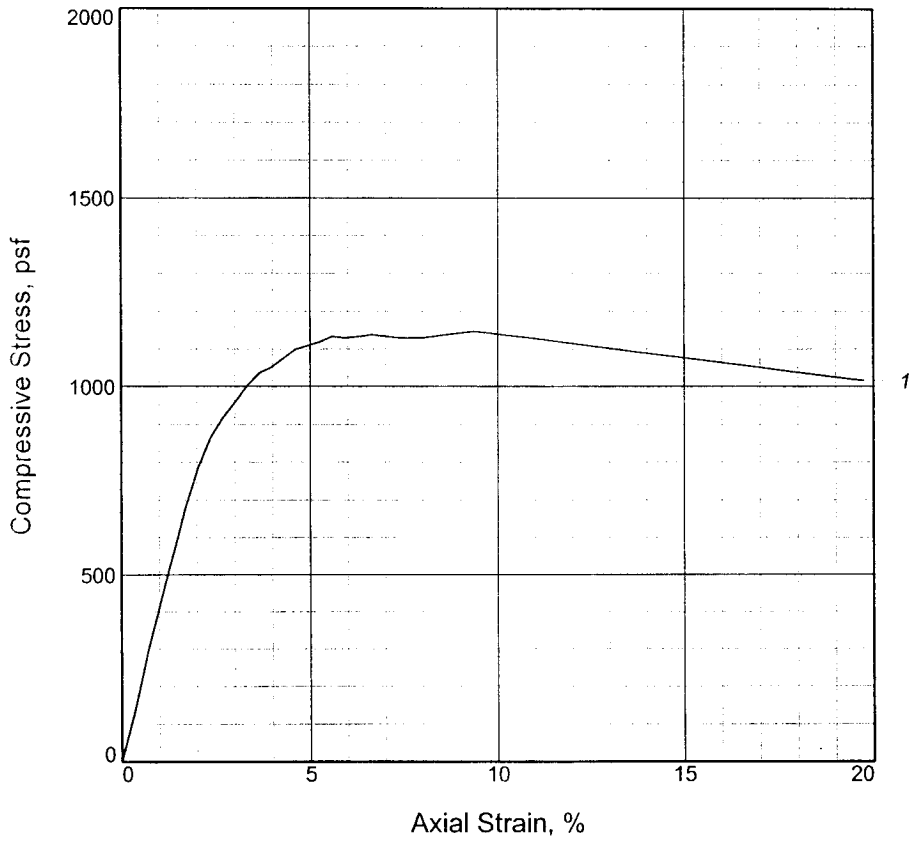
UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1132.1			
Undrained shear strength, psf	566.1			
Failure strain, %	5.6			
Strain rate, in./min.	0.055			
Water content, %	35.9			
Wet density, pcf	113.7			
Dry density, pcf	83.7			
Saturation, %	94.8			
Void ratio	1.0293			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: M GR & T CH4 W/ ARS SM, TR-WD

LL =	PL =	PI =	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/27/05
Remarks:
TORVANE = 0.375 TSF

Figure 1

Client: URS Corporation

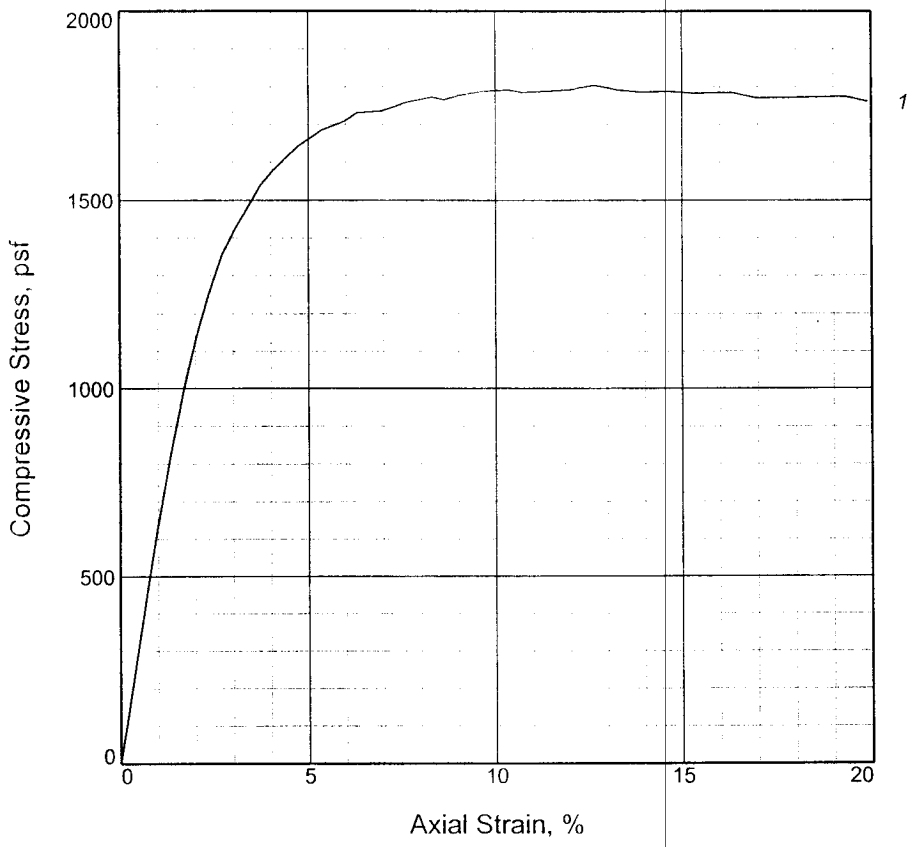
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 0.0
Sample Number: 1

UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Tested By: zh **Checked By:** dp

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1771.5			
Undrained shear strength, psf	885.8			
Failure strain, %	8.3			
Strain rate, in./min.	0.058			
Water content, %	42.3			
Wet density, pcf	100.4			
Dry density, pcf	70.6			
Saturation, %	81.8			
Void ratio	1.4056			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: M GR CH4 W/ TR-WD

LL =	PL =	PI =	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/23/05
Remarks:
TORVANE = 0.375 TSF

