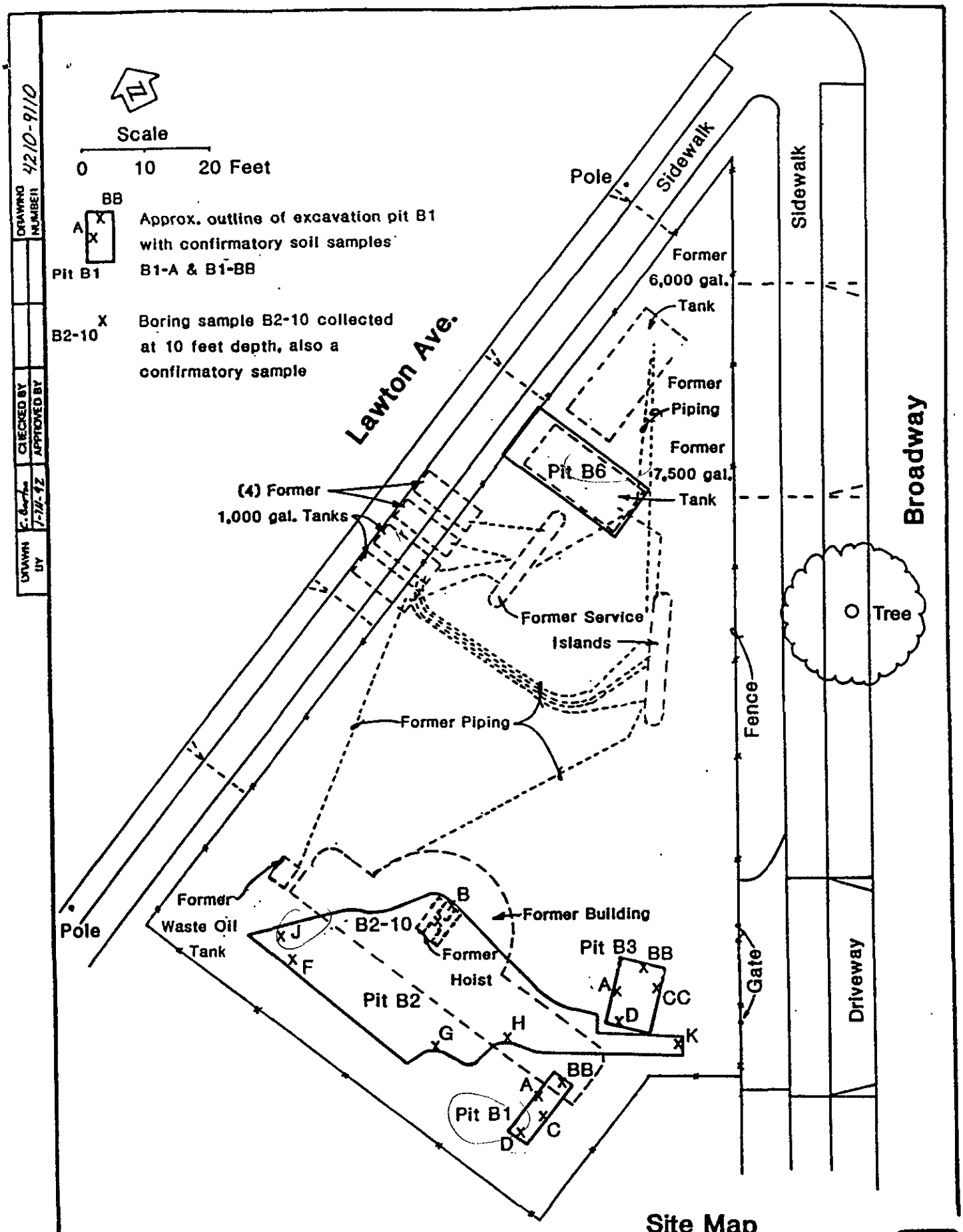
FIGURE 2



Site Map
with Soil Boring Locations and Former Service Station Structures

FIGURE 3

RIEDEL ENVIRONMENTAL SERVICES, INC. Richmond, California



Site Map
with Soil Excavation and Confirmatory Sample Locations

FIGURE 4

RIEDEL ENVIRONMENTAL SERVICES, INC. Richmond, California

ATTACHMENT B

SOIL ANALYTICAL DATA

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
FROM PREVIOUS INVESTIGATIONS

	Water (mg/l)	Soil (mg/kg)				
	HP-1	S-1	S-2	S-3	S-4	S-5
Oil and Grease	25	ND	985	ND	ND	ND
Diesel	ND	ND	ND	ND	NA	NA
Gasoline	1.3	ND	ND	ND	NA	NA
Benzene	0.059	ND	ND	ND	ND	ND
Toluene	0.010	ND	ND	ND	ND	ND
Ethylbenzene	0.039	ND	ND	ND	ND	ND
Xylene	0.22	0.064	0.13	0.05	ND	ND

mg/l= milligrams per liter or parts per million
mg/kg= milligrams per kilogram or parts per million
ND = not detected; for detection limits see reports
In Appendix A.

TABLE 2
ANALYTICAL RESULTS FOR SOIL SAMPLES

SAMPLE ID	DATE	TPH-G	TPH-D	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	O&G
B-1 4.5-5.0'	7 NOV 91	ND	ND	ND	ND	ND	ND	ND
B-1 9.0-10.0'	7 NOV 91	ND	ND	ND	ND	ND	ND	17
B-2 5.0-5.5'	7 NOV 91	ND	ND	ND	ND	ND	ND	140
B-2-10.0-10.5'	7 NOV 91	ND	ND	ND	ND	ND	ND	ND
B-2 14.0-14.5'	7 NOV 91	ND	ND	ND	ND	ND	ND	ND
B-3 2.0-2.5'	7 NOV 91	ND	ND	ND	ND	ND	ND	14
B-4 4.0-4.5'	7 NOV 91	ND	ND	ND	ND	ND	ND	ND
B-4 8.5-9.0'	7 NOV 91	ND	ND	ND	ND	ND	ND	ND
B-5 5.0-5.5'	7 NOV 91	ND	ND	ND	ND	ND	ND	ND
B-5 9.5-10.0'	7 NOV 91	ND	ND	ND	ND	ND	ND	ND
B-5 15.5-16'	7 NOV 91	ND	ND	ND	ND	ND	ND	ND
B-6 4.5-5.0'	7 NOV 91	ND	ND	ND	ND	ND	ND	ND
B-6 7.5-8.0'	7 NOV 91	ND	ND	ND	ND	ND	ND	150
DETECTION LIMIT		1.0	5	.005	.005	.005	.005	10

All results in mg/kg

TPH-G	Total Petroleum Hydrocarbons as Gasoline
TPH-D	Total Petroleum Hydrocarbons as Diesel
O&G	Oil and Grease
ND	Not Detected above the Detection Limit listed

TABLE 3

ANALYTICAL RESULTS OF CONFIRMATORY SOIL SAMPLES
COLLECTED FROM THE SIDES OF THE EXCAVATION

SAMPLE ID	DEPTH	DATE	TOTAL OIL AND GREASE mg/kg
B-1-A	12	15 NOV 91	ND
B-1-C	11.5	15 NOV 91	ND
B-1-D	10.5	15 NOV 91	ND
B1-BB	11	21 Nov 91	ND
B-2-B	5	15 NOV 91	ND
B-2-F	5	16 DEC 91	ND
B-2-G	5	16 DEC 91	ND
B-2-H	5	16 DEC 91	ND
B-2-J	5	19 DEC 91	15
B-2-K	4	19 DEC 91	ND
B-3-A	2.5	15 NOV 91	ND
B-3-D	3	15 NOV 91	ND
B3-BB	3	21 Nov 91	ND
B3-CC	3	21 Nov 91	ND
DETECTION LIMIT			10

ND Not Detected above the Detection Limit listed

TABLE 4

ANALYTICAL RESULTS OF CONFIRMATORY SOIL SAMPLES
COLLECTED FROM THE BOTTOM OF THE EXCAVATION

Sample ID	Depth ft	Date	Total O&G mg/kg
B-2	10	11/7/91	ND
B-2-J	13	12/19/91	15
B-2-M	7	2/6/92	ND
B-2-N	15	2/6/92	ND
Detection limit			10

ND= not detected above detection limit listed

Table 1

RESNA
Working To Restore Nature

SOIL ANALYTICAL RESULTS
Chevron Service Station No. 9-3575
5775 Broadway
Oakland, California

Analyte	B-1 20.9	B-2 22.8	B-3 30.5	A,B,C,D
TPHg	<1	<1	<1	<1
TPHd	<1	<1	1	9
Benzene	<0.005	<0.005	<0.005	<0.005
Toluene	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	<0.005	<0.005	<0.005	<0.005
Xylenes	<0.005	<0.005	<0.005	<0.005
TOG	<50	<50	<50	<50
HVO	ND	ND	6*	NA
Cadmium	<1	<1	<1	NA
Chromium	130	160	620	NA
Zinc	<20	<20	70	NA
Lead	<5	<5	<5	NA
Nickel	60	190	730	NA

Notes:

All results in parts per million (ppm)

TPHg = Total Petroleum Hydrocarbons as Gasoline.
TPHd = Total Petroleum Hydrocarbons as Diesel.
TOG = Total Oil and Grease
HVO = Halogenated Volatile Organics.
* = Chloroform
ND = Not detected; see laboratory analytical reports for detection limits of individual compounds
NA = Not analyzed
< = Less than indicated detection limit established by the laboratory

