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Occidental Chemical Corporation

INFORMATION SUMMARY REPORT

APPENDIX - 1

**OVERBURDEN STRATIGRAPHIC AND
INSTRUMENTATION LOGS**

- OVERBURDEN WELLS
- OVERBURDEN BOREHOLES
- UTILITY BEDDING EXCAVATIONS

S-Area Remedial Program

**DRAFT
FOR REVIEW**

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MAY 31 1988



Occidental Chemical Corporation

INFORMATION SUMMARY REPORT

APPENDIX - 1

**OVERBURDEN STRATIGRAPHIC AND
INSTRUMENTATION LOGS**

- **OVERBURDEN WELLS**
- **OVERBURDEN BOREHOLES**
- **UTILITY BEDDING EXCAVATIONS**

S-Area Remedial Program

LIST OF OVERBURDEN WELLS

OW260-87
OW261-87
OW262-87
OW263-87
OW264-87
OW265-87
OW266-87
OW267-88
OW268-88
OW269-88
OW270-87
OW271-87
OW272-87
OW273-87
OW274-87
OW275-87
OW276-87
OW277-87
OW278-87
OW279-87
OW280-87
OW281-87
OW282-87
OW283-87
OW284-87
OW285-87
OW286-87
OW287-87
OW288-87
OW289-87
OW290-87
OW291-87
OW292-87
OW293-87
OW294-87

LIST OF OVERBURDEN BOREHOLES

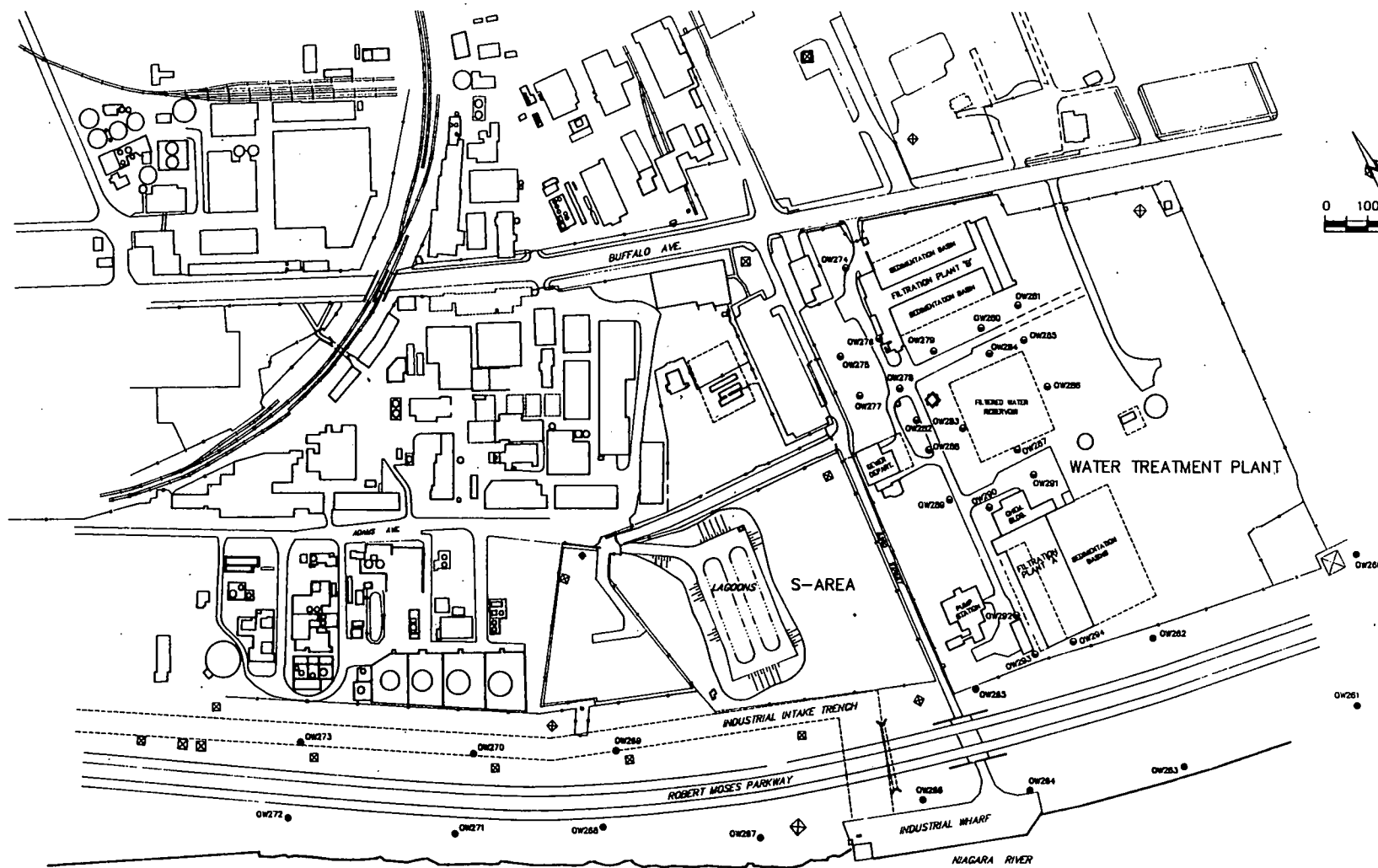
BH-100-87	BH-146-87	BH-192-88
BH-101-87	BH-147-87	BH-193-88
BH-102-87	BH-148-87	BH-194-88
BH-103-87	BH-149-87	BH-195-88
BH-104-87	BH-150-87	BH-196-88
BH-105-87	BH-151-87	BH-197-88
BH-106-87	BH-152-87	BH-198-88
BH-107-87	BH-153-87	BH-199-88
BH-108-87	BH-154-87	BH-200-88
BH-109-87	BH-155-87	BH-201-88
BH-110-87	BH-156-87	BH-202-88
BH-111-87	BH-157-87	BH-203-88
BH-112-87	BH-158-87	BH-204-88
BH-113-87	BH-159-87	BH-205-88
BH-114-87	BH-160-87	BH-206-88
BH-115-87	BH-161-87	BH-207-88
BH-116-87	BH-162-87	BH-208-88
BH-117-87	BH-163-87	BH-209-88
BH-118-87	BH-164-87	BH-210-88
BH-119-87	BH-165-87	BH-211-88
BH-120-87	BH-166-87	BH-212-88
BH-121-87	BH-167-87	BH-213-88
BH-122-87	BH-168-87	BH-214-88
BH-123-87	BH-169-87	BH-215-88
BH-124-87	BH-170-87	BH-216-88
BH-125-87	BH-171-87	BH-217-88
BH-126-87	BH-172-87	BH-218-88
BH-127-87	BH-173-87	BH-219-88
BH-128-87	BH-174-87	BH-220-88
BH-129-87	BH-175-87	BH-221-88
BH-130-87	BH-176-87	BH-222-88
BH-131-87	BH-177-87	BH-223-88
BH-132-87	BH-178-87	
BH-133-87	BH-179-87	
BH-134-87	BH-180-87	
BH-135-87	BH-181-87	
BH-136-87	BH-182-87	
BH-137-87	BH-183-87	
BH-138-87	BH-184-87	
BH-139-87	BH-185-87	
BH-140-87	BH-186-87	
BH-141-87	BH-187-87	
BH-142-87	BH-188-87	
BH-143-87	BH-189-88	
BH-144-87	BH-190-88	
BH-145-87	BH-191-88	

LIST OF UTILITY BEDDING EXCAVATIONS AND BORINGS

A-1
A-2
A-3
B-1
B-1A
B-2
B-2A
B-3
B-5
B-6
B-8
B-9
B-12
B-13
B-14
B-16
B-18
B-21
B-22
B-24
B-25
B-26
B-27
B-28
B-31
B-32
B-33
C-4A
C-4B

OVERBURDEN WELLS

OW260 - OW294



LEGEND

- S-Area Overburden Well Locations, OW260-OW273
- Water Treatment Plant Overburden Well Locations, OW274-OW294

OVERBURDEN WELL LOCATIONS
S-Area Remedial Program
Occidental Chemical Corporation

CRA

1769-20/05/88-35-D-0 (B-7)

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NEAR PARKWAY, SOUTH OF HYSEN PROPERTY

HOLE DESIGNATION: OW260-87

DATE COMPLETED: 6/10/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: D.C. MILLARD
B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION	567.80					
	GROUND ELEVATION	568.4					
	augered to 1.0 ft. BGS, no sample	567.4	<p>ROAD BOX</p> <p>CEMENT/BENTONITE GROUT</p> <p>BENTONITE SEAL</p> <p>7.5" BOREHOLE</p> <p>2.0" B.I. PIPE</p> <p>SAND PACK Q. ROC #1</p> <p>WELL SCREEN</p>	1SS			61
2.5	Fill - Red Brown Clayey Silt, Sandy, Gravel, some Sand lenses, dry	565.4		2SS			18
	Fill - Red Brown Silt with fine to coarse Gravel, dry	563.4		3SS			>100
5.0	Fill - Gray fine to coarse Gravel, dry	562.4					
7.5	augered through "shot rock" to 13.0 ft. BGS, no samples						
10.0							
12.5		555.4		4SS			9
15.0	Gray fine to medium Sand, some Silt, vegetation, trace fine Gravel, wet, native same, with some coarse Sand, trace White shell fragments, no vegetation	553.4		5SS			7
17.5	same, with trace coarse Gravel	551.4		6SS			12
20.0	same, with trace Silt lenses, no Gravel	549.4		7SS			2
22.5	same, except trace coarse Sand and coarse Gravel	547.4		8SS			7
25.0	Red Brown Clay and Silt, some fine Sand, wet, native same, except some Silt, no Sand	544.0	<p>SCREEN DETAILS: Screened Interval: 549.3 to 544.3 Length - 5 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 561.9 to 543.9</p>	9SS			14
		543.4		10SS			2
		542.4		11SS			>100
27.5	Red Brown Clay, Sand, and Silt, trace fine Gravel, wet, native, Till same, with angular rock fragments at spoon tip	541.4					
		540.1					
30.0	augered to 28.5 ft. BGS, no sample	539.9					
	END OF BOREHOLE AT 28.5 ft. BGS						
32.5	NOTE: At completion the initial borehole was grouted to ground surface. In an adjacent borehole (4.0 ft. southwest) a 2.0" ID observation well was installed to 24.5 ft. BGS						

NOTES:

- ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT
- DEC/EPA SAMPLE
- DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTHEAST OF WATER TREATMENT PLANT

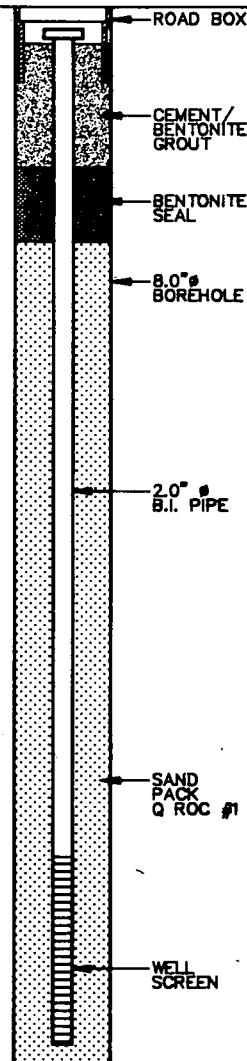
HOLE DESIGNATION: OW261-87

DATE COMPLETED: 6/15/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	569.10 569.6					
	augered to 1.0 ft. BGS, no sample						
	Fill - Brown Silt, some vegetation, trace Gravel, dry	568.6 568.1 567.7		1SS	×		>100
2.5	Fill - Gray angular Gravel, dry						
	augered through "shot rock" to 20.0 ft. BGS						
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0	Gray Silty fine Sand, wet, native	549.6		2SS	×		8
22.5				3SS	×		16
25.0	same, with some Gravel	544.0		4SS	×		25
27.5		541.8		5SS	×		12
30.0	Red Brown Silty Clay, trace Gravel, moist, low plastic, native, Till	539.6		6SS	×		38
	Red Brown and Gray Gravelly Sand, Silty, wet, nonplastic, native, Till	538.2 538.1		7SS	×		>100
32.5	augered to 31.5 ft. BGS, no sample						
	END OF BOREHOLE AT 31.5 FT. BGS NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (5.0 ft. west) a 2.0" ID observation well was installed to 28.5 ft. BGS						



SCREEN DETAILS:
 Screened Interval:
 546.8 to 541.8
 Length - 5 FT.
 Diameter - 2.0" ID
 Slot # 6
 Material - STAINLESS
 STEEL
 Sand Pack Interval:
 563.3 to 541.1

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NORTH OF PARKWAY, SOUTH OF WATERTOWER

HOLE DESIGNATION: OW262-87
(PAGE 1 of 2)

DATE COMPLETED: 6/12/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	574.32 574.5					
	augered to 1.0 ft. BGS, no sample	573.5	ROAD BOX				
2.5	Fill - Brown and Gray Gravelly Silt, dry	571.5	CEMENT/ BENTONITE GROUT	1SS	X		55
	Fill - Brown Silt, some Gravel and brick, trace Clay and Sand, moist	569.5		2SS	X		17
5.0	Fill - Black and Gray Silt and flyash, trace Sand, broken glass, moist	567.5		3SS	X		27
7.5	same, with Gravel and brick	565.6 564.9 564.6 564.4 563.5	8.0" BOREHOLE	4SS	X		39
10.0	Fill - mottled Brown and Red Brown Silty Clay, moist, plastic		BENTONITE SEAL	5SS	X		29
	Fill - Black cinder, moist			6SS	X		15
12.5	Fill - Black tar-like material		2.0" B.I. PIPE	7SS	X		2
	Fill - light Brown Silty Sand, trace concrete, moist			8SS	X		2
15.0	Fill - Brown, Black, White, and Red Silt, slag, cinder, some Gravel, concrete, wet	559.5		9SS	X		5
17.5	Fill - Black Silt, slag, cinders, wet, trace iridescent sheen, sewage odor	557.0		10SS	X		8
20.0	Brown Gray fine Sandy Silt, trace thin Sand seams, wet, native	555.5		11SS	X		6
22.5	Gray Silty fine Sand, wet, native		SAND PACK Q ROC #1	12SS	X		13
25.0				13SS	X		1
27.5	same, except fine to medium Sand, shell fragments	547.5		14SS	X		9
30.0	same, except trace Gravel	545.5		15SS	X		15
32.5	Red Brown Clayey Silt, wet, slightly dilatant, native, Till	542.1 541.5	WELL SCREEN	16SS	X		18
	Red Brown Sandy Silt, trace Clay and Gravel, wet, native, Till	540.5 540.3		17SS	X		100
	augered to 34.2 ft. BGS, no sample						
	END OF BOREHOLE AT 34.2 FT. BGS						

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NORTH OF PARKWAY, SOUTH OF WATERTOWER

HOLE DESIGNATION: OW262-87
(PAGE 2 of 2)

DATE COMPLETED: 6/12/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	NOTE : At completion the initial borehole wa grouted to ground surface. In an adjacent borehole (5.0 ft. east) a 2.0" ID observation well was installed to 32.4 ft. BGS		SCREEN DETAILS: Screened Interval: 547.1 tp 542.1 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material- STAINLESS STEEL Sand Pack Interval: 563.7 to 542.1				
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTHWEST OF PARKWAY, ADJACENT TO OW202.

HOLE DESIGNATION: OW263-87

DATE COMPLETED: 6/17/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	570.54 571.0					
2.5	augered through "shot rock" to 18.0 ft. BGS						
5.0							
7.5							
10.0							
12.5							
15.0							
17.5	Fill - Black Gray Silty fine to medium Sand, wet same, with trace wood	553.0					
20.0	Black Gray Silty fine Sand, wet, native	551.5 551.0					
22.5	Black Gray Silty fine to medium laminated Sand, trace White shell fragments, wet, native	549.5 549.0					
25.0	Gray Black Silty medium to coarse Sand, wet, native same, with fine Gravel	547.5 545.2 545.0					
27.5	same, except rounded fine to medium Gravel	545.0					
30.0	same, except coarse Sand; trace layers of fine Gravel						
32.5	END OF BOREHOLE AT 26.0 FT. BGS						
	At completion a 2.0" ID observation well was installed						
	Note: Stratigraphy for 0.0-26.0 ft. taken from OW202-87						
			<p>SCREEN DETAILS: Screened Interval: 545.0' to 540.0' Length - 5 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 562.7' to 545.0'</p>				

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT

■ DEC/EPA SAMPLE



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTH OF PARKWAY, AT PUBLIC DOCK

HOLE DESIGNATION: OW264-87
(PAGE 1 of 2)

DATE COMPLETED: 4/30/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	568.21 568.4					
2.5	Fill - dark Brown to Gray Silty Gravel, some Clay and Sand, trace vegetation, dry to moist same, except no vegetation	566.4 566.0	<p>ROAD BOX</p> <p>2.0" B.I. PIPE</p> <p>CEMENT/BENTONITE GROUT</p> <p>BENTONITE SEAL</p> <p>7.5" BOREHOLE</p> <p>SAND PACK @ 547.2</p> <p>WELL SCREEN</p> <p>SCREEN DETAILS: Screened Interval: 562.4 to 547.4 Length - 15.0 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 562.9 to 547.4</p>	1SS			42
	augered through "shot rock" to 8.0 ft. BGS			2SS			>100
5.0							
7.5		560.4					
10.0	Fill - Gray to Brown Gray fine to medium Sandy Gravel, trace Silt, wet, slight chemical odor	558.9		3SS			188
	augered through "shot rock" to 12.5 ft. BGS						
12.5	Fill - Gray and dark Gray Silty Gravel, trace Sand, wet	555.9		4SS			54
15.0	Fill - Black Gravelly Silt, Sandy, wet, iridescent sheen	553.9		5SS			5
17.5	Black and dark Gray laminated Silty fine Sand, trace shell fragments, wet, iridescent sheen, native	551.9 550.4		6SS			12
20.0	Gray and dark Gray fine Sand, some Silt, trace Clayey Silt lenses wet, native same, with trace shell fragments	548.4 547.9 547.2		7SS			17
22.5	Dark Gray Silty fine Sand, some fine to medium Gravel, trace shell fragments, wet, native	545.8		8SS			31
	Red Brown Sand, Silt, and Clay, some Gravel, moist to wet, native, Till	544.4 543.8		9SS			>100
25.0	augered to 24.0 ft. BGS, no sample			10SS			110
	Red Brown Silty Gravel, Sandy, trace Clay, wet, native, Till			11SS			161
27.5	Red Brown Sand, Silt, and Clay, some Gravel, moist to wet, native, Till	540.4		12SS			>100
30.0	no split spoon advancement, augered to 30.0 ft. BGS, no sample	538.4 538.0		13SS			55
	Red Brown Sand, Silt, and Clay, some Gravel, moist to wet, native, Till			14SS			>100
32.5	Gray Brown to Gray Silt, some fine Sand and Gravel, trace Clay, moist, native, Till	536.1					
	AUGER REFUSAL AND END OF BOREHOLE AT 32.3 FT. BGS						

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTH OF PARKWAY, AT PUBLIC DOCK

HOLE DESIGNATION: OW264-87
(PAGE 2 of 2)

DATE COMPLETED: 4/30/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	NOTE: At completion the initial borehole was grouted to ground surface. In an adjacent borehole (3.0 ft. east) a 2.0" ID observation well was installed to 21.0 ft. BGS						
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTH OF PUMP STATION, NORTH OF PARKWAY

HOLE DESIGNATION: OW265-87
(PAGE 1 of 2)

DATE COMPLETED: 4/24/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	574.02 574.5					
2.5	Fill - dark Brown and Brown Silt and Clay, some Gravel and fine Sand, trace vegetation, moist Fill - Gray angular to rounded Gravel and Red Brown Sand, some Silt, dry to moist augered through "shot rock" to 4.0 ft. BGS	573.7 573.1 570.5		1SS	X		>100
5.0	Fill - Brown and Red Brown Silty fine Sand, subangular to rounded Gravel, moist Fill - Red Brown and Brown Gray laminated Silty Clay and Gray Silty fine Sand, some Gravel, moist to wet	569.6 568.5		2SS	X		12
7.5	Fill - Red Brown fine Sand, some Silt and Clay, angular to subangular Gravel, moist to wet	568.0		3SS	X		40
10.0	Fill - dark Brown and Brown Gray Silty Clay, trace flyash, cinders, glass, moist Fill - Brown Gray and Orange Brown flyash and Gravel, wet	564.3 562.5		4SS	X		18
12.5	Fill - Brown Silt, flyash, trace cinders and fine Sand, wet Fill - Black cinders and Gravel, wet	562.1		5SS	X		17
15.0				6SS	X		4
17.5				7SS	X		6
20.0	Dark Gray Silty fine Sand, trace vegetation, wet, native	557.9		8SS	X		8
22.5				9SS	X		15
25.0	Dark Gray and Gray fine Sandy Silt, wet, native same, with trace fine rounded Gravel	550.5 548.5		10SS	X		5
27.5	same, except fine to medium Sand	546.5		11SS	X		4
30.0	Red Brown Clayey Silt, some fine Sand, trace fine to medium Gravel, wet, native, Till augered to 32.0 ft. BGS, no sample no recovery	544.7 542.6 542.5		12SS	X		3
32.5	Red Brown fine to medium Sand, some Silt and Gravel, trace Clay, moist to wet, native, Till	540.5		13SS	X		15
				14SS	X		4
				15SS	X		22
				16SS	X		58
				17SS	X		64

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTH OF PUMP STATION, NORTH OF PARKWAY

HOLE DESIGNATION: OW265-87
(PAGE 2 of 2)

DATE COMPLETED: 4/24/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
	no recovery			16SS	X		58
35.0	Red Brown fine to medium Sand, some Silt and Gravel, trace Clay, moist to wet, native, Till	540.5	SCREEN DETAILS: Screened Interval: 549.6 to 544.6 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material- STAINLESS STEEL Sand Pack Interval: 565.1 to 544.3	17SS	X		64
	augered to 36.3 ft. BGS, no sample	538.8					
		538.2					
37.5	END OF BOREHOLE AT 36.3 ft. BGS						
40.0	NOTE: At completion the initial borehole was grouted to ground surface. In an adjacent borehole (2.0 ft. east) a 2.0" ID observation well was installed to 30.2 ft. BGS						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

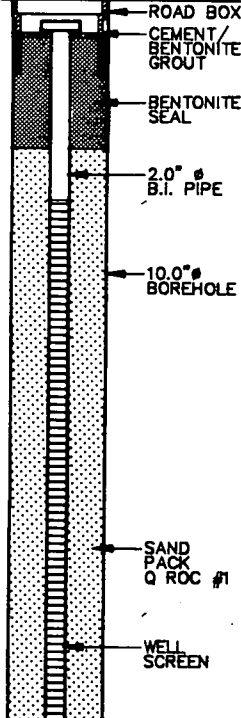
LOCATION: NORTH SIDE OF PUBLIC DOCK

HOLE DESIGNATION: OW266-88

DATE COMPLETED: 3/22/88

DRILLING METHOD: HSA 10.0" OD

CRA SUPERVISOR: D.L. TARNOWSKI

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	568.10 568.2					
2.5	Fill - Brown and Red Brown fine Sandy Silt, Gray angular gravel, trace vegetation, moist						
	no recovery	564.2					
5.0	augered to 5.0 ft. BGS, no sample	563.9 563.2					
	Fill - Gray angular gravel, wet same, with trace brick	561.2					
7.5							
	Fill - coarse angular Gravel, wet	559.2					
10.0	same, with some Sand	557.2					
12.5	same, with some Yellow Brown medium to coarse Sand, wet, slight fuel oil odor	555.2					
15.0							
17.5	Dark Gray Silty fine Sand, trace rounded fine Gravel, wet, native	550.7					
20.0	Red Brown Silty fine Sand, Clayey, some subrounded fine Gravel, moist to wet, native Till	549.2 548.8					
22.5	END OF BOREHOLE AT 19.4 ft. BGS At completion a 2.0" ID observation well was installed		<p>SCREEN DETAILS: Screened Interval: 559.1 to 573.1 Length - 14 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL</p>				
25.0	NOTE: Stratigraphy for 0.0-19.4 ft. taken from OW203-87.						
27.5							
30.0							
32.5							

NOTES:



SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



DEC/EPA SAMPLE



DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

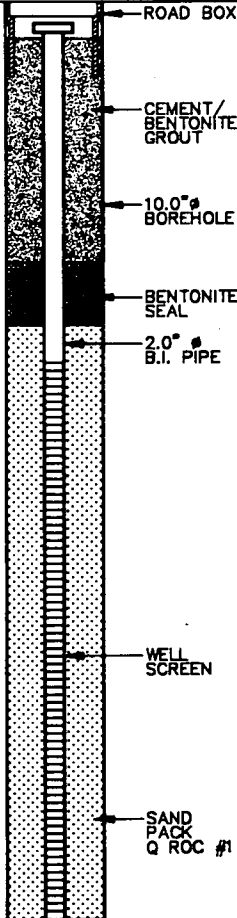
LOCATION: SOUTH OF PARKWAY, ADJECENT TO OW204-87

HOLE DESIGNATION: OW267-88

DATE COMPLETED: 3/22/88

DRILLING METHOD: HSA 10.0" OD

CRA SUPERVISOR: D.L. TARNOWSKI

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	571.78 571.9					
2.5	Fill - Red Brown Silty fine Sand, trace vegetation and Gravel, moist augered to 5.0 ft. BGS, no sample	570.4					
5.0	Fill - Brown and Gray Brown mottled fine Sandy Silt, trace Clay and Gravel, moist	566.9 564.2					
7.5	augered to 9.5 ft. BGS, no sample	562.4					
10.0	Fill - Red Brown to Gray angular Gravel, wet						
12.5							
15.0		556.4 556.1					
17.5	Fill - Gray Brown medium to coarse Sand, trace shell fragments, wet Fill - Gray coarse Gravel, wet augered to 18.0 ft. BGS, no sample Fill - Gray and Gray Brown coarse Gravel, wet	554.4 553.9					
20.0	Fill - Gray Brown Silty coarse Sand, Gravelly, wet	551.9 550.9					
22.5	Gray Silty fine Sand, wet, chemical odor, native Gray fine Sand and Silt, wet, chemical odor, native	549.9					
25.0	END OF BOREHOLE AT 24.7 FT. BGS	547.2					
27.5	NOTE: Stratigraphy for OW267-88 taken from OW204-87 At completion of OW267-88 (11.0 ft. west of OW204-87) a 2.0" ID observation well was installed to 24.7 ft. BGS						
30.0							
32.5							

SCREEN DETAILS:
 Screened Interval:
 562.2 to 547.2
 Length - 15 FT.
 Diameter - 2.0" ID
 Slot # 6
 Material - STAINLESS STEEL
 Sand Pack Interval:
 563.2 to 547.2

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT
 ○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT
 ■ DEC/EPA SAMPLE
 ● DEC/EPA SPLIT

▽ WATER FOUND
 ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTH OF PARKWAY, ADJACENT TO OW205-87

HOLE DESIGNATION: OW268-88
(PAGE 1 of 2)

DATE COMPLETED: 3/10/88

DRILLING METHOD: HSA 10.0" OD

CRA SUPERVISOR: D.C. MILLARD
K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION	578.24					
	GROUND ELEVATION	578.5					
	Fill - Brown and Red Brown mottled Silty Clay, trace vegetation, moist	578.0					
	Fill - Gray Sandy Gravel, Silty, dry	577.7					
2.5	Fill - Red Brown Silty Sand, Gravelly, dry to moist						
	Fill - Gray Brown and dark Brown mottled Silty Clay, moist	574.4					
5.0	same, except Red Brown and Gray, some fine to coarse Sand, moist	574.1					
	Fill - Red Brown Clayey Silt, Sandy, fine to medium angular Gravel, moist	573.7					
7.5		572.6					
	Fill - dark Gray medium to coarse Sand, trace Silt and Clay nodules, wet	571.4					
10.0	Fill - Red Brown, Brown, and Gray Silty Clay, some fine to medium Gravel, some Silty Sand and Sandy Silt lenses, moist to wet	571.4					
12.5	Fill - Red Brown Silty Clay, trace Sand nodules, wet	570.5					
	Fill - Red Brown, Brown, and Red Gray mottled Silty Clay, trace fine Gravel and Sand	566.5					
15.0	Fill - Red Brown and Gray Silty Clay, fine to medium subangular to angular Gravel, fine to medium Sand, wet, slight chemical odor	564.5					
	same, except no odor	564.1					
17.5	Fill - Gray and Brown Gray Sandy angular Gravel, trace Silt, moist	562.7					
20.0	augered through "shot rock" to 20.0 ft. BGS	558.5					
	Fill - dark Gray Sandy angular to subangular Gravel, wet						
	augered through to 24.0 ft., no sample						
22.5	Black to Gray laminated Silty Clay, Clayey Silt, Silty Sand, and Sandy Silt, wet, chemical odor, native	555.5					
	same, with iridescent sheen	554.5					
25.0	same, with trace shell fragments	553.7					
	Black and dark Gray mottled fine Sandy Silt to Silty fine Sand, trace fine Gravel and shell fragments, wet, chemical odor, native	552.5					
27.5	Black Sandy fine to medium subangular Gravel, trace Silt, wet, chemical odor, native	550.5					
30.0	Dark Gray fine to medium Sand, trace Silt, shell fragments, wet, chemical odor, native	548.5					
	Dark Gray medium Gravelly fine to medium Sand, wet, native	548.0					
32.5	Red Brown Sandy Silt, Clayey, fine to medium Gravel, trace Sand and Silty Clay seams, wet to moist, native, Till	546.5					
		546.0					
	END OF BOREHOLE AT 34.0 FT. BGS	544.5					

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

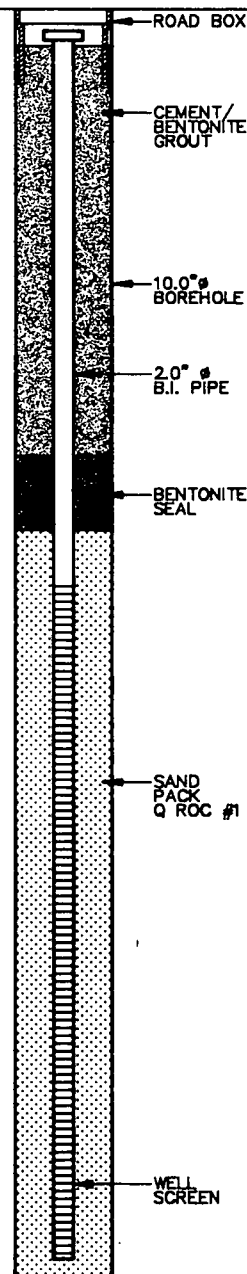
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

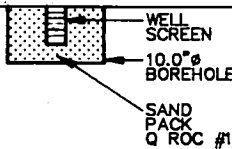
LOCATION: SOUTH OF PARKWAY, ADJACENT TO OW205-87

HOLE DESIGNATION: OW268-88
(PAGE 2 of 2)

DATE COMPLETED: 3/10/88

DRILLING METHOD: HSA 10.0" OD

CRA SUPERVISOR: D.C. MILLARD
K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
35.0	Red Brown Sandy Silt, Clayey, fine to medium Gravel, trace Sand and Silty Clay seams, wet to moist, native, Till	544.5	 <p>WELL SCREEN 10.0" Ø BOREHOLE SAND PACK Q ROC #1</p>				
37.5	END OF BOREHOLE AT 34.0 FT. BGS						
40.0	Note: Stratigraphy for OW268-88 taken from OW205-87. At completion of OW268-88 (11.0 ft. west of OW205-87) a 2.0" ID observation well was installed to 34.0 ft. BGS.		<p>SCREEN DETAILS: Screened Interval: 552.2 to 534.2 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 554.2 to 534.2</p>				
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT
■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NORTH OF PARKWAY, SOUTH OF S-AREA

HOLE DESIGNATION: OW269-87
(PAGE 1 of 2)

DATE COMPLETED: 10/13/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	573.12 573.0					
1.5	Fill - dark Brown and Brown Clayey Silt, trace fine Sand, fine Gravel, moist			1SS			16
3.0	Fill - dark Brown, Black, and Orange fine Sandy Silt, trace Clay, fine Gravel, moist, slight chemical odor	571.0		2SS			23
4.5	Fill - dark Brown, Red Brown, and Gray Clayey Silt, trace fine Sand, fine Gravel, moist	569.0		3SS			8
6.0	Fill - Red Brown and Black Silty Clay, Sandy, trace fine Gravel, moist, slight chemical odor	567.0		4SS			5
7.5	same, with fine Sandy Silt nodules, chemical odor	565.0		5SS			12
9.0	Fill - dark Brown and Brown Silty medium to coarse Sand, fine Gravel, wet, slight chemical odor	563.0		6SS			6
10.5	Fill - Black Silty Clay, Sandy, trace fine Gravel, moist, slight chemical odor	562.6		7SS			6
12.0	Fill - dark Brown and Brown Silty fine to coarse Sand, trace fine Gravel, brick, wet, slight chemical odor same, except Black, moist to wet, moderate chemical odor	561.0 560.4		8SS			2
13.5	Fill - Brown Silty fine to coarse Sand, fine Gravel, moist to wet	559.0 558.9 558.5 558.2		9SS			7
15.0	Fill - Black and Brown fine Sandy Silt, trace fine Gravel, trace moist, trace iridescent sheen	557.0		10SS			7
16.5	Fill - Black Silty Clay, Sandy, moist	556.3		11SS			3
18.0	Fill - Black fine Sandy Silt, fine Gravel, moist to wet, iridescent sheen	555.0					
19.5	Fill - Black Clayey Silt, fine to medium Sand, fine Gravel, wet, iridescent sheen Fill - Black and Brown fine Sandy Silt, Clay nodules, trace wood, wet, dull Gray sheen Fill - Red Brown and Green Gray Silty Clay, trace fine Sand, moist Fill - Black fine Sandy Silt, trace coarse Gravel, wet, slight dull Gray sheen	553.0 552.6					

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

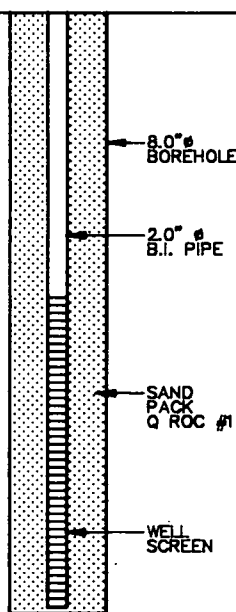
LOCATION: NORTH OF PARKWAY, SOUTH OF S-AREA

HOLE DESIGNATION: OW269-87
(PAGE 2 of 2)

DATE COMPLETED: 10/13/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
	Fill - Black and Brown fine Sandy Silt, Clay nodules, trace wood, wet, dull Gray sheen	553.0	 <p>8.0" Ø BOREHOLE</p> <p>2.0" Ø B.I. PIPE</p> <p>SAND PACK Q ROC #1</p> <p>WELL SCREEN</p> <p>SCREEN DETAILS: Screened Interval: 548.9 to 543.9 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 564.3 to 543.8</p>	10SS			7
	Fill - Red Brown and Green Gray Silty Clay, trace fine Sand, moist	552.6		11SS			3
21.0	Fill - Black fine Sandy Silt, trace coarse Gravel, wet, slight dull Gray sheen			12SS			3
22.5	same, except fine Gravel, no sheen	551.0		13SS			2
24.0	Fill - Gray and Black Silty fine to coarse Sand, fine Gravel, wet	549.0		14SS			>12
25.5				15SS			42
27.0	Fill - Black fine Gravelly fine to medium Sand, trace Silt, wet	546.3 546.0		16SS			74
	augered to 28.0 ft. BGS, no sample	545.0		17SS			>100
28.5	Fill - Black Silty fine to coarse Sand, fine Gravel, wet, chemical odor	543.8 543.7					
	Gray Brown laminated Silty Clay, moist, native						
30.0	Red Brown fine Sandy Silt, fine to medium rounded to subangular Gravel, moist, native, Till						
31.5	same, except Red Brown grading to Gray Brown	543.0					
33.0	augered to 33.2 ft. BGS, no sample	540.2 539.8					
	END OF BOREHOLE AT 33.2 FT. BGS						
34.5	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (3.0 ft. east) a 2.0" ID observation well was installed to 29.2 ft. BGS						
36.0							
37.5							
39.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NORTH OF PARKWAY, SOUTH OF N-AREA

HOLE DESIGNATION: OW270-87
(PAGE 1 of 2)

DATE COMPLETED: 10/16/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				N U M B E R	S T A T E	S T A T U S	N V A L U E
	REFERENCE ELEVATION GROUND ELEVATION	571.90 571.6					
1.5	Fill - Brown and Gray Brown Silty Clay, trace fine Sand, fine to medium Gravel, vegetation, moist			1SS			27
3.0	Fill - Gray Brown fine to medium Sandy Silt, fine to medium Gravel, trace Clay, moist	569.6		2SS			>50
	augered to 4.0 ft. BGS, no sample	568.6					
4.5	Fill - Black, Gray Brown, and Brown Silty Sand, trace fine Gravel, Clay, moist, slight chemical odor	567.6		3SS			>100
6.0	Fill - Brown, Gray Brown, Red Brown, and Yellow Clayey Silt, trace fine Sand, fine Gravel, moist, slight chemical odor	567.2		4SS			6
7.5	Fill - light Gray Silty fine Sand, moist, slight chemical odor	566.8		5SS			26
	augered to 6.0 ft. BGS, no sample	566.3		6SS			4
9.0	Fill - Brown, Gray Brown, Red Brown, and Black Clayey Silt, trace fine Sand, fine Gravel, moist, slight chemical odor same, except fine to medium Gravel, trace Black fibrous material	565.6		7SS			5
10.5	Fill - Gray Brown and Black Silty Clay, Sandy, trace fine Gravel, moist, trace oily sheen, slight chemical odor	563.6		8SS			3
12.0	same, except dark Gray, Black, and Red Brown, fine to medium Gravel, trace wood	561.6		9SS			4
13.5		559.6		10SS			WR
15.0	Fill - Black to Red Brown Silty Clay, Sandy, trace Silty Clay and Silty Sand lenses, trace fine Gravel, moist, slight chemical odor	557.6		11SS			2
16.5	same, except no Black and Silty Sand lenses, no Gravel	555.6					
18.0	same, except no Silty Clay lenses, trace Gravel	555.0					
19.5	Fill - dark Gray and Red Brown Silt and fine to medium Sand, Silty Clay, fine Gravel, wet, slight chemical odor	553.6					
	Fill - Brown Silty fine to medium Sand, wet, slight chemical odor	551.6					

NOTES: (1) SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

(2) GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

(3) GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

(4) DEC/EPA SAMPLE

(5) DEC/EPA SPLIT

(6) WATER FOUND

(7) STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NORTH OF PARKWAY, SOUTH OF N-AREA

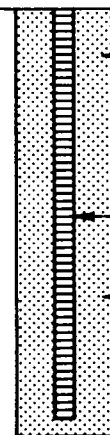
HOLE DESIGNATION: OW270-87
(PAGE 2 of 2)

DATE COMPLETED: 10/16/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
19.5				10SS			WR
21.0	Fill - Brown Silty fine to medium Sand, wet, slight chemical odor			11SS			2
22.5				12SS			6
24.0	Fill - Black Silty fine to medium Sand, wet, slight chemical odor	547.6 547.3		13SS			18
25.5	Fill - fine to medium Sandy medium to coarse angular Gravel, trace Silt, wet, slight chemical odor, dull sheen	545.6 545.2		14SS			100
27.0	Fill - Black fine to coarse Gravelly fine to coarse Sand, trace Silt, wet, slight chemical odor, dull sheen			15SS			98
28.5	Red Brown fine Sandy Silt, rounded to angular Gravel, wet to moist, native, Till same, except grading to fine Sand, some Silt, fine to medium rounded to angular Gravel	543.6					
30.0	augered to 29.8 ft. BGS, no sample	541.9 541.8					
31.5	END OF BOREHOLE AT 29.8 FT. BGS						
33.0	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (5.0 ft. west) a 2.0" ID observation well was installed to 26.4 ft. BGS						
34.5							
36.0							
37.5							
39.0							



SCREEN DETAILS:
Screened Interval:
564.5 to 545.5
Length -19.0 FT.
Diameter -2.0" ID
Slot # 6
Material- STAINLESS
STEEL
Sand Pack Interval:
566.0 to 545.3

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: OW271-87

PROJECT NO.: 1769

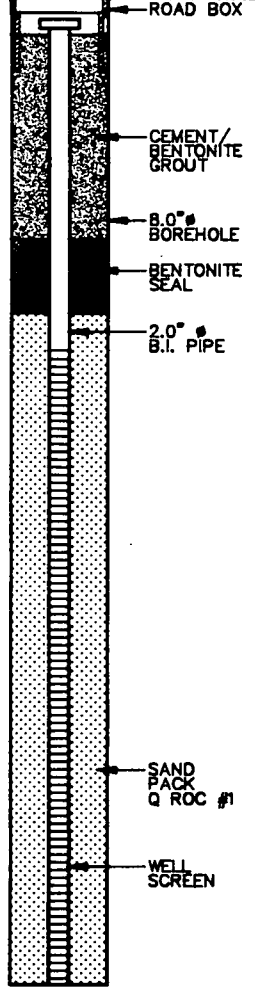
DATE COMPLETED: 6/23/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 8.0" OD

LOCATION: SOUTH OF PARKWAY, ADJACENT TO OW206-87

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	574.10 574.6					
2.5	Fill - Red Brown Silt, angular Gravel, moist same, except Silty Clay	572.6	 <p>SCREEN DETAILS: Screened Interval: 565.1 to 548.1 Length -17 FT. Diameter -2.0" ID Slot # 6 Material-STAINLESS STEEL Sand Pack Interval: 566.1 to 548.1</p>				
5.0	same, with some brick	570.6					
7.5	same, with Gray streaks, no brick	568.6					
10.0	same, with brick and coarse angular Gravel, no streaks	564.6					
12.5	augered through "shot rock" to 15.0 ft. BGS	563.6					
15.0	Fill - Red Brown Silty Clay, trace Gravel, moist	559.6					
17.5	Fill - Red Clay, moist	557.6					
20.0							
22.5	same, with Brown inclusions	552.0 551.6					
25.0	Gray Black Silty Sand, trace Gravel, wet, native	549.6 549.3					
27.5	Gray Black Sand, wet, native	548.1					
30.0	Red Brown Clayey Silt, Gravelly, wet, native, Till						
32.5	augered to 26.5 ft. BGS, no sample END OF BOREHOLE AT 26.5 FT. BGS Note : Stratigraphy for OW271-87 taken from OW206-87. At completion of OW271-87 (10.0 ft. southwest of OW206-87) a 2.0" ID observation well was installed to 26.5 ft. BGS.						

