

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY
DAVID J. KEARS, Agency Director



RAFAT A. SHAHID, DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
1131 Harbor Bay Parkway
Alameda, CA 94502-6577
(510) 567-6700

March 4, 1996

STID # 3204

REMEDIAL ACTION COMPLETION CERTIFICATION

B.A.R.T. Maintenance Facility
ATTN: Brent Baldwin
P.O. Box 12688
Oakland, CA 94604-2688

RE: 601 EAST 8TH STREET, OAKLAND

Dear Mr. Baldwin,

This letter confirms the completion of site investigation and remedial action for the one (1) 8000-gallon and one (1) 7000-gallon gasoline, one (1) 7000-gallon diesel and one (1) 500-gallon waste oil underground storage tanks at the above described location.

Based upon the available information and with provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground tank release is required.

This notice is issued pursuant to the regulation contained in Title 23, Division 3, Chapter 16, Section 2721 (e) of the California Code of Regulations.

Please contact Dale Klettke at (510) 567-6880 if you have any questions regarding this matter.

Sincerely,

Jun Makishima
Interim Director of Environmental Health

c: Gordon Coleman, Acting Chief, Department of Environmental Protection-files
Kevin Graves, RWQCB
Mike Harper, SWRCB

3204racc.dkt

01-0464

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: January 2, 1996

Agency name: Alameda County-HazMat Address: 1131 Harbor Bay Pkwy
City/State/Zip: Alameda, CA 94502 Phone: (510) 567-6700
Responsible staff person: T.Peacock Title: Sup Haz. Materials Spec.

II. CASE INFORMATION

Site facility name: Bay Area Rapid Transit
Site facility address: 601 East 8th Street, Oakland, CA 94606
RB LUSTIS Case No: N/A Local Case No./LOP Case No.: 3204
URF filing date: 12/8/92 SWEEPS No: N/A

Responsible Parties: SF BART District
Addresses: 800 Madison Street
Oakland, CA 94607
Phone Numbers: (510) 464-6000

<u>Tank No:</u>	<u>Size in gal.:</u>	<u>Contents:</u>	<u>Closed in-place or removed?:</u>	<u>Date:</u>
1	8000	gasoline	removed	10/05/1989
2	7000	gasoline	removed	10/05/1989
3	7000	diesel	removed	10/05/1989
4	500	waste oil	removed	10/05/1989

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: suspected leak-perforations observed in bottom/south end - unleaded gasoline tank #1.
Site characterization complete? YES
Date approved by oversight agency: April 2, 1990
Monitoring Wells installed? YES Number: three
Proper screened interval? YES
Highest GW depth below ground surface: 20.84 feet on 4/22/95 Lowest depth: 25.72 feet on 9/27/95
Flow direction: S17E on 6/29/94, S8W on 9/27/95, S38E on 1/24/95 and S10E on 4/22/95.
Most sensitive current use: undetermined
Are drinking water wells affected? NO Aquifer name: N/A
Is surface water affected? NO Nearest affected SW name: N/A
Off-site beneficial use impacts (addresses/locations): N/A
Report(s) on file? YES Where is report(s) filed? Alameda County
1131 Harbor Bay Pkwy
Alameda, CA 94502

Treatment and Disposal of Affected Material:

<u>Material</u>	<u>Amount</u> (include units)	<u>Action (Treatment</u> <u>or Disposal w/destination)</u>	<u>Date</u>
Tank	1-8000gal	disposal/Triangle, Sacramento	10/11/1989
Tank	1-7000gal	disposal/Triangle, Sacramento	10/11/1989
Tank	1-7000gal	disposal/Levins Metals, Richmond	10/05/1989
Tank	1-500gal	disposal/Levins Metals, Richmond	10/05/1989
Piping	UNK	UNK	
Free Product			
Soil	233.5 tons	disposal/Liquid Waste Mgmt.	9/10/1990
	580 cubic yard	disposal/Durham Road Landfill	11/12/1990
	252 cubic yard	disposal/BFI-Vasco Road	12/06/1990
Groundwater	2500gal	disposal/H & H Environmental	10/31/1989
Barrels			

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

<u>Contaminant</u>	<u>Soil (ppm)</u>		<u>Water (ppb)</u>	
	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>
TPH (Gas)	5700	460 ¹	120,000	<50
TPH (Diesel)	<10	78	<50	<50
Benzene	22	0.12	15,000	<0.5
Toluene	12	0.48	13,000	<0.5
Ethylbenzene	26	0.82	2,900	<0.5
Xylenes	5.5	0.31	20,000	<0.5
Oil & Grease	<50			
Heavy metals	²			
Other - organic lead	2.3 ³			
Total lead				

Comments (Depth of Remediation, etc.):

Three underground fuel storage tanks and one underground waste oil tank were removed from the site on October 5, 1989. Upon removal, the unleaded tank was observed to be perforated at the bottom and south ends of the tank. The tank contents and approximate volumes were: unleaded gasoline (8000 gallons), regular gasoline (7000 gallons), diesel (7000 gallons) and waste oil (500 gallons). Groundwater containing patches of floating product (less than 0.25 inches thick) was observed after fuel tank removal.

¹ This result was from test boring RW@9'.

² The heavy metals cadmium, chromium, lead and zinc were detected at the apparent geogenic concentrations of 1.9 ppm, 26 ppm, 15 ppm and 300 ppm, respectively, from the soil sample obtained from beneath the waste oil tank (WO @ 7').

³ This result was for soil sample B9-B12, obtained from a composite of stockpiled soils from the leaded gasoline UST excavation-Tank #2.

During tank excavations the depth to groundwater was approximately 10' below ground surface (bgs). The groundwater sample collected from the fuel tank excavation detected 120 ppm-total volatile hydrocarbons (TVH), 15 ppm-benzene, 13 ppm-toluene, 2.9 ppm-ethyl benzene and 20 ppm-total xylenes (see Table 1).

On October 31, 1989, about 350 cubic yards (cy) of contaminated soil was removed to a maximum depth of approximately 14' bgs. Prior to soil removal, about 2500 gallons of water was pumped from the excavation.

Subsurface conditions outside of the tank excavation limits were explored by drilling seven (7) soil borings at the locations shown in Plates 1 and 2. The boring locations were chosen to define the lateral extent of petroleum hydrocarbon contamination at the site. The results of the laboratory analyses are summarized in Table 3.

Additional soil was removed during excavations performed to remediate areas where concentrations of contaminants were detected at greater than the established clean-up level (100 ppm-TVH), for a total of approximately 600 cubic yards. Excavated soil was used as backfill if the analytical test results indicated less than 10mg/kg gasoline or diesel, and less than 0.5 mg/L of soluble lead.

On May 6, 1991 three test borings were drilled to a depth of approximately 20 to 22' bgs. These borings were subsequently converted to monitoring wells MW-1, MW-2 and MW-3. The analytical results for the water samples taken from the three monitoring wells were found to contain non-detectable concentrations of TPHg, TPHd and BTEX fractions.

On June 20, 1994 three new monitoring wells (MW-1A, MW-2A and M-3A) were installed. This was due to the result of substantial differences in ground water elevations measured in the three existing monitoring wells, and the fact that two of the wells eventually went dry. It appears that the water encountered in the initial monitoring wells was perched. Ground water was encountered at approximately 25 to 28' bgs in monitoring wells MW-1A, MW-2A and MW-3A. The results of the laboratory analysis of the groundwater samples collected from the three new monitoring wells indicated that, except for 0.7 ppb toluene and 1.3 ppb total xylenes in the water sample collected from monitoring well MW-1A, TPHg, TPHd and BTEX fractions were not detected above laboratory detection limits in the ground water samples.

See Section VII, Additional Comments, etc...

