PALOS VERDES LANDFILL
REMEDIAL INVESTIGATION REPORT

APPENDIX C

FIELD DATA

PALOS VERDES LANDFILL
REMEDIAL INVESTIGATION REPORT

APPENDIX C.1.1

GEOLOGIC LOGS: PRE-RI BORINGS

(RENAMED M01A)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW1A

SHEET 1 OF 4

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 12, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY DATUM DRILL CO.

LOCATION MONITORING WELL NO. 1A - STATION 2+89.5±

EQUIPMENT CME 75 HOLLOW STEM AUGER DRIVING WEIGHT 140#

AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 281± GEOL/ENGR H. AUDELL

WELL MW-1A

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0							LANDFILL DEPOSITS Diat clayey SILT w/ trace clasts; V. dark brown, damp, H=B, 20% clay - 75% silt - 5% clasts, mottled w/ med brown diat clayey SILT, clasts up to 3" dia, angular, silic slts + diat slts rock frags			START 8:30 AM
5		S1	5 6 8	CL						
C/B grout										
10							Diat clayey SILT w/ trace clasts (cont)			Smooth drilling Rapid penetr
SOLID PIPE										
15							@15'- becoming moist to v. moist			
		S2	7 8 11	CL			Diat. clayey SILT w/ trace sand + clasts: Med brown, v. moist, H=B, 20% clay - 60% silt - 10% sand - 10% clasts:			@18' - 8:42 AM
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW1A

SHEET 2 OF

PROJECT NAME P.V. LANDFILL - MONITORING WELL 1A DATE JUNE 12, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (con't) mottled w/ dark brown diat clayey SILT, fine-grained sand, clasts up to 1" dia, angular, silic slts + diat slts rock frags			@23'- 855 AM
							@23'- rocks - silic slts			sl. rig chatter
25							@25'- increase in moisture - becoming v. moist - wet (seepage?)			
							@28'- decrease in sand			
30										
		S 3	9 9 11	CL			Diat. clayey SILT w/ trace clasts: Med brown, v. moist - wet, H=B, 15% clay - 75% silt - 10% clasts, low plast, mottled w/ lt gray diat clayey SILT, clasts up to 3" dia, angular, silic slts + diat slts rock frags.			@33'- 920 AM sl. rig chatter
35							@35'- ground water seepage			
40										Smooth drilling Rapid penetr
							@43'- static groundwater level, measured 6/20/86			
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW1A

SHEET 3 OF 4

PROJECT NAME P.V. LANDFILL - MONITORING WELL 1A DATE JUNE 12, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Cont'd)			
		S4	6 6 8	SM			Sandy SILT w/ trace clay + clasts: black, wet, H=B, 30% sand - 60% silt - 5% clay - 5% clasts; fine-grained sand, sl. mottled w/ dark brown clayey SILT, clasts - silic sltst rock frags			@48' - 923 AM
50										
▽ sand										
										Smooth drilling Rapid penetr (Cont'd)
55										
		S5	4 4 6	CL			Clayey SILT w/ trace sand + clasts: Black, sat, 20% clay - 60% silt - 10% sand - 10% clasts; fine-grained sand, mottled w/ dark brown clayey SILT, med plast, clasts up to 2" dia, angular, silic sltst rock frags			@58' - 930 AM
60										
		S6	14 40	ML			Diat SILT w/ some sand + clasts [MINE TAILINGS]: Med green, sat, H=B, 40% silt - 20% sand - 20% clasts, fine- to coarse-grained sand, sl. plast, mottled w/ lt brown diat clayey SILT, clasts up to 3/4" dia, angular, silic sltst rock frags			@63' - 939 AM
65							MONTEREY FM (VALMONTE MEM)			
		67	12 16 25			35B 90F	Diat. SILTSTONE interbd w/ CLAYSTONE; Med brown, wet, H=C, thinly bedded, occ diat laminae, sl. fissle sltst,			@68' - 1029 AM
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW IA

SHEET 4 OF

PROJECT NAME P.V. LANDFILL - MONITORING WELL IA DATE JUNE 12, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70		S8	68			40B 70F 90F	MONTEREY FM (VALMONTE MBR) intensely fract, wet fract surfs, v. close fract spacing, v. narrow fract sep, smooth - sl. rough fract surf, fracts filled w/ dark brown clay, mod-highly weathered			Smooth drilling Rapid penetr STOP @ 10:30 AM
75							TOTAL DEPTH @ 74' SEEPAGE @ 25; 35' STATIC GW @ 43'			

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

(RENAMED M02A)

BORING LOG NO. MW2A

SHEET 1 OF 4

PROJECT NAME P.V. LANDFILL - BARRIER NO 1 DATE JUNE 19, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY DATUM DRILL CO

LOCATION MONITORING WELL NO. 2A - STATION 3+70 ±

EQUIPMENT B61 HOLLOW STEM AUGER DRIVING WEIGHT 140#

AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 277± GEOL/ENGR H. AUDELL

WELL MW2A

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0							LANDFILL DEPOSITS			START 3:05 PM
5		S-1	5 6 6	CL			Diat clayey SILT w/ trace clasts; Med brown, damp, H=B, 20% clay-70% silt-10% clasts, low plast, mottled w/ med. brown diat clayey SILT, clasts up to 1" dia, angular, silic slts, diat slts + diat rock frags			@4' - 3:44 PM
										Smooth drilling Rapid penetr
10							@10' - increase in moisture - becoming moist			
										@13' - 3:20 PM
15										Smooth drilling Rapid penetr (Cont)
		S-2	6 8 11	CL			Diat. clayey SILT w/ trace clasts, Med brown, moist, H=B, 25% clay-65% silt-10% clasts, low-med plast,			@18' - 3:24 PM
20										

1/8 grout

solid pipe

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW2A

SHEET 2 OF

PROJECT NAME P.V. LANDFILL - MONITORING WELL 2A DATE JUNE 19, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont'd) mottled w/ med-dark brown diat clayey SILT, clasts up to 3/4" dia, angular, silic slts, diat slts + clys rock frags			Smooth drilling Rapid penetr (Cont'd)
25							Diat clayey SILT w/ trace clasts (Cont'd)			@25'- 3:29 PM
										c/B grout
30							@30'- increase in moisture - becoming moist - v. moist			
		S3	7 7 14	CL			Diat clayey SILT w/ trace clasts; Dark brown, v. moist, H=B, 20% clay - 70% silt - 10% clasts, low plast, sl. mottled w/ dark brown diat. clayey SILT, clasts up to 3/4" dia, angular, diat slts + diat rock frags			@32'- 3:35 PM
35										bent plug
										Smooth drilling Rapid penetr (Cont'd)
40										sand
45							@45'- static groundwater level, measured 6/20/86			@44'- 3:47 PM

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW2A

PROJECT NAME P.V. LANDFILL - MONITORING WELL 2A DATE JUNE 19, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Cont)			
		S 4	2 3 4	CL		▽	clayey SILT w/ little sand + trace clasts: Black, wet, H=A-B, 25% clay - 45% silt - 20% sand - 10% clasts, low plast, v. fine - fine grained sand, sl. mottled w/ v. dark brown clay, clasts up to ½" dia, angular, silic slts rock frags			@47' - 3 52 PM
50							@48' - ground water seepage			Smooth drilling Rapid penetr (Cont)
55							Clayey SILT w/ little sand + trace clasts (Cont)			@55' - 4 23 PM
60										
		S 5	9 21 40	CL			Diat. clayey SILT w/ little clasts; Lt gray + lt - med brown, wet, H=C, 20% clay - 65% silt - 15% clasts, low plast, mottled w/ black clay, clasts up to 3" dia, angular, silic slts rock frags			@62' - 4 28 PM sl. rig chatter
65										Smooth drilling Rapid penetr
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW-2A

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL - MONITORING WELL 2A DATE JUNE 19, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70		S 6	24 65	CL			LANDFILL DEPOSITS (cont) Diat. clayey SILT w/ little clasts (cont)			@70'-4:45 PM
						45B	MONTEREY FM (VALMONTE MEM) Diat SILTSTONE intbd w/ CLAYSTONE + DIATOMITE; Lt brown slts + clys, lt gray diat, v. moist - wet, H=C, v. thinly bedded to laminated, sl. fissle slts, mod bedding (45°) dip, intensely fract, v. close to extremely close fract spacing, closed - v. narrow fract sep, wet fract surfs, some fracts filled w/ dark brown clay, few fracts stained w/ Fe/Mn oxides, smooth fract surfs, plaunar fracts, highly weathered.			
75		S 7	46			45B SDF 85F				Smooth drilling Slow penetr.
80										STOP 5:10 PM
							TOTAL DEPTH @ 76' SEEPAGE @ 45, 48' STATIC GW @ 45'			

(RENAMED M03A)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW3A

SHEET 1 OF 4

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 18, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY DATUM DRILL CO.

LOCATION MONITORING WELL NO. 3A - STATION 4+44.5±

EQUIPMENT CME 75 HOLLOW STEM AUGER DRIVING WEIGHT 140#

AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 273± GEOL/ENGR H. AUDELL

WELL MW3A

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0							LANDFILL DEPOSITS Diat. clayey SILT w/ trace sand + clasts; Med-dark brown, damp, 20% clay - 60% silt - 10% sand - 10% clasts, v. fine-grained sand, low plast, mottled w/ dark brown clayey SILT, clasts up to 1" dia, angular, silic slts, diat slts + clys rock frags			START 7¹⁵ AM
5		S1	7 7 9	CL			@4'- decrease in sand - becoming a diat. clayey SILT w/ trace clasts			@4'- 7²⁰ AM
10							Diat clayey SILT w/ trace clasts (cont)			Smooth drilling Rapid penetr
15							@15'- sl. increase in moisture - becoming moist - v. moist			
20		S2	7 7 7	ML CL			Diat clayey SILT w/ trace clasts, Lt-med brown, moist - v. moist, H-B, 20% clay - 70% silt - 10% clasts, mottled			@18'- 7³⁵ AM

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW3A

SHEET 2 OF

PROJECT NAME P.V. LANDFILL - MONITORING WELL 3A DATE JUNE 18, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont'd) w/ lt-med brown clayey SILT, low plast, clasts up to 1½" dia, angular, silic slts + diat slts rock frags			
					▼		@22' - static GW level - measured 6/20/86			Smooth drilling Rapid penetr (Cont'd)
25					▽		@25' - groundwater seepage			
							Diat. clayey SILT w/ trace clasts (Cont'd)			@28' - 7 tb
30							@30' - increase in moisture - becoming v. moist - wet, sl. increase in sand			
		S 3	4 3 9	SM ML			~~Sandy SILT w/ trace clasts;~~ Med brown, v. moist - wet, H=B, 30% sand - 60% silt - 10% clasts, v. fine - to fine - grained sand, mottled w/ lt - med brown diat clayey SILT, clasts up to ½" dia, angular, silic slts + diat slts rock frags			@33' - 7 52 AM
35										
40										Smooth drilling Rapid penetr (Cont'd)
							Sandy SILT w/ trace clasts (Cont'd)			
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW3A

SHEET 3 OF 4

PROJECT NAME P.V. LANDFILL - MONITORING WELL 3A DATE JUNE 18, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Cont)			
							Sandy SILT w/ trace clasts (Cont)			smooth drilling Rapid penetr (Cont)
50										@50' - 8⁰⁹ AM
					▽		@52' groundwater seepage			
		S4	6 8 11	CL CH			Diat. clayey SILT w/ trace clasts; Med brown, wet, H=B, 25% clay - 70% silt - 5% clasts, mottled w/ V. dark brown gray CLAY, med-high plast, clasts up to 1" dia, angular, silic slts rock frags.			@53': 8⁰⁶ AM
55										
					▽		@59': groundwater seepage			
60										Smooth drilling Rapid penetr (Cont)
							@63' - silic slts rocks			@63' - sl rig chatter
65										
							Diat. clayey SILT w/ some clasts [MINE TAILINGS]; Dark brown, sat, H=C, 20% clay - 60% silt - 20% clasts, mottled w/ green gray clay, low-med plast, clasts up to 2" dia, angular, silic slts rock frags			
		S5	16 31	CL						@68' - 8²¹ AM
			32				MONTEREY FM (VALMONTE MEM)			
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW3A

SHEET 4 OF [illegible]

PROJECT NAME P.V. LANDFILL- MONITORING WELL 3A DATE JUNE 18, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							MONTEREY FM (VALMONTE MEM)			
							CLAYSTONE occ. intbd w/ DIATOMITE; V. dark brown, v. moist- wet, H=C, occ diat laminae, mod. bedding 45°dip, thinly bedded, intensely fract, wet fract surfs, v. close - extr close fract spacing, closed - v. narrow fract sep, plannar - sl. curv fracts, smooth - sl. rough fract surf, fracts // + ⊥ to bedding, fracts filled w/ dark brown clay, discont fracts dislocating bedding, v. disturbed bedding, highly weathered.			Smooth drilling Rapid penetr (Cont)
		S6	7 9 9			40B 90F 50F	@73½' - Diat SILTSTONE intbd w/ DIATOMITE; Lt brown - lt gray, v. moist - wet, H=B, diat laminae, thinly - v. thinly bedded, mod bedding 40°dip, intensely fract, wet fract surfs, v. close fract spacing, closed to v. narrow fract sep, fracts filled w/ v. dark brown clay, plannar fracts, smooth - sl. rough fract surf, v. disturbed bedding, highly weathered,			STOP 8:45 AM
75										

TOTAL DEPTH @ 75'
SEEPAGE @ 25', 52', 59'
STATIC GW @ 22'

(RENAMED M04A)

EARTHLOGICS
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San Clemente, California

BORING LOG NO. MW4A

SHEET 1 OF 3

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 5, 1986

PROJECT NO. BS-207-05 DRILLING COMPANY DATUM DRILL CO

LOCATION MONITORING WELL NO. 4A - STATION 5+29.8±

EQUIPMENT CME 75 HOLLOW STEM AUGER DRIVING WEIGHT 140#

AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 268± GEOL/ENGR H. AUDELL

WELL MW4A

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0							LANDFILL DEPOSITS Diat. clayey SILT w/ trace clasts; Med brown, damp, H=B, 20% clay - 70% silt - 10% clasts, low plast, mottled w/ lt + Med brown diat. clayey SILT, clasts up to 2" dia, angular, silic slts, diat slts + clys rock frags			START 1235 PM Smooth drilling Rapid penetr
5										
10		S-1	4 7 9	CL			Diat. clayey SILT w/ trace clasts; Med-dark brown, moist, H=B, 25% clay - 70% silt - 5% clasts, low plast, mottled w/ dark brown diat clayey SILT, clasts: silic slts + diat slts rock frags			@10' - 1445 PM
15							@15' - increase in moisture - becoming v. moist - wet @16' - silic slts rocks			@16' - 1520 PM rig chatter rough drilling
20							@18' - increase in clasts up to 6" dia Diat. clayey SILT w/ little clasts (cont)			

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW4A

SHEET 2 OF

PROJECT NAME P.V. LANDFILL - MONITORING WELL 4A DATE JUNE 5, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont)			@20'- 1 55 PM
										Smooth drilling Rapid penetr
		S	6	CL			Diat. clayey SILT w/ trace clasts; Med brown, moist - v. moist, H= B, 25% clay - 65% silt - 10% clasts, low plast, mottled w/ dk brown diat clayey SILT, clasts up to 4" dia, angular, silic slts + diat slts rock frags			
		5	5							
25		2	6							
30							@31'- static GW level, measured 6/20/86			
35										@35'- 1 05 PM
40		S	6	SM			Silty SAND w/ trace clay; Olive, wet H=B, 20% silt - 70% sand - 10% clay, fine-grained sand, mottled w/ olive+ black silty CLAY			Smooth drilling Rapid penetr (Cont)
		3	8 11				@43'- groundwater seepage			
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW4A

SHEET 3 OF 3

PROJECT NAME P.V. LANDFILL - MONITORING WELL 4A DATE JUNE 5, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Cont)			Smooth drilling Rapid penetr (Cont)
							@48' - groundwater seepage			
50							silty SAND (Cont)			@49' - 1¼ PM
		S 4	7 6 15	CL			Clayey SILT w/ trace sand + clasts; Black, sat, H=B, 30% clay - 60% silt - 5% sand - 5% clasts, fine-grained sand, low plast, mottled w/ med green + dark gray silty CLAY, clasts silic slts, diat slts + diat rock frags			
55										@55' - 1 35 PM
		S 5	13 27 32			35B				@57' - sl. rig chatter
60							MONTEREY FM (VALMONTE MEM)			
		S 6	7 12 18			35B 50E 85E	CLAYSTONE w/ occ int bd DIATOMITE; Med brown, wet, H=B-C, thickly bedded, occ diat laminae, intensely fractured, wet fract surfs, mod bedding 35° dip, closed - v. narrow fract sep, close - v. close fract spacing, smooth - sl. rough fract surfs, most fracts filled w/ dark brown clay, minor staining w/ Fe/Mn oxides, v. weathered			Smooth drilling Rapid penetr (Cont)
65										STOP 2 00 PM
							TOTAL DEPTH @ 65' SEEPAGE @ 43 + 48' STATIC GW @ 31'			

(RENAMED M05A)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW5A

SHEET 1 of

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 5, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY DATUM DRILL CO

LOCATION MONITORING WELL NO 5A - STATION 6+09.5±

EQUIPMENT CME HOLLOW STEM AUGER DRIVING WEIGHT 140#

AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 264± GEOL/ENGR H. AUDELL

WELL MW5A

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0							LANDFILL DEPOSITS Diat clayey SILT w/ trace clasts; Med brown, damp, H=B, 20% clay - 70% silt - 10% clasts, mottled w/ lt + med brown diat clayey SILT, low plast, clasts up to 2" dia, angular, silic slts, diat slts + clys rock frags			START 8:09 AM
5		S1	5 6 6	CL						Smooth drilling Rapid penetr
10							@8' - becoming med - dark brown diat clayey SILT			@9' - 8:25 AM
15							@14' - increase in moisture - becoming V. moist			
20		S2	10 18 19	CL			Diat clayey SILT w/ trace sand + clasts; Med brown, V. moist, H=B,			

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MWSA

SHEET 2 OF 3

PROJECT NAME P.V. LANDFILL - MONITORING WELL 5A DATE JUNE 5, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont) 20% clay - 70% silt - 5% sand - 5% clasts, low plast, fine-grained sand, mottled dark brown diat clayey SILT, clasts up to 1" dia, angular, silic slts + diat slts rock frags			Smooth drilling Rapid penetr (Cont)
25							@25' - increase in moisture - becoming v. moist to wet			
30										@30' - 8 12 AM
							@32' - static groundwater level, measured 6/20/86			
35		S 3	S 13 17	CL			Diat clayey SILT w/ trace clasts: Med-dark brown, wet, H=B, 25% clay - 70% silt - 5% clasts, mottled w/ black clay, low-med plast, clasts up to 3/4" dia, angular, silic slts, diat slts + clys rock frags			Smooth drilling Rapid penetr (Cont)
40							@40' - groundwater seepage			@40' - 8 22 AM
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. HWSA

SHEET 3 OF 5

PROJECT NAME P.V. LANDFILL - MONITORING WELL 5A DATE JUNE 5, 1986

PROJECT NO. 85-207-01 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Cont)			
		S 4	12 24 27	CL			Diat. clayey SILT w/ little clasts; Dark brown, gray green, black, sat, H=C, 25% clay - 60% silt - 15% clasts, sl-med plast, v. fine-grained sand, mottled w/ black clay, clasts up to 3" dia, angular, silic slts rock frags, sl. organic odor			@47' - 8:27 AM sl. rig clatter
50										
		S 5	7 6	CL CH			Silty CLAY w/ trace sand + clasts; Black, sat, H=B-C, 30% silt - 50% clay - 10% sand - 10% clasts, mottled w/ dark brown clayey SILT, fine-grained sand, med-high plast, clasts up to 1/2" dia, angular, silic slts rock frags			Smooth drilling Rapid penetr (Cont'd)
55		S	9							
60										@60' - 8:45 AM
		S 6	9 10 16			35B 60F 90F	MONTEREY FM (VALMONTE MEM) Diat SILTSTONE interbd w/ CLAYSTONE + DIATOMITE: Med brown - H gray, wet, H=C, v. thinly bedded - laminated, mod bedding 35° dip, intensely fract, wet fract surfs, v. close fract spacing, closed - v. narrow fract sep, smooth - sl. rough fract surf, planar fracts, fracts filled w/ dark brown clay, few fracts stained w/ Fe/Mn oxides, v. weathered, sl. chem odor.			
65		S 7	6 12 18			35B 55F 90F				STOP 8:55 AM
							TOTAL DEPT @ 65' SEEPAGE @ 40' STATIC GW @ 32'			

(RENAMED M06A)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW6A

SHEET 1 OF 3

PROJECT NAME P.V. LANDFILL - BARRIER NO 1. DATE MAY 27, 1986
PROJECT NO. 85-207-05 DRILLING COMPANY DATUM DRILL CO
LOCATION MONITORING WELL NO 6A
EQUIPMENT B53 HOLLOW STEM AUGER DRIVING WEIGHT 140#
AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 257± GEOL/ENGR H. AUDELL

WELL MW6A

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0							LANDFILL DEPOSITS			START 8⁰⁹ AM
							Diat. clayey SILT w/ trace sand + clasts; Lt-med brown, damp, H=C, 20% clay - 60% silt - 10% sand 10% clasts, v. fine-grained sand, mottled w/ med brown diat clayey SILT, low plast, sl. porous, clasts up to 3/4" dia, angular, silic slts, diat slts + clys rock frags			
5		S 1	7 10 10	CL						@7'- 8¹⁵ AM
							@8'- becoming dark brown diat clayey SILT, becoming moist			Smooth drilling Rapid penetr
10										
15							@15'- increase in moisture - becoming V. moist			
		S 2	5 10 15	CL			Diat clayey SILT w/ trace clasts; Med-dark brown, v. moist, H=B, 20% clay - 70% silt - 10% clasts, mottled w/ lt brown diat clayey SILT, low plast, clasts - silic slts + diat slts			@17'- 8³² AM
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW6A

SHEET 2 OF

PROJECT NAME P.V. LANDFILL - MONITORING WELL 6A DATE MAY 27, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont'd)			Smooth drilling Rapid penetr (Cont'd)
25							@25'- groundwater seepage			
		S 3	12 15 20	CL			Diat clayey SILT w/ trace sand + clasts; Dark brown, wet, H=C, 20% clay - 65% silt - 5% sand - 10% clasts, low plast, mottled w/ med brown diat clayey SILT, clasts up to ½" dia, angular, silic slts + diat slts rock frags			@27'- 8 ½ AM
30							@30'- groundwater seepage			
35		S 4	7 7 10				Silty SAND w/ trace clay; Med green brown, wet, H=C, 15% silt - 80% sand - 5% clay, V. fine to fine - grained sand, sl mottled w/ med-dark brown diat clayey SILT, clasts - silic slts rock frags			@37'- 9 ½ AM
40							Diat. clayey SILT w/ trace sand + clasts; Med-dark brown, wet, H=B, 25% clay - 65% silt - 5% sand - 5% clasts, mod plast, sl. porous, mottled w/ dark brown diat clayey SILT, V. fine - grained sand, clasts up to ½" dia, angular, silic slts rock frags			Smooth drilling Rapid penetr (Cont'd)
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW6A

SHEET 3 OF 3

PROJECT NAME P.V. LANDFILL - MONITORING WELL 6A DATE MAY 27, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45		S5	5 5 6	CL CH		▼	LANDFILL DEPOSITS (Cont) Silty CLAY w/ little clasts; V. dark brown, black, wet, H = B-C, 40% silt - 50% clay - 10% clasts, med-high plast, mottled w/ black silty CLAY, clasts up to 3/4" dia, angular, silic slts, diat slts + clys rock frags. @48' - static groundwater level measured 6/20/86			@47' - 9 13 AM @50' - slow penetration, smooth drilling
50										
55		S6	5 8 12			30B 70F 90F	MONTEREY FM (VALMONTE MEM) Diat SILTSTONE; Lt-med brown, wet, H = B-C, thickly bedded, highly fractured, wet fract surfaces, close-v.close fract spacing, closed to v. narrow fract sep, smooth to sl. rough fract surfs, sl. staining fract surfs w/ Fe/Mn oxides, very weathered.			@57' - 9 35 AM STOP 9 47 AM
60							TOTAL DEPTH @ 60' SEEPAGE @ 25, 30, 38' STATIC GW @ 48'			

(RENAMED M07A)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW 7A

SHEET 1 OF

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE MAY 19, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY DRILL-LINE DRILL CO

LOCATION MONITORING WELL 7A

EQUIPMENT B53 HOLLOW STEM AUGER DRIVING WEIGHT 140#

AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 265± GEOL/ENGR H. AUDELL

WELL MW 7A

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				SM			LANDFILL DEPOSITS Silty SAND w/ trace clasts; Med brown, damp, H=B, 25% silt - 70% sand - 5% clasts, fine - med - grained sand, occ zones of coarse - grained sand + clasts, clasts up to 1" dia, angular, silic slts			START 7:45 AM Smooth drilling Rapid penetr
5		S1	3 5 6				Silty SAND w/ trace clasts; Med brown, damp, H=B, 10% silt - 85% sand - 5% clasts, fine - med - grained sand, gravel zones, clasts up to 1/4" dia, angular, silic slts rock frags @12' - increase in moisture - becoming moist.			@7' - 7:58 AM @8' - minor rig chatter
10										
15		S2	8	CL			Diat. clayey SILT w/ trace sand + clasts; Med brown, moist, H=B, 20% clay - 60% silt - 10% sand - 10% clasts, low plast, fine - grained sand, mottled w/ dark brown diat clayey SILT, clasts up to 1" dia, angular, silic slts + diat slts rock frags			@17' - 8:11 AM
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW7A

PROJECT NAME P.V. LANDFILL - MONITORING WELL 7A DATE MAY 19, 1986

PROJECT NO. BS-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20					▽		LANDFILL DEPOSITS (Lout) @20'- groundwater seepage			
25		S 3	14 9 9	CL CH			Diat. clayey SILT w/ trace sand + clasts; Dark brown, wet, H=B, 25% clay - 65% silt - 5% sand - 5% clasts, mod - high plast, mottled w/ med brown diat clayey SILT, clasts - silic slts, diat slts + clys rock frags			@27'- 8:20 AM
30					▽		@30'- groundwater seepage			Smooth drilling Rapid penetr (Lout)
35		S 4	10 16 20	CL			Diat clayey SILT w/ trace sand + clasts; Dark brown, wet, H=B, 20% clay - 70% silt - 5% sand - 5% clasts, low plast, mottled w/ lt - med brown diat clayey SILT, clasts - silic slts + diat slts rock frags			@37'- 8:33 AM
40					▽		@43'- static groundwater level, measured 6/20/86			
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW7A

SHEET 3 OF ___

PROJECT NAME P.V. LANDFILL - MONITORING WELL 7A DATE MAY 19, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45		S5	10 15 20	CL			Diat clayey SILT w/some sand + clasts [MINE TAILINGS]; Med-dark brown, sat, H=B, 20% clay - 40% silt - 20% sand - 20% clasts, fine-grained sand - green + olive in color, mottled w/ sand + black clay, low plast, clasts up to 3/4" dia, angular, silic slts rock frags			@47' - 8^{47} AM
50		S6	15	CL CH			@50' - increase in mottling w/ black clay Diat clayey SILT w/ some clasts; Dark brown - black, sat, H=B, mod-high plast, mottled w/ black clay, fine-grained sand, clasts silic slts rock frags			@52' - 8^{55} AM Smooth drilling Rapid penetr (Lost)
55		S7	6 6 8			25B 75F 45F	MONTEREY FM (VALMONTE MEM)			
60		S8	7 7 15			25B 80F 50F	CLAYSTONE; Med brown, sat, H=B. thickly bedded, disturbed bedding, intensely fract, wet fract surfs, closed - v. narrow fract sep, v. closely spaced fracts, smooth - sl. rough fract surface, most fracts filled w/ dark brown clay, few fracts stained w/ Fe/Mn oxides and gypsum, very weathered.			@57' - 9^{04} AM @61' - 9^{15} AM STOP 9^{20} AM
65							TOTAL DEPTH @ 63 SEEPAGE @ 20', 30' STATIC GW @ 43'			

(RENAMED M01B)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW1B

SHEET 1 OF 5

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 12, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY DATUM DRILL CO

LOCATION MONITORING WELL NO. 1B - STATION 2+84.2±

EQUIPMENT CME 75 HOLLOW STEM AUGER DRIVING WEIGHT 140#

AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 281± GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0							LANDFILL DEPOSITS			START 12:22 PM
							Diat clayey SILT w/ trace clasts; Very dark brown, damp, M=B, 20% clay - 75% silt - 5% clasts, low plast, mottled w/ med brown diat clayey SILT, clasts up to 3" dia, angular, silic sHs + diat slts rock frags			
		S 1	6 6 7	CL	D D					Smooth drilling Rapid penetr
5										
10										@ 10' - 12:16 PM
		S 2	5 6 8	CL	D D		Diat clayey SILT w/ trace clasts; Lt brown, damp, M=B, 20% clay - 70% silt - 10% clasts, low plast, mottled w/ med brown diat clayey SILT, clasts up to 1" dia, angular, silic sHs + diat slts rock frags			Smooth drilling Rapid penetr (Cont)
15										
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW1B

SHEET 2 OF

PROJECT NAME P.V. LANDFILL - MONITORING WELL 1B DATE JUNE 12, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont)			
							Diat clayey SILT w/ trace clasts (Cont)			
25										
		S 3	8 7 7	CL			Diat clayey SILT w/ trace clasts; Med brown, moist, H=B, 20% clay- 70% silt- 10% clasts, low plast, mottled w/ dark brown diat clayey SILT, clasts up to ½" dia, angular silic slts, diat slts + clys rock frags			@28'- 12[28] PM
30										Smooth drilling Rapid penetr (Cont)
35					▽		@35'- groundwater seepage			
40							@39'- increase in moisture - becoming wet			
							@44'- static groundwater level, measured 6/20/86			
					▼		Sandy SILT w/ trace clay + clasts; Dk brown + olive, wet, H=B, 25% sand-			@43'- 12[37]
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW1B

SHEET 3 OF 5

PROJECT NAME P.V. LANDFILL - MONITORING WELL 1B DATE JUNE 12, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (cont)			
							60% silt - 10% clay - 5% clasts, mottled w/ dark brown sandy SILT, clasts - silic slts rock frags			
50										
		S 5	9 9 11	CL			clayey SILT w/ trace sand + clasts: Black, sat, H=B, 20% clay - 60% silt - 10% sand - 10% clasts, fine - med-grained sand, med plast, mottled w/ dark brown clayey SILT, clasts up to 2" dia, angular, silic slts rock frags			@52' - 1250 PM
55										Smooth drilling Rapid penetr (cont)
60										
		S 6	20 50	CL			Diat clayey SILT w/ some sand + clasts [MINE TAILINGS]; Green, sat, H=B, 20% clay - 40% silt - 20% sand - 20% clasts, fine - coarse - grained sand, low plast, mottled w/ lt brown diat clayey SILT, clasts up to 3/4" dia, angular, silic slts rock frags			@65' - sl. rig chatter
65		S 7	9 12 24			35B 75F 90F	MONTEREY FM (VALMONTE MEM) Diat SILTSTONE intbd w/ CLAYSTONE			@67' - 1030 PM
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW1B

SHEET 4 OF

PROJECT NAME P.V. LANDFILL - MONITORING WELL 1B DATE JUNE 12, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							MONTEREY FM (VALMONTE MEM) DIATOMITE; Lt-med brown slts+ clys, ltgray diat, wet, H=C, diat laminae, v. thinly bedded to laminated, mod bedding 30° dip, sl. fissle slts, intensely fract, wet fract surfs, closed - v. narrow fract sep, v. closely spaced fracts, smooth - sl. rough fract surf, most fracts stained w/ Fe/Mn oxides + gypsum, v. weathered.			Smooth drilling Rapid penetr (cont)
75										@75' - 12 PM
80		S 8	30 55			40B 35F 60F	Diat SILTSTONE intbd w/ CLAYSTONE; Med brown, v. moist, H=C-D, v. thinly bedded - thinly bedded, sl. fissle slts, occ diat laminae, mod bedding 40° dip, highly fract, v. moist fract surfs, closed - v. narrow fract sep, closely spaced fracts, few fracts filled w/ dark brown clay, occ fracts stained w/ Fe/Mn staining, occ chert rock frags, med weathering			@80' - 1 49 PM
85										Smooth drilling Rapid penetr (cont)
90										
95										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW1B

SHEET 5 OF 5

PROJECT NAME P.V. LANDFILL - MONITORING WELL 1B DATE JUNE 12, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
95		S 9	45 61				MONTEREY FM (VALMONTE MEM) CLAYSTONE w/ occ intbd DIAT SILTSTONE; Dark brown, v. moist, H=C-D, mod - thickly bedded, mod fract, v. moist fract surfs, closed fracts, clean fracts, sl-mod weathered			@96' - 2¼ PM
										STOP 2²⁰ PM
100							TOTAL DEPTH @ 98' SEEPAGE 35' STATIC GW @ 44'			

(RENAMED M02B)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW2B

SHEET 1

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 19, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY DATUM DRILL CO

LOCATION MONITORING WELL NO 2B - STATION 3+65.0 ±

EQUIPMENT B61 HOLLOW STEM AUGER DRIVING WEIGHT 140#

AVERAGE DROP (IN.) 30" HOLE DIA. 10" ELEVATION 277± GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				CL			LANDFILL DEPOSITS Diat clayey SILT w/ trace clasts; Lt-med brown, damp, H=B, 20% clay - 70% silt - 10% clasts, low plast, mottled w/ dark brown diat clayey SILT, clasts up to 2" dia, angular, silic slts, diat slts + clys rock frags			START 805 AM
5										@4' - 809 AM
		S-1	5 8 11	CL			Diat clayey SILT w/ trace sand + clasts; Lt brown, moist, H=B, 20% clay - 60% silt - 10% sand - 10% clasts, low plast, v. fine-grained sand, mottled w/ med brown diat clayey SILT, clasts up to 1" dia, angular, diat slts + diat rock frags			@7' - 813 AM
10										Smooth drilling Rapid penetr
15							@15' - becoming moist - v. moist, decrease in sand			
							Diat clayey SILT w/ trace clasts (Cont)			
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW2B

SHEET 2 OF 5

PROJECT NAME P.V. LANDFILL - MONITORING WELL 2B DATE JUNE 19, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20										@20' - 8[19] AM
		S 2	7 8 13	CL			Diat clayey SILT w/ trace clasts; Lt-med brown, moist - v. moist, H=B, 20% clay - 70% silt - 10% clasts, low plast, mottled w/ med brown diat clayey SILT, clasts up to 3/4" dia, angular, diat slts + diat rock frags			
25							@28' becoming v. moist - wet			
30										@30' - 8[26] AM Smooth drilling Rapid penetr (cont)
35										
		S 3	8 10 10	CL			Diat clayey SILT w/ trace clasts; Dark brown, v. moist - wet, H=B-C, 25% clay - 55% silt - 10% clasts, low - mod plast, mottled w/ dark brown diat clayey SILT, clasts up to 2" dia, angular, silic slts, diat slts + clys rock frags			@37' - 8[30] AM
40							@42' - becoming wet			
45							@45' - static ground water level, measured 6/20/86			

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW2B

SHEET 3 OF

PROJECT NAME P.V. LANDFILL-MONITORING WELL 2B DATE JUNE 19, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Cont)			@45'- 8:44 AM
							@48'- groundwater seepage			
50			1							
		S 4	4 5 6	CL			clayey SILT w/ trace sand + clasts; Black, wet, H= A-B, 25% clay- 55% silt- 10% sand -10% clasts, V. fine - fine-grained sand, mottled w/ V. dark gray SILT, low plast, clasts up to ½" dia, angular, silic s lts rock frags			@52'- 8:50 AM
55							@55'- groundwater seepage			Smooth drilling Rapid penetr (Cont)
60										
65										
		S 5	12 16 21	CL			Diat. clayey SILT w/ trace clasts [MINE TAILINGS]: Lt-med brown, sat, H=C, 20% clay - 70% silt - 10% clasts, low plast, mottled w/ med			@67'- 9:15 AM
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW2B

SHEET 4 OF 5

PROJECT NAME P.V. LANDFILL - MONITORING WELL 2B DATE JUNE 19, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							LANDFILL DEPOSITS (Cont) brown. diat clayey SILT, clasts - silic sltst rock frags			@71' - 9:35 AM
		S 6	18 24 36			35B 35F 90F 60F	MONTEREY FM (VALMONTE MEM) DIAT SILTSTONE intbd w/ CLAYSTONE + DIATOMITE; Lt brown diat sltst + clys, lt gray diat, wet, H=C, v. thinly bedded - laminated, diat laminae, sl. fissle sltst, mod bedding 35° dip, intensely fract, v. close to extr close fract spacing, closed to v. narrow fracts, wet fract surfs, most fracts filled w/ dark brown clay, some fracts stained w/ Fe/Mn oxides, smooth - sl. rough fract surfs, highly weathered			
75										
80										@77' - 9:55 AM
85										Smooth drilling slow penetr
		S 7	16 21 27			25B 75F 30B 90F	CLAYSTONE occ intbd w/ diat SILTSTONE; Med brown clys, gray diat sltst, v. moist, H=C, thinly bedded, occ diat sltst laminae, mod bedding 25-30° dip, intensely fract, extr close fract spacing, closed - v. narrow fracts sep, wet fract surfs, mod weathered			@87' - 10:16 AM
90										
95										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW2B

SHEET 5 OF

PROJECT NAME P.V. LANDFILL - MONITORING WELL 2B DATE JUNE 19, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
95							MONTEREY FM (VALMONTE MEM)			
100		5	12			60B	DIAT SILTSTONE intbd w/CLAYSTONE + DIATOMITE [UNOXIDIZED]; Dark olive, moist, H=C-D, v. thinly bedded to laminated, diat laminae, steep bedding 60° dip, med-highly fract, close to v. close fract spacing, closed fracts, clean fracts, unweathered. fresh.			@100' - 1:25 PM Smooth drilling Slow penetr
		8	16			60F				
105			15			30F				STOP 1:32 PM

TOTAL DEPTH @ 103'
SEEPAGE @ 48', 55'
STATIC GW @ 45'

(RENAMED M03B)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW-3B

SHEET 1 OF 5

PROJECT NAME P.V. LANDFILL - BARRIER NO 1 DATE JUNE 17, 1986

PROJECT NO. 85-202-05 DRILLING COMPANY DATUM DRILL CO

LOCATION MONITORING WELL NO 3B - STATION 4+49.5±

EQUIPMENT CME 75 - HOLLOW STEM AUGER DRIVING WEIGHT 140 lbs

AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 273± GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				CL			LANDFILL DEPOSITS (LF)			START 7:20 AM
							Diat. clayey SILT w/trace sand + clasts; Med brown, sl. moist, H=B, 20% clay - 60% silt - 10% sand + 10% clasts; v. fine - grained sand, mottled w/dark brown diat clayey SILT, clasts up to 2" dia - angular - silic sHS, diat slts + clys rock frags			Smooth drill Rapid penetr.
5		S-1	10	CL			@7' - Diat clayey SILT w/trace clasts; Lt brown, moist, H=B-C, 25% clay - 70% silt - 10% clasts, bwplast, mottled w/ med brown diat clayey SILT, clasts; up to 3/4" dia - angular - diat + diat slts			@7' - 7:25 AM
			18							
			18							
10										Smooth drill Rapid penetr. (Cont)
15							@15 - increase in moisture becoming moist - V. moist.			
							Diat clayey SILT w/ trace clasts (Cont)			@17' - 7:31 AM
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW-3B

SHEET 2

PROJECT NAME P.V. LANDFILL - MONITORING WELL NO. 3B DATE JUNE 17, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont)			
						@22'	- static groundwater level, measured 6/20/86			
				CL			Diat. clayey SILT w/ trace clasts; Med brown, v. moist, H=B, 25% clay - 65% silt - 10% clasts, low-med plast mottled w/ gray silty CLAY and dark brown diat clayey SILT, clasts: up to 1½" dia - angular - silic slts, diat slts, clys rock frags.			@22' - 7 36 AM
		5	8							
		2	7							
25			7							Smooth drilling Rapid penetr.
							@25' - groundwater seepage			
30										
35										
							Sandy SILT w/ trace clasts; Med brown, wet, H=B, 30% sand - 60% silt - 10% clasts, v. fine - fine - grained sand, mottled w/ H-wet brown diat clayey SILT, clasts up to 1" dia, angular, silic slts + diat slts rock frags			@35' - 7:51 AM
		3	4	CL						
		3	6							
40			6							Smooth drill Rapid penetr (Cont)
										@ 40' - 7 55 AM
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW-3B

SHEET 2 OF 5

PROJECT NAME P.V. LANDFILL - MONITORING WELL NO. 3B DATE JUNE 17, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Cont)			
							Diat clayey SILT w/ trace sand + clasts (Cont)			@47-8 DD AM
50							@50'-groundwater seepage			Smooth drill Rapid penetr (Cont)
		S4	8 7 8	CL			Diat clayey SILT w/ trace clasts; Lt-med brown, wet, H=B, 25% clay-65% silt-10% clasts, low-med plast, mottled w/ olive sandy SILT and med-dark brown diat clayey SILT; clasts - up to 3/4" dia - angular-silic slts, diat slts + diat rock frags.			@52'-8 DD AM
55							@58'- groundwater seepage			
60										Smooth drill Rapid penetr (Cont)
65		S5	50				Diat clayey SILT w/ some clasts [Mine Tailings]; Med brown, sat, H=C, 25% clay-35% silt - 20% clasts, sl. mottling w/ black clay, clasts - greater than 5" dia - angular - silic slts rock frags.			@65'-8 15 AM Sl. rig chatter Mod penetr.
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. HW-3B