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT

■ DEC/EPA SAMPLE

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTH OF PARKWAY, 75.0' NORTH OF RIVER

HOLE DESIGNATION: OW272-87

DATE COMPLETED: 6/25/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	571.70 572.0					
2.5	augered to 1.0 ft. BGS, no sample Fill - Brown and Gray Sandy Silt, trace Gravel, vegetation, White shell-like material, moist augered through "shot rock" to 15.0 ft. BGS	571.0 570.5		1SS	×		>100
5.0							
7.5							
10.0							
12.5							
15.0	Fill - Brown and Gray Sandy subangular to angular Gravel, Silty, wet	557.0					
17.5	Fill - Gray and Brown coarse Sand, subangular to angular Gravel, wet	555.0		2SS	×		16
20.0	Sand, native, wet	551.3 551.2		3SS	×		8
22.5	augered to 25.0 ft BGS, no sample	549.5		4SS	×		35
25.0	Red Brown Silt, trace Clay, Gravel, and Sand wet, native, Till	547.0 546.1		5SS	×		>100
27.5	augered to 28.0 ft BGS, no samples		<p>SCREEN DETAILS: Screened Interval: 551.2' to 556.2' Length - 5 FT. Diameter - 2" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 562.6' to 551.2'</p>	6SS	×		>100
30.0	no split spoon advancement END OF BOREHOLE AT 28.0 ft. BGS Note: At completion the initial borehole was grouted to ground surface. In an adjacent borehole (5.0 ft. east) a 2.0" ID observation well was installed to 21.2 ft. BGS.	544.0		7SS			>100
32.5							

NOTES: (1) SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

(2) GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

(3) GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

(4) DEC/EPA SPLIT

(5) DEC/EPA SAMPLE

(6) WATER FOUND

(7) STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NORTH OF PARKWAY, SOUTH OF U-AREA

HOLE DESIGNATION: OW273-87
(PAGE 1 of 2)

DATE COMPLETED: 10/20/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	570.48 570.5					
1.5	Fill - dark Brown Silty Clay, fine Gravel, fine Sand, trace vegetation, moist augered to 2.0 ft. BGS, no sample	569.5		1SS	X		>60
3.0	Fill - dark Brown fine Sandy Silt, some Clay, trace fine to medium Gravel, moist augered to 4.0 ft. BGS, no sample	568.5 568.0		2SS	X		>50
4.5	Fill - dark Brown and Gray Brown Clayey Silt, trace fine Sand, fine to medium Gravel, moist	566.5		3SS			21
6.0	Fill - Gray Gravel, trace Silt, Clay, fine Sand, dry to moist	564.5 564.0		4SS			97
7.5	Fill - dark Brown and Black Silty Clay, Sandy, trace fine to medium Gravel, moist, slight chemical odor	562.5		5SS			WR
9.0	Fill - Black Clayey Silt, fine to medium Gravel, trace fine Sand, wet, slight chemical odor	560.5		6SS			2
10.5	Fill - Black and Red Brown fine Sandy Silt, trace Clay, fine to medium Gravel, wet, slight chemical odor	560.0 559.6		7SS			1
12.0	Fill - Black and Red Brown Clayey Silt, fine to coarse Gravel, trace fine Sand, wet, slight chemical odor	558.5		8SS			WH
13.5	Fill - Red Brown Silty Clay, trace fine Sand, fine to coarse Gravel, moist to wet, slight chemical odor	557.7		9SS			3
15.0	Fill - Black and Red Brown Silt and Clay, some fine to coarse Gravel, trace fine Sand, wet, slight chemical odor	556.5		10SS			8
16.5	Fill - Black fine to medium Gravel and slag, trace fine Sand, Clay, wet, iridescent sheen, slight chemical odor	554.5		11SS			11
18.0	Fill - Black Silty fine Sand, trace Clay, Gravel, glass, wet, iridescent sheen, slight chemical odor	552.5 552.0 551.7					
19.5	Fill - Black fine Sandy Silt, trace Gravel, wet, slight chemical odor same, except no Gravel, loose						
	Fill - Black and dark Gray Silty fine Sand, trace Gravel, wet, slight chemical odor						
	Red Brown Clayey Silt, trace fine Sand, fine to medium rounded to angular Gravel, moist, slight chemical odor, native, Till						

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NORTH OF PARKWAY, SOUTH OF U-AREA

HOLE DESIGNATION: OW273-87
(PAGE 2 of 2)

DATE COMPLETED: 10/20/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
19.5							
21.0	Red Brown Clayey Silt, trace fine Sand, fine to medium rounded to angular Gravel, moist, slight chemical odor, native, Till	548.5	SCREEN DETAILS: Screened Interval: 563.5 to 551.5 Length - 12.0 FT. Diameter - 2.0" ID Slot # 6 Material- STAINLESS STEEL Sand Pack Interval: 564.7 to 551.5	10SS			8
22.5	Red Brown Silty Clay, Sandy, trace fine to coarse rounded to angular Gravel, moist, native, Till			11SS			11
24.0	Red Brown fine Sandy Silt, trace Clay, fine to coarse rounded to angular Gravel, moist, native, Till	546.5		12SS			39
25.5				13SS			67
27.0	END OF BOREHOLE AT 26.7 FT. BGS	543.8		14SS			>100
28.5	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (4.0 ft. east) a 2.0" ID observation well was installed to 19.0 ft. BGS						
30.0							
31.5							
33.0							
34.5							
36.0							
37.5							
39.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

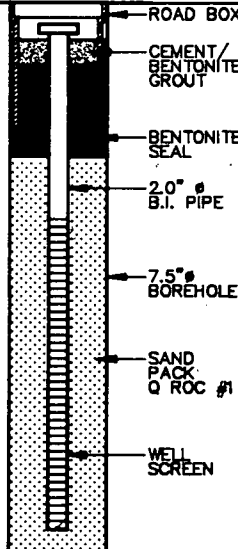
LOCATION: WATER TREATMENT PLANT, WEST OF B-PLANT

HOLE DESIGNATION: OW274-87
(PAGE 1 of 2)

DATE COMPLETED: 5/1/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	571.97 572.1					
1.5	Fill - Black Silty fine to medium Sand, trace fine Gravel, vegetation, dry	571.8		1SS			18
	Fill - Brown and dark Brown Clayey Silt, trace fine Sand, Gravel, vegetation, moist						
3.0	Fill - dark Brown Silty fine to coarse Sand, trace Gravel, vegetation, moist	570.1 569.8		2SS		①	11
4.5	Olive Brown to Brown Gray mottled Sand, Silt, and Clay, trace vegetation and shell fragments, moist, native	568.8 568.1		3SS		①	10
6.0	Brown and Brown Gray Clayey Silt, trace fine Sand, vegetation, moist, native	567.2		4SS		①	20
7.5	Brown and Brown Gray mottled Silt, some fine Sand and Clay, moist, native	565.2		5SS			24
9.0	Olive Gray, Brown Gray, and Gray mottled Silty fine Sand, trace Clay, moist, native	564.8		6SS			22
10.5	Olive Brown and Brown Silty Clay, thin Silty Sand lenses, moist, native	563.3		7SS			23
12.0	Brown, Brown Gray, and Red Brown laminated Silty Clay, thin Sandy Silt lenses, moist, native	562.1		8SS			4
13.5	Red Brown to Red Gray mottled Silty Clay, trace fine Gravel and thin Silt lenses, moist, native	560.1		9SS			4
15.0	same, except soft	558.1		10SS			2
16.5	same, except moist to wet	556.1		11SS			2
18.0	same, with trace Gravel	554.1					
19.5	same, with trace thin Silt seams	552.1					
	same, except grading to a Clayey Silt						

SCREEN DETAILS:
Screened Interval:
568.6 to 563.6
Length - 5.0 FT.
Diameter - 2.0" ID
Slot # 6
Material- STAINLESS
STEEL
Sand Pack Interval:
569.6 to 563.2

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, WEST OF B-PLANT

HOLE DESIGNATION: OW274-87
(PAGE 2 of 2)

DATE COMPLETED: 5/1/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
19.5							
21.0	same, except grading to a Clayey Silt	552.1		10SS			2
22.5	Red Gray Clayey Silt, trace fine Gravel and thin Sandy Silt lenses, moist to wet, native	550.1		11SS			2
24.0	Red Brown Sand, Silt, and Clay, some fine to medium Gravel, moist to wet, native, Till	548.1		12SS			2
25.5				13SS			WH
27.0				14SS			4
28.5	Red Brown fine to medium Sandy Silt, some fine to medium Gravel, trace Clay, moist, native, Till	543.7		15SS			60
30.0	same, except Red Brown and Gray	542.1		16SS			>100
31.5	Gray angular Gravel, wet, native.	541.8					
	augered to 32.0 ft. BGS, no sample	541.3					
	Gravel, wet, native	540.1		17SS			>100
	augered to 32.5 ft. BGS, no sample	539.9					
33.0	END OF BOREHOLE AT 32.5 FT. BGS	539.6					
34.5	NOTE: At completion the initial borehole was grouted to ground surface. In an adjacent borehole (2.0 ft. north) a 2.0" ID observation well was installed to 8.9 ft. BGS						
36.0							
37.5							
39.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: OW275-87

PROJECT NO.: 1769

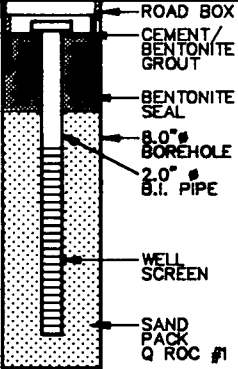
DATE COMPLETED: 6/10/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 8.0" OD

LOCATION: WATER TREATMENT PLANT, WEST OF 53rd,
NORTH OF ADAMS

CRA SUPERVISOR: K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	570.34 570.5					
2.5	augered through asphalt, Gray and Black Silty Sand, and angular Gravel to 2.0 ft. BGS, no sample	568.5	 <p>SCREEN DETAILS: Screened Interval: 566.5 to 561.5 Length - 5 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 567.5 to 560.5</p>	1SS			23
5.0	Fill - Red Brown, Gray, and Olive Green Silty Clay, Gravelly, moist	564.6 564.5		2SS			10
7.5	Fill - Gray and Black Silty Sand, vegetation, wood, cinders, moist	563.5		3SS		①	19
10.0	Fill - Gray, Black, and Olive Silty fine to medium Sand, wet			4SS			26
12.5	Red Brown, Gray, and Olive Green Silty Clay, moist, native			5SS			3
15.0	same, except wet	556.5		6SS			7
17.5	same, with trace Sand	554.5		7SS			2
20.0	same, except no Sand	552.5		8SS			3
22.5				9SS			WR
25.0				10SS			WR
27.5	Red Brown Sandy Clay, Silty, subrounded Gravel, wet, native, Till	543.0		11SS			WH
30.0	same, except subangular Gravel	542.5		12SS			1
32.5	Gray rock fragments			13SS			2
	augered to 32.0 ft. BGS, no sample			14SS			13
	END OF BOREHOLE AT 32.0 FT. BGS	539.0 538.6 538.5		15SS			24
	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (6.0 ft. east) a 2.0" ID observation well was installed to 9.9 ft. BGS						
	1SS to 3SS - A 3.0" split spoon was used						

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

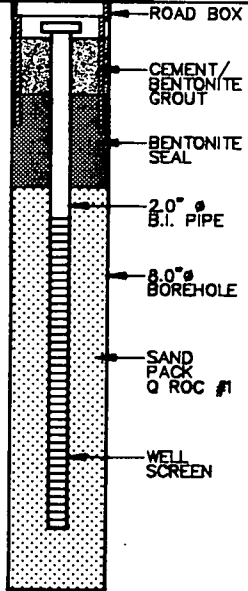
LOCATION: WATER TREATMENT PLANT, WEST OF B-PLANT

HOLE DESIGNATION: OW276-87
(PAGE 1 of 2)

DATE COMPLETED: 5/15/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	571.27 571.5					
1.5	Fill - Brown Silty Sand, vegetation, trace fine Gravel, dry	571.3 571.1		1SS			21
	Fill - Brown Sandy Silt						
	Fill - White and Gray flyash, cinders, coal, dry	569.5					
3.0	Fill - Brown Sandy Silt, coarse Gravel, ash, cinders, dry			2SS			9
	same, except moist	567.5					
4.5	same, except Gray Brown, wet	566.7 566.3					
	Fill - Yellow Brown Clayey Sandy Silt, Yellow Sand seams, wet	565.7		3SS	⊙		13
6.0	Fill - Gray Black Clayey Silt, wood, wet	565.5					
	Fill - Gray Green Sandy Silt, trace ash, wet	564.9					
7.5	Fill - Black Gray Clayey Silt, some Red Brown Clay, trace Sand, wet	563.7 563.5		4SS	⊙		18
	Red Brown and Green Black Silty Clay, moist to wet, native						
9.0	Gray Green and Red Brown laminated Silty Clay, dry, native		<p>SCREEN DETAILS: Screened Interval: 568.0 to 563.0 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 568.5 to 562.0</p>	5SS			23
	same, except moist to wet	561.5					
10.5				6SS			7
12.0							
13.5	same, except wet	557.5		7SS			10
15.0				8SS			3
16.5				9SS			
18.0							
19.5	same, except trace Silt seams and fine Gravel	552.7		10SS			WH
	Gray and Red Brown laminated Silty Clay, trace Silt seams, wet, native	551.5		11SS			WH

NOTES: ⊙ SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, WEST OF B-PLANT

HOLE DESIGNATION: OW276-87
(PAGE 2 of 2)

DATE COMPLETED: 5/15/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
19.5							
21.0	Gray and Red Brown laminated Silty Clay, trace Silt seams, wet, native	551.5		10SS			WH
22.5				11SS			WH
24.0				12SS			WH
25.5				13SS			WH
27.0	same, except trace Gravel, moist to wet	543.5		14SS			2
28.5				15SS			3
30.0				16SS			
31.5							
33.0	Red Brown Clayey Silt, some Sand and subangular Gravel, native, Till	542.5					
34.5	Red Brown Silty Sand, Gravel, trace Clay, moist to wet, native, Till	541.5					
36.0	Gray Sandy Silt, Gravel, trace Gray Clay, dry to moist, native, Till	540.7					
37.5	augered to 32.8 ft. BGS, no sample	539.7					
39.0	END OF BOREHOLE AT 32.8 FT. BGS	538.7					
	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (5.0 ft. south) a 2.0" ID observation well was installed to 9.5 ft. BGS						

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

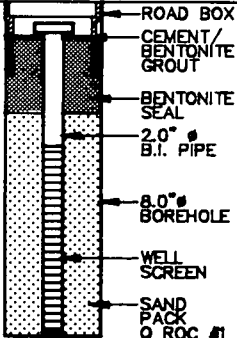
LOCATION: WATER TREATMENT PLANT

HOLE DESIGNATION: OW277-87
(PAGE 1 of 2)

DATE COMPLETED: 6/12/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				N U M B E R	S T A T E	S T A T U S	N V A L U E
	REFERENCE ELEVATION GROUND ELEVATION	569.84 570.2					
	augered through coarse Gravel to 2.0 ft. BGS		 <p>SCREEN DETAILS: Screened Interval: 566.3 to 561.3 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material- STAINLESS STEEL Sand Pack Interval: 567.2 to 561.2</p>				
2.5	Fill - Gray to Black Silty fine Sand, some Gray angular Gravel, moist to wet	568.2		1SS		⊙	10
5.0	Fill - Gray and White Silty fine to coarse Sand, non-plastic, wet	566.2		2SS		⊙	>50
	augered to 6.0 ft. BGS, no sample	565.0					
		564.2					
7.5	Fill - White, Gray, and Black Gravel and slag, wet			3SS			56
	Red Brown Silty Clay, wet, plastic, native	562.2		4SS			5
10.0	Red Brown and Green Gray Silty Clay, mottled, moist, native	560.2		5SS			4
12.5	same, without Green Gray mottling	558.0		6SS			4
15.0				7SS			WH
17.5				8SS			2
20.0				9SS			WH
22.5				10SS			WH
25.0				11SS			WH
27.5				12SS			WR
30.0	Red Brown Silty Clay with some Sand, wet, native	541.6 540.9		13SS			WH
	Red Brown Silty Clay, Sandy, Gray subangular Gravel, wet, native, Till			14SS			WH
32.5	augered to 32.5 ft. BGS, no sample	537.9 537.7		15SS			WH
	END OF BOREHOLE AT 32.5 FT. BGS			16SS			>50

NOTES: ⊙ SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

⊙ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT

HOLE DESIGNATION: OW277-87
(PAGE 2 of 2)

DATE COMPLETED: 6/12/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
35.0	Note: At completion the initial borehole was grouted to ground surface. In an adjacent borehole (6.0 ft. northwest) a 2.0" ID observation well was installed to 9.0 ft. BGS						
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, WEST OF UTILITY TUNNEL

HOLE DESIGNATION: OW278-87
(PAGE 1 of 2)

DATE COMPLETED: 5/8/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.J. OSCAR
D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION	570.24					
	GROUND ELEVATION	570.5					
	augered through asphalt to 0.5 ft. BGS	570.0		1SS			10
1.5	Fill - Brown Gray and Gray Sand, Gravel, dry						
		568.2		2SS			8
3.0	Fill - Red Brown and Gray Brown Silt, some Clay, trace fine Sand and fine Gravel, moist						
	same, except some Sand, fine to medium Gravel moist to wet	566.5					
4.5	Fill - Gray Brown Clay, some Silt, moist	566.2		3SS			4
	Fill - Black and Brown Gray Silty fine Sand, some Clay, trace Gravel, moist to wet	566.0					
6.0	Fill - Brown, Red Brown, and Gray Brown Silt Clay, trace fine Sand and fine Gravel, moist same, except moist to wet	565.8					
7.5	Fill - Black Silt, some Clay and vegetation, trace fine Sand, moist	564.5		4SS		⊙	6
		563.4					
9.0	Brown, Red Brown, and Gray Silty Clay, trace fine Sand and fine Gravel, moist, native	562.1		5SS		⊙	4
10.5							
	Brown Gray Silt, wet, native	559.4		6SS		⊙	6
12.0	Gray Brown Silty Clay, trace fine Gravel, wet, native	558.6					
	same, except moist to native	558.5		7SS			2
13.5							
15.0				8SS			2
16.5	same, except trace Red Brown laminations	554.5					
18.0				9SS			2
	same, except thin Silty Sand seams	552.5					
19.5				10SS			WH
				11SS			WH

SCREEN DETAILS:
Screened Interval:
563.2 to 558.2
Length - 5.0 FT.
Diameter - 2.0" ID
Slot # 6
Material - STAINLESS
STEEL
Sand Pack Interval:
564.5 to 558.0

NOTES: ⊙ SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, WEST OF UTILITY TUNNEL

HOLE DESIGNATION: OW278-87
(PAGE 2 of 2)

DATE COMPLETED: 5/8/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.J. OSCAR
D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft-AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
19.5				10SS			WH
21.0				11SS			WH
22.5	Red Brown Silty Clay, thin Silty Sand seams, moist to wet, native	548.5		12SS			WH
24.0				13SS			WH
25.5				14SS			1
27.0				15SS			WH
28.5	same, trace Gravel	542.5		16SS			>100
30.0	Red Brown Sand, Silt, and Clay, some Gravel, moist to wet, native, Till	540.7 540.5		17SS			>100
31.5	Red Brown Silty Clay, trace Gravel, moist to wet, native	539.8 539.0					
33.0	Red Brown to Gray Sandy Silty Clay, some Gravel, moist to wet, native, Till same, except Gray, Gravelly, wet	538.5 538.3 539.6 537.5					
34.5	augered to 32.0 ft. BGS, no sample Gray Silt and Sand, Gravel, wet, native augered to 33.0 ft. BGS, no sample						
36.0	END OF BOREHOLE AT 33.0 FT. BGS NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (3.0 ft. south) a 2.0" ID observation well was installed to 12.5 ft. BGS						
37.5	NOTE : Due to inadequate amount of sample, OW278-87 was resampled (BHWR 278-87) from 6.0 - 12.0 ft. BGS. These samples were submitted for chemical analysis, split with EPA/DEC, and analyzed.						
39.0							

NOTES:



SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

DEC/EPA SAMPLE

DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

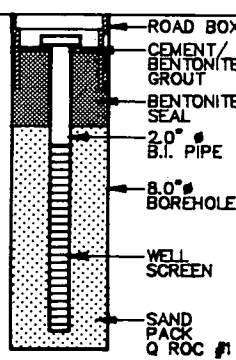
LOCATION: WATER TREATMENT PLANT, SOUTH OF B-PLANT

HOLE DESIGNATION: OW279-87
(PAGE 1 of 2)

DATE COMPLETED: 5/12/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON
B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				N U M B E R	S T A T E	S T A T U S	N V A L U E
	REFERENCE ELEVATION GROUND ELEVATION	570.38 570.5					
	Fill - Brown Sandy Silt, vegetation, moist	568.7	 <p>ROAD BOX CEMENT/ BENTONITE GROUT BENTONITE SEAL 2.0" B.I. PIPE 8.0" BOREHOLE WELL SCREEN SAND PACK Q ROC #1</p> <p>SCREEN DETAILS: Screened Interval: 567.0 to 562.0 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material- STAINLESS STEEL Sand Pack Interval: 567.5 to 561.5</p>	1SS			13
2.5	Fill - Brown Clayey Silt, trace Sand, moist	568.5		2SS			15
	Fill - Brown, Red, and Gray Clayey Silt, Gravel, moist same, except moist to wet	566.5		3SS		①	5
5.0		564.5		4SS		①	6
7.5	Fill - Gray and Green Silty Clay, wet, plastic	562.7		5SS			9
	Fill - Brown Silt, wet	562.5		6SS			3
10.0	Brown and Red Brown laminated Silty Clay, wet, plastic, native			7SS			3
12.5	same, except Red Brown, no laminations	558.5		8SS			2
15.0				9SS			2
17.5		552.5		10SS			WR
20.0	Brown and Red Brown laminated Silty Clay, wet			11SS			WR
22.5				12SS			WR
25.0				13SS			WH
27.5	Red Brown Clayey Silt, Sand, Gravel, wet, native, Till			14SS			WH
	Gray Sandy Gravel, wet, native, Till	542.0		15SS			27
30.0	augered to 30.0 ft. BGS, no sample	541.5		16SS			>50
	Gray rock fragments, some Sand, weathered, wet, native	540.8					
		540.5					
32.5	END OF BOREHOLE AT 31.3 FT. BGS NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (6.0 ft. east) a 2.0" ID observation well was installed to 9.0 ft. BGS	539.0					

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, SOUTH OF B-PLANT








HOLE DESIGNATION: OW279-87
(PAGE 2 of 2)

DATE COMPLETED: 5/12/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON
B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	NOTE : Due to inadequate amount of sample, OW279-87 was resampled (BHR 279-87) from 4.0 - 8.0 ft. BGS. These samples were submitted for chemical analysis, split with EPA/DEC, and analyzed.						
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES:  SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT
 GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT
 DEC/EPA SAMPLE
 DEC/EPA SPLIT
 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

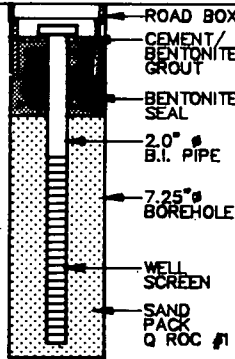
LOCATION: WATER TREATMENT PLANT, SOUTH OF B-PLANT

HOLE DESIGNATION: OW280-87
(PAGE 1 of 2)

DATE COMPLETED: 5/13/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: C.H. PADGINTON
B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	569.78 569.9				
2.5	Fill - Brown Sandy Silt, trace Gravel and Clay, moist	567.9		1SS		10
5.0	Brown, Gray, and Red mottled Clayey Silt, some Gravel, trace Sand, moist, native	563.9		2SS		11
7.5	same, moist to wet	561.9		3SS	⊙	11
10.0	Brown and Red Brown laminated Silty Clay, trace Silt seams, moist, native	555.9		4SS	⊙	13
12.5		551.9		5SS		14
15.0	Brown Silty Clay, wet, soft, native			6SS		9
17.5				7SS		13
20.0	Red Brown and Green Gray laminated Silty Clay, trace Silt seams, wet, soft, native			8SS		3
22.5				9SS		3
25.0	same, except Brown to Red Brown, no laminations	545.9		10SS		WH
27.5		541.9 541.4		11SS		WH
30.0	augered to 28.5 ft. BGS, no sample Red Brown Sandy Gravelly Silt, moist to wet, native, Till augered to 29.9 ft. BGS, no sample	540.6 540.0		12SS		
32.5	END OF BOREHOLE AT 29.9 FT. BGS NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (6.0 ft. west) a 2.0" ID observation well was installed to 9.5 ft. BGS			13SS		WH
				14SS		2
				15SS		>50

NOTES: ⊙ SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, SOUTH OF B-PLANT

HOLE DESIGNATION: OW280-87
(PAGE 2 of 2)

DATE COMPLETED: 5/13/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: C.H. PADGINTON
B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
2.5	NOTE : Due to inadequate amount of sample, OW280-87 was resampled (BHR 280-87) from 4.0 - 8.0 ft. BGS. These samples were submitted for chemical analysis, split with EPA/DEC, and analyzed.						
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT
 ○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
 ● DEC/EPA SPLIT

▽ WATER FOUND
 ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: OW281-87

PROJECT NO.: 1769

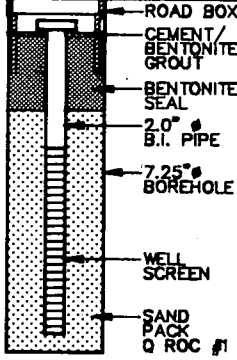
DATE COMPLETED: 5/7/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 7.25" OD

LOCATION: WATER TREATMENT PLANT, SOUTHEAST OF B-PLANT

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				N U M B E R	S T A T E	S T A T U S	V A L U E
	REFERENCE ELEVATION GROUND ELEVATION	570.06 570.3					
2.5	Brown, Red, and Gray mottled Clayey Silt, some Gravel, trace Sand, dry, native	568.3	 <p>SCREEN DETAILS: Screened Interval: 566.3 to 561.3 Length - 5 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 567.3 to 560.8</p>	1SS			13
	Red Brown and Green Gray Clayey Silt, trace Sand and Gravel, moist, native	566.3		2SS			18
5.0	Brown Gray and Red Brown mottled Silty Clay, moist, native same, with dark Gray and Green Silty fine Sand seams, wet	565.8		3SS		①	7
7.5	Red Brown laminated Silty Clay, Silt seams, moist, native same, except trace Silt seams	563.3		4SS		①	11
10.0	same, except plastic	562.3		5SS			14
12.5	same, except mottled	558.3		6SS			6
15.0				7SS			12
17.5				8SS			2
20.0				9SS			2
22.5				10SS			WH
25.0				11SS			WH
27.5	Red Brown Clayey Silt, Sand and Gravel, wet, native, Till	544.5		12SS			1
	augered to 28.9 ft. BGS, no sample	542.6		13SS			1
30.0	END OF BOREHOLE AT 28.9 FT. BGS	541.4		14SS			9
32.5	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (5.0 ft. north) a 2.0" ID observation well was installed to 9.5 ft. BGS						

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

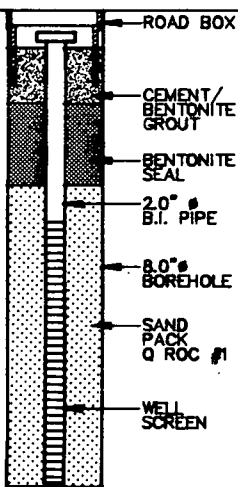
LOCATION: WATER TREATMENT PLANT, WEST OF UTILITY TUNNEL

HOLE DESIGNATION: OW282-87
(PAGE 1 of 2)

DATE COMPLETED: 5/12/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.C. MILLARD
B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	570.61 571.1					
	Fill - Brown fine Sand and Silt, some Gravel, cinders, trace vegetation, dry		 <p>SCREEN DETAILS: Screened Interval: 565.4 to 558.4 Length - 7.0 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 566.4 to 558.3</p>	1SS			28
2.5	Fill - dark Brown to dark Gray mottled Silty Clay, trace cinders and Gravel, moist to dry	569.1		2SS			12
5.0	Fill - dark Gray and Black mottled Silty Clay, trace Gravel, moist to wet	567.1		3SS		①	5
7.5	same, with wood, oily sheen	563.1		4SS		①	9
10.0	Dark Gray Silty fine Sand, trace shell, wet, native	561.1		5SS		①	13
12.5	Brown and Gray Brown Silty Clay, trace Silt seams, moist, plastic, native	559.1		6SS			8
		557.1		7SS			7
15.0	Brown and Red Brown Silty Clay, trace Silt seams, wet, plastic, native			8SS			1
17.5				9SS			2
20.0				10SS			1
22.5				11SS			1
25.0	same, with trace fine Gravel	545.1		12SS			2
27.5	same, with some Sand	543.1		13SS			WH
30.0	Brown and Red Brown Sandy Clay, some Silt, fine Gravel, wet, native, Till	541.3 540.6		14SS			1
32.5	Brown Sandy Clay, some Silt, angular and subangular Gravel, wet to moist, native, Till	538.7 538.2		15SS			WH
	Gray Sandy Gravel, wet, native			16SS			6
	END OF BOREHOLE AT 32.9 FT. BGS			17SS			>100

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, WEST OF UTILITY TUNNEL

HOLE DESIGNATION: OW282-87
(PAGE 2 of 2)

DATE COMPLETED: 5/12/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.C. MILLARD
B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
35.0	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (6.0 ft. south) a 2.0" ID observation well was installed to 12.8 ft. BGS						
37.5	NOTE : Due to inadequate amount of sample, OW282-87 was resampled (BHR 282-87) from 4.0 - 10.0 ft. BGS. These samples were submitted for chemical analysis, split with EPA/DEC, and analyzed.						
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT
 ○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
 ● DEC/EPA SPLIT

▽ WATER FOUND
 ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

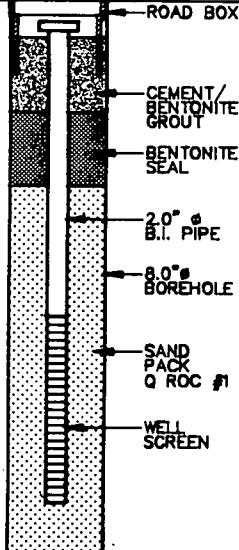
LOCATION: WATER TREATMENT PLANT, WEST OF FILTERED
WATER RESEVOIR

HOLE DESIGNATION: OW283-87

DATE COMPLETED: 6/4/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	571.56 571.7					
2.5	Fill - Brown and Green Silt, vegetation, trace Clay, dry	570.7	 <p>ROAD BOX</p> <p>CEMENT/ BENTONITE GROUT</p> <p>BENTONITE SEAL</p> <p>2.0" B.I. PIPE</p> <p>8.0" BOREHOLE</p> <p>SAND PACK O' ROC #1</p> <p>WELL SCREEN</p> <p>SCREEN DETAILS: Screened Interval: 563.2 to 558.2 Length - 5 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 566.7 to 557.2</p>	1SS			14
	Fill - Brown and Red Clayey Silt, Gravel, slag, brick, dry	569.7		2SS			18
5.0	Fill - Brown, Red, and Gray Silty Clay, brick, trace Gravel and slag, moist	567.7		3SS			11
	no recovery	565.7 565.2		4SS			8
7.5	Fill - Brown and Red Silty Sand, Gravel, brick, wood, trace Clay, wet	563.7 563.2		5SS			6
	Fill - Black Silt, decayed vegetation, wet			6SS			3
10.0	Fill - Gray Brown Sandy Clayey Silt, wet			7SS			4
	Fill - Gray Silty fine Sand, wet	560.2 559.7		8SS			1
12.5	Brown and Red Brown mottled Silty Clay, moist, plastic, native			9SS			WH
15.0	Red Brown and Gray laminated Silty Clay, moist to wet, soft, plastic, native same, except wet	557.7		10SS			WH
17.5	Brown Silty Clay, wet, soft, native	553.7		11SS			1
20.0	Red Brown and Gray laminated Silty Clay, wet, native	551.7		12SS			WH
22.5				13SS			WR
25.0		545.7		14SS			1
27.5	Brown Silty Clay, wet, soft, native			15SS			WH
30.0	Red Brown Sandy Silty Clay, Gravel, wet, native, Till	541.7		16SS			1
	no split spoon advancement, augered to 32.1 ft. BGS, no sample	539.7 539.6		17SS			>50
32.5	END OF BOREHOLE AT 32.1 FT. BGS NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (7.0 ft. east) a 2.0" ID observation well was installed to 14.5 ft. BGS						

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

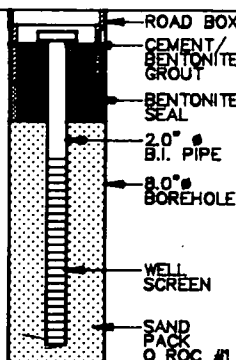
LOCATION: WATER TREATMENT PLANT, SOUTH OF B-PLANT

HOLE DESIGNATION: OW284-87
(PAGE 1 of 2)

DATE COMPLETED: 6/1/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	569.47 569.6					
	Fill - Brown and Gray Gravel, vegetation, dr		 <p>ROAD BOX CEMENT/ BENTONITE GROUT BENTONITE SEAL 2.0" B.I. PIPE 8.0" BOREHOLE WELL SCREEN SAND PACK O.R.C. #1</p> <p>SCREEN DETAILS: Screened Interval: 565.6 to 560.6 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 566.6 to 560.1</p>	1SS			6
2.5	Fill - Brown Gray Silty Clay, Gravel, trace Sand, moist	567.6		2SS			14
5.0	Fill - Brown and Gray mottled Clayey Silt, moist	565.6		3SS			15
	Fill - Brown Silt, decayed vegetation, moist	563.6 563.5 563.4		4SS			21
7.5	Fill - Gray Silty Sand, wet			5SS			16
10.0	Green, Brown, Gray, Red Gray Silty Clay, Silt seams, native			6SS			14
12.5	Brown and Red Brown laminated Silty Clay, trace Silt seams, moist, soft, native	557.6		7SS			4
15.0	Brown Silty Clay, wet, soft, native	555.6		8SS			1
17.5				9SS			2
20.0	Gray and Red Brown laminated Silty Clay, wet, soft, native	551.6		10SS			WR
22.5	same, except trace Silt seams	549.6		11SS			WH
25.0				12SS			1
27.5				13SS			WR
30.0	Red Brown Sandy Silty Clay, Gravel, wet, native, Till	540.6 540.3 539.7		14SS			1
32.5	augered to 29.9 ft. BGS, no sample END OF BOREHOLE AT 29.9 FT. BGS NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (5.0 ft. south) a 2.0" ID observation well was installed to 9.5 ft. BGS			15SS			>50

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, SOUTH OF B-PLANT

HOLE DESIGNATION: OW284-87
(PAGE 2 of 2)

DATE COMPLETED: 6/1/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
35.0	NOTE : Due to inadequate amount of sample, OW284-87 was resampled (OWR 284-87) from 6.0 - 8.0 ft. BGS. These samples were submitted for chemical analysis, split with EPA/DEC, and analyzed.						
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT
 ○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
 ● DEC/EPA SPLIT

▽ WATER FOUND
 ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

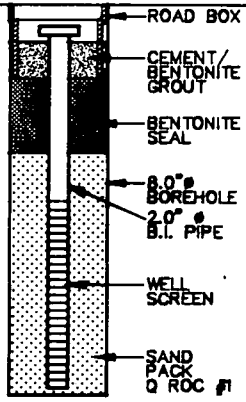
LOCATION: WATER TREATMENT PLANT, NORTHEAST CORNER
OF FILTERED WATER RESERVOIR

HOLE DESIGNATION: OW285-87

DATE COMPLETED: 5/12/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	569.52 569.8					
2.5	Fill - Brown Gray Clayey Silt, vegetation, slag, ash, trace coarse Gravel, dry	567.8	 <p>SCREEN DETAILS: Screened Interval: 564.5 to 559.5 Length - 5 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 565.8 to 559.3</p>	1SS			4
	Fill - Brown to Red Brown and Gray Silt, angular Gravel, cinders, trace Clay, moist	565.8		2SS			16
5.0	Fill - Red Brown and Green Black Silty Clay, Gravelly, wet same, except Gray Black	563.8		3SS	①		7
7.5	Red Brown Silty Clay, Silt lenses, wet, native same, except no Silt lenses, moist to wet	562.8		4SS	①		15
10.0	same, except wet	559.8		5SS			17
12.5	same, except mottled Red Brown, Gray, Orange Brown mottling	557.8		6SS			8
15.0	same, except trace fine Gravel, soft	553.8		7SS			5
17.5				8SS			7
20.0	Red Brown and Gray Silty Clay, wet, soft, native	551.8		9SS			5
22.5				10SS			WH
25.0				11SS			WR
27.5				12SS			<3
30.0				13SS			WH
32.5				14SS			1
				15SS			>50

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

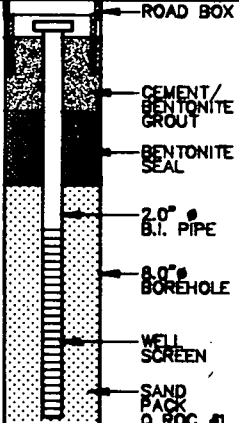
LOCATION: WATER TREATMENT PLANT, EAST OF FILTERED
WATER RESERVOIR

HOLE DESIGNATION: OW286-87

DATE COMPLETED: 5/14/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: S. CROSSMAN

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	570.39 570.7					
2.5	Fill — Gray Brown and Red Brown Silty Clay, some Sand, trace fine Gravel, moist same, with slag, Sand pockets	568.7	 <p>ROAD BOX</p> <p>CEMENT/BENTONITE GROUT</p> <p>BENTONITE SEAL</p> <p>2.0" B.T. PIPE</p> <p>8.0" BOREHOLE</p> <p>WELL SCREEN</p> <p>SAND PACK 0 ROC #1</p> <p>SCREEN DETAILS: Screened Interval: 564.5 to 559.5 Length — 5 FT. Diameter — 2.0" ID Slot # 6 Material—STAINLESS STEEL Sand Pack Interval: 565.7 to 559.2</p>	1SS			18
5.0				2SS			18
				3SS	①		14
7.5	Black organic Silt, some Sand, trace Clay, wet, native	564.9 563.8		4SS	①		10
10.0	Red Brown Silty Clay, moist, plastic, native same, except trace lamination of Green and Gray same, with trace Silt seams, wet	562.7 560.7		5SS			13
12.5		558.7		6SS			5
15.0	Red Brown laminated Silty Clay, wet, native			7SS			5
17.5				8SS			2
20.0				9SS			2
22.5	same, with Silt seams, trace medium Sand	548.7		10SS			WH
25.0				11SS			WH
27.5	same, except trace Gravel	544.7		12SS			<3
30.0	Red Brown Sandy Silty Clay, Gravel, wet, native, Till	542.5 541.2		13SS			WH
32.5	Gray Brown Sandy Silt, angular and rounded Gravel, trace Clay, moist, native, Till	539.7		14SS			2
	END OF BOREHOLE AT 31.0 FT. BGS NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (5.0 ft. northwest) a 2.0" ID observation well was installed to 11.5 ft. BGS			15SS			15
				16SS			>50

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

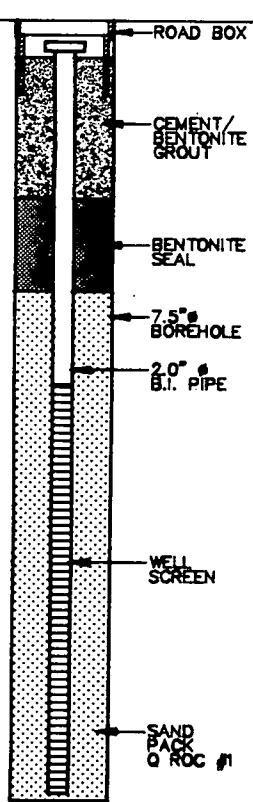
LOCATION: WATER TREATMENT PLANT, SOUTH OF FILTERED
WATER RESERVOIR

HOLE DESIGNATION: OW287-87
(PAGE 1 of 2)

DATE COMPLETED: 2/19/88

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: C.H. PADGINTON
N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	574.19 574.2					
	Fill - Brown and Green Silt, vegetation, trace coarse Gravel, dry			1SS			55
2.5	Fill - Brown and Black Gravelly Silt, slag, dry to moist	572.2		2SS			10
5.0	same, except Brown, Red, Black, and Red Brown, moist	570.2		3SS			18
7.5	same, except moist to wet	568.2		4SS			14
10.0	same, with trace Clay	566.2		5SS			4
12.5	Fill - Brown Silty Clay, thin Silt seams, wet	564.2		6SS			1
15.0	Fill - Brown and Black Silt, trace Clay and Gravel, wet	562.5		7SS			2
17.5	same, with flyash	562.2 560.7		8SS			6
20.0	Fill - White Silt, wet, nonplastic same, with trace slag	560.2		9SS			25
22.5	Brown Gray Silty fine Sand, wet, native same, except Black and Gray	556.4 556.2		10SS			5
25.0	Brown and Gray Silty Clay, wet, plastic, native	553.4		11SS			2
27.5	same, except Red Brown	551.6		12SS			2
30.0	same, with trace Silt seams same, except Brown and Gray, no Silt seams	548.7 548.2		13SS			2
32.5	Red Brown and Gray laminated Silty Clay, some thin Silt seams, wet, plastic, native	546.2		14SS			5
	same, except Brown and Gray, trace Silt seam	542.2		15SS			1
	Red Brown Silty Sand, trace Clay and Gravel, wet, native, Till	540.2		16SS			WR
				17SS			2
				18SS			>50

SCREEN DETAILS:
Screened Interval:
564.2 to 553.2
Length - 11.0 FT.
Diameter - 2.0" ID
Slot # 6
Material - STAINLESS
STEEL
Sand Pack Interval:
565.2 to 553.2

NOTES: (1) SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

(2) GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

(3) GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

(4) DEC/EPA SAMPLE

(5) DEC/EPA SPLIT

(6) WATER FOUND

(7) STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, SOUTH OF FILTERED
WATER RESERVOIR

HOLE DESIGNATION: OW287-87
(PAGE 2 of 2)

DATE COMPLETED: 2/19/88

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: C.H. PADGINTON
N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
				17SS	X		2
35.0	Red Brown Silty Sand, trace Clay and Gravel, wet, native, Till	540.2					
		538.9		18SS	X		>50
	AUGERED TO REFUSAL	538.1					
	END OF BOREHOLE AT 36.1 ft. BGS						
37.5	NOTE: At completion the initial borehole was grouted to ground surface. In an adjacent borehole (6.0 ft. south) a 2.0" ID observation well was installed to 21.0 ft. BGS						
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

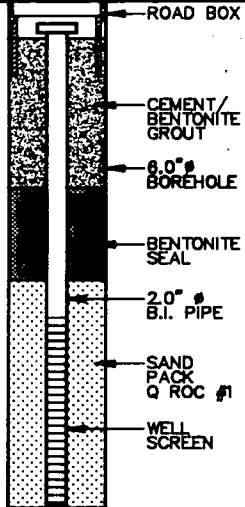
LOCATION: WATER TREATMENT PLANT, EAST OF SEWER DEPT.

HOLE DESIGNATION: OW288-87
(PAGE 1 of 2)

DATE COMPLETED: 5/12/87

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: K.D. SCHMIDTKE
B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION	571.66					
	GROUND ELEVATION	572.2					
2.5	Fill - Gray Sandy angular Gravel, Silty, dry to moist same, with some glass	570.2	 <p>SCREEN DETAILS: Screened Interval: 563.7 to 558.7 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 564.7 to 558.6</p>	1SS			14
	same, with fine Gravel	568.2		2SS			8
5.0				3SS			4
	Fill - Brown Silty Clay, moist to wet	566.2		4SS		⊙	22
7.5	Fill - Brown, Green, and Red Sandy Gravel, Silty, wet	564.2		5SS		⊙	4
10.0	Gray Black Silty fine Sand, peat layer, Sand, native	562.2		6SS		⊙	6
	same, with peat	562.8		7SS		⊙	4
12.5	Gray Black and Black Silty Sand, trace vegetation, wet, native			8SS			1
	Gray Black Silty Sand, wet, native	561.2		9SS			2
15.0	same, except trace vegetation, moist to wet	558.2		10SS			WH
17.5	Red Brown Clay, moist to wet, native			11SS			WH
	same, except wet	556.2		12SS			WH
20.0	same, except moist to wet	554.2		13SS			WR
22.5				14SS			WR
	Brown Red Silty Clay, wet, native	552.2		15SS			WR
25.0	Red Brown Clay with trace Silt, wet, native	550.2		16SS			WR
27.5	Red Gray Clay, wet, native	548.2		17SS			>50
30.0	same, with trace Gravel	547.2					
32.5	Red Brown Silty Sand, some angular Gravel, wet, native, Till	540.7					
	Red Brown Clayey Silt, trace Gravel and fine Sand, wet, native, Till	540.2					
	Red Silty Sand with coarse subangular Gravel and trace Clay, dry to moist, native, Till	539.2					
	augered to 33.8 ft. BGS, no sample	538.5					
	END OF BOREHOLE AT 33.8 FT. BGS	538.4					

NOTES: ⊙ SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, EAST OF SEWER DEPT.

HOLE DESIGNATION: OW288-87
(PAGE 2 of 2)

DATE COMPLETED: 5/12/87

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: K.D. SCHMIDTKE
B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5				17SS	X		>50
35.0	Red Silty Sand with coarse subangular Gravel and trace Clay, dry to moist, native, Till augered to 33.8 ft. BGS, no sample	539.2 538.5 538.4					
37.5	END OF BOREHOLE AT 33.8 FT. BGS						
40.0	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (5.0 ft. south) a 2.0" ID observation well was installed to 13.6 ft. BGS						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES:

① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

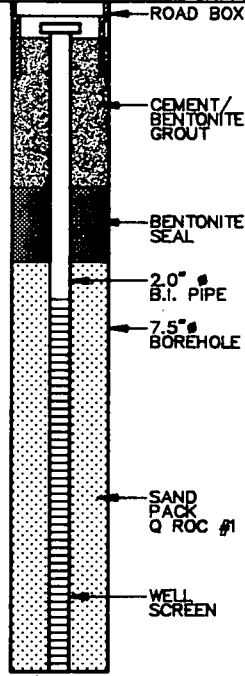
LOCATION: WATER TREATMENT PLANT, SOUTHEAST OF
SEWER PLANT

HOLE DESIGNATION: OW289-87
(PAGE 1 of 2)

DATE COMPLETED: 5/18/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: S. CROSSMAN
B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	572.89 573.1					
	augered to 1.0 ft. BGS, no sample	572.1	 <p>SCREEN DETAILS: Screened Interval: 565.1 to 555.1 Length - 10.0 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 566.1 to 555.1</p>				
2.5	Fill - Gray Brown Sandy Silt, Gravel, trace brick, concrete, rebar, glass, and organics			1SS			11
				2SS			35
5.0	Fill - Gray Brown Silty Clay, some Sand, trace Gravel, moist	568.1		3SS			14
7.5				4SS	⊙		33
10.0	Fill - Gray medium Sand, moist	564.3 564.1		5SS	⊙		12
	Fill - dark Gray Gravelly fine to coarse Sand, trace Silt, brick, peat, wet			6SS	⊙		39
12.5	Gray Silty fine Sand, organics, wet, petroleum odor, native	561.1		7SS	⊙		16
15.0				8SS			1
17.5	Red Brown Clay, soft, wet, native	555.4 555.1		9SS			WH
20.0	Red Brown Silty Clay, soft, wet, native			10SS			WH
22.5	same, except laminated Gray Green and Red Brown	551.1		11SS			WH
	same, except trace Gravel	549.1		12SS			WH
25.0	same, without trace Gravel	547.1		13SS			WH
27.5				14SS			WH
30.0				15SS			2
32.5	Gray Brown Silty Clay, some Sand, trace Gravel, native, Till	539.5 538.4		16SS			>100

NOTES: ⊙ SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, SOUTHEAST OF
SEWER PLANT

HOLE DESIGNATION: OW289-87
(PAGE 2 of 2)

DATE COMPLETED: 5/18/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: S. CROSSMAN
B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
		539.5		15SS	X		2
35.0	Gray Brown Silty Clay, some Sand, trace Gravel, native, Till	538.4		16SS	X		>100
	END OF BOREHOLE AT 34.7 FT. BGS						
37.5	5SS to 7SS - 3" spoon was used, 3.0 ft. long						
40.0	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (6.0 ft. south) a 2.0" ID observation well was installed to 18.0 ft. BGS						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, NORTH OF A-PLANT

HOLE DESIGNATION: OW290-87
(PAGE 1 of 2)

DATE COMPLETED: 6/17/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	574.63 574.8					
1.5	Fill - Brown Tan fine Gravelly Silt, vegetation, dry	574.5		1SS			21
3.0	Fill - Black Gray Silt, cinders, ash, glass, brick, dry	572.8		2SS			15
4.5	Fill - Brown and Red Brown Silt, fine Gravel cinders, ash, glass, dry	570.8					
6.0	Fill - Brown Silt, wood, slag, glass, brick, trace Clay, dry to moist	570.2		3SS			17
7.5	Fill - Brown Sand, White soft material, trace Clay, dry to moist	568.8					
9.0	Fill - Brown Sand, trace Silt and Clay, dry to moist	568.1		4SS			32
10.5	same, with fine Gravel, brick, and slag	567.6					
12.0	Fill - Brown Gray Clayey Silt, Gravel, glass, slag, dry to moist	566.8		5SS		①	10
13.5	same, with brick, cinders, ash, and wood, moist to wet	565.8					
15.0	Fill - Brown Rust Black cinders, ash, wood, wet	564.8		6SS		①	8
16.5	Fill - Brown Clayey Silt, fine Gravel, wood, cinders, ash, trace Sand, moist to wet	564.0					
18.0	same, with copper wire and Black and White filtercake	563.0		7SS		①	52
19.5	Fill - Black Brown bottom ash	562.8					
	Fill - Brown Black fine Gravel, cinders, ash brick, wood, wet	560.8		8SS		①	11
	same, with slag, copper wire, and glass	560.3					
	Black Gray laminated Sand, moist to wet, native	558.8		9SS		①	2
	same, with trace fine Gravel						
	Red Brown Clay, moist to wet, native	555.0		10SS		①	2
	same, with Gray Sandy Silt seam, wet	554.8					
	Red Brown Silty Clay, moist to wet, native	554.8		11SS			WH

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

② GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL











LOCATION: WATER TREATMENT PLANT, NORTH OF A-PLANT

HOLE DESIGNATION: OW290-87
(PAGE 2 of 2)

DATE COMPLETED: 6/17/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
19.5							
	Red Brown Clay, moist to wet, native same, with Gray Sandy Silt seam, wet	555.0 554.8 554.4	 WELL SCREEN	10SS			2
21.0	Red Brown Silty Clay, moist to wet, native		SCREEN DETAILS: Screened Interval: 560.0 to 555.0 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 566.1 to 555.0	11SS			WH
22.5				12SS			2
24.0	Red Sandy Silty Clay, moist to wet, native	551.4					
	Red and Gray laminated Silty Clay, Red Brown and Red Silt seams, native	550.8		13SS			WH
25.5							
27.0	Red Brown Silty Clay, some Red Silt seams, moist, native	548.8		14SS			WH
28.5							
30.0	same, except Gray Silt seams	544.8		15SS			WH
31.5				16SS			WH
	Red Brown Sandy Silty Clay, fine Gravel, native, Till	543.0 542.8					
33.0	Red Brown Silty Clay, moist to wet, native			17SS			2
	Red Brown Silty Clay, Sandy, fine Gravel, moist, native, Till	541.6 540.8 540.6		18SS			>50
34.5	Gray Silty Clay, fine to coarse Gravel, trace Sand, moist, native, Till						
	augered to 35.7 ft. BGS, no sample						
36.0	END OF BOREHOLE AT 35.7 FT. BGS	539.1					
37.5	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (6.0 ft. west) a 2.0" ID observation well was installed to 19.8 ft. BGS						
39.0	3SS to 10SS - A 3.0" split spoon was used						

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, NORTH OF A-PLANT

HOLE DESIGNATION: OW291-87
(PAGE 1 of 2)

DATE COMPLETED: 6/23/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	573.82 574.4					
1.5	augered through asphalt to 2.0 ft. BGS, no sample	572.4					
3.0	Fill - Brown Black mottled fine Gravelly Silt, glass, cinders, slag, dry to moist same, with trace wood, ash, and metal fragments, moist to wet	571.9		1SS		⊙	17
4.5	Fill - Brown Gray Silty Sand, Gravelly, glass, moist same, with metal and copper wire, moist to wet	570.4 570.1 569.9		2SS		⊙	30
6.0	Fill - Red Brown Silty Clay, fine Gravel, Sand lenses, slag, moist	568.4		3SS		⊙	31
7.5	Fill - Gray fine to coarse Gravel, moist	567.9		4SS		⊙	8
9.0	Fill - Brown Silty Clay, Gravelly, some slag and cinders, dry to moist same, except Black	567.1 566.4 565.9		5SS		⊙	3
10.5	Fill - Black Gray fine Gravelly Silt, some wood, moist to wet	564.4 563.9		6SS		⊙	31
12.0	Fill - Black, Yellow, Tan, and Orange cinders, ash, brick, tar paper, moist	560.8 560.6 560.4		7SS		⊙	9
13.5	Fill - Black metal wire	558.4		8SS		⊙	5
15.0	augered to 14.0 ft. BGS, no sample	556.4		9SS		⊙	
16.5	Gray and Olive Green laminated fine to medium Sand, wet, native			10SS		⊙	WH
18.0	same, except no laminations						
19.5	same, with vegetation and shell fragments						
	Red Brown Silty Clay, moist, native						

NOTES: ⊙ SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

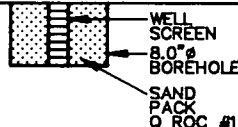
LOCATION: WATER TREATMENT PLANT, NORTH OF A-PLANT

HOLE DESIGNATION: OW291-87
(PAGE 2 of 2)

