aqua science engineers inc.

December 7, 2000

REPORT
of
SENSITIVE RECEPTORS SURVEY
and
AREA WELL SURVEY
for
2021 Brush Street
Oakland, CA

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
208 West El Pintado
Danville, CA 94526
(925) 820-9391

1.0 INTRODUCTION

This report presents Aqua Science Engineers Inc. (ASE)'s sensitive receptors survey and area well survey at 2021 Brush Street, Oakland, California *(Figure 1)*. This survey was requested by the Alameda County Health Care Services Agency (ACHSCA).

2.0 SCOPE OF WORK

ASE's scope of work for this project was as follows:

1) Review all available records from the California Department of Water Resources (DWR) and the Alameda County of Public Works Agency (ACPWA) to determine the location, use and construction of any wells located within a 1,000-foot radius of the site.

2) Contact the City of Oakland and the public utility companies to locate any underground utilities within the 1,000-foot radius that could possibly act as conduits for groundwater contamination.

3) Prepare maps and tables showing the locations and construction of wells in the site vicinity.

4) Prepare maps showing the location of underground utilities in the site vicinity.

3.0 RECORD SEARCH

3.1 Department of Water Resources (DWR)

All available records at the DWR office in Sacramento and the ACPWA were reviewed for township, range, and sections within the vicinity of the site. A total of 43 Water Well Drilling Reports were on file for wells that are located within an approximate 1,000-foot radius of the site. The locations of all the wells within the 1,000-foot radius are presented on *Figure 2* and detailed in *Table One*. The DWR reports for the wells located within the 1,000-foot radius are presented in *Appendix A*.

4.0 UNDERGROUND UTILITY SEARCH

4.1 City of Oakland, Public Works Department

ASE reviewed the storm and sewer sheets at the City of Oakland Public Works Department. The locations of the storm and sewer lines within the 1,000-foot radius of the site and are presented as *Figure 3.*

4.2 Pacific Gas and Electric Company (PG&E)

ASE reviewed the natural gas and underground electric conduit maps at PG&E. The locations of the natural gas and electric conduits within the 1,000-foot radius of the site and are presented as *Figures 4 and 5* respectively.

4.3 East Bay Municipal Utility District (EBMUD)

ASE reviewed the water conduit locations at EBMUD. The locations of the water conduits within the 1,000-foot radius of the site are located on *Figure 6.*

5.0 SUMMARY OF WELLS SURROUNDING SITE

A total of twenty-two (22) wells are located within a 1,000-foot radius of the site. There were also a total of twenty-one (21) wells located immediately outside of the 1,000-foot radius. The location of all the wells identified are shown on *Figure 2,* and known details of the wells are tabulated in *Table One.* It should be noted that there were no public or domestic drinking water wells located within the 1,000-foot radius of the site. There were thirty-seven (37) wells identified as monitoring wells. Two (2) wells were identified as test wells. Four (4) wells were identified as either an extraction well or recovery well.

6.0 GROUNDWATER ELEVATION AND GRADIENT

The annual fluctuation of groundwater at the site is between 12.70 and 16.92-feet bgs, and the average depth to groundwater at the site is 15.25-feet bgs. The depth to water and groundwater elevation data are presented in *Table Two.* The groundwater flow at the site is to the northwest at an average gradient of 0.007 feet/foot. A groundwater elevation (potentiometric surface) is presented as *Figure 7.*

7.0 SUMMARY OF POTENTIAL IMPACT TO RECEPTORS WITHIN THE SITE VICINITY

The depth of the storm and sewer lines ranges between 5-10-feet below ground surface (bgs) approximately. The depth of the electric and gas lines ranges between 3-5-feet bgs. The depth of the water lines ranges between 3-7-feet bgs.

Since the annual fluctuation of groundwater in the vicinity of the site is on an average 10-feet deeper than the depth of the utility conduits, ASE believes that there is no impact potential to the conduits from the source of contamination.

ASE also believes that there are no receptors that could be potentially impacted by the source of contamination at the site. It should be noted that the are no bodies of water and there are no public or domestic drinking water wells within the 1,000-foot radius of the site.

8.0 REPORT LIMITATIONS

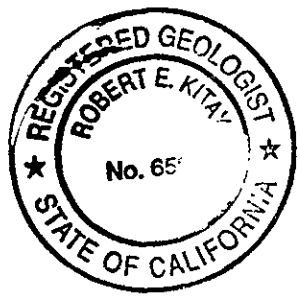
This sensitive receptors survey and area well survey presents all data available to ASE at the time this survey was completed. It is possible that other wells may exist within the study area which could not be located and that some records may exist that were not made available to ASE. This report was completed to meet the requirements outlined in the scope of work. It does not appear to be possible to obtain additional details of the well construction of the wells presented in this report without physically opening the individual wells and conducting tests on the wells.

Aqua Science Engineers appreciates the opportunity to provide environmental services on this project. Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Ian Reed
Associate Geologist



Robert E. Kitay, R.G., R.E.A.
Senior Geologist

Attachments: Figures 1 to 7
Appendix A

TABLES

TABLE ONE
AREA WELL SURVEY
1,000-FOOT RADIUS
2021 BRUSH STREET
OAKLAND, CA

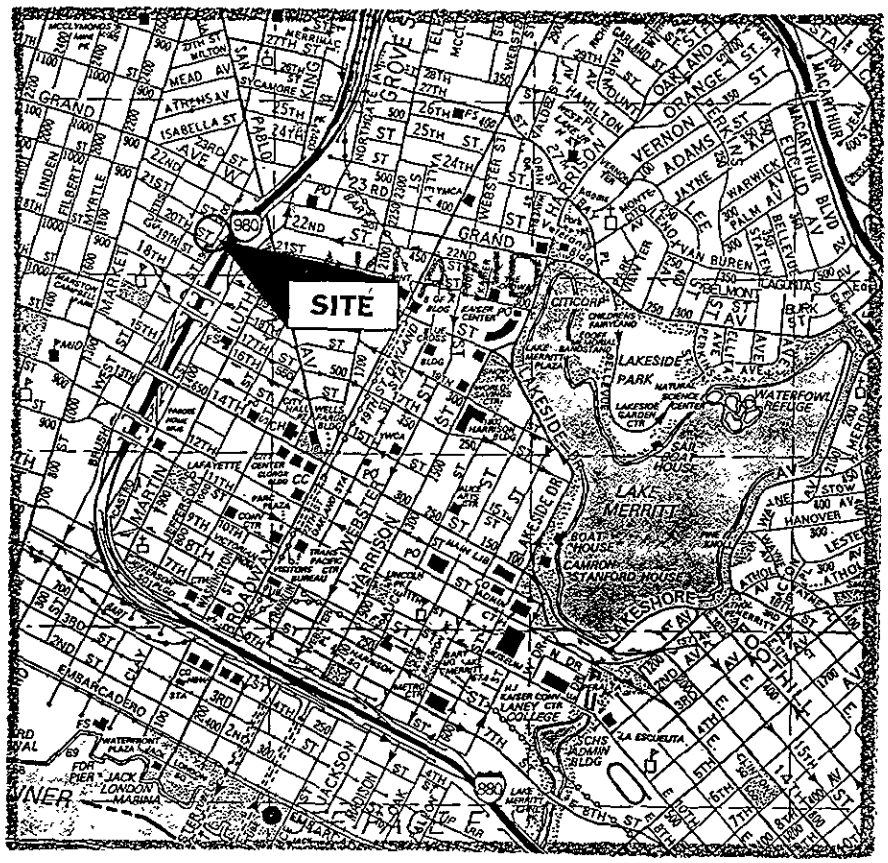
ADDRESS	WELL USE	OWNER	DATE INSTALLED	DEPTH OF WELL (FEET)	FIGURE 2 REFERENCE NUMBER
1919 Market Street	Monitoring	Scott Co.	07/01/92	22	1
1919 Market Street	Monitoring	Scott Co.	07/01/92	Unknown	1
1919 Market Street	Monitoring	Scott Co.	07/01/92	Unknown	1
1919 Market Street	Monitoring	Scott Co.	07/01/92	24	1
1919 Market Street	Monitoring	Scott Co.	07/01/92	25	1
19th Street & San Pablo	Test	City of Oakland	01/01/91	30	2
2103 San Pablo Avenue	Monitoring	Greyhound	11/01/91	31	3
2103 San Pablo Avenue	Monitoring	Greyhound	11/01/91	31	3
2103 San Pablo Avenue	Monitoring	Greyhound	11/01/91	35	3
2103 San Pablo Avenue	Monitoring	Greyhound	11/01/91	31	3
2103 San Pablo Avenue	Monitoring	Greyhound	11/01/91	32	3
611 20TH Street	Test	City of Oakland	01/01/91	30	4
769 22nd Street	Monitoring	Greg Keller	09/01/94	22	5
769 22nd Street	Monitoring	Greg Keller	09/01/94	22	5
769 22nd Street	Monitoring	Greg Keller	09/01/94	22	5
774 West Grand Avenue	Monitoring	Davis Fyne	04/01/88	40	6
850 West Grand Avenue	Monitoring	Chevron - USA	10/01/92	24	7
850 West Grand Avenue	Monitoring	Chevron - USA	10/01/84	30	7
850 West Grand Avenue	Monitoring	Chevron - USA	10/01/84	25	7
850 West Grand Avenue	Monitoring	Chevron - USA	10/01/84	24	7
850 West Grand Avenue	Monitoring	Chevron - USA	04/01/89	25	7
850 West Grand Avenue	Monitoring	Chevron - USA	04/01/89	25	7
850 West Grand Avenue	Monitoring	Chevron - USA	06/01/93	14	7
850 West Grand Avenue	Monitoring	Chevron - USA	06/01/93	14	7
850 West Grand Avenue	Monitoring	Chevron - USA	06/01/93	14	7
850 West Grand Avenue	Monitoring	Chevron - USA	08/01/95	27	7
850 West Grand Avenue	Monitoring	Chevron - USA	08/01/95	27	7
889 West Grand Avenue	Monitoring	Arco Products	05/01/91	Unknown	8
889 West Grand Avenue	Monitoring	Arco Products	03/01/92	30	8
889 West Grand Avenue	Monitoring	Arco Products	03/01/92	27	8
889 West Grand Avenue	Monitoring	Arco Products	04/01/92	30	8
889 West Grand Avenue	Monitoring	Arco Products	04/01/92	30	8
889 West Grand Avenue	Monitoring	Arco Products	04/01/92	29	8
889 West Grand Avenue	Monitoring	Arco Products	06/01/92	14	8
889 West Grand Avenue	Monitoring	Arco Products	06/01/92	14	8
889 West Grand Avenue	Monitoring	Arco Products	06/01/92	14	8
889 West Grand Avenue	Monitoring	Arco Products	06/01/92	30	8
889 West Grand Avenue	Monitoring	Arco Products	02/01/93	29	8
889 West Grand Avenue	Monitoring	Arco Products	02/01/93	20	8
889 West Grand Avenue	Extraction	Arco Products	12/01/93	15	8
889 West Grand Avenue	Extraction	Arco Products	12/01/93	15	8
889 West Grand Avenue	Recovery	Arco Products	12/01/93	27	8
889 West Grand Avenue	Recovery	Arco Products	12/01/93	24	8

TABLE TWO
Summary of Groundwater Well Survey Data
Peerless Stages Property, Oakland, California

WELL ID	Date of Measurement	Top of Casing Elevation (relative to project datum)	Depth to Water (feet)	Groundwater Elevation (project datum)
MW-1	8/26/99	19.66	16.44	3.22
	11/11/99		16.56	3.1
	2/16/00		13.02	6.64
	5/17/00		14.88	4.78
	8/23/00		15.86	3.80
MW-2	8/26/99	20.00	16.88	3.12
	11/11/99		16.92	3.08
	2/16/00		13.76	6.24
	5/17/00		15.32	4.68
	8/23/00		15.96	4.04
MW-3	8/26/99	18.91	15.94	2.97
	11/11/99		15.98	2.93
	2/16/00		12.70	6.21
	5/17/00		14.44	4.47
	8/23/00		15.33	3.58
MW-4	8/26/99	19.43	16.48	2.95
	11/11/99		16.50	2.93
	2/16/00		13.19	6.24
	5/17/00		14.95	4.48
	8/23/00		15.97	3.46

FIGURES

N



SITE LOCATION MAP

Former Peerless Stages, Inc. Property
2021 Brush Street
Oakland, California

Aqua Science Engineers | Figure 1

N

WELLS

- Extraction
- Recovery
- Monitoring
- Test

Locations are Approximate

- Site of Concern
- 1,000 Foot Radius

SCALE

0 100 200 300 400 Feet

AREA WELL SURVEY
1,000 FOOT RADIUS

2021 BRUSH STREET
OAKLAND, CA

FIGURE 2

N

Sewer Conduits

Storm Conduits

Locations are Approximate

Site of Concern

1,000 Foot Radius

SCALE

0 100 200 300 400 Feet

LOCATION OF SEWER AND STORM CONDUITS

2021 BRUSH STREET OAKLAND, CA

FIGURE 3

N

Gas Conduits

Locations are Approximate

Site of Concern

1,000 Foot Radius

SCALE

0 100 200 300 400 Feet

LOCATION OF GAS CONDUITS

2021 BRUSH STREET OAKLAND, CA

FIGURE 4

N

Electric Conduits

Locations are Approximate

Site of Concern

1,000 Foot Radius

SCALE

0 100 200 300 400 Feet

LOCATION OF ELECTRIC CONDUITS

2021 BRUSH STREET OAKLAND, CA

FIGURE 5

N

Water Conduits

Locations are Approximate

Site of Concern

1,000 Foot Radius

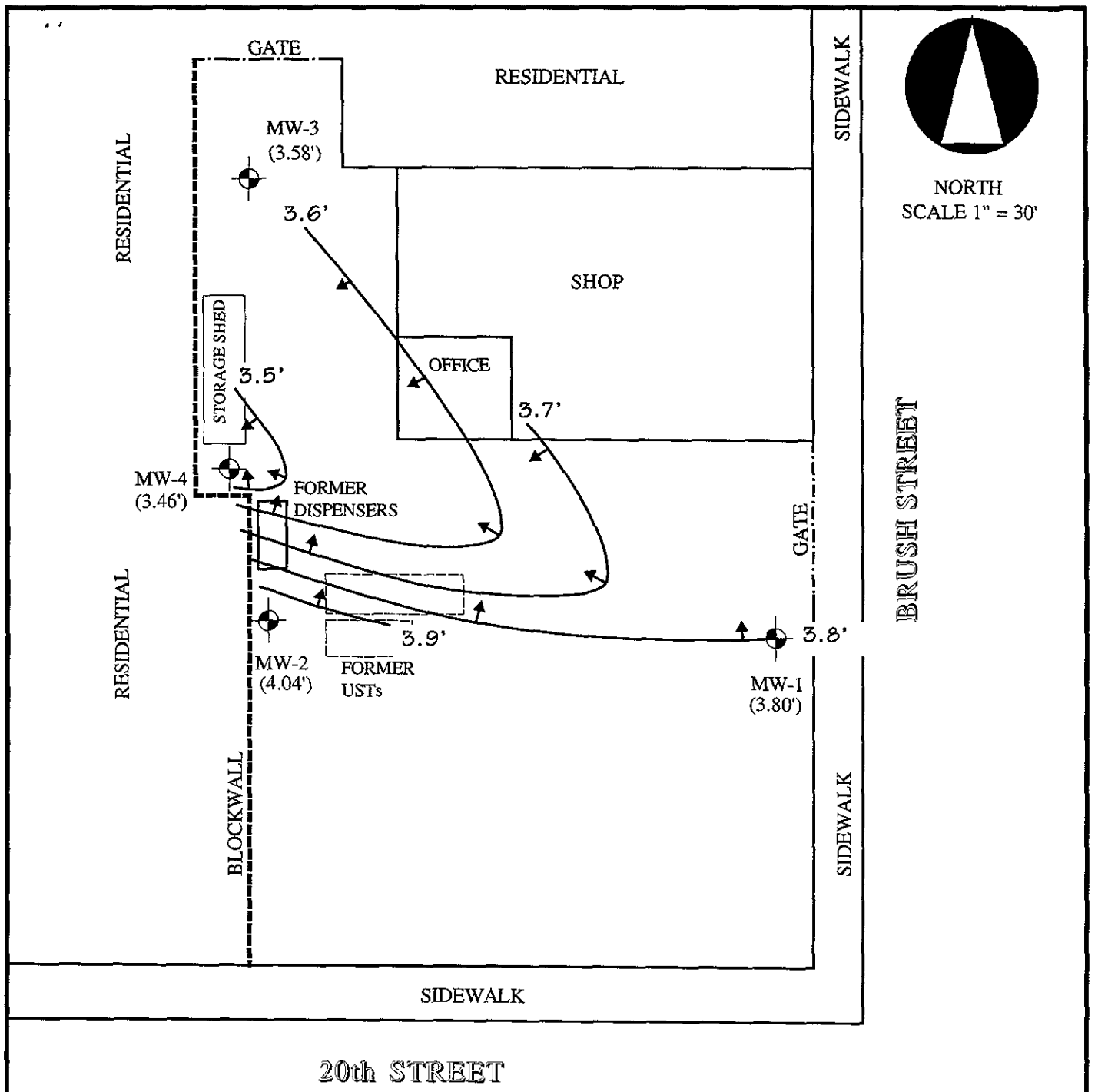
SCALE

0 100 200 300 400 Feet

LOCATION OF WATER CONDUITS

2021 BRUSH STREET OAKLAND, CA

FIGURE 6



LEGEND	
MW-4	MONITORING WELL
(3.46')	GROUNDWATER ELEVATION RELATIVE TO PROJECT DATUM
3.9'	GROUNDWATER ELEVATION CONTOUR
	FORMER UST LOCATION

GROUNDWATER ELEVATION CONTOUR MAP
8/23/00

Former Peerless Stages, Inc Property
2021 Brush Street
Oakland, California

AQUA SCIENCE ENGINEERS | Figure 7

APPENDIX A

DWR Report for Well Located Within 1000-Foot Radius of Site

c/o Patrick O'Brien
2730 Peralta St.

01-40017
15/4W 27B1

BORING LOG

PROJECT NO: CAS-590	PROJECT NAME: CASS	BORING NO: MW1
LOCATION: ~20' S of diesel pit		DATE: 5-16-90
GEOLOGIST: Cinda C. MacKinnon, R.G. (#4316)		Page 1 of 1
GROUND WATER DEPTH: >10'		DRILLER: Kvilhaug
DRILLING METHOD: Hollow stem auger, 11"		

DEPTH	SAMPLE	RECOVERY	BLOWS	DESCRIPTION	UCSC/Lithology	Graphic Symbol	WELL CONSTRUCTION
0				7" concrete/1' silt and gravel 5" asphalt and brick rubble	FILL		Christy box
				black SILTY CLAY (Bay Mud); moist; no odor but soil oily at 5-5.5'	OL		Cement seal
5	⊠		4-6-12				Blank casing
				blue-green SILTY CLAY; stiff; moist; no odor - appears "clean"			Bentonite plug
	⊠		8-12-22	becomes lighter in color and slightly mottled at 8"			
10					CL		
	⊠		5-12-30-50	light brown mottling increases at 10'; also contains minor sand and small gravel			#2 sand pack
15							slotted .01 casing
				light brown SILTY CLAY - cuttings contain coarse sand and small gravel; wet			
20				T.D. 20'			silt trap

REMARKS

⊠ = sample analyzed

2' sampler at 10'-12'

Driller: KVILHAUG

MACKINNON ENVIRONMENTAL CONSULTING
WALNUT CREEK, CA

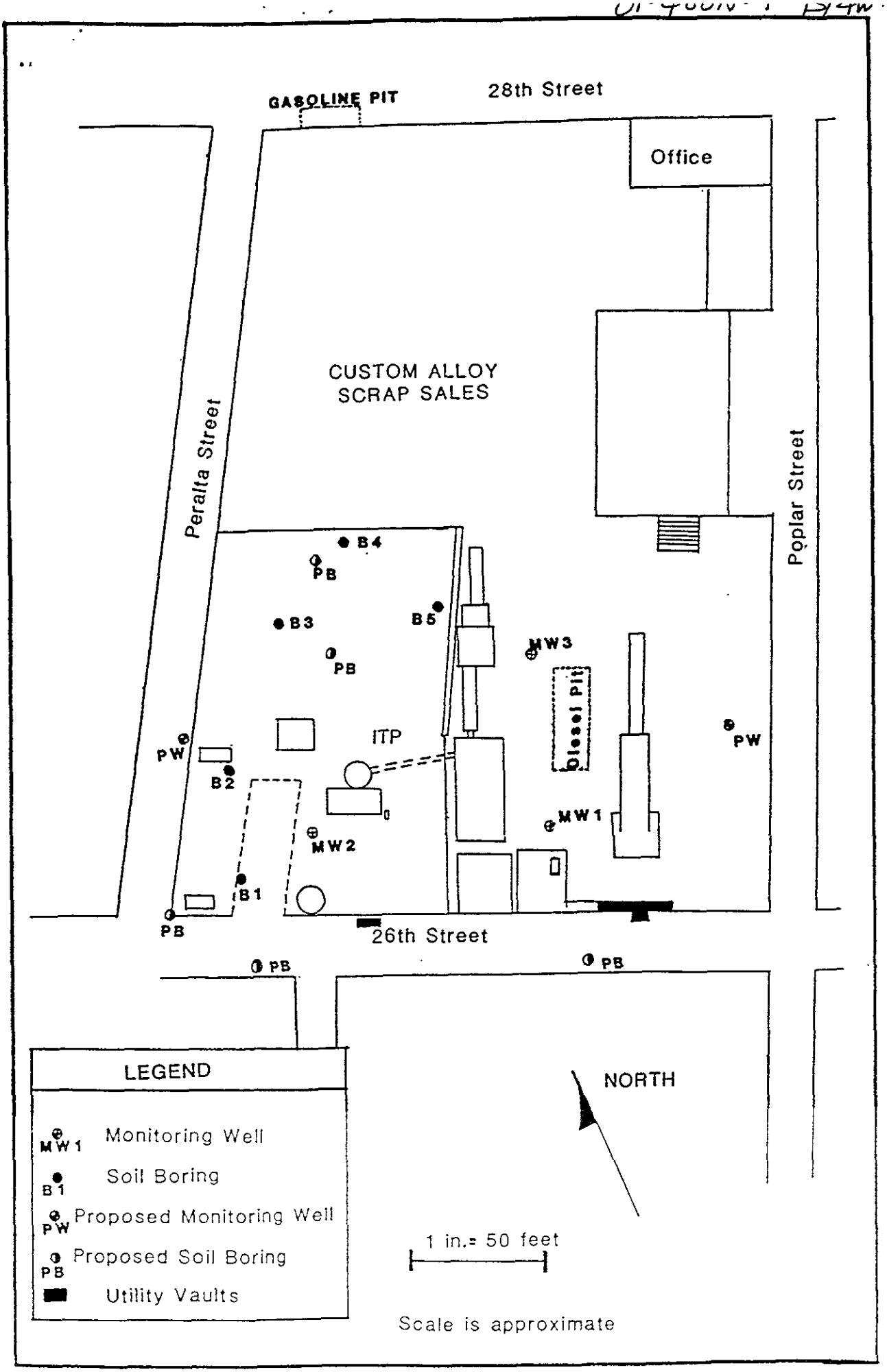


FIGURE: 2 Location of Boreholes and Monitoring Wells

1S/4W27B2.

