



The following document includes geotechnical information, which was collected by the engineering consulting firm Rutherford & Chekene in 1992 and 1999. This information was originally compiled for use during construction of MBARI's main building in 1992 and later expansion in 1999. It includes exploratory boring logs (with soil descriptions), profiles, and CPT data. This information is included here because it is representative of geology along the entire island.

**Transmittal**

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Total Pages (including Trans.):

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QTY.	DESCRIPTION
1 set	1992 investigation
1 set	May 1999 "
1 set	Nov. 1999 "

Remarks:

Monty: These are the logs, profiles and CPTs for 1992, May 1999 and Nov. 1999 investigations.

cc:

Sender:

Gymah

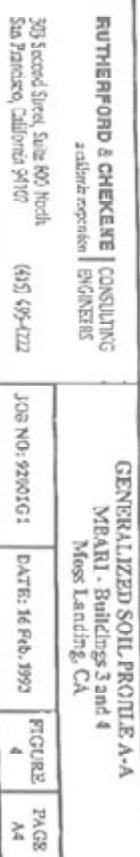
Time Sent:

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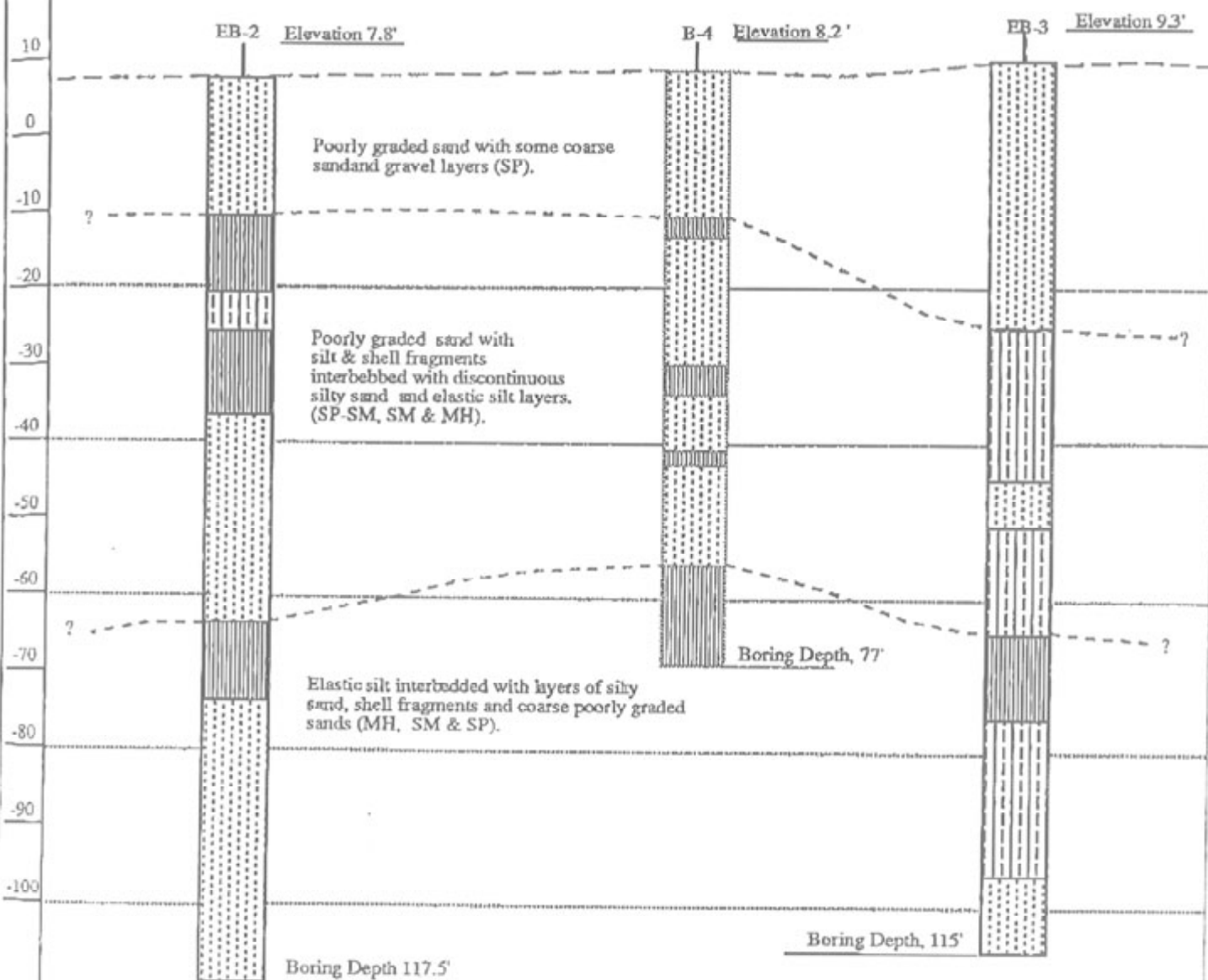
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SECTION C-C LOOKING SOUTH



EXPLANATION

B-4 - Rutherford & Chekene Exploratory Boring, 1993
EB-3 - Rutherford & Chekene Exploratory Boring, 1992

Approximate Location of Material Boundary - - - - -

See Key to Boring Logs for material type symbols.

VERTICAL SCALE - 1 inch = 20'
HORIZONTAL SCALE - 1 inch = 40'

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GENERALIZED SOIL PROFILE C-C
MBARI - Buildings 3 and 4
Moss Landing, CA

JOB NO: 92001G1

DATE: 2/16/93

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Soil Symbols and Descriptions

Symbol	Group Abbreviation (U.S.C.S.)	Group Name
	GW	Well-graded Gravel
	GP	Poorly-graded Gravel
	GM	Silty Gravel
	GC	Clayey Gravel
	SW	Well-graded Sand
	SP	Poorly-graded Sand
	SM	Silty Sand
	SC	Clayey Sand
	ML	Low-plasticity Silt
	CL	Low-plasticity Clay
	OL	Low-plasticity Organic Silt and Clay
	MH	High-plasticity Silt
	CH	High-plasticity Clay
	OH	High-plasticity Organic Clay
	Pt	Peat or Organic Matter

WATER LEVEL SYMBOLS

	Water level during drilling, with date
	Water level after drilling, with date
	Water level after 24 hours, with date

Soil Description Terminology

Soils are identified and classified in this report according to the Unified Soil Classification System with the following modifiers:

CONSISTENCY OF SOILS

Granular Soils	Blows/Foot	Cohesive Soils
Very Loose	0 to 4	Very Soft
Loose	5 to 10	Soft
Semi-Compact	11 to 20	Stiff
Compact	21 to 35	Very Stiff
Dense	36 to 70	Hard
Very Dense	70+	Very Hard

PARTICLE SIZES

Components	Size or Sieve No.
Boulders	Over 12 inches
Cobbles	3 to 12 inches
Gravel - Coarse	3/4 to 3 inches
- Fine	No. 4 to 3/4 inch
Sand - Coarse	No. 10 to No. 4
- Medium	No. 40 to No. 10
- Fine	No. 200 to No. 40
Fines (Silt and Clay)	Below No. 200

SOIL MOISTURE

Descriptive Term	Description
Dry	Dry of Standard Proctor Optimum
Damp	Sand Only
Moist	Near Standard Proctor Optimum
Wet	Wet of Standard Proctor Optimum
Saturated	Free Water in Sample

SAMPLING METHODS

Standard Penetration Samples are taken by driving a standard 1.4" I.D. split-spoon sampler into the ground with a 140-pound weight falling 30 inches, per ASTM Test Method D-1586. Non-standard penetration test data are indicated by * on the boring logs.

SAMPLE TYPES

Abbreviation	Sampling Method or Tool
SSS	Split-spoon sampler, ASTM D1586
MCC	Modified California sampler, 2.5" I.D.
MCS	Modified California sampler, 2.4" I.D.
MC2	Modified California sampler, 2.0" I.D.
T2T	Thinwall tube sample, 2" O.D. x 1-7/8" I.D.
T3T	Thinwall tube sample, 3" O.D. x 2-7/8" I.D.
PS	Partial sample of cuttings, washed

The boring logs show subsurface conditions at the dates and locations shown, and are not warranted to be representative of subsurface conditions at other locations and times.

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KEY TO EXPLORATORY BORING LOGS

MBARI - Buildings 3 and 4
Moss Landing, California

JOB NO: 92001G1

DATE: 2/16/93

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 6.7 ft.

LOGGED BY: John Tabor
START: 12/15/92 **COMPLETE:** 12/15/92 **SHEET** 1
WATER LEVEL AND TIME: 5.5' During Drilling

BORING NO. B-1

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	0	6" concrete, semi-compact, gray-tan, medium poorly graded sand becoming more coarse with depth (SP). Moist to Saturated.	SSS-1 1.0-2.5 18	5 6 7	4.2			Passing # 200 Sieve = 1.8%. Gradation Test Performed.
			SSS-2 3.0-4.5 18	4 6 6	10.5			
		12/15/92	SSS-3 5.0-6.5 18	5 6 9	20.7			
	10	Semi-compact, dark-gray, poorly graded medium sand with some coarse sand and gravel (SP).	SSS-4 10.0-11.5 18	10 14 14	18.3			Passing # 200 Sieve = 2.0%. Gradation Test Performed.
			SSS-5 15.0-16.5 18	7 15 17	13.9			
	20		SSS-6 20.0-21.5 18	7 8 9	16.3			
		Very soft, blue-gray, elastic silt (MH).	SSS-7 25.0-26.5 18	1 1 1	73.6			Passing # 200 Sieve = 8.1%. Gradation Test Performed.
	30	Semi-compact to compact, blue-gray, poorly graded sand with silt and some shell fragments (SP-SM).	SSS-8 30.0-31.5 18	4 7 10	30.1			
			SSS-9 35.0-36.5 18	9 16 8	20.7			
	40	Soft, blue-gray, elastic silt (MH).						

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MBARI - Buildings 3 and 4
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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 6.6 ft.

LOGGED BY: John Tabor
START: 12/16/92 **COMPLETE:** 12/16/92 **SHEET** 1
WATER LEVEL AND TIME: 6.0 feet during drilling.

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV (in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	0	Loose, gray-tan, poorly graded sand (SP) with brick fragments and rubble fill. Moist to Saturated.	SSS-1 1.0-2.5 18	5 4 4	8.4			
		Semi-compact, gray-tan, medium poorly graded sand (SP). Saturated.  12/16/92	SSS-2 3.5-5.0 18	5 9 8	8.8			
			SSS-3 5.5-7.0 18	5 7 11	21.1			
			SSS-4 10.0-11.5 18	4 8 12	19.2			
		Compact, tan-gray, poorly graded medium sand with some coarse sand layers and shell fragments (SP).						
			SSS-5 15.0-16.5 18	13 14 17	12.2			
	20	Soft, gray-blue, elastic silt (MH).	T3T-6 20.0-23.0 36		NA			
		Bottom of hole at 23 feet.						
	30							
	40							

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore, 4" Rotary Wash
 SURFACE ELEVATION: 6.7 ft.

LOGGED BY: John Tabor
 START: 12/16/92 COMPLETE: 12/16/92 SHEET 1
 WATER LEVEL AND TIME: 5.2'@ 48 hrs., 5.5' 2/12/93

BORING NO. B-3

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV (in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	0	6" concrete over 6" rubble fill and medium sand. Moist to Saturated.						
		Semi-compact, tan-gray, poorly graded medium sand. Fish odor (SP).						
		 5.2'-12/16/92; 5.5'-2/12/93						
			SSS-1 5.0-6.5 18	3 4 7	16.1			
	10		SSS-2 10.0-11.5 18	4 8 12	18.9			
		Very loose to loose, blue-gray, poorly graded fine sand interbedded with layers of elastic silt (SP-SM).	MCS-3 15.0-16.5 18	P P P	36.9			Passing # 200 Sieve = 7.4%.
	20		SSS-4 20.0-21.5 18	1 2 3	NA			
		Compact to dense, dark blue-gray, poorly graded medium to coarse sand with some shell fragments (SP).	SSS-5 25.0-26.5 18	11 18 19	16.6			
	30		SSS-6 30.0-31.5 18	15 24 25	16.7			
		Soft, blue-gray elastic silt with some fine silty sand layers interbedded (MH).	SSS-7 35.0-36.5 18	3 3 2	50			
	40							

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 6.7 ft.

LOGGED BY: John Tabor
START: 12/16/92 **COMPLETE:** 12/16/92 **SHEET** 2
WATER LEVEL AND TIME: 5.2' @ 48 hrs., 5.5' 2/12/93

BORING NO. B-3

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(In)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	40	Soft, blue-gray, elastic silt with some fine silty sand layers interbedded (MH).	SSS-10 40.0-41.5 18	1 5 4	45.8			
		Dense, tan-gray, medium to coarse poorly graded sand with silt and shell fragments and elastic silt layers interbedded (SP-SM).	SSS-11 45.0-46.5 18	13 34 40	16.3			
	50	Compact to dense, blue gray, medium to coarse poorly graded sand with some gravel and shell fragments (SP).	SSS-12 50.0-51.5 18	29 50 48	16.6			
	60		SSS-13 60.0-65.5 18	17 40 -	18.2			Passing # 200 Sieve = 6.8%. Gradation test performed.
	70		SSS-14 70.0-71.0 12	36 40 -	18.2			
		Bottom of Hole @ 71'.						
	80							

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MBARI - Buildings 3 and 4
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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore, 4" Rotary Wash
 SURFACE ELEVATION: 8.2 ft.

LOGGED BY: John Tabor

BORING NO. B-4

START: 12/17/92 COMPLETE: 12/17/92 SHEET 1
 WATER LEVEL AND TIME: 6.0' During Drilling.

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	0	Loose, tan, poorly graded fine-medium sand and some rubble fill (SP). Moist to saturated. Fish odor at 3-5 feet.	SSS-1 1.0-2.5 18	3 3 3	9.2			
			SSS-2 3.0-4.5 18	5 7 10	12.4			
		 12/17/92	SSS-3 5.0-6.5 18	5 7 10	10.3			
	10	Compact, tan-gray, poorly graded medium sand with some silt becoming more coarse with depth (SP). Saturated.	SSS-4 10.0-11.5 18	6 7 9	20.5			
			SSS-5 15.0-16.5 18	10 18 19	30.6			
	20	Soft, blue-gray, elastic silt (MH).	T3T-6 20.0-22.0 24		NA			
		Compact to dense, blue-gray, poorly graded sand with some gravel, shell fragments, and thin elastic silt layers interbedded (SP).	SSS-7 25.0-26.5 18	17 27 36	14.5			Passing # 200 Sieve = 3.5%.
	30		SSS-8 30.0-31.5 18	7 18 25	18.8			
			SSS-9 35.0-36.5 18	14 9 6	26.8			
	40	Soft to stiff, blue-gray, elastic silt with some silty fine sand layers (MH).						

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore, 4" Rotary Wash
 SURFACE ELEVATION: ?? ft.

LOGGED BY: John Tabor
 START: 12/17/92 COMPLETE: 12/17/92 SHEET 2
 WATER LEVEL AND TIME: 6.0' During Drilling

BORING NO. B-4

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(ln)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	40	Soft to stiff, blue-gray, elastic silt with some silty fine sand layers (MH).	SSS-10 40.0-41.5 18	1 2 4	45.8			Passing # 200 Sieve = 9.7%.
		Dense, blue-gray, poorly graded sand with silt and shell fragments (SP-SM).	SSS-11 45.0-46.5 18	17 20 25	16.3			
	50	Soft, blue-gray elastic silt (MH).	SSS-12 50.0-51.5 18	2 2 15	16.6			
		Soft, blue-gray, fine silty sand with shell fragments, some gravel, and layers of elastic silt interbedded (SP-SM).	SSS-13 55.0-56.0 12	29 37	18.3			
	60		SSS-13 60.0-65.5 18	24 34 40	18.2			
	70	Soft, gray-blue, elastic silt and fine silty sand (MH).						
		Bottom of Hole @ 77 ft.	SSS-14 75.0-76.5 12	2 3 7	44.2			
	80							

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore, 4" Rotary Wash
 SURFACE ELEVATION: 9.7 ft.

LOGGED BY: John Tabor
 START: 12/17/92 COMPLETE: 12/18/92 SHEET 1
 WATER LEVEL AND TIME: 8.3' @ 1 hr.; 8.0' - 2/12/93

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	0	6" concrete, 4" medium sand, 6" concrete Semi-compact, tan poorly graded fine-medium sand (SP). Moist to Saturated.	SSS-1 2.0-3.5 18	5 8 7	3.3			
			SSS-2 4.0-5.5 18	4 6 8	4.5			
		 8.3' - 12/18/92 ; 8.0' - 2/12/93						
	10	Semi-compact, gray-tan, poorly graded medium sand with some coarse sand (SP). Saturated. Black stained 10-14'. Dark black stained 14-15'.	SSS-3 10.0-11.5 18	3 7 8	14.3			
			SSS-4 12.0-13.5 18	3 7 11	12.1			Passing # 200 Sieve = 1.1%.
			SSS-5 15.0-16.5 18	10 20 28	12.7			
		Dense, gray, poorly graded fine sand with some silt (SP-SM). Saturated.						
	20		SSS-6 20.0-21.5 18	9 15 21	23.5 15.0			
		Semi-compact to compact, gray-tan, poorly graded medium sand with some gravel (SP).						
			SSS-7 25.0-26.5 18	12 12 14	15.0			
	30		SSS-8 30.0-31.5 18	3 4 6	25.1			
		Loose to semi-compact, blue-gray, fine silty sand with some elastic silt layers (SM).	SSS-9 35.0-36.5 18	6 5 8	31.5			Passing # 200 Sieve = 34.5%.
	40							

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 9.7 ft.

LOGGED BY: John Tabor
START: 12/18/92 **COMPLETE:** 12/18/92 **SHEET** 2
WATER LEVEL AND TIME: 8.3' @ 1hr., 8.0' - 2/12/93

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	40	Loose to semi-compact, blue-gray, fine silty sand with some elastic silt layers (SM). Sand becomes more coarse with depth.	SSS-10 40.0-41.5 18	2 3 8	NR			Passing # 200 Sieve = 6.2%.
		Dense, gray-blue, medium silty sand with shell fragments and some elastic silt layers interbedded (SP-SM).	SSS-11 45.0-46.5 18	9 15 17	17.5			
	50		SSS-12 50.0-51.5 18	20 28 37	15.7			
			SSS-13 55.0-56.0 12	13 17 36	24.2			
	60		SSS-14 60.0-61.0 12	11 12 26	33.7			
	70	Semi-compact to compact at bottom of hole.						
		Bottom of Hole @ 72 ft.						
	80							

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 8.7 ft.

LOGGED BY: John Tabor**BORING NO.** EB-1**START:** 2/18/92**COMPLETE:** 2/18/92 **SHEET** 1**WATER LEVEL AND TIME:** 6.5' During Drilling

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	0	Semi-compact to compact, gray-tan poorly graded sand with some coarse sand layers (SP). Moist to Saturated. ▽ 2/18/92						Passing # 200 Sieve = 3.2%. Gradation Test Performed.
			SSS-1 5.0-6.5 18	4 8 10	4.2			
	10	Dense, tan-gray, poorly graded medium sand with some coarse sand and shells (SP)	SSS-2 10.0-11.5 18	5 12 20	15.2			
			SSS-3 14.0-15.5 18	8 20 21	13.9			
	20		SSS-4 21.0-22.5 18	11 13 24	22.3			
			SSS-5 25.5-27.0 NR	12 23 32				
	30	Soft to stiff, blue-gray elastic silt (MH).	SSS-6 30.0-31.5 NR	2 3 2				
			CSS-7 35.0-36.5 18	3* 7* 7*				
	40							

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MBARI - Phase 1 Investigation
Moss Landing, California

JOB NO: 92001G

DATE: 2/16/93

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 8.7 ft.

LOGGED BY: John Tabor**BORING NO.** EB-1**START:** 2/18/92**COMPLETE:** 2/18/92**SHEET** 2**WATER LEVEL AND TIME:** 6.5' During Drilling

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(ln)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	40	Soft to stiff, blue-gray, elastic silt (MH).	SSS-8 40.0-41.5 18	2 3 7	40.0			Passing # 200 Sieve = 97.6% Atterberg Test Performed.
			CSS-9 45.0-46.5 18	10* 18* 24*	39.0			
			CSS-10 50.0-51.5 18	27* 52* -	10.2			
	50	Semi-compact to compact, blue-gray silty sand containing dense layers of poorly graded sand with shell fragments and some gravel (SM).	SSS-11 55.0-56.5 18	4 6 12	36.6			Passing #200 Sieve = 23.8% Gradation Classification Performed.
			SSS-12 60.0-61.5 NR	4 5 9				
			SSS-13 65.0-66.5 18	5 9 16	59.7			
	60	Stiff to very stiff, blue gray elastic silt (MH).	SSS-14 70.0-71.5 18	6 10 19	44.9			
			SSS-15 75.0-76.5 18	12 13 19	31.8			
	70							
	80							

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MBARI - Phase I Investigation
Moss Landing, California

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 8.7 ft.