DATE COMPLETED: 6/23/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
19.5				9SS		①	
21.0	Red Brown Silty Clay, moist, native		 <p>WELL SCREEN 8.0" Ø BOREHOLE SAND PACK Q ROC #1</p> <p>SCREEN DETAILS: Screened Interval: 566.1 to 553.9 Length - 12.2 FT. Diameter - 2.0" ID Slot # 6 Material - STAINLESS STEEL Sand Pack Interval: 567.4 to 553.9</p>	10SS			WH
22.5	same, with fine Sand	552.4		11SS			1
24.0	same, with laminated dark Red and Gray Silt lenses, no Sand	550.4		12SS			WH
25.5				13SS			WH
27.0				14SS			WH
28.5				15SS			WH
30.0				16SS			1
31.5				17SS			>50
33.0	Red Brown fine Gravelly Clay, Silt seams, native, Till	540.5 540.4					
34.5	Red Brown Clayey Silt, Sandy, Gravelly, dry to moist, native, Till	539.2					
36.0	augered to 36.3 ft. BGS, no sample						
37.5	END OF BOREHOLE AT 36.3 FT. BGS	538.1					
39.0	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (6.0 ft. west) a 2.0" ID observation well was installed to 20.5 ft. BGS NOTE : Due to the need for quality assurance and quality control, OW291-87 was resampled (BH-291 and BH-391) from 2.0 - 18.4 ft. BGS. These samples were submitted for chemical analysis, split with EPA/DEC, and analyzed. 2SS to 9SS - A 3.0" split spoon was used						

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, WEST OF A-PLANT

HOLE DESIGNATION: OW292-87
(PAGE 1 of 2)

DATE COMPLETED: 5/22/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	575.72 576.0					
	Fill - Brown, Red, and Olive Sandy Silt, Clayey, Gravel, moist			1SS			34
2.5	Fill - Brown, Black, and Red Sandy Silt and Silty Clay, Gravel, brick, slag, moist	574.0		2SS			49
5.0				3SS			18
7.5	Fill - Olive Green Sandy Silt, trace Clay, Gravel, wood, brick, glass, trace Silty Clay seams	570.0		4SS			30
10.0	Fill - Gray and Black Silty fine Sand, trace Clay and Gravel, brick, concrete, vegetation, moist	568.0		5SS			10
12.5	same, with Clay seam	564.2		6SS			10
	same, with glass, cloth, cinders, slag	564.0		7SS			17
15.0	same, with metal, brick, moist to wet	562.0		8SS		⊙	25
17.5	same, with some Silty Clay seams	576.0		9SS		⊙	11
20.0				10SS		⊙	9
	Fill - Black and Gray Silty fine Sand, flyash, cinders, wet	556.0		11SS		⊙	29
22.5	Black and dark Gray Silty fine Sand, wet, native	554.0		12SS		⊙	15
25.0				13SS		⊙	3
27.5				14SS		⊙	16
30.0	Gray Silty fine to medium Sand, trace fine Gravel, shell fragments, wet, native	548.0		15SS		⊙	14
32.5	Red Brown Silty Clay, trace Sand Seams, wet, plastic, soft, native			16SS		⊙	24
	Red Brown and Gray Sandy Silt, Gravelly, moist, dense, native, Till	542.1 542.0 541.3		17SS		⊙	11
	augered to 36.0 ft. BGS, no sample			18SS			>50

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

⊙ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

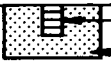
LOCATION: WATER TREATMENT PLANT, WEST OF A-PLANT

HOLE DESIGNATION: OW292-87
(PAGE 2 of 2)

DATE COMPLETED: 5/22/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				N U M B E R	S T A T E	S T A T U S	V A L U E
32.5							
	Red Brown Silty Clay, trace Sand Seams, wet, plastic, soft, native	542.0	 WELL SCREEN SAND PACK Q ROC #1	17SS	X	①	11
	Red Brown and Gray Sandy Silt, Gravelly, moist, dense, native, Till	541.3		18SS	X		>50
35.0	augered to 36.0 ft. BGS, no sample	540.0		19SS			>50
	no split spoon advancement AUGERED TO REFUSAL	538.5					
37.5	END OF BOREHOLE AT 37.5 ft. BGS		SCREEN DETAILS: Screened Interval: 547.7 to 542.7 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material- STAINLESS STEEL Sand Pack Interval: 564.7 to 542.1				
40.0	NOTE : At completion a 2.0" ID observation well was installed to 33.9 ft. BGS						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, SOUTHWEST OF A-PLANT

HOLE DESIGNATION: OW293-87
(PAGE 1 of 2)

DATE COMPLETED: 5/22/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	575.28 575.6					
1.5	augered through Brown Gravelly Silt, vegetation, glass, cinders, and ash to 1.0 ft. BGS, no sample Fill - Brown and Red Brown mottled Sandy Silt, brick, cinders, slag, dry	574.6		1SS			14
3.0	Fill - Brown White and Olive Green mottled Sandy Silt, coal, metal, dry	572.6		2SS			11
4.5	Fill - Brown, Red Brown, and Black Gray mottled Sandy Silt, ash, slag, concrete, cinders, dry	570.6		3SS			20
6.0	Fill - Black and Black Gray Sandy Silt, fine Gravel, cinders, ash, metal, dry	568.6		4SS			18
7.5	Fill - Red Brown, Black, Gray Green mottled Clayey Silt, Gravel, Clay seams, cinders, ash, slag, brick, moist to wet	566.6		5SS		⊙	18
9.0	Fill - Black Sandy Silt, coarse Gravel, cinders, ash, moist to wet	564.4		6SS		⊙	31
10.5	Fill - White and Gray Green coarse Sand, Gravel	563.7 563.0		7SS		⊙	14
12.0	Fill - Gray Black and Olive Green Sandy Silt, Gravel, brick, cinders, ash, slag, moist to wet, septic odor	560.6		8SS		⊙	18
13.5	Fill - Brown Gray Silty Sand, Gravelly, brick, cinders, ash, moist to wet	557.6		9SS		⊙	27
15.0	Fill - Brown Gray Silty Sand, Gravelly, trace Clay lens, cinders, ash, dry to wet	555.6					

NOTES: ⊙ SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

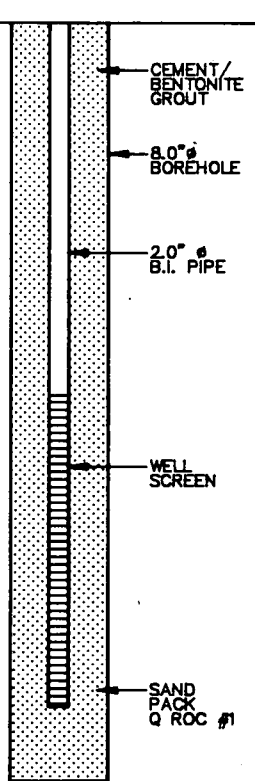
LOCATION: WATER TREATMENT PLANT, SOUTHWEST OF A-PLANT

HOLE DESIGNATION: OW293-87
(PAGE 2 of 2)

DATE COMPLETED: 5/22/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
19.5							
21.0	Fill - Gray Black Silty Sand, Gravelly, trace Clay lens, cinders, ash, dry to wet	555.6		8SS			18
				9SS			27
22.5							
24.0	Fill - Black Gray Silty Sand, Gravelly, trace Clay, wood, wet	552.6					
25.5	Gray Black Sand, wet, native	550.6					
27.0							
28.5	same, with some Gravel	547.6					
30.0	same, with shell fragments, no Gravel same, except coarse Sand, Gravel	545.8 545.6					
31.5	Red Brown Silty Clay, native	544.6					
33.0	Gray Black Gravelly Sand, wet, native	543.6					
34.5	Red Brown Sandy Silt, moist to wet, native, Till same, except Gravelly same, with Gray Brown, stiff, dry	541.7 541.6 540.6					
36.0	Red Brown Silty Sand, Gravelly, native, Till	539.6 538.8					
37.5	Red Brown Sandy Silt, Gravel, native, Till	538.5					
39.0	END OF BOREHOLE AT 37.1 FT. BGS NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (5.0 ft. south) a 2.0" ID observation well was installed to 31.7 ft. BGS 5SS to 7SS, 9SS and 11SS - A 3.0" split spoon was used, 3.0 ft. long						

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, SOUTH OF A-PLANT

HOLE DESIGNATION: OW294-87
(PAGE 1 of 2)

DATE COMPLETED: 5/29/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	REFERENCE ELEVATION GROUND ELEVATION	574.06 574.6					
	augered to 1.0 ft. BGS, no sample	573.6		1SS			10
2.5	Fill - Brown Gray Clayey Silt, trace Gravel, dry	571.4 571.3		2SS			8
	Fill - Red Brown Gray Clay, dry	569.6		3SS			5
5.0	Fill - Black cinders, ash, slag, dry	569.0		4SS			11
	Fill - Brown and White mottled Clayey Silt, dry	567.6		5SS			6
7.5	Fill - Brown Gray Clayey Silt, Gravel, dry to moist	567.0		6SS			17
	Fill - Brown Gray Sandy Silt, Clay, Gravel, slag, cinders, dry to moist	565.6		7SS			50
10.0	Fill - Gray Black Red Brown Clayey Silt, Tan brick, cinders, White ash, dry no recovery	562.6		8SS			35
12.5	Fill - Black Gravel, glass, cinders, ash, Gray slag, wet	561.6		9SS			4
	Fill - Black Silty Sand, Gravel, cinders, slag, ash, wet	559.6		10SS			4
15.0	Fill - Black Sand, cinders, ash, wet, oily sheen, slight chemical odor	559.0		11SS			8
17.5	Fill - Black Gravelly Sand, tar, rubber, wet	556.6		12SS			13
	Fill - Black Sand, cinders, ash, wet	554.6		13SS			23
20.0	Black Gray fine to medium Sand, wet, native	552.6		14SS			1
22.5	Black Gray Silty fine to medium Sand, wet, native			15SS			115
25.0							
27.5							
30.0	Black Gray laminated Gravelly Sand, wet, native	545.6					
	Gray fine to medium Sand, Gravel, White shell fragments, wet, native	544.6					
32.5	Red Brown Sandy Silt, Gravel, dry to moist, native, Till	542.6					
	augered to 36.2 ft. BGS, no sample	541.0					

NOTES: (1) SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT
 (2) GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 (3) GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT
 (4) DEC/EPA SAMPLE
 (5) DEC/EPA SPLIT

(6) WATER FOUND
 (7) STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WATER TREATMENT PLANT, SOUTH OF A-PLANT

HOLE DESIGNATION: OW294-87
(PAGE 2 of 2)

DATE COMPLETED: 5/29/87

DRILLING METHOD: HSA 7.5" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Red Brown Sandy Silt, Gravel, dry to moist, native, Till augered to 36.2 ft. BGS, no sample	541.0	SCREEN DETAILS: Screened Interval: 549.6 to 544.6 Length - 5.0 FT. Diameter - 2.0" ID Slot # 6 Material- STAINLESS STEEL Sand Pack Interval: 564.7 to 544.6				115
37.5	END OF BOREHOLE AT 36.2 FT. BGS	538.4					
40.0	NOTE : At completion the initial borehole was grouted to ground surface. In an adjacent borehole (5.0 ft. west) a 2.0" ID observation well was installed to 30.0 ft. BGS						
42.5	5SS to 7SS - A 3.0" split spoon was used, 3.0 ft. long						
45.0	14SS - sample was analyzed seperately						
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ① SOIL SAMPLES SUBMITTED FOR CHEMICAL ANALYSIS & DEC/EPA SPLIT
 ○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT
 ■ DEC/EPA SAMPLE
 ● DEC/EPA SPLIT
 ▽ WATER FOUND
 ▽ STATIC WATER LEVEL

OVERBURDEN BOREHOLES

BH100 - BH223

BOREHOLE LOCATIONS: SEE INFORMATION SUMMARY REPORT

VOLUME II - DRAWINGS

PLAN #1

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH100-87

PROJECT NO.: 1769


DATE COMPLETED: 2/9/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.0" OD

LOCATION: WEST OF 53rd. STREET

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	571.8					
2.5	augered through asphalt and Gravel to 2.0 ft. BGS	569.8		1SS			92
5.0	Fill - Black and Brown Gravelly coarse Sand, some cinders and wood, dry	567.8		2SS			10
7.5	Fill - Black fine to medium Sand, trace cinders, moist	565.8		3SS			8
10.0	Black to dark Gray fine Sandy Silt, Clayey, trace vegetation, moist, native	563.4 562.8		4SS			11
12.5	Brown, Red Brown, and Gray slightly mottled Silty Clay, some fine Sand, moist, native	559.8		5SS		●	7
15.0	same, with trace Silt nodules, high plastic	557.8		6SS		●	13
17.5	same, with trace vegetation and Silt lenses	555.8		7SS		●	7
20.0	same, with increasing Silt	553.8		8SS		●	9
22.5	same, except Brown and Red Brown	551.8		9SS		●	4
25.0	Brown and Red Brown Silty Clay, trace fine Sand lenses, wet, native			10SS		●	WH
27.5				11SS		●	WH
30.0				12SS		●	1
32.5				13SS		●	2
				14SS		●	WR
				15SS		●	WH
				16SS		●	>100
	Red Brown Silty Sand, Clayey, fine Gravel, wet, native, Till	541.3 539.8					
	same, except Red Brown to Gray Brown, rock fragments						
	AUGERED TO REFUSAL	538.8 538.3					
	END OF BOREHOLE AT 33.5 FT. BGS						
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

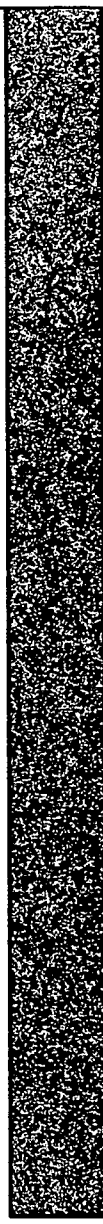
LOCATION: CORNER OF 53rd. AND ADAMS

HOLE DESIGNATION: BH101-87

DATE COMPLETED: 5/27/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	571.2					
	augered through asphalt and Gravel to 2.0 ft. BGS						
2.5	Fill - Black and Brown Sandy Gravel, cinders, flyash, slag, moist	569.2		1SS			10
5.0	Fill - Red Black Gravel, cinders, slag, moist	567.2		2SS			7
7.5				3SS			5
	Fill - Black and Brown Silt, moist to wet	563.2		4SS			5
10.0	Light Gray Silty Sand, moist to wet, native	561.2		5SS		●	4
12.5	Gray and Red Brown laminated Silty Clay, moist to wet, native	559.2		6SS		●	5
	same, except Brown and Red Brown trace Sand, wet			7SS		●	1
15.0	same, except soft, trace Gravel	557.2		8SS		●	2
	same, except faint laminations	555.2		9SS		●	WH
17.5	same, except Brown, no laminations	553.2		10SS		●	WH
20.0	same, except laminated Red Brown and Brown, numerous thin Silt seams	551.2		11SS		●	1
22.5				12SS		●	WH
25.0	same, except trace Silt seams	547.2		13SS		●	1
27.5	Red Brown and Gray Clayey Silt, Sandy, Gravelly, wet, native, Till			14SS		●	WH
30.0	Red Brown Silty Clay, Sandy, trace fine Gravel, wet, native, Till	541.5 541.2		15SS		●	WH
32.5	Red Brown Silt and Clay, Sandy, trace Gravel, native, Till	539.2 538.7		16SS		●	>100
	AUGER REFUSAL AND END OF BOREHOLE AT 32.5 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

∇ WATER FOUND

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

∇ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH102-87

PROJECT NO.: 1769

DATE COMPLETED: 5/26/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 7.5" OD

LOCATION: SOUTH OF 53rd. STREET GATE AND ADAMS AVENUE

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	571.8					
	augered through asphalt and Gravel to 1.0 ft. BGS	570.8					
	Fill - Gray Gravel, dry	569.8					
2.5	Fill - Red, Brown, and Green Clayey Silt, Gravelly, moist	569.3		1SS	X		16
	Fill - Black Silt, cinders, ash, slag, moist to wet	568.8					
5.0	Fill - Red, Olive Green, and Brown Silty Clay, trace Gravel, dry to moist	567.8		2SS	X		21
	Fill - Gray Gravel, dry						
7.5	same, except Gray Black, wet same, with Black NAPL, chemical odor same, wjth some brick, iridescent sheen	566.8		3SS	X		18
		566.2					
		564.8		4SS	X		7
		562.8					
10.0	Black Gray Silty Clay, moist, native	562.0		5SS	X		6
	Black Gray and Brown fine to medium Sand, wet, native						
12.5	same, with fibrous material, iridescent sheen	560.0		6SS	X		10
	same, except medium to coarse Sand, saturated with black NAPL	558.8					
		558.1		7SS	X	●	4
15.0	Red Brown Silty Clay, wet, native			8SS	X	●	WH
17.5				9SS	X	●	WH
20.0	same, with Gray Silt lenses, trace Sand	552.8		10SS	X	●	WH
22.5				11SS	X	●	WH
	same, with increasing Silt, trace Gravel, laminated	548.8		12SS	X	●	WH
25.0				13SS	X	●	WH
27.5				14SS	X	●	1
30.0	Red Brown laminated Clayey Silt, Sandy Gravelly, wet, native, Till			15SS	X	●	WH
	Gray Silty fine Sand, some rock fragments moist to wet, firm			16SS	X	●	WH
32.5	AUGERER REFUSAL AND END OF BOREHOLE AT 33.8 FT. BGS	538.9		17SS	X	●	>100
	At completion borehole was grouted to ground surface	538.4					
		538.0					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTH OF SEWER DEPT. ON 53rd ST.

HOLE DESIGNATION: BH103-87

DATE COMPLETED: 5/26/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	572.1					
	augered through asphalt and Gravel to 2.0 ft. BGS						
2.5	Fill - Brown Silty Sand, moist,	570.1					
		568.4		1SS			31
	Fill - Brown, Green, and White Sandy Silt, Gravel, concrete, moist	568.1					
5.0	Fill - Black flyash, cinders, moist to wet, trace iridescent sheen	566.1		2SS			12
		565.5		3SS			>50
7.5	Fill - Red brick, wet						
	augered to 8.0 ft. BGS, no sample	564.1					
	Fill - Black and Brown Gravelly Sand, NAPL, wet	563.6		4SS			4
10.0	Fill - Black and Brown Silty Sand, wet	562.6					
	Fill - Brown Silt, some vegetation, wet	561.1		5SS			12
12.5	Green Brown Silty Sand, with light Gray Silt seams, wet, native	560.1		6SS			19
	same, with trace light Gray mottling	558.1					
15.0				7SS			7
	Red Brown Silty Clay, trace Sand, wet, soft, native	556.1		8SS			4
17.5				9SS			1
20.0	same, except laminated	552.1		10SS			WH
22.5				11SS			WH
25.0				12SS			WH
27.5				13SS			2
30.0				14SS			2
32.5	Red Brown Silty Clay, Sand and Gravel, wet, native, Till			15SS			2
	AUGERED TO REFUSAL	539.1		16SS			54
	END OF BOREHOLE AT 34.1 FT. BGS	538.7					
	At completion borehole was grouted to ground surface	538.0					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: 53rd ST., NORTH OF PARKWAY

HOLE DESIGNATION: BH104-87
(PAGE 1 of 2)

DATE COMPLETED: 5/26/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	572.5					
	augered through asphalt to 1.0 ft. BGS						
1.5	Fill - Brown Gray Sandy Silt, Gravelly, dry	571.5					
	Fill - Gray Gravel, dry	571.1					
3.0	Fill - Brown mottled Clayey Silt, fine Gravel, moist to dry	569.6		1SS			43
4.5	Fill - Black, Gray Red Brown mottled Silty Sand, cinders, ash, slag, brick, wood, dry	568.7		2SS			22
	Fill - Black Sand, cinders, ash, moist to wet	567.7					
	Fill - Brown Black Clayey Silt, ash, cinder, moist to wet	567.5					
6.0	Fill - White quartz fragments, dry	567.0		3SS			21
	Fill - Brown Black Sandy Silt, ash, cinders, moist	566.7					
7.5	Fill - Brown Black Clayey Silt, fine Gravel, ash, cinders, some slag, trace Sand, dry	565.5		4SS			1
9.0	Fill - Red Brown Silty Clay, fine Gravel, moist						
	Fill - Brown, Red, Black and White Gray, Silty Sand, ash, cinders, slag, Gravel, coarse moist to dry	563.5					
10.5	Fill - Black Silty, Sand, cinders, wet, strong chemical odor	562.7		5SS			68
	Fill - same, except no cinders	561.5					
12.0	Fill - cement and brick fragments			6SS			30
	Fill - Black Silty, Sand, cinders, wet, strong chemical odor	559.7					
13.5	Gray Black laminated Sand, iridescent sheen, wet, native	559.2		7SS			15
15.0	Gray, Black, and Olive Green laminated Silty Sand, iridescent sheen, wet, native						
16.5	same, with NAPL	556.5		8SS			11
		555.9					
18.0	Gray and Red Brown Silty Clay, laminated wet, native	555.5		9SS		●	WH
	same, with Silt lenses, no laminations	555.1					
	same, except no Silt lenses	554.1					
19.5	same, with laminations, trace fine Gravel	553.5		10SS		●	WH
	same, with Silt lenses, no Gravel, no laminations						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: 53rd ST., NORTH OF PARKWAY

HOLE DESIGNATION: BH104-87
(PAGE 2 of 2)

DATE COMPLETED: 5/26/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
19.5							
	Gray and Red Brown Silty Clay, trace Sand and Gravel, wet, native			10SS	⊗	●	WH
21.0	same, with laminations	551.5					
22.5				11SS	⊗	●	WH
24.0				12SS	⊗	●	WH
25.5	same, except no laminations	547.5					
27.0				13SS	⊗	●	WH
28.5	same, with laminations	545.5					
30.0	same, with increasing Silt and fine Gravel, no laminations	543.5		15SS	⊗	●	WH
31.5		540.5		16SS	⊗	●	WH
33.0	Gray Red Brown Silty Clay, Sandy, trace fine Gravel, Silt lenses, native, Till	539.5		17SS	⊗	○	>100
	Gray and Red Brown Sandy Silt, Clay and Gravel, moist to wet, hard, compact, native, Till	539.1					
34.5	AUGER REFUSAL AND END OF BOREHOLE AT 33.4 FT. BGS						
36.0	At completion borehole was grouted to ground surface						
37.5							
39.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: ON 53rd ST. SOUTH OF ADAMS

HOLE DESIGNATION: BH105-87

DATE COMPLETED: 3/09/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION						
	augered through pavement to 2.0 ft., BGS						
2.5	Fill - Brown Sandy Gravel, Silty wet	570.1	 <p>6.5" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	1SS			21
5.0	no recovery	568.1		2SS			7
7.5				3SS			2
10.0	Fill - Black, White, and Green flyash, some Gravel, trace vegetation, wet, chemical odor	564.1		4SS			6
12.5	same, except dry to moist	561.1		5SS			68
12.5	Fill - Black and Brown Silty Sand, trace NAPL, moist	559.6 559.1		6SS			39
15.0	Gray Green laminated Silty Sand, trace Clay seams, moist to wet, native			7SS			18
17.5	same, except wet	554.1		8SS			10
20.0	same, except Black and Green, trace shell fragments	552.1		9SS			4
22.5	same, except Black, Green, and Brown, no shells	550.1		10SS			3
22.5	same, with trace Gravel and shell fragments	548.1		11SS			12
25.0				12SS			4
27.5	Red Brown and Gray laminated Silty Clay, wet, native	545.1		13SS		●	2
30.0	same, with Sand and Gravel	540.3		14SS		●	1
32.5	Red Brown and Gray Sandy Gravel, Silty, trace Clay, moist to wet, dense, native, TII	540.1 539.1 539.0		15SS		●	WR
	AUGERED TO REFUSAL			16SS			98
	END OF BOREHOLE AT 33.1 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: ON 53rd ST. EAST OF LAGOONS

HOLE DESIGNATION: BH106-87

DATE COMPLETED: 3/06/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	GROUND ELEVATION	571.6				
	augered through asphalt and Gravel to 2.0 ft. BGS					
2.5	Fill - Brown and Black Clayey Silt, Sandy, fine to medium Gravel, trace asphalt, moist	569.6 568.8		1SS		33
5.0	Fill - Gray, Black and rust Orange flyash, some Gravel, slag, trace glass, moist			2SS		5
	no recovery	565.6		3SS		3
7.5				4SS		3
10.0	Fill - Gray Brown and Black flyash and cinders, trace Gravel, wet	563.6		5SS		56
12.5				6SS		46
15.0	Fill - dark Gray Silty fine Sand, wet	557.2		7SS		6
17.5				8SS		5
	same, with glass and ceramic fragments	552.7		9SS		7
20.0	Dark Gray Silty fine Sand, wet, native	551.6		10SS		7
22.5				11SS		14
25.0	same, with trace rounded fine Gravel	547.6		12SS		24
	same, except no Gravel	546.8		13SS		2
27.5	same, with trace shells	543.6		14SS	●	18
30.0	Red Brown fine Silty Sand, fine to medium angular to subangular Gravel, Clayey, moist wet native, Till	542.6		15SS	●	52
32.5	Gray fine Sandy Silt with Gravel, Clayey, moist, native, Till	539.3		16SS	○	>50
	AUGERED TO REFUSAL	539.0				
	END OF BOREHOLE AT 33.1 FT. BGS	538.5				
	At completion borehole was grouted to ground surface					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH107-87

PROJECT NO.: 1769

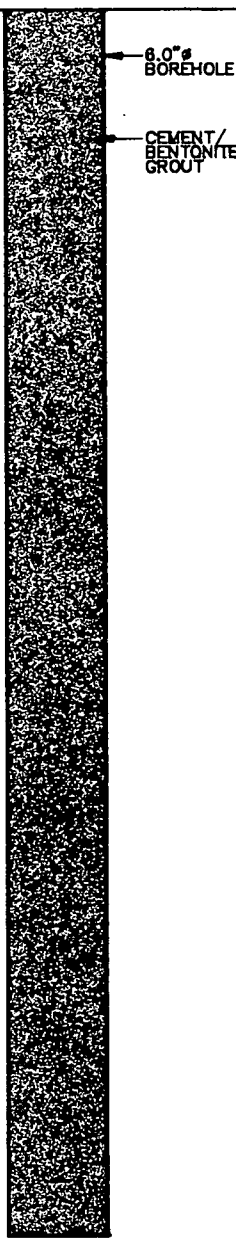
DATE COMPLETED: 3/5/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.0" OD

LOCATION: EAST OF S-AREA, ALONG 53rd STREET

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	571.1					
	augered through asphalt to 2.0 ft. BGS						
2.5	Fill - Red Brown, Brown, Gray, and Black brick, some Sand and Silt, glass, flyash, cinders, rusted Iron, moist to wet	569.1		1SS			22
5.0				2SS			4
7.5	same, except Black, wet, chemical odor	563.1		3SS			3
10.0	same, with trace NAPL	561.1		4SS			4
				5SS			27
12.5	Fill - Gray and Black Silty fine to coarse Sand, trace Gravel, cinders, wood, wet to dry	559.8 559.1		6SS			60
	Fill - some Gravel, brick fragments, some NAPL, wet, iridescent sheen	557.8		7SS			11
15.0	Fill - Gold Brown and Black medium to fine Sand and Silt, trace Gravel and glass, White waste material, moist to dry	556.1 555.1		8SS			5
17.5	Gray and Brown mottled and laminated Silty fine Sand, trace vegetation, moist, native			9SS			6
20.0	Gray and Black Silty fine Sand, trace Gravel, some NAPL, wet, native			10SS			12
22.5	Gray and Gray Black Silty medium Sand, trace Gravel with coarse Sand lenses, wet, native	549.1		11SS			10
25.0				12SS			21
27.5	Red Brown Clay, trace Gravel, high plastic, soft, wet, native	544.6 543.9		13SS		●	2
	Red Brown Sandy Clay, some Silt and Gravel, wet, native, Till	542.6		14SS			>50
30.0	augered to 30.0 ft. BGS	541.1 540.9		15SS			>100
	same, with Gray rock fragments			16SS			>100
32.5	augered to 32.0 ft. BGS, no sample						
	Gray rock fragments, wet, native, Till	539.1 539.0					
	AUGERED TO REFUSAL	538.0					
	END OF BOREHOLE AT 33.1 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH108-87

PROJECT NO.: 1769


DATE COMPLETED: 3/4/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.0" OD

LOCATION: EAST OF S-AREA / ALONG 53rd STREET

CRA SUPERVISOR: D. C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	570.7					
	augered to 2.0 ft. BGS						
2.5	Fill – Brown and dark Brown Gravelly fine to medium Sand, Silty, brick, trace Clay, moist to dry	568.7		1SS			14
		566.7					
5.0	Fill – Black, Red Brown, and Brown cinder, flyash, some Gravel, moist to wet			2SS			10
7.5				3SS			25
10.0	same, with brick fragments, iridescent sheen, wet	562.7		4SS			17
12.5				5SS			45
15.0	Black to dark Gray Silty fine to medium Sand, trace fine rounded Gravel, trace vegetation, wet to moist, native	557.8		6SS			16
		556.7					
17.5	Gray and dark Gray laminated Silty fine Sand trace fine subrounded Gravel, trace NAPL, wet native			7SS			11
20.0	same, except Gray	554.7		8SS			15
	same, with trace thin Silt lenses	552.7					
22.5			9SS			4	
25.0	same, with increasing Silt	550.7	10SS			6	
27.5	Gray fine to medium Sand and Silt, trace fine rounded Gravel, trace thin Silt lenses, wet, native	548.7	11SS			15	
30.0	same, with increasing rounded Gravel	546.7	12SS			18	
32.5	Red Brown Silty Sand with subangular Gravel, little Clay, moist to dry, native, Till	543.7	13SS			16	
	same, except dry	542.7	14SS			51	
		540.7					
	Red Brown, shattered rock fragments, wet, native		15SS			49	
		539.1					
	AUGER REFUSAL AND END OF BOREHOLE AT 31.6 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

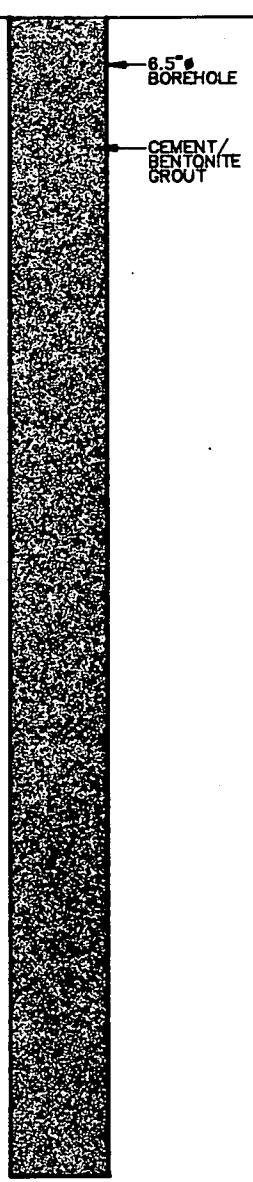
LOCATION: 53rd ST. SOUTHEAST SIDE OF S-AREA

HOLE DESIGNATION: BH109-87

DATE COMPLETED: 3/03/87

DRILLING METHOD: H.S.A. 6.5" OD

CRA SUPERVISOR: D. C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	570.1					
	augered to 2.0 ft. BGS						
2.5	Fill - mottled Brown and Red Brown to Black coarse Sand with cinders, some flyash, trace Clay and vegetation, moist to dry	568.1		1SS			7
5.0	Fill - Brown fine to medium Silty Sand, some Clay, flyash, cinders, moist same, except Yellow Brown and Red Brown, wet	566.1		2SS			30
7.5				3SS			13
10.0	Fill - Black coarse Gravel some cinder, flyash, and wood, trace NAPL, wet,	562.1		4SS			7
12.5	iridescent sheen			5SS			12
15.0	Gray and dark Gray slightly mottled fine to medium Sand, some fine Gravel and vegetation, trace thin coarse Sand lenses, wet, native	557.3		6SS			17
17.5	same, except trace fine Gravel and vegetation, no mottling, moist to wet, native	556.1		7SS			19
20.0	Gray and dark Gray Silty fine Sand, trace thin Silt lenses, moist to wet, native, Till	554.1		8SS			17
22.5	same, with trace fine rounded Gravel, wet			9SS			21
25.0		548.1		10SS			7
27.5	Red Brown Sandy, Silt, some Clay, and fine Gravel, moist to wet, native, Till same, except Brown, subrounded fine to coarse Gravel, moist to dry	545.6		11SS			27
30.0	same, with a 2.0" Clay lense	544.1		12SS			2
32.5	same, with rock fragments at tip of spoon	542.3		13SS		●	51
	AUGERED TO REFUSAL	539.8		14SS		●	>100
	END OF BOREHOLE AT 31.3 FT BGS At completion borehole was grouted to ground surface	539.2 538.8		15SS			>100

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHWEST OF S-AREA

HOLE DESIGNATION: BH110-87

DATE COMPLETED: 2/27/87

DRILLING METHOD: H.S.A. 6.5" OD

CRA SUPERVISOR: D. C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.5					
2.5	Fill - Brown and Gray Gravelly Sand and Silt, trace vegetation, moist to dry			1SS			30
				2SS			39
5.0	Fill - Brown, Yellow Brown and Black mottled Gravelly coarse Sand, cinders, flyash, trace Clay, moist to wet	565.5		3SS			26
		563.5		4SS			57
7.5	Fill - dark Gray to Black angular Gravel, wet			5SS			12
10.0				6SS			6
12.5	same, with trace NAPL, iridescent sheen	557.5		7SS			16
	Gray and dark Gray slightly mottled fine to medium Sand and Silt, trace vegetation and fine Gravel, moist to wet, native	557.1		8SS			4
15.0				9SS			5
17.5				10SS			12
20.0				11SS			12
22.5				12SS			10
25.0	Red Brown Silt and fine Sand, some Clay, trace subrounded Gravel, moist, native, Till trace Clay lenses	544.5		13SS		●	28
		543.5		14SS		●	42
27.5				15SS		●	76
30.0	same, with Gray rock fragments at tip of spoon	539.5		16SS		●	>100
	AUGERED TO REFUSAL	538.4					
		538.1					
32.5	END OF BOREHOLE AT 31.4 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

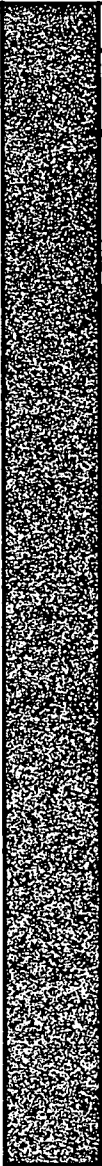
LOCATION: 53rd ST., NORTH OF PARKWAY

HOLE DESIGNATION: BH111-87

DATE COMPLETED: 2/26/87

DRILLING METHOD: H.S.A. 6.0" OD

CRA SUPERVISOR: D. C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.7					
2.5	Fill - Red Brown and Brown Silt, fine Sand and Gravel, trace vegetation, moist to dry, firm	566.7		1SS			63
	Fill - Gray and Brown Silt and angular Gravel, moist to dry			2SS			40
5.0	Fill - Brown and Gray Brown Silt and fine Sand, some Gravel and cinder, trace Clay and brick, moist to dry	564.7 563.7		3SS			17
7.5	Fill - Brown, Black, and White mottled flyash and cinder, some Sand and glass, moist			4SS			5
	same, except Yellow and Yellow Brown, wet	562.7		5SS			44
	same, except Black	561.7		6SS			26
10.0	same, with some NAPL, iridescent sheen	560.7		7SS			14
		557.7		8SS			6
12.5	Black coarse to medium Sand and Silt, trace fine Gravel and vegetation, wet to moist, native			9SS			7
15.0				10SS			4
17.5				11SS			2
20.0				12SS			22
22.5	same, with trace shell fragments, increasing Gravel	546.7		13SS			26
25.0				14SS		●	31
27.5	Red Brown Silty Sand, subrounded fine Gravel, Clayey, moist to dry, native, TIII	542.7		15SS		●	41
30.0	same, with Gray rock fragments at tip of spoon, moist to wet	538.7		16SS		●	>100
	loss of borehole fluids as bedrock encountered	537.3					
32.5	AUGER REFUSAL AND END OF BOREHOLE AT 31.4 FT BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

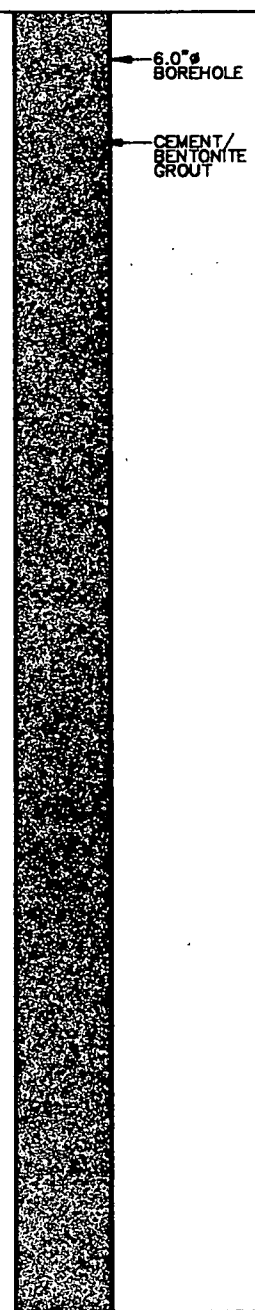
LOCATION: SOUTHWEST OF BRIDGE BY PARKWAY

HOLE DESIGNATION: BH112-87
(PAGE 1 of 2)

DATE COMPLETED: 3/19/87

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: C.H. PADGINTON
K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	585.6					
2.5	Fill - Red Brown Silty Clay, Gray angular Gravel, moist same, with some Sand, dry	583.6		1SS	X		18
				2SS	X		33
5.0	Fill - Gray Silty Sand, angular Gravel, dry	580.7		3SS	X		72
	augered through "shot rock" to 20.0 ft. BGS	579.8					
7.5							
10.0							
12.5							
15.0							
17.5							
20.0	Fill - Gray Silty Sand, Clayey, Gray angular Gravel, moist	565.6		4SS	X		>100
	augered to 22.0 ft BGS	564.3 563.6					
22.5	Fill - Red, Green, and Black medium to coarse Sand material, glass, brick, wood, moist			5SS	X		9
	same, except wet	561.6		6SS	X		7
25.0	same, with asphalt fragments	559.6		7SS	X		5
27.5				8SS	X		20
	Fill - Red Brown Silty Sand, Gravelly, trace Clay, wet	557.6		9SS	X		8
30.0	Black and Gray Silty fine Sand, wet, native	555.9		10SS	X		6
32.5				11SS	X		11
	same, with trace Gravel	551.6					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

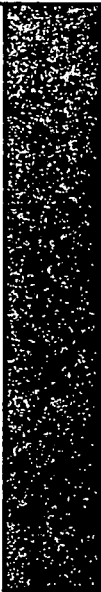
LOCATION: SOUTHWEST OF BRIDGE BY PARKWAY

HOLE DESIGNATION: BH112-87
(PAGE 2 of 2)

DATE COMPLETED: 3/19/87

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: C.H. PADGINTON
K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Black and Gray Silty fine Sand, wet, native same, with trace Gravel	551.6	 <p>6.0" BOREHOLE CEMENT/BENTONITE GROUT</p>	10SS	X		6
37.5				11SS	X		11
40.0	Red Brown Sandy Silt, Clayey, Gravelly, wet, native, Till becoming Silty Sand, and Gravel, Clayey, wet, native, Till	546.1		12SS	X		21
42.5				13SS	X	O	21
45.0				14SS	X	●	21
47.5				15SS	X	O	75
50.0	augered to 46.0 ft. BGS	540.6		16SS	X	●	>50
52.5	Gray rock fragments	539.6		17SS	X		>50
55.0	AUGERED TO REFUSAL	539.0					
57.5		537.2					
60.0	END OF BOREHOLE AT 48.4 FT. BGS						
62.5	At completion borehole was grouted to ground surface						
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: WEST OF BRIDGE ON PARKWAY

HOLE DESIGNATION: BH113-87
(PAGE 1 of 2)

DATE COMPLETED: 5/24/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON
K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	584.9					
	Fill - Brown Clayey Silt, some Gravel, trace vegetation, moist	582.9	 <p>6.5" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	1SS	X		19
2.5	Fill - Red Brown Sandy Silt, some Gravel, trace Clay, moist	580.9		2SS	X		78
5.0	augered through "shot rock" to 18.0 ft BGS, no samples			3SS			
7.5							
10.0							
12.5							
15.0							
17.5		566.9					
20.0	Fill - Brown and Gray Sandy Gravel, Silty, moist to wet	564.9		4SS	X		69
	no split-spoon advancement, augered to 22.0 ft. BGS, no sample			5SS			>100
22.5	Fill - Red Brown Clayey Silt, Gray angular Gravel, wet	562.9		6SS	X		11
	Fill - Black Silty Sand, brick wood, wet	560.9		7SS	X		7
25.0	Fill - Black Gravelly Sand, wood, wet	558.9		8SS	X		9
27.5	Black Silty fine Sand, wet, native	556.9		9SS	X		14
	same, except Black and Brown	554.9		10SS	X		6
30.0	same, except Gray and Brown	552.9		11SS	X		12
32.5	same, except Black and Brown Silty coarse Sand, some wood	550.9		12SS	X		33
	same, except Brown, fine Sand, some Clay, no wood						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

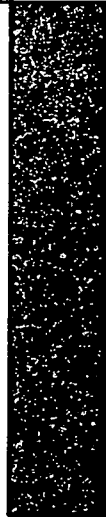
LOCATION: WEST OF BRIDGE ON PARKWAY

HOLE DESIGNATION: BH113-87
(PAGE 2 of 2)

DATE COMPLETED: 5/24/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON
K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
35.0	Black and Brown Silty coarse Sand, some wood, wet, native same, except Brown, fine Sand, some Clay, no wood	550.9	 <p>8.5" BOREHOLE CEMENT/BENTONITE GROUT</p>	11SS			12
37.5				12SS			33
40.0				13SS			43
42.5				14SS			51
45.0				15SS			66
47.5				16SS			17
50.0				17SS			29
52.5				18SS			>60
55.0	Red Silty Sand, little Clay, rounded Gravel, moist native, Till	545.4 544.9					
57.5	Red Sandy Silt some Clay fine to medium Gravel, moist, native, Till						
60.0	Red Clay, some Silt, little Sand, trace Gravel, moist, native, Till						
62.5	Red Silt, some Clay, some Sand, trace Gravel, moist, native, Till						
65.0	Red Brown Silty Clay, moist, native, Till	538.9 538.3					
	SPOON REFUSAL AND END OF BOREHOLE AT 46.4 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NEAR PARKWAY ON NORTHERN SIDE

HOLE DESIGNATION: BH114-87
(PAGE 1 of 2)

DATE COMPLETED: 6/1/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	583.6					
	augered through dry Brown Clayey Silt with Gravel and vegetation to 1.0 ft. BGS	582.6 582.1	7.25" BOREHOLE CEMENT/BENTONITE GROUT	1SS			22
2.5	Fill - Brown Clayey Silt, trace Gravel and vegetation, dry	580.6 580.1		2SS			45
5.0	Fill - Red Brown Silty Clay, Gravelly, dry, firm	577.7		3SS			32
7.5	Fill - Brown, White, and light Brown mottled Clayey Silt	576.6 578.6		4SS			27
10.0	Fill - Brown to Red Silty Clay, some Gravel, moist	574.6		5SS			5
12.5	same, except mottled Red, Brown, and Green fine Gravel	576.7		6SS			17
	Fill - Red Brown Clayey Silt, fine Gravel, dry to moist			7SS			17
	Fill - Gray Sandy Gravel, Silty, dry			8SS			>100
15.0	Fill - Red Brown Silty Clay, Gravel, dry	568.1 567.9 567.2					
17.5	Fill - Gray Sandy Gravel, Silty, dry						
20.0	augered through "shot rock" to 25.0 ft. BGS, no samples						
22.5							
25.0	Fill - Brown and Black Sandy Silt, Gravel, cinders, ash, wet, slight chemical odor	558.6 558.0		9SS			100
27.5	augered through "shot rock" to 28.0 ft. BGS, no samples						
30.0	Fill - Black Silty Sand, some wood, trace Gravel, wet, iridescent sheen, slight septic odor	555.6 555.2		10SS			16
32.5	Black fine Sandy Silt, wet, septic odor, native			11SS			7
				12SS			14
	Black Silty fine to medium Sand, shell fragments, wet, native	550.6		13SS			18
	same, except no shell fragments, septic odor	549.6					

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

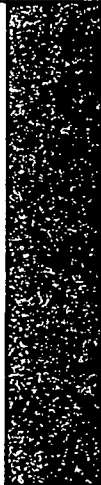
LOCATION: NEAR PARKWAY ON NORTHERN SIDE

HOLE DESIGNATION: BH114-87
(PAGE 2 of 2)

DATE COMPLETED: 6/1/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Black fine Sandy Silt, wet, septic odor, native	550.6		12SS	X		14
	Black Silty fine to medium Sand, shell fragments, wet, native	549.6		13SS	X		18
35.0	same, except no shell fragments, septic odor same, with Gravel	547.6					
		546.8		14SS	X	O	10
37.5	Gray Red Sandy Clay, trace fine Gravel, moist to wet, native, Till	545.8		15SS	X	O	26
	Red Sandy Clay, moist, soft, native	545.6		16ST	X		
40.0	Gray Red Sandy Clay, fine Gravel, moist, soft, native, Till	545.1		16SS	X		32
	Red Silty Clay, Gravelly, moist to wet, firm, native, Till	543.4		17DT	X	⊗	
42.5	same, with Gray White Gravel, dry to moist	540.6		18SS	X		
45.0	Red Silty Sand, Gravelly, Clayey moist to wet, native, Till	539.0		19SS	X		>50
	same, except Silty, coarse Gravel, moist to dry	538.0					
47.5	SPOON REFUSAL AND END OF BOREHOLE AT 45.6 FT. BGS						
50.0	At completion borehole was grouted to ground surface						
52.5	NOTE: 16SS & 19SS - A 3.0 split spoon was used with a 300 lb. hammer						
55.0	NOTE: Insufficient recovery of shelbytube - 18ST (44.6-45.6 ft.) split spoon used to obtain sample - 18SS (44.6-45.6 ft.)						
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

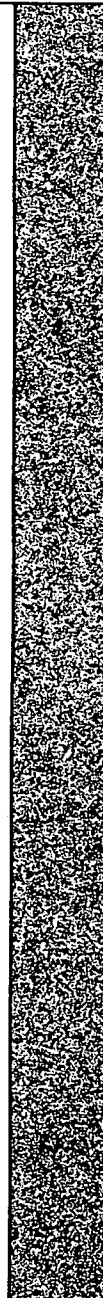
LOCATION: OFF PARKWAY ON NORTHERN SIDE




HOLE DESIGNATION: BH115-87
(PAGE 1 of 2)

DATE COMPLETED: 6/3/87



DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	583.2					
2.5	augered through dry Brown Silt with trace Sand and Gravel to 1.0 ft. BGS, no sample	582.2		1SS	X		32
	Fill - Red Brown Clayey Silt, dry, firm	580.4		2SS	X		60
	augered to 3.0 ft. BGS, no sample	580.2		3SS	X		24
5.0	Red Brown Clayey Silt, Gravelly, wood fragments, dry, firm	578.2		4SS	X		18
	same, with increased Clay, trace Sand, moist	577.7					
7.5	Fill - Gray angular Gravel - "shot rock"						
		574.2					
10.0	augered through "shot rock" to 25.0 ft. BGS, no samples						
12.5							
15.0							
17.5							
20.0							
22.5							
25.0	Black Sandy Silt, wet, NAPL, native	558.2		5SS	X		10
27.5	same, with vegetation, slight chemical odor	555.6		6SS	X		22
	same, except strong chemical odor	554.2		7SS	X		5
30.0	same, with shell fragments, wood	552.2		8SS	X		11
32.5	Black Silty Sand, wet, native	550.4		9SS	X		12
	Black Sandy Silt, wet, native	550.2					
	Black Silty fine Sand, wet, native	549.6					

NOTES:  PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

 DEC/EPA SAMPLE
 DEC/EPA SPLIT

 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: OFF PARKWAY ON NORTHERN SIDE

HOLE DESIGNATION: BH115-87
(PAGE 2 of 2)

DATE COMPLETED: 6/3/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
		550.2		8SS			11
	Black Sandy Silt, wet, native	549.6		9SS			12
35.0	Black Silty fine Sand, wet, native	548.2					
	same, with some fine Gravel	547.9		10SS		●	1
37.5	Red Brown Silty Clay, trace Sand, wet, native	547.1		11SS		●	3
	same, with fine Gravel	545.4		12ST			
40.0	Red Brown Sandy Clay, Silty, fine Gravel, native, Till	544.2		13ST		⊗	
	same, except subangular Gravel, dry to moist	542.2		14ST			
	augered to 42.0 ft. BGS, no sample	541.2					
42.5	Red Brown Silty Clay trace Sand, Gray thin Silt lenses, native, Till	539.2					
		538.8					
45.0	Red Brown Clayey Sand, trace Silt and coarse Gravel, moist to wet, native, Till	538.6					
	AUGERED TO REFUSAL						
47.5	END OF BOREHOLE AT 44.6 FT. BGS						
	At completion borehole was grouted to ground surface						
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NEAR PARKWAY ON NORTHERN SIDE