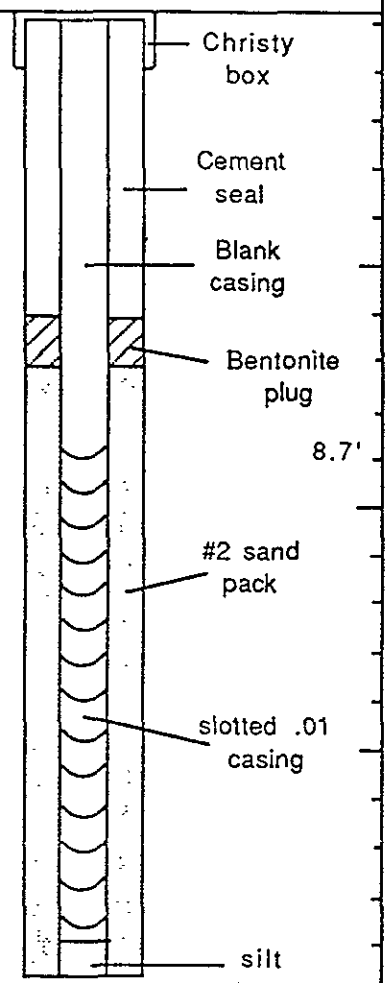
01-460 Ø

BORING LOG

PROJECT NO: CAS-590	PROJECT NAME: CASS	BORING NO: MW2
LOCATION: ITP yard near Diesel pump		DATE: 5-15-90
GEOLOGIST: Cinda C. MacKinnon, R.G. (#4316)		Page 1 of 1
GROUND WATER DEPTH: ~11'-12'		DRILLER: Kvilhaug
DRILLING METHOD: Hollow stem auger, 11"		

DEPTH	SAMPLE	RECOVERY	BLOWS	DESCRIPTION	UCSC/Lithology	Graphic Symbol
0				Gravel base 6"		
				black CLAY and SILT with rubble; slightly moist below 2'	FILL	
			3-6-10	black SILTY CLAY (Bay Mud); moist; no odor		
5	⊠				OL/CL	
				blue-green very SILTY CLAY; plastic; moist; medium stiff to soft; mottled; slight odor; discoloration below 10'; wet		
10	⊠		12-18-25			
			10-15-25	very coarse SAND with small Gravel, Silt and minor Clay; saturated; odor	SM	
15				blue-green Gravelly-Sandy CLAY; wet	CL	
			5-6-8	light red-brown SILTY CLAY with fine Sand; mottled light grey; stiff; wet; no odor		
20				T.D. 19.5'		

WELL CONSTRUCTION



REMARKS

⊠ = sample analyzed

oily product came up outside of last 10' of auger after setting sand and bentonite

MACKINNON ENVIRONMENTAL CONSULTING
WALNUT CREEK, CA

14/4W 2708

BORING LOG

01-460P

PROJECT NO: CAS-590	PROJECT NAME: CASS	BORING NO: MW3
LOCATION: ~10' NW of diesel pit		DATE: 5-16-90
GEOLOGIST: Cinda C. MacKinnon, R.G. (#4316)		Page 1 of 1
GROUND WATER DEPTH: undetermined during drilling		DRILLER: Kvilhaug
DRILLING METHOD: Hollow stem auger, 11"		

DEPTH	SAMPLE	RECOVERY	BLOWS	DESCRIPTION	UCSC/Lithology	Graphic Symbol	WELL CONSTRUCTION
0				8" concrete/12"gravel 4" silt, sand and gravel	FILL		Christy box
			6-8-15	black SILTY CLAY with minor peat; soft; moist; no odor	OL		Cement seal
5	⊠						Blank casing
							Bentonite plug
10	⊠	8"	6-11-28-40	blue-green SILTY CLAY; mottled light brown with very fine sand; moist; medium stiff	CL		#2 sand pack
				color change between 12'-13' to olive			
15				light brown SILTY CLAY - cuttings mixed with coarse sand and gravel; wet			slotted .01 casing
20				T.D. 19.7'			silt trap

REMARKS

⊠ = sample analyzed

Sand and gravel in cuttings below 16' may represent a permeable lense in clay or may be present within clay itself.

MACKINNON ENVIRONMENTAL CONSULTING
WALNUT CREEK, CA

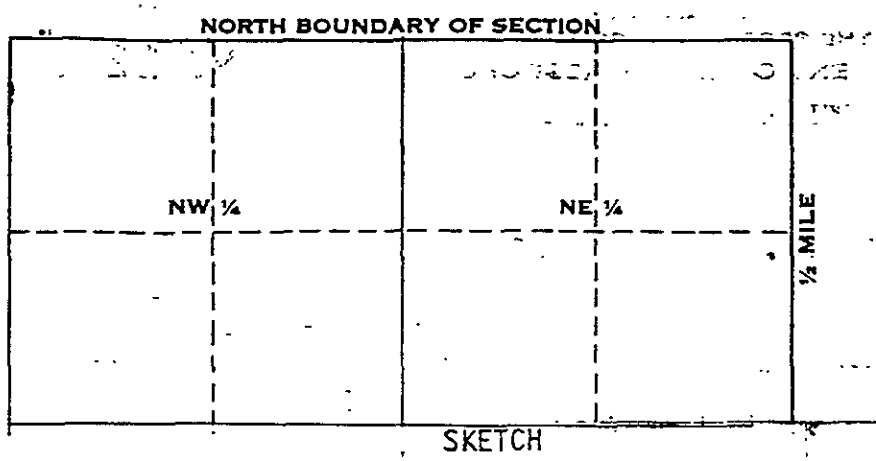
CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

120140
120170

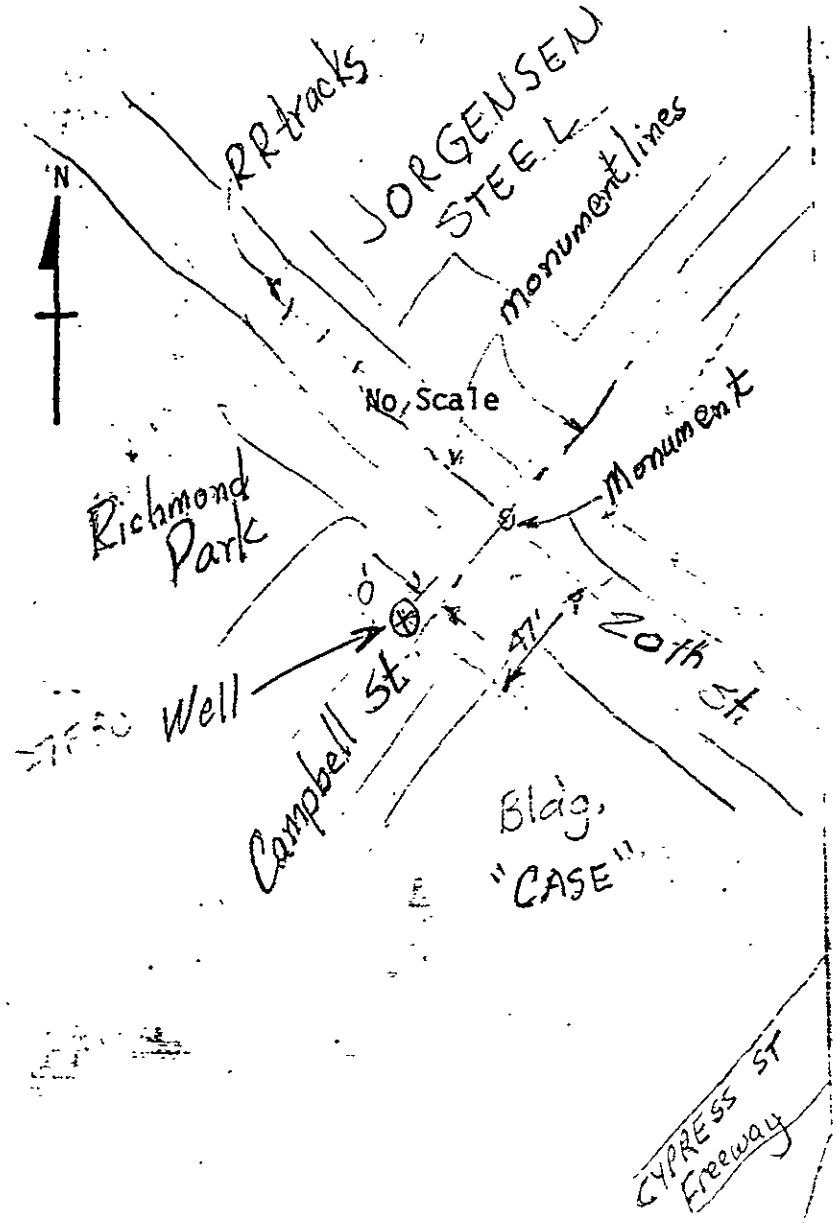
WELL LOCATION SKETCH



Township 1 N/S

Range 4 E/W

Section No. 27 F90



B. Location of well in areas not sectionized. Sketch roads, railroads, streams, or other features as necessary. Indicate distances.

Contamination Assessment Report

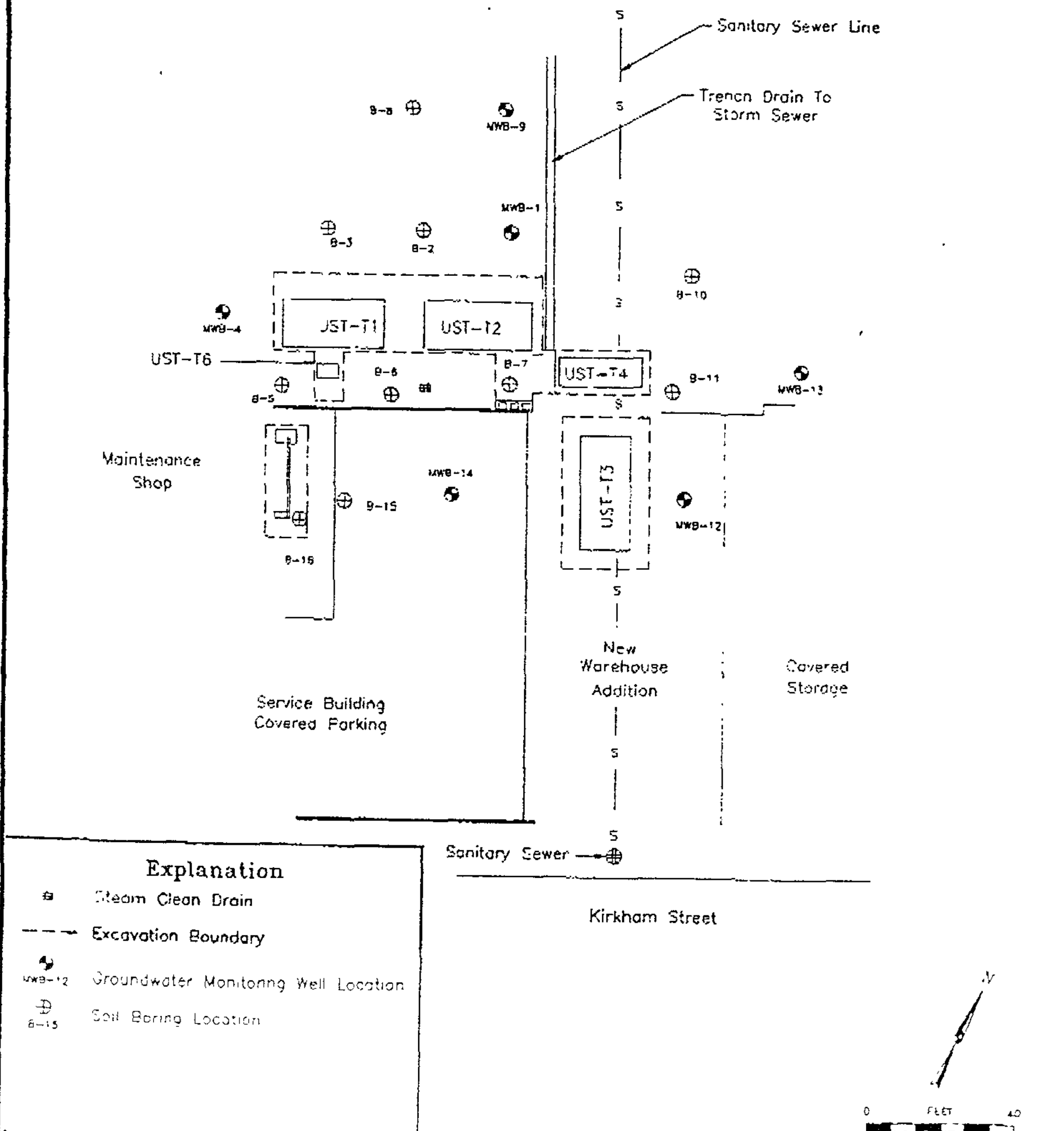
Coca-Cola - West • Oakland, California

Soil Boring and Groundwater

Monitoring Well Location Map

Figure 3

1S/4W 27B4-9



Frame, Base, SB, MW, SBKW-10C

REV 5/28/91 01-02 JTO

JOB NO:	REVIEWED BY:	DRAFTED BY:	
91058.02	R. Hall	J. Overholt	USTEC

phone ~~829~~ 602-829-6311 C57 554979

Key to Boring Log Symbols

01-476H-1

Lithologic Log

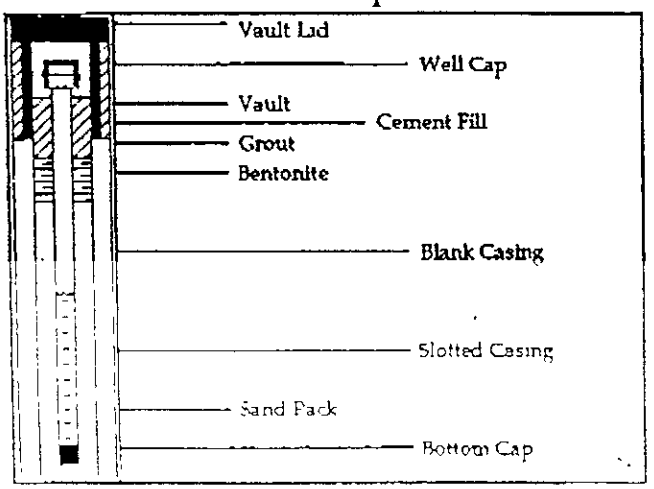
1S/4W 27B4-9

Gravel	Clayey Sand	Silty Clay (CL)	Dolomite
Sandy Gravel	Silt	Silty Clay (CH)	Granite
Clayey Gravel	Sandy Silt	Artificial Fill	Extrusive
Sand	Clayey Silt	Peat	Extrusive
Gravelly Sand	Clay	Sandstone	Intrusive
Sand w/Gravel	Gravelly Clay	Limestone	Shale
Silty Sand	Sandy Clay	Sandy Limestone	

Sample Type

	Continuous Core
	Splitspoon
	Grab

Well Components



Method of Soil Classification

(ASTM D 2487)

01-492A-F
1S/4W29B4-9

Coarse-Grained Soils

Less Than 50% Fines

Group Symbols	Description	Major Divisions
GW	well graded gravels or gravel sand mixtures, less than 5% fines	GRAVELS more than half of coarse fraction is larger than No 4 sieve size
GP	poorly graded gravels or gravel sand mixtures, less than 5% fines	
GM	clayey gravels, gravel, sand, silt mix tures, more than 12% fines	
GC	clayey gravels, gravel sand clay mix tures, more than 12% fines	
SW	well graded sands or gravelly sands, less than 5% fines	SANDS more than half of coarse fraction is smaller than No 4 sieve size
SP	poorlly graded sands or gravelly sands, less than 5% fines	
SM	silty sands, sand clay mixtures more than 12% fines	
SC	clayey sands, sand clay mixtures more than 12% fines	

NOTE:
Coarse-grained soils receive dual symbols if they contain 5 to 12% FINES (E.G. SW-SM, GP-GC)

Fine Grained Soils

More Than 50% Fines

Group Symbols	Description	Major Divisions
ML	inorganic silts, very fine sands, rock flour, silty or clayey fine sands	SILTS AND CLAYS liquid limit less than 50
CL	inorganic clays of low to medium plasticity, gravelly clays sandy clays, silty clays, lean clays	
OL	organic silty or organic silty clays of low plasticity	
MH	inorganic silty, micaceous or diatoma ceous fine sands or silts, elastic silts	SILTS AND CLAYS liquid limit more than 50
CH	inorganic clays of high plasticity, fat clays	
OH	organic clalys of medium to high plasticity	
PT	peat, muck, and other highly organic soils	HIGHLY ORGANIC SOILS

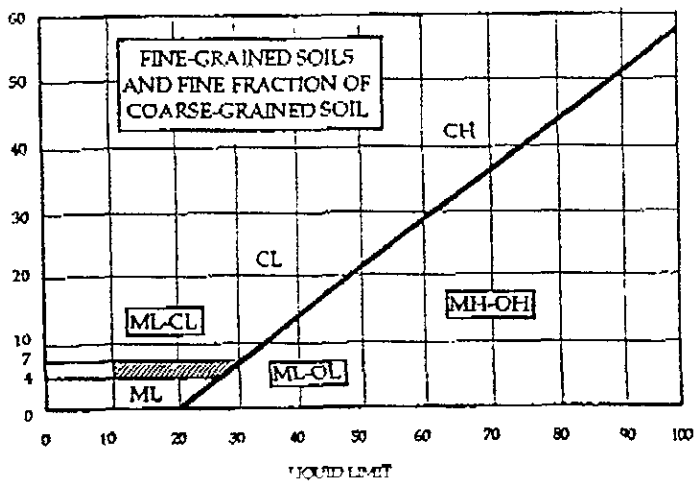
NOTE:
Fine grained soils receive dual symbols if theur limits plot in the hatched zone on the Plasticity Chart (ML-CL)

SOIL SIZES

Component	Size Range
BOULDERS	Above 12 inches
COBBLES	3 inches to 12 inches
GRAVEL	No 4 to 3 inches
Coarse	¼ inch to 3 inches
Fine	No 4 to ¼ inch
SAND	No 200 to No 4
Coarse	No 10 to No 4
Medium	No 40 to No 10
Fine	No 200 to No 40
FINES (silt or clay)	BELOW No 200

NOTE: Only sizes smaller than three inches are used to classify soils. Sizes refer to U.S. Standard Sieve Sizes.