SHEET 4

PROJECT NAME P.V. LANDFILL - MONITORING WELL NO. 3B DATE JUNE 17, 1986

PROJECT NO. BS-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70		S 6	4 6 11			40 B 90 F 40 F	MONTEREY FM (DIATOMITE FACIES) Diat SILTSTONE intbd w/ CLAYSTONE + DIATOMITE; lt-med brown slts + clys, lt-med gray diatomite, v. moist - wet, H=B, v. thinly bedded to laminated, diat. laminae, highly to intensely fract, wet fract surfs, v. cl. sp. fracts, closed - v. narrow fracts filled w/ dark brown + black clay, few fracts stained w/ Fe/Mn oxides, smooth - sl. rough fract surfs, planar to sl. curvilinear fracts, fracts // + ⊥ to bedding, highly weathered.			@70'-8 31 AM Smooth drill Rapid penetr. (Cont)
75										
80										@82'-8 50 AM
		S 7	15 62			35 B 90 F 65 F	CLAYSTONE occ intbd w/ diat SILTSTONE; med brown clys, med gray slts, moist, H=C-D, med-thickly bedded, mod bedding (35°) angle, mod fract, moist fract surfs, closely spaced fracts, closed fracts, few fracts filled w/ dark brown clay - mostly clean fracts, few fracts stained w/ Fe/Mn oxides, smooth - sl rough fract surf, planar - sl curvil fracts, fracts // + ⊥ to bedding, med weathered.			Smooth drill Mod penetr (cont)
85										
90										@92'-9 08 AM
							CLAYSTONE occ intbd w/ diat slts (Cont)			
95										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. HW-3B

SHEET 5 OF 5

PROJECT NAME P.V. LANDFILL - MONITORING WELL NO. 3B DATE JUNE 17, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDIELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
95							MONTEREY FM (VALMONTE MEM) (cont) CLAYSTONE occ interbd w/ DIAT SILTSTONE (cont)			
		5	36			35B	@89½'- SILICIFIED SILTSTONE w/ trace gilsonite; Med brown, moist, H-D-E, thinly bedded, mod bedding (35°) angle, gilsonite (crush) veinlets concordant to bedding, sl. fissle, intensely fract, moist - v. moist fract surfs, diff cl. sp. fracts, closed fracts, occ fracts stained w/ Fe/Mn oxides, sl. rough fract surfs, planar fracts, fracts ∥ + ⊥ to bedding, sl-med weathering.			@98'- 9:13 am STP 8-6" recov
		8	42			90F				STOP 9:15 AM
100			57			60F				
							TOTAL DEPTH @100' SEEPAGE @ 25, 50, 58' STATIC GW @ 22'			

(RENAMED M04B)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW4B

SHEET 1 of

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 5, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY DATUM DRILL CO

LOCATION MONITORING WELL 4B - STATION 5+25.4E

EQUIPMENT CME 75 HOLLOW STEM AUGER DRIVING WEIGHT 140#

AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 268'± GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				CL			LANDFILL DEPOSITS Diat clayey SILT w/ trace clasts; Lt-med brown, damp, H=B, 20% clay - 70% silt - 10% clasts, mottled w/ med brown diat clayey SILT, low plast, clasts up to 2" dia, angular, silic sltst, diat sltst + clys rock frags			START 2:32 PM
5										Smooth drilling Rapid penetr
10										
15		S 1	8 12 14	CL			@13' - becoming moist - v. moist Diat clayey SILT w/ trace clasts; Med brown, v. moist, H=B, 20% clay - 70% silt - 10% clasts, low plast, mottled w/ dark brown diat clayey SILT, clasts up to 2" dia, angular, silic sltst + clys rock frags			@15' - 2:45 PM
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW4B

SHEET 2 OF 4

PROJECT NAME P.V. LANDFILL - MONITORING WELL 4B DATE JUNE 5, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont)			
25							Diat clayey SILT w/ trace clasts (Cont)			Smooth drilling Rapid penetr (Cont)
30					▼		@32'- static groundwater level, measured 6/20/86			
35										
40		S 2	10 6 23	SM			Silty SAND; olive, wet, H=B, 20% silt - 80% sand, fine-grained sand, s/ mottled w/ olive + black clay			@40'- 2:55 PM
					▽		@43'- groundwater seepage			
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW4B

SHEET 3 OF

PROJECT NAME P.V. LANDFILL-MONITORING WELL 4B DATE JUNE 5, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (cont) silty SAND (cont)			@48'- 3:10 PM
50					▽		@ 50'- groundwater seepage			
		S 3	6 6 7	CL	D		Clayey SILT w/ trace clasts; Black sat, H=B, 30% clay - 60% silt - 10% clasts, mottled w/ med green + gray silty CLAY, low-med plast, clasts up to 3" dia, angular, silic slts + diat slts rock frags, sl. organic odor			@54'- 3:5
55										
60		S 4	7 8 9			35B 80F SDF	MONTEREY FM (VALMONTE MEM) CLAYSTONE; Med brown, wet, H=B, thickly bedded, mod bedding 35° dip, mod fract, wet fract surfs, closed - V. narrow fract sep, close - v. close fract spacing, smooth - sl. rough fract surfs, most fracts filled w/ dark brown clay, v. weathered.			@60'- 3:23 PM Smooth drilling Rapid penetr (cont)
65										
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW4B

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL - MONITORING WELL 4B DATE JUNE 5, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							MONTEREY FM (VALMONTE MEM)			
							CLAYSTONE (Lovit)			
75		S	38				@74' - spt 5 - no recovery, drill out and resample @ 77'			@74' - 3:32 PM
		S	80							
		S	7			35B	CLAYSTONE occ int'bd w/ DIATOMITE; Med brown, wet, H=A-B, thickly bedded, occ diat laminae, med fract, closed - v. narrow fract sep, close fract spacing, fracts filled w/ dark brown clay, v. weathered, @78' - top of sample becoming thinly bedded.			@77' - 3:32 PM
		6	6			90F				
80		7	7			60F				
85										
		S	8			40B				@88½' - 3:50 PM
		7	88			90F	CLAYSTONE (Lovit)			STOP 4:00 PM
90			12							
							TOTAL DEPTH @ 90'			
							SEEPAGE @ 43, 50'			
							STATIC GW @ 32'			

(RENAMED M05B)

EARTHLOGICS CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW-5B

SHEET 1

PROJECT NAME: P.V. LANDFILL - BARRIER NO 1 DATE: JUNE 5, 1986
PROJECT NO.: 85-207-05 DRILLING COMPANY: DATUM DRILL CO
LOCATION: MONITORING WELL NO 5B - STATION 6+05.0 ±
EQUIPMENT: CME 75 HOLLOW STEM AUGER DRIVING WEIGHT: 140#
AVERAGE DROP (IN.): 30" HOLE DIA.: 10" ELEVATION: 264 ± GEOL/ENGR: HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				CL			LANDFILL DEPOSITS (LF)			start @ 9:57 am
							Diat clayey SILT w/ trace clasts; Med-dark brown, sl. moist, H=B, 20% clay - 70% silt - 10% clasts, mottled w/ med brown diat clayey SILT, low plast., clasts: up to 2" dia, angular, silic stts, diat stts + clys rock frags.			Smooth drill Rapid penetr.
5							@4' - becoming med brown diat clayey silt			
10		S 1	7 6 9	CL			@9' - becoming sl. mottled w/ dark brown to black clayey SILT, increase in moisture becoming moist.			@9' - 10:00 am
							Diat clayey SILT w/ trace clasts (Cont)			@14' - 10:09 am
15							@15' - increase in moisture - becoming moist - v. moist, H=B, becoming med brown diat clayey SILT.			Smooth drill Rapid penetr. (Cont)
							Diat clayey SILT w/ trace clasts (Cont)			
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW-5B

SHEET 2 OF 4

PROJECT NAME P.V. LANDFILL - MONITORING WELL NO. 5B DATE JUNE 5, 1986

PROJECT NO. BS-207-05 GEOL/ENGR HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont)			
							Diat. clayey SILT w/ trace clasts, (Cont)			Smooth drilling Rapid pene tr. (Cont)
25										
		5	5				Diat clayey SILT w/ trace sand + clasts; Med brown, moist - v. moist, H=B, 25% clay - 60% silt - 5% sand - 10% clasts, v. fine - grained sand, mottled w/ dark brown diat clayey SILT, bn plast, clasts; up to 2" dia, angular, silic clts, diat slts + diat rock frags.			
30		2	6							@ 30' - 10:15am
			9							
							@ 32' - static groundwater level, measured 6/20/86			
35							@ 34' - groundwater seepage			Smooth drill Rapid pene tr.
							@ 39' - groundwater seepage			
40										
		5	6				Diat clayey SILT w/ trace clasts; Dark brown, wet, H=C, 25% clay -			
45		3	13							

EARTHLOGICS CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW-5B

SHEET 3

PROJECT NAME: P.V. LANDFILL - MONITORING WELL No. 5B   DATE: JUNE 5, 1986

PROJECT NO.: 85-207-05   GEOL/ENGR: HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Con't) 60% silt-10% clasts, mottled + streaked w/ black clayey SILT, low-med plast, clasts; up to 2" dia, angular, silic slts, diat slts + clys rock frags.			
50							@50'- becoming med gray clayey SILT.			@50' - 10:32 am
55							Diat clayey SILT w/ little clasts - trace sand.			Smooth drill Rapid pen (Con't)
60							MONTEREY FM (VALMONTE MBR) TMV Diat. SILTSTONE interbd w/ CLAYSTONE + DIATOMITE; Med brown - lt gray, wet, A-B, v. thinly bedded - laminated, moderate (40°) bedding dip, intensly fract, wet - tract surfs, v. cl. sp. bdd., Mn staining on some fract surfs, closed - v. narrow fracts filled w/ dark brown clay, gilsonite veinlets // to bedding, fractes // + ⊥ to bedding, v. weathered.			
		5 4	4 11 12			40B 50F 90F				
65										Smooth drill Rapid pen (Con't)
		5 5	6 9 13			40B 90F	CLAYSTONE; Med-dark brown, wet			@70' - 10:54 am
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW-5B

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL - MONITORING WELL NO. 5B DATE JUNE

PROJECT NO. BS-207-05 GEOL/ENGR HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							MONTEREY F-M (VALMONTE MEM) (cont)			
							CLAYSTONE (Cont); H=B, thickly bedded, highly fract, closed fracts, occ fracts stained w/ Mn, V. weathered			Smooth drill Rapid penetr (Cont'd)
75										
80		S 6	5 6 7			40 B 55 F	CLAYSTONE (Cont); Med brown, soft H=A-B, thickly to v. thickly bedded, mod fract, closed fracts, occ fracts stained w/ Mn, smooth - sl. rough fract surfs, med - widely spaced fracts, planar to sl. curvil. fracts, wet fract surfs, mod weathering			@80' - 11:03 am
85										Smooth drill Rapid penetr (Cont'd)
		S 7	9 10 13			45 B 40 F	CLAYSTONE; Med brown to dark gray, H=B, v. moist - wet, med - thinly bedded, moderate bedding (45°) angle, mod fract, closed fracts, moist fract surfs, clean fracts, sl. weathered.			STOP @ 11:20 am
90							TOTAL DEPTH @ 90' GROUND WATER SEEPAGE @ 31', 85' Static Level @ 32'			

(RENAMED M06B)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW6B

SHEET 1 of

PROJECT NAME P.V. LANDFILL - BARRIER No 1 DATE JUNE 10, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY DATUM DRILL CO

LOCATION NORTH SIDE OF BARRIER - NO STATION No

EQUIPMENT CME - HOLLOW STEM AUGER DRIVING WEIGHT 140 #

AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 257± GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				ML			LANDFILL DEPOSITS (LF) Diat clayey SILT w/ little sand + clasts Lt brown, damp, H=B, 10% clay - 60% silt - 20% sand 10% clasts, fine-grained sand, mottled w/ lt-med brown diat clayey SILT, clasts up to 3" dia, angular - silic slts rock frags			Start 7:20 am Sl. ingr hotter
5		S 1	4 7 10	CL			Diat clayey SILT w/ trace clasts: Lt-med brown, moist, H=B, 25% clay - 65% silt - 10% clasts, mottled w/ med brown diat. clayey SILT, low H clasts, clasts - up to 1" dia, angular, silic slts diat slts + clys rock frags.			Sample d Rapid pene @10' - 7:45 am
10										
15							Diat clayey SILT w/ trace clasts (cont)			
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW6B

SHEET 2 OF 4

PROJECT NAME P.V. LANDFILL - MONITORING WELL 6B DATE JUNE 10, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont)			
		S 2	6 8 10	CL			Diat clayey SILT w/ trace clasts, Lt - med brown, moist - v. moist, H=B-C, 25% clay - 65% silt - 10% clasts, mottled w/ med - dark brown + lt med gray diat clayey SILT, low - med plast, clasts up to 3/4" dia, angular, silic sltst, diat slts + clys rock frags			@22' - 75 BPM
25							@26' - becoming wet, groundwater seepage?			smooth drilling Rapid penetr (Cont)
30							@31' - groundwater seepage			
35		S 3	9 9 15	SM CL			Silty SAND w/ trace clasts; Med brown, sat, H=B-C, 10% silt - 85% sand - 5% clasts, fine - grained sand, sl. mottled w/ med brown diat clayey SILT and dark olive sand, clasts up to 1/4" dia - silic sltst rock frags			@37' - 8 BPM
40							Diat clayey SILT w/ trace clasts; Lt - med brown, wet, H=C, 25% clay - 70% silt - 5% clasts, mottled w/ med brown diat clayey SILT, low plast, clasts up to 4" dia - silic sltst, diat slts + clys rock frags			Smooth drilling Rapid penetr (Cont)
45										

EARTHLOGICS CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW6B

SHEET 3 OF

PROJECT NAME P.V. LANDFILL - MONITORING WELL 6B DATE JUNE 10, 1986

PROJECT NO. 85-207-05 GEOL./ENGR. H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Con't)			
										@47' - 8:26 AM
					▼		@48' - static groundwater level, measured 6/20/86			
50		S 4	6 8 9				@50' - lost sample			@50' - SPT-4 No recov
							@52' - silic slts rocks			@52' - rig chatter
										@54' - sev chatter
55		S 5	17 50			35B 90F	MONTEREY FM (VALMONTE MEM) Diat SILTSTONE; Med gray, wet, H=B-C, thickly bedded, mod fract, med fract spacing, wet fract surfs, sl. rough fract surf, closed - v. narrow fract sep, fracts filled w/ lt gray clay, v. weathered			@57' - 8:53 AM
60										@60' - sl. rig chatter
65		S 6	7 12 12			35B 60F 90F	CLAYSTONE w/occ interbd DIAT SILTSTONE; Med brown, wet, H=C-D, med bedding, med - highly fract, wet fract surfs, closed - v. narrow fract sep, some fracts filled w/ med gray clay, v. weathered			Smooth drilling Rapid penetr
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW6B

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL - MONITORING WELL 6B DATE JUNE 10, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							MONTEREY FM (VALMONTEMEM)			
75		S 7	9 12 15			35B 85F	CLAYSTONE; Med brown, wet, H=B, thickly bedded, mod fract, med fract spacing, wet fract surfs, closed fracts, v. weathered			@75 - 9 3/4 AM
80										Smooth drilling Rapid penetr (cont)
85		S 8	5 7 13			35B 90F	CLAYSTONE; Med brown, sat, H=B, thickly bedded, mod fract, mod-close fract spacing, wet fract surfs, some fracts stained w Fe/Mn oxides, v. weathered.			STOP 9 45 AM
							TOTAL DEPTH @ 85' SEEPAGE @ 26, 31, 38' STATIC GW @ 48'			

(RENAMED M07B)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW7B

SHEET 1 OF

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 11, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY DATUM DRILL CO

LOCATION MONITORING WELL 7B - SEE GEOLOGIC MAP

EQUIPMENT CME 75 HOLLOW STEM AUGER DRIVING WEIGHT 140#

AVERAGE DROP (IN.) 30 HOLE DIA. 10" ELEVATION 265± GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0							LANDFILL DEPOSITS Silty SAND w/ trace clasts; Lt-med brown, damp, H=B, 25% silt-75% sand - 5% clasts, fine - med-grained sand, sl. mottled w/ lt brown clayey SILT, clasts - silic slts rock frags.			START 745 AM
5		S-1	10 13 13	SM						@4' - 750 AM
							@8' - rocks - silic slts			@8' - silic chatter
10							Silty SAND w/ trace clasts (cont)			Smooth drilling Rapid penetr
							Diat clayey SILT w/ trace sand + clasts; Lt-med brown, moist, H=B, 20% clay - 60% silt - 10% sand - 10% clasts, fine-grained sand, low plast, mottled w/ dark brown + black clayey SILT, clasts - up to 3" dia, angular, silic slts + diat slts rock frags.			
15		S-2	13 15 16	CL						@19' - 807 AM
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW7B

SHEET 2 OF 4

PROJECT NAME P.V. LANDFILL - MONITORING WELL 7B DATE JUNE 11, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20					▽3		LANDFILL DEPOSITS (Cont) @21' - groundwater seepage			
							Diat clayey SILT w/ trace sandy clasts (Cont)			
25							@25' - becoming v. moist-wet			@25' - 8:18 AM
30							@30' - groundwater seepage			Smooth drilling Rapid penetr (Cont)
							@32' - decrease in sand			
35		S3	9 12 16	CL			Diat clayey SILT w/ trace clasts, Lt - med brown, wet, H=B, 25% clay - 70% silt - 5% clasts, low plast, mottled w/ dark brown diat clayey SILT, clasts up to 2" dia, angular, diat silts + diat rock frags			
40										
					▽		@43' - static groundwater level, measured 6/20/86			@44 - 8:40 AM
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW7B

SHEET 3 OF

PROJECT NAME P.V. LANDFILL-MONITORING WELL 7B DATE JUNE 11, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Cont)			
		S4	11 17 18				Diat clayey SILT w/ some sand + clasts [MINE TAILINGS]; Med-dark brown + gray, sat, H-B, 20% clay - 40% silt - 20% sand - 20% clasts, fine-grained sand, mottled w/ dark gray + black silty CLAY, clasts up to 1" dia, angular, silic sHs rock frags			@51 - sl. rig chatter
50										
55		S5	17 24 27			35B 85F	MONTEREY FM (VALMONTE MEM) CLAYSTONE; Med brown, wet, H-B, thickly bedded, intensely fract, wet fract surfs, closed - v. narrow fract sep, v. closely spaced fracts, smooth - sl. rough fract surfs, planar - sl. curvil fracts, v. weathered,			Smooth drilling Rapid penetr (Cont)
60										@61' - 90% AM
65							CLAYSTONE (Cont)			
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. MW7B

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL-MONITORING WELL 7B DATE JUNE 11, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70		S 6	7 8 9			40B 5DF	MONTEREY FM (VAL MONTE MEM) CLAYSTONE; Med brown, wet, H=B, thickly bedded, highly fract, wet fract surfs, closed - v. narrow fract sep, closely spaced fracts, some fracts filled w/ dark brown clay, few fracts stained w/ Fe/Mn oxides, very weathered			70'- 9:15 AM
75										Smooth drilling Rapid penetr (cont)
80										@80'- 9:50 AM
		S 7	16 24 45			85B 90F	DIAT SILTSTONE interbd w/ CLAYSTONE + DIATOMITE [UNOXIDIZED]; Med-dark olive, H=C-D, v. thinly bedded - laminated, v. steep bedding 85° dip, mod fract, moist fract surfs, closed fracts, clean fracts, smooth - sl. rough fract surfs, unweathered - fresh.			STOP 10:10 AM
85							TOTAL DEPTH @ 85' SEEPAGE @ 21, 30' STATIC GW @ 43'			

EARTHLOGICS
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BORING LOG NO. EW-1

SHEET 1

PROJECT NAME P.V. LANDFILL - BARRIER NO 1 DATE JUNE 3, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY BARNEYS DRILL CO

LOCATION EXTRACTION WELL NO. 1 - STA 2+54±

EQUIPMENT WATSON 2000 - FLIGHT AUGER DRIVING WEIGHT - - -

AVERAGE DROP (IN.) - - - HOLE DIA. 24" ELEVATION 292± GEOL/ENGR JGY

WELL EW1

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				SM			LANDFILL DEPOSITS Silty SAND with trace clasts; Lt brown, damp, H=B, 35% sand - 60% silt - 5% gravel, med-grained sand, mottled w/ lt-med brown diat silt, clasts: up to 6" dia, angular, silic slts rock frags			Start 820 am Smooth drill Rapid penetr
5										
10							Silty SAND w/ trace clasts (Cont'd)			@9' - 823 am Smooth drill Rapid penetr (Cont'd)
15				CL			Diat. clayey SILT w/ trace sand + clasts; Lt-med brown, damp - moist, H=B, 20% clay - 70% silt - 5% sand - 5% clasts, fine-grained sand, low plasticity, mottled w/ med brown diat clayey SILT, clasts: up to 4" dia, angular, silic slts + diat clys rock frags.			@16' - 825 am
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-1

SHEET 2 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL NO1 DATE JUNE 3, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont)			@20'- 8 25 am
							Diat. clayey SILT w/ trace sand + clasts (Cont)			
										Smooth drill Rapid penetr (Cont)
25										
							@28'- becoming med brown diat clayey SILT w/ trace sand + clasts, moist, H=B, 20% clay - 70% silt - 5% sand - 5% clasts, fine-grained sand, low plast. ML, mottled w/ H brown diat clayey SILT, clasts: up to 4" dia, angular, silic sHs + diat sHs rock frags, slight organic odor			@28'- 8 31 am
30										
35										
										@38'- 8 38 am
40							Diat clayey SILT w/ trace sand + clasts (Cont)			Smooth drill Rapid penetr (Cont)
							@43'- decrease in sand			
45										

EarthLogics Consultant Group, Inc.
San Clemente, California

BORING LOG NO. EW-1

SHEET 3

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL NO. 1 DATE JUNE 3, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Cont)			
							@46'-becoming dark brown to dark gray diat clayey SILT w/ trace clasts, v. moist, H=B, 35% clay - 60% silt - 5% clasts, low-med plast-CL, mottled w/ dark gray diat clayey silt, clasts: up to 4" dia, angular silic sHs + diat sHs rock frags.			
50							@50'-Clayey SILT w/ trace clasts; dark gray to black, v. moist - wet, H=B, 30% clay - 65% silt - 5% clasts, mod plast-CL, mottled w/ black clay, clasts: up to 4" dia, angular, silic sHs + diat sHs rock frags			@50'-845
55							@56'-becoming mottled w/ lt green gray + med brown diat sHs, wet			Smooth drill Rapid penetr (Cont)
60							@58'-Diat clayey SILT w/ trace sand + clasts: Med-dark brown, wet-sat, H=A-B, 25% clay 70% silt - 5% sand - 5% clasts, fine-grained sand, low-med plast-CL, mottled w/ dark gray + black clay, clasts: up to 5" dia, angular, silic sHs + diat sHs rock frags, mod organic odor, caving from 59-63'			
65							@62'-becoming mottled w/ green + med brown diat sHs + clys, mine tailings?, minor caving			@65'-903 Stop drilling - Water added - Change to bucket auger @9 lb start-up
							MONTEREY FM (VALMONTE MBR)			
70							@63'-Diat SILTSTONE oc inttbd w/ diatomite; Lt brown, sat, H=B, thinly bedded, intensely fract, very			Smooth Rapid penetr (Cont)

EARTHLOGICS
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San Clemente, California

BORING LOG NO. EW-1

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL NO 1 DATE JUNE 3, 1986

PROJECT NO. 85-207-01 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							MONTEREY FM (VALMONTE MEM) (cont), closely sp fracts, closed - v. narrow fract seperation, wet fract surfs, sli smooth fract surfs, fracts ⊥ + ∠ to bedding, planar fracts, highly weathered.			@ 950 am stop drilling @ 1015 am start drilling stop @ 1020
							TOTAL DEPTH @ 70' GROUND WATER @ 59' CAVING FROM 59-63'			

EARTHLOGICS
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San Clemente, California

BORING LOG NO. EW-2

SHEET 1

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 3, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY BARNEY'S DRILL CO

LOCATION EXTRACTION WELL NO. 2 - STA 3+09 ±

EQUIPMENT WATSON 2000 - FLIGHT AUGER DRIVING WEIGHT —

AVERAGE DROP (IN.) — HOLE DIA. 24" ELEVATION 290 ± GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				SM			LANDFILL DEPOSITS Silty SAND with trace clasts; Lt brown, damp, H=B, 30% sand - 65% silt - 5% clasts, fine-grained sand, mottled w/ med brown diat clayey silt, clasts: up to 5" dia, angular, silic slts + diat slts rock frags.			Start 1050 am Smooth drill Rapid penetr
5										
10							Silty SAND w/ trace clasts (cont)			
12				CL			@12'- Diat clayey silt w/ little sand + trace clasts; Med brown, damp-moist, H=B, 20% clay - 60% silt - 15% sand - 5% clasts, low plast - CL, mottled w/ lt brown diat clayey silt, clasts: up to 8" dia angular, silic slts + diat slts rocks.			@12'-1057 Smooth drill Rapid penetr (cont)
15										
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-2

SHEET 2 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL NO 2 DATE JUNE 3, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont)			
							Diat clayey SILT w/ sand + clasts (Cont)			@22'- 11⁰³
							@22'- decrease in sand, becoming mottled w/ lt gray diat clayey SILT.			
25										Smooth drill Rapid penetr (Cont)
30							Diat clayey SILT w/ trace sand + clasts (cont)			
35							@36'- weak organic odor			@35'- 11¹¹ am
40										Smooth drill Rapid penetr (Cont)
							@43'- becoming dark brown to dark gray diat clayey SILT w/ trace			
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-2

SHEET 3 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL NO 2 DATE JUNE 3, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Cont)			
							sand + clasts, v. moist - wet, H=B, low - med plast - CL, mottled w/ dark gray diat clayey SILT, v. fine - grained sand, clasts: up to 4" dia, angular, silic slts + diat slts rock frags, organic odor			@48' - 11:20
50							@48' - becoming mottled w/			Smooth drill Rapid penetr (Cont)
							@52' - silty CLAY w/ trace clasts; v. dark gray to black, wet, H=B, 40% silt - 55% clay - 5% clasts, mod - high plast - CH, mottled w/ lt green + lt brown diat clayey SILT, clasts: up to 2" dia, angular, silic slts + diat slts rock frags, strong chemical odor.			
					B					
55							@54' - groundwater seepage, becoming black silty CLAY, organic odor.			@55' - 11:29 Stop drilling Added water @11:49 start-up
60										@60' - 12:01 PM
65										@66' - 12:06 PM rig clutter slow penetr @12:14 PM Lunch break @12:30 start-up
							@64' - Diat clayey SILT w/ some clasts; [MINE TAILINGS]; Lt - med brown, wet. H=B, 20% clay - 60% silt - 20% clasts, mod plast - CL, mottled w/ green clay, clasts: up to 8" dia, angular,			
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-2

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL NO. 2 DATE JUNE 3, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGV

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							LANDFILL DEPOSITS (Cont) silic slts + diat slts rock frags, organic odor.			@70' - 1 10 PM Smooth drill Mod penetr
							MONTEREY FM (VALMONTE MEM)			
75							@70' - Diat. SILTSTONE occ intbd w/ diatomite; med brown, v. moist - wet, H= B, v. thinly bedded to laminated, intensely to highly fract, v. closely sp. fracts, closed - v. narrow fract sep, some fracts filled w/ dark brown clay, wet fract surfs, sl. smooth fract surfs, planar fracts, highly weathered			@75' - 1 20 PM
							TOTAL DEPTH @ 75' GROUNDWATER @ 54' NO CAVING			Stop @ 1 25 PM

EARTHLOGICS
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San Clemente, California

BORING LOG NO. EW-3

SHEET 1 of 1

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 3, 1986
PROJECT NO. 85-207-05 DRILLING COMPANY BARNEY'S DRILL CO
LOCATION EXTRACTION WELL NO. 3 - STA 3+83 ±
EQUIPMENT WATSON 2000 FLIGHT AUGER DRIVING WEIGHT ———
AVERAGE DROP (IN.) ——— HOLE DIA. 24" ELEVATION 284' ± GEOL/ENGR JGY

WELL EW3

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0							LANDFILL DEPOSITS Silty SAND w/ trace clasts; Med brown, damp, H=B, 25% silt - 65% sand - 10% clasts, fine - med grained sand, sl. mottled w/ med brown diat clayey SILT, clasts: up to 8" dia, angular, silic slts, diat slts + diat rock frags.			Start 302 PM Smooth drill Rapid penetr
5										
10							Silty SAND w/ trace clasts (cont'd) @11' - Diat. clayey SILT w/ trace sand + clasts; med brown, moist, H=B, 15% clay - 75% silt - 5% sand - 5% clasts, fine - med - grained sand, mottled w/ lt brown diat clayey SILT, sl. plast - ML, clasts: up to 6" dia, angular, diat slts rock frags.			@9' - 314 PM Smooth drill Rapid penetr @18' - 315 PM
15										
20										

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San Clemente, California

BORING LOG NO. EW-3

SHEET 2 OF 4

PROJECT NAME P.V. LANDFILL – EXTRACTION WELL NO.3 DATE JUNE 4, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS			
							Diat clayey SILT w/ trace clasts (cont'd)			Smooth drill Rapid penetr (cont'd)
25										
										@28' – 3:15 PM
30							@31' – boulder, roughly 18" ± in dia, silic slts – impeded drilling			
										@33' 3:35 PM Stop drilling for day @7:15 am – start-up
35							Diat clayey SILT w/ trace clasts (cont'd)			
40										Smooth drill Rapid penetr (cont'd)
							@42' – becoming mottled w/ dark gray silty SAND			
45										

EARTHLOGICS
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San Clemente, California

BORING LOG NO. EW-3

SHEET 3 OF

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL No. 3 DATE JUNE 4, 1986

PROJECT NO. 86-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (cont)			
							@45'- silty SAND w/ trace clay; dark gray, moist - v. moist, H=B, 25% silt - 65% sand - 5% clay, fine - grained sand, mottled w/ med. dark brown diat clayey SILT.			Smooth drill Rapid penetr (cont)
50							@46'- minor groundwater seepage			
55										
							@58'- groundwater seepage and minor caving			@58' - 7 30 am added water evidence to bucket auger
60							@59'- clayey SILT w/ trace clasts; Black, wet, H=B, 25% clay - 70% silt - 5% clasts, mottled w/ V. dark brown clayey SILT, trace caliche, sl. plast - ML, clasts: up to 2" dia, angular, silic sHs rock frags, minor caving to 62'			
65										@64' - 8 20
							@66'- Diat. clayey SILT w/ some clasts [MINE TAILINGS]; V. dark brown, sat, H=B, 20% clay - 60% silt - 20% clasts, mottled w/ med brown diat. clayey SILT, clasts: up to 8" dia, angular, silic sHs			
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-3

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL No 3 DATE JUNE 4, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							LANDFILL DEPOSITS rock frags.			
							MONTEREY FM (VALMONTE MEM) @72'- Diat SILTSTONE interbd w/ CLAYSTONE; Med brown, wet, H=C, thinly – v. thinly bedded, intensely fract, v. closely spaced fracts, closed – v. narrow fract seperation, some fracts filled w/ dark brown clay, wet fract surfs, smooth - sl. rough fract surfs, v. weathered			@76'-843
75										Stop @ 845 am
							TOTAL DEPTH @ 76' GROUNDWATER @ 58' CAVING FROM 58'-68'±			

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW4

SHEET 1 of

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE MAY 30, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY BARNEYS DRILL CO

LOCATION EXTRACTION WELL NO. 4 - STATION 4+28 ±

EQUIPMENT WATSON 2000 - FLIGHT AUGER DRIVING WEIGHT ———

AVERAGE DROP (IN.) ——— HOLE DIA. 24" ELEVATION 280± GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				SM			LANDFILL DEPOSITS Silty SAND w/ trace clasts; Med brown, damp, H=C, 40% silt - 50% sand - 10% clasts, fine-grained sand, mottled w/ med brown diat clayey SILT, clasts up to 2" dia, angular, silic slts rock frags			START 2:15 PM
5				CL			Diat. clayey SILT w/ trace sand + clasts: Med brown, damp, H=C, 25% clay - 60% silt - 10% sand - 5% clasts, mottled w/ lt brown diat clayey SILT, low plast, clasts up to 2" dia, angular, silic slts + diat slts rock frags			Smooth drilling Rapid penetr
10							@9' - decrease in sand			@10' - 2:30 PM
				CL			Diat clayey SILT w/ trace clasts, Med gray, moist, H=B, 20% clay - 75% silt - 5% clasts, sl - low plast, mottled w/ med brown clayey SILT, clasts - silic slts + clys rock frags			STOP 2:45 PM JUNE 2, 1986 START 7:15 AM
15							@15' - becoming sandy (10%), fine-grained			Smooth drilling Rapid penetr (Lout)
				CL			Diat clayey SILT w/ trace clasts; Med brown, moist, H=B, 20% clay - 70% silt - 10% clasts, low plast,			
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-4

SHEET 2 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL No. 4 DATE JUNE 2, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont)			
							Diat clayey SILT w/ trace clasts (Cont)			Smooth drilling Rapid penetr (Cont)
							@23' - decrease in sand			
25				ML			Diat clayey SILT w/ trace clasts, Lt-med brown, moist-v. moist, H-B-C, 15% clay - 80% silt - 5% clasts, sl. plast, mottled w/ med brown diat clayey SILT, clasts up to 1" dia, angular, silic slts + diat slts rock frags			sl. rig chatter
										@29' - 7 30 AM
30										Smooth drilling Rapid penetr (Cont)
							@34' - becoming med brown diat clayey SILT			
35					▽		@36' - increase in clasts - diat slts clasts - minor ground - water seepage			
							@39' - becoming mottled w/ med brown sand - v. fine-grained			
40				SM			Silty SAND w/ trace clasts; Med brown, v. moist - wet, H-B, 20% silt - 75% sand - 5% clasts, fine-grained sand, mottled w/ green gray sand, clasts up to 1" dia, angular, silic slts rock frags			@41' - 8 98 AM
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW4

SHEET 3 OF

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL 4 DATE JUNE 2, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS Silty SAND w/ trace clasts (Lout)			
				CL			Clayey SILT w/ trace sand + clasts; Dark gray, V. moist, H=B, 25% clay - 70% silt - 5% clasts, fine-grained sand, mottled w/ dark brown diat clayey SILT, low plast, clasts up to 6" dia, angular, silic slts + diat slts rock frags			@51' - 7:55 AM
50							@51' - trash debris (wood), sl organic odor			Smooth drilling Rapid penet. (Lout)
				SM			Silty SAND w/ trace clasts; Dark green gray, V. moist, H=B, 30% silt - 65% sand - 5% clasts, fine-grained sand, mottled w/ dark brown diat clayey SILT, clasts up to 3" dia, angular, silic slts rock frags			
55							@57' - increase in silt + clay (40%), becoming V. dark gray			
60				CL			Diat clayey SILT w/ trace clasts; Lt-med brown, V. moist-wet, H=B, 20% clay - 75% silt - 5% clasts, low plast, mottled w/ med brown diat clayey SILT, clasts up to ½" dia, angular, silic slts, diat slts + clys rock frags			@60' - 8:10 AM
65				CL			@61' - becoming mottled w/ dark gray clayey SILT @62', 64' - ground water seepage @64' - becoming mottled w/ black + dark gray CLAY Diat clayey SILT w/ some sand + clasts			@65' - 8:20 AM
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-4

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL 4 DATE JUNE 2, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							LANDFILL DEPOSITS (Cont'd) [MINE TAILINGS]; Med-dark brown, wet, H=C, 15% clay - 60% silt - 15% sand - 20% clasts, coarse-grained sand, mottled w/ green + black clay, low-med plast, clasts up to 8" dia, angular, silic slts rock frags.			Smooth drilling Rapid penetr (Cont'd)
75							MONTEREY FM (VALMONTE MEM) Diat SILTSTONE occ intbd CLAYSTONE + DIATOMITE; Lt-med brown, wet, H=B-C, thinly bedded, diat laminae, intensely fract, wet fract surfs, closed - v. narrow fract sep, v. close fract spacing, smooth - s/. rough fract surfs, most fracts filled w/ dark brown clay, v. weathered.			STOP 940 AM
							TOTAL DEPTH @ 74' SEEPAGE @ 34, 62, 64' CAVING @ 60-64'			

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW5

SHEET 1 OF

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 2, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY BARNEYS DRILL CO

LOCATION EXTRACTION WELL NO. 5A - STATION 4+77±

EQUIPMENT WATSON 2000 FLIGHT AUGER DRIVING WEIGHT —

AVERAGE DROP (IN.) — HOLE DIA. 24" ELEVATION 284'± GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				CL			LANDFILL DEPOSITS Diat clayey SILT w/ little sand; lt brown, damp, H=A-B, 15% clay - 70% silt - 20% sand, fine-grained sand, mottled w/ med gray clayey SILT, trace clasts - silic sltst + diat sltst rock frags			START 10²⁵ AM
5							@4'- increase in sand - 25%			Smooth drilling Rapid penetr
										@6'- 10³⁵ AM
							@8'- increase in moisture - becoming moist			
10				CL CH			Diat clayey SILT w/ trace clasts; Med dark gray, moist, H=C, 25% clay - 65% silt - 10% clasts, low-mod plast, mottled w/ med brown diat. clayey SILT, clasts up to 1" dia, silic sltst + clyst rock frags			
15				CL			Diat clayey SILT w/ trace sand + clasts; Med brown, moist, H=B, 20% clay - 70% silt - 5% sand - 5% clasts, fine-grained sand, mottled w/ lt brown diat clayey SILT, clasts up to ½" dia, silic sltst + diat sltst rock frags			@15'- 10⁴⁵ AM
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW5

SHEET 2 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL 5 DATE JUNE 2, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont'd)			
							Diat clayey SILT w/ trace clasts (Cont'd)			Smooth drilling Rapid penetr (Cont'd)
25							@25'- becoming mottled w/ med gray clayey SILT			
										@28'- 1109 AM
30				CL			Diat clayey SILT; Red brown, moist, H=B, 25% clay - 75% silt, low-med plast, mottled w/ med brown diat clayey SILT			
				CL			Diat. clayey SILT w/ trace clasts; Lt-med brown, v. moist-wet, H=B, 20% clay - 70% silt - 10% clasts, sl.- low plast, mottled w/ med brown diat clayey SILT, clasts up to 1/2" dia, angular, silic slts + diat slts rock frags			
35					▽		@35'- groundwater seepage			Smooth drilling Rapid penetr (Cont'd)
40										
				SM			Silty SAND w/ trace clay; Med gray, moist, H=B, 20% silt - 70% sand - 10% clay, mottled w/ dark gray silty CLAY, fine-grained sand,			@42'- 1109 AM
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-5

SHEET 3 OF

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL 5 DATE JUNE 2, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (cont) clasts - sillic stts + clys rock frags @45' - becoming mottled w/ black silty CLAY, strong organic odor			@48' - 11[19] AM
50							Clayey SILT; V. dark gray + black, moist - V. moist, H=B, 25% clay - 75% silt, low - med plast, mottled + streaked w/ med gray clayey SILT, strong organic odor,			Smooth drilling Rapid penetr (cont)
55							@55' - minor caving			
60							@58' - becoming mottled + streaked w/ lt gray clayey SILT, strong organic odor @60' - moderate caving, ground-water seepage			@61' - 11[25] AM
65							Clayey SILT w/ trace clasts; Black, wet, H=B, 30% clay - 60% silt - 10% clasts, med - high plast, mottled w/ green clay + lt gray clay, clasts up to 1" dia, angular, diat slts + diat rock frags			@66' - 12[02] PM
70							MONTEREY FM (VALMONTE MEM) CLAYSTONE w/ occ intbd DIATOMITE; Med brown, wet, H=B-C, diat. laminae, med bedded, intensely fract, wet fract surfs, v. close fract spacing, closed			

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW5

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL 5 DATE JUNE 2, 1986

PROJECT NO. 85-207-05 GEOL/ENGR H. AUDELL

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							MONTEREY FM (VALMONTE MEM) to v. narrow fracts sep, most fracts filled w/ dark brown + med gray clay, v. weathered.			STOP 12:15 PM
							TOTAL DEPTH @ 70' SEEPAGE @ 35, 60' CAVING @ 55-62'			

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-6

SHEET 1 OF

PROJECT NAME P.V. LANDFILL - BARRIER No. 1 DATE JUNE 6, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY BARNEY'S DRILL CO