ATTACHMENT C

GROUNDWATER ELEVATION AND ANALYTICAL DATA

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	TOG	HVOCs	Metals
MW-1												
11/10/92	189.13	173.60	15.53	--	<50	<0.5	<0.5	<0.5	<0.5	<5000	ND	--
12/18/92	189.13	175.46	13.67	--	--	--	--	--	--	--	--	--
01/20/93	189.13	178.20	10.93	--	--	--	--	--	--	--	--	--
02/16/93	189.13	176.50	12.63	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
03/16/93	189.13	176.35	12.78	--	--	--	--	--	--	--	--	--
03/30/93	189.13	177.55	11.58	--	--	--	--	--	--	--	--	<0.05--<0.10
04/29/93	189.13	175.96	13.17	--	--	--	--	--	--	--	--	--
05/21/93	189.13	175.04	14.09	--	<50	0.7	2.0	<0.5	2.0	--	--	--
06/07/93	189.13	175.09	14.04	--	--	--	--	--	--	--	--	--
07/14/93	189.13	174.69	14.44	--	--	--	--	--	--	--	--	--
08/03/93	189.13	173.19	15.94	--	<50	1.0	2.0	<0.5	4.0	--	--	--
09/02/93	189.13	173.88	15.25	--	--	--	--	--	--	--	--	--
09/28/93	189.13	--	--	--	--	--	--	--	--	<5000	--	--
10/11/93	189.13	163.19	25.94	--	--	--	--	--	--	--	--	--
11/02/93	189.13	173.32	15.81	--	<50	4.0	7.0	3.0	11	<5000	--	--
12/06/93	189.13	165.13	24.00	--	--	--	--	--	--	--	--	--
01/10/94	189.13	171.90	17.23	--	--	--	--	--	--	--	--	--
02/01/94	189.13	174.22	14.91	--	<50	<0.5	<0.5	<0.5	1.0	<5000	--	--
03/02/94	189.13	176.97	12.16	--	--	--	--	--	--	--	--	--
04/06/94	189.13	175.25	13.88	--	--	--	--	--	--	--	--	--
05/04/94	189.13	175.79	13.34	--	<50	<0.5	<0.5	<0.5	<0.5	<5000	--	--
06/03/94	189.13	175.45	13.68	--	--	--	--	--	--	--	--	--
07/11/94	189.13	174.70	14.43	--	--	--	--	--	--	--	--	--
08/03/94	189.13	174.63	14.50	--	60	3.3	7.9	3.2	15	<5000	--	--
09/07/94	189.13	174.13	15.00	--	--	--	--	--	--	--	--	--
10/12/94	189.13	173.62	15.51	--	--	--	--	--	--	--	--	--
11/03/94	189.13	173.54	15.59	--	<50	<0.5	<0.5	<0.5	<0.5	<5000	--	--
03/23/95	189.13	178.51	10.62	--	--	--	--	--	--	--	--	--
04/13/95	189.13	177.31	11.82	--	--	--	--	--	--	--	--	--
05/02/95	189.13	177.04	12.09	--	<50	<0.5	<0.5	<0.5	<0.5	<5000	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	TOG	HVOCs	Metals
MW-2												
11/10/92	189.82	172.96	16.86	--	<50	<0.5	<0.5	<0.5	<0.5	<5000	ND	--
12/18/92	189.82	175.91	13.91	--	--	--	--	--	--	--	--	--
01/20/93	189.82	177.37	10.93	--	--	--	--	--	--	--	--	--
02/16/93	189.82	175.25	14.57	--	<50	<0.5	0.7	<0.5	0.9	--	--	--
03/16/93	189.82	175.10	14.72	--	--	--	--	--	--	--	--	--
03/30/93	189.82	176.84	12.98	--	--	--	--	--	--	--	--	<0.05--<0.10
04/29/93	189.82	175.05	14.77	--	--	--	--	--	--	--	--	--
05/21/93	189.82	174.23	15.59	--	<50	0.6	2.0	<0.5	2.0	--	--	--
06/07/93	189.82	174.37	15.45	--	--	--	--	--	--	--	--	--
07/14/93	189.82	174.03	15.79	--	--	--	--	--	--	--	--	--
08/03/93	189.82	173.37	16.45	--	87	2.0	5.0	0.8	5.0	--	--	--
09/02/93	189.82	173.25	16.57	--	--	--	--	--	--	--	--	--
09/28/93	189.82	--	--	--	--	--	--	--	--	<5000	--	--
10/11/93	189.82	172.56	17.26	--	--	--	--	--	--	--	--	--
11/02/93	189.82	172.77	17.05	--	<50	3.0	5.0	2.0	9.0	<5000	--	--
12/06/93	189.82	173.48	16.34	--	--	--	--	--	--	--	--	--
01/10/94	189.82	174.21	15.61	--	--	--	--	--	--	--	--	--
02/01/94	189.82	174.76	15.06	--	<50	<0.5	<0.5	<0.5	1.0	<5000	--	--
03/02/94	189.82	175.95	13.87	--	--	--	--	--	--	--	--	--
04/06/94	189.82	174.40	15.42	--	--	--	--	--	--	--	--	--
05/04/94	189.82	175.08	14.74	--	<50	<0.5	<0.5	<0.5	<0.5	<5000	--	--
06/03/94	189.82	174.70	15.12	--	--	--	--	--	--	--	--	--
07/11/94	189.82	174.16	15.66	--	--	--	--	--	--	--	--	--
08/03/94	189.82	174.30	15.52	--	<50	2.1	5.5	2.2	11	<5000	--	--
09/07/94	189.82	173.72	16.10	--	--	--	--	--	--	--	--	--
10/12/94	189.82	173.09	16.73	--	--	--	--	--	--	--	--	--
11/03/94	189.82	172.93	16.89	--	<50	<0.5	<0.5	<0.5	<0.5	<5000	--	--
03/23/95	189.82	177.46	12.36	--	--	--	--	--	--	--	--	--
04/13/95	189.82	174.99	14.83	--	--	--	--	--	--	--	--	--
05/02/95	189.82	176.61	13.21	--	<50	<0.5	1.1	<0.5	0.90	<5000	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	TOG	HVOCs	Metals
MW-3												
11/10/92	189.05	155.68	33.37	--	53	1.7	0.6	<0.5	0.8	<5000	ND	--
11/25/92	189.05	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5000	--	--
12/18/92	189.05	148.60	40.45	--	--	--	--	--	--	--	--	--
01/20/93	189.05	155.32	33.73	--	--	--	--	--	--	--	--	--
02/16/93	189.05	160.71	28.34	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
03/16/93	189.05	158.94	30.11	--	--	--	--	--	--	--	--	--
03/30/93	189.05	161.40	27.65	--	--	--	--	--	--	--	--	<0.05--<0.10
04/29/93	189.05	167.02	22.03	--	--	--	--	--	--	--	--	--
05/21/93	189.05	170.37	18.68	--	<50	0.7	<0.5	<0.5	0.5	--	--	--
06/07/93	189.05	163.45	25.60	--	--	--	--	--	--	--	--	--
07/14/93	189.05	159.60	29.45	--	--	--	--	--	--	--	--	--
08/03/93	189.05	160.12	28.93	--	65	1.0	2.0	0.6	6.0	--	--	--
09/02/93	189.05	153.75	35.30	--	--	--	--	--	--	--	--	--
09/28/93	189.05	--	--	--	--	--	--	--	--	<5000	--	--
10/11/93	189.05	150.15	38.90	--	--	--	--	--	--	--	--	--
11/02/93	189.05	153.25	35.80	--	85	7.0	13	5.0	23	<5000	--	--
12/06/93	189.05	153.32	35.73	--	--	--	--	--	--	--	--	--
01/10/94	189.05	158.45	30.60	--	--	--	--	--	--	--	--	--
02/01/94	189.05	161.35	27.70	--	<50	<0.5	0.5	<0.5	2.0	<5000	--	--
03/02/94	189.05	155.30	33.75	--	--	--	--	--	--	--	--	--
04/06/94	189.05	161.85	27.20	--	--	--	--	--	--	--	--	--
05/04/94	189.05	166.79	22.26	--	<50	<0.5	<0.5	<0.5	<0.5	<5000	--	--
06/03/94	189.05	166.83	22.22	--	--	--	--	--	--	--	--	--
07/11/94	189.05	171.79	17.26	--	--	--	--	--	--	--	--	--
08/03/94	189.05	173.55	15.50	--	<50	3.4	6.6	2.2	11	<5000	--	--
09/07/94	189.05	158.75	30.30	--	--	--	--	--	--	--	--	--
10/12/94	189.05	162.75	26.30	--	--	--	--	--	--	--	--	--
11/03/94	189.05	166.03	23.02	--	<50	<0.5	<0.5	<0.5	<0.5	<5000	--	--
03/23/95	189.05	156.55	32.50	--	--	--	--	--	--	--	--	--
04/13/95	189.05	159.48	29.57	--	--	--	--	--	--	--	--	--
05/02/95	189.05	162.25	26.80	--	<50	<0.5	<0.5	<0.5	<0.5	<5000	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	TOG	HVOCs	Metals
S-3												
11/10/92	177.51	173.09	4.42	--	--	--	--	--	--	--	--	--
12/18/92	177.51	175.23	2.28	--	--	--	--	--	--	--	--	--
01/20/93	177.51	174.77	2.74	--	--	--	--	--	--	--	--	--
02/16/93	177.51	174.96	2.55	--	--	--	--	--	--	--	--	--
03/16/93	177.51	174.98	2.53	--	--	--	--	--	--	--	--	--
03/30/93	177.51	176.38	1.13	--	--	--	--	--	--	--	--	--
04/29/93	177.51	175.39	2.12	--	--	--	--	--	--	--	--	--
05/21/93	177.51	174.57	2.94	--	--	--	--	--	--	--	--	--
06/07/93	177.51	169.61	7.90	--	--	--	--	--	--	--	--	--
07/14/93	177.51	--	--	--	--	--	--	--	--	--	--	--
08/03/93	177.51	173.81	3.70	--	--	--	--	--	--	--	--	--
09/02/93	177.51	--	--	--	--	--	--	--	--	--	--	--
10/11/93	177.51	--	--	--	--	--	--	--	--	--	--	--
11/02/93	177.51	--	--	--	--	--	--	--	--	--	--	--
12/06/93	177.51	--	--	--	--	--	--	--	--	--	--	--
01/10/94	177.51	--	--	--	--	--	--	--	--	--	--	--
02/01/94	177.51	174.61	2.90	--	--	--	--	--	--	--	--	--
03/02/94	177.51	--	--	--	--	--	--	--	--	--	--	--
04/06/94	177.51	--	--	--	--	--	--	--	--	--	--	--
05/04/94	177.51	174.97	2.54	--	--	--	--	--	--	--	--	--
06/03/94	177.51	--	--	--	--	--	--	--	--	--	--	--
07/11/94	177.51	--	--	--	--	--	--	--	--	--	--	--
08/03/94	177.51	--	--	--	--	--	--	--	--	--	--	--
09/07/94	177.51	--	--	--	--	--	--	--	--	--	--	--
10/07/94	177.51	--	--	--	--	--	--	--	--	--	--	--
11/03/94	177.51	--	--	--	--	--	--	--	--	--	--	--

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	TOG	HVOCs	Metals
TRIP BLANK												
02/16/93	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
05/21/93	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
08/03/93	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
11/02/93	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
02/01/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
05/04/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
08/03/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
11/03/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
05/02/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--

Note: Blaine Tech Services, Inc. began routine monitoring of the groundwater wells at this site on March 23, 1995. Earlier field data and analytical results provided by Sierra Environmental.

ABBREVIATIONS:
TPH = Total Petroleum Hydrocarbons
HVOC = Halogenated Volatile Organic Compound
TOG = Total Oil and Grease

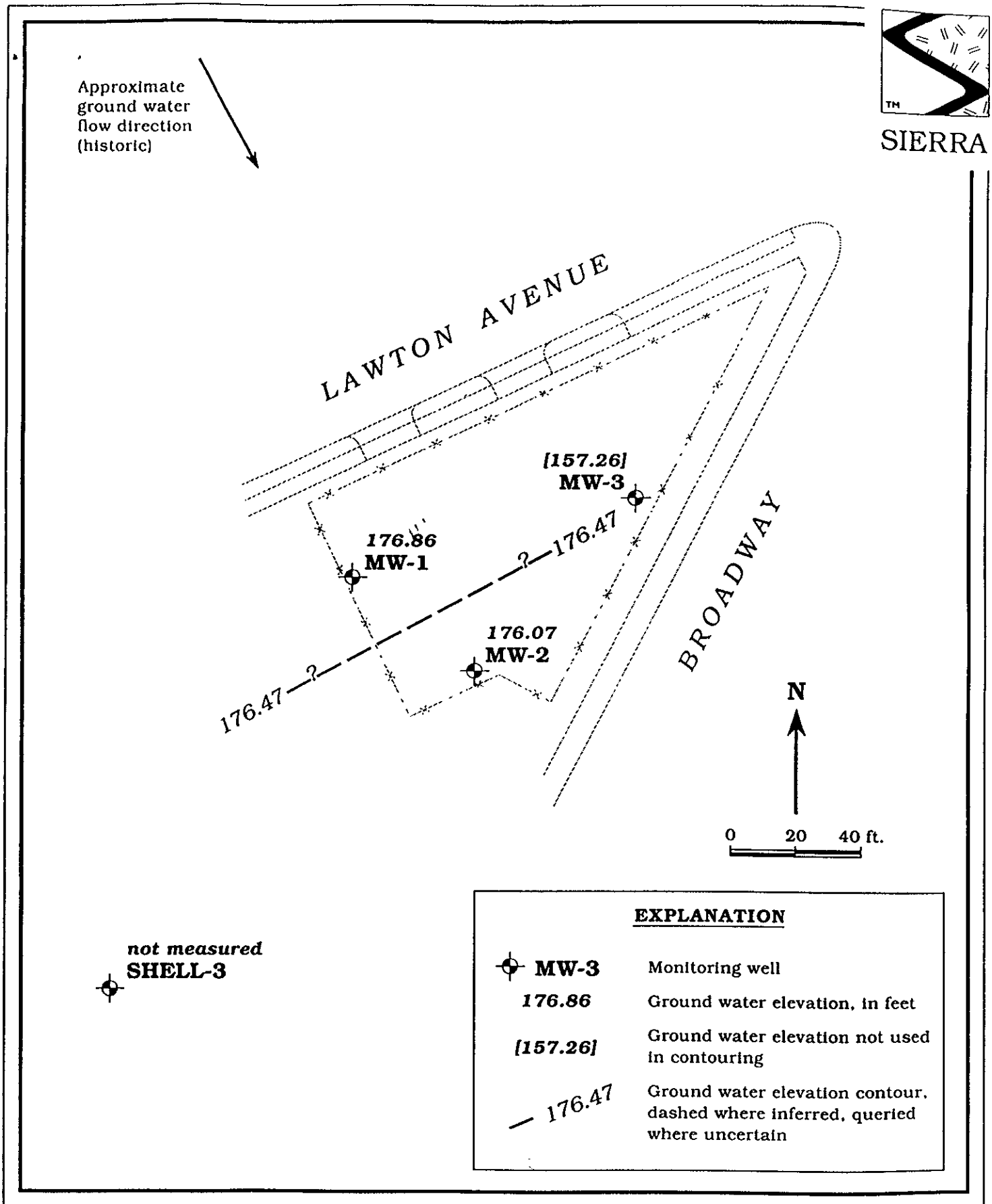


Figure 1. Monitoring Well Locations and Ground Water Elevation Contour Map - December 6, 1994 - Former Chevron Service Station #9-3575, 5775 Broadway, Oakland, California

1-277-04 2/27/95

SIERRA

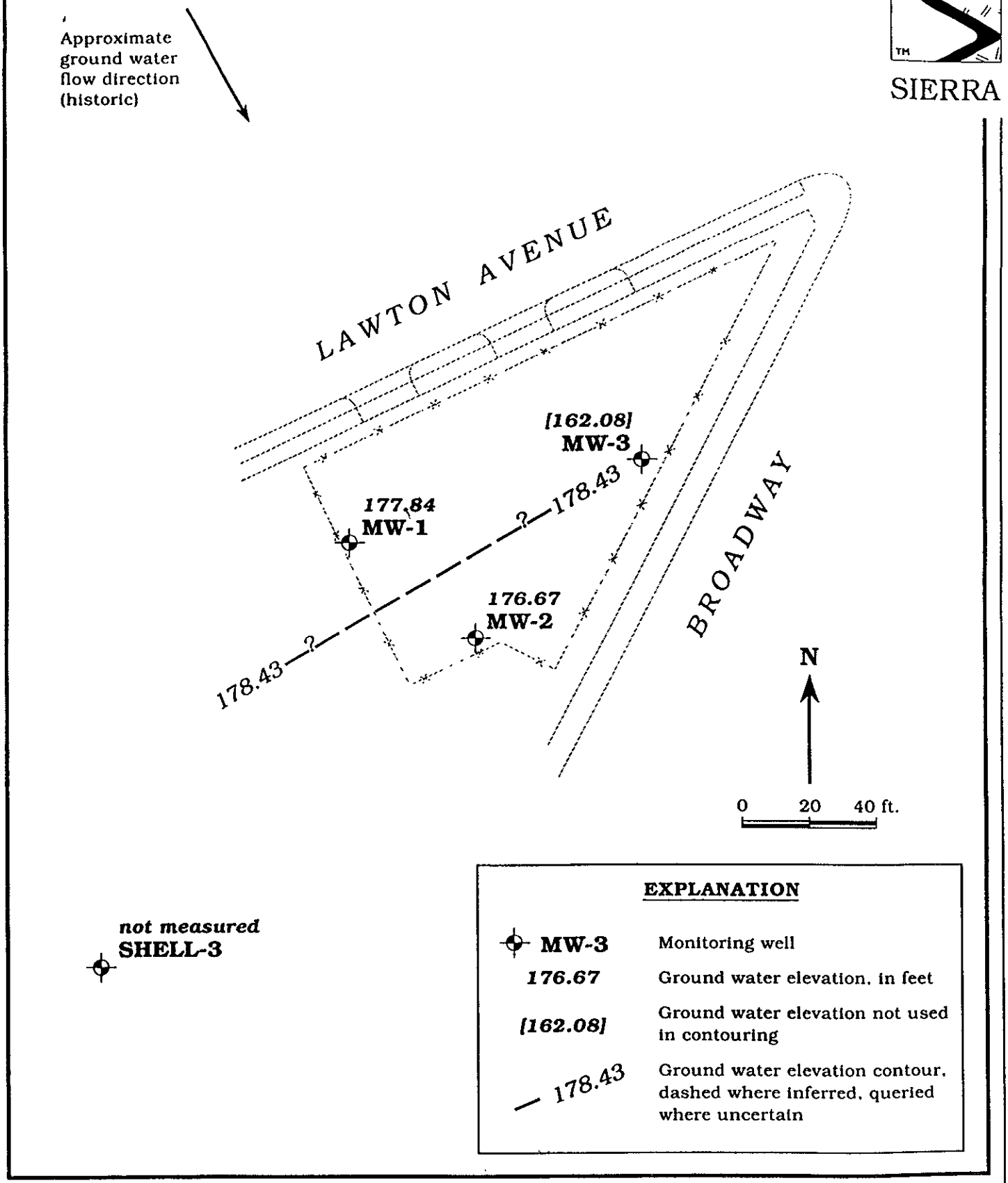


Figure 2. Monitoring Well Locations and Ground Water Elevation Contour Map - January 11, 1995 - Former Chevron Service Station #9-3575, 5775 Broadway, Oakland, California

