SUPPLEMENTARY SITE ASSESSMENT REPORT
January 28, 1994

FORMER MOBIL STATION 04-H6J
1024 Main Street
Pleasanton, California

Alton Geoscience Project No.30-0065

Prepared For:

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1.0 INTRODUCTION

Site assessment activities were performed to further characterize adsorbed-phase and dissolved-phase hydrocarbons beneath the site and offsite to the northwest, northeast, and southeast. Drilling activities were performed from November 15 through 19, 1993.

On November 18, 1993 a vacuum extraction test was performed on both the shallow (20-25 fbg) and deep (30-35 fbg) vadose zone. The results from this test will be issued in a separate report.

2.0 SITE DESCRIPTION

Present Site Use: The site is an inactive service station (Figure 2).

Past Site Use: The site was a gasoline service station until 1989. All former underground storage tanks were removed in 1989; all associated dispenser islands and product lines were also removed.

Future Site Use: There are currently no known plans to redevelop the site.

Adjacent Property: Private residences are located adjacent to the site to the east; railroad tracks are located to the north. Across Stanley Boulevard to the south is an abandoned Union 76 service station presently under investigation. Retail businesses are located across Main Street to the west.

Geography: The site is located approximately 1.75 miles east of Highway 680 at an elevation of 348 feet above mean sea level (National Geodetic Vertical Datum - 1929).

Regional Geology: The site is located within the Livermore Valley Basin. This area is underlain by unconsolidated to semiconsolidated Quaternary sediments. These sediments are predominantly stream channel, fluvial and alluvial deposits composed of gravel, sand, silt, and clay (ACWD-Zone 7, 1989).

Regional Hydrogeology: The site is located within the Amador Subbasin of the Livermore Valley Ground Water Basin. The main surface water drainage areas in the Amador Subbasin are the Arroyo Valle and the Arroyo Mocho, both of which flow into the Arroyo de la Laguna, which is on the western edge of the subbasin. There are three municipal water supply wells within 0.5 mile of the site. Monitoring wells maintained by the City of Pleasanton are located approximately 230 feet to the south of the site. The estimated depth to regional ground water is 40 feet below grade (fbg) and the regional ground water flow direction is directed toward the north and northeast (ACWD-Zone 7, 1993).

Ground Water Quality and Usage:

Ground water in the basin is designated as beneficial for domestic use. The nearest municipal production wells, 16L2, 16L5, and 16L7 are located approximately 945 feet north of the site. These wells were drilled to a depths of 151, 685, and 647 fbg, respectively.

3.0 BACKGROUND SITE CONDITIONS

- Twelve onsite and three offsite borings were drilled at the site between December 1989 and January 1992.

- Nine onsite and one offsite ground water monitoring wells were initially installed at the site. Four Monitoring Wells (MW-3, MW-5, MW-7, and MW-8) have a screened interval above the current static water level.

- Ground water has been encountered at depths from 48 to 33 fbg. Static water level was approximately 38 fbg due to high precipitation during the 1992 and 1993 winter months. The ground water gradient has been approximately 0.15 foot per foot to the east. The ground water gradient direction at this site varies from northwest to southeast as determined from previous ground water monitoring events. Ground water flow direction is potentially influenced from Kaiser Sand & Gravel mining operation discharge (up to 5670 gallons per minute in 1991 water year) into the Arroyo Valle, an intermittent stream approximately 250 feet south of the subject site (ACWD-Zone 7, 1991).

- Hydrocarbon concentrations in soil have been detected in the vicinity of the former tank cavity and former pipeline trenches, and extend to near-surface ground water. The lateral extent of hydrocarbons in soil have been adequately characterized.

- Free product has been detected in the vicinity of MW-2 and dissolved-phase hydrocarbons have been detected in the vicinity of MW-1, MW-4, and MW-9. The lateral extent of free product is characterized. The dissolved-phase hydrocarbons are not fully characterized.

4.0 FIELD ACTIVITIES

4.1 DRILLING AND SOIL SAMPLING

From November 15 to November 19, 1993, three monitoring wells (MW-10, MW-11, MW-12) were installed to depths ranging from 45 to 55 fbg, one recovery well (RW-1) was installed to a depth of 55 fbg, and four vapor extraction wells (VMW-1, VMW-2, VMW-3, VWM-4) were installed to depths ranging from 32 to 35 fbg (Figure 2). The ground water monitoring wells and recovery well were developed using a surge block and bailer for approximately one hour following each installation.

Soil samples were collected continuously in all wells using back to back California-modified split spoon samplers with the exception of Vapor Extraction Wells VMW-1, VMW-3, and VMW-4 which were sampled at 5-foot intervals using a California-modified split spoon sampler. Refer to Appendix A for details regarding general field procedures, boring logs, and ground water monitoring well construction details. See Figures 3 and 4 for geologic cross sections showing soil types beneath the site.

Soil samples collected during drilling were submitted to a state-certified laboratory and analyzed for total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethylbenzene, and total xylenes (BTEX), total organic carbon (TOC), moisture content, dry density, porosity, air permeability, and sieve size analysis. The results of laboratory analysis of soil samples are listed in Tables 1 and 2, and are shown on Figure 5. Refer to Appendix B for a description of the analytical methods used, copies of the official laboratory reports, quality assurance/quality control (QA/QC) reports, and chain of custody records.

4.2 ELEVATION SURVEY, FLUID-LEVEL MONITORING, AND GROUND WATER SAMPLING

On November 22, 1993, well elevations were surveyed horizontally and vertically by Ron Archer Civil Engineer Inc. relative to a city benchmark (Appendix C). On November 30, 1993, fluid levels were measured in Monitoring Wells MW-1 through MW-12 and Recovery Well RW-1 (Table 3). See Figure 6 for a ground water elevation contour map, and Table 3 for a summary of ground water monitoring data.

On November 30, 1993, ground water samples were collected from the wells which did not contain free product, in accordance with standard regulatory protocol, . Refer to Appendix A for a description of fluid-level monitoring and ground water sampling procedures. Ground water samples were submitted to a state-certified laboratory and analyzed for TPH-G and BTEX. The results of ground water sample analyses are listed in Table 3, and are shown on Figure 7. Refer to Appendix B for a description of the analytical methods used, copies of the official laboratory reports, QA/QC reports, and chain of custody records.

4.3 SOIL AND GROUND WATER DISPOSAL

Approximately 12 cubic yards of soil cuttings were generated during drilling activities and stored onsite in Department of Transportation (DOT) approved drums pending disposal at a Mobil-approved disposal facility. Approximately 500 gallons of ground water generated during well development and sampling was stored onsite in a DOT-approved drum pending disposal at a Mobil-approved disposal facility.

5.0 FINDINGS

The results of this investigation are summarized as follows:

- The site is located within the Livermore Valley Basin at an elevation of approximately 348 feet above mean sea level. This area is underlain by unconsolidated to semiconsolidated Quaternary sediments. These sediments are predominantly stream channel, fluvial and alluvial deposits composed of gravel, sand, silt, and clay (ACWD-Zone 7, 1989).

- Soil and unconsolidated sediment underlying the site is generally composed of sandy silt to silty clay to a depth of approximately 30 fbg. From a depth of approximately 30 fbg to 55 fbg (the limit of boring data), the soil and unconsolidated sediment is composed of silty sand, sandy gravel to gravelly sand, and sandy silt to silty clay. The stratigraphy of this deeper interval includes discontinuous lenses of the above described soil types resulting in a horizontally and vertically hetergeneous section. Figures 3 and 4 (cross-sections A-A' and B-B', respectively) show the discontinuous nature of the soil beneath the site. The cross-sections were constructed using boring sample data, as well as downhole geophysical data collected during a previous site investigation.

- The static ground water level currently ranges from a depth of 37.78 to 40.58 fbg (an elevation of 307.95 to 310.29 feet above mean sea level [NGVD-1929]). The ground water elevation has dropped approximately 2.2 feet compared to the previous monitoring and sampling event in July 6, 1993. The average ground water gradient is approximately 0.03 foot-per-foot to the east.

- Liquid-phase hydrocarbons were observed in Monitoring Well MW-2 (0.48 foot), located approximately 10 feet north of the tank cavity, and a trace of liquid-phase hydrocarbons was detected in Recovery Well RW-1 located in the tank cavity.

- Dissolved-phase total petroleum hydrocarbons as gasoline (TPH-G) were detected in Monitoring Wells MW-1, MW-4, MW-6, MW-9, and MW-12 (maximum TPH-G concentration of 2,800 ppb in MW-9). No benzene concentrations were detected in ground water samples collected from Monitoring Wells MW-10 and MW-11.

- Hydrocarbons concentrations in soil as gasoline (TPH-G) were detected in Recovery Well RW-1, Monitoring Well MW-12 at 41.0 fbg, and Vapor Extraction Wells VMW-2, VMW-3, and VMW-4 (maximum TPH-G concentration of 3,500 ppm in RW-1 at 16 fbg). No benzene concentrations were detected in soil samples collected from Monitoring Wells MW-10, MW-11, and MW-12 at 14.0 and 32.0 fbg, or from Vapor Extraction Well VMW-2 at 9.5 fbg.

6.0 CONCLUSIONS

- Liquid-phase hydrocarbons were detected in the vicinity of the former underground storage tank cavity in Monitoring Well MW-2 and Recovery Well RW-1. The liquid-phase hydrocarbons thickness may have increased in MW-2 as a result of a decrease in the ground water elevation of approximately 2.2 feet. Liquid-phase hydrocarbons are adequately characterized in all directions.

- Dissolved-phase TPH-G hydrocarbons are present in the ground water beneath the site and offsite to the northeast. TPH-G and BTEX concentrations are adequately characterized to the southeast and northwest.

- Hydrocarbons concentrations in soil have been detected in the vicinity of the former underground storage tank cavity and former pump islands and extend vertically down to the ground water table. The lateral extent of TPH-G and BTEX concentrations in soil are adequately characterized in all directions.

- The soils and unconsolidated sediments beneath the site are heterogeneous. Discontinuous lenses of gravels, sands, silts, and silty clays exist beneath the site from a depth of approximately 30 fbg to at least 55 fbg.

7.0 REFERENCES

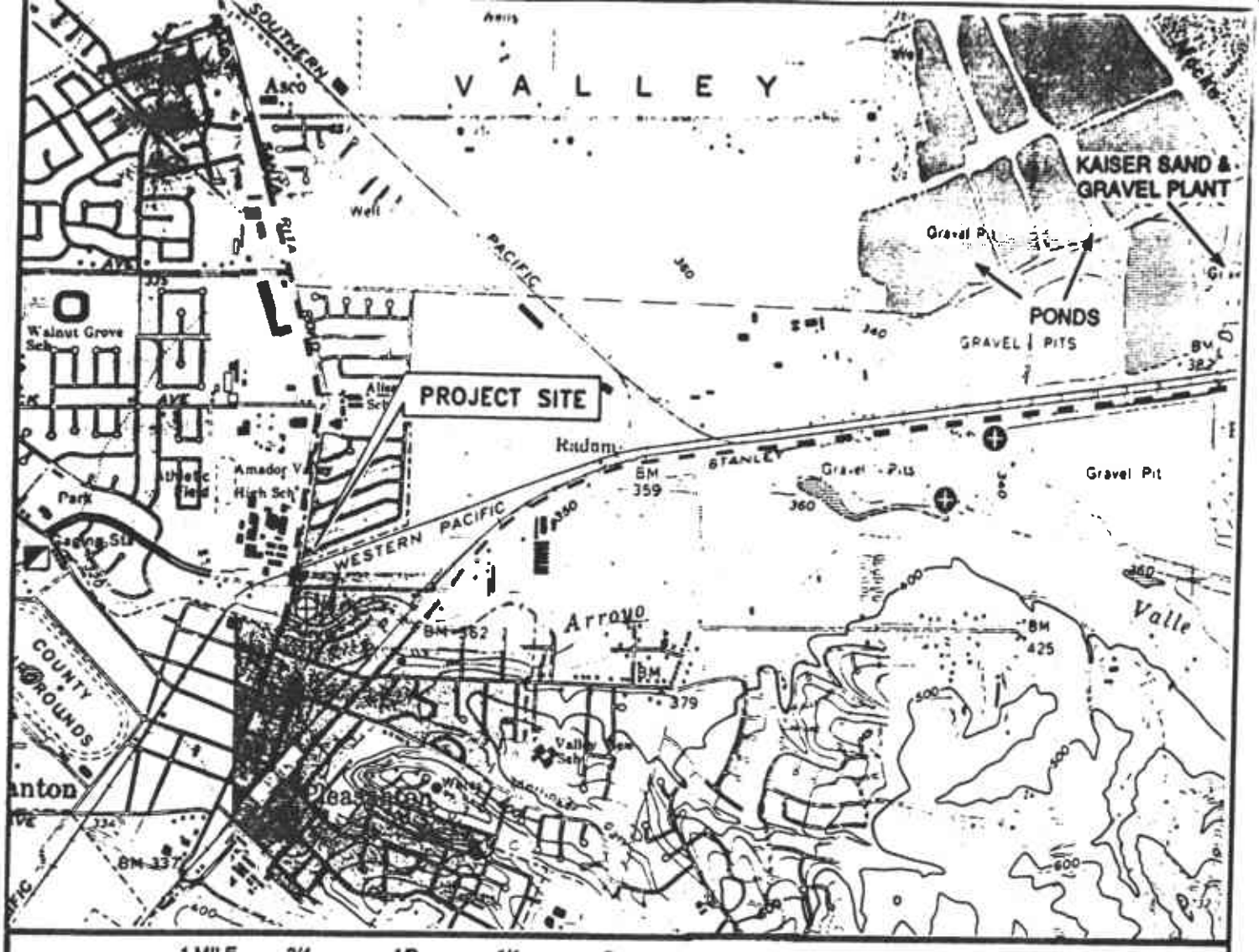
Alameda County Flood Control and Water Conservation District, Zone 7, June 24, 1992, Memorandum: Spring 1993 Ground Water Contour Map.

Alton Geoscience, July 31, 1992, Supplemental Site Investigation Report, Former Mobil Station 04-H6J, 1024 Main Street, Pleasanton, California.

Alton Geoscience, September 9, 1993, Quarterly Ground Water Monitoring and Sampling Report, Former Mobil Station 04-H6J, 1024 Main Street, Pleasanton, California.

H20 Science, Inc., September 10 1993, Borehole Geophysical Survey, Former Mobil Station 04-H6J, 1024 Main Street, Pleasanton, California.

United States Geological Survey, 1961 (Photorevised 1980), Livermore and Dublin Quadrangles, 7.5 Minute Series, USGS, Denver, Colorado.



1 MILE 3/4 1/2 1/4 0 1 MILE

SCALE 1:24,000

N

Source: U.S.G.S. Map
Livermore Quadrangle
California
7.5 Minute Series

LEGEND

- U.S.G.S. Gauging Station
- City of Pleasanton Monitoring Well
- Kaiser Discharge to Arroyo Valle

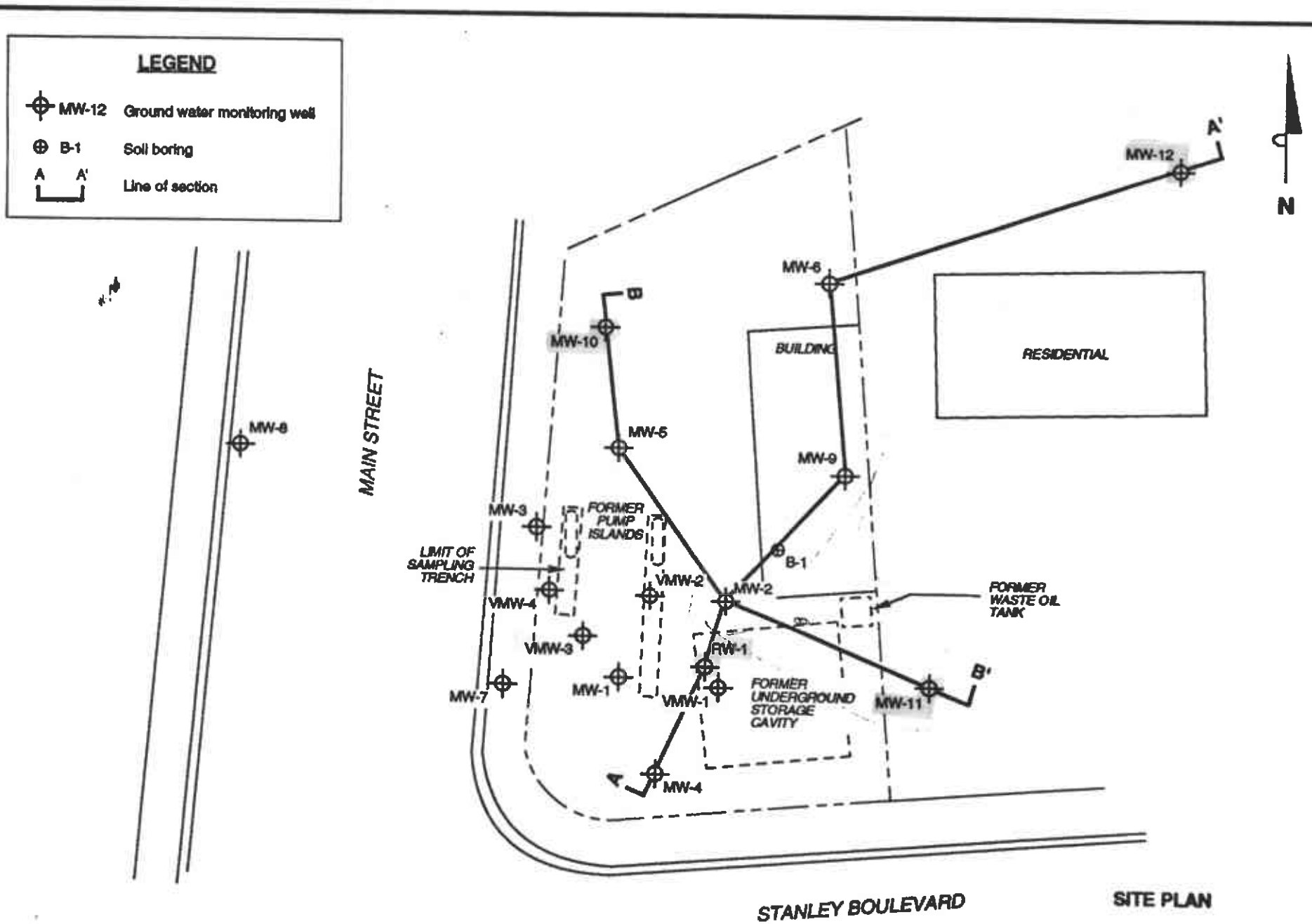
VICINITY MAP

Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California

ALTON GEOSCIENCE
Livermore, California

Project No. 30-0065

FIGURE 1



SITE PLAN

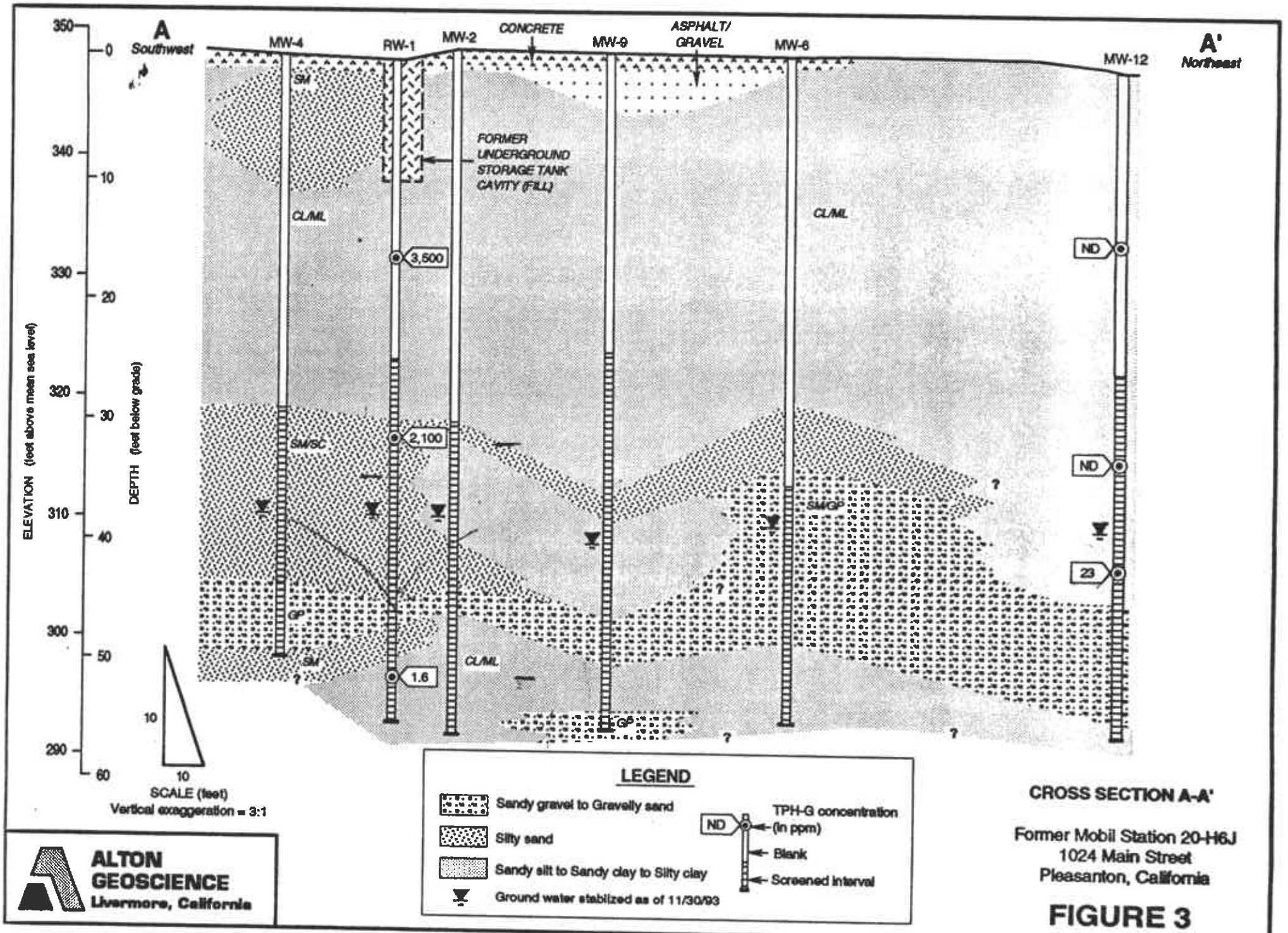
Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California