LOCATION EXTRACTION WELL NO 6 - STA 5+20 ±

EQUIPMENT WATSON 2000 FLIGHT AUGER DRIVING WEIGHT ———

AVERAGE DROP (IN.) ——— HOLE DIA. 24" ELEVATION 283' ± GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				SM			LANDFILL DEPOSITS Silty SAND w/ little clasts; Lt brown, damp, H=B, 20% silt - 70% sand - 10% clasts, fine - med - grained sand, mottled w/ med brown diat clayey SILT, clasts: up to 4" dia, angular, silic sHs + diat s/Hs rocks			Start 3:15 PM Smooth drill Rapid penetr
5										
10							Silty SAND w/ little gravel (Lout)			@10' - 3:21
15				CL			@15'. Diat clayey SILT w/ trace sand; Med brown, moist, H=B, 20% clay - 70% silt - 10% sand, fine - med - grained sand, low plast - CL, mottled w/ med brown diat clayey SILT.			Smooth drill Rapid penetr (Limit)
20										@20' - 3:25 PM Stop drill

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-6

SHEET 2 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL No.6 DATE JUNE 9, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont)			Start 700 6-9-86
							@22'- increase in clasts (5%), up to 2" dia, angular, silic sltst+ clys rocks			Smooth drill Rapid penetr (Cont'd)
25										
30							Diat, clayey SILT w/ trace sand+ clasts (Cont)			
35							@36'- trash debris (ie. wire cable), heavy petro odor			
40							Diat clayey SILT w/ trace sand+ clasts (Cont)			@36'- 733 Smooth drill Rapid penetr (Cont'd)
45										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-6

SHEET 3 OF

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL No. 6 DATE JUNE 9, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45					EW		LANDFILL DEPOSITS (Cont) @46'- groundwater seepage Diat clayey SILT w/ trace sand + clasts (Cont)			@46'- 740 Water added @8a start-up
				CH			Silty CLAY w/ trace sand + clasts: dark gray - black, sat, H=B, 30% silt - 60% clay - 5% sand - 5% clasts, fine - coarse grained sand, mod - high plast - CH, mottled w/ light gray green diat clayey SILT, clasts: up to 5" dia, angular, silic slts + diat slts rocks, strong petro odor			
50										@50'- 810 rig breakdown @845 start-up
55							Silty CLAY w/ trace sand + clasts (Cont)			Smooth drill Slow penetr
60							@60'- increase in clasts to 20%, up to 12" dia, averaging 2" dia, angular, silic slts rocks, strong petro odor			@60'- 1022 @62'- 1013 am rig breakdown @700 am 9-10-86
65							@65'- Diat clayey SILT w/ trace clasts; med brown, sat, H=B, 30% clay - 65% silt - 5% clasts, mod plast - CL, mottled w/ green + some reddish brown clay, clasts: up to 4" dia, angular, silic slts + diat slts rocks.			Rough drilling Slow penetr (Cont)
70										

2 sand

2 screen

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-6

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL No 6 DATE JUNE 9, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							LANDFILL DEPOSITS (Cont) Diat clayey SILT w/ trace clasts (Cont)			@70' - 1100 am
							MONTEREY FM (VALMONTE MEM) @71' - Diat SILTSTONE intbd w/ DIATOMITE + CLAYSTONE; Lt - med brown, sat, H = B-C, thinly - v thinly bedded, intensely fract, v. closely sp. fracts, closed - v. narrow fract seper., some fracts filled w/ dark brown + black clay, smooth - sl. rough fract surfs, wet fract surfs, planar fracts, v. weathered			Smooth drill Rapid penetr
75										
76										
77										@77' - 1213
80							TOTAL DEPTH @ 77' GROUNDWATER @ 46' NO CAVING			Stop @ 1215 PM

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-7

SHEET 1 OF

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE JUNE 10, 1985

PROJECT NO. 85-207-05 DRILLING COMPANY BARNEYS DRILL CO

LOCATION EXTRACTION WELL NO. 7 - STA 5+60 ±

EQUIPMENT WATSON 5000 FLIGHT AUGER DRIVING WEIGHT —

AVERAGE DROP (IN.) — HOLE DIA. 24" ELEVATION 279' ± GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0							LANDFILL DEPOSITS Silty SAND w/ trace clasts; lt brown, damp, M=B, 20% silt - 75% sand - 5% clasts, fine - to coarse-grained sand, clasts: up to 2" dia, angular, silic sltst + clyst rocks			Start 245 PM Smooth drill Rapid penetr
5										
10							@10' - becoming med brown silty SAND w/ little clay, damp, M=B, 25% silt - 60% sand - 15% clay, fine - to coarse-grained sand, mottled w/ dark gray clay, sl. plasticity.			@12' - 303 PM
15										Smooth drill Rapid penetr (Cont'd)
20							@19' - Dk brn clayey SILT w/ trace sand			

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EQ-7

SHEET 2 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL NO7 DATE JUNE 10, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20							LANDFILL DEPOSITS (Cont) and clasts: Med brown, moist, HP=B, 20% clay-60% silt-10% sand-10% clasts, fine-to med-grained sand, mottled w/ green gray diat silt, low plast-CL, clasts: up to 4" dia, angular, silic slts + diat slts rocks			@23'- 3:02 pm
25										
30							@28'- becoming mottled with green + lt brown diat clayey SILT			@30'- 3:15 pm
35							Diat clayey SILT w/ trace sand + clasts (Cont)			
40							@37'- slight petro odor, decrease in sand			@37'- 3:25 pm Stop drilling @ 7:30 am 9-11-86 Start-up
45							Diat clayey SILT w/ trace clasts (Cont)			

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-7

SHEET 3 OF

PROJECT NAME P.V. LANDFALL - EXTRACTION WELL No. 7 DATE JUNE 10, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (cont)			Smooth drill, Rapid penetr (cont)
					▽		@48' - groundwater seepage			
50							silty CLAY; Black, wet, H=B, 40% silt - 60% clay, mod - high plast - CH, mottled w/ med gray + black petro sludge, strong petro odor			@51' - 8 45 am
55										Smooth drill slow penetr
							silty CLAY			
60							MONTEREY FM (VALMONTE MEM)			
							@61' - Diat SILTSTONE intbd w/ DIATOMITE + CLAYSTONE; Black, wet, H=A-B, v. thinly bedded - laminated, totally sat w/ black petro sludge deposits, vestiges of bedding, highly - intensely fract, v. closely sp. fracts, closed fracts, all fracts filled w/ black petro sludge, wet fract surfs, v. weathered, strong petro odor			@63' - 10 35 am
65										@66' - 10 58 am
							@66' - sl. decrease in fract filling w/			Smooth drill Slow pene (cont)
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-7

SHEET 4 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL No. 7 DATE JUNE 10, 1986

PROJECT NO. 85-207-05 GEOL/ENGR JGY

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							MONTEREY FM (VALMONTE MEM) (cont), black petro sludge			@70' - 11:47
							@68' - CLAYSTONE; Med brown, wet, H=B, thickly bedded, highly fract, med close sp. fracts, decrease in fract filling w/ black petro sludge to 10%, most fracts filled w/ dark brown clay, smooth - sl rough fract surfs, v weathered, strong petro odor.			Smooth drill Slow penetr (Cont)
75							@71' - becoming interbedded w/ dist SILTSTONE, and of black petro sludge deposits @71', narrow fracts filled w/ dark brown clay, V. weathered, strong petro odor.			@75' - 11:51 am
							TOTAL DEPTH @ 75' GROUNDWATER @ NO CAVING			Stop @ 11:55 am

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-8

SHEET 1 OF

PROJECT NAME P.V. LANDFILL - BARRIER No. 1 DATE JUNE 11, 1980

PROJECT NO. 85-207-05 DRILLING COMPANY BARNEY'S DRILL CO

LOCATION EXTRACTION WELL No. 8 - STA 6+05 ±

EQUIPMENT WATSON 5000 - FLIGHT AUGER DRIVING WEIGHT ———

AVERAGE DROP (IN.) ——— HOLE DIA. 24" ELEVATION 271' ± GEOL/ENGR HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				SM			LANDFILL DEPOSITS Silty SAND w/ trace clasts; lt to med brown, damp, lt=B, 20% silt - 75% sand - 5% clasts, fine- to med-grained sand, clasts: up to 2" dia, angular, silic slts + diat slts rocks			Start 3:29 PM
5										Smooth drill Rapid penetr
							Silty SAND w/ trace clasts (cont)			
10				CL			@10' - Diat clayey SILT w/ trace sand + clasts; Med brown, moist, lt=B, 20% clay - 60% silt - 10% sand - 10% clasts, fine - med - grained sand, mottled w/ dark brown diat clayey SILT, low-med plast - CL, clasts: up to 4" dia, angular, silic slts + diat slts rocks			
15										@15' - 3:40 PM Smooth drill Rapid penetr (cont)
20										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-8

SHEET 2 OF 3

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL No. 8 DATE JUNE 11, 1986

PROJECT NO. 85-207-05 GEOL/ENGR HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20				CL			LANDFILL DEPOSITS (Cont)			Smooth drill Rapid penetr (Cont)
							Diat clayey SILT w/ trace sand + clasts (Cont)			
25							@25'- becoming red-dark brown diat clayey SILT w/ trace sand + clasts.			@25'- 4pm
30							@30'- decrease in sand			
							Diat clayey SILT w/ tr. clasts (Cont)			
							@33'- becoming mottled w/ green + lt brown diat clayey SILT			
35										Smooth drill Rapid penetr (Cont)
40							Diat clayey SILT w/ tr clasts (Cont)			
										@43'- 4:5pm stop drilling
45							@44'- increase in sand (5%) fine - grained sand.			@7am start up 6-12-86

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-8

SHEET 3 OF

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL No. 8 DATE JUNE 12, 1986

PROJECT NO. 85-207-05 GEOL/ENGR HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (Cont) Diat. clayey SILT w/ trace sand + clasts (Cont'd) @ 47' - groundwater seepage @49' - increase in sand (10%)			Smooth drill Rapid penetr (Cont'd)
50				SM			@50' - silty SAND: Med brown, wet, H=B, 20% silt - 80% sand, fine-grained sand, sl. mottled w/ dark brown diat clayey SILT, @52' - becoming mottled w/ black petro sludge deposits, strong petro odor			@50' - 710
55				CL			@55' - clayey SILT w/ some sand; Dark olive-black, wet, H=B, 20% clay - 60% silt - 20% sand, fine-grained sand, mottled w/ black petro sludge deposits, low-med plast - CL, strong petro odor			
60							MONTEREY FM (VALMONTE MEM) CLAYSTONE; Med-dark brown + black, wet, H=B, thinly bedded-massive, highly fract, v. close fract spacing, closed fract surfs, most fracts filled w/ black petro sludge deposits to 63', wet fract surfs, v. mottled, strong petro odor.			Smooth drill Rapid penetr (Cont'd) @68' - 720
65							TOTAL DEPTH @ 68' GROUND WATER @ 47' NO CAVING			Stop @ 72
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-9

SHEET 1 OF 4

PROJECT NAME P.V. LANDFILL - BARRIER NO. 1 DATE MAY 30, 1986

PROJECT NO. 85-207-05 DRILLING COMPANY BARNEYS DRILL CO

LOCATION EXTRACTION WELL NO. 9 - STA 6+34 ±

EQUIPMENT — DRIVING WEIGHT —

AVERAGE DROP (IN.) — HOLE DIA. 24" ELEVATION 264' ± GEOL/ENGR HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0				CL			LANDFILL DEPOSITS Diat. clayey SILT w/ trace sand + clasts; Lt-med brown, moist, H=B, 15% clay - 60% silt - 5% sand - 10% gravel, v. fine - fine grained sand, mottled w/ dark brown diat clayey SILT, low plast - CL, clasts: up to 6" dia, angular, silic slts + diat slts rocks, occ grass roots			START 8⁰⁰ AM
5							@8' - becoming H brown diat clayey SILT			Smooth drill Rapid penetr
10							@10' - becoming mottled w/ H-med gray diat clayey SILT Diat clayey SILT w/ trace clasts (Cont)			@10' - 8⁰⁵ AM
15							@13' - becoming med gray to green gray diat clayey SILT			Smooth drill Rapid penetr
20				SM			@19' - Silty SAND w/ trace clasts;			

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-9

SHEET 2 OF

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL NO. 9 DATE MAY 30, 1986

PROJECT NO. 85-207-05 GEOL/ENGR HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20				GM			LANDFILL DEPOSITS (Cont) Med gray, moist, H=B, 25% silt-70% sand-5% clasts, fine-coarse-grained sand, clasts: up to 1" dia, angular, silic sltst rocks			Smooth drill Rapid penetr (Cont'd)
25				CL			@23'- Diat clayey SILT w/ trace sand + clasts; Med brown, moist, H=B, 20% clay-70% silt-5% sand-5% clasts, low plast-CL, mottled w/ dark brown diat clayey SILT, clasts: up to 2" dia, angular, silic sltst + diat sltst rocks. @26'- becoming mottled w/ black clayey SILT			@26'- 8 15 am Smooth drill Rapid penetr (Cont)
30							Diat clayey SILT w/ trace sand-clasts (Cont)			
35							@36'- increase in mottling w/ black silty CLAY, med-high plast-CH, increase in moisture-becoming v. moist, clasts: up to 7" dia, angular, silic sltst rocks			@36'- 8 25 am sl. rig chatter
40										Smooth drill Rapid penetr (Cont)
45							@43'- Silty SAND: Med brown, wet, H=B, 20% silt-80% sand, fine-grained sand, sl. mottled w/ dark brown			@44'- 8 30 am

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-9

SHEET 3 OF 4

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL NO. 9 DATE MAY 30, 1986

PROJECT NO. 85-207-05 GEOL/ENGR HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
45							LANDFILL DEPOSITS (cont) silty CLAY. @45'- groundwater see page			
				CL			@47'- Diat clayey SILT w/ trace clasts; med-dark brown, wet, H=B, 25% clay - 70% silt - 5% clasts, low - med plast - CL, mottled w/ black petro sludge deposits, clasts: up to 2" dia, angular, silic slts + diat slts rocks, petro odor			Smooth drill Rapid penetr (cont)
50				SM			@51'- Silty SAND; olive, wet, H=B, 20% silt - 80% sand, fine - grained sand, discolored to olive from petro deposits, v. mottled w/ black petro sludge, strong petro odor			
				CH			@53'- Silty CLAY w/ trace sand + clasts; Dark olive, wet, H=B. 40% silt - 50% clay - 5% sand - 5% clasts, v. fine - grained sand, v. mottled w/ black petro sludge deposits, clasts: up to 1" dia, angular, silic slts rocks, strong petro odor.			@54'- 8 35 am
55							@55'- becoming black silty CLAY, high plast - CH			@56'- 8 50 am added water change to bucket auger
60							silty CLAY (cont)			@65'- 10 00 am
65							MONTEREY FM (VALMONTE MEM) @66'- Diat SILTSTONE occ int bd w/ CLAYSTONE + DIATOMITE; Lt gray - med brown + black, wet, H=B, med bedded, intensely fract v. cl. fract spacing, closed - v. narrow			Smooth drill Rapid penetr (cont)
70										

EARTHLOGICS CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. EW-9

SHEET 4 OF

PROJECT NAME P.V. LANDFILL - EXTRACTION WELL No. 9 DATE MAY 30, 1986

PROJECT NO. 85-207-05 GEOL/ENGR HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							MONTEREY FM (VALMONTE MEM) (cont) fract seperation, all fracts filled w/ black petro sludge to 69', wet fract surfs, smooth-sl. rough fract surfs, v. weathered, strong petro odor.			Smooth drill Rapid penetr (Clean X) @72' - 10^{12} am
75							TOTAL DEPTH @ 72' GROUNDWATER @ 45' MINOR CAVING 50 - 66'			Stop @ 10^{14}

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April, 14, 1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 26 ft.

Job Number: 86-33
Core Number: 6 (RENAMED P4-6)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					1	[ ] [Fill], 0-46 ft. random fill.
					1	[MH] Silty clay, mottled greys and browns, damp, soft to moderately soft, some traces of asphaltic concrete-shale fragments, small pieces of concrete.
					2	
					3	
					4	
					5	
					6	Some gravel.
					7	
					8	
					9	
					10	
40		34.4	133.3	Pl.Tube	11	
					12	Lighter browns-traces of shale and diatomite.
					13	
					14	
					15	
					16	
					17	
					18	
					19	
					20	
20		49.1	80.3	Pl.Tube	21	

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,14,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 26 ft.

Job Number: 86-33
Core Number: 6 (RENAMED P4-6)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					22	Silty clay,mottled greys and browns,damp,soft to moderately soft,some traces of asphaltic concrete-shale fragments, small pieces of concrete.
					23	
					24	
					25	
					26 ▽	
					27	
					28	
					29	
					30	
51		56.5	64.0	St.Tube	31	Mottled and jumbled-very clean,(Fill moderately firm).
					32	
					33	
					34	
					35	
					36	
					37	
					38	Wet/soft
					39	
					40	
14		----	----	St.Tube	41	Saturated-tried two times for sample-lost both times,looks like silty sand(very wet and sands residue inside sampler).
					42	
					43	

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,14,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 26 ft.

Job Number: 86-33
Core Number: 6 (RENAMED P4-6)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					44	Silty clay,mottled greys and browns,damp,soft to moderately soft,some traces of asphaltic concrete-shale fragments, small pieces of concrete.
					45	
					46	[ ] Approximately contact for shale(siltstone),light browns, moderately firm,fractured and bedded highly weathered.
					47	
					48	
					49	
					50	
60		39.7	99.8	St.Tube		
					51	Coring started at 51.0 ft.

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,14,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 26 ft.

Job Number: 86-33
Core Number: 6a (RENAMED P4-6)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
	80				51	[ ] Diatomite,light brown,damp,moderately firm,fractured and bedded,highly weathered.
					52	52-53 ft. slough.
					53	Diatomite,fragments of 1/8 in. chert layer at top of core (53.0 ft.),medium brown with a few light brown layers 1/8-1/4 in. thick.Well bedded with distinct,uniformely oriented strata.
					54	Black 3/16 in. chert layer at 53.9 ft.White ash bed at 53.7 ft. altered to clay etc.
						A few incipient slicks on bedding surfaces.
						White calcareous vein at 54.7 ft.
					55	No open fractures;no prominent fracture system.
	100					Dip 32 degrees North.Strike N75W.
						Siltstone,diatomaceous,medium to dark brown clayey.Bedding moderately distinct,layers(color bands)1/4-1 in. thick.
					56	Strata is uniformely oriented with dip 35-40 degrees North; strike N80W.
					57	
					58	Fine grained sandstone,4 in. thick,light brown,fractured; black stain(Fe,Mn ?) on fractures.
						Diatomite,well bedded.1/16-1/4 in. beds,uniform orientation few tight fractures.Ash bed,altered,1/8 in. at 58.9 ft.
					59	Dip 35 N.Strike N85E approx.
					60	Siltstone,medium brown with a few dark brown layers.Bedding distinct,beds 1/8-1/2 in. thick,uniformely oriented.
	100					Fractures tight,uncoated,randomly oriented.
					61	Dark brown siltstone at 61-62 ft.
						Fractures 1/4-1/2 in. spacing,tight,no coating.

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,14,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 26 ft.

Job Number: 86-33
Core Number: 6a (RENAMED P4-6)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet
	100				62
					63
					64
					65
	20				66
					67
					68
					69
					70

Visual Classification

Diatomite at 62.5-63.0 ft.,well bedded,1/16-1/4 in. layers, white ash beds 1/16 in. at 62.7 ft.
1/8 in.ash bed.
Siltstone.

1/8 in. ash bed.
Sandstone,fine grained silty fractured,black stain(Fe,Mn ?) on surfaces.No open fractures.
Diatomite at 64.8-66.0 ft.,medium brown,well bedded.

Diatomite;dip 36 degrees,strike N80W approx.

At 66.0-70.0 ft.-lost core-fell out of barrel.

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,11,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 27 ft.

Job Number: 86-33
Core Number: 7 (RENAMED P4-7)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					1	[ ] 6 in. Topsoil-sandy silt with organics.
						[Fill] ,0-60 ft. random fill.
					2	[MH] Silty clay-medium with large amounts silt,mottled greys and
						browns,damp,moderately soft,traces of wood, some shale
					3	fragments.
					4	
					5	
					6	
					7	
						Pieces of asphaltic concrete (less than 10%).
					8	
					9	
					10	
4		78.1	33.1	Pl.Tube		
					11	
					12	Damp to wet(in layers).
					13	
					14	
					15	
					16	
					17	
					18	Some wood (less than 10%).
					19	
					20	
15		67.8	48.2	Pl.Tube		
					21	

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,11,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 27 ft.

Job Number: 86-33
Core Number: 7 (RENAMED P4-7)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					22	Silty clay-medium and large amounts silt,mottled greys and browns,damp,moderately soft,traces of wood.
					23	
					24	
					25	
					26	
					27 ▼	
					28	Fills,consisting of silts and clays,spotty and mottled,less blended,shale fragments and some diatomite spotting.
					29	
					30	
18		59.2	73.7	Tube		Some sandy spots,mottled browns,very wet sample at 30 ft.
					31	
					32	
					33	
					34	
					35	Becoming softer.
					36	
					37	
					38	
					39	
					40	
2		53.5	55.7	Tube		2 tries for sample-very soft and some voids present.
					41	
					42	
					43	

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,11,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 27 ft.

Job Number: 86-33
Core Number: 7 (RENAMED P4-7)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					44	Fills,consisting of silts and clays,spotty and mottled,less blended,shale fragments and some diatomite spotting. Soft and wet.
					45	
					46	
					47	
					48	
					49	
					50	
33		40.4	117.4	St.Tube	51	Mottled sample-moderately firm ; still fill.
					52	More diatomite spotting.
					53	
					54	
					55	
					56	
					57	
					58	
					59	
					60	[ ] Diatomite layered and bedded,light browns,damp to wet, highly weathered.
47		58.9	58.2	St.Tube	61	Coring started at 61 ft.

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,11,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 27 ft.

Job Number: 86-33
Core Number: 7a **(RENAMED P4-7)**
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
	50				61	[ ] Diatomite,well bedded,light browns,damp to wet,highly weathered.
					62	
					63	Diatomite,silty,clayey,well bedded,uniform attitude. Dips 40-45 degrees.Strikes N80W to E-W. Light to medium brown,individual layers 1/16-1/4 in.
					64	Fractures 1/4-1 in.spacing,random orientation,discontinuous
					65	White layers. Core weathered in upper 14 in.,but grades to fresh at lower end.
	100				66	Diatomite-silty medium brown,siltstone-dark brown,clayey, massive. Bedding dips 45N ; strikes N85E.
					67	Diatomite,silty,medium brown,poorly stratified,massive.Prominent fractures normal to bedding,spaced 1/4-1 in.,black (manganese,iron ?) stain on some fractures.
					68	
					69	Black-coated fractures normal to bedding,slightly open. White layers.
					70	Diatomite,silty,clayey,medium to dark brown,well stratified Dip 45N.Strike N80E approx. Prominent fractures,parallel to bedding and at right angles to it;all fractures iron stained,some slightly open.
	100				71	Diatomite,silty,less well bedded than section above.

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,11,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 27 ft.

Job Number: 86-33
Core Number: 7a (RENAMED P4-7)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
	100				72	Diatomite (as above).
					73	
					74	Limestone,hard,light brown,massive-core badly broken by drilling.Fractures coated with dark brown,(Fe, Mn ?).
					75	Diatomite,silty,clayey,medium brown;bedding indistinct, layers 1/8-1/2 in.
	100					Silty diatomite,considerably fractured;bedding indistinct-fractures stained.
					76	
					77	Diatomite,silty,clayey,medium brown with a few dark brown layers.Bedding indistinct;dip N45,strike E-W approx. Core moderately broken by joints,fractures.
					78	
					79	Diatomite,silty,core more or less intact,bedding very indistinct. White vein,probably gypsum.
					80	Diatomite,light brown,well bedded,few fractures.

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,4,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 32 ft.

Job Number: 80-[illegible]
Core Number: 8 (RENAMED P4-8)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					1	[ ] Topsoil.Sandy clay and silty sand,light brown,damp,moderately soft,high organics.
					2	[Fill] , 0-50 ft. random fill.
					3	[MH] [Fill]-Silty clay with sand,mottled browns,greys,black,damp to wet,soft,10-20% debris(mostly wood),some clayey silt lenses.
					4	
					5	
					6	
					7	
					8	
					9	Some small gravels.
					10	
43		96.3	17.4	Pl.Tube	11	
					12	
					13	
					14	Some shale fragments,some diatomite.
					15	
					16	
					17	
					18	
					19	
					20	Soft,wet,mostly clays.
19		66.6	42.6	Pl.Tube	21	More shale fragments.

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,4,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 32 ft.

Job Number: 86-33
Core Number: 8 (RENAMED P4-8)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					22	Silty clay with sand,mottled browns,greys,black,damp to wet soft,10-20% debris(mostly wood).
					23	
					24	Fairly clean-not much debris.
					25	
					26	
					27	
					28	
					29	
					30	
31		89.1	29.0	Pl.Tube		
					31	
					32	Water noted.
					33	
					34	
					35	
					36	
					37	
					38	
					39	
					40	
19		93.1	25.5	Tube		Split sample tube.
					41	
					42	
					43	Silty clay with sand,mottled browns,greys,black,damp to wet soft,10-20% debris(mostly wood).

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,4,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 32 ft.

Job Number: 86-33
Core Number: 8 (RENAMED P4-8
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					44	Silty clay with sand,mottled browns,greys,black,damp to wet soft,10-20% debris (mostly wood).
					45	
					46	
					47	Sandier-possible old topsoil or alluvium.
					48	
					49	
					50	[ ] Weathered bedrock,diatomaceous siltstone.
56		31.1	146.9	Tube		Started coring at 50.0 ft.

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,9,1980
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 32 ft.

Job Number: 80-33
Core Number: 8a **(RENAMED P4-8)**
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
56		31.1	146.9		50	[ ] Diatomite,silty,clayey,light brown with a few thin beds nearly white.Well bedded,but individual beds indistinct owing to uniform color. Dip 40-45 degrees to SE. Fractures tight,indistinct,random spacing and orientation.
	60				51	
					52	
					53	Diatomite,light brown,well bedded. Section missing.
					54	
	100				55	Diatomite,silty,clayey,light brown,indistinct,bedding dipping 40-45 degrees.
					56	Core badly broken.Fractures tight,but some are iron-stained No coating on fractures.Strike and dip : N80W , 45S
					57	Diatomite,light brown with rusty zones. Core badly broken by random fractures,some are about normal to bedding.
					58	Fractures spaced 1/8-1/2 in.
					59	Abundant rusty fractures,poor core recovery.
					60	Diatomite,silty,clayey,mottled grey and light brown; apparently well bedded but individual beds are indistinct.

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,9,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 32 ft.

Job Number: 86-33
Core Number: 8a (RENAMED P4-8)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
	100				61	Fractures 1/4-1/2 in. spacing,more or less,normal to bedding.Some have dark iron coatings but most are un-coated.
					62	Strike and dip: N10E , 44E
					63	Diatomite,less silt and clay than section above.
						Abundant fractures 1/4-1/2 in. spacing;randomly oriented.
					64	Strike and dip: N50E , 45E
					65	Siltstone,massive,unbedded,clayey,soft,grey,few fractures.
	100					
					66	
					67	Diatomite,light brown to grey,strongly fractured;core tends to break along bedding as well as along fractures.
					68	Most fractures about at right angles to beds;no coatings or slicks along fractures or beds.Beds,1/16-1/8 in. thick. Some layres light brown to nearly white.
					69	Strike and dip: N30E , 46E
						Dip 45 degrees.Strike N80E. (This seems to hold for the entire core).
					70	

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,2,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 47 ft.

Job Number: 86-33
Core Number: 9 **(RENAMED P4-9)**
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					1	[ ] [Fill] , 0-5& ft random fill.
					2	[MH] Clayey silt with clayey sand,very mottled,black and grey, damp,moderately soft,20-30% debris consisting of wood,rubber,foam rubber.
					3	
					4	
					5	
14		60.1	40.0	Pl.Tube	6	
					7	
					8	
					9	
					10	
					11	Grey and brown,5-15% debris,mostly wood,mottled.
					12	
					13	
					14	
					15	
35		56.1	65.8	Pl.Tube	16	
					17	
					18	
					19	
					20	
					21	

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,2,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 47 ft.

Job Number: 86-33
Core Number: 9 (RENAMED P4-9)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					22	Clayey silt with clayey sand, grey and brown, 5-15% debris. Spotted and mottled.
					23	
					24	
					25	
25		37.0	127.6	Pl.Tube		
					26	
					27	
					28	
					29	
					30	More sand spots.
					31	
					32	
					33	
					34	
					35	
20		97.6	23.8	Pl.Tube		
					36	
					37	
					38	
					39	
					40	
					41	
					42	
					43	

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,2,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 47 ft.

Job Number: 86-33
Core Number: 9 (RENAMED P4-9)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					44	Clayey silt with clayey sand,grey and brown,5-15% debris,
					45	mostly wood,mottled.
50		56.8	43.1	Pl.Tube		Sample odorous-looks sloppy.Sampler bouncing.
					46	Probably debris.
					47	
					48	
					49	
					50	
					51	
					52	
					53	
					54	
					55	
66		56.7	40.1	St.Tube		Diatomite in tip.
					56	[ ] Weathered Bedrock-Diatomite.
					57	
					58	
					59	
					60	
					61	
					62	
					63	
					64	

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,2,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 47 ft.

Job Number: 86-33
Core Number: 9 (RENAMED P4-9)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					65	Weathered Bedrock - Diatomite.
						Lost sample 3 times,retained on fourth time.
					66	
					67	
					68	
					69	
					70	Started coring at 70.00 ft.

Job Name: P-V Parcel
Job Location: Hawthorne
Date Drilled: April,2,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 47 ft.

Job Number: 86-33
Core Number: 9a (RENAMED P4-9)
Field Engr: Van Bevereh/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

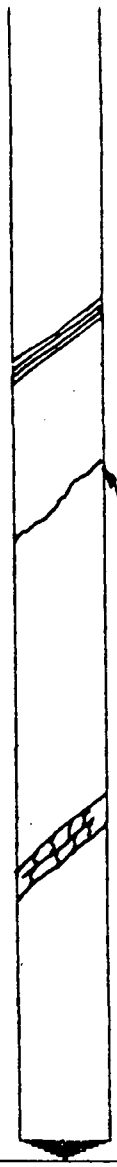
Blows Per Foot	% Rec.	Dry Density (pcf	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					71	[ ] Diatomite,weathered,highly fractured.Thinly bedded,light brown with darker brown spots.Fractures vertical and parallel to bedding with thin white coatings.
					72	Diatomite,light brown with a few white layers,well bedded, beds 1/16-1/2 in.,dip nearly vertical to 50 degrees(no strikes available).
					73	
					74	
					75	Fractures poorly developed,a few offset beds 1/16 in.
					76	Bedding disturbed,some dip up to 70 degrees.
					77	Diatomite,light brown with a few white beds up to 1/2 in. thick.Moderately fractured;fractures tight,no coatings. Bedding dips 45-50 degrees.
					78	Chert,black highly fractured;fractures coated with mud
					79	Diatomite,light brown,badly fractured with tight,closely spaced fractures randomly oriented.
					80	
					81	Chert,black,highly fractured 5 in. thick.

Log Continued on Next Page

Job Name: P-V Parcel
Job Location: Hawthorne
Date Drilled: April,2,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 47 ft.

Job Number: 86-33
Core Number: 9a (RENAMED P4-9
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					81	Diatomite,light brown,badly fractured with tight closely spaced fractures.
					82	Diatomite,light brown,a few thin black chert beds.Bedding indistinct dips 40-45 degrees.
					83	
					84	Siltstone,dark brown,clayey,massive,no fractures.
					85	Diatomite,light brown to medium brown,bedding indistinct dips 45 degrees approx. Joints and fractures rare.1/8 in. gypsum vein.
					86	Diatomite,silty,light to medium brown,well bedded,1/16-1/4 in. layers,dip 40-50 degrees.A few fractures but core is fairly intact.
					87	
					88	Chert,black,fractured. Diatomite,medium brown,indistinct bedding,fractures rare.
					89	
					90	Siltstone,clayey,dark brown.



Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,4,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 40 ft.

Job Number: 86-33
Core Number: 10 (RENAMED P410)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
						[ ] [Fill] , 0-5½ ft. random fill.
					1	[MH] Silty clay,medium and large amounts silt,mottled and spotty
					2	some sand and gravel in spots,10-20% debris,concrete,wood,
					3	foam rubber(silty clay and browns,greys,black,damp,modera-
					4	tely soft).
					5	
					6	
					7	Damp to wet.
					8	
					9	
21		75.6	35.0	Pl.Tube	10	
					11	
					12	
					13	Layers of concrete-drilled through-approx. 6 in. thick.
					14	
					15	
					16	
					17	Pieces of metal,25-35% debris.
					18	
					19	
50		----	----	Pl.Tube	20	Concrete-9 in. thick-drilled through.No sample.
					21	Moderately firm.

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,4,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 40 ft.

Job Number: 86-33
Core Number: 10 (RENAMED P410)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					22	Silty clay,medium and large amounts silt,mottled and spotty
					23	some sand and gravel in spots,25-35% debris,concrete,wood,
					24	foam rubber(silty clay and browns,greys,black,damp,moderately firm).
					25	More metals fragments.
					26	Wet layers.
					27	
					28	
					29	
30		71.3	33.6	Pl.Tube	30	
					31	
					32	
					33	
					34	
					35	
					36	
					37	
					38	
					39	
26		57.5	66.9	Pl.Tube	40	Approximately water level.
					41	10-20% debris/mostly wood.
					42	
					43	

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: April,4,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 40 ft.

Job Number: 86-33
Core Number: 10 (RENAMED P410)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					44	Silty clay,medium and large amounts silt,mottled and spotty some sand and gravel in spots,10-20% debris/mostly wood.
					45	
					46	
					47	Sandy (possibly topsoil or alluvium).
					48	
					49	
					50	
18		----	----	Tube	51	Lost sample.
					52	[ ] Weathered Bedrock.Bedrock probably starts here,(siltstone), light brown,damp to wet,highly weathered,Diatomite.
					53	
					54	
					55	
46		41.0	102.8	Tube	56	Lost sample.Tried again,hard layer.
					57	
					58	
					59	
					60	Started coring at 60 ft.

Job Name: P-V Parcel
Job Location: Hawthorne
Date Drilled: April,4,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 40 ft.

Job Number: 86-33
Core Number: 10a (RENAMED P410)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
						[ ] Mud with scattered rock particles(not core ?).
	80				61	Diatomite,light to medium brown,well bedded,with layers ranging from 1/16-1/2 in. thick.Bedding dips about 15-20 degrees.No strike obtained(core rotated in barrel ?). Abundant tight fractures,1/4-1/2 in. spacing,random orientation but prominent at about normal to bedding.Bedding steepens to 40-45 degrees.Fractures vertical 1/2 in. spacing,tight,no coatings.
					62	
					63	
					64	Diatomite,medium to dark brown,well bedded.Bedding dips 45-55 degrees.Abundant fractures dipping steeply;all are tight but some have incipient slicks on surfaces.Spacing 1/4-1/2 in.
	100				65	
					66	
					67	Diatomite,medium to dark brown,well bedded,layers 1/16-1/4 in.,some layers are silty.Abundant fractures,core is fragile.Bedding dips 60-70 degrees(no strikes because core rotated ?) Most fractures tight but some have light colored coatings (very thin).
					68	
					69	Diatomite,light to medium brown,well bedded,fairly intact; many tight fractures at high angles.
					70	
						Mud (not core).

Log Continued on Next Page

Job Name: P-V Parcel
Job Location: Hawthorne
Date Drilled: April,4,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 40 ft.

Job Number: 86-33
Core Number: 10a (RENAMED P410)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
	100				71	Diatomite,dark brown with a few medium brown layers,well bedded,beds 1/8-1/4 in. Prominent fractures,tight,uncoated but few with incipient slicks,small offsets on some.
					72	Diatomite,light brown,very fragile core.Well bedded,dip 40-45 degrees. Dark brown to black,badly broken core;many random fractures 1/8-1/4 in. spacing.
					73	Diatomite,grey to medium brown,well bedded.Average dip 45 degrees.
					74	Diatomite,black to dark brown;bedded but layers not distinct.Dip about 40 degrees.A few thin(1/16 in.)black chert layers.
	100				75	
					76	Diatomite,black to brownish grey,fairly intact core.Well bedded,layers 1/4-1/2 in.;45-50 degrees dip. Fractures sparse.
					77	
					78	Diatomite,silty,black with a few grey layers. Fractures,wide spaced,about normal to beds,show slight slick surfaces.
					79	1/2 in. grey layer. Beds 1/16-1/2 in.,dip 45 degrees on average.
					80	

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: March,24,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 37 ft.

Job Number: 86-33
Core Number: 11 (RENAMED P411)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
						[ ] [Fill] - 0-64 ft. random fill.
					1	[MH] Silty clay-Small and medium amounts silts,mottled greys and
					2	browns,damp to wet,moderately soft,20-30% gravels,some con-
						crete pieces to 8 in. diam.,some sand.
					3	
					4	10-20% gravels.
					5	
					6	Black,slightly odorous;some organics,some soft saturated
					7	zones.
					8	
					9	Greys and browns,wet.
7		73.9	42.2	Pl.Tube	10	(Voids)
					11	
					12	Black colored.
					13	
					14	
					15	Greys and browns,more gravels(20-30%),medium and coarse.
					16	
					17	
					18	
					19	
3		67.3	47.0	Pl.Tube	20	
					21	Piece concrete(?) 1 in. thick,drilled through.

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: March,24,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 37 ft.

Job Number: 8o-33
Core Number: 11 (RENAMED P411)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					22	Clayey silt,(Fill),greysand browns,mottled,damp to wet,
					23	moderately soft,debris mixed in sample,mostly diatomaceous.
					24	
					25	More rocky areas,auger bouncing.
					26	
					27	
					28	
					29	
15		78.1	37.5	Pl.Tube	30	
					31	
					32	
					33	
					34	
					35	
					36	
					37	
					38	Wood debris,odorous,wet.
					39	
10		32.9	90.6	Tube	40	
					41	
					42	3/25/86:Free water at 42 ft.-Stabilized after drilling to
					43	63 ft. on 3/24/86,water measured at 06:30 on 3/25/86.

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: March,24,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 37 ft.

Job Number: 86-33
Core Number: 11 (RENAMED P411)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					44	Clayey silt,(Fill),grey to brown,mottled,moist,soft,diatomaceous.
					45	
					46	
					47	
					48	
					49	
50		--	--	Tube		More wood in sample,mixed with diatomaceous silts,light browns,damp and wet.
					50	
					51	
					52	
					53	
					54	
83		29.3	143.2	Tube		More wood.
					55	
					56	
					57	
					58	
					59	
25		28.8	140.1	Tube		Entire sample was redwood.(Discarded),bouncing hammer.
					60	
					61	
					62	
					63	End drilling day 3/24/86 Begin drilling day 3/25/86.
29		28.2	182.7	St.Tube	64	[ ] Weathered Bedrock,shale diatomatious,soil light browns, bedded,highly weathered,trace rootlets,damp,moderately firm

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: March,24,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 37 ft.

Job Number: 86-33
Core Number: 11 (RENAMED P411)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					65	Weathered bedrock,diatomaceous siltstone,weathered,soft, wet,getting harder,thin bedded.
					66	
					67	
					68	
					69	
49		25.5	175.2	St.Tube		Bedrock confirmed,at 70 ft. installed core barrel.
					70	
					71	
					72	
					73	
					74	Installed core barrel at 74 ft. Started coring at 74 ft.

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: March,25,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 37 ft.

Job Number: 86-33
Core Number: 11a (RENAMED P411)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
	80				75	[ ] Oxidized diatomite,light brown,abundant fractures which are randomly oriented and slightly moist;no coatings on joints, no strikes. Top of unoxidized zone at 75.3 ft.(core broken when removed from barrel). Dark grey diatomite,well bedded,tends to part along bedding planes;individual layers 1-5 mm thick distinguishable by different color(grey-black).A few high angle fractures are light and un-coated;slightly moist;spacing irregular but averages 1-2 in.Bedding dips 40-50 degrees. Strikes not determined. At 76.0 ft. :Diatomite,well bedded mostly dark grey but with distinct light grey layers (more light grey than in 2 ft. above this).Abundant tight fractures,un-coated,slightly moist some randomly(?) oriented but several dip 60-70 degrees and cross-cut bedding. Diatom structures on surface.
					76	
					77	
					78	Diatomite,well bedded,a few prominent tight fractures,cross cutting bedding;minor fractures tight,random orientation,no slicks or coatings. Fairly intact core. Bedding: N75E,35SE
					79	
	100				80	Diatomite,light grey,and dark grey beds 1/8-1/2 in. average thickness.Tight uncoated joints. Core badly broken,probably in drilling and/or removal from barrel.
					81	Diatomite,fairly intact,distinct light colored beds;some may be ash beds.
					82	Diatomite,mostly dark grey,intact.
					83	Dark grey diatomite, N80E,43SE Core badly broken(by drilling and/or removal ?)
	100				84	1/2 in. black chert bed-highly fractured(from drilling ?), very wet.

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: March,25,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 37 ft.