PLASITCITY CHART



BORING NO. MWB-1

1S/4W 21B4

PROJECT:	Oakland, Ca.	PROJECT NO.:	91058.02
START DATE:	03/22/91	FINISH DATE:	03/22/91
DRILLER	West Hazmat Drilling Co.	RIG TYPE:	CME-75
METHOD:	8 Inch-HSA	M P ELEV. ft:	17.28 ft.
DATUM:	MSL	GW ELEV.:	3.28 ft.
FIELD GEOL.:	D.Didier	REVIEWED BY:	M.Roche

Depth in ft	PID	Well Summary/ Backfill	Blow Count blows/foot	Sample Type	Time	Lithologic Log	Description
							SAND (SP): dusky yellowish brown (10 YR 2/2) to olive gray (5 Y 4/1), moist, dense, odors present, fine to medium grain size
5	75		21		0935		CLAYEY SAND (SC): with silt, olive gray (5 Y 3/2) moist, medium dense, odors obvious (diesel and gas)
							color change to light brown (5 YR 5/6) noted at 7 feet
10	240		75		0955		SILTY SAND (SM): moderate yellowish brown (10 YR 5/4) moist, very dense, strong gas odors
							static groundwater measured at 11.07 feet
							initial groundwater encountered at 14 feet
15	240		32		1002		trace of clay, wet conditions, strong gasoline odors and consistency change to dense noted at 15 feet
20	82		55		1008		consistency change to very dense and slight odors noted at 20 feet
	310		50+		1013		SAND (SP): moderate yellow-brown (10 YR 5/4) wet, very dense, strong gasoline odor
25							Boring Terminated At 27 Feet
30							

NOTE: 4 Inches of Concrete and 6 Inches of Base Coarse Encountered At The Surface

BORING NO. MWB-4

15/4W 27B5

PROJECT:	Oakland, CA.	PROJECT NO.:	91058.02
START DATE:	03/22/91	FINISH DATE:	03/22/91
DRILLER	West Hazmat Drilling Co.	RIG TYPE:	CME-75
METHOD	8 Inch-HSA	M P ELEV. ft:	18.10 ft.
DATUM	MSL	GW ELEV.:	6.34 ft.
FIELD GEOL.:	D.Didier	REVIEWED BY:	M.Roche

Depth ft	PID	Well Summary/ Backfill	Blow Count blows/foot	Sample Type	Time	Lithologic Log	Description
							SAND (SP): light brown (5 YR 5/6) moist, medium dense, no odors
-5	0.0		21		1338		
-10	0.2		95		1340		consistency change to very dense noted at 10 feet
							static groundwater measured at 11.76 feet
							initial groundwater encountered at 14 feet
-15	0.0		94		1345		color change to moderate yellowish brown (10 YR 5/4) and wet conditions
							SILTY SAND (SM): light brown (5 YR 5/6), wet, very dense, no odors
-20							
-25							Boring terminated at 27 Feet
-30							

NOTE. 5 Inches Of Concrete and 6 Inches of Base Coarse Sand Encountered At The Surface

01-4702

BORING NO. MWB-9

PROJECT:	Oakland, CA.	PROJECT NO.:	91058.02
START DATE	03/23/91	FINISH DATE:	03/23/91
DRILLER	West Hazmat Drilling Co.	RIG TYPE:	CME-75
METHOD:	8 Inch-HSA	M P ELEV. ft:	17.18 ft.
DATUM:	MSL	GW ELEV.:	6.15 ft.
FIELD GEOL.:	M. Roche	REVIEWED BY:	J. O'Rourke

Depth in Feet	PID	Well Summary/ Backfill	Blow Count blows/foot	Sample Type	Time	Lithologic Log	Description
5	0.2		24		1051		CLAYEY SAND (SC): olive gray (5 Y 4/1), moist, medium dense, no odor, fine to medium grain size
							color change to light brown (5 YR 5/6) noted at 6.3 feet
10	0.2		86		1056		SAND (SP): light brown (5 YR 5/6), moist, very dense, no odor, fine to medium, grain size
							static groundwater measured at 11.03 feet
							initial groundwater encountered at 14 feet
15	0.0		66		1100		lenses of silty sand and clayey sand noted at 14 feet
							CLAYEY SAND (SC): light brown (5 YR 5/6), wet, very dense, no odor
20							
25							Boring Terminated At 27 Feet
30							

NOTE: 5 Inches Of Concrete and 7 Inches Of Base Coarse Encountered At The Surface

BORING NO. MWB-12

PROJECT:	Oakland, CA.	PROJECT NO.:	91058.02
START DATE:	03/25/91	FINISH DATE:	03/25/91
DRILLER:	West Hazmat Drilling Co.	RIG TYPE:	CME-75
METHOD:	8-10 Inch HSA	M P ELEV. *:	17.01 ft.
DATUM:	MSL	GW ELEV.:	5.98 ft.
FIELD GEOL.:	M. Roche	REVIEWED BY:	J. O'Rourke

Depth in Feet	PID	Well Summary/ Backfill	Blow Count blows/foot	Sample Type	Time	Lithologic Log	Description
							SAND (SP): light brown (5 YR 5/6), slightly moist, medium dense, no odor
5	0.1		*		942		CLAYEY SAND (SC): light brown (5 YR 5/6), slightly moist, dense, no odor
10	0.1		*		950		moisture change to very moist noted at 10 feet
							static groundwater encountered at 11.03 feet
							initial groundwater encountered at 14 feet
15	0.1		*		1002		
20							
25							Boring Terminated At 27 Feet And A Groundwater Monitoring Well Was Installed At 27 Feet
30							

NOTE: 4 Inches Concrete and 8 Inches Of Base Coarse Encountered At The Surface * Split Spoon Sample Was Pushed And No Blow Counts Were Recorded

BORING NO. MWB-13

PROJECT:	Oakland, CA.	PROJECT NO.:	31058.02
START DATE	03/25/91	FINISH DATE:	03/25/91
DRILLER	West Hazmat Drilling Co.	RIG TYPE:	CME-75
METHOD:	8 Inch HSA	M P ELEV. *:	17.07 ft.
DATUM:	MSL	GW ELEV.:	5.92 ft.
FIELD GEOL.:	M. Roche	REVIEWED BY:	J. O'Rourke

Depth in Ft.	PID	Well Summary/ Backfill	Blow Count blows/foot	Sample Type	Time	Lithologic Log	Description
0	0.1		*		1023		SAND (SP): light brown (5 YR 5/6), moist, medium dense, no odor, fine to medium size sand grains
10	0.1		*		1042		static groundwater encountered at 11.14 feet some small lenses of clayey sand noted at 12 feet
15	0.0		*		1056		initial groundwater encountered at 14 feet moisture change to wet noted a 14 feet
20							
25							Boring Terminated At 27 Feet
30							

NOTE: 4 Inches Of Concrete and 8 Inches Base Coarse Encountered At The Surface * The Split Spoon Sample Was Pushed And No Blow Counts Were Recorded

BORING NO. MWB-14

PROJECT:	Oakland, CA.	PROJECT NO.:	91058.02
START DATE:	03/25/91	FINISH DATE:	03/25/91
DRILLER:	West Hazmat Drilling Co.	RIG TYPE:	CME-75
METHOD:	8-10 Inch HSA	M P ELEV. *:	18.01 ft.
DATUM:	MSL	GW ELEV.:	6.21 ft.
FIELD GEOL.:	M. Roche	REVIEWED BY:	J. O'Rourke

Depth in	PID	Well Summary/ Backfill	Blow Count blows/foot	Sample Type	Time	Lithologic Log	Description
							SAND (SP): light brown (5 YR 5/6), moist, medium dense, no odor
-5	0.1		*		1335		
							CLAYEY SAND (SC). light brown (5 YR 5/6), very moist, dense, no odor, fine to medium grain size
-10	0.1		*		1345		
							static groundwater encountered at 11.80 feet
							initial groundwater encountered at 14 feet
-15	0.1		*		1405		
-20							
-25							Boring Terminated At 27 Feet
-30							

NOTE: 4 Inches Of Concrete And 8 Inches of Base Coarse Encountered At The Surface * The Split Spoon Sample was Pushed And No Blow Counts Were Recorded

aqua science engineers inc.

01504W01G01 ... 27B (2)
01-544T-X

November 16, 1992

RECEIVED
NOV 17 1992
ZONE 7, ACFC&WCD

Alameda County Flood Control
and Water Conservation District
5997 Parkside Drive
Pleasanton, CA 94588

ATTENTION: Mr. Craig Mayfield
Water Resources Engineer III

SUBJECT: Well/Boring Completion Logs, Permit #92454
Kantor's Furniture
2525 Cypress Street
Oakland, California

Dear Mr. Mayfield:

Enclosed is Aqua Science Engineers, Inc's. report which details monitoring well and boring construction at the subject site.

If you have any questions or comments, please feel free to give us a call at (510) 820-9391.

Respectfully submitted,

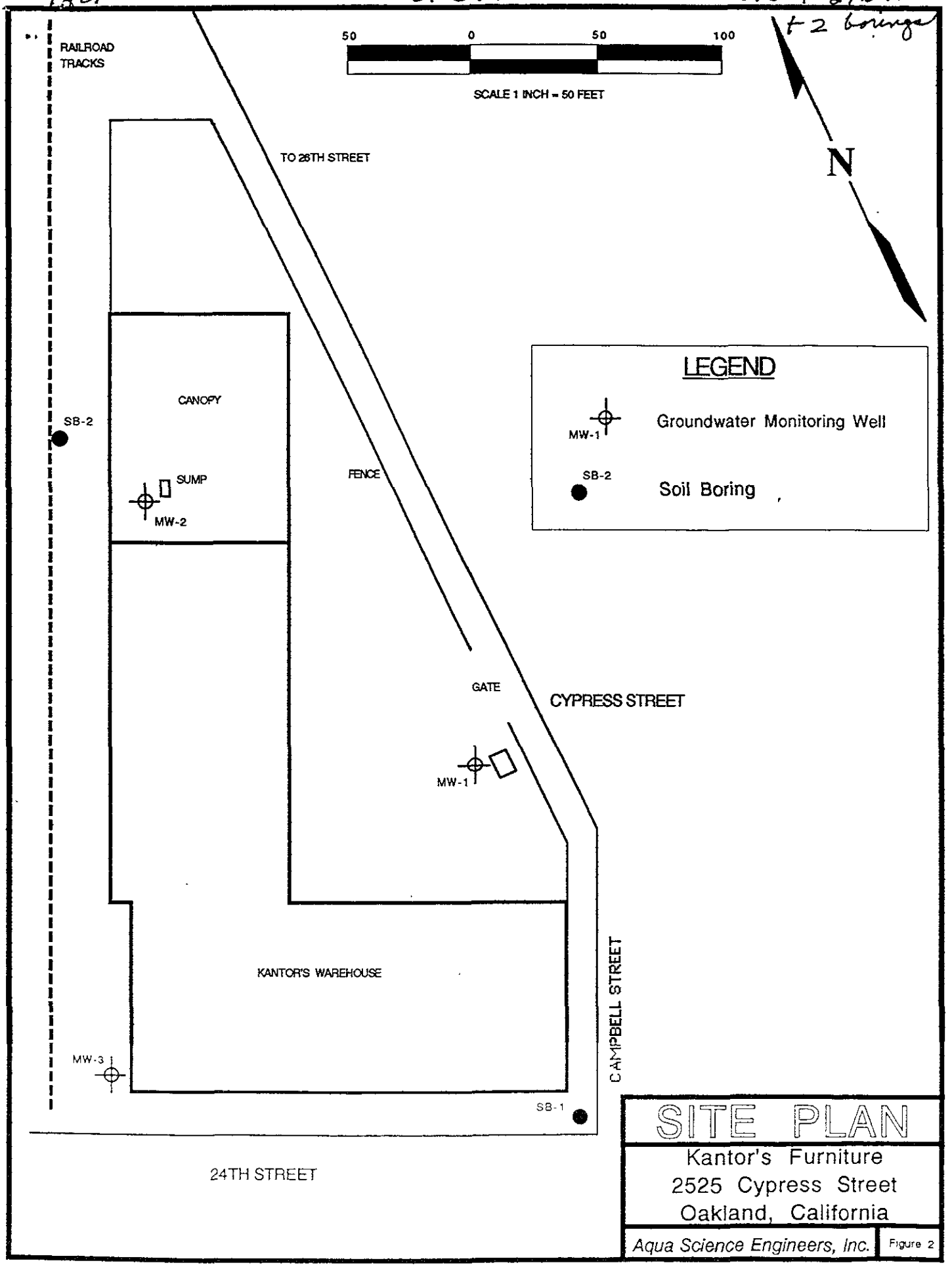
AQUA SCIENCE ENGINEERS, INC.

David Allen

David Allen
Project Manager

192 01-544T-X 01S04W27B 10-12

t 2 borings



SITE PLAN

Kantor's Furniture
2525 Cypress Street
Oakland, California

Aqua Science Engineers, Inc. | Figure 2

272 01-544T 01S04W27B10

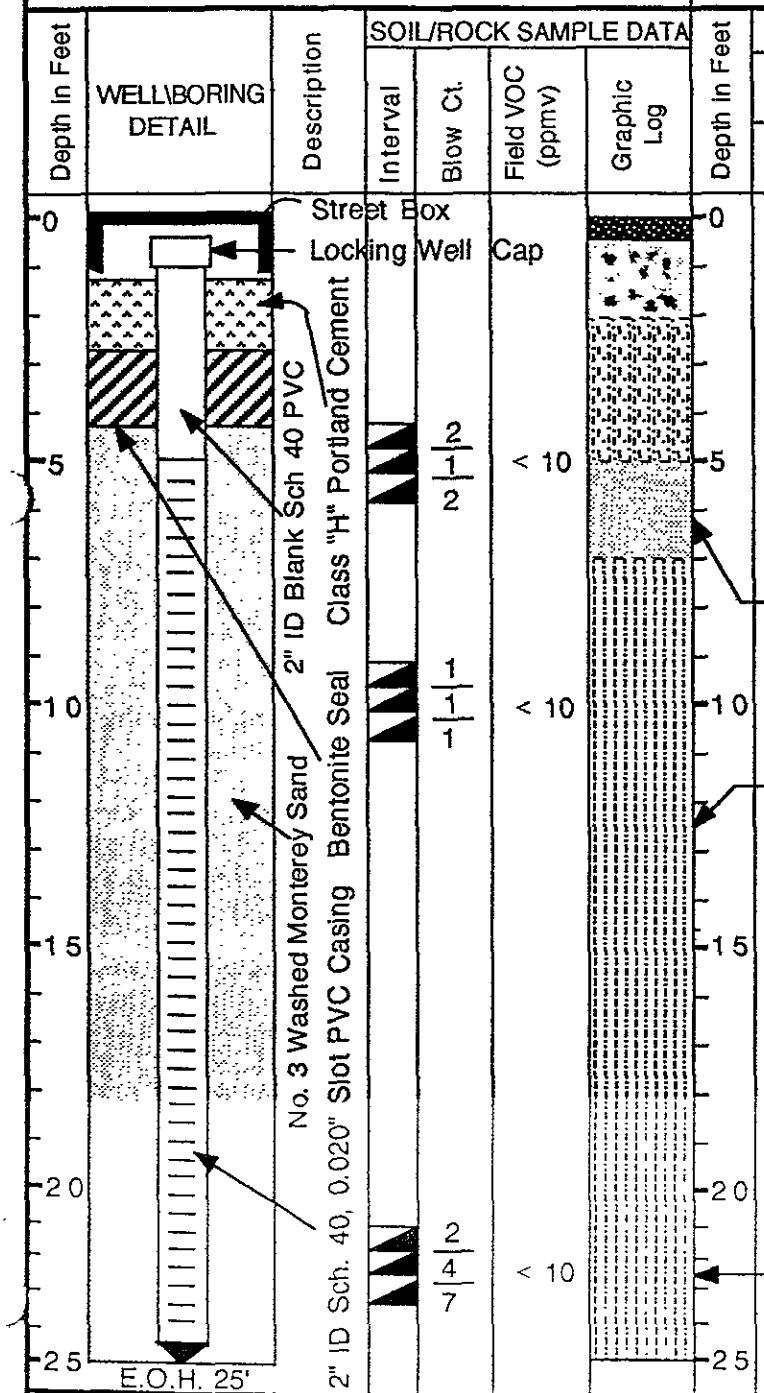
SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DETAILS

WELL NO. MW1

Project Name: Kantor Discount Furniture	Project Location: 2525 Cypress Street, Oakland	Page 1 of 1
Driller: WEST HAZMAT 1621	Type of Rig: Mobil B-61	Type and Size of Auger: 7-3/4 O.D. Hollow 3-1/4 I.D. Stem
Logged By: WCL	Date Drilled: 09/16/92	Checked By: David M. Schultz, P.E.

WATER AND WELL DATA

Depth of Water First Encountered: ≈ 12.5'	Total Depth of Well Completed: 25.0'
Static Depth of Water in Well: 13.02' Below T.O.C.	Well Screen Type and Diameter: 2" Diameter Schedule 40 PVC
Total Depth of Boring: 25'	Well Screen Slot Size: 0.020"
	Type and Size of Soil Sampler: 2" I.D., Calif. Split-Spoon



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

And (40-50%) With (40-25%) Some (25-10%) Trace (10-0%)

Approximately 5" of Asphalt

Backfill Material To ≈ 2 Feet

Sand & Clay Mixture (SW-CL), sand being C-M-F, sl. odor, from 2 to 5 feet, (old gasoline?), sl. moisture

From 5 to 7 feet = gray medium sand (SP), no odor, sl. moisture

Gray with dark gray mottling, organic clay (OL), very moist, abd. plant fragments, no odor

Saturation ≈ 12.5'

Static Water Level = 13.02'

SAME AS ABOVE, (moderate H_2S odor)

SAME AS ABOVE

Driven sample taken @ 22.5 feet for sieve analysis

ASE Form 20A

AQUA SCIENCE ENGINEERS, INC.

2-32 01-5440 01504W27B11

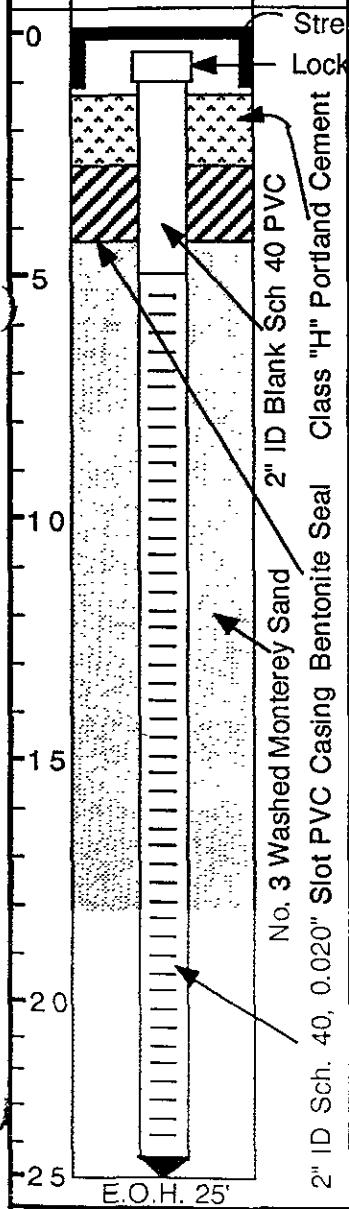
SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DETAILS

WELL NO. MW2

Project Name: Kantor Discount Furniture	Project Location: 2525 Cypress Street, Oakland	Page 1 of 1
Driller: WEST HAZMAT K-21	Type of Rig: Mobil B-61	Type and Size of Auger: 7-3/4 O.D. Hollow 3-1/4 I.D. Stem
Logged By: WCL	Date Drilled: 09/16/92	Checked By: David M. Schultz, P.E.

WATER AND WELL DATA

Depth of Water First Encountered: ≈ 12.5'	Total Depth of Well Completed: 25.0'
Static Depth of Water in Well: 13.9' Below T.O.C.	Well Screen Type and Diameter: 2" Diameter Schedule 40 PVC
Total Depth of Boring: 25'	Well Screen Slot Size: 0.020"
	Type and Size of Soil Sampler: 2" I.D., Calif. Split-Spoon



Interval	Blow Ct.	Field VOC (ppmv)	Graphic Log	Depth in Feet	DESCRIPTION OF LITHOLOGY
				0	Approximately 6" of Concrete
	4/4/2	< 10		5	Gray Medium Grained sand (SP), mod. moisture, no odor
	1/1/1	< 10		10	Gray with dark gray mottling, organic clay (OL), moist, abd. plant fragments, no odor
					Saturation ≈ 12.5'
					Static Water Level = 13.9'
				15	SAME AS ABOVE, (moderate H_2S odor)
				20	SAME AS ABOVE
				25	

SOIL/ROCK SAMPLE DATA

DESCRIPTION OF LITHOLOGY: standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

And (40-50%) With (40-25%) Some (25-10%) Trace (10-0%)

272 01-5446 01S04W27B12

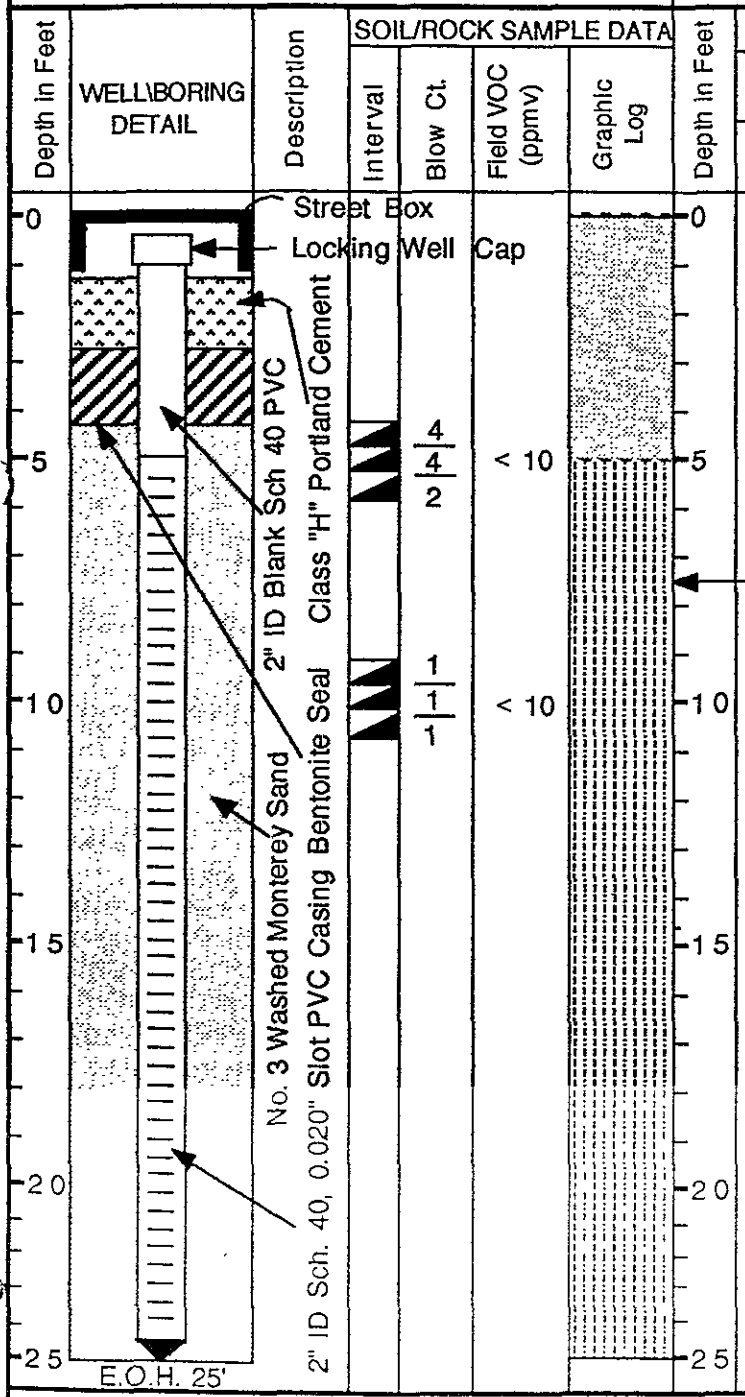
SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DETAILS

WELL NO. MW3

Project Name: Kantor Discount Furniture	Project Location: 2525 Cypress Street, Oakland	Page 1 of 1
Driller: WEST HAZMAT 1621	Type of Rig: Mobil B-61	Type and Size of Auger: 7-3/4 O.D. Hollow 3-1/4 I.D. Stem
Logged By: WCL	Date Drilled: 09/16/92	Checked By: David M. Schultz, P.E.

WATER AND WELL DATA

Depth of Water First Encountered: ≈ 7.5'	Total Depth of Well Completed: 25.0'
Static Depth of Water in Well: 10.56' Below T.O.C.	Well Screen Type and Diameter: 2" Diameter Schedule 40 PVC
Total Depth of Boring: 25'	Well Screen Slot Size: 0.020"
	Type and Size of Soil Sampler: 2" I.D., Calif. Split-Spoon



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

And (40-50%) With (40-25%) Some (25-10%) Trace (10-0%)

0 — Gray Medium Grained sand (SP), mod. moisture, no odor

5 — Gray with dark gray mottling, organic clay (OL), moist, abd. plant fragments, no odor

Saturation ≈ 7.5'

10 — SAME AS ABOVE (soil is saturated)

Static Water Level = 10.56'

15 — SAME AS ABOVE, (moderate H_2S odor)

20 — SAME AS ABOVE

25

ASE Form 20A

AQUA SCIENCE ENGINEERS, INC.