HOLE DESIGNATION: BH116-87
(PAGE 1 of 2)

DATE COMPLETED: 6/5/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	582.7					
2.5	augered through fine Gravel and Silt to 1.0 ft. BGS, no sample	581.7	7.25" BOREHOLE CEMENT/BENTONITE GROUT	1SS	X		>100
	Fill - Red Brown Clayey Silt, fine to coarse Gravel, dry	580.7		2SS	X		23
5.0	augered through "shot rock" to 3.0 ft. BGS	579.7		3SS	X		16
	Fill - Red Brown Silty Clay, fine to coarse Gravel, trace cinders and ash, dry same, with trace Sand, no cinders and ash, moist	577.7 576.7					
7.5	Fill - Black Silt, cinders, ash, wood, thin Rust Brown laminations, moist	575.7					
10.0	augered through "shot rock" to 20.0 ft. BGS, no samples						
12.5							
15.0							
17.5							
20.0	Fill - Gray, Black, White, and Brown mottled fine to coarse Gravel, ash, cinders, wood, wet	562.7		4SS	X		27
22.5	augered to 25.0 ft. BGS, no samples	560.7					
25.0	Fill - Black cinders, ash, cloth, fibrous material, wet, iridescent sheen, strong chemical odor	557.7		5SS	X		10
	Fill - Gray Black Sandy Silt, vegetation, wet same, with Gravel, ash, cinders iridescent sheen	556.8 555.7		6SS	X		77
27.5		554.1 553.7		7SS	X		5
30.0	Gray Black Sandy Silt, moist to wet, native Black Gray Silty fine Sand, wet, native same, with iridescent sheen	551.7		8SS	X		8
32.5	same, with shell fragments	549.7		9SS	X		18

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: NEAR PARKWAY ON NORTHERN SIDE

HOLE DESIGNATION: BH116-87
(PAGE 2 of 2)

DATE COMPLETED: 6/5/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
	Black Gray Silty fine Sand, shell fragments, wet, iridescent sheen, native	549.7		8SS			8
				9SS			18
35.0	Black Gravelly coarse Sand, shell fragments, wet, slight septic odor, native	547.7		10SS			12
		545.7		11SS			10
37.5	Black medium to coarse Sand, wet, native	544.8		12DT			NR
	Black Gravelly coarse Sand, wet, native	543.9		13DT			
	Red Brown Clay, Gray angular Gravel wet, native, Till, native	543.7		14SS			130
40.0	no recovery, augered to 41.0 ft. BGS	541.7					
	Red Brown Clay, moist, firm, native	541.2					
42.5	Red Brown Clayey Silt, fine Gravel, trace Sand, moist, native, Till	540.9					
	Red Brown fine Sandy Silt, fine to coarse Gravel, trace Clay, moist, native, Till	539.3					
45.0	AUGERED TO REFUSAL	538.4					
	END OF BOREHOLE AT 44.3 FT. BGS						
47.5	At completion borehole was grouted to ground surface						
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: NORTH OF PARKWAY

HOLE DESIGNATION: BH117-87
(PAGE 1 of 2)

DATE COMPLETED: 3/13/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	582.1					
2.5	Fill - Brown Silty fine Sand, angular Gravel, vegetation, moist	579.6		1SS	X		13
	augered to 4.0 ft. BGS, no sample	578.1		2SS	X		>100
5.0	Fill - Red Brown Silt, fine to medium Sand, and angular Gravel, trace Clay, moist to dry	576.1		3SS	X		20
	no recovery, augered to 8.0 ft. BGS	574.1		-	X		22
7.5	Fill - Red Brown Silt, fine to medium Sand, and angular Gravel, trace Clay, moist to dry	570.7		4SS	X		30
10.0	petroleum odor	569.1		5SS	X		>100
	augered to 13.0 ft BGS, no sample	568.3		6SS	X		>100
12.5	Fill - Red Brown Silt, fine to medium Sand, and angular Gravel, trace Clay, moist to dry	567.1		-	X		>50
15.0	petroleum odor	566.6					
	augered through "shot rock" to 15.0 ft. BGS, no sample	564.1		7SS	X		27
17.5	no recovery	563.2		8SS	X		15
	augered to 18.0 ft. BGS, no samples	560.1		9SS	X		46
20.0	Fill - Black fine to medium Sand and Silt, cinders, trace vegetation, trace brick and slag, moist to dry	559.3		10SS	X		10
22.5	Fill - Brown and Red Brown Silt, fine Sand, and Clay, trace Gravel, dry	557.9		11SS	X		48
	same, except wet, iridescent sheen, chemical odor	556.1		12SS	X		6
25.0	Fill - Black Silty coarse Gravel, trace Clay, NAPL, wet	554.1		13SS	X		5
	Black fine to medium Sand and Silt, trace rounded Gravel, vegetation, wet, native same, with NAPL, trace shell fragments, no vegetation	550.1		14SS	X		19
27.5	same, with trace Clay and thin Silt lenses	548.1		15SS	X		6
30.0							
32.5	same, except no NAPL						
	same, with iridescent sheen, trace NAPL, increasing fine Gravel						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

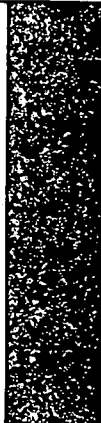
LOCATION: NORTH OF PARKWAY

HOLE DESIGNATION: BH117-87
(PAGE 2 of 2)

DATE COMPLETED: 3/13/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Black fine to medium Sand and Silt, trace rounded Gravel, shell fragments, Clay and thin Silt lenses, wet, native same, with iridescent sheen, trace NAPL, increasing fine Gravel	548.1	 <p>8.0" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	14SS			19
		546.1		15SS			6
37.5	Black Silty medium to coarse Sand, rounded and subrounded Gravel, some NAPL, wet, native	544.5 544.1		16SS			10
	Dark Gray Clayey Silt, wet, native	543.4		17SS		●	24
40.0	Red Brown Silt and fine Sand, angular and subangular Gravel, some Clay, dry, native			18SS		●	30
	Red Brown and Brown Silty Clay, trace Gravel, moist, native	540.8 540.3					
42.5	Brown Sand and Silt, angular to subangular Gravel, trace Clay, wet, native, Till						
	AUGERED TO REFUSAL	538.1					
45.0	END OF BOREHOLE AT 44.0 FT. BGS						
47.5	At completion borehole was grouted to ground surface						
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: ALONG PARKWAY

HOLE DESIGNATION: BH118-87
(PAGE 1 of 2)

DATE COMPLETED: 3/12/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON
D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				N U M B E R	S T A T E	S T A T U S	V A L U E
	GROUND ELEVATION	581.2					
2.5	Fill - Brown Silty fine Sand, some Gravel, some vegetation, moist		 <p>8.0" BOREHOLE CEMENT/BENTONITE GROUT</p>	1SS	X		24
				2SS	X		17
5.0	Fill - Green, Brown, Red Brown, and Black Silty fine Sand, wet, chemical odor	576.6		3SS	X		15
7.5	same, with some Gravel	573.2		4SS	X		17
				5SS	X		14
10.0	augered to 14.0 ft. BGS, no samples	571.2					
12.5							
15.0	Fill - Gray and Brown Silty fine Sand, angular Gravel, wet augered to 17.5 ft. BGS, no samples	567.2 566.7		6SS	X		>100
17.5	Fill - Brown and Gray Brown coarse Gravel, some Sand and Silt, wet	563.7		7SS	X		63
20.0	augered to 20.0 ft. BGS, no samples Fill - Gray Black Silty Gravel, wet	561.7 561.2		8SS	X		>151
22.5	augered to 22.0 ft. BGS, no samples Fill - Gray Black Silty fine to medium Sand, Gravelly, cinders, wet	559.9 559.2		9SS	X		26
25.0	Gray Black Silty fine Sand, vegetation, NAPL, wet, native	558.1		10SS	X		16
27.5	same, except no vegetation	555.2		11SS	X		12
30.0	same, except fine to medium Sand	553.2		12SS	X		8
32.5	sample lost	549.2		13SS	X		WR
	Gray and dark Gray Silty fine to medium Sand, trace rounded Gravel, NAPL, wet, native	547.2		14SS	X		16

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

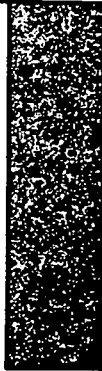
LOCATION: ALONG PARKWAY

HOLE DESIGNATION: BH118-87
(PAGE 2 of 2)

DATE COMPLETED: 3/12/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: C.H. PADGINTON
D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	sample lost						
35.0	Gray and dark Gray Silty fine to medium Sand, trace rounded Gravel, NAPL, wet, native	547.2		14SS			16
37.5	Gray Brown fine Sand and Silt, some Clay, trace Gravel, wet, native, Till	544.2		15SS			12
40.0	Brown fine Sand and Silt, subrounded Gravel, Clayey, dry to moist	543.2		16SS		●	75
42.5	Brown rock fragments, some Silt and Sand, trace Clay, wet, native	539.2 538.7		17SS		●	44
42.5				18SS			>50
45.0	SPOON REFUSAL AND END OF BOREHOLE AT 42.5 FT. BGS At completion borehole was grouted to ground surface						
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

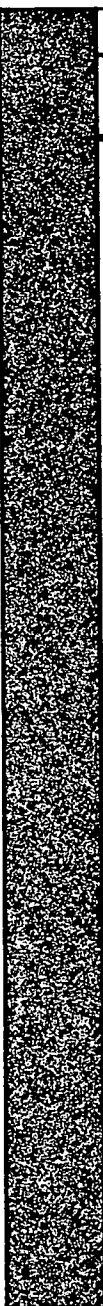
LOCATION: ALONG PARKWAY

HOLE DESIGNATION: BH119-87
(PAGE 1 of 2)

DATE COMPLETED: 3/17/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	580.8					
2.5	Fill - Brown and Gray Gravelly Silt, Sandy, trace Clay, some vegetation, moist			1SS			39
				2SS			28
5.0	Fill - Red, Brown, and Green laminated Clayey Silt, moist, low plastic	576.8		3SS			11
		574.8		4SS			15
7.5	Fill - Brown and Gray Gravelly Sand, Silty, moist to wet no recovery	572.8		5SS			29
10.0	Fill - Gray "shot rock"	570.8		6SS			44
12.5				7SS			>100
15.0	augered through "shot rock" to 20.0 ft. BGS	566.8					
17.5							
20.0	Fill - Black and Gray flyash with some Sand and Silt, moist to wet	560.8		9SS			34
22.5	Fill - Black and Gray subangular Gravel, trace Silt and Sand, wet	558.8		10SS			23
		556.8		11SS			20
25.0	Black and Gray Silty fine Sand, trace Gravel, wet, native			12SS			21
27.5				13SS			7
30.0	Dark Gray to Black Silty fine to medium Sand, wet, native	550.8		14SS			2
32.5				15SS			16
				16SS			3

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: ALONG PARKWAY

HOLE DESIGNATION: BH119-87
(PAGE 2 of 2)

DATE COMPLETED: 3/17/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Dark Gray to Black Silty fine to medium Sand, wet, native		 <p>6.5" BOREHOLE CEMENT/BENTONITE GROUT</p>	15SS	X		16
				16SS	X		3
37.5	Red Brown laminated Silty Clay, Sandy trace Gravel, moist, native, Till	543.8 543.0		17SS	X	●	27
40.0	Red Brown Silty Clay, Sandy, trace, Gravel, moist, native, Till			18SS	X	●	>50
	Red Brown Silty Sand, Clayey, Gravelly, moist, native, Till	540.3		19SS	X	●	>50
42.5	AUGERED TO REFUSAL	538.5					
	END OF BOREHOLE AT 42.3 FT. BGS						
45.0	NOTE: NO RECOVERY OF SPLIT SPOON 8SS (20.0-21.1 FT.) SECOND SPLIT SPOON USED TO OBTAIN SAMPLE - 9SS (20.0-22.0 FT. BGS) At completion borehole was grouted to ground surface						
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

▽ WATER FOUND

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: NORTH OF PARKWAY

HOLE DESIGNATION: BH120-87
(PAGE 1 of 2)

DATE COMPLETED: 3/13/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR
D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	580.8					
2.5	Fill - Black Brown and Red Brown Silt with some fine Sand and Clay, some Gravel, asphalt, mottled, moist to dry augered to 2.0 ft. BGS, no sample	579.5 578.8 578.4		1SS	X		>100
	Fill - Gray Gravel, dry augered to 4.0 ft. BGS, no sample	576.8		2SS	X		>100
5.0				3SS	X		35
7.5	Fill - Brown, Green Brown, and Orange Brown fine Sandy Silt, Gravelly, trace Clay, moist no recovery	572.8 572.5		4SS	X		17
10.0	augered to 14.0 ft. BGS, no sample			5SS	X		>100
12.5							
15.0	Fill - Gravel Fill - Brown Silty Clay, moist	566.8 566.3 566.0		6SS	X		19
17.5	Fill - Brown, Red, Green, and Black Sandy Silt, trace Clay, moist Fill - Brown Clay, moist	564.8 564.5 564.0 562.8 562.5		7SS	X		50
20.0	Fill - Brown, Red, Green, and Black Sandy Silt, trace Clay, moist Fill - Gray, White, Blue, and Yellow Gravel, some Silt and Sand, wet	560.8		8SS	X		>100
22.5	Fill - Gray Gravel, wet augered to 20.0 ft. BGS, no sample			9SS	X		>100
25.0	no split spoon advancement, no recovery, augered to 24.0 ft. BGS, no sample Gray Silty Sand, wet, native	556.8		10SS	X		14
27.5				11SS	X		21
30.0				12SS	X		19
32.5				13SS	X		5
	Red Brown laminated Silty Clay, Sandy, Gravelly, moist, native	546.3		14SS	X		17
				15SS	X	○	38

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: NORTH OF PARKWAY

HOLE DESIGNATION: BH120-87
(PAGE 2 of 2)

DATE COMPLETED: 3/13/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR
D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Gray Silty Sand, wet, native	546.3	 <p>6.5" BOREHOLE CEMENT/BENTONITE GROUT</p>	14SS	X		17
35.0	Red Brown laminated Silty Clay, Sandy, Gravelly, moist, native, Till	544.3		15SS	X	O	38
37.5	Red Brown Silty Sand, Gravelly, Clayey, moist to wet, native, Till			16SS	X	●	92
40.0		540.0 539.9		17SS	X	●	>100
	AUGERED TO REFUSAL			18SS	X		>100
42.5	END OF BOREHOLE AT 40.9 FT. BGS						
45.0							
47.5	At completion borehole was grouted to ground surface						
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

▽

WATER FOUND

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: NEAR PARKWAY

HOLE DESIGNATION: BH121-87

DATE COMPLETED: 2/19/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D. BLACK
D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	566.8					
	Fill - Brown and Black Gravelly Silt, mottled, dry			1SS			86
2.5	Fill - Yellow Brown Gravelly coarse Sand, dry	564.8					
	Fill - Black Sandy Silt, Gravelly, trace glass, wood, dry	564.0		2SS			33
		563.8					
5.0	Fill - Gray Black and Gray White coarse material, moist	562.8		3SS			14
	Fill - Black and Gray White medium to coarse Sand, Gravelly, some Silt, wet			4SS			2
7.5				5SS			13
10.0				6SS			12
12.5	Black medium to fine Sand, trace Gravel, wet, native	554.8		7SS			8
15.0				8SS			8
17.5				9SS			9
20.0				10SS			18
22.5	Black Sandy Gravel, wet, native	544.8		11SS			17
		543.5		12SS		●	12
25.0	Red Brown Clayey Sand, trace Gravel, dry, dense, native, Till			13SS		●	46
	Red Brown Silty coarse Sand, Clayey, trace Gravel, moist to wet, native, Till	540.8		14SS			>100
27.5		540.4					
	AUGERED TO REFUSAL						
		538.3					
30.0	END OF BOREHOLE AT 28.5 FT. BGS						
32.5	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH122-87

PROJECT NO.: 1769

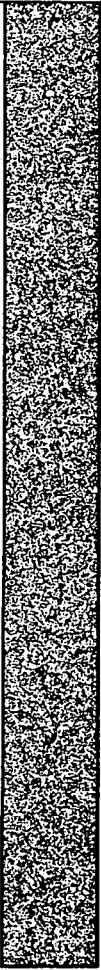
DATE COMPLETED: 1/12/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: WEST OF LAGOON IN PARKING LOT

CRA SUPERVISOR: K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	567.9					
	Fill - Gray, Brown, and Black Silty Sand, Clayey, angular Gravel, brick, moist	565.9		1SS			15
2.5	Fill - Red Brown Clayey Silt and Gravel	565.8		2SS			28
	Fill - Brown to Gray Silty Sand, trace Gravel, moist	563.9		3SS			28
5.0	Fill - Gray coarse Sand to Black Silty Sand, angular Gravel, brick, wet	561.9		4SS			12
	Fill - Black Gravelly coarse Sand, Silty, wet	559.9		5SS			9
7.5	Black Silty fine Sand, wet, native			6SS			19
10.0				7SS			16
12.5				8SS			6
15.0	same, with sulphur odor	553.9		9SS			8
17.5				10SS			2
20.0	same, except no sulphur odor	549.9		11SS			WR
22.5				12SS			13
25.0	Black Gravelly Sand with some Silver Gray flakey material, wet, native	544.1 544.0 543.9		13SS			14
	Black Clay, wet, native	542.6					
	Red Brown Silty Clay, wet, native	541.9					
27.5	Red Brown Clayey Silt, Sandy, some rounded Gravel, moist, native, Till						
30.0	SPOON REFUSAL AND END OF BOREHOLE AT 26.0 FT. BGS At completion borehole was grouted to ground surface						
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

▽ WATER FOUND

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: WEST OF LAGOONS IN PARKING LOT

HOLE DESIGNATION: BH123-87

DATE COMPLETED: 1/12/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.3					
2.5	Fill - Gray Brown Clayey Silt, angular Gravel, moist		 <p>6.5" BOREHOLE CEMENT/BENTONITE GROUT</p>	1SS			22
		564.5		2SS			50
5.0	Fill - Red Brown Silty fine Sand	564.3		3SS			56
	Fill - Black and Gray Brown Silty Sand, Gravel, moist			4SS			28
7.5	Fill - Gray Black Sandy Silt, Gravel, Brown fine Sand lenses, glass, wet	562.3		5SS			31
		559.4		6SS			24
10.0	Gray Black and Gray Brown Silty Sand, fine Brown Sand lenses, moist, native, chemical odor	558.3		7SS			14
12.5	Black and Brown laminated Silty fine Sand, trace layers of fine Gravel, moist, chemical odor, native			8SS			4
	same, except trace Silt lenses, wet, slight chemical odor	556.3		9SS			8
15.0	same, with chemical odor	554.3		10SS			11
	same, except slight chemical odor	552.3		11SS			4
17.5				12SS			2
20.0				13SS			WH
				14SS			52
22.5	Black Clay, wet, native	547.6					
	Red Brown Clay, wet, native	547.3					
25.0	same, except Sandy	544.3					
27.5	Red Brown Silty Sand with Gravel, wet, native, Till	540.6					
		540.4					
30.0	SPOON REFUSAL AND END OF BOREHOLE AT 27.9 FT. BGS						
32.5	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WEST OF LAGOON IN PARKING LOT

HOLE DESIGNATION: BH124-87

DATE COMPLETED: 1/13/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.5					
	Fill - Brown and Gray Silty Sand, angular Gravel, brick, moist	566.5		1SS			28
2.5	Fill - Gray Brown Silty Clay, moist	566.0		2SS			33
	Fill - Black Silty medium Sand with angular Gravel, brick, moist to wet			3SS			26
5.0	same, with iridescent sheen, chemical odor	562.5		4SS			24
7.5		560.5		5SS			21
	Gray Black and Brown laminated Silty fine Sand, iridescent sheen, wet, chemical odor, native			6SS			14
10.0				7SS			20
12.5				8SS			1
15.0	Black and Red Brown Clay, wet, native	554.2		9SS			2
17.5	same, except Red Brown, some Sand	551.1		10SS			WH
	same, except trace Sand	550.5		11SS			1
20.0				12SS			2
22.5				13SS			WH
25.0	same, with increasing Sand	544.5		14SS			25
27.5	Red Brown and Gray Silty Clay with Gravel, moist, native, Till	540.8 540.5					
30.0	SPOON REFUSAL AND END OF BOREHOLE AT 28.0 FT. BGS						
32.5	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

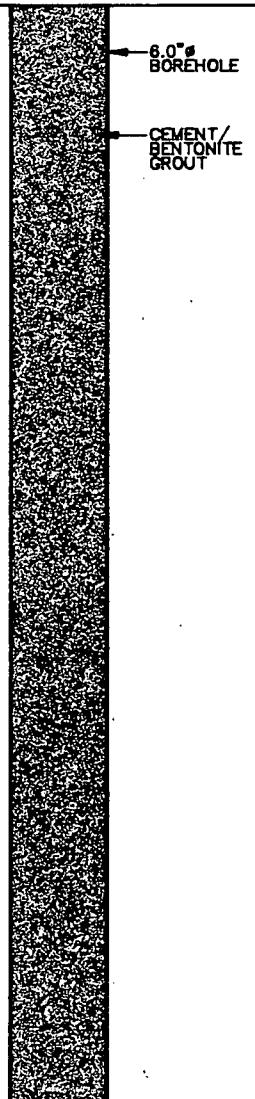
LOCATION: ADAMS AVE.

HOLE DESIGNATION: BH125-87

DATE COMPLETED: 2/17/87

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	570.5					
	augered to 2.0 ft. BGS through asphalt						
2.5	Fill - Black, Gray, and Yellow coarse Sand, cinders, some Silt, trace Gravel, dry to moist same, with some flyash, wet	568.5		1SS	X		25
5.0		566.5		2SS	X		8
7.5	Fill - Black coarse Sand, cinder, wood, NAPL, wet	564.5		3SS	X		5
10.0		560.8		4SS	X		11
12.5	Dark Gray Silty fine to medium Sand and Silt trace vegetation and subrounded Gravel, moist to wet, native same, with NAPL, dry to wet	560.5 558.0		5SS	X		18
15.0	Dark Brown Silty Clay, moist to wet, high plastic, native same, trace Sand, trace Gravel			6SS	X		7
17.5				7SS	X	●	2
20.0				8SS	X	●	2
22.5		552.5		9SS	X	●	2
25.0	Brown and Red Brown alternating bands of Clay and Silt, trace fine Sand, moist to wet, native same, with occasional thin fine Sand lenses and Gravel, wet	550.5		10SS	X	●	2
27.5				11SS	X	●	2
30.0				12SS	X	●	2
				13SS	X	●	2
				14SS	X	●	>25
	Red Brown Clayey Silt, Sandy, with Gravel, moist to wet, native, Till	542.5 542.0					
30.0	AUGERED TO REFUSAL	540.9					
32.5	END OF BOREHOLE AT 29.6 FT. BGS						
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLUT



WATER FOUND



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLUT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

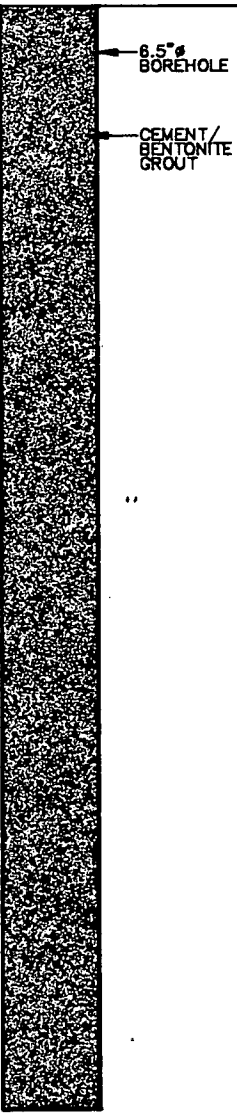
LOCATION: ADAMS AVE.

HOLE DESIGNATION: BH126-87

DATE COMPLETED: 2/16/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	570.7					
	augered to 4.0 ft. BGS						
2.5							
	Fill - Black and White coarse Sand, cinder, brick, wood, wet	566.7					
5.0	Fill - Black and Gray Silty coarse Sand, some Gravel, trace cinder, unknown Green granular material, wet	564.7		1SS			8
	same, with NAPL	563.6					
7.5	same, except no NAPL	563.4		2SS			4
		562.6					
	Gray and Gray Brown laminated Sand and Silty Sand, trace vegetation and Gravel, some Black NAPL, moist, native			3SS			11
10.0				4SS			8
12.5				5SS			6
	Brown and Dark Brown Silty Clay, trace Silt lenses and vegetation, trace NAPL in soil partings, moist to wet, native	557.4					
15.0	same, except no NAPL, trace Sand, trace Gravel, wet	556.7		6SS		●	WH
17.5				7SS		●	5
	Red Brown Clay and Silt, trace fine Sand and Gravel, trace Silt lenses, native	552.7		8SS		●	1
20.0				9SS		●	WH
22.5	Brown and Red Brown Silty Clay, trace Sand moist to wet, native	548.7		10SS		●	4
	same, trace Gravel	546.7		11SS		●	WH
25.0				12SS		●	2
27.5		542.7		13SS		●	WH
	Red Brown Silty Clay, some fine to medium Sand, trace Gravel, wet, native, Till	540.9					
30.0	AUGER REFUSAL AND END OF BOREHOLE AT 29.8 FT. BGS						
32.5	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

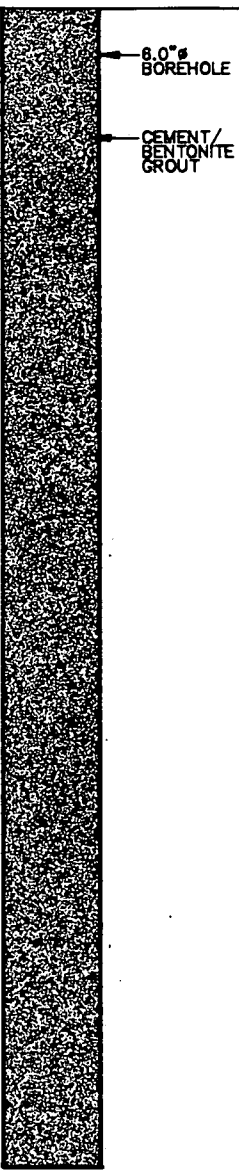
LOCATION: ADAMS AVE.

HOLE DESIGNATION: BH127-87

DATE COMPLETED: 2/13/87

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	570.8					
	augered to 2.0 ft. BGS through asphalt						
2.5	Fill - Black coarse Silt and Sand, cinder, slag, trace coarse angular Gravel, wet same, with NAPL	568.8		1SS			21
5.0		566.8		2SS			25
7.5				3SS			10
10.0	Black, Brown, and Gray Silty fine to medium Sand, trace vegetation, NAPL, moist to wet, native	562.8		4SS			13
12.5				5SS			2
				6SS			4
15.0	Brown Silty Clay, wet, native	557.5		7SS		●	WH
	Brown to Red Brown Silty Clay, trace fine Sand lenses, trace Gravel, moist to wet, native	556.8		8SS		●	3
17.5				9SS		●	2
20.0	Brown and Red Brown Silty Clay, trace fine Silt lenses, wet, native	552.8		10SS		●	WH
22.5				11SS		●	2
25.0				12SS		●	WH
27.5				13SS		●	2
30.0	Red Brown and Gray Clayey Sand, Silty, trace Gravel, wet, native, Till	541.3		14SS		●	1
32.5	AUGER REFUSAL AND END OF BOREHOLE AT 31.2 FT. BGS	539.6		15SS			>50
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: ADAMS AVE.

HOLE DESIGNATION: BH128-87

DATE COMPLETED: 2/12/87

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	570.9					
	augered to 2.0 ft. BGS through asphalt						
2.5	Fill - Black and Brown Gravelly coarse Sand, Silty, moist to dry	568.9		1SS			33
	same, except some cinders, brick, wet	566.9		2SS			6
5.0				3SS			6
	Fill - Black Sandy Gravel, cinder, some NAPL, wet, chemical odor	564.9		4SS			11
7.5				5SS			2
	Black and Gray Black Silty fine Sand, vegetation, NAPL, wet, native	562.9		6SS		●	4
10.0				7SS		●	WH
12.5		557.7		8SS		●	2
	Red Brown to Brown Silty Clay, trace vegetation, moist to wet, native			9SS		●	1
15.0				10SS		●	WH
17.5	same, except trace Silt nodules, wet	552.9		11SS		●	2
20.0	same, except trace fine Sand lenses	550.9		12SS		●	2
22.5				13SS		●	2
25.0				14SS		●	WH
27.5		542.4		15SS			WR
30.0	Red Brown and Gray Silty Clay, Sandy with Gravel, wet, native, Till						
32.5	AUGERED TO REFUSAL END OF BOREHOLE AT 32.2 FT. BGS At completion borehole was grouted to ground surface	538.9 538.7					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

◐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: ADAMS AVE.

HOLE DESIGNATION: BH129-87

DATE COMPLETED: 2/11/87

DRILLING METHOD: H.S.A. 6.5" OD

CRA SUPERVISOR: D. C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	571.0					
2.5	augered through moist coarse Gravel and some Sand to 4.0 ft. BGS						
5.0	Fill - Black coarse Sand and Gravel, wet	567.0		1SS			2
	same, with some clinder, iridescent sheen, chemical odor	565.0					
7.5	same, with Pink Silt waste	563.4		2SS			2
	same, except no Pink Silt	563.2					
	Fill - Black coarse Sand and Silt, some Gravel and vegetation, moist	563.0		3SS			14
		562.4					
10.0	Gray Black to Yellow Gray Silty fine Sand, some vegetation, trace NAPL, moist to wet, native	561.0		4SS			5
12.5	Yellow Gray to Gray Black laminated fine to coarse Sand and Silt, trace vegetation, NAPL, moist to wet, native	558.1		5SS		●	3
15.0	Brown Silty Clay, trace vegetation, moist to wet, high plastic, soft, native			6SS		●	1
	same, with trace Silt nodules	557.0					
	same, except Brown and Red Brown	554.0		7SS		●	2
17.5				8SS		●	1
20.0				9SS		●	WH
22.5	same, with trace fine Sand lenses	549.0		10SS		●	WH
25.0				11SS		●	WH
27.5				12SS		●	1
30.0				13SS		●	WR
		540.0		14SS		●	WR
32.5	Red Brown Sand, Clay, and Silt, some fine Gravel, wet, native, Till			15SS			WR
		538.0		16SS			>100
	SPOON REFUSAL AND END OF HOLE AT 33.0 FT. B.G.S. At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

◐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: INTERSECTION OF 53rd. AND ADAMS AVE.

HOLE DESIGNATION: BH130-87

DATE COMPLETED: 3/10/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	571.1					
	augered through asphalt to 2.0 ft. BGS						
2.5	Fill - Brown and Red Brown Gravelly coarse Sand, brick fragments, moist	569.1		1SS			4
5.0	Fill - Brown Sandy Coarse Gravel, brick, moist	567.1		2SS			4
7.5	Fill - Black coarse Sand and Gravel, some Silt, trace Clay, wet, iridescent sheen	565.1		3SS			11
10.0	Black to Gray Black mottled Silty fine Sand, some Clay, trace vegetation, wet, native same, with trace subrounded to rounded Gravel, trace thin coarse Sand lenses, moist, iridescent sheen	564.1		4SS			9
12.5	Brown Silty Clay, trace Silt nodules, wet, plastic, native	560.1		5SS			9
15.0	Red Brown Silty Clay, wet, native same, except Brown and Red Brown, high plastic, soft	559.1		6SS			4
17.5		557.1		7SS		●	2
20.0	same, with trace Silt nodules and fine lense	551.1		8SS		●	4
22.5	same, except laminated Brown and Red Brown, trace Silt lenses	549.1		9SS		●	1
25.0				10SS		●	WH
27.5				11SS		●	1
30.0	Red Brown and Gray Brown Sand, Silt, and Clay, trace rounded and subrounded Gravel, wet, native, Till	541.1		12SS		●	1
32.5	Red Brown Sand, Silt, and Gravel, some Clay moist to wet, native, Till	539.1		13SS		●	2
	AUGERED TO REFUSAL	538.8		14SS		●	2
	END OF BOREHOLE AT 32.8 FT. BGS	538.3		15SS		●	2
	At completion borehole was grouted to ground surface			16SS		●	>100

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH131-87

PROJECT NO.: 1769


DATE COMPLETED: 1/28/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 8.0" OD

LOCATION: EAST OF BUILDING V-70

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.5					
2.5	Fill - Black, Brown, and Red Brown Gravel and coarse Sand, quartz, cinders, slag, dry to moist	567.5		1SS			81
	Fill - Black and Rust Red cinders and slag, some White waste material, wet same, with coarse Gravel	565.5		2SS			28
5.0	same, with NAPL	563.5		3SS			6
	Gray and dark Gray Silt and fine to medium Sand, some fine Gravel and vegetation, Brown NAPL, wet, strong chemical odor, native	563.2		4SS			6
7.5	Dark Brown and Gold Brown laminated Silty fine to medium Sand, trace vegetation, native	561.5		5SS			9
10.0	Dark Gray Silt and Sand, NAPL, wet, native	559.5		6SS			2
	Brown Clay, trace vegetation and Silt nodules, moist, high plastic, native	559.3		7SS		●	2
12.5				8SS		●	2
15.0				9SS		●	2
17.5		551.5		10SS		●	2
20.0	Brown and Red Brown laminated Clay, trace Red Gray Silt lenses, wet, native			11SS		●	WH
22.5				12SS		●	2
25.0				13SS		●	2
27.5		541.5		14SS		●	2
	Red Brown Silt and Clay, Sandy, fine Gravel, wet, native, Till	540.5		15SS			>100
30.0	SPOON REFUSAL AND END OF BOREHOLE AT 29.0 FT. BGS						
32.5	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH132-87

PROJECT NO.: 1769


DATE COMPLETED: 1/30/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.0" OD

LOCATION: EAST OF BUILDING V-70

CRA SUPERVISOR: D.E. BLACK
D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATUS	VALUE
	GROUND ELEVATION	569.4				
2.5	Fill - Black cinders, some fine Gravel, dry	568.6		1SS		168
	Fill - Purple Gravel, dry	568.4				
	Fill - Sand, cinders, concrete, dry	567.6		2SS		36
	Fill - Purple Gravel, dry	567.4				
	Fill - Sand, concrete, dry	567.1				
5.0	Fill - Brown Gravelly Silt, cinders, concrete, sawdust, dry	565.4		3SS		6
	same, except Black, wood, slag, no concrete and sawdust, moist	566.2		4SS		5
7.5	Fill - Black Gravel, cinders, concrete, brick, wet	562.2		5SS	●	3
10.0	Black Silt, trace Clay, moist, native same, with some wood	561.9		6SS	●	7
	Red Brown and Gray mottled Silty Clay, moist, native	561.4		7SS	●	10
12.5	same, except softer	557.4		8SS	●	1
15.0	same, except wet, plastic	553.4		9SS	○	2
17.5	Red and Gray laminated Clay, wet, native	551.4		10SS	●	1
20.0	Red Brown and Brown Clay, trace Silt nodules, wet, native	549.4		11SS	●	1
22.5				12SS	●	1
25.0	same, with some Sand and fine Gravel	543.6		13SS	●	1
27.5	Red Brown and Gray Sandy Clay, some Gravel, trace Silt lenses, wet, native, Till	543.4		14SS	●	4
	same, with Silt, rock fragments	541.4		15SS		>100
30.0	SPOON REFUSAL AND END OF BOREHOLE AT 29.0 FT. BGS	540.4				
32.5	At completion borehole was grouted to ground surface					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH133-87

PROJECT NO.: 1769


DATE COMPLETED: 2/2/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: EAST OF V-68

CRA SUPERVISOR: D.C. MILLARD
K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	571.8					
	augered to 0.5 ft. BGS	571.3					
2.5	Fill - Gray and Black Gravel and coarse Sand, some cinders and brick, some glass moist	569.3		1SS			110
	Fill - Gray, Yellow, and light Brown cinder and flyash, some coarse Sand and Gravel, moist	567.3		2SS			81
5.0	relocate borehole 3.0 ft. east then 3.0 ft. northeast	565.9		3SS			152
	augered to 4.5 ft. BGS, no samples	565.3		4SS			42
7.5	Fill - Gray and Yellow Black Sand, rock fragments, brick, moist	563.4		5SS			14
	Fill - Yellow Black fine Sand, brick, moist			6SS			16
10.0	Fill - Black angular Gravel, Green inclusions, wet	561.6		7SS			28
	Gray and Black fine Silty Sand, moist, native			8SS			3
12.5	Red Brown Silty Clay, moist, native same, with trace fine Sand lenses	561.3		9SS			4
	same, no Sand lenses	559.3		10SS			2
15.0				11SS			WH
17.5				12SS			1
20.0				13SS			WH
22.5				14SS			4
25.0				15SS			16
27.5	Red Brown Clayey Silt, Sandy, some rounded Gravel, wet, native, Till	544.1		16SS			>100
		543.3					
30.0	Red Brown Sandy Clay, coarse Gravel, wet, native, Till same, with rounded Gravel	541.3					
		540.8					
32.5	SPOON REFUSAL AND END OF BOREHOLE AT 31.0 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH134-87

PROJECT NO.: 1769


DATE COMPLETED: 2/4/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.0" OD

LOCATION: EAST OF V-70

CRA SUPERVISOR: K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	571.8					
	Fill - Black and Gray Silty medium Sand with angular Gravel, brick, concrete, moist			1SS			36
2.5	Fill - Red Brown Silty Clay with Gravel and some Sand, moist	569.8		2SS			14
	Fill - Gray Black medium Sand, angular Gravel, brick, concrete, moist	567.8		3SS			19
5.0		565.9		4SS			11
7.5	Fill - Black Brown and Red Brown Silty Clay, some angular Gravel, moist			5SS			12
		561.8		6SS			11
10.0	Black fine Sand, wet, native	560.8		7SS			21
	Red Brown Silty Clay, wet, native	559.8		8SS			5
12.5	Red Brown Clay, trace vegetation, moist, native			9SS			5
	same, except no wood, wet	557.8		10SS			1
15.0				11SS			WR
17.5				12SS			2
20.0				13SS			WH
22.5				14SS			5
25.0				15SS			4
27.5	Red Brown Sandy Clay, Silty, Gravel, wet, native, Till	545.0		16SS			6
30.0				17SS			>50
32.5	same, with rock fragments, moist	539.8					
	SPOON REFUSAL AND END OF BOREHOLE AT 32.2 FT. BGS	539.6					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

▽ WATER FOUND

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHWEST OF FIELD TRAILERS

HOLE DESIGNATION: BH135-87

DATE COMPLETED: 2/4/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	570.9					
	Fill - Brown and Gray Brown Sand, Silt, and Gravel, moist	570.4		1SS			71
2.5	Fill - Gray Gravel, slag, some Sand, moist	568.9		2SS			24
	Fill - Brown Gray Silt and Sand, some Gravel, trace Clay, moist	568.6					
	same, except Gray Brown, trace brick no Clay	568.2		3SS			25
5.0	Fill - dark Brown flyash, trace brick and glass, moist			4SS			21
	same, except wet	566.9		5SS			3
7.5	Fill - Black Silt, some Clay, trace fine Sand, trace thin flyash lenses, moist	562.9		6SS		●	6
10.0	Gray fine to medium Sand, some Silt, wet, native	561.8		7SS			
	Red Brown mottled Clay, some Silt, trace fine Gravel, Silt nodules, moist, native	560.7		8SS		●	3
12.5	no recovery	558.9		9SS		●	4
		556.9		10SS		●	WH
15.0	Red Gray Silt, some Clay, wet, native			11SS		●	WH
	same, with thin Gravel lense	554.7		12SS		●	1
	Gravel, wet, native	554.3		13SS		●	1
17.5	Red Gray Silt, some Clay, wet, native	554.1		14SS		●	1
	same, except Red Brown	553.6		15SS		●	1
20.0				16SS			5
22.5	Red Brown and Gray laminated Silty Clay and Clayey Silt, wet, native	547.8		17SS			>50
		546.9					
25.0	Red Brown Silty Clay, trace Sand nodules, wet, native						
27.5							
30.0	Red Brown Sand, Silt and Clay with some rounded Gravel, wet, native, Till same, with increased Gravel	541.3					
		539.4					
32.5	Gray Silt, some fine Sand, trace Gravel, moist, native, Till	538.7					
		538.4					
	SPOON REFUSAL AND END OF BOREHOLE AT 32.5 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WEST OF 53rd. STREET

HOLE DESIGNATION: BH136-87

DATE COMPLETED: 2/6/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	570.6					
	Fill - dark Brown coarse Sand, Gravelly, brick, concrete, dry	568.6		1SS			158
2.5	Fill - Brown Sand and Silt, some Gray Gravel, some cinders, moist same, except wet	566.6		2SS			13
5.0		564.6		3SS			3
	no recovery	562.6		4SS			4
7.5	Fill - dark Gray to Black coarse Sand and Gravel, wet	562.5		5SS			8
10.0	Dark Gray fine to medium Sand and Silt, wet, native	562.4		6SS		●	7
	Brown and Gray slightly mottled Silty Clay, moist, native	560.6		7SS		●	10
12.5	Brown and Gray slightly mottled Clay, trace vegetation, native	558.6		8SS		●	2
15.0	same, except Brown, no mottling, high plastic same, except no vegetation	556.6		9SS		●	4
	Red Brown and Brown Clay, trace fine Sand, trace fine Gravel, wet, soft, native trace Silt nodules	554.6		10SS		●	WH
17.5		552.6		11SS		●	WR
20.0	trace Silt and fine Sand lenses	550.6		12SS		●	WH
22.5				13SS		●	WH
25.0				14SS		●	1
27.5	same, with increased Sand	542.6		15SS		●	WH
30.0	Red Brown fine to medium Sand and Silt, trace fine Gravel, wet, native, Till same, except some Clay, Gravel, moist to wet	540.9		16SS			WH
		540.6					
		539.1					
32.5	AUGER REFUSAL AND END OF BOREHOLE AT 31.5 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH137-87

PROJECT NO.: 1769


DATE COMPLETED: 3/26/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: NORTHWEST CORNER OF LANDFILL

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	570.9					
2.5	Fill - Black and Brown Silty Clay, Sandy, Gravelly, moist	568.9		1SS			15
	Fill - Black Sandy Gravel, Silty, Clayey, moist to wet	566.9		2SS			12
5.0	Fill - Black Clayey Gravel, Silty, NAPL, wet	564.9		3SS			2
7.5	Fill - Black flyash, some Silt, glass, NAPL, wet	562.9		4SS			13
	same, with some brick	560.5		5SS			6
10.0		560.5		6SS			6
12.5	Black and Gray Silty Sand, NAPL, wet, native	556.9		7SS			11
15.0	Red Brown laminated Silty Clay, moist to wet, native	554.9		8SS		●	2
	same, with thin Silt seams, NAPL in seams	552.9		9SS		●	2
17.5	same, except Red Brown and Gray, no Silt seams, no NAPL	543.6		10SS		●	1
20.0		541.8		11SS		●	WH
22.5		541.0		12SS		●	1
25.0				13SS		●	2
27.5	Red Brown Silty Clay, Sandy, Gravelly, moist to wet, native, Till			14SS		●	4
30.0	AUGERED TO REFUSAL			15SS		●	>100
32.5	END OF BOREHOLE AT 29.9 FT. BGS						
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH138-87

PROJECT NO.: 1769


DATE COMPLETED: 3/27/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: WEST OF S-AREA LAGOONS

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	571.3					
2.5	Fill - Brown and Gray Sandy Silt, Gravelly, moist	568.8	 <p>6.5" Ø BOREHOLE CEMENT/BENTONITE GROUT</p>	1SS	X		16
	Fill - White Silt, moist	567.3		2SS	X		21
5.0	same, except Black and White, Sandy	565.3		3SS	X		8
	Fill - Black Silty Sand, NAPL, wet	563.3		4SS	X		7
7.5	same, with Gravel	561.3		5SS	X		24
10.0	Fill - Black Sandy Silt, wood, NAPL, wet	559.3		6SS	X		7
12.5	Black and Brown Silty Sand, NAPL, moist, native			7SS	X		17
15.0				8SS	X		11
17.5				9SS	X		16
20.0				10SS	X		12
	Red Brown and Gray laminated Silty Clay, trace Sand, trace NAPL, moist to wet, native same, with Silt seams containing NAPL	550.9		11SS	X	●	3
22.5	Red Brown Silty Clay, trace Gray laminations trace Sand, trace Gravel, moist to wet, native	549.3 548.7		12SS	X	●	4
25.0		545.3		13SS	X	●	WH
27.5	Red Brown Silty Clay, Sandy, Gravelly, wet, native, Till	542.3		14SS	X	●	2
30.0	Red Brown Sandy Silt, Clayey, Gravelly, wet native	540.2		15SS	X	●	1
32.5	AUGER REFUSAL AND END OF BOREHOLE AT 31.1 FT. BGS			16SS	X	●	>50
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: WEST OF S-AREA LAGOONS

HOLE DESIGNATION: BH139-87

DATE COMPLETED: 3/30/87

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	570.9					
2.5	Fill - Red Brown Silty Sand, Gravelly, trace Clay, moist augered to 2.0 ft. BGS, no sample	569.7 568.9		1SS	X		>50
5.0	Fill - White and Red Brown Sandy Silt, some Gravel, moist	566.9		2SS	X		16
	Fill - Black and Brown Silty Sand, NAPL, wet	564.9		3SS	X		7
7.5	Fill - Black and Brown Silt, angular Gravel, ash, NAPL, wet	562.9		4SS	X		38
10.0	Fill - Black flyash, Sand and Gravel, brick, NAPL, wet	560.9		5SS	X		15
12.5	Black Silty fine Sand, NAPL, wet, native			6SS	X		15
15.0				7SS	X		21
17.5				8SS	X		11
20.0				9SS	X		8
22.5				10SS	X		2
25.0				11SS	X		WH
27.5				12SS	X		2
30.0		546.4		13SS	X	○	13
32.5	Red Brown Clayey Silt, Sandy, Gravelly, wet, native, Till			14SS	X	●	16
		541.7		15SS	X	○	>100
	augered to 30.0 ft. BGS, no sample	540.9		16SS	X		>50
	rock fragments	540.6					
	AUGERED TO REFUSAL	540.3					
	END OF BOREHOLE AT 30.6 FT. BGS						
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: WEST OF S-AREA, INSIDE FENCE AREA

HOLE DESIGNATION: BH140-87

DATE COMPLETED: 4/2/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	571.6					
	Fill - White, Black, and Brown Silty Sand, Gravelly, moist to wet			1SS			16
2.5	Fill - Black, White, and Gray Silty fine Sand, some brick, moist to wet	569.6		2SS			30
	Fill - White Sand, moist	567.6		3SS			2
5.0	same, except Silty, trace Gravel, wet, iridescent sheen	565.6		4SS			29
7.5	Fill - Black and Brown Gravelly Silt, wood, NAPL, wet	563.6		5SS			16
10.0	Fill - Black and Gray Gravel, flyash, wood, moist	561.6		6SS			11
	Silty fine Sand, trace Gravel, wet, native	559.6		7SS			32
12.5	Gray and Brown laminated Silty Sand, trace Gravel, wet, native	557.6		8SS			19
15.0	same, with trace NAPL	555.6		9SS			13
17.5				10SS			9
20.0				11SS			2
22.5	same, with increased NAPL	549.6		12SS			17
	Black and Brown fine Sand, abundant NAPL, wet, native	547.6		13SS			15
25.0	Gray Silty Clay, wet, native	544.8		14SS		●	5
27.5	Red Brown Silty Clay, Gravelly, wet, native, Till	544.6		15SS		○	WH
	Red Brown Sandy Silt, some Clay, Gravelly, wet, native, Till	543.6		16SS		○	>100
30.0	same, with increasing Sand	541.6					
	AUGER REFUSAL AND END OF BOREHOLE AT 30.8 FT. BGS At completion borehole was grouted to ground surface	540.8					
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: WEST OF S-AREA LAGOONS