1-277-04 3/2/95

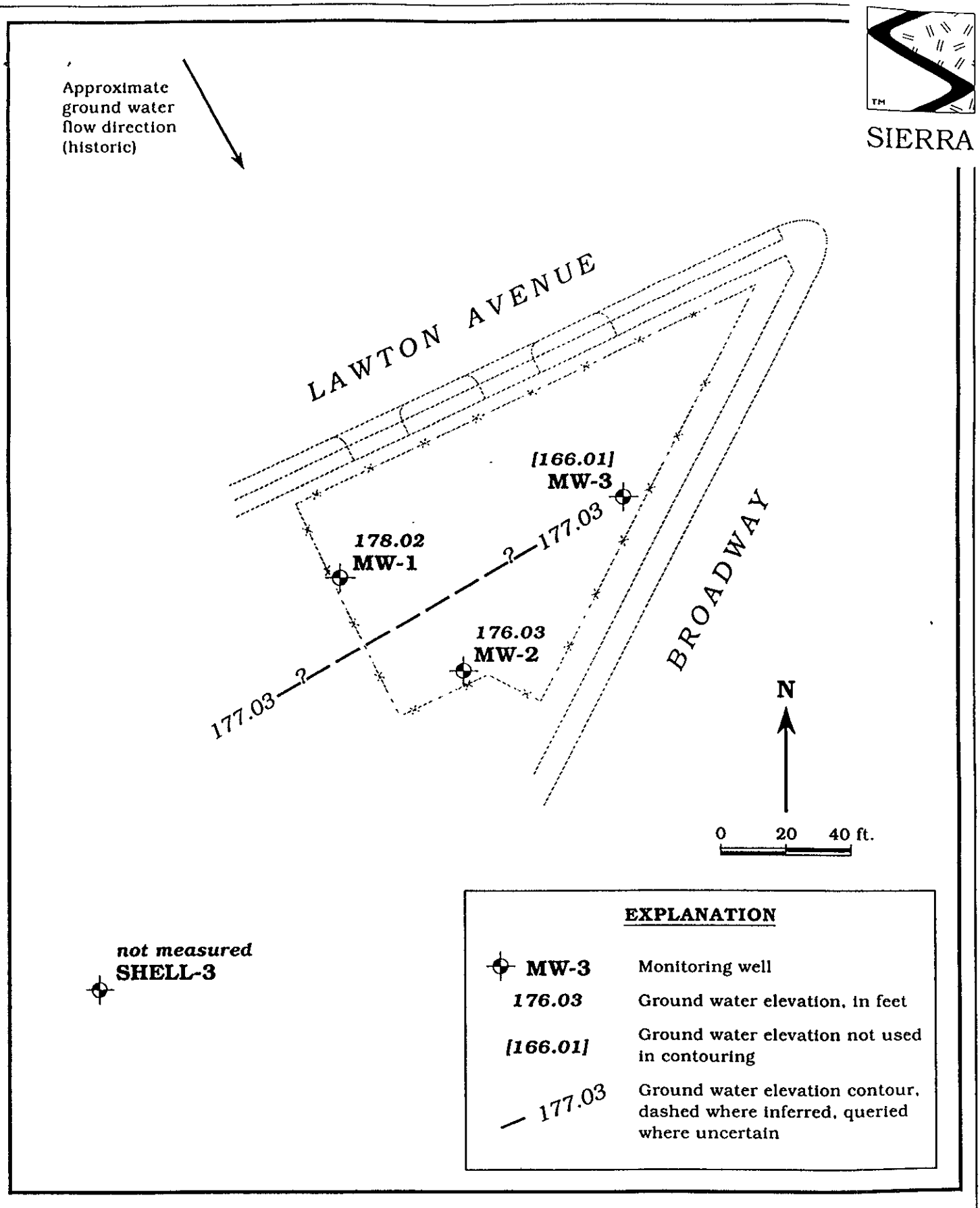
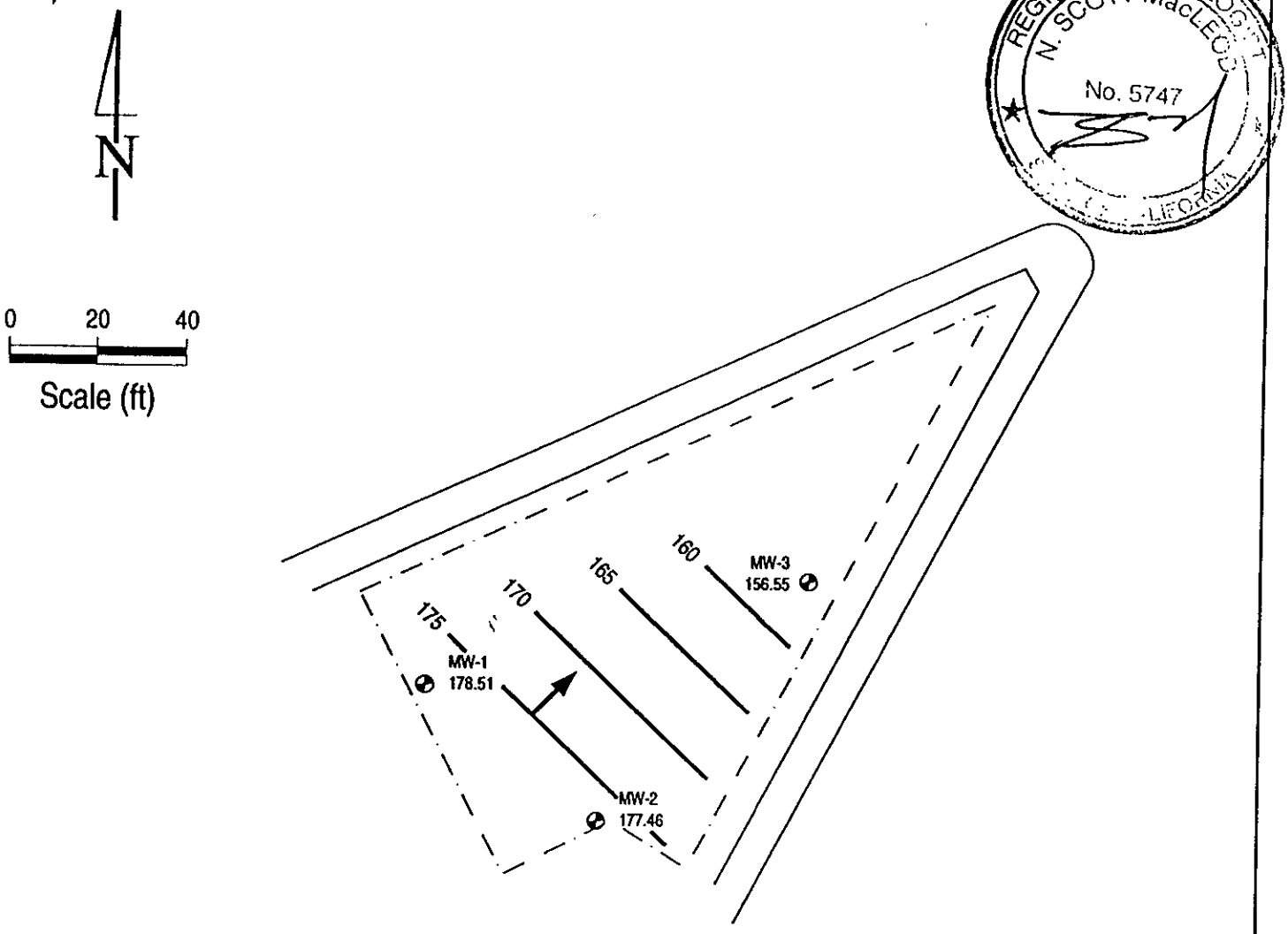


Figure 3. Monitoring Well Locations and Ground Water Elevation Contour Map - February 3, 1995 - Former Chevron Service Station #9-3575, 5775 Broadway, Oakland, California

1-277-04 3/9/95



REGISTERED GEOLOGIST
N. SCOTT MacLEOD
No. 5747
CALIFORNIA

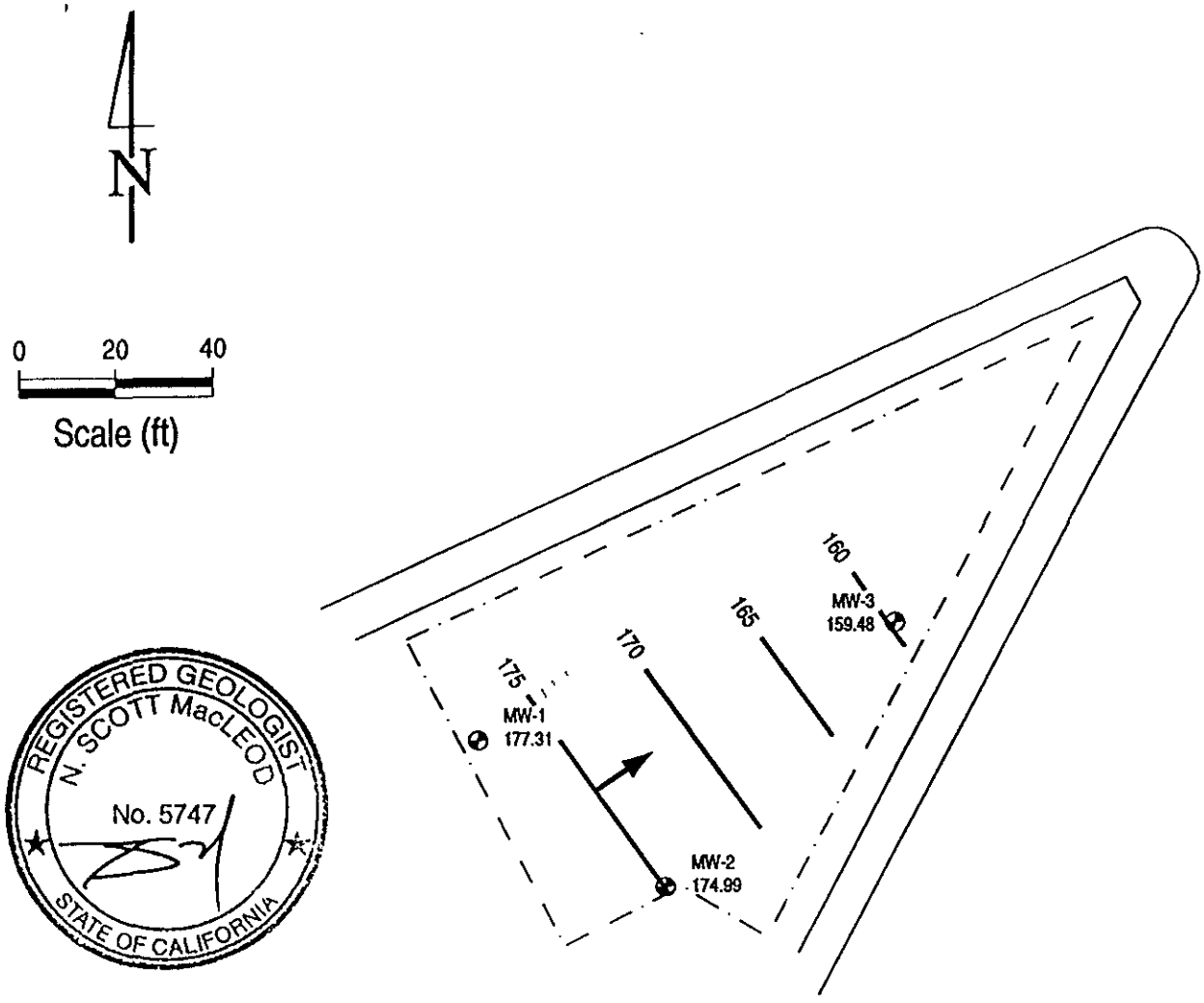
CAMBRIA
Environmental Technology, Inc.