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? **YES**
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? **YES**

Does corrective action protect public health for current land use? **YES**
Site management requirements: **None**

Should corrective action be reviewed if land use changes? **YES**
Monitoring wells Decommissioned: **YES, 3 of 6**
Number Decommissioned: **three** Number Retained: **three**
List enforcement actions taken: **8/26/93 ACHCSA NOV letter for failure to implement a quarterly monitoring program.**

List enforcement actions rescinded:

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Dale H. Klettke** Title: **Haz Mat Specialist**

Signature: *Dale Klettke* Date: *1/2/96*

Reviewed by

Name: **Thomas Peacock** Title: **Supervising Haz Mat Spec.**

Signature: *Thomas Peacock* Date: *1-2-96*

Name: **Barney Chan** Title: **Haz Mat Specialist**

Signature: *Barney Chan* Date: *1/2/96*

VI. RWQCB NOTIFICATION

Date Submitted to RB: RB Response: *Approved*

RWQCB Staff Name: **Kevin Graves** Title: **AWRCE**

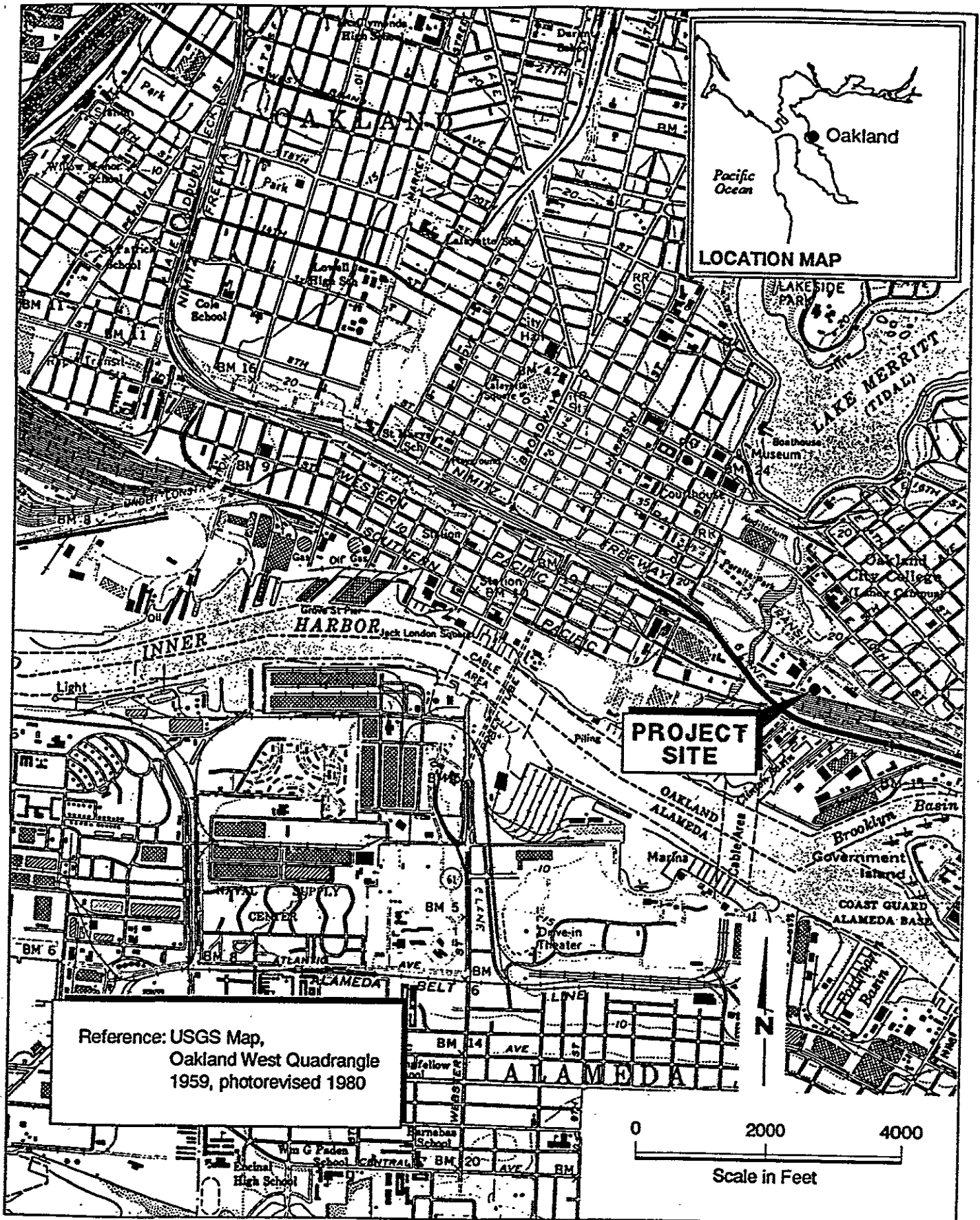
Signature: *Kevin Graves* Date: *1/31/96*

VII. ADDITIONAL COMMENTS, DATA, ETC.

On September 6, 1994 the three original groundwater monitoring wells MW-1, MW-2 and MW-3 were destroyed.

Quarterly groundwater monitoring has been performed for the three new wells (MW-1A, MW-2A and MW-3A on June 29, 1994, September 27, 1994, January 24, 1995 and April 22, 1995. Sampling results from the groundwater samples collected from the three new monitoring wells were found to contain non-detectable concentrations of TPHg and BTEX for these four consecutive quarterly sampling events.

Based on the groundwater sampling results for the three newly installed wells, it is determined that the shallow groundwater aquifer beneath the site has not been impacted by the former release of petroleum hydrocarbons from the former USTs. Therefore, continued groundwater monitoring is not warranted in this case.



