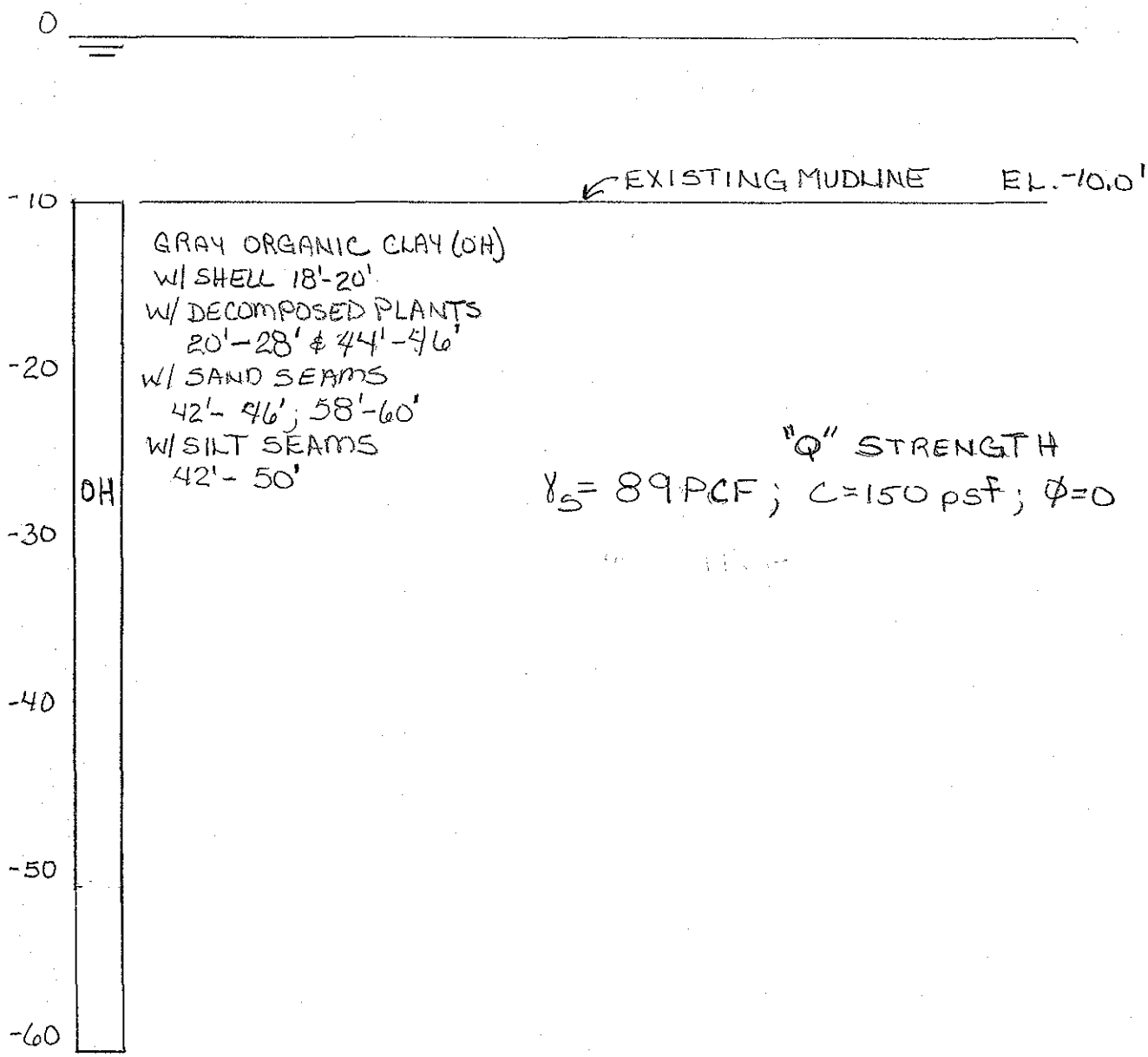
SOILS PARAMETERS
BORING NO. 94-29



ENCL. NO. 3

BY O.D.O'M. DATE 7/29/94 SUBJECT PORT ARTHUR GIWW - MOORING FACILITIES SHEET NO. 1 OF
CHKD. BY DATE JOB NO.