LOGGED BY: John Tabor
START: 2/18/92 **COMPLETE:** 2/18/92 **SHEET** 3
WATER LEVEL AND TIME: 6.5' During Drilling

BORING NO. EB-1

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	80	Very stiff, blue-gray, elastic silt (MH).	SSS-16 80.0-81.5 18	8 12 50+	20.1			
		Dense to very dense, tan, poorly graded medium sand (SP). Difficult drilling.						
			SSS-17 85.0-86.5 6	50+ - -				
	90		SSS-18 90.0-91.5 6	50+ - -	18.4			
	100	Very dense, light brown, poorly graded medium sand (SP). Very difficult drilling at 100'.	SSS-19 100.0-101.5 12	39 50+ -	19.6			
	110		SSS-20 110.0-111.5 NR	50+ - -				
		Difficult Drilling @ 105'						
	120	Bottom of Hole @ 120'						

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 7.8 ft.

LOGGED BY: John Tabor
START: 2/19/92 **COMPLETE:** 2/19/92 **SHEET 1**
WATER LEVEL AND TIME: 6.0' During Drilling

BORING NO. EB-2

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(ln)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	0	Semi-compact, gray-tan poorly graded sand with some coarse sand layers (SP). Moist to Saturated.  2/19/92	SSS-1 2.5-3.5 12	14 12 -	2.4			Passing #200 Sieve = 2.6%. Gradation Classification Performed.
			SSS-2 5.0-6.5 18	6 9 10	10.6			
			SSS-3 10.0-11.5 18	6 8 10	19.3			
			SSS-4 15.0-16.5 18	6 8 11	25.8			
	10	Soft to stiff, blue-gray elastic silt containing some interbedded silty sand layers (MH).	CSS-5 20.0-21.5 18	2* 3* 4*	38.0			Consolidation Test Performed.
			SSS-6 25-26.5 NR	10 6 5				
			CSS-7 30.0-31.5 18	7* 8* 9*	26.1			
	20	Loose, blue-gray silty sand (SM).	CSS-8 35.0-36.5 18	5* 4* 6*	28.3			Passing # 200 Sieve = 30.4%.
	30	Soft to stiff, blue-gray elastic silt containing some interbedded silty sand layers (MH).						
	40							

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JOB NO: 92001G

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 7.8 ft.

LOGGED BY: John Tabor**BORING NO.** EB-2**START:** 2/19/92 **COMPLETE:** 2/19/92 **SHEET** 2**WATER LEVEL AND TIME:** 6.5' During Drilling

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	40	Stiff, blue-gray elastic silt containing some interbedded silty sand layers (MH).	SSS-9 40.0-41.5 18	3 3 10	50.7			Passing #200 Sieve = 8.8%, Gradation Test Performed.
		Compact to very dense, gray poorly graded medium sand with silt, interbedded with layers of silty sand containing some shell fragments and some gravel (SP).	SSS-10 45.0-41.5 NR	12 15 11				
	50		SSS-11 50.0-51.5 18	23 55 50+	15.9			
			SSS-12 55.0-56.5 18	19 46 41	14.4			
	60		SSS-13 60.0-61.5 12	35 50 -	19.9			
			SSS-14 65.0-66.5 18	13 19 25	16.9			
	70		SSS-15 70.0-71.5 18	9 14 23	32.6			
		Very stiff, blue-gray elastic silt (MH).	SSS-16 75.0-76.5 18	5 8 14	42.8			
	80							

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 7.8 ft.

LOGGED BY: John Tabor
START: 2/19/92 **COMPLETE:** 2/19/92 **SHEET** 3
WATER LEVEL AND TIME: 6.0' During Drilling

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(ft)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	80	Very stiff, blue-gray elastic silt (MH).	SSS-17 80.0-81.5 18	7 14 50+	39.6			
		Very dense, tan poorly graded medium sand, interbedded with layers of compact silty sand (SP).						
			SSS-18 85.0-86.5 6	57 - -	21.5			
	90		SSS-19 90.0-91.5 18	7 9 15	21.8			
			SSS-20 90.0-91.5 12	15 50 -	23.4			
	100		SSS-21 100.0-100.5 8	40 20/2" -	13.2			
	110	Very difficult drilling @ 110'-117'.						
			SSS-22 117.0-117.5 6	50+ - -	9.5			
	120	Bottom of Hole @ 117.5'						

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 9.3 ft.

LOGGED BY: John Tabor
START: 2/20/92 COMPLETE: 2/20/92 SHEET 1
WATER LEVEL AND TIME: 9.0' During Drilling

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(ln)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	0	Semi-compact to dense, gray-tan poorly graded sand with gravel (SP). Moist to Saturated.						
			SSS-1 2.5-3.5 18	5 9 15	7.4			
			SSS-2 5.0-6.5 18	5 7 10	4.4			
		 2/20/92						
	10		SSS-3 10.0-11.5 18	3 10 12	16.2			Passing #200 Sieve = 2.6%. Gradation Test Performed.
			CSS-4 15.0-16.5 18	14* 18* 37*	NA			
	20	Dense, brown-gray, poorly graded sand with shell fragments at 20-25' (SP).	SSS-5 20.0-21.5 18	15 25 35	16.4			
			SSS-6 25-26.5 NR	10 17 16				
	30	Dense, gray poorly graded sand with silt, containing layers of poorly graded sand with shell fragments (SP-SM).	SSS-7 30.0-31.5 18	19 28 50	16.1			Passing #200 Sieve = 5.6%. Gradation Test Performed.
		Loose to dense, gray silty sand with shell fragments (SM).	SSS-8 35.0-36.5 18	11 23 25	27.1			
	40							

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 9.3 ft.

LOGGED BY: John Tabor
START: 2/20/92 **COMPLETE:** 2/20/92 **SHEET** 2
WATER LEVEL AND TIME: 9.0' During Drilling

BORING NO. EB-3

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(In)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	40	Loose to compact, gray silty sand with shell fragments and some coarse sand layers (SM).	SSS-9 40.0-41.5 18	8 12 16	24.9			Passing #200 Sieve = 32.0%.
			CSS-10 44.0-45.5 18	3* 7* 16*	23.9			Passing #200 Sieve = 33.0%.
	50	Dense, gray poorly graded sand with silt, containing layers of poorly graded medium sand with shell fragments (SP-SM).	SSS-11 50.0-51.5 18	3 3 2	41.8			Passing #200 Sieve = 33.9%.
			SSS-12 55.0-56.5 18	28 43 50+	19.8			Passing #200 Sieve = 7.7%. Gradation Test Performed.
	60	Very dense, gray silty sand with gravel (SM).	SSS-13 60.0-61.5 12	8 29 50+	20.6			Passing #200 Sieve = 14.7%.
			SSS-14 64.5-65.0 6	50+ - -	11.4			
	70	Very soft to soft, gray-green elastic silt with shell fragments (MH).	SSS-15 70.0-71.5 12	43 50+ -	14.9			
			SSS-16 75.0-76.5 18	2 3 5	51.9			
	80							

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 9.3 ft.

LOGGED BY: John Tabor
START: 2/20/92 **COMPLETE:** 2/20/92 **SHEET** 3
WATER LEVEL AND TIME: 6.0' During Drilling

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(ln)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	80	Very soft to soft, gray-green elastic silt with shell fragments (MH).	SSS-17 80.0-81.5 18	4 4 6	39.9			
		Compact to dense, gray green poorly graded medium sand with silt, interbedded with thin layers of gray green elastic silt (SM).	SSS-18 85.0-86.5 NR	8 10 13				
	90		SSS-19 90.0-91.5 NR	11 24 27				
			SSS-20 95.0-96.5 18	18 16 34	26.4			
	100		SSS-21 100.0-101.5 18	7 10 13	28.1			
			SSS-22 104.0-105.5 18	19 50+ -	20.8			
		Very dense, poorly graded medium tan sand (SP).						
	110		SSS-23 110.0-111.5 18	50+ - -	14.8			
		Drilled to 115'. Very difficult drilling. Bottom of Hole @ 115'						
	120							

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore, 4" Rotary Wash
 SURFACE ELEVATION: 5.2 ft.

LOGGED BY: John Tabor

BORING NO. EB-5

START: 2/21/92 COMPLETE: 2/21/92 SHEET 1

WATER LEVEL AND TIME: 4.0' During Drilling

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	0	Loose to semi-compact, gray-tan poorly graded sand with some gravel (SP). Moist to saturated. 2/21/92						
			SSS-1 2.0-3.5 12	7 8 7	9.9			
			SSS-2 5.0-6.5 NR	3 2 3				
			AUG-3 8.0-9.5		23.8			
	10		SSS-4 10.0-11.5 NR	5 8 7				
			AUG-5 12.5-14.0		22.1			
			SSS-6 15.0-16.5 18	8 10 8	25.8			
	20		SSS-7 20.0-21.5 18	11 9 4	17.5			Passing #200 Sieve = 2.1%. Gradation Test Performed.
		Soft, blue-gray elastic silt containing some interbedded silty sand layers with shell fragments (MH).	SSS-8 25.0-26.5 18	1 2 8	38.7			Passing #200 Sieve = 69.7%.
		Dense, blue-gray silty sand (SM).						
	30		SSS-9 30.0-31.5 18	7 23 29	25.2			
		Stiff, blue-gray elastic silt containing some interbedded silty sand layers with shell fragments (MH).	CSS-10 35.0-36.5 18	2* 2* 4*	45.0			Consolidation & Atterberg Tests Performed. Passing #200 Sieve = 93%.
	40							

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DATE: 2/16/93

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 5.2 ft.

LOGGED BY: John Tabor
START: 2/21/92 **COMPLETE:** 2/21/92 **SHEET** 2
WATER LEVEL AND TIME: 4.0' During Drilling

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	40	Stiff, blue-gray elastic silt containing some interbedded silty sand layers with shell fragments (MH).	SSS-11 40.0-41.5 18	8 7 11	23.6			
		Compact to very dense, gray, poorly graded medium sand with shell fragments, interbedded with some thin layers of coarse sand and gravel (SP).	SSS-12 45.0-41.5 18	18 13 22	19.8			
	50		SSS-13 50.0-51.0 18	19 29 25	14.1			
			SSS-14 55.0-56.0 12	22 50+ -	16.3			
	60		SSS-15 60.0-61.0 12	30 50+ -	18.8			
			SSS-16 65.0-66.0 12	30 50+ -	21.2			
	70		SSS-17 70.0-71.0 12	32 52+ -	20.4			
			SSS-18 75.0-76.0 12	33 50+ -	23.2			
	80							

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EXPLORATORY BORING LOG

DRILLER: Tabor Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 5.2 ft.

LOGGED BY: John Tabor**BORING NO.** EB-5**START:** 2/21/92 **COMPLETE:** 2/21/92 **SHEET** 3**WATER LEVEL AND TIME:** 6.0' During Drilling

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(in)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	80	Very dense, gray, poorly graded medium sand with shell fragments, interbedded with some thin layers of coarse sand and gravel (SP).	SSS-19 80.0-81.0 12	32 50+ -	22.8			
			SSS-20 85.0-86.0 12	45 50+ -	22.5			
		Stiff, green-gray elastic silt with some layers of silty fine sand (MH).						
	90		SSS-21 90.0-90.5 6	50+ - -	25.9			
			SSS-22 95.0-96.5 18	4 4 8	44.8			
	100		SSS-23 100.0-101.5 18	4 6 7	44.3			
		Very dense, gray medium silty sand interbedded with poorly graded medium sand layers (SM).	SSS-24 105.0-110.5 18	3 5 6	51.3			
	110		SSS-25 110.0-115.5 18	4 6 7	46.8			
	120							

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JOB NO: 92001G

DATE: 2/16/93

FIGURE
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EXPLORATORY BORING LOG

DRILLER: Tabor Consultants
RIG: Concore, 4" Rotary Wash
SURFACE ELEVATION: 5.2 ft.

LOGGED BY: John Tabor
START: 2/21/92 **COMPLETE:** 2/21/92 **SHEET** 4
WATER LEVEL AND TIME: 6.0' During Drilling

LOG	DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE/NO. DEPTH (ft) RECOV(ln)	SPT	WC (%)	DRY DENS. (pcf)	UNC. COMP. (tsf)	NOTES AND TEST RESULTS
	120	Very dense, gray medium silty sand interbedded with poorly graded medium sand layers (SM).	SSS-26	6	18.0			
			120.0-121.5 18	13 60				
	130		SSS-27	6	22.4			
			130.0-131.5 18	40 42				
		Bottom of Hole Depth @ 131.5'						
	140							
	150							
	160							

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JOB NO: 92001G

DATE: 2/16/93

FIGURE
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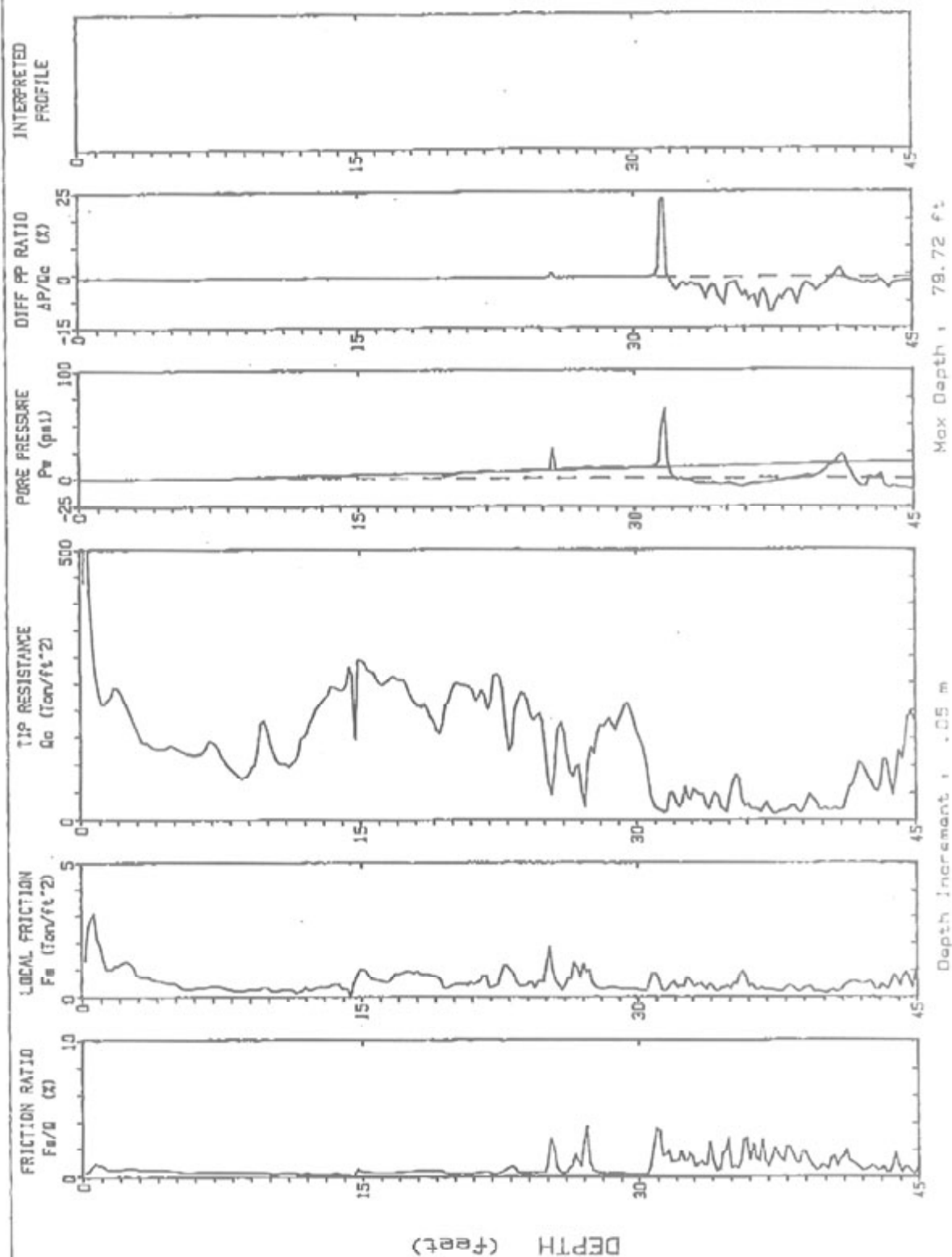
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V B I

Operator : VIRGIL A. BAKER
Location : CPT-1

CPT Date : 02-18-92 11:07
Cone Used : HQ 322

Sounding : 92Z055 Pg 1 / 2
Job No. : 92001G



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JOB NO: 92001G1

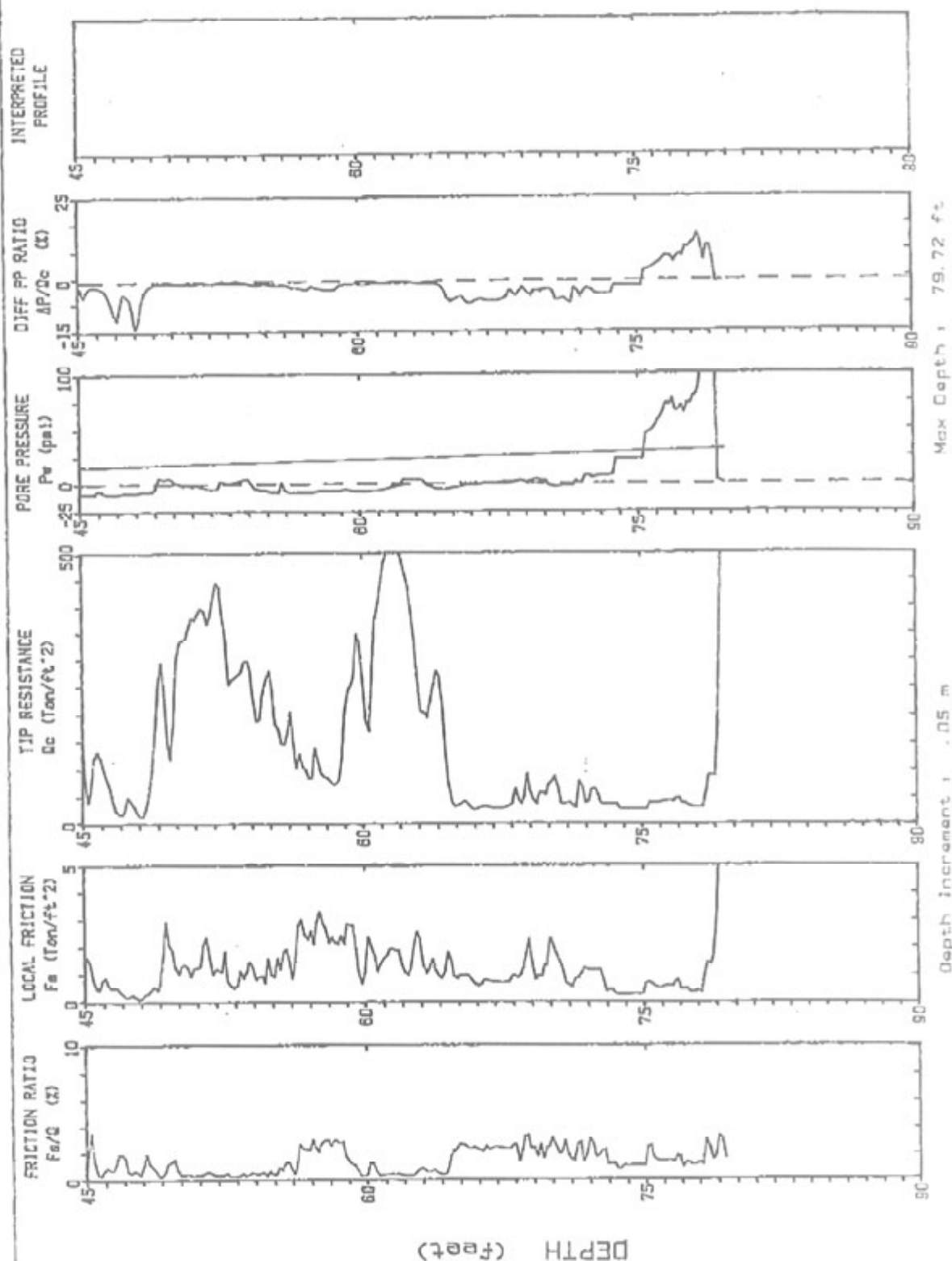
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FIGURE
S4