Reference: USGS Map,
Oakland West Quadrangle
1959, photorevised 1980

PROJECT SITE

JOHN H. DAILEY
CONSULTING GEOTECHNICAL ENGINEER

Site Location Map
601 East Eighth Street
Oakland, California

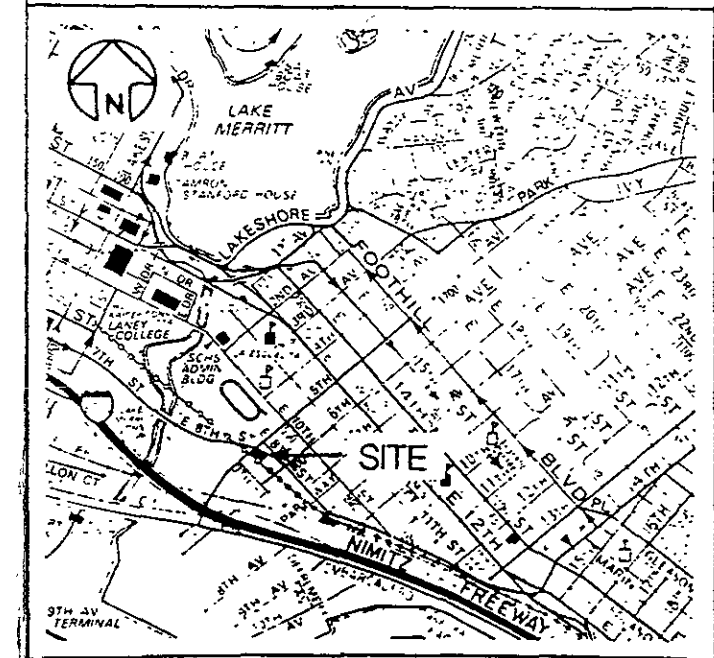
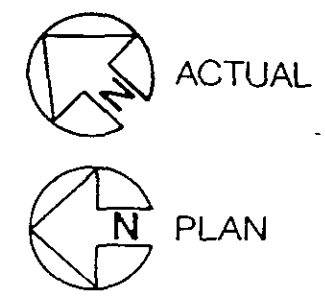
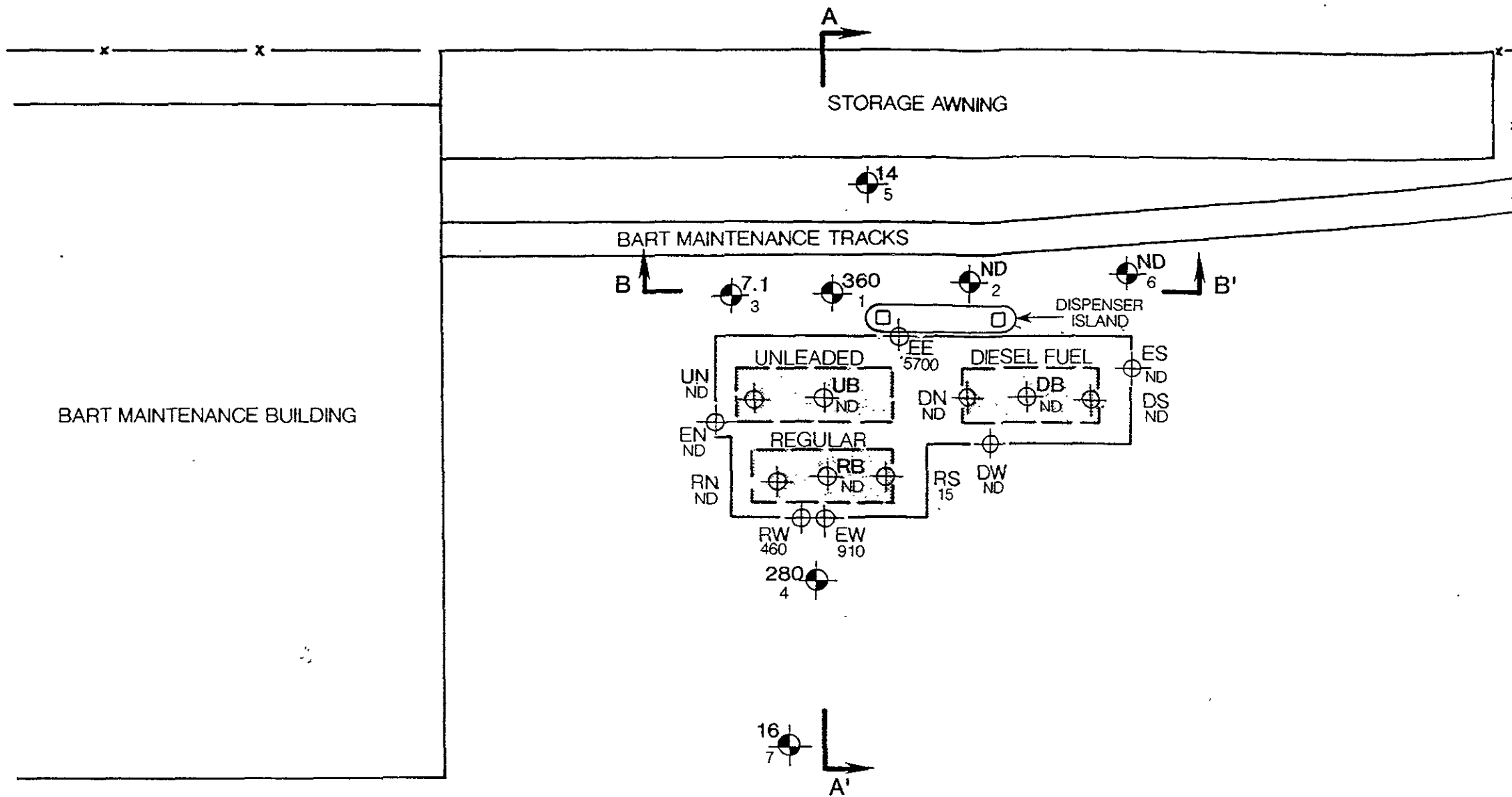
PLATE
1

JOB NUMBER
9405

REVIEWED BY
JHD

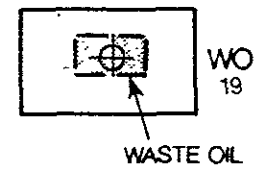
DATE
8/94

REVISED DATE

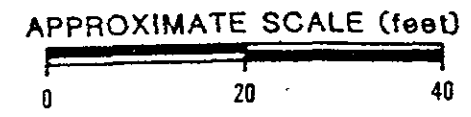


VICINITY MAP

SITE PLAN

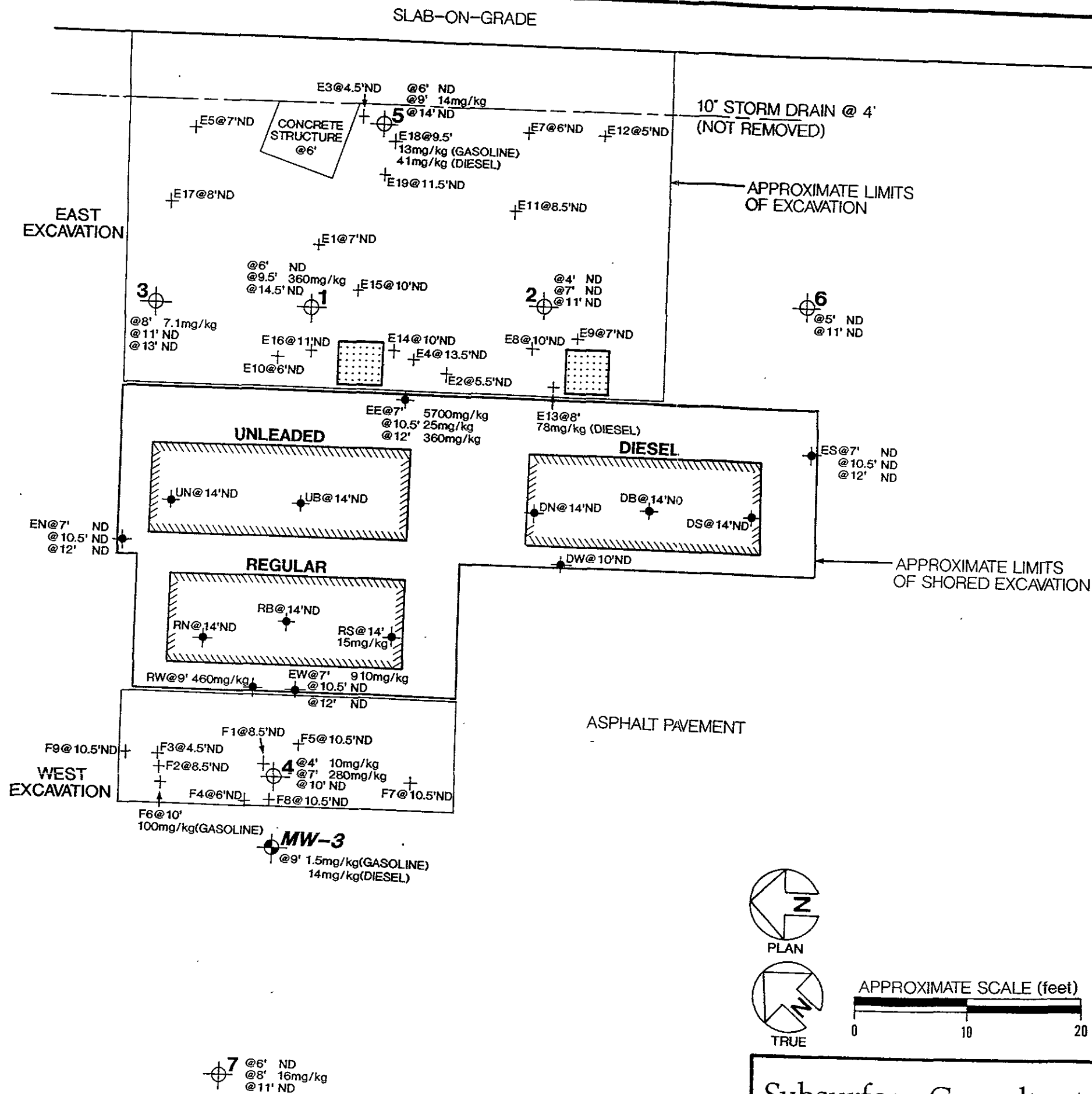


- CROSS SECTIONS (SEE PLATE 8)
- TEST BORING, SHOWING HIGHEST TVH RESULT (IN PARTS PER MILLION)
- TANK EXCAVATION SAMPLE, SHOWING HIGHEST TVH RESULT
- APPROXIMATE FORMER STORAGE TANK LOCATIONS
- APPROXIMATE LIMITS OF EXCAVATION