TABLE 3

SUMMARY OF LABORATORY TEST RESULTS

PROJECT: Port Arthur Waterway
AEC 270-94
Contract No. DACW-64-94-M-0608

BORING NO. 94-29

S #	Depth (Feet)	PP (tsf)	SPT Blows per Foot	Visual Classification	MC (%)	UDW (pcf)	LL (%)	PL (%)	Mechanical Analysis % Passing					Torvane (tsf)	QU (tsf)
									#4	#10	#40	#100	#200		
1	0 - 2	0		Gray organic clay (OH)	108										
2	2 - 4	0		Gray organic clay (OH)	122										
3	4 - 6	0		Gray organic clay (OH)	88	52	60	22						0.09	
4	6 - 8	0		Gray organic clay (OH)	69										
5	8 - 10	0		Gray organic clay (OH) w/shell	51										
6	10 - 12	0		Gray organic clay (OH) w/decomposed plants	117									0.10	
7	12 - 14	0		Gray organic clay (OH) w/decomposed plant	108	43	120	41	100	100	99.8	99.8	99.8	0.14	0.24
8	14 - 16	0		Gray organic clay (OH) w/decomposed plant	83									0.13	
9	16 - 18	0		Gray organic clay (OH) w/decomposed plant	72										
10	18 - 20	0		Gray organic clay (OH)	79	50	88								
11	20 - 22	0		Gray organic clay (OH)	83									0.08	
12	22 - 24	0		Gray organic clay (OH)	73										
13	24 - 26	0		Gray organic clay (OH)	74										
14	26 - 28	0		Gray organic clay (OH)	64									0.05	
15	28 - 30	0		Gray organic clay (OH)	75										
16	30 - 32	0		Gray organic clay (OH)	83										
17	32 - 34	0		Gray organic clay (OH) w/sand & silt seams	70										

S#: Sample Number; PP: Pocket Penetrometer Reading; MC: Moisture Content; QU: Unconfined Compressive Strength

TABLE 3 (continued)

SUMMARY OF LABORATORY TEST RESULTS

PROJECT: Port Arthur Waterway
AEC 270-94
Contract No. DACW-64-94-M-0608

BORING NO. 94-29

S #	Depth (Feet)	PP (tsf)	SPT Blows per Foot	Visual Classification	MC (%)	UDW (pcf)	LL (%)	PL (%)	Mechanical Analysis % Passing					Torvane (tsf)	QU (tsf)
									#4	#10	#40	#100	#200		
18	34 - 36	0		Gray organic clay (OH) w/sand & silt seams & decomposed plants	73										
19	36 - 38	0		Gray organic clay (OH) w/silt seams	81	52	87	36						0.04	
20	38 - 40	0		Gray organic clay (OH) w/silt seams	71				100	100	99.9	99.9	99.1		
21	40 - 42	0		Gray organic clay (OH)	82										
22	42 - 44	0		Gray organic clay (OH)	77										
23	44 - 46	0		Gray organic clay (OH)	78										
24	46 - 48	0		Gray organic clay (OH)	71										
25	48 - 50	0		Gray organic clay (OH) w/sand seams	56										
26	50 - 51	0		Gray organic clay (OH) w/sand seams	60										

S#: Sample Number; PP: Pocket Penetrometer Reading; MC: Moisture Content; QU: Unconfined Compressive Strength

PROJECT NO. 270-94

AVILES ENGINEERING CORP. GEOTECHNICAL ENGINEERS

PROJECT: Port Authur Waterway BORING 94-29

DATE MAY 26, 1994 TYPE 3" CORE LOCATION SEE PLAN

Elevation: -

DEPTH IN FEET	DESCRIPTION	M.C. %	U.D.W. PCF	-200 MESH	LIQUID LIMIT	PLASTIC LIMIT
0	Very soft gray Organic Clay (OH)	108				
		122				
4		88	52		60	22
		69				
8	W/shell @ 8'-10'	51				
	W/decomposed plant @ 10'-18'	117				
12		108	43	100	120	41
		83				
16		72				
		79	50		88	
20		83				
		73				
24		74				
		64				
28		75				
		63				
32	W/sand seams @ 32'-36' W/silt seams @ 32'-40' W/decomposed plant @ 34'-36'	70				
		73				
36		81	62		87	36
		71		99		
40		82				

COMPRESSIVE STRENGTH, TSF

○ POCKET PENETROMETER
△ CONFINED COMPRESSION
● UNCONFINED COMPRESSION
□ TORVANE

0.5 1 1.5 2

BORING DRILLED TO _____ FEET WITHOUT DRILLING FLUID

WATER ENCOUNTERED AT _____ FEET WHILE DRILLING

WATER LEVEL AT _____ FEET AFTER _____ HOURS

DRILLED BY JH CHECKED BY QL LOGGED BY JH

REVIEWED BY: _____ DATE____
_____ DATE____

SUMMARY OF QUESTIONABLE
ERRONEOUS OR MISSING DATA
FOR

PROJECT: LABORATORY TESTING OF SOILS SAMPLES, CONTRACT NO. DACW64-93-M-0299 (GIWW - PT. ATRHUR)