2 of 2 01-5440 0150YW27B

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DETAILS

BORING NO. SB-1

Project Name: Kantor Discount Furniture	Project Location: 2525 Cypress Street, Oakland	Page 1 of 1
Driller: WEST HAZMAT /621	Type of Rig: Mobil B-61	Type and Size of Auger: 7-3/4" O.D. / 3-1/4" I.D. Hollow Stem
Logged By: WCL	Date Drilled: 6/16/92	Checked By: David M. Schultz, P.E.

WATER AND WELL DATA

Depth of Water First Encountered: Not Reached	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 10 Feet	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2" I.D. Calif. Split Spoon

Depth in Feet	WELL\BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA: Interval	Blow Ct.	Field VOC (ppmv)	Graphic Log	Depth in Feet
0		BORING BACKFILLED W/CONCRETE					0
5				1/2/1	< 10		5
10	E.O.H 10'			1/1/1	< 10		10
15							15
20							20

DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

And (40-50%) With (40-25%) Some (25-10%) Trace (10-0%)

Top soil from 0' to 2'

Light brown medium grained sand (SP)

From 4-1/2' to 6' = Road base type of backfill material (ie. "pea" gravel, rock etc.),

Odorous liquid chemical product encountered at ≈ 5-1/2 feet. Product appears to be perched on the organic clay.

At 6 feet exists contact of road base material and the "bay" muds, consisting of gray with dark gray mottling, clays (OL), rich in organics and abd. plant matter. The clay was mod. moist with no noticeable odor..

2 of 2 OL544X 01504W27B

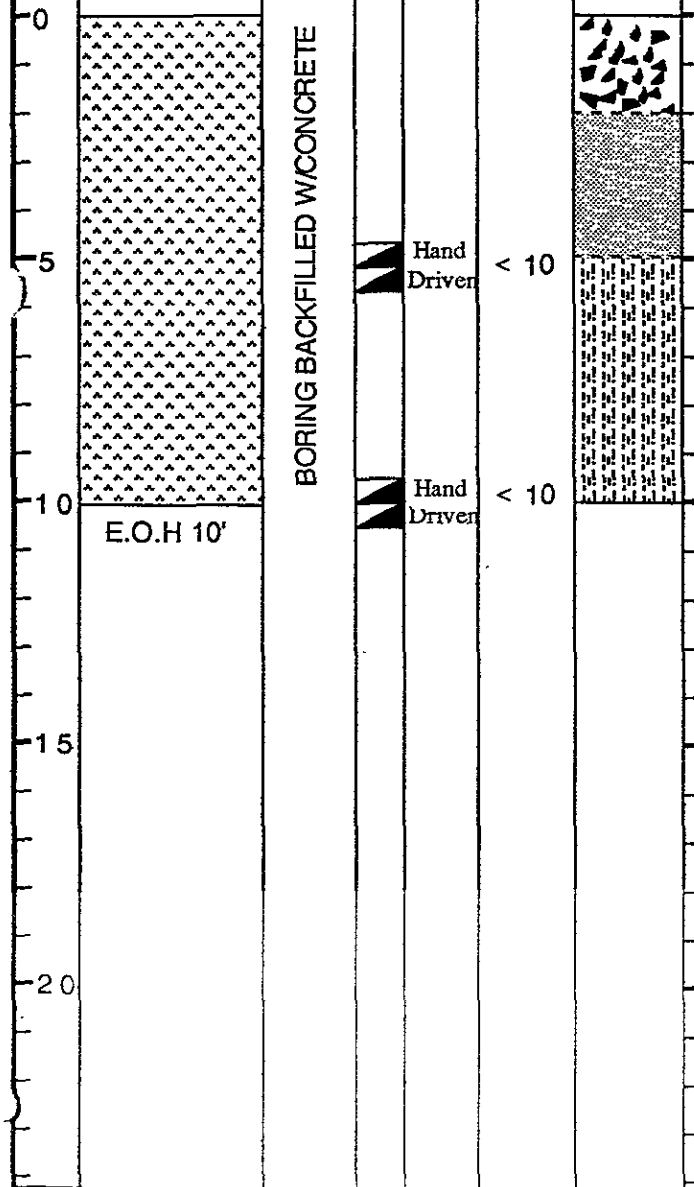
SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DETAILS

BORING NO. SB-2

Project Name: Kantor Discount Furniture	Project Location: 2525 Cypress Street, Oakland	Page 1 of 1
Driller: ASE 1558	Type of Rig: Hand Auger	Type and Size of Auger: 3-1/4 O.D.
Logged By: WCL	Date Drilled: 6/16/92	Checked By: David M. Schultz, P.E.

WATER AND WELL DATA

Depth of Water First Encountered: Not Reached	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 10 Feet	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2" I.D. Calif. Split Spoon



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

And (40-50%) With (40-25%) Some (25-10%) Trace (10-0%)

Rock base for railroad tracks from 0' to 2'

Light brown medium grained sand (SP), sl. moisture, no odor

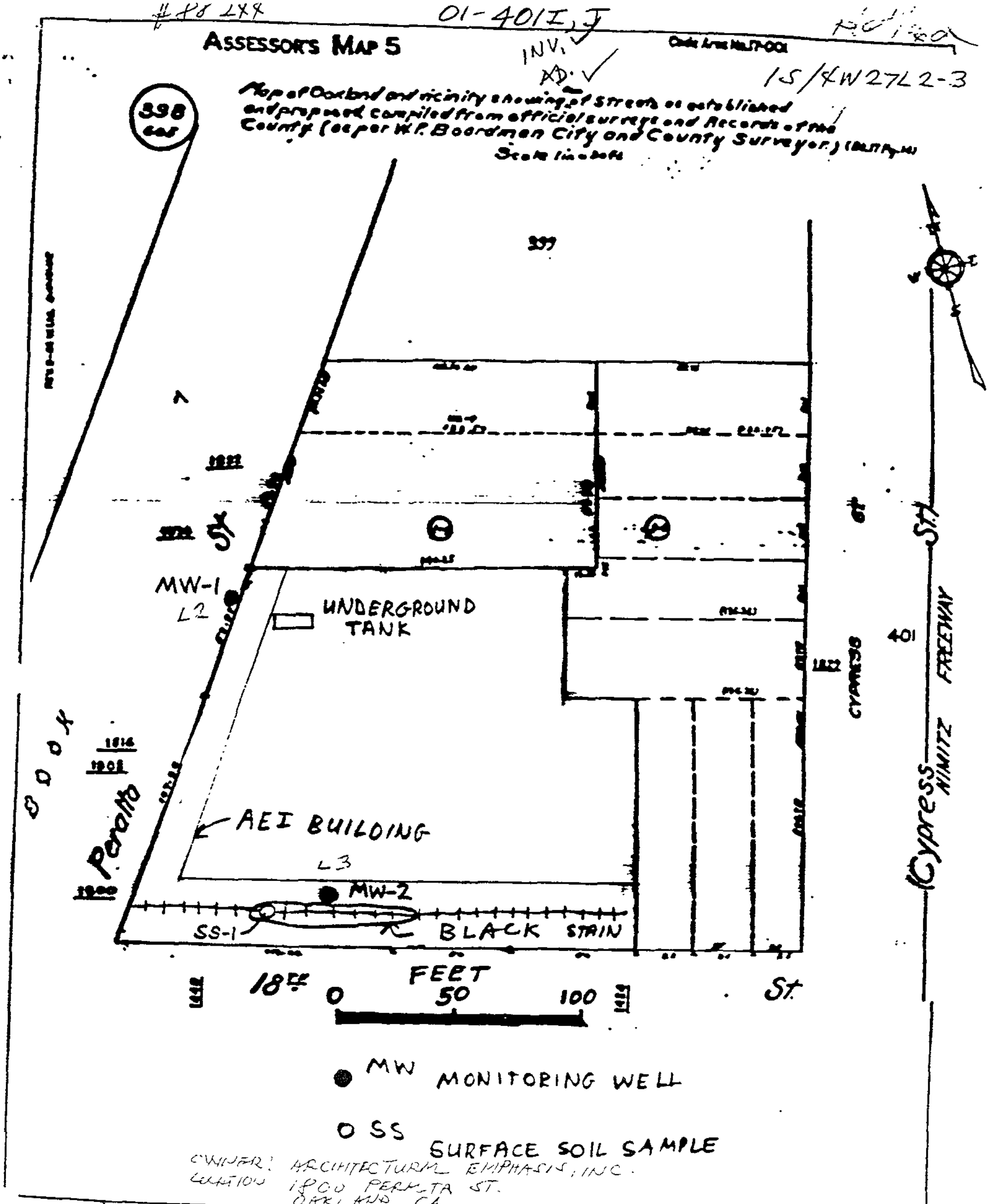
Gray with dark gray mottling, clay (OL), rich in organics, abd. plant matter, moist mod. H_2S odor

SAME AS ABOVE

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED



Project No.			
8820082A	CURTIS & SONS, 1800 PERALTA, OAKLAND	FIGURE 2. LOCATION OF WELLS AND SAMPLE, CURTIS & SONS, 1800 PERALTA, OAKLAND (Map from Assessor's Map 5)	JUNE 22, 1988
Woodward-Clyde Consultants			

DRILLER: ENSCO (EXCELTECH)

01-401 I INV. ✓ AD. ✓ 15/4W27L2

#88244

TABLE 2. ONSITE SOIL BORING LOGS, CURTIS & SONS, 1800 PERALTA, OAKLAND, 8820082A

BORING MW-1 - Elevation <10 feet

Depth, feet	Thickness, feet	Soil Description
0-0.5	0.5	ASPHALT (Qam)
0.5-3.3	2.8	FILL (Qaf); dark brown, dry, sandy soil. with angular, cobble-sized rock fragments. and rounded pebbles
3.3-4.2	0.9	SILTY SAND (SM); dark brown, dry, 65 % fine to medium sand, 35 % silt, some clay, dense, poorly graded, poorly sorted. Damp to moist from 3.8 ft downward.
4.2-4.9	0.7	SILTY SAND (SM); light brown, mottled with orange sand, damp, poorly graded and sorted.
4.9-5.7	0.8	SILTY SAND (SM); dark brown to black, moist, fine to medium sand >85 %, black clay and silt <20 %, poorly graded and sorted. First water encountered at 5.5 ft.
5.7-6.5	0.8	SILTY SAND (SM): black, wet, organic rich and decayed organic matter and plant fragments; 55 - 60 % fine to medium sand, 40-45 % silt and clay, poorly graded and sorted.
6.5-10.5	4.0	SANDY CLAY (SC); dry to damp, blue-green clay. mottled with orange sand with black clay stringers, very stiff; roots, moderate plasticity. Hard drilling.

Boring MW-1 is located adjacent to Peralta St. by the loading dock near the known fuel tank, about 15 ft south of the northwest property corner and 2.5 ft west of the Peralta St. curb, between the two north driveways on Peralta St. Total depth of Boring MW-1 is 10.5 ft. Monitoring well MW-1 completed as: 0-4 ft. 2-in. dia. PVC casing; 4-9 ft. 2-in. dia. PVC 0.010-in. slotted well screen; 9-10.5 ft, 2-in. dia. PVC casing as silt trap; and end cap; cement grouted annulus from 0-2 ft. bentonite pellet sealed annulus from 2-3 ft. Monterey No. 2 sand pack from 3 to 10.5 ft. MW-1 is enclosed in a traffic box with a locked, water-tight sealed cap. Groundwater encountered at time of drilling at 5.5 ft below grade; well dry when completed. Boring advanced by 6-in. dia. hollow stem auger using Mobile B-34 rig and converted to monitoring well on June 17, 1988 by Tim Collett, ENSCO (Exceltech). Logged by Marin A. Popoff. Woodward-Clyde Consultants.

#88248 · 01-401J, NV, ✓ AD: ✓ 1S/4W27L3

TABLE 2. ONSITE SOIL BORING LOGS, CURTIS & SONS, 1800 PERALTA, OAKLAND, 8820082A (Concluded)

BORING MW-2 - Elevation <10 feet

Depth, feet	Thickness, feet	Soil Description
0-2.5	2.5	FILL (Qaf); gray angular cobbles (3-4 in.) and rounded pebbles (3/4-1 in.), loose, dry, no sorting.
2.5-4.1	1.6	CLAYEY SAND to SILTY SAND (SC); black, moist, 65 % very fine to fine sand, 35 % clay and silt, sticky, low plasticity, poorly graded, poorly sorted. Locally, pebbles to 1/2-3/4 in., rounded, 5-10 % soft to firm. Wet to saturated, black clay and silt to 40 %, more plastic at 3.7 3.7 ft. First water encountered at 4 ft.
4.1-4.8	0.7	CLAYEY SAND (SM); dark brown, moist, 70-75 % very fine to medium sand, sticky, slightly plastic, poorly graded, poorly sorted, dense. Hard drilling.
4.8-6.4	1.6	CLAYEY SAND (SM); gray brown, wet, mottled with orange iron stains and blue stringers of bay mud clay, very fine to medium sands about 75 %, medium dense. Hard drilling.
6.4-7.7	1.3	CLAYEY SAND (SM); light brown, mottled with orange sand and blue-green clay, fine to medium sand, 70 %, organic dark brown to black mottled, locally dry to moist, dense.
7.7-18	10.3	SILTY CLAY (CL) to SANDY CLAY (CH); blue gray-green, damp, very stiff, 5-10 % very fine to fine sand, 90-95 % clay and silt. Bay Mud, some organic detritus (5 %) and local, infrequent orange mottling. Hard drilling. At 8.2 ft in silt content, <5 % very fine sand, light blue gray clay, damp to moist.

Boring MW-2 is located between the building and the railroad track, in the railroad spur between the two loading docks and nearest the first loading dock closest to Peralta St. by 18th St., about 85 ft east of the southwest property corner and 20 ft north of 18th St. Total depth of Boring MW-2 is 18 ft. Monitoring well MW-2 completed as: 0-5 ft, 2-in. dia. PVC casing; 5-10 ft, 2-in. dia. PVC 0.010-in. slotted well screen; 10-13 ft, 2-in. dia. PVC casing as silt trap; and end cap; cement grouted annulus from 0-3 ft, bentonite pellet sealed annulus from 3-4 ft, Monterey No. 2 sand pack from 4 to 13 ft, Monterey No. 2 sand backfill from 13 to 17.5 ft, bentonite pellet backfill from 17.5 to 18 ft. MW-2 is enclosed in a traffic box with a locked, water-tight sealed cap. Groundwater encountered at time of drilling at 4 ft below grade; groundwater at 3.1 ft when well was completed. Boring advanced by 6-in. dia. hollow stem auger using Mobile B-34 rig and converted to monitoring well on June 17, 1988 by Tim Collett, ENSCO (Exceltech). Logged by Marin A. Popoff, Woodward-Clyde Consultants.

INV ✓
ADD ✓

ANANIA GEOLOGIC ENGINEERING™

1S/4W 27L

01-897

May 10, 1990

Mr. Todd N. Wendler
Alameda County Flood Control and
Water Conservation District
5997 Parkside Drive
Pleasanton, CA 94566

SUBJECT: WELL ABANDONMENT REPORT

AGE PROJECT No. 004-88-059

Dear Mr. Wendler:

Enclosed please find a chart documenting the number of the wells destroyed, the date of destruction, and the amount of cement used in the destruction for a project at 1310 14th Street (Carnation Dairy) in Oakland, California. Included also is a location map of all destroyed wells.

Four of the wells were included in Groundwater Protection Ordinance permit 90196. They are monitoring wells MW-17, MW-18, MW-19, and MW-20. MW-18 and MW-20 were abandoned by Accubore Precision Drilling. MW-17 and MW-19 were abandoned by Pioneer Drilling.

The remaining twenty wells were destroyed under Groundwater Protection Ordinance permit 90218. The twenty wells are: PR-1, PR-2, PR-3, PR-4, PR-5, PR-6, PR-8, PR-9, PR-13, PR-14, PR-15, PR-16, PR-82, PR-83, PR-84, PR-92, PR-93, PR-97, PR-103, and MW-21. All twenty wells were destroyed by Pioneer drilling.

Lic C57
584907

Lic # C57
573920

2560 Ninth Street, Suite 216 Berkeley, CA 94710 Phone 415-548-0377 Fax 415-548-4471
Main Office P O Box 161148 Sacramento, CA 95816

01-841

The following procedures were used to abandon the wells:

1. The surface traffic box was removed.

2. The well was drilled out using a hollow stem auger that was larger than the auger used to drill the original well.

3. The well was overdrilled to a depth of at least one foot deeper than the bottom plug attached to the well screen.

4. The casing and screen were removed through the auger with the auger remaining in the ground during this procedure.

5. After the screen and casing were pulled, a grout mixture was tremied to the bottom of the open hole. The auger lengths were pulled in five foot sections as the grout advanced up the hole.

6. The grout mixture was brought up to within one foot of the existing ground surface.

7. After the grout mixture in the hole was allowed to set, the last foot was completed with a concrete mixture plug.

8. The screen and casing were steam cleaned, cut in pieces, and disposed of properly.

9. The cuttings from the hole were collected and will be disposed of properly

If you have any questions, please do not hesitate to call me at (415) 548-0377 or Mary Scruggs at (916) 631-0154.

Sincerely,
Anania Geologic Engineering

Robyn McKinney

Robyn McKinney
Project Geologist

Enclosure

2560 Ninth Street, Suite 216 Berkeley, CA 94710 Phone 415-548-0377 Fax 415-548-4471
Main Office P O Box 161148 Sacramento, CA 95816

01-897

WELL ABANDONMENT
1310 14TH STREET
OAKLAND, CALIFORNIA

CARNATION DAIRY FACILITY
AGE PROJECT 004-88-059

Well Number	Date Drilled	Drilling Depth (Feet)	Bags of Cement	Completed to Grade	Original Well Depth	Well Abandonment Permit No.	Date Permit Issued
PR-1	04/20/90	16.0	4.50	04/25/90	15.0	90218	04/09/90
PR-2	04/18/90	16.5	4.50	04/20/90	15.5	90218	04/09/90
PR-3	04/18/90	18.0	5.00	04/20/90	15.5	90218	04/09/90
PR-4	04/19/90	16.5	4.25	04/20/90	15.0	90218	04/09/90
PR-5	04/24/90	16.5	4.25	04/24/90	15.5	90218	04/09/90
PR-6	04/24/90	16.5	4.50	04/24/90	15.5	90218	04/09/90
PR-8	04/23/90	16.5	4.25	04/24/90	15.5	90218	04/09/90
PR-9	04/24/90	16.0	4.25	04/24/90	15.0	90218	04/09/90
PR-13	04/23/90	16.5	4.25	04/24/90	15.5	90218	04/09/90
PR-14	04/24/90	16.5	4.25	04/24/90	15.5	90218	04/09/90
PR-15	04/23/90	16.5	4.25	04/24/90	15.5	90218	04/09/90
PR-16	04/23/90	16.5	4.25	04/24/90	15.5	90218	04/09/90
PR-82	04/19/90	26.0	6.25	04/20/90	25.0	90218	04/09/90
PR-83	04/18/90	26.0	6.00	04/19/90	25.0	90218	04/09/90
PR-84	04/19/90	26.0	6.25	04/20/90	25.0	90218	04/09/90
PR-92	04/24/90	16.0	4.25	04/25/90	15.0	90218	04/09/90
PR-93	04/24/90	16.0	4.50	04/25/90	15.0	90218	04/09/90
PR-97	04/20/90	16.0	4.25	04/24/90	15.0	90218	04/09/90
PR-103	04/24/90	16.0	4.50	04/25/90	15.0	90218	04/09/90
MW-17	04/19/90	21.0	5.25	04/20/90	20.0	90196	03/26/90
MW-18	03/31/90	21.0	8.00	03/31/90	20.0	90196	03/26/90
MW-19	04/23/90	21.0	5.25	04/24/90	20.0	90196	03/26/90
MW-20\ /	03/30/90 03/31/90	21.0	7.00	04/02/90	20.0	90196	03/26/90
MW-21	05/09/90	55.0	12.00	05/10/90	54.0	90218	04/09/90

01-897

WELL ABANDONMENT
1310 14TH STREET
OAKLAND, CALIFORNIA

CARNATION DAIRY FACILITY
AGE PROJECT 004-88-059

15/4W
27L

	Well Number	Date Drilled		Drilling Depth (Feet)	Bags of Cement	Completed to Grade	Original Well Depth	Well Abandonment Permit No.	Date Permit Issued
20	PR-1	04/20/90		16.0	4.50	04/25/90	15.0	90218	04/09/90
21	PR-2	04/18/90		16.5	4.50	04/20/90	15.5	90218	04/09/90
23	PR-3	04/18/90		18.0	5.00	04/20/90	15.5	90218	04/09/90
24	PR-4	04/19/90		16.5	4.25	04/20/90	15.0	90218	04/09/90
25	PR-5	04/24/90		16.5	4.25	04/24/90	15.5	90218	04/09/90
26	PR-6	04/24/90		16.5	4.50	04/24/90	15.5	90218	04/09/90
27	PR-8	04/23/90		16.5	4.25	04/24/90	15.5	90218	04/09/90
28	PR-9	04/24/90		16.0	4.25	04/24/90	15.0	90218	04/09/90
32	PR-13	04/23/90		16.5	4.25	04/24/90	15.5	90218	04/09/90
33	PR-14	04/24/90		16.5	4.25	04/24/90	15.5	90218	04/09/90
34	PR-15	04/23/90		16.5	4.25	04/24/90	15.5	90218	04/09/90
35	PR-16	04/23/90		16.5	4.25	04/24/90	15.5	90218	04/09/90
X	PR-82	04/19/90	95	26.0	6.25	04/20/90	25.0	90218	04/09/90
X	PR-83	04/18/90	96	26.0	6.00	04/19/90	25.0	90218	04/09/90
X	PR-84	04/19/90	97	26.0	6.25	04/20/90	25.0	90218	04/09/90
X	PR-92	04/24/90	98	16.0	4.25	04/25/90	15.0	90218	04/09/90
X	PR-93	04/24/90	99	16.0	4.50	04/25/90	15.0	90218	04/09/90
X	PR-97	04/20/90	100	16.0	4.25	04/24/90	15.0	90218	04/09/90
X	PR-103	04/24/90	101	16.0	4.50	04/25/90	15.0	90218	04/09/90
57	MW-17	04/19/90		21.0	5.25	04/20/90	20.0	90196	03/26/90
58	MW-18	03/31/90		21.0	8.00	03/31/90	20.0	90196	03/26/90
59	MW-19	04/23/90		21.0	5.25	04/24/90	20.0	90196	03/26/90
60	MW-20	03/30/90 03/31/90		21.0	7.00	04/02/90	20.0	90196	03/26/90
X	MW-21	05/09/90	102	55.0	12.00	05/10/90	54.0	90218	04/09/90

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

1S/4W-27K

01-931

Job 1000. City of Oakland,
Board of Park Commissioners
Dell DeFremery Park.