Client: URS Corporation

Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 2.5
Sample Number: 2

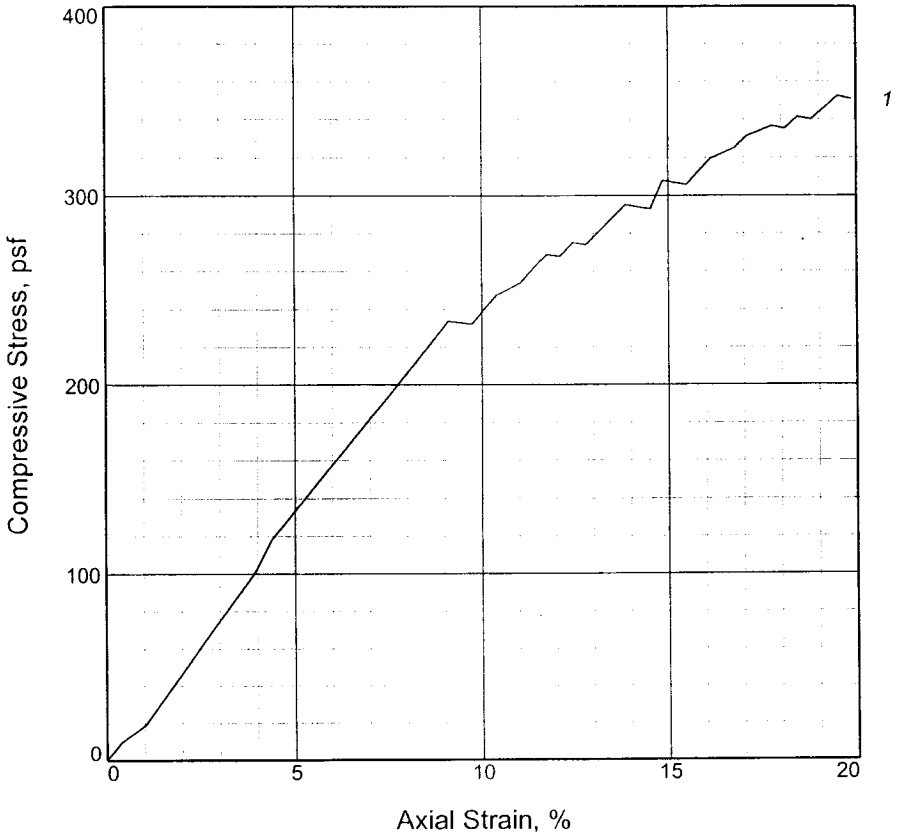
UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	233.5			
Undrained shear strength, psf	116.8			
Failure strain, %	9.1			
Strain rate, in./min.	0.058			
Water content, %	40.3			
Wet density, pcf	112.6			
Dry density, pcf	80.2			
Saturation, %	99.0			
Void ratio	1.1004			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: VSO GR CL4 W/ RT

LL =	PL =	PI =	Assumed GS= 2.7	Type: UNDISTURBED

Project No.: 19082
Date: 11/27/05
Remarks:

Client: URS Corporation

Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 10.0
Sample Number: 5

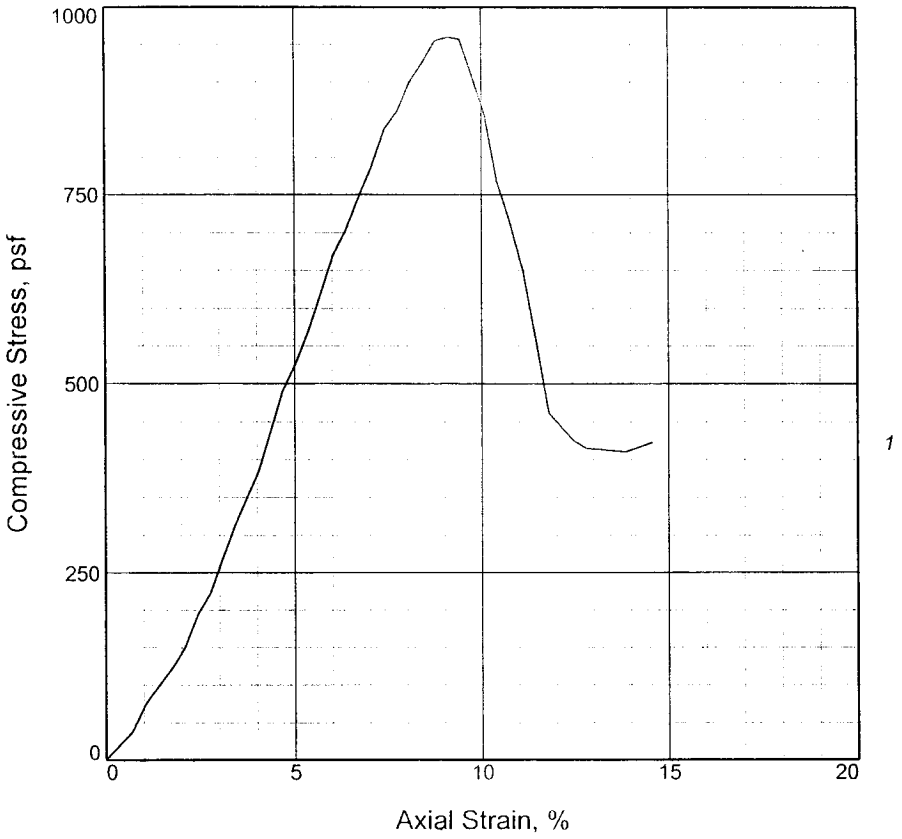
UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	960.0			
Undrained shear strength, psf	480.0			
Failure strain, %	9.1			
Strain rate, in./min.	0.060			
Water content, %	27.8			
Wet density, pcf	118.9			
Dry density, pcf	93.0			
Saturation, %	92.4			
Void ratio	0.8121			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: SO GR CL4

LL =	PL =	PI =	**Assumed GS=** 2.7	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/27/05