BORING NO.	SAMPLE NO.	COMMENTS ON TEST RESULTS
Only one test was not performed - Borings No., 94-32, sample 3, Unconfined Compression Test was not performed because the contractor stated the sample was too short.		
Bori 94-27	1	Description on Plate 2 indicates shell from samples 1 - 12, but it is only listed on sample 1,5,7,8,& 12 on Table 1.
	14-16	Plate 2 and Table 1 do not agree on description, should be either Sandy Silt or Silt w/sand Moisture contents are given but Not ordered.
94-28	1	Table 2 states w/shell from 0-2 feet, Plate 3 does not.
	15	Table 2 states w/ferrous nodules from 28-30 feet, Plate 3 does not.
	20-23	Plate 3 states w/calcareous nodules, ferrous nodules & sand seams Table 2 does not show the sand seams for sample 20 or the calcareous and ferrous nodules for sample 23
	22	Plate 3 states slickensided below 50 feet. Table 2 shows slickensided from 48-50 and 50-52 feet.
94-30	9	Table 4 states w/shell from 16-22 feet, Plate 5 states shell from 18-22 feet.
94-31	1	Plate 6, beginning description should state w/shell 0-6 feet to agree with Table 5.
	3	Plastic limit performed not ordered,
	18	Table 5 states w/silt seams & decomposed plants, Plate 7 states silt seams but not decomposed plants Plate 6 is for boring 94-31
94-32	22	Table 6 stated LL 188, Plate 7 shows no LL value

PROJECT NO. 270-94

AVILES ENGINEERING CORP. GEOTECHNICAL ENGINEERS

PROJECT: Port Authur Waterway BORING 94-29

DATE MAY 26, 1994 TYPE 3" CORE LOCATION SEE PLAN

Elevation: -

DEPTH IN FEET	DESCRIPTION	M.C. %	U.D.W. PCF	-200 MESH	LIQUID LIMIT	PLASTIC LIMIT
0	Very soft gray Organic Clay (OH)	108				
		122				
4		88	82		60	22
		59				
8	W/shell @ 8'-10'	51				
	W/decomposed plant @ 10'-18'	117				
12		108	43	100	120	41
		83				
16		72				
		79	50		88	
20		83				
		73				
24		74				
		64				
28		75				
		83				
32	W/sand seams @ 32'-36' W/silt seams @ 32'-40' W/decomposed plant @ 34'-36'	70				
		73				
36		81	82	99	87	36
		71				
40		82				

COMPRESSIVE STRENGTH, TSF

○ POCKET PENETROMETER
△ CONFINED COMPRESSION
● UNCONFINED COMPRESSION
□ TORVANE

0.5 1 1.5 2

BORING DRILLED TO _____ FEET WITHOUT DRILLING FLUID

WATER ENCOUNTERED AT _____ FEET WHILE DRILLING ▽

WATER LEVEL AT _____ FEET AFTER _____ HOURS ▽

DRILLED BY DG CHECKED BY QL LOGGED BY WS

AVILES ENGINEERING CORP. GEOTECHNICAL ENGINEERS

PROJECT: Port Authur Waterway BORING 94-29

DATE MAY 26, 1994 TYPE 3" CORE LOCATION SEE PLAN

PROJECT NO. 270-94

DEPTH IN FEET	SYMBOL	CORES	DESCRIPTION	BLOWS/FOOT	M.C. %	U.D.W. PCF	COMPRESSIVE STRENGTH, TSF (○ POCKET PENETROMETER, △ CONFINED COMPRESSION, ● UNCONFINED COMPRESSION, □ TORVANE; 0.5, 1, 1.5, 2)	-200 MESH	LIQUID LIMIT	PLASTIC LIMIT
			Elevation: -							
42					77					
46					78					
					71					
			W/sand seams below 48'		56					
50					60					
			Bottom @ 52'							
54			Driller: Dempsey Gearen Logger: Wayne Sammons Weather: Partly Cloudy, 80°F Water Level: 12' MLT: 2.2' Rig: D & R 75							
58										
62										
66										
70										
74										
78										
82										