FIGURE 2

ALTON GEOSCIENCE
Livermore, California

SCALE (FEET)
0 30

30-0065 12/20/93



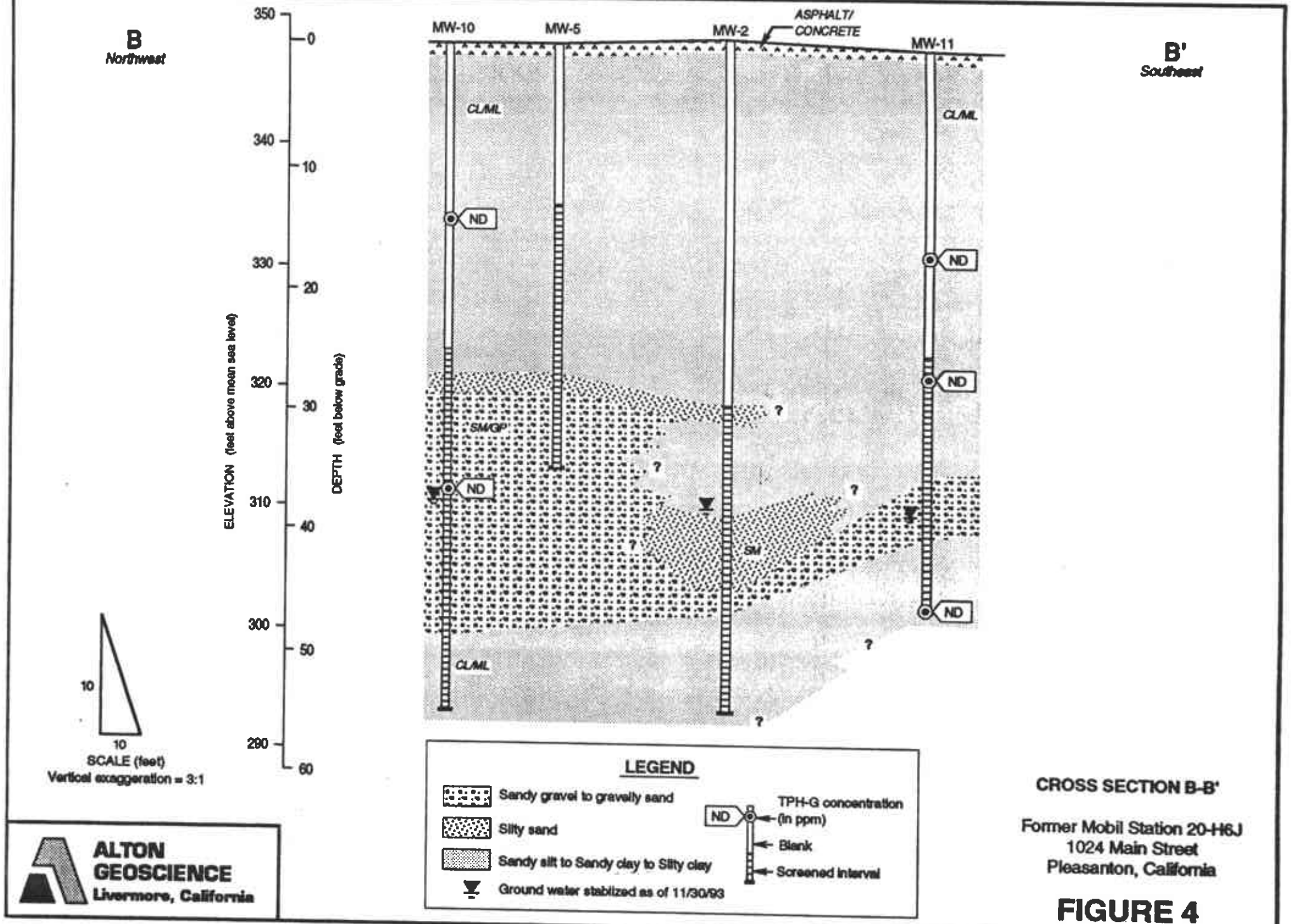
ALTON GEOSCIENCE
Livermore, California

CROSS SECTION A-A'

Former Mobil Station 20-H6J
1024 Main Street
Pleasanton, California

FIGURE 3

30-095/A-A' 01/00/94



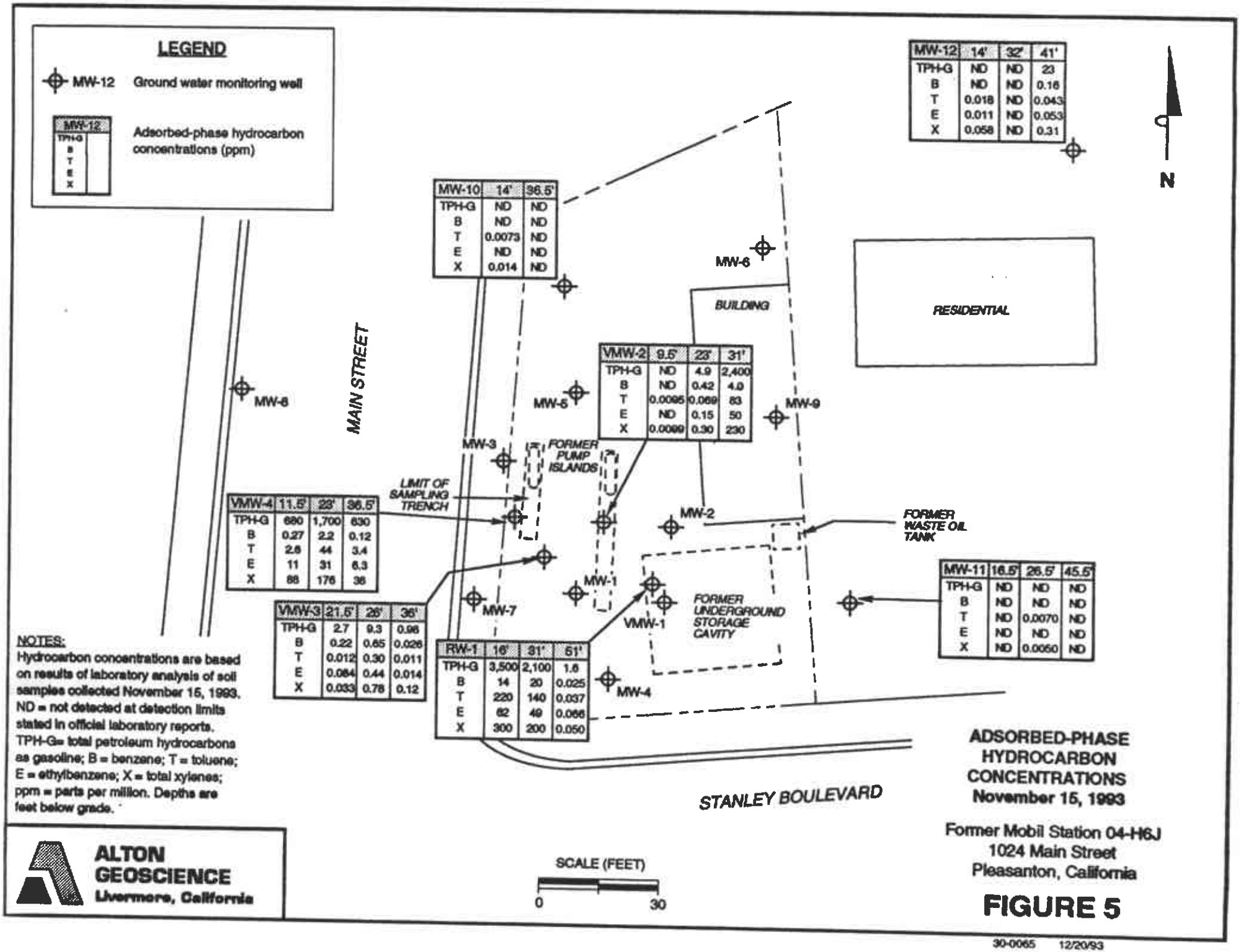
ALTON GEOSCIENCE
Livermore, California

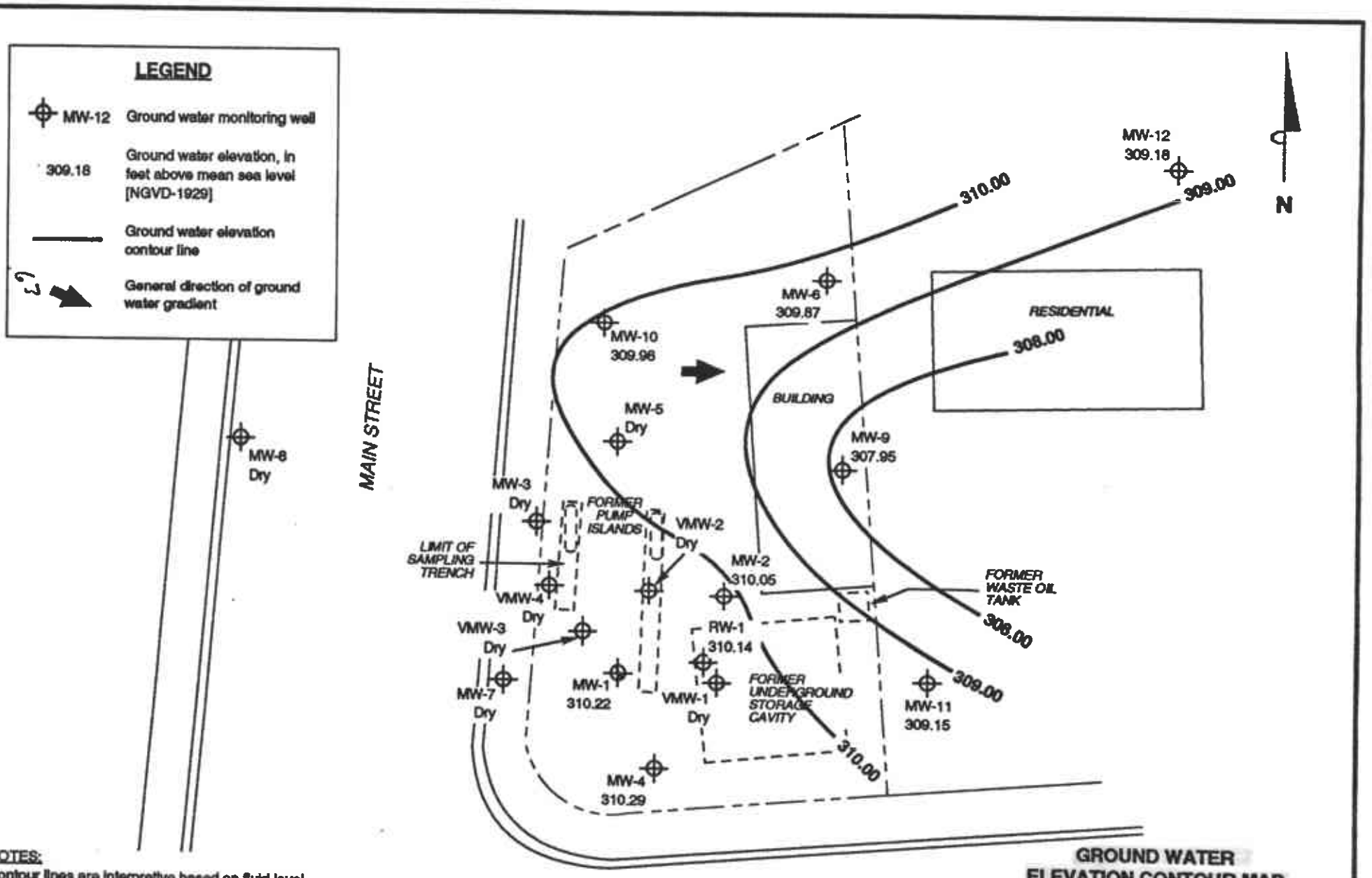
CROSS SECTION B-B'

Former Mobil Station 20-H6J
1024 Main Street
Pleasanton, California

FIGURE 4

30-0065/B-B' 01/10/94


LEGEND
MW-12 Ground water monitoring well
MW-12 TPH-G B T E X
Adsorbed-phase hydrocarbon concentrations (ppm)
MW-12 14' 32' 41'
TPH-G ND ND 23
B ND ND 0.16
T 0.018 ND 0.043
E 0.011 ND 0.053
X 0.058 ND 0.31
N
MW-10 14' 36.5'
TPH-G ND ND
B ND ND
T 0.0073 ND
E ND ND
X 0.014 ND
MW-6
BUILDING
RESIDENTIAL
MAIN STREET
MW-6
MW-5
VMW-2 9.5' 23' 31'
TPH-G ND 4.9 2,400
B ND 0.42 4.0
T 0.0095 0.069 83
E ND 0.15 50
X 0.0099 0.30 230
MW-9
MW-3
FORMER PUMP ISLANDS
LIMIT OF SAMPLING TRENCH
VMW-4 11.5' 23' 36.5'
TPH-G 680 1,700 630
B 0.27 2.2 0.12
T 2.8 44 3.4
E 11 31 6.3
X 88 176 36
MW-2
FORMER WASTE OIL TANK
MW-1
MW-11 16.5' 26.5' 45.5'
TPH-G ND ND ND
B ND ND ND
T ND 0.0070 ND
E ND ND ND
X ND 0.0050 ND
MW-7
VMW-3 21.5' 26' 36'
TPH-G 2.7 9.3 0.96
B 0.22 0.65 0.026
T 0.012 0.30 0.011
E 0.084 0.44 0.014
X 0.033 0.78 0.12
VMW-1
FORMER UNDERGROUND STORAGE CAVITY
RW-1 16' 31' 51'
TPH-G 3,500 2,100 1.6
B 14 20 0.025
T 220 140 0.037
E 62 49 0.066
X 300 200 0.050
MW-4
STANLEY BOULEVARD
NOTES:
Hydrocarbon concentrations are based on results of laboratory analysis of soil samples collected November 15, 1993.
ND = not detected at detection limits stated in official laboratory reports.
TPH-G= total petroleum hydrocarbons as gasoline; B = benzene; T = toluene; E = ethylbenzene; X = total xylenes; ppm = parts per million. Depths are feet below grade.
ALTON GEOSCIENCE
Livermore, California
SCALE (FEET)
0
30
ADSORBED-PHASE HYDROCARBON CONCENTRATIONS
November 15, 1993
Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California
FIGURE 5
30-0065 12/20/93



NOTES:
Contour lines are interpretive based on fluid level measurements collected November 30, 1993.
Contour interval = 1.00 foot.

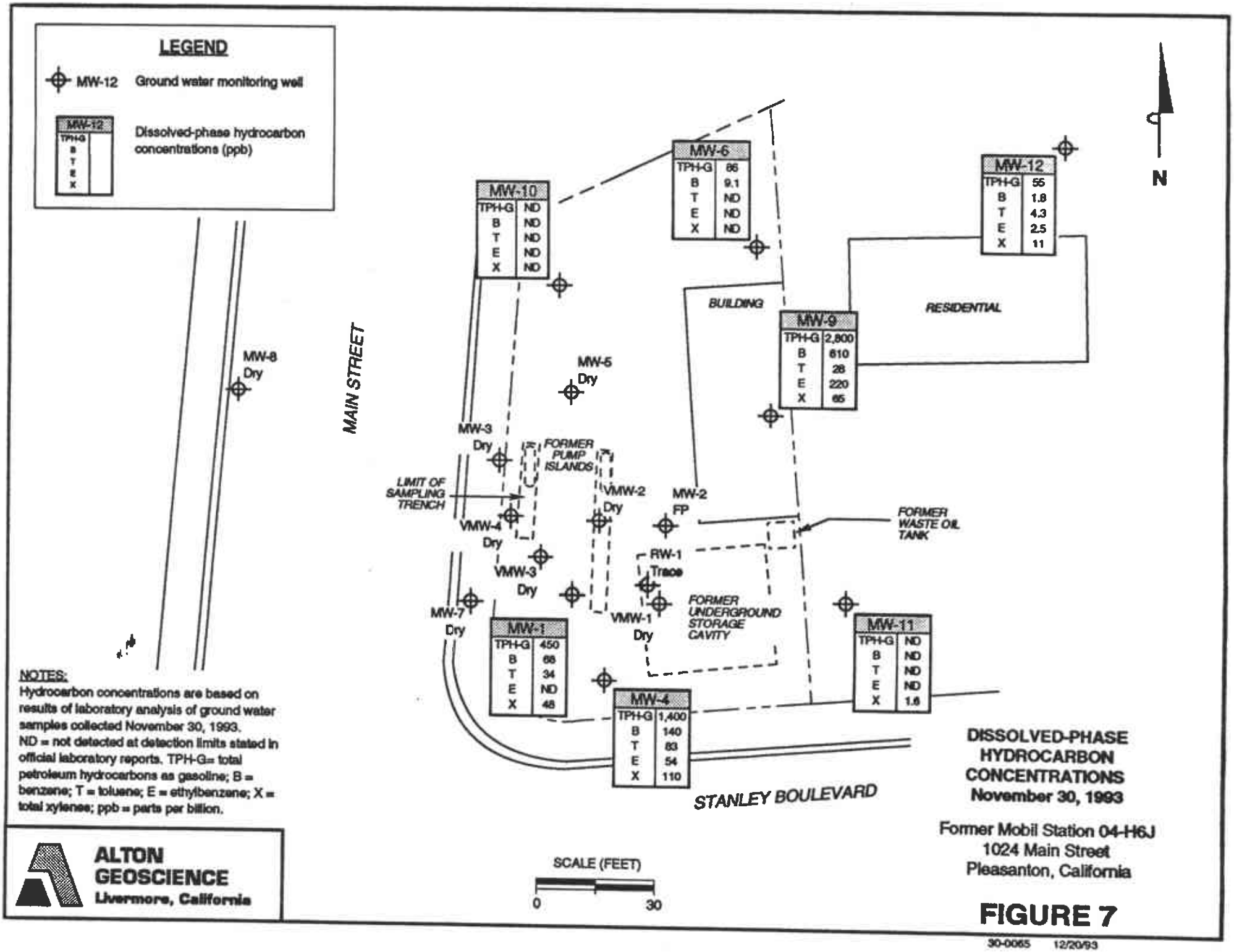
ALTON GEOSCIENCE
Livermore, California

SCALE (FEET)
0 30

GROUND WATER ELEVATION CONTOUR MAP
November 30, 1993

Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California

FIGURE 6



NOTES:
Hydrocarbon concentrations are based on results of laboratory analysis of ground water samples collected November 30, 1993.
ND = not detected at detection limits stated in official laboratory reports. TPH-G= total petroleum hydrocarbons as gasoline; B = benzene; T = toluene; E = ethylbenzene; X = total xylenes; ppb = parts per billion.

ALTON GEOSCIENCE
Livermore, California

DISSOLVED-PHASE HYDROCARBON CONCENTRATIONS
November 30, 1993

Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California

FIGURE 7

30-0065 12/20/93

Table 1
Summary of Soil Sampling and Analyses
Former Mobil Station 10-H6J
1024 Main Street
Pleasanton, California

Boring Number	Date of Sampling	Depth (feet)	TPH-G (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)	Lab
RW-1	11/15/93	16.0	3,500	14	220	62	300	Sequoia
	11/15/93	31.0	2,100	20	140	49	200	Sequoia
	11/16/93	51.0	1.6	0.025	0.037	0.066	0.050	Sequoia
VMW-2	11/15/93	9.5	ND<1.0	ND<0.005	0.0095	ND<0.005	0.0099	Sequoia
	11/15/93	23.0	4.9	0.42	0.069	0.15	0.30	Sequoia
	11/15/93	32.0	2,400	4.0	83	50	230	Sequoia
VMW-3	11/16/93	21.5	2.7	0.22	0.012	0.084	0.033	Sequoia
	11/16/93	26.0	9.3	0.65	0.30	0.44	0.78	Sequoia
	11/16/93	36.0	0.98	0.026	0.011	0.014	0.12	Sequoia
VMW-4	11/16/93	11.5	680	0.27	2.6	11	88	Sequoia
	11/16/93	23.0	1,700	2.2	44	31	176	Sequoia
	11/16/93	36.5	630	0.12	3.4	6.3	38	Sequoia
MW-10	11/17/93	14.0	ND<1.0	ND<0.005	0.0073	ND<0.005	0.014	Sequoia
	11/17/93	36.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	Sequoia
MW-11	11/16/93	16.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	Sequoia
	11/16/93	26.5	ND<1.0	ND<0.005	0.0070	ND<0.005	0.0050	Sequoia
	11/16/93	45.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	Sequoia
MW-12	11/17/93	14.0	ND<1.0	ND<0.005	0.018	0.011	0.058	Sequoia
	11/17/93	32.0	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	Sequoia
	11/17/93	41.0	23	0.16	0.043	0.053	0.31	Sequoia

NOTES:
ppm = parts per million (mg/kg)
TPH-G = total petroleum hydrocarbons as gasoline
ND = not detected at or above method detection limit
— = not measured/not available/not analyzed
Depths are in feet below grade.