Remarks:
TORVANE = 0.150 TSF

Figure 1

Client: URS Corporation

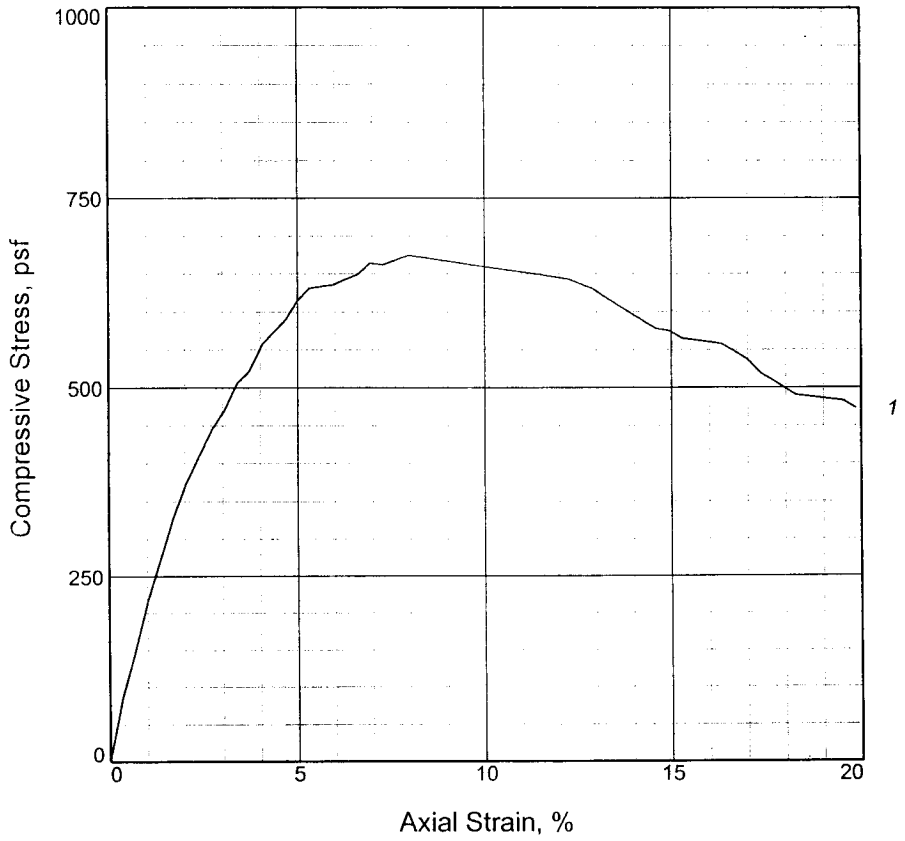
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 12.5
Sample Number: 6

UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	664.2			
Undrained shear strength, psf	332.1			
Failure strain, %	6.9			
Strain rate, in./min.	0.058			
Water content, %	75.5			
Wet density, pcf	93.7			
Dry density, pcf	53.4			
Saturation, %	93.8			
Void ratio	2.2046			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: SO GR CH4 W/ TR-WD, SL

LL =	PL =	PI =	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 19082

Date: 11/23/05

Remarks:
TORVANE = 0.130 TSF

Figure 1

Client: URS Corporation

Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal

Source of Sample: B-3WG **Depth:** 20.0

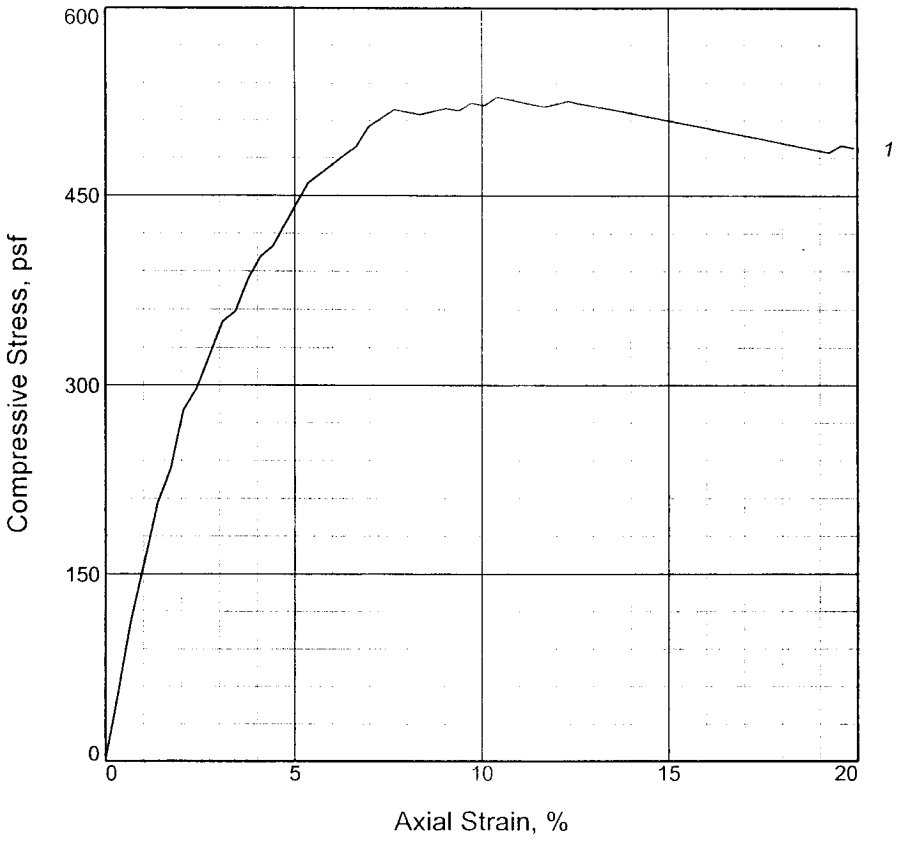
Sample Number: 9

UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	518.5			
Undrained shear strength, psf	259.2			
Failure strain, %	7.7			
Strain rate, in./min.	0.058			
Water content, %	63.0			
Wet density, pcf	98.2			
Dry density, pcf	60.3			
Saturation, %	94.2			
Void ratio	1.8180			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: SO GR CH4 W/ LNS ML

LL =	PL =	PI =	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/27/05

Remarks:
TORVANE = 0.180 TSF

Figure 1

Client: URS Corporation

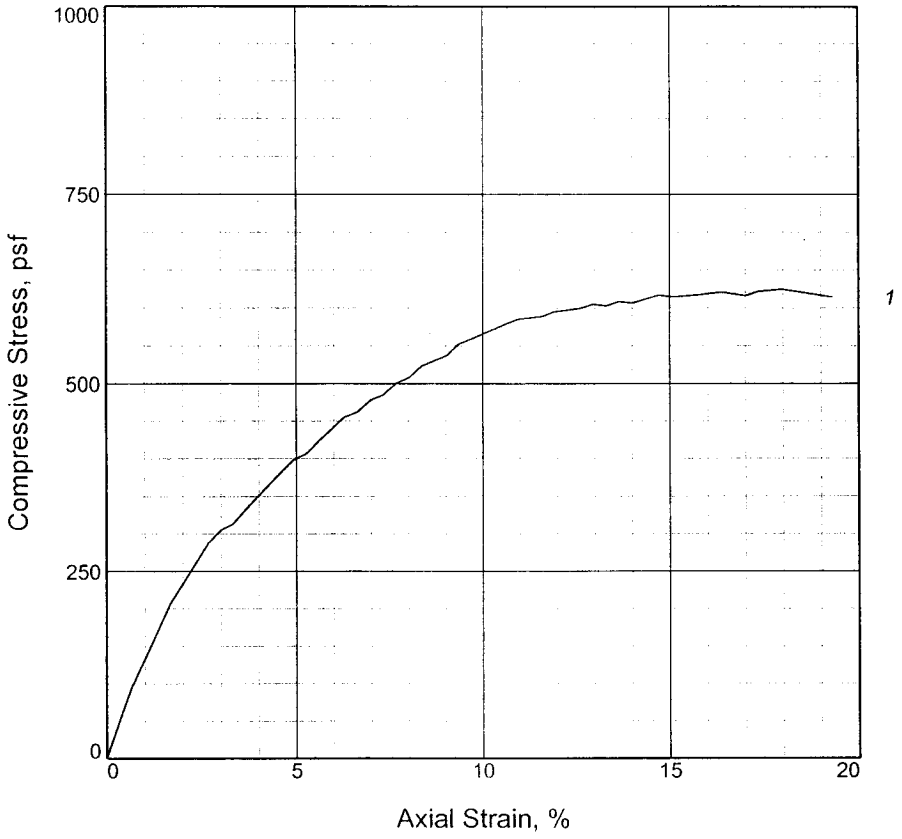
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 25.0
Sample Number: 11

UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	604.7			
Undrained shear strength, psf	302.3			
Failure strain, %	13.0			
Strain rate, in./min.	0.057			
Water content, %	55.3			
Wet density, pcf	102.2			
Dry density, pcf	65.8			
Saturation, %	95.2			
Void ratio	1.5788			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: SO GR CH4 W/ ARS SM, SL

LL =	PL =	PI =	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/27/05

Remarks:
TORVANE = 0.160 TSF

Client: URS Corporation

Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 30.0
Sample Number: 13

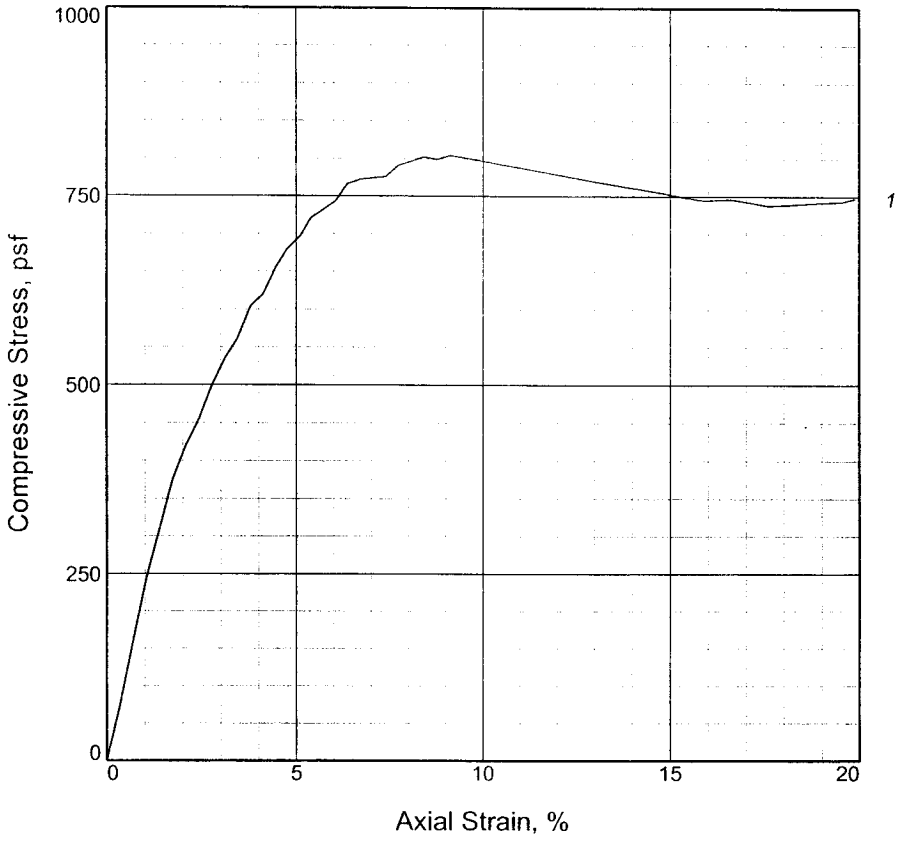
UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	801.9			
Undrained shear strength, psf	400.9			
Failure strain, %	8.4			
Strain rate, in./min.	0.056			
Water content, %	57.1			
Wet density, pcf	99.8			
Dry density, pcf	63.5			
Saturation, %	92.9			
Void ratio	1.6728			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: SO GR CH4 W/ SL

LL =	PL =	PI =	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/27/05

Remarks:
TORVANE = 0.200 TSF

Client: URS Corporation

Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 35.0
Sample Number: 15

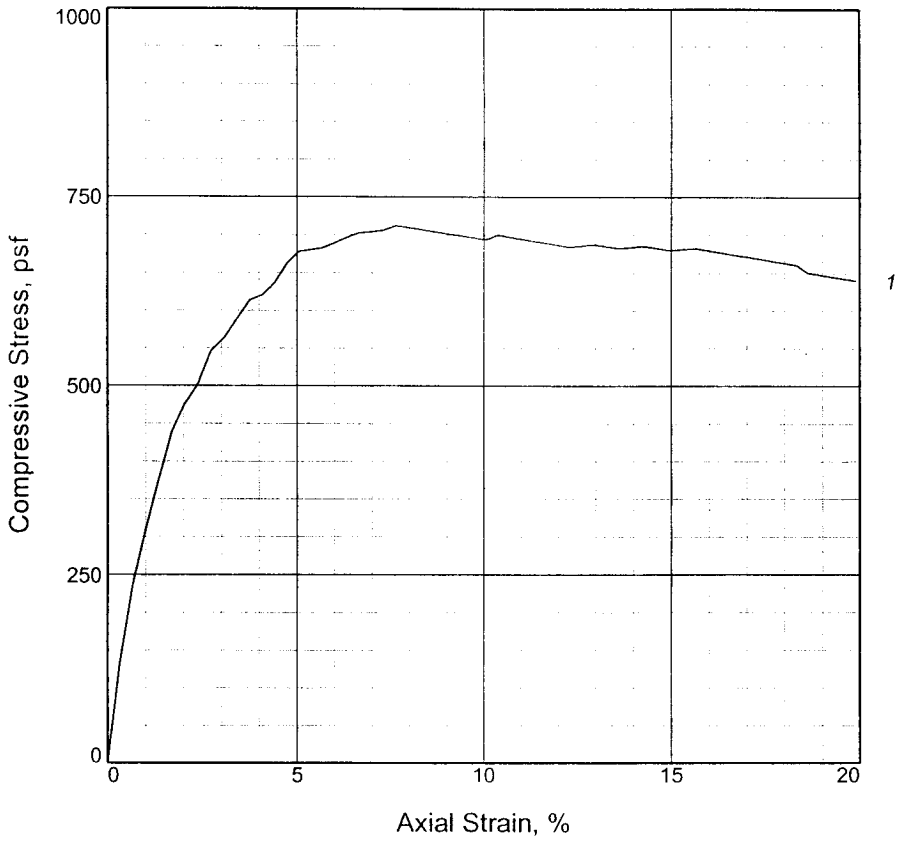
UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	711.9			
Undrained shear strength, psf	356.0			
Failure strain, %	7.6			
Strain rate, in./min.	0.058			
Water content, %	67.2			
Wet density, pcf	97.4			
Dry density, pcf	58.3			
Saturation, %	95.5			
Void ratio	1.9139			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: SO GR CH4 W/ SL