BORING DRILLED TO _____ FEET WITHOUT DRILLING FLUID

WATER ENCOUNTERED AT _____ FEET WHILE DRILLING ⚲

WATER LEVEL AT _____ FEET AFTER _____ HOURS ⚲

DRILLED BY DG CHECKED BY QL LOGGED BY WS

LOG OF BORING

PROJECT: FOR: Port Arthur

BORING NO: 94-29
LOCATION:

DATE: 5-26-94 JOB NO: BORING TYPE 3" Core
DRILLER: REPORT NO. GROUND ELEV.:

LEGEND
S-Shelby Tube D-Denison Barrel P-Penetration Test J-Jar
-Core -Penetration Sample -No Recovery
-Static Water Table -Hydrostatic Water Table

Depth in Feet	Sample Type & No.	Symbol	Elevation in Feet	Blows / Foot	PEN.	DESCRIPTION OF STRATUM	
	S-1				0	Very Soft G. SiCL	Jar Sample
	S-2				0	Very Soft G. SiCL	Jar Sample
5	S-3				0	Very Soft G. SiCL	
	S-4				0	Very Soft G. SiCL	Jar Sample
	S-5				0	Very Soft G. SiCL	
10	S-6				0	Very Soft G. SiCL	
	S-7				0	Very Soft G. SiCL	
15	S-8				0	Very Soft G. SiCL	
	S-9				0	Very Soft G. SiCL	
	S-10				0	Very Soft G. SiCL	Jar Sample
20	S-11				0	Very Soft G. SiCL	
	S-12				0	Very Soft G. SiCL	Jar Sample
25	S-13				0	Very Soft G. SiCL	Jar Sample
	S-14				0	Very Soft G. SiCL	
	S-15				0	Very Soft G. SiCL	Jar Sample
30	S-16				0	Very Soft G. SiCL	Jar Sample
	S-17				0	Very Soft G. SiCL	
35	S-18				0	Very Soft G. SiCL	
	S-19				0	Very Soft G. SiCL	
	S-20				0	Very Soft G. SiCL	
40	S-21				0	Very Soft G. SiCL	Jar Sample
	S-22				0	Very Soft G. SiCL	Jar Sample
45	S-23				0	Very Soft G. SiCL	Jar Sample

LOG OF BORING

PROJECT: Port Arthur
FOR:

BORING NO: 94-29
LOCATION:

DATE: 5-26-94
JOB NO:
BORING TYPE 3" Core
DRILLER:
REPORT NO.
GROUND ELEV.:

LEGEND

S-Shelby Tube D-Denison Barrel P-Penetration Test J-Jar
■-Core ⊠-Penetration Sample ▯-No Recovery
▽-Static Water Table ▼-Hydrostatic Water Table

Depth in Feet	Sample Type & No.	Symbol	Elevation in Feet	Blows / Foot	PEN.	DESCRIPTION OF STRATUM
	S-24				0	Very Soft G. SiCL Jar Sample
	S-25				0	Very Soft G. SiCL Jar Sample
50	S-26				0.	Very Soft G. SiCL
55						

Rig: D & R TS
Driller: Dempsey Grearan
Logger: Wayne Sammons
Weather: Partly cloudy, 80° F
Water Level: 12'
MLT: +2.2'

PROJECT NO. 270-94

PROJECT: Port Authur Waterway

ENGINEERING CORP. GEOTECHNICAL ENGINEERS

BORING 94-29

DATE MAY 26, 1994 TYPE 3" CORE LOCATION SEE PLAN

Elevation: -

DEPTH IN FEET	SYMBOL	CORES	DESCRIPTION	BLOWS/FOOT	M.C. %	U.D.W. PCF	COMPRESSIVE STRENGTH, TSF (○ POCKET PENETROMETER, △ CONFINED COMPRESSION, ● UNCONFINED COMPRESSION, □ TORVANE; 0.5, 1, 1.5, 2)	-200 MESH	LIQUID LIMIT	PLASTIC LIMIT
0			Very soft gray Organic Clay (OH)		108					
					122					
4					88	52			60	22
					69					
8			W/shell @ 8'-10'		51					
			W/decomposed plant @ 10'-18'		117					
12					108	43		100	120	41
					83					
16					72					
					79	50			88	
20					83					
					73					
24					74					
					64					
28					75					
					83					
32			W/sand seams @ 32'-36' W/silt seams @ 32'-40' W/decomposed plant @ 34'-36'		70					
					73					
36					81	52		99	87	36
					71					
40					82					