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B
I

Operator : VIRGIL A. BAKER
 Location : CPT-1
 CPT Date : 02-18-92 11:07
 Cone Used : HQ 322
 Sounding : 92Z055 Pg 2 / 2
 Job No. : 92001G



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JOB NO: 92001G1

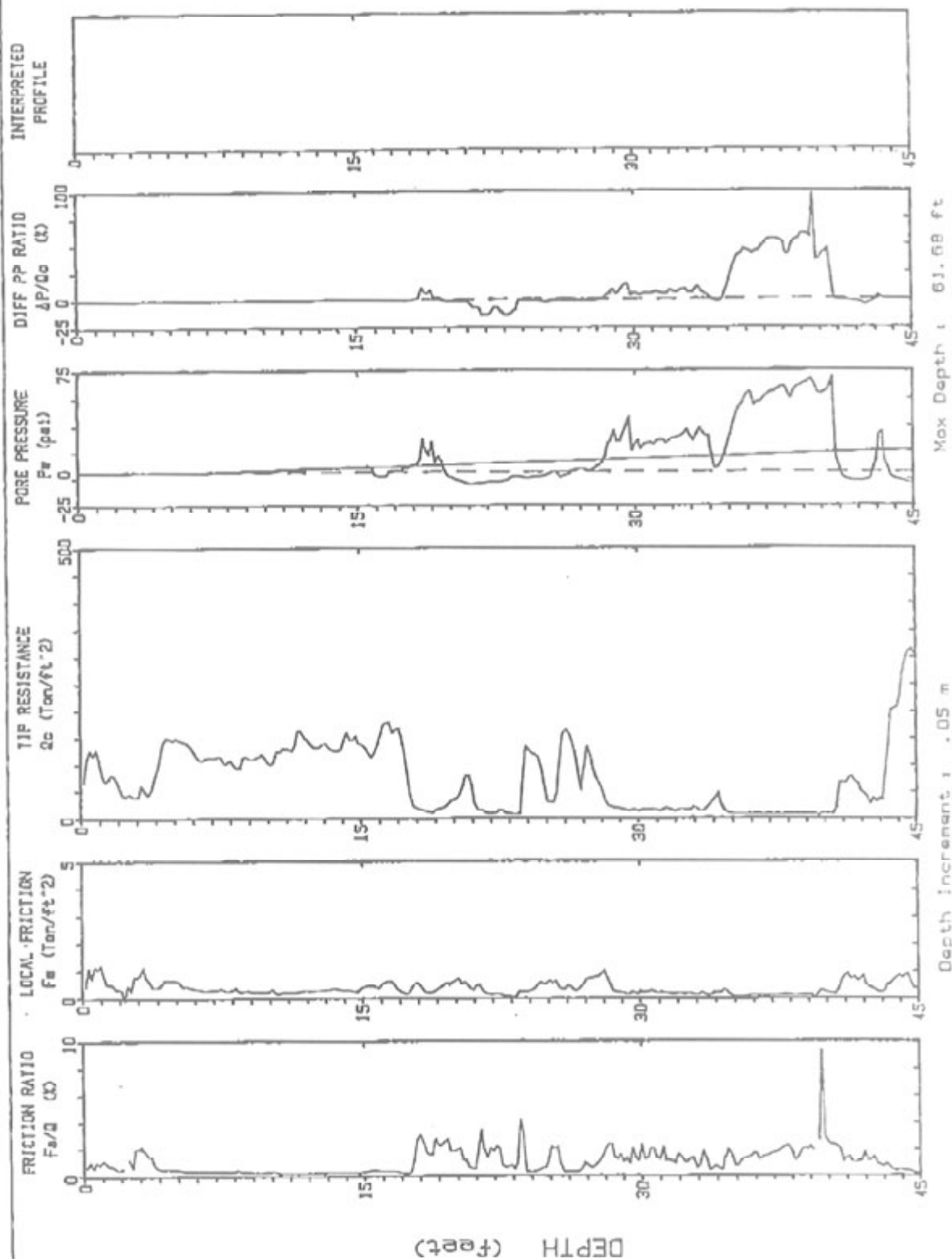
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FIGURE
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I
B
V

Operator : VIRGIL A. BAKER
 Location : CPT-2
 CPT Date : 02-18-92 12:35
 Cone Used : HO 322
 Sounding : 92Z056 Pg : / 2
 Job No. : 92001G



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JOB NO: 92001G1

DATE: 2/16/93

FIGURE
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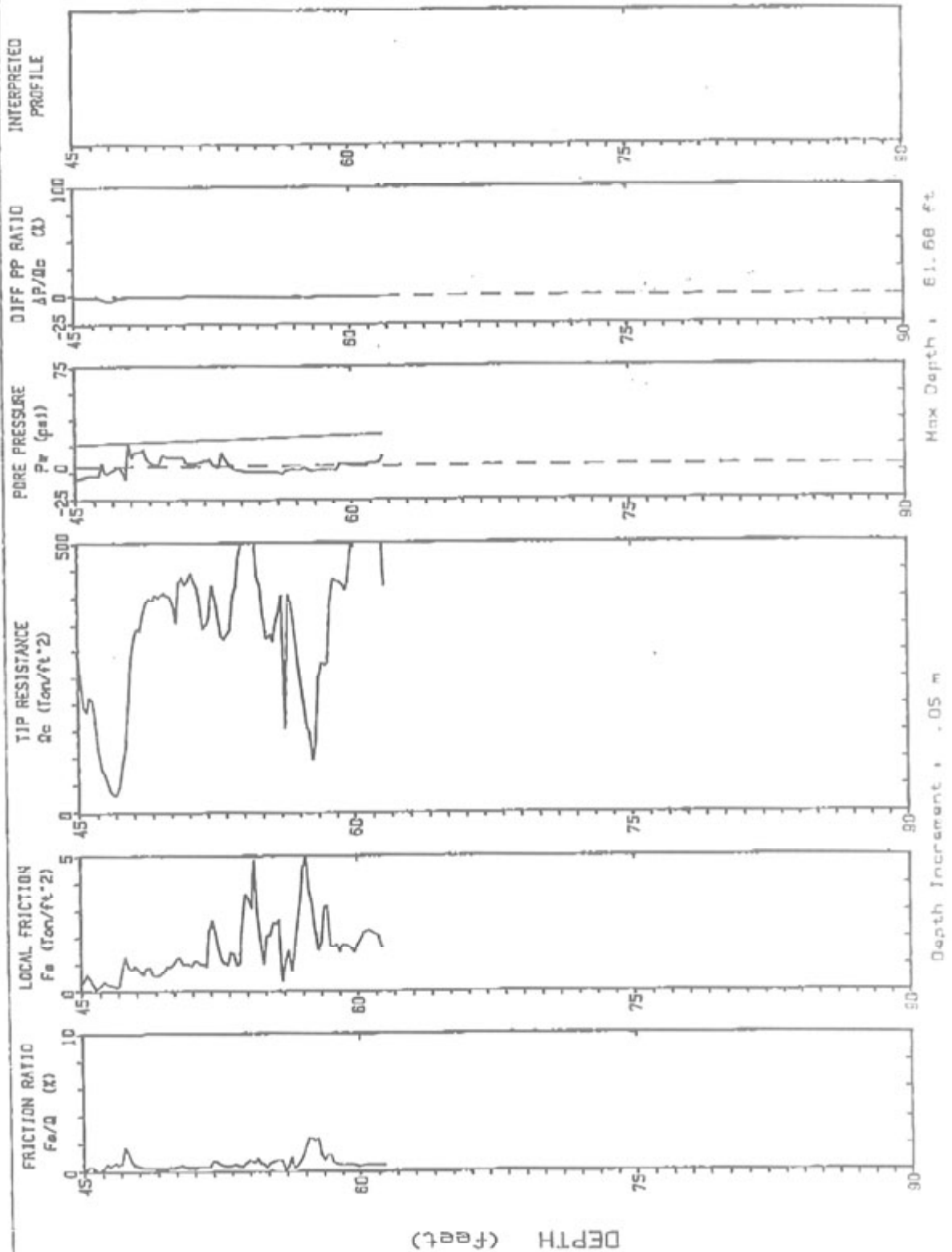
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V B I

Operator : VIRGIL A. BAKER
Location : CPT-2

CPT Date : 02-18-92 12:35
Cone Used : HO 322

Sounding : 92Z056 Pg 2 / 2
Job No. : 92001G



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JOB NO: 92001G1

DATE: 2/16/93

FIGURE
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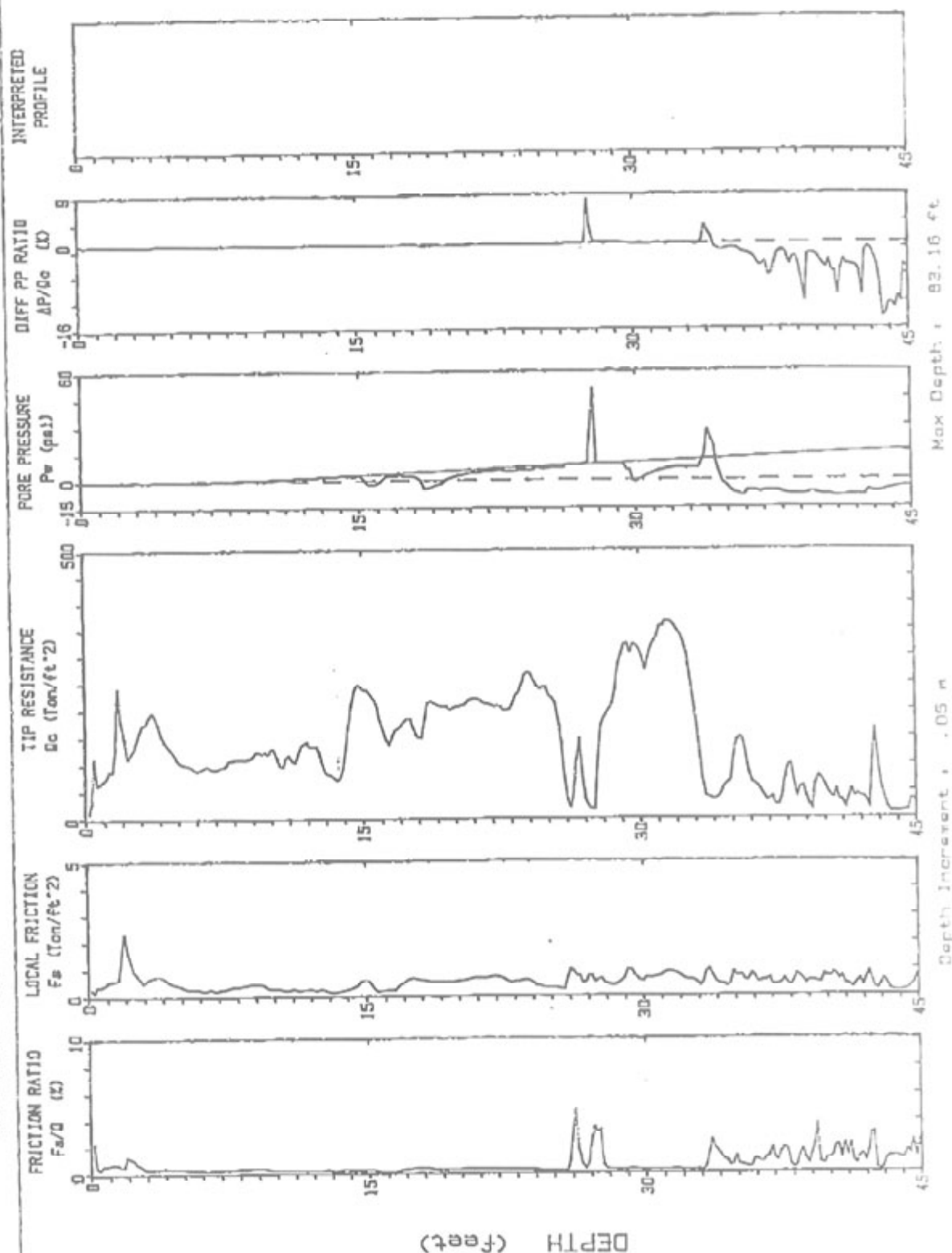
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V B I

Sounding : 92Z057 Pg 1 / 2
Job No. : 92001G

CPT Date : 02-18-92 13:47
Cone Used : HO 322

Operator : VIRGIL A. BAKER
Location : CPT-3



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DATE: 2/16/93

FIGURE
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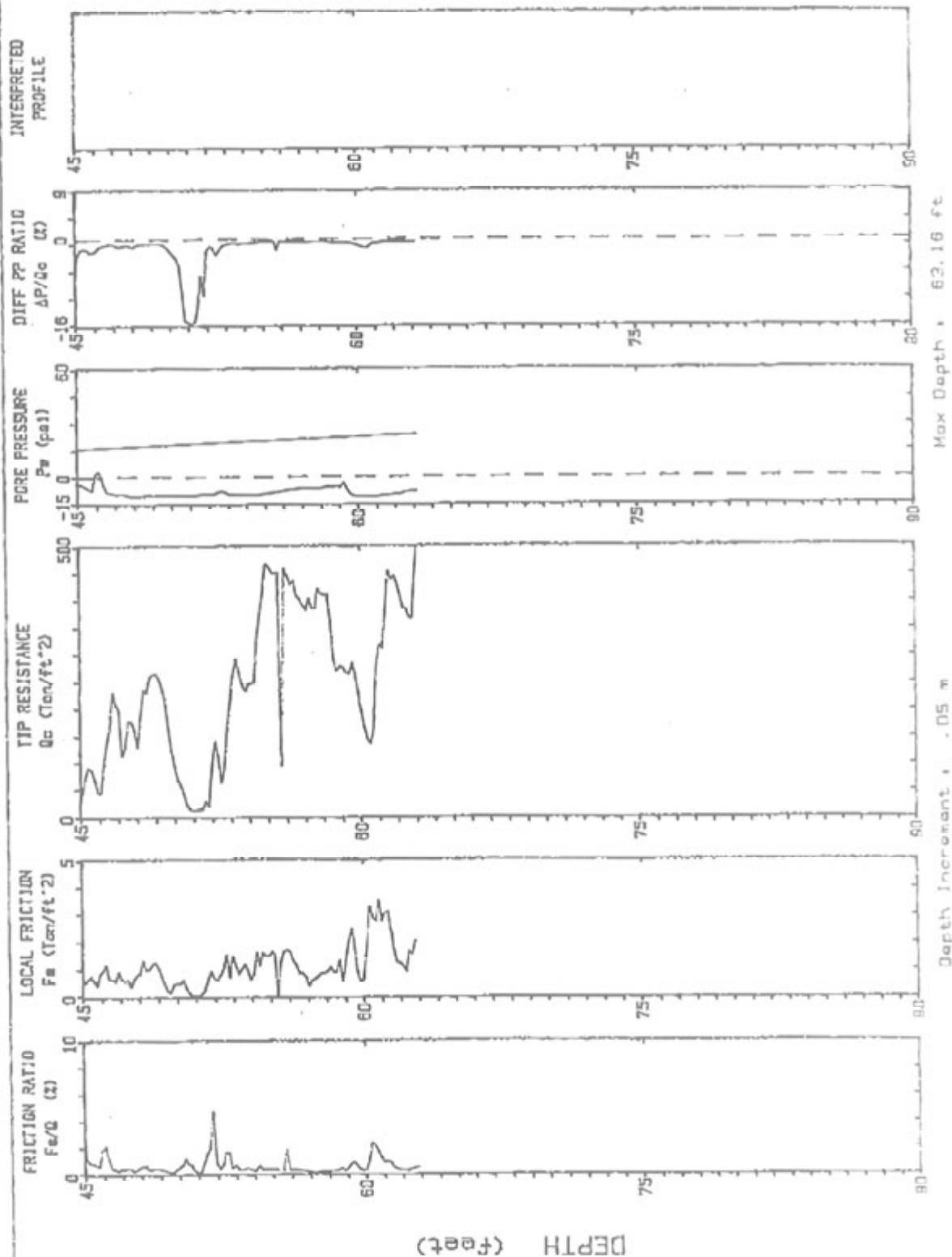
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V B I

Sounding : 922057 Pg 2 / 2
Job No. : 92001G

CPT Data : 02-18-92 13:47
Cone Used : HD 322

Operator : VIRGIL A. BAKER
Location : CPT-3



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FIGURE
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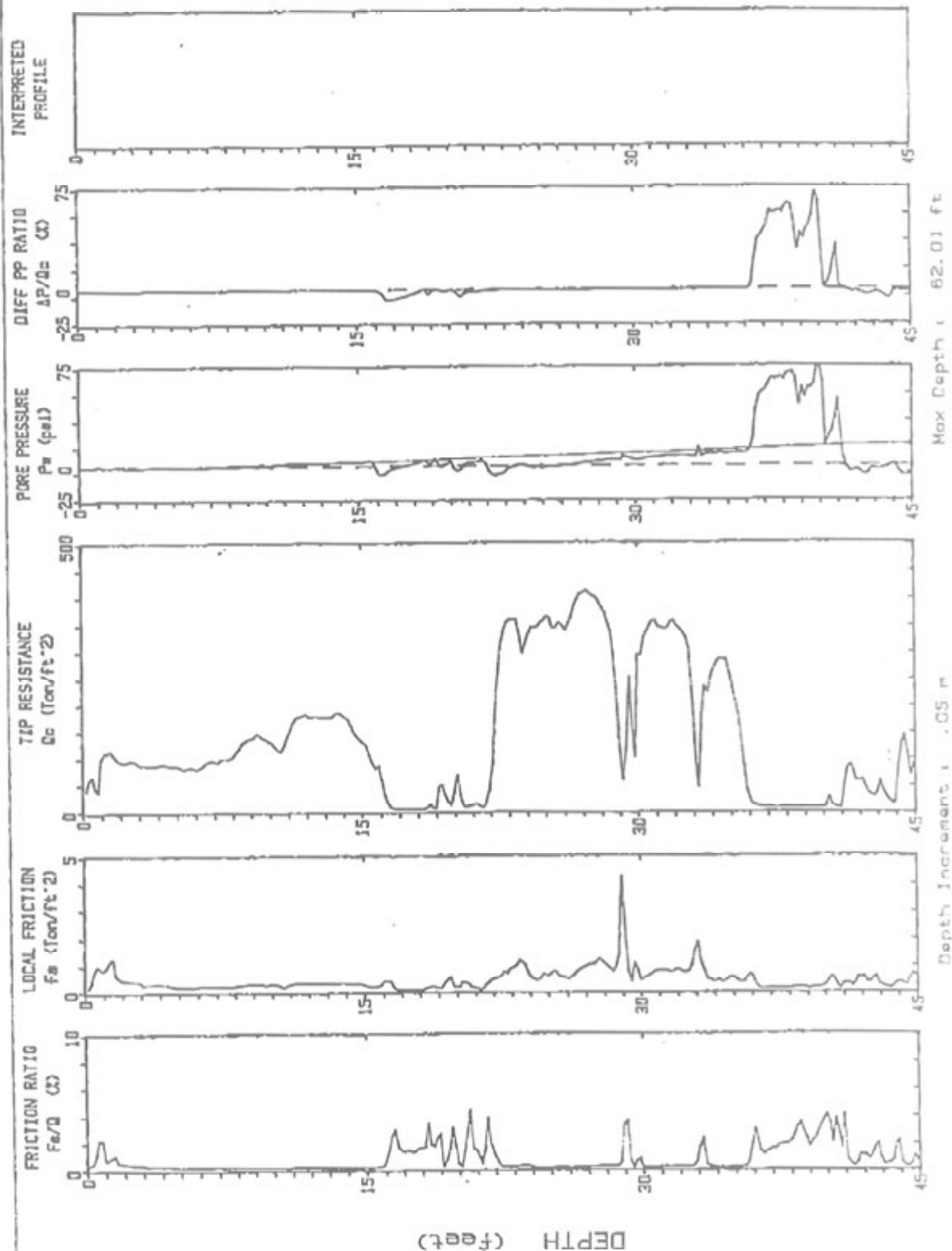
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V B I

