GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	---	Sample Type:	---	Tested By:	md
Sample ID:	---	Test Date:	12/20/19	Checked By:	jsc
Depth :	---	Test Id:	530866		

Moisture Content of Soil and Rock - ASTM D2216

Boring ID	Sample ID	Depth	Description	Moisture Content,%
PDI-107SPT	39- 41-190924	---	Wet, dark gray sand	34.2
PDI-108SPT	1.5- 3.5-19107	---	Wet, olive gray silt	86.6
PDI-109SPT	6.5- 8.5-191004	---	Wet, dark olive gray silt	96.1
PDI-109SPT	20- 22-191004	---	Wet, black silt	50.7
PDI-112SPT	6.5- 8.5-191003	---	Moist, olive gray silt	87.7
PDI-113SPT	47- 49-191011	---	Moist, dark grayish brown silty sand	32.1
PDI-114SPT	7.5- 9.5-191008	---	Wet, gray silt	63.9
PDI-114SPT	17.5- 19.5-191008	---	Wet, gray clay	65.6
PDI-115SPT	41.5- 43.5-191009	---	Wet, dark gray sandy silt	48.6

Notes: Temperature of Drying : 110º Celsius

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	---	Sample Type:	---	Tested By:	md
Sample ID:	---	Test Date:	12/26/19	Checked By:	jsc
Depth :	---	Test Id:	530875		

Moisture Content of Soil and Rock - ASTM D2216

Boring ID	Sample ID	Depth	Description	Moisture Content,%
PDI-116SPT	9.5- 11.5-191002	---	Wet, gray silt with sand	55.2
PDI-116SPT	30- 32-190927	---	Moist, gray sand with silt	31.0
PDI-117SPT	58.5- 60.5-191002	---	Moist, dark brownish gray silty sand	29.5
PDI-118SPT	4.5- 6.5-191014	---	Wet, olive gray silt	83.2
PDI-118SPT	15- 17-191014	---	Wet, black silt	64.1
PDI-119SPT	36.5- 38.5-191001	---	Moist, dark gray sandy clay	41.7
PDI-121SPT	06- 08-190930	---	Wet, olive gray silt	84.5
PDI-122SPT	44- 46-190926	---	Moist, dark gray sand	31.0
PDI-123SPT	4.5- 6.5-190924	---	Wet, olive gray silt	69.2
PDI-123SPT	19.5- 21.5-190924	---	Wet, gray clay	71.3

Notes: Temperature of Drying : 110º Celsius

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	---	Sample Type:	---	Tested By:	ckg
Sample ID:	---	Test Date:	12/06/19	Checked By:	jsc
Depth :	---	Test Id:	532322		

Moisture Content of Soil and Rock - ASTM D2216

Boring ID	Sample ID	Depth	Description	Moisture Content,%
PDI-135RAB	19.1- 21-191120	---	Moist, very dark gray silty sand with gravel	17.2
PDI-137RAB	3.5- 14.8-191119	---	Moist, dark gray silty sand with gravel	17.7
PDI-138RAB	15.2- 18.6-191118	---	Moist, dark grayish brown sandy silt with gravel	25.4
PDI-139RAB	17.5- 21-191115	---	Moist, dark grayish brown sandy silt with gravel	28.2
PDI-140RAB	10- 12.7-191108	---	Moist, dark brown silty gravel with sand	29.6
PDI-141RAB	00- 10-191107	---	Moist, dark grayish brown clayey gravel with sand	12.0
PDI-142RAB	00- 10-191112	---	Moist, dark brown silty sand with gravel	6.6
PDI-143RAB	20- 31.1-191111	---	Moist, dark brown silty sand	10.9

Notes: Temperature of Drying : 110º Celsius

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	---	Sample Type:	---	Tested By:	ckg
Sample ID:	---	Test Date:	12/09/19	Checked By:	jsc
Depth :	---	Test Id:	532310		

Laboratory Determination of Density (Unit Weight) of Soil Specimens by ASTM D7263

Boring ID	Sample ID	Depth	Visual Description	Bulk Density pcf	Moisture Content %	Dry Density pcf	*
PDI-108SPT	1.5-3.5-19107	---	Wet, olive gray silt	92.16	86.65	49.38	(1)
PDI-112SPT	6.5-8.5-191003	---	Moist, olive gray silt	86.71	87.70	46.20	(2)
PDI-114SPT	17.5-19.5-19100[illegible]	---	Wet, gray clay	100.3	65.59	60.60	(3)
PDI-116SPT	9.5-11.5-19100[illegible]	---	Wet, gray silt with sand	94.24	55.15	60.74	(4)
PDI-121SPT	06-08-190930	---	Wet, olive gray silt	75.75	84.53	41.05	(5)
PDI-123SPT	4.5-6.5-190924	---	Wet, olive gray silt	96.54	69.18	57.06	(6)
PDI-135RAB	19.1-21-191120	---	Moist, very dark gray silty sand with gravel	83.21	17.21	70.99	(7)

* Sample Comments

(1): Method B-Cylinder, Intact

(2): Method B-Cylinder, Intact

(3): Method B-Cylinder, Intact

(4): Method B-Cylinder, Intact

(5): Method B-Cylinder, Intact

(6): Method B-Cylinder, Intact

(7): Method B-Cylinder, Intact

Notes: Moisture Content determined by ASTM D2216.

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	---	Sample Type:	---	Tested By:	ckg
Sample ID:	---	Test Date:	12/09/19	Checked By:	jsc
Depth :	---	Test Id:	532306		

Laboratory Determination of Density (Unit Weight) of Soil Specimens by ASTM D7263

Boring ID	Sample ID	Depth	Visual Description	Bulk Density pcf	Moisture Content %	Dry Density pcf	*
PDI-137RAB	3.5-14.8-191119	---	Moist, dark gray silty sand with gravel	105.0	17.73	89.16	(1)
PDI-138RAB	15.2-18.6-191118	---	Moist, dark grayish brown sandy silt with gravel	119.0	25.40	94.87	(2)
PDI-139RAB	17.5-21-191115	---	Moist, dark grayish brown sandy silt with gravel	125.7	28.22	98.03	(3)
PDI-140RAB	10-12.7-191108	---	Moist, dark brown silty gravel with sand	109.8	29.58	84.73	(4)
PDI-141RAB	00-10-191107	---	Moist, dark grayish brown clayey gravel with sand	120.2	11.99	107.3	(5)
PDI-142RAB	00-10-191112	---	Moist, dark brown silty sand with gravel	103.4	6.640	96.93	(6)
PDI-143RAB	20-31.1-191111	---	Moist, dark brown silty sand	104.2	10.93	93.92	(7)

* Sample Comments

(1): Method B-Cylinder, Reconstituted (compacted)

(2): Method B-Cylinder, Reconstituted (compacted)

(3): Method B-Volumetric, Reconstituted (compacted)

(4): Method B-Cylinder, Reconstituted (compacted)

(5): Method B-Cylinder, Reconstituted (compacted)

(6): Method B-Cylinder, Reconstituted (compacted)

(7): Method B-Cylinder, Reconstituted (compacted)

Notes: Moisture Content determined by ASTM D2216.

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-119SPT	Sample Type:	tube	Tested By:	md
Sample ID:	36.5-38.5-191001	Test Date:	12/20/19	Checked By:	jsc
Depth :	---	Test Id:	531124		
Test Comment:	---				
Visual Description:	Moist, dark gray sandy clay				
Sample Comment:	---				

Laboratory Determination of Density (Unit Weight) of Soil Specimens by ASTM D7263

Boring ID	Sample ID	Depth	Visual Description	Bulk Density pcf	Moisture Content %	Dry Density pcf
PDI-119SPT	36.5-38.5-191001	---	Moist, dark gray sandy clay	106.9	41.68	75.45

* Sample Comments

(1): Method B-Cylinder, Intact

Notes: Moisture Content determined by ASTM D2216.

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	---	Sample Type:	---	Tested By:	ckg
Sample ID:	---	Test Date:	12/12/19	Checked By:	jsc
Depth :	---	Test Id:	532330		

Specific Gravity of Soils by ASTM D854

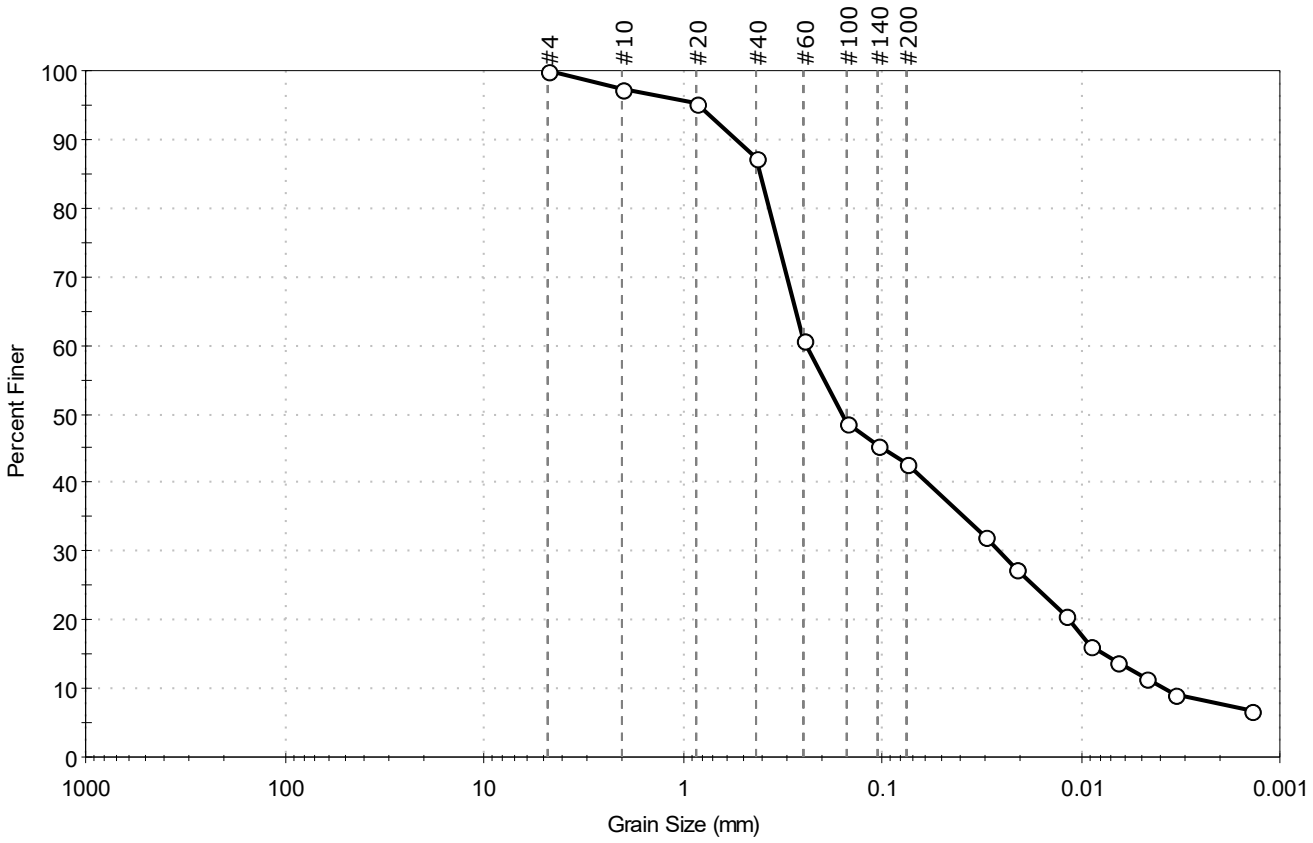
Boring ID	Sample ID	Depth	Visual Description	Specific Gravity	Comment
PDI- 135RAB	19.1-21-191120	---	Moist, very dark gray silty sand with gravel	2.66	
PDI- 137RAB	3.5-14.8-191119	---	Moist, dark gray silty sand with gravel	2.74	
PDI- 138RAB	15.2-18.6-191118	---	Moist, dark grayish brown sandy silt with gravel	2.79	
PDI- 139RAB	17.5-21-191115	---	Moist, dark grayish brown sandy silt with gravel	2.81	
PDI- 140RAB	10-12.7-191108	---	Moist, dark brown silty gravel with sand	2.84	
PDI- 141RAB	00- 10-191107	---	Moist, dark grayish brown clayey gravel with sand	2.88	
PDI- 142RAB	00- 10-191112	---	Moist, dark brown silty sand with gravel	2.80	
PDI- 143RAB	20-31.1-191111	---	Moist, dark brown silty sand	2.77	

Notes: Specific Gravity performed by using method B (oven dried specimens) of ASTM D854
Moisture Content determined by ASTM D2216.

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-071SC	Sample Type:	bag	Tested By:	ckg
Sample ID:	2-06-08-191001	Test Date:	11/27/19	Checked By:	bfs
Depth :	---	Test Id:	531000		
Test Comment:	---				
Visual Description:	Moist, very dark gray silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.1	57.1	42.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	97		
#20	0.85	95		
#40	0.42	87		
#60	0.25	61		
#100	0.15	49		
#140	0.11	45		
#200	0.075	43		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0303	32		
---	0.0214	28		
---	0.0120	21		
---	0.0089	16		
---	0.0067	14		
---	0.0048	11		
---	0.0033	9		
---	0.0014	7		

Coefficients

D_{85} =0.4063 mm	D_{30} =0.0257 mm
D_{60} =0.2426 mm	D_{15} =0.0078 mm
D_{50} =0.1586 mm	D_{10} =0.0038 mm
C_u =63.842	C_c =0.716

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

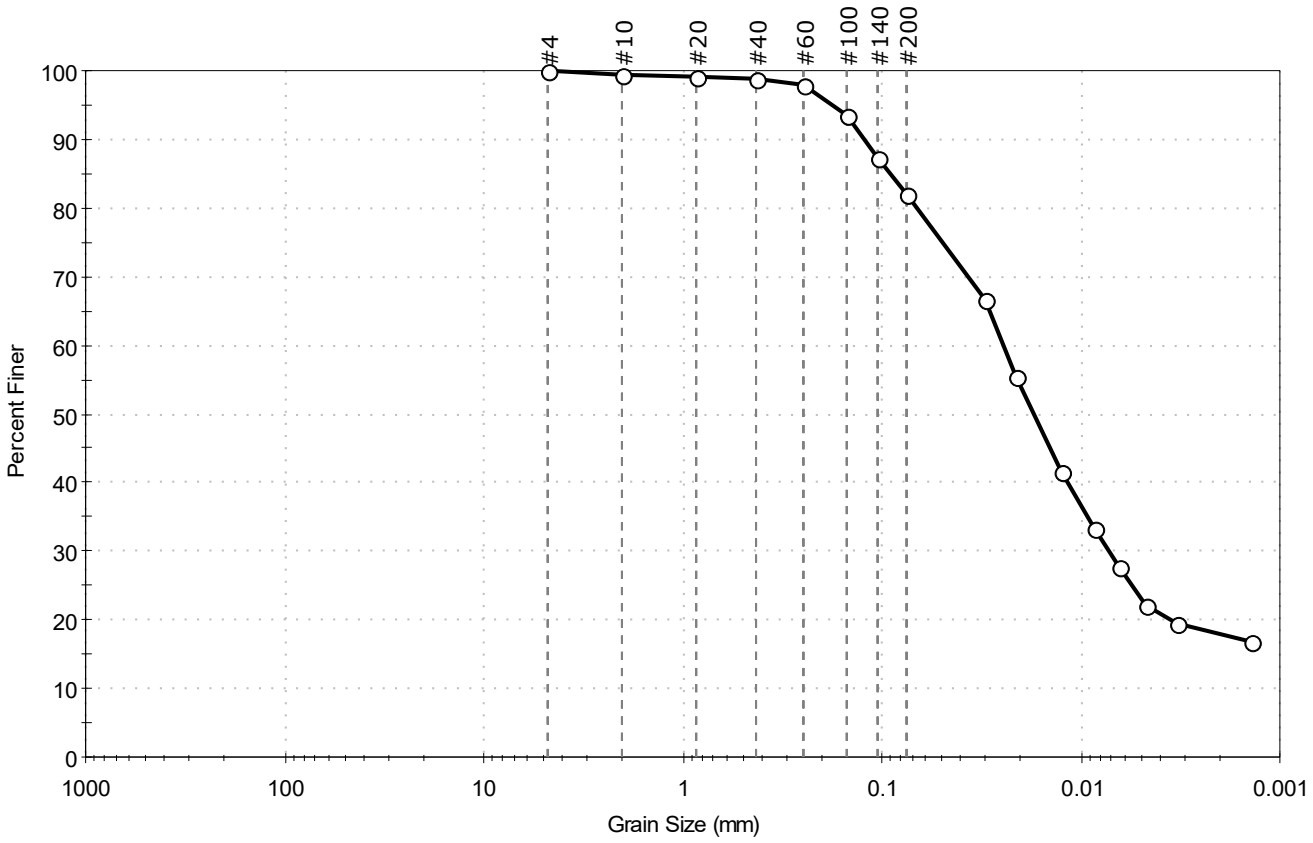
Separation of Sample: #200 Sieve

printed 2/17/2020 2:27:35 PM

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-084SC	Sample Type:	bag	Tested By:	ckg
Sample ID:	2-06-08-191002	Test Date:	11/27/19	Checked By:	bfs
Depth :	---	Test Id:	531001		
Test Comment:	---				
Visual Description:	Moist, dark grayish brown silt with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.1	17.9	82.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	93		
#140	0.11	87		
#200	0.075	82		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0306	67		
---	0.0210	56		
---	0.0125	42		
---	0.0086	33		
---	0.0064	28		
---	0.0047	22		
---	0.0033	19		
---	0.0014	17		

Coefficients

D_{85} = 0.0906 mm	D_{30} = 0.0072 mm
D_{60} = 0.0244 mm	D_{15} = N/A
D_{50} = 0.0171 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

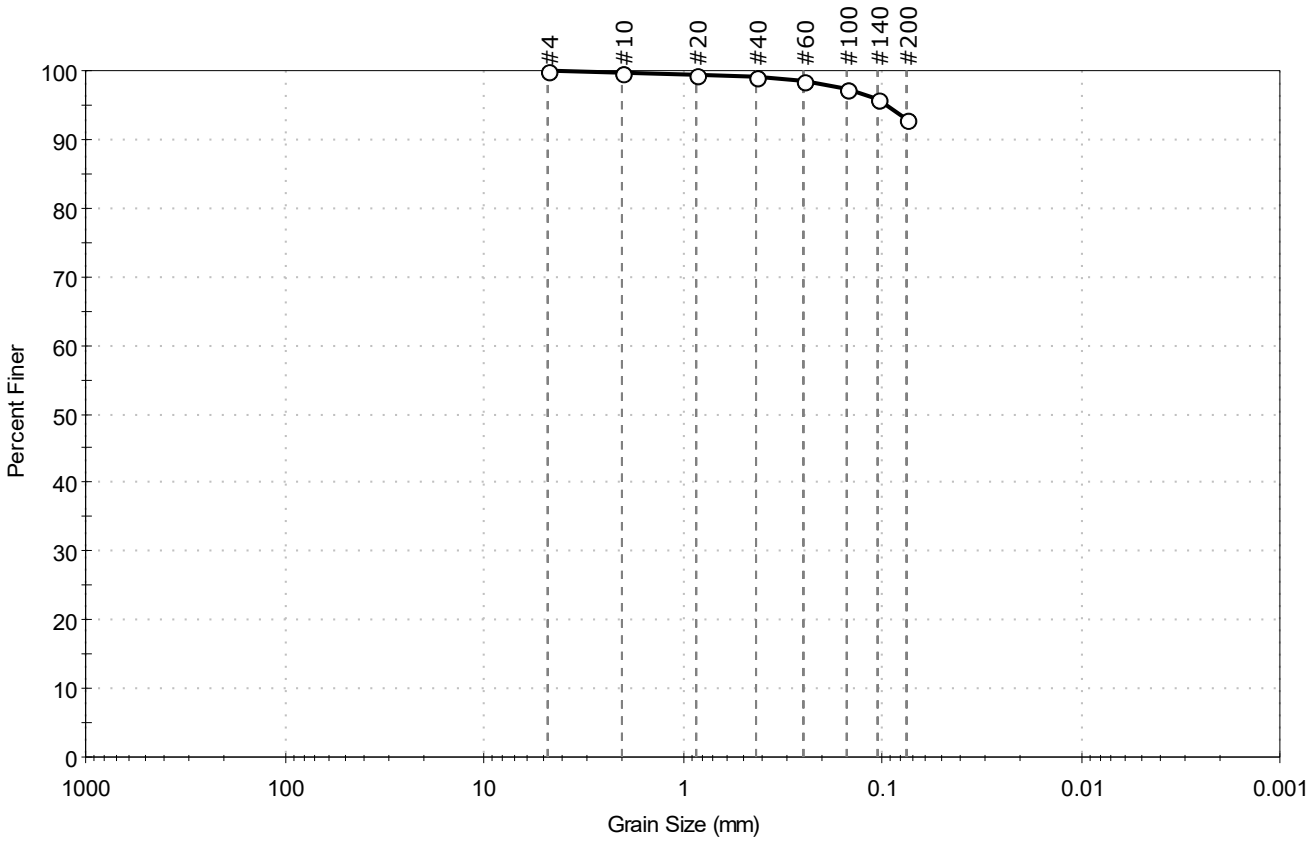
Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-112SPT	Sample Type:	tube	Tested By:	ckg
Sample ID:	6.5-8.5-191003	Test Date:	12/16/19	Checked By:	bfs
Depth :	---	Test Id:	531045		
Test Comment:	---				
Visual Description:	Moist, olive gray silt				
Sample Comment:	Sample contains organics				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	6.9	93.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	97		
#140	0.11	96		
#200	0.075	93		