Table 2

Summary of Soil Sampling and Analyses for Physical Properties and Total Organic Carbon

Former Mobil Station 10-H6J
1024 Main Street
Pleasanton, California

Boring Number	Date	Depth (feet)	Group Symbol	Total Organic Carbon (g/100g)	Moisture Content (%)	Dry Density (pcf)	Porosity (%)	Air Permeability (darcy)	LAB
RW-1	11/15/93	16.0	CL	—	15	—	—	—	Sequoia
	11/15/93	16.5	CL	—	18.0	99.1	42.1	*	Solea
	11/15/93	46.0	SP	—	11.8	119.5	30.2	—	Solea
VMW-4	11/16/93	23.0	CL	—	—	—	—	*	Solea
MW-10	11/17/93	18.5	CL	—	19.9	109.3	35.8	*	Solea
	11/17/93	23.0	CL	0.22	16	—	—	—	Sequoia
	11/17/93	41.0	SW-GP	0.030	—	—	—	—	Sequoia
	11/17/93	42.0	SP-GP	—	11.6	110.9	34.5	—	Solea
MW-11	11/18/93	11.5	CL-ML	—	10.1	95.3	44.3	58.8	Solea
	11/18/93	16.5	ML	0.26	10	—	—	—	Sequoia
	11/18/93	43.5	CL	—	23.2	105.2	39.6		Solea
MW-12	11/17/93	11.0	CL-ML	—	11.8	101.8	40.1	20.9	Solea
	11/17/93	14.0	CL	0.56	10	—	—	—	Sequoia
	11/17/93	32.0	CL-ML	—	—	—	—	—	Solea
	11/17/93	51.5	SP-GP	—	15.0	**	**	—	Solea

NOTES:
g = grams
pcf = pounds per cubic foot
* = samples too saturated to determine soil permeability to air
** = samples too saturated to determine density/porosity
— = not sampled/not measured/not applicable

Table 3
Summary of Ground Water Sampling and Analyses
Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California

Well ID	Date of Sampling	Casing Elevation (feet)	Free Product (feet)	Depth to Water (feet)	Ground Water Elevation (feet)	TPH-G (ppb)	TPH-D (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	1,2-DCE (ppb)	Organic Lead (ppb)	Total Lead (ppb)	Lab
MW-1	04/12/90	348.03	0.00	43.57	304.46	3,600	—	73	13	3	180	45	ND<10	—	SAL
	10/18/90		0.00	43.18	304.85	5,000	ND<1000	700	360	170	480	54	—	—	SAL
	06/06/91		0.00	38.65	309.38	2,600	—	310	340	110	340	ND<25	—	ND<5.0	SAL
	01/08/92		0.00	38.68	309.35	2,400	—	270	370	18	340	14	ND<50		SAL
	04/30/92		0.00	39.93	308.10	1,300	—	150	120	12	160	4.3	—	—	SEQ
	07/31/92		0.00	43.05	304.98	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	SEQ
	10/27/92		0.00	42.86	305.17	2,700	—	320	310	84	310	—	—	—	SEQ
	01/22/93		0.00	34.88	313.15	2,800	—	190	340	87	320	—	—	—	SEQ
	04/05/93		0.00	33.71	314.32	6,000	—	410	460	51	500	—	—	—	SEQ
	07/06/93		0.00	35.46	312.57	2,200	—	140	240	32	180	—	—	—	SEQ
	11/30/93		0.00	37.81	310.22	450	—	68	34	ND<0.5	48	—	—	—	SEQ
MW-2	04/12/90	348.45	0.00	44.14	304.31	64,000	—	5,500	7,600	1,900	7,800	200	ND<10	—	SAL
	10/18/90		0.00	43.18	305.27	83,000	10,000	6,800	9,100	2,400	11,000	460	—	—	SAL
	06/06/91		0.00	39.19	309.26	160,000	—	16,000	25,000	4,300	19,000	330	—	330	SEQ
	01/08/92		0.02	39.40	309.07	—	—	—	—	—	—	—	—	—	—
	04/30/92		0.00	40.50	307.95	71,000	—	9,200	19,000	3,700	15,000	420	—	—	SEQ
	07/31/92		0.15	43.64	304.93	—	—	—	—	—	—	—	—	—	—
	10/27/92		Trace	43.53	304.92	—	—	—	—	—	—	—	—	—	—
	01/22/93		Trace	35.55	312.90	—	—	—	—	—	—	—	—	—	—
	04/05/93		Trace	34.41	314.04	—	—	—	—	—	—	—	—	—	—
	07/06/93		Trace	35.98	312.47	—	—	—	—	—	—	—	—	—	—
	11/30/93		0.48	38.76	310.05	—	—	—	—	—	—	—	—	—	—
MW-3	04/12/90	347.97	0.00	23.18	324.79	2,100	—	32	56	31	170	117	ND<10	—	SAL
	10/18/90		0.00	14.28	333.69	110	ND<1000	3	3	1	5	2	—	—	SAL
	06/06/91		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	01/08/92		0.00	32.36	315.61	680	—	8.9	26	8.5	72	5.7	—	—	SEQ
	04/30/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—

NOTES: ppb = parts per billion (µg/l)
TPH-G = total petroleum hydrocarbons as gasoline
TPH-D = total petroleum hydrocarbons as diesel
ND = not detected at detection limits stated in official laboratory reports
— = not measured/not analyzed/not applicable
1,2-DCE = 1,2-Dichloroethane
* = reported by laboratory as non-gasoline mixture
** = well inaccessible
# = wells installed by Kaprealian Engineering at former Unocal Station #0543
SAL = Superior Analytical Laboratories
SEQ = Sequoia Analytical
Casing and ground water elevations are in feet above mean sea level (NGVD-1929).

Table 3
Summary of Ground Water Sampling and Analyses
Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California

Well ID	Date of Sampling	Casing Elevation (feet)	Free Product (feet)	Depth to Water (feet)	Ground Water Elevation (feet)	TPH-G (ppb)	TPH-D (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	1,2-DCE (ppb)	Organic Lead (ppb)	Total Lead (ppb)	Lab
MW-3 (con't)	07/31/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	10/27/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	01/22/93		0.00	27.30	320.67	2,600	—	240	300	170	440	—	—	—	SEQ
	04/05/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	07/06/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	11/30/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
MW-4	10/18/90	348.07	0.00	43.16	304.91	9,600	2,000	180	500	200	1,200	9	—	—	SAL
	06/06/91		0.00	38.65	309.42	6,600	—	320	420	220	650	ND<25	—	ND<5.0	SEQ
	01/08/92		0.00	38.65	309.42	3,400	—	600	680	220	1,100	9.2	ND<50	—	SEQ
	04/30/92		0.00	39.88	308.19	7,200	—	650	1,200	210	1,200	ND<50	—	—	SEQ
	07/31/92		0.00	43.07	305.00	3,800	—	320	340	120	360	—	—	—	SEQ
	10/27/92		0.00	42.78	305.29	9,000	—	440	750	190	900	—	—	—	SEQ
	01/22/93		0.00	34.76	313.31	12,000	—	540	1,200	320	1,900	—	—	—	SEQ
	04/05/93		0.00	33.61	314.46	1,100	—	34	18	12	31	—	—	—	SEQ
	07/06/93		0.00	35.37	312.70	4,000	—	220	300	43	440	—	—	—	SEQ
	11/30/93		0.00	37.78	310.29	1,400	—	140	83	54	110	—	—	—	SEQ
MW-5	10/18/90	347.97	—	**	—	—	—	—	—	—	—	—	—	—	—
	06/06/91		0.00	34.25	313.72	—	—	—	—	—	—	—	—	—	—
	01/08/92		0.00	34.22	313.75	—	—	—	—	—	—	—	—	—	—
	04/30/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	07/31/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	10/27/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	01/22/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	04/05/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	07/06/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	11/30/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—

NOTES: ppb = parts per billion (µg/l)
TPH-G = total petroleum hydrocarbons as gasoline
TPH-D = total petroleum hydrocarbons as diesel
ND = not detected at detection limits stated in official laboratory reports
— = not measured/not analyzed/not applicable
1,2-DCE = 1,2-Dichloroethane
* = reported by laboratory as non-gasoline mixture
** = well inaccessible
# = wells installed by Kaprealian Engineering at former Unocal Station #0543
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Casing and ground water elevations are in feet above mean sea level (NGVD-1929).

Table 3
Summary of Ground Water Sampling and Analyses
Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California

Well ID	Date of Sampling	Casing Elevation (feet)	Free Product (feet)	Depth to Water (feet)	Ground Water Elevation (feet)	TPH-G (ppb)	TPH-D (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	1,2-DCE (ppb)	Organic Lead (ppb)	Total Lead (ppb)	Lab
MW-6	10/18/90	348.23	0.00	43.60	304.63	3,000	ND<1000	1,300	150	120	85	140	—	—	SAL
	08/06/91		0.00	39.07	309.16	1,600	—	220	10	5.2	14	8.3	—	ND<5.0	SEQ
	01/08/92		0.00	39.18	309.05	370	—	81	3.9	4.5	2.9	5.4	ND<50	—	SEQ
	04/30/92		0.00	40.46	307.77	610	—	180	8.4	6.6	3.3	7.0	—	—	SEQ
	07/31/92		0.00	43.61	304.62	96	—	1,500	1,500	370	1,100	—	—	—	SEQ
	10/27/92		0.00	43.68	304.55	9,400	—	27	ND<0.5	6	10	—	—	—	SEQ
	01/22/93		0.00	35.66	312.57	250	—	12	2.4	1.4	1.9	—	—	—	SEQ
	04/05/93		0.00	34.41	313.82	190	—	2.3	0.99	ND<0.5	0.5	—	—	—	SEQ
	07/06/93		0.00	36.01	312.22	99	—	1.4	0.54	ND<0.5	ND<0.5	—	—	—	SEQ
	11/30/93		0.00	38.36	309.87	86	—	9.1	ND<0.5	ND<0.5	ND<0.5	—	—	—	SEQ
MW-7	10/18/90	347.90	0.00	9.26	338.64	ND<50	ND<1000	0	0.5	ND<0.3	0.8	ND<0.5	—	—	SAL
	08/06/91		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	01/08/92		0.00	23.79	324.11	220	—	7.8	1.7	ND<0.3	0.56	—	—	—	SEQ
	04/30/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	07/31/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	10/27/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	01/22/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	04/05/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	07/06/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	11/30/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
MW-8	10/18/90	348.90	0.00	11.30	337.60	900	ND<1000	3	5	7	62	ND<0.5	—	—	SAL
	08/06/91		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	01/08/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	04/30/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	07/31/92		0.00	12.04	336.86	270 *	—	ND<0.5	ND<0.5	ND<0.5	1.3	—	—	—	SEQ
	10/27/92		—	Dry	—	—	—	—	—	—	—	—	—	—	—
	01/22/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—

NOTES: ppb = parts per billion (µg/l)
TPH-G = total petroleum hydrocarbons as gasoline
TPH-D = total petroleum hydrocarbons as diesel
ND = not detected at detection limits stated in official laboratory reports
— = not measured/not analyzed/not applicable
1,2-DCE = 1,2-Dichloroethane
* = reported by laboratory as non-gasoline mixture
** = well inaccessible

# = wells installed by Kaprealian Engineering at former Unocal Station #0543
SAL = Superior Analytical Laboratories
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Casing and ground water elevations are in feet above mean sea level (NGVD-1929).

Table 3
Summary of Ground Water Sampling and Analyses
Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California

Well ID	Date of Sampling	Casing Elevation (feet)	Free Product (feet)	Depth to Water (feet)	Ground Water Elevation (feet)	TPH-G (ppb)	TPH-D (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	1,2-DCE (ppb)	Organic Lead (ppb)	Total Lead (ppb)	Lab
MW-8	04/05/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
(con't)	07/06/93		0.00	7.48	341.42	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	SEQ
	11/30/93		—	Dry	—	—	—	—	—	—	—	—	—	—	—
MW-9	02/04/92	348.53	0.00	43.54	304.99	16,000	—	3,000	740	1,200	2,500	68	—	ND<5.0	SEQ
	04/30/92		0.00	42.83	305.70	5,600	—	1,000	120	410	350	ND<50	—	—	SEQ
	07/31/92		0.00	47.36	301.17	93	—	1,800	1,900	620	940	—	—	—	SEQ
	10/27/92		0.00	48.32	300.21	13,000	—	2,400	1,600	680	1,100	—	—	—	SEQ
	01/22/93		0.00	39.11	309.42	5,600	—	1,200	200	510	350	—	—	—	SEQ
	04/05/93		0.00	37.10	311.43	7,900	—	1,300	510	620	670	—	—	—	SEQ
	07/06/93		0.00	39.21	309.32	3,200	—	510	46	170	150	—	—	—	SEQ
	11/30/93		0.00	40.68	307.95	2,800	—	610	28	220	65	—	—	—	SEQ
MW-10	11/30/93	347.95	0.00	37.97	309.98	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	SEQ
MW-11	11/30/93	347.56	0.00	38.41	309.15	ND<50	—	ND<0.5	ND<0.5	ND<0.5	1.6	—	—	—	SEQ
MW-12	11/30/93	347.15	0.00	37.97	309.18	55	—	1.8	4.3	2.5	11	—	—	—	SEQ
VMW-1	11/30/93	348.05	—	Dry	—	—	—	—	—	—	—	—	—	—	—
VMW-2	11/30/93	347.90	—	Dry	—	—	—	—	—	—	—	—	—	—	—
VMW-3	11/30/93	348.10	—	Dry	—	—	—	—	—	—	—	—	—	—	—
VMW-4	11/30/93	347.95	—	Dry	—	—	—	—	—	—	—	—	—	—	—
RW-1	11/30/93	347.89	Trace	37.75	310.14	—	—	—	—	—	—	—	—	—	—

NOTES: ppb = parts per billion (µg/l)
TPH-G = total petroleum hydrocarbons as gasoline
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ND = not detected at detection limits stated in official laboratory reports
— = not measured/not analyzed/not applicable
1,2-DCE = 1,2-Dichloroethane
* = reported by laboratory as non-gasoline mixture
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Table 3
Summary of Ground Water Sampling and Analyses
Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California

Well ID	Date of Sampling	Casing Elevation (feet)	Free Product (feet)	Depth to Water (feet)	Ground Water Elevation (feet)	TPH-G (ppb)	TPH-D (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	1,2-DCE (ppb)	Organic Lead (ppb)	Total Lead (ppb)	Lab
MW-1#	12/16/92	351.18	—	—	—	ND	ND	ND	ND	ND	ND	—	—	—	—
	02/02/93		0.00	37.76	313.42	—	—	—	—	—	—	—	—	—	—
MW-1#	03/01/93		0.00	36.26	314.92	—	—	—	—	—	—	—	—	—	—
(con't)	04/14/93		0.00	36.56	314.62	ND	ND	ND	ND	ND	ND	—	—	—	—
	05/14/93		0.00	37.27	313.91	—	—	—	—	—	—	—	—	—	—
	06/15/93		0.00	38.02	313.16	—	—	—	—	—	—	—	—	—	—
	07/06/93		0.00	38.06	313.12	ND	ND	ND	ND	ND	ND	—	—	—	—
	11/30/93		—	—	—	—	—	—	—	—	—	—	—	—	—
MW-2#	12/16/92	349.83	—	—	—	1,600	—	28	ND	5.1	5.6	—	—	—	—
	02/02/93		0.00	39.18	310.65	—	—	—	—	—	—	—	—	—	—
	03/01/93		0.00	34.33	315.50	—	—	—	—	—	—	—	—	—	—
	04/14/93		0.00	37.56	312.27	4,300	—	7.2	5.8	13	10	—	—	—	—
	05/14/93		0.00	37.49	312.34	—	—	—	—	—	—	—	—	—	—
	06/15/93		0.00	39.34	310.49	—	—	—	—	—	—	—	—	—	—
	07/06/93		0.00	37.82	312.01	4,700	—	17	15	30	28	—	—	—	—
	11/30/93		—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3#	12/16/92	351.35	—	—	—	ND	—	ND	ND	ND	ND	—	—	—	—
	02/02/93		0.00	40.62	310.73	—	—	—	—	—	—	—	—	—	—
	03/01/93		0.00	35.7	315.65	—	—	—	—	—	—	—	—	—	—
	04/14/93		0.00	36.97	312.38	ND	—	ND	ND	ND	ND	—	—	—	—
	05/14/93		0.00	39.07	312.28	—	—	—	—	—	—	—	—	—	—
	06/15/93		0.00	40.68	310.67	—	—	—	—	—	—	—	—	—	—
	07/06/93		0.00	37.82	313.53	ND	—	ND	ND	ND	ND	—	—	—	—
	11/30/93		—	—	—	—	—	—	—	—	—	—	—	—	—

NOTES: ppb = parts per billion (µg/l)
TPH-G = total petroleum hydrocarbons as gasoline
TPH-D = total petroleum hydrocarbons as diesel
ND = not detected at detection limits stated in official laboratory reports
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1,2-DCE = 1,2-Dichloroethane
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# = wells installed by Kaprealian Engineering at former Unocal Station #0543
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APPENDIX A

GENERAL FIELD PROCEDURES, BORING LOGS, AND WELL CONSTRUCTION DETAILS

APPENDIX A

GENERAL FIELD PROCEDURES

A description of the general field procedures used during site investigation and monitoring activities is presented below. For an overview of protocol, refer to the appropriate section(s).

DRILLING AND SOIL SAMPLING

Soil borings are drilled using continuous-flight, hollow-stem augers. Borings that are not completed as monitoring wells are grouted to within 5 feet of the ground surface with a cement/bentonite slurry. The remaining 5 feet is filled with concrete.

Soil samples are obtained for soil description, field hydrocarbon vapor screening, and possible laboratory analysis. Soil samples are retrieved from the borings by one of two methods: 1) continuously, using a back-to-back standard split-spoon sampler; sample tubes are driven into the core with a mallet, or 2) at 2.5- or 5-foot intervals, using a standard split-spoon sampler lined with four 1.5-inch-diameter stainless steel or brass sample inserts. The split-spoon sampler is driven approximately 18 inches beyond the lead auger with a 140-pound hammer dropped from a height of 30 inches.

For hand auger borings and hand-held, power-driven auger borings, soil samples are retrieved using a hand-driven slide hammer lined with a 1.5-inch-diameter stainless steel sample tube.

During drilling activities, soil adjacent to the laboratory sample is screened for combustible vapors using a combustible gas indicator (CGI) or equivalent field instrument. For each hydrocarbon vapor screening event, a 6-inch-long by 2.5-inch-diameter sample insert is filled approximately 1/3 full with the soil sample, capped at both ends, and shaken. The probe is then inserted through a small opening in the cap, and a reading is taken after approximately 15 seconds and recorded on the boring log. The remaining soil recovered is removed from the sample insert or sampler, and described in accordance with the Unified Soil Classification System. For each sampling interval, field estimates of soil type, density/consistency, moisture, color, and grading are recorded on the boring logs.

SOIL SAMPLE HANDLING

Soil sample handling follows the same basic protocol for both drilling and excavation activities. Upon retrieval, soil samples are immediately removed from the sampler, sealed with Teflon sheeting and polyurethane caps, and wrapped with tape. Each sample is labeled with the project number, boring/well number, sample depth, geologist's initials, and date of collection. After the samples have been labeled and documented in the chain of custody record, they are placed in a cooler with ice at approximately 4 degrees Celsius (°C) prior to and during transport to a state-certified laboratory for analysis. Samples not selected for immediate analysis may be transported in a cooler with ice and archived in a frostless refrigerator at approximately 4°C for possible future testing.

WELL INSTALLATION

Monitoring wells are constructed of 4-inch-diameter, flush-threaded Schedule 40 PVC blank and screened (0.020-inch slot size) casing. Where possible, the screened interval will extend at least 10 feet above, and 10 to 20 feet below, the top of the ground water table. The annular space surrounding the screened casing is backfilled with Sri Supreme # 8 sand (filter pack) to approximately 2 feet above the top of the screened section.

Recovery wells are constructed of 6-inch diameter flush-threaded Schedule 40 PVC blank and screened (0.020-inch slot size) casing. Where possible, the screened interval will extend at least 10 feet above, and 10 to 20 feet below, the top of the ground water table. The annular space surrounding the screened casing is backfilled with No. 3 Monterey sand (filter pack) to approximately 2 feet above the top of the screened section.

Vapor Extraction wells are constructed of 4-inch diameter flush-threaded Schedule 40 PVC blank and screened (0.010-inch slot size) casing. The annular space surrounding the screened casing is backfilled with coarse aquarium sand (filter pack) to approximately 1 feet above the top of the screened section.

During monitoring and recovery well construction, the filter pack is completed by surging with a rig-mounted surge block. A 2 to 3 foot thick bentonite annular seal is placed above the filter pack. The remaining annular space is grouted with Portland cement and/or bentonite grout to the surface. Utility access boxes are installed slightly above grade. Locking, watertight caps are installed to prevent unauthorized access to the well, and limit infiltration of surface fluids.

FLUID LEVEL MONITORING

Fluid levels are monitored in the wells using an electronic interface probe with conductance sensors. The presence of liquid-phase hydrocarbons is verified using the interface probe and/or a hydrocarbon-reactive paste. The depth to liquid-phase hydrocarbons and water is measured relative to the top of casing. Well box or casing elevations are surveyed to within 0.02 foot relative to a county or city bench mark (see Appendix C for Survey data).

GROUND WATER PURGING AND SAMPLING

Ground water monitoring wells are purged and sampled in accordance with standard regulatory protocol. Typically, monitoring wells that contain no liquid-phase hydrocarbons are purged of ground water, prior to sampling, so that fluids sampled are representative of fluids within the formation. Temperature, pH, and specific conductance are typically measured after each well casing volume has been removed. Purging is considered complete when these parameters vary less than 10% from the previous readings, or when four casing volumes of fluid have been removed. Samples are collected without further purging if the well does not recharge within 2 hours to 80% of its volume before purging. The purged water is either pumped directly into a licensed vacuum truck or temporarily stored in labeled drums prior to transport to an appropriate treatment or recycling facility. If an automatic recovery system (ARS) is operating at the site, purged water may be pumped into the ARS for treatment.

Ground water samples are collected by lowering a 1.5-inch-diameter, bottom-fill, disposable polyethylene bailer just below the static water level in the well. The samples are carefully transferred from the check-valve-equipped bailer to 1-liter and 40-milliliter glass containers. The sample containers are filled to zero headspace and fitted with Teflon-sealed caps. Each sample is labeled with the project number, well number, sample date, and sampler's initials. Samples remain chilled at approximately 4°C prior to analysis by a state-certified laboratory.