Operator : VIRGIL A. BAKER
Location : CPT-4

CPT Date : 02-18-92 14:47
Cone Used : HQ 322

Sounding : 92Z058 Pg 1 / 2
Job No. : 92001G



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DATE: 2/16/93

FIGURE
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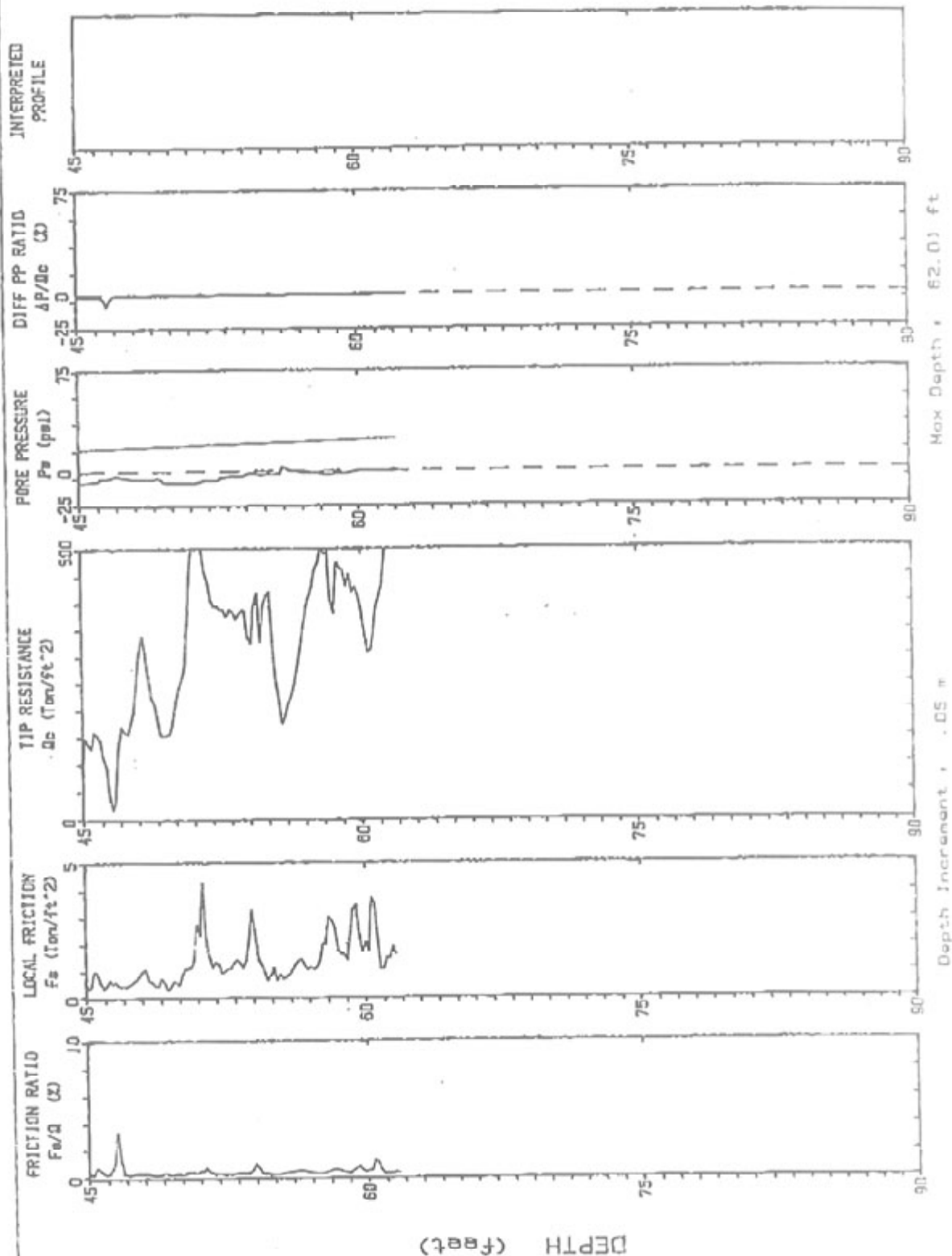
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V B I

Operator : VIRGIL A. BAKER
Location : CPT-4

CPT Date : 02-18-92 14.47
Cone Used : HD 322

Sounding : 92Z058 Pg 2 / 2
Job No. : 92001G



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JOB NO: 92001G1

DATE: 2/16/93

FIGURE
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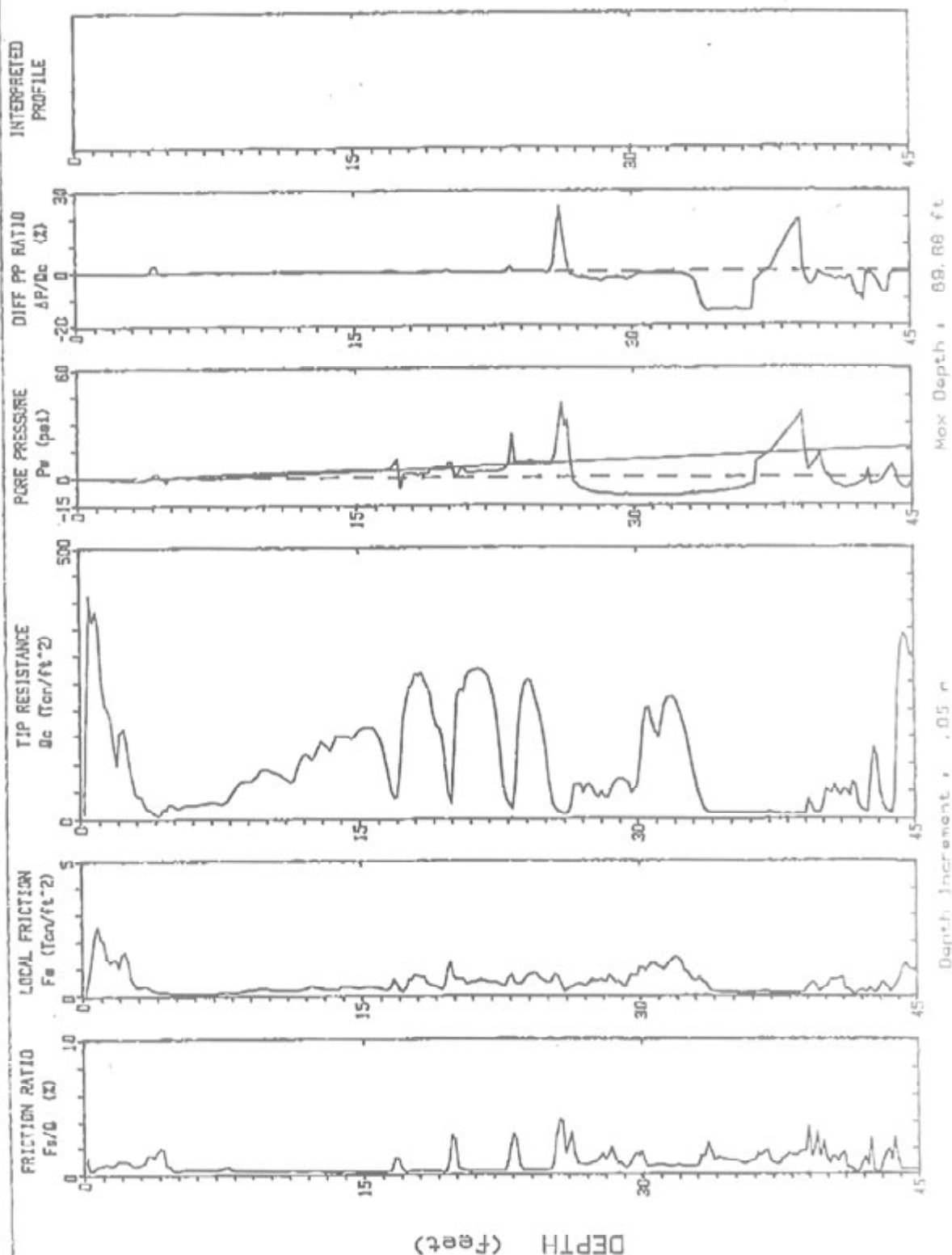
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V B I

Operator : VIRGIL A. BAKER
 Location : CPT-5

CPT Date : 02-18-92 15:45
 Cone Used : HO 322

Sounding : 92Z059 Pg 1 / 2
 Job No. : 92001G



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FIGURE
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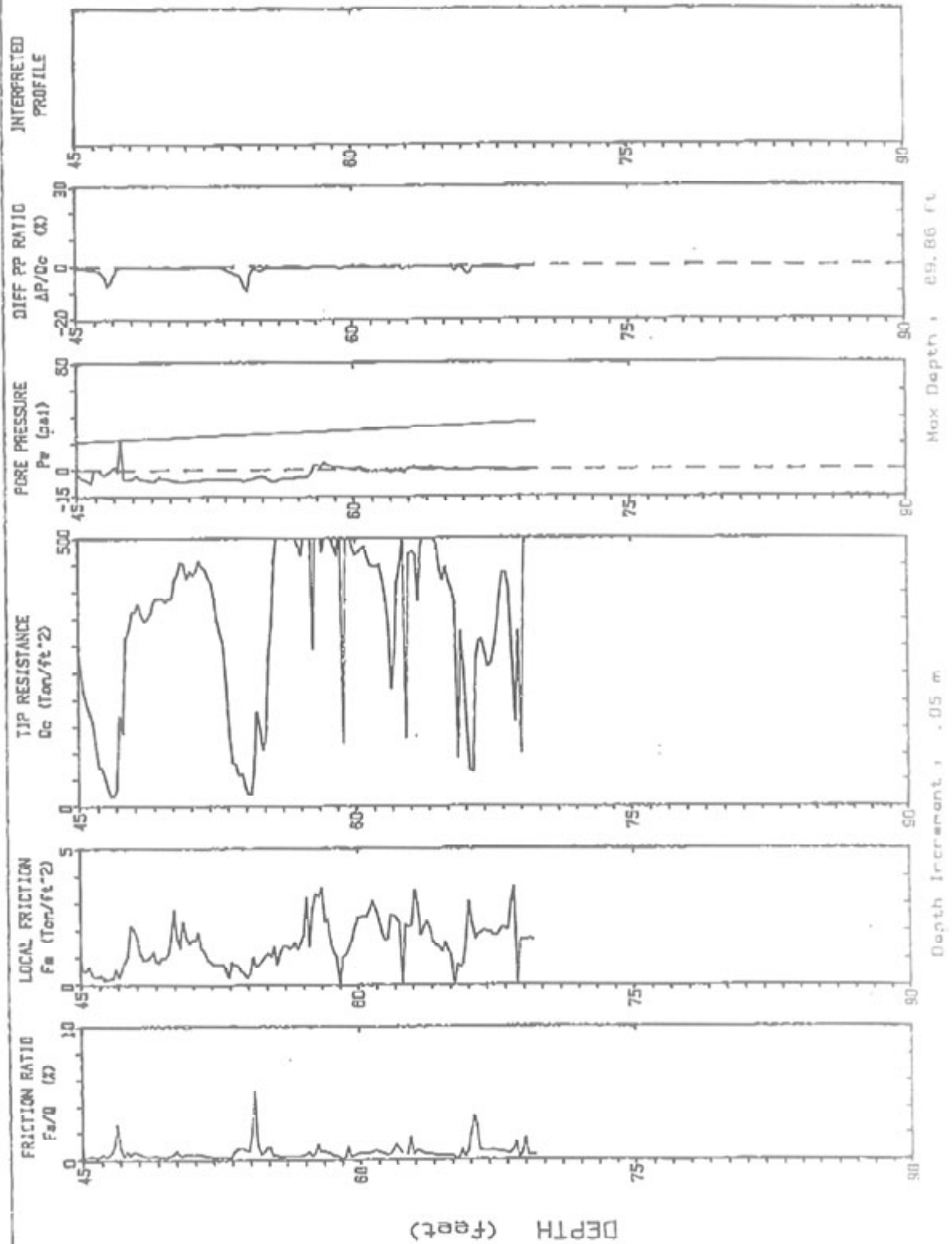
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V B I

Operator : VIRGIL A. BAKER
Location : CPT-5

CPT Data : 02-18-92 15:45
Cone Used : HO 322

Sounding : 922059 Pg 2 / 2
Job No. : 92001G



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MBARI - Buildings 3 and 4
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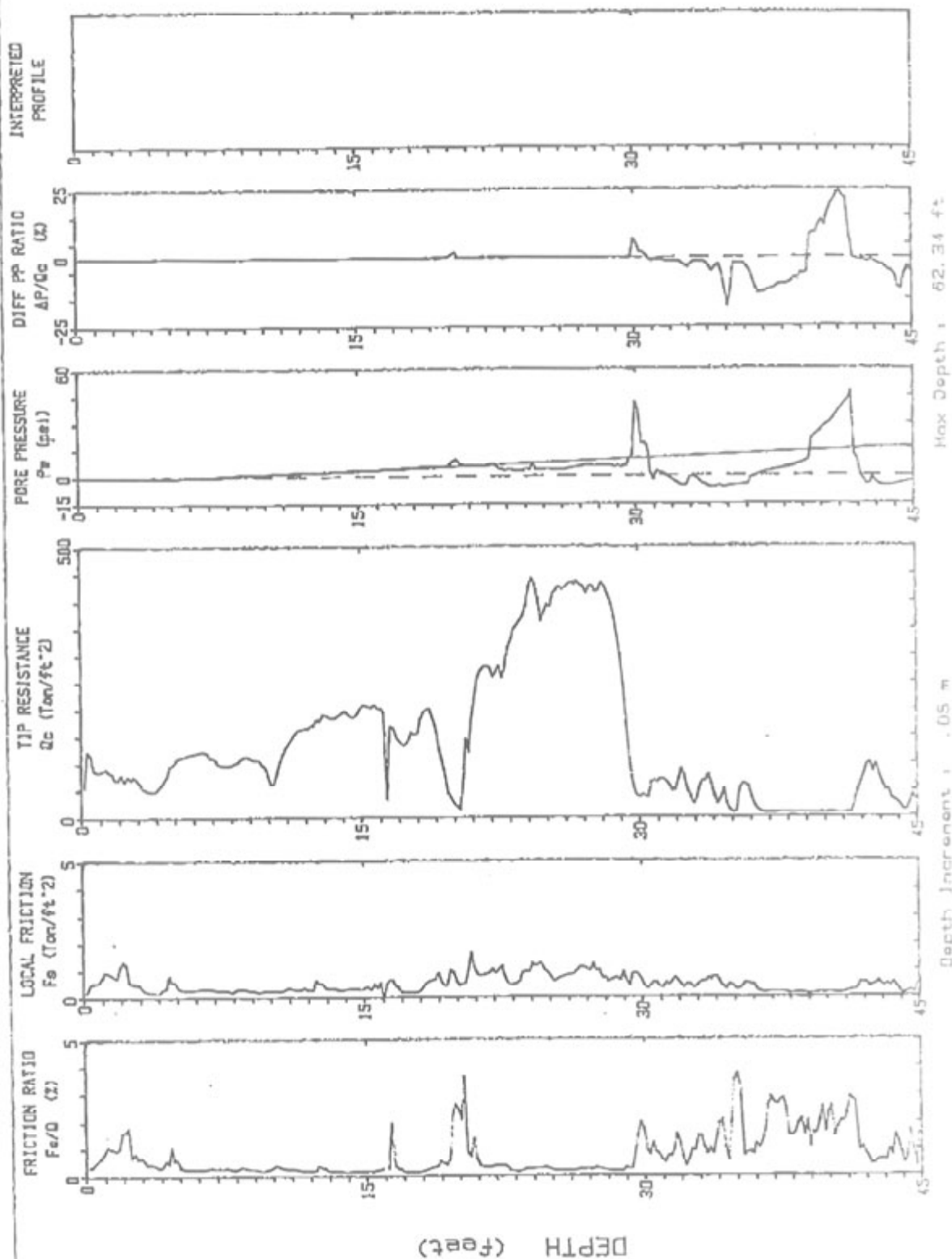
JOB NO: 92001G1

DATE: 2/16/93

FIGURE
63

PAGE
A63

V B I

Sounding : 922061 Pg 1 / 2
Job No. : 92001GCPT Date : 02-18-92 17:25
Cone Used : HD 322Operator : VIRGIL A. BAKER
Location : CPT-6ARUTHERFORD & CHEKENE CONSULTING
a caltrans corporation ENGINEERS303 Second Street, Suite 800 North
San Francisco, California 94107

(415) 495-4222

CONE PENETRATION TEST DATA
MBARI - Buildings 3 and 4
Moss Landing, California

JOB NO: 92001G1

DATE: 2/16/93

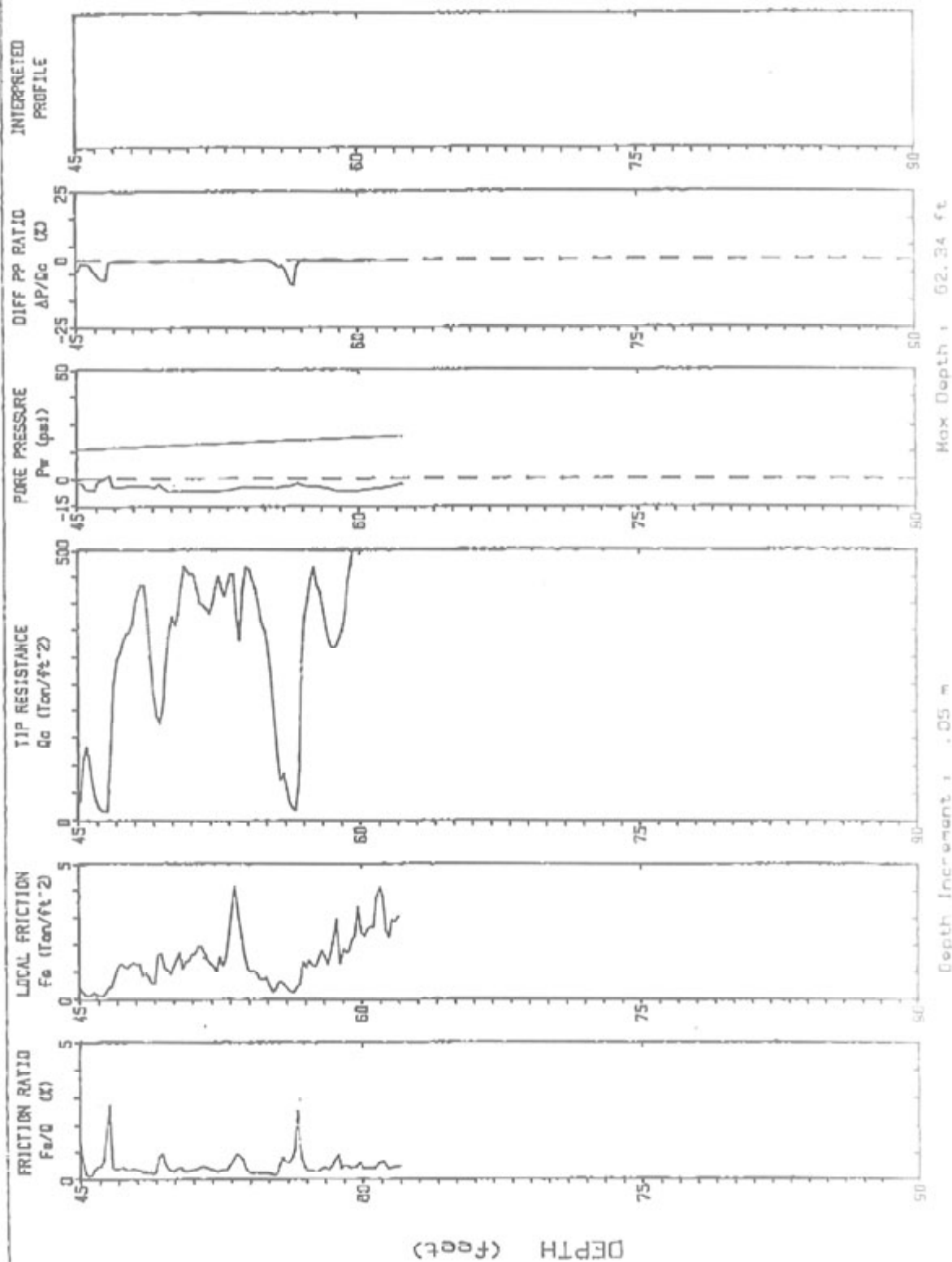
FIGURE
64PAGE
A64

V B I

Sounding : 92Z061 Pg 2 / 2
Job No. : 92001G

CPT Date : 02-18-92 17:25
Cone Used : HD 322

Operator : VIRGIL A. BAKER
Location : CPT-6A



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CONE PENETRATION TEST DATA
MBARI - Buildings 3 and 4
Moss Landing, California