Coefficients

D_{85} = N/A	D_{30} = N/A
D_{60} = N/A	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

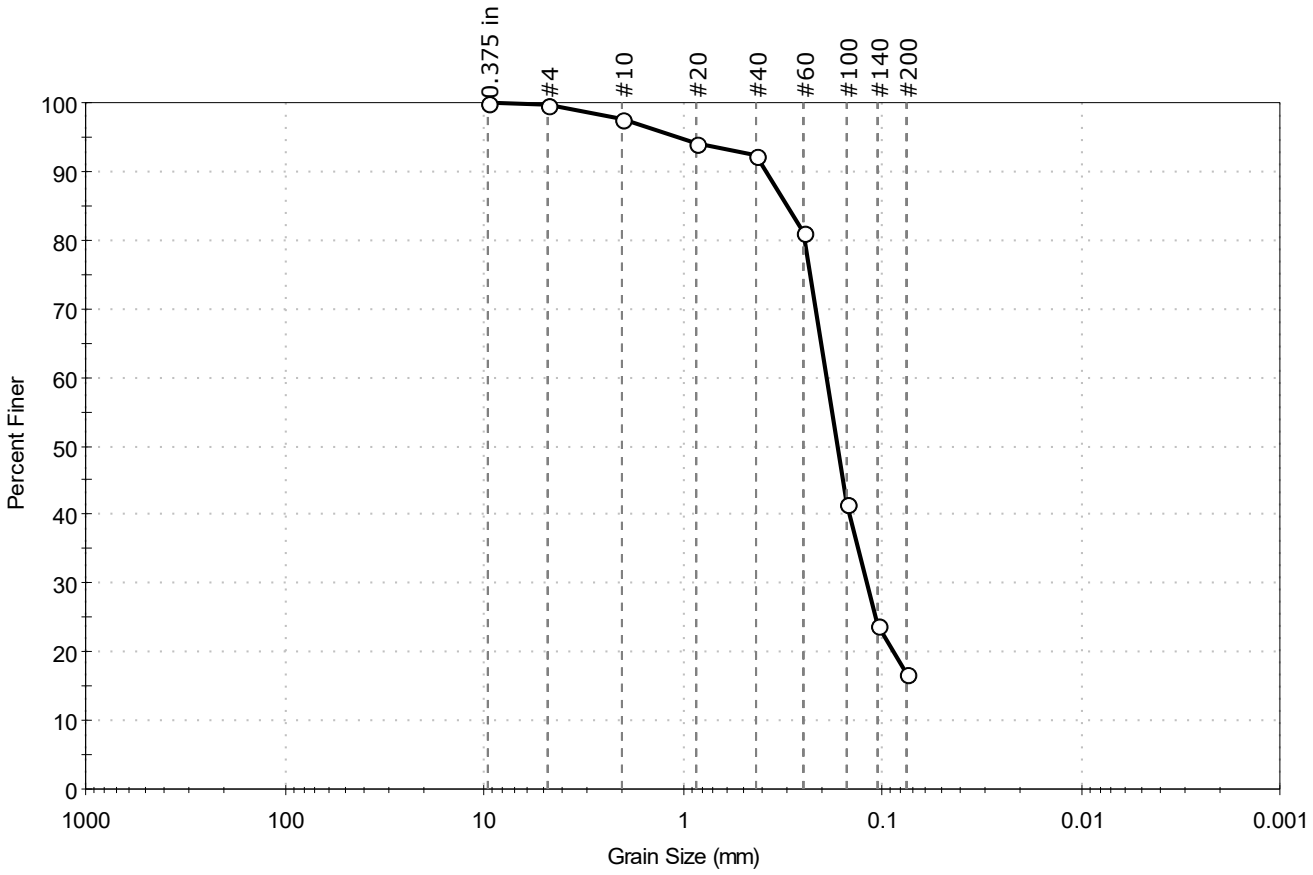
Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

printed 2/17/2020 2:27:38 PM

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-113SPT	Sample Type:	tube	Tested By:	ckg
Sample ID:	47-49-191011	Test Date:	12/23/19	Checked By:	bfs
Depth :	---	Test Id:	531046		
Test Comment:	---				
Visual Description:	Moist, dark grayish brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.4	82.7	16.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	100		
#10	2.00	98		
#20	0.85	94		
#40	0.42	92		
#60	0.25	81		
#100	0.15	42		
#140	0.11	24		
#200	0.075	17		

Coefficients

D_{85} = 0.2993 mm D_{30} = 0.1197 mm

D_{60} = 0.1902 mm D_{15} = N/A

D_{50} = 0.1672 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

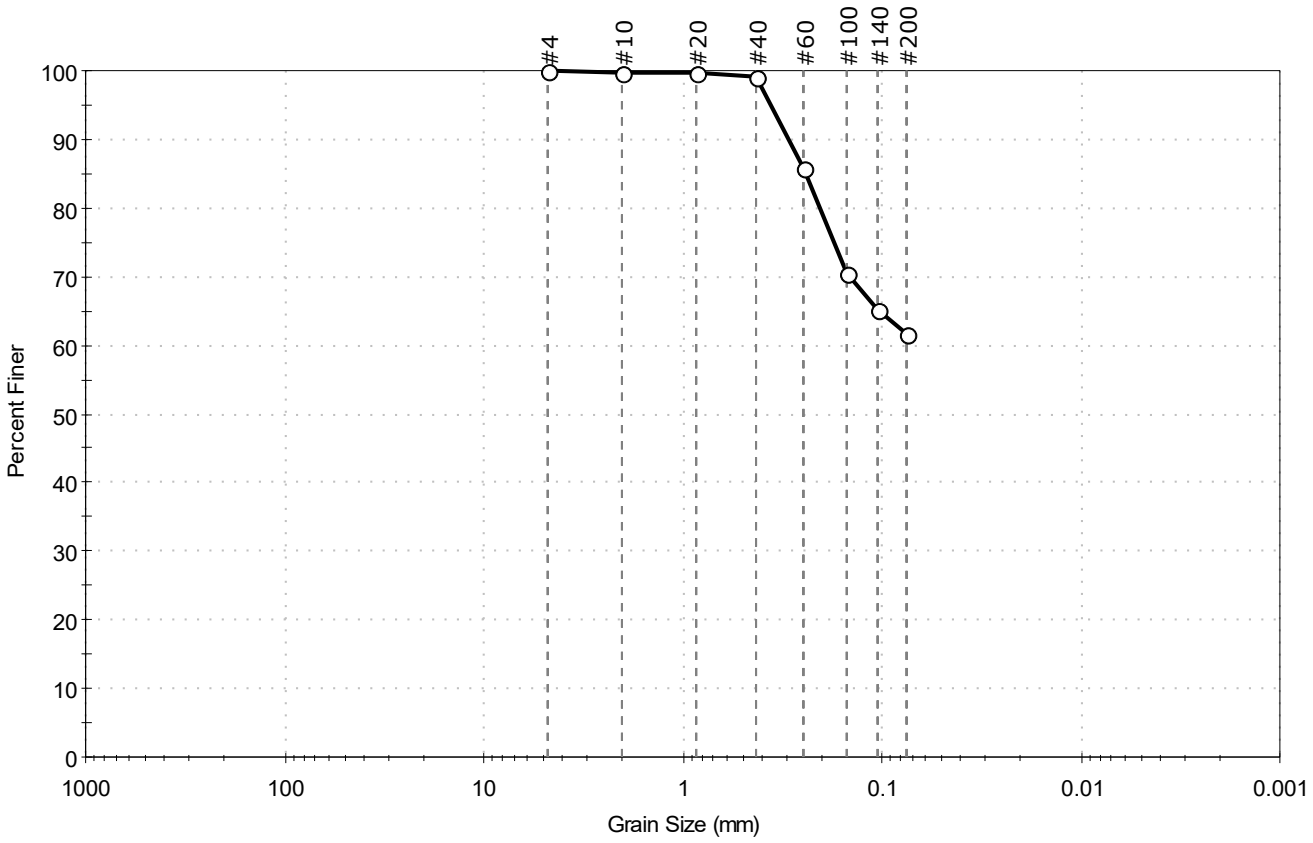
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-115SPT	Sample Type:	tube	Tested By:	ckg
Sample ID:	41.5-43.5-191009	Test Date:	12/04/19	Checked By:	bfs
Depth :	---	Test Id:	531047		
Test Comment:	---				
Visual Description:	Wet, dark gray sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	38.2	61.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	99		
#60	0.25	86		
#100	0.15	71		
#140	0.11	65		
#200	0.075	62		

Coefficients

D_{85} = 0.2425 mm	D_{30} = N/A
D_{60} = N/A	D_{15} = N/A
D_{50} = N/A	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

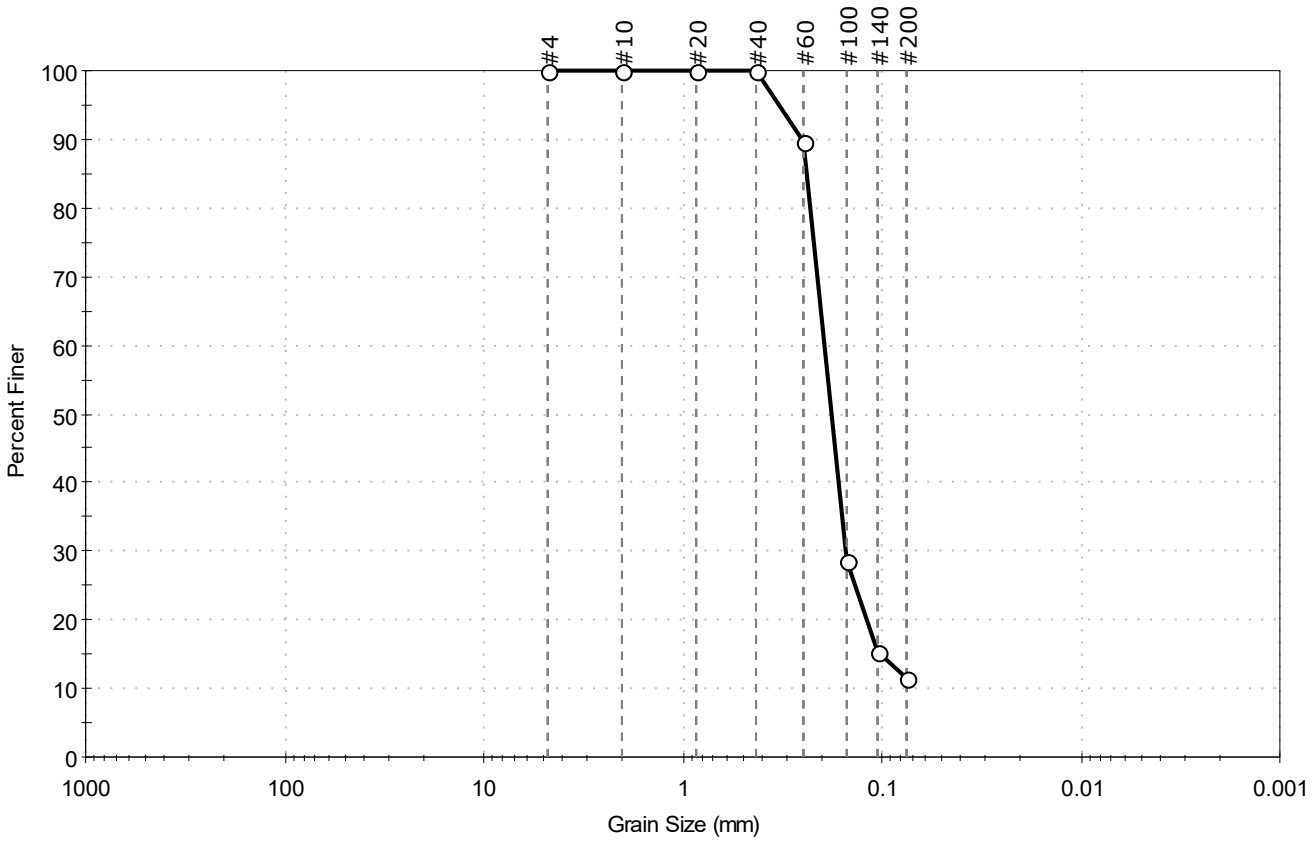
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-116SPT	Sample Type:	tube	Tested By:	ckg
Sample ID:	30-32-190927	Test Date:	12/16/19	Checked By:	bfs
Depth :	---	Test Id:	531048		
Test Comment:	---				
Visual Description:	Moist, gray sand with silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	88.4	11.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	90		
#100	0.15	29		
#140	0.11	15		
#200	0.075	12		

Coefficients

D_{85} = 0.2403 mm D_{30} = 0.1516 mm
D_{60} = 0.1949 mm D_{15} = 0.1019 mm
D_{50} = 0.1792 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

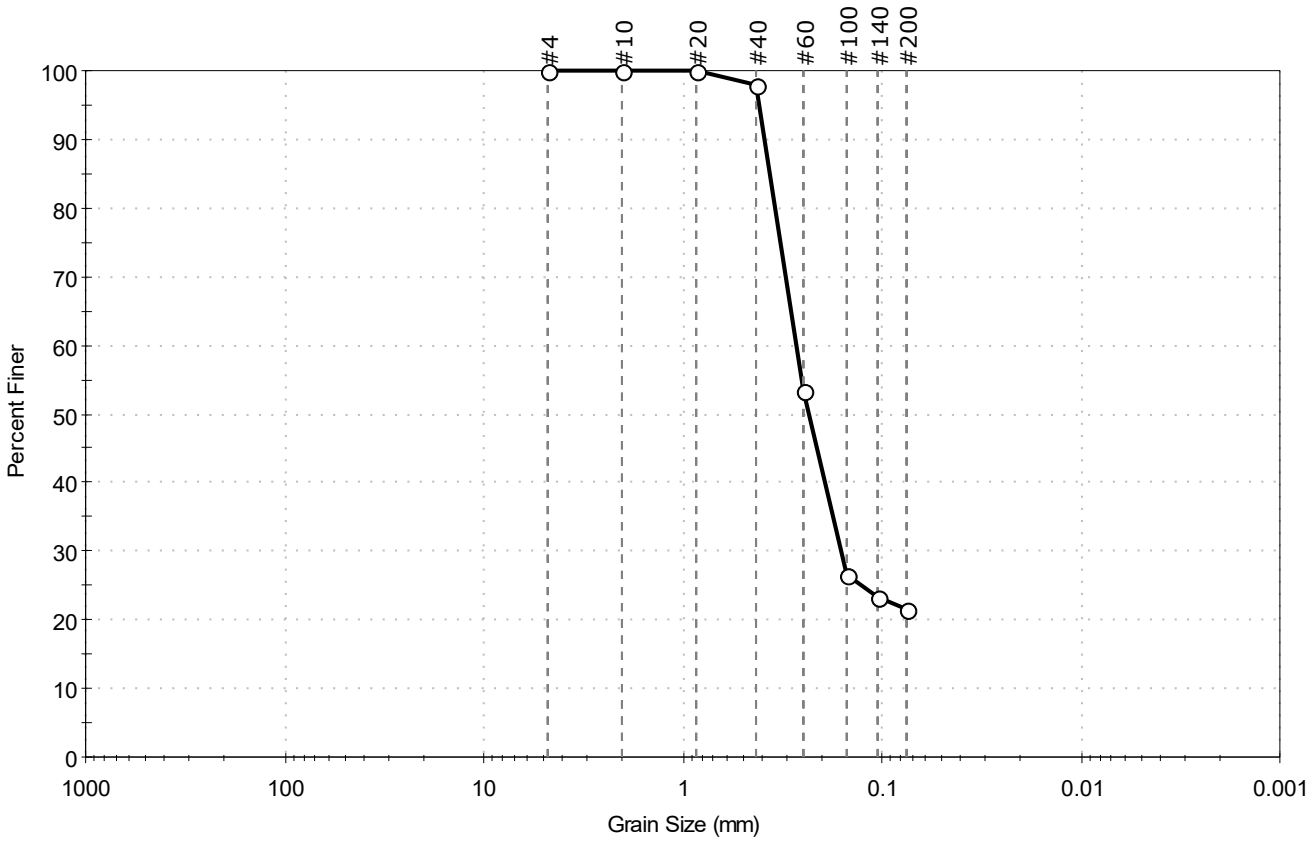
Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

printed 2/17/2020 2:27:40 PM

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-117SPT	Sample Type:	tube	Tested By:	ckg
Sample ID:	58.5-60.5-191002	Test Date:	12/13/19	Checked By:	bfs
Depth :	---	Test Id:	531049		
Test Comment:	---				
Visual Description:	Moist, dark brownish gray silty sand				
Sample Comment:	----				

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	78.6	21.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	98		
#60	0.25	53		
#100	0.15	27		
#140	0.11	23		
#200	0.075	21		

Coefficients

D_{85} = 0.3641 mm	D_{30} = 0.1598 mm
D_{60} = 0.2703 mm	D_{15} = N/A
D_{50} = 0.2340 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

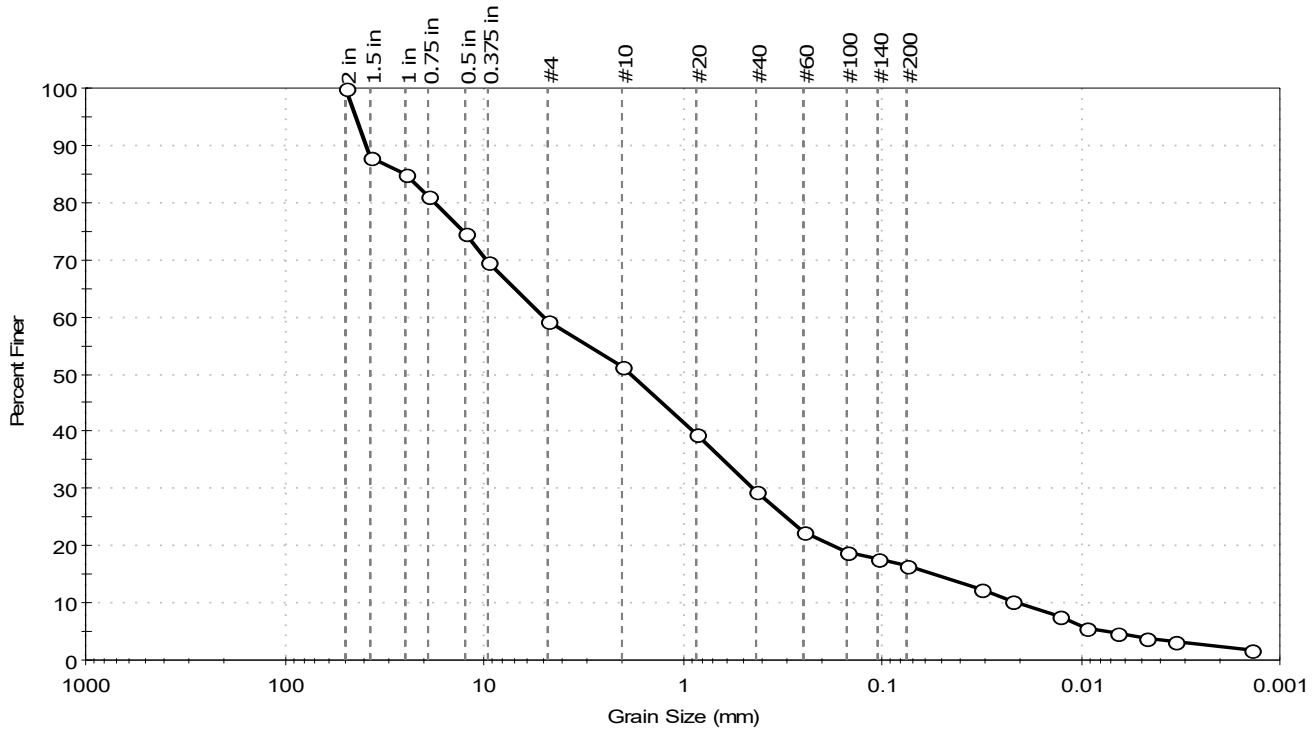
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-135RAB	Sample Type:	bag	Tested By:	ckg
Sample ID:	19.1-21-191120	Test Date:	12/09/19	Checked By:	bfs
Depth :	---	Test Id:	532318		
Test Comment:	---				
Visual Description:	Moist, very dark gray silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	40.8	42.7	16.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
2 in	50.00	100		
1.5 in	37.50	88		
1 in	25.00	85		
0.75 in	19.00	81		
0.5 in	12.50	75		
0.375 in	9.50	70		
#4	4.75	59		
#10	2.00	51		
#20	0.85	39		
#40	0.42	30		
#60	0.25	22		
#100	0.15	19		
#140	0.11	18		
#200	0.075	17		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0317	12		
---	0.0224	10		
---	0.0130	8		
---	0.0094	6		
---	0.0067	5		
---	0.0047	4		
---	0.0034	3		
---	0.0014	2		