HOLE DESIGNATION: BH141-87

DATE COMPLETED: 4/6/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	572.3					
2.5	Fill - Brown and Blue Gravelly Silt, moist same, with some Sand	570.3		1SS	X		16
		569.3		2SS	X		4
5.0	note: site moved augered to 4.0 ft. BGS, no sample no recovery	568.3		3SS	X		>50
		566.3		4SS	X		WH
7.5	Fill - Black and Brown Sandy Silt, Gravelly, NAPL, wet void, augers drop to 10.0 ft. BGS, no recovery	564.3		5SS	X		-
10.0		562.3		6SS	X		WH
	Fill - White Clayey material, wet, non-plastic Fill - Black and Brown Silty Sand, NAPL, wet void, augers drop to 14.0 ft. BGS, no recovery	561.7		7SS	X		-
12.5		560.3		8SS	X		17
		558.3		9SS	X		16
15.0	Brown Gray and Black laminated Silty Sand, wet, native			10SS	X		-
17.5				11SS	X		4
20.0				12SS	X		17
22.5	same, with NAPL	550.3		13SS	X		10
25.0				14SS	X		28
27.5				15SS	X		-
30.0	Gray Silty Sand Clayey, Gravelly, wet, native, Till	542.3		16SS	X	○	>100
	Gray and Brown rock fragments, Silt, dry to moist, native	541.8					
		541.5					
32.5	AUGERED TO REFUSAL END OF BOREHOLE AT 32.0 FT. BGS At completion borehole was grouted to ground surface	540.3					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

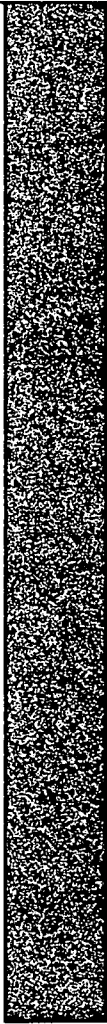
LOCATION: SOUTHWEST OF S-AREA

HOLE DESIGNATION: BH142-87

DATE COMPLETED: 2/20/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.C. MILLARD
D.E. BLACK

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	567.8					
	Fill - Brown and Red Brown coarse Sand and Silt, some Clay, trace Gravel and vegetation, moist to dry	567.1		1SS			45
2.5	Fill - Brown and Gray coarse Sand and Gravel some Silt, moist	565.8		2SS			63
	Fill - Red Brown Silt and fine to medium Sand, trace Gravel, dry	563.8		3SS			>100
5.0	Fill - Green and White slag, dry augered to 6.0 ft. BGS, no sample	563.3					
	Fill - Green and White slag, dry augered to 6.0 ft. BGS, no sample	561.8		4SS			14
7.5	Fill - Black fine to medium Sand, wet same, except dark Brown, NAPL same, with trace Silt	559.8		5SS			6
		558.8		6SS			9
10.0	Fill - Black Silty fine Sand, NAPL, wet	557.4		7SS			10
	Fill - Black fine to medium Sand, NAPL, wet same, except Black Brown	556.7		8SS			8
12.5	same, with trace glass, no NAPL	556.2		9SS			8
		555.8		10SS			3
		553.8					
15.0	Black fine to medium Sand, wet, native						
17.5							
20.0	augered to 24.0 ft. BGS, no samples	547.8					
22.5							
		543.8					
25.0	Black fine to medium Sand, wet, native	543.6		11SS			94
	Brown fine Sandy Silt, some Gravel, moist, native	542.3					
		541.8					
27.5	Red Brown fine Silty Sand, moist, native, Till	541.0					
	AUGERED TO REFUSAL						
30.0	END OF BOREHOLE AT 26.8 FT. BGS						
32.5	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

▽ WATER FOUND

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH143-87

PROJECT NO.: 1769

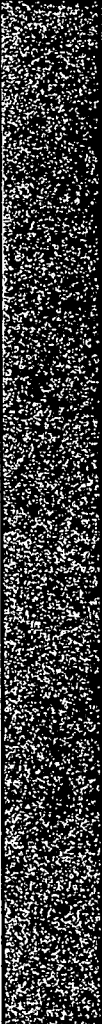
DATE COMPLETED: 2/23/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: SOUTHWEST OF S-AREA

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	567.3					
2.5	Fill - Brown and Red Brown coarse Sand and Silt, some Gravel, trace vegetation and cinder, dry same, with some Clay	565.3		1SS			22
		563.5		2SS			41
5.0	Fill - dark Gray and Black Silty fine to medium Sand, trace fine Gravel, moist same, with some flyash and coal, wet to moist	563.3		3SS			55
		561.3		4SS			19
7.5	Fill - Black coarse Sand and Gravel, some brick fragments, NAPL, wet			5SS			12
		559.1		6SS			9
10.0	Black Silty fine to medium Sand, trace shell fragments and vegetation, trace NAPL, wet, native same, with trace fine Gravel	557.3		7SS			5
12.5				8SS			6
15.0	same, with iridescent sheen, no NAPL, no Gravel	553.3		9SS			12
17.5				10SS			12
20.0	same, except no vegetation and iridescent sheen	549.3		11SS			9
22.5	Black coarse Sand, Silt, and Gravel, trace NAPL, wet, native, Till same, except Black to dark Brown, some Silt, NAPL	546.3		12SS		●	10
		545.3		13SS		●	72
25.0	same, with Clay and Silt same, except Red Brown, trace NAPL, rock fragments, moist	543.7 543.3 542.3					
	AUGERED TO REFUSAL						
27.5	END OF BOREHOLE AT 27.0 FT. BGS	540.3					
30.0	At completion borehole was grouted to ground surface						
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHWEST OF S-AREA

HOLE DESIGNATION: BH144-87

DATE COMPLETED: 2/24/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	GROUND ELEVATION	567.7				
2.5	Fill - Brown and Red Brown Sandy Silt, trace Clay, cinders, vegetation, and White waste material, dry same, except Brown and dark Gray, trace Gravel	565.7		1SS		14
	same, except Black	563.7		2SS		27
5.0	Fill - Gray and Gray White laminated waste material, moist to wet same, with trace wood	563.2		3SS		43
7.5		561.7		4SS		18
10.0	Black coarse to medium Sand and Silt, wet, native	559.2		5SS		12
12.5	same, with trace subrounded fine Gravel	555.7		6SS		8
15.0				7SS		11
17.5	same, with trace vegetation	549.7		8SS		4
20.0				9SS		9
22.5	same, except dark Red Brown, trace shell fragments, NAPL	546.7		10SS		13
		545.7		11SS		9
	Dark Red Brown Sand, Silt, and Gravel, dark Brown NAPL, wet, native	544.7		12SS		19
25.0	Dark Gray, Black, and Red Brown Silt, Clay, Sand, and fine Gravel, wet, native, Till	543.7		13SS		89
	augered to 24.5 ft. BGS, no sample	542.9		14SS		>50
27.5	Dark Gray, Black, and Red Brown Silt, Clay, Sand, and fine Gravel, wet, native, Till	542.4				
	Brown and Red Brown Clay, Silt, trace fine Gravel, moist, native, Till	541.7				
30.0	same, with coarse to medium Sand	541.4				
	Red Brown Silty coarse Sand, wet, native, Till					
32.5	AUGERED TO REFUSAL					
	END OF BOREHOLE AT 27.8 FT. BGS					
	At completion borehole was grouted to ground surface					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHWEST OF S-AREA

HOLE DESIGNATION: BH145-87

DATE COMPLETED: 2/25/87

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	567.2					
2.5	Fill - Brown and Red Brown Sandy Silt, Gravelly, trace Clay and vegetation, dry	565.2	 <p>8.0" BOREHOLE CEMENT/BENTONITE GROUT</p>	1SS			16
	Fill - Black fine to medium Sand and Silt, some cinder and Gray waste material, trace Gravel, moist to wet	563.2		2SS			28
5.0	Fill - Black and Red Brown Silt and Sand, some Gravel and cinders, moist	561.2		3SS			23
7.5	Fill - Black Silty coarse Sand and Gravel, wet	558.3		4SS			14
10.0	Black fine to medium Sand and Silt, some vegetation, trace rounded fine Gravel, wet to moist, native	557.2		5SS			13
12.5	same, with trace iridescent sheen	555.2		6SS			21
	same, with NAPL	553.2		7SS			4
15.0	same, except trace vegetation, no NAPL	544.1		8SS			8
17.5		543.2		9SS			4
20.0		541.2		10SS			12
22.5	same, except Black and dark Red Brown, dark Brown to Black NAPL, wet	539.8		11SS			9
25.0	same, with increasing round to subrounded fine Gravel, trace shell fragments	539.2		12SS			15
27.5	Black to Gray Brown Sandy Gravel, Silty, rock fragments, trace Clay, Red Brown NAPL, wet, native, Till			13SS			52
	AUGERED TO REFUSAL			14SS			>100
30.0	END OF BOREHOLE AT 28.0 FT. BGS						
32.5	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTHWEST CORNER OF LANDFILL

HOLE DESIGNATION: BH146-87

DATE COMPLETED: 4/21/87

DRILLING METHOD: HSA 7.25" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	570.4					
2.5	Fill - Gray Silty Gravel, wet	569.4		1SS			15
	Fill - Red, Purple, Brown, Tan Gravelly Silt, Sandy, slag, moist			2SS			45
	same, with brick	566.4		3SS			8
5.0		564.4		4SS			28
7.5	Fill - Black Silty fine Sand with angular Gravel, wet	562.4		5SS			22
10.0	Fill - Black Gravelly Silt, Sandy, iridescent sheen, wet	560.4		6SS			24
12.5	Fill - Sandy Silt, Gravelly, slag, trace NAPL	558.4		7SS			31
15.0	Gray to dark Gray laminated Silty fine Sand, trace fine Gravel, wet, native	556.4		8SS			11
	same, with NAPL in some laminations			9SS			9
17.5		552.4		10SS			6
20.0	Black Silty fine Sand, trace NAPL, wet, native			11SS			9
22.5	Gray to dark Gray laminated Silty fine Sand, wet, native	549.4		12SS			22
	same, with NAPL	546.4		13SS			21
25.0	same, with fine Gravel	544.4		14SS		●	33
27.5	Red Brown Clayey Silt, Sandy, increasing Clay with depth, wet, native, Till	542.4		15SS		○	12
30.0	Red Brown Silty Clay, trace fine Gravel, wet, native, Till	540.0 539.4 539.0		16SS		○	50
32.5	Red Brown Silty Sand, Gravelly and Clayey, wet, native, Till						
	AUGERED TO REFUSAL						
	END OF BOREHOLE AT 31.4 FT. BGS						
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S—AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTHWEST CORNER OF LANDFILL

HOLE DESIGNATION: BH147—87

DATE COMPLETED: 4/22/87

DRILLING METHOD: HSA 4.75" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.1					
2.5	Fill — Brown and Gray Silty Sand, Gravel, dry	567.1		1SS			25
	Fill — Black and Gray Silty Sand, Gravel, trace Clay, dry	565.1		2SS			66
5.0	Fill — Black Silt, wood, trace NAPL, moist to wet	563.1		3SS			13
7.5	Fill — Black Silt, Gravel, flyash, wood, NAPL, wet	559.1		4SS			16
		558.1		5SS			20
10.0	Fill — Red Silty Sand, trace NAPL, wet			6SS			18
12.5	Brown and Gray laminated Silty Sand, some fine Gravel, trace NAPL, wet, native			7SS			20
	same, except no fine Gravel	555.1		8SS			11
15.0	same, with Red and Black laminations, NAPL	553.1		9SS			11
17.5	same, with trace NAPL	551.1		10SS			17
20.0	same, with abundant NAPL	549.1		11SS			20
	same, with trace NAPL	547.1		12SS			27
22.5	Red Brown Sandy Silt, Clayey, trace fine Gravel, wet, native, Till			13SS		●	7
25.0	Red Brown Silty Clay, Sandy, trace gravel Clay, trace Clay seams, wet, native, Till	544.1		14SS		●	76
	augered to 28.0 ft. BGS, no sample	543.1		15SS		●	59
27.5	Red Brown Silty Sand, Clayey, Gravelly, trace Clay seams, wet, native, Till	541.6		16SS			>100
	Gray rock fragments, wet, native	541.1					
	augered to 30.0 ft. BGS, no sample	539.5					
30.0	no split spoon advancement	539.2					
	AUGERED TO REFUSAL	539.1					
		537.9					
32.5	END OF BOREHOLE AT 31.2 FT. BGS						
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

◐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTH OF LAGOONS

HOLE DESIGNATION: BH148-87

DATE COMPLETED: 4/23/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.1					
	Fill - Brown Sandy Silt, Gravelly, moist			1SS			21
2.5	Fill - Black flyash, moist	567.3 566.7		2SS			21
	Fill - Silt, some brick, wood, trace Gravel, wet	565.1		3SS			22
5.0	Fill - Brown fine Sand with trace Silt, wet	563.1		4SS			20
7.5	Fill - Black, White, and Brown flyash, slag, wood, brick, bottom ash, iridescent sheen, wet same, with some Silt	561.1		5SS			8
10.0	Black and dark Gray Silty fine Sand, trace fine subrounded Gravel, trace NAPL, wet, native	559.1		6SS			21
12.5		556.1		7SS			20
15.0	Brown and Gray laminated Silty fine Sand, trace NAPL, wet, native			8SS			9
17.5	same, with NAPL	551.1		9SS			18
20.0				10SS			18
22.5				11SS			10
25.0				12SS			39
				13SS			WH
	Red Brown Silty Clay, Sandy, trace Gravel, wet, native, Till	543.2 543.1		14SS		●	15
27.5	Red Brown Clayey Silt, Sandy and Gravel, wet, native, Till	542.1 541.1		15SS		●	44
30.0	Red Brown Silty Clay, wet, native, Till			16SS			50
	Red Brown Clayey Silt, Sandy and Gravelly, trace Silty Clay seams, wet, native, Till	539.3 538.1					
	Gray rock fragments, wet, native	537.3					
32.5	AUGERED TO REFUSAL						
	END OF BOREHOLE AT 31.8 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S--AREA

HOLE DESIGNATION: BH149-87

PROJECT NO.: 1769


DATE COMPLETED: 4/24/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: SOUTH OF LAGOONS

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.1					
2.5	Fill -- Brown, Black, and Red Gravelly Silt, brick, slag, flyash, moist		 <p>8.5" BOREHOLE CEMENT/BENTONITE GROUT</p>	1SS			19
				2SS			61
5.0	Fill -- Black and Brown flyash, cinders, moist	565.1		3SS			16
				4SS			9
7.5	Fill -- Black cinders, trace Gravel, wet, iridescent sheen same, with increased Gravel	563.1		5SS			2
		561.1		6SS			16
10.0	same, with NAPL	559.1		7SS			27
		558.1		8SS			8
12.5	Gray and Brown laminated Silty fine Sand, trace NAPL, wet, native	557.1		9SS			14
				10SS			12
15.0	Black and Gray Silty fine Sand, trace fine Gravel, wet, native			11SS			6
				12SS			28
17.5	same, except no Gravel	553.1		13SS			4
		551.1		14SS			20
20.0	Brown and Gray laminated Silty fine Sand, trace NAPL in some laminations, wet, native			15SS			66
22.5				16SS			>100
25.0	Red Brown Clayey Silt, Sandy and trace fine Gravel, wet, native, Till	544.1					
		542.6					
27.5	Red Brown Silty Gravel, Clayey, Sandy, wet, native, Till	542.1					
		541.1					
30.0	Red Brown Clay, Silty, trace Sand and Gravel, wet, native, Till						
		539.2					
	Red Brown Silty Sand, Clayey and Gravelly, wet, native, Till	539.1					
		538.8					
	augered to 30.0 ft. BGS, no sample						
32.5	no split spoon advancement AUGERED TO REFUSAL END OF BOREHOLE AT 30.3 ft. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

⊙ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH150-87

PROJECT NO.: 1769

DATE COMPLETED: 4/27/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: SOUTHEAST OF LAGOON

CRA SUPERVISOR: C.H. PADINGTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.0					
2.5	Fill - Brown Silt, vegetation, trace Clay and medium Sand, moist	567.2		1SS			5
	Fill - Black flyash, moist	567.0		2SS			35
	Fill - Black, Brown, and Gray Silt, slag, wood, flyash, trace Sand, moist	565.0		3SS			13
5.0	no recovery	563.0		4SS			12
7.5	Fill - Black and dark Gray Silty Sand, fine to medium Gravel, wet, iridescent sheen	561.0		5SS			4
	Fill - Black, Gray, and Red Gravel and brick, wet, iridescent sheen	559.0		6SS			23
10.0	Fill - dark Gray to Black Silty Sand, trace NAPL, wet	557.5		7SS			10
12.5	Brown and Gray laminated Silty fine Sand, trace NAPL, wet, native	553.0		8SS			7
15.0		551.0		9SS			8
17.5	Black and dark Gray Silty fine Sand, trace NAPL, wet, native			10SS			14
20.0	same, except no NAPL			11SS			11
22.5		546.0		12SS			21
25.0	Brown and Gray laminated Silty fine Sand, NAPL, wet, native	545.0		13SS		○	5
	same, with subrounded fine Gravel	543.2		14SS		●	32
27.5	Red Brown Sandy Silt, some Gravel, Clayey, wet, native, Till			15SS		●	33
30.0		539.1		16SS			>50
	augered to 30.0 ft. BGS, no sample	539.0					
	no split spoon advancement	538.1					
	AUGERED TO REFUSAL						
32.5	END OF BOREHOLE AT 30.9 FT. BGS						
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH151-87

PROJECT NO.: 1769

DATE COMPLETED: 4/28/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: SOUTHEAST OF LAGOONS

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.6					
	Fill - Red Brown Silty Clay, some vegetation, moist	569.3		1SS			6
2.5	Fill - Brown and Gray Gravelly Silt, Sandy, moist same, except trace glass	567.6		2SS			46
	Fill - Red Brown Clayey Silt, Gravelly, brick, moist	565.6		3SS			25
5.0	Fill - Black and Brown Gravelly Silt, trace Clay, wet, iridescent sheen	563.6		4SS			20
7.5	no recovery	561.6		5SS			7
10.0	Fill - Black and Brown Silt, some flyash, wood, fiberglass, wet, iridescent sheen	559.6		6SS			59
12.5	Fill - Black flyash, Gravel, wood, wet, iridescent sheen	557.6		7SS			19
		555.6		8SS			7
15.0	Brown and Gray laminated Silty fine Sand, wet, native			9SS			4
17.5				10SS			12
20.0	same, except faint laminations, dark Gray and Brown, trace Silt	549.6		11SS			7
22.5	same, with NAPL	546.6		12SS			23
25.0	Red Brown Sandy Silt, some Clay and fine Gravel, wet, native, Till	544.6		13SS		●	5
	same, with some Gravel and Sand augered to 28.0 ft. BGS, no sample	543.6		14SS			>50
		543.3					
27.5	Red and Brown Silty Clay, wet, plastic, native, Till						
	Red Brown Clayey Silt, some Sand and Gravel, wet, native, Till	541.6		15SS		●	24
30.0	augered to 30.0 ft. BGS, no sample	540.6		16SS			>50
		539.6					
	Red Brown Clayey Silt, rock fragments, wet, native, Till	539.4					
		539.2					
32.5	AUGERED TO REFUSAL						
	END OF BOREHOLE AT 30.4 ft. BGS At completion borehole grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

▽

WATER FOUND

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHEAST OF LAGOONS

HOLE DESIGNATION: BH152-87

DATE COMPLETED: 4/29/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.5					
	Fill - Brown and Orange Sandy Silt, trace Clay and Gravel, wood, moist			1SS			16
2.5	Fill - Gray angular Gravel, dry	567.5		2SS			74
5.0	augered to 6.0 ft. BGS, no sample #3SS	565.5					
7.5	no recovery	563.5		4SS			11
		561.5		5SS			14
10.0	Fill - Black and Brown flyash, slag, cinders, wood, wet, iridescent sheen same, except no cinders and slag, no iridescent sheen	559.5		6SS			9
	Fill - Black Sandy Silt, wet	557.5		7SS			17
12.5	Brown and Black Silty fine Sand, some laminations, wet, native			8SS			9
15.0	same, with trace gravel	555.5		9SS			7
17.5	same, with no gravel	553.5		10SS			16
20.0	same, with trace gravel	551.5		11SS			11
22.5	same, with no gravel	549.5		12SS			24
	same, with trace NAPL	547.5		13SS			13
25.0	same, with some Gravel, NAPL	545.5		14SS			31
	Red Brown Silty Sand, Some Clay, wet, native Till	543.7		15SS			45
	same, with some Gravel	543.3					
27.5	same, with Clay seam	542.5					
	same, with Clay seam	541.2					
30.0	AUGERED TO REFUSAL	539.5					
	END OF BOREHOLE AT 30.2 FT. BGS	539.3					
32.5	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHEAST OF LAGOONS

HOLE DESIGNATION: BH153-87

DATE COMPLETED: 4/30/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.2					
2.5	Fill - Brown and Green Silt, trace Sand, flyash, wood, glass, slag, dry	567.2		1SS			19
	Fill - Black and dark Gray Silt, flyash, trace Sand, moist	566.2		2SS			30
5.0	Fill - Red Brown fine Gravelly Silt, Clayey, moist	565.2					
	augered through "shot rock" to 6.0 ft. BGS, no samples	563.2		3SS			18
7.5	Fill - slag (at tip of split spoon)	561.2		4SS			4
10.0	Fill - Red, Brown, and Black slag, brick, wood, White powder, trace NAPL, wet	559.2		5SS			13
12.5				6SS			30
		555.2		7SS			27
15.0	Light Gray and Brown Silty fine Sand, trace Gravel, wet, native	553.2		8SS			12
17.5	same, except dark Gray and Brown, laminated, no Gravel			9SS			12
20.0				10SS			11
22.5	same, with Gravel, faint laminations	547.2		11SS			21
25.0		543.7		12SS		●	1
27.5	Red Brown Sandy Silt, Gravelly, Clayey, wet, native, Till			13SS		●	25
30.0	Red Brown Sandy Clay, Silty trace Gravel, wet, native, Till	539.2 538.8 538.7		14SS		●	39
32.5	AUGERED TO REFUSAL			15SS		○	>33
	END OF BOREHOLE AT 30.5 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHEAST OF LAGOONS

HOLE DESIGNATION: BH154-87

DATE COMPLETED: 4/30/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	569.7					
2.5	Fill -- Brown and White Sandy Silt, some Gravel, trace Clay, wood, glass, tile, moist same, except no Clay	567.7		1SS			27
	same, with increasing Sand	565.7		2SS			38
5.0		563.7		3SS			9
	no recovery	563.7		4SS			2
7.5		561.7		5SS			5
	Fill -- Sandy Gravel, brick, tile, wet, iridescent sheen	559.7		6SS			7
10.0	Dark Gray Silty fine Sand, wet, iridescent sheen, native	557.7		7SS			13
12.5	Black and dark Gray fine Sand, trace Silt, wet, native	555.7		8SS			8
15.0	same, dark Gray to light Gray, NAPL	553.7		9SS			7
17.5	same, with iridescent sheen	551.7		10SS			18
20.0	Brown and Gray laminated Silty fine Sand, wet, NAPL, iridescent sheen, native	549.7		11SS			13
22.5	Dark to Light Gray fine Sand, trace Silt, NAPL, wet, iridescent sheen, native	545.7		12SS			15
25.0	same, with Gravel, no iridescent sheen	543.7		13SS			7
27.5	Silty Sand, some Gravel, Clayey wet, native, Till	542.2		14SS		●	50
	Red Brown Silty Clay, Sandy, trace Gravel, wet, plastic, native Till	539.7		15SS		●	11
30.0	Silty Clay, some Sand and trace Gravel, wet, native, Till	538.7		16SS		●	>66
	same, except Gray, increased Sand and Gravel	538.4					
32.5	AUGERED TO REFUSAL	537.2					
	END OF BOREHOLE AT 32.5 FT. BGS						
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTHEAST CORNER OF LANDFILL

HOLE DESIGNATION: BH155-87

DATE COMPLETED: 5/1/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	572.8					
2.5	Fill — Brown and Gray Gravelly Silt, vegetation, dry	570.8		1SS			14
	Fill — Brown, Yellow, and Black Gravel, slag brick, flyash, dry	568.8		2SS			11
5.0	same, with some Sand	566.8		3SS			15
	no recovery	566.8		4SS			12
7.5		564.8		5SS			7
10.0	Fill — Black, Red, and Gray Silt and Gravel, brick, moist to wet			6SS			5
12.5	same, with iridescent sheen	560.8		7SS			10
		558.8		8SS			16
15.0	Fill — Gray Silty fine to medium Sand, wet			9SS			7
17.5		553.8		10SS			13
20.0	Brown and Gray laminated Silty fine Sand, NAPL, wet, native	550.8		11SS			3
22.5	Brown and Gray Silty fine to medium Sand, wet, native			12SS			6
25.0		546.8		13SS			14
27.5	same, with some Gravel			14SS			21
30.0	Red Brown Sandy Silt, Clayey, Gravelly, wet, native, Till	543.4		15SS		●	3
	same, with decreasing Silt	540.8		16SS		●	18
32.5	AUGERED TO REFUSAL			17SS		●	>84
	END OF BOREHOLE AT 34.2 FT. BGS	539.5					
	At completion borehole was grouted to ground surface	538.6					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NORTHWEST CORNER OF LANDFILL

HOLE DESIGNATION: BH156-87

DATE COMPLETED: 4/15/87

DRILLING METHOD: HSA 6.75" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	572.8					
2.5	Fill - Brown, Gray, and Black Gravelly Silt, Sandy, moist same, with trace Clay, some glass	570.8		1SS			25
		569.0		2SS			35
5.0	Fill - Brown and Gray Silty Sand, moist	568.8		3SS			6
	Fill - Black, Brown, and Red Brown Sand and Silt, Gravel, brick, fibrous material, wet	566.8		4SS			7
7.5	Fill - Clayey Silt with some Gravel and brick, trace wood and fibrous material, wet	564.8		5SS			-
	no recovery	562.8		6SS			13
10.0	Fill - Red Brown Silty Sand, coarse angular Gravel, iridescent sheen, moist	560.8		7SS			32
12.5	Fill - Red Brown Silty Sand, angular Gravel, NAPL, wet	559.3		8SS			16
	Gray and Green Silty fine Sand, Clayey, moist, native	558.8		ST		NR	
15.0	Gray and Green Silty fine Sand, some Gravel, wet, native	558.3		ST		NR	
	same, with NAPL and no Gravel	554.8		ST		NR	
17.5	no recovery	554.3		ST		NR	
	Clay noted on outside of Shelby tube	552.8		1ST			
20.0	Red Brown Clay, some Silt moist, native	550.8		2ST		⊗	
22.5	same, except wet			3ST		⊗	
25.0				4ST		⊗	
27.5		543.8		5ST		■	
30.0	Red Brown Silty Clay, Sandy, wet, native, Till	542.8		6ST		⊗	
	same, with some Gravel	540.8		9SS			>100
32.5	same, with Gray Green rock fragments	540.3					
	AUGER REFUSAL AND END OF BOREHOLE AT 32.5 FT. BGS At completion borehole was grouted to ground surface						

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
● DEC/EPA SPLIT

- ▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: NORTH OF LAGOONS




HOLE DESIGNATION: BH157-88
(PAGE 1 of 2)



DATE COMPLETED: 1/26/88



DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH
N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	586.2					
	Fill - Gray fine to coarse Sandy Gravel, dry	585.2		1SS	X		39
2.5	Fill - Red Brown Clayey Silt, dry same, with trace fine Gravel and moist	584.2		2SS	X		21
	no recovery	582.2		3SS	X		30
5.0		580.2		4SS	X		33
7.5	Fill - Red Brown Clayey Silt, trace fine Gravel, dry same, with occasional Gray mottling	578.2		5SS	X		18
10.0				6SS	X		12
12.5		573.7		7SS	X		43
	Fill - dark Gray Silty fine Sand, trace fine to coarse Gravel, moist to wet	572.7		8SS	X		1
15.0	Fill - Tan Silt, some White chalky ash, trace brick, dry	572.2		9SS	X		8
	Fill - dark Gray and Black fine to coarse Sandy Silt, trace fine Gravel	570.2		10SS	X		12
17.5	Fill - dark Brown and Black Silty fine Sand, trace fine Gravel and Clay, trace wood, NAPL, wet	568.2		11SS	X		16
20.0	Fill - Red Brown Clayey Silt, dry	566.2		12SS	X		6
	Fill - Black Silty fine Sand, moist, iridescent sheen	566.2		13SS	X		23
22.5	no recovery	564.2		14SS	X		29
25.0	Fill - Black Silty fine Sand, trace fine Gravel, wet, iridescent sheen			15SS	X		6
27.5	Gray Silty fine Sand, moist, native	558.9		16SS	X		1
30.0	Gray Silty Clay, moist, plastic, native some, except grading to Red Brown	557.2		17ST		X	
32.5	same, except Red Brown, wet	556.2		18ST		X	

NOTES:  PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

 DEC/EPA SAMPLE
 DEC/EPA SPLIT

 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: NORTH OF LAGOONS

HOLE DESIGNATION: BH157-88
(PAGE 2 of 2)

DATE COMPLETED: 1/26/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH
N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Red Brown Silty Clay, wet, plastic, native		 <p>6.5" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	17ST		⊗	
37.5				18ST		⊗	
40.0				19ST		■	
42.5	same, with trace Sand	543.2		20ST		⊗	
45.0		541.2		21ST		⊗	
47.5		340.9		22ST		⊗	
50.0		539.7		23ST		⊗	
52.5	Red Brown Silty Clay, trace Sand and fine subangular Gravel, wet, native, Till						
55.0	AUGERED TO REFUSAL						
57.5	END OF BOREHOLE AT 46.5 FT. BGS						
60.0	At completion borehole was grouted to ground surface						
62.5	NOTE: Injection test conducted (9.0-29.0 ft)						
65.0	Sampling continued in same borehole						

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
- DEC/EPA SPLIT

- ▽ WATER FOUND
- ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: NORTHWEST OF EAST LAGOON




HOLE DESIGNATION: BH158-87
(PAGE 1 of 2)

DATE COMPLETED: 12/23/87



DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	576.1					
	Fill - dark Brown medium Sand medium to fine angular Gravel, ash, glass, slag, dry	574.1		1SS			15
2.5	Fill - Brown medium Sand, brick, sulphur, dry	572.1		2SS			21
5.0	Fill - dark Brown medium Sand, fine to medium rounded to subrounded Gravel, trace light Brown Silt, vegetation, brick, trace NAPL, dry	570.1		3SS			9
7.5	Fill - Black and Brown Silty medium to coarse Sand, vegetation, moist	568.2		4SS			9
	Fill - Red Brown Silty Clay, moist	568.1		5SS			38
10.0	Fill - Brown fine to coarse Sand fine angular Gravel, wet	566.1		6SS			10
12.5	Fill - Black Silty Sand, fine to coarse angular Gravel, trace Red Brown Silty Clay, vegetation, wet	664.1		7SS			3
	no recovery	562.1		8SS			12
15.0	Fill - Black medium Sand, ash, wet	561.6		9SS			19
17.5	Dark Brown Sand, vegetation, wet, native same, trace NAPL	560.1		10SS			2
20.0	Red Brown Silty Clay, wet, native same, trace Sand	556.1		11ST			
22.5				12ST			
25.0				13ST			
27.5				14ST			
30.0				15ST			
32.5				16ST			
		542.5		17SS			WR
	Red Brown fine Sandy Clay, fine subangular Gravel, wet, native, Till			18ST			

NOTES:  PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
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 GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

 DEC/EPA SAMPLE
 DEC/EPA SPLIT

 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: NORTHWEST OF EAST LAGOON

HOLE DESIGNATION: BH158-87
(PAGE 2 of 2)

DATE COMPLETED: 12/23/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Red Brown Silty Clay, trace Sand, wet, native		 <p>6.5" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	17SS	⊗	●	WR
35.0	Red Brown fine Sandy Silt, Clayey and Gravelly, wet, native, Till	542.5					
	AUGERED TO REFUSAL	540.1		18ST		⊗	
	END OF BOREHOLE AT 37.5 FT. BGS	538.6					
40.0	At completion borehole was grouted to ground surface						
42.5	NOTE: INJECTION TEST CONDUCTED (7.8 -18.5 FT.) RELOCATED BOREHOLE 3.0 FT. NORTH AUGERED TO 20.0 FT. AND CONTINUED SAMPLING						
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

⚡ WATER FOUND
⚡ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: NORTHEAST OF LAGOONS

HOLE DESIGNATION: BH159-87
(PAGE 1 of 2)

DATE COMPLETED: 12/30/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	575.1					
2.5	Fill - Brown Silty Sand with medium to coarse angular Gravel, roots, fire brick, dry same, with fire brick, Red Brown Silty Clay at bottom	573.1		1SS	X		11
				2SS	X		20
5.0	Fill - dark Brown Silty Sand with medium to coarse angular Gravel, brick, slag, Red Gray Silty Sand at bottom, moist	571.1		3SS	X		23
	Fill - Black Silty Sand with fine to medium rounded Gravel, fibrous material, wet	569.1		4SS	X		13
7.5	Fill - Black coarse angular Gravel, Silty Sand with brick, fibrous material, trace NAPL, wet	567.1		5SS	X		17
10.0	Fill - Black Silty Sand with medium to coarse angular Gravel, brick, fibrous material, trace NAPL, wet	565.1		6SS	X		15
12.5	same, with fine subrounded to angular Gravel brick, wood	563.1		7SS	X		14
	Brown medium to coarse Sand with roots, wet, native	561.2		8SS	X		12
15.0	Black medium Sand with Silty Sand lenses, roots, wet, native	561.1		9SS	X	○	12
17.5	same, except no silty sand lenses, roots	559.1		1ST	▲	⊗	
20.0	Red Brown to Gray Silty Clay, wet, native	557.6		2ST	▲	⊗	
	same except no Gray	557.1		3ST	▲	■	
22.5				4ST	▲	⊗	
25.0				5ST	▲	⊗	
27.5				6ST	▲	⊗	
30.0				7ST	X	■	
32.5	same, except trace Sand	543.1		8ST	▲	⊗	
		541.1		9ST	▲	○	

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLT

■ DEC/EPA SAMPLE
● DEC/EPA SPLT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: NORTHEAST OF LAGOONS

HOLE DESIGNATION: BH159-87
(PAGE 2 of 2)

DATE COMPLETED: 12/30/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Red Brown Sandy Clay, wet, native	541.1	 <p>6.5" BOREHOLE CEMENT/BENTONITE GROUT</p>	8ST		⊗	
35.0	Red Brown Silt, some Sand, Clayey, with fine angular Gravel, Till			9ST		○	
	AUGERED TO REFUSAL	539.1					
37.5	END OF BOREHOLE AT 37.5 FT. BGS	537.6					
40.0	At completion borehole was grouted to ground surface						
42.5	NOTE: Injection test conducted (3.2-17.5 ft) Sampling continued in same borehole						
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
- DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: EAST OF LAGOONS

HOLE DESIGNATION: BH160-88
(PAGE 1 of 2)

DATE COMPLETED: 1/4/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	578.1					
2.5	Fill - Orange Yellow Silty Sand, slag, wood, dry same, with trace coarse angular Gravel, dry to moist	576.1		1SS			9
		574.1		2SS			13
5.0	Fill - dark brown to Black Silty Sand, slag, brick, moist	572.1		3SS			5
7.5	same, with vegetation, trace NAPL, no slag, moist	570.1		4SS			5
	Fill - Black Silty Sand, fine to medium subrounded Gravel, vegetation, trace NAPL, wet	568.1		5SS			3
10.0	Fill - Black medium Sand, medium to coarse angular Gravel, NAPL, wet	566.1		6SS			9
12.5	same, with wood, fire brick, no Gravel	564.1		7SS			25
15.0	same, with fine to medium angular Gravel, glass, rubber, no fire brick	562.1		8SS			29
	Fill - Black medium to coarse Sand, fine to medium angular Gravel, brick, wet	560.6		9SS			42
17.5	Brown laminated Silty Sand, wet, native same, with vegetation, trace NAPL	560.1		10SS			25
20.0	same, except no NAPL	558.1		11SS			8
22.5	Gray Silty Clay, wet, native attempted Shelby tube - no recovery,	556.2 556.1		12ST		NR	
		554.1		13ST		⊗	
25.0	Brown Silty Clay, wet, native same, except Red Brown	552.1		14ST		■	
27.5	augered to 30.0 ft. BGS, no sample	550.1		16ST		■	
30.0	same as above	548.1		17ST		⊗	
32.5	same, except Sandy Red Brown Silty Clay, Sandy, fine to coarse subrounded to angular Gravel, wet, native, Till	546.1 544.1		18ST		⊗	

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: EAST OF LAGOONS

HOLE DESIGNATION: BH160-88
(PAGE 2 of 2)

DATE COMPLETED: 1/4/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Red Brown Sandy Clay, wet, native		 <p>6.5" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	17ST		⊗	
35.0	Red Brown Silty Clay, Sandy, fine to coarse subrounded to angular Gravel, wet, native, Till	544.1		18ST		⊗	
37.5	AUGERED TO REFUSAL	540.5		19ST 20SS		●	WH
40.0	END OF BOREHOLE AT 39.5 FT. BGS	538.6					
42.5	At completion borehole was grouted to ground surface						
45.0	NOTE: Injection test conducted (7.0-21.9 ft) Relocated borehole 3.0 ft north augered to 22.0 ft and continued sampling						
47.5	NOTE: Insufficient recovery of shelly tube - 19ST (36.0-37.6 ft.) consolidated with split spoon sample - 20SS (36.0-37.6 ft)						
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
- DEC/EPA SPLIT

- ▽ WATER FOUND
- ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

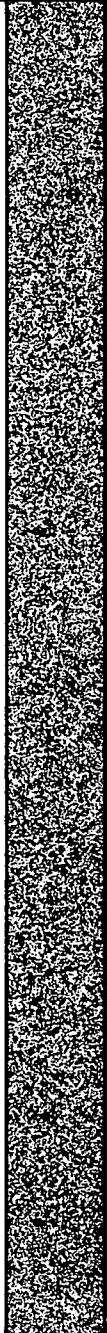
LOCATION: BETWEEN LAGOONS




HOLE DESIGNATION: BH161-88
(PAGE 1 of 2)



DATE COMPLETED: 2/2/88



DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				N U M B E R	S T A T E	S T A T U S	N V A L U E
	GROUND ELEVATION	585.9					
	Fill - Brown coarse Gravelly Sand, dry, firm			1SS			25
2.5	Fill - Red Brown Silty Clay, dry, firm	584.4		2SS			27
	same, with trace medium rounded Gravel	581.9		3SS			22
5.0	same, except no Gravel	579.9		4SS			42
7.5				5SS			30
10.0				6SS			28
	Fill - Brown medium angular Gravelly Sand, Silty, dry	574.9		7SS			22
12.5	Fill - Brown fine Sand, some fine angular Gravel, and slag, coal, and ash, dry	573.9		8SS			9
	Fill - Brown fine sand, trace metal, dry	571.9		9SS			23
15.0	Fill - Black Silty Sand, NAPL, moist to wet same, with trace fine angular Gravel porcelain, slag, wood and ash, wet	569.9		10SS			35
17.5	same, except medium angular Gravel and no porcelain or ash	567.9		11SS			16
	Fill - Brown to dark Brown laminated Silty Sand, trace vegetation and medium angular Gravel, moist	567.4		12SS			10
20.0	no recovery	565.9		13SS			8
22.5				14SS			38
25.0	Fill - Black Silty Sand, trace wood and ash, wet	561.9		15SS			21
	Dark Brown and Black laminated Silty Sand, wet, native	559.9		16SS			21
27.5				17SS			19
30.0				18SS			WH
32.5	Red Brown and Gray mottled Silty Clay, wet, native	551.9					

NOTES:  PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

 DEC/EPA SAMPLE
 DEC/EPA SPLIT

 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

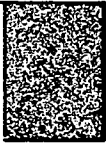

LOCATION: BETWEEN LAGOONS

HOLE DESIGNATION: BH161-88
(PAGE 2 of 2)

DATE COMPLETED: 2/2/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
	Dark Brown and Black laminated Silty Sand, wet, native	551.9	 <p>6.5" BOREHOLE CEMENT/BENTONITE GROUT</p>	17SS	X		19
35.0	Red Brown and Gray mottled Silty Clay, wet, native	549.9		18SS	X	●	WH
	NOTE: INTITAL BOREHOLE SAMPLED TO 36 FT. INJECTION TEST CONDUCTED (7.2 - 34.0 FT.) RELOCATED BOREHOLE 3 FT. NORTH AUGERED TO 34.0 FT. AND COMMENCED SAMPLING						
34.0	Red Brown Silty Clay, moist, native	551.9	 <p>6.5" BOREHOLE CEMENT/BENTONITE GROUT</p>				
36.5	same, except wet	549.9		19ST		⊗	
				20ST		⊗	
39.0				21ST		⊗	
41.5				22ST		⊗	
44.0	Red Brown clayey Silt, some Sand and subangular Gravel, wet native, Till	542.9		23ST		⊗	
	AUGERED TO REFUSAL	540.9		24DT		○	
46.5	END OF BOREHOLE AT 46.2 FT. BGS	539.7					
49.0	At completion both boreholes were grouted to ground surface						
51.5							
54.0							
56.5							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA
PROJECT NO.: 1769
CLIENT: OCCIDENTAL
LOCATION: WEST OF LAGOONS

HOLE DESIGNATION: BH162-88
(PAGE 1 OF 2)
DATE COMPLETED: 1/19/88
DRILLING METHOD: HSA 6.5" OD
CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	573.2					
2.5	Fill - Brown Silty Sand, trace medium to coarse angular Gravel and wood, trace slag and plastic, dry augered to 2.0 ft. BGS, no sample	572.3 571.2		1SS	X		>65
5.0	Fill - Brown Silty Sand, trace medium angular Gravel and coal, dry Fill - White coarse Sand, trace dark Brown Silty Sand and wood, dry to moist	569.2 567.2		2SS	X		13
7.5	Fill - Black fine Sand, trace White coarse Sand, NAPL, wet same, with trace wood, no White coarse Sand	565.2		3SS	X		17
10.0	same, with glass and medium angular Gravel	563.2		4SS	X		7
12.5	same, except no wood, glass, or Gravel	561.2		5SS	X		18
15.0	Brown laminated Silty Sand, trace vegetation, NAPL, wet, native same, except Black and Brown same, with Gray Silt	559.4 559.2 557.2		6SS	X		16
17.5				7SS	X		10
20.0				8SS	X		17
22.5	no recovery	551.2		9SS	X		21
25.0	Red, Brown Silty Clay, wet, native	549.2		10SS	X		14
27.5	NOTE: Initial Borehole Sampled to 26.0 ft Injection test conducted (3.4 - 23.0 ft) Relocated Borehole 3 ft North Augered to 22.0 ft and commenced sampling	547.2		11SS	X		7
				12SS	X		6
				13SS	X	○	WR

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: WEST OF LAGOONS

HOLE DESIGNATION: BH162-88
(PAGE 2 OF 2)

DATE COMPLETED: 1/19/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
22.5	Black Sandy Silt, NAPL, wet, native	551.2	 <p>6.5" Ø BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	14SS	⊗		9
	Gray to Red Brown Silty Clay, wet, native	550.4					
	augered to 24.0 ft. BGS, no sample	550.2					
25.0	Red Brown Silty Clay, wet, native	549.2		15ST	⊗		
27.5				16ST	■		
	Red Brown Sandy Silt, some clay and fine to medium subrounded Gravel, wet, native, Till	545.2		17ST	⊗		
30.0	attempted Shelby tube and split spoon, no recovery	543.2		18ST	⊗		
	AUGERED TO REFUSAL	541.7		19SS	NR		WR
32.5	END OF BOREHOLE AT 32.1 FT. BGS	541.1					
35.0	At completion both boreholes were grouted to ground surface						

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
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● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH163-87

PROJECT NO.: 1769


DATE COMPLETED: 1/22/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 8.0" OD

LOCATION: WEST OF S-AREA

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	567.5					
2.5	Fill - Brown and dark Gray Brown coarse Sand and Gravel, trace cinder and Silt, trace unknown White material, moist	565.5		1SS			18
	Fill - Black, dark Gray and White fine grained waste material, some Gravel and coarse Sand, wet, nonplastic	563.5		2SS			26
5.0	Fill - White and Black to Black Gray laminated fine grained waste material, wet	561.5		3SS			7
7.5	Fill - Gray fine grained waste material, wet, soft	559.5		4SS			WH
	Fill - dark Brown coarse Sand, White waste material, NAPL, wet	559.4		5SS			15
10.0	Dark Gray to Black fine Sand and Silt, trace vegetation, trace NAPL, wet, native same, except moist	557.5		6SS			15
12.5	same, except Black, trace White shell fragments	555.5		7SS			16
15.0	same, except Black to dark Gray, trace Silt lenses, some vegetation, wet	553.5		8SS			6
17.5				9SS			6
20.0	Black fine to medium Sand and Silt, trace vegetation and Gravel, wet, trace iridescent sheen, native	549.5		10SS			7
				11SS			3
22.5	Black to dark Gray Clay, wet, low plastic, soft, native same, except Red Brown	545.1		12SS		○	WH
		544.0					
		543.5					
25.0	Red Brown Clay, increasing Sand with depth, trace fine Gravel, wet, native, Till	541.5		13SS		○	WH
	augered to 26.3 ft. BGS, no sample	541.2					
27.5	Red Brown Sandy Clay, Gravelly, wet, native, Till	540.5		14ST		⊗	
	AUGERED TO REFUSAL	539.5					
30.0	END OF BOREHOLE AT 28.0 ft. BGS At completion borehole was grouted to ground surface						
32.5	NOTE: No recovery of shelby tube -13ST (24.0-26.0 ft) Split spoon used to obtain sample -13SS (24.0-26.0 ft)						

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

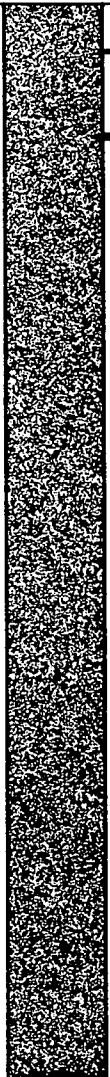
LOCATION: WEST OF S-AREA

HOLE DESIGNATION: BH164-87

DATE COMPLETED: 1/23/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.C. MILLARD
K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.3					
	augered to 0.5 ft. BGS	567.8					
2.5	Fill - Brown and Red Brown Silt and Sand, trace Clay, some Gravel, cinder, moist	566.3		1SS	X		47
	Fill - Gray and Red Brown Sandy Gravel, Silty, moist	566.1		2SS	X		47
5.0	Fill - White medium Sand size waste material, nonplastic, moist	563.3		3SS	X		10
	same, with Black Gray sludge-like Silt size material, moist to wet	564.3		4SS	X		11
7.5	Fill - Black Silty medium to coarse Sand, cinder, moist to wet	562.3		5SS	X		18
10.0	Fill - Black Gravelly coarse Sand, trace brick fragments, cinder, wet, strong chemical odor, NAPL	559.3		6SS	X		18
	same, with Silt, some wood, moist to wet	560.3		7SS	X		22
12.5	Dark Gray Silty fine to medium Sand, trace vegetation, moist, native no recovery	558.3		8SS	X		7
15.0	Black to dark Gray Silty fine to medium Sand, trace vegetation, moist to wet, native	554.3		9SS	X		4
				10SS	X		5
17.5	same, with trace fine Gravel, wet	550.3		11SS	X		10
22.5	Black Silty fine Sand, wet, chemical odor, native	546.3		12SS	X		WR
	attempted Shelby tube - no recovery, same as above	544.3		13SS	X		WR
25.0	Red Brown Silty Sand, rounded Gravel, moist, native, Till	543.3		14SS	X		132
27.5	same, with Clay	542.3					
	AUGERED TO REFUSAL	540.3					
		540.0					
30.0	END OF BOREHOLE AT 28.3 FT. BGS						
32.5	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL, SOUTHEAST OF EAST LAGOON

HOLE DESIGNATION: BH165-87
(PAGE 1 of 2)

DATE COMPLETED: 12/11/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	575.3					
2.5	Fill - Red Brown Silty Sand, coarse angular Gravel, vegetation, brick, coal, dry same, with flyash, no coal, wet	573.3		1SS			9
		571.3		2SS			40
5.0	Fill - dark Brown to Black Silty Sand, coarse angular Gravel, coal, glass, vegetation, moist to wet	569.3		3SS			12
7.5	Fill - dark Brown Silty Sand, fine angular Gravel, coal, vegetation, moist to wet	567.3		4SS			31
	Fill - dark Brown to Black Silty Sand, medium to coarse angular Gravel, ash, glass, brick, wet	565.3		5SS			10
10.0	Fill - Black and Red Brown Silty Sand, fine rounded Gravel, ash, vegetation, wet	563.3		6SS			11
12.5	same, with medium to coarse Gravel, wood, glass, NAPL, wet	561.3		7SS			10
	Fill - Black Silty Sand, fine to medium angular Gravel, glass, porcelain, NAPL, wet	560.4		8SS			28
15.0	Brown Silty Sand, fine rounded Gravel, wet, native	557.3		9SS			72
17.5	Red Brown Sandy Silt, wet, native			10SS			9
20.0				11SS			7
22.5				12SS			8
25.0				13SS			8
27.5		547.8 547.3		14SS			12
	Dark Brown to Black Silty Sand, fine to coarse subrounded Gravel, shell fragments, wet, native			15SS		●	WH
30.0	Red Brown Silty Clay, wet, native			16SS		⊗	
32.5	same with trace Sand	543.3		17SS		⊗	
	Red Brown Silty Clay with some Sand, trace fine subrounded Gravel, wet, native, Till same, with fine to coarse angular Gravel	541.3		18SS		●	