LOG OF WELL.

Brown sand				8 feet
Yellow sand	8	to	27	"
Good water sand	27	"	29	"
Sand & hardpan in streaks	29	"	33	"
Brown sandy clay	33	"	40	"
Water sand	40	"	46	"
Blue cementy gravel, tight	46	"	48	"
Blue clay	48	"	50	"
Brown clay	50	"	53	"
Brown sandy clay	53	"	56	"
Brown sticky clay	56	"	77	"
Blue sand	77	"	79	"
Blue clay	79	"	88	"
Broken brown rock, with little gravel	88	"	90	"
Blue hardpan	90	"	91	"
Brown clay & gravel	91	"	99	"
Yellow clay	99	"	111	"
Blue sand	111	"	112	"
Yellow sand, some water	112	"	118	"
Yellow clay	118	"	123	"
Hard cementy gravel	123	"	127	"
Yellow clay	127	"	133	"
Hard white clay	133	"	137	"

120 feet 12" No. 14 R. H. Double Casing,
1 - 12" No. 14 R. H. Double starter 16 feet long
60 feet machine perforations (Chisel slot cracked)
1 - 12" No. 12 two ply, butt welded reband.

Aug.6-1928 137 feet 8" No. 14 R. H. Collar Casing placed in well. Bottom of well plugged. Gravel between 8" & 12" Casings.
Work done by [illegible] Gough, 1201 - East 12th. Street, Oakland.

Foreman E. Burfeind.

Job finished September 6 - 1927.

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

Oakland City Center
500 12th Street
Suite 100
Oakland, CA 94607-4014
(415) 893-3600

Woodward-Clyde Consultants

1S 4W 27H
2 Borings
Inv
Add

April 7, 1989

Alameda County Flood Control
And Water Conservation District
5997 Parkside Drive
Pleasanton, California 94566

Attention: Permits Department

Gentlemen:

Subject: Well Construction Report, Permits 89028 and 89133, Location 1S/4W 27H80

This Well Construction Report transmits information required by Groundwater Protection Ordinance, Permits 89028 for the installation of one monitoring well and two soil borings and Permit 89133 for the destruction of the monitoring well.

The well and borings were installed at 2311 Adeline Street (see Figures 1 and 2) on January 27, 1989. No free water was encountered in the soil borings at time of drilling and they were backfilled immediately after drilling with compacted cuttings. The monitoring well was constructed using 2-in. diameter PVC casing, backfilled with clean sand, sealed with 1 foot of bentonite pellets and a 4-foot surface seal of cement/bentonite grout. The monitoring well was abandoned by drilling out the casing and sand pack and grouting with cement/bentonite grout on March 10, 1989. Because the water bearing formation produces water very slowly at this site, the drilled-out monitoring well was virtually dry at time of abandonment and did not require a tremie pipe to backfill. Logs of the monitoring well and borings are attached in Appendix A.

If you have any question concerning the installation or abandonment of these soil borings and monitoring well please call Stan Clarke at 874-3096.

Sincerely,

Woodward-Clyde Consultants

Stanton L. Clarke, P.E.
Project Engineer

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE NO. 8910023A

BORING LOCATION	MW - 1			ELEVATION AND DATUM	N/A
DRILLING AGENCY	ENSCO	DRILLER	J.R. Richards	DATE STARTED / DATE FINISHED	January 27 ,1989
DRILLING EQUIPMENT	Diedrich D - 25 (Skid Rig)			COMPLETION DEPTH	16.5'
DRILLING METHOD	8" Hollow Stem Augers	DRILL BIT	8" Auger	NO. OF SAMPLES / DIST.	N/A
SIZE AND TYPE OF CASING	2" PVC			WATER LEVEL / FIRST	11'
TYPE OF PERFORATION	0.020" Factory slot	FROM 6 TO 16 Ft.		SAMPLER	2.5" Modified California Type
SIZE AND TYPE OF PACK	#2/12 Lonestar Monterey Sand	FROM 4.9 TO 16.5 Ft.		UNDIST.	6
TYPE OF SEAL NO. 1	Bentonite Pellets	FROM 3.9 TO 4.9 Ft.		COMPL. / 72 HRS.	N/A / 7.94
TYPE OF SEAL NO. 2	Neat Cement	FROM 0.5 TO 3.9 Ft.		LOGGED BY:	C. Parten
				CHECKED BY:	S. Clarke

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology / Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	Sample Number	Recov. (Feet)	Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Silty Clay w/ sand (CL) -brown -no sand below 1" -medium stiff -black with gray mottling (below 1') -damp								40 ppm Hnu Reading
5	Clayey Silt (ML) -tan and gray mottling - stiff -damp				1			6 7 12	90 ppm Hnu Readings Gas / Hydrocarbon Odor
10	Clayey Silt w/sand (ML) -tan with gray mottling decreasing -stiff -damp		72 hrs ATD		2			7 11 14	120ppm Hnu Reading Gas Odor
15	Clayey Sand w/ gravel (SC) in top of sampler -gray -medium dense -saturated -gravel to 1" diameter Clayey Silt (ML) in the bottom of the sampler -tan and gray mottling -medium -damp				3			4 4 5	70 ppm Hnu Reading No Odor
20	Bottom of Boring at 16.5'								
25									
30									
35									

Piezometer Legend
- Slottet Well Screen
- Sand Pack
- Bentonite Pellets
- Cement / Bentonite Grout

Woodward-Clyde Consultants PROJECT NAME NED CLYDE NO. 8910023A

BORING LOCATION B-1		ELEVATION AND DATUM N/A	
DRILLING AGENCY ENSCO	DRILLER J.R. Richards	DATE STARTED / DATE FINISHED January 27, 1989	
DRILLING EQUIPMENT Diedrich D-25 (Skid Rig)		COMPLETION DEPTH 16.5'	SAMPLER 2.5" Modified California Type
DRILLING METHOD 8" Hollow Stem Augers	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. N/A	UNDIST. 6
SIZE AND TYPE OF CASING N/A		WATER LEVEL FIRST 12	COMPL. N/A 24 HRS. N/A
TYPE OF PERFORATION N/A	FROM N/A TO N/A Ft.	LOGGED BY: C. Parten	CHECKED BY: S. Clarke
SIZE AND TYPE OF PACK N/A	FROM N/A TO N/A Ft.		
TYPE OF SEAL NO. 1 N/A	FROM N/A TO N/A Ft.		
NO. 2 N/A	FROM N/A TO N/A Ft.		

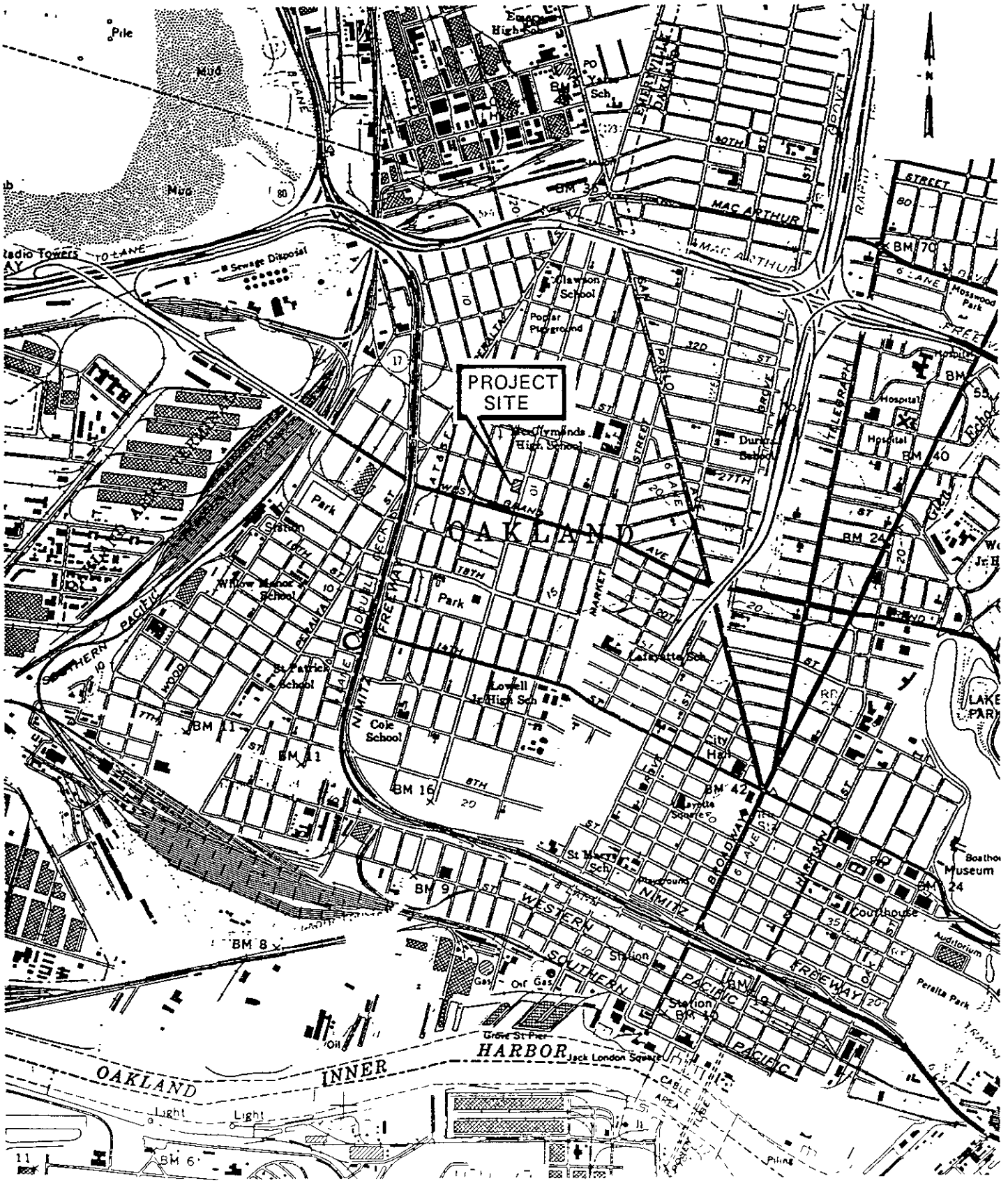
DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet.)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
5	Silty Clay w/gravel (CL) -brown Silty Clay (CL) -black, gray mottling Clayey Silt (ML) -gray w/ slight tan mottling -medium -damp					1			5 6 9	170 ppm to 140 ppm Hnu Readings Slight Odor
10	Clayey Silt w/sand (ML) -tan w/ gray mottling -medium -damp			ATD		2			6 8 10	110 ppm Hnu Reading Gas Odor
15	Gravelly Clayey Sand (SC) -tan and gray -medium dense -saturated -gravel to 1" diameter					3			5 8 10	70 ppm Hnu Reading Slight Odor
20	Bottom of Boring at 16.5'									
25										
30										
35										

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE NO. 8910023A

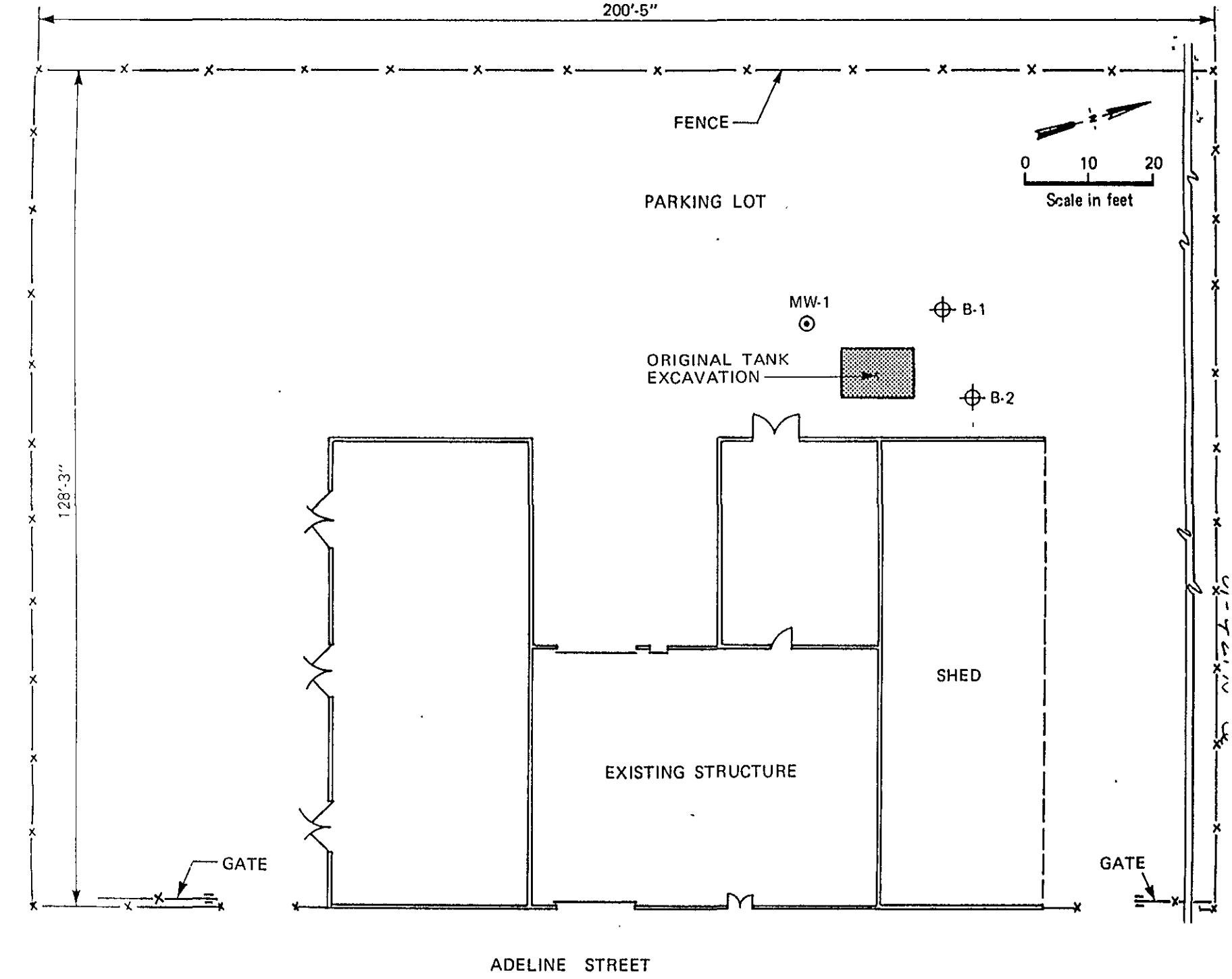
BORING LOCATION	B-2			ELEVATION AND DATUM	N/A
DRILLING AGENCY	ENSCO	DRILLER	J.R. Richards	DATE STARTED / DATE FINISHED	January 27 ,1989
DRILLING EQUIPMENT	Diedrich D - 25 (Skid Rig)			COMPLETION DEPTH 16.5'	SAMPLER 2.5" Modified California Type
DRILLING METHOD	8" Hollow Stem Augers	DRILL BIT	8" Auger	NO. OF SAMPLES DIST. N/A	UNDIST. 6
SIZE AND TYPE OF CASING	N/A			WATER LEVEL FIRST 9 1/2	COMPL. N/A 24 HRS. N/A
TYPE OF PERFORATION	N/A	FROM N/A TO N/A Ft.		LOGGED BY: C. Parten	CHECKED BY: S. Clarke
SIZE AND TYPE OF PACK	N/A	FROM N/A TO N/A Ft.			
TYPE OF SEAL NO. 1	N/A	FROM N/A TO N/A Ft.			
TYPE OF SEAL NO. 2	N/A	FROM N/A TO N/A Ft.			

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet.)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
5	Silty Clay w/gravel (CL) -brown -black									
5	Clayey Silt (ML) w/ sand lenses -gray w/ tan mottling -medium -damp					1			5 6 10	250 ppm Hnu Readings Gas Odor
10				ATD						
10	Clayey Silt w/sand (ML) -tan w/ gray mottling -medium -moist					2			4 7 7	175ppm Hnu Reading Gas Odor
15	Clayey Sand w/ gravel (SC) -gray -medium dense -saturated -gravel to 1" diameter					3			6 12 13	160 ppm Hnu Reading Slight Odor
20	Bottom of Boring at 16.5'									
25										
30										
35										



Reference USGS Oakland West, California
1959, Revised 1980

Project No 8910023A	NED CLYDE CONSTRUCTION		Figure 1
Woodward-Clyde Consultants		SITE LOCATION MAP	



Project No 8910023A

NED CLYDE CONSTRUCTION

Woodward-Clyde Consultants

SITE PLAN
2311 ADELINE STREET

Figure 2

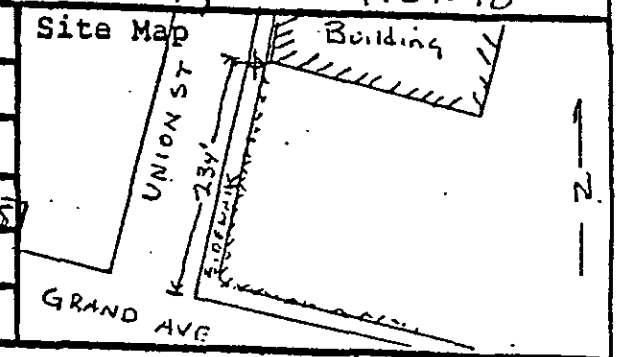
1S/4W 27G1 — OF —

Client: Guidotti

Date: 9.27.90

Location: 2210 Union St
Oakland Ca.

Site Map



Driller: Aqua Science #487000

Method: 8" Hollow Stem Auger Mobile Drill B57

Sampler: Cal.f. 2" 140 H. w/ 30" Fall

Logger: B. Halsted

Inspector:

Sample Number	Depth	Blows/ft	Moisture	Depth	USCS	Description of Subsurface Materials	Completion Data
		MASTER HYDRAULICALLY				Concrete	UNIV. WATER GEO STONE 2" ESP. LINER
						Backfill; Import soil	PORTLAND CEMENT SANITARY SEAL 2" PVC BLANK TRILOC
				5	OH	BAY MUD NO ODOR	3½ 4½ BENTONITE
		MAST DOWN DRIVE SAMPLER		6.5		WATER LEVEL	#3 RMC LONE STAR LAPIS LUSTRE SAND PACK
SB-1	8½-10		WET	10	OH	BAY MUD No ODOR	
		DRILLED W/ HAMMER,					TRILOC 2" .020 SCREEN PVC 15'
SB-2	13½-15		WET	15	OH		
		TRI LINE, SAMPLER W/					
SB-3	19½-21		WET	20		GRAVEL/SAND/MUD	SHIP LAP 19½
		HEAD ELEC			GC	BOH @ 21'	Bentonite 21
		DRIVE					
		LOUD OVER. UNABLE TO					
		DUE TO					

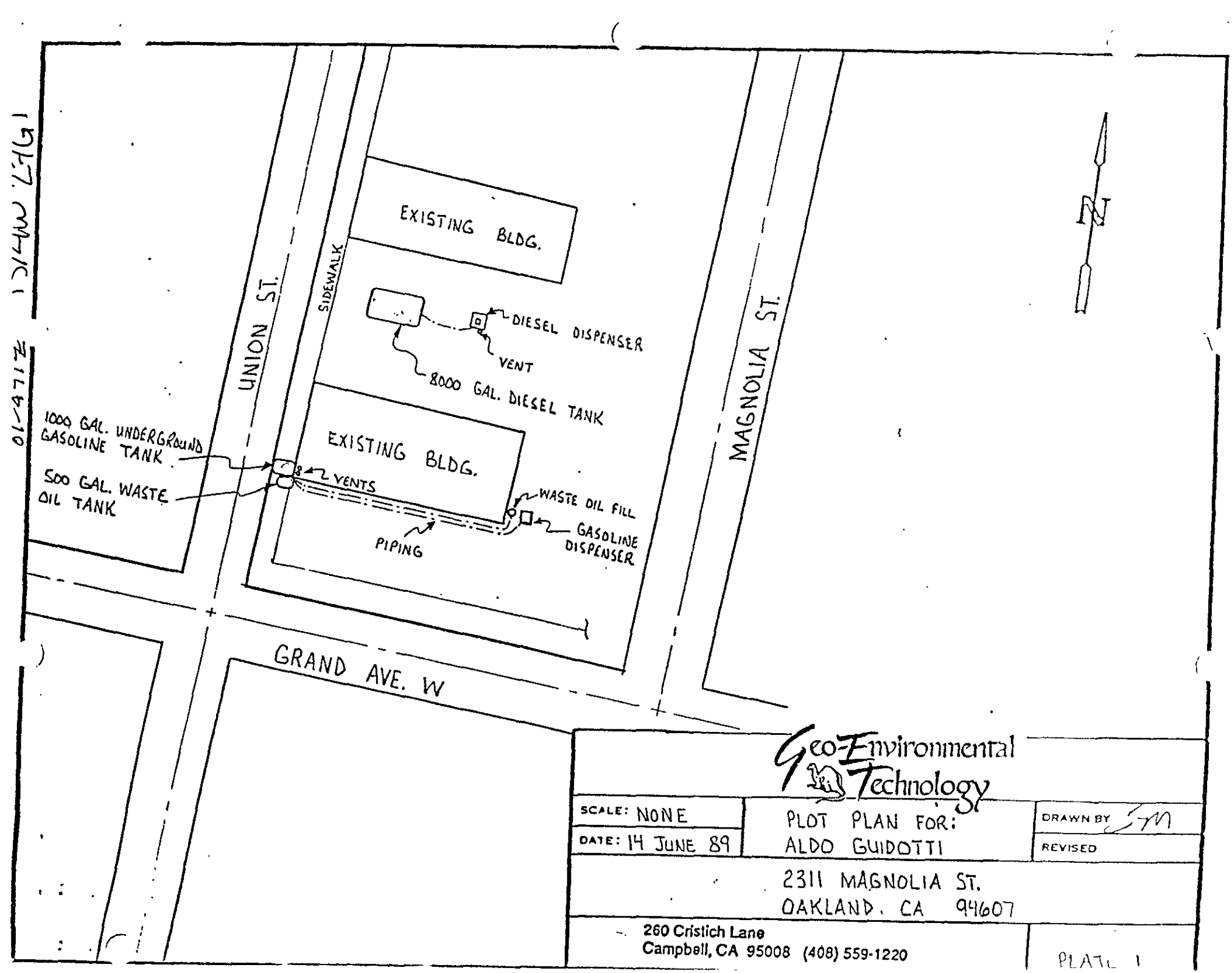
Total Depth: 19.5'

Water Level: 6.5'

Sanitary Seal: PORTLAND CEMENT 30'

Permit #: 90577

Agency: Alameda Co. Flood Control & WATER CONSERVATION DIST ZONE 7



Geo-Environmental Technology

SCALE: NONE	PLOT PLAN FOR: ALDO GUIDOTTI	DRAWN BY SM
DATE: 14 JUNE 89		REVISED
	2311 MAGNOLIA ST. OAKLAND, CA 94607	

260 Cristich Lane
Campbell, CA 95008 (408) 559-1220

PLATE 1

screened interval, and extended to approximately 1 foot above the screen. A bentonite and concrete seal was placed from the top of the sand pack to the ground surface. A locking cap and protective traffic-rated vault box was installed on the top of the well.