LL =	PL =	PI =	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/27/05

Remarks:
TORVANE = 0.150 TSF

Figure 1

Client: URS Corporation

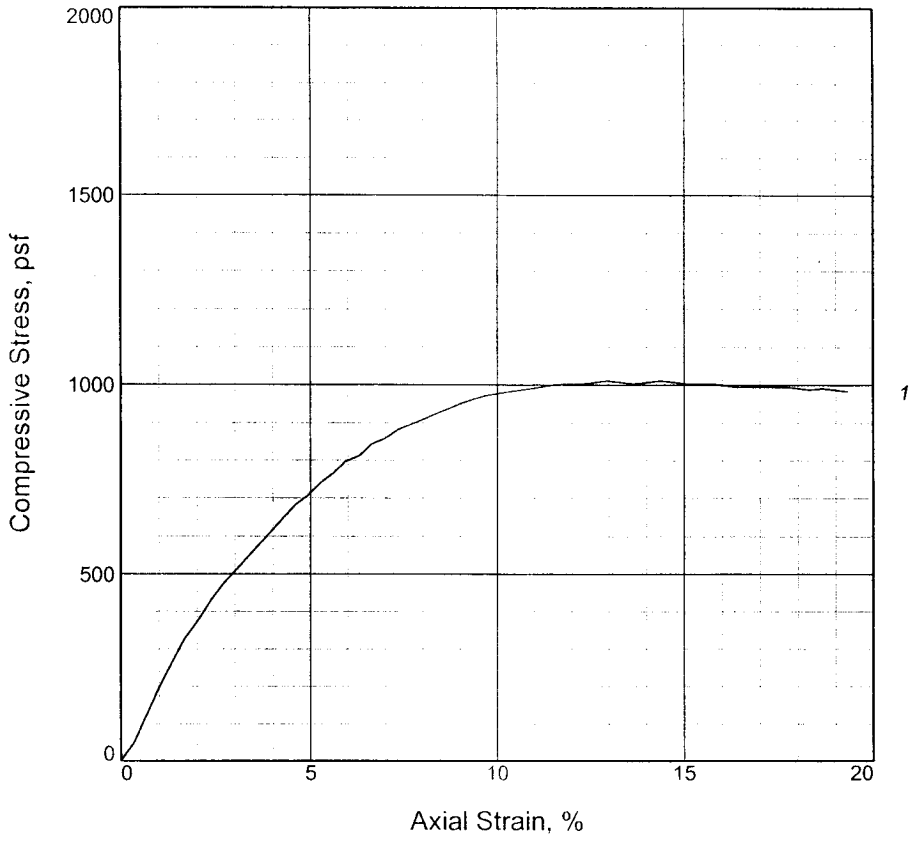
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 40.0
Sample Number: 17

UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1010.4			
Undrained shear strength, psf	505.2			
Failure strain, %	13.0			
Strain rate, in./min.	0.025			
Water content, %	56.5			
Wet density, pcf	100.6			
Dry density, pcf	64.3			
Saturation, %	93.6			
Void ratio	1.6416			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: M GR CH4 W/ SL

LL =	PL =	PI =	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/27/05

Remarks:
TORVANE = 0.240 TSF

Client: URS Corporation

Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 45.0
Sample Number: 19

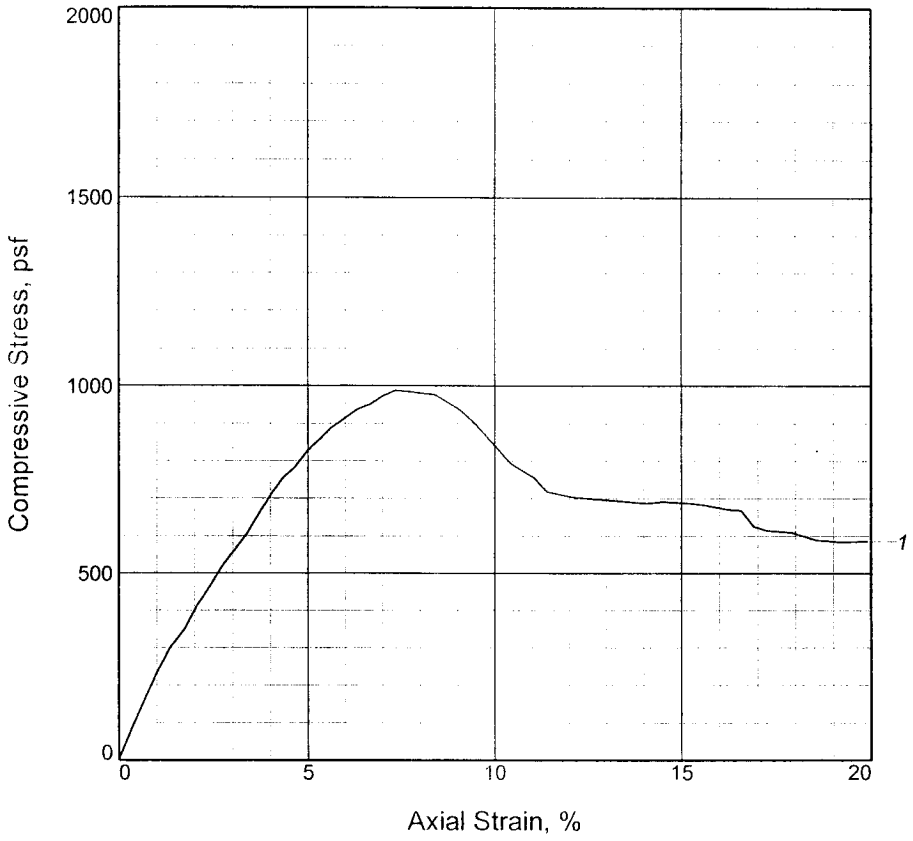
UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	987.6			
Undrained shear strength, psf	493.8			
Failure strain, %	7.3			
Strain rate, in./min.	0.040			
Water content, %	50.3			
Wet density, pcf	100.6			
Dry density, pcf	66.9			
Saturation, %	89.0			
Void ratio	1.5367			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: M GR CH4 W/ ARS SM, SIF

LL =	**PL =**	**PI =**	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/27/05