Coefficients

D_{85} = 25.0254 mm D_{30} = 0.4377 mm

D_{60} = 5.0175 mm D_{15} = 0.0549 mm

D_{50} = 1.8218 mm D_{10} = 0.0206 mm

C_u = 243.568 C_c = 1.854

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

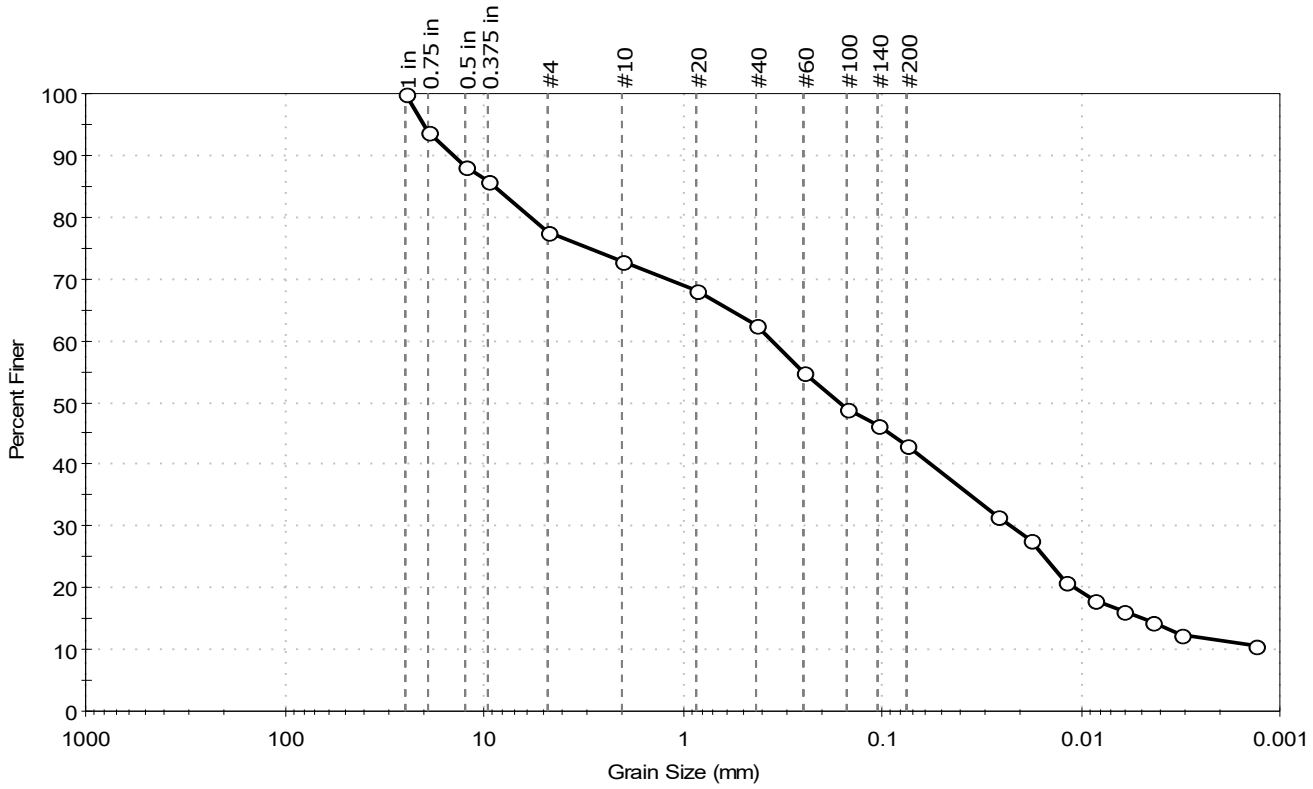
Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-137RAB	Sample Type:	bag	Tested By:	ckg
Sample ID:	3.5-14.8-191119	Test Date:	12/10/19	Checked By:	bfs
Depth :	---	Test Id:	532319		
Test Comment:	---				
Visual Description:	Moist, dark gray silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	22.6	34.5	42.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	94		
0.5 in	12.50	88		
0.375 in	9.50	86		
#4	4.75	77		
#10	2.00	73		
#20	0.85	68		
#40	0.42	63		
#60	0.25	55		
#100	0.15	49		
#140	0.11	46		
#200	0.075	43		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0264	31		
---	0.0181	28		
---	0.0121	21		
---	0.0085	18		
---	0.0061	16		
---	0.0044	14		
---	0.0032	12		
---	0.0013	10		

Coefficients

D_{85} = 8.9167 mm
D_{30} = 0.0228 mm
D_{60} = 0.3550 mm
D_{15} = 0.0050 mm
D_{50} = 0.1650 mm
D_{10} = N/A
C_u = N/A
C_c = N/A

Classification

ASTM N/A

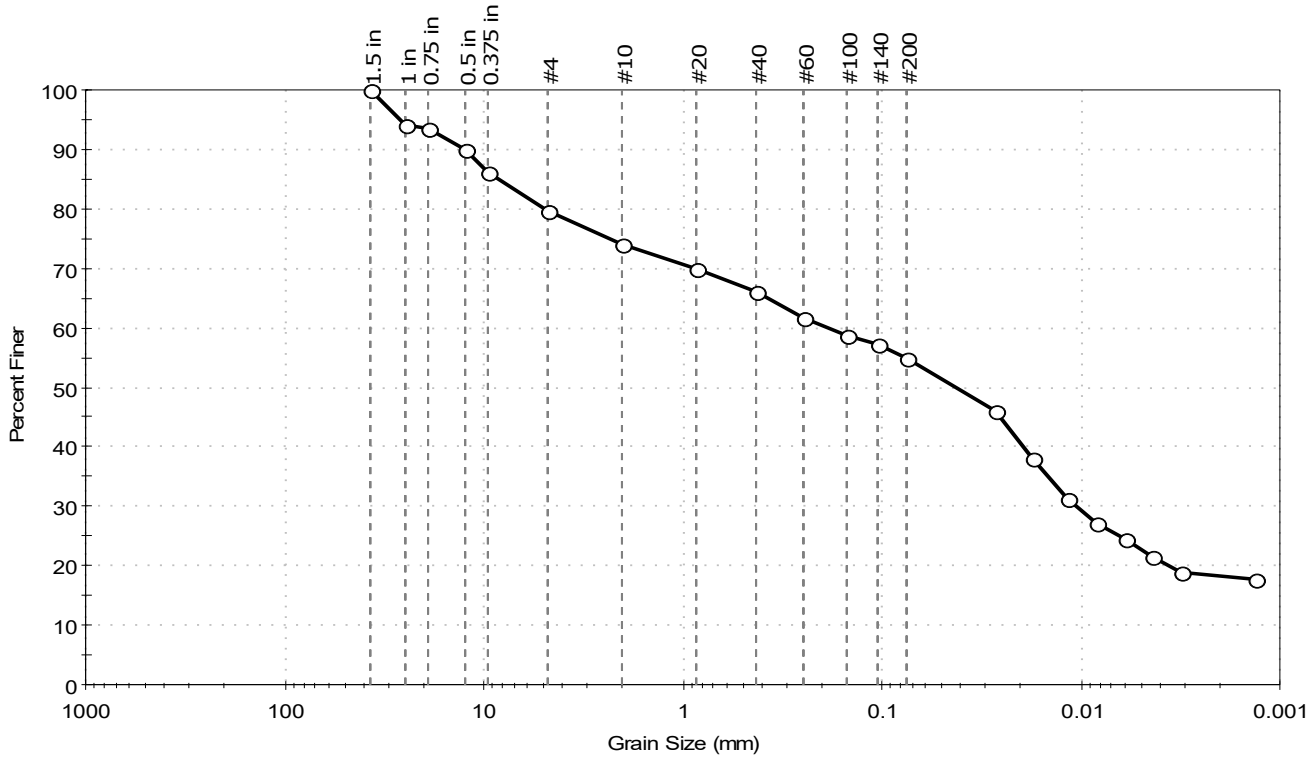
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-138RAB	Sample Type:	bag	Tested By:	ckg
Sample ID:	15.2-18.6-191118	Test Date:	12/10/19	Checked By:	bfs
Depth :	---	Test Id:	532316		
Test Comment:	---				
Visual Description:	Moist, dark grayish brown sandy silt with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	20.5	24.7	54.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	94		
0.75 in	19.00	94		
0.5 in	12.50	90		
0.375 in	9.50	86		
#4	4.75	80		
#10	2.00	74		
#20	0.85	70		
#40	0.42	66		
#60	0.25	62		
#100	0.15	59		
#140	0.11	57		
#200	0.075	55		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0271	46		
---	0.0176	38		
---	0.0117	31		
---	0.0085	27		
---	0.0060	24		
---	0.0044	22		
---	0.0032	19		
---	0.0013	18		

Coefficients

D_{85} = 8.3973 mm
D_{30} = 0.0106 mm
D_{60} = 0.1863 mm
D_{15} = N/A
D_{50} = 0.0427 mm
D_{10} = N/A
C_u = N/A
C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

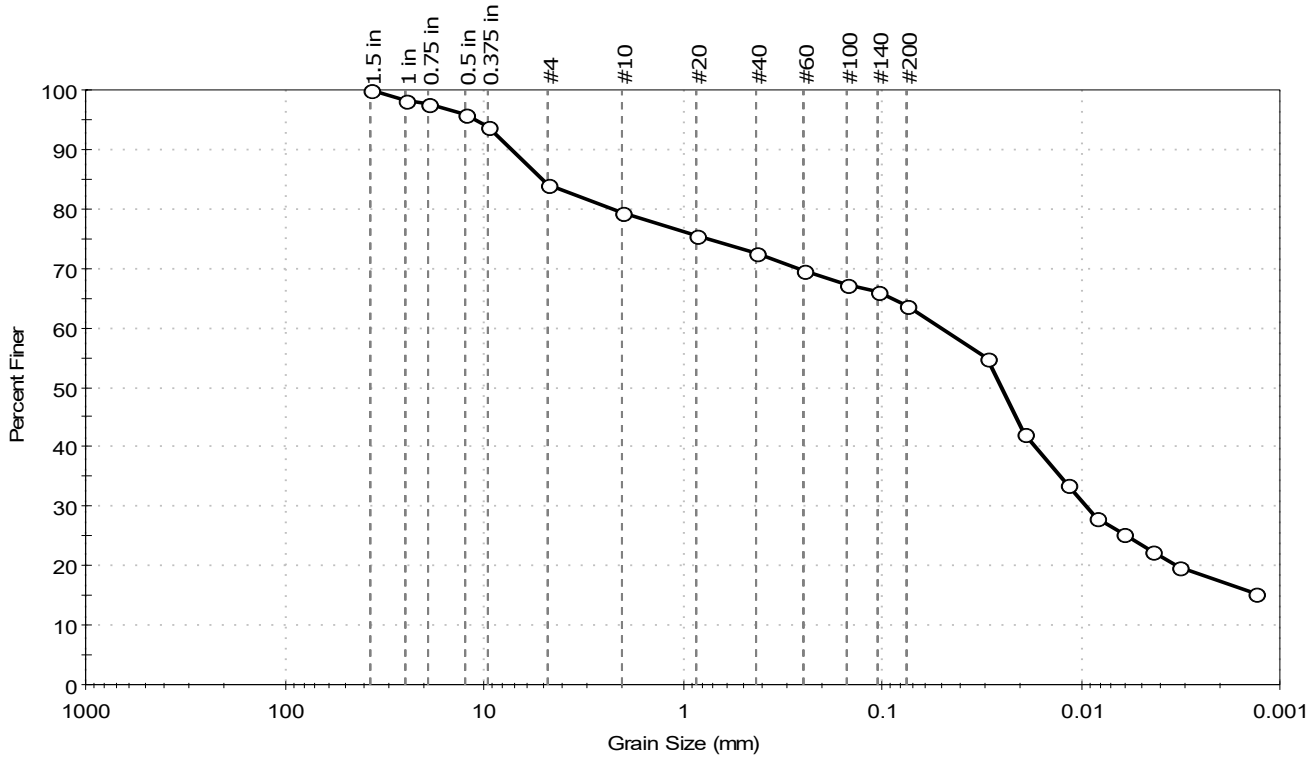
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-139RAB	Sample Type:	bag	Tested By:	ckg
Sample ID:	17.5-21-191115	Test Date:	12/09/19	Checked By:	bfs
Depth :	---	Test Id:	532317		
Test Comment:	---				
Visual Description:	Moist, dark grayish brown sandy silt with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	16.0	20.1	63.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	98		
0.75 in	19.00	98		
0.5 in	12.50	96		
0.375 in	9.50	94		
#4	4.75	84		
#10	2.00	79		
#20	0.85	76		
#40	0.42	72		
#60	0.25	70		
#100	0.15	67		
#140	0.11	66		
#200	0.075	64		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0299	55		
---	0.0193	42		
---	0.0118	34		
---	0.0084	28		
---	0.0061	25		
---	0.0044	22		
---	0.0032	20		
---	0.0013	15		

Coefficients

D_{85} = 5.1115 mm	D_{30} = 0.0094 mm
D_{60} = 0.0507 mm	D_{15} = N/A
D_{50} = 0.0253 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

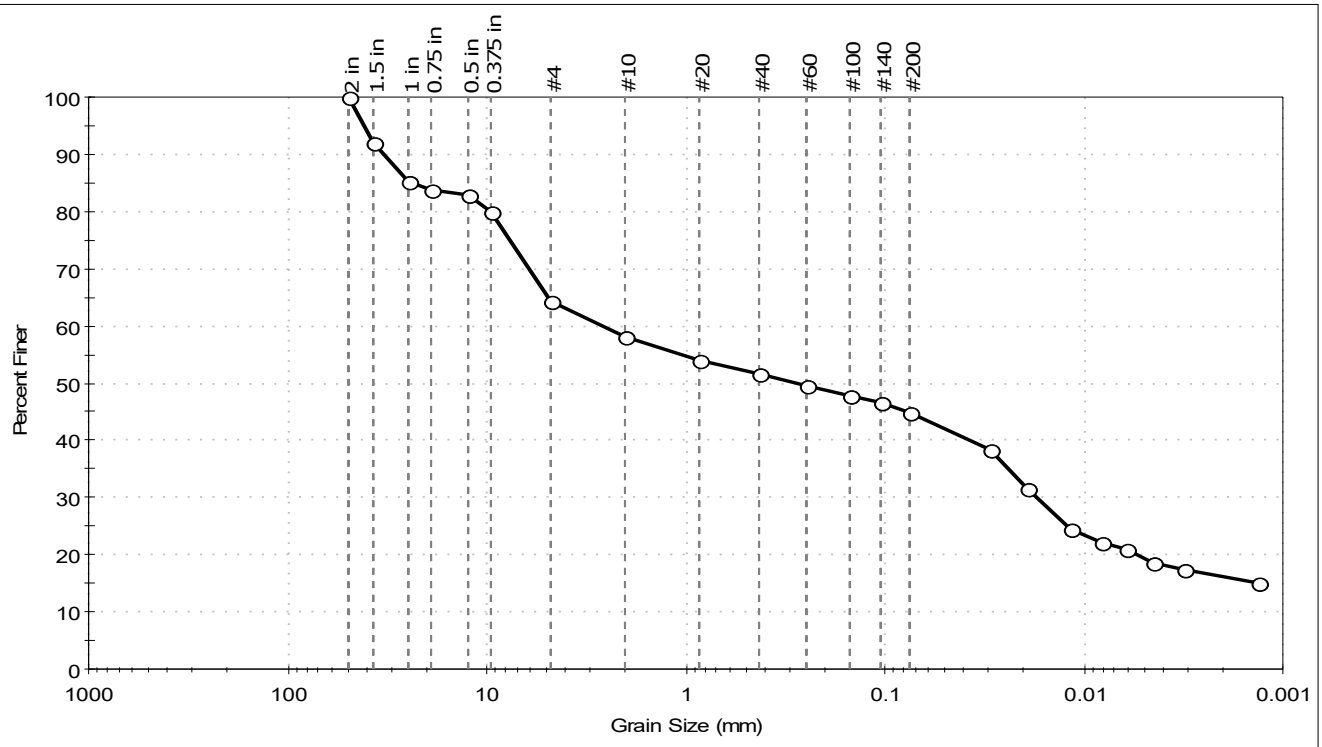
Separation of Sample: #200 Sieve

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-140RAB	Sample Type:	bag	Tested By:	ckg
Sample ID:	10-12.7-191108	Test Date:	12/09/19	Checked By:	bfs
Depth :	---	Test Id:	532312		

Test Comment: ---
Visual Description: Moist, dark brown silty gravel with sand
Sample Comment: ---

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	35.7	19.5	44.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
2 in	50.00	100		
1.5 in	37.50	92		
1 in	25.00	85		
0.75 in	19.00	84		
0.5 in	12.50	83		
0.375 in	9.50	80		
#4	4.75	64		
#10	2.00	58		
#20	0.85	54		
#40	0.42	52		
#60	0.25	49		
#100	0.15	48		
#140	0.11	47		
#200	0.075	45		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0299	38		
---	0.0192	31		
---	0.0117	24		
---	0.0083	22		
---	0.0061	21		
---	0.0044	19		
---	0.0032	17		
---	0.0013	15		

Coefficients

D_{85} = 23.5073 mm D_{30} = 0.0173 mm
D_{60} = 2.6348 mm D_{15} = N/A
D_{50} = 0.2879 mm D_{10} = N/A
C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

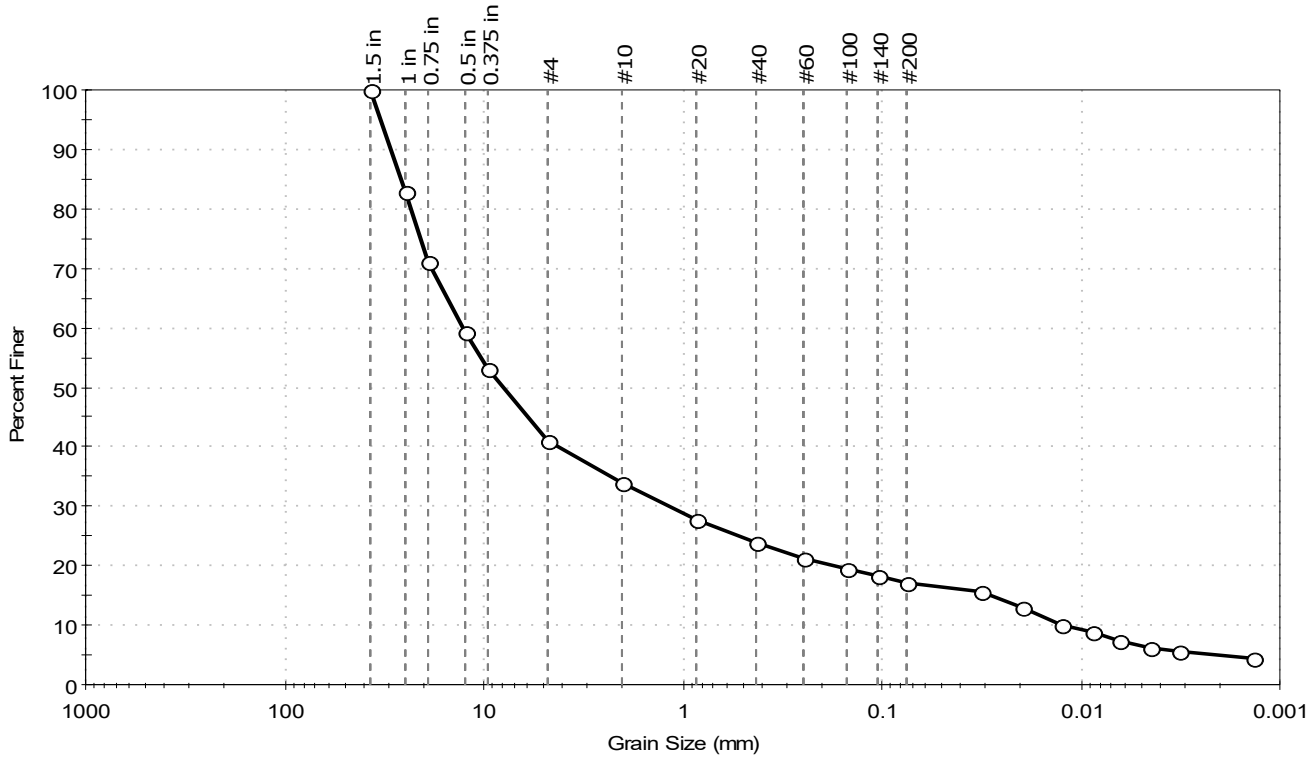
Sample/Test Description

Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-141RAB	Sample Type:	bag	Tested By:	ckg
Sample ID:	00-10-191107	Test Date:	12/10/19	Checked By:	bfs
Depth :	---	Test Id:	532313		
Test Comment:	---				
Visual Description:	Moist, dark grayish brown clayey gravel with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	59.0	23.8	17.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	83		
0.75 in	19.00	71		
0.5 in	12.50	59		
0.375 in	9.50	53		
#4	4.75	41		
#10	2.00	34		
#20	0.85	28		
#40	0.42	24		
#60	0.25	21		
#100	0.15	19		
#140	0.11	18		
#200	0.075	17		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0322	16		
---	0.0197	13		
---	0.0127	10		
---	0.0089	9		
---	0.0064	7		
---	0.0045	6		
---	0.0032	6		
---	0.0014	4		

Coefficients

D_{85} = 26.2239 mm
D_{30} = 1.1689 mm
D_{60} = 12.8536 mm
D_{15} = 0.0285 mm
D_{50} = 7.9307 mm
D_{10} = 0.0127 mm
C_u = 1012.094
C_c = 8.370