JOB NO: 92001G1

DATE: 2/16/93

FIGURE
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A65

May 1999

NOTES

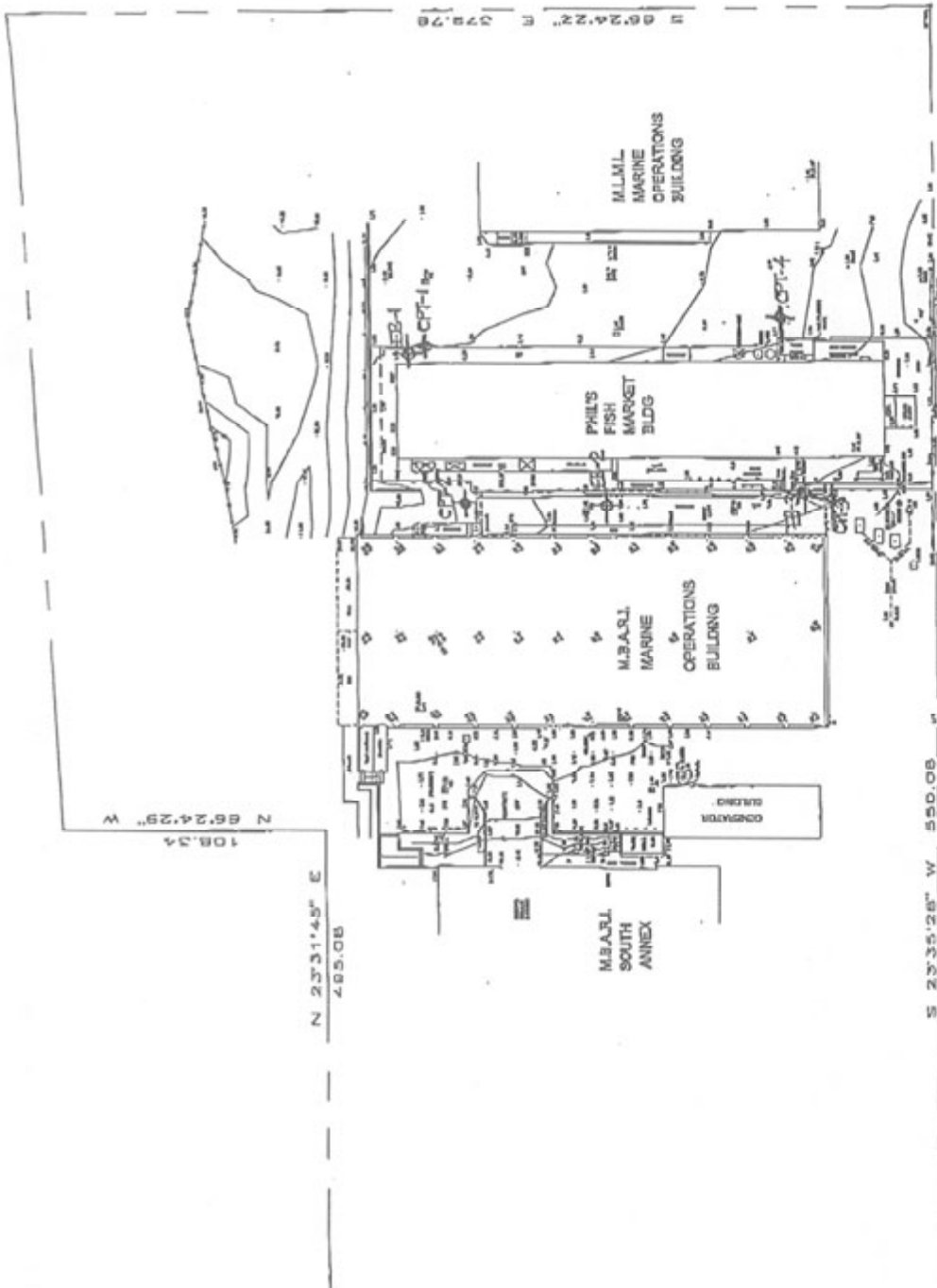
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31. Station 11+00.00 to 11+00.00 - 11+00.00
32. Station 11+00.00 to 11+00.00 - 11+00.00
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62. Station 11+00.00 to 11+00.00 - 11+00.00
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71. Station 11+00.00 to 11+00.00 - 11+00.00
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74. Station 11+00.00 to 11+00.00 - 11+00.00
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78. Station 11+00.00 to 11+00.00 - 11+00.00
79. Station 11+00.00 to 11+00.00 - 11+00.00
80. Station 11+00.00 to 11+00.00 - 11+00.00
81. Station 11+00.00 to 11+00.00 - 11+00.00
82. Station 11+00.00 to 11+00.00 - 11+00.00
83. Station 11+00.00 to 11+00.00 - 11+00.00
84. Station 11+00.00 to 11+00.00 - 11+00.00
85. Station 11+00.00 to 11+00.00 - 11+00.00
86. Station 11+00.00 to 11+00.00 - 11+00.00
87. Station 11+00.00 to 11+00.00 - 11+00.00
88. Station 11+00.00 to 11+00.00 - 11+00.00
89. Station 11+00.00 to 11+00.00 - 11+00.00
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94. Station 11+00.00 to 11+00.00 - 11+00.00
95. Station 11+00.00 to 11+00.00 - 11+00.00
96. Station 11+00.00 to 11+00.00 - 11+00.00
97. Station 11+00.00 to 11+00.00 - 11+00.00
98. Station 11+00.00 to 11+00.00 - 11+00.00
99. Station 11+00.00 to 11+00.00 - 11+00.00
100. Station 11+00.00 to 11+00.00 - 11+00.00

LEGEND

Gravelly Surface
Top, Area Sandstone



Scale: 1" = 20'



Sandholt Road
(a 50 foot wide county road)

RUTHERFORD & CHEKENE CONSULTING a full service engineering firm		SITE, BORING AND CPT LOCATION PLAN Marine Tech Lab, MBARI Moss Landing, California	
305 Second Street, Suite 800 North San Francisco, California 94107	(415) 495-4222	JOB NO: 990210	DATE: 5/1/99
		FIGURE 2	PAGE 42

Soil Symbols and Descriptions

Symbol	Group Abbreviation (U.S.C.S.)	Group Name
	GW	Well-graded Gravel
	GP	Poorly-graded Gravel
	GM	Silty Gravel
	GC	Clayey Gravel
	SW	Well-graded Sand
	SP	Poorly-graded Sand
	SM	Silty Sand
	SC	Clayey Sand
	ML	Low-plasticity Silt
	CL	Low-plasticity Clay
	OL	Low-plasticity Organic Silt and Clay
	MH	High-plasticity Silt
	CH	High-plasticity Clay
		Weathered Rock

WATER LEVEL SYMBOLS

	Water level during drilling, with date
	Water level after drilling, with date
	Water level after 24 hours, with date

Soil Description Terminology

Soils are identified and classified in this report according to the Unified Soil Classification System with the following modifiers:

CONSISTENCY OF SOILS

Granular Soils	Blows/Foot	Cohesive Soils
Very Loose	0 to 5	Very Soft
Loose	6 to 10	Soft
Semi-Compact	11 to 20	Stiff
Compact	21 to 35	Very Stiff
Dense	36 to 70	Hard
Very Dense	70+	Very Hard

PARTICLE SIZES

Components	Size or Sieve No.
Boulders	Over 12 inches
Cobbles	3 to 12 inches
Gravel - Coarse	3/4 to 3 inches
- Fine	No. 4 to 3/4 inch
Sand - Coarse	No. 10 to No. 4
- Medium	No. 40 to No. 10
- Fine	No. 200 to No. 40
Fines (Silt and Clay)	Below No. 200

SOIL MOISTURE

Descriptive Term	Description
Dry	Dry of Standard Proctor Optimum
Damp	Sand Only
Moist	Near Standard Proctor Optimum
Wet	Wet of Standard Proctor Optimum
Saturated	Free Water in Sample

SAMPLING METHODS

Standard Penetration Samples are taken by driving a standard 1.4" I.D. split-spoon sampler into the ground with a 140-pound weight falling 30 inches, per ASTM Test Method D-1586.

SAMPLE TYPES

Symbol	Sampling Method or Tool
	Sample from auger cuttings
	Split-spoon sampler, ASTM D1586
	Modified California sampler
	Split spoon sampler with liners
	Thinwall tube sampler, 2" O.D. x 1-7/8" I.D.
	Thinwall tube sample, 3" O.D. x 2-7/8" I.D.
	Partial sample of cuttings, washed
	NX - Core Barrel - 2" I.D.

The boring logs show subsurface conditions at the dates and locations shown, and are not warranted to be representative of subsurface conditions at other locations and times.

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Key to Exploratory Boring Logs
Marine Tech Lab
MBARI
Moss Landing, California

JOB NO: 99021G

DATE: 11 May 1999

FIGURE
3

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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore 4-inch Auger/Rotary Wash
 SURFACE ELEVATION: NA

LOGGED BY: John Tabor
 START: 12/17/98 COMPLETE: 12/17/98 PAGE: 1 of 2
 WATER LEVEL AND TIME: 6'8" @ 3:00pm, 12/17/98

SIEVE ANALYSIS	ATTERBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/ 6 in.	SAMPLE DEPTH (feet)	SYMBOLS	SOIL DESCRIPTION
	PLASTIC INDEX	LIQUID LIMIT (%)							
				0.5	5.6	10,7,7	0	SP	Dark brown, semi-compact, poorly sorted sand,
								SP	Brown-tan, loose, fine-to-medium poorly sorted sand, damp, becoming more coarse with depth.
				1.2	4.4	4,4,5			 Groundwater encountered during drilling.
				2.5	13.7	3,6,10	10	SP	Gray-brown, semi-compact, poorly graded medium sand with some gravel. Saturated.
					19.6	8,13,16			Gray-tan, compact, poorly graded, fine-to-medium sand, Saturated.
				23.5	10,13,14		20		
				3.0	21.6	10,12,15			
						2,2,3	30	MH	Gray-green, soft to very soft, high plastic silt.
						4,7,7			
				32	33.5	2,3,4		SM	Gray-green, loose, silty sand with some shell fragments. Saturated.
							40		

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EXPLORATORY SOIL BORING
 MARINE TECH LAB, MBARI
 MOSS LANDING, CA

303 Second Street, Suite 800 North
 San Francisco, California 94107

(415) 495-4222

JOB NO: 99021G

DATE: 5/11/99

FIGURE
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A4

EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore 4-inch Auger/Rotary Wash
SURFACE ELEVATION: NA

LOGGED BY: John Tabor
START: 12/17/98 **COMPLETE:** 12/18/98 **PAGE:** 2 of 2
WATER LEVEL AND TIME: 6'8" @ 3:00pm, 12/17/98

SIEVE ANALYSIS	ATTENBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/ 6 in.	SAMPLE	DEPTH (feet)	SYMBOLS	SOIL DESCRIPTION
	PLASTIC INDEX	LIQUID LIMIT (%)								
30	60			59	41.0	P,2,3		40	MH	Gray-green,very soft, high plastic silt.
				8.1	23.1	8,13,14			SP-SM	Gray-brown, compact to dense, poorly graded medium sand and silty sand interbedded with some high plastic silt layers. Saturated.
				11	25.5	9,18,26		50		
				87	43.3	10,7,7			MH	Gray-green, stiff, high plastic silt.
				53.5	3,5,8			60		
				40.9	4,7,10				CH	Gray, stiff to very stiff high plasticity clay.
				85	32.0	7,12,21		70		
										Bottom of Hole @ 71.5'
								80		

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EXPLORATORY SOIL BORING
 MARINE TECH LAB, MBARI
 MOSS LANDING, CA

JOB NO: 99021G

DATE: 5/11/99

FIGURE
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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore 4-inch Auger/Rotary Wash
SURFACE ELEVATION: NA

LOGGED BY: John Tabor
START: 12/16/98 **COMPLETE:** 12/16/98 **PAGE:** 2 of 2
WATER LEVEL AND TIME: 6' 2" @ 11:28 am, 12/16/98

SIEVE ANALYSIS	ATTERBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/ 6 in.	SAMPLE	DEPTH (feet)	SYMBOLS		SOIL DESCRIPTION
	PLASTIC INDEX	LIQUID LIMIT (%)									
				21	26	5,5,3		40		SM	Gray, loose, fine silty sand and sandy silt. BOH - 41.5 feet
		</									

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EXPLORATORY SOIL BORING
 MARINE TECH LAB, MBARI
 MOSS LANDING, CA

JOB NO: 99021G

DATE: 5/11/99

FIGURE
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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore 4-inch Auger/Rotary Wash
 SURFACE ELEVATION: NA

LOGGED BY: John Tabor
 START: 12/16/98 COMPLETE: 12/16/98 PAGE: 1 of 2
 WATER LEVEL AND TIME: 6'2" @ 11:28, 12/16/98

SIEVE ANALYSIS	ATTERBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/ 6 in.	SAMPLE DEPTH (feet)	SYMBOLS	SOIL DESCRIPTION
	PLASTIC INDEX	LIQUID LIMIT (%)							
						5,5,5	0	GW	2.5 inches Asphalt Concrete over 4 inches Class 2 Aggregate Base.
						3,4,4		SP	Brown-tan, loose to semi-compact, fine-to-medium poorly sorted sand becoming more coarse with depth. Damp.
			0.4	4.3	2,4,7	3,5,6			
			0.7	13.8	2,3,4				
			3.2	15.7	3,4,7			SP	 Groundwater encountered during drilling.
					18.5	3,6,7	10		
					5,8,10			SP	Gray-brown, semi-compact to compact, poorly graded medium sand with shell fragments, interbedded with some silty layers.
					14.7	8,8,11			
					10,13,15				
			2.1	24.1	8,10,13			SP	Gray, compact, poorly graded, fine sand with some shell fragments.
					6,9,13				
					24.6	6,10,12			
					24.7	7,10,13	20		
					6,12,15				
					8,12,14			SP	Gray, medium to coarse poorly graded sand with shell fragments.
			2.6	16.4	8,11,13				
			48	39.0	3,5,2		30	SM	Gray, loose, fine silty sand.
					P,1,1			MH	Gray, very soft high plasticity silt.
							40	SM	Gray, loose, fine silty sand.

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EXPLORATORY SOIL BORING
 MARINE TECH LAB, MBARI
 MOSS LANDING, CA

JOB NO: 99021G

DATE: 5/11/99

FIGURE
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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore 4-inch Auger/Rotary Wash
 SURFACE ELEVATION: NA

LOGGED BY: John Tabor
 START: 12/16/98 COMPLETE: 12/17/98 PAGE: 1 of 2
 WATER LEVEL AND TIME: 6'8" @ 4:00pm, 12/16/98

SIEVE ANALYSIS	ATTERBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/ 6 in.	SAMPLE	DEPTH (feet)	SYMBOLS	SOIL DESCRIPTION
	PLASTIC INDEX	LIQUID LIMIT (%)								
						6,9,8		0	GW	2.5 inches Asphalt Concrete over 4 inches Class II Aggregate Base
				1.5	5.2	5,5,5			SP	Brown-tan, loose, fine-to-medium poorly sorted sand, becoming more coarse with depth. Damp.
						3,4,6				
				45		3,4,7			SP	Brown-tan, loose to semi-compact, medium-to-coarse poorly graded sand. Saturated.
				2.2	14	4,8,10		10		
						5,6,9			SP	Gray-brown, semi-compact, poorly graded medium sand, interbedded with some silty layers, and shell fragments. Saturated
						10,12,16			SP	Gray, compact, poorly graded, fine sand with some shell fragments. Saturated.
				3.9	18	9,13,15				
						9,14,18				
						9,12,14		20		
				3.7	15	12,17,21			SP	Gray, medium to coarse, poorly graded sand with some gravel and shell fragments. Saturated.
						10,13,16				
									SM	Gray-green, loose, silty fine sand.
				29	27	2,3,4		30		(31.5' to 34', Shelby push @ 350 psi maximum - No recovery)
									MH	Soft, high plastic silt.
										(34' to 36.5', Shelby push @ 50 psi maximum - No recovery)
										(36.5' to 39', Shelby push @ 100 psi maximum - No recovery)
								40		

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EXPLORATORY SOIL BORING
 MARINE TECH LAB, MBARI
 MOSS LANDING, CA

JOB NO: 99021G

DATE: 5/11/99

FIGURE
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A8

EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore 4-inch Auger/Rotary Wash
 SURFACE ELEVATION: NA

LOGGED BY: John Tabor
 START: 12/16/98 COMPLETE: 12/17/98 PAGE: 2 of 2
 WATER LEVEL AND TIME: 6'8" @ 4:00pm, 12/16/98

SIEVE ANALYSIS	ATTERBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/ 6 in.	SAMPLE	DEPTH (feet)	SYMBOLS	SOIL DESCRIPTION
	PLASTIC INDEX	LIQUID LIMIT (%)								
				28	29	4,5,3		40	SM	Gray, loose, silty fine sand with shell fragments.
					25	6,6,9				
				5.6	18	4,19,25		50	SP	Gray, semi-compact to dense, medium, poorly sorted sand with shell fragments and some interbedded silt layers.
					30	10,7,9				
									MH	Gray-green, soft to very soft high plasticity silt.
				45		4,5,7		60		
									SP/ SM	Gray, medium to coarse, poorly graded sand and silty sand with some gravel and shell fragments, saturated.
				6.2	13	5,8,10				
									MH	Gray-green, soft to very soft high plasticity silt.
						10,13,15		70		
										Bottom of Hole @ 71.5'
								80		