BORING DRILLED TO _____ FEET WITHOUT DRILLING FLUID

WATER ENCOUNTERED AT _____ FEET WHILE DRILLING

WATER LEVEL AT _____ FEET AFTER _____ HOURS

DRILLED BY DG CHECKED BY QL LOGGED BY WS

AVILES ENGINEERING CORP. GEOTECHNICAL ENGINEERS

PROJECT: Port Authur Waterway BORING 94-29

DATE MAY 26, 1994 TYPE 3" CORE LOCATION SEE PLAN

PROJECT NO. 270-94

DEPTH IN FEET	SYMBOL	CORES	DESCRIPTION Elevation: -	BLOWS/FOOT	M.C. %	U.D.W. PCF	COMPRESSIVE STRENGTH, TSF ○ POCKET PENETROMETER △ CONFINED COMPRESSION ● UNCONFINED COMPRESSION □ TORVANE 0.5 1 1.5 2	-200 MESH	LIQUID LIMIT	PLASTIC LIMIT
42					77					
46					78					
					71					
			W/sand seams below 48'							
50					56					
					60					
			Bottom @ 52'							
54			Driller: Dempsey Gearen Logger: Wayne Sammons Weather: Partly Cloudy, 80°F Water Level: 12' MLT: 2.2' Rig: D & R 75							
58										
62										
66										
70										
74										
78										
82										

BORING DRILLED TO _____ FEET WITHOUT DRILLING FLUID

WATER ENCOUNTERED AT _____ FEET WHILE DRILLING

WATER LEVEL AT _____ FEET AFTER _____ HOURS

DRILLED BY DG CHECKED BY QL LOGGED BY WS

TABLE 3

SUMMARY OF LABORATORY TEST RESULTS

PROJECT: Port Arthur Waterway
AEC 270-94
Contract No. DACW-64-94-M-0608

BORING NO. 94-29

S #	Depth (Feet)	PP (tsf)	SPT Blows per Foot	Visual Classification	MC (%)	UDW (pcf)	LL (%)	PL (%)	Mechanical Analysis % Passing					Torvane (tsf)	QU (tsf)
									#4	#10	#40	#100	#200		
1	0 - 2	0		Gray organic clay (OH)	108										
2	2 - 4	0		Gray organic clay (OH)	122										
3	4 - 6	0		Gray organic clay (OH)	88	52	60	22						0.09	
4	6 - 8	0		Gray organic clay (OH)	69										
5	8 - 10	0		Gray organic clay (OH) w/shell	51										
6	10 - 12	0		Gray organic clay (OH) w/decomposed plants	117									0.10	
7	12 - 14	0		Gray organic clay (OH) w/decomposed plant	108	43	120	41	100	100	99.8	99.8	99.8	0.14	0.24
8	14 - 16	0		Gray organic clay (OH) w/decomposed plant	83									0.13	
9	16 - 18	0		Gray organic clay (OH) w/decomposed plant	72										
10	18 - 20	0		Gray organic clay (OH)	79	50	88								
11	20 - 22	0		Gray organic clay (OH)	83									0.08	
12	22 - 24	0		Gray organic clay (OH)	73										
13	24 - 26	0		Gray organic clay (OH)	74										
14	26 - 28	0		Gray organic clay (OH)	64									0.05	
15	28 - 30	0		Gray organic clay (OH)	75										
16	30 - 32	0		Gray organic clay (OH)	83										
17	32 - 34	0		Gray organic clay (OH) w/sand & silt seams	70										

S#: Sample Number; PP: Pocket Penetrometer Reading; MC: Moisture Content; QU: Unconfined Compressive Strength

TABLE 3 (continued)

SUMMARY OF LABORATORY TEST RESULTS

PROJECT: Port Arthur Waterway
AEC 270-94
Contract No. DACW-64-94-M-0608

BORING NO. 94-29

S #	Depth (Feet)	PP (tsf)	SPT Blows per Foot	Visual Classification	MC (%)	UDW (pcf)	LL (%)	PL (%)	Mechanical Analysis % Passing					Torvane (tsf)	QU (tsf)
									#4	#10	#40	#100	#200		
18	34 - 36	0		Gray organic clay (OH) w/sand & silt seams & decomposed plants	73										
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20	38 - 40	0		Gray organic clay (OH) w/silt seams	71										
21	40 - 42	0		Gray organic clay (OH)	82										
22	42 - 44	0		Gray organic clay (OH)	77										
23	44 - 46	0		Gray organic clay (OH)	78										
24	46 - 48	0		Gray organic clay (OH)	71										
25	48 - 50	0		Gray organic clay (OH) w/sand seams	56										
26	50 - 51	0		Gray organic clay (OH) w/sand seams	60										