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

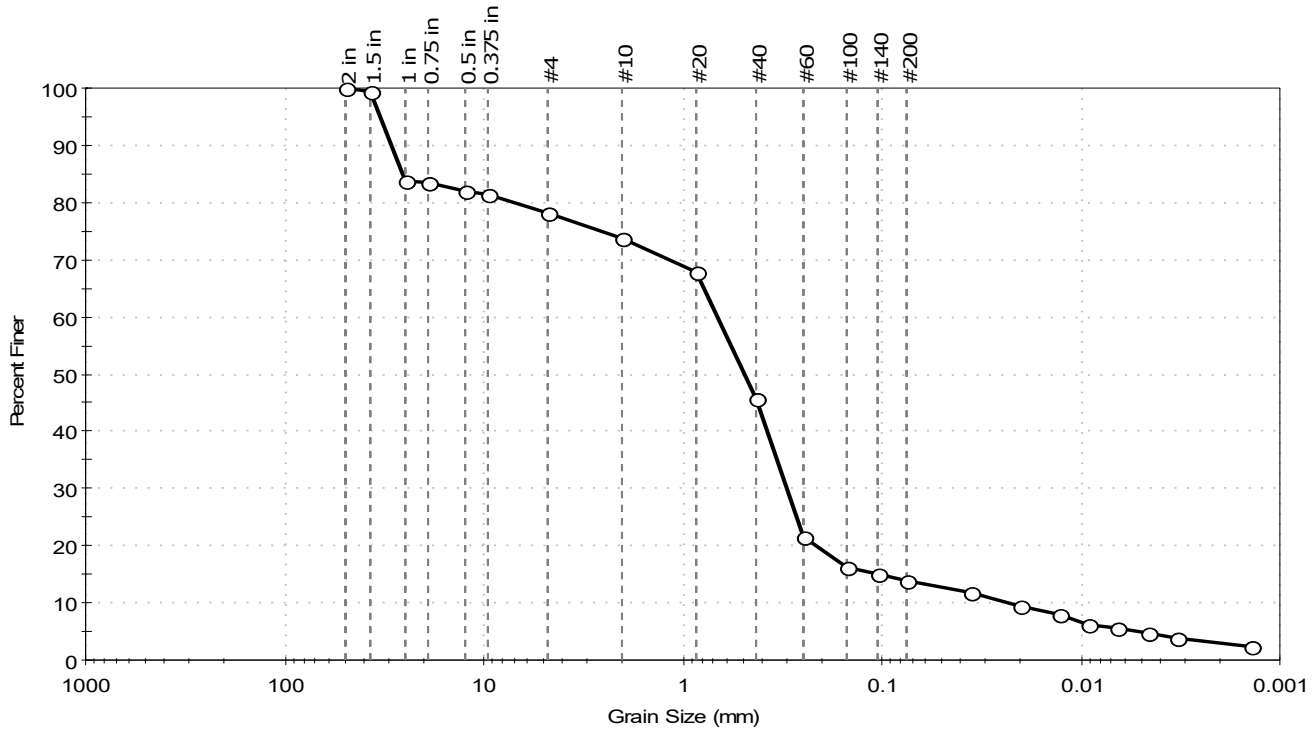
Dispersion Period : 1 minute

Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-142RAB	Sample Type:	bag	Tested By:	ckg
Sample ID:	00-10-191112	Test Date:	12/09/19	Checked By:	bfs
Depth :	---	Test Id:	532315		
Test Comment:	---				
Visual Description:	Moist, dark brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	21.9	64.2	13.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
2 in	50.00	100		
1.5 in	37.50	99		
1 in	25.00	84		
0.75 in	19.00	83		
0.5 in	12.50	82		
0.375 in	9.50	82		
#4	4.75	78		
#10	2.00	74		
#20	0.85	68		
#40	0.42	46		
#60	0.25	22		
#100	0.15	16		
#140	0.11	15		
#200	0.075	14		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0357	12		
---	0.0203	9		
---	0.0127	8		
---	0.0093	6		
---	0.0066	6		
---	0.0046	5		
---	0.0033	4		
---	0.0014	2		

Coefficients

D_{85} = 25.8783 mm D_{30} = 0.3005 mm

D_{60} = 0.6646 mm D_{15} = 0.1028 mm

D_{50} = 0.4844 mm D_{10} = 0.0232 mm

C_u = 28.647 C_c = 5.857

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

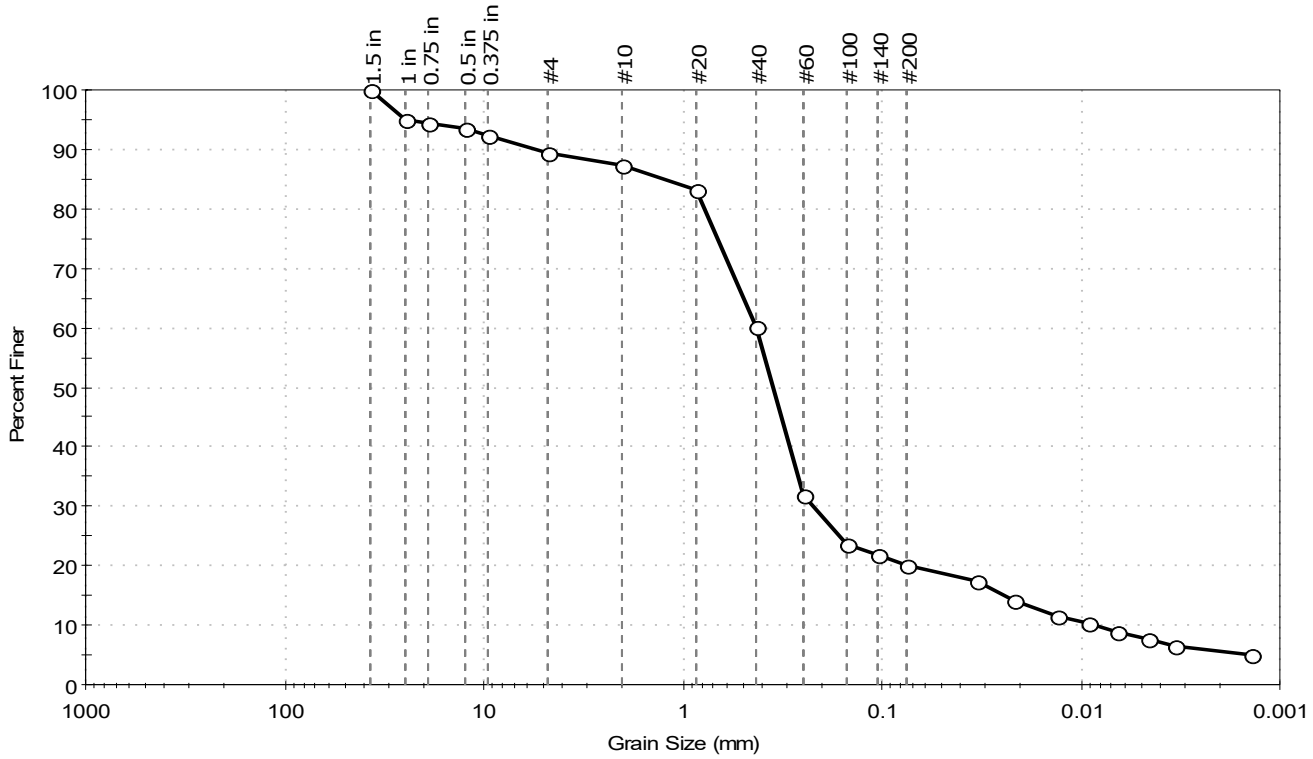
Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI-143RAB	Sample Type:	bag	Tested By:	ckg
Sample ID:	20-31.1-191111	Test Date:	12/09/19	Checked By:	bfs
Depth :	---	Test Id:	532314		
Test Comment:	---				
Visual Description:	Moist, dark brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	10.6	69.5	19.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	95		
0.75 in	19.00	94		
0.5 in	12.50	94		
0.375 in	9.50	92		
#4	4.75	89		
#10	2.00	87		
#20	0.85	83		
#40	0.42	60		
#60	0.25	32		
#100	0.15	24		
#140	0.11	22		
#200	0.075	20		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0330	17		
---	0.0219	14		
---	0.0130	12		
---	0.0092	10		
---	0.0066	9		
---	0.0046	8		
---	0.0033	6		
---	0.0014	5		

Coefficients

D_{85} = 1.2464 mm D_{30} = 0.2222 mm
D_{60} = 0.4230 mm D_{15} = 0.0245 mm
D_{50} = 0.3508 mm D_{10} = 0.0086 mm
C_u = 49.186 C_c = 13.572

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

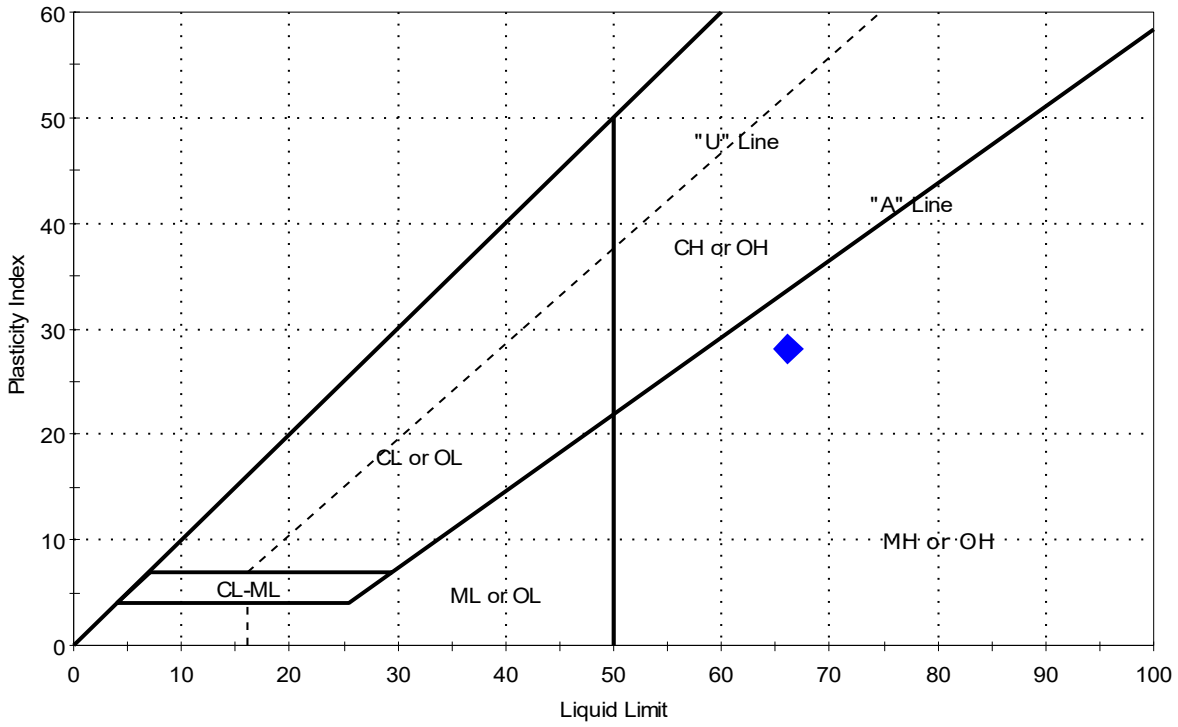
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve

GeoTesting EXPRESS

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI- 108SPT	Sample Type:	tube	Tested By:	cam
Sample ID:	1.5-3.5-19107	Test Date:	12/12/19	Checked By:	bfs
Depth :	---	Test Id:	531039		
Test Comment:	---				
Visual Description:	Wet, olive gray silt				
Sample Comment:	---				

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	1.5-3.5-19107	PDI-108SPT	---	87	66	38	28	1.7	

Sample Prepared using the WET method

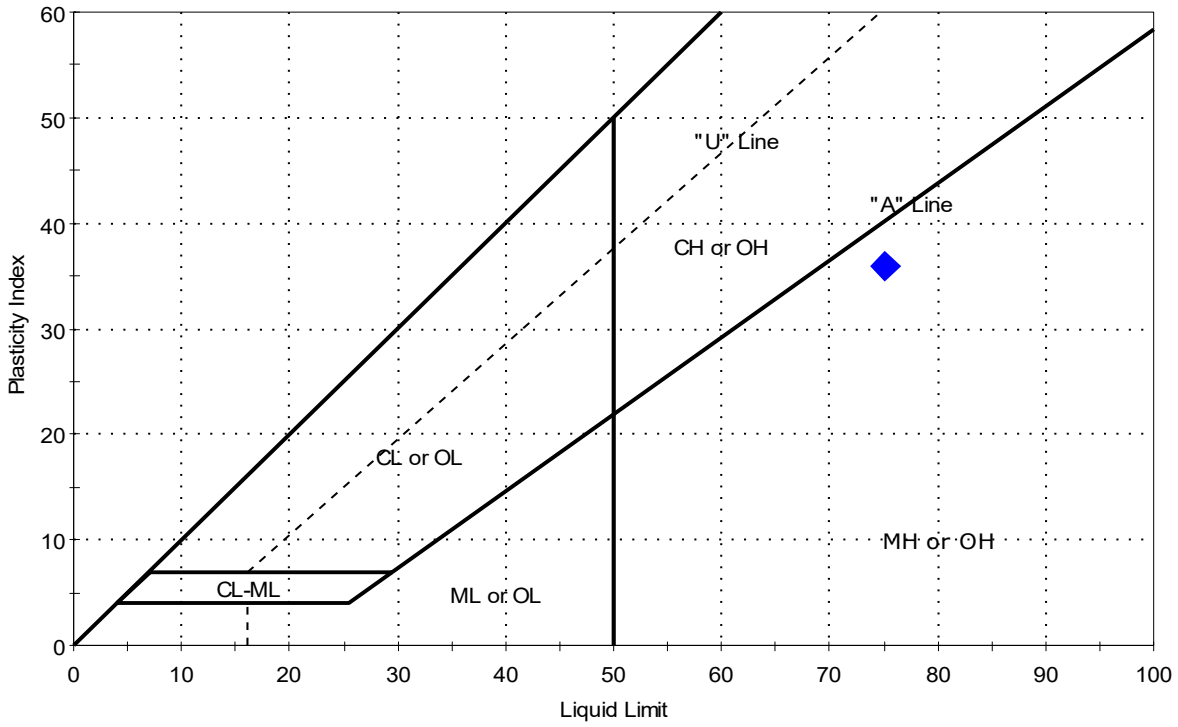
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI- 109SPT	Sample Type:	tube	Tested By:	cam
Sample ID:	6.5-8.5-191004	Test Date:	12/11/19	Checked By:	bfs
Depth :	---	Test Id:	531040		
Test Comment:	---				
Visual Description:	Wet, dark olive gray silt				
Sample Comment:	Sample contains organics				

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	6.5-8.5-191004	PDI-109SPT	---	96	75	39	36	1.6	

Sample Prepared using the WET method

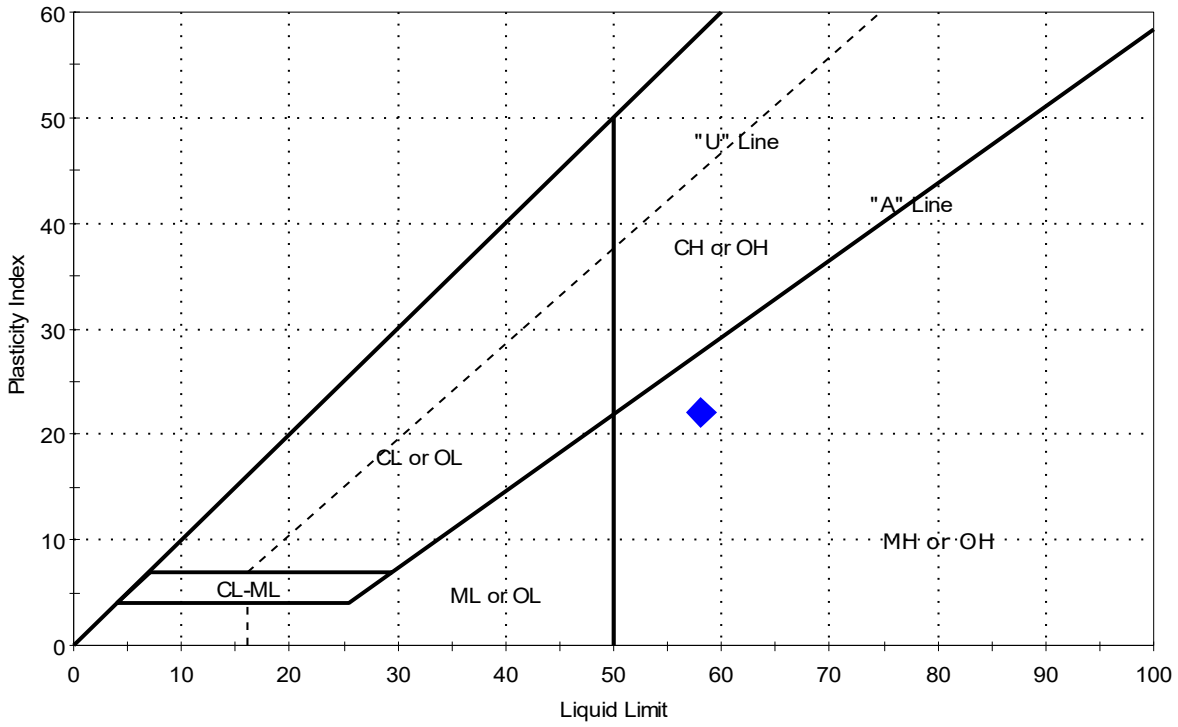
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI- 114SPT	Sample Type:	tube	Tested By:	cam
Sample ID:	7.5-9.5-191008	Test Date:	12/13/19	Checked By:	bfs
Depth :	---	Test Id:	531041		
Test Comment:	---				
Visual Description:	Wet, gray silt				
Sample Comment:	---				

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	7.5-9.5-191008	PDI-114SPT	---	64	58	36	22	1.3	

Sample Prepared using the WET method

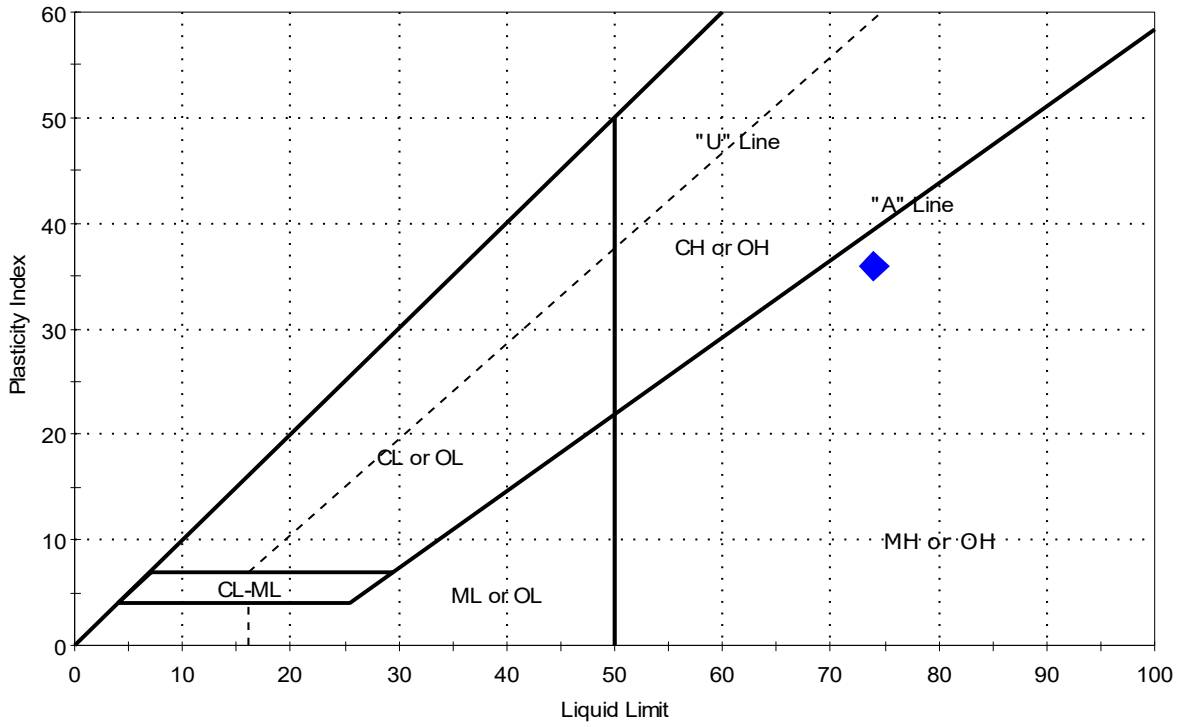
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI- 118SPT	Sample Type:	tube	Tested By:	cam
Sample ID:	4.5-6.5-191014	Test Date:	12/13/19	Checked By:	bfs
Depth :	---	Test Id:	531042		
Test Comment:	---				
Visual Description:	Wet, olive gray silt				
Sample Comment:	---				

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	4.5-6.5-191014	PDI-118SPT	---	83	74	38	36	1.3	

Sample Prepared using the WET method

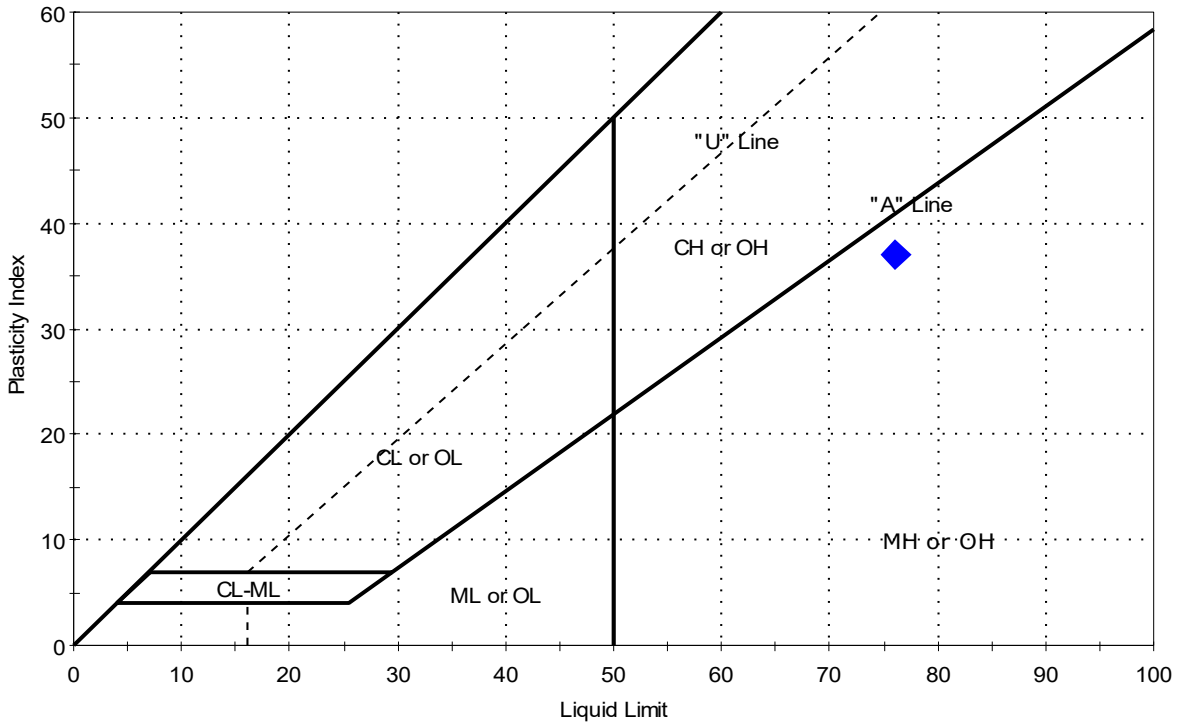
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI- 121SPT	Sample Type:	tube	Tested By:	cam
Sample ID:	06-08-190930	Test Date:	12/13/19	Checked By:	bfs
Depth :	---	Test Id:	531043		
Test Comment:	---				
Visual Description:	Wet, olive gray silt				
Sample Comment:	---				