Former Chevron Station 9-3575
5775 Broadway
Oakland, California

D:\PROJECT\CHEVRON\9-3575\3575-QM.DWG

Ground Water Elevation
March 23, 1995

FIGURE
1



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Former Chevron Station 9-3575
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Oakland, California

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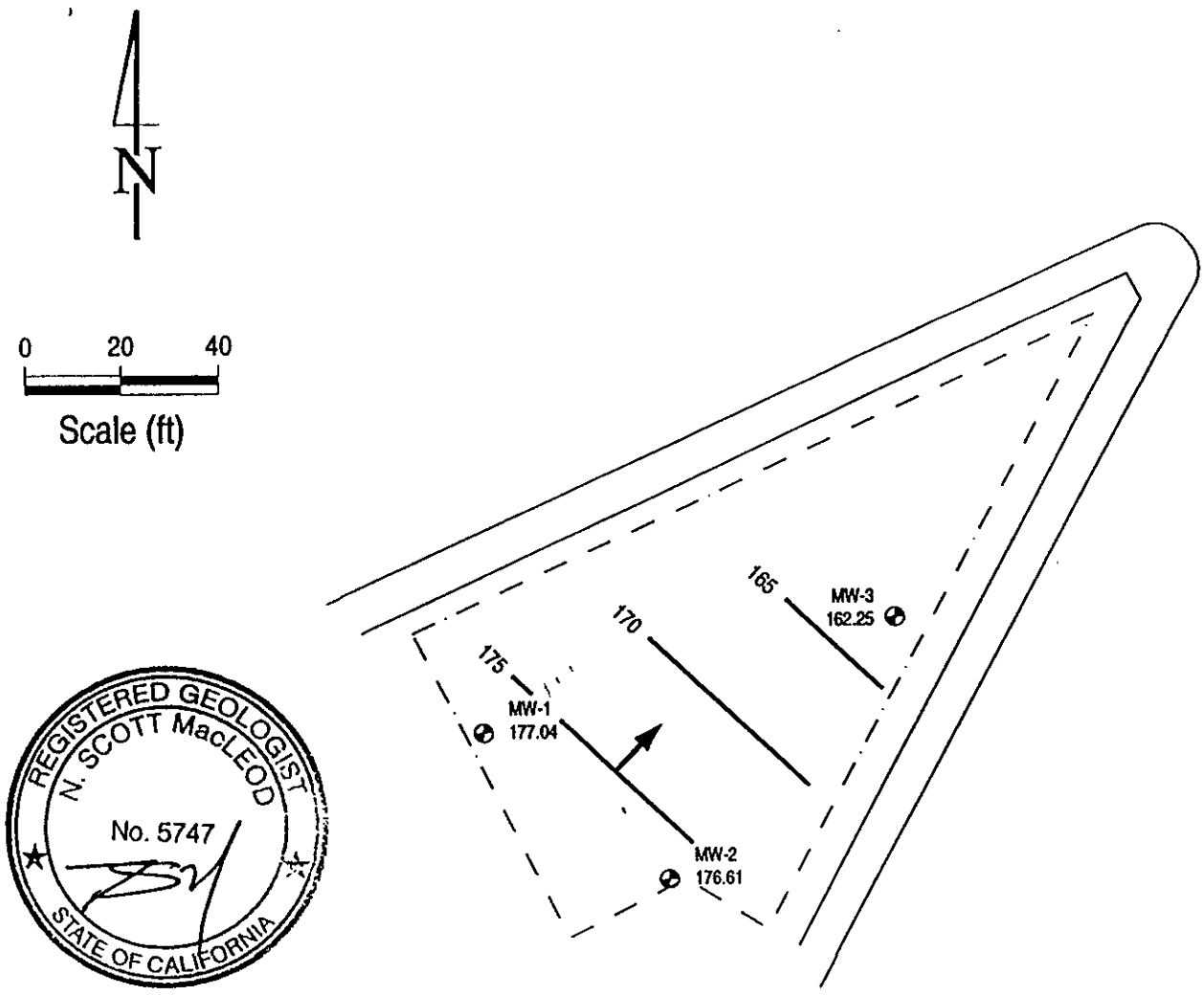
Ground Water Elevation
April 13, 1995

FIGURE
2



CAMBRIA
Environmental Technology, Inc.

Former Chevron Station 9-3575
5775 Broadway
Oakland, California

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Ground Water Elevation
May 2, 1995

FIGURE
3

ATTACHMENT D

BORING LOGS

Log of Exploratory Boring B-1

Project No. 4208-9110

Project Name California Pacific Investments

Date 11-7-91

Logged By Jim Rohrer

Pocket Penetrometer (TSF)	Blows/Foot	Groundwater Levels	Samples	Depth in Ft.	Lithographic Column	Description
2.0				1–2	CL	CLAY: black (2.5Y, 2/0); damp; stiff; 5–15% very fine sand.
	38			3–9	CL	SANDY CLAY: light olive brown (2.5Y, 5/4); dry to damp; stiff; 20–30% fine sand.
3.75	28					SANDY CLAY: olive (5Y, 4/3); damp; very stiff; coarse gravel of weathered sandy claystone in shoe.
	50					
	23					
	56			10–12		Weathered sandy claystone; very dense; brittle; bedrock.
	91			13		*Bottom of boring 13 feet.*
				14–23		

Log of Exploratory Boring B-2

Project No. 4208-8110

Project Name California Pacific Investments

Date 11-7-91

Logged By Jim Rohrer

Pocket Penetrometer (TSF)	Blows/Foot	Groundwater Levels	Samples	Depth in Ft.	Lithographic Column	Description
				1–23	SW	GRAVELLY SAND: reddish yellow (7.5YR, 7/6); dry; loose; asphalt pieces.
					CL	CLAY: black (2.5Y, 2/0); dry to damp; stiff; 5–15% very fine sand.
	18					
	33					@ 6': serpentinite (?) fragments with black Mn (?) stain.
	47				SC	CLAYEY SAND: black (2.5Y, 2/0); dry; dense; 40–50% fines; 50–60% fine sand.
	55					
	41					
	37					
	41					
	53					
	58					@ 15': serpentine (?) vein in clayey sandstone.
	74					*Bottom of boring 17.5 feet*

Log of Exploratory Boring B-3

Project No. 4208-8110

Project Name California Pacific Investments

Date 11-7-91

Logged By Jim Rohrer

Packet Penetrameter (TSF)	Blows/Foot	Groundwater Levels	Samples	Depth in Ft.	Lithographic Column	Description
				0		1" of asphalt
	73			1–2	CL	SANDY CLAY: orange brown (5YR, 5/8); damp; stiff; 30–40% fine sand.
				3	SP	SAND: light brown; (7.5 YR, 6/3); dry; loose; 1–10% fines with trace clay; fine sand; from cuttings.
	85			4		Bedrock
	144		NR	5–6		*Bottom of boring 6 feet.*
				7–23		

Log of Exploratory Boring B-4

Project No. 4209-8110

Project Name California Pacific Investments

Date 11-7-91

Logged By Jim Rohrer

Pocket Penetrometer (TSF)	Blows/Foot	Groundwater Levels	Samples	Depth in Ft.	Lithographic Column	Description
1.5	22 25 28 30 60 120			1–23	CL SC	1" of asphault CLAY: black (2.5Y, 2/0); damp; very stiff; 1–10% very fine sand. @ 2': 5–15% fine gravel. @ 4.5': serpentinite (?) fragment. CLAYEY SAND: black (2.5Y,2/0); dry; medium dense. @ 7.5': weathered serpentinite (?) fragments. serpentinite (?) bedrock. *Bottom of boring 10 feet.*

Log of Exploratory Boring B-5

Project No. 4209-9110

Project Name California Pacific Investments

Date 11-7-91

Logged By Jim Rohrer

PID	Blows/ Foot	Groundwater Levels	Samples	Depth in Ft.	Lithographic Column	Description
				1	GP	SANDY GRAVEL: reddish yellow (7.5YR, 7/8); dry; loose; 40-50% fine to medium sand; 50-60% fine angular gravel.
	17			2	SP	SAND: olive (5Y, 4/4); dry; medium dense; 5-15% fines; orange brown sand lenses.
	17			3		
	18			4	SC	CLAYEY SAND: black (2.5Y, 2/0); dry; medium dense.
	20			5		
	31			6	CL/SC	SANDY CLAY/CLAYEY SAND: black (2.5Y, 2/0); dry; medium dense; fine to medium sand lenses to 1.5" diameter.
	35			7		
	55			8		weathered serpentintie (?) fragment in sample
	37			9		
	80			10		
	31			11	SC	CLAYEY SAND: black (2.5, 2/0); dry; stiff; 40-50% fines; 50-60% fine sand; minor angular coarse gravel of serpentinite (?).
	300		NR	12		
				13		
				14		
				15		
				16		bedrock, auger refusal
				17		*Bottom of boring 16.2 feet.*
				18		
				19		
				20		
				21		
				22		
				23		

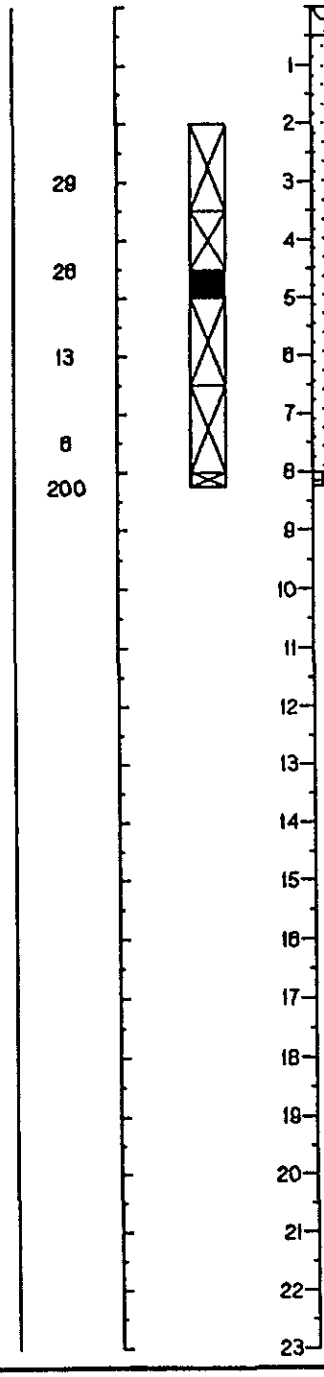
Log of Exploratory Boring B-6

Project No. 4209-9110

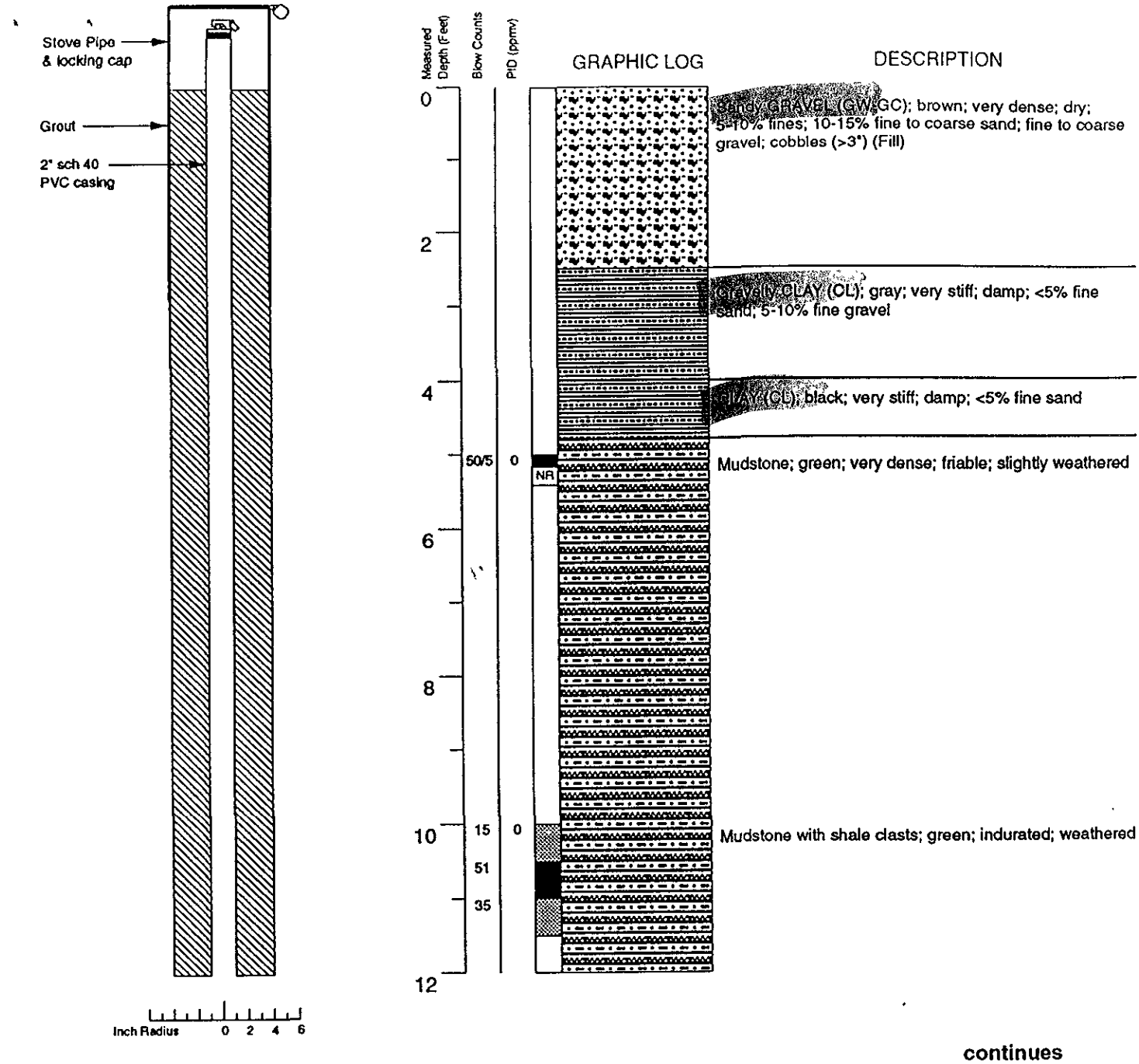
Project Name California Pacific Investments

Date 11-7-91

Logged By Jim Rohrer



Lithographic Column	Description
GW	SANDY GRAVEL: reddish brown (7.5YR, 7/8); dry loose.
	SAND: brown (10YR, 3/2); dry; loose; fine sand; fill.
	asphalt chunks
SP	SAND: brown (10YR, 3/2); medium dense; traced clay; subangular coarse gravel; cement fragments; sandstone gravel in shoe.
	color change to olive brown (2.5Y, 4/3); damp; loose; dark brittle clay lense.
	bedrock
	Bottom of boring 8.25 feet.