CHAIN OF CUSTODY PROTOCOL

Chain of custody protocol is followed for all soil and ground water samples selected for laboratory analysis. The chain of custody form(s) accompanies the samples from the sampling locality to the laboratory, providing a continuous record of possession prior to analysis.

DECONTAMINATION

Drilling and Soil Sampling

Drilling equipment is decontaminated by steam cleaning before being brought onsite. The augers are also steam cleaned before each new boring is commenced. Prior to use, the sampler and sampling tubes are brush-scrubbed in a Liqui-nox and potable water solution and rinsed twice in clean potable water. Sampling equipment and tubes are also decontaminated before each sample is collected to avoid cross-contamination between borings.

Ground Water Sampling

Purging and sampling equipment that could contact well fluids is either dedicated to a particular well or cleaned prior to each use in a Liqui-nox solution followed by two tap water rinses.

LITHOLOGY
(UNIFIED SOIL CLASSIFICATION SYSTEM)

MAJOR DIVISIONS			TYPICAL NAMES		
COARSE-GRAINED SOILS MORE THAN HALF IS LARGER THAN No. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN No. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GP		POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC		CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN No. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP		POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS, SAND-SILT MIXTURES
			SC		CLAYEY SANDS, SAND-CLAY MIXTURES
FINE-GRAINED SOILS MORE THAN HALF IS SMALLER THAN No. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL		INORGANIC CLAYS OF LOW- TO MEDIUM-PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL		ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OF MEDIUM- TO HIGH-PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt		PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

SYMBOLS AND NOTES

 SAMPLE INTERVAL

 SAMPLE NOT RECOVERED

 BENTONITE

 CONCRETE

 GROUT

 FILTER SAND PACK

 STATIC WATER LEVEL

 WATER LEVEL ENCOUNTERED WHEN DRILLING

ppm = parts per million (mg/kg)
ppb = parts per billion (µg/kg)
ND = not detected at detection limits stated in official laboratory reports
CGI = combustible gas indicator
OVA = organic vapor analyzer
PID = photoionization detector
LEL = lower explosive limit
TPH = total petroleum hydrocarbons
TRPH = total recoverable petroleum hydrocarbons

ALTON GEOSCIENCE
Livermore, California

KEY TO BORING LOG

PROJECT NO.:	30-0065	DATE DRILLED:	11-15-93
LOCATION:	Mobil Station 04-H6J	LOGGED BY:	R. Scheele
	1024 Main Street	APPROVED BY:	J.A. Lehrman, R.G.
	Pleasanton, California	DRILLING CO.:	V & W Drilling

DRILLING METHOD: 10.25-inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 56.5 feet DEPTH TO WATER: 34.0 feet

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	DEPTH (feet below grade)	DESCRIPTION	USCS
			0	Hand-augered to 5 feet.	
				Sandy Pea Gravel (Fill).	Fill
			5	SILTY CLAY: fill, dark brown, medium stiff, damp; well graded, gravel to 0.25-inch-diameter, plastic liner at 9.5 feet.	
	225		10	SILTY CLAY: brown very dark gray staining, medium stiff, damp; well graded, with fine-grained sand.	
	250				
	60% LEL	3,500	15	SANDY CLAY: brown with dark gray staining, medium stiff, damp; well graded, with silt.	CL
	70% LEL		20	Dark brown, 5% gravel to 0.25-inch-diameter.	
	20% LEL		25		
3/5/7					
3/6/8					
4/7/9	90% LEL	2,100	30	SILTY SAND: brown, loose, damp; very fine-grained, well graded, some clay.	
3/7/10					
8/9/13	80% LEL				SM
3/9/11			35		
4/8/12				Medium dense, wet; fine-grained.	
7/8/11					
8/9/11	100% LEL		40	CLAYEY SAND: dark brown, medium dense, wet; fine-grained, well graded, trace of pebbles to 0.25-inch-diameter.	SC

WELL CONSTRUCTION DETAIL

ALTON GEOSCIENCE
Livermore, California

LOG OF EXPLORATORY BORING

RW-1

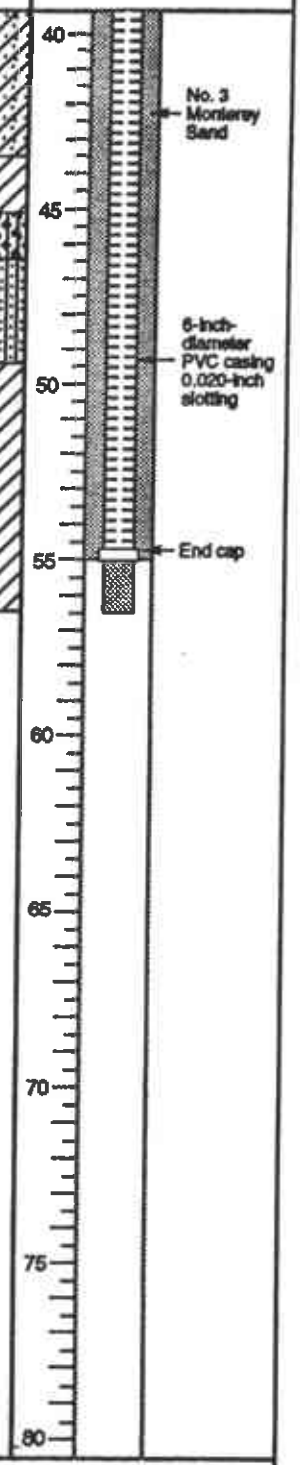
30-0065/RW-1 01/10/94

PROJECT NO.: 30-0065	DATE DRILLED: 11-15-93
LOCATION: Mobil Station 04-H6J	LOGGED BY: R. Scheele
1024 Main Street	APPROVED BY: J.A. Lehrman, R.G.
Pleasanton, California	DRILLING CO.: V & W Drilling

DRILLING METHOD: 10.25-inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 56.5 feet DEPTH TO WATER: 34.0 feet

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
8/11/14 8/10/12	100% LEL			40	SANDY CLAY: brown, medium dense, wet; fine-grained sand, well graded, some silt.	SC	
	100% LEL			45	CLAYEY SAND: dark brown, medium dense, wet, fine-grained, well graded, trace of pebbles to 1/4" in diameter	CL	
					SANDY GRAVEL: very dark gray, loose, wet; well graded, fine- to very coarse-grained sand, angular gravel to 0.33-inch-diameter	GM	
3/6/14					SILTY SAND: brown, medium dense, wet; fine-grained, well graded, some clay.	SM	
7/8/19	400			50			
7/19/75	300	1.6			SANDY CLAY: brown, stiff, moist; fine-grained sand, well graded, reddish brown, Fe Oxide mottling.	CL	
0				55	Medium dense, sandstone clasts to 0.5-inch-diameter, black and reddish brown mottling.		
				60			
				65			
				70			
				75			
				80			

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
Livermore, California

LOG OF EXPLORATORY BORING

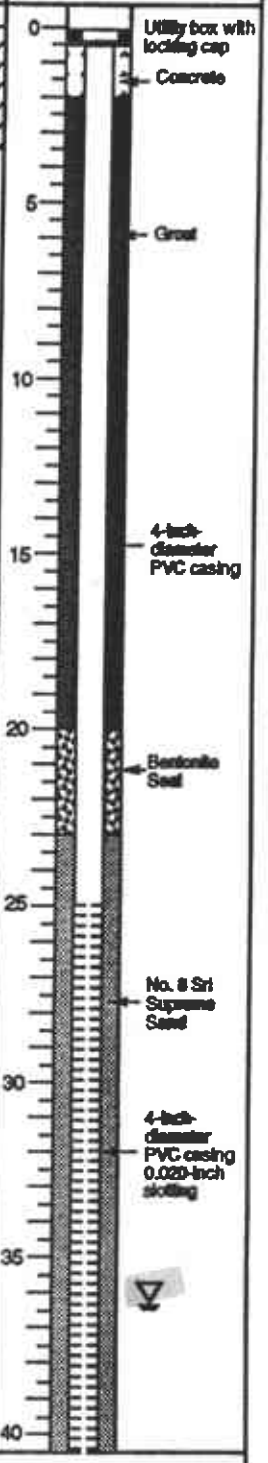
RW-1
PAGE 2 OF 2

PROJECT NO.: 30-0065	DATE DRILLED: 11-17-93
LOCATION: Mobil Station 04-H6J	LOGGED BY: R. Scheele
1024 Main Street	APPROVED BY: J.A. Lehrman, R.G.
Pleasanton, California	DRILLING CO.: V & W Drilling

DRILLING METHOD: 10.25-Inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 56.5 feet DEPTH TO WATER: 36.5 feet

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
	0			0	Hand-augered to 5 feet. SILTY GRAVEL: dark brown, (fill).		
2/2/3	100			5	SANDY SILT: brown, soft, damp; very fine-grained sand, well graded, rootlets.		
2/3/3							
3/6/7							
4/5/8				10	Trace of gravel to 0.25-inch-diameter, some clay, burrows.	ML	
4/5/5							
3/4/6	75	ND					
2/3/5				15	Increasing clay content.		
2/3/4					SANDY CLAY: brown, soft, damp; very fine-grained sand, well graded, with gray burrow, some silt.		
3/3/4	75						
3/3/5				20			
4/6/6							
4/7/8	50					CL	
4/5/8							
4/6/9				25			
5/6/8	65						
6/8/14					SILTY SAND: brown, medium dense, damp; fine- to medium-grained, poorly graded, fining upwards.	SM	
12/10/16				30	SANDY GRAVEL: dark gray, medium dense, damp; fine- to coarse-grained sand, well graded, angular to semi-angular gravel to 1.0-inch-diameter, with silt.		
10/12/15	0				Increasing gravel.	GM	
10/12/18							
31/35/50				35			
10/15/16	0	ND			Gray, dense; coarse- to very coarse-grained sand, well graded.		
13/16/31							
14/15/21					Gravel to 1.5-inch-diameter.	GP	
13/17/22				40	Less fines.		

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
Livermore, California

LOG OF EXPLORATORY BORING

MW-10
PAGE 1 OF 2

30-0065/MW-10 01/1094

PROJECT NO.:	30-0065	DATE DRILLED:	11-17-93
LOCATION:	Mobil Station 04-H6J	LOGGED BY:	R. Scheele
	1024 Main Street	APPROVED BY:	J.A. Lehrman, R.G.
	Pleasanton, California	DRILLING CO.:	V & W Drilling

DRILLING METHOD: 10.25-Inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 56.5 feet DEPTH TO WATER: 36.5 feet

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
15/17/20	0			40	SANDY GRAVEL: gray, dense, damp; coarse to very coarse-grained sand, well graded, gravel to 0.75-inch-diameter.	GP	
16/19/22							
16/20/24				45			
					SANDY CLAY: brown, medium stiff, damp; very fine-grained sand, well graded, trace gravel to 0.25-inch-diameter, mottled.	CL	
7/9/11				50			
5/6/9				55	Increasing gravel to 10%.		
				60			
				65			
				70			
				75			
				80			

WELL CONSTRUCTION DETAIL

ALTON GEOSCIENCE
Livermore, California

LOG OF EXPLORATORY BORING

MW-10
PAGE 2 OF 2

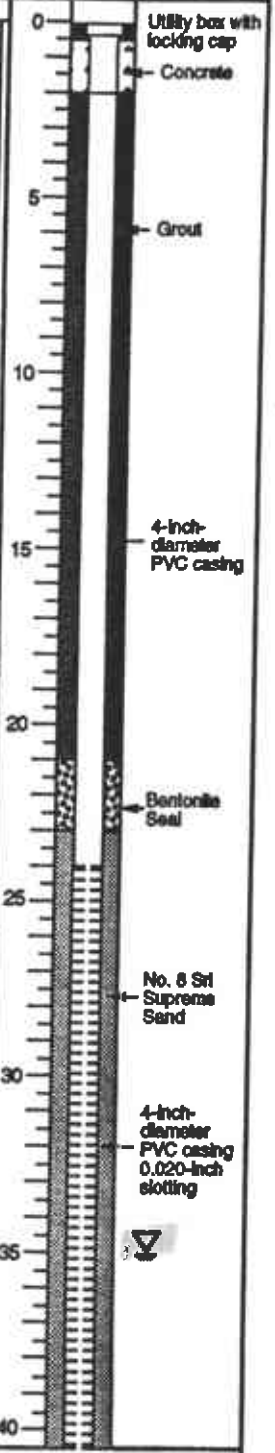
30-0065/MW-10 01/10/94

PROJECT NO.: 30-0065	DATE DRILLED: 11-18-93
LOCATION: Mobil Station 04-H6J	LOGGED BY: R. Scheele
1024 Main Street	APPROVED BY: J.A. Lehrman, R.G.
Pleasanton, California	DRILLING CO.: V & W Drilling

DRILLING METHOD: 10.25-inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 46.5 feet DEPTH TO WATER: 35.0 feet

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				0	Hand-augered to 5 feet.		
					SILT: brown, very soft, damp; very fine-grained sand, poorly graded, trace clay (Cuttings).		
4/6/11	85	ND		5	SANDY SILT: brown, soft, damp; very fine-grained sand, well graded, some gravel to 0.75-inch-diameter, trace clay.		
12/15/25	65			10	Increasing % of gravel to 0.75-inch-diameter.	ML	
11/16/28	130	ND		15	No gravel.		
					Increasing clay.		
					SANDY CLAY: dark gray, medium stiff, damp; very fine-grained sand, trace silt.		
8/11/14	125			20	Reddish brown mottling.	CL	
8/9/11	70	ND		25	Gray, worm burrows, mottling.		
5/8/9							
8/10/10					SANDY SILT: brown, medium stiff, damp; very fine-grained sand, trace clay.		
4/7/8	50			30	Gravel up to 15%.	ML	
8/9/14							
9/12/15							
11/13/14				35			
10/14/18					GRAVELLY SAND: brown, medium dense, moist to wet; medium to coarse-grained, gravel to 0.5-inch-diameter.	SM	
7/10/12							
	5% LEL			40			

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
Livermore, California

LOG OF EXPLORATORY BORING

MW-11

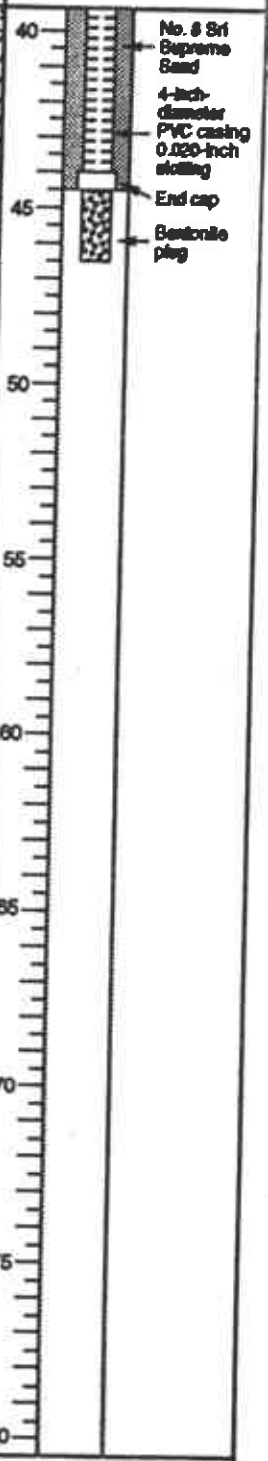
30-0065/MW-11 01/10/94

PROJECT NO.: 30-0065	DATE DRILLED: 11-18-93
LOCATION: Mobil Station 04-H6J	LOGGED BY: R. Scheele
1024 Main Street	APPROVED BY: J.A. Lehrman, R.G.
Pleasanton, California	DRILLING CO.: V & W Drilling

DRILLING METHOD: 10.25-inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 46.5 feet DEPTH TO WATER: 35.0 feet

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
3/3/3				40		SM	
4/4/5					SANDY CLAY: brown, moist, medium dense; very fine-grained sand, well graded, burrows, trace pebbles, some silt.	CL	
5/5/7							
11/12/15		ND		45	Increasing sand.	SM	
				50			
				55			
				60			
				65			
				70			
				75			
				80			

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
Livermore, California

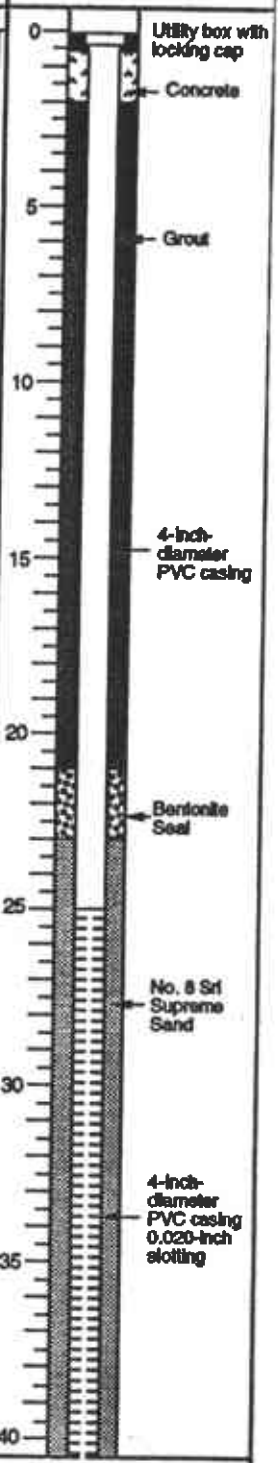
LOG OF EXPLORATORY BORING

MW-11

PROJECT NO.: 30-0065	DATE DRILLED: 11-17-93
LOCATION: Mobil Station 04-H6J	LOGGED BY: R. Scheele
1024 Main Street	APPROVED BY: J.A. Lehrman, R.G.
Pleasanton, California	DRILLING CO.: V & W Drilling

DRILLING METHOD: 10.25-inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 58.0 feet DEPTH TO WATER: 45.0 feet

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				0	Hand-augered to 5 feet.		
					SILT: brown, very soft, damp; very fine-grained, poorly graded, trace of clay.		
3/4/6				5	SANDY SILT: brown, soft, damp; very fine-grained sand, medium graded.		
3/5/5							
4/5/6							
5/7/8				10	Medium stiff, burrows, trace clay.		
6/9/11							
8/11/12	40						
9/10/12				15		ML	
6/9/12							
7/9/12	30			20	Increasing clay.		
9/10/14					Numerous gray burrows.		
7/9/11							
6/8/11				25			
4/8/9	20				Increasing sand.		
11/13/14							
7/8/10				30	SANDY SILT: brown, medium stiff, damp; very fine-grained sand, well graded, trace of gravel to 0.5-inch-diameter.		
9/11/15	100				Increasing semi-rounded gravel to 0.75-inch-diameter.		
15/26/39					SANDY SILT: brown, very stiff, damp; very fine- to very-coarse grained sand, well graded, semi-angular to semi-rounded gravel to 1-inch-diameter, sand clasts to 0.75-inch-diameter, yellow, trace clay.	ML/GM	
15/23/38				35			
11/24/38					SANDY CLAY: brown, medium stiff, damp; very fine-grained sand, well graded, black mottling, trace of gravel to 0.25-inch-diameter.		
8/22/23						CL	
7/18/21	25				Increasing gravel to 15%.		
				40	Increasing reddish brown and black mottling.		