S#: Sample Number; PP: Pocket Penetrometer Reading; MC: Moisture Content; QU: Unconfined Compressive Strength

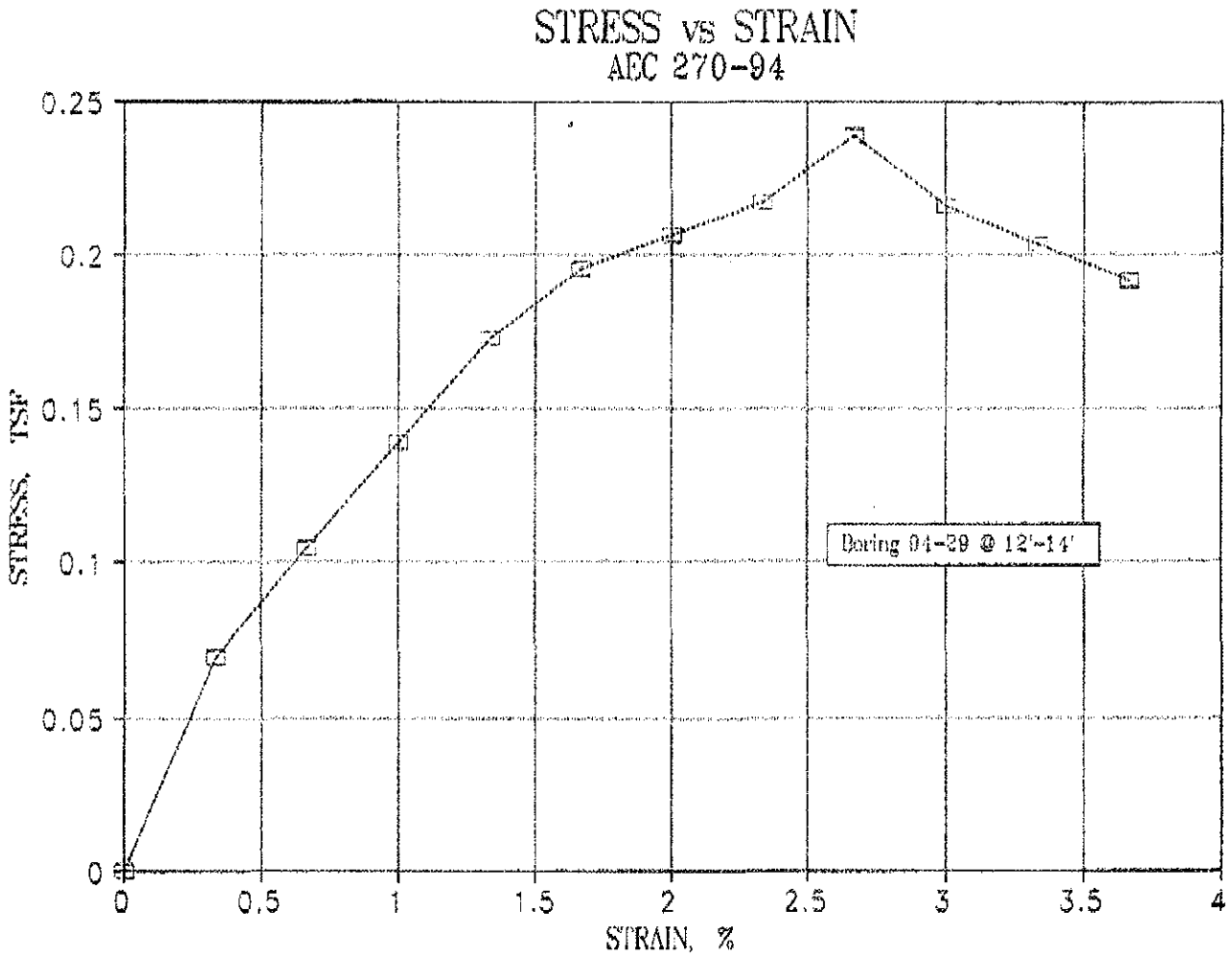
STRESS vs STRAIN
AEC 270-94
0.25
0.2
0.15
0.1
0.05
0
STRESS, TSF
0
0.5
1
1.5
2
2.5
3
3.5
4
STRAIN, %
Boring 04-29 @ 12'-14'

FIGURE 7