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Logged by:	Justin Power	Drilling Company:	Westex	Well Head Completion:	Stove pipe & locking cap
Project Mgr:	Barry Marcus	Drilling Method:	Air Rotary	Type of Sampler:	2" " split barrel
Dates Drilled:	8/20/92-8/21/92	Driller:	Randy	TD (Total Depth):	43.0 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample
- All symbols and definitions may not be applicable

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

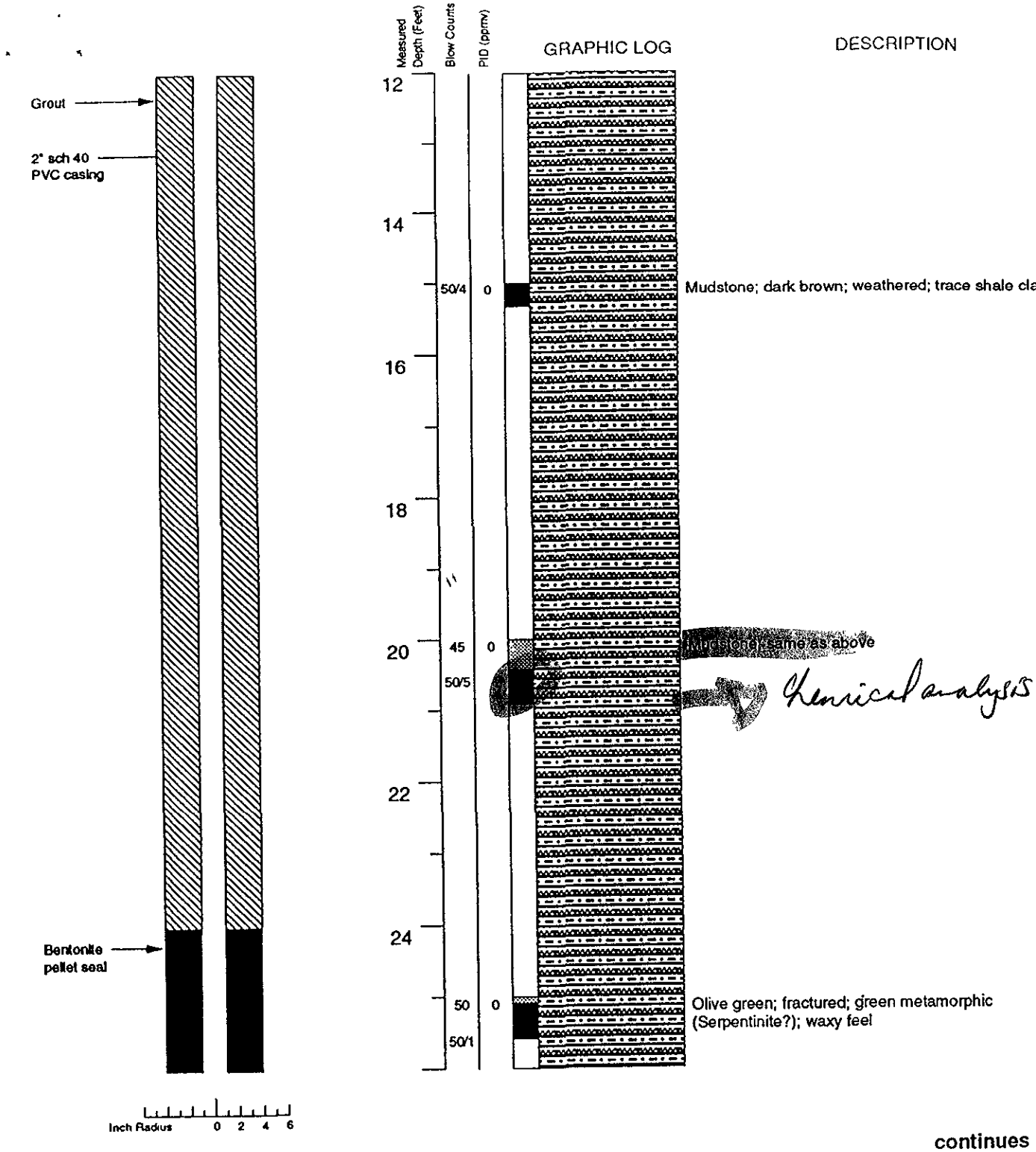
Boring Log
Monitor Well 1 (Boring B-1)

Former Chevron Service Station # 9-3575
5775 Broadway
Oakland, California

MONITOR WELL

RESNA

17046.01



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EXPLANATION

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

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

All symbols and definitions may not be applicable

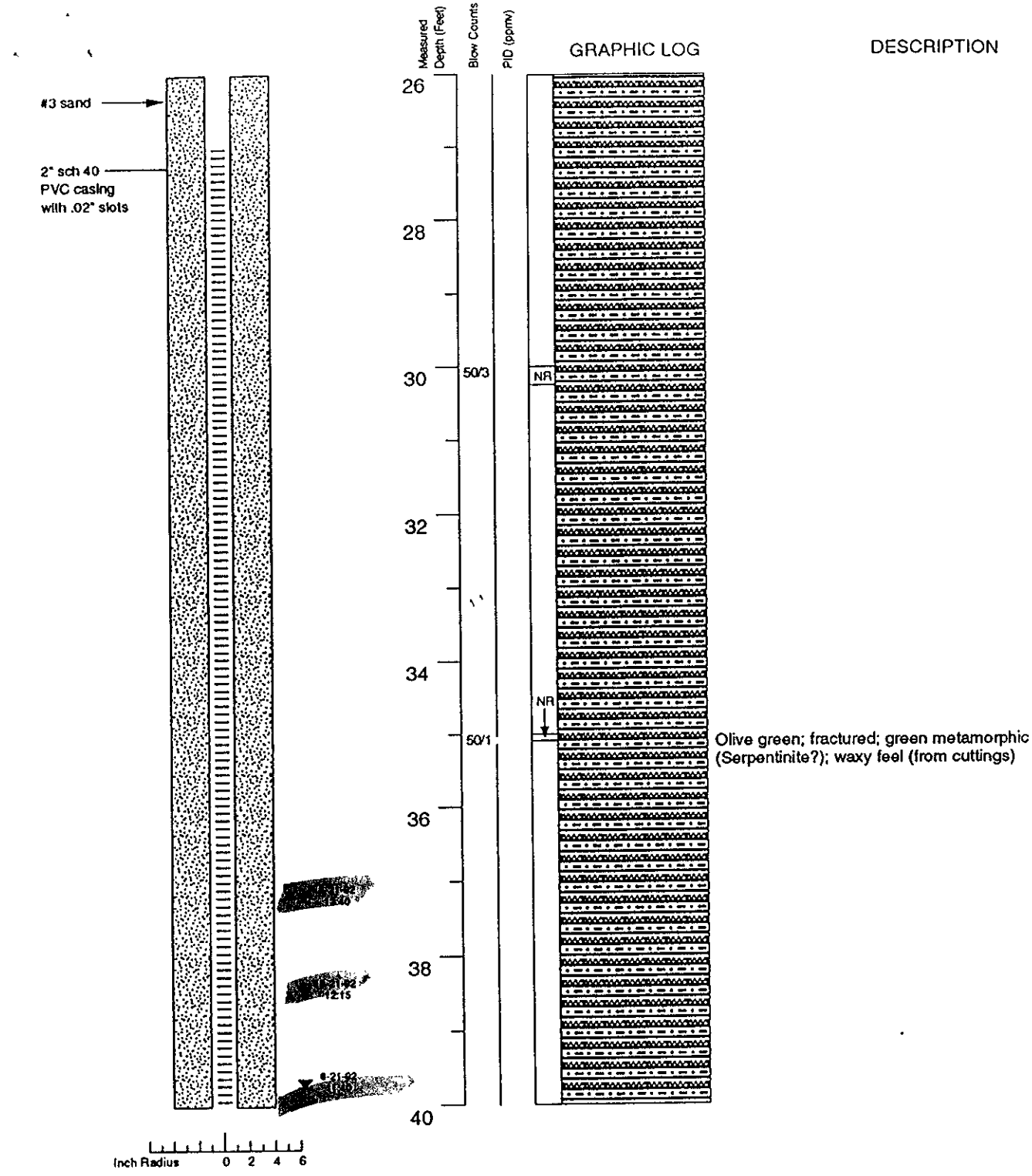
Boring Log
Monitor Well 1 (Boring B-1)

Former Chevron Service Station #9-3575
5775 Broadway
Oakland, California

MONITOR WELL
1

RESNA

17046.01



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EXPLANATION

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

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

All symbols and definitions may not be applicable

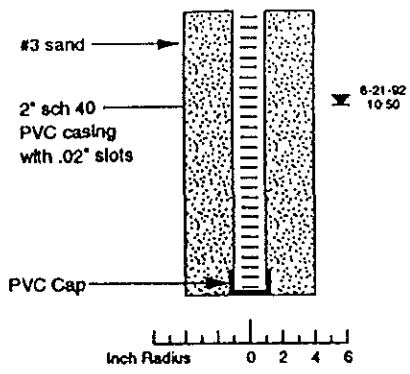
Boring Log
Monitor Well 1 (Boring B-1)

Former Chevron Service Station #9-3575
5775 Broadway
Oakland, California

MONITOR WELL 1

RESNA

17046.01



Measured Depth (Feet)	Blow Counts	PID (ppmv)	GRAPHIC LOG	DESCRIPTION
40				Olive green; fractured; green metamorphic (Serpentinite?); waxy feel (from cuttings)
42				TD @ 43.0 ft.
44				
46				
48				
50				
52				
54				

EXPLANATION

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

All symbols and definitions may not be applicable

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

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

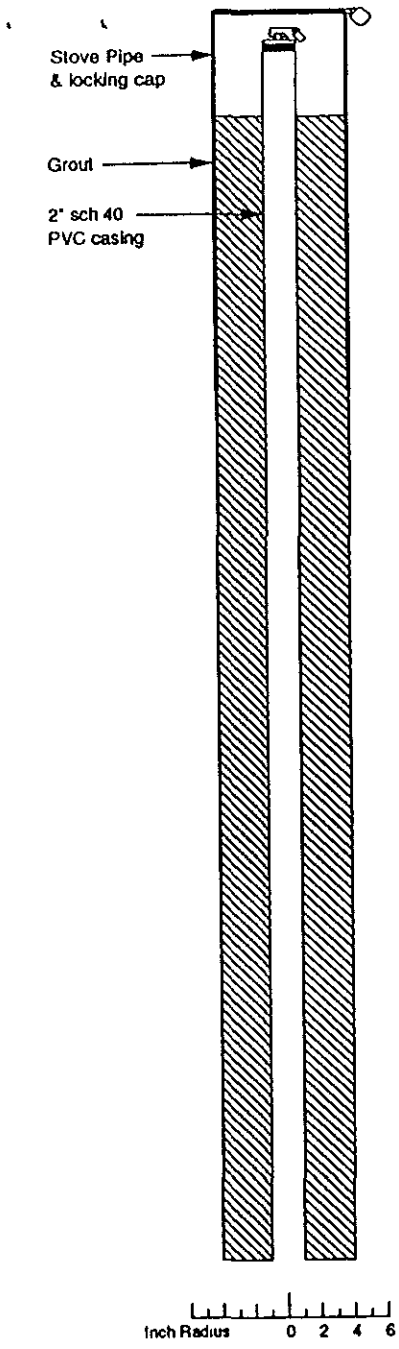
Boring Log
Monitor Well 1 (Boring B-1)