Subsurface Consultants

BART EAST OAKLAND MAINTENANCE FACILITY		APPROVED 	PLATE 1
JOB NUMBER 364.017	DATE 10/30/89		



EXCAVATION PLAN

BART EAST OAKLAND MAINTENANCE FACILITY

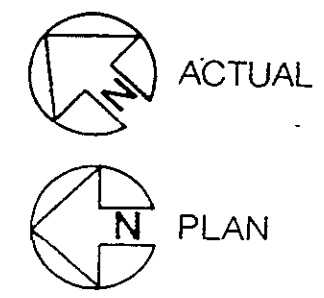
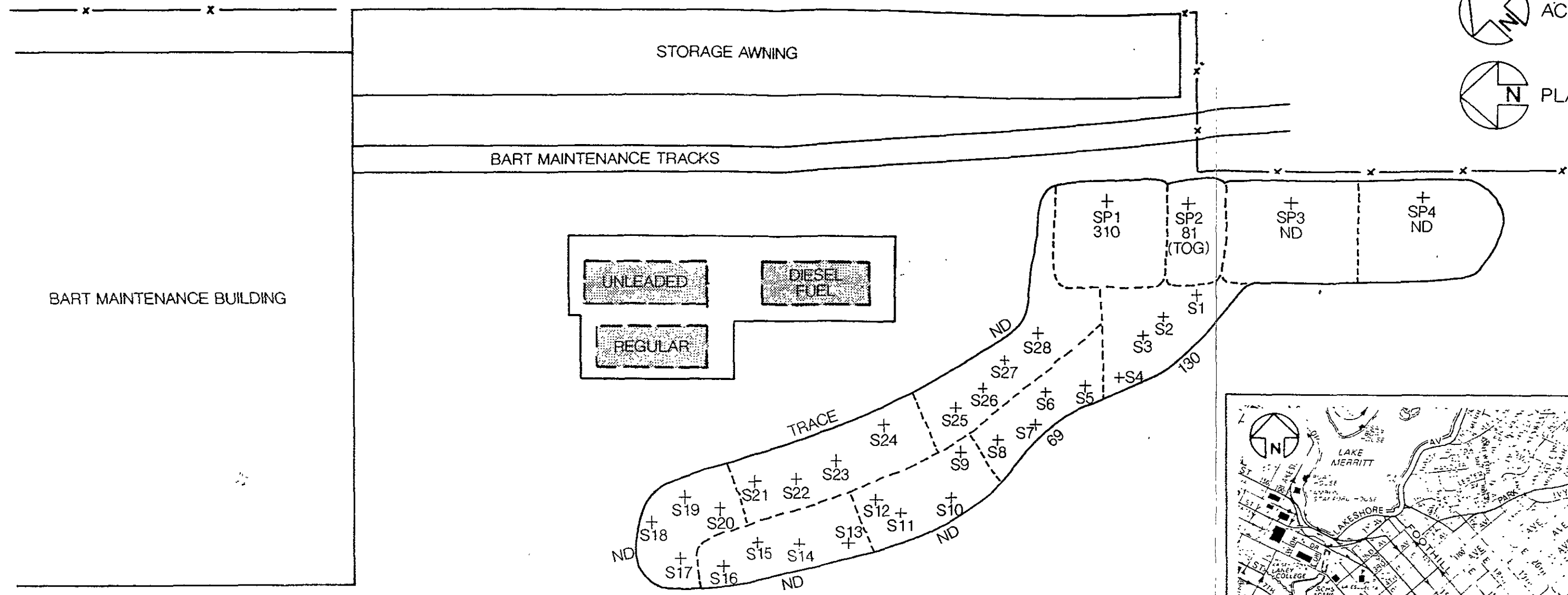
JOB NUMBER 364.018

DATE 6/12/91

APPROVED

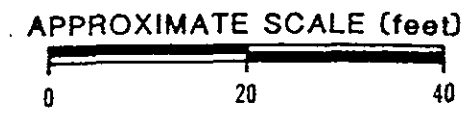
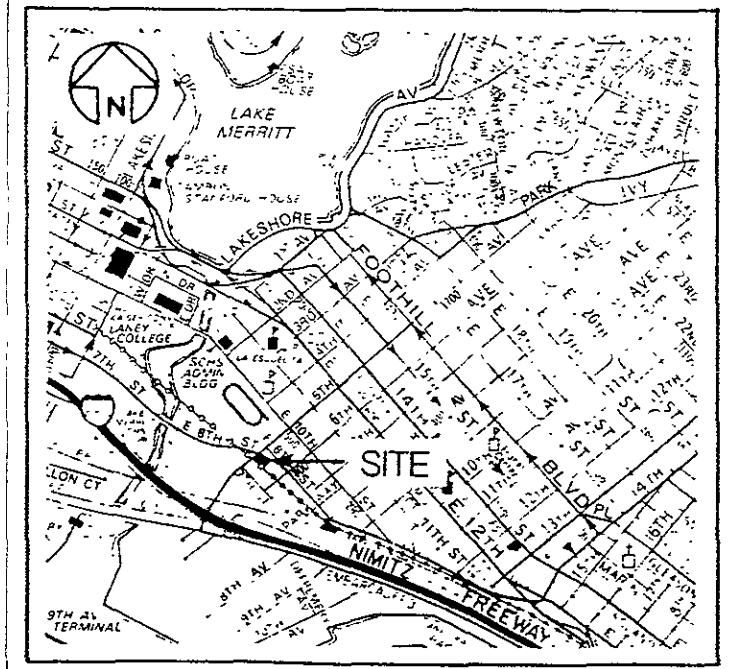
PLATE 2

Subsurface Consultants



+ STOCKPILE SAMPLE LOCATION (SHOWING TVH RESULT IN PARTS PER MILLION)

□ APPROXIMATE LIMITS OF SAMPLED AREA



STOCKPILE MAP

Subsurface Consultants

BART EAST OAKLAND MAINTENANCE FACILITY			PLATE
JOB NUMBER	DATE	APPROVED	3
364.017	10/30/89	<i>[Signature]</i>	

Table 1 - Summary of TVH, TEH, TOG, BTXE and VOC Analytical Test Results of Samples from the Excavation and Stockpiles