Job Number: 86-33
Core Number: 11a **(RENAMED P411)**
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					85	1/8 in. chert bed.
						Core highly fractured,20% recovery-all grey diatomite with 40-45 degrees dip.
					86	Fracturing and poor core recovery probably due to drilling and/or removal from barrel.
						Chert,black,highly fractured,wet.
					87	Poor core recovery,section appears to be light and dark grey diatomite.
						Abundant white surface,may be gypsum(?) coating on fractures and/or bedding planes.
					88	Diatomite,massive,dark grey,very few fractures,bedding obscure but probably conforms with the rest of the section, i.e. 45 degrees dip,N70-80E strikes.
	100				89	Diatomite,dark grey sparse light layers.Prominent high angle fractures approx. normal to bedding show very slight development of slick surfaces.Fracture spacing 1-3 in.
					90	Cross fractures,nearly horizontal are opened but may have been opened by drilling-spaced at 1/4 in.
					91	Dark grey diatomite,very few light beds.Fractures are about normal to bedding,dip 60 degrees,spacing 1/2-2 in.Bedding dips 35-40 degrees South,strike is N80-85E.
					92	
					93	Dark grey diatomite.Few,if any,light beds,prominent fractures normal to bedding,dips 50-70 degrees NE.Longer fractures show incipient development of slicks;no coatings; all slightly moist cross fractures,roughly horizontal in lower 6 in. of core.
					94	

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: March,28,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 40 ft.

Job Number: 86-33
Core Number: 12 (RENAMED P412)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					1	[MH] Fill,Silty clay,clayey silt,mottled grey and brown,damp to wet,moderately soft,some asphalt and wood,(less than 10%)
					2	
					3	
					4	
					5	More asphalt pieces,auger chattering
					6	
					7	
					8	Heavy asphalt,approx 30%
					9	Sandy silt,medium amount fine sand,mottled light brown, damp,some alkali streaks,some saturated lenses.
25		92.3	1.6	Pl.Tube	10	
					11	
					12	
					13	Traces of sand,heavy cobbles and fragments,traces of asphalt.
					14	
					15	
					16	
					17	
					18	
					19	
16		58.5	48.8	Pl.Tube	20	
					21	

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: March,28,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 40 ft.

Job Number: 86-33
Core Number: 12 (RENAMED P412)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					22	Fill,Diatomaceous clayey silt,mottled grey and brown,damp to wet soft,occasional debris
					23	
					24	
					25	30-40% cobbles,light brown.
					26	
					27	
					28	
					29	
25		80.0	24.4	Pi.Tube		
					30	
					31	
					32	
					33	
					34	
					35	
					36	
					37	
					38	[ ] Diatomite,white to light brown,bedded,moderately firm, some black streaks. Weathered bedrock zone,highly weathered.
					39	
50		31.4	150.5	Pi.Tube		
					40	
					41	
					42	
					43	

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: March,28,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 40 ft.

Job Number: 86-33
Core Number: 12 (RENAMED P412)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (pcf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
					44	Weathered Bedrock,Diatomite,white to light brown,thin bedded,firm,wet,some black streaks.
					45	
					46	Shale-Siltstone,small clay lenses,traces of gypsum-1/2in thick,bedded, light brown.
					47	
					48	
					49	Started coring at 49 feet.
50		22.6	215.5	St.Tube	50	

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: March,28,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 40 ft.

Job Number: 86-33
Core Number: 12a (RENAMED P412
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (psf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
50		22.6	215.5	Rings	50	[ ] Diatomite,weathered,bedded but bedding distorted,light brown plastic,moderately fractured 1/8-1/4 in.spacing more or less horizontal and vertical orientation,fractures tight but moist,no coatings.
	65				51	Diatomite,light to medium brown,intact,orderly bedding, layers 1/16-1/4 in.thick;dips 35-40 SW.Tight fractures nearly normal to bedding 1/2-1 in. spacing,no coating but diatomite is darker brown along fractures.Some fractures show minute effects. Core recovery aprrox. 65%.
					52	Diatomite grades into medium brown at 52.20 ft.,well bedded but individual layers poorly defined.Fractures sparse and irregular (one or two per foot).1/4-1/2 in. white layer at 53.00 ft. may be ash bed.
					53	Diatomite,poorly bedded with two permanant,tight fractures normal to bed.
					54	Diatomite,massive medium brown with a few darker brown patches.Bedding vaguely apparent.Fractures,tight,uncoated, irregularly oriented,(mostly steep angle) spaced at 1/4-1/2 in.
					55	Bedding flattens to nearly horizontal.Core is more silty and is not pure diatomite in this interval.Partings or separations at 1/4-3/4 in. spacing.
	100				56	Silty diatomite to 58.00 ft.Nearly 100% core recovery.
					57	Silty diatomite,medium brown,considerably fractured. 56.00-58.00 ft. good recovery.
					58	Core broken,some missing.
	40					Medium brown with dark brown spots 1/2 in. diam. Gypsum vein 1/16 in.Poor core recovery (40% max.).
					59	Diatomite,silty,well bedded 1/16-1/4 in. layers.Medium brown to dark brown,a few gray layers considerably jointed or fractured,commonly oriented breaks.

Log Continued on Next Page

Job Name: P-V Parcel 4
Job Location: Hawthorne
Date Drilled: March,28,1986
Drilling Firm: DATUM
Hole Diameter: 8 in.
Hammer Weight: 140 lbs
Water Depth: 40 ft.

Job Number: 86-33
Core Number: 12a (RENAMED P412)
Field Engr: Van Beveren/Merrian
Drill Type: CME HSA
Sample Type(s): Ring/Core
Hammer Drop: 30 in.

Blows Per Foot	% Rec.	Dry Density (psf)	Natural Moist. Content %	Sample Type	Feet	Visual Classification
	40				60	Fracture spacing 1/8-1/2 in.,some are open but this may be result of drilling and slight drying. At section 60.00 to70.00 ft.,core recovery is poor (40% max.).Presice position in section,for recovered core is not possible.Core in this section is considerably fractured with the exception of two or three sections,4-8 in. long, which are well bedded,silty diatomite,medium brown, sparse tight joints.
					61	
					62	
					63	
					64	
	40				65	
					66	Highly fractured fragment of diatomite.
					67	1/2 in. white layer(vein ?) Medium,silty diatomite;medium to dark brown.
					68	1/8 in.white bed (or vein ?) Diatomite,bedded but not laminated,medium to dark brown, tight fractures,some normal to beds,white vein(?) material, a few black layers.
	40				69	

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. PV-3

SHEET 1 OF 5

PROJECT NAME Palos Verdes Landfill-Monitoring Well PV-3 DATE January 8, 198[redacted]

PROJECT NO. 85-207-02 DRILLING COMPANY Datum Drill Co.

LOCATION Northeast corner at intersection of Hawthorne Blvd and Rolling Hills Drive

EQUIPMENT B-61HD Hollow Stem Auger DRIVING WEIGHT 140 lbs

AVERAGE DROP (IN.) 30" HOLE DIA 8" ELEVATION 225.5'± GEOL/ENGR H. Audell

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT.	REMARKS
0							**ARTIFICIAL FILL**			Start@7:15a
2		SPT 1	2	CL			Silty CLAY w/ trace sand; Med-dark brown, moist, H=B-C, 40% silt-55% clay- 5% sand, v fine-grained sand, mottled w/ lt brown diat clayey SILT, high plast, trace rock frags			Smooth cril
4			2	CH						Rapid penet
		SPT 2	2				@3'-sl decrease in clay			
6			8				@6'-increase in moisture-becoming v moist			@5'-7:25am
			8							
8			13							
10				CL			Silty CLAY; v dark brown-black, v moist-wet, H=C, sl-med plast, trace rock frags			
12				ML CL			Diat clayey SILT w/trace sand;Med brown, v moist, H=C, 25% clay-70% silt- 5% sand, v fine-grained sand, mottled, sl plast, trace rock frags			Smooth dril Rapid penet (con't)
14										
		SPT 3	16							@15'-7:30am
16			22							
			31	SM			SAND; Lt brown, v moist, H=C-D, fine-grained, sl mottled w/ med brown sand			
18										
20										

Unobserved Section (typ)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. PV-3

SHEET 2 OF 5

PROJECT NAME P. V. LANDFILL-MONITORING WELL PV-3 DATE January 8, 1986

PROJECT NO. 85-207-02 GEOL/ENGR HSA

DEPTH IN FT	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
20				SM			**ARTIFICIAL FILL (Con't)** Silty SAND; Med brown, moist, H=C-D, 20% silt- 80% sand, fine-grained sand, sl mottled, trace rock frags @23'-becoming dark brown sand			@20'-7:38am
22										
24		SPT								
26		4	5 9 10	SM ML			Sandy SILT w/ trace clay; Dark brown, moist, H=C, 35% sand-55% silt- 10% clay, v fine- to fine grained sand, mottled, trace rock frags			Smooth dril Rapid penet (con't)
28										
30										@30'-7:50an
32							@31-increase in clay + silt, increase in moisture-becoming v moist @32'-groundwater (static level)			
34				CL			**NATURAL COLLUVIUM** Clayey SILT w/ trace sand; V dark olive, v moist, H=C-D, 20% clay- 70% silt- 10% sand, v fine grained sand, mottled, sl plast, trace diat slts rock frags @36'-increase in moisture-becoming wet			
36		SPT 5	5 9 12							Smooth dri Rapid pene (con't)
38										
40				CH			Silty CLAY w/ trace sand; Dark olive sat, H=B-C, 40% silt- 55% clay-5% sand, v fine-grained sand, mottled, med-high plast, trace rock frags			@40'-7:55a
42										
44							**MONTEREY FORMATION (VALMONTE MEMBER)**			@45'-8:05a

Unobserved Section (typ)

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. PV

SHEET 3 OF

PROJECT NAME P. V. LANDFILL-MONITORING WELL PV-3 DATE January 98

PROJECT NO. 85-207-02 GEOL/ENGR HSA

DEPTH IN FT	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
46		6	5 7 21		Unobserved Section (typ)	90 Frac 45 Bed 45 Frac	MONTEREY FORMATION (VALMONTE MEMBER)(Con't) Diat SILTSTONE interbd w/ CLAYSTONE + DIATOMITE; Lt-med brown slts + clys, lt-med gray diatomite, moist-v moist, H=C-D, v thinly bedded to laminated, sl fisility, highly-intensely fract, wet fract surfs, closed-narrow fract sep, some fract surfs stained w/ iron oxides, few fracts filled w/ dark brown clay, smooth-sl rough fract surfs, fracts para + normal to beds, med weathered bedrock			
48		SPT								
50		SPT				90 Frac 45 Frac 50 Bed 75 Frac				@50'-8:15a
52		7	7 9 13				@50'-Diat SILTSTONE interbd w/ CLAYSTONE + DIATOMITE (Con't)			
54										Smoo tri Rapi ene (Con't)
56										
58										
60							Diat SILTSTONE interbd w/ CLAYSTONE + DIATOMITE (Con't)			
62										
64		SPT				90 Frac				
66		8	5 5 12			40 Bed 40 Frac 55 Frac	@65'-Diat SILTSTONE interbd w/ CLAYSTONE + DIATOMITE; Lt-med brown, moist, H=B-C, thinly bedded, diatomite laminae, sl fisility, intensely fract, some wet fract surfs, closed-narrow fract sep, few fracts filled w/ brown clay, smooth-sl rough fract surfs, planar-sl curvil fracts, occ gilsonite rock frags, med weathered bedrock			@65'-8:30 Shut-down Start-up Smooth dr Rapid per (Con't)
68										
70										

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. PV-3

PROJECT NAME P. V. LANDFILL-MONITORING WELL PV-3 DATE January 8, 1986

PROJECT NO. 85-207-02 GEOL/ENGR HSA

DEPTH IN FT	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE %DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
70							**MONTEREY FORMATION (VALMONTE MEMBER)(Con't)**			
72										Smooth drill Rapid penet (Con't)
74							Diat SILTSTONE interbd w/ CLAYSTONE + DIATOMITE (Con't)			
		SPT	5			60 Frac 60 Bed 90 Frac	@75'-Diat SILTSTONE interbd w/ CLAYSTONE + DIATOMITE; Lt-med brown, moist, H=B-C, thinly bedded, occ diatomite laminae, intensely fract, few wet fract surfs-most fract surfs are moist, closed-narrow fracts filled w/ dark brown clay, some fracts stained w/ iron oxides, smooth- sl rough fract surfs, med weathered			@75'-9:10am
76		9	12 12							
78					Unobserved Section (typ)					@78'-9:25am
							@78'-increase in bedrock density-becoming H=D			Smooth drill Mod penetr
80							@80'-decrease in bedrock density-becoming H=C-D			
82										
84		SPT	5			No obtain able data	@85'-Diat SILTSTONE; Lt-med brown, v moist-wet, H=B-C, thickly bedded, indistinct bedding, intensely fract, wet fract surfs, v closely spaced fracts, highly weathered bedrock			@85'-9:40am
86		10	12 15							
88										
		SPT	10			No obtain able data	@89'-increase in bedrock density-becoming H=D			@89'-9:55am
90		11	29 41				@90'-Diat SILTSTONE; Med brown, moist, H=C-D, thickly bedded, occ mottling w/ dark olive diat siltstone (fresh), intensely fract, moist-wet fract surfs, closed-v narrow fracts filled w/ brown clay, v closely spaced fracts, smooth-sl rough fract surfs, sl-med weathered bedrock			@90'-10:10am Smooth drill Mod penetr (Con't)
92										
94		SPT	12			No obtain able data	Diat SILTSTONE [UNOXIDIZED]; see sheet 5			
		12	26							

EARTHLOGICS
CONSULTANT GROUP, INC.
San Clemente, California

BORING LOG NO. PV-3

SHEET 5 5

PROJECT NAME P. V. LANDFILL-MONITORING WELL PV-3 DATE January 8, 19

PROJECT NO. 85-207-02 GEOL/ENGR HSA

DEPTH IN FT.	SAMPLE NO. BULK	SAMPLE NO. CORE	BLOW COUNT	GROUP SYMBOL	GRAPHIC LOG	GEOLOGIC ATTITUDES	DESCRIPTION	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LBS/CU FT	REMARKS
95			50				**MONTEREY FORMATION (VALMONTE MEMBER)(Con't)**			Stopped@11:
							Diat SILTSTONE [UNOXIDIZED]; Dark olive, moist-v moist, H=D, thinly bedded, highly-intensely fract, moist-wet fract surfs, closed to v narrow fracts filled w/ v dark olive clay, smooth-sl rough fract surfs, v closely spaced fracts, planar-sl curvill fracts, unoxidized (fresh) bedrock			

TOTAL DEPTH @ 95'
GROUNDWATER @ 32'±

NOTES

Hole reamed out to 10 inches dia to 90 '
Installation of 4 inch dia stainless steel pipe, Jan 9, 1986, to 90'

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: DIAGRAM / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			0				FILL SILTY SAND: Light brown, dry, fine sand, large amounts of silt, soft, porous, rootlets. Dark gray brown, damp.
		27	5				CLAYEY SILT: Dark gray brown, stiff, moderately firm, damp, rock fragments.
		19	10				MIXTURES OF SAND, SILT AND CLAY: Dark gray brown, mottled white, pieces of brick and rock fragments, soft to medium fine, damp, no odor, rootlets.
		9	15				SILTY SAND: Fine sand, large amounts of silt, brown, soft, damp, diatomaceous silt, few diatomite rock fragments.
		7	20				SILTY SAND: Dark gray brown, fine sand, large amounts of silt.
			25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 55.00
DATE DRILLED: 5-15-87

LOGGED BY: H Audell, RG
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet): Not encountered.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M23-A

PLATE B-1

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY / FIELD)	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE TYPE	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				11	25					DIATOMACEOUS SILT: Soft, damp, mottled white, diatomite granules, few silic siltstone fragments, no odor.
				42	30					MIXED CHERT: Fragments, yellowish brown, reddish brown silty sand, matrix.
				12	35					CLAYEY SILT: Dark grayish brown, mottled with white specks, soft, damp, pieces of glass, siltstone pebbles.
										DIATOMITE: White to tan, bedded to thinly bedded, soft, very damp, very fractured, weathered, beds dip 50 degrees, fractures sub-vertical, few carbon specks.
				38	40					CLAYEY SILT: Extremely weathered, diatomite, white to tan, relict bedded, soft, saturated, no odor.
				34	45					CLAYEY SILT: Few fragments of diatomite, very weathered, crushable, wet, very soft, brown to light brown, diatomaceous silt, clayey.
				25	50					CLAYEY SILT: Brown, some relict bedding, very soft, wet.

KLEINFELDER

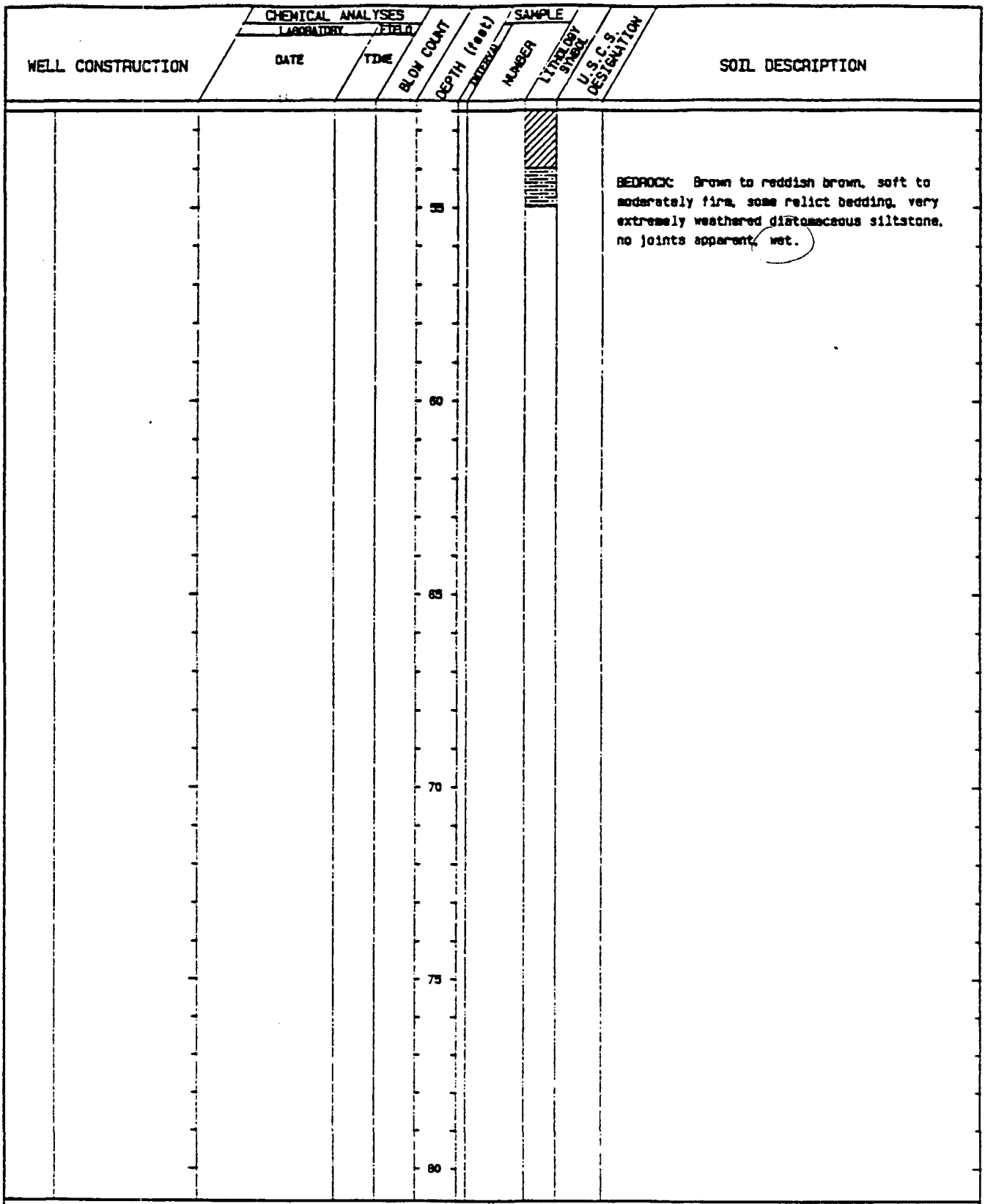
PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M23-A

PLATE B-1

PAGE 3



KLEINFELDER

PROJECT NUMBER 50-1237-01

June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M23-A

PLATE

B-1

PAGE 3 of 3

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		1005	0	0		SM	SLOPEWASH SANDY SILT WITH TRACE CLASTS: Dark brown (10YR 3/3), damp, firm, slightly mottled with dark yellow brown sandy silt, very fine to fine grained sand, 30% sand to 65% silt - <5% clasts, clasts - up to 1/2" diameter, angular, silic siltstone and siltstone rock fragments.
		1012	5	5		SM	SANDY SILT WITH TRACE CLAY: Very dark gray brown (10YR 3/2), damp, stiff, slightly mottled with dark gray brown sandy silt, very fine to fine grained sand, 30% sand to 65% silt - 5% clay, abundant caliche pods and streaks, slightly to moderately porous, trace clasts - <5%, up to 1/4" diameter, angular, silic siltstone and siltstone rock fragments. BEDROCK - MONTEREY FM (VALMONTE DIAT MEM)
		1023	10	10			DIATOMACEOUS SILTSTONE: Gray orange (10YR 7/4), moist, medium hard, very thinly bedded to laminated, few interbedded diatomite and claystone laminae, moderate to very fissle (shaley), extremely fractured, moist fractured surfaces, many fractures filled with moderate yellow brown clay, extra close fractured spacing, closed to very narrow fractured separation, few fractures stain with medium brown iron oxides, moderatel weathered.
		1031	15	15			DIATOMACEOUS SILTSTONE: Pale to dark yellow brown (10YR 4-6/2), moist, medium hard, very thinly bedded, occasional diatomite and claystone laminae, slightly fissle (shaley), extremely fractured, moist fractured surfaces, extremely close fractured spacing, closed to very narrow fractured separation, occasional fractures filled with orange brown clay, many fractures stained with orange brown iron oxides, medium weathered.
		1040	20	20			DIATOMACEOUS SILTSTONE: Moderate yellow brown (10YR 5/4), moist, medium hard, thinly bedded, very slightly fissle, extremely fractured spacing, closed to very narrow fractured separation, many fractures stained with orange brown iron oxides, slight to medium weathering.
			25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 56.00
DATE DRILLED: 7-2-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet): 39.00

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M24-A

PLATE B-2

PAGE 1

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			1057	27	25	25			DIATOMACEOUS SILTSTONE: Moderate yellow brown (10YR 5/4), moist, moderately hard, very thinly bedded to laminated, occasional claystone and diatomite laminae, slightly to moderately fissle (shaley), extremely fractured, moist fractured surfaces, extra close fractured spacing, closed fractured separation, clean fractured surfaces, slightly weathered.
			1110	50	30	30			DIATOMACEOUS SILTSTONE: Dark yellow brown (10YR 5/4), moist, moderately hard, very thinly bedded to laminated, occasional claystone and diatomite laminae, slightly fissle, extremely fractured, moist to very moist fractured surfaces, extremely close fractured spacing, closed fractured separation, occasional fractures filled with white caliche, many fractures stained with black iron oxides, moderately weathered.
			1121	17	35	35			SILTSTONE: Dark reddish brown (2.5YR 3/4), very moist, medium hard, very thinly bedded to laminated, occasional claystone laminae, very slightly fissle, extremely fractured, extremely close fractured spacing, wet fractured surfaces, closed to very narrow fractured separation, few fractured filled with gypsum and stained with black iron oxides, many clean fractures, moderately weathered.
			1132	50/6	40	40			SILTSTONE INTERBEDDED DIATOMACEOUS SILTSTONE: Siltstone - dark reddish brown (2.5YR 3/4), and diatomaceous siltstone - moderate yellow brown (10YR 5/4), wet, medium hard, very thinly bedded to laminated, occasional claystone and diatomite laminae, diatomite siltstone to slightly fissle (shaley), extremely fractured, extremely close fractured spacing, many clean fractures, wet fractured surfaces, few fractures stained with black iron oxides, moderately weathered, abundant diatoms.
			1152	20	45	45			SILTSTONE: Dark red brown (2.5YR 3/4), wet, medium hard, laminated, few claystone (red) laminae, highly to extremely fractured, very close to extremely fractured spacing, close fractured separation, many clean fractured surfaces, occasional fractures stained with black iron oxides, moderately weathered, abundant diatoms.
			1205	50/6	50	50			SILTSTONE INTERBEDDED WITH DIATOMACEOUS SILTSTONE: Siltstone - dark reddish brown (2.5YR 3/4), and diatomaceous siltstone - moderate yellow brown (10YR 5/4), wet.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M24-A

PLATE B-2

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		1220	60	55	55			medium hard, very thinly bedded to laminated, occasional claystone laminae, diatomite siltstone to slightly fissle, extremely fractured, wet fractured surfaces, very close to extremely close fractured spacing, many clean fractures, few fractures stained with black and orange brown iron oxides and filled with gypsum, gypsum veinlets -up to 1/16" thick, moderately weathered, abundant diatoms. SILTSTONE: Dark reddish brown (2.5YR 3/4), wet, medium hard, very thinly bedded, occasional claystone laminae, slightly fissle, extremely fractured, very close to extra close fractured spacing, closed fractured separation, many clean fractured surfaces, few fractures filled with gypsum (gypsum veinlets - up to 1/8" thick) and stained with black and orange brown iron oxides, wet fractured surfaces, moderately weathered, many diatoms.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M24-A

PLATE B-2

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		0940		0	0		CL	CLAYEY SILT WITH TRACE CLASTS: Dark grayish brown (10YR 4/2), damp, firm, mottled with black clayey silt, trace sand - <5%, very fine to fine grained, low plasticity, 20% clay to 75% silt to 5% clasts, clasts - up to 1/2" diameter, angular, silic siltstone, diatomite siltstone and siltstone rock fragments, grass rootlets.
		0955	52	5	5		CL	CLAYEY SILT WITH TRACE CLASTS: Dark grayish brown (10YR 4/2), moist, firm to stiff, slightly mottled with black clayey silt, trace sand - <5%, very fine to fine grained, low plasticity, 20% clay to 75% silt to 5% clasts, clasts: up to 1" diameter, subangular, silic siltstone and siltstone rock fragments.
		1010	17	10	10		CL	CLAYEY SILT WITH LITTLE CLASTS: Yellow brown (10YR 5/6), moist, firm, diatomite silt, mottled with dark yellow brown clayey silt, low plasticity, 25% clay to 65% silt to 10% clasts, clasts: up to 2" diameter, angular, silic siltstone, diatomite siltstone, siltstone rock fragments.
		1025	22	15	15		CL	CLAYEY SILT WITH SOME SAND AND LITTLE CLASTS: Dark yellow brown (10YR 4/4), moist, stiff, very mottled with black sand, dark brown and black clayey silt, sand - fine to coarse grained, low to moderate plasticity, slightly porous, 20% clay to 60% silt to 15% sand to 5% clasts, occasional asphalt fragments, clasts - up to 1" diameter, sub-angular, silic siltstone, diatomite siltstone and siltstone rock fragments.
		1040	80/11	20	20		CL	CLAYEY SILT WITH LITTLE CLASTS AND TRACE SAND: Dark yellow brown (10YR 3/4), moist, stiff, very mottled with yellow brown sandy silt to fine to medium grained, low to medium plasticity, slightly porous, 20% clay to 65% silt to 5% sand to 10% clasts, clasts: up to 1 1/2" diameter, sub-rounded, silic siltstone, diatomite siltstone and siltstone rock fragments.
				25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 121.00
DATE DRILLED: 7-6-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet):

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M25-A

PLATE B-3

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY / FIELD)	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			1100	62	25	25		CL	CLAYEY SILT WITH SOME SAND AND CLASTS: yellow brown (10YR 4/6), moist to very moist, stiff, very mottled with orange brown, yellow brown and dark yellow brown clayey silt, diatomite silt, low plasticity, sand - fine to coarse grained, slightly porous, 20% clay to 50% silt, to 15% sand to 15% clasts, clasts: up to 2" diameter, angular to sub-angular, diatomite siltstone, siltstone and silic siltstone rock fragments.
			1145	62	30	30		SM	SANDY SILT WITH LITTLE CLASTS: Brownish yellow (10YR 6/8), very moist, stiff, mottled with yellow brown sandy silt and diatomite clayey silt, sand - fine to coarse grained, 30% sand to 50% silt to 10% clasts to 5% clay, clasts: up to 1" diameter, angular, silic siltstone, diatomite siltstone and siltstone rock fragments.
			1205	50/4	35	35		SM	SILTY SAND WITH LITTLE CLASTS: Brownish yellow (10YR 6/6), very moist, medium dense, slightly mottled with black silty sand, sand - fine to coarse grained, diatomite clayey silt, 30% silt to 40% sand to 15% clasts to 5% clay, abundant shell fragments, trace clay, clasts: up to 1" diameter, angular, silic siltstone, siltstone and diatomite siltstone rock fragments.
			1217	24	40	40		SM	SANDY SILT WITH SOME CLASTS: Very pale brown (10YR 7/4), moist to very moist, stiff, mottled with light brown gray sandy silt, abundant diatomite fragments, sand - fine to medium grained with occasional coarse grains, 30% sand to 50% silt to 15% clasts to 5% clay, clasts: up to 1/2" diameter, angular, diatomite silt and diatomite rock clasts. BEDROCK - MONTEREY FM (VALMONTE DIAT MEM)
			1225	50/5	45	45			DIATOMACEOUS SILTSTONE: Yellow (10YR 7/6), moist to very moist, soft to medium hard, medium bedded, abundant shell fragments, abundant diatomite fragments randomly oriented throughout sample, highly fractured, moist to very moist fractured surfaces, very close fractured spacing, closed fractured separation, mostly clean fractured surfaces - few fractures slightly stained with black iron oxides, random scattering of black iron oxide pods and streaks, medium weathering.
			1235	48	50	50			DIATOMACEOUS SILTSTONE: Yellow (10YR 7/6), moist to very moist, soft to medium hard.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M25-A

PLATE B-3

PAGE 2 [illegible]6

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WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
										medium bedded, very fine to fine grained sand, abundant diatomite fragments randomly oriented throughout sample, poorly developed bedding, highly fractured, moist to very moist fractured surfaces, very close fractured spacing, closed fractured separation, random scattering of black iron oxide pods and streaks, medium weathering.
				1250	50/6	55	55			DIATOMACEOUS SANDY SILTSTONE: White (10YR 8/2), moist, medium hard, medium bedded to poorly developed bedding, abundant diatomite fragments, moist fractured surfaces, very close fractured spacing, close to very narrow fractured separation, clean fractured surfaces, slightly scattering of black iron oxide pods and streaks, abundant clasts: up to 1 1/2" diameter - white chert, conchiodal fractures, angular, chert, silic siltstone and diatomite rock fragments.
				1310	56	60	60			*In sampler tip - CLAYEY SILTSTONE: Olive gray (5Y 4/2), soft, moist, extremely fractured (hackley fractured), abundant polished surfaces with occasional slicks, 2" of sample recovered from tip, slightly interbedded with black (unoxidized) CLAYEY SILTSTONE, also extremely fractured with hackley fractures, slightly organic odor.
				1335	56	65	65			CLAYEY SILTSTONE: Dark olive gray (5Y 3/2), moist to very moist, medium hard, medium bedded to poorly developed bedding, extremely fractured (hackley fracturing), moist fractured surfaces, abundant fractured surfaces polished with occasional slicks, extremely close fractured spacing, closed fractured separation, clean fractured
				1405	56	70	70			surfaces, randomly oriented hackley fractures, unoxidized, many diatoms, organic odor.
										CLAYEY SILTSTONE: Dark olive gray (5Y 3/2), moist, medium hard to hard, medium bedded to poorly developed bedding, non-fissle, extremely fractured (hackley fractures) although not as fractured as at 60 feet, very close to extremely close fractured
				1425	55	75	75			spacing, clean fractured surfaces, closed fractured separation, randomly oriented hackley fractures, many hackley fractured surfaces are polished and slicked; unoxidized; many diatoms, strong organic odor.
						80				CLAYEY SILTSTONE: Dark olive gray (5Y 3/2), moist, medium hard to hard, medium bedded to poorly developed bedding, non-fissle, extremely fractured (hackley fractures), very close to extremely close fractured

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M25-A

PLATE B-3

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: RECOVERY / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		7/7/87	0940	50/6	80	80			spacing, closed fractured separation, c fractured separation, clean fractured surfaces, moist fractured surfaces, few to many hackley fractures with polished surfaces and slicks; in tip of sampler: medium gray SILTSTONE laminae - roughly 1/8" thick, very slightly mottled with medium gray SILTSTONE: unoxidized bedrock; many diatoms; strong organic odor.
			1005	50/6	85	85			CLAYEY SILTSTONE: Dark olive gray (5Y 3/2), moist, medium hard, thinly bedded, occasional gray siltstone laminae, non-fissle, extremely fractured (hackley fractures), very close to extremely close fractured spacing, closed fractured separation, clean fractured surfaces, moist fractured surfaces, few to many hackley fractures with polished surfaces and slicks, unoxidized; many diatoms, strong organic odor.
			1025	50/6	90	90			CLAYEY SILTSTONE: Very dark olive gray to black (5Y 2.5/1), moist, medium hard, medium bedded, occasional gray siltstone laminae, non-fissle, extremely fractured (hackley fractured), very close to extremely close fractured spacing, closed fractured separation, clean fractured surfaces, moist fractured surfaces, few to many hackley fractures with polished surfaces and slicks, unoxidized; many diatoms, strong organic odor.
			1105	50/6	95	95			CLAYEY SILTSTONE: Very dark olive gray black (5Y 2.5/1), moist, medium hard, me bedded to poorly developed bedding, non-fissle, extremely fractured, moderate hackley fractures, very close to extremely close fractured spacing, closed fractured separation, clean fractured surfaces, moist fractured surfaces, few hackley fractures with polished surfaces and slicks, unoxidized, many diatoms, strong organic odor (putrid).
			1140	50/6	100	100			CLAYEY SILTSTONE: Very dark olive gray to black (5Y 2.5/1), moist, medium hard, medium bedded to poorly developed bedding, non-fissle, extremely fractured (hackley fractures), very close to extremely close fractured spacing, closed fractured separation, clean fractured surfaces, moist fractured surfaces, few hackley fractures with polished surfaces and slicks, unoxidized, many diatoms, strong organic odor.
			1213	50/6	105	105			CLAYEY SILTSTONE: Very dark olive gray to black (5Y 2.5/1), moist, medium hard, thinly

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING
M25-A

PLATE
B-3

PAGE [redacted]

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
								bedded to poorly developed bedding, steep bedding (65) angle - inferred from alignment of diatoms, non-fissle, extremely fractured, (hackley fractures), extremely close fractured spacing, closed fractures, clean fractured surfaces, moist fractured surfaces, occasional hackley fractures with polished surfaces and slicks, unoxidized, abundant diatoms, strong organic odor.
		1323	50/6	110	110			CLAYEY SILTSTONE OCCASIONALLY INTERBEDDED WITH CLAYSTONE: Very dark olive grey to black (5Y 2.5/1), siltstone and medium gray claystone, moist, medium hard, occasional claystone laminae - up to 1/8" thick, non-fissle, moderate bedding (30) angle - claystone laminae and alignment of diatoms, extremely fractured (hackley fractures), extremely close fractured spacing, closed fractures, clean fractured surfaces, moist fractured surfaces, few hackley fractures with polished surfaces and slicks, unoxidized, abundant diatoms, strong organic odor.
		1355	50/6	115	115			CLAYEY SILTSTONE: Very dark olive to black (5Y 2.5/1), moist, medium hard, occasional claystone laminae, medium gray, non-fissle, steep bedding angle, very thinly bedded, extremely fractured, extremely close fractured spacing, clean fractured surfaces, moist fractured surfaces, occasional hackley fractures with polished surfaces and slicks, fragments of organic material - plant/bone remains - is brownish red and oxidized roughly 1" long and 1/2" diameter, abundant diatoms, strong organic odor.
		1420	50/6	120	120			CLAYEY SILTSTONE OCCASIONALLY INTERBEDDED WITH CLAYSTONE: Very dark olive gray (5Y 3/1), and olive gray (5Y4/2) - Siltstone, gray (7.5YR N/6) - Claystone, moist, medium hard, occasional claystone laminae - up to 1/4" thick, non-fissle, thinly bedded, moderate bedding (30) angle - from claystone laminae and alignment of diatoms to poorly developed bedding; extremely fractured, hackley fractures, extremely close fractured surfaces, occasional hackley fractures with polished surfaces and slicks; unoxidized, occasional fish scales, abundant diatoms, strong organic odor.
				125				CLAYEY SILTSTONE: Olive (5Y 4/3), dark olive gray (5Y 3/2), moist, medium hard, occasional interbeds of claystone - gray, up to 1/8" thick, non-fissle, thinly bedded, steep bedding (45), angle - from claystone laminae and alignment of diatoms to poorly
				130				
				135				

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L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M25-A

PLATE B-3

PROJECT NUMBER 50-1237-01 June 1988

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
					135				developed bedding, extremely fractured, hackley fractures, extremely close frac spacing, closed fractured separation, clean fractured surfaces, moist fractured surfaces, occasional fish scales, abundant diatoms, strong organic odor. CLAYEY SILTSTONE: Olive (5Y 4/3), moist, medium hard, non-fissile, medium to thinly bedded, vertical bedding angle - from layering of diatoms, extremely fractured, hackley fractures, extremely close fractured spacing, closed fractured separation, clean fractured surfaces, moist fractured surfaces, occasional hackley fractures with polished surfaces and slicks, unoxidized, occasional fish scales, abundant diatoms, strong organic odor.
					140				
					145				
					150				
					155				
					160				

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING
M25-A

PLATE
B-3

PAGE [illegible] 6

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD DATE	CHEMICAL ANALYSES FIELD TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		6/25/87	1130		0	0		CL	SILTY CLAY WITH FINE SAND: Dark grayish brown (2.5Y 4/2), firm, wet.
			1140	15	5	05		CL	SILTY CLAY WITH FINE SAND: Dark grayish brown (2.5Y 4/2), firm, wet.
				8	10	10		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), firm, wet.
				12	15	15		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), firm, wet.
			1200	8	20	20		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), firm, wet.
					25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 155.00
DATE DRILLED: 6-29-87

LOGGED BY: T. Moore
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet):

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PROJECT NUMBER 50-1237-01

July 1987

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M26-A

PLATE B-4

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY / FIELD)	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				9	25	25		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/ firm, wet.
									BEDROCK - LAKEWOOD/SAN PEDRO FM
				100	30	30		SW	SAND: Fine to coarse, light brownish gray (2.5Y 6/2), dense, moist.
			1230	24	35	35		SW	SAND: Fine to coarse, light brownish gray (2.5Y 6/2), dense, moist.
			1240	50/6	40	40		SP	SAND: Fine with silt, pale yellow (2.5Y 8/4), dense, moist, slightly micaceous.
				50/6	45	45		SP	SAND: Fine with silt, pale yellow (2.5Y 8/4), dense, moist, slightly micaceous.
				50/6	50	50		SW	SAND: Fine to coarse, pale yellowish gray (5Y 8/1), dense, damp, larger quartz grains.

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PROJECT NUMBER 50-1237-01

July 1987

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M26-A

PLATE
B-4

PAGE 2 of 9

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			50/6	55	55		SM	SILTY SAND: Fine to medium, pale yellowish gray (5Y 8/1), dense, damp, larger quartz grains, semi-rounded.
			50/6	60	60		SM	SILTY SAND: Fine to medium, pale yellowish gray (5Y 8/1), dense, damp, larger quartz grains, semi-rounded.
			50/6	65	65		SM	SILTY SAND: Fine to medium with trace silt, pale yellowish gray (5Y 8/1), dense, damp.
			50/6	70	70		SM	SILTY SAND: Fine to medium with trace silt, pale yellowish gray (5Y 8/1), dense, damp.
		1430	50/6	75	75		SM	SILTY SAND: Fine to coarse, pale yellowish gray (5Y 8/1), dense, damp, larger quartz grains, semi-rounded, spherical.
				80				

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PROJECT NUMBER 50-1237-01

July 1987

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M26-A

PLATE
B-4

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		1445	50/6	80	80		SM	SILTY SAND: Fine to medium, pale yellow gray (5Y 8/1), dense, damp, larger quartz grains, semi-rounded, quartz grains much larger than matrix which is mostly silt.
			50/6	85	85		SM	SILTY SAND: Fine to medium, pale yellowish gray (5Y 8/1), dense, damp, locally larger quartz grains and gravel sized rounded chert fragments.
			50/6	90	90		SM	SILTY SAND: Fine to medium, pale yellowish gray (5Y 8/1), dense, damp.
		1600	50/6	95	95		SM	SILTY SAND: Fine, laminated silt and fine sand layers, light olive gray (5Y 6/2), dense, moist.
		1300	50/6	100	100		SP	SAND: Fine with trace silt, light yellowish brown (2.5Y 6/4), dense, moist, slightly micaceous, variable mafic composition, locally stained orange.
		1315	50/6	105	105		SP	SAND: Fine with trace silt, light yellowish brown (2.5Y 6/4), dense, moist, slightly micaceous, variable mafic composition, locally stained orange.