Potentially contaminated soil cuttings and samples not retained for chemical analysis were contained in secured 55 gallon storage on-site. The storage drums were properly sealed and labeled. All drilling and sampling equipment was steam-cleaned upon completion of well installation.

Groundwater Sampling Procedure

Groundwater sampling was performed by GET using techniques approved by the Environmental Protection Agency (EPA), and the California Regional Water Quality Control Board, (RWQCB). These techniques require that:

1. Wells will be developed until the water is free of fine-grained sediments and/or until field measurements of pH, electrical conductivity, and temperature stabilize. Approximately four to ten well volumes of water will be removed during development of the well.

2. Equipment inserted into the well during development will be decontaminated by washing or steam cleaning prior to and after its use.

GET's sampling procedure consisted of first measuring the water level in the well and then checking for the presence of floating petroleum product using a clear teflon bailer. Because no free product was detected, the well was purged of four casing volumes of water. In order to ensure that a representative sample was obtained, the pH, electrical conductivity and temperature were monitored and documented on a well sampling field sheet. (See Figure 4). Using a teflon bailer, two samples entitled 9070-1 and 9070-2 were collected on 10/26/90 at 1:30 pm. They had a pH of_7.4_an electrical conductivity of .01, and a temperature of 65 degrees.___Samples were placed into appropriate EPA-approved containers, labeled, logged onto chain-of-custody documents, and transported to the laboratory. All sampling equipment was properly decontaminated with a trisodiumphosphate, (TSP), solution followed with a tap water rinse. A field blank sample (9070-2) was prepared for quality control purposes, prior to collection of groundwater samples. Potentially contaminated purge water and decontaminant rinsate was contained in secured 55-gallon storage drums on-site. The drums were properly sealed and labeled.

15/4W 27G1

Site Description

A site map showing the current layout of the site is presented in Figure 2. This figure shows the locations of existing structures and the former underground storage tanks, as well as adjacent streets. Site sketch maps showing the sources of the samples are shown in figures 3 and 4

Well Installation

In order to determine if site operations have impacted groundwater, GET installed one groundwater monitoring well within the tank pit excavation area. The well is within five feet of the former waste oil storage tank location in the estimated downgradient direction. The well location is shown on Figure 2 entitled Site Map and Soil Sample Plot Plan and on Figure 3 entitled Boring Log MW-1.

The soils boring was drilled using an 8-inch diameter continuous-flight hollow-stem B-57 mobile drill augur. The boring was logged by a Professional Engineer using the Unified Soil Classification System and standard geologic techniques. (See Appendix A) Soil samples for logging and chemical analysis were collected at 9', 14', and 20' depths and were entitled SB-1 ,SB-2 and SB-3 respectively. These samples were collected by advancing a California-modified split-spoon sampler with brass liners into undisturbed soil beyond the tip of the auger. The sampler was driven 18 inches, using a 140-pound hammer with a 30" drop. Soil samples above groundwater were retained in brass liners, capped with aluminum foil and plastic end caps, and sealed in clean glass containers for possible chemical analysis. The samples were placed on ice and transported to the laboratory accompanied by the appropriate chain-of-custody documentation. All drilling and sampling equipment was thoroughly steam-cleaned prior to utilization.

The boring for the monitoring well (appendix A) penetrated 14.5 feet through the water bearing zone to a depth of 21 feet. Permeable sand and gravel was encountered at 19.5 feet. As a result, the boring was stopped and bentonite used to seal the well between 19.5 and 21 feet. The boring was then converted to a groundwater monitoring well with the installation of a 2-inch diameter, flush-threaded Schedule 40 PVC casing and 0.020-inch factory slotted Triloc screen. 13 feet of screen was placed through the entire saturated section extending to two feet above the static water level in order to account for fluctuations in groundwater elevation. A 2 X 12 graded #3 RMC Lone Star Lapis Lustre sand pack was placed in the annular space across the

1of5 01-547R-T

MW-4 MW-5 MW-6 01504W2IGW4 01-894 G03 G04

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94588 ♦ (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Pacific Cryogenics
2311 Magnolia Street
Oakland, CA 94607

CLIENT
Name Aldo Guidotti / Estate of Jean Josephine
Address 1 Bates Blvd #300 Phone
City Orinda Zip 94536

APPLICANT
Name Hageman-Aguiar, Inc.
3732 Mt Diablo Blvd
Address Suite 372 Phone (510)284-1661
City Lafayette Zip 94549

TYPE OF PROJECT
Well Construction — Geotechnical Investigation
Cathodic Protection ___ General ___
Water Supply ___ Contamination ___
Monitoring X Well Destruction ___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD: excavation backfill wells
Mud Rotary ___ Air Rotary ___ Auger ___
Cable ___ Other X

DRILLER'S LICENSE NO. NONE (excavation backfill wells) 66

WELL PROJECTS
Drill Hole Diameter ___ in. Maximum
Casing Diameter 4 in. Depth 15 ft.
Surface Seal Depth 3 ft. Number 3

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE 11/19/92
ESTIMATED COMPLETION DATE 11/19/92

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Gary Aguiar Date 11/18/92

FOR OFFICE USE

PERMIT NUMBER 92607
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.
D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.
E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 19 Nov 92
Wyman Hong

121989

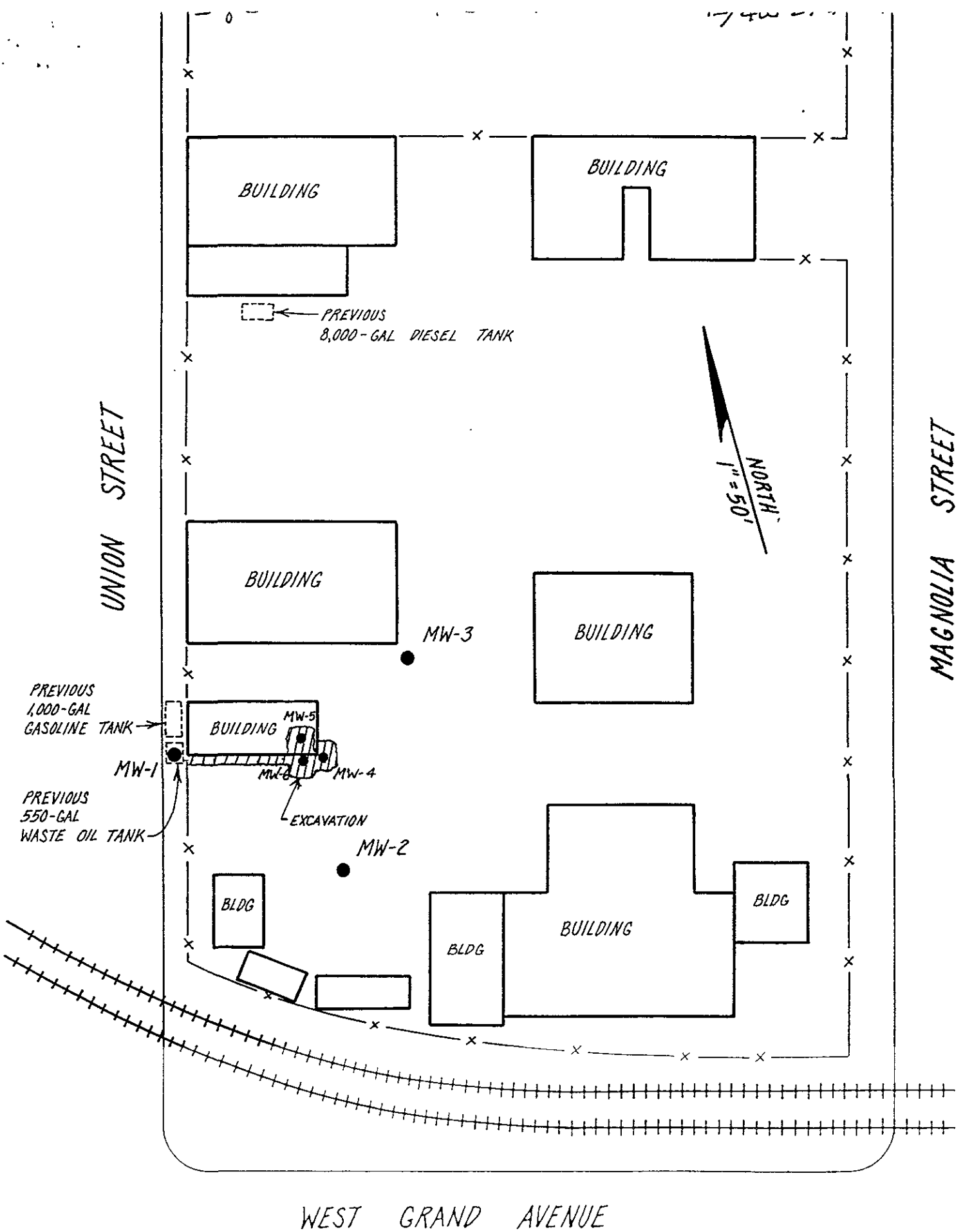
07-30-1993 08:59AM 5102841664 P.02

66

RE:
permit # 97127
5311 Magnolia St.
Oakland CA

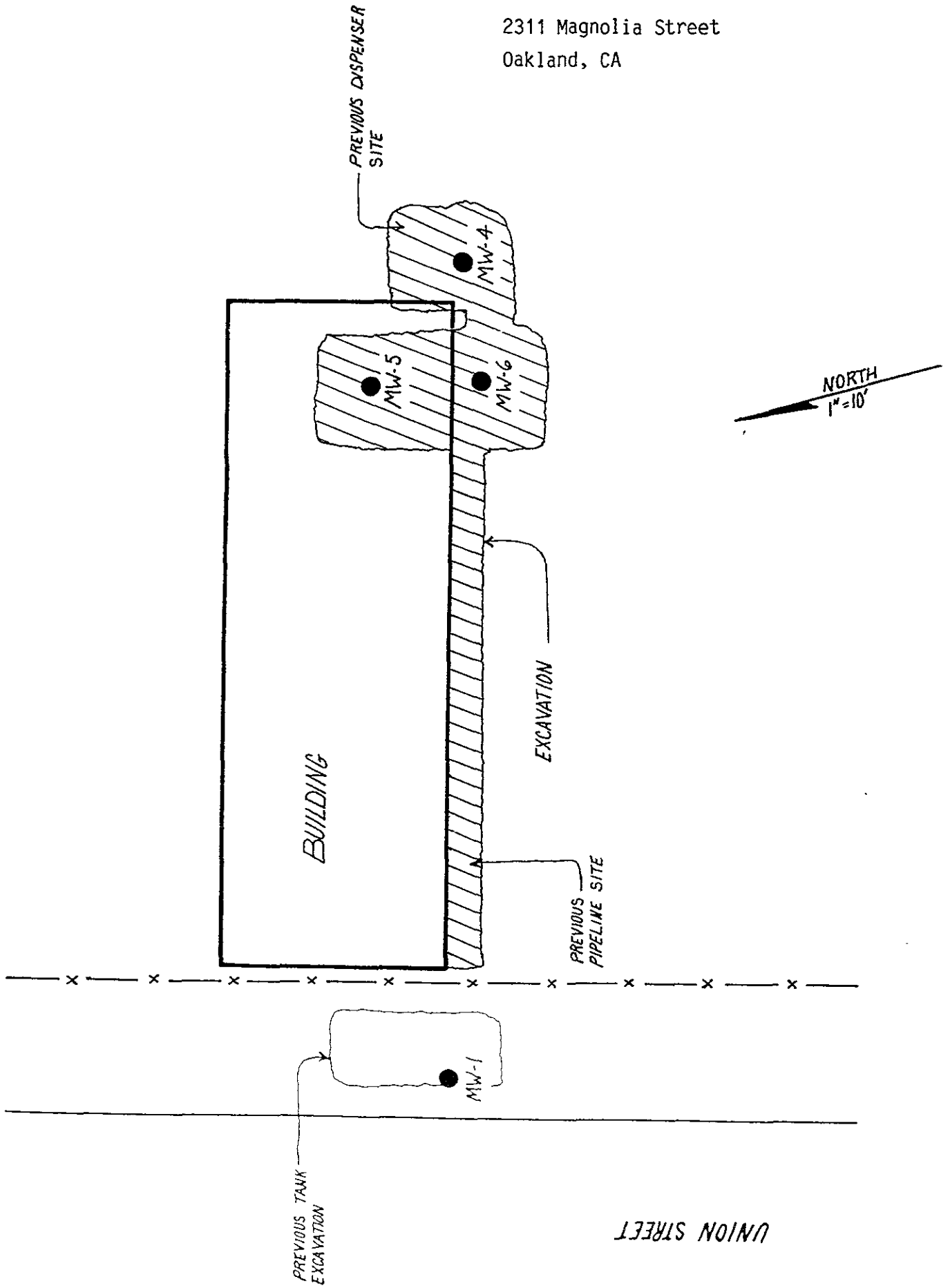
FIGURE 1.
Site Location Map.

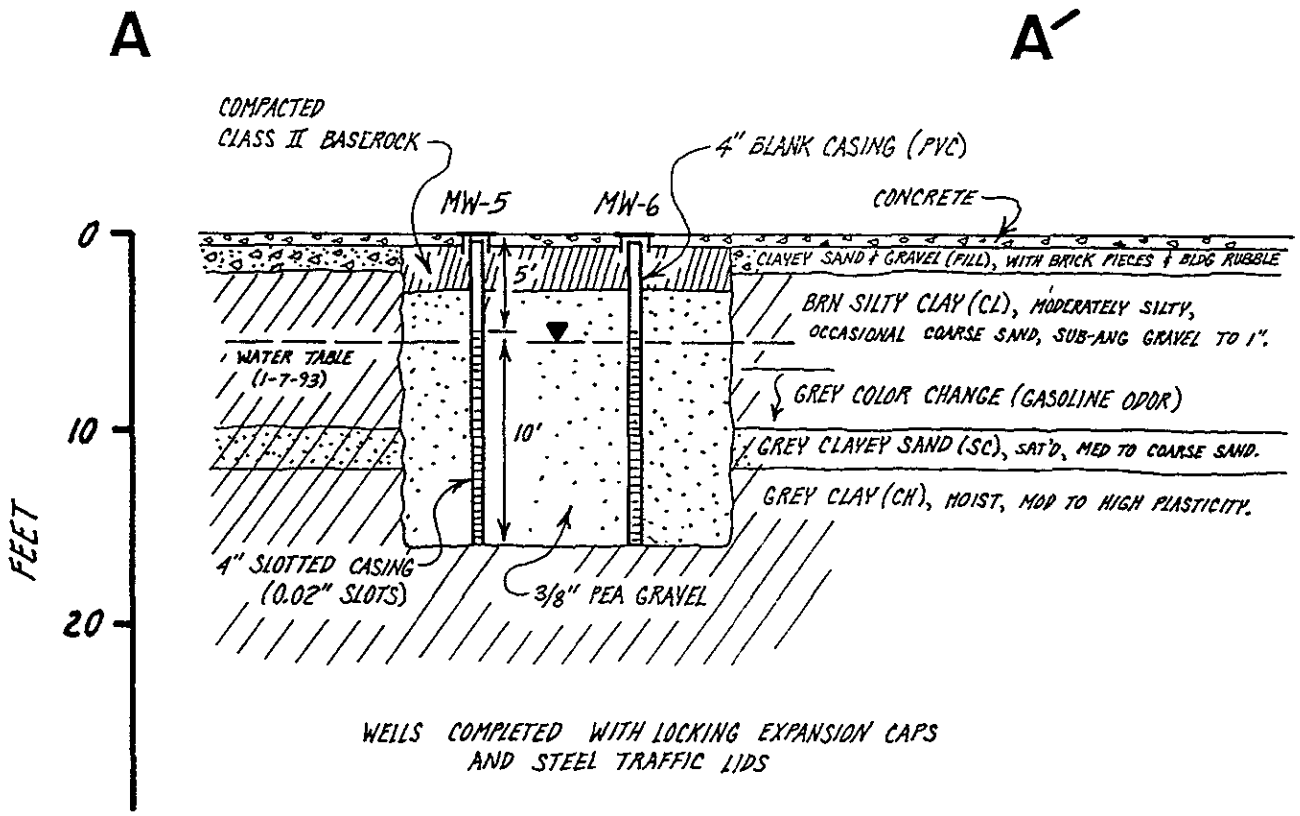
owner: ALDO GUIDOTTI


BUILDING
BUILDING
PREVIOUS
8,000-GAL DIESEL TANK
UNION STREET
NORTH
1" = 50'
MAGNOLIA STREET
BUILDING
MW-3
BUILDING
PREVIOUS
1,000-GAL
GASOLINE TANK
BUILDING
MW-5
MW-1
MW-6
MW-4
EXCAVATION
PREVIOUS
550-GAL
WASTE OIL TANK
MW-2
BLDG
BLDG
BUILDING
BLDG
WEST GRAND AVENUE

Locations of Backfill Wells
MW-4, MW-5 and MW-6

2311 Magnolia Street
Oakland, CA





SCALE
HORIZ: 1"=10'
VERT: 1"=10'

2311 Magnolia Street
Oakland, California

MW-4, MW-5, MW-6 all
have similar data
Were excavations-backfilled

Oakland City Center
500 12th Street
Suite 100
Oakland, CA 94607-4014
(415) 893-3600

Woodward-Clyde Consultants

Inv ✓
Add ✓

1S/4W 27H 2-9
1S/4W 27H
9 Borings

RECEIVED
JUN - 5 1989
ZONE 7, ACFC&WCD

June 2, 1989

Alameda County Flood Control
And Water Conservation District
5997 Parkside Drive
Pleasanton, California 94566

Attention: Permits Department

Gentlemen:

Subject: Well Construction Report, Permits 89146, 89176, 89213, 89241, and 89310.

This Well Construction Report transmits information required by Groundwater Protection Ordinance, Permits 89146, 89176, 89213, 89241, and 89310 for the installation of several monitoring wells, piezometers, and soil borings and for the destruction of the piezometers. The wells, piezometers, and borings were installed at 2311 Adeline Street (see Figure 1) during the period of March 11 through May 11, 1989.

Three piezometers (P-N, P-SE, and P-SW) were installed under permit 89146 on March 11 in locations shown on Figure 2. The piezometers were installed according to the well logs attached in Appendix 1. Piezometer P-N was drilled to 30 ft depth and backfilled with cement/bentonite grout to 14 ft depth prior to installation of the piezometer casing. The hole was backfilled immediately after drilling and had about 1 foot of water in the bottom at the time of grouting. The upper seals were installed above the water table with bentonite pellets and cement/bentonite grout. Grout was installed by shoveling into the hole. Water levels were periodically measured in the piezometers and on April 11 the depth below top of casing were 6.36 ft, 11.21 ft, and 11.14 ft for P-N, P-SE, and P-SW, respectively.

The piezometers were abandoned on May 11 under permit 89310. Each piezometer was drilled out to the bottom of the sand pack using an 8-inch diameter auger and then immediately backfilled with cement/bentonite grout. Because the water bearing formation at this site produces water very slowly and because the borings were relatively shallow (less than 30 feet), the drilled-out piezometers accumulated between 0 and 2 feet of water prior to backfilling at time of abandonment. Grouting was done by tailgating from a cement truck.

Eight soil borings (B-3 through -10) were drilled on April 10, 11, and 12 under permit 89213 in locations identified on Figure 2. This is two borings more than were initially requested under permit

15/4W-27H

89213. The borings were logged and sampled and the boring logs are presented in Appendix 1. The borings were backfilled immediately after drilling with cement/bentonite grout. The holes had very little water in them (between 0 and 2 feet) at time of backfilling so it was not necessary to tremie grout into the holes. Boring B-10 was a hand augered dry hole to 5 feet and was backfilled with tamped in cuttings.

One monitoring well (MW-2) was installed on April 10 under permit 89176 (and also mistakenly under permit 89213) and four additional monitoring wells (MW-3 through -6) were installed on May 11 under permit 89241 in locations shown on Figure 3. Each well was logged and installed with sand packs and seals as shown on the monitoring well logs attached in Appendix 1. Each well was sealed above the groundwater table by bentonite pellets and end-dumped cement/bentonite grout. The wells are being monitored for TPH (gasoline) and BTE&X on a quarterly basis and the results of the monitoring are available from the Alameda County Health Care Services. On May 23, the wells were sounded and their water levels were 9.37 ft, 8.38 ft, 11.08 ft, 9.73 ft, and 10.58 ft depth below top of casing for MW-2 through -6, respectively.

If you have any question concerning the installation or abandonment of these soil borings, monitoring wells, or piezometers, please call Stan Clarke at 874-3096.