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	06-08-190930	PDI-121SPT	---	85	76	39	37	1.2	

Sample Prepared using the WET method

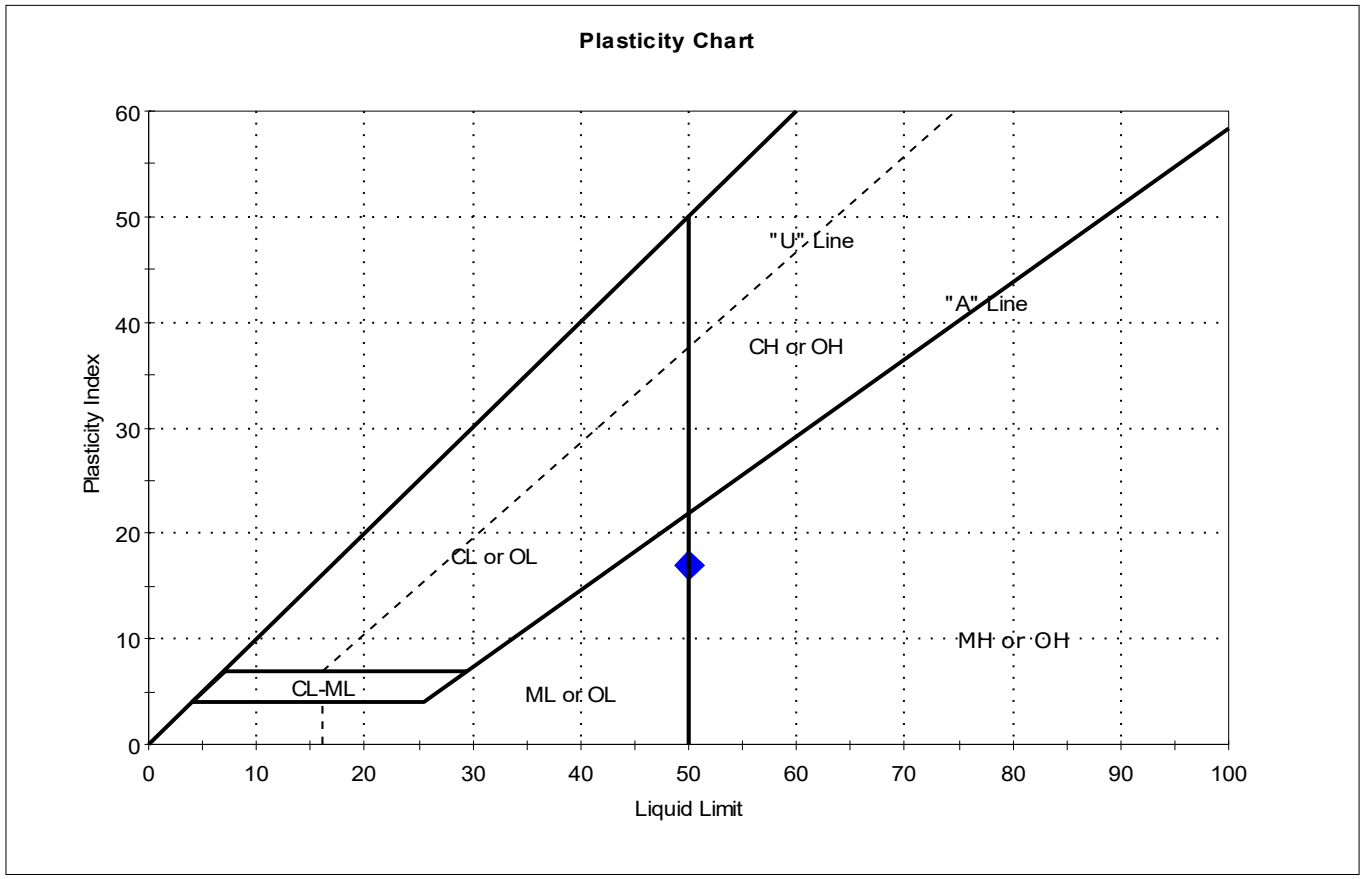
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Anchor QEA, LLC				
Project:	Gasco PDI				
Location:				Project No:	GTX-310685
Boring ID:	PDI- 123SPT	Sample Type:	tube	Tested By:	cam
Sample ID:	4.5-6.5-190924	Test Date:	12/11/19	Checked By:	bfs
Depth :	---	Test Id:	531044		
Test Comment:	---				
Visual Description:	Wet, olive gray silt				
Sample Comment:	---				

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	4.5-6.5-190924	PDI-123SPT	---	69	50	33	17	2.1	

Sample Prepared using the WET method

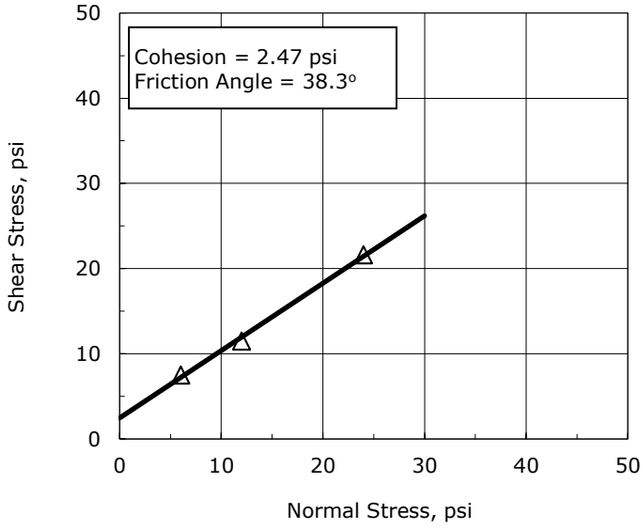
Dry Strength: HIGH

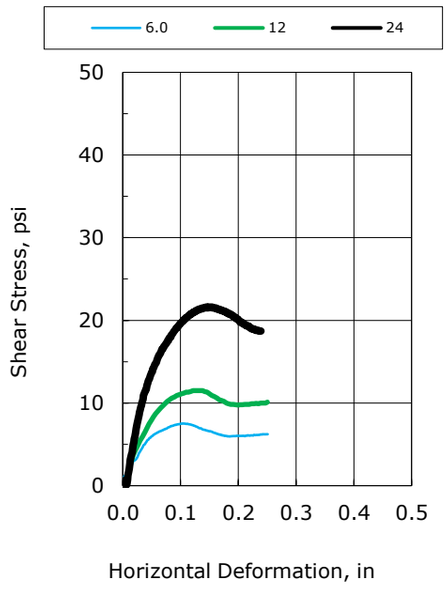
Dilatancy: SLOW

Toughness: LOW

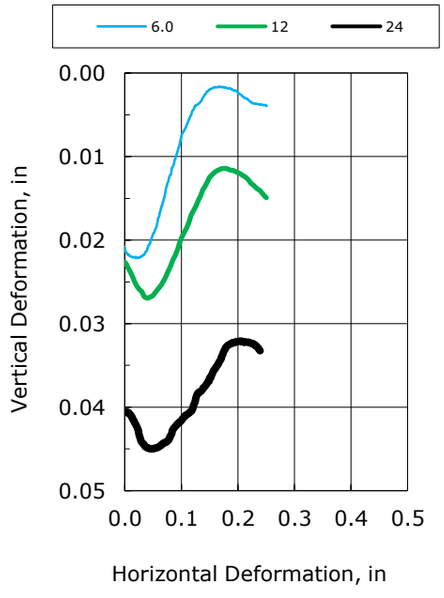
Client:	Anchor QEA, LLC
Project Name:	Gasco PDI
Project Location:	---
GTX #:	310685
Test Date:	12/12/19
Tested By:	md
Checked By:	njh
Boring ID:	PDI-107SPT
Sample ID:	39-41-190924
Depth, ft:	---
Visual Description:	Moist, black sand

Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D3080





Test No.:	DS-10	DS-11	DS-12
Initial Diameter, in:	2.5	2.5	2.5
Initial Height, in:	1.0	1.0	1.0
Initial Mass, grams:	144	147	145
Initial Dry Density, pcf:	85.8	87.0	85.0
Initial Moisture Content, %:	30.7	31.3	32.5
Initial Bulk Density, pcf:	112.0	114.2	112.7
Initial Degree of Saturation:	87.4	92.0	91.0
Initial Void Ratio:	0.93	0.90	0.95
Final Dry Density, pcf:	86.1	88.3	88.0
Final Moisture Content, %:	30.5	31.6	32.2
Final Bulk Density, pcf:	112.4	116.2	116.3
Normal Stress, psi:	6.0	12	24
Maximum Shear Stress, psi:	7.5	12	22
Shear Rate, in/min:	0.004	0.004	0.004



Sample Type:	intact
Estimated Specific Gravity:	2.65
Liquid Limit:	---
Plastic Limit:	---
Plasticity Index:	---
% Passing #200 sieve:	---
Soil Classification:	---
Group Symbol:	---

Notes:

Moisture content obtained before shear from sample trimmings

Moisture Content determined by ASTM D2216

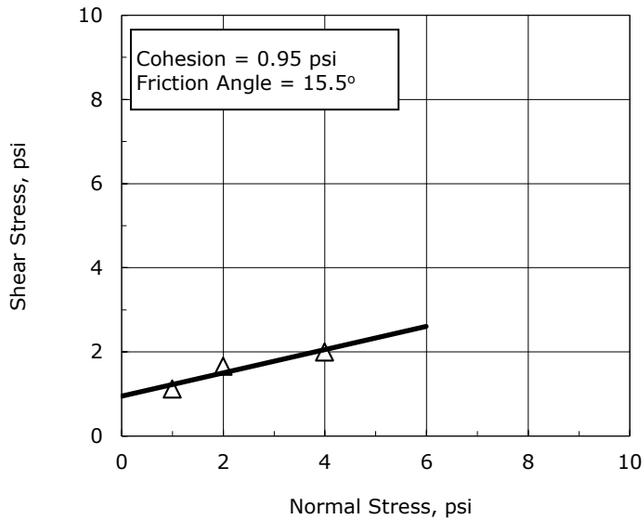
Extruded from tube, cut, trimmed and placed into apparatus at the as-received density and moisture content

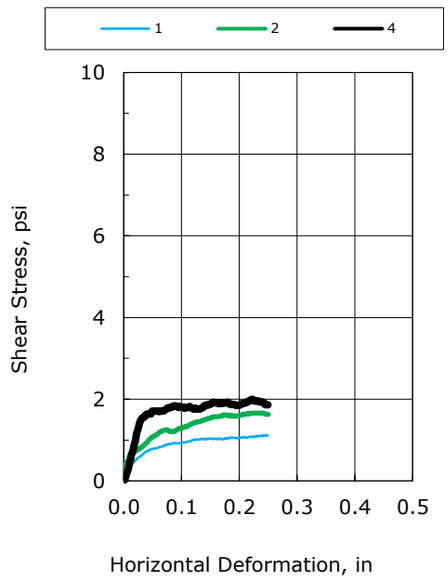
Values for cohesion and friction angle determined from best-fit straight line to the data for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site-specific conditions.

"---" indicates testing required to determine these values was not requested.

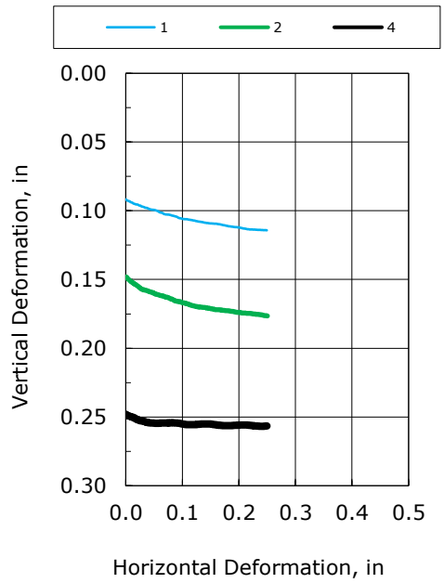
Client:	Anchor QEA, LLC
Project Name:	Gasco PDI
Project Location:	---
GTX #:	310685
Test Date:	12/11/19
Tested By:	md
Checked By:	njh
Boring ID:	PDI-109SPT
Sample ID:	6.5-8.5-191004
Depth, ft:	---
Visual Description:	Wet, dark olive gray silt

Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D3080





Test No.:	DS-1	DS-2	DS-3
Initial Diameter, in:	2.5	2.5	2.5
Initial Height, in:	1.0	1.0	1.0
Initial Mass, grams:	105	115	115
Initial Dry Density, pcf:	41.5	44.4	44.4
Initial Moisture Content, %:	96.1	100.4	100.3
Initial Bulk Density, pcf:	81.5	89.0	89.0
Initial Degree of Saturation:	84.9	97.0	96.9
Initial Void Ratio:	3.06	2.79	2.80
Final Dry Density, pcf:	46.9	53.9	59.7
Final Moisture Content, %:	86.3	77.9	77.1
Final Bulk Density, pcf:	87.3	96.0	105.8
Normal Stress, psi:	1.0	2.0	4.0
Maximum Shear Stress, psi:	1.1	1.7	2.0
Shear Rate, in/min:	0.001	0.001	0.001



Sample Type:	intact
Estimated Specific Gravity:	2.70
Liquid Limit:	75
Plastic Limit:	39
Plasticity Index:	36
% Passing #200 sieve:	---
Soil Classification:	---
Group Symbol:	---

Notes:

Moisture content obtained before shear from sample trimmings

Moisture Content determined by ASTM D2216

Atterberg Limits determined by ASTM D4318

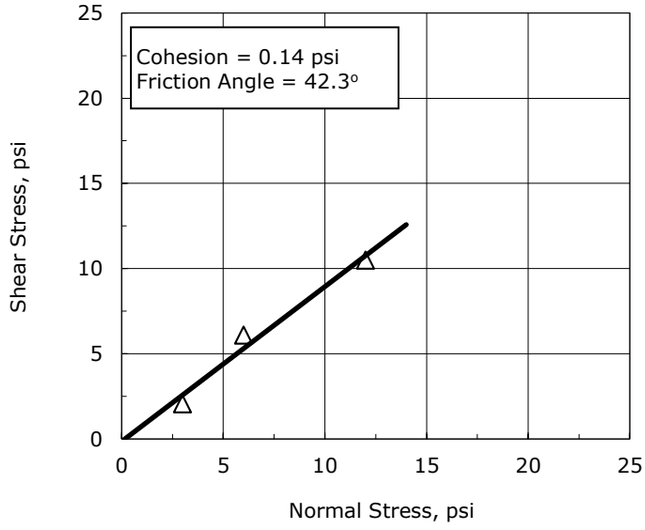
Extruded from tube, cut, trimmed and placed into apparatus at the as-received density and moisture content

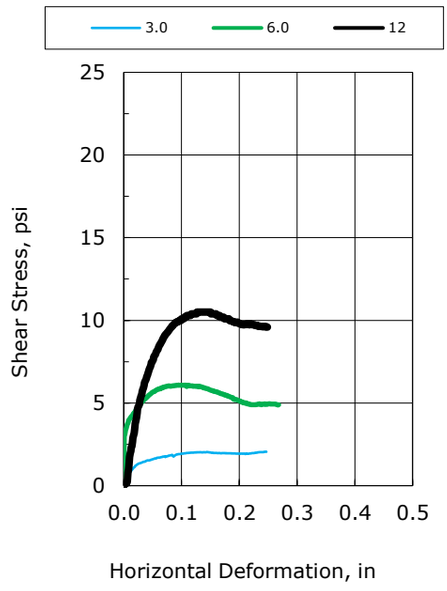
Values for cohesion and friction angle determined from best-fit straight line to the data for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site-specific conditions.

"---" indicates testing required to determine these values was not requested.

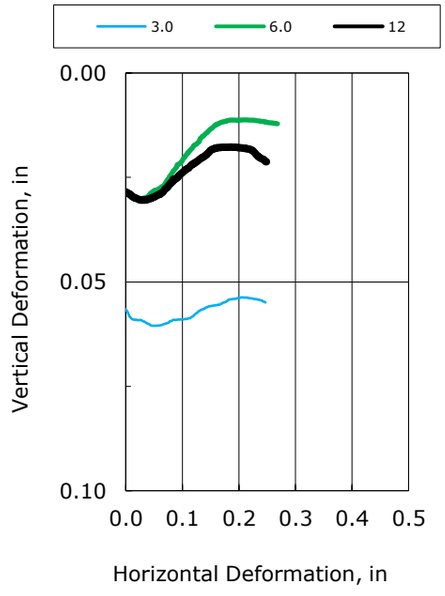
Client:	Anchor QEA, LLC
Project Name:	Gasco PDI
Project Location:	---
GTX #:	310685
Test Date:	12/12/19
Tested By:	md
Checked By:	njh
Boring ID:	PDI-109SPT
Sample ID:	20-22-191004
Depth, ft:	---
Visual Description:	Moist, black sand with silt

Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D3080





Test No.:	DS-7	DS-8	DS-9
Initial Diameter, in:	2.5	2.5	2.5
Initial Height, in:	1.0	1.0	1.0
Initial Mass, grams:	137	135	141
Initial Dry Density, pcf:	78.1	76.9	80.9
Initial Moisture Content, %:	36.0	35.8	35.1
Initial Bulk Density, pcf:	106.2	104.5	109.2
Initial Degree of Saturation:	85.3	82.5	88.8
Initial Void Ratio:	1.12	1.15	1.05
Final Dry Density, pcf:	82.6	77.9	82.6
Final Moisture Content, %:	39.7	40.3	36.4
Final Bulk Density, pcf:	115.4	109.3	112.7
Normal Stress, psi:	3.0	6.0	12
Maximum Shear Stress, psi:	2.1	6.1	11
Shear Rate, in/min:	0.002	0.002	0.002



Sample Type:	intact
Estimated Specific Gravity:	2.65
Liquid Limit:	---
Plastic Limit:	---
Plasticity Index:	---
% Passing #200 sieve:	---
Soil Classification:	---
Group Symbol:	---

Notes:

Moisture content obtained before shear from sample trimmings

Moisture Content determined by ASTM D2216

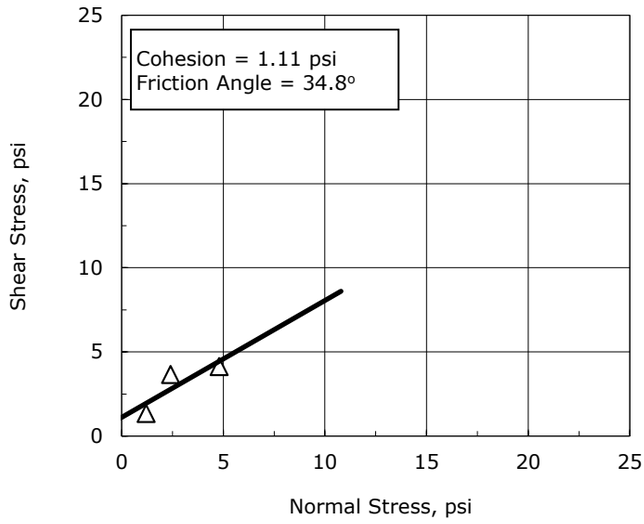
Extruded from tube, cut, trimmed and placed into apparatus at the as-received density and moisture content

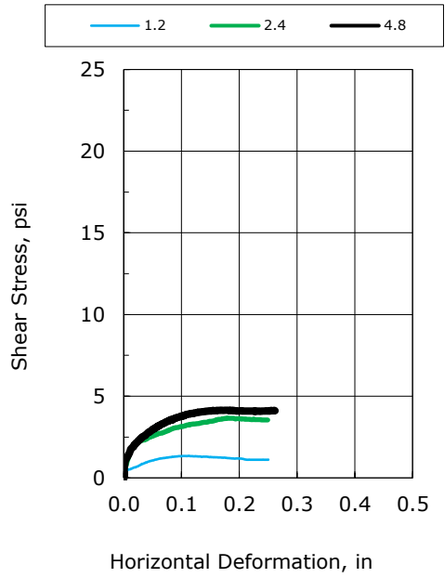
Values for cohesion and friction angle determined from best-fit straight line to the data for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site-specific conditions.

"---" indicates testing required to determine these values was not requested.