<u>Sample</u>	<u>TVH</u> <u>(ppm)¹</u>	<u>TEH</u> <u>(ppm)</u>	<u>TOG</u> <u>(ppm)</u>	<u>Benzene</u> <u>(ppm)</u>	<u>Toluene</u> <u>(ppm)</u>	<u>Total</u> <u>Xylenes</u> <u>(ppm)</u>	<u>Ethyl-</u> <u>benzene</u> <u>(ppm)</u>
<u>From excavation:</u>							
DB @ 14'	-- ²	ND ³	--	--	--	--	--
DN @ 14'	--	ND	--	0.550	0.160	0.650	0.630
DS @ 14'	--	ND	--	0.055	0.016	0.180	0.035
DW @ 10'	--	ND	--	0.290	0.035	0.035	0.017
EE @ 7'	5700	--	--	--	--	--	--
EE @ 10.5'	25	--	--	--	--	--	--
EE @ 12'	360	--	--	--	--	--	--
EN @ 7'	ND	--	--	--	--	--	--
EN @ 10.5'	ND	--	--	--	--	--	--
EN @ 12'	ND	--	--	--	--	--	--
ES @ 7'	--	ND	--	--	--	--	--
ES @ 10.5'	--	ND	--	--	--	--	--
ES @ 12'	--	ND	--	--	--	--	--
EW @ 7'	910	--	--	--	--	--	--
EW @ 10.5'	ND	--	--	--	--	--	--
EW @ 12'	ND	--	--	--	--	--	--
RB @ 14'	ND	--	--	--	--	--	--
RN @ 14'	ND	--	--	ND	ND	ND	ND
RS @ 14'	15	--	--	0.140	0.009	0.073	0.130
RW @ 9'	460	--	--	6.800	3.300	4.000	5.900
UB @ 14'	ND	--	--	--	--	--	--
UN @ 14'	ND	--	--	0.180	0.007	ND	0.020
WO @ 7'	19	ND	ND	1.500 ⁴	0.043 ⁴	0.120 ⁴	0.094 ⁴
FT(water)	120	ND	--	15	13	20	2.9
<u>From stockpiles:</u>							
SP1	310	--	--	--	--	--	--
SP2 ⁵	ND	41	81	--	--	--	--
SP3	ND	--	--	--	--	--	--
SP4	ND	--	--	--	--	--	--
S1-4	130	--	--	--	--	--	--
S5-8	69	--	--	--	--	--	--
S9-12	ND	--	--	--	--	--	--

<u>Sample</u>	<u>TVH</u> <u>(ppm)¹</u>	<u>TEH</u> <u>(ppm)</u>	<u>TOG</u> <u>(ppm)</u>	<u>Benzene</u> <u>(ppm)</u>	<u>Toluene</u> <u>(ppm)</u>	<u>Total</u> <u>Xylenes</u> <u>(ppm)</u>	<u>Ethyl-</u> <u>benzene</u> <u>(ppm)</u>
S13-16	ND	--	--	--	--	--	--
S17-20	ND	--	--	--	--	--	--
S21-24	Trace	--	--	--	--	--	--
S25-28	ND	--	--	--	--	--	--

¹ Parts per million (mg/kg or mg/L)

² Not measured

³ None detected, see test data sheets in Appendix for detection limits

⁴ Detected using EPA 8240 (no other VOC's detected in sample), all other BTXE detected using EPA 8020/602

⁵ From waste oil tank excavation

The results of analytical tests for cadmium, chromium, lead and zinc, on the soil sample from beneath the waste oil tank (WO @ 7') are on summarized Table 2.

Table 2 - Summary of Heavy Metal Analytical Test Results of Samples from the Waste Oil Tank Excavation

<u>Sample</u>	<u>Metal</u>	<u>Concentration</u> <u>(ppm)³</u>	<u>STLC¹</u> <u>(ppm)</u>	<u>TTL²</u> <u>(ppm)</u>
WO @ 7'	Cadmium	1.9	1.0	100
	Chromium	26	560	2500
	Lead	15	5.0	1000
	Zinc	30	250	5000

¹ Soluble threshold limit concentration

² Total threshold limit concentration

³ Parts per million (mg/kg or mg/L)

⁴ Includes chromium and/or chromium (III) compounds

TTL and STLC values are used by the State of California in evaluating whether materials containing these metals should be considered as hazardous wastes. Samples that contain metal

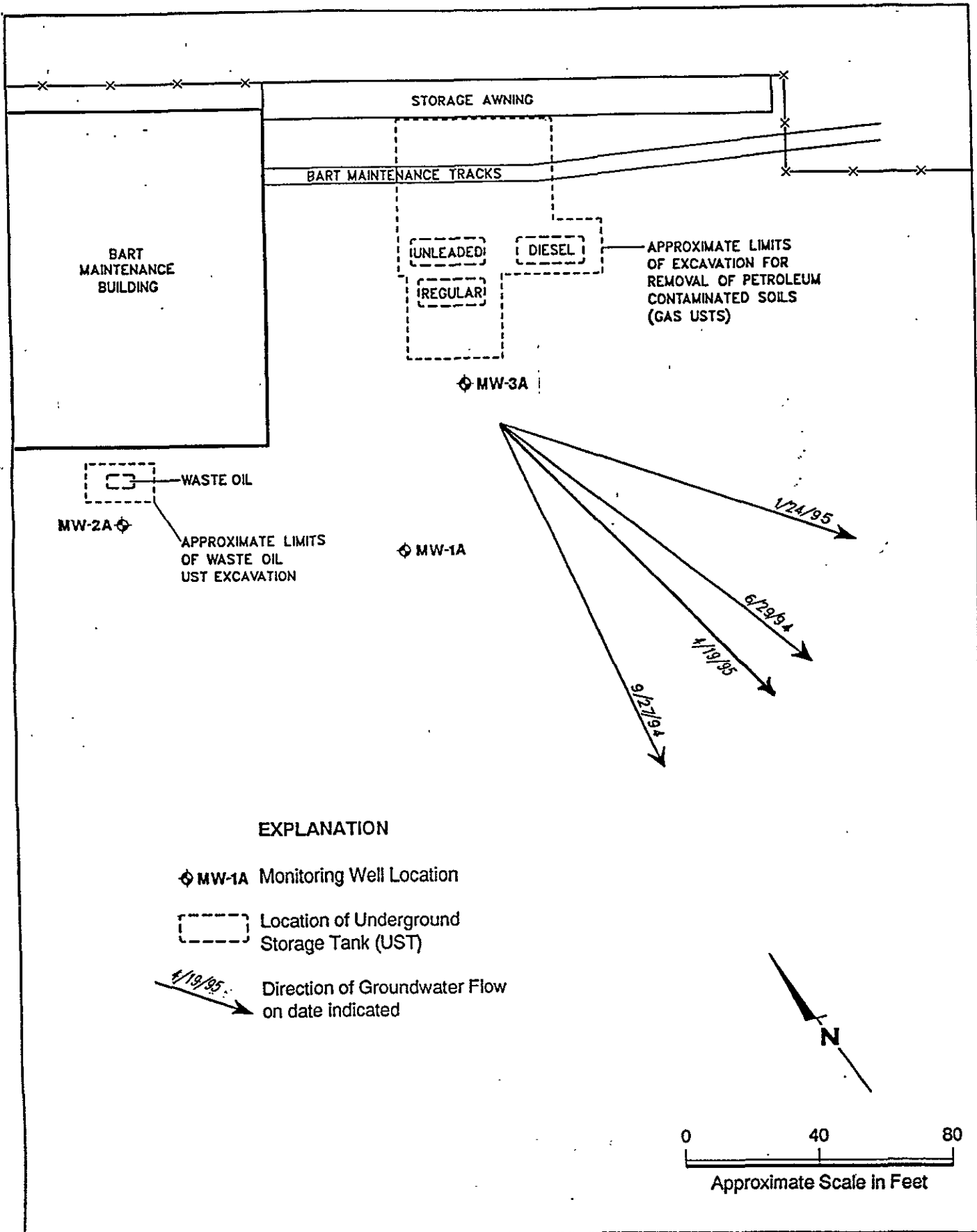
TABLE 3 - Summary of TVH and BTXE Analytical Test Results of Samples from the Test Borings