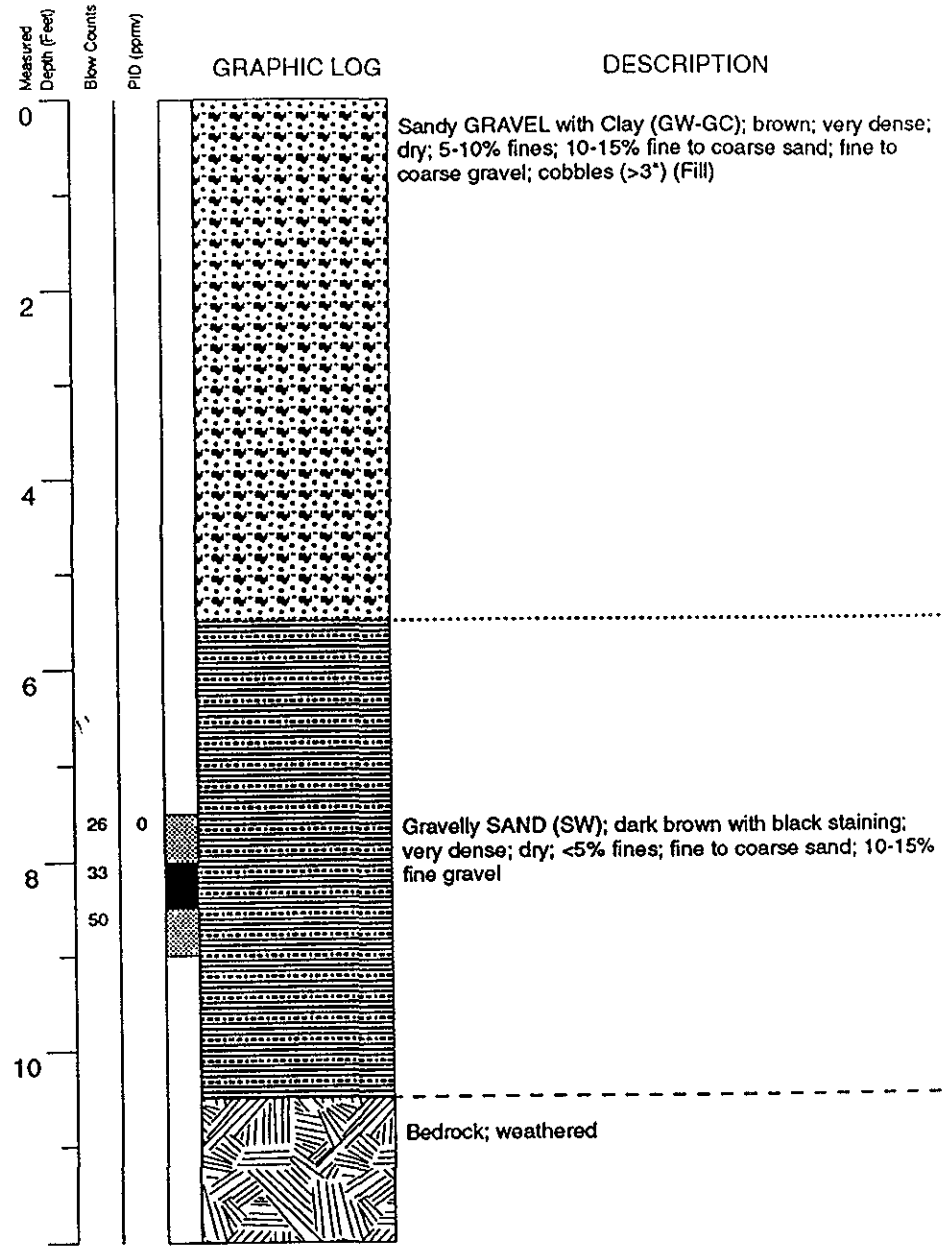
Former Chevron Service Station #9-3575
5775 Broadway
Oakland, California

MONITOR WELL
1

RESNA

17046.01





continues

Logged by:	Justin Power	Drilling Company:	Westex	Well Head Completion:	Stove pipe & locking cap
Project Mgr:	Barry Marcus	Drilling Method:	Air Rotary	Type of Sampler:	2" split barrel
Dates Drilled:	8/20/92-8/22/92	Driller:	Randy	TD (Total Depth):	38.0 ft.

EXPLANATION

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

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- Hachured where gradational

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All symbols and definitions may not be applicable

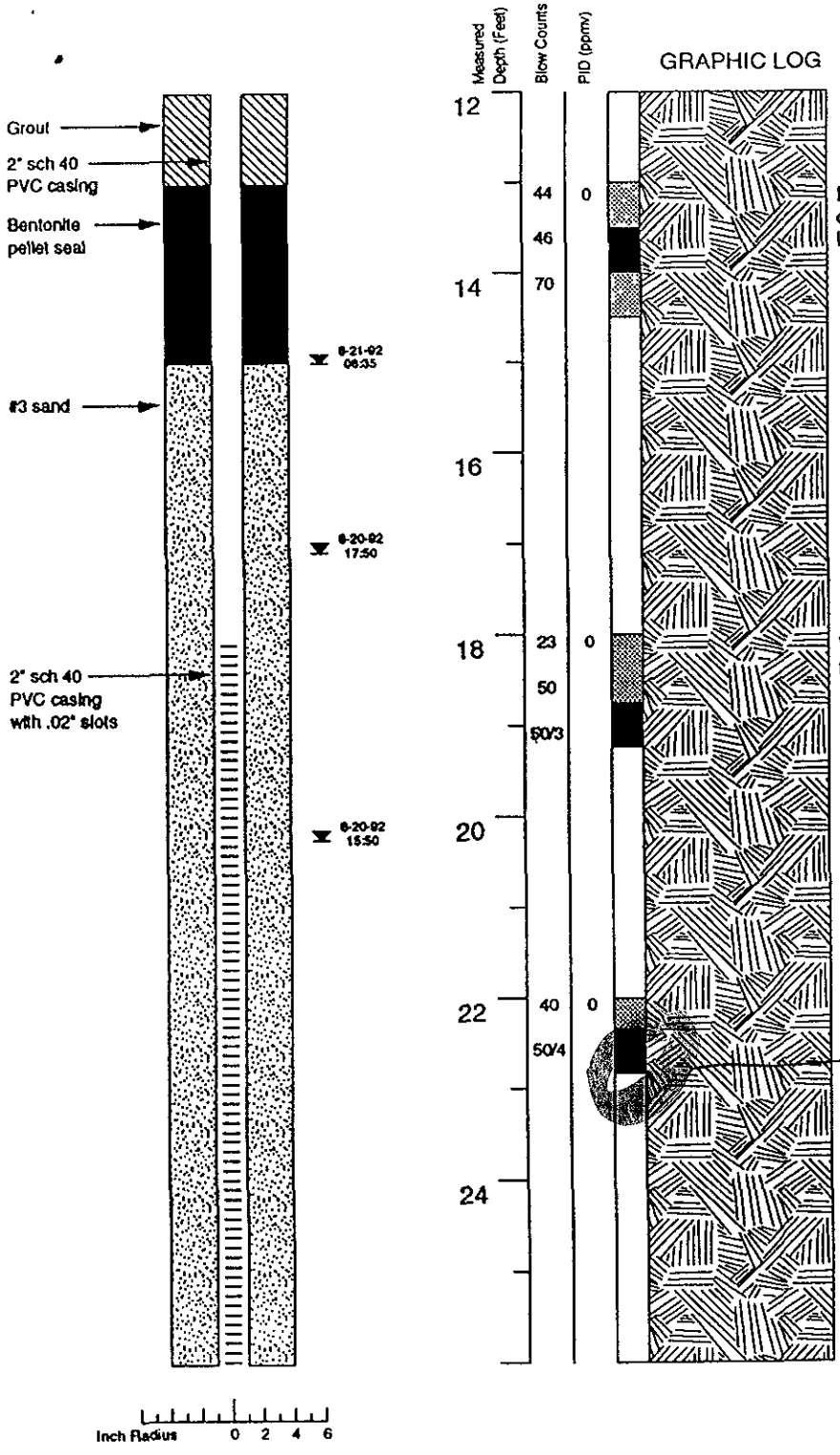
Boring Log
Monitor Well 2 (Boring B-2)

Former Chevron Service Station #9-3575
5775 Broadway
Oakland, California

MONITOR WELL
2

RESNA

17046.01



continues

EXPLANATION

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

All symbols and definitions may not be applicable

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

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

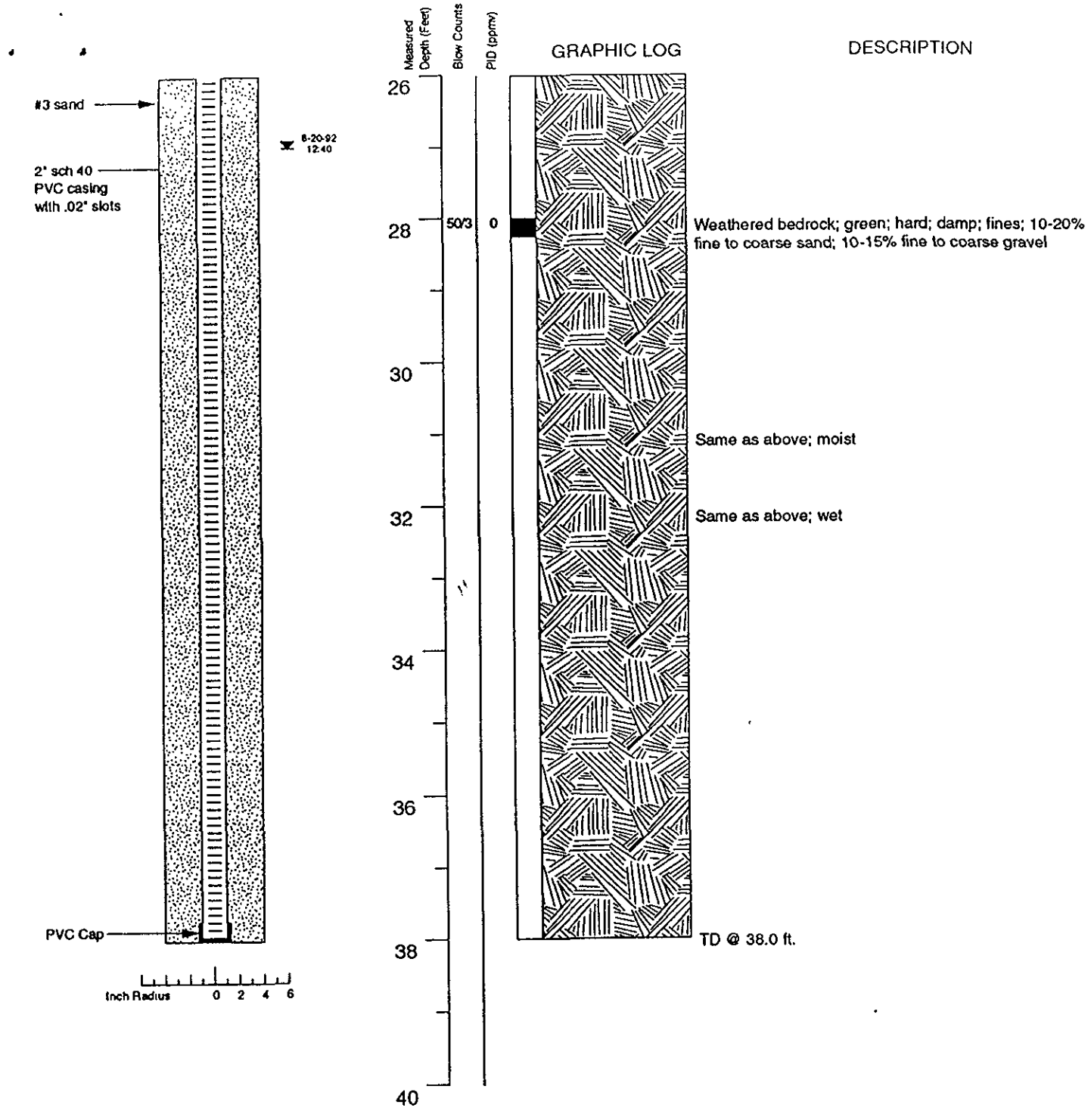
Boring Log
Monitor Well 2 (Boring B-2)

Former Chevron Service Station #9-3575
5775 Broadway
Oakland, California

MONITOR WELL
2

RESNA

17046.01



EXPLANATION

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

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

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

All symbols and definitions may not be applicable

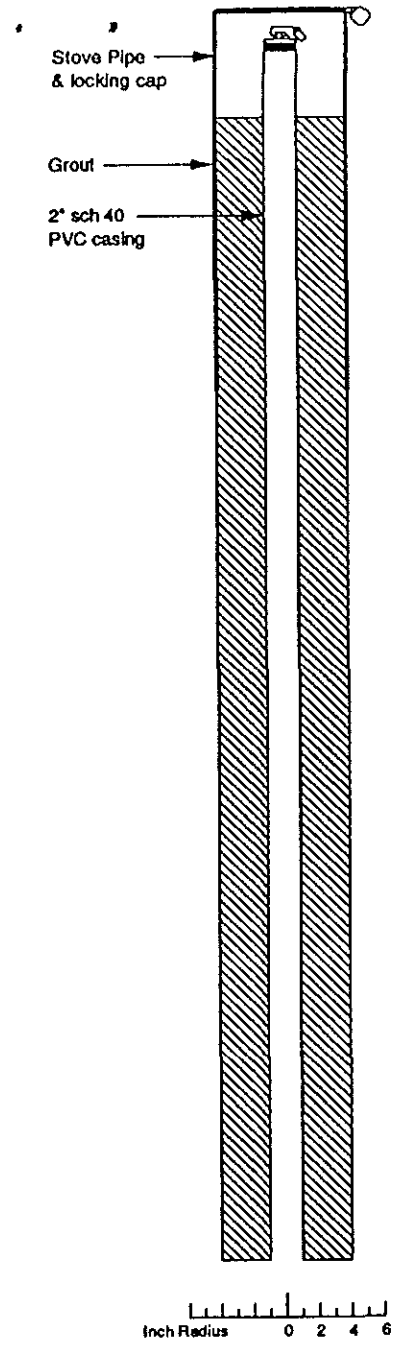
Boring Log
Monitor Well 2 (Boring B-2)