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EXPLORATORY SOIL BORING
 MARINE TECH LAB, MBARI
 MOSS LANDING, CA

JOB NO: 99021G

DATE: 5/11/99

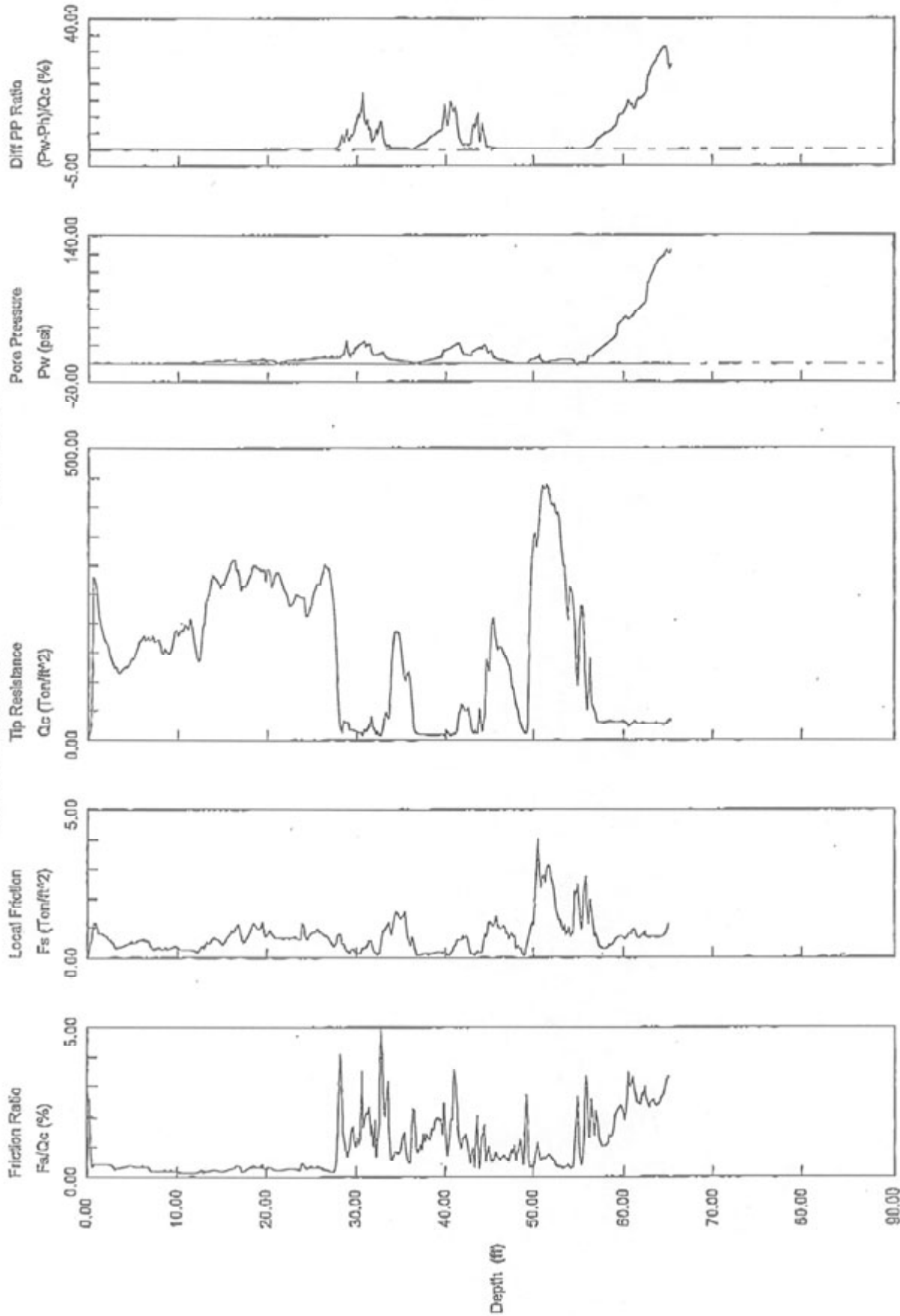
FIGURE
9

PAGE
A9

VBI IN-SITU TESTING

Operator: VIRGIL A. BAKER
Sounding: 992023
Cone Used: HO 684 TC U2

CPT Date: 01-15-99 10:43
Location: CPT-1
Job No.: 98156



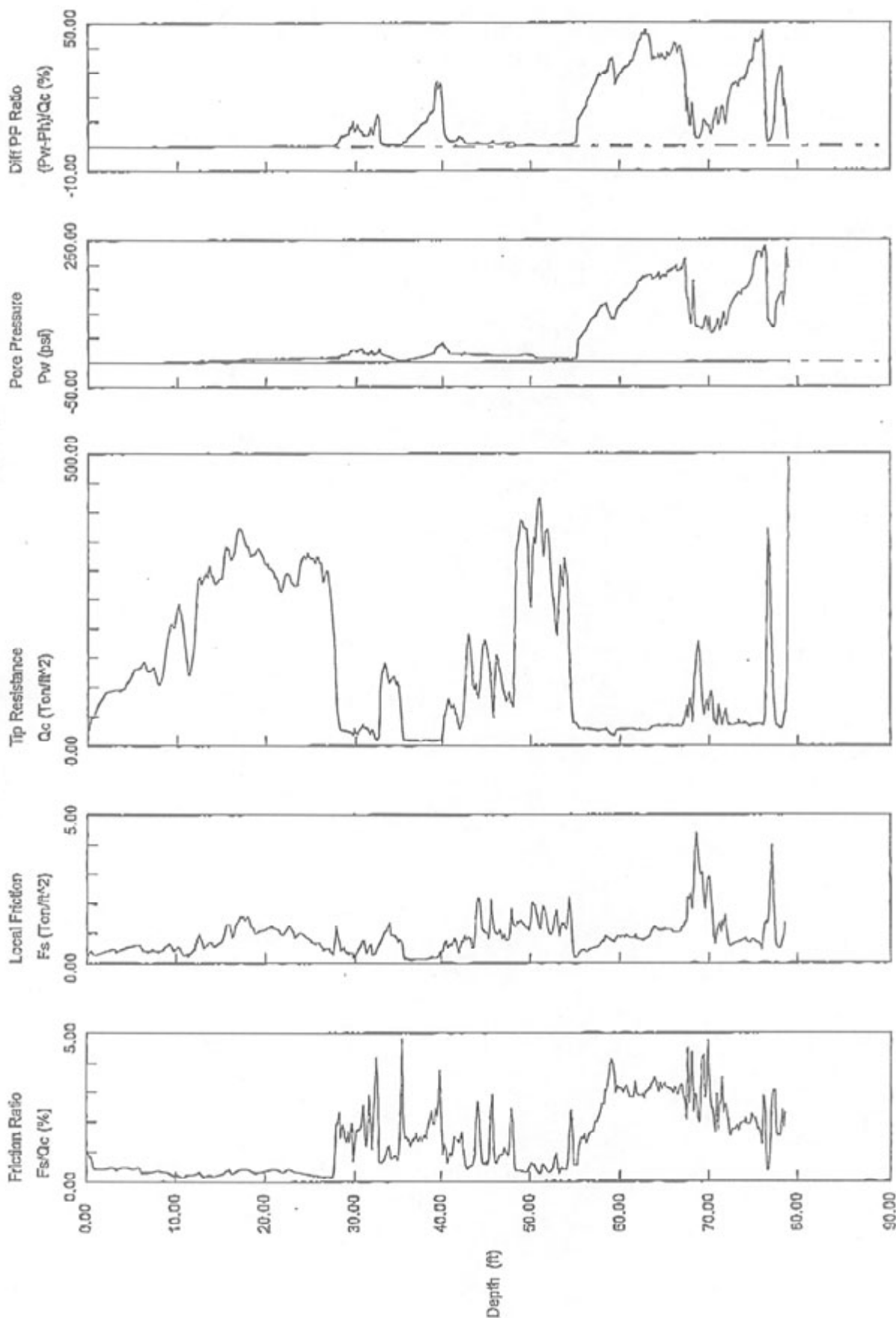
RUTHERFORD & CHEKENE CONSULTING Soils and Foundations OAKRIDGE		CONE PENETRATION TEST Marine Tech Lab, NALBET Mass Landing, California	
JSI Serial (Plot Scale 80) Nod6	DATE: 01/15/99	PROJECT NO.	DATE: 01/15/99
San Francisco, California 94107	0410 000 000000	0410 000 000000	0410 000 000000

Depth (feet)

Maximum Depth = 65.29 feet

VBI IN-SITU TESTING

Operator: VIRGIL A. BAKER
Sounding: 992026
Cone Used: HO 684 TC U2
CPT Date: 01-15-99 13:47
Location: CPT-2
Job No.: 98156



Maximum Depth = 78.90 feet

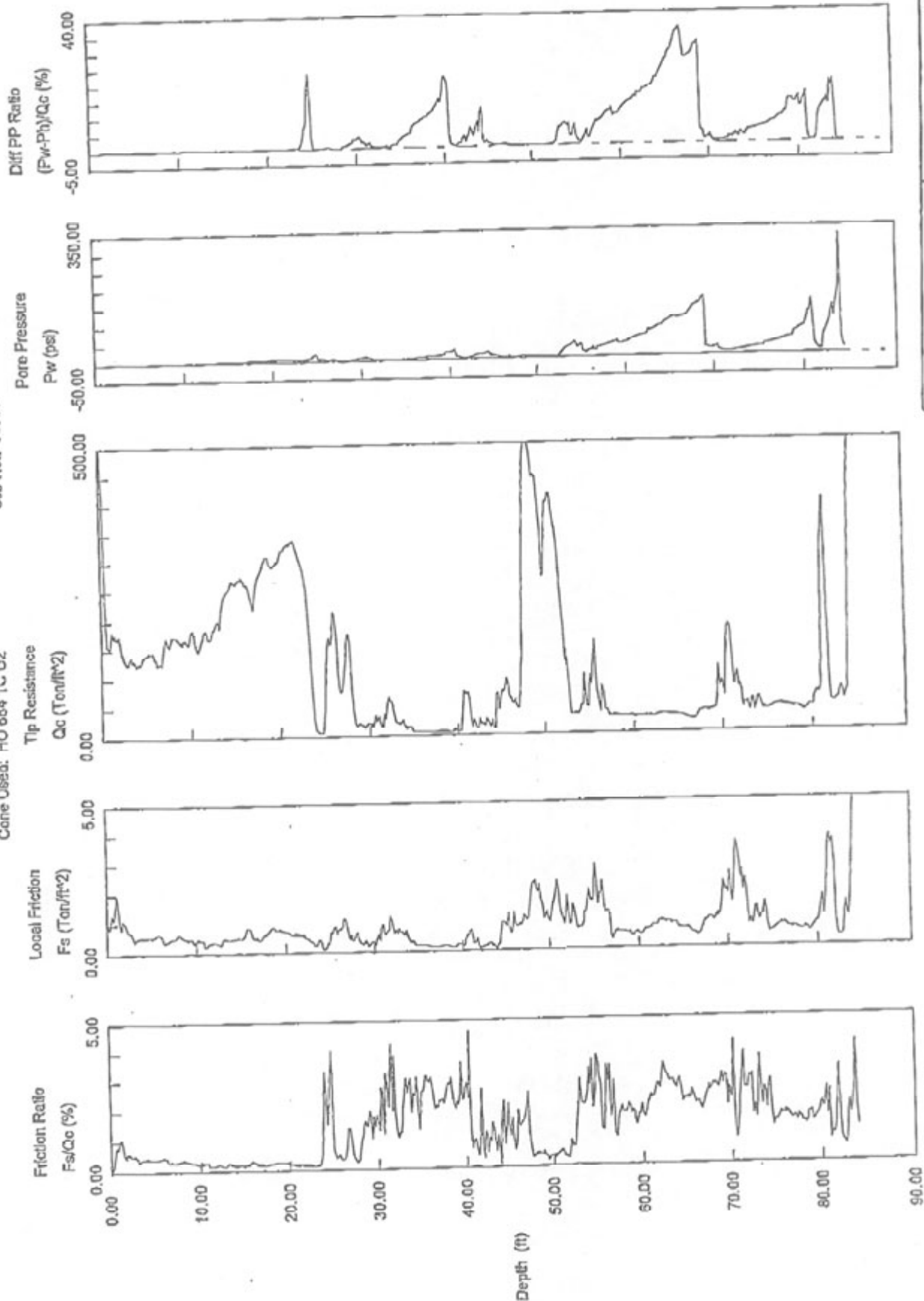
Depth Incr

RUTHERFORD A. CHEKENE CONSULTING soils & geotechnical ENGINEERS		CONE PENETRATION TEST Marine Tech Lab, VBA&E Marine Landing, California	
305 Alameda Street, Suite 300 North San Francisco, California 94103	(415) 469-1122	DATE: 2/11/99	PAGE: 11
JOB NO.: 990102		DATE: 2/11/99	PAGE: 11

VB1 IN-SITU TESTING

CPT Date: 01-15-99 12:36
 Location: CPT-3
 Job No.: 98156

Operator: VIRGIL A. BAKER
 Sounding: 992025
 Cone Used: HO 684 TC U2



CONE PENETRATION TEST
 Marine Tech Lab, MESA
 Moss Landing, California

RUTHERFORD & CHEKENE CONSULTING
 10100 S. 10th St. #100
 San Jose, CA 95128

NO Sound/Time Site 80 Red
 for RUTHERFORD & CHEKENE

MOI NOS 980110

DATE: 2/1/99

FIGURE 11

PAGE 11

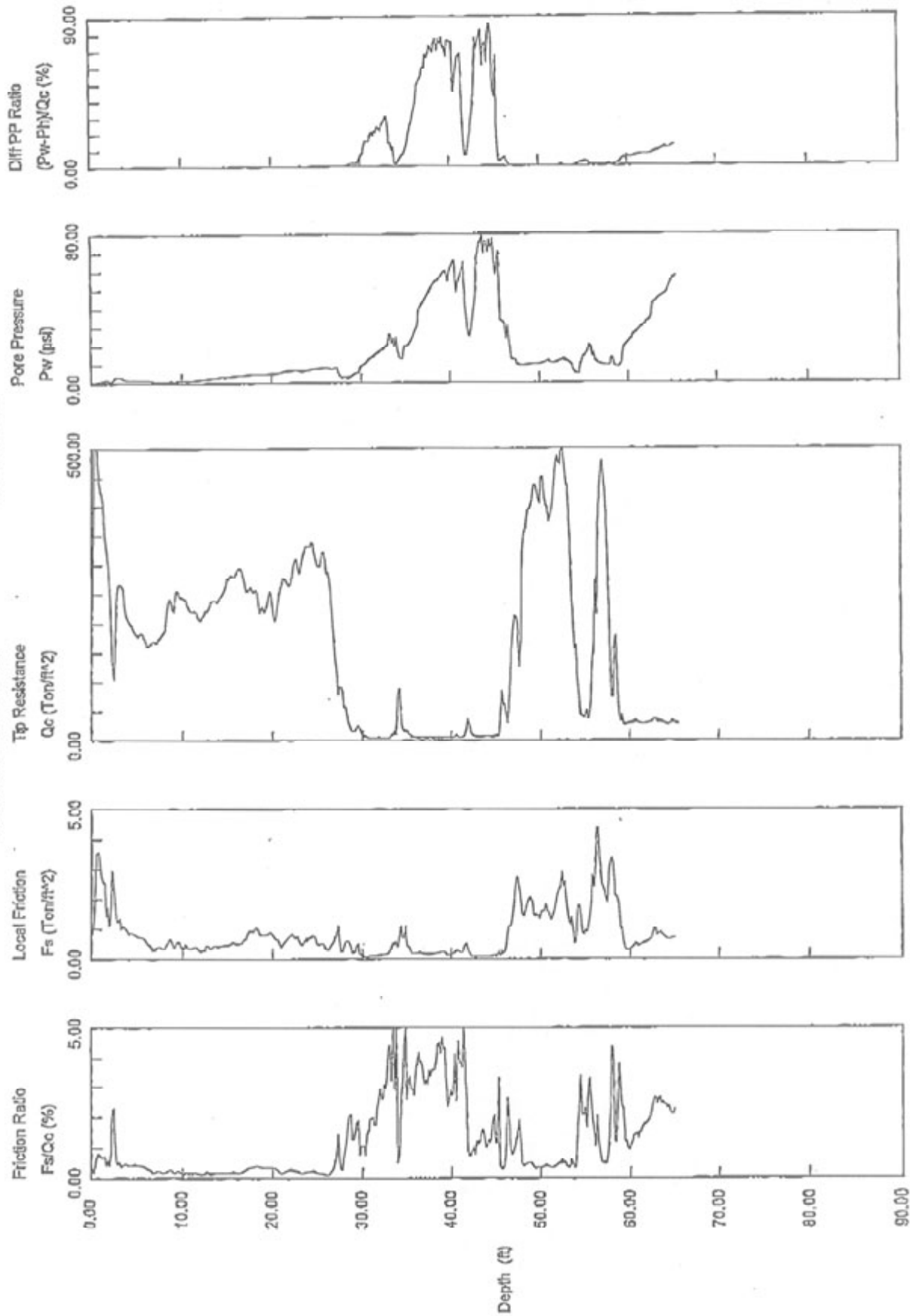
Depth In feet

Maximum Depth = 84.48 feet

VBI IN-SITU TESTING

Operator: VIRGIL A. BAKER
Sounding: 992024
Cone Used: HO 684 TC U2

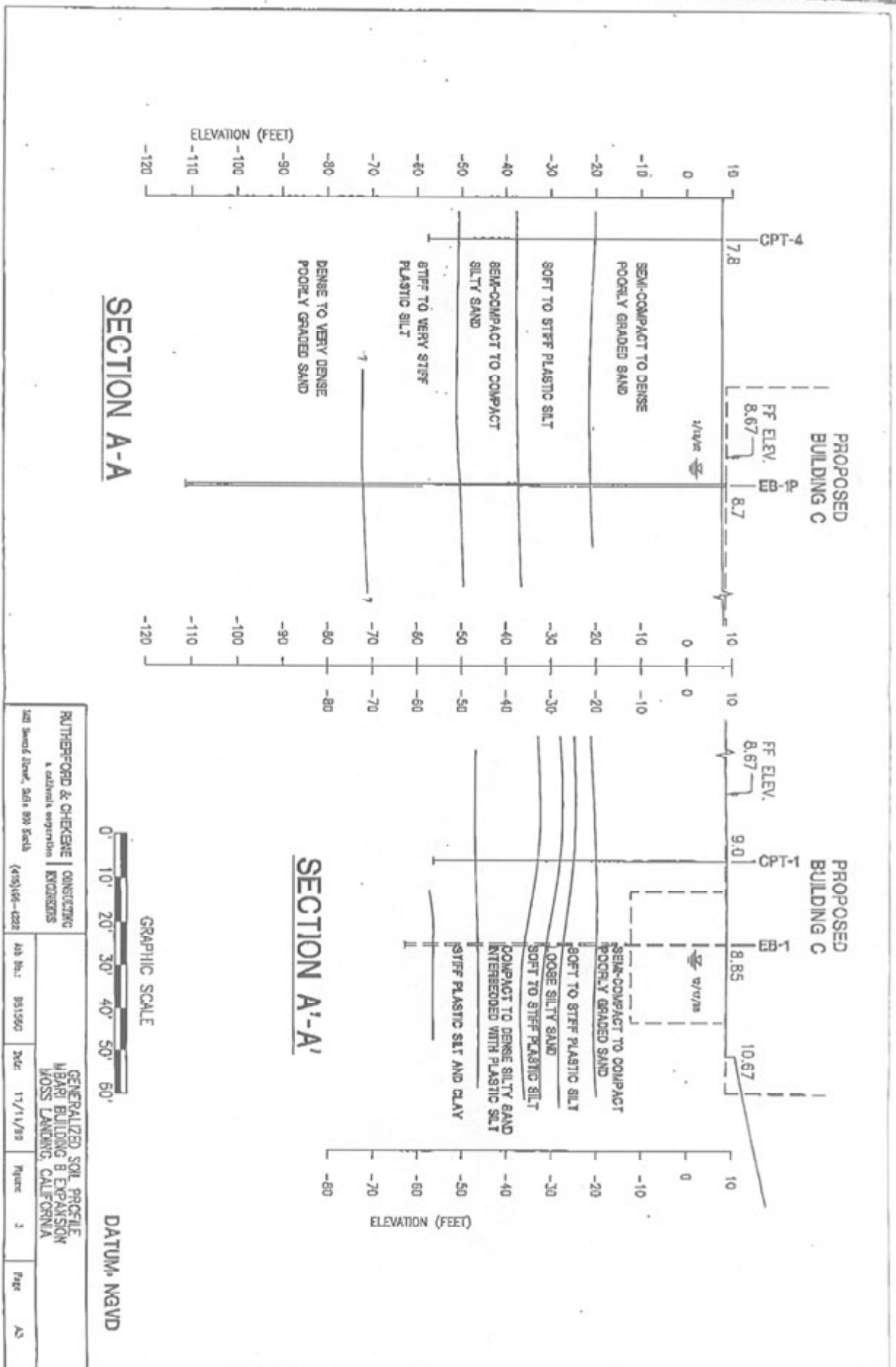
CPT Date: 01-15-99 11:29
Location: CPT-4
Job No.: 98156

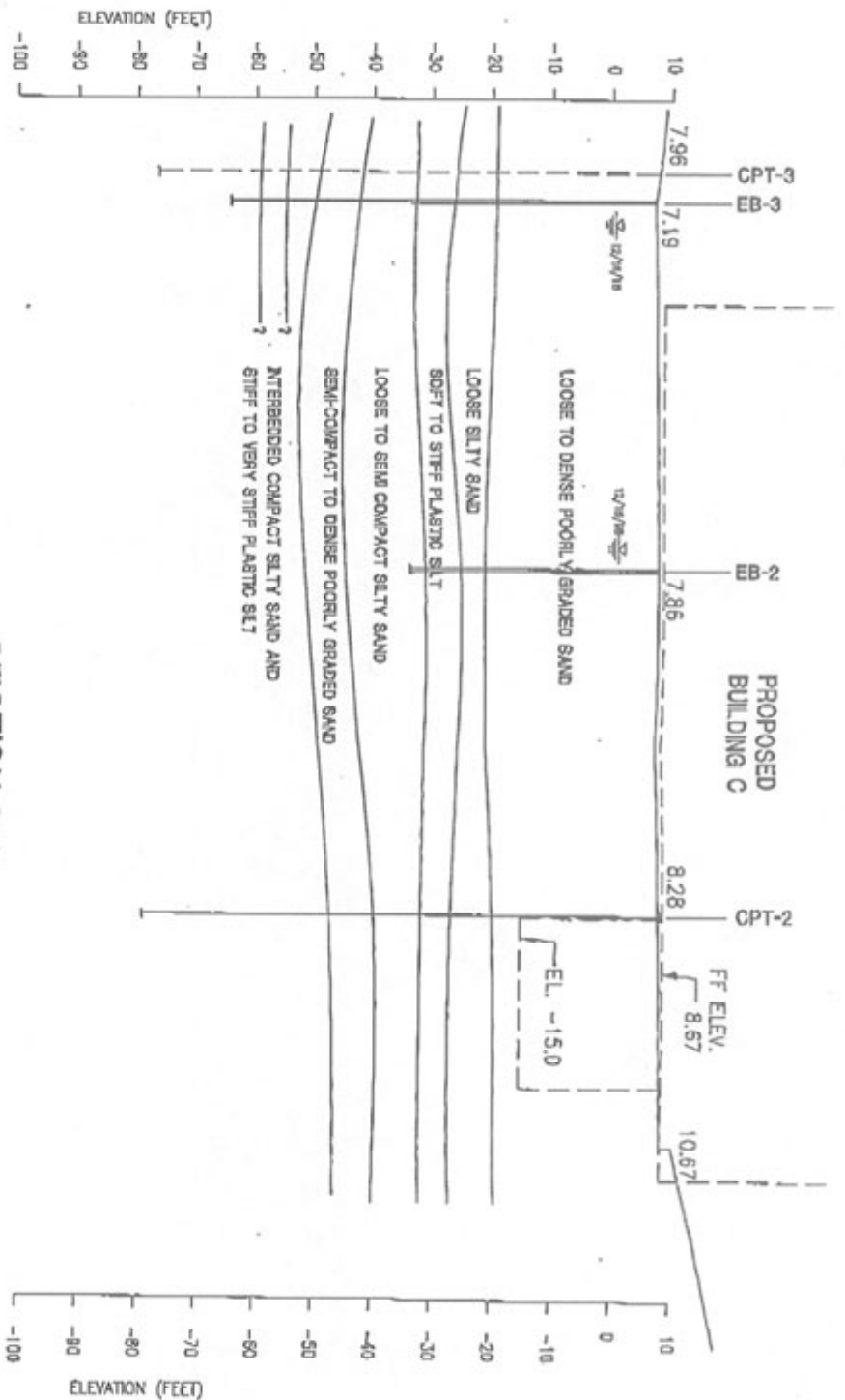


Maximum Depth = 65.29 feet
Depth Incore

RUTHERFORD & CHEKENE CONSULTING soils & geotechnical 145 Second Street, Suite 200 North San Francisco, CA 94107		DATE: 01/15/99	PROJECT: 43	PAGE: 4/3
CONE PENETRATION TEST Marden Tech Lab, M&B RE Mesa Landing, California				