<u>Sample</u>	<u>TVH (ppm)¹</u>	<u>Benzene (ppm)</u>	<u>Toluene (ppm)</u>	<u>Total Xylenes (ppm)</u>	<u>Ethyl-benzene (ppm)</u>
1 @ 6'	ND ²	0.140	0.210	0.095	0.380
1 @ 9.5'	360	22.0	12.0	5.5	26.0
1 @ 14.5'	ND	ND	0.018	0.005	0.018
2 @ 4'	ND	0.025	0.006	0.007	0.013
2 @ 7'	ND	0.130	0.024	0.011	0.043
2 @ 11'	ND	0.016	0.009	ND	0.008
3 @ 8'	Trace ³	0.039	ND	0.057	0.062
3 @ 11'	ND	0.150	0.017	0.047	0.170
3 @ 13'	ND	0.069	0.009	ND	0.008
4 @ 4'	10	0.370	0.065	0.180	0.450
4 @ 7'	280	0.630	ND	5.4	0.590
4 @ 10'	ND	0.045	0.016	ND	0.015
5 @ 6'	ND	0.018	0.007	ND	0.017
5 @ 9'	14	0.017	0.008	ND	0.006
5 @ 14'	ND	0.009	0.056	ND	0.120
6 @ 5'	ND	0.025	0.045	0.019	0.016
6 @ 11'	ND	0.027	0.014	ND	ND
7 @ 6'	ND	0.017	0.041	ND	0.016
7 @ 8'	16	0.026	0.056	0.270	2.1
7 @ 11'	ND	0.017	0.009	ND	0.008

¹ Parts per million (mg/kg)

² None detected, see test data sheets in Appendix for detection limits

³ 7.1 ppm (less than detection limits)



JOHN H. DAILEY
 CONSULTING GEOTECHNICAL ENGINEER

Groundwater Flow Direction Map
 601 East Eighth Street
 Oakland, California

PLATE

1

JOB NUMBER
 9405

REVISION BY
[Signature]

DATE
 5/95

REVISED DATE

The latest water samples were collected by our engineer on April 22, 1995 and analyzed by McCampbell Analytical Inc. Based on the analyses by McCampbell Analytical Inc., there is no detectable contamination from the compounds that were the subject of the laboratory screening in the ground water at the locations of the monitoring wells installed for this investigation. The results of the laboratory analysis and field log data sheets are attached.

TABLE 1
GROUND WATER SURFACE ELEVATION DATA

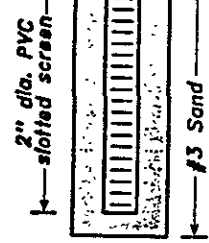
Well No.	Casing Elevation	Depth to Ground Water	Ground Water Elevation
June 29, 1994			S17°E @ 0.0130 ft/ft
MW-1A	9.94	21.85	-11.91
MW-2A	11.25	22.25	-11.00
MW-3A	11.13	22.78	-11.65
September 27, 1994			S8°W at 0.0339 ft/ft
MW-1A	9.94	25.72	-15.78
MW-2A	11.25	25.66	-14.41
MW-3A	11.13	25.50	-14.42
January 24, 1995			S38°E at 0.0088 ft/ft
MW-1A	9.94	22.72	-12.78
MW-2A	11.25	23.10	-11.85
MW-3A	11.13	23.90	-12.77
April 22, 1995			S10°E at 0.0330 ft/ft
MW-1A	9.94	21.52	-11.58
MW-2A	11.25	20.84	-9.59
MW-3A	11.13	21.89	-10.76

Elevation measurements are in feet and referenced to mean sea level

Closure

Based on the results of our investigation performed at the site, we do not believe that the ground water in the water table aquifer beneath the site has been impacted by the former

WELL CONSTRUCTION DETAIL % FINES (-#200) BLOWS/FT DEPTH (FT) SYMBOLS MATERIALS DESCRIPTION



21

31

35



GRAVELLY SILTY SAND (SM)
light olive brown (2.5Y 5/4), dense, saturated.

40

45

50

55

60

DRILL RIG	8" Hollow Stem Auger/2" Mod. CA Sampler	DIAMETER OF HOLE	8 inches
DATE STARTED	6/20/94	TOTAL DEPTH OF HOLE	35.5 feet
DATE COMPLETED	6/20/94	TOP OF CASING ELEVATION	9.94 feet MSL

JOHN H. DAILEY
CONSULTING GEOTECHNICAL ENGINEER

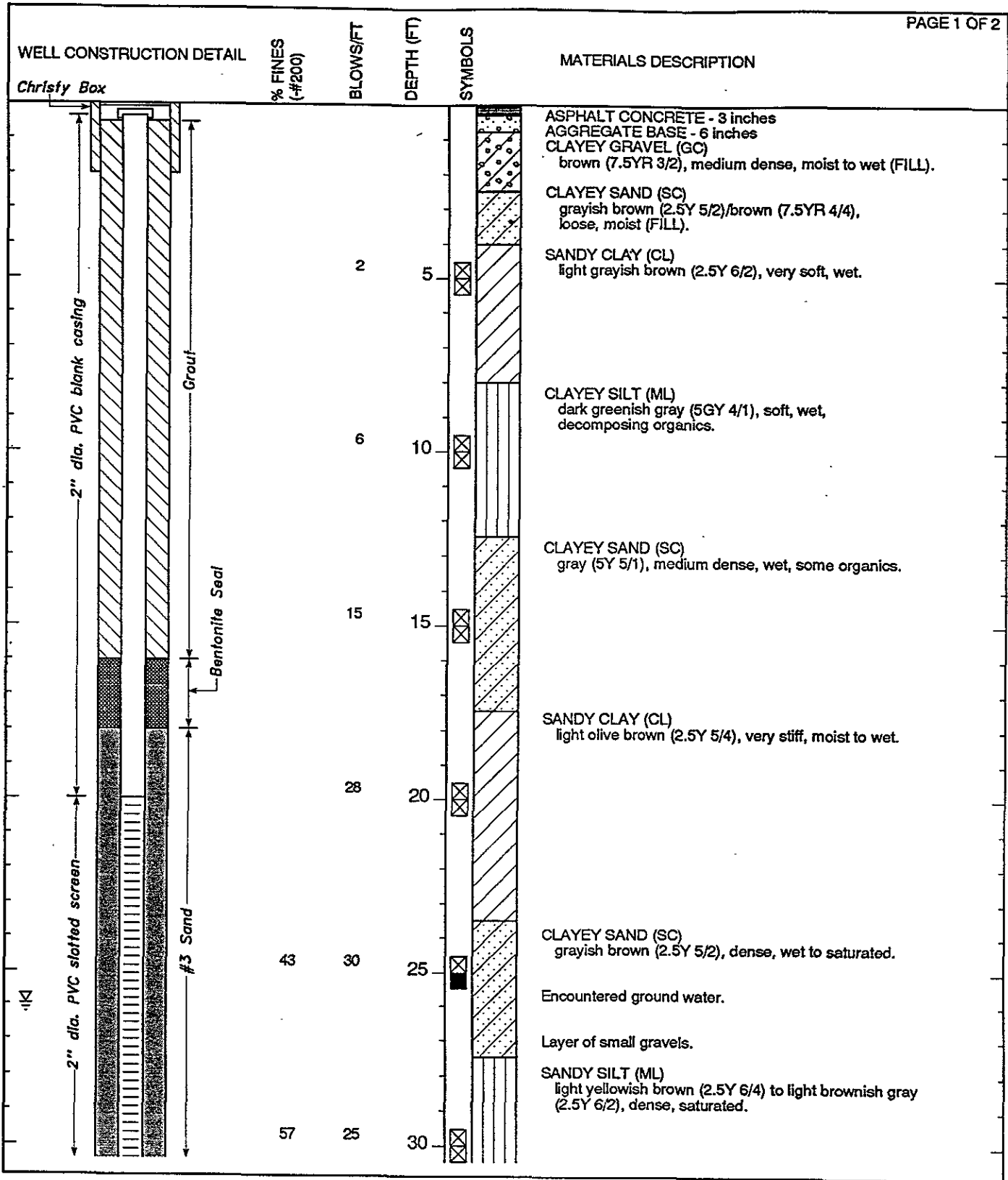
Log of Boring MW-1A and
Well Completion Detail
601 East Eighth Street
Oakland, California