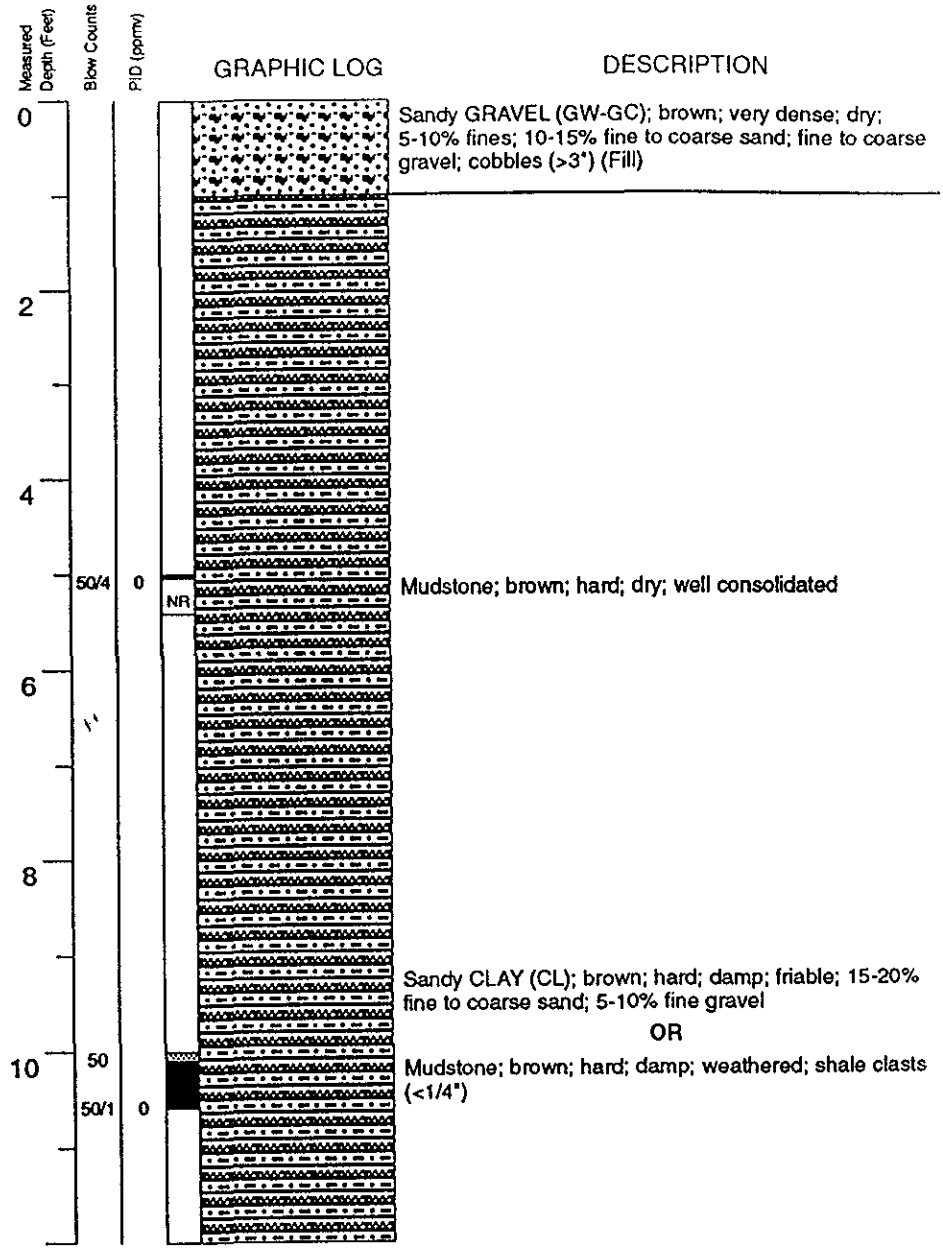
Former Chevron Service Station #9-3575
5775 Broadway
Oakland, California

MONITOR WELL
2

RESNA

17046.01





continues

Logged by:	Justin Power	Drilling Company:	Westex	Well Head Completion:	Stove pipe & locking cap
Project Mgr:	Barry Marcus	Drilling Method:	Air Rotary	Type of Sampler:	2" & 2.5" split barrel
Dates Drilled:	8/21/92	Driller:	Randy	TD (Total Depth):	43.0 ft.

EXPLANATION

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

All symbols and definitions may not be applicable

- Contacts. Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

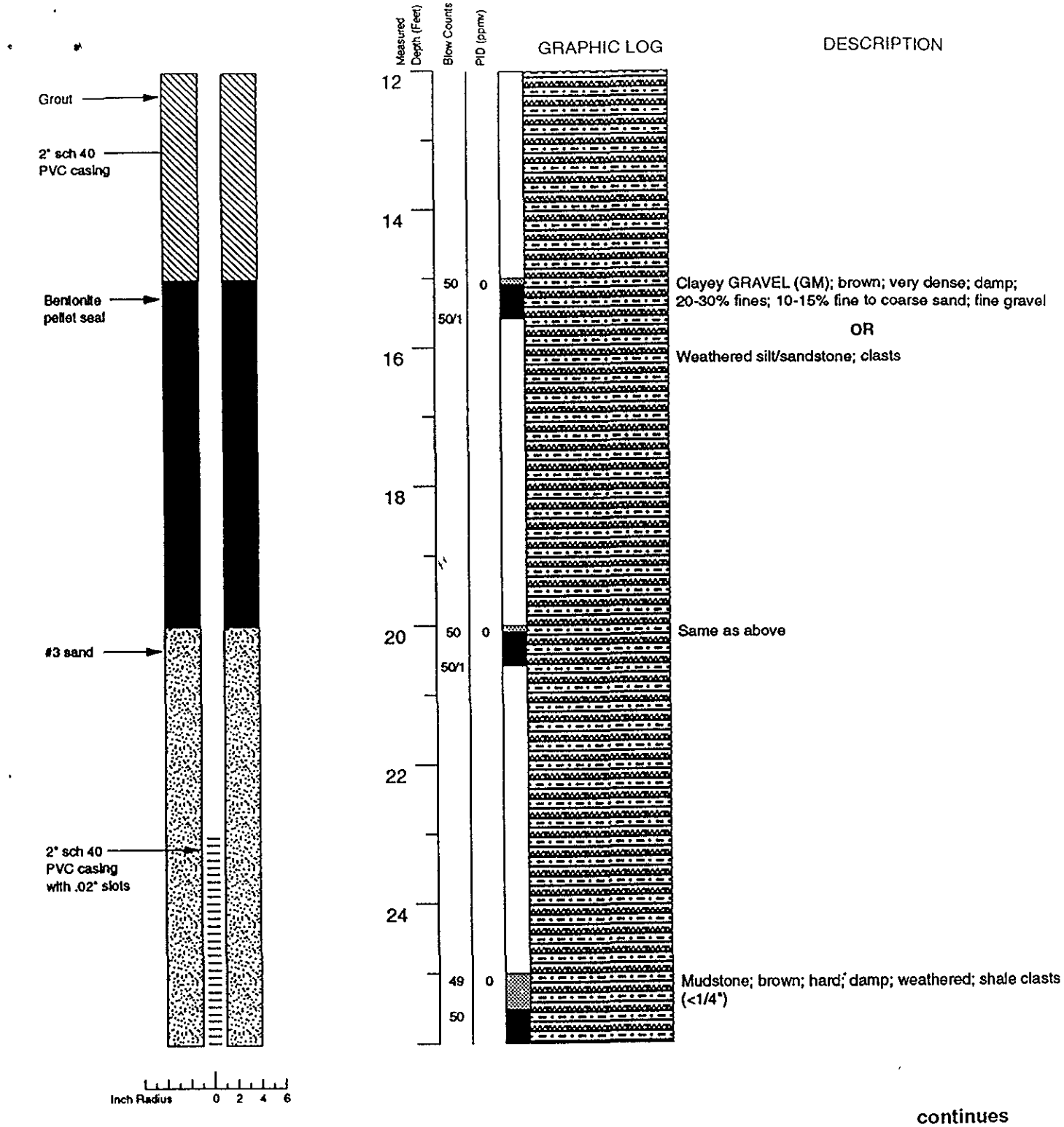
Boring Log
Monitor Well 3 (Boring B-3)

Former Chevron Service Station # 9-3575
5775 Broadway
Oakland, California

MONITOR WELL
3

RESNA

17046.01



EXPLANATION

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

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

All symbols and definitions may not be applicable

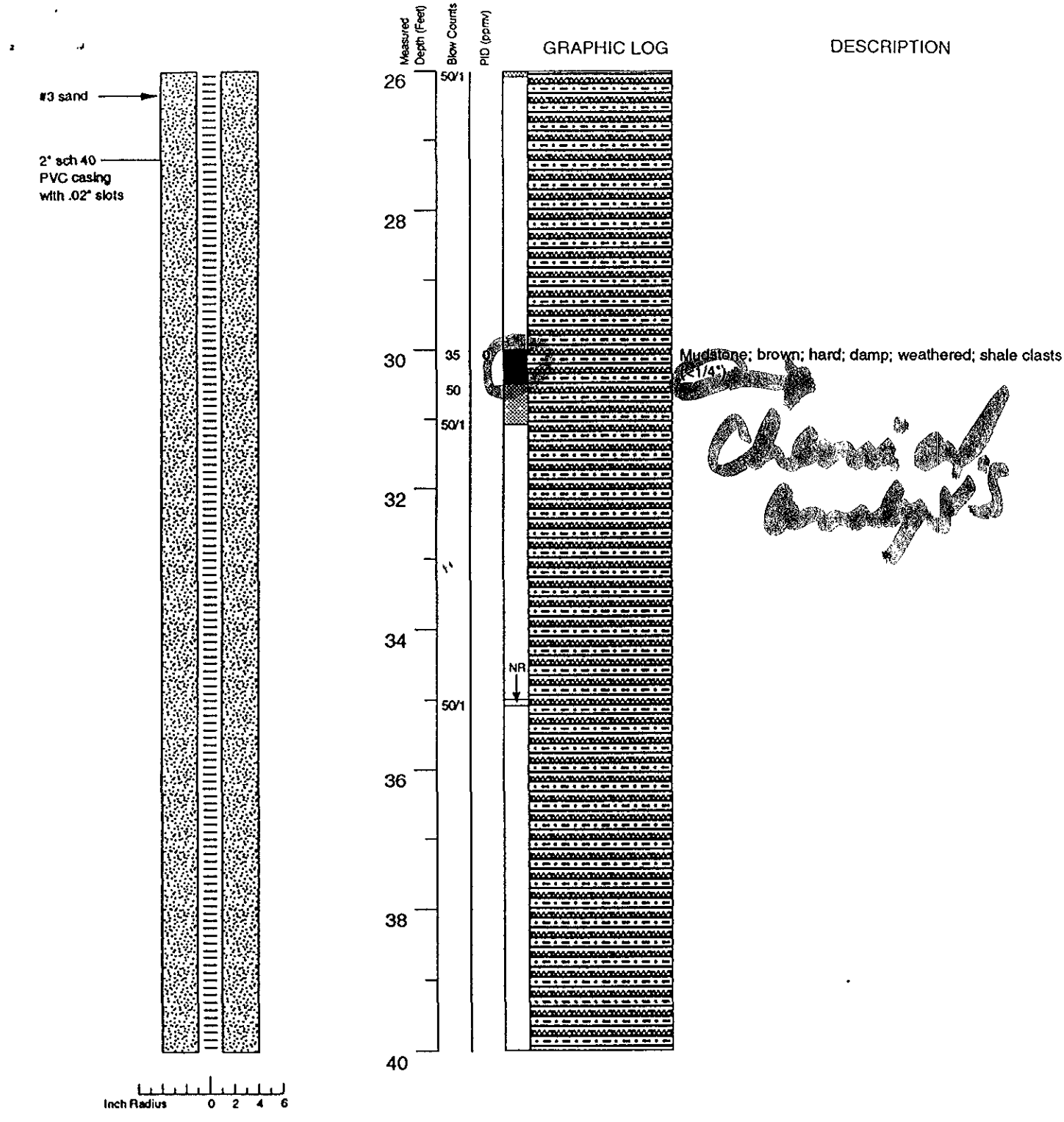
Boring Log
Monitor Well 3 (Boring B-3)

Former Chevron Service Station # 9-3575
5775 Broadway
Oakland, California

MONITOR WELL
3

RESNA

17046.01



continues

EXPLANATION

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

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

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

All symbols and definitions may not be applicable

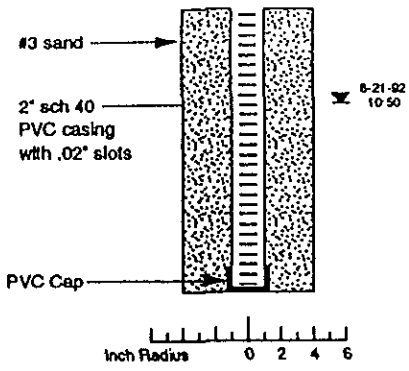
Boring Log
Monitor Well 3 (Boring B-3)

Former Chevron Service Station #9-3575
5775 Broadway
Oakland, California

MONITOR WELL
3

RESNA

17046.01



Measured Depth (Feet)	Blow Counts	GRAPHIC LOG	DESCRIPTION
40	50/1	NR	
42			TD @ 43.0 ft.
44			
46			
48			
50			
52			
54			

EXPLANATION

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

All symbols and definitions may not be applicable

- Contacts: Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

Boring Log
Monitor Well 3 (Boring B-3)