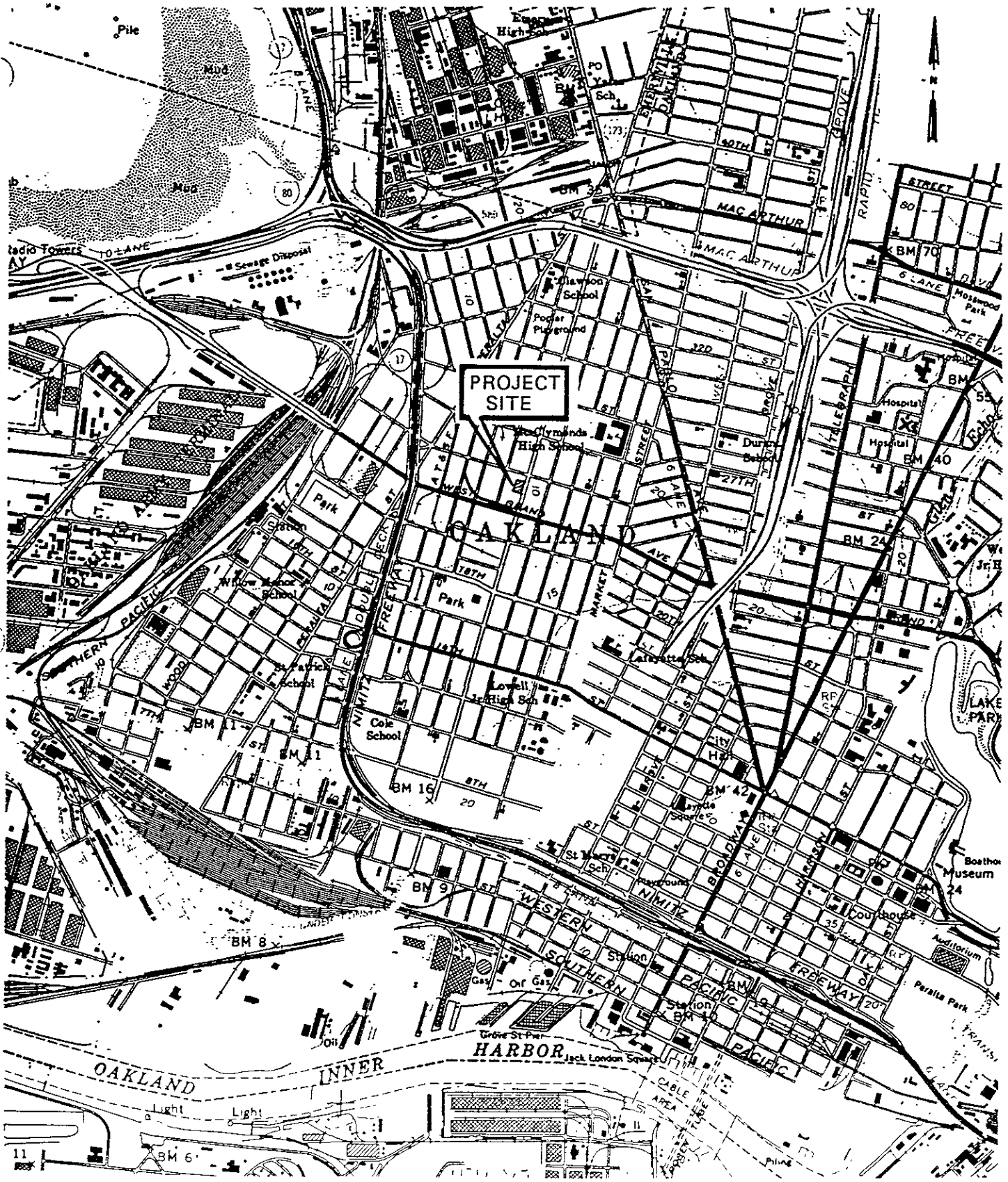
Sincerely,

Woodward-Clyde Consultants

Stanton L. Clarke, P.E.
Project Engineer

cc Ned Clyde Construction

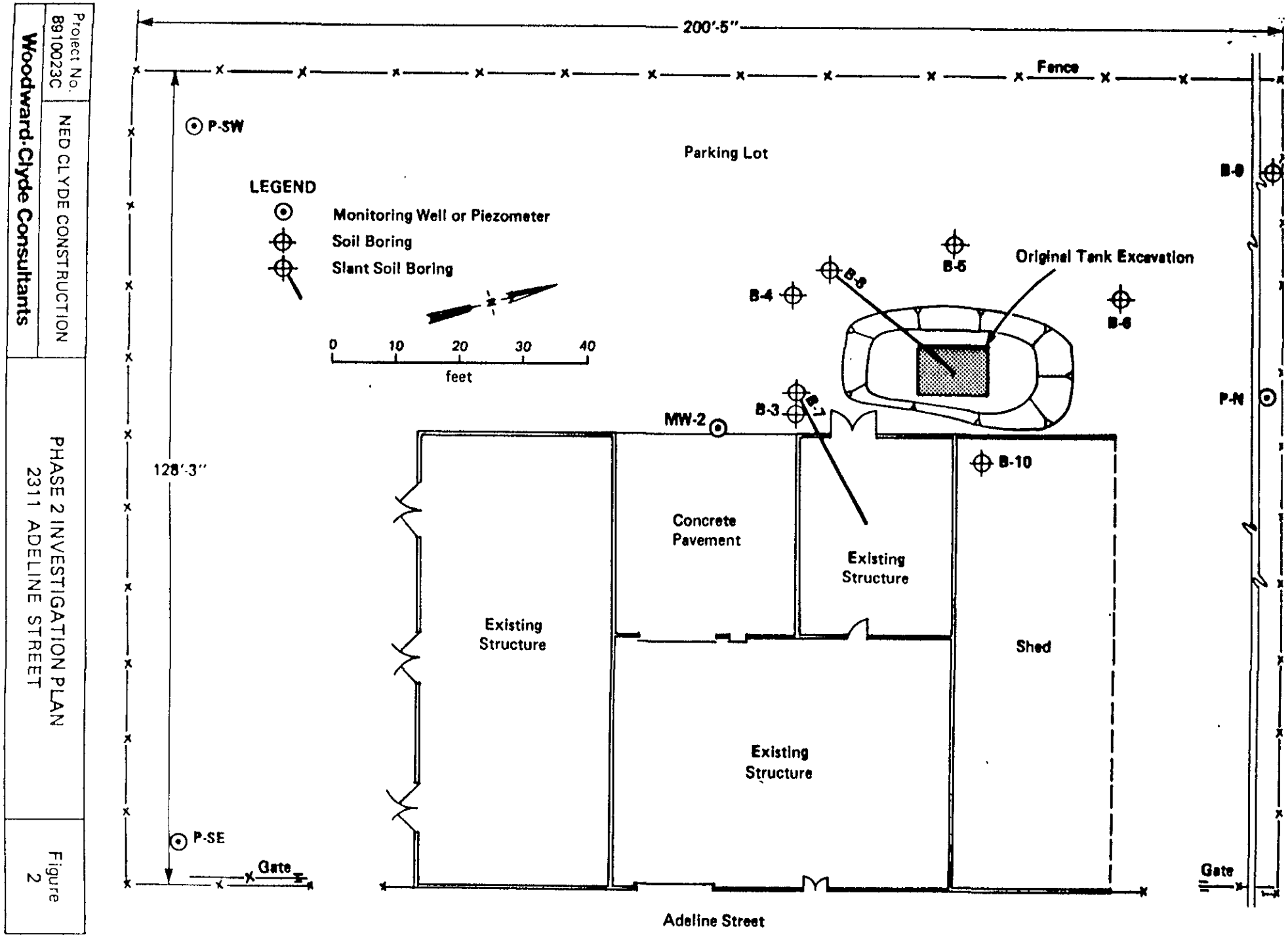
01-033A-RP



Reference USGS Oakland West, California
1959, Revised 1980

0 100 200 300
Scale in feet

Project No. 8910023A	NED CLYDE CONSTRUCTION	SITE LOCATION MAP	Figure 1
Woodward-Clyde Consultants			



Project No. 88100230

Woodward-Clyde Consultants

NED CLYDE CONSTRUCTION

PHASE 2 INVESTIGATION PLAN
2311 ADELINE STREET

Figure 2

Project No. 8910023B

NED CLYDE CONSTRUCTION

Woodward-Clyde Consultants

MAY 23, 1989
RELATIVE GROUNDWATER ELEVATIONS
2311 ADELINE STREET

Figure 3

15/40-27H

APPENDIX A

LOGS OF BORINGS

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE GW MONITORING NO. 8910023B

BORING LOCATION P-N North side of Property		ELEVATION AND DATUM N/A	
DRILLING AGENCY ENSCO	DRILLER G. Nunes	DATE STARTED / DATE FINISHED March 10, 1989	
DRILLING EQUIPMENT Mobile B-34		COMPLETION DEPTH 16'	SAMPLER N/A
DRILLING METHOD 8" Hollow-stem Auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. N/A	UNDIST. N/A
SIZE AND TYPE OF CASING 2" Schedule 40 PVC		WATER LEVEL FIRST N/A	COMPL. N/A 24 HRS. N/A
TYPE OF PERFORATION .010" Slotted	FROM 4.0 TO 14.0 Ft.	LOGGED BY: C. Parton and S. Clarke	CHECKED BY:
SIZE AND TYPE OF PACK #2/12 Lonestar Monterey Sand	FROM 3.0 TO 14.0 Ft.		
TYPE OF SEAL NO. 1 Bentonite Pellets	FROM 2.0 TO 3.0 Ft.		
NO. 2 Concrete/Bentonite Grout	FROM 0.0 and 30.0 TO 2.0 14.0 Ft.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet.)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Sandy Clay (CL) dark brown, moist									
5	Silty Clay (CH) Moist, light brown									
	Sandy Clay (CL) light brown, moist									
10	Silty Clay (CL) brown, saturated									
15	Gravel layer, to 1/2" diam., becoming wet									
20										
25										
30	Augered to 30', backfilled to 14' with cement bentonite grout									
35										

Peizometer Legend
- Slotted Well Screen
- Sand Pack
- Bentonite Pellets
- Cement/ Bentonite Grout

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE GW MONITORING NO. 8910023B

BORING LOCATION P-SE SE Corner of Property		ELEVATION AND DATUM N/A	
DRILLING AGENCY ENSCO	DRILLER G. Nunes	DATE STARTED / DATE FINISHED March 10, 1989	
DRILLING EQUIPMENT Mobile B-34		COMPLETION DEPTH 16'	SAMPLER N/A
DRILLING METHOD 8" Hollow-stem Auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. N/A	UNDIST. N/A
SIZE AND TYPE OF CASING 2" Schedule 40 PVC		WATER LEVEL FIRST	COMPL. N/A 24 HRS. N/A
TYPE OF PERFORATION .010" Slotted	FROM 6.0 TO 16.0 Ft.	LOGGED BY: A. McDonald	CHECKED BY:
SIZE AND TYPE OF PACK #2/12 Lonestar Monterey Sand	FROM 4.0 TO 16.0 Ft.		
TYPE OF SEAL NO. 1 Bentonite Pellets	FROM 3.0 TO 4.0 Ft.		
NO. 2 Concrete/Bentonite Grout	FROM 0.0 TO 3.0 Ft.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet.)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Gravel Base Coarse, (Fill) brown, moist									
	Silty Clay (CH) Moist, dark gray									
5										
	Silty Clay (CL) dark brown, moist, very stiff									
10	Clayey Silt (ML) Light brown, fine sand, moist									
	Gravel layer, to 1/2" diam., becoming wet									
15										
	Silty Sand (SM), medium grained, saturated									
	Augered to 18', hole caved to 16'									
20										
25										
30										
35										

Piezometer Legend
- Slotted Well Screen
- Sand Pack
- Bentonite Pellets
- Cement/ Bentonite Grout

FIELD LOG OF BORING NO. P-SE SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE GW MONITORING NO. 8910023B

BORING LOCATION P-SW, SE Corner of Property		ELEVATION AND DATUM N/A	
DRILLING AGENCY ENSCO	DRILLER G. Nunes	DATE STARTED / DATE FINISHED March 10, 1989	
DRILLING EQUIPMENT Mobile B-34		COMPLETION DEPTH 16'	SAMPLER N/A
DRILLING METHOD 8" Hollow-stem Auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. N/A	UNDIST. N/A
SIZE AND TYPE OF CASING 2" Schedule 40 PVC		WATER LEVEL FIRST	COMPL. N/A 24 HRS. N/A
TYPE OF PERFORATION .010" Slotted	FROM 6.0 TO 16.0 Ft.	LOGGED BY: A. McDonald	CHECKED BY:
SIZE AND TYPE OF PACK #2/12 Lonestar Monterey Sand	FROM 4.0 TO 16.0 Ft.		
TYPE OF SEAL NO. 1 Bentonite Pellets	FROM 3.0 TO 4.0 Ft.		
NO. 2 Concrete/Bentonite Grout	FROM 0.0 TO 3.0 Ft.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Sandy Clay (CL) dark brown, moist									
5	Silty Clay (CH) light brown, moist, very stiff									
	becoming siff w/some small gravel									
10	Clayey Sand (SC) light brown, moist									
15	Sand with Clay (SW-SC), dark gray, medium grained, saturated									
	Augered to 16'									
20										
25										
30										
35										

Peizometer Legend
- Slotted Well Screen
- Sand Pack
- Bentonite Pellets
- Cement/ Bentonite Grout

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE GW MONITORING NO. 8910023B

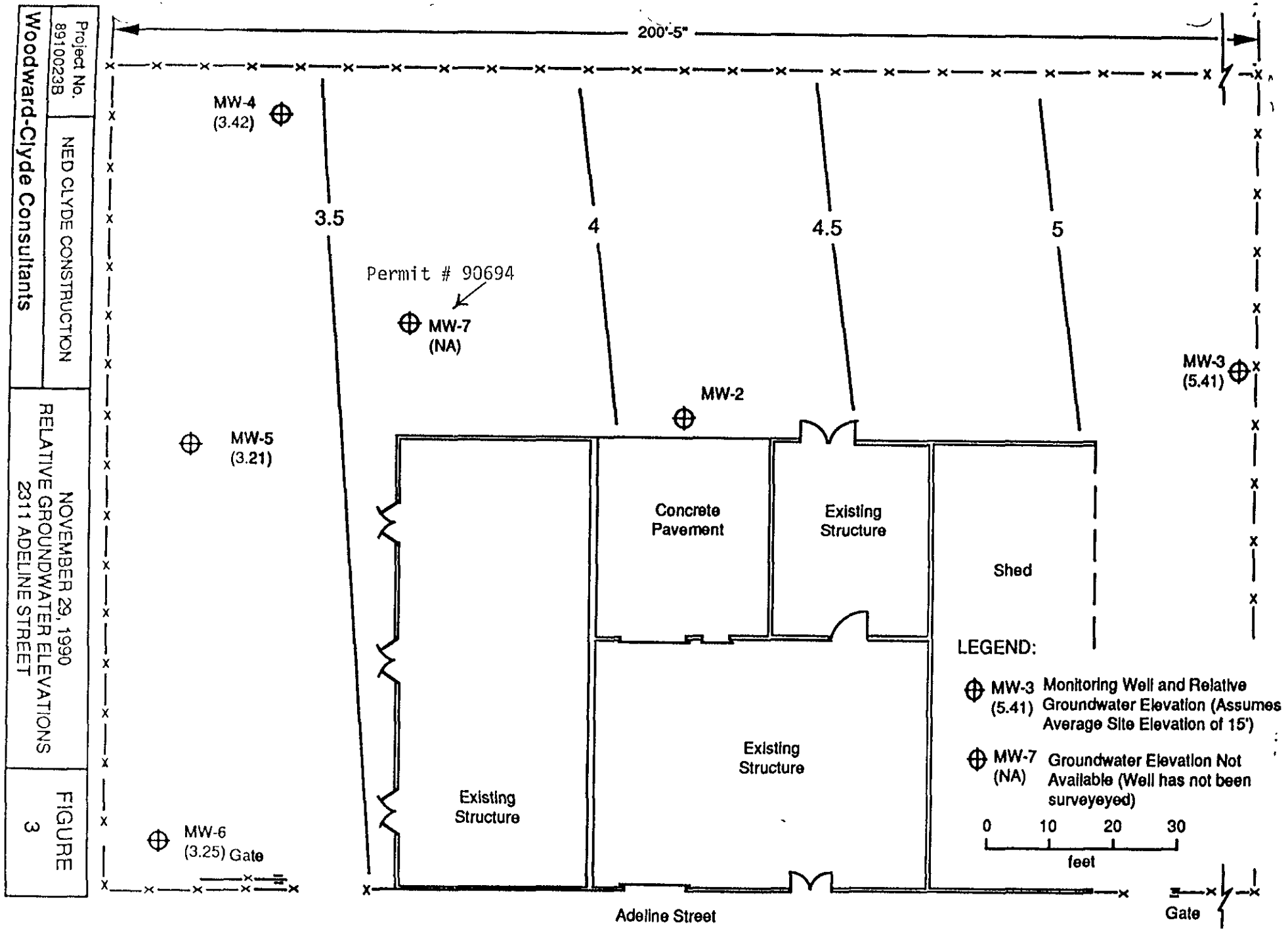
BORING LOCATION	MW-7 10' E of SW corner of building	ELEVATION AND DATUM	N/A
DRILLING AGENCY	ENSCO	DRILLER Frank	DATE STARTED / DATE FINISHED November 29, 1990
DRILLING EQUIPMENT	Mobile B-51	COMPLETION DEPTH 18'	SAMPLER 2.0" Modified California Type
DRILLING METHOD	8" Hollow-stem Auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. 4 / UNDIST. N/A
SIZE AND TYPE OF CASING	2" Schedule 40 PVC	WATER LEVEL FIRST 12'	COMPL. N/A / 24 HRS. N/A
TYPE OF PERFORATION	.020" Slotted	FROM 7.0 TO 17.0 FT	LOGGED BY: T. Ross
SIZE AND TYPE OF PACK	#2/20 Lonestar Monterey Sand	FROM 6.0 TO 17.0 FT	CHECKED BY:
TYPE OF SEAL	NO. 1 Bentonite Pellets	FROM 5.0 TO 6.0 FT	
	NO. 2 Cement	FROM 0.4 TO 5.0 FT	

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Fill rubble, brick, concrete									
5	Silty Clay (CL) brown to dark brown plastc, moist, some sand									
10						1			6 9 10	Hydrocarbon odor detected
15	CLAY olive, plastic, wet with hydrcarbon sheen, some fine sand with rocks to 1" diameter with 3" bailing wire fragments					2 3 4			9 14 17 5 5 6 4 7	
17	Augered to 17'									
20										
25										
30										
35										

Peizometer Legend
- Slotted Well Screen
- Sand Pack
- Bentonite Pellets
- Cement/ Bentonite Grout

phone 415-893 3600

Driller Ensceo Environmental
Ensco ?


Woodward-Clyde Consultants
Project No. 89100238
NED CLYDE CONSTRUCTION
NOVEMBER 29, 1990
RELATIVE GROUNDWATER ELEVATIONS
2311 ADELINE STREET
FIGURE 3
200'-5"
MW-4 (3.42)
3.5
4
4.5
5
Permit # 90694
MW-7 (NA)
MW-3 (5.41)
MW-2
MW-5 (3.21)
Concrete Pavement
Existing Structure
Shed
Existing Structure
Existing Structure
MW-6 (3.25) Gate
Adeline Street
Gate
LEGEND:
MW-3 (5.41) Monitoring Well and Relative Groundwater Elevation (Assumes Average Site Elevation of 15')
MW-7 (NA) Groundwater Elevation Not Available (Well has not been surveyeyed)
0 10 20 30
feet

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE PHASE 2 NO. 8910023C

BORING LOCATION B-3		ELEVATION AND DATUM N/A	
DRILLING AGENCY ENSCO	DRILLER G. Nunes	DATE STARTED / DATE FINISHED April 10, 1989	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 24.5'	SAMPLER 2.5" Modified California Type
DRILLING METHOD 8" Hollow-stem Auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. 4	UNDIST. N/A
SIZE AND TYPE OF CASING N/A		WATER LEVEL FIRST 18'	COMPL. N/A / 24 HRS. N/A
TYPE OF PERFORATION N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Springer	CHECKED BY:
SIZE AND TYPE OF PACK N/A	FROM N/A TO N/A FT.		
TYPE OF SEAL NO. 1 N/A	FROM N/A TO N/A FT.		
NO. 2 N/A	FROM N/A TO N/A FT.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Silty Clay (CL-CH) black, plastic, damp									20 ppm HNu Reading Hydrocarbon Odor
5	Clay (CH) dark blue-gray, plastic, damp becomes olive brown									
10						1			8 15 20	250 ppm HNu Reading Strong Hydrocarbon Odor
15	Clay (CH) mottled olive brown and light gray, damp, plastic, specs of charcoal					2			10 12 12	3 ppm HNu Reading Slight (?) Hydrocarbon Odor
20	Clay (CH) steel gray, plastic, occasional pebbles, trace of sand					3			8 10 10	7 ppm HNu Reading
	As above					4			7 10 13	0 ppm HNu Reading
25	Bottom of boring at 24.5'									
30										
35										

FIELD LOG OF BORING NO. B-3 SHEET 1 OF 1

Woodward-Clyde Consultants PROJECT NAME NED CLYDE PHASE 2 NO. 8910023C

BORING LOCATION B-4		ELEVATION AND DATUM N/A	
DRILLING AGENCY ENSCO	DRILLER G. Nunes	DATE STARTED / DATE FINISHED April 10, 1989	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 19.5'	SAMPLER 2.5" Modified California Type
DRILLING METHOD 8" Hollow-stem auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. 3	UNDIST. N/A
SIZE AND TYPE OF CASING N/A		WATER LEVEL FIRST N/A	COMPL. N/A / 24 HRS. N/A
TYPE OF PERFORATION N/A	FROM N/A TO N/A Ft.	LOGGED BY: J. Springer	CHECKED BY:
SIZE AND TYPE OF PACK N/A	FROM N/A TO N/A Ft.		
TYPE OF SEAL NO. 1 N/A	FROM N/A TO N/A Ft.		
NO. 2 N/A	FROM N/A TO N/A Ft.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet.)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Clay (CH) black, little silt, plastic, damp									2 ppm HNu Reading; Hydrocarbon Odor
5	Clay (CH) olive green, plastic, damp									
	As above					1			8, 12, 12	350 ppm HNu Reading; Strong Hydrocarbon Odor
10	Clay (CH) mottled olive brown and steel gray, little sand					2			10, 10, 18	10 ppm HNu Reading; Hydrocarbon Odor
15	Clay (CH) steel gray, plastic, few pebbles					3			6, 8, 8	0 ppm HNu Reading
20	Bottom of boring at 19.5'									
25										
30										
35										