Remarks:
TORVANE = 0.250 TSF

Figure 1

Client: URS Corporation

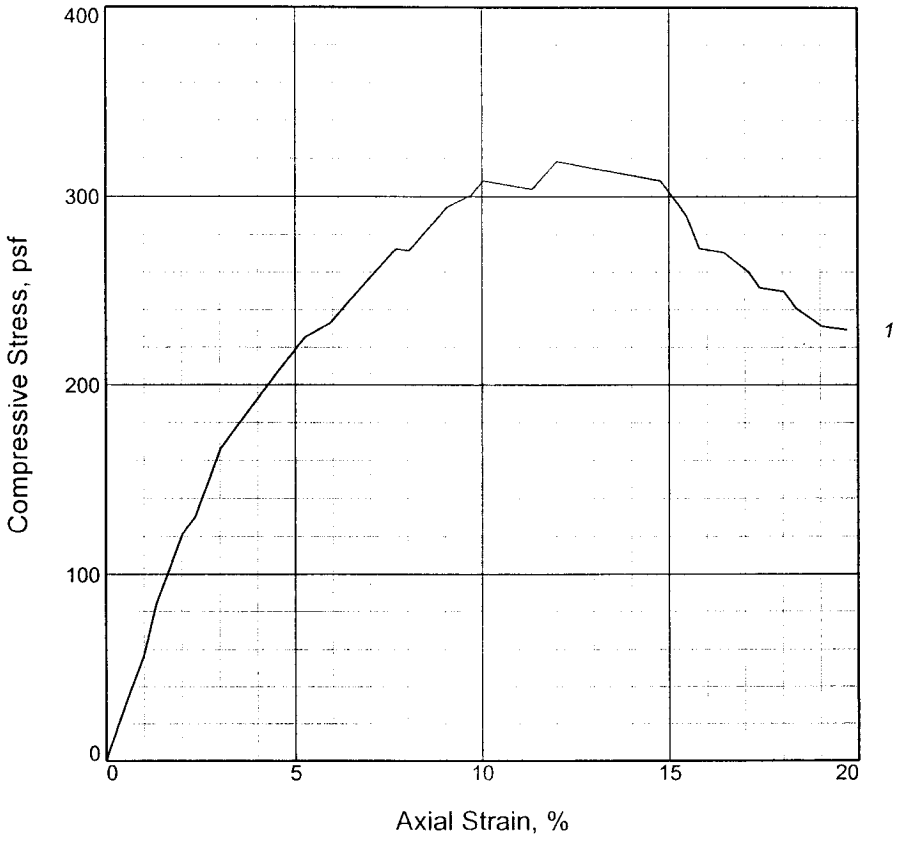
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 50.0
Sample Number: 21

UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Tested By: zh **Checked By:** dp

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	272.3			
Undrained shear strength, psf	136.2			
Failure strain, %	7.7			
Strain rate, in./min.	0.054			
Water content, %	30.3			
Wet density, pcf	114.7			
Dry density, pcf	88.0			
Saturation, %	88.7			
Void ratio	0.9297			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: VSO GR CL6 W/ LNS & ARS CH

LL =	PL =	PI =	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/27/05

Remarks:
TORVANE = 0.250 TSF

Figure 1

Client: URS Corporation

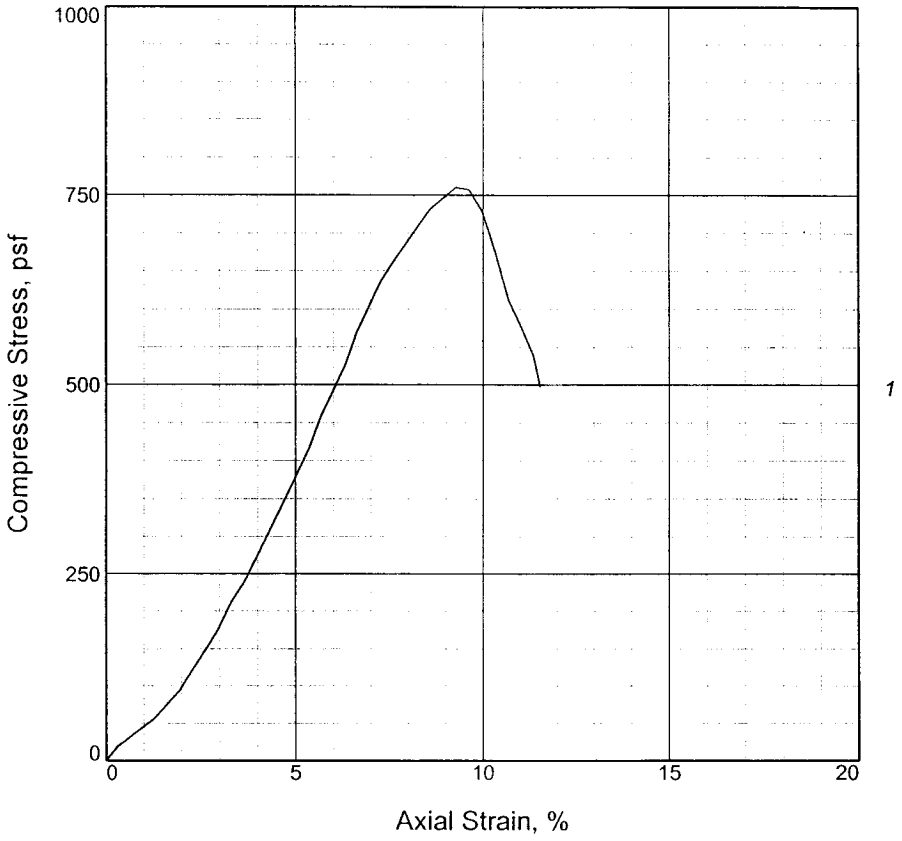
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 65.0
Sample Number: 27

UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	759.8			
Undrained shear strength, psf	379.9			
Failure strain, %	9.3			
Strain rate, in./min.	0.058			
Water content, %	26.2			
Wet density, pcf	126.1			
Dry density, pcf	99.9			
Saturation, %	101.8			
Void ratio	0.6998			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: SO GNG CL4

LL =	PL =	PI =	Assumed GS= 2.72	Type: UNDISTURBED

Project No.: 19082
Date: 11/27/05

Remarks:
TORVANE = 0.110 TSF

Client: URS Corporation

Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: B-3WG **Depth:** 67.5
Sample Number: 28