Former Chevron Service Station # 9-3575
5775 Broadway
Oakland, California

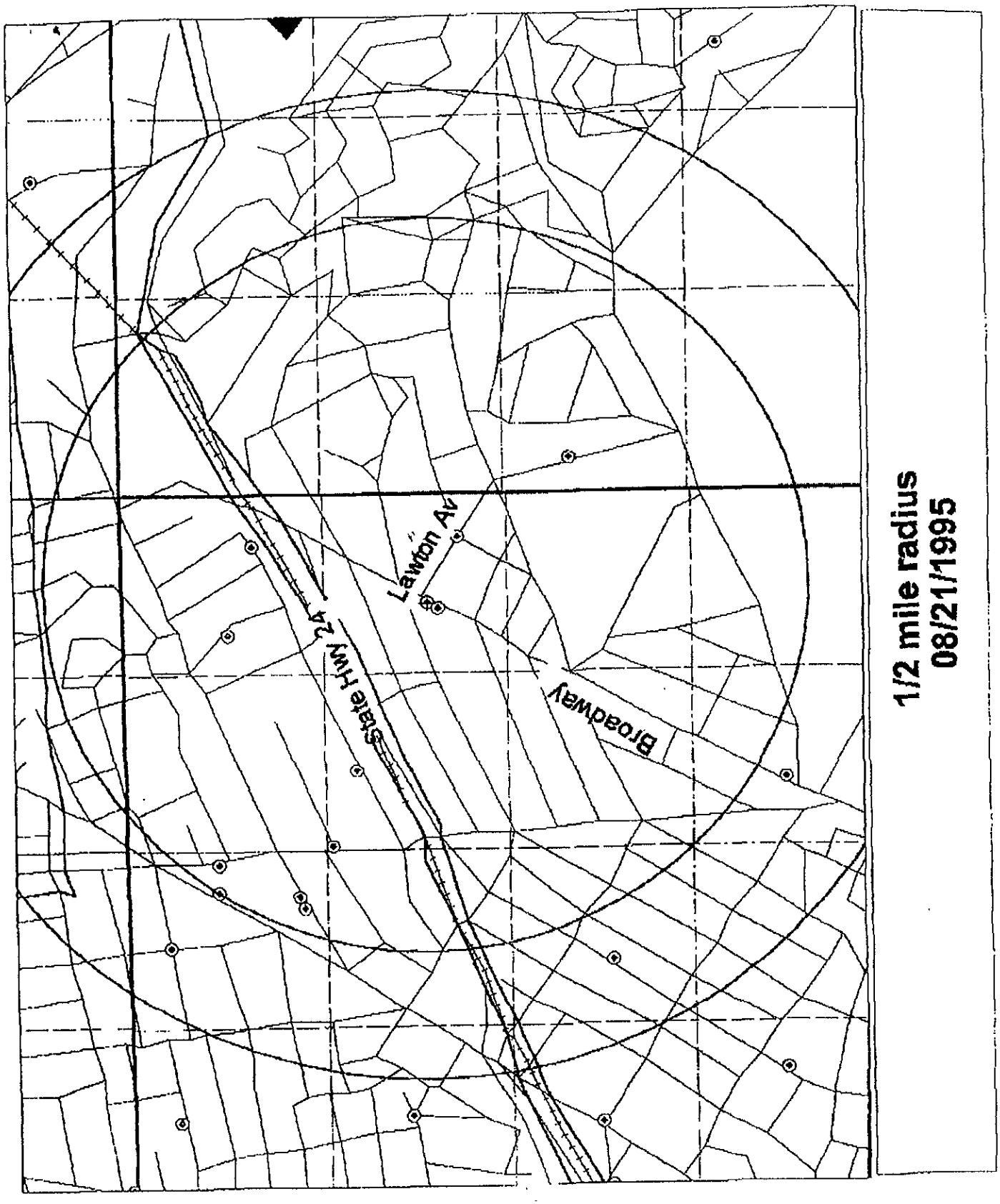
MONITOR WELL
3

RESNA

17046.01

ATTACHMENT E

WELL SEARCH


Lawton Av
State Hwy 24
Broadway
1/2 mile radius
08/21/1995

1/2 mile radius (Page 1)

WELL #	CITY	ADDRESS	OWNER		PHONE	USE	DR.DATE	DIAM	TOT.DEPTH	DTW	ST.ELEV	WA.ELEV	YIELD	LOG	WQ	WL	DATAORGN	MARGIN
1S/3W 18B 1	OAK	5909 CHABOT RD	RBMUD		0	CAT	7/81	0	27	0	0	0	0	D	D	0	1	
1S/3W 18D 1	OAK	5809 IVANHOE RD	M.L. SORENSON		0	DOM	?	15	60	20	0	0	0	?	D	0	1	
1S/3W 19R	OAK	5710 Margarido Dr.	Mr. E. Keafey		0	ABN	06/89	0	400	0	0	0	0	D	D	0	0	
1S/4W 13B	OAK	6039 College Ave	Shell Oil Company		0	DES	9/90	8	0	0	0	0	0	?	G	0	0	
1S/4W 13B 1	OAK	6039 College Ave	Shell Oil Company		0	EOR*	7/90	0	0	8	0	0	0	G	G	0	0	
1S/4W 13B 2	OAK	6039 College Ave	Shell Oil Company		0	EOR*	1/90	10	0	0	0	0	0	G	G	0	0	
1S/4W 13B 3	OAK	6039 College Ave	Shell Oil Company		0	MON	1/90	4	25	0	196	0	0	G	G	0	0	
1S/4W 13B 4	OAK	6039 College Ave	Shell Oil Company		0	MON	1/90	4	25	0	194	0	8	G	G	0	0	
1S/4W 13C 2	OAK	6066 Clarewont Ave	Shell Oil Co		0	MON	8/91	4	32	17	0	0	0	D	G	0	0	
1S/4W 13C 3	OAK	5929 College Ave	Dryer's Ice Cream	MW1	0	MON	7/91	2	30	18	0	0	0	G	G	0	0	
1S/4W 13C 4	OAK	5929 College Ave	Dryer's Ice Cream	MW2	0	MON	7/91	4	28	15	0	0	0	G	G	0	0	
1S/4W 13C 5	OAK	5929 College Ave	Dryer's Ice Cream	MW3	0	MON	7/91	4	27	14	0	0	0	G	G	0	0	
1S/4W 13G 1	BER	5800 COLLEGE AVE	CHEVRON USA		0	DES	07/89	0	8	0	0	0	0	G	G	0	0	
1S/4W 13G 2	BER	5800 COLLEGE AVE	CHEVRON USA		0	DES	07/89	0	8	0	0	0	0	G	G	0	0	
1S/4W 13G 3	BER	5800 COLLEGE AVE	CHEVRON USA		0	DES	07/89	0	8	0	0	0	0	G	G	0	0	
1S/4W 13G 4	BER	5800 COLLEGE AVE	CHEVRON USA		0	DES	07/89	0	8	0	0	0	0	G	G	0	0	
1S/4W 13G 5	BER	5800 COLLEGE AVE	CHEVRON USA		0	DES	07/89	0	8	0	0	0	0	G	G	0	0	
1S/4W 13G 6	OAK	5776 MILES AVE	CITY OF OAKLAND		0	PIE	04/89	0	28	18	100	0	0	G	G	0	0	
1S/4W 13G 6	OAK	5800 College Avenue	Chevron, USA, Inc.		0	MON	12/89	4	17	10	0	0	0	D	G	0	0	
1S/4W 13G 7	OAK	5776 MILES AVE	CITY OF OAKLAND		0	PIE	04/89	0	28	23	101	0	0	G	D	0	0	
1S/4W 13G 7	OAK	5800 College Avenue	Chevron, USA, Inc.		0	MON	12/89	4	17	10	0	0	0	D	G	0	0	
1S/4W 13G 8	OAK	5776 MILES AVE	CITY OF OAKLAND		0	MON	04/89	2	31	18	99	0	0	G	G	0	0	
1S/4W 13G 8	OAK	5800 College Avenue	Chevron USA		0	MON	7/90	2	41	0	0	0	0	D	G	0	0	
1S/4W 13G 9	OAK	5800 College Avenue	Chevron, USA		0	MON	8/90	2	26	16	179	163	0	G	D	0	0	
1S/4W 13M 1	OAK	LAWTON & MENDOCINO ST	PG&E		0	CAT	12/71	0	120	0	0	0	0	D	D	0	0	
1S/4W 13M 2	OAK	5785 Broadway	Shell Oil Company		0	MON	5/89	4	10	4	0	0	0	D	D	0	0	
1S/4W 13M 3	OAK	5785 Broadway	Shell Oil Company		0	MON	5/89	4	10	4	0	0	0	D	D	0	0	
1S/4W 13M 4	OAK	5775 Broadway	Chevron USA - MW - 3		0	MON	8/92	2	43	0	0	0	0	D	D	0	0	
1S/4W 13M 5	OAK	5775 Broadway	Chevron USA - MW - 1		0	MON	8/92	2	43	41	0	0	0	D	D	0	0	
1S/4W 13M 6	OAK	5775 Broadway	Chevron USA - MW - 2		0	MON	8/92	2	38	37	0	0	0	D	D	0	0	
1S/4W 13L 2	OAK	MILES AV	RBMUD		0	CAT	5/75	0	50	0	0	0	0	D	D	0	0	
1S/4W 13M 2	OAK	MILES AV	RBMUD		0	CAT	5/75	0	50	0	0	0	0	D	D	0	0	

WELL INVENTORY FILE

Definitions and abbreviations for items listed in the well inventory file are as follows:

[WELLNO] Well number - Wells are numbered according to their location in the rectangular system of the Public Land Survey. The part of the number preceding the slash indicates the township; the part following the slash indicates the range and section number; the letter following the section number indicates the 40-acre subdivision; and the final digit is a serial number for wells in each 40-acre subdivision.

[DAT] Date - The month and year when drilling or boring was completed.

[ELEV] Surface elevation - The surface elevation of the well, if known, in feet above mean sea level. A zero designates an unknown elevation.

[TD] Total depth - The depth of the well. This usually designates the completed well depth. If the well has a well log available on file, then the total drilled depth of the well is given. The inventory does not show total depth data for geotechnical borings. This is because only one state well number is assigned to one boring at a site, and there are usually several borings of different depth.

[DTW] Depth to water - This category usually indicates the standing groundwater level in the well on the date of completion. The "depth to first water encountered" is recorded in the inventory when it is the only water level data reported on the well driller's report.

[USE] Use - The well use (or in the case of cathodic protection wells and geotechnical borings, the reason for the excavation) as indicated in the well driller's report or data sheets. A plus sign (+) after the well use indicates a well in the current ACFC & WCD monitoring network.

[ABN] Abandoned well - A well whose use has been permanently discontinued or which is in such a state of disrepair that no water can be produced. In the inventory, this may include wells which are covered or capped but not properly destroyed.

[CAT] Cathodic protection well - Any artificial excavation constructed by any method for the purpose of installing equipment or facilities for the protection from corrosion by electrochemical methods of metallic equipment (usually piping) in contact with the ground; commonly referred to as cathodic protection.

[DES] Destroyed well - A well that has been properly filled so that it cannot produce water nor act as a vertical conduit for the movement of groundwater.

[DOM] Domestic well - A water well which is used to supply water for the domestic needs of an individual residence or systems of four or less service connections or "hookups".

[EXT] Extraction well - generally used in site remediation to extract contaminated water for treatment.

[GEO] Geotechnical boring - A temporary boring made to determine certain engineering properties of soils. An asterisk (*) indicates that the state well number assigned to the boring represents more than one boring at a particular site.

[INA] Inactive well - A well not routinely operating but capable of being made operable with a minimum of effort. Also called a "standby well".

[IND] Industrial well - A well used to supply water for industrial use

[INJ] Injection well - reintroduces water into the aquifer for recharge

[IRR] Irrigation well - A water well used to supply water only for irrigation or other agricultural purposes. In the inventory, this category includes large capacity wells as well as small capacity wells for lawn irrigation.

[MON] Monitoring or observation well - Wells constructed for the purpose of observing or monitoring groundwater conditions. (see piezometer).

[MUN] Municipal well - A water well used to supply water for domestic purposes in systems subject to Chapter 7, Part 1,
Division 5 of the California Health and Safety Code. Included are wells supplying public water systems classified by the Department of Health Services. (Also referred to as community water supply wells).

[PIE] Piezometer - A piezometer is a well specifically designated to measure the hydraulic head within a zone small enough to be considered a point as contrasted with a well that reflects the average head of the aquifer for the screened interval.

[REC] Recovery well - same as extraction well

[STO] Stock - A water well used primarily for livestock.

[TES] Test well and test hole - A test well is constructed for the purpose of obtaining the information needed to design a well prior to its construction. Such wells are not to be confused with "test holes" which are temporary in nature (i.e., uncased excavations whose purpose is the immediate determination of existing geologic and hydrologic conditions). Test wells are cased and can be converted to observation or monitoring wells, and under certain circumstances, to production wells. In the inventory, "TES" includes both test wells and test holes.

[?] Unidentified use - This indicates water wells whose use could not be ascertained from the available well data.

[**LOG**] Log - This category indicates whether a geologic record, or log, for the well or boring is available in the Agency's files. Abbreviations are as follows:

D - well driller's log
G - geotechnical boring log
E - electric (resistivity) log or other subsurface geophysical logs.

[**WQ**] Water quality data available - This category indicates which wells have water quality data available in ACFC & WCD files. The numbers 1 through 9 signify the number of sets of water quality measurements available for that well. A plus sign (+) indicates that 10 or more sets of data are available. A "0" indicates that no data is available.

[**WL**] Water level data available - This category indicates which wells have water level data other than the data reported on the well driller's logs. The numbers 1 through 9 signify the number of water level measurements available. A plus sign (+) indicates that 10 or more measurements are available for that well.
A "0" indicates that no data is available.

[**YLD**] Yield - The maximum pumping rate in gallons per minute that can be supplied by a well without lowering the water level in the well below the pump intake. This data is taken from pump test data recorded in the driller's records. Some of the yield data reflects current production rates and does not reflect maximum yield values determined in a capacity test.

[**DIA**] Diameter - The diameter in inches of the main casing in a well. May also indicate the diameter of a hand-dug well. Diameter data is not recorded for geotechnical borings.