WELL CONSTRUCTION DETAIL

ALTON GEOSCIENCE
Livermore, California

LOG OF EXPLORATORY BORING

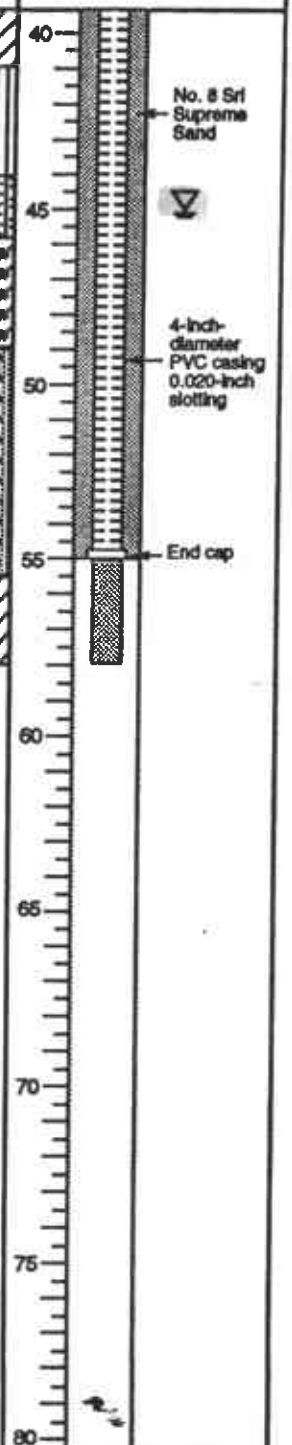
MW-12

PROJECT NO.:	30-0065	DATE DRILLED:	11-17-93
LOCATION:	Mobil Station 04-H6J	LOGGED BY:	R. Scheele
	1024 Main Street	APPROVED BY:	J.A. Lehrman, R.G.
	Pleasanton, California	DRILLING CO.:	V & W Drilling

DRILLING METHOD: 10.25-Inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 58.0 feet DEPTH TO WATER: 45.0 feet

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
6/20/21				40	SANDY CLAY: brown, medium stiff, damp; very fine-grained sand, well graded, reddish brown and black mottling, some gravel to 0.25-inch-diameter.	CL	
14/15/17	40	23			SANDY SILT: brown, medium stiff, moist; very fine-grained sand, well graded, black mottling.	ML	
				45	SILTY SAND: brown, loose, damp; fine- to medium-grained, well graded, gravel to 1.25-inch-diameter.	SM	
50-3"					CLAYEY GRAVEL: brown, very dense, wet; very fine- to very-coarse grained sand, well graded, gravel to 2-inch-diameter.	GC	
20/50-4.5"	125			50	SANDY GRAVEL: dark gray, very dense, wet; coarse-grained sand, well graded, gravel to 1-inch-diameter.	GP	
28/50/50	100			55	SANDY CLAY: brown, very stiff, wet; fine-grained sand, well graded, gravel to 0.25-inch-diameter, trace silt.	CL	
				60			
				65			
				70			
				75			
				80			

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
Livermore, California

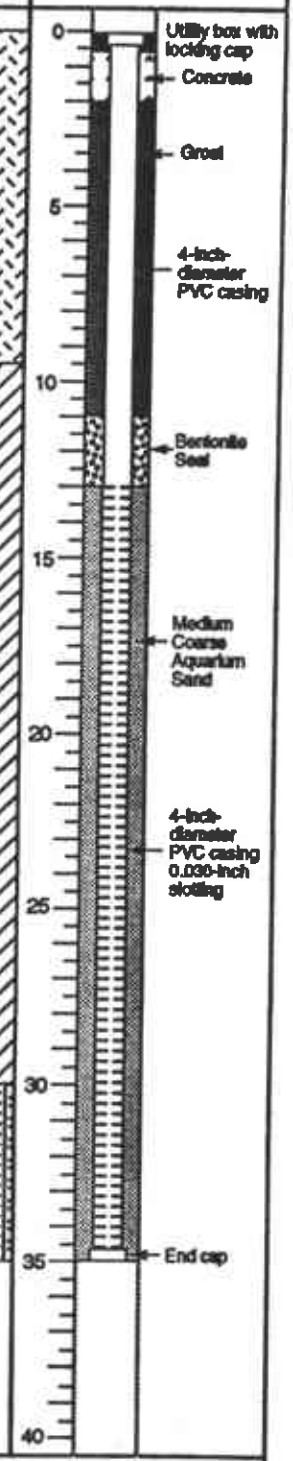
LOG OF EXPLORATORY BORING

MW-12
PAGE 2 OF 2

PROJECT NO.: 30-0065	DATE DRILLED: 11-15-93
LOCATION: Mobil Station 04-H6J	LOGGED BY: R. Scheele
1024 Main Street	APPROVED BY: J.A. Lehrman, RG
Pleasanton, California	DRILLING CO.: V & W Drilling

DRILLING METHOD: 10.25-Inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 35.0 feet DEPTH TO WATER: NA

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				0	Hand-augered to 5 feet.		
					SANDY GRAVEL (Fill).		
				5			
					Plastic liner at 9.5 feet.		
				10	SILTY CLAY: dark brown, medium stiff, damp; well graded, trace of gravel to 0.25-inch-diameter.		
				15	SANDY CLAY: brown with dark gray staining, medium stiff, damp; medium graded, with silt.		
				20	5% gravel to 0.25-inch-diameter.	CL	
				25			
				30	SILTY SAND: brown, loose, damp; fine-grained, medium graded, some clay.	SM	
				35	NOTE: VMW-1 is located ~2.5 feet from RW-1. The soil description on this log is from RW-1.		
				40			



ALTON GEOSCIENCE
Livermore, California

LOG OF EXPLORATORY BORING

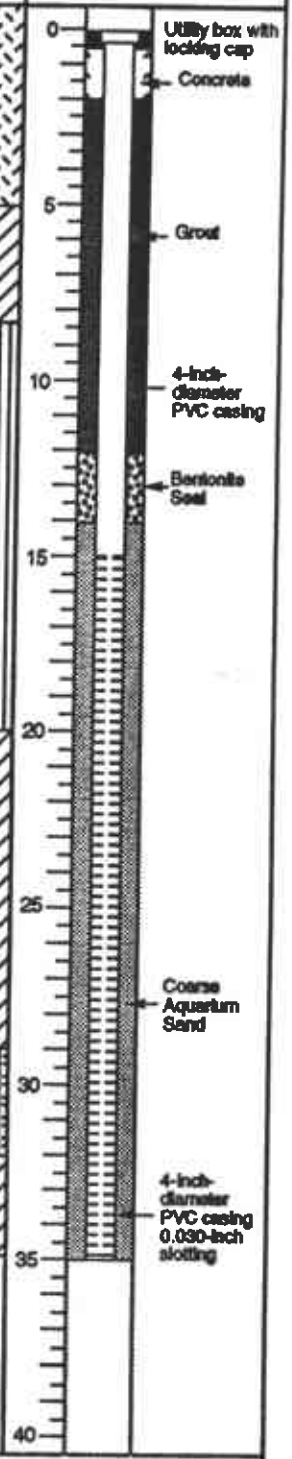
VMW-1

PROJECT NO.: 30-0065	DATE DRILLED: 11-15-93
LOCATION: Mobil Station 04-H6J	LOGGED BY: R. Scheele
1024 Main Street	APPROVED BY: J.A. Lehrman, R.G.
Pleasanton, California	DRILLING CO.: V & W Drilling

DRILLING METHOD: 10.25-inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 35.0 feet DEPTH TO WATER: NA

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				0	Hand-augered to 5 feet.		
					Sandy gravel (Fill).	Fill	
9/12/14	200			5	SANDY CLAY: brown, soft, damp; fine-grained sand, well graded, with silt.	CL	
8/10/16							
4/9/12	300	ND					
8/10/13				10	SANDY SILT: brown, medium stiff, damp; fine-grained sand, well graded, some clay, trace pebbles to 0.25-inch-diameter, dark gray staining.		
5/9/11	275						
7/10/14					Dark gray; burrows.	ML	
5/7/8				15			
6/8/11	275						
3/4/6							
7/9/13				20			
6/7/11					SANDY CLAY: brown, medium stiff, damp; fine-grained sand, well graded, some silt, burrows.		
5/9/13	200	4.9				CL	
2/4/5							
3/4/7				25			
5/8/10							
7/11/15				30	SILTY SAND: brown, loose, damp; fine-grained, well graded.	SM	
7/12/15	90% LEL	2,400			SANDY CLAY: brown, medium stiff, damp; fine-grained sand, well graded, some silt, burrows, trace gravel to 0.5-inch-diameter.	CL	
9/14/19							
11/13/16				35			
				40			

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
Livermore, California

LOG OF EXPLORATORY BORING

VMW-2

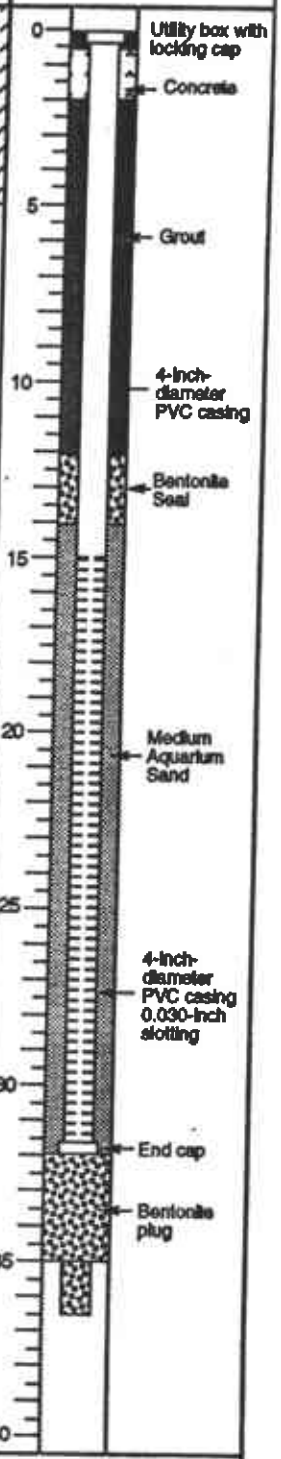
30-0065/VMW-2 01/10/94

PROJECT NO.: 30-0065	DATE DRILLED: 11-16-93
LOCATION: Mobil Station 04-H6J	LOGGED BY: R. Scheele
1024 Main Street	APPROVED BY: J.A. Lehrman, R.G.
Pleasanton, California	DRILLING CO.: V & W Drilling

DRILLING METHOD: 10.25-Inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 36.5 feet DEPTH TO WATER: NA

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				0	Hand-augered to 5 feet.		
					Sand: light brown (Fill).	Fill	
3/4/5	200			5	SANDY SILT: dark brown, soft, damp; fine-grained sand, well graded, semi-angular pebbles to 0.25-inch-diameter.	ML	
6/4/7	200			10	Rootlets.		
					Burrows (horizontal and vertical).		
4/5/6	300			15			
	200	2.7		20	SANDY CLAY: brown, soft, damp; very fine-grained sand, well graded, trace of burrows, dark gray staining, some silt.	CL	
3/4/5							
4/5/6	8% LEL	9.3		25			
					SILTY SAND: brown, soft, damp; fine-grained, well graded, mottled, some clay.	SM	
6/7/10	5% LEL			30	SANDY CLAY: brown, soft, damp; fine-grained sand, well graded.	CL	
					SILTY SAND: dark gray, medium stiff; fine- to medium-grained.	SM	
12/19/22	250	0.98		35	SANDY GRAVEL: gray, loose, damp; medium- to very coarse-grained, well graded, semi-angular to semi-rounded gravel to 1.0-inch-diameter.	GM	
				40			

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
Livermore, California

LOG OF EXPLORATORY BORING

VMW-3

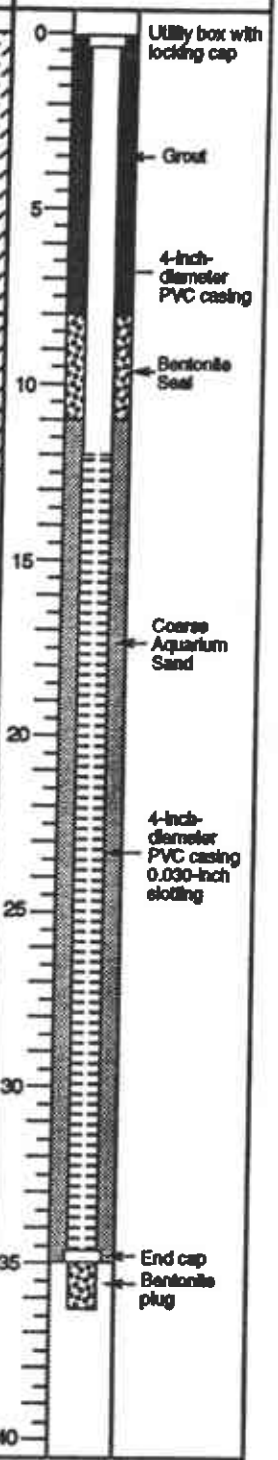
PAGE 1 OF 1

PROJECT NO.: 30-0065	DATE DRILLED: 11-16-93
LOCATION: Mobil Station 04-H6J	LOGGED BY: R. Scheele
1024 Main Street	APPROVED BY: J.A. Lehrman, R.G.
Pleasanton, California	DRILLING CO.: V & W Drilling

DRILLING METHOD: 10.25-Inch Hollow-Stem Auger
SAMPLER TYPE: California Modified Split-Spoon
TOTAL DEPTH: 36.5 feet DEPTH TO WATER: NA

BLOWS PER 6 INCHES	CGI (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				0	Hand-augered to 5 feet.		
					SANDY GRAVEL (Fill).	Fill	
10/18/8				5			
					SANDY CLAY: dark brown, soft, damp; well graded, trace of semi-round pebbles to 0.5-inch-diameter, trace of burrows, some silt.	CL	
2/2/3	275	680		10			
					SANDY SILT: brown, soft, damp; well graded, some clay, trace of burrows, with clay.	ML	
3/3/4	25% LEL			15			
					SANDY CLAY: brown, soft, damp; well graded, with gray burrows, trace silt.	CL	
3/3/5				20			
4/5/7	70% LEL	1,700					
4/5/9	50% LEL			25			
					SILTY SAND: brown, loose, damp; medium graded, very fine grained, some clay.	SM	
5/9/10	60% LEL			30			
					Dark gray, trace clay.		
				35	SANDY GRAVEL: gray, loose, damp; medium-coarse to very coarse-grained sand, well graded, semi-angular to semi-rounded gravel to 1-inch-diameter.	GM	
10/16/18	20% LEL	630					
				40			

WELL CONSTRUCTION DETAIL



ALTON GEOSCIENCE
Livermore, California

LOG OF EXPLORATORY BORING

VMW-4

PAGE 1 OF 1

30-0065/VMW-4 01/10/94

APPENDIX B

ANALYTICAL METHODS, OFFICIAL LABORATORY REPORTS, AND CHAIN OF CUSTODY RECORDS

APPENDIX B

ANALYTICAL METHODS, OFFICIAL LABORATORY REPORTS, AND CHAIN OF CUSTODY RECORDS

ANALYTICAL METHODS

All analyses were performed by a state-certified laboratory in accordance with the following methods:

Sample Analysis	Soil	Water
Total Petroleum Hydrocarbons as Gasoline (TPH-G)	EPA Method 8015	EPA Method 8015
Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX)	EPA Method 8020	EPA Method 8020

OFFICIAL LABORATORY REPORTS AND QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) REPORTS

Official laboratory and QA/QC reports are provided by the state-certified laboratory performing the analyses. The QA/QC reports for samples from each group of analyses completed for a single gas chromatograph calibration are provided.

CHAIN OF CUSTODY PROTOCOL

Chain of Custody protocol was followed for all samples selected for laboratory analysis. The Chain of Custody form(s) accompanies the samples from the sampling locality to the laboratory, providing a continuous record of possession prior to analysis.

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience	Client Project ID:	Mobil 04-H6J / 30-0065	Sampled: Nov 15, 1993
30-A Lindbergh Ave.	Sample Matrix:	Soil	Received: Nov 20, 1993
Livermore, CA 94550	Analysis Method:	EPA 5030/8015/8020	Reported: Dec 2, 1993
Attention: Jim Lehrman	First Sample #:	311-1694	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 311-1694 RW-1/16.0'	Sample I.D. 311-1696 RW-1/31.0'	Sample I.D. 311-1698 RW-1/51.0'	Sample I.D. 311-1699 VMW-2/9.5'	Sample I.D. 311-1700 VMW-2/23.0'	Sample I.D. 311-1701 VMW-2/32.0'
Purgeable Hydrocarbons	1.0	3,500	2,100	1.6	N.D.	4.9	2,400
Benzene	0.005	14	20	0.025	N.D.	0.42	4.0
Toluene	0.005	220	140	0.037	0.0095	0.069	83
Ethyl Benzene	0.005	62	49	0.066	N.D.	0.15	50
Total Xylenes	0.005	300	200	0.050	0.0099	0.30	230
Chromatogram Pattern:		Gasoline	Gasoline	Gasoline	--	Gasoline	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	250	250	1.0	1.0	1.0	100
Date Analyzed:	11/26/93	11/26/93	11/26/93	11/26/93	11/26/93	11/26/93
Instrument Identification:	HP-2	HP-2	HP-2	HP-2	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	122	111	119	106	112	140*

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

Please Note:
REVISED REPORT DEC. 17, 1993
* High surrogate percent recovery is due to matrix interference causing the surrogate to coelute with another peak.

SEQUOIA ANALYTICAL
1900 Bates Avenue • Suite LM • Concord, California 94520
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Alton Geoscience	Client Project ID:	Mobil 04-H6J / 30-0065	Sampled: Nov 16, 1993
30-A Lindbergh Ave.	Sample Matrix:	Soil	Received: Nov 19, 1993
Livermore, CA 94550	Analysis Method:	EPA 5030/8015/8020	Reported: Dec 2, 1993
Attention: Jim Lehrman	First Sample #:	311-1702	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 311-1702 VMW-3/21.5'	Sample I.D. 311-1703 VMW-3/26.0'	Sample I.D. 311-1704 VMW-3/36.0'	Sample I.D. 311-1705 VMW-4/11.5'	Sample I.D. 311-1706 VMW-4/23.0'	Sample I.D. 311-1707 VMW-4/36.5'
Purgeable Hydrocarbons	1.0	2.7	9.3	0.98	680	1,700	630
Benzene	0.005	0.22	0.65	0.026	0.27	2.2	0.12
Toluene	0.005	0.012	0.30	0.011	2.6	44	3.4
Ethyl Benzene	0.005	0.084	0.44	0.014	11	31	6.3
Total Xylenes	0.005	0.033	0.78	0.12	88	176	38
Chromatogram Pattern:		Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	5.0	1.0	10	100	20
Date Analyzed:	11/26/93	11/26/93	11/26/93	11/26/93	11/26/93	11/26/93
Instrument Identification:	HP-2	HP-2	HP-4	HP-2	HP-4	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	117	108	98	99	90	103

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

Please Note:
REVISED REPORT DEC. 17, 1993

3111694.ALT <2>

SEQUOIA ANALYTICAL
1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience
30-A Lindbergh Ave.
Livermore, CA 94550
Attention: Jim Lehrman

Client Project ID: Mobil 04-H6J / 30-0065
Sample Matrix: Soil
Analysis Method: EPA 5030/8015/8020
First Sample #: 311-1708

Sampled: Nov 17-18, 1993
Received: Nov 19, 1993
Reported: Dec 2, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 311-1708 MW-10/14.0'	Sample I.D. 311-1711 MW-10/36.5'	Sample I.D. 311-1715 MW-11/16.5'	Sample I.D. 311-1716 MW-11/26.5'	Sample I.D. 311-1718 MW-11/45.5'	Sample I.D. 311-1720 MW-12/14.0'
Purgeable Hydrocarbons	1.0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Benzene	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Toluene	0.005	0.0073	N.D.	N.D.	0.0070	N.D.	0.018
Ethyl Benzene	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	0.011
Total Xylenes	0.005	0.014	N.D.	N.D.	0.0050	N.D.	0.058
Chromatogram Pattern:		--	--	--	--	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	11/26/93	11/26/93	11/26/93	11/26/93	11/26/93	11/26/93
Instrument Identification:	HP-4	HP-4	HP-4	HP-4	HP-4	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	98	105	108	98	111	107

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL
1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience
30-A Lindbergh Ave.
Livermore, CA 94550
Attention: Jim Lehrman

Client Project ID: Mobil 04-H6J / 30-0065
Sample Matrix: Soil
Analysis Method: EPA 5030/8015/8020
First Sample #: 311-1721

Sampled: Nov 18, 1993
Received: Nov 19, 1993
Reported: Dec 2, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 311-1721 MW-12/32.0'	Sample I.D. 311-1722 MW-12/41.0'
Purgeable Hydrocarbons	1.0	N.D.	23
Benzene	0.005	N.D.	0.16
Toluene	0.005	N.D.	0.043
Ethyl Benzene	0.005	N.D.	0.053
Total Xylenes	0.005	N.D.	0.31
Chromatogram Pattern:		--	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	11/26/93	11/26/93
Instrument Identification:	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	106	179*

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

Please Note:

* High surrogate percent recovery is due to matrix interference causing the surrogate to coelute with another peak.

SEQUOIA ANALYTICAL

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Alton Geoscience
30-A Lindbergh Ave.
Livermore, CA 94550
Attention: Jim Lehrman

Client Project ID: Mobil 04-H6J / 30-0065
Sample Descript: Soil
Analysis for: Percent Moisture
First Sample #: 311-1694

Sampled: 11/15-18/93
Received: Nov 19, 1993
Extracted: Dec 9, 1993
Analyzed: Dec 9, 1993
Reported: Dec 13, 1993

LABORATORY ANALYSIS FOR: Percent Moisture

Sample Number	Sample Description	Detection Limit %	Sample Result %
311-1694	RW-1/16.0'	0.0010	15
311-1710	MW-10/23.0'	0.0010	16
311-1715	MW-11/16.5'	0.0010	10
311-1720	MW-12/14.0'	0.0010	10

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
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Alton Geoscience
30-A Lindbergh Ave.
Livermore, CA 94550
Attention: Jim Lehrman

Client Project ID: Mobil 04-H6J / 30-0065
Sample Descript: Soil
Analysis for: Total Organic Carbon
First Sample #: 311-1710

Sampled: 11/15-18/93
Received: Nov 20, 1993

Analyzed: Dec 1, 1993
Reported: Dec 13, 1993

LABORATORY ANALYSIS FOR: Total Organic Carbon

Sample Number	Sample Description	Detection Limit g/100g	Sample Result g/100g
311-1710	MW-10/23.0'	0.030	0.22
311-1712	MW-10/41.0'	0.030	0.030
311-1715	MW-11/16.5'	0.030	0.26
311-1720	MW-12/14.0'	0.030	0.56

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

Please Note:
California Fertilizer Association, "California Soil Testing Procedures".

SEQUOIA ANALYTICAL
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Alton Geoscience
30-A Lindbergh Ave.
Livermore, CA 94550
Attention: Jim Lehrman

Client Project ID: Mobil 04-H6J / 30-0065
Matrix: Solid

QC Sample Group: 3111694-1723

Reported: Dec 13, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon
MS/MSD Batch#:	3112467	3112467	3112467	3112467
Date Prepared:	11/30/93	11/30/93	11/30/93	11/30/93
Date Analyzed:	11/30/93	11/30/93	11/30/93	11/30/93
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	0.40 mg/kg	0.40 mg/kg	0.40 mg/kg	1.2 mg/kg
Matrix Spike % Recovery:	90	95	98	96
Matrix Spike Duplicate % Recovery:	90	95	95	98
Relative % Difference:	0.0	0.0	3.1	2.1
LCS Batch#:	LCS113093	LCS113093	LCS113093	LCS113093
Date Prepared:	11/30/93	11/30/93	11/30/93	11/30/93
Date Analyzed:	11/30/93	11/30/93	11/30/93	11/30/93
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	89	92	92	94
% Recovery Control Limits:	55-145	47-149	47-155	56-140

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience
30-A Lindbergh Ave.
Livermore, CA 94550
Attention: Jim Lehrman

Client Project ID: Mobil 04-H6J / 30-0065
Matrix: Soil

QC Sample Group: 3111694-1720

Reported: Dec 13, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	% Moisture
Method:	EPA 160.3
Analyst:	A.P.

Date Analyzed:	Dec 9, 1993
Sample #:	3111715
Sample Concentration:	10%
Sample Duplicate Concentration:	9%
% RPD:	11%
% RPD: Control Limits:	0-30

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SOLEA TESTING GROUP

Statement of Additions and Omissions

Sequoia Analytical
1900 Bates Avenue, Suite LM
Concord, CA 94520

Laboratory Test Results; Alton Geoscience

December 7, 1993

STG Client No.: SQA.001

1. Sample 3111723 was too saturated for density determination. Porosity was not attainable.
2. Samples 3111695, 3111706, & 3111709 were too moist for air permeability.