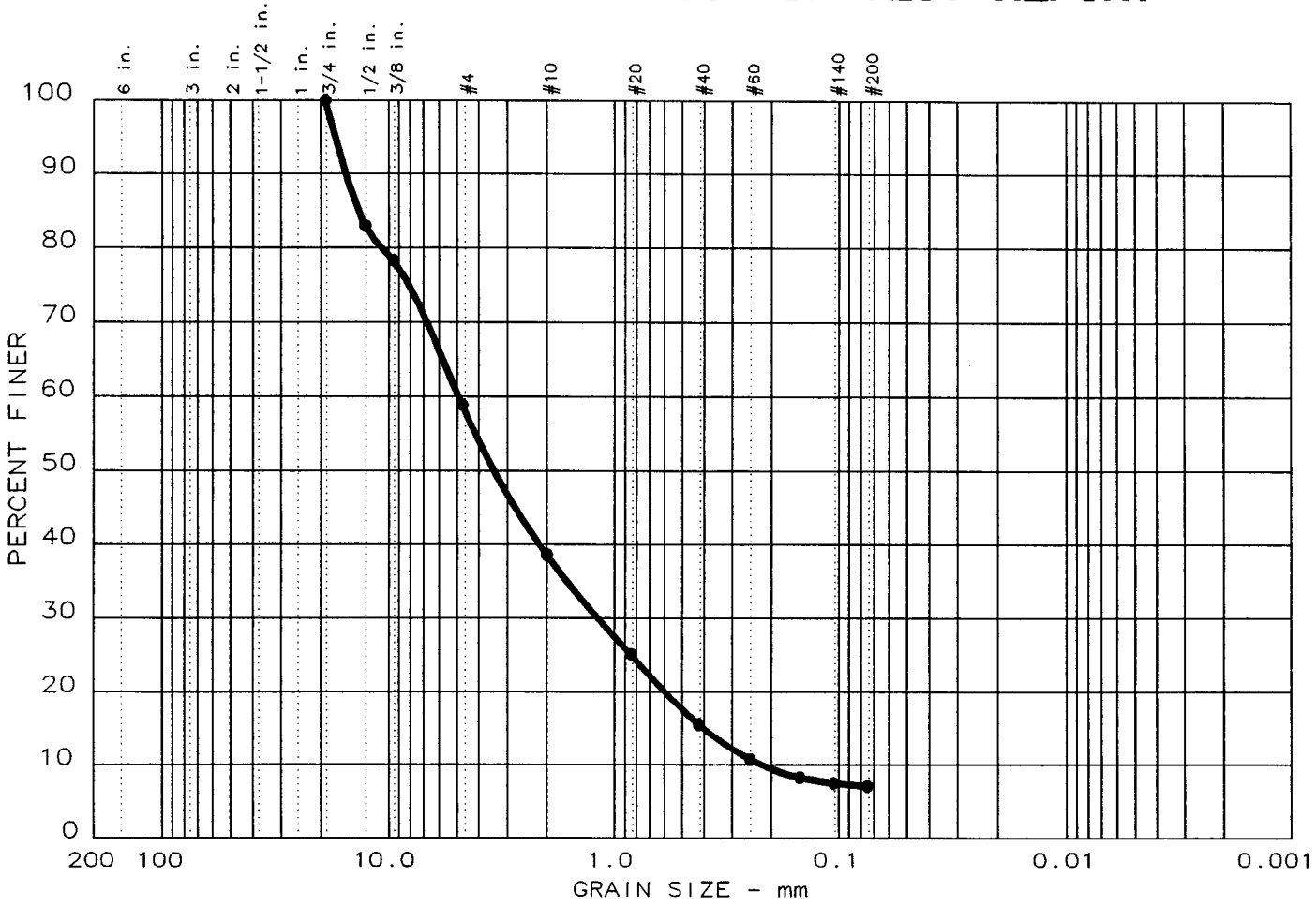
UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: ZH **Checked By:** DP

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	41.1	51.8	7.1		SI		

SIEVE inches size	PERCENT FINER ●
0.75	100.0
0.5	82.9
0.375	78.3
GRAIN SIZE	
D_{60}	4.92
D_{30}	1.18
D_{10}	0.22
COEFFICIENTS	
C_c	1.27
C_u	22.2

SIEVE number size	PERCENT FINER ●
4	58.9
10	38.6
20	25.1
40	15.6
60	10.7
100	8.3
140	7.5
200	7.1

Sample information:
● Boring 3WG, Sample 24
SI W/ GP, ARS SM

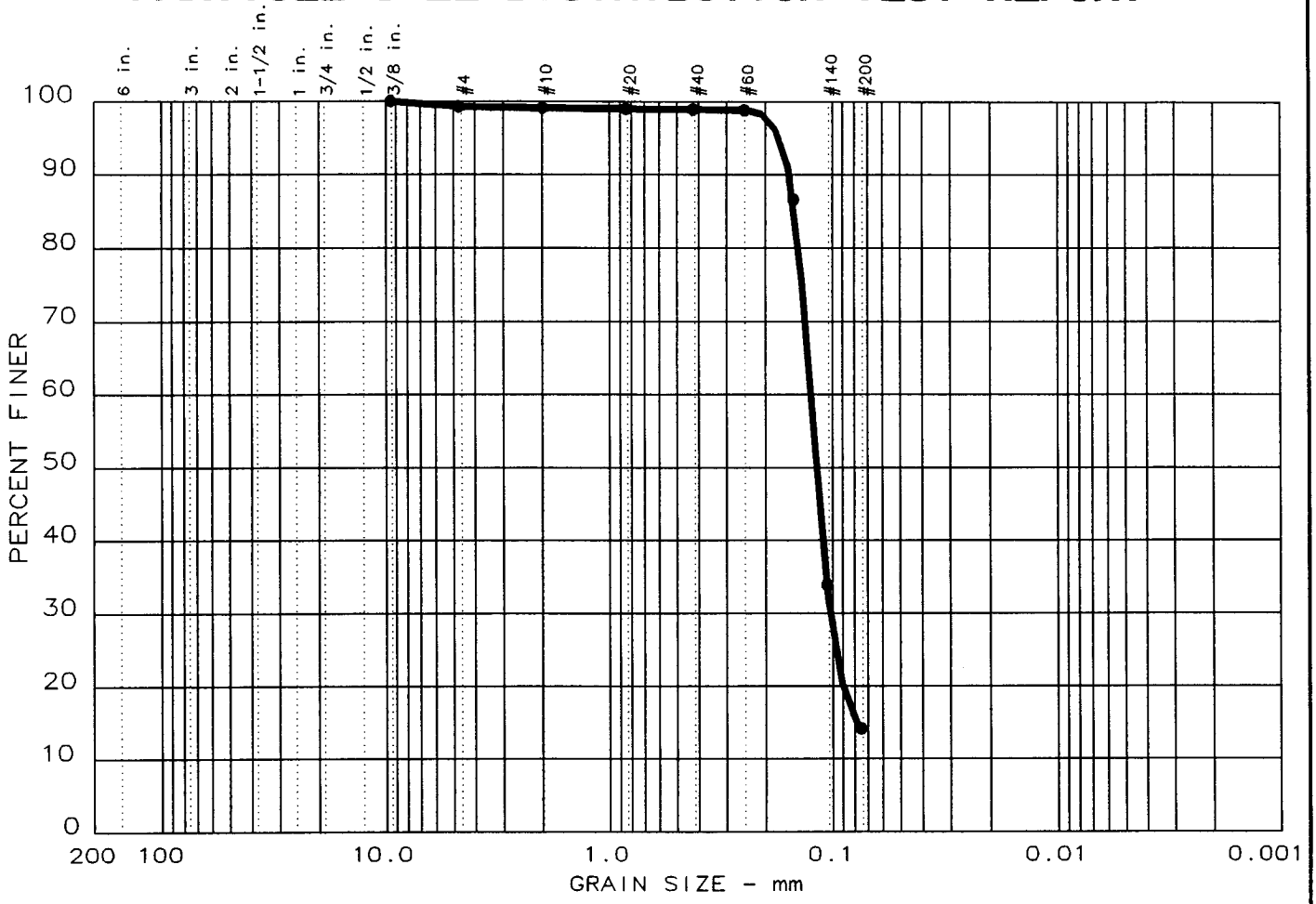
Remarks:
Sample 57.5'