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MATERIALS TESTING - LAND AND WATER RESOURCES

PROJECT NUMBER 50-1237-01 July 1987

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M26-A

PLATE B-4

PAGE [illegible]

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			50/6	110	110		SP	SAND: Fine with trace silt, light yellowish brown (2.5Y 6/4), dense, moist, silty layers interbedded, slightly micaceous, locally stained orange.
		1530	50/6	115	115		SP	SAND: Fine with trace silt, light yellowish brown (2.5Y 6/4), dense, moist, slightly micaceous, interbedded silt, variable mafic composition.
	6/29/87	1145	50/6	120	120		SP	SAND: Fine with trace silt, light yellowish brown (2.5Y 6/4), dense, moist, interbedded silt, micaceous, variable mafic composition.
		1210	50/6	125	125		SP	SAND: Fine with trace silt, light yellowish brown (2.5Y 6/4), dense, moist.
			50/6	130	130		GW	SAND AND GRAVEL: Fine to coarse, olive yellow (2.5Y 6/6), dense, moist, gravel - up to 1/4" diameter, sub-rounded, coarse sand is sub-rounded to sub-angular, gravel composed mostly of volcanic rock.
				135				

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MATERIALS TESTING - LAND AND WATER RESOURCES

PROJECT NUMBER 50-1237-01 July 1987

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M26-A

PLATE B-4

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: INTERVAL	NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				50/6	135		135		GW	SAND AND GRAVEL: Fine to coarse, olive yellow (2.5Y 6/6), dense, moist, gravel to 1/4" diameter, sub-rounded, mostly of volcanic or metamorphic rock.
				50/6	140		140		GW	SAND: Fine, pale yellow (2.5Y 8/4), dense, moist.
				50/6	145		145		SP	SAND: Fine, pale yellow (2.5Y 8/4), dense, moist, slightly micaceous.
			1600	50/6	150		150		SW	SAND: Fine to coarse with gravel, light brownish gray (2.5Y 6/2), dense, moist.
				50/6	155		155			SAND: Poorly graded, fine sand, yellowish brown (2.5Y 6/2), damp, firm, bedded, fine sand and some mafics rounded to sub-rounded, no cementation, approximately 10 degrees dip, across grain size change.
					160					SAND: Fine, pebble beds, less than 1/2 inch in diameter, slate and granitic pebbles, rounded.

KLEINFELDER

PROJECT NUMBER 50-1237-01 July 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M26-A

PLATE B-4

PAGE [redacted]

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD: DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: DIAGRAM / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			165				
			170				SAND: Fine, yellowish, reddish brown, micaceous, schist pebble fragments.
			175				
			180				SAND: Fine, poorly graded, 15% gravel, sub-rounded to rounded, granitics and slate gravel, light yellowish brown in primarily quartz sand, micaceous, damp, large gravel up to 1 inch in diameter.
			185				
			190				

KLEINFELDER

PROJECT NUMBER 50-1237-01 July 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M26-A

PLATE B-4

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: INTERVAL / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			190				SAND: Fine, light olive brown, 15 to [illegible] gravel, gravel up to 1 inch in diameter, primarily quartz sand, micaceous, damp, gravel rounded.
			195				
			200				SAND: Poorly graded, fine to medium sand, primarily quartz sand, micaceous, wet, light gray to olive brown, few granules, local thin pebble beds.
			205				
			210				
			215				

KLEINFELDER

PROJECT NUMBER 50-1237-01 July 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M26-A

PLATE B-4

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: DIAGRAM / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			220				
			225				SAND: Poorly graded, fine to medium sand, primarily quartz sand, micaceous, wet, light gray to olive brown, few granules, local thin pebble beds.
			230				
			235				
			240				

KLEINFELDER

PROJECT NUMBER 50-1237-01 July 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M26-A

PLATE B-4

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				0950		0	0		CL	SANDY CLAY: Fine with silt, very dark grayish brown (2.5Y 3/2), firm, wet.
				1000	21	5	05		CL	SILTY CLAY: Olive gray (5Y 4/2), stiff, wet, mottled with dark brown traces of siltstone fragments less than 1/4" diameter.
				1010	11	10	10		CL	SILTY CLAY: Olive gray (5Y 4/2), stiff, wet, siltstone fragments less than 1/2" diameter.
				1015	15	15	15		CL	SILTY CLAY WITH FINE SAND: Olive gray (4/2), stiff, moist.
					30	20	20		SM	SILTY SAND: Fine to coarse with clay, olive gray (5Y 4/2), stiff, moist.
						25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 61.00
DATE DRILLED: 6-24-87

LOGGED BY: T. Moore
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet):

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M29-A

PLATE B-5

PAGE 1 of 3

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				1030	25	25	25		SM	SILTY SAND: Fine to coarse with trace clay, grayish brown (2.5Y 5/2), dense moist.
				1035	50/6	30	30		SM	SILTY SAND: Fine to medium, light yellowish brown (2.5Y 6/4), dense, damp.
					22	35	35		SC	CLAYEY SAND: Olive gray (2.5Y 4/2), hard, moist, abundant small fossils.
					50/5	40	40			CLAYEY SILTSTONE: Black (2.5Y 2/1), moderately hard, moist, indistinctly bedded, slightly micaceous, petroliferous odor.
					50/6	45	45			CLAYEY SILTSTONE: Black (2.5Y 2/1), moderately hard, moist, indistinctly bedded, slightly micaceous, petroliferous odor.
					50/6	50	50			

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M29-A

PLATE B-5

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: RECOVERY / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		60	55	55			CLAYEY SILTSTONE: Black (2.5Y 2/1), moderately hard, moist, indistinctly bedded, slightly micaceous, petroliferous odor.
			60	60			CLAYEY SILTSTONE: Black (2.5Y 2/1), moderately hard, moist, locally diatomaceous.
			65				
			70				
			75				
			80				

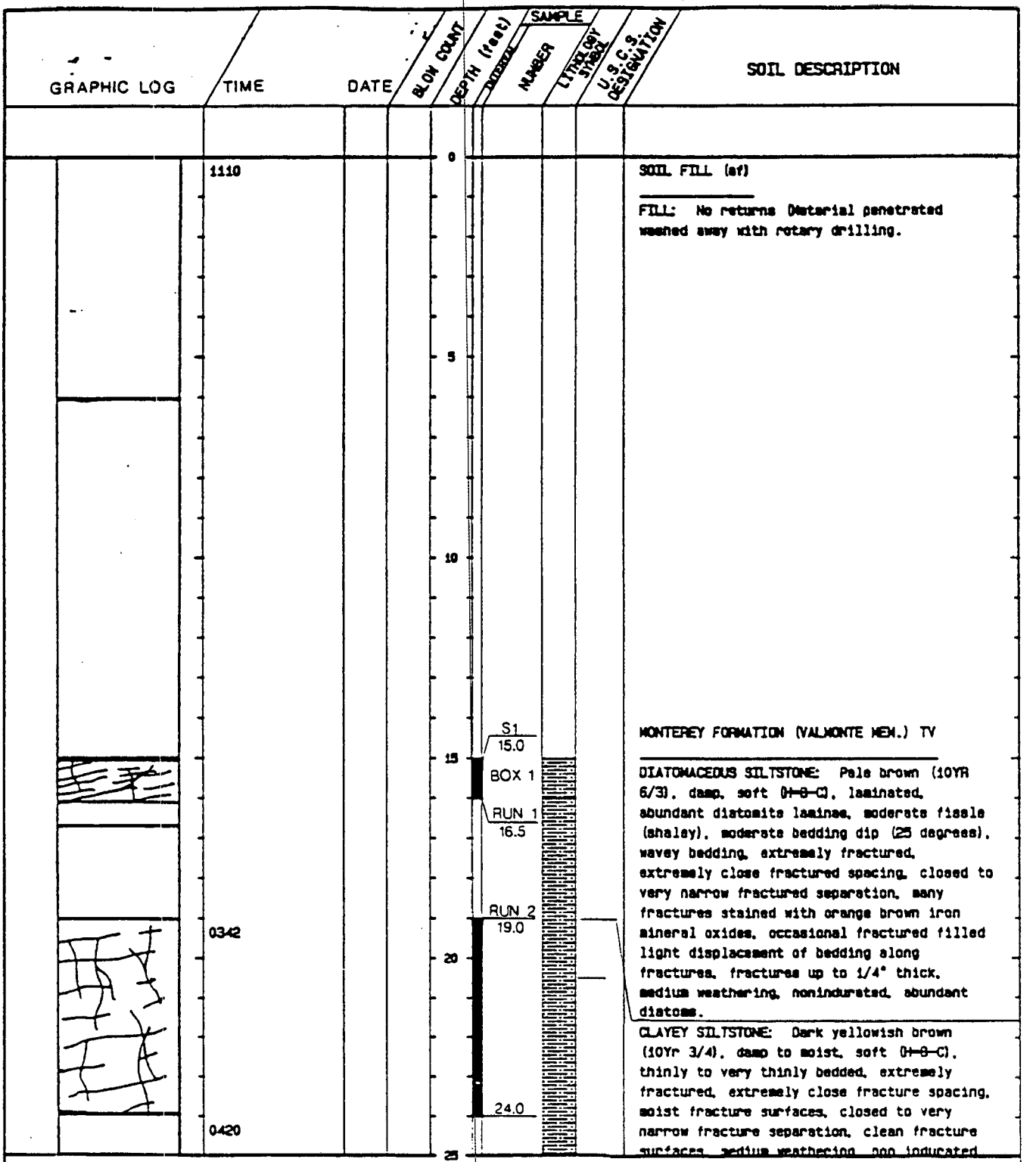
KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M29-A

PLATE B-5



SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 123.00
DATE DRILLED: 7-22-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 105.00

KLEINFELDER

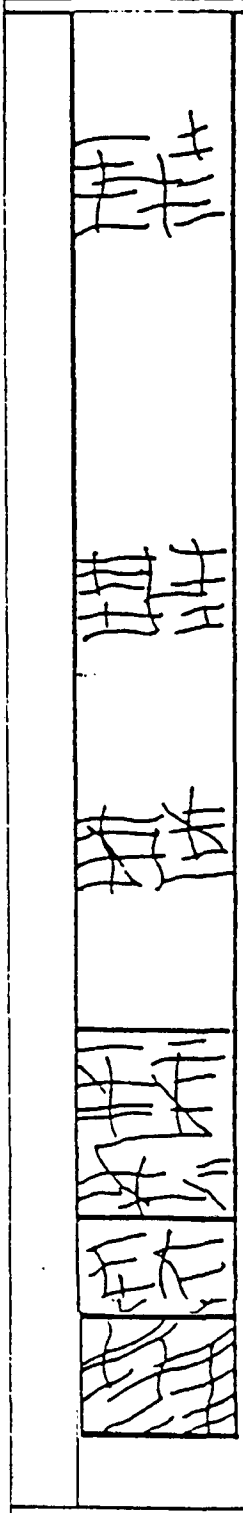
PROJECT NUMBER 50-1237-01

April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates

LOG of BORING M30B

PLATE C-1



GRAPHIC LOG	TIME	DATE	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
	0345			25	50/5"			Becoming unoxidized, mottled with black very dark brown (10YR 2/2), clayey siltstone, very thinly bedded, very slightly fissle, extremely fractured, extremely close fracture spacing, moist fracture surfaces, closed to very narrow fracture separation, clean fracture surfaces, slightly weathered to unoxidized, non indurated. SILIC SILTSTONE: Olive black, moist, very hard (H-E), very thinly bedded, extremely fracture, extremely fractured, extremely close fracture spacing, unoxidized, very well indurated, silic siltstone bed roughly 6" thick - to 24.5'. DIATOMACEOUS SILTSTONE: Olive black, moist, soft to medium hard (H-C-D), very thinly bedded, slightly fissle, extremely fractured, extremely close fracture spacing, moist fracture surfaces, closed fracture separation, unoxidized, non indurated, abundant diatoms.
	0415			35	50/5"			DIATOMACEOUS SILTSTONE: Olive black (5Y 2.5/1), moist, soft to medium hard (H-C), very thinly bedded to laminated, abundant diatomite laminae, slightly to medium fissle, extremely fractured, extremely close fracture spacing, closed fracture separation, moist fracture surfaces, unoxidized, non indurated, abundant diatoms.
	0920			40	35/50			DIATOMACEOUS SILTSTONE: Olive black, moist, soft to medium hard (H-C), very thinly bedded to laminated, many diatomite lami slightly fissle, gentle (5 degree) bedding angle, extremely fractured, extremely close fracture spacing, closed fracture separation, moist fracture surfaces, smooth to slightly rough fracture surfaces, occasional fractures sub-parallel to perpendicular to bedding, unoxidized, non indurated, abundant diatoms.
	1045			45	RUN 3 44.5			DIATOMACEOUS SILTSTONE: Becoming soft (H-B-C), slight decrease in fractures, becoming highly to extremely fractured, moist fracture surfaces, unoxidized, non indurated, strong petroleum odor (PID = 18).
					RUN 4 48.0			
	1110			50	BOX 2 49.1			DIATOMACEOUS SILTSTONE: Becoming moderately bedded (30 degrees) angle, slightly wavey bedding, extremely close fractured spacing, moist fractured surfaces, unoxidized, non indurated, petroleum odor.
					52.3			

KLEINFELDER

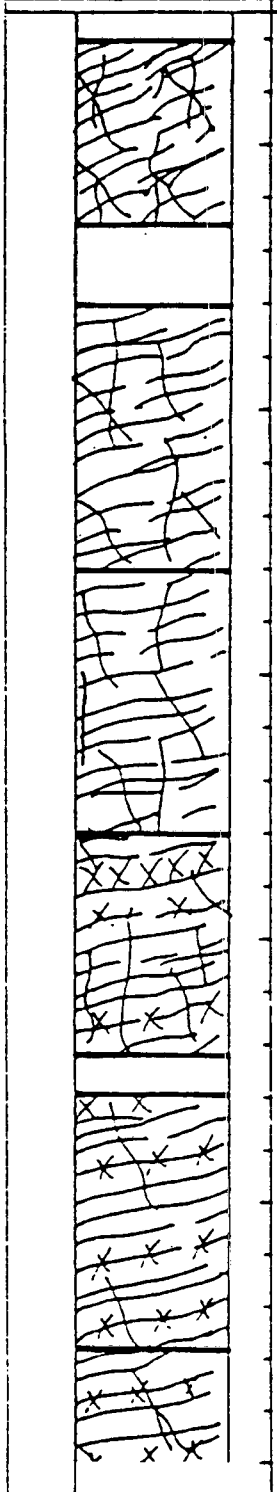
PROJECT NUMBER 50-1237-01 March 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING
M30B

PLATE
C-1

PAGE 2



WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY DATE	CHEMICAL ANALYSES FIELD TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
	1115 0100			53.0				DIATOMACEOUS SILTSTONE: Becoming laminated, abundant diatomaceous laminae, increasing in bedding angle to 45 degrees, moderately fissle - especially along diatomaceous bedding planes, extremely fractured, extremely close fractured separation, clean fractured surfaces, closed fractured separation, moist fractured surfaces, unoxidized, non indurated, strong petroleum odor.
				55	RUN 5 56.5			
					RUN 6 58.0			DIATOMACEOUS SILTSTONE: Slight decrease in bedding angle to 30 degrees, occasional claystone laminae, claystone surfaces display polished surfaces and occasional slicks, becoming highly fractured, very close to extremely close fracture spacing, moist fracture surfaces, unoxidized, non indurated, moderate petroleum odor.
	0115 0140			60				
					RUN 7 63.0			DIATOMACEOUS SILTSTONE: Decrease in b4edding angle (20 degrees), occasional claystone and diatomite laminae, extremely to highly fractured, moist fracture surfaces, extremely to very close fracture spacing, clean fracture surfaces, closed fracture separation, occasional fractures with polished surfaces, smooth to slightly rough surfaces, unoxidized, non indurated, moderate petroleum odor.
	0157 300			65				
					RUN 8 68.0			VOLCANIC ASH (TUFF): From 68.5' to 68.8, white (2.5Y N8), dry to damp, very soft, glassy, very fine grained, very friable, massive to nonbedded, clean, no associated clasts, slightly fractured, clean fractured surfaces, unoxidized, non indurated, not devitrified.
	0320 0340			70	BOX 4 70.6			
					72.2 RUN 9 73.0			DIATOMACEOUS SILTSTONE: Becoming interbedded with volcanic ash laminae, occasional claystone and diatomite laminae, laminated, slightly to moderately fissle, extremely fractured, moist fractured surfaces, extremely closed fractured spacing, clean fractured surfaces, closed fractured separation, unoxidized, non indurated, moderate petroleum odor, abundant diatoms. Decrease in volcanic ash laminae - becoming diatomaceous siltstone at 69 feet.
	0415 1002			75				
		RUN 6			RUN 10 78.0			TUFFACEOUS SILTSTONE: Light olive gray (5Y 6/2), damp to moist, soft to medium hard (H-C-O), very thinly bedded, occasional tuff laminae, occasionally glassy ash shards, 25%
	1015 1035			80				

KLEINFELDER

PROJECT NUMBER 50-1237-01 March 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING

M30B

PLATE C-1

GRAPHIC LOG	TIME	DATE	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				80	BOX 5 81.0			ash - 75% siltstone, slightly fissle siltstone, cleaves easily along tuff laminae, tuff - not devitrified, extremely fractured, extremely close fractured spacing, closed fractured separation, clean fractured surfaces, damp fractured surfaces, unoxidized, non indurated.
	1045				RUN 11 83.0			
	1103			85			RUN 9	DIATOMACEOUS SILTSTONE Interbedded with TUFF: Dark olive black, moist, soft to medium hard (H-C-O), many tuff interbeds to laminae, occasional claystone laminae, laminated to very laminated, slightly to moderately fissle, claystone interbeds, dark gray, slightly to moderately fissle, extremely fractured, extremely close fractured spacing, clean fractured surfaces, moist fractured spacing, closed fractured separation, unoxidized, non indurated, abundant diatoms.
	1117				RUN 12 88.0			
	1203			90	BOX 6 91.0		RUN 10	DIATOMACEOUS SILTSTONE Interbedded with TUFF: Laminated to very laminated, occasional tuff laminae, occasionally very fine grained sandstone laminae, tuff - not devitrified - glassey and unweathered, extremely fractured, extremely close fracture spacing, dominant fractures perpendicular to bedding, cleaves easily (fissle) along bedding, moist fracture surfaces, unoxidized, non indurated.
	1210				RUN 13 93.0			
	1245			95			RUN 11	DIATOMACEOUS SILTSTONE Interbedded with TUFF: Laminated, many tuff laminae, hig to extremely fractured, very close frac spacing, moist fracture surfaces, closed and clean fractures, unoxidized, abundant diatoms.
					RUN 14 98.0			
	1255						RUN 12	DIATOMACEOUS SILTSTONE Interbedded with TUFF: Slight decrease in tuff laminae, many interbedded claystone laminae, laminated to very laminated, slightly to moderately fissle, highly to moderately fractured, close to very close fracture spacing, moist fracture surfaces, closed fracture separation, clean fracture surfaces, unoxidized.
	0245			100				
					RUN 15 103.0			
	0255						RUN 13	DIATOMACEOUS SILTSTONE Interbedded with TUFF: Tuff interval at 94.8 roughly 1/4" thick, many tuff laminae, occasional claystone laminae, highly to moderately fractured, close to very close fracture spacing, moist fracture surfaces, unoxidized, non indurated, abundant diatoms.
	0320			105				
							RUN 14	DIATOMACEOUS SILTSTONE: Decrease in interbedded tuff, few claystone laminae, highly fractured, very close fracture spacing, many fractures with very smooth

KLEINFELDER

PROJECT NUMBER 50-1237-01 March 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING

M30B

PLATE C-1

PAGE 5

GRAPHIC LOG	TIME	DATE	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
	0335 0350				RUN 16 108.0			surfaces and very thin clay coating, possible zone of previous water, moist fracture surfaces, unoxidized.
				110	BOX 8 111.0			DIATOMACEOUS SILTSTONE Interbedded with TUFF: Dark olive black, moist, soft to medium hard (H-C-O), many tuff interbeds to laminae, occasional claystone laminae, laminated to very laminated, slightly to moderately fissle, claystone interbeds, dark grey, slightly to moderately fissle, extremely fractured, extremely close fractured spacing, clean fractured surfaces, moist fractured spacing, closed fractured separation, unoxidized, non indurated.
	0405 0820				RUN 17 113.0			
				115				DIATOMACEOUS SILTSTONE Interbedded with TUFF: Slight increase in hardness, becoming medium hard (H-O), very thinly bedded to laminated, highly to moderately fractured, moist to very moist fracture surfaces, many fractures stained with black iron/magnesium oxides, (where it = H-O-E at 101.5'), closed fracture separation, unoxidized.
					RUN 18 118.0			
				120	BOX19 121.0			DIATOMACEOUS SILTSTONE Interbedded with TUFF: Siltstone - moist to very moist, becoming very thinly to thinly bedded, occasional claystone laminae, extremely to highly fractured, wet fracture surfaces, zone of saturation roughly 1/8" from fracture surfaces, closed to very narrow fracture separation, extremely close to close fracture spacing, unoxidized, non indurated.
					123 .0			
				125				DIATOMACEOUS SILTSTONE Interbedded with TUFF: Siltstone, very moist to wet, becoming laminated to very laminated, occasional claystone laminae, extremely fractured to highly fractured, wet fracture surfaces, closed to very narrow fracture separation, many fracture surfaces with clay coating, smooth, unoxidized.
				130				
				135				

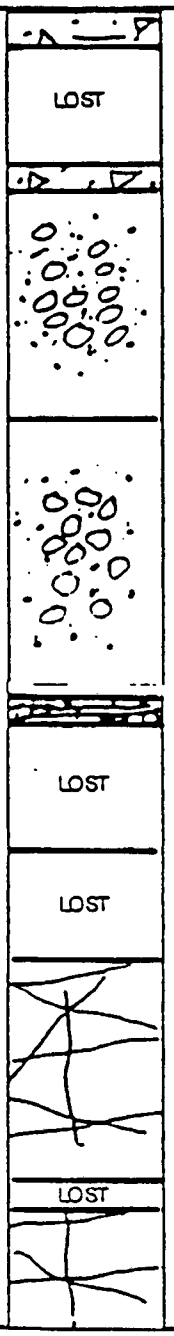
KLEINFELDER

PROJECT NUMBER 50-1237-01 March 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M30B

PLATE C-1



GRAPHIC LOG	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
	8/3/87	0135		0	RUN 1 0.0 BOX 1 0.5		CL	SOIL FILL (af) Trench Backfill CLAYEY SILT: With little gravel, medium gray, dry to damp, stiff, trace of sand - <5%, fine grained sand, mottled with olive clayey silt and light brown diatomaceous silty clasts - up to 2" diameter, rounded, trench backfill materials.
		0140 0145			RUN 2 3.0 3.5		GW	
				5	SAMP SPOIL		GW	SANDY GRAVEL: (Trench backfill material) - cobbles up to 2 - 3" diameter, rounded, 15% sand - 85% cobbles.
		0150 0200			RUN 3 8.0			
				10	SAMP SPOIL		GW	SANDY GRAVEL: (Trench backfill material) - cobbles up to 2 - 3" diameter, rounded, 15% sand - 85% cobbles.
		0205 0210			RUN 4 13.0 13.5		SC	SANDY CLAY: With occasional gravel, olive gray, wet, firm, (H = A8), 20% sand to 75% clay to 50% gravel, mottled with light olive brown clayey silt, slight plasticity, gr... up to 2" diameter.
				15				BEDROCK - MONTEREY FM (MALAGA MEMBER) TM
		0215 0220			RUN 5 18.0			CLAYSTONE (MUDSTONE): Very dark gray (5Y 3/1) to dark olive gray (5Y 3/2), very moist to wet, soft (H - B), medium bedded to thickly bedded, no fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, mostly clean fractured surfaces, many fractures with polished surfaces and slicks (shears?), unoxidized, non indurated, occasional diatoms.
				20	22.5			
		0230 0250			RUN 6 23.0			CLAYSTONE (MUDSTONE): Very dark gray (5Y 3/1) to dark olive gray (5Y 3/2), very moist to wet, soft (H - B), medium bedded to
				25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 48.00
DATE DRILLED: 8-3-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 30.00

KLEINFELDER

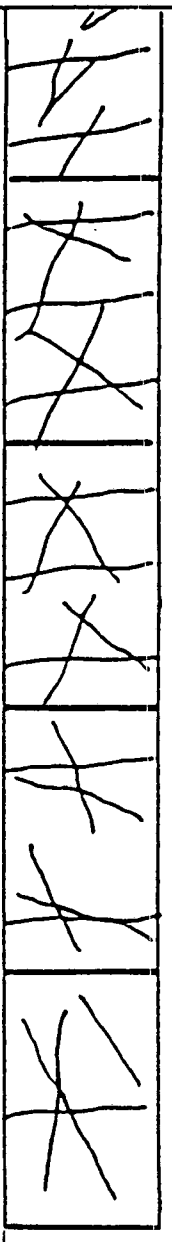
PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M32-B

PLATE C-2

PAGE



GRAPHIC LOG	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				25				thickly bedded, no fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, mostly clean fractured surfaces, many fractures with polished surfaces and slicks (shears?), unoxidized, nonindurated, occasional diatoms, increase in fracturing, becoming like crushed, most all fractures with polished surfaces and slicks, fracture zone at 27.0 feet with orange brown iron oxides, slightly weathered to unoxidized..
					BOX 2 27.3			
					RUN 7 28.0			
		0300						
		0320		30				
								CLAYSTONE (MUDSTONE): Very dark gray (5Y 3/1) to dark olive gray (5Y 3/2), very moist to wet, soft (H - B), medium bedded to thickly bedded, no fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, mostly clean fractured surfaces, many fractures with polished surfaces and slicks (shears?), unoxidized, nonindurated, occasional diatoms, becoming wet, extremely fractured, wet fractured surfaces, extremely close fractured spacing, many fractures with polished surfaces and slicks, unoxidized.. GROUNDWATER SEEPAGE AT 30 FEET.
					RUN 8 33.0			
		0330						
		0345		35				
					BOX 3 36.7			
					RUN 9 38.0			
		0350						
		0410		40				
								CLAYSTONE (MUDSTONE): Very dark gray (5Y 3/1) to dark olive gray (5Y 3/2), very moist to wet, soft (H - B), medium bedded to thickly bedded, no fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, mostly clean fractured surfaces, many fractures with polished surfaces and slicks (shears?), unoxidized, nonindurated, occasional diatoms, becoming wet to saturated, most fractures filled with water, many fractures filled with black clay, closed to very narrow fractured separation, extremely fractured zone (crush), clean fractured surfaces, very unoxidized, non indurated, occasional diatoms.
					RUN 10 43.0			
		0415						
		0435		45				
					BOX 4 46.7			
					48.0 END			
		0440						
				50				CLAYSTONE (MUDSTONE): Very dark gray (5Y 3/1) to dark olive gray (5Y 3/2), very moist to wet, soft (H - B), medium bedded to thickly bedded, no fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, mostly clean fractured surfaces, many fractures with polished surfaces and slicks (shears?), unoxidized, nonindurated, occasional diatoms, increase in water.

KLEINFELDER

PROJECT NUMBER 50-1237-01 March 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M32-B

PLATE C-2

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: INTERVAL / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			55				becoming saturated, extremely fractured continuous, all fractures filled with w clean fractures surfaces, closed to very narrow fractures separation, smooth to slightly rough fractured surfaces, occasional fractures with polished surfaces and slicks, unoxidized, non indurated.
			60				CLAYSTONE (MUDSTONE): Very dark grey (5Y 3/1) to dark olive grey (5Y 3/2), very moist to wet, soft (H - B), medium bedded to thickly bedded, no fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, mostly clean fractured surfaces, many fractures with polished surfaces and slicks (shears?), unoxidized, nonindurated, occasional diatoms, decrease in water, becoming very moist to wet, extremely fractured, very moist to wet fractured surfaces, clean fractured surfaces, closed to very narrow fractured separation, unoxidized, non indurated.
			65				
			70				
			75				
			80				

KLEINFELDER

PROJECT NUMBER 50-1237-01 March 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING
M32-B

PLATE
C-2

PAGE

GRAPHIC LOG	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
					RUN 1			
	8/5/87	0815		0	0.0		CL	SOIL FILL (af)
		0820			BOX 1			CLAYEY SILT: With small clasts, dark grayish brown (10YR 4/2), moist, firm (H-B), 20% clay - 70% silt - 10% clasts, mottled with light and medium brown clayey silt, low to medium plasticity, clasts - up 2" diameter, angular, silic siltstone, diatomaceous siltstone and gravel rock fragments.
LOST					1.7			
					RUN 2			
		0825			3.0		GW	GRAVEL: Trench Backfill, rocks up to 2" diameter, well-rounded, backfill for gas and water leader pipe.
		0840			3.6			
LOST				5				
					RUN 3			
		0845			8.0		GW	GRAVEL: Trench Backfill, rocks up to 2" diameter, well-rounded, backfill for gas and water leader pipe, very little sand, fine grained.
		0858			8.7			
LOST				10				
					RUN 4			
		0903			13.0		GW	GRAVEL: Trench Backfill, rocks up to 2" diameter, well-rounded, backfill for gas and water header pipe, very little sand, fine grained.
		0915			13.6			
LOST				15				
					RUN 5			
		0920			18.0			GROUNDWATER SEEPAGE, NEAR BOTTOM OF TRENCH. CLAYSTONE (MUDSTONE): Very dark olive gray (5Y 3/2), wet to saturated, very soft (H-A), thickly bedded to indistinct, extremely fractured, extremely close fractured spacing, wet fractured surfaces, slightly weathered to unoxidized, nonindurated.
		0936			18.2			
LOST				20				
					RUN 6			
					23.0			
		0942						
LOST		0958		25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 93.00
DATE DRILLED: 8-5-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 40.00

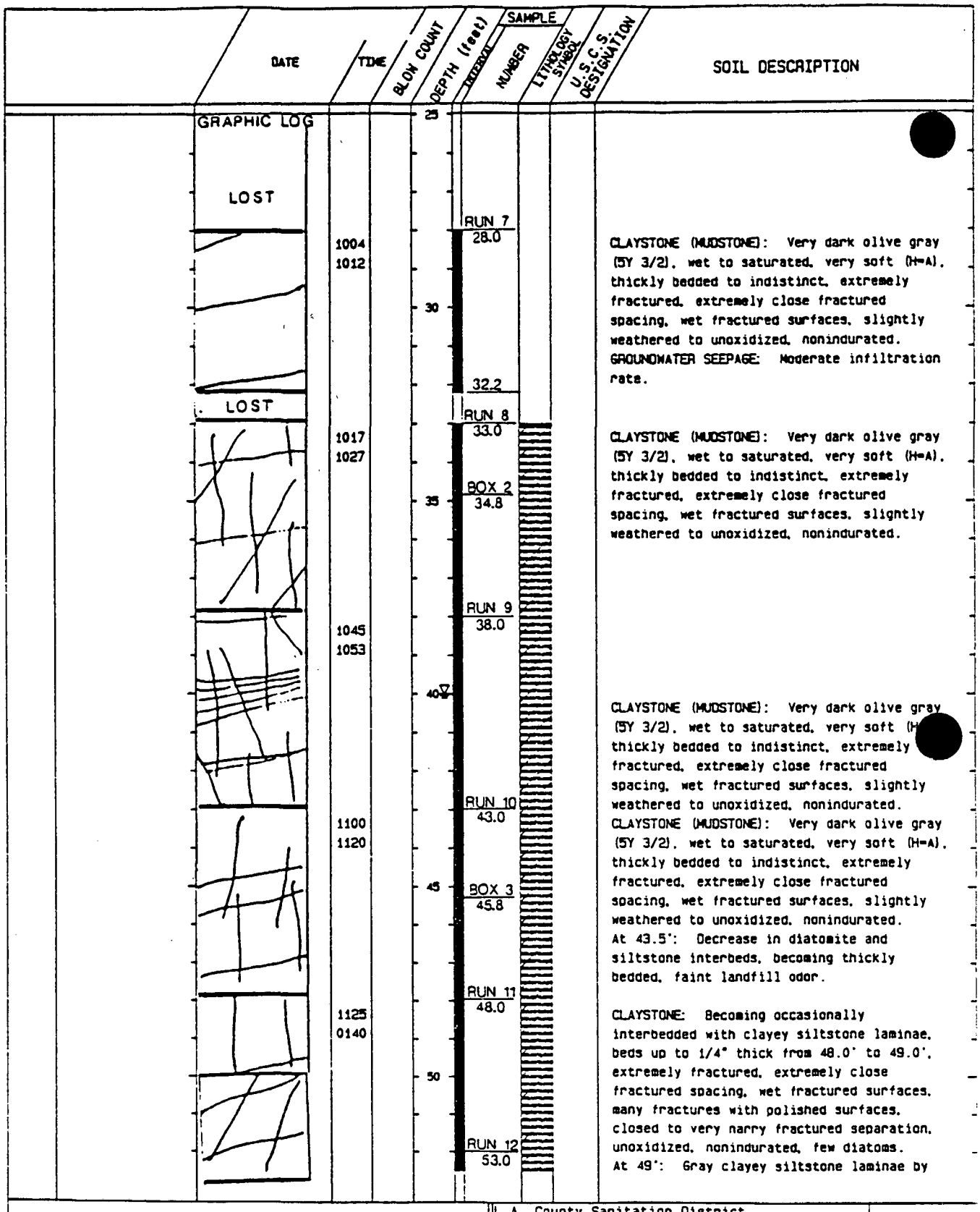
KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M33-B

PLATE C-3



KLEINFELDER

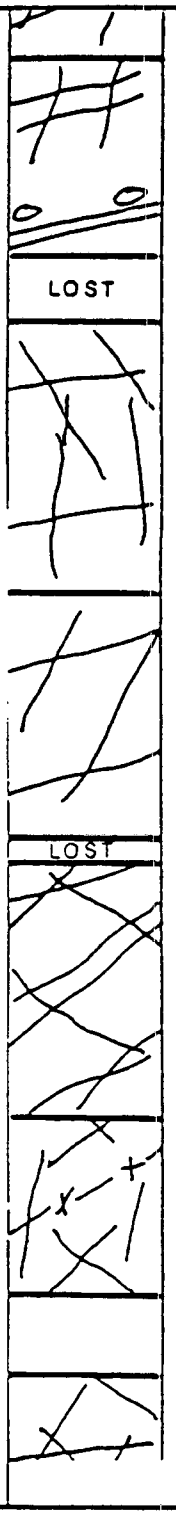
PROJECT NUMBER 50-1237-01 March 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M33-B

PLATE C-3

PAGE



GRAPHIC LOG	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				0145						fracture, becoming thickly bedded.
				0205						CLAYSTONE: Becoming occasionally interbedded with clayey siltstone laminae, extremely fractured, extremely close fractured spacing, wet fractured surfaces, many fractures with polished surfaces, closed to very narry fractured separation, unoxidized, nonindurated, few diatoms. Becoming interbedded with tuff laminae, occasional tuff beds at 56.4' to 56.8'.
						55	BOX 4			
							55.5			
							56.8			
							RUN 13			
							58.0			
				0220						CLAYSTONE: Becoming occasionally interbedded with clayey siltstone laminae, extremely fractured, extremely close fractured spacing, wet fractured surfaces, many fractures with polished surfaces, closed to very narry fractured separation, unoxidized, nonindurated, few diatoms. Decreases in interbeds of clayey siltstone laminae, becoming thickly bedded claystone.
				0240		60				
							RUN 14			
							63.0			
				0245						CLAYSTONE: Becoming occasionally interbedded with clayey siltstone laminae, extremely fractured, extremely close fractured spacing, wet fractured surfaces, many fractures with polished surfaces, closed to very narrow fracture separation, unoxidized, nonindurated, few diatoms. Solitary siltstone and tuff laminae, extremely thin, moderate dip angle (25 degrees), becoming interbedded with tuff laminae from 65.2' to 66.5', slight increase in moisture, becoming very moist to wet. Becoming thickly bedded, decrease in siltstone and tuff laminations.
				0255		65				
							BOX 5			
							66.5			
							67.5			
				0300			RUN15			
				0325			68.0			
						70				
										CLAYSTONE: Becoming occasionally interbedded with clayey siltstone laminae, extremely fractured, extremely close fractured spacing, wet fractured surfaces, many fractures with polished surfaces, closed to very narrow fracture separation, unoxidized, nonindurated, few diatoms.
							RUN 16			
			8/6/87	0330			73.0			
				0830		75				CLAYSTONE: Becoming occasionally interbedded with clayey siltstone laminae, extremely fractured, extremely close fractured spacing, wet fractured surfaces, many fractures with polished surfaces, closed to very narrow fracture separation, unoxidized, nonindurated, few diatoms. Tuff laminae, 3/16" thick, plannar, unoxidized, non-weathered. Dominant fractured sets - fractures with polished surfaces and slicks.
							76.5			
							RUN 17			
							78.0			
				0835			BOX 6			
				0850			78.2			
						80				CLAYSTONE: Becoming occasionally interbedded with clayey siltstone laminae,

KLEINFELDER

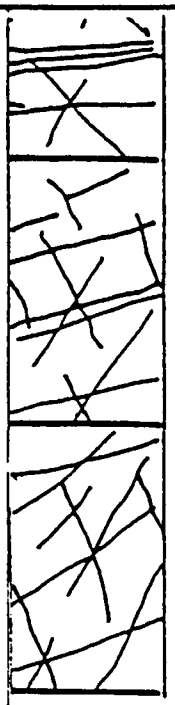
PROJECT NUMBER 50-1237-01

April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M33-B

PLATE C-3



GRAPHIC LOG	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet) INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
						80				extremely fractured, extremely close fracture spacing, wet fractured surfaces, many fractures with polished surfaces, closed to very narrow fracture separation, unoxidized, nonindurated, few diatoms.
							RUN 18 83.0			
				0900						CLAYSTONE: Becoming occasionally interbedded with clayey siltstone laminae, extremely fractured, extremely close fractured spacing, wet fracture surfaces, many fractures with polished surfaces, closed to very narrow fracture separation, unoxidized, nonindurated, few diatoms.
				0925		85				
							RUN 19 88.0			
				0930			BOX 7 88.2			CLAYSTONE: Becoming occasionally interbedded with clayey siltstone laminae, extremely fractured, extremely close fractured spacing, wet fracture surfaces, many fractures with polished surfaces, closed to very narrow fracture separation, unoxidized, nonindurated, few diatoms.
				0950		90				
							93.0			
				1000		95				
						100				
						105				

KLEINFELDER

PROJECT NUMBER 50-1237-01

April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M33-B

PLATE C-3

PAGE 4

GRAPHIC LOG	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				0		RUN 1			
LOST	7/29/87	1400				0.0 BOX 1		CL	SOIL FILL (af) CLAYEY SILT With trace SAND: Olive gray (5Y 5/2), moist, soft (H-B), 30% clay - 60% silt - 5% sand - 5% clasts, medium plasticity, slightly porous, mottled with pale olive clayey silt, fine to very fine grained sand, clasts - up to 3/4" diameter, angular, silic siltstone rock fragments.
						RUN 2 3.0			
LOST		1405 1410		5					
						RUN 3 8.0		CL	Increase in sand (10-15%), fine to coarse grained with occasional medium grained sand.
LOST		1412 1420		10					
						RUN 4 13.0		CL	CLAYEY SILT With trace SAND: Olive gray (5Y 5/2), moist, soft (H-B), 30% clay - 60% silt - 5% sand - 5% clasts, medium plasticity, slightly porous, mottled with pale olive clayey silt, fine to very fine grained sand, clasts - up to 3/4" diameter, angular, silic siltstone rock fragments.
LOST		1424 1429		15				CL	Decrease in sand (5-10%), slight increase in moisture, becoming very moist.
						RUN 5 18.0		CL	Becoming very moist to wet.
LOST		1435 1439		20		19.3			BEDROCK - MONTEREY FM (MALAGA MEM) TH
						RUN 6 23.0			CLAYSTONE (MUDSTONE): Very dark gray brown (10YR 3/2), very moist to wet, very soft to soft (H-A-B), thickly bedded, occasionally orient of diatoms parallel to bedding
		1445 1450		25					

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 48.00
DATE DRILLED: 7-29-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 33.00

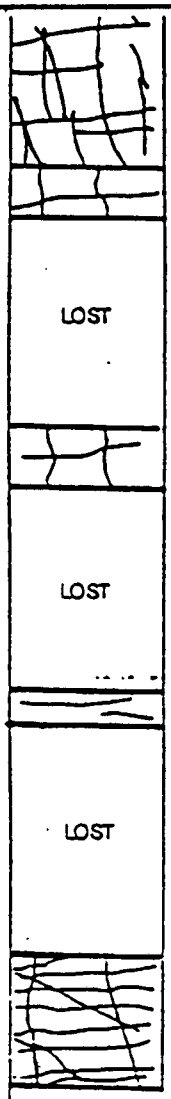
KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M34-B

PLATE
C-4
PAGE 1 of 3



DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			25				non-fissle, extremely fractured, extrem close to close fractured spacing, very to wet fractured surfaces, closed to very narrow fracture separation, from 23.0 to 23.8 clean fracture surfaces, at 23.8'-becoming stained and occasionally filled with orange brown iron magnesium oxides (limonitic), planar to curvilinear fractures config., few fractures with polished surfaces, occasional slicks, slightly to moderately weathering, non-indurated, occasionally diatomaceous. CLAYSTONE: Dark brown (10YR 3/3) to black (10YR 2/1), very moist, wet, very soft (H=A-8), thickly bedded, extremely fractured, very moist to wet fractured surfaces, occasional fractures with polished surfaces with slicks, mostly clean fractured surfaces, no stained fractures, mottled with areas of unoxidized claystone, non-indurated, occasionally diatomaceous.
	1455			RUN 7			
	1500		28.0				
			29.0				
			30				
				RUN 8			
	1505		33.0				
	1510		34.0				
			35				
				RUN 9			
7/30/87	1515		38.0				
	0920		38.5				
			40				
				RUN 10			
	0925		43.0				
	0935		45.6				
			45				
			48.0				
	0940		END				
			50				

CLAYSTONE: Dark brown (10YR 3/3) to black (10YR 2/1), very moist, wet, very soft (H=A-8), thickly bedded, extremely fractured, very moist to wet fracture surfaces, occasional fractures with polished surfaces with slicks, mostly clean fracture surfaces, no stained fractures, mottled with areas of unoxidized claystone, non-indurated, occasionally diatomaceous, becoming wet, very soft (H=A-8), thickly bedded, extremely fractured, wet fractured surfaces, unoxidized to slightly weathered. CLAYSTONE: Dark brown (10YR 3/3) to black (10YR 2/1), very moist, wet, very soft (H=A-8), thickly bedded, extremely fractured, very moist to wet fractured surfaces, occasional fractures with polished surfaces with slicks, mostly clean fracture surfaces, no stained fractures, mottled with areas of unoxidized claystone, non-indurated, occasionally diatomaceous.