PLATE

3A

JOB NUMBER 9405 REVIEWED BY *JAD*

DATE 8/94 REVISED DATE



DRILL RIG	8" Hollow Stem Auger/2" Mod. CA Sampler	DIAMETER OF HOLE	8 inches
DATE STARTED	6/20/94	TOTAL DEPTH OF HOLE	35.5 feet
DATE COMPLETED	6/20/94	TOP OF CASING ELEVATION	9.94 feet MSL

JOHN H. DAILEY
CONSULTING GEOTECHNICAL ENGINEER

Log of Boring MW-1A and Well Completion Detail
601 East Eighth Street
Oakland, California

PLATE

3A

WELL CONSTRUCTION DETAIL

% FINES
(#200)

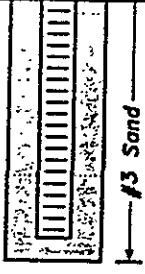
BLOWS/FT

DEPTH (FT)

SYMBOLS

MATERIALS DESCRIPTION

2" dia. PVC
slotted screen

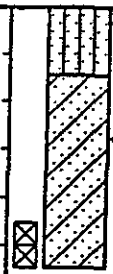


#3 Sand

13

41

35



CLAYEY GRAVELLY SAND (SC)
dark yellowish brown (10YR 4/4), very dense, saturated.

40

45

50

55

60

DRILL RIG 8" Hollow Stem Auger/2" Mod. CA Sampler
 DATE STARTED 6/20/94
 DATE COMPLETED 6/20/94

DIAMETER OF HOLE 8 inches
 TOTAL DEPTH OF HOLE 35.5 feet
 TOP OF CASING ELEVATION 11.25 feet MSL

JOHN H. DAILEY
 CONSULTING GEOTECHNICAL ENGINEER

Log of Boring MW-2A and
 Well Completion Detail
 601 East Eighth Street
 Oakland, California