Sample No.	Boring No.	Depth (ft.)	Sample Description	Group Symbol	Moisture Content, %	Dry Density, pc	Specific Gravity	Void Ratio	Porosity %	Saturation %
3111694			Brown Lean Clay w/Sand	CL						
3111695			Brown Lean Clay	CL	18.0	99.1	2.74	0.726	42.1	68.1
3111697			Olive-Brown Sand	SP	11.8	119.5	2.74	0.432	30.2	75.1
3111706			Brown Lean Clay	CL						
3111709			Dark Brown Lean Clay	CL	19.9	109.3	2.73	0.559	35.8	97.1
3111710										
3111712			Brown Sand w/Gravel	SW						
3111713			Brown Sand w/Clay & Gravel	SP-SC	11.6	110.9	2.71	0.526	34.5	60.0
3111714			Brown Silty Clay	CL-ML	10.1	95.3	2.74	0.795	44.3	34.7
3111715										
3111717			Brown Lean Clay	CL	23.2	105.2	2.79	0.656	39.6	98.7
3111719			Brown Silty Clay	CL-ML	11.8	101.8	2.72	0.669	40.1	48.0
3111720										
3111721			Brown Sandy Lean Clay	CL						
3111723			Brown Sand w/Clay & Gravel	SP-SC	15.0		2.71			

SOLEA

SOLEA TESTING GROUP

LABORATORY SUMMARY REPORT

Sequoia Analytical-Alton Geoscience

DRAWN	DATE	PROJECT	LRN	APPROVED	PAGE
CLM	12/7/93	SQA.001	4388	FP	

SOLEA

SOLEA TESTING GROUP

AIR PERMEABILITY REPORT

Flexible Wall Method

P&N 0688

Project: Sequoia Analytical Project No.: on Geoscle LRN: 4388

Sample I.D.: 3111714 Boring: Depth:

Sample Description: Brown Silty Clay (CL-ML)

MOISTURE DATA			Before Test			After Test		
Setup Date: 11/29/93	Julian day 333		Specimen	Trimmings	Misc.	Specimen	Solids	Total
Tare No.:						KK		
Wet Soil & Tare Weight:	grams					578.4		
Dry Soil & Tare Weight:	grams					537.0		
Tare Weight:	grams					125.3		
Wet Soil Weight:	grams	453.4				453.1		453.1
Dry Soil Weight:	grams	411.70				411.70		411.70
Water Content:	%	10.13				10.06		10.06

SPECIMEN DATA		Initial	Final
Length:	inches	5.630	5.630
	Average	5.630	5.630
Diameter:	inches	1.930	1.930
	Average	1.930	1.930
Length, Ave.	centimeters	14.300	14.300
Diameter, Ave.	centimeters	4.902	4.902
Area	cm²	18.874	18.874
Consol Pressure	psi		
Specific Gravity:		2.70	
Solids Weight, cc:	Ws	411.70	411.70
Volume Total, cc:	Vt	269.91	269.91
Volume Solids, cc:	Vs	152.48	152.48
Volume Voids, cc:	Vv	117.43	117.43
Volume Water, cc:	Vw	41.70	41.40
Void Ratio	e	0.770	0.770
% Saturation	S	35.51	35.26
% Porosity	n	43.51	43.51
% Moisture	M	10.13	10.06
Dry Density, pcf	γ	95.23	95.23

TEST DATA

TRIAL NO.	FLOW ml	TIME, sec 1ST	TIME, sec 2ND	FLOW ml/sec
1	25	6.84	6.85	3.652
2	25	3.70	3.68	6.775
3	50	4.45	4.43	11.261
4	250	12.71	12.68	19.693
5	500	15.74	15.76	31.746
6	25	6.90	6.87	3.631

TRIAL NO.	ENTRY PRESSURE, Pi Left, cm	Right, cm	psi	Pascal
1	52.35	50.25		205.9
2	53.40	49.10		421.7
3	55.50	46.80		853.2
4	60.10	41.80		1794.7
5	68.90	32.20		3599.2
6	52.35	50.75		156.9

TRIAL NO.	EXIT PRESSURE, Pe Left, cm	Right, cm	psi	Pascal
1	56.00	54.80		117.7
2	56.60	54.30		225.6
3	57.80	53.10		460.9
4	60.45	50.55		970.9
5	65.60	45.70		1951.6
6	56.00	54.75		122.6

TRIAL NO.	AIR PERMEABILITY cm²	2/(Pe+Pi)	Darcy	
1	5.70E-07	6.2E-03	5.76E+01	
2	4.76E-07	3.1E-03	4.81E+01	
3	3.95E-07	1.5E-03	3.99E+01	
4	3.28E-07	7.2E-04	3.32E+01	
5	2.64E-07	3.6E-04	2.66E+01	
6	1.46E-06	7.2E-03	1.47E+02	
Average	5.82E-07		5.88E+01	

Assumptions & Notes
(1) "Initial" data based on initial measured weights and dimensions.
(2) "Final" data based on measured weights and dimensions on specimen out of the cell which may allow change in water content and volume.
3.)
5.)
6.)

k-atrxdb.xls (C) Issued 6/25/92

DRAWN DSJ DATE 12/3/93 CHECKED

SOLEA

SOLEA TESTING GROUP

AIR PERMEABILITY REPORT

Flexible Wall Method

PSN 068

Project: Sequoia Analytical | Project No.: on Geoscie | LRN: 4388

Sample I.D.: 3111719 | Boring: | Depth:

Sample Description: Brown Silty Clay (CL-ML)

MOISTURE DATA			Before Test			After Test		
Setup Date: 11/29/93	Julian day 333		Specimen	Trimmings	Misc.	Specimen	Solids	Total
Tare No.:						AC-5		
Wet Soil & Tare Weight:	grams					646.1		
Dry Soil & Tare Weight:	grams					590.8		
Tare Weight:	grams					122.5		
Wet Soil Weight:	grams		524.2			523.6		523.6
Dry Soil Weight:	grams		468.30			468.30		468.30
Water Content:	%		11.94			11.81		11.81

SPECIMEN DATA		Initial	Final
Length:	inches	6.000	6.000
	Average	6.000	6.000
Diameter:	inches	1.930	1.930
	Average	1.930	1.930
Length, Ave.	centimeters	15.240	15.240
Diameter, Ave.	centimeters	4.902	4.902
Area	cm²	18.874	18.874
Consol Pressure	psi		
Specific Gravity:		2.70	
Solids Weight, cc:	Ws	468.30	468.30
Volume Total, cc:	Vt	287.65	287.65
Volume Solids, cc:	Vs	173.44	173.44
Volume Voids, cc:	Vv	114.20	114.20
Volume Water, cc:	Vw	55.90	55.30
Void Ratio	e	0.658	0.658
% Saturation	S	48.95	48.42
% Porosity	n	39.70	39.70
% Moisture	M	11.94	11.81
Dry Density, pcf	γ	101.64	101.64

TEST DATA

TRIAL NO.	FLOW ml	TIME, sec 1ST	TIME, sec 2ND	FLOW ml/sec
1	25	7.60	7.57	3.296
2	25	4.33	4.35	5.760
3	50	4.99	4.96	10.050
4	250	15.03	15.05	16.622
5	500	18.70	18.72	26.724
6	25	7.81	7.59	3.289

TRIAL NO.	ENTRY PRESSURE, Pi Left, cm	Right, cm	psi	Pascal
1	52.65	49.90		269.7
2	54.05	48.40		554.1
3	57.10	45.10		1176.8
4	62.95	38.70		2378.2
5	74.85	25.90		4800.5
6	52.70	49.90		274.6

TRIAL NO.	EXIT PRESSURE, Pe Left, cm	Right, cm	psi	Pascal
1	55.90	54.90		98.1
2	56.40	54.45		191.2
3	57.45	53.45		392.3
4	59.40	51.80		764.9
5	63.30	47.90		1510.3
6	55.90	54.90		98.1

TRIAL NO.	AIR PERMEABILITY cm²	2/(Pe+Pi)	Darcy	
1	2.82E-07	5.4E-03	2.85E+01	
2	2.33E-07	2.7E-03	2.35E+01	
3	1.88E-07	1.3E-03	1.89E+01	
4	1.50E-07	6.4E-04	1.52E+01	
5	1.17E-07	3.2E-04	1.19E+01	
6	2.74E-07	5.4E-03	2.76E+01	
Average	2.07E-07		2.09E+01	

Assumptions & Notes

(1) "Initial" data based on initial measured weights and dimensions.

(2) "Final" data based on measured weights and dimensions on specimen out of the cell which may allow change in water content and volume.

3.)

5.)

6.)

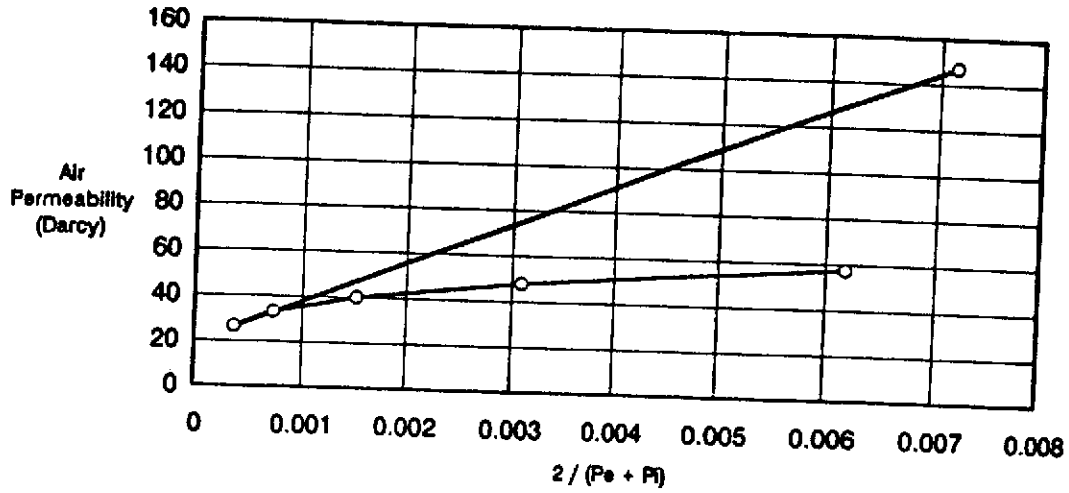
k-airchk.xls (C) Issued 6/28/88

DRAWN DSJ | DATE 12/3/93 | CHECKED

AIR PERMEABILITY TEST

Modified ASTM D-4525 (1)

Air Permeability vs. Reciprocal Mean Pressure



SAMPLE I.D.:	3111714.0
BORING:	
DEPTH:	

STAGE:	Initial	Final
MOISTURE, %:	10.1	10.1
DRY DENSITY, pcf:	95.2	95.2
SATURATION, %:	35.5	35.3
VOID RATIO, e:	0.770	0.770

TRIAL	AIR PERMEABILITY	
	cm^2	DARCY
1	5.7E-7	5.8E+1
2	4.8E-7	4.8E+1
3	4.0E-7	4.0E+1
4	3.3E-7	3.3E+1
5	2.6E-7	2.7E+1
6	1.5E-6	1.5E+2
AVERAGE	5.8E-7	5.9E+1

Notes: (1) Test Procedure is modified as follows:

a) Test is performed on specimen at the "as received" moisture content, without oven drying.

b) A Flexible-Wall Permeameter Cell is used. The specimen is confined to an estimate of the "in-situ" pressure.

c) Air flow applied is low to simulate gradients typical with vapor extraction equipment.

(2) Sample consolidated to:

(3) Sample Description: Brown Silty Clay (CL-ML)

SOLEA

SOLEA TESTING GROUP

AIR PERMEABILITY TEST REPORT

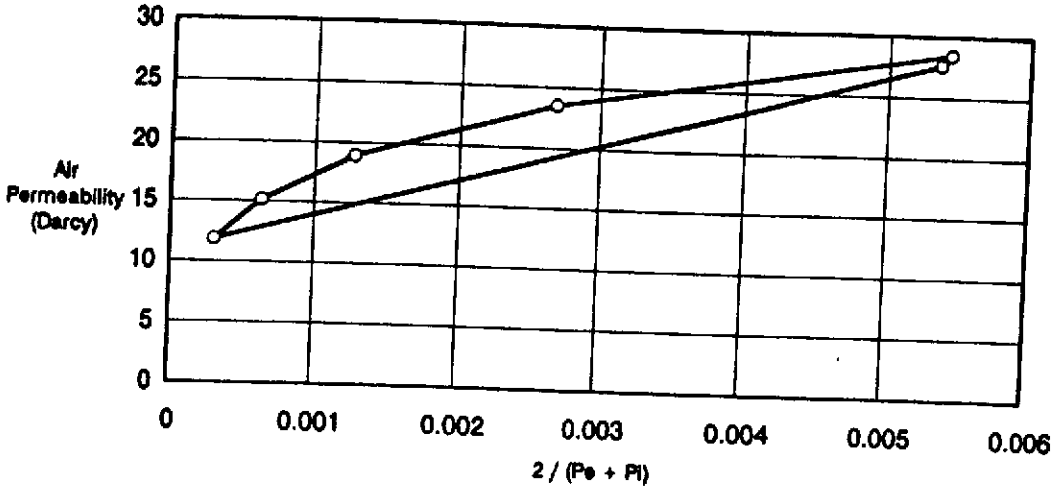
Sequoia Analytical

DRAWN	PROJECT NO.	LRN	DATE	APPROVED	PAGE
CLM	Alton Geoscien	4388	12/3/93		

AIR PERMEABILITY TEST

Modified ASTM D-4525 (1)

Air Permeability vs. Reciprocal Mean Pressure



SAMPLE I.D.:	3111719.0
BORING:	
DEPTH:	

STAGE:	Initial	Final
MOISTURE, %:	11.9	11.8
DRY DENSITY, pcf:	101.6	101.6
SATURATION, %:	48.9	48.4
VOID RATIO, e:	0.658	0.658

TRIAL	AIR PERMEABILITY	
	cm²	DARCY
1	2.8E-7	2.8E+1
2	2.3E-7	2.4E+1
3	1.9E-7	1.9E+1
4	1.5E-7	1.5E+1
5	1.2E-7	1.2E+1
6	2.7E-7	2.8E+1
AVERAGE	2.1E-7	2.1E+1

Notes: (1) Test Procedure is modified as follows:

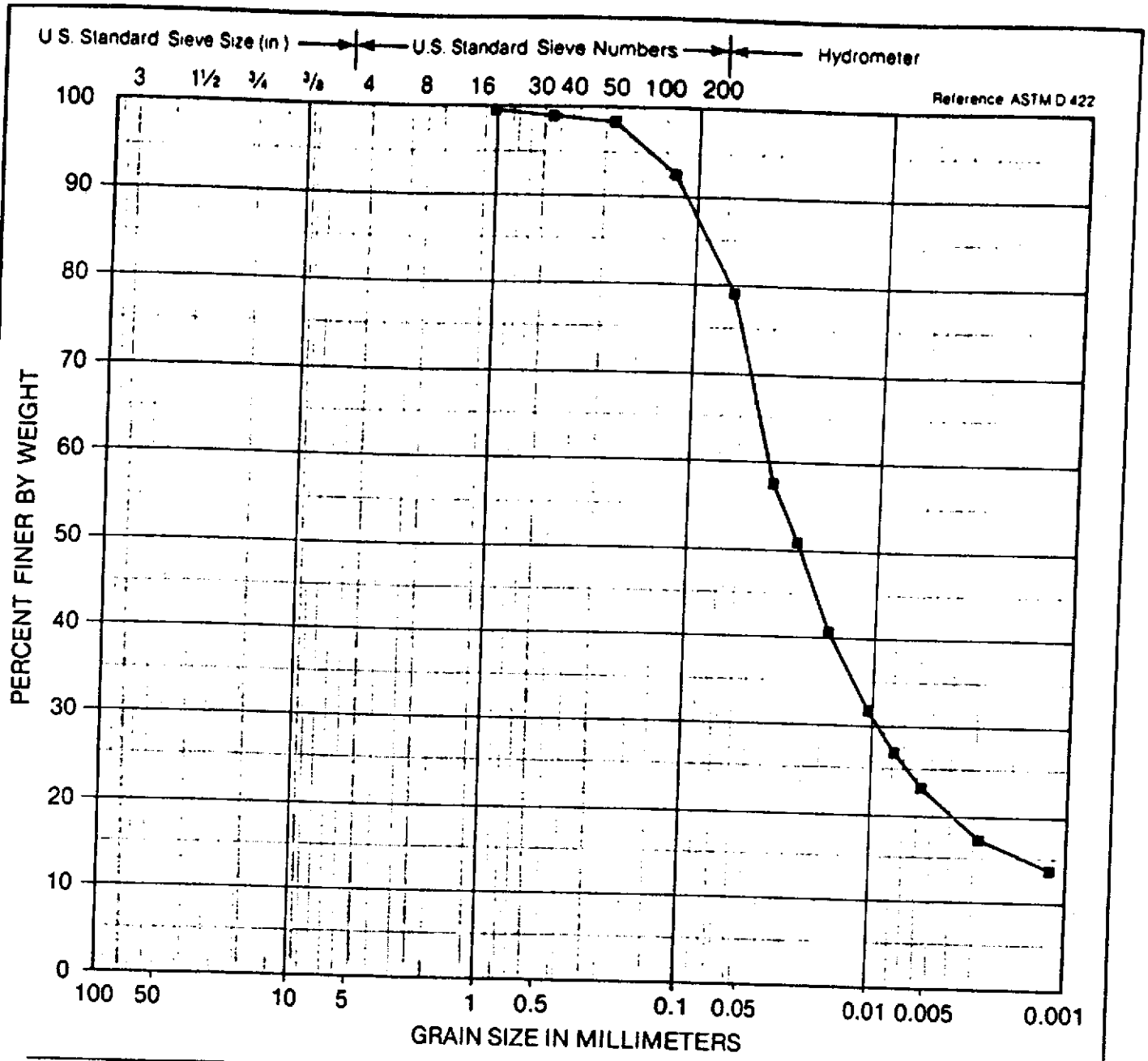
a) Test is performed on specimen at the "as received" moisture content, without oven drying.

b) A Flexible-Wall Permeameter Cell is used. The specimen is confined to an estimate of the "in-situ" pressure.

c) Air flow applied is low to simulate gradients typical with vapor extraction equipment.

(2) Sample consolidated to:

(3) Sample Description: Brown Silty Clay (CL-ML)



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Sample Source	Classification
■	1694 @ 0.0 FT	BROWN LEAN CLAY W/SAND (CL)

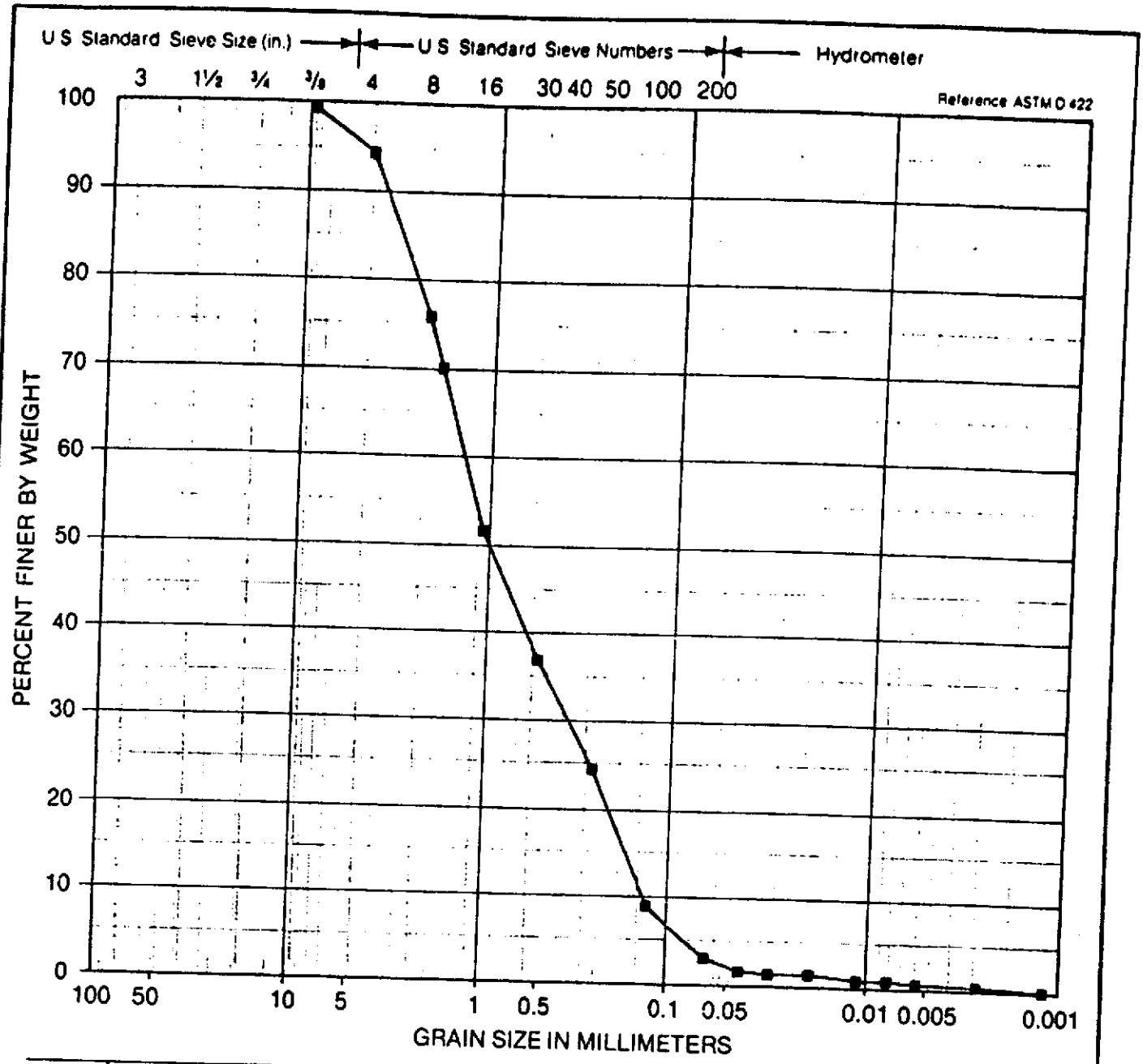
SOLEA

SOLEA TESTING GROUP

Particle Size Analysis

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	SQA.1-4388	FF	12-03-1993		



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Sample Source	Classification
■	1697 @ 0.0 FT	OLIVE-BROWN SAND (SP)