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

⚡ WATER FOUND
⚡ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL, SOUTHEAST OF EAST LAGOON

HOLE DESIGNATION: BH165-87
(PAGE 2 of 2)

DATE COMPLETED: 12/11/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
	Red Brown Silty Clay with some Sand, trace fine subrounded Gravel, wet, native, Till same, with fine to coarse angular Gravel	542.3	 <p>6.5" Ø BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	17SS	⊗		
35.0		541.3		18SS	⊗	●	16
		539.0		19SS	⊗	●	>100
37.5	AUGERED TO REFUSAL	537.7					
	END OF BOREHOLE AT 37.6 FT. BGS						
40.0	At completion borehole was grouted to ground surface						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
 ● DEC/EPA SPLIT

▽ WATER FOUND
 ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

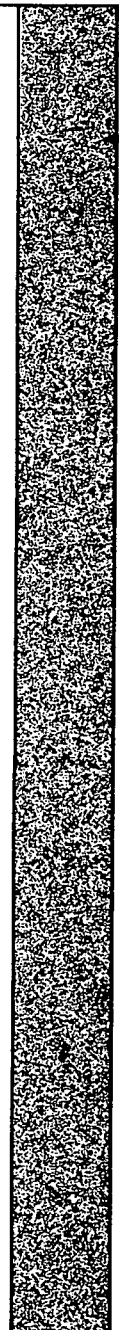
LOCATION: LANDFILL, EAST OF EAST LAGOON

HOLE DESIGNATION: BH166-87
(PAGE 1 of 2)

DATE COMPLETED: 12/10/87

DRILLING METHOD: HSA 6.75" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	573.4					
2.5	Fill - Brown Silty Sand, coarse angular Gravel, trace vegetation, brick, ash, rusted metal, dry same, with wood, fine to coarse angular Gravel, no vegetation, no rusted metal	571.4		1SS			36
5.0	same, except Red Brown, with glass, coarse angular Gravel, no wood, moist	569.4		2SS			42
7.5	Fill - dark Brown Silty Sand, medium to coarse angular Gravel, trace fire brick, NAPL, wet	567.4		3SS			9
10.0	Fill - Black Sandy Silt, coarse angular Gravel, trace brick and ash, NAPL, wet	565.4		4SS			7
12.5	Fill - Black Silty Sand, medium to coarse angular Gravel, trace wood and glass, NAPL, wet	563.4		5SS			12
	no recovery	561.4		6SS			18
		559.4		7SS			10
15.0	Black to dark Brown Silty Sand, wet, native	557.4		8SS			10
17.5	same, with coarse Sand, trace NAPL	555.4		9SS			20
20.0	same, except no NAPL			10SS			13
22.5				11SS			6
		549.4		12SS			7
25.0	Black coarse Sand, trace NAPL, wet, native	547.9		13SS			12
27.5	Red Brown Silty Clay, wet, native			14ST		⊗	
	augered to 29.0 ft. BGS, no sample	545.4					
30.0	Red Brown Clay, wet, native	544.4		15ST		⊗	
32.5	Red Brown Clay, fine to medium subrounded Gravel, wet, native, Till	542.4		16SS			52
	AUGERED TO REFUSAL	540.6					

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLT

■ DEC/EPA SAMPLE
● DEC/EPA SPLT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

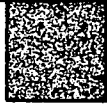
LOCATION: LANDFILL, EAST OF EAST LAGOON

HOLE DESIGNATION: BH166-87
(PAGE 2 of 2)

DATE COMPLETED: 12/10/87



DRILLING METHOD: HSA 6.75" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
	AUGERED TO REFUSAL	540.6	 6.75" Ø BOREHOLE CEMENT/BENTONITE GROUT	16SS			52
35.0	END OF BOREHOLE AT 35.1 FT. BGS	538.3					
37.5	At completion borehole was grouted to ground surface						
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH167-87

PROJECT NO.: 1769


DATE COMPLETED: 12/12/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: LANDFILL, SOUTH CENTRAL

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	569.8					
	Fill - coarse angular Gravel, vegetation, dry augered to 2.0 ft., no sample	568.5 567.8		1SS	X		>100
2.5	Fill - dark Brown and Black Silty Sand, fine to coarse subangular Gravel, brick, vegetation, dry	565.8		2SS	X		54
5.0	Fill - dark Brown coarse Sand, medium to coarse angular Gravel, ash, brick, vegetation, wood, dry to moist	563.8		3SS	X		20
7.5	Fill - Black Silty Sand, medium to coarse Gravel, vegetation, wood, brick, glass, NAPL, wet same, with fine angular Gravel, no brick and glass	561.8		4SS	X		32
10.0	same, except no wood and vegetation	559.8		5SS	X		7
		558.8		6SS	X		25
12.5	Dark Brown fine angular Gravelly coarse Sand, vegetation, wet, native	557.8		7SS	X		24
15.0	Dark Brown Silty Sand, trace coarse rounded Gravel, vegetation, wet, native same, with wood, no vegetation	555.8		8SS	X		18
		553.8		9SS	X		12
17.5	Black Silty Sand, some Silt lenses, wood, wet, native same, except no Silt lenses and wood	551.8		10SS	X		10
20.0				11SS	X		6
22.5		545.8		12SS	X	●	21
25.0	Red Brown Clayey Silt, Sandy medium to coarse subangular Gravel, wet, native, Till	543.5		13SS	X	●	3
	augered to 28.0 ft., no sample	541.8		14SS	X	●	>100
27.5	Red Brown Clayey Silt, Sandy medium to coarse subangular Gravel, wet, native, Till	540.3 539.8		15SS	X	●	15
30.0	AUGERED TO REFUSAL						
32.5	END OF BOREHOLE AT 30.0 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: NORTHEAST OF EAST LAGOON

HOLE DESIGNATION: BH168-87
(PAGE 1 of 2)

DATE COMPLETED: 12/8/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	578.2					
2.5	Fill - Brown Silty Sand, fine to medium subrounded Gravel, trace vegetation, dry same, except Brown to Black, no vegetation	576.2		1SS			13
				2SS			6
5.0	no recovery	574.2		3SS			2
		572.2		4SS			1
7.5	Fill - Black Silty Sand, trace fine to medium angular Gravel, wet	570.2		5SS			2
10.0	Fill - dark Brown to Black fine Sandy Silt, trace sulphur, wet	568.2		6SS			9
12.5	Fill - Black Silty Sand, trace medium angular Gravel, trace tar, wet same, trace fine angular Gravel, NAPL, no tar	566.2		7SS			6
15.0		564.2		8SS			2
	same, trace fine to coarse angular Gravel, paper	562.2		9SS			8
17.5		560.2		10SS			13
20.0	Fill - Brown to Black Silty Sand, NAPL, wet			11SS			5
		556.2		12SS			5
22.5	Brown to Black Silty Sand, trace roots, wet, native	555.2		13SS		●	WH
25.0	Red Brown to Gray Clay, wet, native			14SS		●	1
	same, trace Silt seams, trace Sand	552.2		15SS		●	WR
27.5				16SS		●	WR
30.0	same, except no Silt seams, trace Gravel	550.2		17SS		●	WH
32.5				18SS		●	WR

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

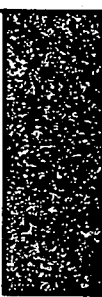
LOCATION: NORTHEAST OF EAST LAGOON

HOLE DESIGNATION: BH168-87
(PAGE 2 of 2)

DATE COMPLETED: 12/8/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Red Brown to Gray Clay, wet, native		 <p>6.5" BOREHOLE CEMENT/BENTONITE GROUT</p>	17SS	X	●	WH
35.0		542.7		18SS	X	●	WR
	Red Brown Clayey Silt, Sandy, trace medium angular Gravel, wet, native, Till			19SS	X	●	>100
37.5	same, trace fine angular Gravel	540.2					
	AUGERED TO REFUSAL	539.0					
40.0	END OF BOREHOLE AT 40.0 FT. BGS	538.2					
	At completion borehole was grouted to ground surface						
42.5							
	NOTE: INJECTION TEST CONDUCTED (18.0 - 23.0 FT.)						
45.0	SAMPLING CONTINUED IN SAME BOREHOLE						
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

TABLE
STRATIGRAPHIC SUMMARY LOGS
UTILITY BEDDING INVESTIGATION
S-AREA SUBSURFACE INVESTIGATION

<u>Excavation Number</u>	<u>Depth (ft. BG)</u>	<u>Description</u>	<u>Water Level (ft. BG)</u>	<u>Sampled Depth (ft. BG)</u>
	10.7-16.5	Red and Black clayey silt, trace gravel and cinders, iridescent sheen noted in black silt layer from 15.8-16.0 ft. Moist. (FILL)		
	16.5-18.5	Black silty fine sand, trace iridescent sheen noted from 18-18.5 ft. Wet. (FILL)		
	18.5-24.0	Brown fine to medium sand. Wet. (FILL)		
	24.0-27.5	Gray coarse to fine gravel and fine to medium sand. Wet. (FILL)		
	27.5-28.0	Red gravelly silt. Moist. (NATIVE)		

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: EAST OF NORTH END OF LAGOONS

HOLE DESIGNATION: BH169-87
(PAGE 1 of 2)

DATE COMPLETED: 12/17/87



DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	578.8					
	Fill - Brown Sand, medium to coarse angular Gravel, trace roots and slag, dry	576.8		1SS	X		23
2.5	Fill - dark Brown Silty Sand, fine to medium angular Gravel, trace Red Brown Silty Clay, vegetation, moist same, except no vegetation	574.8		2SS	X		27
5.0	augered to 8.0 ft. BGS, no sample	573.6		3SS	X		>100
7.5		570.8		4SS	X		7
10.0	Fill - Brown to Black Silty Sand, Gravelly, NAPL, wet	568.8		5SS	X		4
12.5	Fill - Brown to Black Silty Gravel, NAPL, wet	564.8		6SS	X		17
15.0	no recovery	562.8		7SS	X		24
17.5	Fill - Brown Silty Sand, trace ash, glass, and wood, NAPL, wet	560.8		8SS	X		8
20.0	Brown to Black laminated Silty Sand, NAPL, wet, native	556.8		9SS	X		27
22.5	Black laminated Silty fine to medium Sand, trace coarse subrounded Gravel, native, wet	555.8		10SS	X		10
25.0	Gray to Red Brown Silty Clay, wet, native note: relocate borehole 3.0 ft. north, augered to 24.0 ft. BGS, no samples	554.8		11SS	X		8
27.5	Red Brown Silty Clay, trace Sand, wet, native			12SS	X	●	1
30.0				13SS	X	●	2
32.5				14SS	X	●	WH
				15SS	X	●	WH
				16SS	X	●	1
				17SS	X	●	WR

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☒ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

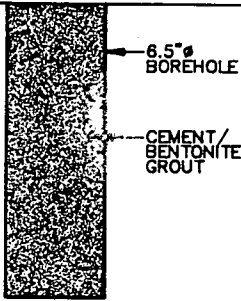
LOCATION: EAST OF NORTH END OF LAGOONS

HOLE DESIGNATION: BH169-87
(PAGE 2 of 2)

DATE COMPLETED: 12/17/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
35.0	Red Brown Silty Clay, trace Sand, wet, native		 <p>6.5" BOREHOLE CEMENT/BENTONITE GROUT</p>	16SS	⊗	●	1
37.5				17SS	⊗	●	WR
40.0	Red to Brown Silt, some Sand, Clayey, little Gravel, wet, native, Till	540.8		18ST	⊗	●	
42.5	Red to Brown Silty Clay, fine to coarse subrounded Gravel, wet, native, Till	539.2		19ST	⊗	●	
45.0	AUGERED TO REFUSAL	539.1		20SS	⊗	●	>100
47.5	END OF BOREHOLE AT 40.2 FT. BGS	538.6					
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL, EAST OF LAGOONS

HOLE DESIGNATION: BH170-87
(PAGE 1 of 2)

DATE COMPLETED: 12/21/87

DRILLING METHOD: HSA 6.75" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	578.3					
2.5	Fill - dark Brown fine Sand, dry same, with sulphur same, with trace slag and brick same, except no sulphur	577.3 576.3 576.1		1SS			64
		574.3		2SS			12
5.0	Fill - Black fine Sand, vegetation, thin Brown clay seam, moist	572.3		3SS			6
7.5	Fill - Black Silty Sand, fine rounded Gravel, NAPL, wet	570.3		4SS			6
10.0	Fill - Black Sandy Silt, medium to coarse angular Gravel, trace slag, NAPL, wet same, except Silty Sand, coarse angular Gravel	568.3		5SS			8
12.5	same, with brick, caulking compound, no slag	566.3		6SS			16
				7SS			12
15.0				8SS			5
17.5		560.8 560.3		9SS			13
	Brown medium Sand, laminated, wet, native			10SS			15
20.0	Dark Brown medium to coarse Sand, laminated, wet, native			11SS			14
22.5		555.6		12SS			2
25.0	Red Brown Silty Clay, wet, native			13SS			1
27.5				14SS			WH
30.0				15SS			WR
32.5	same, with trace medium rounded Gravel	545.8		16SS			WR
				17SS			WH

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT

▽ WATER FOUND

▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

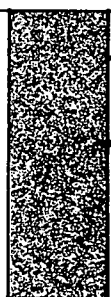
LOCATION: LANDFILL, EAST OF LAGOONS

HOLE DESIGNATION: BH170-87
(PAGE 2 of 2)

DATE COMPLETED: 12/21/87

DRILLING METHOD: HSA 6.75" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Red Brown Silty Clay, trace medium rounded Gravel, wet, native		 <p>6.75" Ø BOREHOLE CEMENT/BENTONITE GROUT</p>	16SS		●	WR
		542.3		17SS		●	WH
37.5	no recovery, Till contact inferred due to Shelby tube resistance	540.8 540.3		18ST		NR	
40.0	Gray to Brown Silty Clay, fine to coarse rounded to angular Gravel, vegetation, wet, native, Till	538.6 538.2		20SS		○	>100
	AUGERED TO REFUSAL						
42.5	END OF BOREHOLE AT 40.1 FT. BGS						
45.0	At completion borehole was grouted to ground surface						
47.5	NOTE: Injection test conducted (5.9-22.7 ft.). Relocated borehole 3 ft. north. Augered to 24.0 ft. and continued sampling						
50.0	NOTE: Sample 16SS - spoon and rods fell from ground surface penetrating 4 ft. of soft clay material						
52.5	NOTE: No recovery of Shelby tube - 19ST (38.0-39.0 ft.). Split spoon used to obtain sample - 20SS (38.0 - 39.7 ft.)						
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT



WATER FOUND




STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA
PROJECT NO.: 1769
CLIENT: OCCIDENTAL
LOCATION: WEST OF LAGOONS

HOLE DESIGNATION: BH171-87
DATE COMPLETED: 4/17/87
DRILLING METHOD: HSA 4.5" OD
CRA SUPERVISOR: K.D. SCHMIDTKE

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	572.0					
2.5	Fill - Black and Brown to light Brown Silty Clay, Gray coarse angular Gravel, iron nodules, White coarse Sand at tip, dry no sample recovered	570.0		1SS			39
		568.0					14
5.0	Fill - Brown Silty fine Sand to White coarse Sand, brick, wood, moist	566.0		2SS			2
	Fill - Gray White to Black Silty fine Sand, wet	565.7		3SS			4
7.5	Fill - Black Silty medium Sand, wet	564.0		4SS			18
	Fill - Brown Black fine to coarse Sand, brick, wood, NAPL			5SS			4
12.5		558.8		6SS			14
	Gray Green Silty fine Sand, NAPL, moist, native	558.0		7SS			14
15.0	Brown Silty fine to medium Sand, NAPL, native	556.0		8SS			13
	Brown Silty fine Sand, fine Gravel, NAPL, native	555.0		9SS			5
20.0				10SS			8
22.5				11SS			9
25.0				12SS			7
27.5	Red Brown Clay, wet	544.4 544.0		13SS		○	8
	Red Brown Gravelly Clay, wet, native, Till	542.3		14SS		●	2
30.0	Red Brown and Gray Silty Sand, Gravelly, becoming a Gray Green Silty Sand with angular Gravel, native, Till	541.0		15SS		○	>50
32.5	AUGERED TO REFUSAL END OF BOREHOLE AT 32.0 FT. BGS At completion borehole was grouted to ground surface	540.0					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT



WATER FOUND

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHWEST CORNER OF LAGOONS

HOLE DESIGNATION: BH172-87
(PAGE 1 of 2)

DATE COMPLETED: 4/10/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	586.2					
	Fill - Brown Silty Gravel, trace Sand, dry to moist	584.4		1SS	X		16
2.5	Fill - Red Brown Silty Clay, dry to moist, plastic	582.2		2SS	X		10
5.0	same, with trace subrounded fine Gravel			3SS	X		6
7.5	same, except dry	578.2		4SS	X		15
10.0				5SS	X		12
12.5				6SS	X		12
15.0	Fill - Black, Brown, Red Brown Gravelly Silt, trace Sand, slag, insulation, etc., dry	572.2		7SS	X		15
17.5	Fill - Gray fine Sand, trace Silt, moist	570.2		8SS	X		29
	Fill - White and Yellow fiberglass, insulation, dry to moist	568.2		9SS	X		15
20.0	Fill - Brown and Gray Gravelly Silt, Sandy, trace vegetation, wet	567.2 566.9		10SS	X		>50
22.5	relocate borehole 5.0 ft. east, augered to 22.0 ft. BGS through "shot rock", no samples	564.2		11SS	X		18
25.0	Fill - Black and Brown Gravelly Silt, Sandy, cloth pieces, wet	562.2		12SS	X		2
27.5	Fill - Brown Sand and Silt, wood, some vegetation, NAPL, wet	559.2		13SS	X		18
30.0	Brown and Brown Gray laminated Silty fine Sand, trace NAPL, wet, native same, with NAPL in laminations	558.2		14SS	X		14
32.5	same, except dark Gray, trace NAPL, no laminations	554.2		15SS	X		9
	same, with NAPL	552.2		16SS	X		19
				17SS	X		10

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTHWEST CORNER OF LAGOONS

HOLE DESIGNATION: BH172-87
(PAGE 2 of 2)

DATE COMPLETED: 4/10/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Dark Gray Silty fine Sand, NAPL, wet, native			16SS	X		19
				17SS	X		10
37.5				18SS	X		4
	Gray and Brown laminated Silty fine Sand, NAPL, wet, native	548.2		19SS	X		9
40.0	same, trace fine subrounded Gravel	546.2		20SS	X		21
42.5	Clay noted on spoon tip at 44.0 ft.			21SS	X		10
	augered to 45.0 ft. BGS, no sample	542.2		22SS	X	●	28
45.0	Red Brown Silty Sand, Gravelly, Clayey, wet, native, Till	541.2					
47.5	SPOON REFUSAL AND END OF BOREHOLE AT 46.8 FT. BGS	539.4					
50.0	At completion borehole was grouted to ground surface						
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTH END OF LAGOONS

HOLE DESIGNATION: BH173-87
(PAGE 1 of 2)

DATE COMPLETED: 4/14/87

DRILLING METHOD: HSA 6.75" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	586.3					
	Fill - Brown Silty Sand, Gravelly, moist	584.5		1SS			20
2.5	Fill - Red Brown Silty Clay, trace fine Gravel, dry			2SS			21
5.0				3SS			14
7.5				4SS			24
10.0				5SS			20
12.5				6SS			12
15.0	Fill - Gray Gravel, concrete, dry	572.3		7SS			24
17.5	Fill - Brown and Black Silt, flyash, glass, slag, dry	570.3		8SS			78
	same, becoming wet	568.3		9SS			9
20.0		566.3		10SS			2
	no recovery, possible void	564.3		11SS			2
22.5	Fill - Brown, Black and Gray Gravelly Silt, wood, flyash, NAPL, wet.	562.3		12SS			10
25.0	same, except no NAPL			13SS			7
27.5	Brown and Gray laminated Silty fine Sand, NAPL in laminations, wet, native	559.3		14SS			24
30.0		556.3		15SS			17
	no recovery	554.3		16SS			1
32.5	Brown and Gray laminated Silty fine Sand, NAPL in laminations, wet, native	552.3		17SS			14
	same, except Gray and Black, no laminations, NAPL			18SS			7

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTH END OF LAGOONS

HOLE DESIGNATION: BH173-87
(PAGE 2 of 2)

DATE COMPLETED: 4/14/87

DRILLING METHOD: HSA 6.75" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Brown and Gray laminated Silty fine Sand, NAPL in laminations, wet, native same, except Gray and Black, no laminations, NAPL	552.3		17SS	X		14
				18SS	X		7
37.5				19SS	X		14
40.0				20SS	X		8
42.5				21SS	X		12
		542.8		22SS	X	○	13
	Red Brown Silty Clay, Sandy, Gravelly, NAPL wet, native, Till	542.3					
45.0	Red Brown Gravelly Silt, Sandy, Clayey, wet, native, Till	541.3		23SS	X	●	69
	AUGERED TO REFUSAL						
47.5	END OF BOREHOLE AT 47.1 FT. BGS	539.2					
	At completion borehole grouted to ground surface						
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: LANDFILL EAST OF LAGOONS

HOLE DESIGNATION: BH174-87
(PAGE 1 of 2)

DATE COMPLETED: 6/26/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	576.8					
	Fill - Gray Brown Sand, moist to wet			1SS			9
2.5	Fill - Red Brown and Gray Sandy Clay, flyash, slag, brick, wood, moist to wet	575.3		2SS			9
	Fill - Brown flyish, moist	574.8					
	Fill - Gray Brown Silt, flyash, moist to dry	574.5		3SS			3
5.0	Fill - Gray, Silty fine Sand, dry	572.8		4SS			2
	Fill - rusted metal fragments, cloth fragment, void	572.1		5SS			<13
7.5				6SS			8
10.0	Fill - Gray fine Sand, rusted metal, dry to moist,	567.3		7SS			7
	Fill - Brown Silty fine Sand, dry to moist same, with some ash	566.3		8SS			8
12.5	Fill - Black and Brown Silt, flyash, moist to wet	564.8		9SS			>53
	same, with rusted metal, cinders, no flyash	564.5		10SS			45
15.0	Fill - Black Sandy Silt, wood, NAPL moist to wet	562.8		11SS			6
	same, with cinders, glass, ash	562.6		12SS			13
17.5	Fill - Brown Gray and Olive Green mottled Sand	560.8		13SS			5
	augered to 18.0 ft. BGS, no sample	560.1		14SS			24
20.0	Fill - Black Brown Silty Sand, wood, wet, iridescent sheen	559.4		15SS			7
	Black, and Brown Gray laminated fine Sand vegetation, trace shell fragments, moist native	558.8		16SS			28
22.5	Black fine Sand, trace vegetation, moist to wet, native	558.0		17SS			13
25.0	same, with wood fragments	556.8		18SS			>50
27.5							
30.0							
32.5	Red Brown fine Gravelly Sand, wet, trace iridescent sheen, native	552.8					
		543.4					
		542.2					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT



WATER FOUND

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL EAST OF LAGOONS

HOLE DESIGNATION: BH174-87
(PAGE 2 of 2)

DATE COMPLETED: 6/26/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Red Brown fine Gravelly Sand, wet, iridescent sheen, native	543.4	 <p>6.5" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	17SS	X		13
35.0	Red Brown Silty Clay, fine to coarse Gravel, dry, native, Till	542.2 541.6		18SS	X		>50
	augered to 36.0 ft. BGS, no sample	540.8		19SS			>50
37.5	Gray rock fragments, wet, native no split spoon advancement, augered to 39.0 ft. BGS, no sample						
40.0	Gray rock fragments, wet, native no split spoon advancement, AUGERED TO REFUSAL	537.8 537.0		20SS			>100
42.5	END OF BOREHOLE AT 39.8 FT. BGS						
45.0	At completion borehole was grouted to ground surface						
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

- ☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☒ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SPLIT

☒ WATER FOUND
☒ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL EAST OF LAGOONS

HOLE DESIGNATION: BH175-87
(PAGE 1 of 2)

DATE COMPLETED: 6/25/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	574.2					
2.5	Fill - Green, White, Red, and Brown Clayey Silt, cinders, vegetation, ash, dry same, except Yellow Brown and Red Brown, no ash and cinders, no vegetation	572.2		1SS			10
		570.2		2SS			36
5.0	Fill - Red and Green brick, cinders, glass, dry	568.2		3SS			11
7.5	Fill - Red Brown, Yellow, and White flyash, slag, dry to moist same, with glass and wood	566.2		4SS			7
10.0	no recovery	564.2		5SS			9
12.5	Fill - brick, wet	562.2		6SS			4
		560.2		7SS			8
15.0	Fill - Gray Brown and Black fine to medium Sand, NAPL, wet	559.7		8SS			28
	Fill - Gray fine Gravelly Sand, moist to dry same, except laminated Black and Gray, trace NAPL, dry to moist	558.2		9SS			36
17.5		556.2		10SS			9
20.0	Fill - Gray, Brown, and Black Sand, slag, cinders, glass, moist	554.2		11SS			2
	no recovery	552.2		12SS			9
22.5	Gray Brown fine to medium Sand, some Silt lenses, trace NAPL, iridescent sheen, native same, except no Silt lenses	550.2		13SS			11
25.0	same, with abundant Brownish NAPL	548.2		14SS			24
27.5	same, with shell fragments, trace NAPL, moist, iridescent sheen	546.2		15SS			45
30.0	same, except abundant Brownish Black NAPL	544.2		16SS			6
	same, with trace Red Brown Clay	542.3 542.2		17SS			27
32.5	Red Brown Silty Clay, Gravelly, trace Sand, moist to dry, native, Till same, with Gray Sandy Silt, dry, firm	540.2		18SS			>50

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

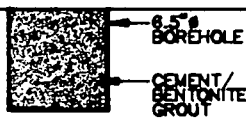
LOCATION: LANDFILL EAST OF LAGOONS

HOLE DESIGNATION: BH175-87
(PAGE 2 of 2)

DATE COMPLETED: 6/25/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: B. BURKETT

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Red Brown Silty Clay, Gravelly, trace Sand, moist to dry, native, Till same, with Gray Sandy Silt, dry, firm	540.2		17SS	X		27
35.0	AUGERED TO REFUSAL	539.0		18SS			>50
	END OF BOREHOLE AT 35.2 FT. BGS						
37.5	At completion borehole was grouted to ground surface						
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH176-87

PROJECT NO.: 1769


DATE COMPLETED: 12/09/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: NORTHEAST OF EAST LAGOON

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	573.1					
2.5	Fill - Black Silty Sand, medium angular Gravel, trace vegetation, dry same, except no vegetation	571.1		1SS			13
		569.1		2SS			19
5.0	Fill - Brown Red Silty Sand, trace ash, vegetation, tar, dry	567.1		3SS			16
7.5	Fill - Red Sandy Silt, trace wood and rusted metal, trace glass and porcelain, wet same, with trace medium rounded Gravel, Black roofing shingles, tar, NAPL, no wood, metal, glass, and porcelain	565.1		4SS			15
10.0		563.1		5SS			14
12.5	Fill - Black Silty Sand, wet same, trace glass and brick	561.1		6SS			13
	same, with NAPL, no glass and brick	559.1		7SS			19
15.0		557.1		8SS			20
17.5	Black Sandy Silt, NAPL, wet, native			9SS			13
20.0				10SS			10
22.5				11SS			5
		549.1		12SS			10
25.0	no recovery	547.1		13SS			WR
27.5	Gray Brown Silty Sand, coarse Sand, fine subrounded Gravel, trace shell fragments, NAPL, wet, native	545.1		14SS			13
30.0	Red Brown Sandy Clay, coarse angular Gravel, wet, native, Till			15SS		●	18
	augered to 32.0 ft. BGS, no sample			16SS		●	35
32.5	Coarse angular Gravel, wet, native	541.2		17SS			>100
	AUGERED TO REFUSAL	541.1					
		540.4					
	END OF BOREHOLE AT 34.3 FT. BGS At completion borehole was grouted to ground surface	538.8					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT

- ▽ WATER FOUND
- ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

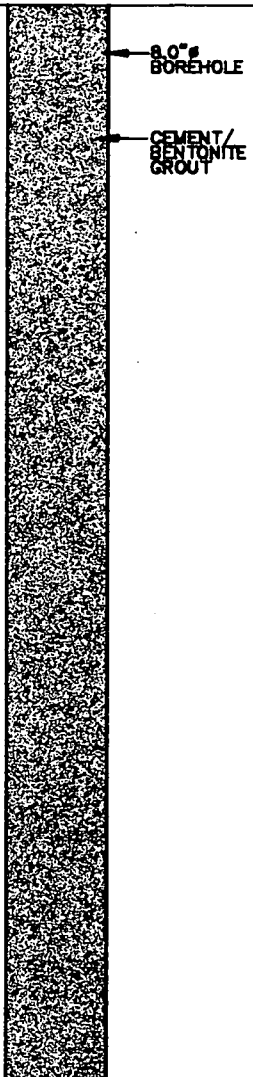
LOCATION: WEST OF S-AREA

HOLE DESIGNATION: BH177-87

DATE COMPLETED: 1/27/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	568.6					
2.5	Fill - Brown and dark Brown Gravelly coarse Sand, cinder, dry to moist	566.2		1SS			22
	Fill - White Sand size waste material, moist same, except Black and White, wet	564.6		2SS			33
5.0	same, with some Gray medium Sand, trace Gravel	562.6		3SS			20
7.5	augers fell to 10.0 ft. BGS, no sample	560.6		4SS			18
10.0	Dark Gray Silty fine to medium Sand, trace vegetation, trace Sand lenses, wet, native	558.6		5SS			21
12.5				6SS			31
15.0				7SS			4
17.5				8SS			4
20.0				9SS			WH
22.5	same, with trace fine Gravel, dark Brown NAPL, iridescent sheen	546.6		10SS			11
25.0	Dark Gray and Gray slightly mottled Silty medium Sand, Clayey, trace fine Gravel, NAPL, native	543.6		11SS			14
27.5	Dark Gray to Red Brown Sandy Clay, Silty, trace fine Gravel, moist to wet, native, Till	542.6 541.8 540.8 540.6 540.3		12SS			-
30.0	Red Brown Silty Clay, Sandy, moist to wet, native, Till			13SS		●	10
32.5	Brown and Gray Brown medium Sand, trace Gravel, wet, native, Till						
	AUGERED TO REFUSAL						
	END OF BOREHOLE AT 28.3 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH178-87

PROJECT NO.: 1769


DATE COMPLETED: 4/20/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 4.75" OD

LOCATION: SOUTHEAST OF MONITORING STATION

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	573.2					
2.5	Fill - Brown, Gray, and Red Silt, Gravel, brick, dry	571.2	 <p>4.75" Ø BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	1SS			26
	Fill - Gray and Brown Silty Gravel, dry	569.2		2SS			16
5.0	Fill - Brown and Gray Sandy Silt, Gravelly, trace Red granular material, moist	567.2		3SS			6
7.5	Fill - Brown, Red, light Blue, and Gray Silt Sand, some fibrous insulation material, moist	565.2		4SS			13
	Fill - Black Gravelly Silt, wet	563.9		5SS			>100
10.0	augered to 10.0 ft. BGS, no sample	563.2		6SS			>100
	Fill - Gray rock fragments	563.0					
	augered to 12.0 ft. BGS, no sample	561.2					
12.5	Fill - Black Gravelly Silt, iridescent sheen, wet,	559.2		7SS			4
15.0	Black Silty fine Sand, trace NAPL, wet, native			8SS			17
17.5				9SS			25
20.0	same, with some wood fragments	553.2		10SS			5
22.5	same, except no wood, no NAPL	551.2		11SS			6
	same, with some wood fragments, trace NAPL	549.2		12SS			18
25.0	same, except Brown, no wood, NAPL	547.2		13SS			7
27.5	same, with rounded Gravel	545.2		14SS			52
30.0	Gray Gravelly Silt, Clayey, wet, native, Till	543.5		15SS		○	8
	augered to 32.0 ft. BGS, no sample	541.7		16SS		○	50
32.5	rock fragments	541.2		17SS			>100
		541.0					
	AUGERED TO REFUSAL	539.7					
	END OF BOREHOLE AT 33.5 FT. BGS						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTHWEST CORNER OF WEST LAGOON

HOLE DESIGNATION: BH179-87
(PAGE 1 of 2)

DATE COMPLETED: 4/8/87

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: K.D. SCHMIDTKE
C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	586.4					
	Fill - Gray Sandy Gravel, dry			1SS			39
2.5	Fill - Red Silty Clay, moist	584.5		2SS			40
5.0				3SS			11
7.5				4SS			20
10.0				5SS			12
12.5				6SS			10
15.0				7SS			17
	Fill - dark Brown Silty Sand, Clayey, Gravel, brick, moist	571.4		8SS			26
17.5	Fill - dark Brown to Black Silty fine Sand, Gray angular Gravel, cinder, moist	570.4		9SS			30
	Fill - Gray and White medium to coarse Sand, wet	567.7		10SS			28
20.0	Fill - Gray and Black Silty fine Sand, wet	567.1		11SS			7
	Fill - Gray Clayey Silt, wet	566.7		12SS			35
22.5	Fill - Gray and Black medium Sandy Silt, wet	566.4		13SS			2
	Fill - Black Brown medium Sand, NAPL, wet	565.8		14SS			24
25.0	Fill - Gray Silt, wet	565.1		15SS			-
	Fill - Gray Black medium Sand, brick, NAPL, wet	564.4		16SS			14
27.5	Fill - Silty coarse Sand, NAPL, wet	562.4		17SS			15
	Fill - coarse material, NAPL, wet	560.4		18SS			5
30.0	Gray Brown Silty fine Sand, moist, native no recovery	558.9					
	Gray and Brown Gray Silty fine Sand, trace NAPL, wet, native	558.4					
32.5	same, except laminated, no NAPL	556.4					
	same, except Black, no laminations, trace vegetation	554.4					
		552.4					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

◐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHWEST CORNER OF WEST LAGOON

HOLE DESIGNATION: BH179-87
(PAGE 2 of 2)

DATE COMPLETED: 4/8/87

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: K.D. SCHMIDTKE
C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Black Silty fine Sand, trace vegetation, wet, native			17SS			15
				18SS			5
37.5	Dark Gray fine Sand, trace Silt, trace NAPL, wet, native	550.4		19SS			30
		548.4		20SS			7
40.0	Gray and Gray Brown Silty fine Sand, trace fine rounded Gravel, laminated, NAPL, wet, native			21SS			19
	same, except Gravelly	546.4		22SS		●	7
42.5	Gray Silty Clay, Sandy, trace gravel wet, native, Till	542.9 542.4		23SS		○	>100
45.0	Red Brown Sandy Silt, Gravelly, Clayey, wet, native, Till	541.4 541.3					
	AUGERED TO REFUSAL						
47.5	END OF BOREHOLE AT 45.1 FT. BGS						
50.0	At completion borehole was grouted to ground surface						
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT



WATER FOUND

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

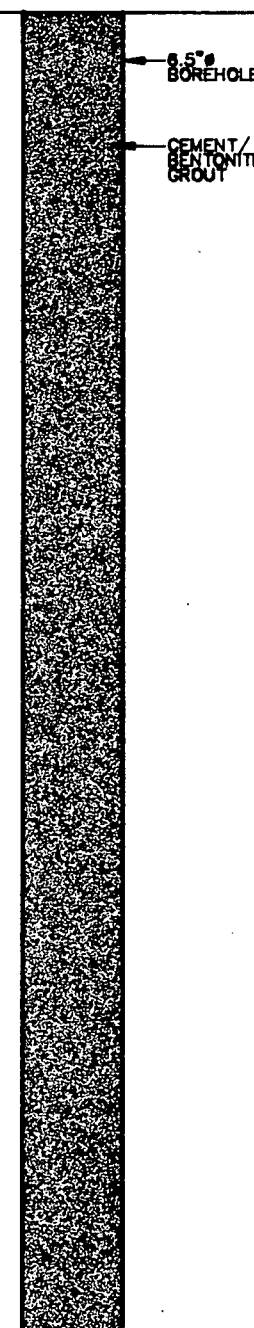
LOCATION: SOUTH END OF WEST LAGOON

HOLE DESIGNATION: BH180-87
(PAGE 1 of 2)

DATE COMPLETED: 4/13/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	585.9					
2.5	Fill - Gray and Brown Silty Sand, Gravelly, dry	584.9		1SS			21
	Fill - Red Brown Silty Clay, trace fine Gravel, dry, plastic			2SS			21
5.0				3SS			10
7.5				4SS			21
10.0				5SS			18
12.5				6SS			11
15.0				7SS			16
		570.9		8SS			22
17.5	Fill - Black, Brown, and Gray Sandy Silt, Gravelly, wood chips, slag, bottom ash, dry same, except decreasing Gravel with depth, moist	569.9		9SS			18
		567.9		10SS			29
20.0	Fill - Black Silt, flyash, moist			11SS			11
	same, with some wood, trace NAPL	565.9		12SS			13
22.5				13SS			4
	Fill - Black and Brown Gravelly Silt, slag, trace wood, moist	562.9		14SS			26
25.0		561.9		15SS			19
	Fill - Black, Brown, and Gray Silt, Gravel, wood, NAPL, moist to wet			16SS			10
27.5		559.4		17SS			14
	Fill - Gray and Brown laminated Silty fine Sand, NAPL in laminations, wet no recovery	557.9		18SS			12
30.0		555.9					
32.5	Gray and Brown laminated Silty fine Sand, NAPL in laminations, wet, native						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

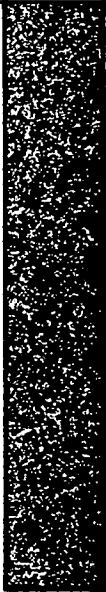
LOCATION: SOUTH END OF WEST LAGOON

HOLE DESIGNATION: BH180-87
(PAGE 2 of 2)

DATE COMPLETED: 4/13/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: C.H. PADGINTON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Gray and Brown laminated Silty fine Sand, NAPL in laminations, wet, native			17SS	X		14
37.5				18SS	X		12
40.0				19SS	X		17
42.5				20SS	X		11
45.0				21SS	X		5
47.5	Gray Silty Clay, wet, plastic, native	544.1		22SS	X	●	4
	Red Brown Sandy Silt, Clayey, Gravelly, wet, plastic to low plastic, native, Till	543.9		23SS	X	●	14
	Red Brown and Gray laminated Silty Clay, trace Sand and Gravel, wet, native, Till	541.9					
	Red Brown Silty Clay, Sandy, trace fine Gravel, wet, native, Till	540.3					
	AUGERED TO REFUSAL	539.9					
	END OF BOREHOLE AT 47.5 FT. BGS	538.4					
	At completion borehole was grouted to ground surface						
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND




STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA
PROJECT NO.: 1769
CLIENT: OCCIDENTAL
LOCATION: SOUTHWEST OF LANDFILL

HOLE DESIGNATION: BH181-87
DATE COMPLETED: 10/13/87
DRILLING METHOD: HSA 6.5" OD
CRA SUPERVISOR: C. AHRENS

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.3					
2.5	Fill - Brown Silty Sand, Clayey, Gravel, moist same, except fine to medium Gravel, trace Clay same, except fine to medium Sand, Clayey, Gravel, wet	567.3 565.3 565.0		1SS			17
				2SS			41
5.0	augered through "shot rock" to 13.0 ft. BGS, no samples			3SS			>100
7.5							
10.0							
12.5							
	Fill - Black Gravelly coarse Sand, wet	556.3 555.8		4SS			13
15.0	Fill - Black Silty fine Sand, wet same, with slight chemical odor	554.3		5SS			10
17.5				6SS			17
20.0	same, with trace fine Gravel	549.3		7SS			14
22.5	same, with some coarse Gravel	547.3		8SS			7
				9SS			21
25.0	same, with trace Clayey Silt	545.3		10SS			57
	Brown Clayey Sand, Gravelly, Silty, moist, native, Till	544.0		11SS			>100
27.5	AUGERED TO REFUSAL	543.0					
		541.1					
30.0	END OF BOREHOLE AT 28.2 ft. BGS						
32.5	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT

- ▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTH OF S-AREA LANDFILL

HOLE DESIGNATION: BH182-87

DATE COMPLETED: 5/26/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.C. MILLARD
C. AHRENS

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	569.4					
	Fill - Brown and Red Brown Silty fine Sand, some Gravel, trace vegetation, moist	568.6		1SS	X		>50
	augered to 2.0 ft. BGS, no sample	567.4					
2.5	Fill - Brown and Red Brown to Black Gravel, fine Sand and Silt, concrete, some Clay, moist to dry, chemical odor	565.4		2SS	X		80
5.0	Fill - Black and Gray, some Red Brown fine Sandy Silt, Gravelly, trace cinders, moist to dry, chemical odor	564.0		3SS	X		>85
7.5	augered through Black Gravel and Sand, brick, and metal to 10.0 ft. BGS, no samples						
10.0	Fill - Black coarse Gravel and Sand, some cinder, wet	559.4 559.2					
	Fill - Olive Green and Yellow Brown fine Sand and Silt, some slag and cinder, trace Black NAPL	557.6 557.4		4SS	X		4
12.5	Fill - Black wood chips and fibrous material, moist to wet			5SS	X		26
15.0	Fill - Black Silty fine Sand, some coarse Gravel, wet	555.4		6SS	X		7
17.5	Black Silty fine to medium Sand, trace vegetation, wet, native same, with trace fine subrounded Gravel, no vegetation	553.4 551.4		7SS	X		8
20.0	Black fine to medium Sand, some Silt, trace subrounded Gravel, trace shell fragments, wet, native same, with trace vegetation, iridescent sheen	549.4		8SS	X		20
22.5	Black fine to medium Sand and Silt, subrounded to rounded Gravel increasing with depth, wet, iridescent sheen, native	547.4		9SS	X		20
	Dark Gray to Black fine Sand, Silt, and Clay wet, native	545.7 545.4		10SS	X		19
25.0	Dark Gray Gravelly Sand, Clayey, Silty, wet, native	543.9 543.6 543.4 542.9		11ST	X		
	no recovery			13SS	X		>50
	augered to 26.0 ft. BGS, no sample			14DT	X		
27.5	Red Brown Silty Clay, Sandy, moist, native, Till	541.4 541.2		15SS	X		>50
30.0	augered to 28.0 ft. BGS, no sample						
	no recovery	539.4					
	augered to 30.0 ft. BGS, no sample						
	AUGERED TO REFUSAL	537.9					
32.5	END OF BOREHOLE AT 31.5 FT. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH183-87

PROJECT NO.: 1769


DATE COMPLETED: 10/21/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: SOUTHWEST OF LANDFILL

CRA SUPERVISOR: C.AHRENS

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.8					
2.5	Fill - Brown Clayey fine to medium Sand, Silty, Gravelly, vegetation, moist same, except no vegetation	566.8		1SS			22
		564.8		2SS			20
5.0	augered through "shot rock" to 8.0 ft. BGS, no samples						
7.5							
	Fill - Brown Clayey Silt, Sandy, Gravelly, moist	560.8		3SS			>100
10.0	Fill - Black Silty fine to coarse Sand, Gravelly, trace glass, NAPL, wet, iridescent sheen	558.8		4SS			5
12.5	same, except fine grained, no Gravel and glass	556.8		5SS			21
		554.8		6SS			4
15.0	Fill - Black Silty fine to medium Sand, wet, iridescent sheen			7SS			10
17.5				8SS			15
20.0				9SS			13
22.5	Gray to Brown Clayey Sand, Silty, Gravelly, wet, native, Till no recovery	546.8		10SS			7
	Brown Silty Clay, trace fine Gravel, trace Sand, moist, native, Till	544.8 543.3		11ST		NR	
25.0	Brown Silty Clay, trace Gravel and Sand, moist, firm, native, Till	542.8 542.4 541.2		12SS			12
27.5	Brown Silty Clay, wet, native, Till Brown Sandy Silt, Clayey, native, Till same, with trace fine Gravel, moist	540.8		13SS			12
	Gray Silty Sand, Clayey, some Gravel, wet, native, Till	540.1 539.8		14SS			>50
30.0	AUGERED TO REFUSAL	538.8					
32.5	END OF BOREHOLE AT 30.0 ft. BGS At completion borehole was grouted to ground surface NOTE: No penetration of denission tube -13DT (26.0 ft.) Split spoon used to obtain sample -13SS (26.0 - 28.0 ft.)						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT

- ▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH184-87

PROJECT NO.: 1769

DATE COMPLETED: 10/15/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: SOUTH OF LAGOONS

CRA SUPERVISOR: C. AHRENS

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.2					
	Fill - Brown Silty Clay, vegetation, some Gravel, moist			1SS	X		51
2.5	Fill - Brown Silty fine Sand, some Gravel, moist	566.2		2SS	X		23
	Fill - Gray Gravelly Sand, Silty, moist	564.2		3SS	X		>100
5.0	augered through "shot rock" to 8.0 ft. BGS	562.7					
7.5							
	Fill - Black Silty fine Sand, some Gravel, moist, iridescent sheen, chemical odor	560.2		4SS	X		15
10.0	same, with cloth fibers, wet	558.2		5SS	X		11
	same, with trace Gravel	556.2		6SS	X		11
12.5				7SS	X		2
15.0	Black laminated Silty fine Sand and fine Sandy Silt, wet, native	554.2		8SS	X		3
	no recovery	552.2		9SS	X		2
17.5				10SS	X		2
20.0	Black Silty fine Sand, wet, iridescent sheen, strong chemical odor, native	550.2		11SS	X		5
	Black fine Gravelly Sand, some Silt, wet, native	546.2		12SS	X	○	16
22.5	same, except no Gravel	544.2		13SS	X	○	80
25.0	Gray Brown Silty Clay, trace fine subrounded Gravel, moist, native, Till	543.9		14SS	X		>100
27.5	Brown Sandy Clay, Silty, some Gravel, moist	541.5					
	Gray Sand, fine to medium angular Gravel, some Silt, wet, native, Till	541.2					
30.0	same, except no Silt	540.2					
32.5	SPOON REFUSAL AND END OF BOREHOLE AT 29.4 ft. BGS	538.8					
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

▽

WATER FOUND

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT


▽

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA
PROJECT NO.: 1769
CLIENT: OCCIDENTAL
LOCATION: SOUTH OF LAGOONS

HOLE DESIGNATION: BH185-87
DATE COMPLETED: 10/23/87
DRILLING METHOD: HSA 6.5" OD
CRA SUPERVISOR: C. AHRENS

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	N' VALUE
	GROUND ELEVATION	569.1					
2.5	Fill - Brown Clayey Sand, Silty, vegetation, trace Gravel, moist same, except no vegetation	567.1		1SS			19
				2SS			18
5.0	same, except Black Brown, wet	565.1		3SS			7
				4SS			8
7.5	Fill - Black Sandy fine to medium Gravel, wet, iridescent sheen, chemical odor	561.1		5SS			15
10.0	Fill - Black fine fibers, iridescent sheen	559.9		6SS			22
	Fill - Black tar-like material	558.9		7SS			31
	Fill - cardboard	558.5		8SS			18
12.5	Black Silty fine Sand, wet, iridescent sheen native	557.6		9SS			12
	Black and Brown laminated Silty fine Sand, trace wood, wet, iridescent sheen, native	557.1		10SS			10
15.0				11SS			20
	Black laminated Silty fine Gravel and fine Sandy Silt, wet, iridescent sheen, native	555.1		12SS			14
17.5		553.1		13SS			34
	Black Silty fine Sand, wet, iridescent sheen, native	551.1		14ST			25
20.0	same, with shell fragments	549.1		15SS			136
22.5	same, except no shell fragments	547.1		16SS			
	same, except no iridescent sheen	545.1					
25.0	Brown fine Sandy Silt, fine Gravel, moist, native, Till no recovery	544.1					
	Brown Silty fine Sand, trace fine Gravel, moist, native, Till	543.1					
27.5	Brown Silty Clay, moist, native, Till	542.6					
	Brown Silty fine Sand, trace Clay and fine Gravel, moist, native, Till	542.0					
30.0	Brown Silty Sand, some Gravel, Clayey, moist, native, Till	541.4					
	Brown fine Sandy Gravel, Silty, Clayey, moist, native, Till	541.1					
32.5	AUGER REFUSAL AND END OF BOREHOLE AT 29.5 FT. BGS At completion borehole was grouted to ground surface	540.5					
		539.6					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTH OF S-AREA LANDFILL