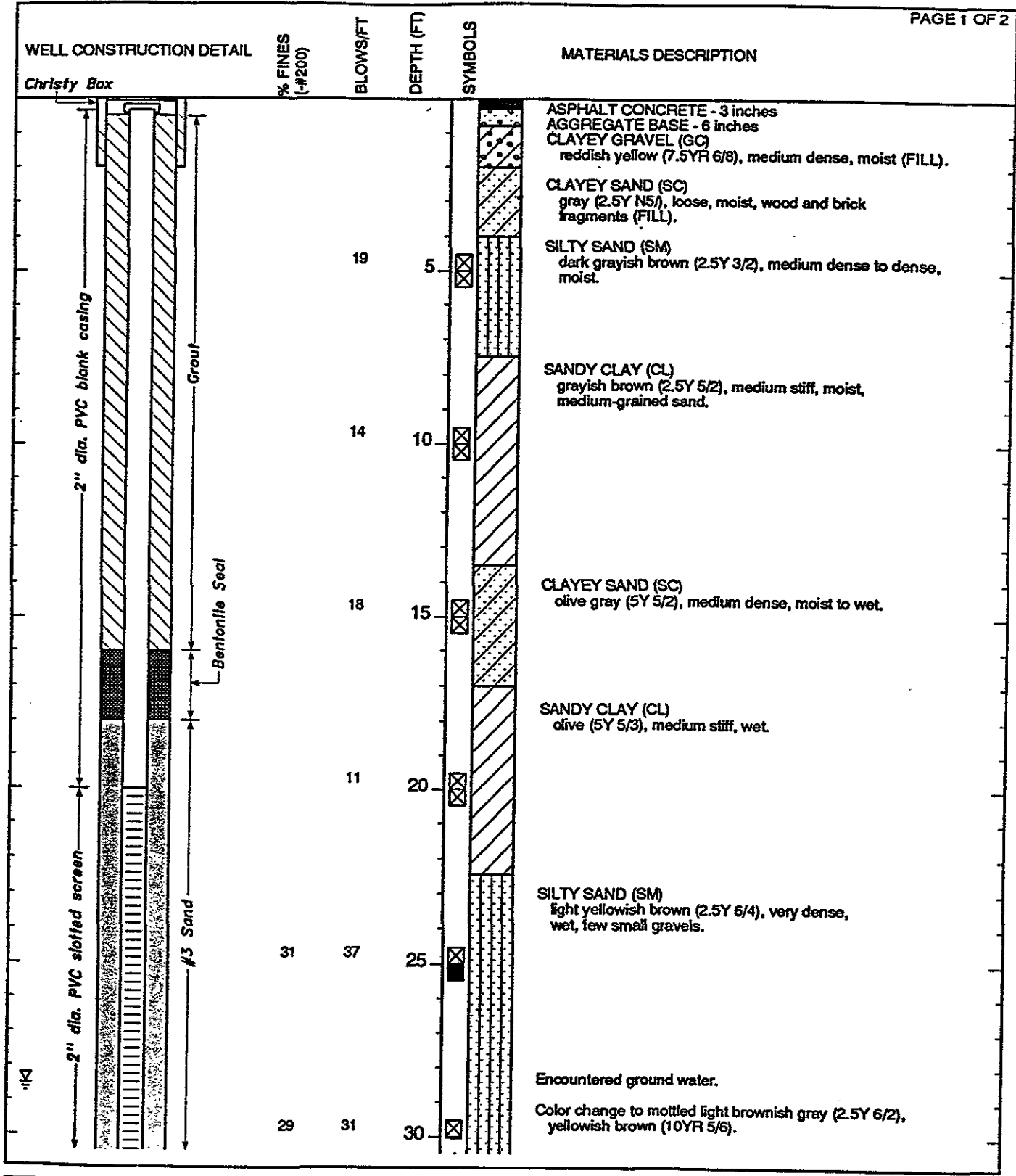
PLATE

3B

JOB NUMBER
 9405

REVIEWED BY *[Signature]*

DATE 8/94
 REVISED DATE



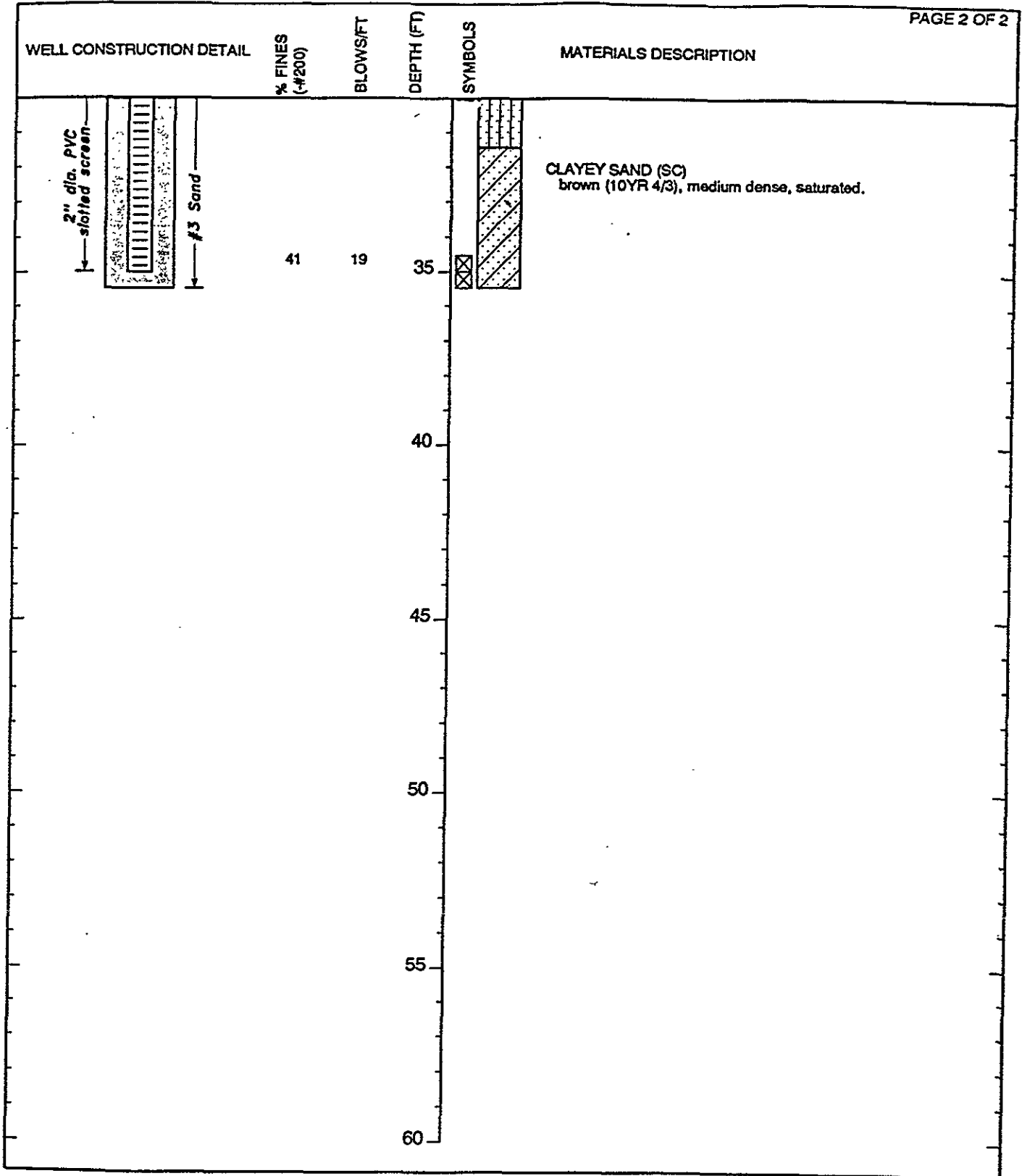
DRILL RIG	8" Hollow Stem Auger/2" Mod. CA Sampler	DIAMETER OF HOLE	8 inches
DATE STARTED	6/20/94	TOTAL DEPTH OF HOLE	35.5 feet
DATE COMPLETED	6/20/94	TOP OF CASING ELEVATION	11.25 feet MSL

JOHN H. DAILEY
 CONSULTING GEOTECHNICAL ENGINEER

Log of Boring MW-2A and
 Well Completion Detail
 601 East Eighth Street
 Oakland, California

PLATE

3B



DRILL FIG	8" Hollow Stem Auger/2" Mod. CA Sampler	DIAMETER OF HOLE	8 inches
DATE STARTED	6/20/94	TOTAL DEPTH OF HOLE	35.5 feet
DATE COMPLETED	6/20/94	TOP OF CASING ELEVATION	11.13 feet MSL

JOHN H. DAILEY
CONSULTING GEOTECHNICAL ENGINEER

Log of Boring MW-3A and
Well Completion Detail
601 East Eighth Street
Oakland, California

PLATE

3C

JOB NUMBER
9405

REVIEWED BY
JH

DATE
8/94

REVISED DATE

WELL CONSTRUCTION DETAIL

Christy Box

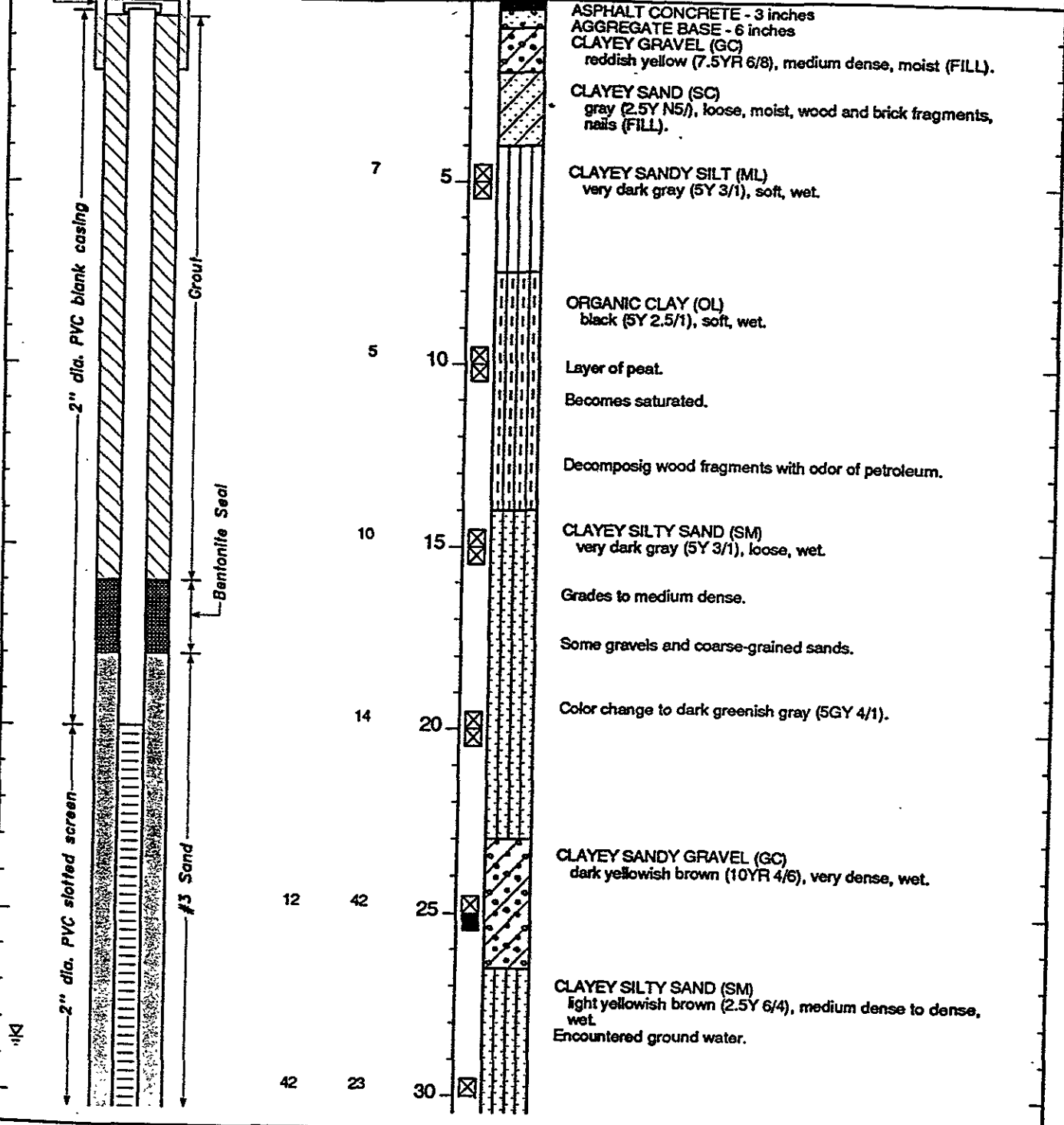
% FINES
(#200)

BLOWS/FT

DEPTH (FT)

SYMBOLS

MATERIALS DESCRIPTION



DRILL RIG	8" Hollow Stem Auger/2" Mod. CA Sampler	DIAMETER OF HOLE	8 inches
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601 East Eighth Street
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PLATE

3C