KLEINFELDER

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M34-B

PLATE C-4

PROJECT NUMBER 50-1237-01

April 1988

PAGE [redacted]3

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: INTERVAL / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			55				Becoming wet, very soft (H-A-B), thickly bedded, extremely fractured, wet fractured surfaces, unoxidized to slightly weathered. CLAYSTONE: Dark brown (10YR 3/3) to black (10YR 2/1), very moist, wet, very soft (H-A-B), thickly bedded, extremely fractured, very moist to wet fractured surfaces, occasional fractures with polished surfaces with slicks, mostly clean fracture surfaces, no stained fractures, mottled with areas of unoxidized claystone, non-indurated, occasionally diatomaceous. Becoming wet, very soft (H-A-B), thickly bedded, extremely fractured, wet fractured surfaces, unoxidized to slightly weathered.
			60				
			65				
			70				
			75				
			80				

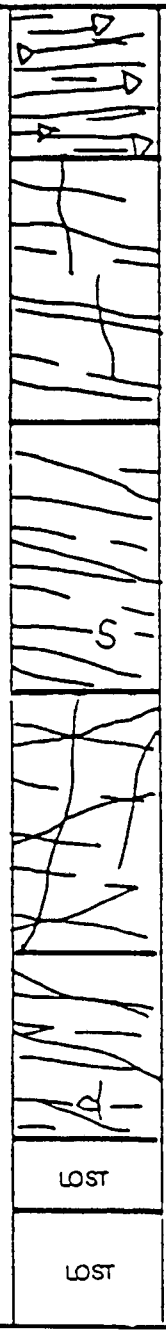
KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M34-B

PLATE C-4



GRAPHIC LOG	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				0	BOX 1 RUN 1 0.0			SOIL FILL (af)
	7/30/87	1040			RUN 2 3.0			CLAYEY SILT: With trace clasts, light gray (10YR 7/2), moist, soft (A-8), 30% clay - 60% silt - 10% clasts, mottled with medium brown clayey silt, low to medium plasticity, clasts - up to 1/2" diameter, silic siltstone, siltstone and asphalt rock fragments. BEDROCK - MONTEREY FM (MALAGA MEM) TM
		1045						
		1050		5				CLAYEY SILTSTONE: Diatomaceous, light yellowish brown (10YR 6/4), moist, soft (H-C), medium to thinly bedded, occasional diatomaceous laminae, extremely fractured, extremely close fractured spacing, closed to very narrow fractured separation, occasional fractured with polished surfaces, slightly to medium weathering, non-indurated, many diatoms.
		1055			RUN 3 8.0			
		1100		10	BOX 2 10.4			CLAYEY SILTSTONE: Diatomaceous, light yellowish brown (10YR 6/4), moist, soft (H-C), medium to thinly bedded, occasional diatomaceous laminae, extremely fractured, extremely close fracture spacing, closed to very narrow fracture separation, occasional fractures with polished surface, slightly to medium weathering, non-indurated, many diatoms.
					RUN 4 13.0			
		1105						
		1110		15				SILIC DIATOMACEOUS SILTSTONE: White (10YR 8/2) to very pale brown (10YR 8/3), moist, medium hard to hard, (H-D-E), medium bedded, slightly fissle, extremely fractured, extremely close fracture spacing, moist fracture surfaces, many fractures stained with dark orange brown and black iron magnesium oxides, closed to very narrow fracture separation, slightly to medium weathering, moderately indurated.
					RUN 5 18.0			
		1115						
		1135		20	BOX 3 20.7			DIATOMACEOUS CLAYEY SILTSTONE: Dark gray brown (10YR 4/2), moist, soft (H-B-C), medium to thinly bedded, very slightly fissle, highly to extremely fractured, very close to extremely close fracture spacing, moist fracture surfaces, few fractures stained with orange brown iron magnesium oxides, closed to very narrow fracture separation, slightly to medium weathering, non-indurated, many diatoms.
LOST					21.6			
					RUN 6 23.0			
LOST		1140						
		1200		25				DIATOMACEOUS CLAYEY SILTSTONE: Dark gray

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 118.00
DATE DRILLED: 7-30-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet):

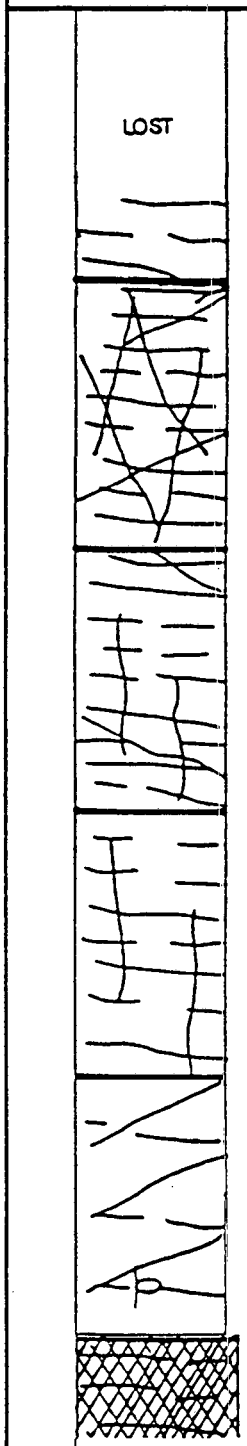
KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M35-B

PLATE C-5



DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			25				brown (10YR 4/2), moist, soft (H-8-C), medium to thinly bedded, very slightly fissle, highly to extremely fractured, very close to extremely close fracture spacing, moist fracture surfaces, few fractures stained with orange brown iron magnesium oxides, closed to very narrow fracture separation, slight to medium weathering, non-indurated, many diatoms.
	1205			RUN 7			
	1220			28.0			
			30				DIATOMITE: Very pale brown (10YR 8/3) to white, moist, medium hard (H-C-O), slightly silic, extremely fractured, extremely close fracture spacing, moist fracture surfaces, closed to very narrow fracture separation, occasional fractured surfaces stained with light to medium orange brown iron magnesium oxides, slightly to medium weathering, slightly indurated.
	1230			RUN 8			
	1245			33.0			
			35				DIATOMACEOUS CLAYEY SILTSTONE: Dark gray brown (10YR 4/2), moist, soft (H-8-C), medium to thinly bedded, very slightly fissle, highly to extremely fractured, very close to extremely close fracture spacing, moist fracture surfaces, few fractures stained with orange brown iron magnesium oxides, closed to very narrow fracture separation, slight to medium weathering, non-indurated, many diatoms.
				BOX 4			
				37.0			
				RUN 9			
	1250			38.0			
	1310		40				DIATOMACEOUS CLAYEY SILTSTONE: Becoming very dark gray (10YR 3/1) to black (10YR 2/1), moist, soft (H-8-C), medium bedded, extremely to highly fractured, very close to extremely close fracture spacing, moist fracture surfaces, closed to very narrow fracture separation, clean fracture surfaces, unoxidized, non-indurated.
				RUN 10			
	1320			43.0			
	1350		45				DIATOMACEOUS CLAYEY SILTSTONE: Becoming very dark gray (10YR 3/1) to black (10YR 2/1), moist, soft (H-8-C), medium bedded, extremely to highly fractured, very close to extremely close fracture spacing, moist fracture surfaces, closed to very narrow fracture separation, clean fracture surfaces, unoxidized, non-indurated.
				BOX 5			
				45.2			
				RUN 11			SILIC SILTSTONE: From 36.0' to 36.3', interbedded with diatomaceous siltstone, light to medium gray, moist, hard (H-E).
	1405			48.0			
	1420		50				DIATOMACEOUS CLAYEY SILTSTONE: Becoming very dark gray (10YR 3/1) to black (10YR 2/1), moist, soft (H-8-C), medium bedded, extremely to highly fracture, very close to extremely close fracture spacing, moist fracture surfaces, closed to very narrow fracture separation, clean fracture surfaces, unoxidized, non-indurated.

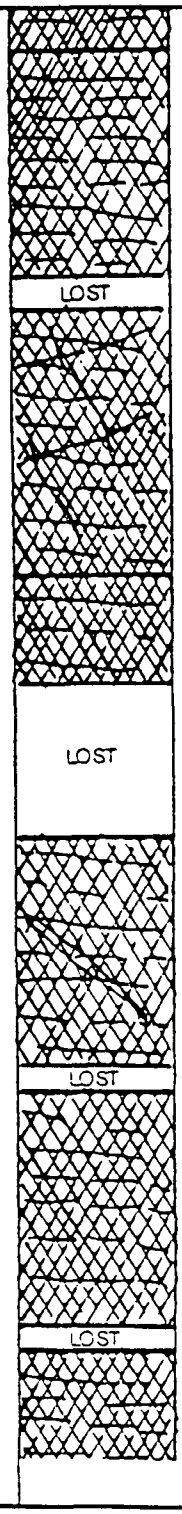
KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M35-B

PLATE C-5



DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
	1432			RUN 12 53.0			DIATOMACEOUS CLAYEY SILTSTONE: Becoming very dark gray (10YR 3/1) to black (10YR 2/1), moist, soft (H-8-C), medium bedded, extremely to highly fractured, very close to extremely close fracture spacing, moist fracture surfaces, closed to very narrow fracture separation, clean fracture surfaces, unoxidized, non-indurated.
	1458			BOX 6 53.4			
			55				
				57.5			
				RUN 13 58.0			DIATOMACEOUS CLAYEY SILTSTONE: Becoming very dark gray (10YR 3/1) to black (10YR 2/1), moist, soft (H-8-C), medium bedded, extremely to highly fractured, very close to extremely close fractured spacing, moist fractured surfaces, closed to very narrow fractured separation, clean fractured surfaces, unoxidized, non-indurated. Increase in moisture, becoming moist to very moist, soft (H-8), extremely fractured to crush material, very moist to wet fractured surfaces.
	1505						
	1523		60				
				BOX 7 61.7			
				RUN 14 63.0			Seepage zone, becoming wet, fractures with free water, extremely fractured-crushed, very narrow to narrow fracture separation, clean fracture surfaces, unoxidized, non-indurated, diatoms.
7/31/87	1530						
	0820						
			65	65.0			DIATOMACEOUS CLAYEY SILTSTONE: Becoming very dark gray (10YR 3/1) to black (10YR 2/1), moist, soft (H-8-C), medium bedded, extremely to highly fractured, very close to extremely close fracture spacing, moist fracture surfaces, closed to very narrow fracture separation, clean fracture surfaces, unoxidized, non-indurated.
				RUN 15 68.0			
	0825						
	0850		70				
				BOX 8 72.5			DIATOMACEOUS CLAYEY SILTSTONE: Becoming very dark gray (10YR 3/1), very moist-becoming wet at 60', soft (H-8), thinly bedded, extremely fractured, extremely close fracture spacing, wet fracture surfaces at 59', closed to very narrow fracture separation, clean fracture surfaces, unoxidized, non-indurated.
				RUN 16 73.0			
	0900						
	1000		75				Seepage - free water, water bearing fractures.
				77.6			DIATOMACEOUS CLAYEY SILTSTONE: Becoming very moist, soft, (H-8-C), very thinly bedded, slightly fissle, extremely fractured, extremely close fracture spacing, very moist to wet fracture surfaces, closed to very narrow fracture separation, clean fracture surfaces.
				RUN 17 78.0			
	1013						
	1028		80				DIATOMACEOUS CLAYEY SILTSTONE: Becoming very moist, soft, (H-8-C), very thinly bedded, slightly fissle, extremely fractured, extremely close fracture spacing, very moist to wet fracture surfaces, closed

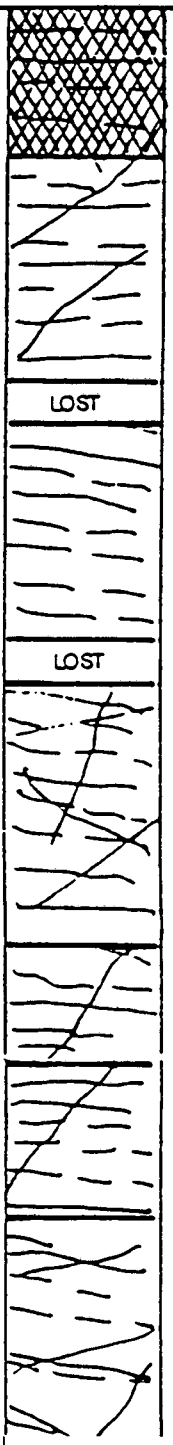
KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M35-B

PLATE C-5



GRAPHIC LOG	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				80				to very narrow fracture separation, clean fracture surfaces. Becoming interbedded with light grey SILTSTONE - up to 0.2' thick, very moist to wet, soft (H-B-C).
		1040			RUN 18 83.0			DIATOMACEOUS CLAYEY SILTSTONE: Becoming very moist, soft, (H-B-C), very thinly bedded, slightly fissle, extremely fracture, extremely close fracture spacing, very moist to wet fracture surfaces, closed to very narrow fracture separation, clean fracture surfaces.
		1055			BOX 9 84.0			
				85				
					87.2			DIATOMACEOUS CLAYEY SILTSTONE: Becoming very moist, soft, (H-B-C), very thinly bedded, slightly fissle, extremely fractured, extremely close fracture spacing, very moist to wet fracture surfaces, closed to very narrow fracture separation, clean fracture surfaces.
LOST					RUN 19 88.0			
		1107						
		1121						
				90				DIATOMACEOUS CLAYEY SILTSTONE: Becoming very moist, soft, (H-B-C), very thinly bedded, slightly fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, clean fractured surfaces.
					92.2			
LOST					RUN 20 93.0			
		1133			BOX 10 93.6			
		1150						
				95				
								DIATOMACEOUS CLAYEY SILTSTONE: Becoming very moist, soft, (H-B-C), very thinly bedded, slightly fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, clean fractured surfaces.
					RUN 21 98.0			
		1200						
		1220						
				100				
								DIATOMACEOUS CLAYEY SILTSTONE: Becoming very moist, soft, (H-B-C), very thinly bedded, slightly fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, clean fractured surfaces.
					RUN 22 103.0			
		1231						
		1248						
				105				DIATOMACEOUS CLAYEY SILTSTONE: Becoming very moist, soft, (H-B-C), very thinly bedded, slightly fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, clean fractured surfaces.

KLEINFELDER

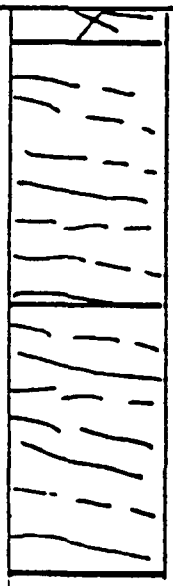
PROJECT NUMBER 50-1237-01

April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M35-B

PLATE C-5



GRAPHIC LOG	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
	8/01/87	1258			RUN 23			DIATOMACEOUS CLAYEY SILTSTONE: Becoming very moist, soft, (H-8-C), very thinly bedded, slightly fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, clean fractured surfaces.
		0805		108.0				
				110				
					RUN 24			
		0815		113.0				DIATOMACEOUS CLAYEY SILTSTONE: Becoming very moist, soft, (H-8-C), very thinly bedded, slightly fissle, extremely fractured, extremely close fractured spacing, very moist to wet fractured surfaces, closed to very narrow fractured separation, clean fractured surfaces.
		0840						
				115				
				118.0	END			
		0855						
				120				
				125				
				130				
				135				

KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M35-B

PLATE C-5

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				0	0		CL	CLAYEY SILT WITH TRACE SAND: Dark brown (10YR 3/3), moist, stiff, slightly mottled with dark gray brown clayey silt, 25% clay to 65% silt to <5% sand to 5% clasts, low to moderate plasticity, trace clasts - up to 1" diameter, angular siltstone and silic siltstone rock fragments.
		1005	16	5	05		CL	CLAYEY SILT WITH TRACE CLASTS: Dark brown (10YR 3/3), moist, stiff, very mottled with orange brown, light and medium brown clayey silt, 25% clay to 70% silt to 5% clasts, moderate plasticity, trace clasts - up to 1/2" diameter, angular, siltstone and silic siltstone rock fragments.
		1010	10	10	10		CL	CLAYEY SILT WITH TRACE CLASTS: Very dark grayish brown (10YR 3/2), moist, firm to stiff, very mottled with red brown, orange brown, light to medium brown clayey silt, trace sand - <5%, fine to medium grained, low to moderate plasticity, clasts - up to 3/4" diameter, angular, siltstone rock fragments.
		1017	9	15	15			SILTY CLAY WITH TRACE CLASTS: Very dark gray (10YR 3/1), to black (10YR 2/1), wet, soft to firm, mottled with medium to dark brown clayey silt, trace sand - <5%, fine to medium grained, medium to high plasticity, 45% silt to 45% clay to 5% sand to 5% clasts, clasts - up to 3/4" diameter, sub-angular, siltstone and silic siltstone rock fragments.
		1031	10	20	20			BEDROCK - MONTEREY FM (MALAGA MEM) MUDSTONE: Dark yellow brown (10YR 4/2), wet, soft, medium bedded, highly fractured, very moist fractured surfaces, very close fractured spacing, many fractures filled with light olive brown clayey silt, closed to very narrow fractured separation, slightly rough fractured surfaces, medium weathered, slight gasoline odor.
				25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 41.00
DATE DRILLED: 7-1-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet): 17.00

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M36-A

PLATE B-6

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			1042	14	25	25			MUDSTONE: Dark brown (10YR 4/2), wet, [illegible] medium bedded, highly fractured, very [illegible] to wet fractured surfaces, very close to extre close fractured spacing, many fractured filled with medium brown and dark greenish grey clay, many fractured stained with dark yellow orange and medium brown iron oxides and gypsum, gypsum veinlets - up to 1/16" diameter, closed to very narrow fractured separation, slightly rough fractured surfaces, greenish black mudstone in sample tip with slight gasoline odor throughout sample.
			1107	14	30	30			MUDSTONE: Dark yellow brown (10YR 4/2), wet, soft, medium to thickly bedded, poorly developed bedding, non-fissle, highly to extremely fractured, very moist to wet fractured surfaces, very close to extremely close fractured spacing, closed to very narrow fractured separation, many fractures filled with medium and dark brown clay, many fractures stained with dark yellow orange and medium brown iron oxides, occasional gypsum veinlets - up to 1/8" thick, medium to slightly weathered, slight gas odor.
			1120	50/6	35	35			CLAYEY SILTSTONE: Black (N 1), moist, medium hard to hard, thinly to very thinly bedded, very slightly fissle, highly to extremely fractured, moist fractured surfaces, very close to extremely close fractured spacing, close fractured separation, clean fractures, unoxidized, abundant diatoms, slight gas odor.
			1150	50/6	40	40			CLAYEY SILTSTONE: Black (N 1), moist, medium hard to hard, thinly to very thinly bedded, very slightly fissle, highly to extremely fractured, moist fractured surfaces, very close to extremely close fractured spacing, at least 3 fractured sets, closed fractured separation, clean fractured surfaces, 2 fractured sets sub-parallel and perpendicular to bedding, slightly rough fractured surfaces, occasional fractured surfaces with slightly polished surfaces, unoxidized, slight gasoline odor.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M36-A

PLATE B-6

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER / TYPE	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			0				FILL: Silty clay, light brown (10YR 3/3), with some asphalt fragments, fine sand, firm, damp, slight plasticity.
		18	5				SILTY CLAY: With yellowish brown siltstone clasts, moderately firm to soft, damp, mottled, rootlets.
							Lighter brown, very damp, few granules.
		10	10				SILTSTONE: Light brown (7.5YR 4/2), clayey siltstone, extremely fractured, oxidized, jointed surfaces, 1/8" gypsum along subvertical seam, very faint, grain size graduation, few zones highly fractured oxidized with yellow silt and gypsum.
		14	15				CLAYEY SILTSTONE: Light brown (7.5YR 4/2), very weathered, extremely fractured, medium brown oxidation coating on joints, thin gypsum seam along joints, massive, whitish yellow silt along joints, joints displaced 30 degrees and vertical, slightly open to closed, few striae along on oxidized surfaces.
		13	20				CLAYEY SILTSTONE: Silty claystone, light brown (5YR 4/3), massive, very weathered, extremely fractured, light yellow silt along jointed surfaces 1/4" in diameter, reddish brown oxidation coating below silt coating, pods of gpysum, joints vertical to subvertical, few joints at 50 degrees, few very small black pods.
			25				CLAYEY SILTSTONE: Light brown (5YR 4/3), massive, very weathered, extremely jointed, light yellowish silt along joints, reddish brown oxidized coatings, firm, slight plasticity, joints slightly open, vertical to subvertical, silt pods.

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 46.50
DATE DRILLED: 7-16-87

LOGGED BY: H. Audsell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 25.00

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M36A-2

PLATE B-7

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				45	25					CLAYEY SILTSTONE: Silty claystone, dark brown to grey brown (10YR 2/2), very fractured, moderately weathered, very sheared, abundant striae, wet, various directions, abundant gypsum, primary striae on 70 degrees dip shear surfaces, damp to moist, firm.
				52	30					SILTSTONE: Dark grey-black (5Y 2.5/2), massive, unoxidized, extremely jointed and fractured, joints closed 35 to 70 degrees, white specs, slightly damp to damp, firm.
				53	35					CLAYEY SILTSTONE: Dark olive grey (5Y 3/2), unoxidized, very highly jointed, damp, moderately firm to firm, joints subvertical, very slight odor.
										Very hard drilling.
				55	40					CLAYEY SILTSTONE: Dark olive grey (5Y 3/2), massive, unoxidized, highly fractured to jointed, joints slightly open, primarily closed, damp, very firm, 40 to 60 degrees dip, few very small white specs, slight oil odor.
				65	45					CLAYEY SILTSTONE: And bedded chert, unoxidized, extremely fractured, dark olive grey (5Y 3/2), firm to very firm, massive, few very small white specs, damp to very damp, no apparent odor, may be masked by fluid from above.
					50					

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M36A-2

PLATE B-7

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: DIAMETER	SAMPLE: NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		7/22/87	1045		0				CL	ARTIFICIAL FILL (AF) CLAYEY SILT: With little sand, dark yellowish brown (10YR 4/4), moist, firm, 20% clay - 60% silt - 15% sand, <5% clasts, fine to coarse grained sand, low to medium plasticity, mottled with brown and dark brown clayey silt, clasts - up to 1/2" diameter, angular, silic siltstone and siltstone rock fragments.
			1055	23	5		05		CL	CLAYEY SILT: With little sand, dark yellowish brown (10YR 4/4), moist, firm, 20% clay - 60% silt - 15% sand, <5% clasts, fine to coarse grained sand, low to medium plasticity, mottled with brown and dark brown clayey silt, clasts - up to 1/2" diameter, angular, silic siltstone and siltstone rock fragments.
			1110	11	10		10		CL	CLAYEY SILT: With little sand, dark yellowish brown (10YR 4/4), moist, firm, 20% clay - 60% silt - 15% sand, <5% clasts, fine to coarse grained sand, low to medium plasticity, mottled with brown and dark brown clayey silt, clasts - up to 1/2" diameter, angular, silic siltstone and siltstone rock fragments. ALLUVIUM
			1121	26	15		15		CH	SILTY CLAY: With little sand, black to very dark grey (10YR 3/1), moist to very moist, very stiff (H-C), 40% clay - 40% silt - 15% sand - 5% clasts, fine to medium grained sand with occasional coarse grains, medium to high plasticity, very mottled with dark yellowish brown and dark brown clayey silt, clasts - up to 2" diameter, angular, silic siltstone, diatomaceous siltstone, claystone rock fragments.
			1143	16	20		20		CL SM	CLAYEY SAND: With trace clasts, black (N2), very moist to wet, stiff (H-B-C), stratified with silty clay and clayey silt, 20% clay - 70% sand - 5% clasts, fine to medium grained sand with many coarse grains, low to medium plasticity, very mottled with dark yellowish brown to very dark greyish brown clayey silt, clasts - up to 1" diameter, angular, silic siltstone, diatomaceous siltstone and claystone rock fragments.
					25					

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 41.00
DATE DRILLED: 7-22-87

LOGGED BY: H. Audsell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 23.00

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M36A-3

PLATE B-8

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			1202	11	25	25			BEDROCK - MONTEREY FM DALAGA MEMB TMM MUDSTONE: Dark gray brown (10YR 4/2), wet (saturated), very soft, very soft (H=A-8), thinly bedded, non-fissle, highly to extremely fractured, very close to extremely close fractured spacing, closed to very narrow fractured separation, wet fractured surfaces, many fractures stained and filled with orange brown iron magnesium oxides, highly weathered, non-indurated.
			1225	18	30	30			MUDSTONE: Dark gray brown (10YR 4/2), wet (saturated), very soft, very soft (H=A-8), thinly bedded, non-fissle, highly to extremely fractured, very close to extremely close fractured spacing, closed to very narrow fractured separation, wet fractured surfaces, many fractures stained and filled with orange brown iron magnesium oxides, highly weathered, non-indurated.
			1245	34	35	35			MUDSTONE: Dark gray brown (10YR 4/2), wet (saturated), very soft, very soft (H=A-8), thinly bedded, non-fissle, highly to extremely fractured, very close to extremely close fractured spacing, closed to very narrow fractured separation, wet fractured surfaces, many fractures stained and filled with orange brown iron magnesium oxides, highly weathered, non-indurated.
			1315	50	40	40			MUDSTONE: Dark gray brown (10YR 4/2), wet (saturated), very soft, very soft (H=A-8), thinly bedded, non-fissle, highly to extremely fractured, very close to extremely close fractured spacing, closed to very narrow fractured separation, wet fractured surfaces, many fractures stained and filled with orange brown iron magnesium oxides, highly weathered, non-indurated.
					45				
					50				

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M36A-3

PLATE B-8

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			7/12/87	0907		0			SM	ARTIFICIAL FILL SILTY SAND: With trace clasts, light to medium yellowish brown (10YR), damp, medium dense (N=8-C), 40% silt - 55% sand - <5% clasts, very fine to fine grained sand
									CL	with occasional medium grained sand, slightly mottled with medium yellow brown clayey silt, clasts - up to 1" diameter, angular silic siltstone and diatomaceous
				0915	33	5			CL	siltstone rock fragments. CLAYEY SILT: With trace sand, medium yellowish brown (10YR), damp to moist, firm (N=8), 30% clay - 60% silt - 5% sand - 5% clasts, very fine to fine grained sand, low to medium plasticity, mottled with light to medium yellowish brown sandy silt to clayey silt, clasts - up to 1/2" diameter, angular, silic siltstone and diatomaceous siltstone rock fragments.
				0920	13	10	10		CL	CLAYEY SILT: With trace clasts, medium yellowish brown (10YR), moist, firm (N=8), 25% clay - 70% silt - <5% clasts, very mottled with black silty clay, medium to dark brown clayey silt and light brown diatomaceous and silt, low to medium plasticity, clasts - up to 1/2" diameter (average 1/4" diameter), angular, diatomaceous siltstone, silic siltstone and claystone rock fragments.
				0930	13	15	15		CL	Increase in moisture - becoming moist to very moist. CLAYEY SILT: With trace clasts, medium yellowish brown (10YR), moist, firm (N=8), 25% clay - 70% silt - <5% clasts, very mottled with black silty clay, medium to dark brown clayey silt and light brown diatomaceous and silt, low to medium plasticity, clasts - up to 1/2" diameter (average 1/4" diameter), angular,
				0942	9	20	20		CL	diatomaceous siltstone, silic siltstone and claystone rock fragments. CLAYEY SILT: With trace clasts, medium yellowish brown (10YR), moist, firm (N=8), 25% clay - 70% silt - <5% clasts, very mottled with black silty clay, medium to dark brown clayey silt and light brown diatomaceous and silt, low to medium plasticity, clasts - up to 1/2" diameter (average 1/4" diameter), angular,
						25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 56.00
DATE DRILLED: 8-12-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 16.00

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M37-A

PLATE B-9

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			1005	13	25	25		CL	diatomaceous siltstone, silic siltstone claystone rock fragments. Increase in moisture - becoming very moist. CLAYEY SILT: With trace clasts, medium yellowish brown (10YR), moist, firm (H-8), 25% clay - 70% silt - <5% clasts, very mottled with black silty clay, medium to dark brown clayey silt and light brown diatomaceous and silt, low to medium plasticity, clasts - up to 1/2" diameter (average 1/4" diameter), angular, diatomaceous siltstone, silic siltstone and claystone rock fragments.
			1015	12	30	30			Increase in water - becoming wet, seepage zone. CLAYEY SILT: With trace clasts, medium gray brown, dark gray brown, black, light to medium yellowish brown, wet to saturated, soft (H-A-8), 25% clay - 70% silt - <5%, fine to medium gray with occasional coarse grained sand, very mottled with black silty clay, medium dark gray brown clayey silt, clasts up to 3/4" diameter, angular, silic siltstone and diatomaceous siltstone rock fragments. BEDROCK - MONTEREY FM (VALMONTE MEM)
			1030	12	35	35			
			1043	19	40	40			DIATOMACEOUS CLAYEY SILTSTONE: Light to medium yellowish brown, wet to saturated, soft (H-8), medium to thinly bedded, extremely fractured, extremely close fractured spacing, closed to very narrow fractured separation, wet fractured surfaces, many fractures stained with orange brown iron magnesium oxides, occasionally clean fractures, smooth to slightly rough fractured surfaces, medium weathering, non-indurated.
			1110	27	45	45			DIATOMACEOUS CLAYEY SILTSTONE: Light to medium yellowish brown, wet to saturated, soft (H-8), medium to thinly bedded, extremely fractured, extremely close fractured spacing, closed to very narrow fractured separation, wet fractured surfaces, many fractures stained with orange brown iron magnesium oxides, occasionally clean fractures, smooth to slightly rough fractured surfaces, medium weathering, non-indurated.
			1132	53	50	50			CLAYSTONE: Light to medium yellowish brown, wet to saturated, soft (H-8), medium to thinly bedded, extremely fractured, extremely close fractured spacing, closed to very narrow fractured separation, wet fractured surfaces, many fractures stained

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M37-A

PLATE B-9

PAGE [redacted]3

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				1200	46	55		55			with orange brown iron magnesium oxides, occasionally clean fractures, smooth to slightly rough fractured surfaces, medium weathering, non-indurated. CLAYSTONE: Light to medium yellowish brown, wet to saturated, soft (H=0), medium to thinly bedded, extremely fractured, extremely close fractured spacing, closed to very narrow fractured separation, wet fractured surfaces, many fractures stained with orange brown iron magnesium oxides, occasionally clean fractures, smooth to slightly rough fractured surfaces, medium weathering, non-indurated. Unoxidized contact. CLAYSTONE: Black, moist, medium hard (H=C-0), thinly to medium bedded, extremely fractured, extremely close fractured spacing, moist to very moist fractured surfaces, closed fractured separation, clean fractured surfaces, occasional fractures with polished surfaces and slicks, 6° below top contact occasional fractures filled with medium yellowish brown clayey silt, unoxidized, non-indurated, diatomaceous. CLAYSTONE: Black, moist, medium hard (H=C-0), thinly to medium bedded, extremely fractured, extremely close fractured spacing, moist to very moist fractured surfaces, closed fractured separation, clean fractured surfaces, occasional fractures with polished surfaces and slicks, 6° below top contact occasional fractures filled with medium yellowish brown clayey silt, unoxidized, non-indurated, diatomaceous.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M37-A

PLATE B-9

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		1230		0	0		ML	CLAYEY SILT: Yellowish brown (10YR 5/4), stiff, moist, abundant siltstone and diatomaceous siltstone fragments - up to 1/4" diameter.
			9	5	05		MH	DIATOMACEOUS SILT WITH CLAY: Brown (10YR 4/3), stiff, moist, siltstone fragments.
			30	10	10		ML	CLAYEY SILT: Light olive brown (2.5Y 5/4), stiff, moist, abundant siltstone and diatomite fragments.
			15	15	15		ML	CLAYEY SILT: Light olive brown (2.5Y 5/ stiff, moist, abundant siltstone and diatomite siltstone fragments commonly less than 1/4" diameter.
		1230	20	20	20		CL	SILTY CLAY: Olive brown (2.5Y 4/4), stiff, moist, abundant clayey siltstone and diatomaceous siltstone fragments - mostly less than 1/4" diameter.

SURFACE ELEVATION (feet): 341.00
TOTAL DEPTH (feet): 96.00
DATE DRILLED: 6-16-87

LOGGED BY: T. Moore
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 65.00

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M38-A

PLATE B-10

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WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				25		25		CL	SILTY CLAY: Olive brown (2.5Y 4/4), stiff, moist, abundant clayey siltstone and diatomaceous siltstone fragments - mostly less than 1/4" diameter.
			28	30		30		ML	CLAYEY SILT: Light olive brown (2.5Y 5/4), stiff, mostly diatomaceous siltstone fragments.
			15	35		35		ML	CLAYEY SILT: Light olive brown (2.5Y 5/4), stiff, mostly diatomaceous siltstone fragments.
		1445	24	40		40		ML	CLAYEY SILT: Light olive brown (2.5Y 5/4), stiff, mostly diatomaceous siltstone fragments.
			16	45		45		CL	SILTY CLAY: Light olive brown (2.5Y 5/4), stiff, mostly siltstone fragments, locally diatomaceous.
			17	50		50		CL	SILTY CLAY: Dark olive grey (5Y 3/2), stiff, moist, abundant siltstone, chert and diatomaceous siltstone fragments, mostly less than 1/4" diameter.

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PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M38-A

PLATE B-10

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: DIAGRAM	NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			16	55		55		CL	SILTY CLAY: Dark grey (5Y 4/1), stiff, moist, abundant diatomaceous siltstone fragments, slight odor of tar.
			23	60		60		CL	SILTY CLAY: Dark grey (5Y 4/1), stiff, moist, abundant diatomaceous siltstone fragments, slight odor of tar.
		1615	30	65		65		ML	CLAYEY SILT: Dark grey (5Y 4/1), stiff, moist, abundant diatomaceous material, abundant wood fragments.

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PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M38-A

PLATE B-10

PAGE

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD DATE	CHEMICAL ANALYSES FIELD TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			1015		0				
				17	5	05		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), stiff, moist, abundant siltstone fragments.
				20	10	10		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), stiff, moist, abundant siltstone fragments, locally diatomaceous.
				20	15	15		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), stiff, moist, abundant siltstone fragments.
				24	20	20		CL	SILTY CLAY: Light grayish brown (2.5Y 4/2), stiff, moist, abundant siltstone fragments.
					25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 96.50
DATE DRILLED: 6-17-87

LOGGED BY: T. Moore
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet): 65.00

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M38-A2

PLATE
B-11

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY	CHEMICAL ANALYSES: FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: NUMBER	SAMPLE: TYPE	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
					34	25	25			CL	SILTY CLAY: Dark greyish brown (2.5Y [redacted] stiff, wet, sparse, very small siltstone fragments.
					23	30	30			ML	CLAYEY SILT: Dark greyish brown (2.5Y 4/2), stiff, wet, with abundant diatomaceous siltstone fragments, locally diatomaceous.
					19	35	35			CL	SILTY CLAY: Dark greyish brown (2.5Y 4/2), stiff, wet, with abundant diatomaceous siltstone fragments.
				1140	13	40	40			CL	SILTY CLAY: Dark greyish brown (2.5Y 4/2) stiff, moist, with abundant siltstone fragments up to 1/2" diameter, locally diatomaceous.
					14	45	45			ML	CLAYEY SILT: Dark greyish brown (2.5Y 4/2), stiff, moist, with siltstone fragments - up to 1/2" diameter, locally diatomaceous.
					11	50	50			CL	SILTY CLAY: Dark greyish brown (2.5Y 4/2), stiff, moist, abundant siltstone fragments, locally diatomaceous, variable clay content.

KLEINFELDER

PROJECT NUMBER 50-1237-01

June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M38-A2

PLATE B-11

PAGE [redacted] 4

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				17	55	55		CL	SILTY CLAY: Dark greyish brown (2.5Y 4/2), stiff, moist, abundant siltstone fragments locally diatomaceous, locally black and very clayey.
				17	60	60		CL	SILTY CLAY: Very dark greyish brown (2.5Y 4/2), stiff, moist, mostly composed of diatomaceous shale, slight tar odor.
				16	65	65		CL	SILTY CLAY: Very dark greyish brown (2.5Y 3/2), stiff, moist, diatomaceous, contains paper and has tar or crude oil odor.
				9	70	70		ML	CLAYEY SILT: Very dark greyish brown (2.5Y 3/2), stiff, moist, diatomaceous, siltstone fragments.
				17	75	75		CL	SILTY CLAY: Very dark gray to black (5Y 2.5/1), stiff, moist to wet, intermixed clay soil and diatomaceous fill.
					80				

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PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M38-A2

PLATE B-11

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				22	80	80		CL	SILTY CLAY: Dark olive grey (5Y 3/2). stiff, moist to wet, contains siliceous siltstone fragments - up to 1/2" diameter.
				21	85	85			CLAYEY SILTSTONE: Olive grey (5Y 4/2). stiff, wet, highly weathered, indistinctly bedded, fractured, discolored.
				8	90	90			CLAYEY SILTSTONE: Dark greyish brown (2.5Y 4/2). stiff, wet, highly weathered, decomposed, massive.
			1700	15	95	95			CLAYEY SILTSTONE: Dark greyish brown (2.5Y 4/2). stiff, wet, medium weathered, fract surfaces discolored, indistinctly bedded.
					100				
					105				

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M38-A2

PLATE B-11

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: DIAGRAM / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			0				FILL: Clayey silt, light grayish brown, moderately firm, slightly damp, mottled, white, some diatomaceous siltstone rock fragments, some fine to medium sand.
		22	5	05			SILTY CLAY: Dark grayish brown, damp, plastic.
		18	10	10			Mixed clayey silt and silty clay, brown (10YR 5/3), mottled, yellowish brown, sandstone and siltstone rock fragments, moderately firm, damp.
		31	15	15			REFUSE: Tip - clayey silt, blue gray, mottled yellowish brown, moderate amounts, fine sand, porous, black organic pods, damp.
		34	20	20			REFUSE: Plastic, wire, glass, paper, mixed with blue-gray and black clayey silt, moderate plasticity, damp, moderately firm.
			25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 76.50
DATE DRILLED: 6-10-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 58.00

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M39-A

PLATE B-12

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY / FIELD)	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				14	25	25			REFUSE: Mixed refuse, black, odiferous, damp to moist, vegetation only.
				33	30	30			REFUSE: Moist, wood in tip and in first ring.
				22	35	35			REFUSE: Wood, paper, grass (vegetation), strong sour odor, very damp.
					40				REFUSE: Wood, paper, grass (vegetation), strong sour odor, very damp.
					45				REFUSE: Wood, paper, grass (vegetation), strong sour odor, very damp.
				25	50	50			SILTSTONE & CLAYSTONE: Clayey siltstone and silty claystone, diatomaceous, olive brown (2.5Y 5/4), crushed, porous, yellow brown staining along joints, dark reddish brown, amorphous, chrystalline, some fine sand.