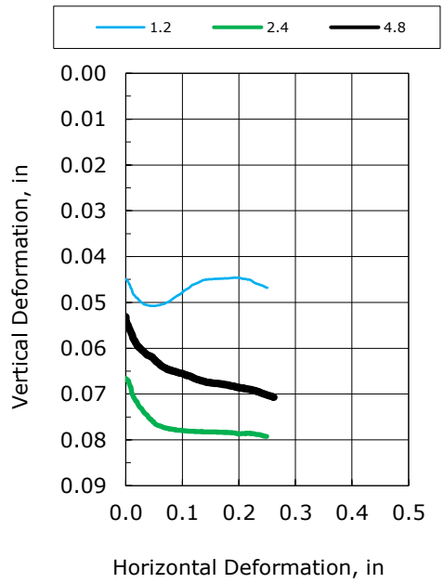
Client:	Anchor QEA, LLC
Project Name:	Gasco PDI
Project Location:	---
GTX #:	310685
Test Date:	12/13/19
Tested By:	md
Checked By:	njh
Boring ID:	PDI-114SPT
Sample ID:	7.5-9.5-191008
Depth, ft:	---
Visual Description:	Wet, gray silt

Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D3080





Test No.:	DS-13	DS-14	DS-15
Initial Diameter, in:	2.5	2.5	2.5
Initial Height, in:	1.0	1.0	1.0
Initial Mass, grams:	123	118	122
Initial Dry Density, pcf:	60.9	55.8	62.9
Initial Moisture Content, %:	57.2	63.9	50.8
Initial Bulk Density, pcf:	95.8	91.4	94.8
Initial Degree of Saturation:	87.5	85.3	81.7
Initial Void Ratio:	1.77	2.02	1.68
Final Dry Density, pcf:	63.9	60.6	67.7
Final Moisture Content, %:	54.0	60.9	51.9
Final Bulk Density, pcf:	98.4	97.5	102.8
Normal Stress, psi:	1.2	2.4	4.8
Maximum Shear Stress, psi:	1.4	3.7	4.1
Shear Rate, in/min:	0.001	0.001	0.001



Sample Type:	intact
Estimated Specific Gravity:	2.70
Liquid Limit:	58
Plastic Limit:	36
Plasticity Index:	22
% Passing #200 sieve:	---
Soil Classification:	---
Group Symbol:	---

Notes:

Moisture content obtained before shear from sample trimmings

Moisture Content determined by ASTM D2216

Atterberg Limits determined by ASTM D4318

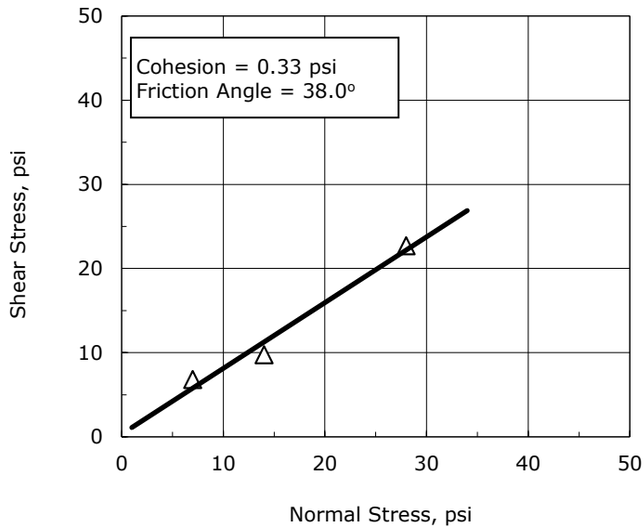
Extruded from tube, cut, trimmed and placed into apparatus at the as-received density and moisture content

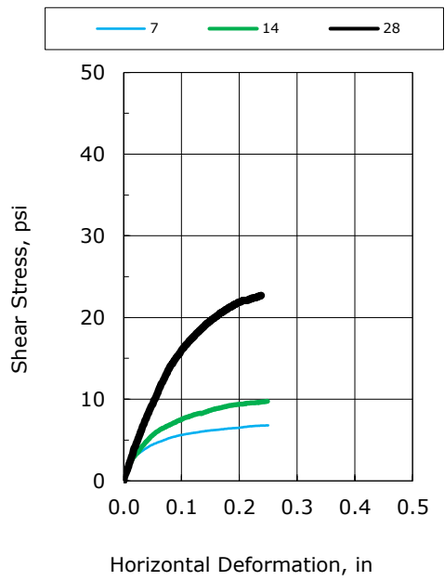
Values for cohesion and friction angle determined from best-fit straight line to the data for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site-specific conditions.

"---" indicates testing required to determine these values was not requested.

Client:	Anchor QEA, LLC
Project Name:	Gasco PDI
Project Location:	---
GTX #:	310685
Test Date:	12/17/19
Tested By:	md
Checked By:	njh
Boring ID:	PDI-115SPT
Sample ID:	41.5-43.5-190100
Depth, ft:	---
Visual Description:	Wet, dark gray sandy silt

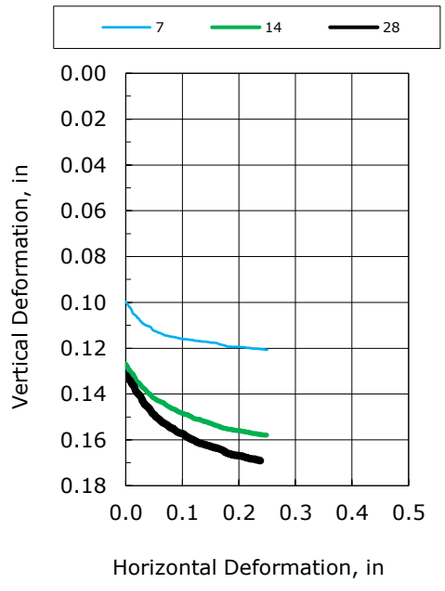
Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D3080





Test No.:	DS-19	DS-20	DS-21
Initial Diameter, in:	2.5	2.5	2.5
Initial Height, in:	1.0	1.0	1.0
Initial Mass, grams:	138	133	132
Initial Dry Density, pcf:	72.2	69.7	68.9
Initial Moisture Content, %:	48.6	48.6	48.6
Initial Bulk Density, pcf:	107.3	103.6	102.4
Initial Degree of Saturation:	99.7	93.8	92.0
Initial Void Ratio:	1.29	1.37	1.40
Final Dry Density, pcf:	82.1	82.8	83.0
Final Moisture Content, %:	47.8	4689.0	73.3
Final Bulk Density, pcf:	121.3	3964.3	143.7
Normal Stress, psi:	7.0	14	28
Maximum Shear Stress, psi:	6.8	10	23
Shear Rate, in/min:	0.0004	0.0004	0.0004

Sample Type:	intact
Estimated Specific Gravity:	2.65
Liquid Limit:	---
Plastic Limit:	---
Plasticity Index:	---
% Passing #200 sieve:	61.8
Soil Classification:	---
Group Symbol:	---



Notes:

Moisture content obtained before shear from sample trimmings

Moisture Content determined by ASTM D2216

% Passing #200 Sieve determined by ASTM D6913

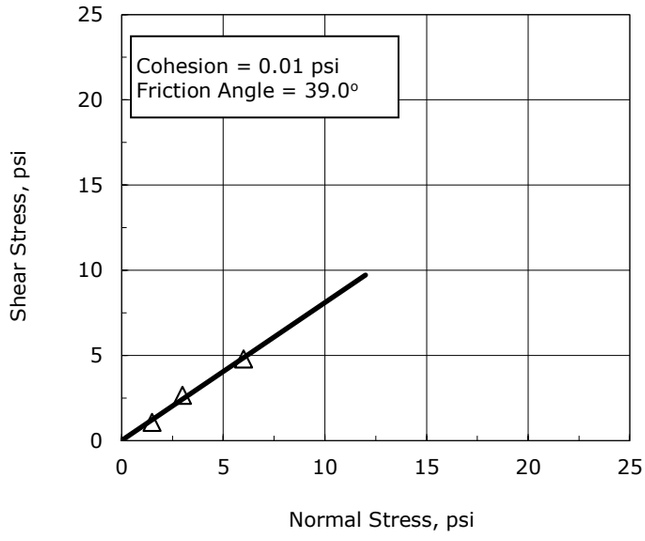
Extruded from tube, cut, trimmed and placed into apparatus at the as-received density and moisture content

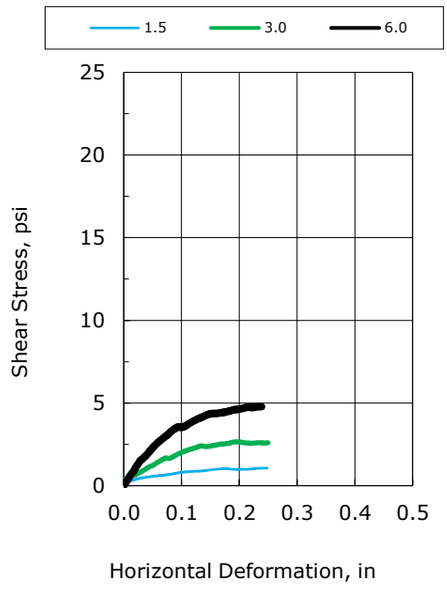
Values for cohesion and friction angle determined from best-fit straight line to the data for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site-specific conditions.

"---" indicates testing required to determine these values was not requested.

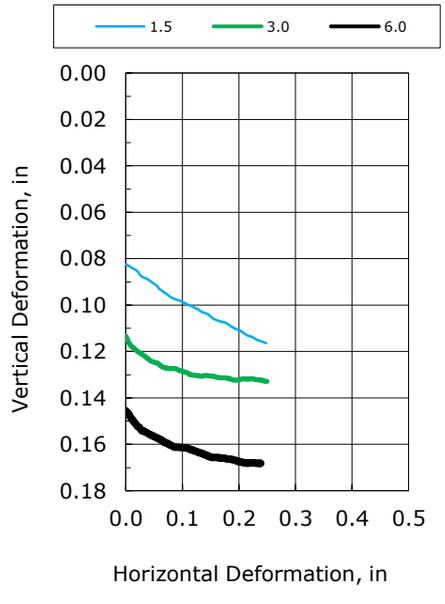
Client:	Anchor QEA, LLC
Project Name:	Gasco PDI
Project Location:	---
GTX #:	310685
Test Date:	12/18/19
Tested By:	md
Checked By:	njh
Boring ID:	PDI-116SPT
Sample ID:	9.5-11.5-191002
Depth, ft:	---
Visual Description:	Wet, gray silt with sand

Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D3080





Test No.:	DS-22	DS-23	DS-24
Initial Diameter, in:	2.5	2.5	2.5
Initial Height, in:	1.0	1.0	1.0
Initial Mass, grams:	111	114	118
Initial Dry Density, pcf:	54.8	54.2	59.1
Initial Moisture Content, %:	57.7	62.9	55.2
Initial Bulk Density, pcf:	86.4	88.3	91.7
Initial Degree of Saturation:	75.0	80.5	80.4
Initial Void Ratio:	2.08	2.11	1.85
Final Dry Density, pcf:	62.0	62.5	71.0
Final Moisture Content, %:	66.1	57.6	50.7
Final Bulk Density, pcf:	103.0	98.5	107.0
Normal Stress, psi:	1.5	3.0	6.0
Maximum Shear Stress, psi:	1.1	2.7	4.8
Shear Rate, in/min:	0.001	0.001	0.001



Sample Type:	intact
Estimated Specific Gravity:	2.70
Liquid Limit:	---
Plastic Limit:	---
Plasticity Index:	---
% Passing #200 sieve:	---
Soil Classification:	---
Group Symbol:	---

Notes:

Moisture content obtained before shear from sample trimmings

Moisture Content determined by ASTM D2216

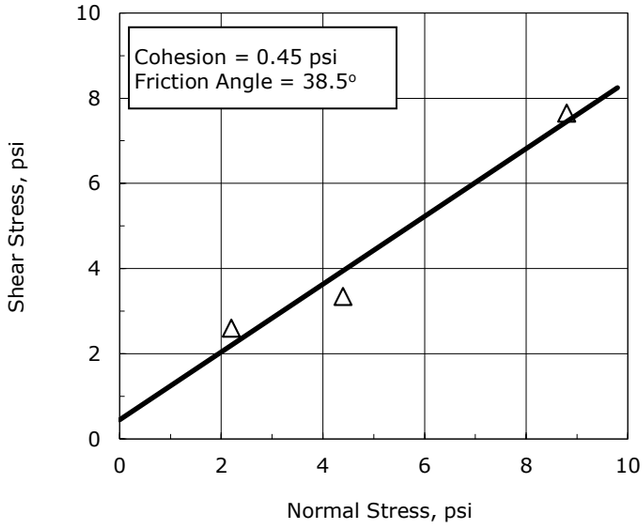
Extruded from tube, cut, trimmed and placed into apparatus at the as-received density and moisture content

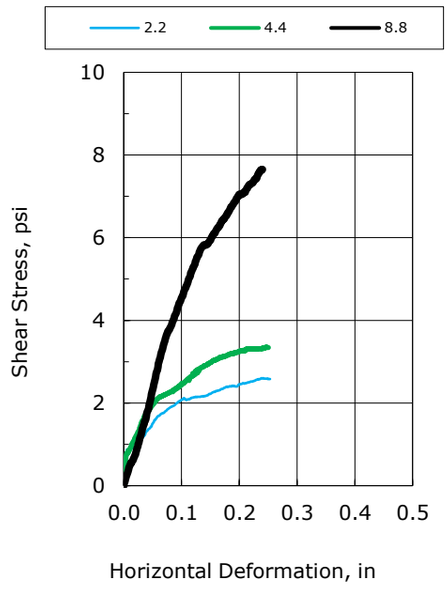
Values for cohesion and friction angle determined from best-fit straight line to the data for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site-specific conditions.

"---" indicates testing required to determine these values was not requested.

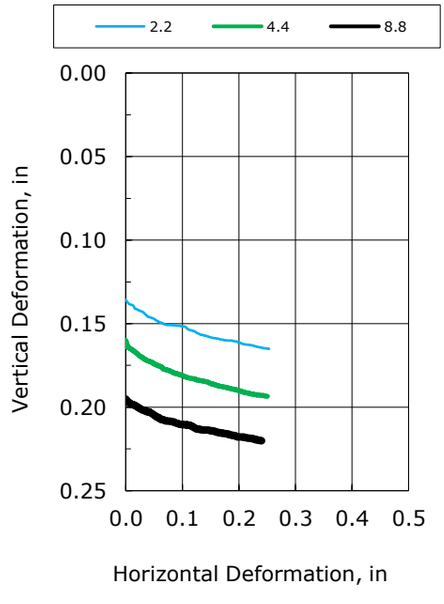
Client:	Anchor QEA, LLC
Project Name:	Gasco PDI
Project Location:	---
GTX #:	310685
Test Date:	12/11/19
Tested By:	md
Checked By:	njh
Boring ID:	PDI-118SPT
Sample ID:	15-17-191014
Depth, ft:	---
Visual Description:	Wet, black silt

Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D3080





Test No.:	DS-4	DS-5	DS-6
Initial Diameter, in:	2.5	2.5	2.5
Initial Height, in:	1.0	1.0	1.0
Initial Mass, grams:	108	109	112
Initial Dry Density, pcf:	47.5	47.9	47.9
Initial Moisture Content, %:	76.6	76.9	81.1
Initial Bulk Density, pcf:	83.9	84.8	86.7
Initial Degree of Saturation:	81.1	82.5	86.8
Initial Void Ratio:	2.55	2.52	2.52
Final Dry Density, pcf:	56.9	59.4	61.4
Final Moisture Content, %:	68.6	63.3	57.7
Final Bulk Density, pcf:	95.9	97.1	96.8
Normal Stress, psi:	2.2	4.4	8.8
Maximum Shear Stress, psi:	2.6	3.4	7.7
Shear Rate, in/min:	0.0004	0.0004	0.0004



Sample Type:	intact
Estimated Specific Gravity:	2.70
Liquid Limit:	---
Plastic Limit:	---
Plasticity Index:	---
% Passing #200 sieve:	---
Soil Classification:	---
Group Symbol:	---

Notes:

Moisture content obtained before shear from sample trimmings

Moisture Content determined by ASTM D2216

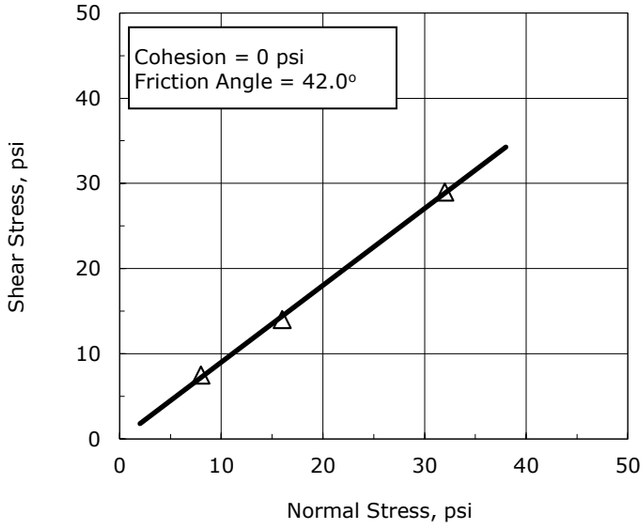
Extruded from tube, cut, trimmed and placed into apparatus at the as-received density and moisture content

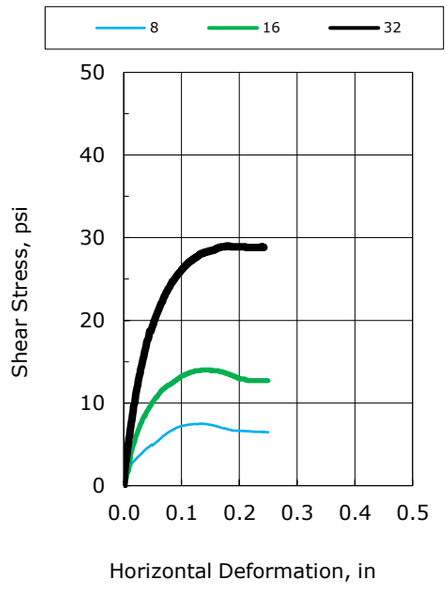
Values for cohesion and friction angle determined from best-fit straight line to the data for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site-specific conditions.

"---" indicates testing required to determine these values was not requested.

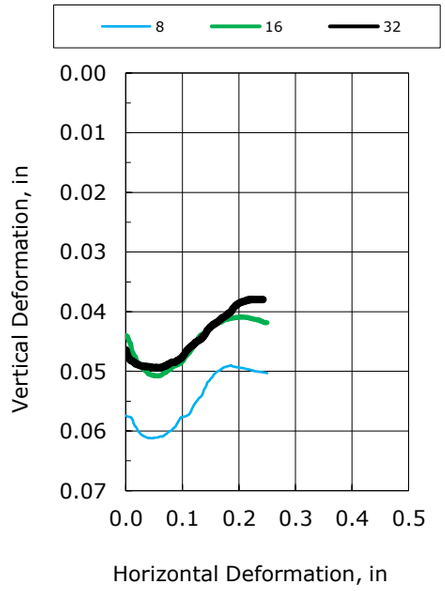
Client:	Anchor QEA, LLC
Project Name:	Gasco PDI
Project Location:	---
GTX #:	310685
Test Date:	12/16/19
Tested By:	md
Checked By:	njh
Boring ID:	PDI-122SPT
Sample ID:	44-46-190926
Depth, ft:	---
Visual Description:	Moist, dark gray sand

Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D3080





Test No.:	DS-16	DS-17	DS-18
Initial Diameter, in:	2.5	2.5	2.5
Initial Height, in:	1.0	1.0	1.0
Initial Mass, grams:	148	148	145
Initial Dry Density, pcf:	87.7	87.4	85.5
Initial Moisture Content, %:	30.8	31.0	31.5
Initial Bulk Density, pcf:	114.7	114.5	112.5
Initial Degree of Saturation:	92.1	92.0	89.4
Initial Void Ratio:	0.89	0.89	0.93
Final Dry Density, pcf:	92.3	91.2	88.9
Final Moisture Content, %:	30.9	31.1	30.7
Final Bulk Density, pcf:	120.9	119.6	116.2
Normal Stress, psi:	8.0	16	32
Maximum Shear Stress, psi:	7.5	14	29
Shear Rate, in/min:	0.002	0.002	0.002



Sample Type:	intact
Estimated Specific Gravity:	2.65
Liquid Limit:	---
Plastic Limit:	---
Plasticity Index:	---
% Passing #200 sieve:	---
Soil Classification:	---
Group Symbol:	---

Notes:

Moisture content obtained before shear from sample trimmings

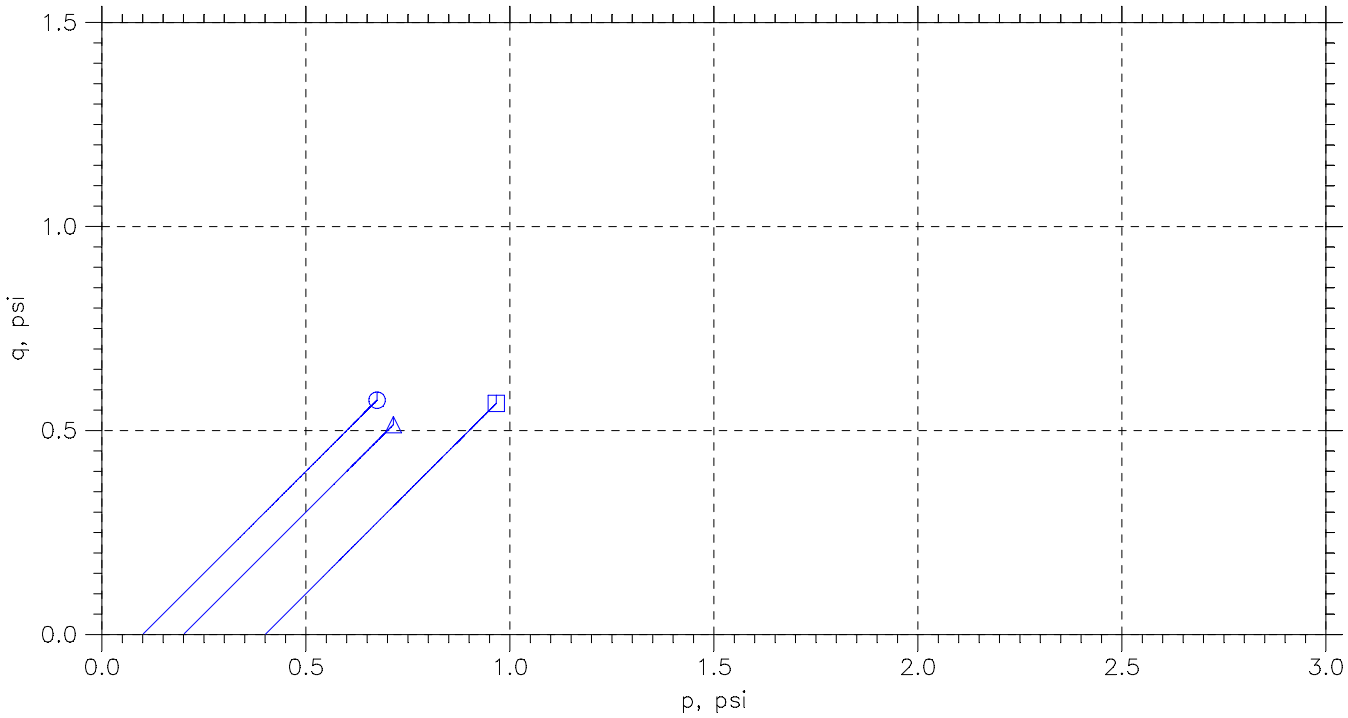
Moisture Content determined by ASTM D2216

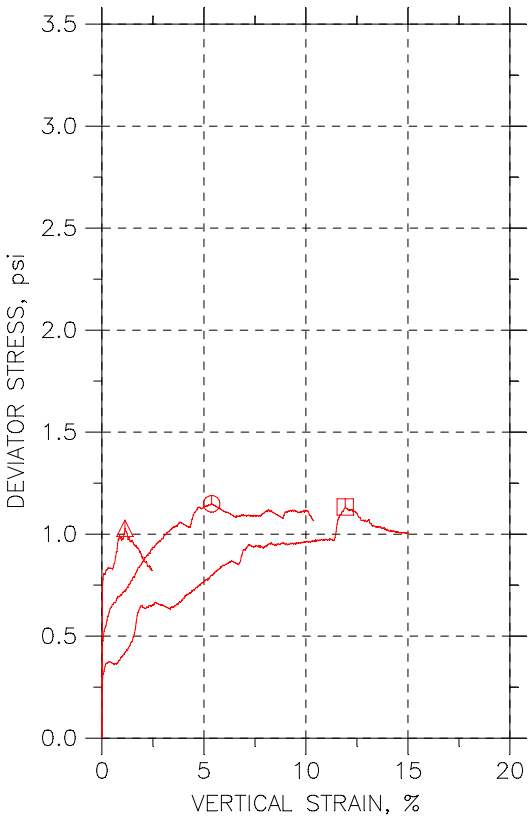
Extruded from tube, cut, trimmed and placed into apparatus at the as-received density and moisture content

Values for cohesion and friction angle determined from best-fit straight line to the data for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site-specific conditions.

"---" indicates testing required to determine these values was not requested.

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D2850





Symbol	◷	△	◫	
Sample No.	191007	191007	191007	
Test No.	UU-1-1	UU-1-2	UU-1-3	
Depth	1.5-3.5 ft	1.5-3.5 ft	1.5-3.5 ft	
Tested by	trm	trm	trm	
Test Date	12/16/19	12/17/19	12/16/19	
Checked by	anm	anm	anm	
Check Date	2/06/20	2/06/20	2/06/20	
Diameter, in	1.93	1.93	1.93	
Height, in	4.4	4.4	4.15	
Water Content, %	86.6	86.3	67.3	
Dry Density, pcf	49.38	49.01	59.8	
Saturation, %	96.9	95.5	99.9	
Void Ratio	2.41	2.44	1.82	
Confining Stress, psi	0.1	0.2	0.4	
Undrained Strength, psi	0.5743	0.5143	0.5666	
Max. Dev. Stress, psi	1.149	1.029	1.133	
Strain at Failure, %	5.38	1.13	11.9	
Strain Rate, %/min	1	1	1	
Estimated Specific Gravity	2.7	2.7	2.7	
Liquid Limit	66	66	66	
Plastic Limit	38	38	38	
Plasticity Index	28	28	28	

GeoTesting EXPRESS

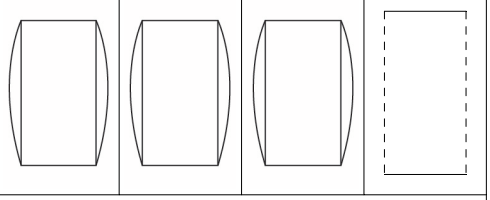
Project: Gasco PDI

Location: ---

Project No.: GTX-310685

Boring No.: PDI-108SPT

Sample Type: intact

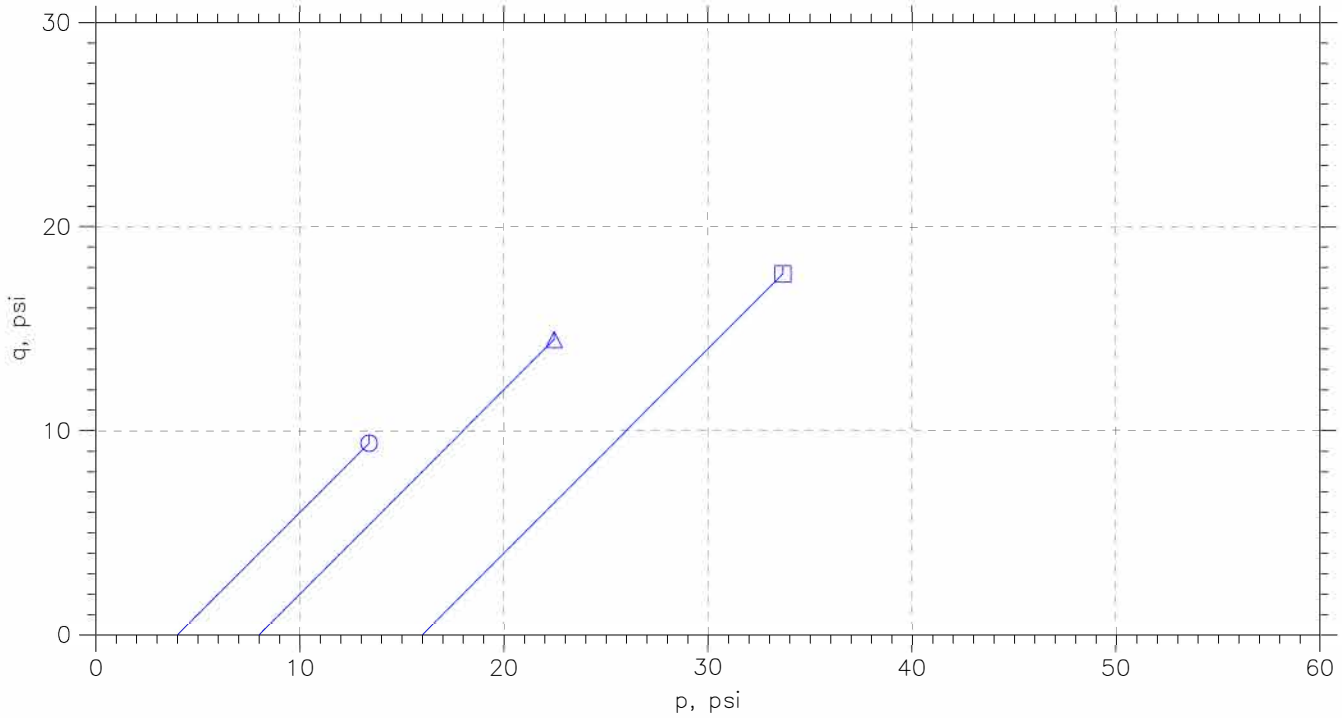


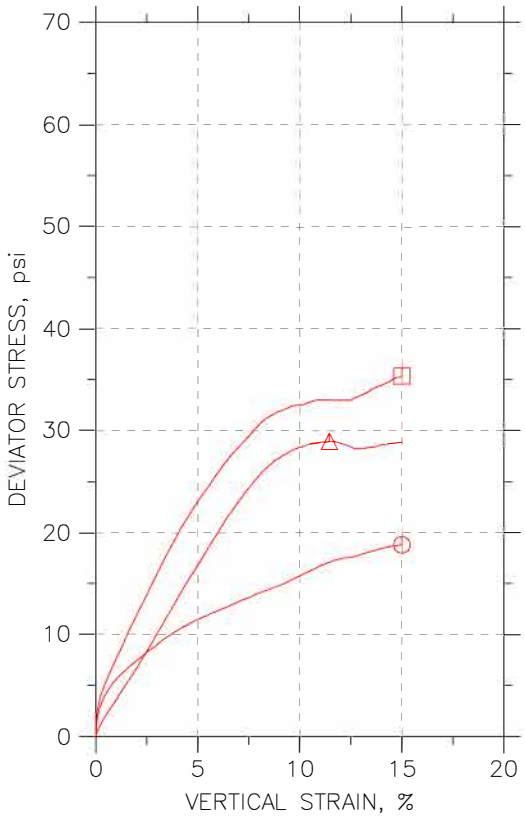
Description: Wet, olive gray silt

Remarks: System PP

Phase calculations based on start and end of test.

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D2850





Symbol	○	△	□	
Sample No.	191011	191011	191011	
Test No.	UU-2-1	UU-2-2	UU-2-3	
Depth	47-49 ft	47-49 ft	47-49 ft	
Tested by	trm	trm	trm	
Test Date	12/19/19	12/19/19	12/19/19	
Checked by	anm	anm	anm	
Check Date	2/05/20	2/05/20	2/05/20	
Diameter, in	1.93	1.93	1.93	
Height, in	4.3	4.1	4.15	
Water Content, %	32.1	32.9	35.1	
Dry Density, pcf	84.1	85.78	85.19	
Saturation, %	88.1	94.0	98.7	
Void Ratio	0.967	0.928	0.942	
Confining Stress, psi	4	8	16	
Undrained Strength, psi	9.392	14.46	17.67	
Max. Dev. Stress, psi	18.78	28.92	35.35	
Strain at Failure, %	15	11.5	15	
Strain Rate, %/min	1	1	1	
Estimated Specific Gravity	2.65	2.65	2.65	
Liquid Limit	---	---	---	
Plastic Limit	---	---	---	
Plasticity Index	---	---	---	

GeoTesting EXPRESS

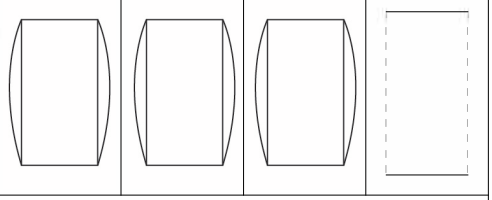
Project: Gasco PDI

Location: ---

Project No.: GTX-310685

Boring No.: PDI-113SPT

Sample Type: intact

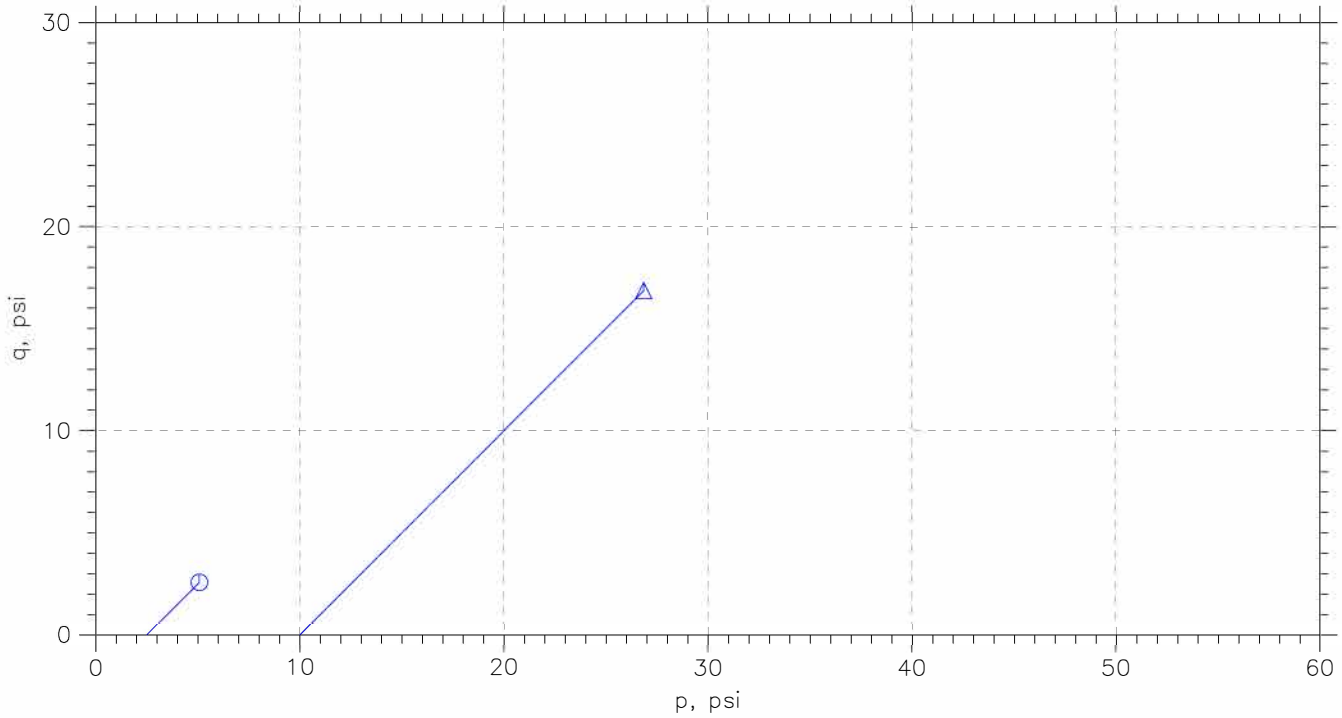


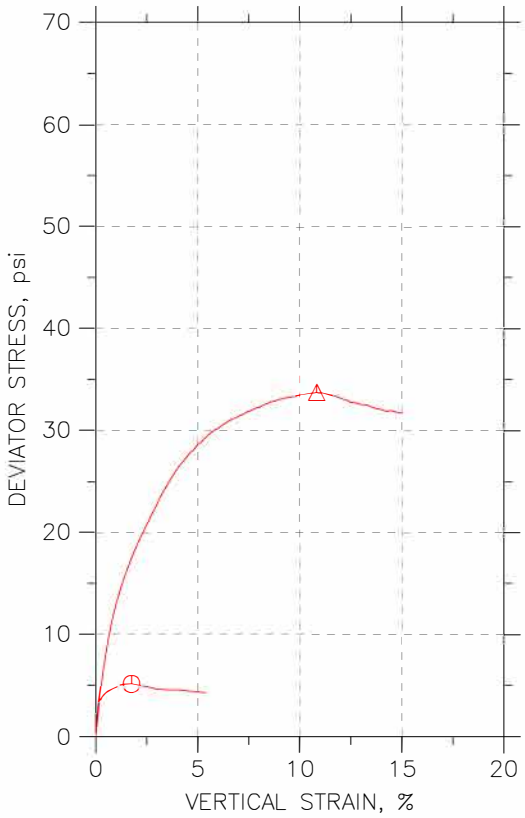
Description: Moist, dark grayish brown silty sand

Remarks: System F

Phase calculations based on start and end of test.

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D2850





Symbol	⏲	△		
Sample No.	190927	190927		
Test No.	UU-4-1	UU-4-2		
Depth	30-32 ft	30-32 ft		
Tested by	trm	trm		
Test Date	12/16/19	12/16/19		
Checked by	anm	anm		
Check Date	2/06/20	2/06/20		
Diameter, in	1.93	1.93		
Height, in	4.2	4.4		
Water Content, %	31.0	29.8		
Dry Density, pcf	81.27	77.63		
Saturation, %	79.4	69.7		
Void Ratio	1.04	1.13		
Confining Stress, psi	2.5	10		
Undrained Strength, psi	2.573	16.86		
Max. Dev. Stress, psi	5.145	33.71		
Strain at Failure, %	1.75	10.8		
Strain Rate, %/min	1	1		
Estimated Specific Gravity	2.65	2.65		
Liquid Limit	---	---		
Plastic Limit	---	---		
Plasticity Index	---	---		

GeoTesting EXPRESS

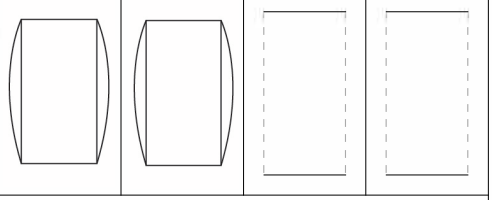
Project: Gasco PDI

Location: ---

Project No.: GTX-310685

Boring No.: PDI-116SPT

Sample Type: intact

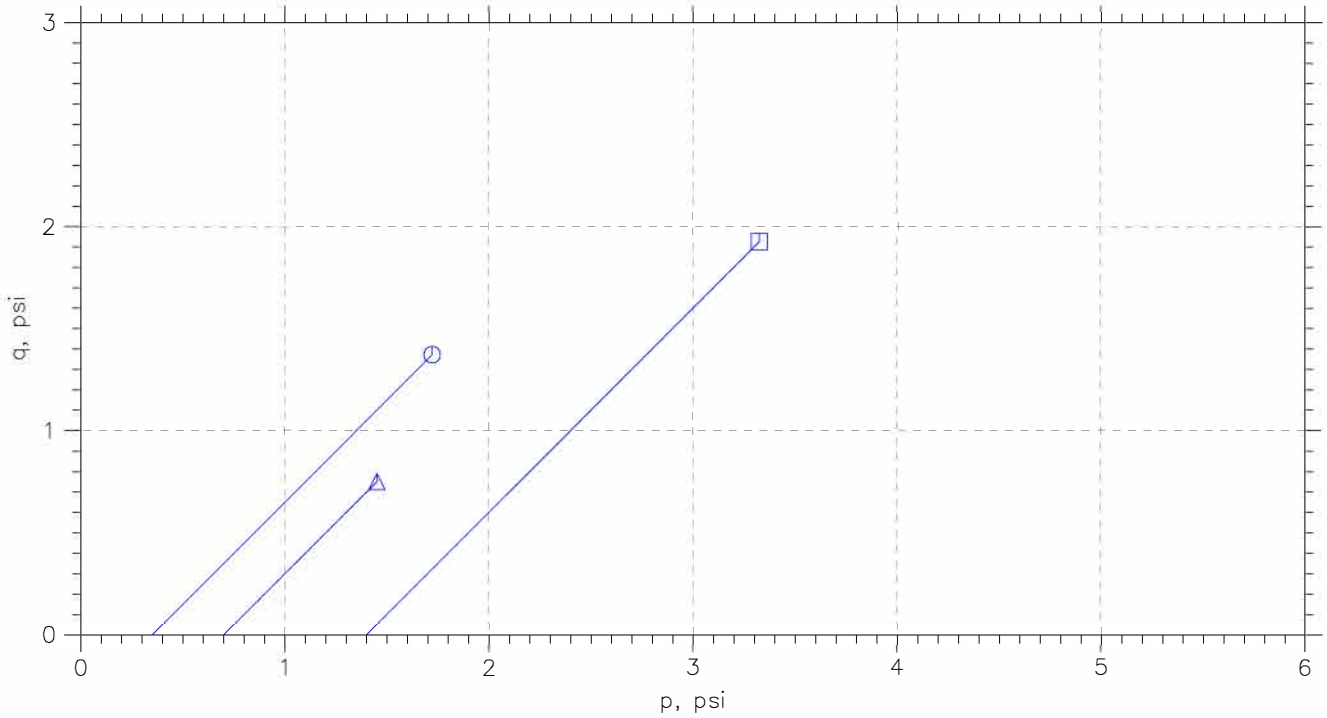


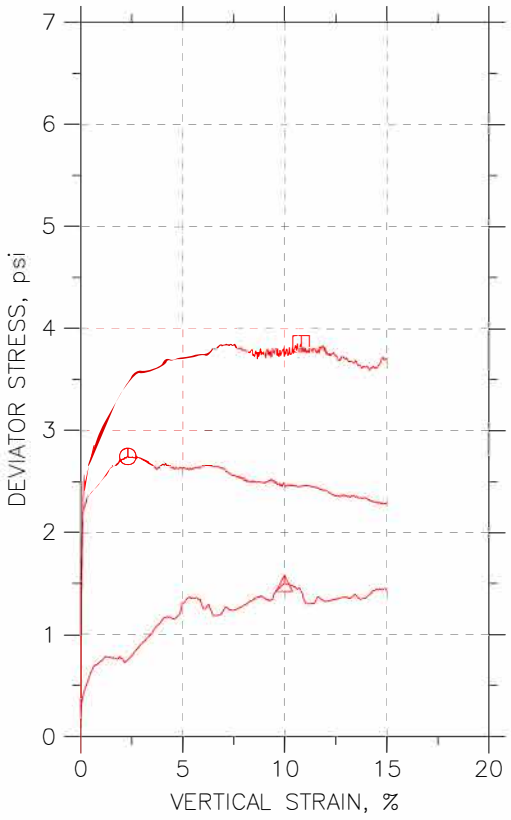
Description: Moist, dark gray sand with gravel

Remarks: System F

Phase calculations based on start and end of test.