Nov. 1999





SECTION B-B

GRAPHIC SCALE

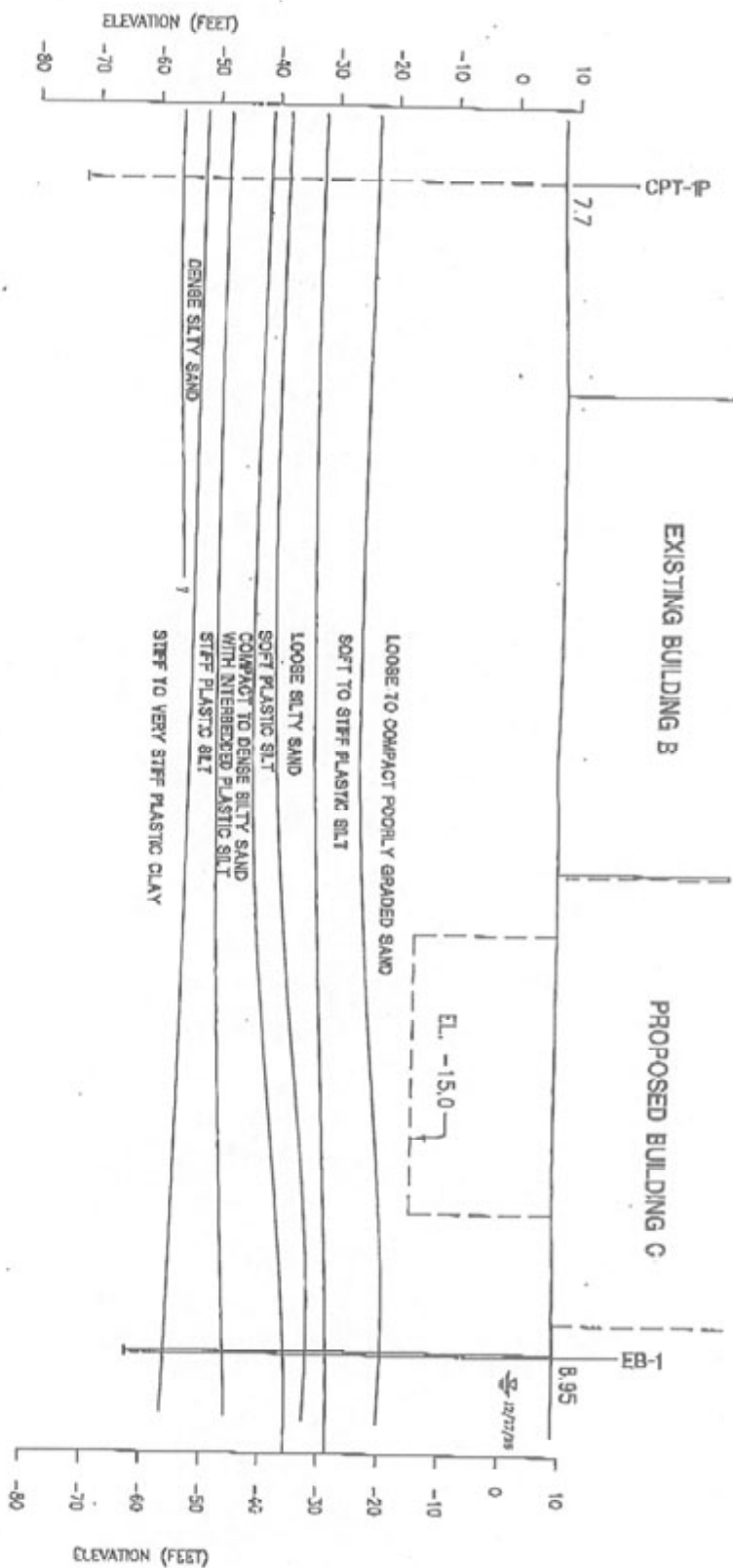
0' 10' 20' 30' 40' 50' 60'

DATUM: NGVD

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a rutherford chekene corporation ENGINEERS
110 Second Street, Suite 800 San Francisco, CA 94105
(415) 495-4222

GENERALIZED SOIL PROFILE
LIBRARY BUILDING B EXPANSION
MOSS LANDING, CALIFORNIA

As Shown: 08/19/04 Date: 11/11/99 Pages: 4 Type: A4



DATUM: NGVD

RUTHERFORD & CHEKENE CONSULTING		GENERALIZED SOIL PROFILE	
A California Corporation		MARI BUILDING B EXPANSION	
200 Second Street, Suite 400, San Francisco, CA 94105		MOSS LANDING, CALIFORNIA	
(415) 441-1222		Job No.	98156C
		Date	11/11/98
		Revised	5
		Page	AS

ELEVATION (FEET)

10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100

BUILDING A

9.7

EXISTING BUILDING B

8.67

PROPOSED BUILDING C

7.86

LOOSE TO DENSE POORLY GRADED SAND

LOOSE TO SEMI-COMPACT SILTY SAND
WITH INTERBEDDED PLASTIC SILT

COMPACT TO DENSE SILTY SAND
WITH INTERBEDDED PLASTIC SILT

SOFT ELASTIC SILT

EL. -15.0

SECTION D-D

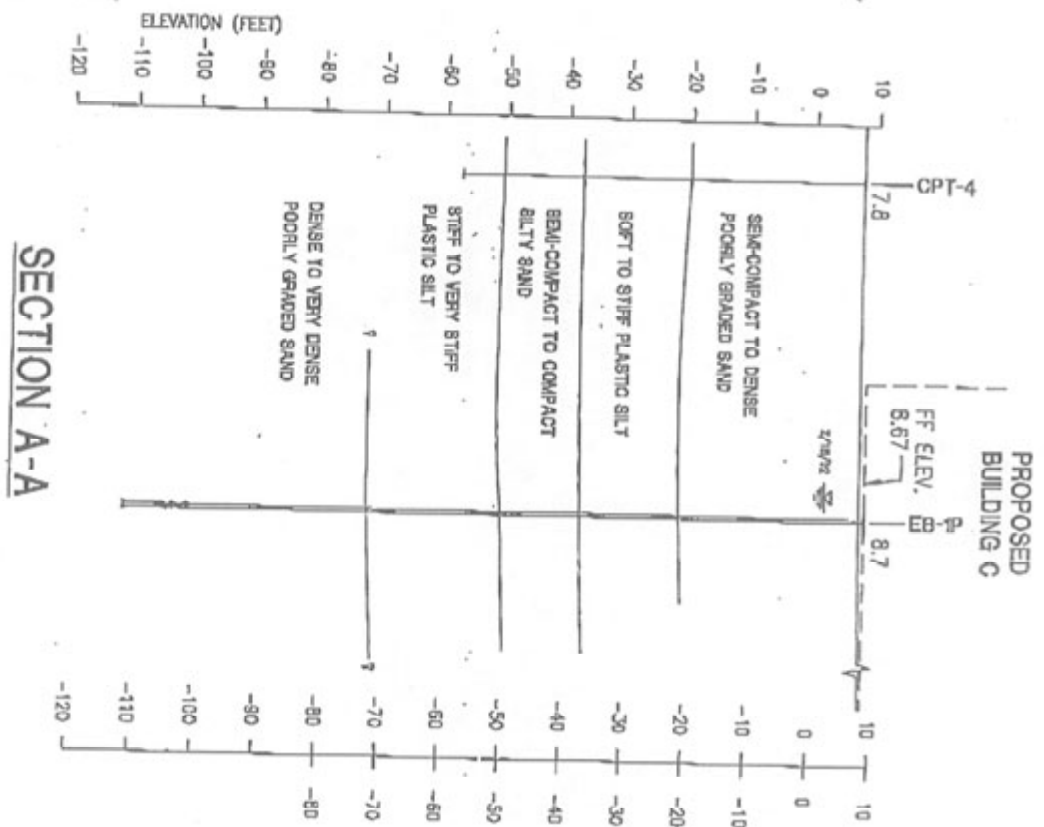
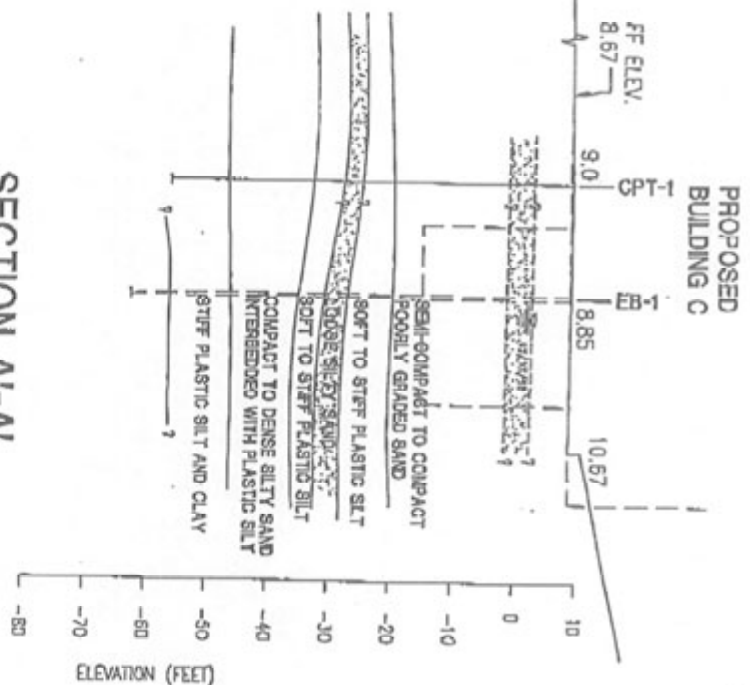


DATUM NGVD

ELEVATION (FEET)

10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100

RUTHERFORD & CHEKENE a full-service engineering CONSULTING ENGINEERS	Job No.: 991560	GENERALIZED SOIL PROFILE MIDWAY BUILDING B EXPANSION MOSS LANDING, CALIFORNIA	Date: 11/11/98 Figure: 8 Page: 45
203 Street View, Suite 200, San Francisco, CA 94116-4222 (415) 416-4222			

**SECTION A'-A'**

GRAPHIC SCALE

0' 10' 20' 30' 40' 50' 60'

DATUM: NGVD

RUTHERFORD & CHEKENE CONSULTING a multiple corporation		SOIL PROFILES SHOWING ZONES OF LIQUEFACTION	
301 Bernal Street, Suite 400, Berkeley, CA 94701		MIRARI BUILDING B EXPANSION MOSS LANDING, CALIFORNIA	
(415) 446-4223		Date: 11/11/99	
60' Scale: 90/150'		Page: 2	
		Rev: A7	

Soil Symbols and Descriptions

Symbol	Group Abbreviation (U.S.C.S.)	Group Name
	GW	Well-graded Gravel
	GP	Poorly-graded Gravel
	GM	Silty Gravel
	GC	Clayey Gravel
	SW	Well-graded Sand
	SP	Poorly-graded Sand
	SM	Silty Sand
	SC	Clayey Sand
	ML	Low-plasticity Silt
	CL	Low-plasticity Clay
	OL	Low-plasticity Organic Silt and Clay
	MH	High-plasticity Silt
	CH	High-plasticity Clay
		Weathered Rock

WATER LEVEL SYMBOLS

	Water level during drilling, with date
	Water level after drilling, with date
	Water level after 24 hours, with date

Soil Description Terminology

Soils are identified and classified in this report according to the Unified Soil Classification System with the following modifiers:

CONSISTENCY OF SOILS

Granular Soils	Blows/Foot	Cohesive Soils
Very Loose	0 to 5	Very Soft
Loose	6 to 10	Soft
Semi-Compact	11 to 20	Stiff
Compact	21 to 35	Very Stiff
Dense	36 to 70	Hard
Very Dense	70+	Very Hard

PARTICLE SIZES

Components	Size or Sieve No.
Boulders	Over 12 inches
Cobbles	3 to 12 inches
Gravel - Coarse	3/4 to 3 inches
- Fine	No. 4 to 3/4 inch
Sand - Coarse	No. 10 to No. 4
- Medium	No. 40 to No. 10
- Fine	No. 200 to No. 40
Fines (Silt and Clay)	Below No. 200

SOIL MOISTURE

Descriptive Term	Description
Dry	Dry of Standard Proctor Optimum
Damp	Sand Only
Moist	Near Standard Proctor Optimum
Wet	Wet of Standard Proctor Optimum
Saturated	Free Water in Sample

SAMPLING METHODS

Standard Penetration Samples are taken by driving a standard 1.4" I.D. split-spoon sampler into the ground with a 140-pound weight falling 30 inches, per ASTM Test Method D-1586.

SAMPLE TYPES

Symbol	Sampling Method or Tool
	Sample from auger cuttings
	Split-spoon sampler, ASTM D1586
	Modified California sampler
	Split spoon sampler with liners
	Thinwall tube sampler, 2" O.D. x 1-7/8" I.D.
	Thinwall tube sample, 3" O.D. x 2-7/8" I.D.
	Partial sample of cuttings, washed
	NX - Core Barrel - 2" I.D.

The boring logs show subsurface conditions at the dates and locations shown, and are not warranted to be representative of subsurface conditions at other locations and times.

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KEY TO EXPLORATORY BORING LOGS

MBARI Building B Expansion
Moss Landing, California

JOB NO: 98156G

DATE: 11/11/99

FIGURE
17

PAGE
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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore 4-inch Auger/Rotary Wash
 SURFACE ELEVATION: NA

LOGGED BY: John Tabor
 START: 12/17/98 COMPLETE: 12/17/98 PAGE: 1 of 2
 WATER LEVEL AND TIME: 6'8" @ 3:00pm, 12/17/98

SIEVE ANALYSIS	ATTERBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/6 in.	SAMPLE DEPTH (feet)	SYMBOLS	SOIL DESCRIPTION
	PLASTIC INDEX	LIQUID LIMIT (%)							
				0.5	5.6	10,7,7	0	SP	Dark brown, semi-compact, poorly sorted sand.
								SP	Brown-tan, loose, fine-to-medium poorly sorted sand, damp, becoming more coarse with depth.
				1.2	4.4	4,4,5			
									 Groundwater encountered during drilling.
				2.5	13.7	3,6,10	10	SP	Gray-brown, semi-compact, poorly graded medium sand with some gravel. Saturated.
					19.6	8,13,16			Gray-tan, compact, poorly graded, fine-to-medium sand. Saturated.
				23.5	10,13,14		20		
				3.0	21.6	10,12,15			
						2,2,3	30	MH	Gray-green, soft to very soft, high plastic silt.
					4,7,7				
				32	33.5	2,3,4		SM	Gray-green, loose, silty sand with some shell fragments. Saturated.
							40		

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EXPLORATORY SOIL BORING
MBARI Building B Expansion
Moss Landing, California

303 Second Street, Suite 800 North
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(415) 495-4222

JOB NO: 98156G

DATE: 11/11/99

FIGURE
18

PAGE
A18

EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore 4-inch Auger/Rotary Wash
SURFACE ELEVATION: NA

LOGGED BY: John Tabor
START: 12/17/98 **COMPLETE:** 12/18/98 **PAGE:** 2 of 2
WATER LEVEL AND TIME: 6'8" @ 3:00pm, 12/17/98

SIEVE ANALYSIS		ATTERBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/ 6 in.	SAMPLE	DEPTH (feet)	SYMBOLS	SOIL DESCRIPTION
PLASTIC INDEX	LIQUID LIMIT (%)										
30	60				59	41.0	P,2,3		40	MH	Gray-green,very soft, high plastic silt.
					8.1	23.1	8,13,14			SP-SM	Gray-brown, compact to dense, poorly graded medium sand and silty sand interbedded with some high plastic silt layers. Saturated.
					11	25.5	9,18,26		50		
					87	43.3	10,7,7			MH	Gray-green, stiff, high plastic silt.
					53.5	3,5,8		60			
					40.9	4,7,10			CH	Gray, stiff to very stiff high plasticity clay.	
			85	32.0	7,12,21		70				
											Bottom of Hole @ 71.5'
									80		

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EXPLORATORY SOIL BORING
MBARI Building B Expansion
Moss Landing, California

JOB NO: 98156G

DATE: 11/11/99

FIGURE
19

PAGE
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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore 4-inch Auger/Rotary Wash
 SURFACE ELEVATION: NA

LOGGED BY: John Tabor
 START: 12/16/98 COMPLETE: 12/16/98 PAGE: 1 of 2
 WATER LEVEL AND TIME: 62" @ 11:28, 12/16/98

SIEVE ANALYSIS	ATTERBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/6 in.	SAMPLE DEPTH (feet)	SYMBOLS	SOIL DESCRIPTION
	PLASTIC INDEX	LIQUID LIMIT (%)							
						5,5,5	0	XXXX GW	2.5 inches Asphalt Concrete over 4 inches Class 2 Aggregate Base.
						3,4,4		SP	Brown-tan, loose to semi-compact, fine-to-medium poorly sorted sand becoming more coarse with depth. Damp.
			0.4	4.3		2,4,7			
						3,5,6			
			0.7	13.8		2,3,4			Groundwater encountered during drilling.
			3.2	15.7		3,4,7		SP	Brown-tan, loose to semi-compact medium-to-coarse poorly graded sand. Saturated.
						18.5	10		
						5,8,10		SP	Gray-brown, semi-compact to compact, poorly graded medium sand with shell fragments, interbedded with some silty layers.
						14.7			
						10,13,15			
			2.1	24.1		8,10,13		SP	Gray, compact, poorly graded, fine sand with some shell fragments.
						6,9,13			
						24.6			
						24.7	20		
						6,12,15			
						8,12,14			
			2.6	16.4		8,11,13		SP	Gray, medium to coarse poorly graded sand with shell fragments.
			48	39.0		3,5,2	30	SM	Gray, loose, fine silty sand.
						P,1,1		MH	Gray, very soft high plasticity silt.
							40	SM	Gray, loose, fine silty sand.