Woodward-Clyde Consultants PROJECT NAME NED CLYDE PHASE 2 NO. 8910023C

BORING LOCATION B-5		ELEVATION AND DATUM N/A	
DRILLING AGENCY ENSCO	DRILLER G. Nunes	DATE STARTED / DATE FINISHED April 10, 1989	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 19.5'	SAMPLER 2.5" Modified California Type
DRILLING METHOD 8" Hollow-stem Auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. 3	UNDIST. N/A
SIZE AND TYPE OF CASING N/A		WATER LEVEL FIRST 18'	COMPL N/A / 24 HRS. N/A
TYPE OF PERFORATION N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Springer	CHECKED BY:
SIZE AND TYPE OF PACK N/A	FROM N/A TO N/A FT.		
TYPE OF SEAL NO. 1 N/A	FROM N/A TO N/A FT.		
NO. 2 N/A	FROM N/A TO N/A FT.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Clay (CH) black to dark green, damp, plastic									4 ppm HNu Reading; Slight Hydrocarbon Odor
5	Clay (CH) olive brown with black streaks									
	as above, damp with product					1			7, 14, 14	300 ppm HNu Reading; Strong Hydrocarbon Odor
10										
	Clay to Silty Clay (CH) olive brown, little sand					2			6, 6, 10	6 ppm HNu Reading
15										
	Clay (CH) mottled olive brown and steel gray, little silt, plastic, wet				ATD	3			7, 7, 11	20 ppm HNu Reading
20	Bottom of boring at 19.5'									
25										
30										
35										

Woodward-Clyde Consultants PROJECT NAME NED CLYDE PHASE 2 NO. 8910023C 01-033E

BORING LOCATION B-6		ELEVATION AND DATUM N/A	
DRILLING AGENCY ENSCO	DRILLER G. Nunes	DATE STARTED / DATE FINISHED April 11, 1989	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 19.5'	SAMPLER 2.5" Modified California Type
DRILLING METHOD 8" Hollow-stem Auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. 3	UNDIST. N/A
SIZE AND TYPE OF CASING N/A		WATER LEVEL FIRST N/A	COMPL. N/A / 24 HRS. N/A
TYPE OF PERFORATION N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Springer	CHECKED BY:
SIZE AND TYPE OF PACK N/A	FROM N/A TO N/A FT.		
TYPE OF SEAL NO. 1 N/A	FROM N/A TO N/A FT.		
NO. 2 N/A	FROM N/A TO N/A FT.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet.)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
5	Silty Clay (CL-CH) black, plastic, damp									3.5 ppm HNu Reading Hydrocarbon Odor
10	Clay (CH) olive green, trace of sand, plastic, damp					1			9 17 17	200 ppm HNu Reading Strong Hydrocarbon Odor
15	as above sandy at top of sample, trace of gravel					2			6 6 8	10 ppm HNu Reading
20	Clay (CH) steel gray, little silt, damp					3			7 7 12	0 ppm HNu Reading
25	Bottom of boring at 19.5'									
30										
35										

FIELD LOG OF BORING NO. B-6 SHEET 1 OF 1

Woodward-Clyde Consultants PROJECT NAME NED CLYDE PHASE 2 No. 8910023C 01-033

BORING LOCATION B-7		ELEVATION AND DATUM N/A	
DRILLING AGENCY ENSCO	DRILLER	DATE STARTED / DATE FINISHED April 11, 1989	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 31.5'	SAMPLER 2.5" Modified California Type
DRILLING METHOD 8" Hollow-stem Auger	DRILL BIT	NO. OF SAMPLES DIST. 4	UNDIST. N/A
SIZE AND TYPE OF CASING N/A		WATER LEVEL FIRST N/A	COMPL. N/A / 24 HRS. N/A
TYPE OF PERFORATION N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Springer	CHECKED BY:
SIZE AND TYPE OF PACK N/A	FROM N/A TO N/A FT.		
TYPE OF SEAL NO. 1 N/A	FROM N/A TO N/A FT.		
TYPE OF SEAL NO. 2 N/A	FROM N/A TO N/A FT.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet.)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Silty Clay (CH) black, plastic, damp									45 Degree angle boring drift = N80E 16 ppm HNu Reading Slight Hydrocarbon Odor
5	Clay (CH) olive green with black streaks, plastic, damp									
10	Gravelly Sand (SW) gray, little silt, foundation fill (?)					1			Push	True vertical depth = 7.1' 20 ppm HNu Reading Slight Hydrocarbon Odor
15	Clay (CH) mottled olive brown and gray, plastic, damp					2			Push	True vertical depth = 10.6' 350 ppm HNu Reading Strong Hydrocarbon Odor
20	Gravelly Sand (SW) *with some sandy clay (CH)*					3			Push	True vertical depth = 14.1' 120 ppm HNu Reading Strong Hydrocarbon Odor
25	Clay (CH) steel gray, little silt, damp, plastic									
30	Sandy Clay (CL) mottled steel gray and olive brown, wet					4			Push	True vertical depth = 21.2' 18 ppm HNu Reading Hydrocarbon Odor (Evaporates Quickly)
35	Bottom of boring at 31.5'									

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE PHASE 2 NO. 8910023C 01-0331

BORING LOCATION B-8			ELEVATION AND DATUM N/A		
DRILLING AGENCY ENSCO	DRILLER G. Nunes		DATE STARTED / DATE FINISHED April 11, 1989		
DRILLING EQUIPMENT Mobile B-53			COMPLETION DEPTH 36.5'		SAMPLER 2.5" Modified California Type
DRILLING METHOD 8" Hollow-stem Auger	DRILL BIT 8" Auger		NO. OF SAMPLES DIST. 5		UNDIST. N/A
SIZE AND TYPE OF CASING N/A			WATER LEVEL FIRST N/A		COMPL. N/A / 24 HRS. N/A
TYPE OF PERFORATION N/A	FROM N/A TO N/A Ft.		LOGGED BY: J. Springer		CHECKED BY:
SIZE AND TYPE OF PACK N/A	FROM N/A TO N/A Ft.				
TYPE OF SEAL NO. 1 N/A	FROM N/A TO N/A Ft.				
NO. 2 N/A	FROM N/A TO N/A Ft.				

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet.)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Silty Clay (CH) black, damp, plastic									45 Degree angle hole drift = N35E 5 ppm HNu Reading Hydrocarbon Odor
10	Silty Sand (SM), black, few pebbles						1		Push	True Depth = 7.1' 14 ppm HNu Reading Slight Hydrocarbon Odor
	Clay (CH) olive green, plastic, damp									
15	Clay (CH) mottled olive brown and green, little silt, damp, plastic						2		Push	True Depth = 10.6' 300 ppm HNu Reading Strong Hydrocarbon Odor
20	Silty Clay (CH) mottled steel gray and olive brown, damp						3		Push	True Depth = 14.1' 14 ppm HNu Reading
25	as above with little silt and trace of sand						4		Push	True Depth = 19.1' 22 ppm HNu Reading
30										
35										True Depth = 24.8'

01-033E

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: DRIVE NUMBER	SAMPLES: SAMPLE NUMBER	SAMPLES: Recov. (feet)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
35	Clay (CH) mottled olive brown and steel gray, plastic, moist						S		Push	True Depth = 24.8' 80 ppm HNu Reading Slight Hydrocarbon Odor
	Bottom of boring at 36.5'									
40										
45										
50										
55										
60										
65										
70										
75										
80										

FIELD LOG OF BORING NO. B-8 SHEET 2OF 2

Woodward-Clyde Consultants PROJECT NAME NED CLYDE PHASE 2 NO. 8910023C

BORING LOCATION B-9		ELEVATION AND DATUM N/A	
DRILLING AGENCY ENSCO	DRILLER G. Nunes	DATE STARTED / DATE FINISHED April 11, 1989	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 7.5'	SAMPLER 2.5" Modified California Type
DRILLING METHOD 8" Hollow-stem Auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. 1	UNDIST. N/A
SIZE AND TYPE OF CASING N/A		WATER LEVEL FIRST N/A	COMPL. N/A / 24 HRS. N/A
TYPE OF PERFORATION N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Springer	CHECKED BY:
SIZE AND TYPE OF PACK N/A	FROM N/A TO N/A FT.		
TYPE OF SEAL NO. 1 N/A	FROM N/A TO N/A FT.		
NO. 2 N/A	FROM N/A TO N/A FT.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet.)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Silty Clay (CH-CL) black, trace of sand, damp									0 ppm HNu Reading
5	Clay (CH) olive green, trace of sand, roots, plastic, damp					1			6 8 12	0 ppm HNu Reading
7.5	Bottom of boring at 7.5'									
10										
15										
20										
25										
30										
35										

Woodward-Clyde Consultants PROJECT NAME NED CLYDE PHASE 2 NO. 8910023C

BORING LOCATION	B-10			ELEVATION AND DATUM	N/A
DRILLING AGENCY	WCC	DRILLER	J. Springer	DATE STARTED / DATE FINISHED	April 12, 1989
DRILLING EQUIPMENT	Hand Auger			COMPLETION DEPTH	7.2'
DRILLING METHOD	Hand Auger	DRILL BIT	6" O.D.	NO. OF SAMPLES / DIST.	2
SIZE AND TYPE OF CASING	N/A			WATER LEVEL / FIRST	N/A
TYPE OF PERFORATION	N/A	FROM	N/A TO N/A Ft.	COMPL. / 24 HRS.	N/A / N/A
SIZE AND TYPE OF PACK	N/A	FROM	N/A TO N/A Ft.	LOGGED BY:	J. Springer
TYPE OF SEAL NO. 1	N/A	FROM	N/A TO N/A Ft.	CHECKED BY:	
TYPE OF SEAL NO. 2	N/A	FROM	N/A TO N/A Ft.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
	Sandy Gravel (GW), black, dry									
	Clay (CH), olive green, little silt, damp									Slight Hydrocarbon Odor
	Silty Clay (CH-CL), black, wet									Strong Hydrocarbon Odor
	Clay (CH), black, damp, plastic									Strong Hydrocarbon Odor
5	Clay (CH), dark green, plastic, damp pebbly at 5.8'				5					Strong Hydroicarbon Odor
	Clay (CH), tan to olive green						1			Strong Hydrocarbon Odor
	Bottom of boring at 7.2'									2 grab samples taken at 7.2'
10					10					
15					15					
20					20					
25					25					
30					30					
35					35					

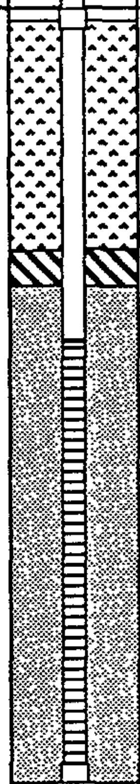
Woodward-Clyde Consultants

PROJECT NAME NED CLYDE PHASE 2 **NO.** 8910023C

BORING LOCATION MW-2		**ELEVATION AND DATUM** N/A	
DRILLING AGENCY ENSCO	**DRILLER** G. Nunes	**DATE STARTED / DATE FINISHED** April 10, 1989	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 20.9'	**SAMPLER** 2.5" Modified California Type
DRILLING METHOD 8" Hollow-stem Auger	**DRILL BIT** 8" Auger	**NO. OF SAMPLES** DIST. 3	UNDIST. N/A
SIZE AND TYPE OF CASING 2" Schedule 40 PVC		**WATER LEVEL** FIRST 18'	COMPL. N/A / 24 HRS. 8'
TYPE OF PERFORATION .010" Slotted	FROM 10.6 TO 20.6 Ft.	**LOGGED BY:** J. Springer	**CHECKED BY:**
SIZE AND TYPE OF PACK #1/20 Lonestar Monterey Sand	FROM 7.5 TO 20.6 Ft.		
TYPE OF SEAL NO. 1 Bentonite Pellets	FROM 6.5 TO 7.5 Ft.		
TYPE OF SEAL NO. 2 Concrete	FROM 0.4 TO 6.5 Ft.		

DEPTH (feet)	DESCRIPTION	Piezometer Data	Drive Number	Recov. (Feet)	Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Clay (CH) black, plastic, little silt, damp					0 ppm HNu Reading
5	Clay (CH) olive green, plastic, damp					
7	Clay (CH) mottled olive brown and gray	24 hrs	1		7 / 15 / 18	300 ppm HNu Reading; *Strong Hydrocarbon Odor*; Lost sample, went back, and drove sampler an additional 6"
13	Clayey Sand (SC), brown, coarse-grained		2		15 / 10 / 8	75 ppm HNu Reading; Hydrocarbon Odor
14	Clay (CH) olive brown, plastic, wet					
16	Clay (CH) mottled olive brown and steel gray, plastic, damp	ATD	3		6 / 6 / 10	1.2 ppm HNu Reading
20.9	Augered to 20.9'					

GRAPHIC LOG: Lithology / Piezometer Installation



Peizometer Legend
- Slotted Well Screen
- Sand Pack
- Bentonite Pellets
- Cement/ Bentonite Grout

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE GW MONITORING NO. 8910023B

BORING LOCATION	MW-3 North Side of Property	ELEVATION AND DATUM	N/A
DRILLING AGENCY	ENSCO	DRILLER G. Nunes	DATE STARTED / DATE FINISHED May 11, 1989
DRILLING EQUIPMENT	Mobile B-53	COMPLETION DEPTH 15'	SAMPLER 2.5" Modified California Type
DRILLING METHOD	8" Hollow-stem Auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. N/A; UNDIST. 2
SIZE AND TYPE OF CASING	2" Schedule 40 PVC	WATER LEVEL FIRST 11'	COMPL. N/A 24 HRS. N/A
TYPE OF PERFORATION	.010" Slotted	FROM 5.0 TO 15.0 Ft.	LOGGED BY: S. Clarke
SIZE AND TYPE OF PACK	#1/20 Lonestar Monterey Sand	FROM 5.0 TO 15.0 Ft.	CHECKED BY:
TYPE OF SEAL	NO. 1 Bentonite Pellets	FROM 4.0 TO 5.0 Ft.	
	NO. 2 Concrete/Bentonite Grout	FROM 0.4 TO 4.0 Ft.	

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Silty Clay (CH) Moist, dark gray									
5	Becoming gray									
10	Becoming light gray-brown					1		NR	7, 10, 16	
15	Augered to 15'					2			7, 13, 13	
20										
25										
30										
35										

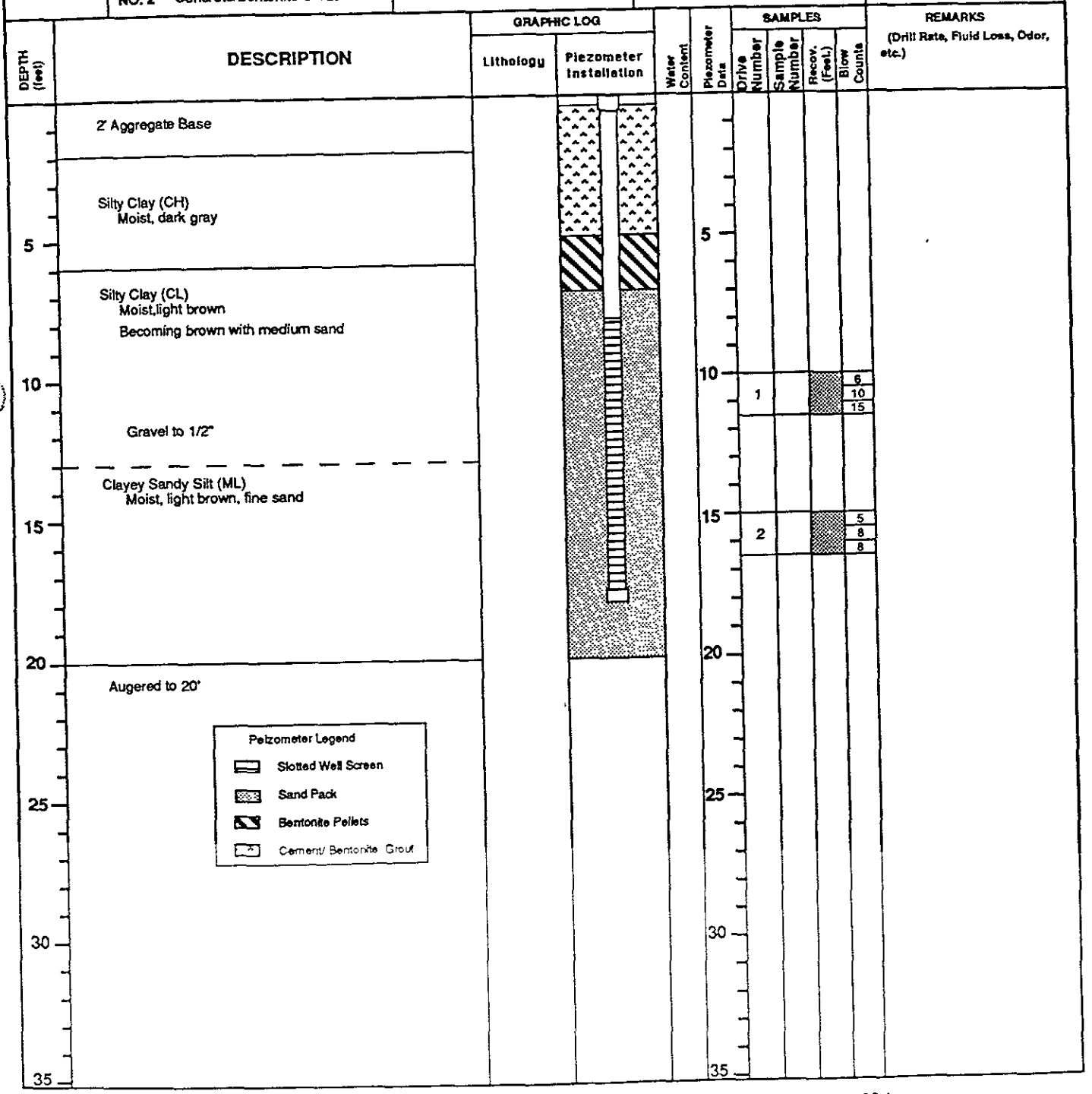
Piezometer Legend
- Slotted Well Screen
- Sand Pack
- Bentonite Pellets
- Cement/ Bentonite Grout

FIELD LOG OF BORING NO. MW-3 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE GW MONITORING NO. 8910023B

BORING LOCATION	MW-4 SW Corner of Property	ELEVATION AND DATUM	N/A
DRILLING AGENCY	ENSCO	DRILLER G. Nunes	DATE STARTED / DATE FINISHED May 11, 1989
DRILLING EQUIPMENT	Mobile B-53	COMPLETION DEPTH 20'	SAMPLER 2.5" Modified California Type
DRILLING METHOD	8" Hollow-stem Auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. N/A; UNDIST. N/A
SIZE AND TYPE OF CASING	2" Schedule 40 PVC		WATER LEVEL FIRST N/A; COMPL. N/A; 24 HRS. N/A
TYPE OF PERFORATION	.010" Slotted	FROM 8.0 TO 18.0 Ft.	LOGGED BY: S. Clarke
SIZE AND TYPE OF PACK	#1/20 Lonestar Monterey Sand	FROM 7.0 TO 20.0 Ft.	CHECKED BY:
TYPE OF SEAL	NO. 1 Bentonite Pellets	FROM 5.0 TO 7.0 Ft.	
	NO. 2 Concrete/Bentonite Grout	FROM 0.4 TO 5.0 Ft.	



FIELD LOG OF BORING NO. MW-4 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE GW MONITORING NO. 8910023B

BORING LOCATION: MW-5, South Side of Property		ELEVATION AND DATUM: N/A	
DRILLING AGENCY: ENSCO	DRILLER: G. Nunes	DATE STARTED / DATE FINISHED: May 11, 1989	
DRILLING EQUIPMENT: Mobile B-53		COMPLETION DEPTH: 20'	SAMPLER: 2.5" Modified California Type
DRILLING METHOD: 8" Hollow-stem Auger	DRILL BIT: 8" Auger	NO. OF SAMPLES: DIST. N/A	UNDIST. N/A
SIZE AND TYPE OF CASING: 2" Schedule 40 PVC		WATER LEVEL: FIRST N/A	COMPL. N/A / 24 HRS. N/A
TYPE OF PERFORATION: .010" Slotted	FROM 8.0 TO 18.0 FT.	LOGGED BY: S. Clarke	CHECKED BY:
SIZE AND TYPE OF PACK: #1/20 Lonestar Monterey Sand	FROM 7.0 TO 18.0 FT.		
TYPE OF SEAL: NO. 1 Bentonite Pellets	FROM 5.0 TO 7.0 FT.		
NO. 2 Concrete/Bentonite Grout	FROM 0.4 TO 5.0 FT.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	1' Gravel Base									
	Silty Clay (CH) Moist, dark gray									
5	Silty Clay (CL) Moist,light brown									
	Becoming brown with medium sand									
10	Silty Fine Sand (SM) Medium dense, moist					1			8, 10, 25	
15	Silty Gravelly Sand (SM) Gravel to 3/4"									
	Less gravel									
20	*Augered to 20'*									
25										
30										
35										

Piezometer Legend
- Slotted Well Screen
- Sand Pack
- Bentonite Pellets
- Cement/ Bentonite Grout

FIELD LOG OF BORING NO. MW-5 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME NED CLYDE GW MONITORING NO. 8910023B 01-033

BORING LOCATION	MW-6 SE Corner of Property	ELEVATION AND DATUM	N/A
DRILLING AGENCY	ENSCO	DRILLER G. Nunes	DATE STARTED / DATE FINISHED May 11, 1989
DRILLING EQUIPMENT	Mobile B-53	COMPLETION DEPTH 18'	SAMPLER 2.5" Modified California Type
DRILLING METHOD	8" Hollow-stem Auger	DRILL BIT 8" Auger	NO. OF SAMPLES DIST. 1 / UNDIST. N/A
SIZE AND TYPE OF CASING	2" Schedule 40 PVC		WATER LEVEL FIRST 11' / COMPL. N/A / 24 HRS. N/A
TYPE OF PERFORATION	.010" Slotted	FROM 8.0 TO 18.0 FT.	LOGGED BY: S. Clarke
SIZE AND TYPE OF PACK	#1/20 Lonestar Monterey Sand	FROM 7.0 TO 18.0 FT.	CHECKED BY:
TYPE OF SEAL	NO. 1 Bentonite Pellets	FROM 5.0 TO 7.0 FT.	
	NO. 2 Concrete/Bentonite Grout	FROM 0.4 TO 5.0 FT.	

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG: Lithology	GRAPHIC LOG: Piezometer Installation	Water Content	Piezometer Data	SAMPLES: Drive Number	SAMPLES: Sample Number	SAMPLES: Recov. (Feet)	SAMPLES: Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
0	Silty Clay (CH) Moist, dark gray									
5	Silty Clay (CL) Gray-brown, moist									
	Sandy Silty Clay (CL) Light brown, fine sand									
10	Sandy Silt (ML) Light brown, fine sand				ATD	1			8 / 10 / 15	
	Gravel layer									
15										
	Augered to 18'									
20										
25										
30										
35										

Petzometer Legend
- Slotted Well Screen
- Sand Pack
- Bentonite Pellets
- Cement/Bentonite Grout