KLEINFELDER

PROJECT NUMBER 50-1237-01

June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M39-A

PLATE B-12

PAGE

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
									slight odor.
				27	55	55			SILTSTONE: Clayey siltstone, chocolate brown (2.5Y 5/2), yellowish brown staining on joints, joints slightly open, slight odor, damp.
				22	60	60			SILTSTONE: Clayey siltstone, reddish brown (7.5YR 3/4), crushed, striations along jointing plane, sheer planes, gypsum crystals on joints, dark reddish brown oxidized staining, damp, joints closed to slightly open, moist to wet on tip.
				24	65	65			SILTSTONE: Clayey, dark brown (7.5YR 3/2), very clayey, very damp, crushed, slicks without directional orientation, slightly porous, few dark yellowish siltstone pods/lenses, massive, firm, few wet joint surfaces.
				28	70	70			SILTSTONE: Clayey siltstone, reddish brown (10YR 4/4), crushed sheared, striations are sheer planes, abundant gypsum 1/4" thick seams, possibly along under developed bedding, rock primarily massive, moist, gypsum along seam sub-vertical joints, yellowish brown, staining and infilled silt in sub-vertical joints, some joints very slightly open.
				30	75	75			SILTSTONE: Clayey siltstone, dark chocolate brown (7.5YR 3/2), highly jointed, abundant gypsum crystals and disseminated in pods, gypsum along vertical joint, lesigon ring, joints closed, firm, damp.
					80				

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M39-A

PLATE B-12

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE DISTANCE	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
						0					FILL
					14	5		05			CLAYEY SILTSTONE: Gray-green (5Y 5/3), damp, soft, moderately firm, mixed clay and silt.
					7	10		10			SANDY SILTSTONE: Rock fragments, moderately firm, slightly damp, matrix of silt, clay with sand, light gray green (5Y 7/4).
					15	15		15			SILTY CLAY: With moderate amounts of fi to medium sand, damp, grey brown (2.5Y 5/4), mottled, yellowish brown and white, soft.
					19	20		20			SILTY CLAY: Black (5Y 2.5/1), firm, slightly damp, stiff, some sand, massive, moderately strong, organic odor, slightly porous, scattered quartz sand, fine grained.
						25					

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 51.50
DATE DRILLED: 6-11-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 34.00

KLEINFELDER

PROJECT NUMBER 50-1237-01

June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M40-A

PLATE B-13

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY / FIELD)	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				22	25	25			SILTY CLAY: Light gray-green (5Y 6/2), moderately firm to firm, damp, mottled white and yellowish brown, some fine sand, caliche pods, few small siltstone fragments.
				14	30	30			SILTSTONE: Clayey siltstone, light gray-green (5Y 6/2), very fractured and slightly porous, mottled yellowish brown along some joints.
				15	35	35			SILTSTONE: Clayey, light chocolate brown (10YR 6/2), highly jointed yellowish brown staining along joints, joints slightly open, moderately weathered.
				13	40	40			SILTSTONE: Very clayey, dark brown (10YR 4/4), black organic stains along joints, very damp, very jointed, joints very slightly open, moderately weathered, some very fine sand, local dark yellowish brown stained pods.
				15	45	45			SILTSTONE: Very clayey, chocolate brown (10YR 5/2), very jointed, various orientation, some pores yellowish brown staining along joints, firm to moderately firm, damp, some fine sand, moderately firm, plastic, black organic stains.
				11	50	50			SILTSTONE: Very clayey, light chocolate brown (10YR 6/3), yellowish brown staining along joints, stiff to moderately firm, very weathered, moist.

KLEINFELDER

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M40-A

PLATE B-13

PROJECT NUMBER 50-1237-01 June 1988

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY / FIELD) DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
	6/15/87	1445		0					
			16	5		05		CL	SILTY CLAY: Brown (10YR 4/3), firm, moist, containing siltstone fragments.
			17	10		10		ML	CLAYEY SILT WITH FINE SAND: Black (5Y 2.5/1), firm, moist, traces of leaves and twigs, occasional diatoms.
		1530	8	15		15		CL	SILTY CLAY: Black (5Y 2.5/1), stiff, mo occasional chert fragments - up to 1/2" diameter, local diatoms.
			60	20		20		CL	SILTY CLAY: Brown (10YR 4/3), stiff, moist, containing chert fragments - up to 1/2" diameter.
									BEDROCK
				25					

SURFACE ELEVATION (feet): 356.00
TOTAL DEPTH (feet): 41.00
DATE DRILLED: 6-15-87

LOGGED BY: T. Moore
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 26.00

KLEINFELDER

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M41-A

PLATE B-14

PROJECT NUMBER 50-1237-01

June 1988

PAGE

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY DATE	CHEMICAL ANALYSES FIELD TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				25		25			CLAYEY SILTSTONE: Brown (10YR 4/3), stiff, moist, thinly bedded, clay content variable.
	6/16/87	0845	50/6	30		30			CLAYEY SILTSTONE: Dark grayish brown (10YR 4/2), firm, wet, highly weathered, discoloration along fractures, thickly bedded.
			11	35		35			CLAYEY SILTSTONE: Dark brown (10YR 4/3), stiff, moist to wet, mottled, massive, medium weathered, fractured.
		1000	20	40		40			CLAYEY SILTSTONE: Dark grayish brown (2.5Y 4/2), stiff, moist to wet, medium weathered, fractured.
				45					
				50					

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M41-A

PLATE
B-14

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: INTERVAL / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			0				FILL SANDY SILT: Large amounts fine sand, tan, diatomaceous silt, dry, soft, rock fragments.
		26	5	05			SANDY SILT: Light grayish brown to tank, low density.
		26	10	10			SILTY CLAY: Dark grayish brown, mottled with diatomaceous siltstone, moderately firm to stiff.
		34	15	15			SILTSTONE: Fragments, diatomaceous, tan white, in matrix of diatomaceous silt and clay, moderately firm, dry.
		19	20	20			SILTSTONE: Diatomaceous, yellowish brown sandstone interbeds.
			25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 81.50
DATE DRILLED: 6-12-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): Not encountered.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M42-A

PLATE B-15

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE RECOVERY	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				26	25		25			DIATOMACEOUS SILTSTONE: In diatomaceous silt and clay, soft, dry to slightly damp, rock fragments, very weathered, crushed, highly fractured, moderately firm.
				22	30		30			SILTY CLAY: Clayey silt, dark grayish brown, mottled with tan to yellowish brown diatomaceous claystone and sandy siltstone, firm to moderately firm, dry, sewer odor.
				50/6	35		35			SILTSTONE: Chocolate brown, diatomaceous siltstone and mudstone, also blue gray clayey siltstone, diatomaceous matrix of silt and clay, some fine sand, moderately firm, dry, mottled with tan to light brown siltstone fragments.
				41	40		40			CLAYEY SILTSTONE: Diatomaceous, soft to moderately firm, white, light gray-green slicks, damp.
					45					SILTSTONE: Chocolate brown, massive, crushed, fractured, pods of caliche, caliche coating on joints, also clay infilling, massive, clay, oxidized coating locally disseminated gypsum, very weathered, some staining on joint planes, closed separation.
				18	50		50			SILTSTONE: Chocolate brown to tan, siltstone diatomaceous, mottled dark to light yellowish brown oxide staining also faint lenticular beds, white, very weathered, crushed, closely spaced, thin.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M42-A

PLATE B-15

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
							faint light brown streaks, clay coating joints, damp.
		25	55	55			SILTSTONE: Grayish brown (2.5Y 5/2), diatomaceous with yellowish brown staining, crushed, porous, some clay infilling, moderately firm to firm, damp, slicks, massive, matrix of diatom silt and clay.
		36	60	60			SILTSTONE: Grayish brown (2.5Y 5/2), diatomaceous with yellowish brown staining, crushed, porous, some clay infilling, moderately firm to firm, damp, slicks, massive, matrix of diatom silt and clay.
		30	65	65			SILTSTONE: Clayey siltstone, large amounts of clay, diatomaceous, slick, mottled gray to tan to yellow, overall (2.5Y 6/2), slightly porous, moderately firm, very damp, small black specs (oxide stain), black staining on joint surfaces, joints closed, joints under developed due to soft clayey nature.
		28	70	70			SILTSTONE: Clayey siltstone, large amounts of clay, diatomaceous, slick, mottled gray to tan to yellow, overall (2.5Y 6/2), slightly porous, moderately firm, very damp, small black specs (oxide stain), black staining on joint surfaces, joints closed, joints under developed due to soft clayey nature, however joints moderate to well developed, tip = thinly bedded siltstone, clayey tan, white grayish brown.
		29	75	75			SILTSTONE: Clayey siltstone, diatomaceous, grayish brown, reddish yellow, moderately firm to firm (5Y 7/6) (2.5Y 8/2), crushed, sheared, few striae, damp, few gypsum flakes, black organic specs, mottled with reddish brown streaks, joints closed pods of reddish brown sandy silt, irregular pods no distinct bedding.
			80				

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M42-A

PLATE B-15

PAGE

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		19	80	80			SILTSTONE: Clayey siltstone. (5Y 7/6) & (2.5Y 6/2), moderately firm, crushed, sheared, joints closed, tan sandy silt lenses, irregular oxide stains or joints, joints closed to very slightly open, damp to very damp, striae on few joint surfaces, vertical bedding (lenticular) 1/4" thick, abundant oxide streaks.
			85				
			90				
			95				
			100				
			105				

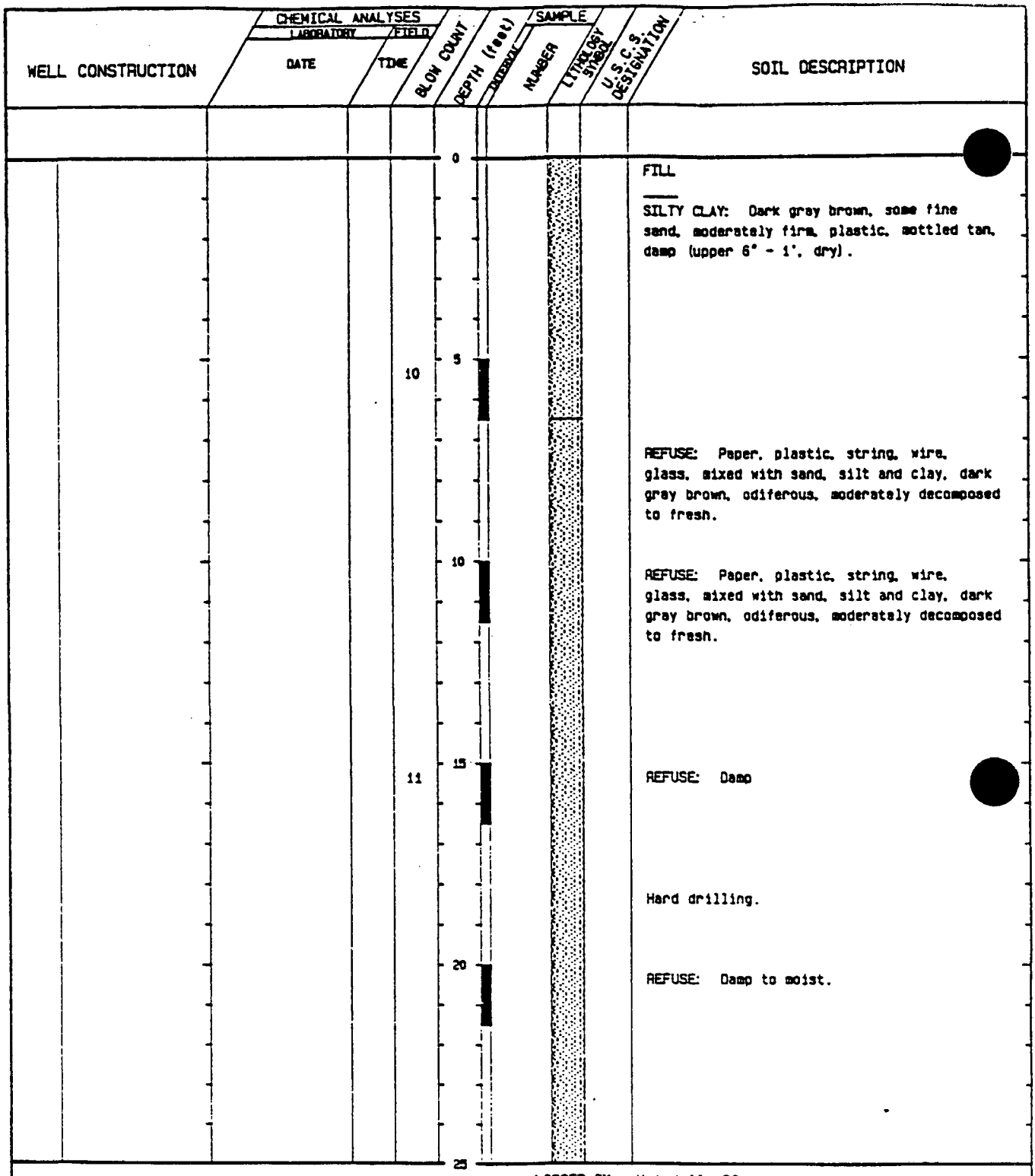
KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M42-A

PLATE B-15



SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 105.00
DATE DRILLED: 5-15-87

LOGGED BY: H Audell, RG
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet): Not encountered.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M43-A

PLATE
B-16

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: DIAGRAM / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		28	25				Increased soil portion, clayey silty, black, plastic, odiferous, damp to moist.
		25	30				
		90	35				
			40				Slight increase in soil portion.
		90	45				Hand drilling, tin cans.
		14	50				SILTSTONE: Rock fragments, light chocolate brown (10YR 5/2), very weathered, diatomaceous, caliche along joints, crushed to very fractured, dry to slightly damp, soft to moderately firm.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M43-A

PLATE B-16

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY / FIELD)	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				50/4	55				SILTSTONE: Clayey, sand, gray green (5Y 6/2), soft, fractured, damp to slightly damp, odiferous.
									Mire, refuse, brown to dark brown, dry to slightly damp.
				50/4"	60				Odiferous.
				46	65				SILTSTONE: Diatomaceous , light chocolate brown to tan (10YR 5/2), soft to moderately firm, very fractured, limonite pods, dark yellowish brown staining, laminated (faintly), black, amorphous, crystalline, concretion, few organic status, dry to slightly damp, joints vertical slightly open, diagonals, white diatomaceous pods appear like minute shell fragments and casts.
				40	70				SILTSTONE: Diatomaceous, light chocolate brown to tan (10YR 5/2), soft to moderately firm, crushed limonite staining on joint planes, disseminated gypsum black organic pods, dry to slightly damp, fish scales.
					75				SILTSTONE: Most diatomaceous, chocolate brown (10YR 4/4), soft to medium firm, white specks and pods of diatomite, crushed, joints closed, bedded to laminated, breaks readily along bedding planes, poorly indurated, dry to slightly damp, fish scales, disseminated gypsum, very weathered.
					80				

KLEINFELDER

PROJECT NUMBER 50-1237-01

June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M43-A

PLATE B-16

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: INTERVAL / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				40/4"	80				SILTSTONE: Dipping 20 degrees, bedded, 1/8" thick to laminated.
				50/4"	85				SILTSTONE: Damp.
					90				CHERT: Brown, gravel <1/4" diameter, 1.5" diameter gravel in tip, clean gravel, moist, wet clayey slurry in upper ring. Hard drilling about 1.5'.
					95				
					98				Very hard drilling at 98'.
					100				SILTSTONE: Diatomaceous, black and gray green (2.5Y 2/0) and (2.5Y 4/2), moderately firm to firm, very fractured, white specks, joints closed, bedding dip 25 degrees, thinly bedded, 1/4" thick beds, petroliferous odor. Hard drilling at 103'.
					105				

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M43-A

PLATE
B-16

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY)	CHEMICAL ANALYSES (FIELD) DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		6/12/87	1130		0	0		GW	GRAVEL.
				28	5	05		CL	SILTY CLAY: Dark yellowish brown (10YR 3/6), firm, moist, abundant siliceous and diatomaceous siltstone fragments - up to 2" diameter.
				5	10	10		CL	SILTY CLAY: Dark brown (10YR 3/3), stiff, moist.
			1230	15	15	15		CL	SILTY CLAY: Brown (10YR 4/3), stiff, mo abundant siltstone fragments - up to 2" diameter.
				11	20	20		CL	SILTY CLAY: Brown (10YR 4/3), stiff, moist, piece of white diatomite in bottom end of sampler.
					25				

SURFACE ELEVATION (feet): 365.00
TOTAL DEPTH (feet): 95.00
DATE DRILLED: 6-15-87

LOGGED BY: T. Moore
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 78.00

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M44-A

PLATE B-17

PAGE

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			10	25	25		ML	CLAYEY SILT: Very dark grayish brown (2.5Y 3/2), stiff, wet, moderate organic odor (crude oil), slightly diatomaceous.
			20	30	30		CL	SILTY CLAY: Very dark grayish brown (2.5Y 3/2), stiff, wet, organic odor, PID reading is zero.
			18	35	35		MH	DIATOMACEOUS SILT WITH CLAY: Grayish brown (2.5Y 3/2), stiff, moist, abundant diatomaceous material.
			11	40	40		MH	DIATOMACEOUS SILT WITH CLAY: Grayish brown (2.5Y 3/2), stiff, moist, abundant diatomaceous material.
			14	45	45		ML	CLAYEY SILT: Grayish brown (2.5Y 3/2), stiff, moist, large siltstone fragments - <2" diameter, some fragments diatomaceous.
			13	50	50		ML	CLAYEY SILT: Diatomaceous, grayish brown (10YR 5/2), stiff, moist, generally composed of siltstone fragments - <1/2" diameter.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M44-A

PLATE B-17

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD DATE	CHEMICAL ANALYSES FIELD TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				16	55		55		ML	CLAYEY SILT: Diatomaceous, grayish brown (10YR 5/2), stiff, moist, composed of mostly siltstone fragments - >2" diameter.
				16	60		60		ML	CLAYEY SILT: Grayish brown (10Y 5/4), stiff, moist, mostly composed of diatomaceous siltstone fragments.
			1600	19	65		65		MH	DIATOMACEOUS SILT WITH CLAY: Grayish brown (10YR 5/4), stiff, moist, mostly composed of siltstone fragments larger that 2" diameter.
				17	70		70			CLAYEY SILT: Grayish brown (10YR 5/4), stiff, moist, composed mostly of diatomaceous siltstone fragments.
					75		75		ML	CLAYEY SILT: Grayish brown (10YR 5/4), stiff, moist, composed mostly of diatomaceous siltstone fragments.
					80					

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M44-A

PLATE B-17

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				80	80		CL	SILTY CLAY: Grayish brown (10YR 5/4), stiff, moist, siltstone fragments less abundant than above.
	6/15/87	0900	48	85	85			DIATOMACEOUS SILTSTONE: Light gray (10YR 7/2), firm, wet, intensely fractured, brown colored material in fractures gives mottled appearance, highly weathered, laminated.
		1030	54	90	90			DIATOMACEOUS SILTSTONE: Light gray (10YR 7/2), firm, wet, intensely fractured, highly weathered, laminated.
				95	95			
				100				
				105				

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M44-A

PLATE B-17

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY DATE	CHEMICAL ANALYSES FIELD TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				0				FILL - Grass landscaping on surface.
								SILTY CLAY: Medium to high plasticity with fine sand, mottled grayish brown and yellowish brown, damp, rootlets.
			8	5				1" Diatomite rock fragment, soft, semi-friable, white to tan, mottled with circular pods with tan borders.
			16	10				Brown silty clay, diatomaceous, with pods of diatomite, firm, damp fragments of laminated siltstone, rootlets.
								Tan, mottled yellowish brown, moist, firm.
			26	15				Larger amount of siltstone rock fragments, dark brown and light yellowish brown siliceous siltstone and clayey siltstone, matrix of brown mottled silty clay. SILTY CLAY: Brown to light brown, mottled, damp, moderately firm.
			12	20				Layer of siltstone and claystone rock fragments, light brown and yellow brown, fractured rock, moderately to highly weathered, hard to firm, matrix of brown mottled silty clay, damp.
				25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 90.00
DATE DRILLED: 6-10-87

LOGGED BY: H Audell, RG
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet): Not encountered.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M45-A

PLATE B-18

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY / FIELD) DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			19	25				Same rock fragment lithology, matrix of dark brown silty diatomaceous clay, mottled yellowish brown and tan and reddish brown.
			12	30				SILTY CLAY: Dark grayish brown, mottled black and yellowish brown, diatomaceous, damp, some yellowish brown siltstone fragments, massive, hard.
				35				
			18	40				Mixed clayey siltstone, brown to light brown, diatomaceous, moderately firm, and siliceous siltstone, olive brown, mottled, tan and yellow brown and black, matrix of dark brown silty clay.
			4	45				RESIDUAL SOIL SILTY CLAY: Black mottled with tan and reddish brown and yellowish brown siltstone chips, damp, moderately firm, no odor.
				50				Dark gray brown to black, abundant small <1/4" diameter siltstone chips, mottled tan to yellowish brown and reddish brown, firm, some fine sand.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING
M45-A

PLATE
B-18

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: NUMBER / TYPE	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		5	55				
		100	60				On tip (61.5): Siliceous siltstone, light olive brown, hard, fractured.
		47	65				Tip: Light brown to olive brown diatomaceous and siliceous siltstone, fractured, faint tan mottling, firm, oxidized sand pods, fish scales.
			70				SILTSTONE: Clayey diatomaceous, siltstone, dark brown, mottled tan and shear zone, striations on shear planes, fractures, joints - 1/4" spaced, oxidized joint surfaces, diatomaceous pods.
		24	75				SILTSTONE: Clayey, gray to mottled yellow brown and tan, slightly porous, with fine sand, fractured, sheer planes with striae, damp, stained black locally on joint faces, vertical joints, oxidized 1/4" to 1/2" concretion, thin bedding dipping 75 degrees, firm to hard.
			80				

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M45-A

PLATE B-18

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: NUMBER / RECOVERY	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		19	80				SILTSTONE: Clayey siltstone, brown and blue gray, thinly bedded, very jointed, fractured, black staining on joints, some fine sand along bedding, oxidized (reddish brown), thin sand layers, diatomaceous, very plastic, black thin siliceous beds (1/8" diameter), also laminated 1/4" to 1/2" beds.
			85				No sample.
			90				Lower 8" of sample, highly fractured, siliceous shale, laminated, tan, oxidized joint surfaces, black mottled on joint faces, thin shear plane offsets bedding, bedding dips 30 to 40 degrees, chocolate brown, diatomaceous mudstone, laminated, moderately firm, thin gray, very fine sand beds, specks of yellowish brown siltstone fragments, striated joints.
			95				
			100				
			105				

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M45-A

PLATE
B-18

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: RECOVERY / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			0				1 foot #2 foot base, few concrete pieces. FILL
		12	5				SILT & CLAY: Silty clay, clayey silt, light brown, diatomaceous, mottled tan with siltstone chips and yellowish brown, slightly damp, some fine sand, rock fragments < 1/2" diameter.
		27	10				DIATOMACEOUS SILTSTONE: Rock fragments, light brown to tan, laminated, very weathered, soft, fractured, slightly damp, thin brown clay coating along joints.
		32	15				6" diatomite rock fragments, laminated, white to light brown, dry to slightly damp, friable to very firm, very weathered.
		38	20				Brown, diatomaceous clay and silt with siltstone fragments, rock fragment, diatomaceous silt, light brown, soft, dry (matrix).
			25				

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 106.00
DATE DRILLED: 6-10-87

LOGGED BY: H Audell, RG
SUPERVISED BY: S. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): Not encountered.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M45A-2

PLATE B-20

PAGE [redacted]5

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				21	25					SILTSTONE: Diatomaceous, white to tan, laminated, very weathered, very fractured, some yellow to brown siltstone fragments matrix of silt and clay, diatomaceous clay, soft.
				12	30					Mixed fill, silt and clay, diatomaceous, brown and yellow brown to tan, dry, soft.
				20	35					
				17	40					SILTY CLAY: Dark gray brown, large amounts of silt, moderately firm, mottled with tan diatomite fragments, slightly damp.
				12	45					Mixed diatomaceous siltstone, and diatomaceous silt and clay, tan to light brown and gray brown, soft sand, fine sand, rock fragments < 1/2" diameter, slightly damp.
				28	50					Mixed, diatomaceous siltstone and sandy siltstone, tan to very light yellowish brown, soft to medium firm, matrix of diatomaceous silt and clay, slightly damp, few brown diatom, siltstone, laminated.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M45A-2

PLATE B-20

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / FIELD — DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: INTERVAL / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
								mottled appearance, few gray ash pods.
			30	55				Matrix, dark gray brown, silty clay, moderately firm, damp, mottled, rock fragments, light yellowish brown sandy siltstone, with moderate amounts of very fine sand, tan diatomaceous siltstone, bedded up to 6" diameter, soft, very weathered, fractured.
			13	60				DIATOMACEOUS SILTSTONE: Light brown, damp to slightly damp, moderately firm, fragments about 8" diameter (though tube), mixed in silty clay, diatomaceous, some gray ash pods and yellowish brown siltstone chips.
			20	65				Harder drilling, progressively harder, easier drilling at 71'.
			92	70				Matrix dark gray brown silty clay, mottled with white to tan small <1/4" diameter siltstone fragments, damp to slightly moist.
			110	75				Light brown diatomaceous siltstone and mudstone, fragments, damp, soft, (root) light yellowish brown, sandy siltstone fragments, (siltstone - crushes and is slick, does not roll). Tip - Siltstone, diatomaceous, brown to olive brown, clayey, damp, firm, bedded, very fractured, close spacing beds 1/4" thick. Rock fragments, light yellowish brown, sandy siltstone, very weathered, fractured, friable clay, dark olive brown to yellowish brown, silty claystone, thickly bedded to laminated, crushed, weathered, bentonitic siltstone pods, striae, damp, soft, olive
				80				

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING
M45A-2

PLATE
B-20

PAGE [redacted]5

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
					14	80				brown siliceous siltstone, hard, sub-angular fragments, broken, dry, black to dark brown stained on joint faces (petroleum?), gray and yellowish brown claystone interbeds in fragments.
					21	85				CLAYSTONE TO SILTSTONE: Silty claystone, clayey siltstone, dark brown, gray, reddish brown and dark yellowish brown, very weathered, highly jointed, streaked (striae), black staining on joints, buff siltstone pods, damp, medium firm, bedded, planer and lenticular.
					19	90				MUDSTONE: Chocolate brown, diatomaceous, very clayey, firm, mottled with 2.5° thick very small white specks, pods of reddish brown oxdized, sheared claystone, tip of sample - dark black, siltstone, clayey siltstone, diatomaceous, dark olive brown and gray and yellowish brown, bedded, lenticular, firm to very firm, very jointed, joints closed, shear surfaces with striae, damp to very damp, some black mottling (organics).
					20/6	95				MUDSTONE: Chocolate brown, clayey, plastic, moderately firm, very damp, massive, pods of organics <1/4° diameter, stained dark brown, some very fine sand, vertical contact with yellow brown silty sandstone, very fine sand with reddish brown, stringers, moderately firm, damp, also - laminated, diatomaceous, siltstone, clayey, moderately firm, damp, pods of organics along bedding, vertical bedding. Tip, bedded 20 degree dip, gypsum along bedding, brown silty claystone, plastic, damp, gray, silty claystone, black organic pods, thinly bedded.
					50/6	100				CLAYSTONE TO MUDSTONE: Dark brown to chocolate brown, thinly bedded, highly diatomaceous, clayey, jointed, crushed, striae on sheer surfaces, various orientations, abundant gypsum along joints, firm, damp, also - gray to blue gray sandy clayey siltstone, massive, very jointed, oxide staining along joints, closely spaced, firm, damp, moist along joints.
					50/6	105				Tip - gravelly shale to gravel <1/4° in diameter, tan to buff, clayey matrix. Claystone, black, silty claystone, highly fractured, crushed, few thin cherty pods, thin gray siltstone interbeds, crushed

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M45A-2

PLATE B-20

WELL CONSTRUCTION	CHEMICAL ANALYSES: LABORATORY / DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE: DIAGRAM / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			110				striae on joints surfaces, firm, damp, siliceous shale dark grey chips in muds some gypsum pods, bedded about low angle dip.
			115				
			120				
			125				
			130				
			135				

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING
M45A-2

PLATE
B-20

PAGE [illegible]5

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
	6/9/87	1040		0			CL	SILTY CLAY: With trace fine sand, very dark grayish brown (10YR 3/2), stiff, moist.
		1100	11/11	5	05		ML	CLAYEY SILT: With trace of fine to medium sand, light yellowish brown (2.5Y 6/4), firm, moist to wet, abundant diatomaceous siltstone fragments.
		1200	24	10	10		ML	CLAYEY SILT: With fine sand, grayish brown (2.5Y 4/2), stiff, moist to wet, abundant diatomaceous siltstone fragments.
			24	15	15		ML	CLAYEY SILT: Grayish brown (2.5Y 5/2), stiff, wet, with siltstone fragments.
			22	20	20		ML	CLAYEY SILT: Grayish brown (2.5Y 5/2), stiff, moist to wet, small siltstone fragments, generally less than 1/2 centimeter diameter.
				25				

SURFACE ELEVATION (feet): 374.00
TOTAL DEPTH (feet): 72.00
DATE DRILLED: 6-9-87

LOGGED BY: T. Moore
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet):

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M46-A

PLATE
B-21

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
					20	25	25		ML	SILT: With clay, grayish brown (2.5Y 5/2) very stiff, moist to wet, diatomaceous siltstone fragments.
					26	30	30		ML	CLAYEY SILT: Grayish brown (2.5Y 4/2), very stiff, moist, abundant diatomaceous siltstone fragments.
				1520	35	35	35		ML	CLAYEY SILT: Grayish brown (2.5Y 4/2), very stiff, moist, abundant diatomaceous and cemented siltstone fragments.
					28	40	40		ML	CLAYEY SILT: Grayish brown (2.5Y 5/2), stiff, wet, diatomaceous, abundant siltstone chips.
					25	45	45		ML	CLAYEY SILT: Grayish brown (2.5Y 5/2), stiff, wet, diatomaceous.
				1550	20	50	50		ML	CLAYEY SILT: Light olive brown (2.5Y 5/4), stiff, very moist, abundant diatomaceous siltstone fragments.

KLEINFELDER

PROJECT NUMBER 50-1237-01

June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING
M46-A

PLATE
B-21

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD DATE	TIME	BLOW COUNT	DEPTH (feet) NUMERICAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			1600	22	55	55		ML	CLAYEY SILT: Light olive brown (2.5Y 5/2). stiff, wet, abundant diatomaceous siltstone fragments.
			1610	23	60	60		ML	CLAYEY SILT: Grayish brown (2.5Y 5/2). firm, wet, abundant diatomaceous siltstone fragments.
		6/10/87	0830	60	65	65		MH	DIATOMACEOUS SILT: Pale brown (10YR 6/3). hard, moist, sample composed mostly of one block of siltstone.
			1015	67	70	70		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2). firm, wet, abundant diatomaceous siltstone fragments.
					75				
					80				

KLEINFELDER

PROJECT NUMBER 50-1237-01

June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M46-A

PLATE B-21

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
	6/10/87	1430		0	0		CL	SILTY CLAY: Grayish brown (2.5Y 5/2), firm, moist.
			6	5	05		CL	SILTY CLAY: Grayish brown (2.5Y 5/2), firm, wet.
			17	10	10		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), firm, moist, diatomaceous siltstone fragments.
			17	15	15		CL	CLAYEY SILT: Very dark grayish brown (2.5Y 3/2), firm to stiff, moist, diatomaceous siltstone fragments.
			20	20	20		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), stiff, moist, diatomaceous siltstone fragments.
				25				

SURFACE ELEVATION (feet): 366.00
TOTAL DEPTH (feet): 106.00
DATE DRILLED: 6-10-87

LOGGED BY: T. Moore
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet):

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M46-A2

PLATE B-22

PAGE 4

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			23	25		25		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/20, stiff, moist, diatomaceous siltstone fragments.
			14	30		30		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), stiff, moist, diatomaceous siltstone fragments up to 2" diameter.
		1550	16	35		35		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), stiff, moist, siltstone fragments generally less than 1/2" diameter, locally diatomaceous.
			25	40		40		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), stiff, moist.
			27	45		45		ML	CLAYEY SILT: Dark grayish brown (2.5Y 4/2), stiff, moist.
			22	50		50		ML	CLAYEY SILT: Dark grayish brown (2.5Y 4/2), stiff, moist.

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PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M46-A2

PLATE B-22

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY / FIELD)	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				24	55	55		CL	SILTY CLAY: Dark grayish brown (2.5Y 4/2), stiff, moist.
		6/11/87	0830	36	60	60		ML	CLAYEY SILT: Dark grayish brown (2.5Y 4/2), stiff, moist, abundant siltstone fragments commonly less than 1/2" diameter, approximately 10% fragments, matrix more clayey.
				24	65	65		ML	CLAYEY SILT: Grayish brown (2.5Y 5/2), stiff to very stiff, moist, mostly siltstone fragments, matrix more abundant clay.
				23	70	70		ML	CLAYEY SILT: Dark grayish brown (2.5Y 4/2), very stiff, moist, mostly siltstone fragments, tip of sampler contains black silty clay with siliceous and diatomaceous siltstone fragments.
			1000	43	75	75		CL	SILTY CLAY: Black (5Y 2/1), very stiff, moist, rounded siltstone fragments less than 1/2" diameter.
					80				

KLEINFELDER

PROJECT NUMBER 50-1237-01

June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M46-A2

PLATE B-22

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY / FIELD)	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			1200	30/11	80	80		GC	CLAYEY GRAVEL: With coarse sand, grayish brown (2.5Y 5/2), loose, moist, gravel consists of siliceous siltstone fragments, matrix is clayey coarse sand. SILTSTONE: Very pale brown (10Y 7/3), very hard, damp, siliceous, difficult drilling.
			1315	26	85	85			SILTSTONE: Dark yellowish brown (10YR 4/4), moderately hard, moist, thinly bedded, highly weathered, highly fractured, fracture surfaces discolored with some fractures filled with clay.
				50/5	90	90			SILTSTONE: Very pale brown (10YR 7/4), hard, moist, fractured, siliceous cemented layer.
				9	95	95			CLAYEY SILTSTONE: Brown (10YR 5/3), stiff, wet, indistinctly bedded.
				39	100	100			SILTSTONE: Very dark grayish brown (10YR 3/2), stiff, moist, slightly diatomaceous, thinly bedded.
			1550	50/5	105	105			SILTSTONE: Black (5Y 2/1), very hard, siliceous cemented, slightly fractured, unweathered, surfaces fresh.

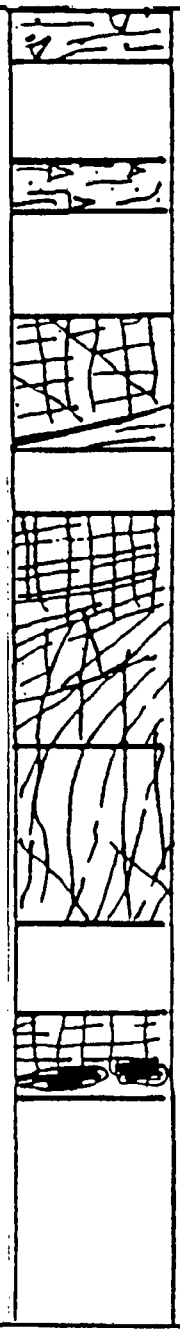
KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M46-A2

PLATE B-22



DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE DRIVE	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			0					
7/10/88	1202						CL	TOP SOIL (af)
								CLAYEY SILT: With some clasts, black (N2), damp to moist, slightly mottled with very dark grayish brown clayey silt, trace sand - <5%, very fine grained, moderate plasticity, slightly porous, 30% clay to 50% silt - <5% sand - 15% clasts, clasts up to 2" in diameter, angular, silic siltstone, chert and diatomaceous siltstone rock fragments, grass rootlets.
7/13/88	1255		5		BOX 1			
	1545				RUN 1			BEDROCK - MONTEREY FM (ALTAMIRA MEM) Tma
					6.0			
					8.5			SILIC SILTSTONE: Light olive gray (5GY 6/1), dry, very hard (H-E), very thinly bedded to laminated, silicified, occasionally interbedded with chert (up to 1/8" thick), extremely fractured, extremely close fracture spacing, very narrow to narrow fracture separation, many clean fracture surfaces, few fractures stained with black iron/magnesium oxides, few closed (healed) fractures, filled with silic and breccia fracture surfaces, dry fracture surfaces, occasional open fractures coated with quartz druse, moderately weathered, well indurated.
					RUN 2			
					9.5			
7/14/88	1635		10					
	0809							
					RUN 3			Becoming thinly bedded, occasional zones are tightly folded (soft sedimentation definition?), sedimentary breccia zones, to 1/2" thick, silicified (chert), wavey bedding, very small scale shears - offset up to 1/4" displacement, 9.5' to 13' extremely fractured, 13 - 14' highly fractured, dry fracture surfaces, fractures parallel to perpendicular to bedding, moderately weathered, well indurated.
					14.0			
	0840							
	0935		15					
					BOX 2			
					16.5			
					17.3			
					RUN 4			SILIC SILTSTONE: Bedding becoming vertical at 16', extremely fractured, dominant fracture vertical orient, decrease in fracture staining, clean fracture surfaces, dry fracture surfaces, moderate weathering, well indurated.
					19.0			
	1003							
	1410		20					
					20.7			
							RUN4 @19'	SILIC SILTSTONE: Bedding becoming near horizontal (10 degrees), extremely fractured, dominant fracture oriented parallel to perpendicular to bedding, clean fracture surfaces, dry fracture surfaces, fracture at 20.5' to soil filled (clayey silt - medium brown, wet, soft, moderate
			25					

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 149.00
DATE DRILLED: 7-10-88

LOGGED BY: H Audell, RG
SUPERVISED BY: B. Villalobos
DIAMETER of BORING:
WATER ENCOUNTERED AT (feet): Not encountered.