HOLE DESIGNATION: BH186-87

DATE COMPLETED: 10/23/87

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.9					
2.5	Fill - Brown and dark Brown Clayey Silt, some Sand and Gravel, vegetation, trace brick, moist	566.9		1SS			4
	Fill - Brown Sandy Silt, some Clay and Gravel, wet to moist	564.9		2SS			5
5.0	Fill - Brown and Red Brown Clayey Silt, Sandy, some Gravel, moist to wet	562.9		3SS			12
7.5	Fill - Brown Sandy Silt, Gravelly, some flyash and cinder, wet	562.6		4SS			>50
10.0	augered through "shot rock" to 12.0 ft. BGS, no samples						
12.5	Fill - Black coarse Gravel, wet, iridescent sheen, chemical odor	556.9		5SS			7
15.0	Black Silty fine Sand, trace rounded Gravel, wet, iridescent sheen, native	554.8		6SS			4
	same, with trace Silt lenses	552.9		7SS			15
17.5	same, except no Silt lenses and iridescent sheen	550.9		8SS			10
20.0	augered to 20.5 ft. BGS, no sample	548.9		9SS			24
	same, with rounded Gravel at tip of spoon	548.4		10SS			4
22.5	Black Silty medium to coarse Sand, trace rounded Gravel, trace White shell fragments, wet to moist, native	546.9		11SS			22
25.0	Black to dark Gray to dark Brown Silty Clay, rounded Gravel, increasing Sand with depth, wet, native, Till	544.9		12SS			87
27.5	Brown and dark Brown Silty Clay, Sandy, Gravelly, moist to dry, native, Till	542.9		13SS			>100
30.0	Red Brown Silty Clay, trace fine Sand lenses with fine Sand, Silt and fine Gravel at tip of spoon, moist, native, Till	540.0					
	Red Brown Silty fine Sand, Clayey, Gravelly moist, wet, Till	539.7					
32.5	AUGERED TO REFUSAL						
	END OF BOREHOLE AT 29.2 FT. BGS						
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

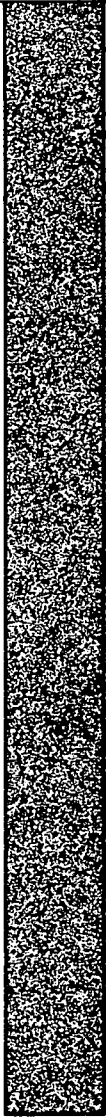
LOCATION: SOUTH OF S-AREA LANDFILL

HOLE DESIGNATION: BH187-87

DATE COMPLETED: 10/22/87

DRILLING METHOD: HSA 8.0" OD

CRA SUPERVISOR: D.C. MILLARD

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	568.5					
2.5	Fill - Brown and Red Brown Silty Sand, some Gravel and brick, trace concrete, wet to moist	566.5		1SS			24
	Fill - coarse Gravel, some Sand and brick, dry	564.5		2SS			75
5.0	Fill - Black, Brown, and White mottled Silty Sand, some Gravel and White medium Sand size material, moist, moderate chemical odor	562.5		3SS			33
7.5	Fill - Black Sand, coarse Gravel, wet, strong chemical odor, iridescent sheen	560.5		4SS			12
	Fill - Black oily Silty Sand, some Gravel, moist to wet, strong chemical odor, iridescent sheen	558.5		5SS			19
10.0	Fill - Black and Brown to Gray Silty Sand, coarse angular to subrounded Gravel, moist, strong chemical odor	556.5		6SS			32
12.5	Fill - dark Brown and Black Gravelly coarse Sand, Silty, trace vegetation, moist to dry, moderate chemical odor	554.5		7SS			72
15.0	same, except no vegetation, trace brick, moist	552.5		8SS			45
17.5	Fill - Black Gravelly coarse Sand, some concrete and brick, trace rubber, moist to wet, strong chemical odor	550.5		9SS			47
20.0	Fill - Black Silty medium to coarse Sand, some rounded to angular Gravel, trace Clay wet, strong chemical odor	548.5		10SS			17
22.5	same, except no Clay	546.5		11SS			31
25.0	Fill - Black coarse angular Gravel, some Sand and Silt, wet, strong chemical odor			12SS			32
27.5	Red Brown fine to medium Sandy Silt, trace Clay, Gravel, moist to wet, native, Till	541.8 541.1 540.5		13SS			31
30.0	augered to 28.0 ft. BGS, no sample	539.9 539.2		14SS			>61
32.5	Gray Brown Silty fine to medium Sand, trace Clay, Gravel, moist to wet, native, Till			15SS			>100
	Rock fragments, Black NAPL, wet						
	AUGER REFUSAL AND END OF BOREHOLE AT 29.3 FT. BGS						
	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND

STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH188-87

PROJECT NO.: 1769


DATE COMPLETED: 10/22/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: SOUTHWEST OF LAGOONS

CRA SUPERVISOR: C. AHRENS

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	573.1					
2.5	Fill - Brown Silty Sand, Clayey, some Gravel, trace glass and vegetation, moist same, with trace wood	571.1	 <p>6.5" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	1SS			23
	augered to 4.5 ft. BGS, no sample	569.1 568.6		2SS			82
5.0	Fill - Brown Silty Sand, some Gravel, trace Clay, slag, moist			3SS			16
7.5	same, except Black and Brown, glass	564.6		4SS			20
10.0	Fill - Gray angular medium Gravel, wet	563.1		5SS			22
12.5	same, except coarse Gravel	561.1		6SS			20
	same, except some Silty Sand	559.1		7SS			13
15.0	same, except no Sand	557.1		8SS			7
17.5				9SS			29
	Fill - Black Silty fine Sand, wet, slight chemical odor	555.1		10SS			5
20.0	Black Silty fine Sand, trace vegetation, wet, trace chemical odor, native	553.1		11SS			3
22.5	same, except no vegetation	551.1		12SS			3
	same, with trace shell fragments	549.1		13SS			2
25.0	same, with trace fine Gravel, iridescent sheen	547.1		14SS			7
27.5	Gray Brown Clayey Silt, some Gravel, trace fine Sand, wet, grading to a Brown Silty Clay, some fine to medium Gravel, moist, native, Till	545.6 545.1		15SS			53
	Red Brown laminated Silty Clay, moist, native, Till	544.1		16SS			>100
30.0	Red Brown Sandy Clay, Silty, fine to medium Gravel, moist, native, Till	543.1					
32.5	same, except Brown, some fine Gravel, moist to wet	542.3					
	AUGER REFUSAL AND END OF BOREHOLE AT 30.8 ft. BGS At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



GRAIN SIZE DIST. & ATT. LIMITS FOR OCC



DEC/EPA SPLIT



WATER FOUND



GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHEAST LANDFILL

HOLE DESIGNATION: BH189-88
(PAGE 1 of 2)

DATE COMPLETED: 3/4/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	574.1					
	augered to 2.0 ft. BGS, no sample						
2.5	Fill - Brown fine to coarse Sandy Silt, fine to coarse Gravel, Clay, wood, cement, and cinders, moist same, with Yellow Blue crystalline material	572.1		1SS			10
5.0	same, except no cinders	570.1		2SS			7
7.5		568.1		3SS			44
	Fill - Black, Orange, and White fine to coarse Sandy Silt, slag, crystalline material, wet	566.1		4SS			26
10.0	Fill - Black Silt, thick sticky NAPL	564.1		5SS			9
12.5				6SS			20
15.0	same, with White chalky material, slag	560.1		7SS			16
	Brown Silty fine Sand, trace NAPL, moist, native	558.4		8SS			31
17.5	same, except Gray	558.1		9SS			14
20.0	same, except wet	554.1		10SS			7
22.5	same, with trace iridescent sheen	552.1		11SS			11
	same, with trace medium Sand	550.1		12SS			10
25.0				13SS			36
27.5	same, except laminated Gray and Brown, trace fine Gravel	547.1		14SS			30
	Gray to Brown Silty fine to medium Sand, trace fine Gravel, wet, native	546.1		15SS		○	WR
30.0		542.6		16SS		⊗	106
32.5	Red Brown fine to coarse Sandy Silt, Clayey, wet, native, Till	541.1		17SS		●	>100
	Red Brown Gravelly Silt, some Sand and Clay, native, Till	540.1					

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S--AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTHEAST LANDFILL

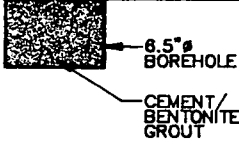
HOLE DESIGNATION: BH189-88

(PAGE 2 of 2)

DATE COMPLETED: 3/4/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Red Brown Gravelly Silt, some Sand and Clay, native, Till	541.1		16SS	X	●	106
	Gray fine to coarse Sandy Gravel, wet native, Till	540.1		17SS			>100
	AUGERED TO REFUSAL	540.0					
35.0	END OF BOREHOLE AT 34.3 FT. BGS	539.8					
37.5	At completion borehole was grouted to ground surface						
40.0	NOTE: 16SS - A 300 lb. hammer and a 3.0" split spoon with polycarbonate liner was used						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

☒ WATER FOUND
☒ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL, BETWEEN LAGOONS, AT SOUTH END

HOLE DESIGNATION: BH190-88
(PAGE 1 of 2)

DATE COMPLETED: 2/23/88



DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	586.4					
	augered to 2.0 ft. BGS, no sample						
2.5	Fill - Red Brown Silty Clay, trace coarse Sand, dry	584.4	 <div style="position: absolute; top: 300px; left: 680px;">8.5" BOREHOLE</div> <div style="position: absolute; top: 340px; left: 680px;">CEMENT/ BENTONITE GROUT</div>	1SS			35
5.0				2SS			7
7.5	same, except moist	578.4		3SS			20
10.0				4SS			13
12.5				5SS			13
	same, with some glass	572.4		6SS			24
15.0	Fill - Gray and Brown Silty fine to coarse Gravel, some fine to coarse Sand, trace brick and slag, moist	571.7		7SS			55
17.5	Fill - Brown Silty fine to coarse Sand, some brick, moist	570.4		8SS			>50
	Fill - dark Brown Silty fine Sand, trace fine Gravel and brick, moist	568.4		9SS			20
20.0	Fill - Black Silty fine Sand, trace fine Gravel, wet, NAPL	566.4		10SS			12
22.5				11SS			9
25.0				12SS			6
27.5	Dark to light Brown Silty Sand, trace fine Gravel, wet	560.4		13SS			35
30.0				14SS			20
32.5				15SS			16
				16SS			13
				17SS			11

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
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☒ DEC/EPA SAMPLE
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 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL, BETWEEN LAGOONS, AT SOUTH END

HOLE DESIGNATION: BH190-88
(PAGE 2 of 2)

DATE COMPLETED: 2/23/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Dark to light Brown Silty Sand, trace fine Gravel, wet		 <p>6.5" Ø BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	16SS	×		13
35.0				17SS	×		11
37.5				18SS	×		18
40.0	same, with NAPL	546.4		19SS	×		8
	same, with trace fine to coarse Gravel	544.4		20SS	×		26
42.5	Red Brown Silty Clay, trace rounded fine Gravel, moist, native, Till, Gray silty fine Sand lense at 43.6 ft	543.1		21SS	×	○	6
	Red Brown Sandy Silt, some Clay, trace fine Gravel, native, Till	542.4		22SS	×		>100
45.0	augered to 47.0 ft. BGS	539.4					
	Red Brown Sandy Silt, some Clay, trace fine Gravel, native, Till	539.1		23SS	×	○	>100
47.5	AUGERED TO REFUSAL	538.3					
50.0	END OF BOREHOLE AT 48.1 FT. BGS At completion borehole was grouted to ground surface						
52.5	NOTE: No penetration of shelby tube -22ST (44.0 ft) Split spoon was used to obtain sample -22SS (44.0-45.3 ft)						
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: WEST OF LAGOONS

HOLE DESIGNATION: BH191-88
(PAGE 1 of 2)

DATE COMPLETED: 2/25/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	586.5					
	augered through Gravel to 2.0 ft. BGS						
2.5	Fill - Red Brown Clayey Silt, trace fine Gravel, dry	584.5		1SS	X		34
5.0	same, except no Gravel	582.5		2SS	X		10
7.5	same, with trace coarse Sand	580.5		3SS	X		32
10.0				4SS	X		18
12.5				5SS	X		20
				6SS	X		39
15.0	Fill - Brown and Black Gravelly Silt, brick and slag, dry	572.3		7SS	X		52
				8SS	X		>60
17.5	augered to 18.0 ft. BGS, no sample	570.0					
				9SS	X		14
20.0	Fill - Brown and Black Gravelly Silt, brick and slag, trace NAPL in tip of split spoon, dry	566.5		10SS	X		16
22.5	Fill - dark Brown and Black Silty fine to medium Sand, some fine to coarse Gravel, NAPL, moist	564.5		11SS	X		37
				12SS	X		8
25.0	Fill - Brown Silty fine to medium Sand, glass, brick, slag, moist	562.5					
	same, except Black with NAPL	561.0		13SS	X		25
	same, except wet	560.5		14SS	X		11
27.5	Brown Silty fine Sand, trace fine Gravel, moist, native	558.5		15SS	X		12
	same, except Gray, NAPL, wet			16SS	X		12
30.0	same, except trace NAPL, moist	556.5					
32.5	same, except wet	554.5		17SS	X		11

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
- DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

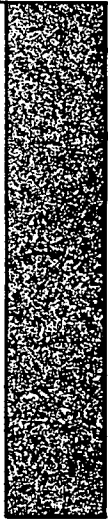
LOCATION: WEST OF LAGOONS

HOLE DESIGNATION: BH191-88
(PAGE 2 of 2)

DATE COMPLETED: 2/25/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Gray Silty fine Sand, trace fine Gravel, trace NAPL, wet, native		 <p>6.5" BOREHOLE</p> <p>CEMENT/ BENTONITE GROUT</p>	16SS	X		12
37.5				17SS	X		11
40.0				18SS	X		19
42.5				19SS	X		3
45.0	Red Brown Sandy Silt, some clay, trace fine Gravel, native, Till	545.0		20SS	X	○	3
	Gray fine to coarse Gravel, some fine to coarse Sand and Silt, wet, native, Till	542.5 542.0		21SS	X	⊗	WR
	AUGERED TO REFUSAL	540.5		22SS	X		>400
47.5	END OF BOREHOLE AT 46.0 ft. BGS At completion borehole was grouted to ground surface						
50.0	NOTE: 21SS & 22SS A 3.0" split spoon with a polycarbonate liner was used						
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
- DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH192-88

PROJECT NO.: 1769


DATE COMPLETED: 1/11/88

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: PARKING LOT WEST OF LANDFILL

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.9					
	augered to 3.0 ft. BGS						
2.5		565.9					
	Fill - White Silty Sand, Red Brown Silty Clay, Brown fine Sand, trace sulphur, dry	564.9		1SS			27
5.0	Fill - White Silty Sand, dry to moist, same, except White to Gray, trace medium angular Gravel, wet	562.9		2SS			19
7.5		560.9		3SS			10
	Fill - Gray coarse Sand, wet	559.9		4SS			11
10.0	Black Silty fine Sand, wet, native	558.9		5SS			14
	same, with trace shell fragments	556.9		6SS			18
12.5	same, with trace vegetation, no shell fragments	554.9		7SS			4
15.0				8SS			9
17.5	same, with iridescent sheen	550.9		9SS			6
20.0				10SS			7
22.5	same, with laminations and shell fragments	546.9		11SS			21
		545.0					
		544.9					
25.0	Gray Silty Clay, NAPL, wet, native			12ST		⊗	
	Red Brown Sandy Clay, wet, native			12DT			
	Red Brown Silt and Clay, trace Sand, wet, native	542.9		13ST		⊗	
27.5		542.2					
	AUGERED TO REFUSAL						
		540.4					
	END OF BOREHOLE AT 28.5 FT. BGS						
30.0	At completion borehole was grouted to ground surface						
32.5	NOTE: No penetration of Shelby tube - 12ST (24.0 ft.). Dennison tube used to obtain sample - 12DT (24.0 - 26.0 ft.)						

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: PARKING LOT WEST OF LANFILL

HOLE DESIGNATION: BH193-88

DATE COMPLETED: 1/12/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.8					
	augered to 2.0 ft. BGS						
2.5	Fill - Black to White fine to medium Sand, trace ash, trace vegetation, dry to moist	566.8		1SS			47
5.0	Fill - Black medium Sand, trace coarse fine Gravel, wet	564.8		2SS			32
	no recovery	562.8		3SS			3
7.5	Fill - Black coarse Sand, NAPL, wet	560.8		4SS			39
10.0	Black fine Sand, trace fine rounded Gravel, NAPL, wet, native	559.4		5SS			20
12.5	same, with trace vegetation	556.8		6SS			17
	same, except no Gravel and vegetation	554.8		7SS			7
15.0	same, with trace fine subrounded Gravel and vegetation	552.8		8SS			9
17.5	same, except no Gravel	550.8		9SS			5
20.0	same, with trace shell fragments	548.8		10SS			7
22.5	same, except no vegetation or shell fragments	546.8		11SS			28
	same, with laminations and fine to medium rounded Gravel	545.4					
	same, except no laminations	544.8					
25.0	Red Brown Silty Clay, fine to coarse subangular Gravel, wet, native, Till	544.3		12SS		●	14
	AUGERED TO REFUSAL	542.4		13ST		○	
27.5	END OF BOREHOLE AT 28.0 FT. BGS	540.8					
30.0	At completion borehole was grouted to ground surface						
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH194-87

PROJECT NO.: 1769


DATE COMPLETED: 12/14/87

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: SOUTHWEST CORNER OF S-AREA

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	567.5					
2.5	Fill - Brown Gray Silty Sand, fine to coarse angular Gravel, brick, slag, vegetation, dry	565.5		1SS			24
	Fill - White and Black coarse Sand and ash, trace brick, dry to moist	563.5		2SS			30
5.0	Fill - Gray coarse Sand, medium to coarse angular Gravel, trace Silty Sand, vegetation slag, paper, moist to wet	561.5		3SS			33
7.5	Fill - Black medium Sand, trace vegetation, NAPL, wet	559.5		4SS			10
10.0	Fill - Black fine Sand, medium subrounded Gravel, slag, NAPL, wet	557.5		5SS			14
	same, except no Gravel	556.5		6SS			8
12.5	Black fine Sand with Sandy Silt lenses, vegetation, wet, native			7SS			7
15.0	same, except no vegetation, trace Silt lenses	551.5		8SS			7
17.5		549.5		9SS			14
	Black fine to medium Sand, wet, native			10SS			3
20.0	Black medium to fine Sand, some medium round Gravel, wet, native	547.5		11SS			12
22.5	same, except no Gravel, NAPL	545.5		12SS			6
	Red Brown Silty Clay, wet, native	543.6		13SS			>100
25.0	Red Brown Silty Sand, fine to coarse Gravel, trace Clay, wet, native	543.5 542.8					
27.5	AUGERED TO REFUSAL	539.3					
30.0	END OF BOREHOLE AT 28.2 FT. BGS						
32.5	At completion borehole was grouted to ground surface						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

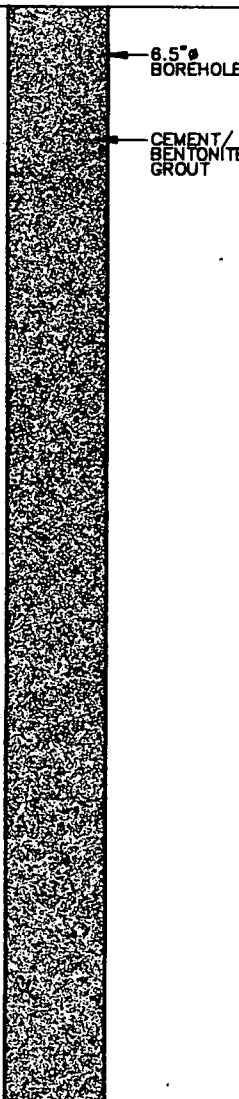
LOCATION: PARKING LOT WEST OF LANDFILL

HOLE DESIGNATION: BH195-88

DATE COMPLETED: 1/13/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.2					
2.5	Fill - Brown fine to coarse angular Gravel, dry augered to 4.0 ft. BGS, no sample	567.8		1SS			>50
5.0	Fill - Black Sand, roofing shingles, trace medium angular Gravel and brick, moist same, except Silty Sand, no brick, wet, iridescent sheen	564.2		2SS			18
7.5	same, except no Gravel	562.2		3SS			13
10.0	Black Silty Sand, trace shell fragments, wet, iridescent sheen, native same, with trace vegetation	560.2		4SS			7
12.5	same, with trace fine rounded Gravel	559.0		5SS			12
15.0		558.2		6SS			27
17.5		556.2		7SS			4
20.0				8SS			24
22.5				9SS			12
25.0				10SS			3
27.5				11SS			12
30.0				13SS			>50
32.5	Gray to Red Brown Sandy Clay, wet, native	544.4					
	Red Brown Sandy Clay, some medium to coarse angular Gravel and rock fragments, wet, native, Till	544.2					
		543.9					
	AUGERED TO REFUSAL						
	END OF BOREHOLE AT 28.7 FT. BGS	539.5					
	At completion borehole was grouted to ground surface						
	NOTE: No recovery of shelly tube - 12ST (24.0-24.8 ft) Split spoon used to obtain sample -13SS (24.0-24.3 ft)						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH196-88

PROJECT NO.: 1769


DATE COMPLETED: 1/7/88

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.5" OD

LOCATION: PARKING LOT WEST OF LANDFILL

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	568.8					
	augered to 2.0 ft. BGS						
2.5	Fill - Black Silty Sand, coarse angular Gravel, vegetation, ash, dry	566.8		1SS			40
5.0	Fill - White to Gray medium to coarse Sand, trace coarse angular Gravel and Silt, wet same, with NAPL	564.8		2SS			2
7.5		562.8		3SS			5
10.0				4SS			3
12.5		559.3		5SS			10
15.0				6SS			14
17.5				7SS			12
20.0				8SS			8
22.5				9SS			9
25.0				10SS			1
27.5				11SS			2
	Red Brown Silty Clay, wet, native	544.9					
	Red Brown Silty Clay, coarse angular Gravel, trace Gray rock fragments, moist, native, Till	544.8					
	augered to 27.0 ft. BGS, no sample	543.1		13SS			>50
	Gray rock fragments	541.8					
	AUGERED TO REFUSAL	541.3		14SS			>100
		541.1					
30.0	END OF BOREHOLE AT 27.7 FT. BGS At completion borehole was grouted to ground surface						
32.5	NOTE: No recovery of shelby tube - 12ST (24.0-25.0 ft) Split spoon used to obtain sample - 13SS (24.0-25.7 ft)						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

● DEC/EPA SPLIT

- ▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S--AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: PARKING LOT WEST OF LAGOONS

HOLE DESIGNATION: BH197-88

DATE COMPLETED: 2/23/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.5					
2.5	Fill - Black to Brown fine to coarse angular Gravelly Silt, dry			1SS			17
				2SS			56
5.0	Fill - Black Silty Sand, fine to medium angular Gravel, wet	564.5		3SS			25
	Fill - wood in tip of split spoon	562.5		4SS			6
7.5	Fill - Black Silty Sand, wet	560.5		5SS			10
		559.5		6SS			14
10.0	Black fine Sand, NAPL, wet, native			7SS			11
12.5	same, with trace shell fragments	556.5		8SS			3
	same, except no NAPL and no shell fragments	554.5		9SS			9
15.0				10SS			4
17.5				11SS			7
20.0				12SS			30
22.5				13SS		⊗	52
25.0	Gray to Red Brown Silty Clay, wet, native	544.5		14SS		⊗	68
	Red Brown Sandy Clay, fine to coarse angular Gravel, wet, native, Till	543.8		15SS		●	>75
27.5		542.5					
	no recovery	540.5					
	AUGERED TO REFUSAL	540.1					
30.0	END OF BOREHOLE AT 28.7 FT. BGS At completion borehole was grouted to ground surface	539.8					
32.5	NOTE: 13SS to 15SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPUT

- DEC/EPA SAMPLE
- DEC/EPA SPUT

- ▽ WATER FOUND
- ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

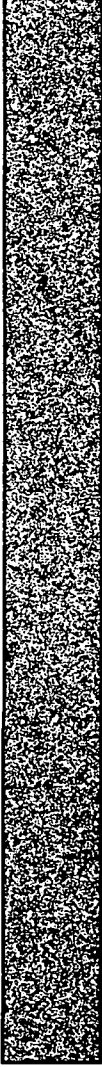
LOCATION: PARKING LOT WEST OF LAGOONS




HOLE DESIGNATION: BH198-88



DATE COMPLETED: 3/21/88



DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH
N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.9					
2.5	Fill - Gray fine to coarse Gravel, some Silt and Sand, trace wood, dry augered to 4.0 ft. BGS, no sample	567.3		1SS	X		25
5.0	Fill - dark Gray Silt and fine to coarse Gravel, some White paste-like material, moist augered to 6.0 ft. BGS, no sample	564.9 563.9 562.9		2SS	X		>58
7.5	Fill - White paste-like material and Black Silty fine Sand, NAPL, wet			3SS	X		12
10.0				4SS	X		16
12.5				5SS	X		9
15.0				6SS	X		17
17.5	Black fine Sand, wet, native	554.9		7SS	X		6
20.0				8SS	X		13
22.5				9SS	X		4
25.0	same, with NAPL	546.9		10SS	X		4
27.5	same, with fine to medium rounded Gravel	544.9 544.6		11SS	X		42
30.0	Red Brown Silty Clay, wet, firm, native			12SS	X	●	-
32.5	Red Brown Silty Clay, trace fine subrounded Gravel, wet, firm, native, Till augered to 26.8 ft. BGS, no sample Red Brown Silty Clay, trace fine subrounded Gravel, wet, firm, native, Till AUGERED TO REFUSAL END OF BOREHOLE AT 28.0 FT. BGS At completion borehole was grouted to ground surface NOTE: 12SS & 13SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used	542.9 542.1 542.0 540.9		13SS	X	●	>100

NOTES:  PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

 DEC/EPA SAMPLE
 DEC/EPA SPLIT

 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHEAST OF LAGOONS

HOLE DESIGNATION: BH199-88
(PAGE 1 of 2)

DATE COMPLETED: 2/17/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	586.8					
2.5	Fill - Brown Silty Sand, Gravelly, dry same, except dark Brown, no Gravel, moist	584.8		1SS			38
				2SS			23
5.0	Fill - Red Brown Silty Clay, dry, firm same, except moist	583.0 582.8		3SS			16
	same, with trace medium angular Gravel	580.8		4SS			21
7.5	same, except no Gravel	578.8		5SS			12
10.0				6SS			11
12.5				7SS			12
	same, except dry	572.8 572.5		8SS			25
15.0	Fill - Brown medium angular Gravelly Sand, trace ash, dry	570.8		9SS			30
	same, with trace slag, moist			10SS			24
17.5	same, except no slag	568.8		11SS			19
20.0	same, except no ash	566.8		12SS			12
22.5	Fill - Black Silty Sand, trace Gray Clay, NAPL, wet	564.8		13SS			9
	same, with trace medium angular Gravel, trace NAPL	562.8		14SS			30
25.0	same, except Brown, trace vegetation, no Gravel	560.8		15SS			22
27.5	Fill - Black fine Sand, trace NAPL, wet same, with trace fine rounded Gravel	559.8 558.8		16SS			10
30.0	same, except no Gravel	556.8		17SS			13
32.5	Black and Gray mottled fine Sand, trace vegetation and NAPL, wet, native	554.8		18SS			12

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT



WATER FOUND

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHEAST OF LAGOONS

HOLE DESIGNATION: BH199-88
(PAGE 2 of 2)

DATE COMPLETED: 2/17/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Black and Gray mottled fine Sand, trace vegetation and NAPL, wet, native			17SS	X		13
37.5				18SS	X		12
40.0				19SS	X		17
42.5				20SS	X		14
45.0				21SS	X		36
47.5				22SS	X	○	5
50.0				23SS	X	○	>50
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

◐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: EAST OF LAGOONS

HOLE DESIGNATION: BH200-88
(PAGE 1 of 2)

DATE COMPLETED: 2/29/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	577.1					
	augered to 2.0 ft. BGS, no sample						
2.5	Fill - Brown and Black Silt, some Sand and Gravel, vegetation, ash, brick, moist	575.1		1SS			43
5.0	same, with Yellow, Blue, Green, and Orange crystalline material	573.1		2SS			25
7.5				3SS			18
10.0	same, except no crystalline material	567.1		4SS			10
12.5	Fill - Black Silty fine to coarse Sand, some fine Gravel, Orange crystalline material, trace glass, wet, iridescent sheen	565.1		5SS			1
15.0	Fill - Black slag and ash, some fine to coarse Sand and Gravel, NAPL, wet same, with brick, glass	563.1		6SS			11
17.5		561.1		7SS			7
20.0	Light and dark Gray Silty fine Sand, native same, except Black, NAPL	559.6		8SS			36
22.5		559.1		9SS			23
25.0				10SS			5
27.5				11SS			3
30.0	Gray Silty fine Sand, trace rounded Gravel, trace NAPL, wet, native	549.1		12SS			WR
32.5	same, except Gray to light Brown	547.1		13SS			2
		545.1		14SS			15
	no recovery			15SS			22
	Red Brown fine to coarse Sandy Silt, Clayey, native, Till	543.1		16SS			-
				17SS			20

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

☒ WATER FOUND
☒ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

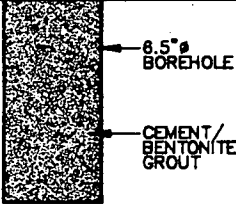
LOCATION: EAST OF LAGOONS

HOLE DESIGNATION: BH200-88
(PAGE 2 of 2)

DATE COMPLETED: 2/29/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				N U M B E R	S T A T E	S T A T U S	N V A L U E
32.5							
	no recovery			16SS	⊗		-
35.0	Red Brown fine to coarse Sandy Silt, Clayey, native, Till	543.1		17SS	⊗	●	20
37.5	AUGERED TO REFUSAL	540.0		18SS	⊗	●	>13
	END OF BOREHOLE AT 37.8 FT. BGS At completion borehole was grouted to ground surface	539.3					100
40.0							
42.5	NOTE: 16SS to 18SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						
45.0	NOTE: Relocated borehole 3 ft. north augered to 28.0 ft. and resampled to confirm till thickness						
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S--AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL

HOLE DESIGNATION: BH201-88
(PAGE 1 of 2)

DATE COMPLETED: 3/1/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	576.0					
	augered to 2.0 ft. BGS, no sample						
2.5	Fill -- Gray Silty fine Sand, trace fine Gravel and brick, moist	574.0		1SS			18
5.0	same, with some slag, vegetation	572.0		2SS			4
7.5				3SS			1
	same, except no vegetation	568.0		4SS			WR
10.0	same, with Yellow granular to crystalline material, NAPL	566.0		5SS			>39
	augered to 12.0 ft. BGS	565.5					
12.5	FILL -- Black hard and dense Clay--like material, NAPL, trace brick and metal, dry	564.0		6SS			52
		562.0		7SS			15
15.0	Black fine to coarse Sandy Silt, NAPL, wet, native	560.7		8SS			47
17.5	Brown Silty fine Sand, native same, except mottled Gray and Brown, trace NAPL, moist	560.0		9SS			24
20.0				10SS			15
22.5				11SS			16
25.0	same, except wet	552.0		12SS			2
27.5				13SS			8
30.0	same, with increased NAPL	546.0		14SS			3
				15SS			22
32.5	Gray and Red Brown mottled Silty Clay, wet, native	544.0		16SS			-
	Red Brown fine to coarse Sandy Clay, wet, native, Till	542.0 541.5		17SS			>100

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
- DEC/EPA SPLIT

- ▽ WATER FOUND
- ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

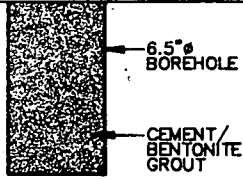
LOCATION: LANDFILL

HOLE DESIGNATION: BH201-88
(PAGE 2 of 2)

DATE COMPLETED: 3/1/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Gray and Red Brown mottled Silty Clay, wet, native			16SS	X	⊗	-
	Red Brown fine to coarse Sandy Clay, wet, native, Till	542.0		17SS	X	⊗	>100
35.0	augered to 35.0 ft. BGS, no sample	541.5 541.0 540.7		18SS	X	⊗	>100
	Gray fine to coarse Sandy Gravel, some Silt and Clay, wet, native, Till						
37.5	AUGERED TO REFUSAL	539.0					
	END OF BOREHOLE AT 37.0 FT. BGS						
40.0	At completion borehole was grouted to ground surface						
42.5	NOTE: 16SS to 18SS - A 300lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
- DEC/EPA SPLIT

- ▽ WATER FOUND
- ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL

HOLE DESIGNATION: BH202-88
(PAGE 1 of 2)

DATE COMPLETED: 3/2/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	573.9					
	augered to 2.0 ft. BGS, no sample						
2.5	Fill - Brown, Gray, and Black fine to coarse Sandy Silt, trace Clay and fine gravel, trace cement and slag, dry same, except moist	571.9		1SS	X		14
5.0		569.9		2SS	X		43
	No recovery - concrete in tip of split spoon	567.9		3SS	X		17
7.5	Fill - Gray Silty fine Sand, trace fine gravel, moist	565.9 565.7		4SS	X		8
10.0	Fill - Black, White, and Brown fine to coarse Sand, slag, ash, some Silt, trace NAPL, wet	563.9		5SS	X		17
12.5	Fill - Black ash, slag, coal, trace wood and glass, wet	561.9		6SS	X		10
	Fill - Black Silty fine to coarse Sand, some slag, wood, wet, iridescent sheen	559.7		7SS	X		30
15.0	Gray Brown Silty fine Sand, trace fine to coarse Gravel, moist, native same, except dark Gray, trace NAPL, wet	557.9		8SS	X		26
17.5		555.9		9SS	X		9
20.0	Light and dark Gray to Gray laminated Silty fine to medium Sand, trace Clay, native same, with trace vegetation, trace NAPL	553.9		10SS	X		5
22.5				11SS	X		7
25.0				12SS	X		8
27.5	same, with trace coarse Sand	547.9		13SS	X		10
30.0				14SS	X		17
	Red Brown fine to coarse Sandy Clay, some Silt, native, Till	543.4		15SS	X	●	WH
32.5	augered to 33.5 ft. BGS, no sample			16SS	X	⊗	>100
	Red Brown fine to coarse Sandy Clay, some Silt, native, Till	540.7 540.4 539.6		17SS	X	⊗	>100

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLT

■ DEC/EPA SAMPLE
● DEC/EPA SPLT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S--AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL

HOLE DESIGNATION: BH202-88.
(PAGE 2 of 2)

DATE COMPLETED: 3/2/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	augered to 33.5 ft. BGS, no sample	540.7		16SS	△	⊗	>100
	Red Brown fine to coarse Sandy Clay, some Silt, native, Till	540.4		17SS	⊗	⊗	>100
	AUGERED TO REFUSAL	539.6 539.1					
35.0							
37.5	END OF BOREHOLE AT 34.8 FT. BGS						
	At completion borehole was grouted to ground surface						
40.0	NOTE: 16SS & 17SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL

HOLE DESIGNATION: BH203-88
(PAGE 1 of 2)

DATE COMPLETED: 3/3/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	576.7					
	augered to 2.0 ft. BGS, no sample						
2.5	Fill - Gray and Red Brown fine to coarse Sandy Silt, some slag, trace Clay, dry	574.7		1SS			11
5.0	same, with some fine to coarse Gravel, cement	572.7		2SS			14
7.5				3SS			32
	same, with some White crystalline material	568.7		4SS			>19
10.0	augered to 10.0 ft. BGS, no sample	567.3		5SS			34
	Fill - Red Brown fine to medium Sandy Silt, some slag, dry	566.7		6SS			28
12.5	same, with Black tar-like material	564.7		7SS			6
15.0	no recovery	562.7		8SS			35
	Fill - Black fine to coarse Silty Sand, some slag, ash, glass, moist	560.7		9SS			115
17.5	Fill - Black to dark Gray Silty fine Sand, moist	559.5		10SS			20
20.0	same, with trace fine Gravel and glass	558.7		11SS			4
22.5	same, with trace NAPL, wet, no gravel or glass	556.7		12SS			6
25.0				13SS			8
27.5	Black to dark Gray Silty fine Sand, trace NAPL, wet, native	549.4		14SS			5
30.0	same, except dark Red Brown	546.7		15SS			15
	Brown Silty fine to medium Sand, trace NAPL, native	546.1		16SS			34
32.5	same, with trace fine to coarse Gravel	544.7		17SS			12
	Red Brown fine to coarse Sandy Silt, trace Clay, native, Till	543.2					

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLT

- DEC/EPA SAMPLE
- DEC/EPA SPLT

- ▽ WATER FOUND
- ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: LANDFILL

HOLE DESIGNATION: BH203-88
(PAGE 2 of 2)

DATE COMPLETED: 3/3/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
		543.2	 <div style="position: absolute; left: 680px; top: 300px;">6.5" BOREHOLE</div> <div style="position: absolute; left: 680px; top: 340px;">CEMENT/ BENTONITE GROUT</div>	16SS	⊗	●	34
35.0	Red Brown fine to coarse Sandy Silt, trace Clay, native, Till	541.2		17SS	⊗	●	12
	Red Brown Gravelly Silt, fine to coarse Sand, trace Clay, native, Till	539.4 539.1		18SS	⊗	●	19
37.5	AUGERED TO REFUSAL END OF BOREHOLE AT 37.6 FT. BGS						
40.0	At completion borehole was grouted to ground surface						
42.5	NOTE: 17SS & 18SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT.

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

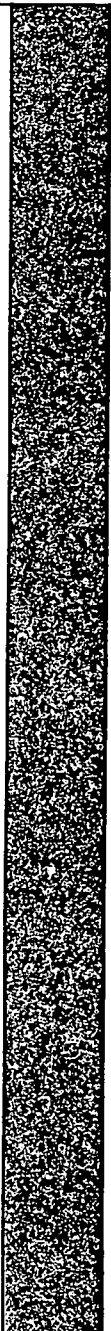
LOCATION: SOUTHWEST OF LAGOONS; ADJACENT TO OW2S-80




HOLE DESIGNATION: BH204-88
(PAGE 1 of 2)



DATE COMPLETED: 3/16/88



DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	575.4					
	augered through dark Gray fine to coarse Sand and brick to 2.0 ft. BGS						
2.5	Fill - Brown very fine to medium Sand, Gravel, brick, wood, rubber, small Gray Clay lenses, dry, slight odor	573.4	 8.5" BOREHOLE CEMENT/BENTONITE GROUT				
5.0	Fill - dark Gray Clayey Silt, trace Gravel, dry	569.4					
7.5	Fill - dark Brown Gray Silty to medium Sandy Clay, Gravelly, wet, odor	567.4					
10.0	Fill - dark Brown Gravelly medium Sand, wet	565.4					
	Fill - medium to coarse Gravel, concrete	564.4					
12.5	Fill - Gravelly fine Sand, wood, glass, dry, strong chemical odor	563.4					
	Fill - dark Gray Gravelly fine Sand, glass, NAPL, odor	561.4					
15.0	Fill - Green Brown Gravelly fine to medium Sand, dry	560.4					
	Fill - Black Gravel, glass, NAPL	559.4					
17.5	Fill - Brown Green fine Sand	558.4					
	Fill - medium to coarse Sandy Gravel, NAPL, glass	557.4					
20.0	Fill - dark Gray very fine to fine Sand, odor	556.4					
	Fill - dark Gray Gravelly very fine Sand, glass, NAPL	555.4					
22.5	Fill - dark Gray to dark brown very fine to fine Sand, NAPL, dry, odor	553.4					
25.0							
27.5	Fill - Black Silty fine Sand, NAPL, trace brick and slag	547.4 546.9		1SS			25
30.0	Brown Silty fine Sand, trace NAPL, native	545.4		2SS			8
	Black Silty fine to medium Sand, trace fine Gravel, NAPL, native	544.4		3SS			-
32.5	Red Brown Silty Clay, trace fine to coarse Sand, native, Till same, with some fine to coarse Gravel	541.9 541.2		4SS			>100
	AUGERED TO REFUSAL						

NOTES:  PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

 DEC/EPA SAMPLE
 DEC/EPA SPLIT

 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHWEST OF LAGOONS; ADJACENT TO OW2S-80

HOLE DESIGNATION: BH204-88
(PAGE 2 of 2)

DATE COMPLETED: 3/16/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	same, with some fine to coarse Gravel	541.9	 <p>6.5" Ø BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	3SS	△		-
	AUGERED TO REFUSAL	541.2		4SS	△		>100
35.0							
37.5	END OF BOREHOLE AT 36.8 ft. BGS	538.6					
40.0	At completion borehole was grouted to ground surface						
42.5	NOTE: 3SS & 4SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						
45.0	NOTE: Stratigraphy from 0.0 ft. to 28.0 ft. BGS was taken from OW2S-80						
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
- DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTHEAST OF LAGOONS


HOLE DESIGNATION: BH205-88

(PAGE 1 of 2)

DATE COMPLETED: 3/9/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	573.2					
	Fill - dark Brown Silty fine Sand, trace Gravel, dry	572.5		1SS	X		>50
2.5	augered to 2.0 ft. BGS, no sample	571.2		2SS	X		21
	Fill - dark Brown laminated fine Sand and Silt, trace coarse angular Gravel, some ash, trace wood, dry	569.2		3SS	X		13
5.0	Fill - slag, sulphur, dry	567.2		4SS	X		17
7.5	Fill - Brown Silty Sand, some fine angular Gravel, brick, sulphur, trace NAPL, dry to moist	563.9		5SS	X		>84
10.0	augered to 10.0 ft. BGS, no sample	563.2		6SS	X		53
	no split spoon advancement, augered to 12.0 ft. BGS	561.2		7SS	X		9
12.5	Fill - Black Silty Sand, trace vegetation and glass, NAPL, wet	560.2		8SS	X		17
15.0	Black and Brown laminated Silty Sand, moist, native	557.2		9SS	X		10
17.5	same, with trace vegetation, NAPL			10SS	X		3
20.0				11SS	X		2
22.5				12SS	X		5
25.0				13SS	X		17
27.5	Brown and light Brown laminated fine Sand and Silt, NAPL, moist, native	547.7		14SS	X		33
	same, with fine subrounded Gravel	544.7		15SS	X		4
30.0	Dark Brown Silty Clay, moist, native	543.7		16SS	X	X	>100
	Red Brown Sandy Clay, fine Gravel, wet, native, Till	542.5		17SS	X		32
	augered to 31.0 ft. BGS, no sample	542.2					
32.5	Red Brown Sandy Clay, fine Gravel, moist, native, Till	540.2					
	AUGERED TO REFUSAL	540.0					
	END OF BOREHOLE AT 33.2 ft. BGS						

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

☒ WATER FOUND
☒ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTHEAST LANDFILL

HOLE DESIGNATION: BH205-88

(PAGE 2 of 2)
DATE COMPLETED: 3/9/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5				17SS			32
	Red Brown Sandy Clay, fine Gravel, moist, native, Till	540.2	6.5" BOREHOLE				
	AUGERED TO REFUSAL	540.0	CEMENT/BENTONITE GROUT				
35.0	END OF BOREHOLE AT 33.2 ft. BGS						
37.5	At completion borehole was grouted to ground surface						
40.0	NOTE: 16SS - A300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

☒ WATER FOUND
☒ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

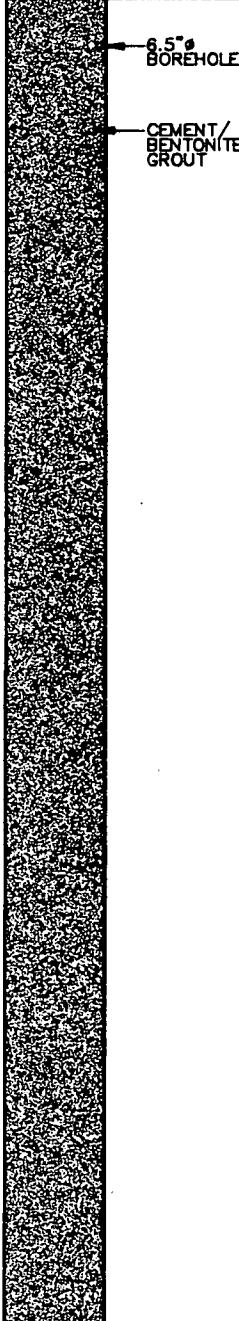
LOCATION: EAST OF LAGOONS




HOLE DESIGNATION: BH206-88
(PAGE 1 of 2)



DATE COMPLETED: 3/10/88



DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	573.8					
2.5	Fill - Brown Silty Sand, fine to coarse angular Gravel, trace vegetation, wood, slag, ash, and brick, dry			1SS			14
				2SS			21
5.0	same, except Brown to Black, tar-like material, no Gravel, no wood	569.8		3SS			12
		567.8		4SS			19
7.5	Fill - Red, Purple to Black Sandy Silt, trace copper, vegetation, and slag, dry to moist	565.8		5SS			7
		563.8		6SS			14
10.0	Fill - Black Clay with tar-like material, moist			7SS			>50
	same, with trace ash	561.8		8SS			36
12.5	same, except no ash, trace Blue substance and wood, wet	560.9		9SS			41
	augered to 14.0 ft. BGS, no sample	559.8		10SS			49
15.0	Fill - Brown Silty Sand, trace vegetation, NAPL, wet	558.8		11SS			11
				12SS			14
17.5	Brown laminated fine Sand, trace fine rounded Gravel, trace vegetation, wet, native			13SS			13
	same, except Black, no vegetation	555.8		14SS			17
20.0				15SS			24
22.5				16SS			14
25.0				17SS			27
27.5	Red Brown and Black laminated fine Sand, trace to some fine rounded Gravel, wet, native	546.8		18SS			>100
30.0	Gray Silty Clay, wet, native	544.0 543.8					
32.5	Red Brown Clayey coarse angular Gravel, Sandy, wet, native, Till						
	no split spoon advancement						
	AUGERED TO REFUSAL	539.8					
	END OF BOREHOLE AT 34.8 FT. BGS	539.0					

NOTES:  PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

 DEC/EPA SAMPLE
 DEC/EPA SPLIT

 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL




LOCATION: EAST OF LAGOONS

HOLE DESIGNATION: BH206-88
(PAGE 2 of 2)




DATE COMPLETED: 3/10/88



DRILLING METHOD: HSA 6.5" OD



CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Red Brown Clayey coarse angular Gravel; Sandy, wet, native, Till			17SS			27
	no split spoon advancement	539.8		18SS			>100
35.0	AUGERED TO REFUSAL	539.0					
	END OF BOREHOLE AT 34.8 FT. BGS						
37.5	At completion borehole was grouted to ground surface						
40.0	NOTE: 16SS to 18SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate line was used						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES:

-  PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
-  GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
-  GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

-  DEC/EPA SAMPLE
-  DEC/EPA SPLIT

-  WATER FOUND
-  STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHEAST OF LAGOONS

HOLE DESIGNATION: BH207-88
(PAGE 1 of 2)

DATE COMPLETED: 3/10/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION						
2.5	Fill - dark Brown Silty Sand, some Orange slag, trace vegetation, dry	571.6		1SS	X		1
	no recovery	569.6		2SS	X		1
5.0	Fill - Red Brown rusted metal (drum), slag, dry			3SS	X		WR
7.5				4SS	X		2
10.0		563.6		5SS	X		1
	Fill - dark Brown Silty Sand, slag, trace wood, coal, dry to wet	561.6		6SS	X		8
12.5	Fill - Black fine Sand, trace Silt, trace vegetation, wet	559.6		7SS	X		6
	same, with trace rusted metal, no vegetation	557.6		8SS	X		10
15.0		555.6		9SS	X		10
17.5	Fill - Brown medium Sand, trace slag, vegetation, and rubber, NAPL, wet	553.6		10SS	X		12
20.0	Dark Brown Silty Sand, trace fine rounded Gravel, wet, native			11SS	X		9
	same, except no Gravel	549.6		12SS	X		6
22.5				13SS	X		12
25.0	same, with NAPL	546.6		14SS	X		69
27.5	Dark Gray and Black laminated Silty fine to coarse Sand, trace coarse angular Gravel, wet, native	543.6		15SS	X	○	6
30.0	Gray to Red Brown Silty Clay, wet, native	542.6		16SS	X	●	WH
32.5	Red Brown Sandy medium to coarse angular Gravel, Clayey, wet, native, Till same, except Red Brown to Gray	541.6		17SS	X	●	57
	AUGURED TO REFUSAL	539.6					
	END OF BOREHOLE AT 34.7 ft. BGS	538.9					

NOTES:
 ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
 ● DEC/EPA SPLIT

▽ WATER FOUND
 ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

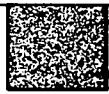
LOCATION: SOUTHEAST OF LAGOONS

HOLE DESIGNATION: BH207-88
(PAGE 2 of 2)