Eustis Engineering Company, Inc.

Project No.: 19082
Project: USACE - IHNC

Date: 12-1-05 Data Sheet No. ——

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	0.8	85.1	14.1		SM1-s		

SIEVE inches size	PERCENT FINER ●		
0.375	100.0		
	GRAIN SIZE		
D_{60} D_{30} D_{10}	0.13 0.10		
	COEFFICIENTS		
C_c C_u			

SIEVE number size	PERCENT FINER ●		
4	99.2		
10	99.1		
20	99.0		
40	98.9		
60	98.8		
100	86.6		
140	33.9		
200	14.2		

Sample information:
● Boring 3WG, Sample 31
Gr SM1-s W/ TR SIF

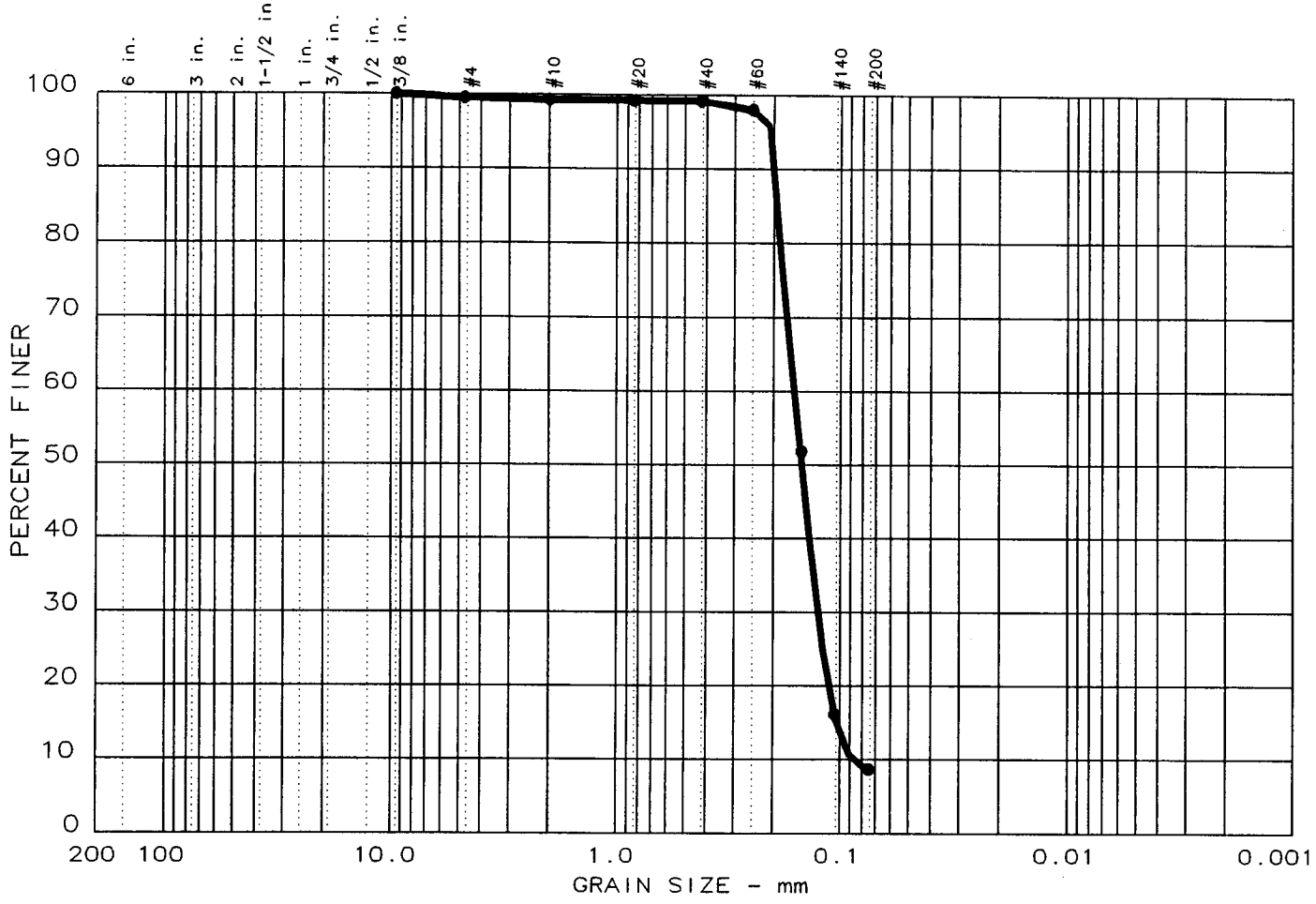
Remarks:
Sample 75.0'

Eustis Engineering Company, Inc.

Project No.: 19082
Project: USACE - IHNC

Date: 12-1-05 Data Sheet No. ——

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	0.5	90.8	8.7		SP		

SIEVE inches size	PERCENT FINER ●		
0.375	100.0		

	GRAIN SIZE
D_{60}	0.16
D_{30}	0.13
D_{10}	0.08

	COEFFICIENTS
C_c	1.13
C_u	1.8

SIEVE number size	PERCENT FINER ●
4	99.5
10	99.3
20	99.2
40	99.1
60	98.0
100	51.8
140	16.1
200	8.7

Sample information:
● Boring 3WG, Sample 38
Gr SP

Remarks:
Sample 92.5'

Eustis Engineering Company, Inc.

Project No.: 19082
Project: USACE - IHNC

Date: 12-1-05 Data Sheet No. ———