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EXPLORATORY SOIL BORING
MBARI Building B Expansion
Moss Landing, California

JOB NO: 98156G

DATE: 11/11/99

FIGURE
20

PAGE
A20

EXPLORATORY BORING LOG

DRILLER: Taber Consultants
RIG: Concore 4-inch Auger/Rotary Wash
SURFACE ELEVATION: NA

LOGGED BY: John Tabor
START: 12/16/98 **COMPLETE:** 12/16/98 **PAGE:** 2 of 2
WATER LEVEL AND TIME: 6' 2" @ 11:28 am, 12/16/98

SIEVE ANALYSIS	ATTERBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/ 6 in.	SAMPLE DEPTH (feet)	SYMBOLS	SOIL DESCRIPTION
	PLASTIC INDEX	LIQUID LIMIT (%)							
				21	26	5,5,3	40	SM	Gray, loose, fine silty sand and sandy silt.
									BOH - 41.5 feet
							50		
							60		
							70		
							80		

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EXPLORATORY SOIL BORING
MBARI Building B Expansion
Moss Landing, California

JOB NO: 98156G

DATE: 11/11/99

FIGURE
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EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore 4-inch Auger/Rotary Wash
 SURFACE ELEVATION: NA

LOGGED BY: John Tabor
 START: 12/16/98 COMPLETE: 12/17/98 PAGE: 1 of 2
 WATER LEVEL AND TIME: 6'8" @ 4:00pm, 12/16/98

SIEVE ANALYSIS	ATTERBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/6 in.	SAMPLE	DEPTH (feet)	SYMBOLS	SOIL DESCRIPTION
	PLASTIC INDEX	LIQUID LIMIT (%)								
						6,9,8		0	GW	2.5 inches Asphalt Concrete over 4 inches Class II Aggregate Base
				1.5	5.2	5,5,5			SP	Brown-tan, loose, fine-to-medium poorly sorted sand, becoming more coarse with depth. Damp.
						3,4,6				
				45		3,4,7			SP	Brown-tan, loose to semi-compact, medium-to-coarse poorly graded sand. Saturated.
			2.2	14		4,8,10		10		
						5,6,9			SP	Gray-brown, semi-compact, poorly graded medium sand, interbedded with some silty layers, and shell fragments. Saturated
						10,12,16			SP	Gray, compact, poorly graded, fine sand with some shell fragments. Saturated.
			3.9	18		9,13,15				
						9,14,18				
						9,12,14		20		
			3.7	15		12,17,21			SP	Gray, medium to coarse, poorly graded sand with some gravel and shell fragments. Saturated.
						10,13,16				
									SM	Gray-green, loose, silty fine sand.
			29	27		2,3,4		30		(31.5' to 34', Shelby push @ 350 psi maximum - No recovery)
									MH	Soft, high plastic silt.
										(34' to 36.5', Shelby push @ 50 psi maximum - No recovery)
										(36.5' to 39', Shelby push @ 100 psi maximum - No recovery)
								40		

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EXPLORATORY SOIL BORING
MBARI Building B Expansion
Moss Landing, California

JOB NO: 98156G

DATE: 11/11/99

FIGURE
22

PAGE
A22

EXPLORATORY BORING LOG

DRILLER: Taber Consultants
 RIG: Concore 4-inch Auger/Rotary Wash
 SURFACE ELEVATION: NA

LOGGED BY: John Tabor
 START: 12/16/98 COMPLETE: 12/17/98 PAGE: 2 of 2
 WATER LEVEL AND TIME: 6'8" @ 4:00pm, 12/16/98

SIEVE ANALYSIS	ATTERBERG LIMITS		DRY DENSITY (pcf)	% PASSING 200 SIEVE	MOISTURE CONTENT (%)	BLOWS/ 6 in.	SAMPLE DEPTH (feet)	SYMBOLS	SOIL DESCRIPTION
	PLASTIC INDEX	LIQUID LIMIT (%)							
				28	29	4,5,3	40	SM	Gray, loose, silty fine sand with shell fragments.
				25		6,6,9			
			5.6	18	4,19,25		50	SP	Gray, semi-compact to dense, medium, poorly sorted sand with shell fragments and some interbedded silt layers.
				30	10,7,9				
				45	4,5,7		60	MH	Gray-green, soft to very soft high plasticity silt.
			6.2	13	5,8,10			SP/SM	Gray, medium to coarse, poorly graded sand and silty sand with some gravel and shell fragments, saturated.
								MH	Gray-green, soft to very soft high plasticity silt.
					10,13,15		70		
									Bottom of Hole @ 71.5'
							80		

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EXPLORATORY SOIL BORING
MBARI Building B Expansion
Moss Landing, California

JOB NO: 98156G

DATE: 11/11/99

FIGURE
23

PAGE
A23

VBI IN-SITU TESTING

Operator: VIRGIL A. BAKER

CPT Date: 01-15-99 10:43

Location: CPT-1

Job No.: 98156

Sounding: 502023

Cone Used: HC 684 TC U2

Tip Resistance

 Q_t (Ton/in²)

Local Friction

 F_s (Ton/in²)

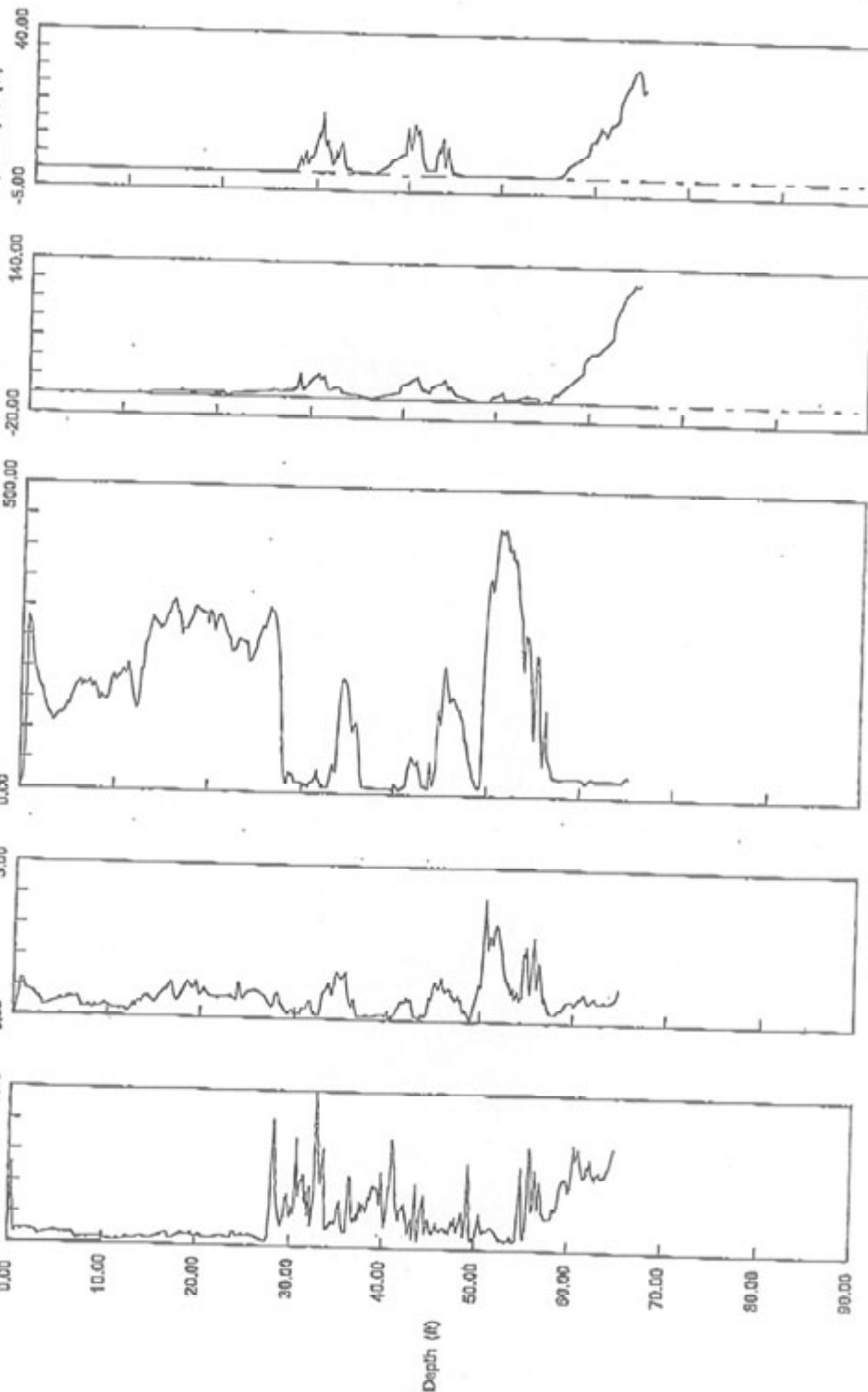
Friction Ratio

 F_s/Q_t (%)

Pore Pressure

 P_w (psf)

Dilatancy Ratio

 $(P_w - P_w)/Q_t$ (%)

Depth Increment = 0.15 feet

Maximum Depth = 65.29 feet

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CONE PENETRATION TEST PROFILE
MBARI Building B Expansion
Moss Landing, California

JOB NO: 98156G

DATE: 11/11/99

FIGURE
24PAGE
A24

VBI IN-SITU TESTING

Operator: VIRGIL A. BAKER
 CPT Date: 01-16-99 13:47
 Location: CPT-2
 Job No.: 98156

Cone Used: HO 684 TC U2

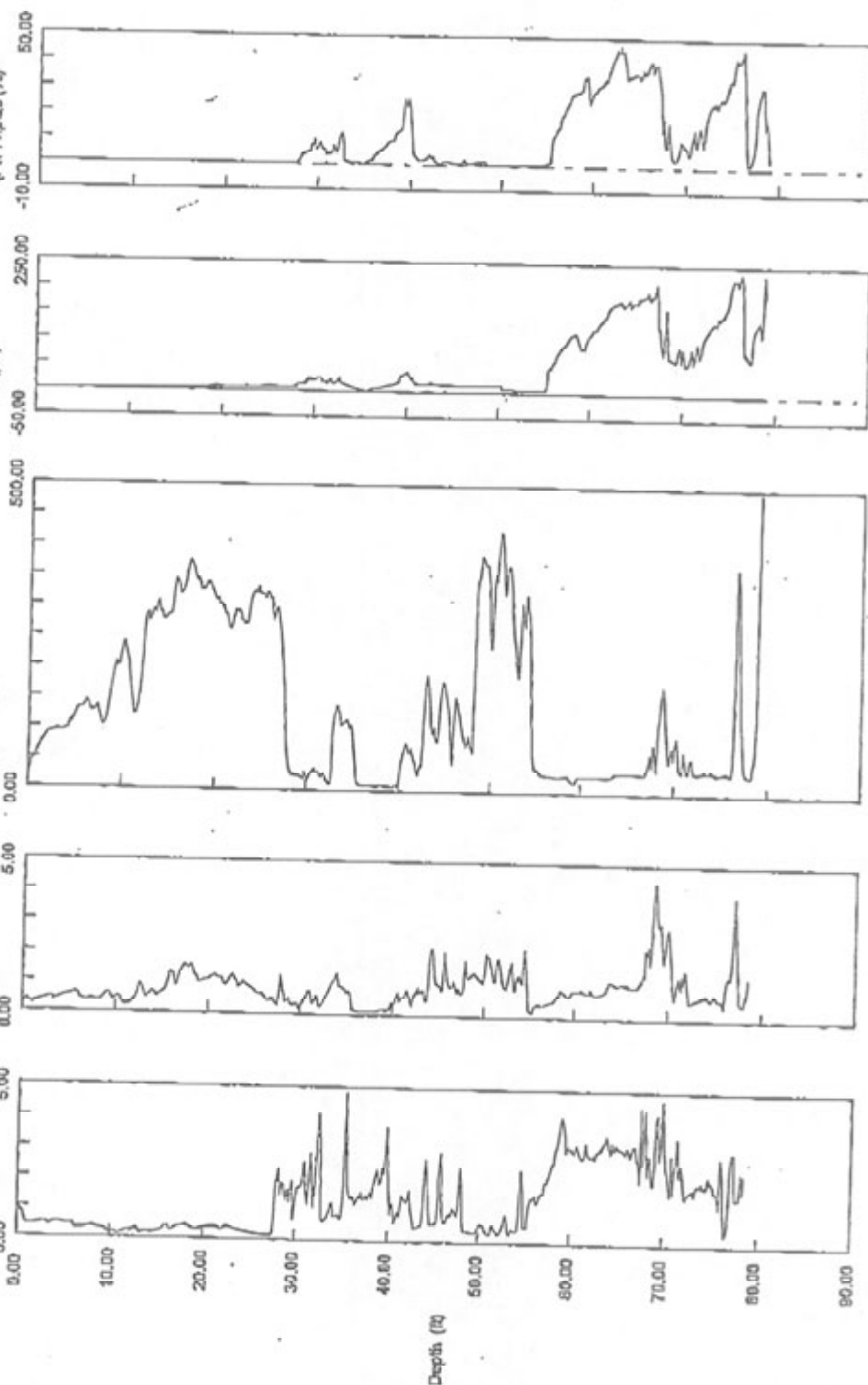
Tip Resistance
 Q_t (Ton/ft²)

Local Friction
 F_{s1} (Ton/ft²)

Friction Ratio
 F_{s1}/Q_t (%)

Pore Pressure
 P_w (psi)

Diff. P. Ratio
 $(P_w - P_{w0})/Q_t$ (%)



Depth Increment = 0.16 feet

Minimum Depth = 79.90 feet

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CONE PENETRATION TEST PROFILE
MBARI Building B Expansion
Moss Landing, California

JOB NO: 98156G

DATE: 11/11/99

FIGURE
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VBI IN-SITU TESTING

Operator: VIRGIL A. BAKER
 Sounding: 982025
 Cone Used: HD 684 TC U2

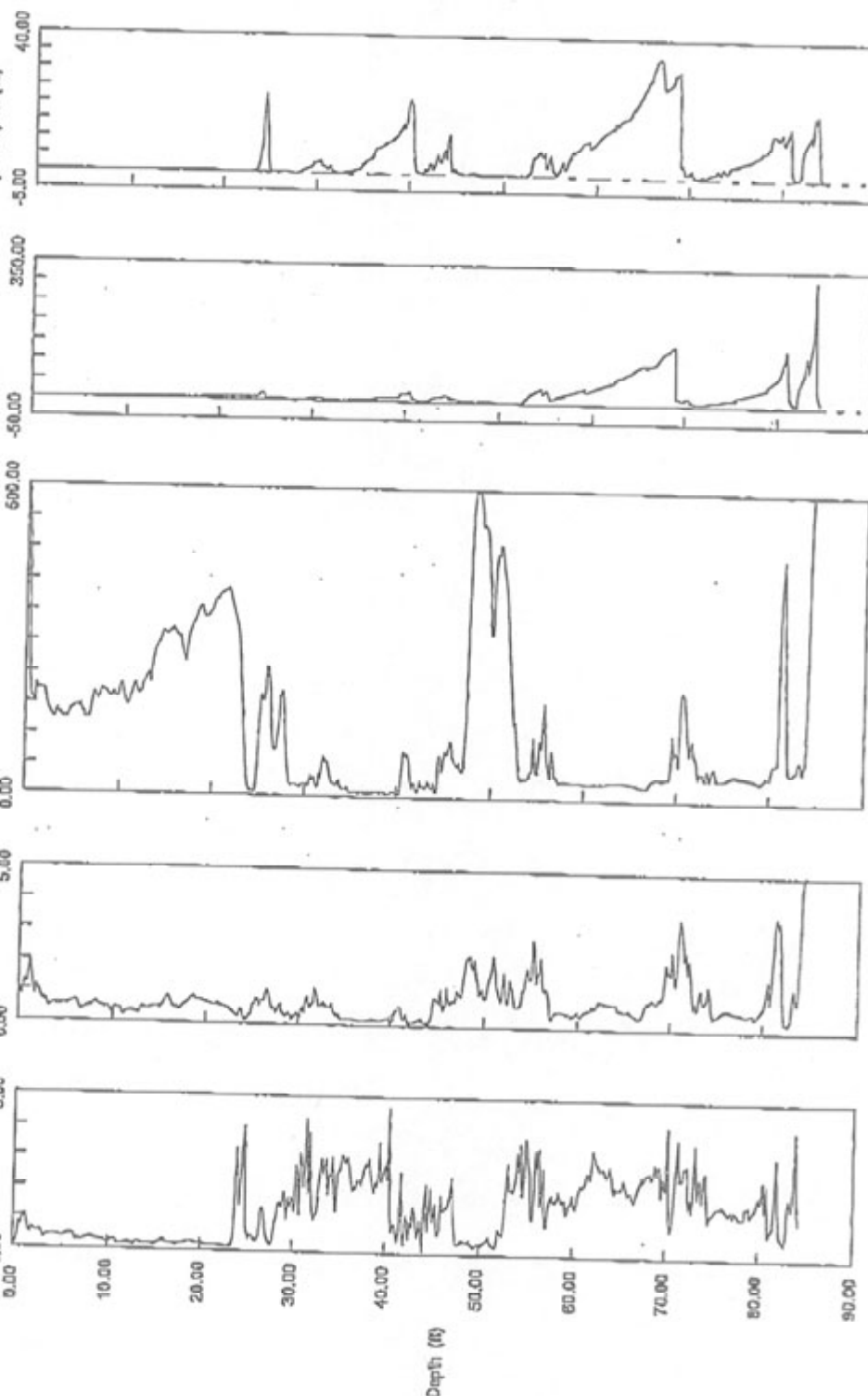
Tip Resistance
 Q_c (Ton/in²)

Local Friction
 F_s (Ton/in²)

Friction Ratio
 F_s/Q_c (%)

Pore Pressure
 P_w (psi)

Diff PP Ratio
 $(P_w - P_0)/Q_c$ (%)



Depth Increment = 0.16 feet

Maximum Depth = 84.48 feet

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CONE PENETRATION TEST PROFILE
 MBARI Building B Expansion
 Moss Landing, California

JOB NO: 98156G

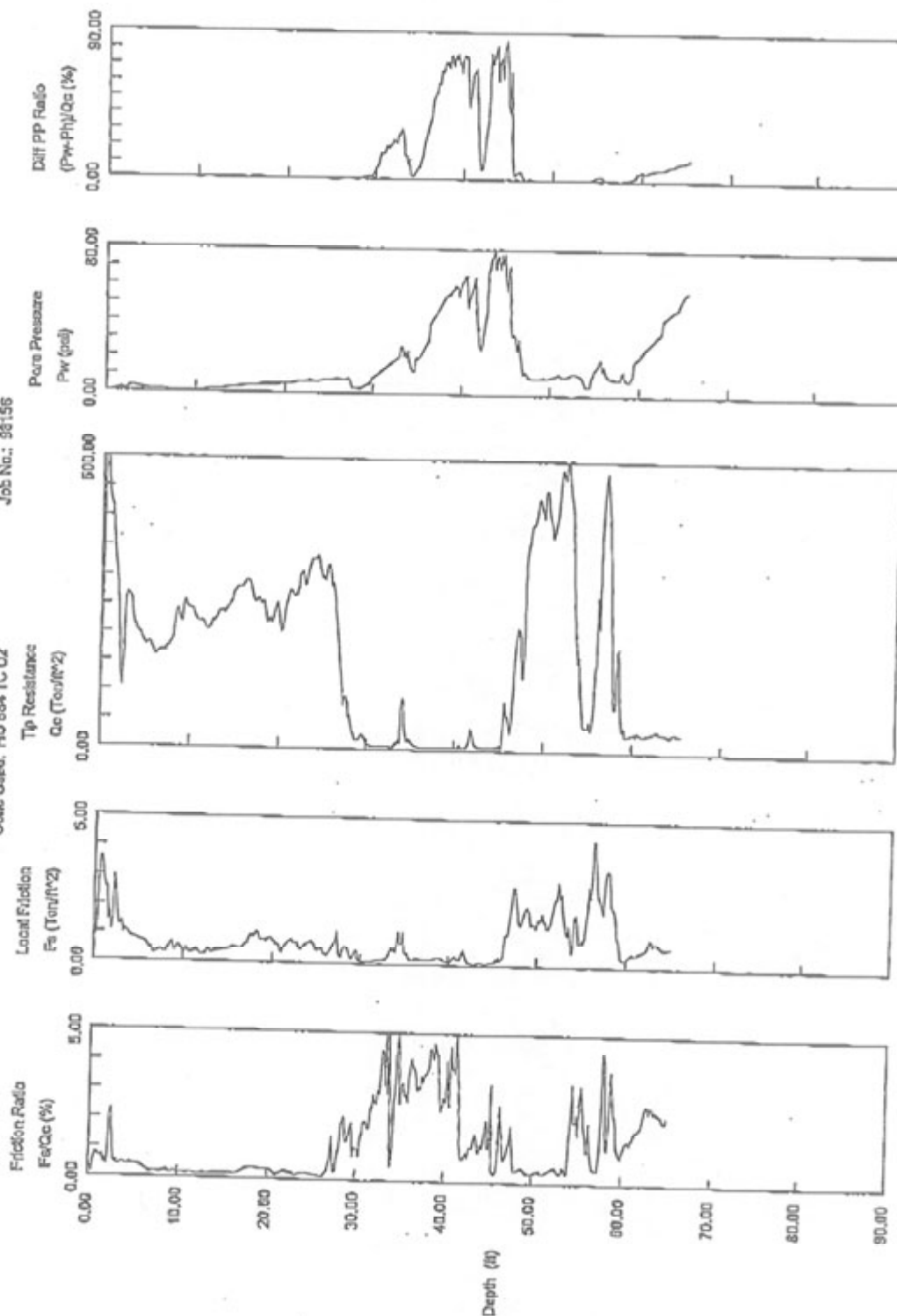
DATE: 11/11/99

FIGURE
26

PAGE
A26

VBI IN-SITU TESTING

Operator: VIRGIL A. BAKER
 CPT Date: 01-15-99 11:29
 Sounding: 992024
 Logger: CPT-4
 Cone Used: HO 884 TC U2
 Job No.: 98156



Depth Increment = 0.16 feet

Maximum Depth = 65.29 feet

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CONE PENETRATION TEST PROFILE
 MBARI Building B Expansion
 Moss Landing, California

JOB NO: 98156G

DATE: 11/11/99

FIGURE
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