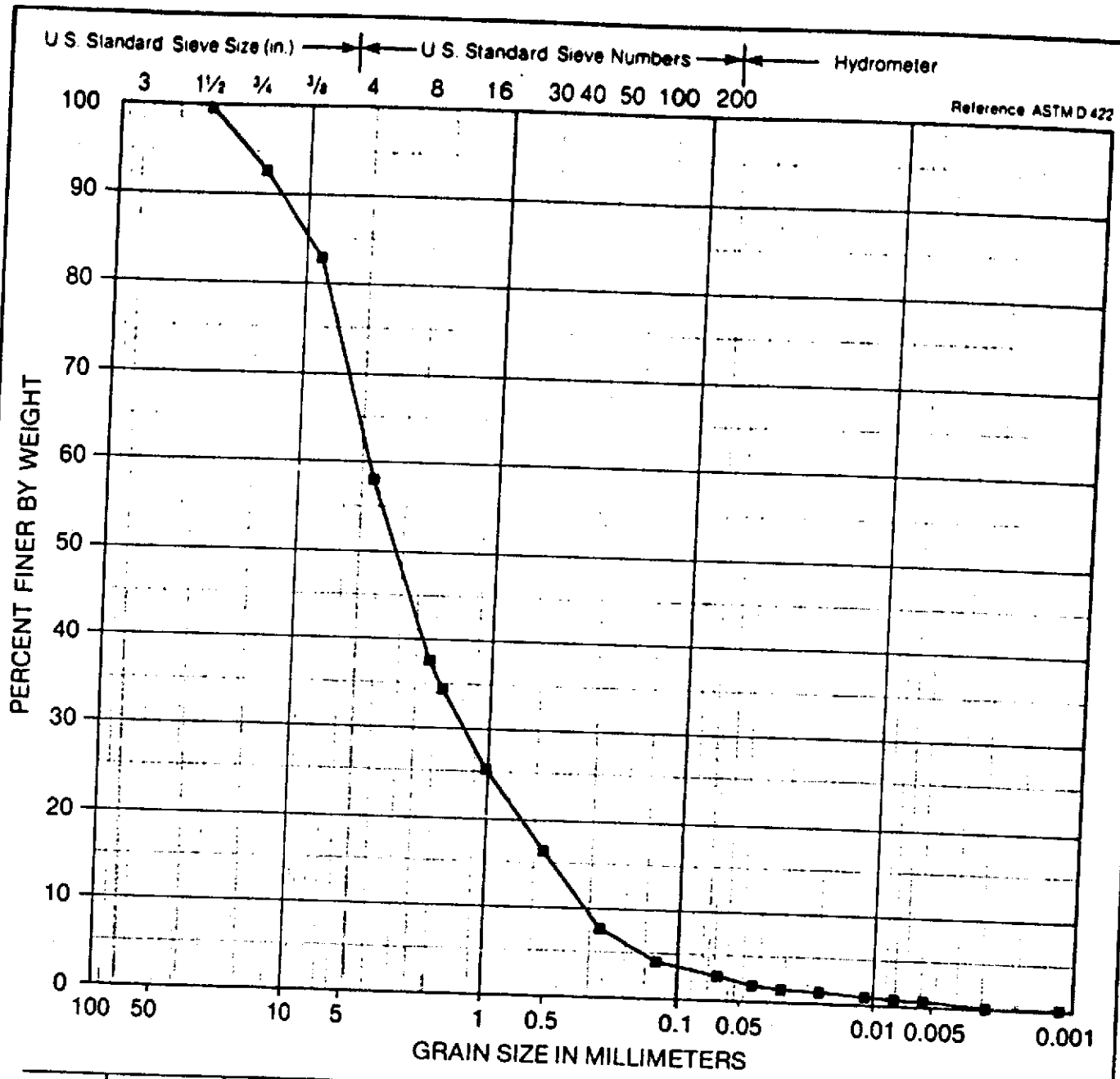
SOLEA

SOLEA TESTING GROUP

Particle Size Analysis

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	SGA.1-4388		12-03-1993		



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Sample Source	Classification
■	1712 @ 0.0 FT	BROWN SAND W/GRAVEL (SW)

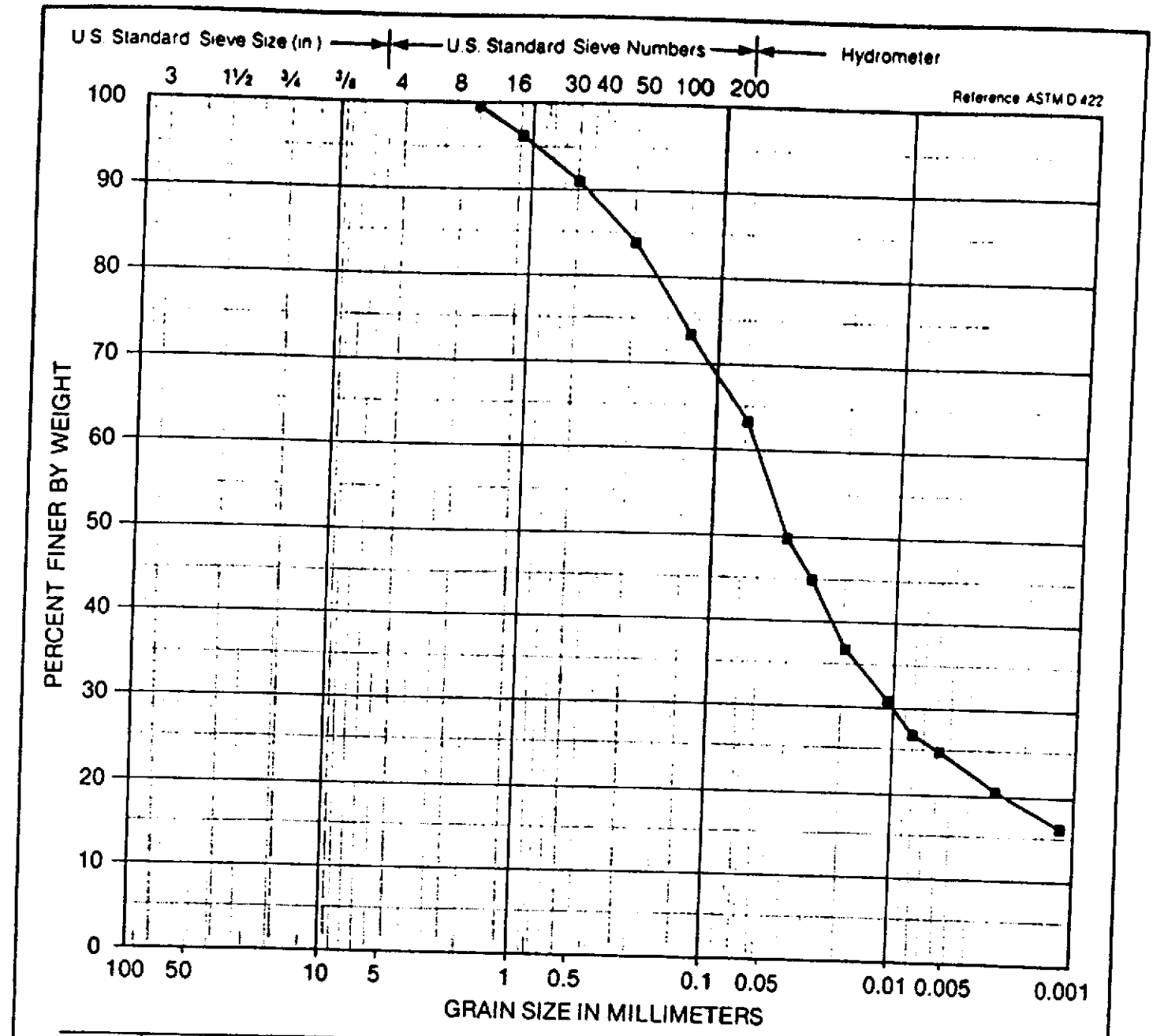
SOLEA

SOLEA TESTING GROUP

Particle Size Analysis

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	SQA.1-4388		12-03-1993		



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Sample Source	Classification
■	1721 @ 0.0 FT	BROWN SANDY LEAN CLAY (CL)

SOLEA

SOLEA TESTING GROUP

Particle Size Analysis

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	SQA.1-4388	FF	12-03-1993		

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project Name: SEQUOIA ANALYTICAL
Project Number: SQA.1-4388

Test Date: 12-03-1993
Location: 1694 @ 0.0

Total Sample Weight (g): 50.0

Percent Passing No. 10 Sieve: 100.0

Weight of Split Sample Used (g): 50.0

Specific Gravity (g/cc): 2.70

Hygroscopic Moisture (%): 0.0

Hydrometer Correction Value (div): 5.5

Liquid Limit: ---

Plasticity Index: ---

Soil Composition (%):

Gravel	0.0
Sand	20.4
Silt	57.7
Clay	21.9

Particle Diameter (mm):

@ 60% Passing	4.49E-2
@ 30% Passing	1.02E-2
@ 10% Passing	4.54E-4

Coefficient of Curvature : 5.11E 0

Coefficient of Uniformity : 9.89E 1

Soil Classification : BROWN LEAN CLAY W/SAND

Symbol : CL*

Frost Classification : F4*

Data Entry By: CLM

File #: 659

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project : SEQUOIA ANALYTICAL ID : SQA.1-4388 Test Date : 12-03-1993

Data Entry By : CLM Location : 1694 @ 0.0 Data File : TEST0659

Sieve Name	Sieve Size (mm)	Cum. Weight Retained (g)	Percent of Total Weight Passing
5.000 in	125.000	0.0	100.0
3.000 in	75.000	0.0	100.0
1.500 in	37.500	0.0	100.0
3/4 in	19.000	0.0	100.0
3/8 in	9.500	0.0	100.0
No. 4	4.750	0.0	100.0
No. 8	2.360	0.0	100.0
No. 10	2.000	0.0	100.0
No. 16	1.180	0.0	100.0
No. 30	0.600	0.0	100.0
No. 50	0.300	0.3	99.4
No. 100	0.150	0.6	98.8
No. 200	0.075	3.5	93.0
		10.2	79.6

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project : SEQUOIA ANALYTICAL ID : SQA.1-4388 Test Date : 12-03-1993

Data Entry By : CLM Location : 1694 @ 0.0 Data File : TEST0659

Elapsed Time (min)	Hydrometer Reading	Temperature (deg C)	% of Total Passing in Solution	Particle Diameter (mm) in Suspension
1	34.5	22.0	58.1	0.04277
2	31.1	22.0	51.4	0.03102
5	26.0	22.0	41.3	0.02034
15	21.5	22.0	32.4	0.01210
30	19.1	22.0	27.7	0.00869
60	17.1	22.0	23.7	0.00622
250	14.0	22.7	17.9	0.00308
1440	12.8	20.0	14.4	0.00133

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project Name: SEQUOIA ANALYTICAL
Project Number: SQA.1-4388

Test Date: 12-03-1993
Location: 1697 @ 0.0

Total Sample Weight (g): 229.9

Percent Passing No. 10 Sieve: 70.8

Weight of Split Sample Used (g): 120.0

Specific Gravity (g/cc): 2.74

Hygroscopic Moisture (%): 0.0

Hydrometer Correction Value (div): 5.5

Liquid Limit: ---

Plasticity Index: ---

Soil Composition (%):

Gravel	5.0
Sand	91.1
Silt	2.6
Clay	1.3

Particle Diameter (mm):

@ 60% Passing	1.47E 0
@ 30% Passing	3.90E-1
@ 10% Passing	1.51E-1

Coefficient of Curvature : 6.86E-1

Coefficient of Uniformity : 9.73E 0

Soil Classification : OLIVE-BROWN SAND

Symbol : SP*

Frost Classification : NFS

Data Entry By: CLM

File #: 660

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project : SEQUOIA ANALYTICAL ID : SQA.1-4388 Test Date : 12-03-1993

Data Entry By : CLM Location : 1697 @ 0.0 Data File : TEST0660

Sieve Name	Sieve Size (mm)	Cum. Weight Retained (g)	Percent of Total Weight Passing
5.000 in	125.000	0.0	100.0
3.000 in	75.000	0.0	100.0
1.500 in	37.500	0.0	100.0
3/4 in	19.000	0.0	100.0
3/8 in	9.500	0.0	100.0
No. 4	4.750	11.4	95.0
No. 8	2.360	53.9	76.6
No. 10	2.000	67.2	70.8
No. 16	1.180	31.3	52.3
No. 30	0.600	56.1	37.7
No. 50	0.300	77.1	25.3
No. 100	0.150	103.3	9.8
No. 200	0.075	113.3	4.0

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project : SEQUOIA ANALYTICAL ID : SQA.1-4388 Test Date : 12-03-1993

Data Entry By : CLM Location : 1697 @ 0.0 Data File : TEST0660

Elapsed Time (min)	Hydrometer Reading	Temperature (deg C)	% of Total Passing in Solution	Particle Diameter (mm) in Suspension
1	9.5	21.5	2.5	0.05005
2	9.1	21.5	2.3	0.03547
5	9.1	21.5	2.3	0.02243
15	8.1	21.5	1.7	0.01302
30	8.0	22.0	1.7	0.00916
60	7.5	22.0	1.4	0.00649
250	7.0	22.7	1.2	0.00316
1440	7.0	20.0	0.9	0.00136

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project Name: SEQUOIA ANALYTICAL
Project Number: SQA.1-4388

Test Date: 12-03-1993
Location: 1712 @ 0.0

Total Sample Weight (g): 302.3

Percent Passing No. 10 Sieve: 35.1

Weight of Split Sample Used (g): 101.8

Specific Gravity (g/cc): 2.70

Hygroscopic Moisture (%): 0.0

Hydrometer Correction Value (div): 5.5

Liquid Limit: ---

Plasticity Index: ---

Soil Composition (%):

Gravel	:	41.5
Sand	:	55.1
Silt	:	2.3
Clay	:	1.1

Particle Diameter (mm):

@ 60% Passing : 4.95E 0

@ 30% Passing : 1.49E 0

@ 10% Passing : 3.40E-1

Coefficient of Curvature : 1.31E 0

Coefficient of Uniformity : 1.46E 1

Soil Classification : BROWN SAND W/GRAVEL

Symbol : SW

Frost Classification : NFS

Data Entry By: CLM

File #: 661

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project : SEQUOIA ANALYTICAL ID : SQA.1-4388 Test Date : 12-03-1993

Data Entry By : CLM Location : 1712 @ 0.0 Data File : TEST0661

Sieve Name	Sieve Size (mm)	Cum. Weight Retained (g)	Percent of Total Weight Passing
5.000 in	125.000	0.0	100.0
3.000 in	75.000	0.0	100.0
1.500 in	37.500	0.0	100.0
3/4 in	19.000	21.1	93.0
3/8 in	9.500	50.5	83.3
No. 4	4.750	125.4	58.5
No. 8	2.360	186.6	38.3
No. 10	2.000	196.3	35.1
No. 16	1.180	26.1	26.1
No. 30	0.600	52.3	17.1
No. 50	0.300	77.3	8.4
No. 100	0.150	87.6	4.9
No. 200	0.075	91.8	3.4

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project : SEQUOIA ANALYTICAL ID : SQA.1-4388 Test Date : 12-03-1993

Data Entry By : CLM Location : 1712 @ 0.0 Data File : TEST0661

Elapsed Time (min)	Hydrometer Reading	Temperature (deg C)	% of Total Passing in Solution	Particle Diameter (mm) in Suspension
1	12.5	21.5	2.5	0.04979
2	11.5	21.5	2.1	0.03541
5	11.0	21.5	2.0	0.02246
15	10.0	21.5	1.6	0.01304
30	9.2	22.0	1.4	0.00921
60	9.0	22.0	1.3	0.00652
250	7.1	22.7	0.7	0.00320
1440	7.8	20.0	0.8	0.00137

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project Name: SEQUOIA ANALYTICAL
Project Number: SQA.1-4388

Test Date: 12-03-1993
Location: 1721 @ 0.0

Total Sample Weight (g): 50.0

Percent Passing No. 10 Sieve: 100.0

Weight of Split Sample Used (g): 50.0

Specific Gravity (g/cc): 2.70

Hygroscopic Moisture (%): 0.0

Hydrometer Correction Value (div): 5.5

Liquid Limit: ---

Plasticity Index: ---

Soil Composition (%):

- Gravel : 0.0
- Sand : 36.2
- Silt : 39.6
- Clay : 24.2

Particle Diameter (mm):

- @ 60% Passing : 6.46E-2
- @ 30% Passing : 1.07E-2
- @ 10% Passing : 3.39E-4

Coefficient of Curvature : 5.26E 0

Coefficient of Uniformity : 1.91E 2

Soil Classification : BROWN SANDY LEAN CLAY

Symbol : CL*

Frost Classification : F4*

Data Entry By: CLM

File #: 662

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project : SEQUOIA ANALYTICAL ID : SQA.1-4388 Test Date : 12-03-1993

Data Entry By : CLM Location : 1721 @ 0.0 Data File : TEST0662

Sieve Name	Sieve Size (mm)	Cum. Weight Retained (g)	Percent of Total Weight Passing
5.000 in	125.000	0.0	100.0
3.000 in	75.000	0.0	100.0
1.500 in	37.500	0.0	100.0
3/4 in	19.000	0.0	100.0
3/8 in	9.500	0.0	100.0
No. 4	4.750	0.0	100.0
No. 8	2.360	0.0	100.0
No. 10	2.000	0.0	100.0
No. 16	1.180	0.0	100.0
No. 30	0.600	1.7	96.6
No. 50	0.300	4.3	91.4
No. 100	0.150	7.8	84.4
No. 200	0.075	13.1	73.8
		18.1	63.8

Particle Size Analysis
Hydrometer Method
HLA Laboratory Analysis Routines Ver 3.0

Project : SEQUOIA ANALYTICAL ID : SQA.1-4388 Test Date : 12-03-1993

Data Entry By : CLM Location : 1721 @ 0.0 Data File : TEST0662

Elapsed Time (min)	Hydrometer Reading	Temperature (deg C)	% of Total Passing in Solution	Particle Diameter (mm) in Suspension
1	30.5	22.0	50.2	0.04407
2	28.1	22.0	45.5	0.03170
5	24.0	22.0	37.4	0.02062
15	21.0	22.0	31.4	0.01214
30	19.0	22.0	27.5	0.00869
60	18.0	22.0	25.5	0.00618
250	15.5	23.0	21.0	0.00304
1440	14.0	20.0	16.8	0.00132

Specific Gravity Test
HLA Laboratory Analysis Routines Ver 3.0

Project : SEQUOIA ANALYTICAL ID : SQA.1-4388 Test Date : 12-03-1993

Data Entry By : CLM Data File : TEST0658

Boring Desc.	Depth (ft)	% Passing #4 Screen	Specific Gravity -#4 Portion	Specific Gravity +#4 Portion	Specific Gravity Average
1695	0.0	100.0	2.74		2.74
1697	0.0	100.0	2.74		2.74
1709	0.0	100.0	2.73		2.73
1713	0.0	100.0	2.71		2.71
1714	0.0	100.0	2.74		2.74
1717	0.0	100.0	2.79		2.79
1719	0.0	100.0	2.72		2.72
1723	0.0	100.0	2.71		2.71

Mobil Chain of Custody

SEQUOIA ANALYTICAL

Redwood City: (415) 364-9600
Concord: (510) 686-9600
Sacramento: (916) 921-9600

Consulting Firm Name: ALTON GEOSCIENCE	Site SS #: 04-H6J
Address: 30 A LINDBERGH AVE	Mobil Site Address: 1024 MAIN ST PLEASANTON
City: LIVERMORE State: CA Zip Code: 94550	Mobil Engineer: CHERINE FOUTCH
Telephone: (510) 606-9150 FAX #: (510) 606-9260	Consultant Project #: 30-0065
Project Contact: JIM LEHRMAN Sampled by: RON SCHEELE	Sequoia's Work Order Release #:

Phase of Work:
- ☐ A. Emrg. Response
- ☑ B. Site Assessment
- ☐ C. Remediation
- ☐ D. Monitoring
- ☐ E. OGC/Claims

Turnaround Time: ☑ Standard TAT (5 - 10 Working Days)
☐ Other ____________

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Description	# of Containers	Sequoia's Sample #	TPH Gas/BTEX	TPH Diesel	TRPH by I.R. EPA 418.1	~~[illegible]~~ TOC	HYDROMETER – SIEVE (ASTM D422)	MOISTURE CONTENT	BULK DENSITY	TOTAL POROSITY	AIR PERM. - FIELD WALL	Comments
1. RW-1/16.0'	11/15/93 12:00 pm	SOIL	one		X				X	X				3111694
2. RW-1/16.5'	11/15/93 12:00 pm	↓	↓								X	X	X	1695
3. RW-1/31.0'	11/15/93 12:00 pm				X									1696
4. RW-1/46.0'	11/15/93 12:00 pm								X		X	X		1697
5. RW-1/51.0'	11/15/93 12:00 pm				X									1698
6. VMW-2/19.5'	11/15/93 3:30 pm				X									1699
7. VMW-2/23.0	11/15/93 3:30 pm				X									1700
8. VMW-2/32.0'	11/15/93 [illegible]:10				X									1701
9. VMW-3/21.5	11/16/93 10:45 am				X									1702
10. VMW-3/26.0	11/16/93 10:45 am	↓	↓		X									↓ 1703