DATE COMPLETED: 3/10/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Red Brown to Gray Sandy medium to coarse angular Gravel, Clayey, wet, native, Till		 <div style="position: absolute; left: 685px; top: 285px; font-size: 8px;">6.5" Ø BOREHOLE</div> <div style="position: absolute; left: 685px; top: 305px; font-size: 8px;">CEMENT/BENTONITE GROUT</div>	17SS	X	⊗	57
35.0	AUGERED TO REFUSAL	539.6					
	END OF BOREHOLE AT 34.7 ft. BGS	538.9					
	At completion borehole was grouted to ground surface						
37.5							
40.0	NOTE: 15SS to 17SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT


■ DEC/EPA SAMPLE
 ● DEC/EPA SPLIT

▽ WATER FOUND
 ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA
PROJECT NO.: 1769
CLIENT: OCCIDENTAL
LOCATION: EAST OF LAGOONS

HOLE DESIGNATION: BH208-88
(PAGE 1 of 2)
DATE COMPLETED: 3/8/88
DRILLING METHOD: HSA 6.5" OD
CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	575.1					
	augered to 2.0 ft. BGS, no sample						
2.5	Fill - dark Brown Silty Sand, some sulphur and slag, trace vegetation, glass, fine rounded Gravel, dry	573.1		1SS			26
5.0	same, with trace plastic, no sulphur, slag, vegetation	571.1		2SS			4
7.5	same, with some slag, trace brick, coal, ash, sulphur, no plastic	569.1		3SS			8
	same, with coarse angular Gravel, moist	567.1		4SS			20
10.0	Fill - Black tar-like material, trace coarse angular Gravel, NAPL, moist	565.1		5SS			23
12.5	Fill - Black Silty Sand, trace fine angular Gravel and ash, NAPL, wet	561.1		6SS			17
15.0	Brown laminated fine Sand, moist, native	560.6		7SS			32
	same, with fine rounded Gravel and shell fragments	559.1		8SS			52
17.5	same, except no shell fragments, wet	557.1		9SS			11
20.0	same, except no laminations	555.1		10SS			5
22.5	same, with trace vegetation	553.1		11SS			3
	same, except no vegetation, NAPL	551.1		12SS			5
25.0	same, with fine rounded Gravel, laminated	549.1		13SS			22
27.5				14SS			22
30.0	same, except medium rounded Gravel	545.1		15SS			11
32.5	Red Brown medium angular Gravelly Clay, Sandy, moist, native, Till	543.6		16SS		⊗	58
	same, with medium to coarse angular Gravel	543.1		17SS			>100
	no recovery	541.1					
	AUGERED TO REFUSAL	540.5					

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

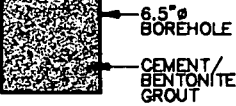
LOCATION: EAST OF LAGOONS

HOLE DESIGNATION: BH208-88
(PAGE 2 of 2)

DATE COMPLETED: 3/8/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
32.5							
	Red Brown medium to coarse angular Gravelly Clay, Sandy, moist, native, Till no recovery	541.1		16SS	X		58
35.0	AUGERED TO REFUSAL	540.5		17SS	X		>100
		539.3					
	END OF BOREHOLE AT 35.8 FT. BGS						
37.5	At completion borehole was grouted to ground surface						
40.0	NOTE: Samples 14SS to 17SS - A 300 lb. hammer and a 3.0" split spoon with polycarbonate liner was used						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
- DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: EAST OF LAGOONS

HOLE DESIGNATION: BH209-88
(PAGE 1 of 2)

DATE COMPLETED: 3/7/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	573.7					
	augered to 2.0 ft. BGS, no sample						
2.5	Fill — dark Brown Silty Sand, trace slag, coal, wood and sulphur, dry	571.7		1SS			9
5.0	same, with Red fine Sand, trace glass, no slag and sulphur	569.7		2SS			10
	same, with some light Brown fine Sand	567.7		3SS			28
7.5		565.7		4SS			17
10.0	Fill — Brown Silty Sand, some wood, trace slag, moist	563.7		5SS			14
	same, with trace porcelain, no wood, wet	561.7		6SS			15
12.5	Fill — dark Brown fine to medium angular Gravelly fine Sand, trace brick, wood and porcelain, wet	559.7		7SS			34
15.0	Fill — dark Brown fine Sand, trace wood and sulphur, wet	559.2		8SS			20
17.5	Gray fine Sand, trace fine to medium subrounded Gravel and vegetation, trace NAPL, wet, native	557.7		9SS			5
	same, except no NAPL			10SS			7
20.0	same, except no Gravel and vegetation	553.7		11SS			9
22.5				12SS			12
25.0	same, with trace vegetation and shell fragments	547.7		13SS			45
27.5		545.4		14SS			3
30.0	Red Brown Silty Clay, Sandy, wet, native	543.7		15SS		⊗	24
32.5	Red Brown Silty Clay, subrounded fine to coarse Gravel, wet, native, Till			16SS		⊗	60
	AUGERED TO REFUSAL	539.7					
	END OF BOREHOLE AT 34.5 FT. BGS	539.2					

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

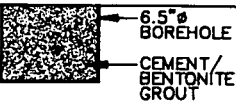
■ DEC/EPA SAMPLE
● DEC/EPA SPLIT



▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA
PROJECT NO.: 1769
CLIENT: OCCIDENTAL
LOCATION: EAST OF LAGOONS

HOLE DESIGNATION: BH209-88
(PAGE 2 of 2)
DATE COMPLETED: 3/7/88
DRILLING METHOD: HSA 6.5" OD
CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Red Brown Silty Clay, subrounded fine to coarse Gravel, wet, native, Till AUGERED TO REFUSAL	539.7 539.2	 6.5" BOREHOLE CEMENT/BENTONITE GROUT		X	●	60
37.5	END OF BOREHOLE AT 34.5 FT. BGS At completion borehole was grouted to ground surface						
40.0	NOTE: 15SS & 16SS - A 300 lb. hammer and a 3.0" split spoon with polycarbonate liner was used						
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC ☒ DEC/EPA SAMPLE
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC ☒ DEC/EPA SPLIT
☒ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT  WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

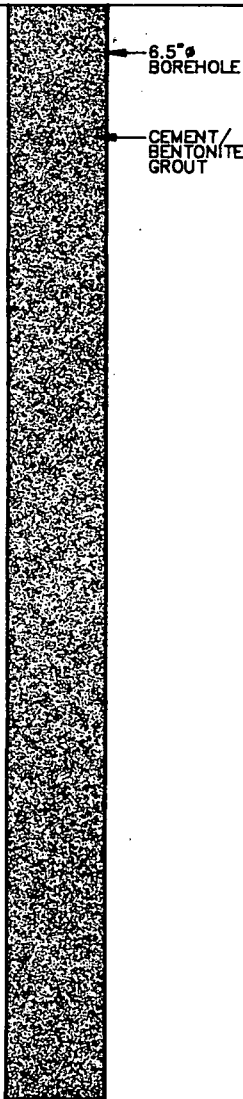
LOCATION: PARKING LOT WEST OF LAGOONS

HOLE DESIGNATION: BH210-88

DATE COMPLETED: 3/23/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.8					
2.5	Fill — Brown fine to medium angular Gravelly Silt, trace glass and vegetation, dry same, except no glass and vegetation	566.8		1SS			25
				2SS			8
5.0	no recovery, wet spoon	564.8		3SS			8
		562.8		4SS			5
7.5	Fill — Gray to Black coarse Sand, trace fine angular Gravel, wet	560.8		5SS			8
10.0	Black fine Sand, trace vegetation, wet, trace iridescent sheen, native same, with NAPL	558.8		6SS			15
12.5				7SS			12
15.0				8SS			5
	same, except no NAPL	552.8		9SS			5
17.5	same, with trace vegetation and fine angular Gravel	550.8		10SS			2
20.0	same, except no Gravel	548.8		11SS			WH
22.5	same, with fine to medium angular Gravel	546.8		12SS			11
		545.1					
	Gray Silty Clay, wet, native	544.8					
25.0	Red Brown fine to medium angular Gravelly Clay, Silty, wet, native, Till same, with Sand, no Silt	542.8		13SS			—
27.5				14SS			102
	AUGERED TO REFUSAL	540.8					
		540.1		15SS			>100
30.0	END OF BOREHOLE AT 28.7 FT. BGS At completion borehole was grouted to ground surface						
32.5	NOTE: 13SS to 15SS — A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
- DEC/EPA SPLIT

- ▽ WATER FOUND
- ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: PARKING LOT WEST OF LAGOONS

HOLE DESIGNATION: BH211-88

DATE COMPLETED: 3/22/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.0					
2.5	Fill - Brown fine to medium angular Gravelly fine Sand, trace vegetation and slag, dry	567.0		1SS	X		30
	Fill - Brown to Black fine Sand, dry to moist	566.2		2SS	X		35
	Fill - White coarse Sand, moist	565.0					
5.0	Fill - Black medium angular Gravelly Silt, NAPL, wet	563.0		3SS	X		67
	same, with trace glass			4SS	X		5
7.5	same, with no glass	561.0		5SS	X		5
		560.7		6SS	X		14
10.0	Black fine Sand, trace vegetation, wet, native			7SS	X		12
				8SS	X		4
12.5	same, except no vegetation	557.0		9SS	X		15
				10SS	X		8
15.0				11SS	X		9
17.5				12SS	X		23
20.0				13SS	X	⊗	-
22.5				14SS	X	⊗	66
25.0	Red Brown fine to medium Gravelly Clay, Silty, wet, native, Till	545.0		15SS		●	>50
27.5	augered to 28.0 ft. BGS, no sample no split spoon advancement AUGERED TO REFUSAL	541.2 541.0					
30.0	END OF BOREHOLE AT 29.0 FT. BGS At completion borehole was grouted to ground surface	540.0					
32.5	NOTE: Relocated borehole 2.0 ft. west due to hard augering at 8.0 ft. Augered to 8.0 ft. and continued sampling NOTE: 13SS to 15SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: PARKING LOT WEST OF LAGOONS

HOLE DESIGNATION: BH212-88

DATE COMPLETED: 3/22/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	569.1					
2.5	Fill - Brown Gray Silty fine to medium Sand, fine to medium Gravel, trace vegetation and brick, dry	567.1		1SS			33
	Fill - Brown medium to coarse angular Gravelly fine to medium Sand, trace ash, glass, wood and Sandy Silt, dry to moist	565.1		2SS			65
5.0	Fill - wood in spoon tip	563.1		3SS			9
7.5	Fill - Black Silty fine Sand, trace White fine Sand, wet	561.1		4SS			11
10.0	Black fine Sand, trace vegetation, wet, native	557.1		5SS			10
12.5	Black and Brown laminated fine Sand, wet, native	555.1		6SS			12
15.0	same, except Black, no laminations	551.1		7SS			17
17.5	no recovery	549.1		8SS			6
20.0	Black fine Sand, NAPL, wet, native	545.6		9SS			4
22.5		544.1		10SS			8
25.0	Gray Silty Clay, fine angular Gravel, wet, native, Till	543.1		11SS			9
27.5	same, except Red Brown, fine to medium angular Gravel	541.1		12SS			7
	same, except Red Brown to Gray, coarse angular Gravel	540.4		13SS		⊗	-
	Gray medium to coarse angular Gravel, wet, native	539.6		14SS		⊗	25
30.0	AUGERED TO REFUSAL			15SS		■	>100
32.5	END OF BOREHOLE AT 29.5 FT. BGS At completion borehole was grouted to ground surface NOTE: 13SS to 15SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: WEST OF LAGOONS; SOUTH OF BH164-87

HOLE DESIGNATION: BH213-88

DATE COMPLETED: 3/17/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.6					
2.5	Fill - Brown Silty fine to coarse Gravel, some fine to coarse Sand, moist	566.9		1SS			19
	Fill - Red Brown fine Gravelly Silt, trace Clay	566.6		2SS			34
5.0	Fill - dark Gray fine to coarse Sandy Silt, some fine Gravel, trace glass, ceramic, moist	564.6		3SS			24
7.5	Fill - Black Silty fine to coarse Sand, some Gravel, trace slag, moist to wet, iridescent sheen, chemical odor same, except wet, NAPL	562.6		4SS			5
	no recovery	560.6		5SS			13
10.0	Fill - Black Silty fine Sand, trace wood and Gravel, trace NAPL, wet	558.6		6SS			19
12.5	Black Silty fine Sand, trace wood, trace NAPL wet, native	556.6		7SS			17
	no recovery	554.6		8SS			4
15.0	Black Silty fine Sand, trace wood, trace NAPL, wet, native	552.6		9SS			15
17.5		550.6		10SS			12
20.0				11SS			9
22.5	same, with some fine to coarse Sand,	545.1		12SS			21
25.0	Gray Brown Silty Clay, trace fine to coarse Sand, moist, native	544.1		13SS			41
	Red Brown fine to coarse Sandy Silt, some fine Gravel, dry, native, Till	542.6		14SS			>100
27.5	Red Brown fine to coarse Gravelly Silt, some fine to coarse Sand and Clay, dry, native, Till	540.9		15SS			>100
30.0	augered to 28.0 ft. BGS, no sample no split spoon advancement	540.6					
	AUGERED TO REFUSAL	540.1					
32.5	END OF BOREHOLE AT 28.5 FT. BGS At completion borehole was grouted to ground surface						

NOTES:

- ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
- GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

- DEC/EPA SAMPLE
- DEC/EPA SPLIT

- ▽ WATER FOUND
- ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHWEST OF LAGOONS

HOLE DESIGNATION: BH214-88

DATE COMPLETED: 3/18/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	568.7					
2.5	Fill - Gray fine to coarse Sandy Silt, some fine to coarse Gravel, trace White paste-like material, moist	566.7		1SS			25
	Fill - White paste-like material, trace Sand and Gravel, moist same, except wet	565.7		2SS			32
5.0				3SS			12
7.5	same, with iridescent sheen	560.7		4SS			15
10.0	Black Silty fine Sand, trace vegetation, wet, native	559.5		5SS			7
12.5	same, except dark Gray, no vegetation	558.7		6SS			15
15.0				7SS			17
17.5				8SS			4
20.0				9SS			6
22.5	same, except Brown, fine to medium Sand, NAPL	547.2		10SS			10
25.0				11SS			9
27.5	Red Brown fine to coarse Gravelly Clay, some Silt and Sand, dry, native, Till	543.4		12SS			24
	Red Brown fine to coarse Gravelly Silt, some Sand and Clay, dry, native, Till	542.7		13SS			16
30.0	no split spoon advancement AUGERED TO REFUSAL	540.7		14SS		●	44
32.5	END OF BOREHOLE AT 28.5 FT. BGS At completion borehole was grouted to ground surface	540.2		15SS			>100
	NOTE: 14SS & 15SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: WEST OF LAGOONS, SOUTH OF OW4S-80




HOLE DESIGNATION: BH215-88
(PAGE 1 of 2)

DATE COMPLETED: 3/11/88



DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	572.7					
	augered through Sand, Gravel, and brick, to 2.0 ft. BGS						
2.5	Fill - Brown fine Sandy Gravel, Clayey, dry, odor	570.7					
		568.7					
5.0	Fill - Brown Clayey very fine to medium Sand, some Gravel, NAPL, dry, odor						
7.5		564.7					
	no recovery						
10.0	Fill - dark Brown very fine to fine Sand, vegetation, odor	562.7					
12.5	same, with Gravel, NAPL, no vegetation, dry	560.7					
	same, with wood, no Gravel	558.7					
15.0		556.7					
17.5	Dark Brown Silty very fine Sand, dry, odor, native						
20.0	same, with NAPL	552.7					
22.5	same, with vegetation	550.7					
	no recovery - same except no vegetation, no NAPL	548.7					
25.0	no recovery - same with fine Gravel, no Silt	547.7		1SS			17
		546.7					
27.5	Red Brown fine subrounded Gravelly Clay, Sandy, wet, native, Till			2SS			5
				3SS			-
30.0	same, with coarse angular Gravel	542.7		4SS			>30
		541.4					
32.5	AUGERED TO REFUSAL	541.0					
	END OF BOREHOLE AT 31.7 ft. BGS						
	At completion borehole was grouted to ground surface						

NOTES:  PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

 DEC/EPA SAMPLE
 DEC/EPA SPLIT

 WATER FOUND
 STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: WEST OF LAGOONS, SOUTH OF OW4S-80

HOLE DESIGNATION: BH215-88
(PAGE 2 of 2)

DATE COMPLETED: 3/11/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: N.W. THOMPSON

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	NOTE: A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						
37.5	NOTE: Stratigraphy for 0.0-26.0 ft. BGS taken from OW4S-80						
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☐ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

☒ WATER FOUND
☐ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

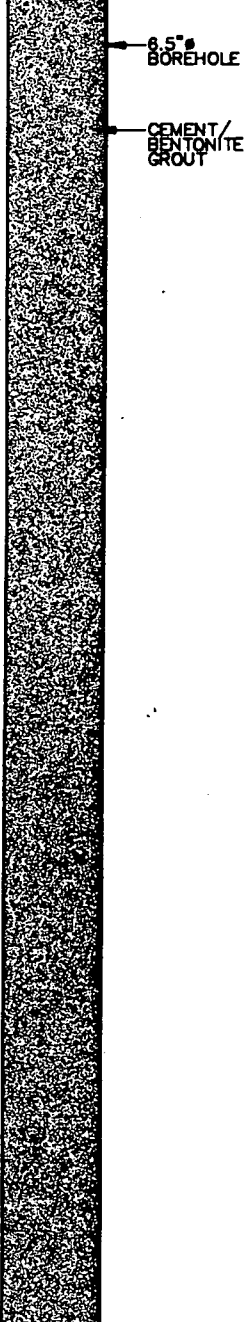
LOCATION: WEST OF LAGOONS

HOLE DESIGNATION: BH216-88
(PAGE 1 of 2)

DATE COMPLETED: 3/14/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	586.7					
	augered to 2.0 ft. BGS						
2.5	Fill - Red Brown Silty Clay, some fine Gravel, dry	584.7		1SS			22
5.0	same, with coarse Gravel	582.7		2SS			22
7.5	same, except no coarse Gravel	578.7		3SS			38
10.0	same, except no fine Gravel	576.7		4SS			14
12.5				5SS			20
		573.2		6SS			39
15.0	Fill - Black slag, concrete, brick, dry	572.7		7SS			21
17.5	Fill - Black fine to coarse Sand, some fine Gravel and Silt, some slag, ash, brick, trace NAPL, wet	570.7		8SS			9
	same, except no brick			9SS			5
20.0				10SS			9
22.5	same, with Gray Silt seam,	563.7		11SS			62
25.0	same, with trace ceramic material	562.7		12SS			17
	Gray Silty fine Sand, wet, native	560.7		13SS			23
27.5		558.7		14SS			24
30.0	no recovery	556.7		15SS			18
32.5	Gray and Brown laminated Silty fine Sand, trace fine Gravel, vegetation, wet, native	554.7		16SS			11
	same, except no vegetation			17SS			10

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLUT

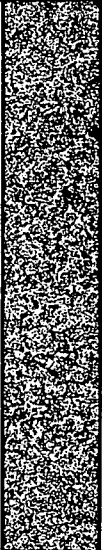
☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLUT

☒ WATER FOUND
☒ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA
PROJECT NO.: 1769
CLIENT: OCCIDENTAL
LOCATION: WEST OF LAGOONS

HOLE DESIGNATION: BH216-88
(PAGE 2 of 2)
DATE COMPLETED: 3/14/88
DRILLING METHOD: HSA 6.5" OD
CRA SUPERVISOR: P.H. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
35.0	Gray and Brown laminated Silty fine Sand, trace fine Gravel, wet, native		 <p>6.5" BOREHOLE CEMENT/BENTONITE GROUT</p>	16SS	X		11
	Red Brown Silty Clay, moist, native	551.2		17SS	X	○	10
37.5	no recovery	548.7		18SS	X	●	3
40.0	Red Brown Silty Clay, moist, native	546.7		19ST		NR	
42.5	Red Brown Sandy Silt, some Clay and fine Gravel, moist, native, Till	543.7		20ST		⊗	
45.0	Brown fine to coarse Gravel, some Sand and Silt, trace Clay, wet, native, Till	542.2 541.7		21ST		⊗	
	augered to 46.0 ft. BGS	540.7 540.6		22SS	X	⊗	>100
47.5	Gray fine Gravelly fine to coarse Sand, wet, AUGERED TO REFUSAL	539.7		23SS			>50
50.0	END OF BOREHOLE AT 47.0 FT. BGS At completion borehole was grouted to ground surface						
52.5	NOTE: 22SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
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● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTH OF LANDFILL, NORTH OF PARKWAY

HOLE DESIGNATION: BH217-88
(PAGE 1 of 2)

DATE COMPLETED: 3/14/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATUS	STATUS	VALUE
	GROUND ELEVATION	582.0					
2.5	augered through "shot rock" to 26.0 ft. BGS		 <p>6.5" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>				
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0	Gray Brown Silty fine Sand, trace vegetation, NAPL, wet, native	556.0					
27.5	Dark Gray to Black fine Sandy Silt, trace vegetation, NAPL, wet, native	555.6		1SS	X		7
30.0	Black fine Sandy Silt, trace Clay, vegetation, NAPL, wet, native	553.6		2SS	X		
32.5	Black Silty fine Sand, trace Clay, iridescent sheen, wet, native	552.0		3SS	X		1
	same with only trace Silt, no sheen	548.2		4SS	X		4
	Black fine to medium rounded Gravelly fine Sand, trace Silt, wet, native	547.5		5SS	X		1

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
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☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

☒ WATER FOUND
☒ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S--AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTH OF LANDFILL, NORTH OF PARKWAY

HOLE DESIGNATION: BH217-88
(PAGE 2 of 2)

DATE COMPLETED: 3/14/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Black fine Sand, trace Silt and Clay, wet, native	547.5		4SS	X		4
35.0	Black fine to medium rounded Gravelly fine Sand, trace Silt, wet, native	547.1		5SS	X		1
	Gray and Brown to Red Brown Clayey Silt, trace to some fine Sand, fine Gravel, moist to wet, native, Till	545.1		6SS	X		4
37.5	Red Brown laminated Silty Clay, trace fine Sand, moist, native			7SS	X	⊗	8
40.0	Red Brown fine Sandy Silt, Clayey trace Gravel moist to wet, native, Till	542.3 541.8		8SS	X		16
	Gray Silty fine Sand, trace Clay, fine to medium Gravel, wet, native, Till	540.0		9SS	X		100
42.5	Red Brown fine to medium Sandy Silt, Clayey fine to medium Gravel, moist to wet, native, Till	539.3 538.7 538.4					
45.0	Gray angular Gravel, trace Silt, fine to medium Sand, wet, native						
	AUGERED TO REFUSAL						
47.5	END OF BOREHOLE AT 43.6 FT. BGS						
	At completion borehole was grouted to ground surface						
50.0	NOTE: 7SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

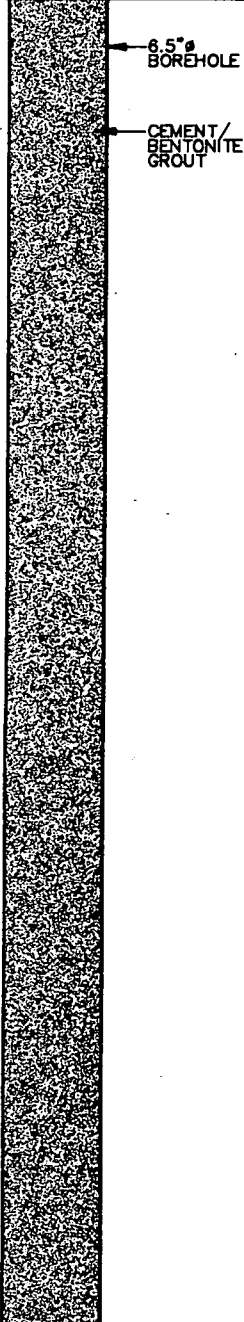
LOCATION: SOUTHWEST OF LAGOONS, NORTH OF PARKWAY

HOLE DESIGNATION: BH218-88
(PAGE 1 of 2)

DATE COMPLETED: 3/15/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	581.2					
2.5	augered through "shot rock" to 25 ft. BGS, no samples						
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0	Gray fine Sandy Silt, trace shell fragments, trace NAPL in sandy lenses, wet, native	556.2					
	Dark Gray to Black Silty fine Sand, trace Clay, wet, native	555.4					
	same, except some Clay, trace shell fragments and fine Gravel, Sandy lenses with trace NAPL, moist to wet	554.2		1SS			4
27.5	Black fine Sandy Silt, wet, iridescent sheen, native	552.2					
	Black Silty fine Sand and fine Sandy Silt, wet, iridescent sheen, native	551.7		2SS			5
30.0	same, with some fine to medium Gravel	548.2					
	same, except some Clay, trace Gravel, no iridescent sheen	547.8		3SS			1
32.5	Dark Gray to Brown Gray Clayey Silt, trace fine Sand and Gravel, fine Sandy Silt						
	lense with iridescent sheen, wet, native	547.3		4SS			5
				5SS			1

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☒ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

☒ WATER FOUND
☒ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTHWEST OF LAGOONS, NORTH OF PARKWAY

HOLE DESIGNATION: BH218-88
(PAGE 2 of 2)

DATE COMPLETED: 3/15/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5				4SS			5
35.0	Dark Gray to Brown Gray Clayey Silt, trace fine Sand and Gravel, fine Sandy Silt lense with iridescent sheen, wet, native same, grading to Black and Red Brown Silty Clay, trace angular Gravel	547.3 546.2 545.6	 <p>6.5" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	5SS			1
37.5	Red Brown laminated Silty Clay, trace fine Sandy Silt lenses, moist, native	544.2		6SS			6
40.0	Red Brown to Gray Red Brown Silty fine Sand, fine to medium Gravel, trace Clay, moist, native, Till			7SS		⊗	35
42.5	AUGERED TO REFUSAL	539.2 539.0		8SS			20
45.0	END OF BOREHOLE AT 42.2 FT. BGS At completion borehole was grouted to ground surface			9SS			>100
47.5	NOTE: A 300 lb. hammer was used for entire borehole						
50.0	NOTE: 7SS - A 3.0" split spoon with a polycarbonate liner was used						
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
 ① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
 ● DEC/EPA SPLIT

▽ WATER FOUND
 ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL



LOCATION: SOUTH OF LAGOONS, NORTH OF PARKWAY

HOLE DESIGNATION: BH219-88
(PAGE 1 of 2)

DATE COMPLETED: 3/16/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE				
				NUMBER	STATE	STATUS	VALUE	
	GROUND ELEVATION	580.3						
2.5	augered through "shot rock" to 25.0 ft. BGS							
5.0								
7.5								
10.0								
12.5								
15.0								
17.5								
20.0								
22.5								
25.0								
27.5	Dark Gray and Black Interbedded Silty fine to medium Sand and fine to medium Sandy Silt, trace Clay, wet, native	555.3		1SS	X		4	
30.0				2SS	X		5	
32.5	same, with trace Gravel	547.3 546.9		3SS	X			
				4SS	X		10	
				5SS	X			
	Dark Brown to Red Brown Clayey Silt, fine Sand, trace Gravel, wet, native							

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

☒ WATER FOUND
☒ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTH OF LAGOONS, NORTH OF PARKWAY

HOLE DESIGNATION: BH219-88
(PAGE 2 of 2)

DATE COMPLETED: 3/16/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
		547.3		4SS			10
	Dark Brown to Red Brown Clayey Silt, fine Sand, trace Gravel, wet, native	546.9		5SS			
35.0	Red Brown fine Sandy Silt, fine Gravel, trace Clay, wet, native, Till	545.3					
		544.8		6SS			4
	Red Brown Silt and Clay, trace fine Sand, fine Gravel, wet, native, Till	544.6					
37.5	Red Brown laminated Silty Clay, moist, native	542.9		7SS			23
40.0	Red Brown to Gray Brown Silty fine Sand, fine to medium Gravel, moist, native, Till	540.5		8SS		⊗	>100
	AUGERED TO REFUSAL	540.1					
42.5	END OF BOREHOLE AT 40.2 ft. BGS						
45.0	At completion borehole was grouted to ground surface						
47.5	NOTE: 8SS - A 300 lb. hammer and a 3.0" split spoon with a polycarbonate liner was used						
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTH OF LAGOONS NORTH OF PARKWAY

HOLE DESIGNATION: BH220-88
(PAGE 1 of 2)

DATE COMPLETED: 3/16/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	582.6					
2.5	augered through "shot rock" to 25.0 ft. BGS						
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0	Black Silt, trace fine to medium Sand, fine Gravel, wet, iridescent sheen, strong odor, native	557.6					
	Black fine to coarse Sand, trace Silt, fine Gravel, wet, iridescent sheen, strong odor, native	557.2 556.8		1SS			3
27.5	Black fine Sandy Silt, wet, native	555.6		2SS			6
30.0	Black fine to coarse Sand, trace Silt, fine Gravel, wet, iridescent sheen, native same, except some Silt, no Gravel, odor, or iridescent sheen	553.6 553.3 554.8		3SS			3
32.5	Black Silt, trace fine to medium Sand, fine Gravel, wet, iridescent sheen, native			4SS			5
	Black Silty fine Sand, trace fine Sandy Silt lenses with iridescent sheen, wet, native	549.6		5SS			WR
	Black Silt, trace fine Sand, iridescent sheen, wet, native						

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

☒ WATER FOUND
☒ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTH OF LAGOONS NORTH OF PARKWAY

HOLE DESIGNATION: BH220-88
(PAGE 2 of 2)

DATE COMPLETED: 3/16/88

DRILLING METHOD: HSA 6.5" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
	Black Silt, trace fine Sand, iridescent sheen, wet, native		 <p>8.5" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	4SS			5
				5SS			WR
35.0	Black fine Sand, trace Silt, fine to medium Gravel, iridescent sheen, wet, native	547.6					
	Gray Silty Clay, wet, native	546.6 546.4		6SS			8
37.5	Gray fine to coarse Gravelly Silt, trace Clay and fine Sand, wet, native			7SS		○	3
	Dark Gray to Red Brown Clayey Silt, fine to medium Gravel, trace fine Sand, wet to moist, native, Till	544.1 543.3		8SS		○	13
40.0	Red Brown laminated Silty Clay, moist to wet, native	541.6		9SS		⊗	40
42.5	Red Brown Clayey Silt, angular Gravel, wet, native, Till same, with trace fine Gravel, trace fine Sand	539.6 538.6		10SS		○	>100
45.0	AUGER REFUSAL AND END OF BOREHOLE AT 44.0 FT. BGS						
47.5	At completion borehole was grouted to ground surface						
50.0	NOTE: A 300 lb. hammer was used for entire borehole						
52.5	NOTE: 9SS - A 3.0" split spoon with a polycarbonate liner was used						
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL

LOCATION: SOUTH OF S-AREA LANDFILL, NORTH OF PARKWAY

HOLE DESIGNATION: BH221-88
(PAGE 1 of 2)

DATE COMPLETED: 3/18/88

DRILLING METHOD: HSA 13.0" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	583.2					
2.5	augered through "shot rock" to 25.0 ft. BGS						
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0	Fill - Black fine to medium Gravel and fine to coarse Sand, trace wood and Silt, NAPL, wet, iridescent sheen	558.2 557.8					
27.5	Black Silty fine Sand, trace vegetation and thin Sand lenses with an iridescent sheen, wet, native	556.2 555.8		1SS			5
30.0	Black fine Sandy Silt, trace vegetation, NAPL, wet, native	554.2		2SS			3
32.5	Black Silty fine Sand, trace vegetation and thin Sand and Silt lenses, wet, native			3SS			WH
	Black fine Sandy Silt, trace thin Sand lenses, wet, native			4SS			5
	Black Silty fine Sand, trace fine Sandy Silt lenses, wet, native	551.2		5SS			1
	same, with fine Gravel, no Sandy Silt lenses	550.2 549.7					
	Gray Silty Clay, wet, native						

NOTES: ☒ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
☐ GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

☒ DEC/EPA SAMPLE
☒ DEC/EPA SPLIT

☒ WATER FOUND
☒ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: SOUTH OF S-AREA LANDFILL, NORTH OF PARKWAY

HOLE DESIGNATION: BH221-88
(PAGE 2 of 2)

DATE COMPLETED: 3/18/88

DRILLING METHOD: HSA 13.0" OD

CRA SUPERVISOR: D.J. OSCAR

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
32.5							
		549.7	 <p>13.0" BOREHOLE CEMENT/BENTONITE GROUT</p>	4SS			5
	Gray Silty Clay, wet, native			5SS			1
35.0	Gray Brown to Red Brown Clayey Silt, fine Sand and fine to medium Gravel, moist to wet, native, Till	548.2		6SS		○	WH
37.5	Red Brown laminated Silty Clay, moist, native	546.2		7SS		⊗	20
	augered to 40.0 ft. BGS, no sample	544.2					
40.0	Red Brown laminated Silty Clay, moist, native	543.2		8SS		⊗	10
42.5	Red Brown Clayey Silt, trace fine Sand, fine Gravel, moist, native, Till	541.4		9SS			19
	same, except Red Brown to Gray, angular Gravel, moist to wet	539.2		10SS			>100
45.0	AUGERED TO REFUSAL	538.7 538.6					
	END OF BOREHOLE AT 44.6 FT. BGS						
47.5	At completion borehole was grouted to ground surface						
50.0	NOTE: A 300 lb. hammer was used for entire borehole						
52.5	NOTE: 7SS & 8SS - A 3.0" split spoon with a polycarbonate liner was used						
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: ⊗ PERMEABILITY, GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC
● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT

■ DEC/EPA SAMPLE
● DEC/EPA SPLIT

▽ WATER FOUND
▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

HOLE DESIGNATION: BH222-88

PROJECT NO.: 1769


DATE COMPLETED: 3/31/88

CLIENT: OCCIDENTAL

DRILLING METHOD: HSA 6.0" OD

LOCATION: WATER TREATMENT PLANT, SOUTH OF A-PLANT

CRA SUPERVISOR: D.L. TARNOWSKI

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	575.2					
2.5	Fill - Brown Silt, vegetation, moist	574.7		1SS			90
	Fill - Gray Brown Silt, fine Gray Gravel, dry same, with fine to coarse angular Gravel	573.2		2SS			113
5.0	same, with trace medium Sand, dry to moist	571.2		3SS			96
		569.2		4SS			38
7.5	Fill - Gray Black Clayey Silt, Gravelly, wood, brick, ash, slag, moist to wet	567.2		5SS			33
	Fill - Red Brown Silty Clay, Gravelly, moist	566.4		6SS			30
10.0	Fill - Black Gravelly Silt, slag, ash, cinders, dry to moist	565.2		7SS			5
	Fill - Red Brown Silty Clay, Gravelly, moist	564.9		8SS			16
12.5	Fill - Gray Silt and fine Sand, Gravelly, dry	563.2		9SS			14
15.0	Fill - Orange Brown to Black Gravelly Silt, brick, cinders, wet	561.2		10SS			18
	Fill - Black Gravelly Silt, cinders, trace Brown Silty Clay, piece of rubber	559.2					
17.5	no recovery	557.2					
	Gray Silty fine to medium Sand, vegetation, wet, native	555.2					
20.0	END OF BOREHOLE AT 20.0 FT. BGS						
22.5	At completion borehole was grouted to ground surface						
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

● GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: S-AREA

PROJECT NO.: 1769

CLIENT: OCCIDENTAL


LOCATION: WATER TREATMENT PLANT, SOUTH OF A-PLANT

HOLE DESIGNATION: BH223-88

DATE COMPLETED: 3/31/88

DRILLING METHOD: HSA 6.0" OD

CRA SUPERVISOR: D.L. TARNOWSKI

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	STATUS	VALUE
	GROUND ELEVATION	574.8					
2.5	Fill - Brown Clayey Silt, Gravelly, vegetation, moist to dry same, except no vegetation	572.8	 <p>6.0" BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	1SS			20
		570.8		2SS			33
5.0	Fill - Brown to Black Clayey Silt, Gravelly, trace brick and cinders, dry to moist	568.8		3SS			48
		567.8		4SS			42
7.5	Fill - Brown Silt, trace Clay, cinders, slag, brick, moist	566.8		5SS			10
	Fill - Red Brown Silty Clay, slag, moist	564.8		6SS			6
	Fill - White, Red Brown, and Brown Silt, cinders, ash, slag, dry to moist same, except Gray Black, moist	564.0		7SS			5
10.0	Fill - Orange Brown Gravelly Silt, slag, wet	562.8		8SS			31
12.5	no recovery	560.8		9SS			5
		560.5		10SS			21
15.0	Fill - Red Brown Silt and coarse Sand, Gravel, slag, cinders, wet	558.8					
	Fill - Black Silt, cinders, wood, wet, iridescent sheen	556.8					
17.5	Fill - Black Silt, trace Clay, Gravel, cinders, wet	554.8					
20.0	Gray Silty fine to medium Sand, trace rounded Gravel and vegetation, wet, native						
	END OF BOREHOLE AT 20.0 FT. BGS						
22.5	At completion borehole was grouted to ground surface						
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS, MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

○ GRAIN SIZE DIST. & ATT. LIMITS FOR OCC

● DEC/EPA SPLIT

① GRAIN SIZE DIST. & ATT. FOR OCC & DEC/EPA SPLIT



WATER FOUND



STATIC WATER LEVEL

UTILITY BEDDING EXCAVATION
AND BORING LOGS

EXCAVATION AND BOREHOLE LOCATIONS:

SEE INFORMATION SUMMARY REPORT

VOLUME II - DRAWINGS

PLAN #13

STRATIGRAPHIC SUMMARY LOGS
UTILITY BEDDING INVESTIGATION
S-AREA SUBSURFACE INVESTIGATION

<u>Excavation Number</u>	<u>Depth (ft. BG)</u>	<u>Description</u>	<u>Water Level (ft. BG)</u>	<u>Sampled Depth (ft. BG)</u>
A-1	0 - 0.5 0.5- 2.0	Asphalt Brown-gray fine to medium gravel, sand. Dry to Moist (FILL)	Dry	2.0
A-2	0 - 0.5 0.5- 2.0	Asphalt Brown-gray fine to coarse gravel, sand and silt. Moist (FILL)	Dry	2.0
A-3	0 - 0.5 0.5- 0.8	Asphalt Brown silt and sand, gravel, slight chemical odor. Dry to Moist (FILL)	Dry	0.8
B-1	0 - 6.0 6.0- 8.0	Black coarse gravel and stone, some sand and silt, trace brick and wood, occasional wire. Wet (FILL) Black and gray silt and sand, gravel, trace clay, strong chemical odor, some black NAPL. Wet (FILL)	 6.5	8.0
B-1A	0 - 0.5 0.5- 4.0 4.0- 6.0 6.0- 7.0	Asphalt Black and dark brown silty sand and gravel, brick, cinder, rusted metal. Moist (FILL) Black and dark brown silty sand and gravel, brick, cinder, rusted metal, wood and trace brown clay. Moist (FILL) Black, brown and gray silt, sand, gravel, clay, some yellow-brown sand, waste material, slight chemical odor, trace iridescent sheen. Wet (FILL)	 5.0	7.0

Continued....

STRATIGRAPHIC SUMMARY LOGS
UTILITY BEDDING INVESTIGATION
S-AREA SUBSURFACE INVESTIGATION

<u>Excavation Number</u>	<u>Depth (ft. BG)</u>	<u>Description</u>	<u>Water Level (ft. BG)</u>	<u>Sampled Depth (ft. BG)</u>
B-2	0 - 6.0	Black coarse gravel and stone, some sand and silt, trace brick and wood, occasional wire. Wet (FILL)		8.0
	6.0- 8.0	Black and gray silt and sand, gravel, trace clay, strong chemical odor, some black NAPL. Wet (FILL)	6.5	
B-2A	0 - 0.5	Asphalt		7.0
	0.5- 4.0	Black and dark brown silty sand and gravel, brick, cinder, rusted metal. Moist (FILL)		
	4.0- 6.0	Black and dark brown silty sand and gravel, brick, cinder, rusted metal, wood and trace brown clay. Moist (FILL)	5.0	
	6.0- 7.0	Black, brown and gray silt, sand, gravel, clay, some yellow-brown sand, waste material, slight chemical odor, trace iridescent sheen. Wet (FILL)		
B-3	0 - 6.0	Black coarse gravel and stone, some sand and silt, trace brick and wood, occasional wire. Wet (FILL)		8.0
	6.0- 8.0	Black and gray silt and sand, gravel, trace clay, strong chemical odor. Wet (FILL)	6.5	
B-5	0 - 3.0	Brown fine sandy silt, gravel, trace brick, root fibers, some light brown clay. Moist (FILL)	Dry	3.5
	3.0- 3.5	Light brown to dark brown and black fine sandy silt, some clay, gravel, trace white waste material. Moist (FILL)		
	3.5- 4.5	Gray fine to coarse sand and gravel. Moist (FILL)		

Continued....

STRATIGRAPHIC SUMMARY LOGS
UTILITY BEDDING INVESTIGATION
S-AREA SUBSURFACE INVESTIGATION

<u>Excavation Number</u>	<u>Depth (ft. BG)</u>	<u>Description</u>	<u>Water Level (ft. BG)</u>	<u>Sampled Depth (ft. BG)</u>
B-6	0 - 0.5	Asphalt		6.5
	0.5- 3.0	Gray fine to medium sand and gravel, trace brick. Moist (FILL)		
	3.0- 6.5	Gray fine to medium gravel, brown silty fine sand, some red-brown clay. Wet (FILL)	4.5	
B-8	0 - 0.5	Asphalt		10.5
	0.5- 3.0	Brown-gray fine to coarse gravel, some silt. Moist to Wet (FILL)		
	3.0-10.5	Brown-gray gravel, silt, sand, clay, brick, rusted metal. Wet (FILL)	7.0	
B-9	0 - 3.5	Dark brown fine sandy silt. Moist (FILL)		0-10.5
	3.5- 8.0	Gray-brown sandy coarse to fine gravel. Moist to Wet (FILL)	8.0	
	8.0-10.5	Gray coarse gravel. Wet (FILL)		
B-12	0 - 2.0	Brown sandy silt, fine to coarse subangular gravel, trace clay, trace brick. Moist (FILL)	Dry	12.0
	2.0- 6.0	Brown sandy silt, fine to coarse subangular gravel, some gravelly clay nodules, trace brick. Moist (FILL)		
	6.0-10.0	Brown gravelly, silty clay, trace sand. Moist to Wet (FILL)		
	10.0-12.0	Gray gravel. Moist (FILL)		
B-13	0 - 8.5	Brown silty fine sand, clay, fine to coarse gravel, trace cinder and brick. Dry to Moist (FILL)	Dry	11.5
	8.5-11.5	Brown silty clay, gravel. Moist (FILL)		
	11.5-14.0	Bedding gravel. Moist (FILL)		

Continued....

STRATIGRAPHIC SUMMARY LOGS
UTILITY BEDDING INVESTIGATION
S-AREA SUBSURFACE INVESTIGATION

<u>Excavation Number</u>	<u>Depth (ft. BG)</u>	<u>Description</u>	<u>Water Level (ft. BG)</u>	<u>Sampled Depth (ft. BG)</u>
B-14	0 - 3.5	Brown silty sand, fine to coarse gravel, trace cinder, brick and concrete. Moist (FILL)	Dry	14.5
	3.5-11.0	Red-brown silty clay, gravel, sand. Moist (FILL)		
	11.0-12.5	Red-brown silty clay, gravel, sand, slag, chemical odor. Moist (FILL)		
	12.5-14.5	Gray fine sand, trace gravel. Wet (FILL)		
B-16	0 - 3.0	Gray-brown gravelly sand, white clayey waste material. Dry to Moist (FILL)	Dry	4.5
	3.0- 4.5	Gray, brown, white gravel, sand clay. Wet (FILL)		
B-18	0 - 4.5	Brown silt and sand, gravel, white waste material, slight chemical odor. Wet (FILL)	4.0	4.5
B-21	0 - 0.5	Asphalt		7.0
	0.5- 3.0	Brown-gray sandy gravel, some brick, rusted metal. Dry (FILL)		
	3.0- 4.0	Brown-gray sandy gravel, some brick, rusted metal, white-purple waste material, trace wood, gravel. Moist (FILL)		
	4.0- 5.0	Brown-gray sandy gravel, some brick, rusted metal, white-purple waste material, trace wood gravel, black tar-like substance. Wet (FILL)	5.0	
	5.0- 6.0	Brown-gray sandy gravel, some brick, rusted metal, white-purple waste material, trace wood, some gravel, black tar-like substance, some NAPL, iridescent sheen. Wet (FILL)		
	6.0- 7.0	Brown-black gravel, sand, silt, trace clay, wood, some NAPL, iridescent sheen. Wet (FILL)		

Continued....

STRATIGRAPHIC SUMMARY LOGS
UTILITY BEDDING INVESTIGATION
S-AREA SUBSURFACE INVESTIGATION

<u>Excavation Number</u>	<u>Depth (ft. BG)</u>	<u>Description</u>	<u>Water Level (ft. BG)</u>	<u>Sampled Depth (ft. BG)</u>
B-22	0 - 0.4	Asphalt		6.5
	0.4- 5.0	Brown-black silt, sand, gravel, cinders, trace clay. Moist (FILL)		
	5.0- 6.5	Black-brown gravelly clay, NAPL. Wet (FILL)	6.0	
B-24	0 - 8.0	Black-brown coarse slag and gravel, some sand and silt, chemical odor. Wet (FILL)	4.5	8.0
B-25	0 - 8.0	Brown to red-brown clayey silt, some gravel and sand. Moist (FILL)	Dry	10.5
	8.0-10.5	Gray medium to fine gravel. Moist (FILL)		
B-26	0 - 4.0	Brown to red-brown gravelley sand, some clay and silt, trace brick. Moist (FILL)		10.5
	4.0- 8.0	Gray coarse to fine gravel. Moist (FILL)		
	8.0- 9.5	Yellow-brown silty fine sand. Moist (FILL)	9.0	
	9.5-10.5	Yellow-brown silty fine sand, trace clay. Wet (FILL)		
	10.5	Gray gravel and sand. Wet (FILL)		
B-27	0 - 5.0	Brown to red-brown sandy silt, gravelly, some clay. Moist (FILL)	Dry	6.5
	5.0- 6.5	Gray fine to medium gravel. Dry to Moist (FILL)		
B-28	0 - 3.0	Brown gravelly silt, some clay and sand. Moist to Wet (FILL)	6.0	6.0
	3.0- 6.0	Gray gravel, trace clay. Wet (FILL)		
B-31	0 - 8.0	Brown silty sand, gravelly, some clay, trace brick, concrete, cinder. Moist (FILL)	Dry	9.5
	8.0- 9.5	Gray fine to medium gravel. Dry to Moist (FILL)		

Continued....

TABLE
STRATIGRAPHIC SUMMARY LOGS
UTILITY BEDDING INVESTIGATION
S-AREA SUBSURFACE INVESTIGATION

Excavation Number	Depth (ft. BG)	Description	Water Level (ft. BG)	Sampled Depth (ft. BG)
B-32	0 - 8.5	Gray-brown sandy silt and gravel. Moist (FILL)		0-16.0
	8.5-14.0	Gray gravelly coarse to fine sand. Moist (FILL)	12.0	
	14.0-16.0	Red-brown silty clay. Moist (NATIVE)		
B-33	0 - 7.0	Brown silty sand, some fine to coarse gravel, clay, trace wood. (FILL)	Dry	11.0
	7.0-10.0	Black and brown silty clay, some fine to medium gravel. Moist (FILL)		
	10.0-11.0	Gray medium gravel. Moist (FILL)		
C-4A	0 - 0.5	Asphalt		0-28.0
	0 - 10.0	Gray sandy fine to coarse angular gravel. Dry to wet. (FILL)		
	12.0-16.0	Dark gray to black gravelly silt. Wet. (FILL)	7.0	
	16.0-16.5	Fine to coarse sand. Wet. (FILL)		
	16.5-17.0	Red silty clay. Wet. (FILL)		
	17.0-17.8	Gravelly silt. Wet. (FILL)		
	17.8-25.2	Dark gray to black silty fine to medium sand, trace gravel with depth, iridescent sheen noted from 20-24 ft. Wet. (FILL)		
	25.2-26.0	Black fine to coarse gravel. Wet. (FILL)		
	26.0-28.0	Red Brown fine gravelly silt Till. Moist. (NATIVE)		
C-4B	0 - 0.5	Asphalt		0-20.0
	0.5- 3.5	Gray sandy fine to coarse angular gravel. Dry to Moist. (FILL)		
	3.5- 8.0	Augered through.	8.0	
	8.0-10.0	Gray sandy fine to coarse gravel. Wet. (FILL)		
	10.0-10.7	Black gravelly fine to coarse sand. Wet. (FILL)		

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