KLEINFELDER

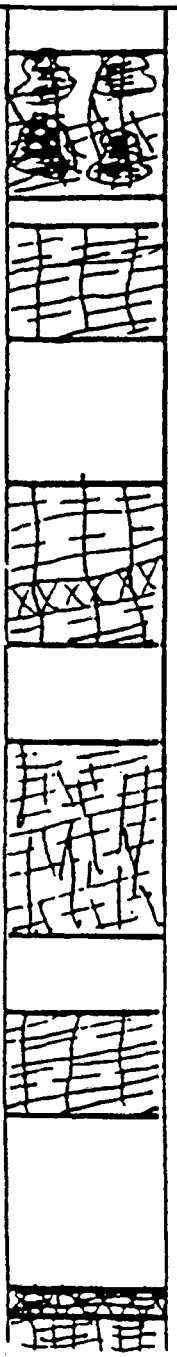
PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M47-B

PLATE C-6

PAGE [redacted]

GRAPHIC LOG	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
	7/15/87	1512 1002 1055 1108 1129 1144 1157 1211 1225 1449 1459 1535 1600 1610	25 30 35 40 45 50	RUN 5 26.0 28.9 RUN 6 29.2 31.3 RUN 7 34.0 37.1 RUN 8 39.0 BOX 3 42.7 RUN 9 44.0 46.0 RUN 10 RUN 11 50.8 RUN 12		RUN 5 @26' RUN 6 @29' RUN 7 @34' RUN 8 @39'	plasticity, CL occasional rock fragments), moderate weathering, well indurated. CLAYEY SILTSTONE: Yellowish brown (10YR 5/6), wet, soft, interval at 27.5' medium hard (H-A-B), extremely mottled with brownish yellow, dark yellowish brown and dark brown clayey siltstone, very thinly bedded to laminated, slightly fissle siltstone and claystone, occasional claystone laminae, very distinct bedding, occasional intervals lack bedding, extremely fractured, wet fracture surfaces, closed fracture separation, many fractures filled and stained with black iron/magnesium oxides, rough fracture surfaces, extremely close fracture spacing, highly weathered, non indurated. SILIC SILTSTONE: Dark grayish brown (10YR 4/2), dry, very hard (H-E), very thinly bedded to laminated, occasional silic claystone laminae, very slightly fissle along bedding planes of weakly silic siltstone beds, extremely fractured, wet fracture surfaces, closed fracture separation, many fractures filled and stained with black iron/magnesium oxides, rough fracture surfaces, extremely close fracture spacing, moist fracture surfaces, many fracture surfaces and bedding planes stained with black, red, orange brown iron/magnesium oxides, closed to narrow fracture separation, highly silic rock - few chert intervals, occasionally gilsonite? laminae at 29.4', highly weathered, well indurated. CLAYSTONE: Dark brown (7.5YR 4/4), very moist to wet, soft (H-B) from 34.0 to 36.0' and very hard (H-E) from 36.0 to 36.8', very thinly bedded to laminated, very slightly fissle siltstone - non indurated zone, extremely fractured, crush zone from 36.0 to 36.8', very well indurated zone, extremely close fracture spacing, closed to narrow fracture separation, slightly rough to rough fracture surfaces, very moist fracture surfaces, occasional chert intervals from 36.0 to 36.8', highly weathered, well indurated. SILIC SILTSTONE: Dark brown (7.5YR 3/2), dry, very hard (H-E), very thinly bedded to laminated, chert interval from 39.5 to 40.0', silic siltstone interval from 40.0 to 42.7', extremely fractured, extremely close fracture spacing, many fractures and bedding surfaces stained with black and orange brown

KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M47-B

PLATE C-6

GRAPHIC LOG	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
					53.3			iron/magnesium oxides, fractures sub-parallel to perpendicular to bedding, closed to narrow fracture separation, moist to very moist fracture surfaces, highly weathered, very well indurated, occasional intervals (laminae), non indurated.
LOST				55	RUN 13 55.5			
	7/16/87	1626				RUN 9 @44'		SILIC SILTSTONE: Dark brown (7.5YR 3/2), dry, very hard (H-E), very thinly bedded to laminated, chert interval from 39.5 to 40.0', silic siltstone interval from 40.0 to 42.7', extremely fractured, extremely close fracture spacing, many fractures and bedding surfaces stained with black and orange brown iron/magnesium oxides, fractures sub-parallel to perpendicular to bedding, closed to narrow fracture separation, moist to very moist fracture surfaces, highly weathered, very well indurated, occasional intervals (laminae), non indurated.
		0925						
					BOX 4 58.6			
LOST					RUN 14 59.0			
		0939						
		0955		60	60.5			
LOST						RUN10 @49'		CHERT: With gilsonite, extremely fractured, highly weathered, very well indurated.
						RUN11 @49.2'		SILIC SILTSTONE: With chert, extremely fractured, highly weathered, very well indurated.
					RUN 15 64.6			
		1015		65		RUN12 @50.8'		SILIC SILTSTONE: With interbedded chert, from 50.8' to 52.0', yellow brown (10YR 5/4), and light gray (2.5Y N2), dry, very hard (H-E), silicified, very thinly bedded to laminated, parts easily along bedding, thick, slightly wavey bedding, gray silic siltstone (bleached), strongly silicified, yellow brown silic siltstone - moderately silicified, extremely fractured, extreme close fracture spacing, closed to narrow fracture separation, very moist fracture surfaces, few fractures stained with black and orange brown iron/magnesium oxides, highly weathered, very well to well indurated.
		1030						
LOST					RUN 16 66.5			
		1048			68.1			
LOST					RUN 17 69.0			
		1102						
		1112		70				
					72.5			
LOST						@52'		CLAYEY SILTSTONE: Dark brown (7.5YR 4/4), very moist, soft (H-B), very thinly bedded to laminated, occasional claystone laminae, occasionally medium hard, slightly silic beds with siltstone and claystone, slightly fissle, extremely fractured, extremely close fracture spacing, closed to narrow fracture separation, many fractures stained with black iron/magnesium oxides, very moist, fracture surfaces, highly weathered, non to slightly indurated.
					RUN 18 74.0			
		1130						
		1235		75	BOX 5 RUN 19 75.5			
		1247						
		1256						
					78.5			
LOST						RUN13 @55.5'		CLAYEY SILTSTONE: Becoming light yellowish brown, very moist to wet, soft (H-B).
					RUN 20 79.0			
		1310				@57.0'		CLAYEY SILTSTONE: Becoming black, very moist, soft to medium hard (H-B), very mottled with dark brown clayey siltstone.
		1325		80	RUN 21 80.5			

KLEINFELDER

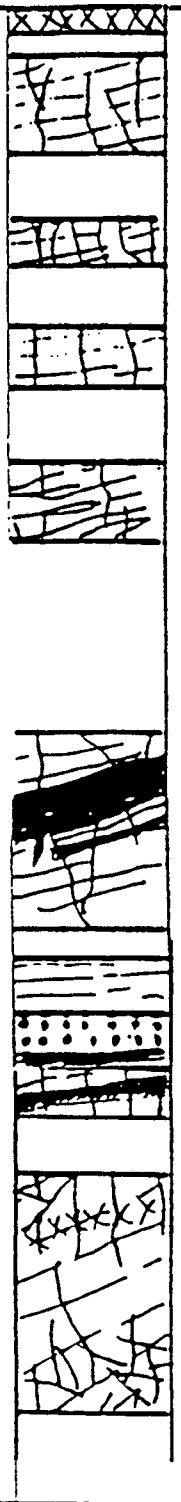
PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M47-B

PLATE C-6

PAGE 3 [redacted]



DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE DRIVE	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			80					thinly bedded, unoxidized?, extremely fractured, extremely close fracture spacing, occasional fractures with polished surfaces, occasional fractures with orange brown iron oxides, slightly weathered to unoxidized?, non indurated.
	1340				RUN 22			
	1505				81.5			
	1517							
	1525							
					83.4			
							RUN14	CLAYEY SILTSTONE: Dark brown (7.5YR 4/4), very moist, soft (H=B), very thinly bedded to laminated, occasional claystone laminae, occasionally medium hard, slightly silic beds with siltstone and claystone, slightly fissle, extremely fractured, extremely close fracture spacing, closed to narrow fracture separation, many fractures stained with black iron/magnesium oxides, very moist, fracture surfaces, highly weathered, non to slightly indurated, becoming dark brown, very moist, soft (H=A-B), non indurated.
					RUN 23			
	1540		85		84.5			
	1547				85.5			
					RUN 24			
7/17/87	1602				86.5			
	1250				87.8			
					RUN 25			
					89.0			
	1315							
	1330		90		BOX6		@60'	SILIC SILTSTONE: Light brownish gray (10YR 6/2), dry, very hard (H=E), very silicified, very thinly bedded to laminated, extremely fractured, extremely close fracture spacing, few fractures stained with black iron/magnesium oxides, very moist fracture surfaces, highly weathered, very well indurated.
					90.5			
					RUN 26		RUN15	CLAYEY SILTSTONE: With occasional intervals of silic siltstone, black, very moist, hard to occasionally hard (H=D-E), very thinly bedded to laminated, cleaves along bedding planes, moderately to well silicified, extremely fractured, extremely close fracture spacing, very moist fracture surfaces, fractures sub-parallel and perpendicular to bedding, slightly weathering to unoxidized?, moderately to well indurated.
	1348				94.0		@64.5'	
	1401		95					
					97.6			
	1425				RUN 27			
	1530				98.0		RUN16	CLAYEY SILTSTONE: With intervals of silic siltstone, black, very moist, medium hard to hard (H=C-E), unoxidized.
	1538				RUN 28		@66.5'	
	1545		100		99.0			
					101.0		RUN17	SILIC SILTSTONE: Black (N2), and medium gray (N5), dry, very hard (H=E) silicified, very thinly bedding to laminated, cleavage bedding cherty intervals, extremely fractured, extremely close fracture spacing, conchoidal fracture, few intervals very silic to glassy, occasional intervals gray in color, very moist fracture surfaces, few fractures stained with orange brown iron/magnesium oxides, slightly weathered to unoxidized, very well indurated.
					RUN 29		@69'	
7/20/88	1602				102.0			
	0855							
			105		BOX 7			
					105.5			GILSONITE: (Silicified), dark olive black, dry, hard to very hard (H=D-E), resinous luster, conchoidal fracture extremely fracture.
					106.7		RUN18 @74'	

KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M47-B

PLATE C-6

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
								RUN 30 109.0		RUN19 @75'	PETROLIFEROUS SILTSTONE (OIL SHALE): With tar, olive black, moist, (H=E), laminat extremely fractured, extremely close fracture spacing, occasional fracture surfaces stained with red brown iron/magnesium oxides, conchoidal fractures, cleaves along bedding, at 78' - 4' thick interval of clayey siltstone, red brown, very moist, soft (H=B), extremely fractured, extremely close fracture spacing, gypsum veinlet - up to 1/2" thick sub-parallel to bedding, many fracture surfaces stained with red brown iron/magnesium oxides, slightly weathered to unoxidized.
				0930 0940		110					
						115		115.2		RUN20 @79'	GILSONITE: With chert, black, dry, very hard (H=E), silic and cherty, very thinly bedded, laminated, cleaves along bedding, cherty intervals at 79.4', dark red brown, very hard, slightly glassey with conchoidal fracture, extremely fractured, extremely close fracture spacing, occasional quartz veinlets sub-parallel to bedding, up to 1/64" thick, occasional fractures stained with black iron/magnesium oxides, occasional fractures filled with gypsum, slightly weathered to unoxidized, very well indurated.
								RUN 31 119.0			
				1021 1052		120					
								BOX 8 121.9		RUN21 @80.5'	CHERT: With gilsonite, light yellow brown and black, dry, very hard (H=E), very silicified and cherty, aphanitic texture to glassy, zonal chystalization of white quartz around chert laminae (silic claystone laminae), extremely fractured, extremely close fracture spacing, slightly weathered to unoxidized, very well indurated.
						125		125.6		RUN22 @81.5'	SILIC SILTSTONE AND CHERT: Black and medium brown, dry, very hard (H=E), silicified and slightly cherty, vestages of original bedding to very thinly bedded and laminated, extremely fractured, extremely close fracture spacing, many fracture surfaces stained with black iron/magnesium oxides, few white quartz veinlets perpendicular to bedding, up to 1/64" wide, zonal discoloration (light to medium brown) from fractures - up to 1/4" wide, dominant fracture parallel to bedding - occasional fractures parallel to bedding, slightly weathered to unoxidized.
								RUN 32			
				1110 1020		130				RUN23 @84.5'	PETROLIFEROUS SILTSTONE (OIL SHALE): With chert.
										RUN24 @86.5'	CHERT: With gilsonite, yellow brown (10YR 5/6), dry, very hard (H=E), chert, laminated, aphanitic texture to glassy, occasional gilsonite laminae, extremely
						135					

KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M47-B

PLATE C-6

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
				135				fractured, extremely close fracture spacing, concnoidal fractures, many fractures stained with black and orange brown iron/magnesium oxides, highly weathered, very well indurated.
							@87'	PETROLIFEROUS SILTSTONE (OIL SHALE): Olive black, moist, medium hard (H=C-D), slightly to moderately fissle, extremely fractured, extremely close fracture spacing, very moist fracture surfaces, slightly weathered to unoxidized, slightly indurated, organic (decay) odor, occasional fracture surfaces stained with petroliferous tar.
		1103						
		1115		140				
		1135					RUN25 @89'	GILSONITE: Extremely fractured, extremely close fracture spacing, fractures becoming narrow to wide in separation, increase in fractures filled with quartz - most veinlets sub-parallel to perpendicular to bedding, veinlets - up to 1/8" thick, occasional fractures stained with petroliferous tar, slightly - moderately indurated.
		1150						
				145				
		1215					RUN26 @94'	PETROLIFEROUS SILTSTONE (OIL SHALE): With gilsonite and tar, olive black, moist, soft to medium hard (H=B-C), very thinly bedded to laminated, occasional diatom rich bedding to laminated, slightly fissle, from 94.3' to 94.6', dark interval and black, vitreous luster, very viscous, strong petroleum odor, extremely fractured, very close fracture spacing, abundant fractures filled and stained with petroliferous tar, extremely fractured zone from 94.3' to 94.6' - tar saturated, very moist fracture surfaces, highly weathered, slightly oxidized, non indurated.
		1235						
		1300		150				
							RUN27 @97'	SILIC SILTSTONE: Olive gray (5Y 5/2), dry, very hard (H=E), very thinly bedded to laminated, occasional diatom laminae - up to 3/16" thick, extremely fractured, extremely close fracture spacing, closed to wide fracture separation, gilsonite, fractures perpendicular and sub-parallel to bedding, occasional fractures filled with white quartz, veinlets up to 1/4" thick, moderately weathered, moderately alterated, very well indurated.
							RUN28 @99'	FOSSILIFEROUS SANDSTONE: Black with medium to light brown shell fragments, wet, soft sand (H=A), medium to coarse grained sand, non consolidated to loose, uncemented to non indurated, 25% shell fragments, 25% siltstone and tar clasts (fragments), 50% sand, strong petroleum odor.
							@99.6'	PETROLIFEROUS SILTSTONE (OIL SHALE): With gilsonite and tar, olive black, moist, soft

KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M47-B

PLATE C-6

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE / TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL / NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
							to medium hard (H-B-C), very thinly bedded to laminated, occasional diatom rich bed[illegible] to laminated, slightly fissle, from 94.3' 94.6', dark interval and black, vitreous luster, very viscous, strong petroleum odor, extremely fractured, very close fracture spacing, abundant fractures filled and stained with petroliferous tar, extremely fractured zone from 94.3' to 94.6' - tar saturated, very moist fracture surfaces, highly weathered, slightly oxidized, non indurated.
				RUN29 @102'			MUDSTONE: Medium blue gray (5B 5/1), wet, soft (H-A), very plastic, massive, extremely fractured, extremely close fracture spacing, slightly weathered, unoxidized, non indurated.
				@102.4'			SILIC SILTSTONE: Olive gray (5Y 5/2), dry, very hard (H-E), very thinly bedded to laminated, occasional diatom laminae - up to 3/16" thick, extremely fractured, extremely close fracture spacing, closed to wide fracture separation, gilsonite, fractures perpendicular and sub-parallel to bedding, occasional fractures filled with white quartz, veinlets up to 1/4" thick, moderately weathered, moderately altered, very well indurated.
				@103.7'			PETROLIFEROUS SILTSTONE (OIL SHALE): Black, Very moist, soft to medium hard, (H-B-C), thinly bedded to laminated, petroleum saturated, slightly fissle, extremely fractured, from 103 feet to 105 feet - highly fractured, abundant fractures and bedding planes filled and stained with black petroliferous tar, very moist fractured surfaces, fractures sub-parallel to perpendicular to bedding, non-indurated.
				RUN30 @109.3'			PETROLIFEROUS SILTSTONE BRECCIA: Olive black, damp, hard (H-D), lithic (rock fragments) - up to 50% of competent, saturated, vestiges of bedding - very thinly bedded, slight alignment of rock fragments along bedding, rock fragments - up to 1/4" diameter - angular, silic siltstone clasts, slightly vitreous luster on fresh fracture surfaces, slightly conchoidal fractures, close to very close fracture spacing, occasional fracture surfaces filled with petroliferous tar, abundant shell fragments, slightly to moderately indurated.
				@111.0'			PETROLIFEROUS SILTSTONE (OIL SHALE): Very thinly bedded, petroleum saturated, highly fractured to extremely fractured from 113.0 feet to 114.1 feet, close to extremely close

KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M47-B

PLATE C-6

WELL CONSTRUCTION	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
					@118.0' RUN31			indurated. PETROLIFEROUS SILTSTONE (OIL SHALE): Occasional diatomite beds to laminae - up to 1/4" thick, abundant diatoms, medium to highly fractured, and fractures filling with tar at 121.0 feet - becoming mostly clean fracture surfaces with few fractures stained with petroleum residues, moderate to strong petroleum odor.
								SILTSTONE: Black (5Y 2.5/1), petroliferous siltstone, unoxidized, bedded, lenticular bedding, 15 degree dip, beds 0.1 to 1.6 inch thick beds, moderately fractured, striae on fracture surfaces, 57 degrees vertical rock breaks along bedding smooth fracture surfaces, closed to very narrow, no infilling, thin dark olive gray sandy bedding with siltstone granules, (continuous core from 130 - 134'- broke core to put in box), dry to very slightly damp, well indurated, firm.
								SILTSTONE: Very dark gray (5Y 3/1), clayey, petroliferous, oily odor, moderately firm, intensely fractured, smooth fracture surfaces, moderately developed striae, closed to narrow, no infilling, venticular, faintly bedded, 14 degrees (oil), rock surfaces brown to dark gray, slightly sandy, moderately indurated, firm to moderately firm (breaks easily) (discontinuous with core below).
								CHERT: Black (2.5Y N2/0), intensely fractured, various orientations, smooth closed to very narrow, fragments are angular, conchoidal, no infilling, black tarry spotty coating very faint, bedding lineations, slight oily odor.
								CLAYSTONE: Black to dark gray (5Y 2.5/1), highly fractured, rough fracture surfaces, no infilling, closed to very narrow, vertical <20 to 25 degrees, faint striations on fractures surfaces, bedding to massive to lenticular, very thin, very fine sand lenses, gray and brown poorly indurated, slightly plastic, grainy liniations on vertical joint surface, moderate oily odor, at 139', streaks of sand sized silt pids and organics, slight mottled appearance.
								SILTSTONE: Black (5Y 2.5/1), petroliferous

KLEINFELDER

PROJECT NUMBER 50-1237-01 April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M47-B

PLATE C-6

WELL CONSTRUCTION	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
								siltstone, unoxidized, bedded, lenticular bedding, 10 degrees dip, beds 0.1 to 0.[illegible] inch thick beds, moderately fractured, striae on fracture surfaces, 50 degrees vertical rock breaks along bedding smooth fracture surfaces, closed to very narrow, no infilling, thin dark olive gray sandy bedding with siltstone granules, (continuous core from 130 - 134'- broke core to put in box), dry to very slightly damp, well indurated, firm.
								CLAYSTONE: Black to dark olive gray brown (5Y 2.5/1), highly fractured, slightly rough, no infilling, no discoloration of fracture surfaces, massive, moderately indurated, highly fractured, vertical and dip, dry to slightly damp, slight oily odor, slightly plastic.
								SILTSTONE: Black (5Y 3/1), thinly bedded planer and lenticular bedding, 16 to 20 degrees 0.05 to 1.45 inches thick, alternating dark brown and black beds, thin (0.1 - 0.2 inch) sandy beds, brown beds contain sand to gravel sized silt pods, intensely fractured (141.5 to 143.5'), venticular and 50 degree fracture, slightly rough, no infilling or coatings, fractures closed to very narrow, fractures highly to moderately fractured (143.5 to 146), fractures moderately developed, dry to slightly damp, well indurated, moderately oil odor.
								SILTSTONE: Black (5Y 3/1), thinly bedde[illegible] planer and lenticular 10 degree dip, hig[illegible] fractured, beds 0.05 to 0.9" thick, alternating gray and brown, and black beds, sand and gravel beds in matrix of silt, also sand and gravel silt pods, shaly rock fragments, gray silt pods, fractures dip 85 degrees, tar along joints and bedding, siliceous 146.5 to 147.7', cemented granule bed, 0.5" thick , 147.2' well indurated to hard, fractures closed, tar coated on joints, hard to very firm.
								SILICEOUS SILTSTONE: Gray and black (2.5Y N2/0), thinly bedded, beds planer in core, 0.1 - 0.7" thick, sand to granule beds, gray and blue gray 15 degree dip, at 148', bedding faint, intensely fractured, slightly rough fracture surfaces, tar coated, infilled, healed fractures, open fractures, narrow to very narrow healed with tar, hard, angular root fragments, dig fractures dip vertical to 15 degrees various orientations.

KLEINFELDER

PROJECT NUMBER 50-1237-01

April 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M47-B

PLATE C-6

WELL CONSTRUCTION	CHEMICAL ANALYSES (LABORATORY / FIELD)	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		6/22/87	1100		0				
			1110	11	5	05		ML	SILTY CLAY: Dark grayish brown (2.5Y 4/2), stiff, moist, fragments of diatomaceous siltstone.
			1120	8	10	10		ML	SILTY CLAY: Dark grayish brown (2.5Y 4/2), stiff, moist, siltstone fragments.
			1230	8	15	15		CL	SILTY CLAY: With fine to medium sand, black (2.5Y 3/1), soft, saturated.
			1245	2	20	20		CL	SILTY CLAY: With fine to medium sand, black (2.5Y 3/1), soft, saturated, occasional chert fragments, slightly rounded.
					25				

SURFACE ELEVATION (feet): 272.00
TOTAL DEPTH (feet): 63.00
DATE DRILLED: 6-22-87

LOGGED BY: H. Audell
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 7"
WATER ENCOUNTERED AT (feet): 12.00

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PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M48-A

PLATE B-23

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD	DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
					2	25		25		CL	SILTY CLAY: With fine to medium sand, bl (2.5Y 3/1), soft, saturated, occasional chert fragments.
					9	30		30		CL	SILTY CLAY: With fine to medium sand, black (2.5Y 3/1), soft, saturated, occasional chert fragments.
				1340	47	35		35		CL	M-CL GRAVEL: In clay matrix, black (2.5Y 3/1), firm, saturated, gravel consists of chert fragments up to 1 1/2" diameter, with silty clay matrix infill.
					80	40		40		GC	GRAVEL: In clay matrix, black (2.5Y 3/1), firm, saturated, gravel consists of chert very siliceous siltstone, hard, fractured
						45		45		GC	GRAVEL: With clay, black (2.5Y 3/1), dense, saturated, gravel consists of very hard chert or siliceous siltstone, highly fractured.
					50/3	50		50		GW	SILICEOUS SILTSTONE: Grayish brown (2.5Y 5/2), very hard, fractured, fractures filled with dark brown clayey material.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M48-A

PLATE B-23

PAGE 2

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD — DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			53	55	55			CHERT AND CLAYEY SILTSTONE: Interbedded Chert: Black, very hard, fractured; Clayey Siltstone: Dark brown, stiff, locally asphaltic, strong petroleum or tar odor.
			50/6	60	60			CHERT AND CLAYEY SILTSTONE: Interbedded Chert: Black, very hard, fractured; Clayey Siltstone: Dark brown, stiff, strong asphaltic odor.

KLEINFELDER

PROJECT NUMBER 50-1237-01 June 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M48-A

PLATE B-23

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
		1310		0				SM	ARTIFICIAL FILL SILTY SAND: With trace clay, dark brown (10YR), damp, medium dense (H=8-C), 30% silt - 60% sand - 5% clay - 5% clasts, fine to medium grained sand, with occasional coarse grained sand, slightly mottled with medium brown silty sand, clasts - up to 1/2" diameter, angular, diatomaceous siltstone, silic siltstone and claystone rock fragments.
		1315	24	5				CL	DIATOMACEOUS CLAYEY SILT: With trace clasts, light to medium brown (10YR), moist, firm (H=8), 20% clay - 75% silt - 5% clasts, low plasticity (CL), very mottled with very dark brown clayey silt and diatomaceous clayey siltstone, clasts - up to 1" diameter, angular - diatomaceous siltstone, silic siltstone and claystone rock fragments.
		1325	20	10				CL	DIATOMACEOUS CLAYEY SILT: With trace clasts, becoming very mottled with black silty clay, slight increase in moisture, becoming moist to very moist.
		1335	25	15				CL	DIATOMACEOUS CLAYEY SILT: With trace clasts, becoming very light brown (10YR), moist to very moist, firm to stiff (H=C), slightly mottled with medium brown diatomaceous clayey siltstone and claystone, low plasticity, clasts - up to 1" diameter - average, silic siltstone and diatomaceous siltstone rock fragments.
		1350	46/6	20				CL	DIATOMACEOUS CLAYEY SILT: With trace clasts, becoming medium to dark brown, slightly mottled with medium brown silty sand, fine to medium grained, no clasts.
								SM	SILTY SAND: Medium brown, very moist, medium dense (H=8), 20% silt - 80% sand, fine to medium grained, no clasts.
				25					

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 61.00
DATE DRILLED: 7-11-87

LOGGED BY: H Audell, RG
SUPERVISED BY: B. Villalobos
DIAMETER of BORING: 6"
WATER ENCOUNTERED AT (feet): 40.00

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PROJECT NUMBER 50-1237-01 July 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M49-A

FIGURE B-24

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY	CHEMICAL ANALYSES FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
			1405	14	25			CL	DIATOMACEOUS CLAYEY SILT: With little clasts, becoming light to medium brown, moist to very moist, slight decrease in density, becoming firm (H-8-C), 20% clay - 70% silt - 10% clasts, mottled with dark brown, diatomaceous clayey silt and claystone, clasts - up to 1 1/2" diameter - average, diatomaceous siltstone, silic siltstone and claystone rock fragments.
			1417	27	30			CL	DIATOMACEOUS CLAYEY SILT: With trace clasts, 1 sample recovery, becoming medium brown, moist to very moist, stiff (H-C), mottled with medium and dark brown diatomaceous clayey silt, low plasticity, clasts, slight decrease - up to 1 1/2" diameter - average, silic siltstone and diatomaceous siltstone rock fragments.
			1435	16	35			CL	CLAYEY SILT: With trace clasts, medium to dark gray, very moist, firm (H-8), 25% clay - 70% silt - 5% clasts, very mottled with medium brown diatomaceous clayey silt, low plasticity, clasts - up to 1/2" diameter - average, diatomaceous siltstone and claystone rock fragments.
		8/12/87	1445	19	40 ▽			ML	DIATOMACEOUS SILT: With trace clasts, light to medium brown, very moist, firm (H-8), 20% clay - 75% silt - 5% clasts, low plasticity, very mottled with medium brown diatomaceous clayey silt, clasts - up 1/2" diameter - average, diatomaceous siltstone, diatomite and claystone rock fragments.
			0925						
			0900	16	45			CL	DIATOMACEOUS CLAYEY SILT: With some clasts, becoming light gray green, light green gray, light brown, white and light gray, very moist to wet, firm (H-8), abundant diatomite, 25% clay - 60% silt, fine to medium grained sand with occasional coarse grained sand, low to medium plasticity, clasts - up to 1" diameter angular - abundant diatomite, occasional silic siltstone and diatomaceous siltstone rock fragments, possible mine tailing deposits.
			0945	14	50				DIATOMACEOUS CLAYEY SILT: With little clasts, becoming light to medium brown, wet, soft (H-A-8), very mottled with dark gray brown diatomaceous clayey silt, abundant
			1000						

KLEINFELDER

PROJECT NUMBER 50-1237-01 July 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates.

LOG of BORING M49-A

FIGURE B-24

WELL CONSTRUCTION	CHEMICAL ANALYSES LABORATORY / FIELD DATE	TIME	BLOW COUNT	DEPTH (feet)	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
								diatomite, clasts - up to 1/2" diameter angular, diatomaceous siltstone, silic siltstone and claystone rock fragments, possible mine tailings, bedrock (Valmonte Dist) in sample tip.
		1012	13	55				BEDROCK - MONTEREY FM (VALMONTE MEM)
								DIATOMACEOUS SILTSTONE: Occasional interbedded with Diatomite, white to very light brown (10YR), very moist to wet, soft (H-B), very thinly bedded to laminated, diatomite up to 1/2" thick, slightly to medium fissle, gentle bedding angle (15 - 10 degrees), extremely fractured, extremely close fracture spacing, wet fracture surfaces, many fractures stained with orange brown iron oxides, closed to very narrow fracture separation, smooth to slightly rough fracture surfaces, occasional clean fractures, subordinate fracture set parallel to bedding, cleaves easily along bedding, slightly orange brown iron staining on bedding plane surfaces, moderately weathered, non indurated.
		1030	20	60				DIATOMACEOUS SILTSTONE: Becoming saturated, very soft (H-A), extremely fractured, wet fracture surfaces, many fractures stained with orange brown iron oxides, closed to very narrow fracture separation, moderately weathered, non indurated.
				65				
				70				
				75				
				80				

KLEINFELDER

PROJECT NUMBER 50-1237-01 July 1988

L.A. County Sanitation District
25704 Hawthorne Blvd., Rolling Hills Estates,

LOG of BORING M49-A

FIGURE B-24

PAGE

pH	Conductivity	Temperature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Blows/ Foot *	Depth (feet)
7.34	2700	ND	167.2	80	70	10
7.40	2500	ND	164.1	78	49	20

Equipment: 6" Hollow Auger
Logged By: E. Hilmer
Elevation:**
Start Date: 10-5-87
Finish Date: 10-5-87

DARK BROWN GRAVELLY SILT(ML)
medium stiff, dry to moist, (fill)

MOTTLED BROWN TO LIGHT BROWN CLAYEY SILTSTONE
soft to firm, dry to moist, plastic to friable, highly weathered
cemented zone from 7' to 9', very hard, calcified?

BOTTOM OF BORING L-1 @ 20.5 FEET
No Free Water Encountered

ND = Not Determined

* Converted to equivalent standard penatration blow counts.

** Existing ground surface at time of drilling.

DONALD HERZOG & ASSOCIATES
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Job No: 15035.01.01.7
Geologist:
License No: 3947

PALOS VERDES L-1
PALOS VERDES
LOS ANGELES COUNTY SANITATION DISTRICT

PLATE
1 of 1

pH	Conductivity	Temperature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Blows/ Foot *	Depth (feet)
7.74	1000	21.9	146.0	18	51/ 6"	10
7.13	2300	21.5	146.0	72	99	20
5.45	5000	21.8	130.4	64	106	30
6.40	6900	21.4	172.9	2	96/ 6"	40

Equipment: 6" Hollow Auger
Logged By: E. Hilmer
Elevation:**
Start Date: 10-10-87
Finish Date: 10-10-87

BROWN CLAYEY SILT(ML)
stiff to very stiff, moist to wet, (disturbed)

BROWN MOTTLED AND STREAKED ORANGE CEMENTED SANDY SILTSTONE
hard, moderately strong, moderately weathered

BROWN AND LIGHT BROWN SILTSTONE
closely laminated, soft, friable, highly weathered

CEMENTED ZONE

CEMENTED ZONE

DARK BROWN CLAYEY SILTSTONE
soft, wet, plastic, highly weathered, with randomly oriented cement veins

▽ Water Level 10-10-87

BOTTOM OF BORING L-2 @ 40.3 FEET

* Converted to equivalent standard penetration blow counts.

** Existing ground surface at time of drilling.

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License No: 3947

PALOS VERDES L-2
PALOS VERDES
LOS ANGELES COUNTY SANITATION DISTRICT

PLATE
1 of 1

pH	Conductivity	Temperature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Depth (feet)
					2
					4
					6
					8
					10
					12
					14
					16
					18
					20
					22
					24
					26
					28
					30
					32
					34
					36
					38
					40
					42
					44
					46
					48

Equipment: 3-7/8" Tricone
Logged By: E. Hilmer
Elevation:*
Start Date: 10-6-87
Finish Date: 10-6-87

BROWN SILT(ML)
stiff, dry, (in part fill)

DARK GRAY CLAYEY SILTSTONE
closely laminated, firm, friable, highly weathered, with lenses of silty Sandstone

becoming red brown and moderately weathered

DARK BROWN AND DARK GRAY CLAYEY

* Existing ground surface at time of drilling.

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PALOS VERDES NP-1

PALOS VERDES

LOS ANGELES COUNTY SANITATION DISTRICT

PLATE

pH	Conductivity	Temperature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Depth (feet)
					50
					52
					54
					56
					58
6.57	3100	ND	129.8	27	60
					62
					64
					66
					68
					70
					72
					74
					76
					78
7.10	850	ND	130.4	29	80
					82
					84
					86
					88
					90
					92
					94
					96

Equipment: 3-7/8" Tricone
Logged By: E. Hilmer
Elevation:*
Start Date: 10-6-87
Finish Date: 10-6-87

SILTSTONE AND SILTY CLAYSTONE
closely laminated, soft to firm, friable, moderately weathered, with very apparent hydrocarbon odor

* Existing ground surface at time of drilling.

pH	Conductivity	Temperature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Depth (feet)
7.37	500	ND	141.0	15	100

Equipment: 3-7/8" Tricone
Logged By: E. Hilmer
Elevation:*
Start Date: 10-6-87
Finish Date: 10-6-87

BOTTOM OF NEUTRON PROBE 1 @ 101.5 FEET
No Free Water Encountered

ND = Not Determined

* Existing ground surface at time of drilling.

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PALOS VERDES NP-1

PALOS VERDES

LOS ANGELES COUNTY SANITATION DISTRICT

PLATE

pH	Conductivity	Temperature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Blows/Foot *	Depth (feet)
7.32	2700	21.8	160.4	9	22	10
7.39	1410	21.6	162.2	10	82	20
7.44	7600	21.7	156.0	12	22	30
					87	40
IS	IS	IS	164.1	IS	22	46

Equipment: 6" Hollow Auger
Logged By: E. Hilmer
Elevation:**
Start Date: 10-9-87
Finish Date: 10-9-87

BROWN SILT TO BROWN SILTY CLAY AND CLAYEY SILT(ML/CL)
very stiff, moist, (locally wet)

abundant to scattered gravel from +/- 18'

BROWN SILTY GRAVEL(GM)
medium dense, saturated

BOTTOM OF BORING L-3 @ 46 FEET
No Free Water Encountered
IS = Insufficient Sample

* Converted to equivalent standard penatration blow counts.

** Existing ground surface at time of drilling.

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PALOS VERDES L-3
PALOS VERDES
LOS ANGELES COUNTY SANITATION DISTRICT

PLATE
1 of 1

pH	Conductivity	Temperature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Blows/Foot *	Depth (feet)
7.46	300	ND	152.3	74	122	10
7.47	310	ND	149.1	84	189 /10"	20
7.42	420	ND	127.3	80	160 /6"	30
7.50	390	ND	141.7	78	160 /6"	40

Equipment: 6" Hollow Auger
Logged By: E. Hilmer
Elevation:**
Start Date: 10-5-87
Finish Date: 10-5-87

ASPHALT CONCRETE OVER BASEROCK

DARK BROWN AND LIGHT BROWN-GRAY SILTSTONE
closely laminated, firm, friable, highly weathered

DARK GRAY SILTY CLAYSTONE
massive, firm, friable, moderately weathered, with thin lenses and/or pods of light gray Siltstone containing minor white cementation

* Converted to equivalent standard penatration blow counts.

** Existing ground surface at time of drilling.

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License No: 3947

PALOS VERDES L-4
PALOS VERDES
LOS ANGELES COUNTY SANITATION DISTRICT

PLATE

H	Cond-uctivity	Temp-erature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Blows/ Foot *	Depth (feet)	
.40	370	ND	138.5	74	96/ 6"	50	DARK GRAY SILTY CLAYSTONE massive, firm, friable, moderately weathered, with thin lenses and/or pods of light gray Siltstone containing minor white cementation
						52	
						54	
						56	
						58	
.56	440	ND	144.1	76	181	60	
						62	
						64	
						66	
						68	
'.56	440	ND	144.1	74	128 /6"	70	
						72	
						74	
						76	
						78	
'.82	270	ND	145.4	74	128 /6"	80	becoming blocky
						82	
						84	
						86	
						88	
7.56	120	ND	146.0	60	173 /11"	90	
						92	
						94	
						96	

Equipment: 6" Hollow Auger
Logged By: E. Hilmer
Elevation:**
Start Date: 10-5-87
Finish Date: 10-5-87

* Converted to equivalent standard penetration blow counts.

** Existing ground surface at time of drilling.

H	Cond-uctivity	Temp-erature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Blows/ Foot *	Depth (feet)
.55	320	ND	136.7	70	223	100

Equipment: 6" Hollow Auger
Logged By: E. Hilmer
Elevation:**
Start Date: 10-5-87
Finish Date: 10-5-87

BOTTOM OF BORING L-4 @ 100.5 FEET
No Free Water Encountered

ND = Not Determined

* Converted to equivalent standard penatration blow counts.

** Existing ground surface at time of drilling.

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PALOS VERDES L-4

PALOS VERDES

LOS ANGELES COUNTY SANITATION DISTRICT

PLATE

pH	Cond-uctivity	Temp-erature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Depth (feet)
					2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48

Equipment: 3-7/8" Tricone
Logged By: E. Hilmer
Elevation:*
Start Date: 10-9-87
Finish Date: 10-9-87

ASPHALT CONCRETE OVER BASEROCK

DARK BROWN AND LIGHT BROWN-GRAY SILTSTONE
closely laminated, firm, friable, highly weathered

DARK GRAY SILTY CLAYSTONE
massive, firm, friable, moderately weathered, with thin lenses and/or pods of light gray Siltstone containing minor white cementation

* Existing ground surface at time of drilling.

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Geologist: Eric E. Hilmer
License No: 3947

PALOS VERDES NP-3

PALOS VERDES

LOS ANGELES COUNTY SANITATION DISTRICT

PLATE

pH	Cond-uctivity	Temp-erature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Depth (feet)

Equipment: 3-7/8" Tricone
Logged By: E. Hilmer
Elevation:*
Start Date: 10-9-87
Finish Date: 10-9-87

50
52
54
56
58
60
62
64
66
68
70
72
74
76
78
80
82
84
86
88
90
92
94
96

DARK GRAY SILTY CLAYSTONE
massive, firm, friable, moderately weathered, with thin lenses and/or pods of light gray Siltstone containing minor white cementation

becoming blocky

* Existing ground surface at time of drilling.

pH	Cond-uctivity	Temp-erature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Depth (feet)
					100

Equipment: 3-7/8" Tricone
Logged By: E. Hilmer

Elevation:*
Start Date: 10-9-87
Finish Date: 10-9-87

BOTTOM OF NEUTRON PROBE 3 @ 100.5 FEET
No Free Water Encountered

* Existing ground surface at time of drilling.

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PALOS VERDES NP-3

PALOS VERDES

LOS ANGELES COUNTY SANITATION DISTRICT

PLATE

›H	Cond-uctivity	Temp-erature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Blows/ Foot *	Depth (feet)
7.58	1050	ND	141.0	19	25	10
5.33	1250	ND	131.7	28	43	20
5.33	1100	ND	145.4	34	91	30
6.81	1100	ND	144.8	58	70	40

Equipment: 6" Hollow Auger
Logged By: E. Hilmer
Elevation:**
Start Date: 10-7-87
Finish Date: 10-7-87

ASPHALT CONCRETE OVER BASEROCK

LIGHT BROWN CLAYSTONE
massive, soft, pliable, thouroughly weathered, wet, with red brown and white crystalized calcite veins

becoming brown

becoming dark brown
CEMENTED ZONE, very hard

becoming dark green

* Converted to equivalent standard penetration blow counts.

** Existing ground surface at time of drilling.

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PALOS VERDES L-5

PALOS VERDES

LOS ANGELES COUNTY SANITATION DISTRICT

PLATE

pH	Conductivity	Temperature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Blows/Foot *	Depth (feet)
6.96	1050	ND	143.5	32	115	50
						52
						54
						56
						58
7.13	750	ND	149.8	29	90	60
						62
						64
						66
						68
7.38	800	ND	163.5	32	77	70
						72
						74
						76
						78
7.62	650	ND	152.3	55	96	80
						82
						84
						86
						88
7.73	650	ND	156.0	48	173	90
						92
						94
						96

Equipment: 6" Hollow Auger
Logged By: E. Hilmer
Elevation:**
Start Date: 10-7-87
Finish Date: 10-7-87

apparent local saturated zones

▽ Water Level 10-7-87

local white cement veins and pods (apparent plant replacement)

* Converted to equivalent standard penatration blow counts.

** Existing ground surface at time of drilling.

pH	Cond-uctivity	Temp-erature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Blows/ Foot *	Depth (feet)
7.59	550	ND	153.5	46	173	100

Equipment: 6" Hollow Auger
Logged By: E. Hilmer
Elevation:**
Start Date: 10-7-87
Finish Date: 10-7-87

BOTTOM OF BORING L-5 @ 100.5 FEET

ND = Not Determined

* Converted to equivalent standard penatration blow counts.

** Existing ground surface at time of drilling.

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Geologist: Eric A. Hilmer
License No: 3947

PALOS VERDES L-5
PALOS VERDES
LOS ANGELES COUNTY SANITATION DISTRICT

PLATE 3 of 3

pH	Conductivity	Temperature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Depth (feet)

Equipment: 3-7/8" Tricone
Logged By: E. Hilmer
Elevation:*
Start Date: 10-7-87
Finish Date: 10-8-87

ASPHALT CONCRETE OVER BASEROCK (FILL)

LIGHT BROWN CLAYSTONE
with randomly oriented fractures/crystalized veins, massive, soft, plastic, thoroughly weathered, wet

becoming brown and highly weathered

becoming dark brown

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

* Existing ground surface at time of drilling.

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Geologist: Eric A. Hilmer
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PALOS VERDES NP-2

PALOS VERDES

LOS ANGELES COUNTY SANITATION DISTRICT

PLATE

pH	Cond-uctivity	Temp-erature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Depth (feet)
					50
					52
					54
					56
					58
					60
					62
					64
					66
					68
					70
					72
					74
					76
					78
					80
					82
					84
					86
					88
					90
					92
					94
					96

Equipment: 3-7/8" Tricone
Logged By: E. Hilmer

Elevation: *
Start Date: 10-7-87
Finish Date: 10-8-87

becoming moderately weathered

* Existing ground surface at time of drilling.

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PALOS VERDES NP-2
PALOS VERDES
LOS ANGELES COUNTY SANITATION DISTRICT

PLATE
2 of 3

pH	Conductivity	Temperature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Depth (feet)
					100
					102
					104
					106
					108
					110
					112
					114
					116
					118
					120
					122
					124
7.63	870	21.9	157.3	53	126

Equipment: 3-7/8" Tricone
Logged By: E. Hilmer
Elevation: *
Start Date: 10-7-87
Finish Date: 10-8-87

becoming firm, friable

BOTTOM OF NEUTRON PROBE 2 @ 127.6 FEET
No Free Water Encountered

* Existing ground surface at time of drilling.

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PALOS VERDES NP-2

PALOS VERDES

LOS ANGELES COUNTY SANITATION DISTRICT

PLATE 3 of 3

H	Cond-uctivity	Temp-erature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Blows/ Foot *	Depth (feet)
						2
						4
						6
						8
R	R	R	R	R	16/ 6"	10
						12
						14
						16
						18
R	R	R	R	R	64/ 6"	20
						22
						24
						26
						28
R	R	R	R	R	51	30
						32
						34
						36
						38
IS	IS	IS	154.1	IS	64/ 3"	40
						42
						44
						46
						48

Equipment: 6" Hollow Auger
Logged By: E. Hilmer
Elevation:**
Start Date: 10-9-87
Finish Date: 10-9-87

BROWN SANDY GRAVELLY SILT(ML)
medium stiff, dry to moist, (fill)

DARK GRAY CLAY
with abundant wood, occasional wire, wood, cloth, and other debris (fill)

* Converted to equivalent standard penatration blow counts.

** Existing ground surface at time of drilling.

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Geologist: Eric A. Hilmer
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PALOS VERDES L-6
PALOS VERDES
LOS ANGELES COUNTY SANITATION DISTRICT

PLATE
1 of 2

H	Cond-uctivity	Temp-erature (°C)	Bulk Density (pcf)	Matrix Potential (cb)	Blows/ Foot *	Depth (feet)
.73	1120	22.0	161.6	52	ND	50
						52
						54
						56
						58
.70	2650	21.7	171.0	52	ND	60
						62
						64
						66
						68
						70
						72
						74
.58	2180	21.5	148.5	26	ND	

Equipment: 6" Hollow Auger
Logged By: E. Hilmer
Elevation:**
Start Date: 10-9-87
Finish Date: 10-9-87

RED BROWN SILTY CLAYSTONE
massive, firm, friable, highly to moderately weathered

local viens of crystalization

color change to brown

BOTTOM OF BORING L-6 @ 75.5 FEET
No Free Water Encountered

ND = Not Determined
IS = Insufficient Sample
R = Refuse intersected analysis not possible

* Converted to equivalent standard penatration blow counts.

** Existing ground surface at time of drilling.

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PALOS VERDES L-6
PALOS VERDES
LOS ANGELES COUNTY SANITATION DISTRICT

PLATE 2 of 2