Relinquished By: [signature]	Date: 11/17/93	Time: 1830	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: [signature]	Date: [illegible]	Time:

Mobil Chain of Custody

SEQUOIA ANALYTICAL

Redwood City: (415) 364-9600
Concord: (510) 686-9600
Sacramento: (916) 921-9600

Consulting Firm Name: ALTON GEOSCIENCE	Site SS #: 04-1165	Phase of Work:
Address: 30A LINDBERGH AVE.	Mobil Site Address: 1024 MAIN ST.	☐ A. Emrg. Response
City: LIVERMORE State: CA Zip Code: 94550	Mobil Engineer: CHERINE FOUTCH	☑ B. Site Assessment
Telephone: (510) 606-9150 FAX #: (510) 606-9260	Consultant Project #: 30-0065	☐ C. Remediation
Project Contact: JIM LEHRMAN	Sampled by: RON SCHEGLE	Sequoia's Work Order Release #: ☐ D. Monitoring ☐ E. OGC/Claims

Turnaround Time: ☐ Standard TAT (5 - 10 Working Days)
☐ Other _____

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Description	# of Containers	Sequoia's Sample #	TPH Gas/BTEX	TPH Diesel	TRPH by I.R. EPA 418.1	Hydrometer TOC	Hydrometer Sieve (ASTM D422) Moisture Content	Bulk Density	Total Porosity MR Permeameter	Comments
1. VMW-3/36.0'	11/16/93 10:45 am	SOIL	ONE		X							3111704
2. VMW-4/11.5'	11/16/93 2:00 pm				X							1705
3. VMW-4/23.0'	11/16/93 2:00 pm				X						X	1706
4. VMW-4/36.5'	11/16/93 2:00 pm				X							1707
5. MW-10/14.0'	11/17/93 8:30am				X							1708
6. MW-10/18.5'	11/17/93 8:30am									X	X X	1709
7. MW-10/23.0'	11/17/93 8:30 am						X		X			1710
8. MW-10/36.5'	11/17/93 8:30am				X							1711
9. MW-10/41.0'	11/17/93 8:30 am						X	X				1712
MW-10/42.0'	11/17/93 8:30am											
10. MW-11/11.5'	11/18/93 3:30pm									X	X	1713
										X	X X	1714

Relinquished By: Ron Schegle	Date: 11/19/93	Time: 1830	Received By:	Date: Time:
Relinquished By:	Date:	Time:	Received By:	Date: Time:
Relinquished By:	Date:	Time:	Received By:	Date: 11/19/93 Time: 1530

Mobil Chain of Custody

SEQUOIA ANALYTICAL

Redwood City: (415) 364-9600
Concord: (510) 686-9600
Sacramento: (916) 921-9600

Consulting Firm Name: ALTON GEOSCIENCE		Site SS #: 04-H6J	**Phase of Work:**
Address: 30A LINDBERGH AVE.		Mobil Site Address: 1024 MAIN STREET	☐ A. Emrg. Response
City: LIVERMORE State: CA	Zip Code: 94550	Mobil Engineer: CHERINE FOUTCH	☑ B. Site Assessment
Telephone: (510) 606-9150	FAX #: (510) 606-9260	Consultant Project #: 30-0065	☐ C. Remediation
Project Contact: JIM LEHRMAN	Sampled by: RON SCHEELE	Sequoia's Work Order Release #:	☐ D. Monitoring
			☐ E. OGC/Claims

Turnaround Time: ☑ Standard TAT (5 - 10 Working Days)
☐ Other ___________

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Description	# of Containers	Sequoia's Sample #	TPH Gas/BTEX	TPH Diesel	TRPH by I.R. EPA 418.1	~~[printed heading struck out]~~ TOC	HYROMETER - SIEVE (ASTM D422)	MOISTURE CONTENT	BULK DENSITY	TOTAL POROSITY	AIR PERM: FIXED [illegible]	Comments
1. MW-11/16.5'	11/18/93 3:30pm	SOIL	One		X			X		X				3111715
2. MW-11/26.5'	11/18/93 3:30pm	↓	↓		X									1716
3. MW-11/43.5'	11/18/93 3:30pm										X	X		1717
4. MW-11/45.5'	11/18/93 3:30pm				X									1718
5. MW-12/11.0'	11/18/93 8:00am										X	X	X	1719
6. MW-12/14.0'	11/18/93 8:00am				X			X		X				1720
7. MW-12/32.0'	11/18/93 8:00am				X				X					1721
8. MW-12/41.0'	11/18/93 8:00am				X									1722
9. MW-12/51.5'	11/18/93 8:00am	↓	↓							[scribbled out]	X	X		↓ 1723
10.														

Relinquished By: [signature]	Date: 11/19/93	Time: 1830	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: [signature]	Date: 11/19/93	Time: 1830

Method of Shipment

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience
30-A Lindbergh Ave.
Livermore, CA 94550
Attention: Jim L.

Client Project ID: Mobil 04-H6J / 30-0065
Sample Matrix: Water
Analysis Method: EPA 5030/8015/8020
First Sample #: 311-2614

Sampled: Nov 30, 1993
Received: Nov 30, 1993
Reported: Dec 13, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 311-2614 MW 10	Sample I.D. 311-2615 MW 11	Sample I.D. 311-2616 MW 12	Sample I.D. 311-2617 MW 1	Sample I.D. 311-2618 MW 4	Sample I.D. 311-2619 MW 6
Purgeable Hydrocarbons	50	N.D.	N.D.	55	450	1,400	86
Benzene	0.5	N.D.	N.D.	1.8	68	140	9.1
Toluene	0.5	N.D.	N.D.	4.3	34	83	N.D.
Ethyl Benzene	0.5	N.D.	N.D.	2.5	N.D.	54	N.D.
Total Xylenes	0.5	N.D.	1.6	11	48	110	N.D.
Chromatogram Pattern:		--	--	Gasoline	Gasoline	Gasoline	Discrete Peaks

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	5.0	4.0	1.0
Date Analyzed:	12/9/93	12/10/93	12/9/93	12/9/93	12/9/93	12/10/93
Instrument Identification:	HP-5	HP-2	HP-5	HP-5	HP-5	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	96	97	92	101	91	99

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience
30-A Lindbergh Ave.
Livermore, CA 94550
Attention: Jim L.

Client Project ID: Mobil 04-H6J / 30-0065
Sample Matrix: Water
Analysis Method: EPA 5030/8015/8020
First Sample #: 311-2620

Sampled: Nov 30, 1993
Received: Nov 30, 1993
Reported: Dec 13, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 311-2620 MW 9
Purgeable Hydrocarbons	50	2,800
Benzene	0.5	610
Toluene	0.5	28
Ethyl Benzene	0.5	220
Total Xylenes	0.5	65
Chromatogram Pattern:		Gasoline

Quality Control Data

Report Limit Multiplication Factor:	20
Date Analyzed:	12/9/93
Instrument Identification:	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	95

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience
30-A Lindbergh Ave.
Livermore, CA 94550
Attention: Jim L.

Client Project ID: Mobil 04-H6J / 30-0065
Matrix: Liquid

QC Sample Group: 3112614-20

Reported: Dec 13, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J.F.	J.F.	J.F.	J.F.
MS/MSD Batch#:	3120142	3120142	3120142	3120142
Date Prepared:	12/9/93	12/9/93	12/9/93	12/9/93
Date Analyzed:	12/9/93	12/9/93	12/9/93	12/9/93
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	118	109	102	102
Matrix Spike Duplicate % Recovery:	130	114	102	100
Relative % Difference:	9.7	4.5	1.9	0.0
LCS Batch#:	3LCS120993	3LCS120993	3LCS120993	3LCS120993
Date Prepared:	12/9/93	12/9/93	12/9/93	12/9/93
Date Analyzed:	12/9/93	12/9/93	12/9/93	12/9/93
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	1113	112	108	107
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

Mobil Chain of Custody

SEQUOIA ANALYTICAL

Redwood City: (415) 364-9600
Concord: (510) 686-9600
Sacramento: (916) 921-9600

Consulting Firm Name: Alton Geoscience		Site SS #: Mobil 04 H6J	Phase of Work:
Address: 30 A Lindberg Ave		Mobil Site Address: 1024 Main St	☐ A. Emrg. Response
City: Pleasanton	State: CA Zip Code: 94550	Mobil Engineer: S. F.	☐ B. Site Assessment
Telephone: 606-9150	FAX #:	Consultant Project #: 30-0065	☐ C. Remediation
Project Contact: Jim L.	Sampled by: Jim Summers	Sequoia's Work Order Release #:	☑ D. Monitoring
			☐ E. OGC/Claims

Turnaround Time: ☐ Standard TAT (5 - 10 Working Days)
☐ Other ____________

Analyses Requested

	Client Sample I.D.	Date/Time Sampled	Matrix Description	# of Containers	Sequoia's Sample #	TPH Gas/BTEX	TPH Diesel	TRPH by I.R. EPA 418.1	Oil & Grease EPA 413.2				Comments
1.	MW10	11-30	H2O	2		X							3112614 A-L
2.	MW11	"	"	2		X							615 ↓
3.	MW12	"	"	1		X							616 -
4.	MW1	"	"	2		X							617 A-L
5.	MW4	"	"	2		X							618
6.	MW6	"	"	2		X							619
7.	MW9	"	"	2		X							620
8.													
9.													
10.													

Relinquished By: Jim S.	Date: 11-30-93	Time: 1500	Received By: [signature]	Date: 11/30/93	Time: 1500
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Method of Shipment ____________

APPENDIX C

SURVEY DATA

RON ARCHER
CIVIL ENGINEER, INC.

CONSULTING • PLANNING • DESIGN • SURVEYING

4133 Mohr Ave., Suite E • Pleasanton, CA 94566
(510) 462-9372

OCTOBER 24,1990 JOB NO. 1739
* REVISED: FEBRUARY 3, 1992
* REVISED: NOVEMBER 22, 1993

ELEVATIONS OF EXISTING MONITOR WELLS AT THE OLD MOBIL STATION LOCATED AT THE CORNER OF STANLEY BLVD. AND SANTA RITA ROAD, PLEASANTON CALIFORNIA.

FOR: ALTON GEOSCIENCE
PROJECT NO.30-065

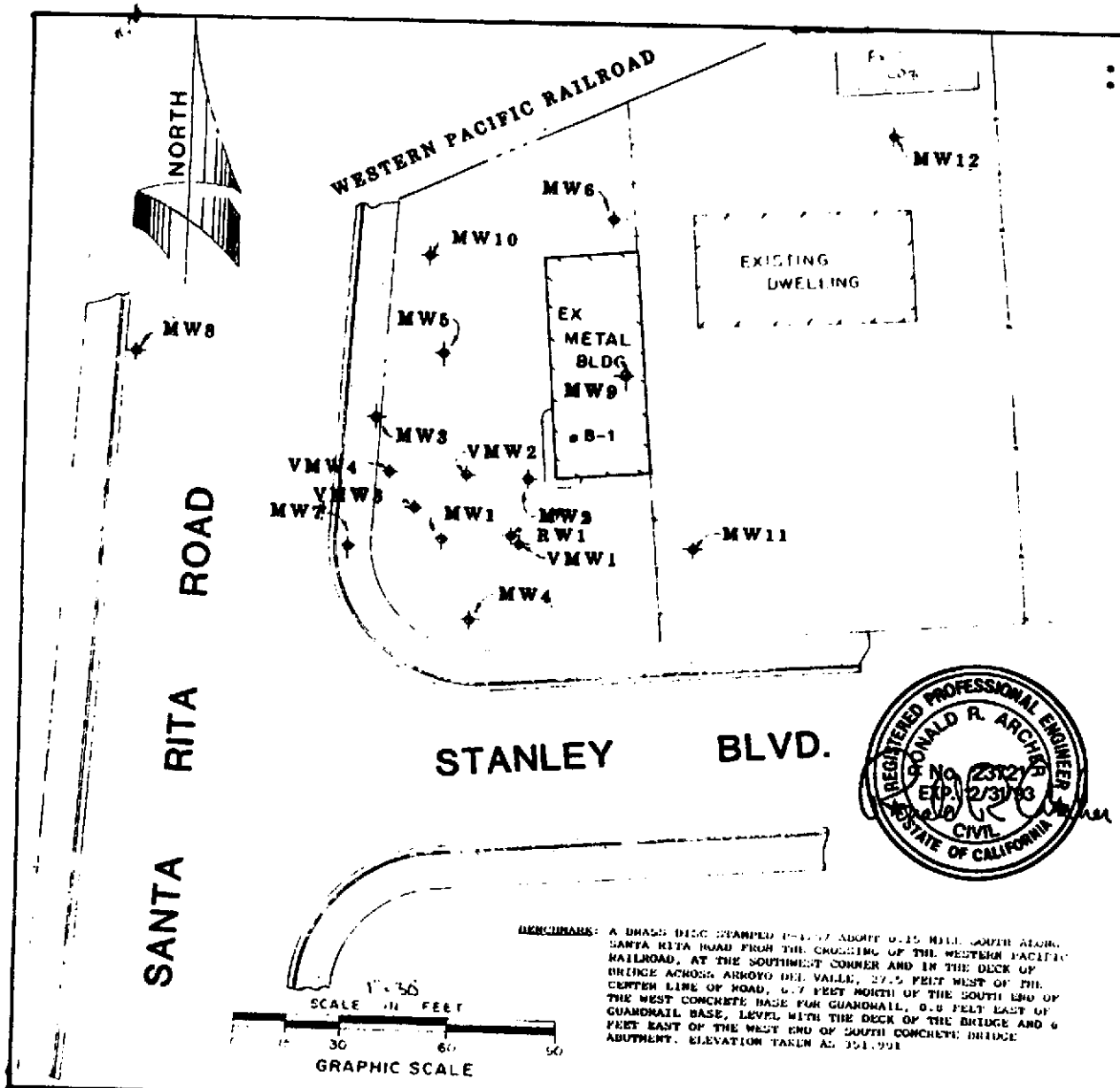
BENCHMARK: A BRASS DISC STAMPED P-1257 ABOUT 0.15 MILE SOUTH ALONG SANTA RITA ROAD FROM THE CROSSING OF THE WESTERN PACIFIC RAILROAD, AT THE SOUTHWEST CORNER AND IN THE DECK OF BRIDGE ACROSS ARROYO DEL VALLE, 27.5 FEET WEST OF THE CENTER LINE OF ROAD, 6.7 FEET NORTH OF THE SOUTH END OF THE WEST CONCRETE BASE FOR GUARDRAIL, 0.8 FEET EAST OF GUARDRAIL BASE, LEVEL WITH THE DECK OF THE BRIDGE AND 6 FEET EAST OF THE WEST END OF SOUTH CONCRETE BRIDGE ABUTMENT. ELEVATION TAKEN AS 351.991

MONITOR WELL DATA TABLE

WELL NO.	ELEVATION	DESCRIPTION
MW1	348.03	TOP OF CASING
	348.49	TOP OF BOX
MW2	348.45	TOP OF CASING
	348.72	TOP OF BOX
MW3	347.97	TOP OF CASING
	348.27	TOP OF BOX
MW4	348.07	TOP OF CASING
	348.46	TOP OF BOX
MW5	347.97	TOP OF CASING
	348.37	TOP OF BOX
MW6	348.23	TOP OF CASING
	348.61	TOP OF BOX
MW7	347.90	TOP OF CASING
	348.40	TOP OF BOX

MONITOR WELL DATA TABLE

WELL NO.	ELEVATION	DESCRIPTION
MW8	348.90	TOP OF CASING
	349.25	TOP OF BOX
MW9	348.53	TOP OF CASING
	349.06	TOP OF BOX
MW10	347.95	TOP OF CASING
	348.12	TOP OF BOX
MW11	347.56	TOP OF CASING
	347.97	TOP OF BOX
MW12	347.15	TOP OF CASING
	347.53	TOP OF BOX
RW1	347.89	TOP OF CASING
	348.53	TOP OF BOX
VMW1	348.05	TOP OF CASING
	348.58	TOP OF BOX
VMW2	347.90	TOP OF CASING
	348.48	TOP OF BOX
VMW3	348.10	TOP OF CASING
	348.48	TOP OF BOX
VMW4	347.95	TOP OF CASING
	348.32	TOP OF BOX



BENCHMARK: A BRASS DISC STAMPED [illegible] ABOUT 0.15 MILE SOUTH ALONG SANTA RITA ROAD FROM THE CROSSING OF THE WESTERN PACIFIC RAILROAD, AT THE SOUTHWEST CORNER AND IN THE DECK OF BRIDGE ACROSS ARROYO DEL VALLE, 27.5 FEET WEST OF THE CENTER LINE OF ROAD, 6.7 FEET NORTH OF THE SOUTH END OF THE WEST CONCRETE BASE FOR GUARDRAIL, 0.8 FEET EAST OF GUARDRAIL BASE, LEVEL WITH THE DECK OF THE BRIDGE AND 6 FEET EAST OF THE WEST END OF SOUTH CONCRETE BRIDGE ABUTMENT. ELEVATION TAKEN AS 351.991

REGISTERED PROFESSIONAL ENGINEER
RONALD R. ARCHER
No. 23121
Exp. 12/31/93
CIVIL
STATE OF CALIFORNIA

OCTOBER 24,1990
* REVISED: FEBRUARY 3, 1992
* REVISED: NOVEMBER 22, 1993

JOB NO. 1730

PLAT SHOWING EXISTING MONITOR WELLS AT THE OLD MOBIL STATION LOCATED AT THE CORNER OF STANLEY BLVD. AND SANTA RITA ROAD, PLEASANTON CALIFORNIA.

FOR: ALTON GEOSCIENCE
PROJECT NO.30-065

MONITOR WELL DATA TABLE

WELL NO.	ELEVATION	DESCRIPTION
MW1	348.83	TOP OF CASING
	348.48	TOP OF BOX
MW2	348.45	TOP OF CASING
	348.78	TOP OF BOX
MW3	347.97	TOP OF CASING
	348.37	TOP OF BOX
MW4	348.07	TOP OF CASING
	348.46	TOP OF BOX
MW5	347.97	TOP OF CASING
	348.37	TOP OF BOX
MW6	348.23	TOP OF CASING
	348.63	TOP OF BOX
MW7	347.90	TOP OF CASING
	348.40	TOP OF BOX
MW8	348.80	TOP OF CASING
	349.25	TOP OF BOX
MW9	348.33	TOP OF CASING
	348.86	TOP OF BOX
MW10	347.86	TOP OF CASING
	348.32	TOP OF BOX
MW11	347.86	TOP OF CASING
	347.97	TOP OF BOX
MW12	347.13	TOP OF CASING
	347.53	TOP OF BOX
RW1	347.80	TOP OF CASING
	348.53	TOP OF BOX
VMW1	348.86	TOP OF CASING
	348.58	TOP OF BOX
VMW2	347.80	TOP OF CASING
	348.48	TOP OF BOX
VMW3	348.10	TOP OF CASING
	348.48	TOP OF BOX
VMW4	347.85	TOP OF CASING
	348.32	TOP OF BOX

RON ARCHER
CIVIL ENGINEER, INC.
CONSULTING · PLANNING · DESIGN · SURVEYING

January 28, 1994

Mr. Craig Mayfield
Alameda County Flood Control and WCD
Zone 7
5997 Parkside Drive
Pleasanton, California 94588

ATTN: MR. CRAIG MAYFIELD

SITE: FORMER MOBIL STATION 04-H6J
1024 MAIN STREET
PLEASANTON, CALIFORNIA

RE: SUPPLEMENTARY SITE ASSESSMENT REPORT

Dear Mr. Mayfield:

Alton Geoscience submits this supplementary site assessment report for former Mobil Station 04-H6J, located at 1024 Main Street in Pleasanton, California. This work was performed in accordance with the Alton Geoscience work plan dated September 8, 1993.

Please call us at (510) 606-9150, if you have questions regarding this project.

Sincerely,

ALTON GEOSCIENCE

Ron A. Scheele
Staff Geologist

James A. Lehrman
Associate

enclosure

cc: Ms. Cherine Foutch, Mobil Oil Corporation
Mr. Lester Feldman, RWQCB

M:\...\04h6jr1.ssa

January 28, 1994

Mobil Oil Corporation
2063 Main Street, # 501
Oakley, California 94561

ATTN: MS. CHERINE FOUTCH

SITE: FORMER MOBIL STATION 04-H6J
1024 MAIN STREET
PLEASANTON, CALIFORNIA

RE: SUPPLEMENTARY SITE ASSESSMENT REPORT

Dear Ms. Foutch:

Alton Geoscience submits this supplementary site assessment report for former Mobil Station 04-H6J, located at 1024 Main Street in Pleasanton, California. This work was performed in accordance with the Alton Geoscience work plan dated September 8, 1993.

Please call us at (510) 606-9150, if you have questions regarding this project.

Sincerely,

ALTON GEOSCIENCE

Ron A. Scheele
Staff Geologist

James A. Lehrman
Associate

enclosure

cc: Mr. Lester Feldman, CRWQCB, San Francisco Bay Region
Mr. Craig Mayfield, Alameda County

M:\...\04h6jr1.ssa

January 28, 1994

California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94566-0802

ATTN: MR. LESTER FELDMAN

SITE: FORMER MOBIL STATION 04-H6J
1024 MAIN STREET
PLEASANTON, CALIFORNIA

RE: SUPPLEMENTARY SITE ASSESSMENT REPORT

Dear Mr. Feldman:

Alton Geoscience submits this supplementary site assessment report for former Mobil Station 04-H6J, located at 1024 Main Street in Pleasanton, California. This work was performed in accordance with the Alton Geoscience work plan dated September 8, 1993.

Please call us at (510) 606-9150, if you have questions regarding this project.

Sincerely,

ALTON GEOSCIENCE

Ron A. Scheele
Staff Geologist

James A. Lehrman
Associate

enclosure

cc: Ms. Cherine Foutch, Mobil Oil Corporation
Mr. Craig Mayfield, Alameda County Flood Control & WCD

M:\...\04h6jr1.ssa