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D2850





Symbol	⏲	△	⏍	
Sample No.	191014	191014	191014	
Test No.	UU-7-1	UU-7-2	UU-7-3	
Depth	4.5-6.5 ft	4.5-6.5 ft	4.5-6.5 ft	
Tested by	trm	trm	trm	
Test Date	12/16/19	12/16/19	12/16/19	
Checked by	anm	anm	anm	
Check Date	2/06/20	2/06/20	2/06/20	
Diameter, in	1.93	1.93	1.93	
Height, in	4.5	4.4	4.3	
Water Content, %	83.2	82.5	62.6	
Dry Density, pcf	51.13	50.66	60.49	
Saturation, %	97.9	95.7	94.6	
Void Ratio	2.3	2.33	1.79	
Confining Stress, psi	0.35	0.7	1.4	
Undrained Strength, psi	1.372	0.751	1.926	
Max. Dev. Stress, psi	2.744	1.502	3.852	
Strain at Failure, %	2.3	9.98	10.8	
Strain Rate, %/min	1	1	1	
Estimated Specific Gravity	2.7	2.7	2.7	
Liquid Limit	74	74	74	
Plastic Limit	38	38	38	
Plasticity Index	36	36	36	

GeoTesting EXPRESS

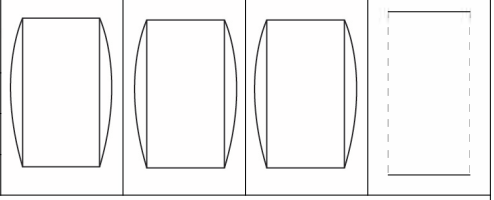
Project: Gasco PDI

Location: ---

Project No.: GTX-31685

Boring No.: PDI-118SPT

Sample Type: intact

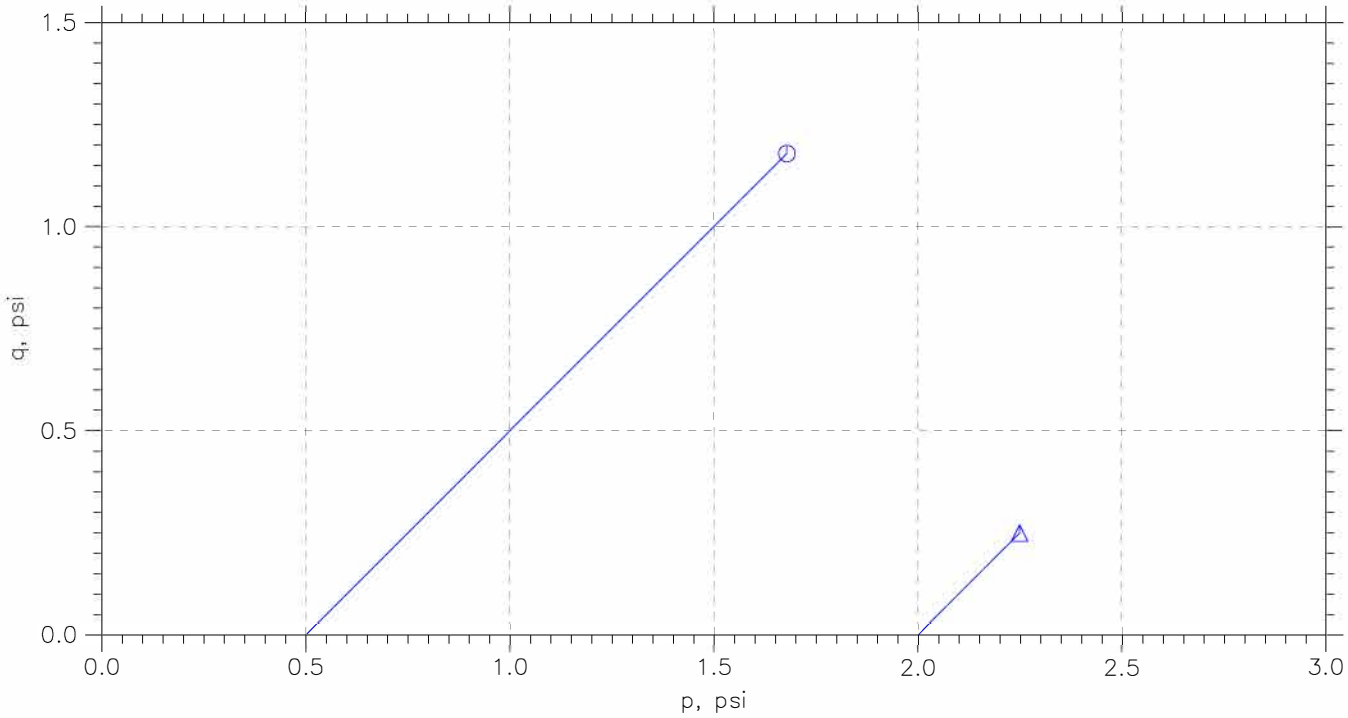


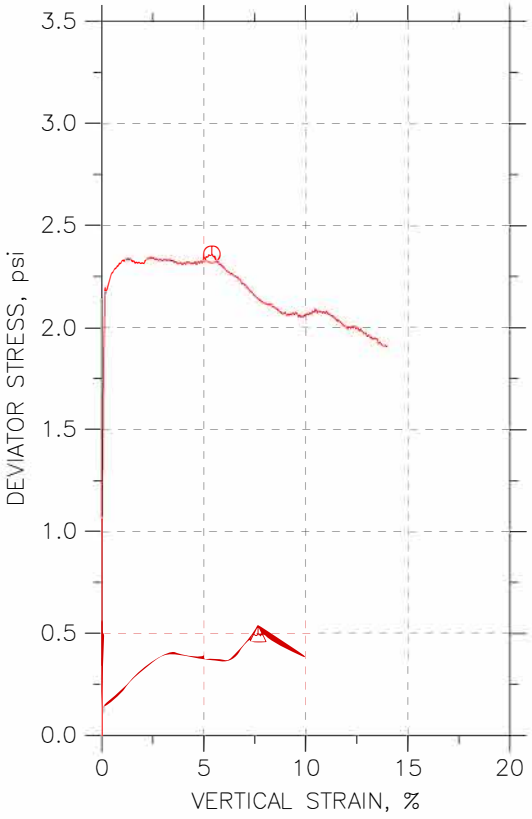
Description: Wet, olive gray silt

Remarks: System R

Phase calculations based on start and end of test.

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D2850





Symbol	⏲	△		
Sample No.	190930	190930		
Test No.	UU-5-1	UU-5-2		
Depth	6-8 ft	6-8 ft		
Tested by	trm	trm		
Test Date	12/16/19	12/16/19		
Checked by	anm	anm		
Check Date	2/06/20	2/06/20		
Diameter, in	1.93	1.93		
Height, in	4.05	4.2		
Water Content, %	84.5	77.3		
Dry Density, pcf	41.05	54.38		
Saturation, %	73.5	99.4		
Void Ratio	3.11	2.1		
Confining Stress, psi	0.5	2		
Undrained Strength, psi	1.179	0.2495		
Max. Dev. Stress, psi	2.358	0.499		
Strain at Failure, %	5.4	7.65		
Strain Rate, %/min	1	1		
Estimated Specific Gravity	2.7	2.7		
Liquid Limit	76	76		
Plastic Limit	39	39		
Plasticity Index	37	37		

GeoTesting EXPRESS

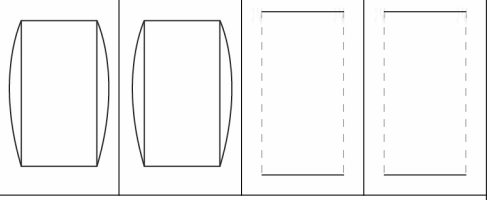
Project: Gasco PDI

Location: ---

Project No.: GTX-31685

Boring No.: PDI-121SPT

Sample Type: intact

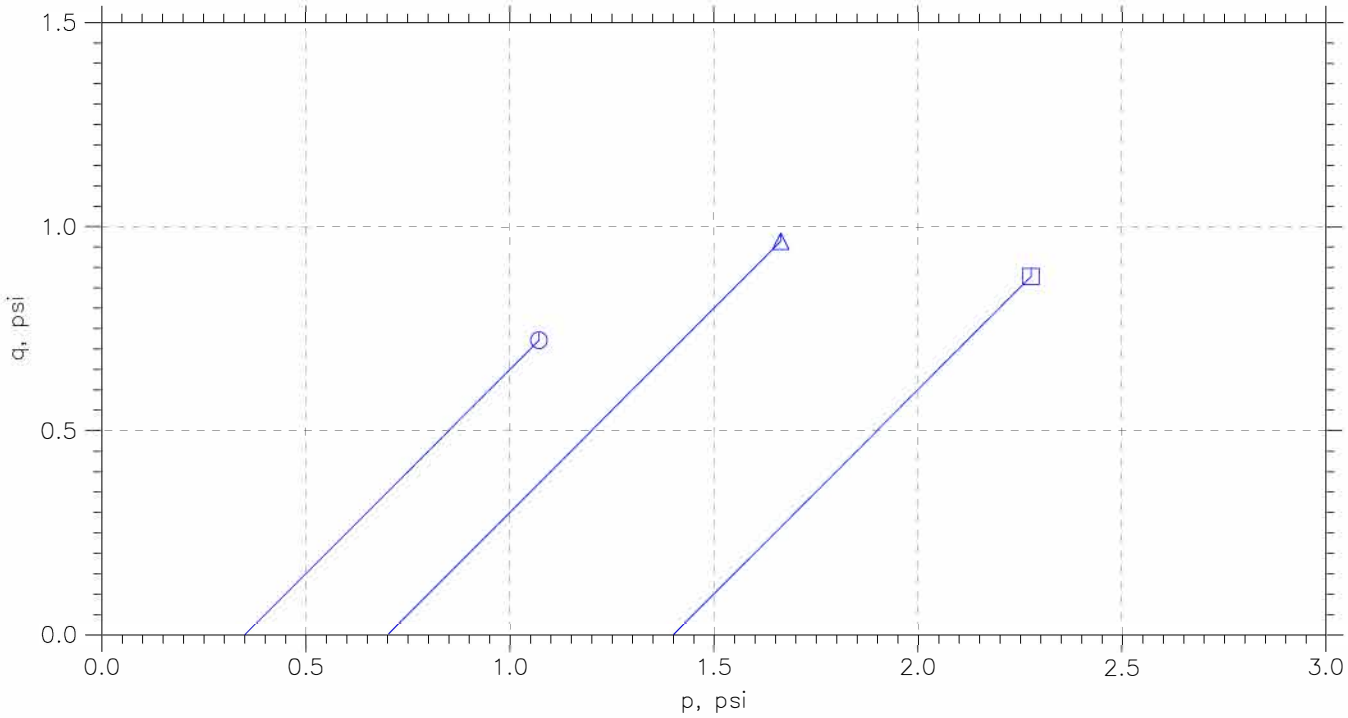


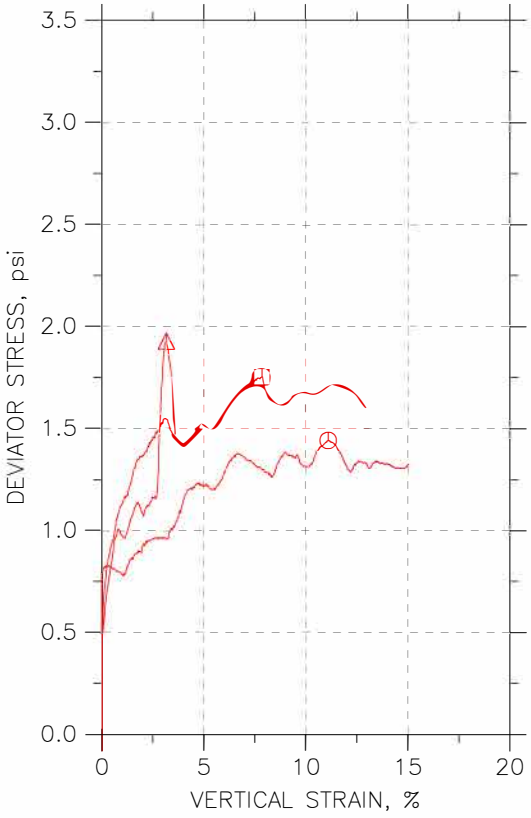
Description: Wet, olive gray silt

Remarks: System R

Phase calculations based on start and end of test.

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D2850





Symbol	○	△	□	
Sample No.	190924	190924	190924	
Test No.	UU-3-1	UU-3-2	UU-3-3	
Depth	4.5-6.5 ft	4.5-6.5 ft	4.5-6.5 ft	
Tested by	trm	trm	trm	
Test Date	12/16/19	12/17/19	12/16/19	
Checked by	anm	anm		
Check Date	2/06/20	2/06/20	2/06/20	
Diameter, in	1.93	1.93	1.93	
Height, in	4.3	4.4	4.35	
Water Content, %	69.2	73.4	78.6	
Dry Density, pcf	57.06	54.29	51.85	
Saturation, %	95.6	94.1	94.3	
Void Ratio	1.95	2.1	2.25	
Confining Stress, psi	0.35	0.7	1.4	
Undrained Strength, psi	0.7212	0.9639	0.8775	
Max. Dev. Stress, psi	1.442	1.928	1.755	
Strain at Failure, %	11.1	3.16	7.86	
Strain Rate, %/min	1	1	1	
Estimated Specific Gravity	2.7	2.7	2.7	
Liquid Limit	50	50	50	
Plastic Limit	33	33	33	
Plasticity Index	17	17	17	

GeoTesting EXPRESS

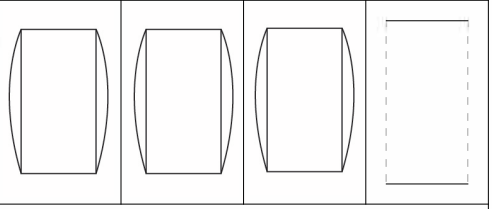
Project: Gasco PDI

Location: ---

Project No.: GTX-310685

Boring No.: PDI-123SPT

Sample Type: intact



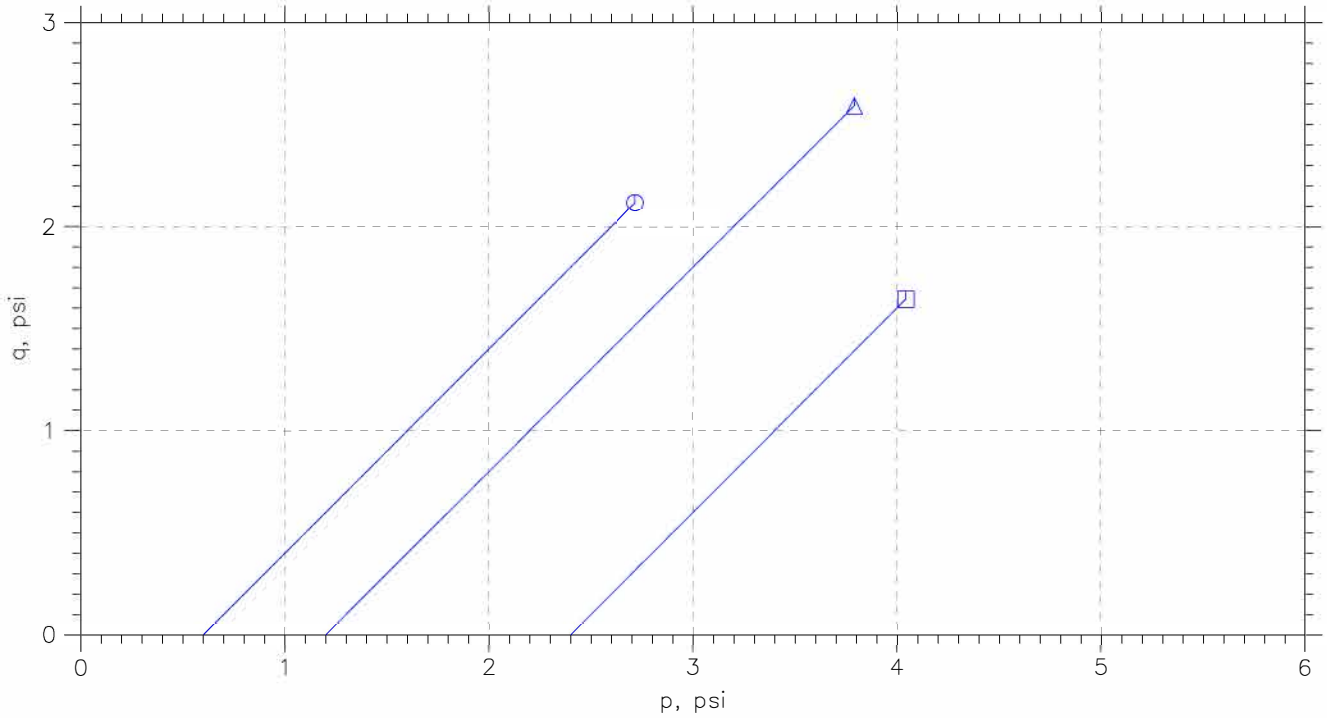
Description: Wet, olive gray silt

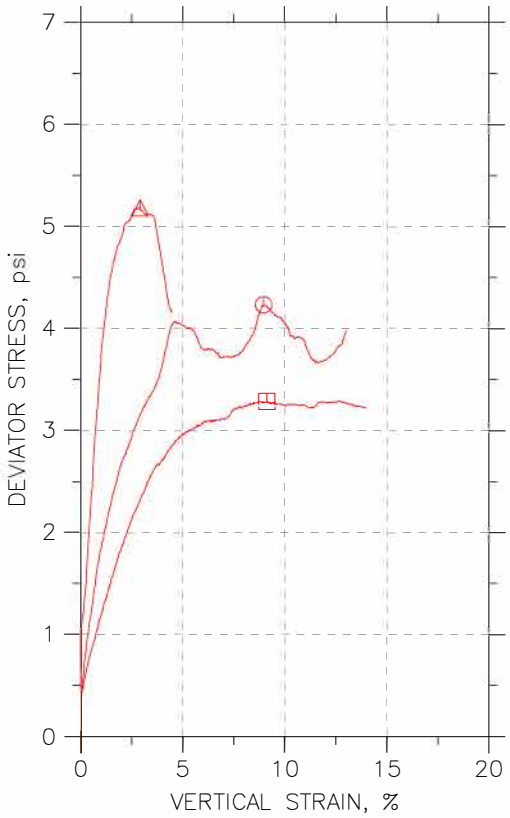
Remarks: System PP

Phase calculations based on start and end of test.

Thu, 06-FEB-2020 11:03:51

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D2850





Symbol	○	△	□	
Sample No.	191008	191008	191008	
Test No.	UU-6-1	UU-6-2	UU-6-3	
Depth	7.5-9.5 ft	7.5-9.5 ft	7.5-9.5 ft	
Tested by	trm	trm	trm	
Test Date	12/17/19	12/17/19	12/16/19	
Checked by	anm	anm	anm	
Check Date	2/06/20	2/06/20	2/06/20	
Diameter, in	1.93	1.93	1.93	
Height, in	4.6	4.7	4.65	
Water Content, %	67.1	78.2	75.8	
Dry Density, pcf	58.57	51.91	53.09	
Saturation, %	96.5	93.9	94.1	
Void Ratio	1.88	2.25	2.18	
Confining Stress, psi	0.6	1.2	2.4	
Undrained Strength, psi	2.116	2.591	1.644	
Max. Dev. Stress, psi	4.232	5.182	3.289	
Strain at Failure, %	8.96	2.91	9.13	
Strain Rate, %/min	1	1	1	
Estimated Specific Gravity	2.7	2.7	2.7	
Liquid Limit	58	58	58	
Plastic Limit	36	36	36	
Plasticity Index	22	22	22	

GeoTesting EXPRESS

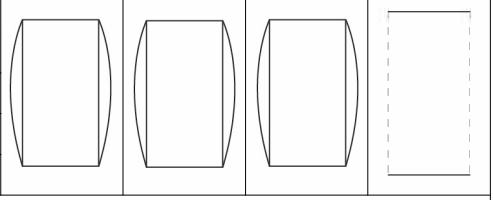
Project: Gasco PDI

Location: ---

Project No.: GTX-310685

Boring No.: PDI-114SPT

Sample Type: intact



Description: Wet, gray silt

Remarks: System QQ

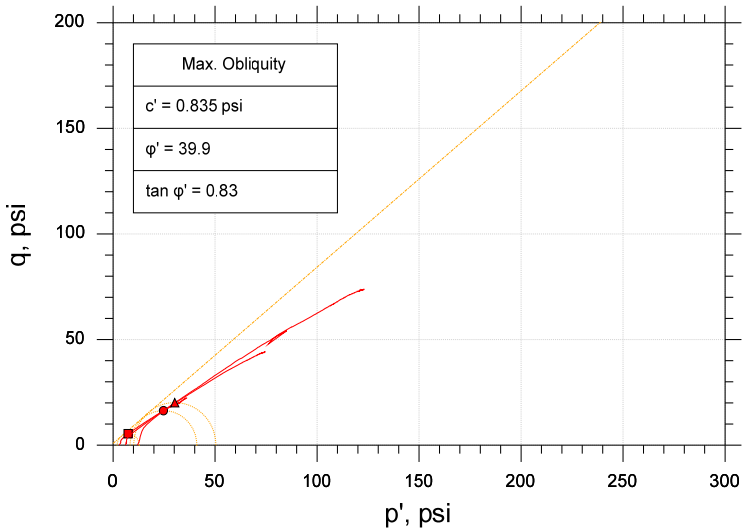
Phase calculations based on start and end of test.

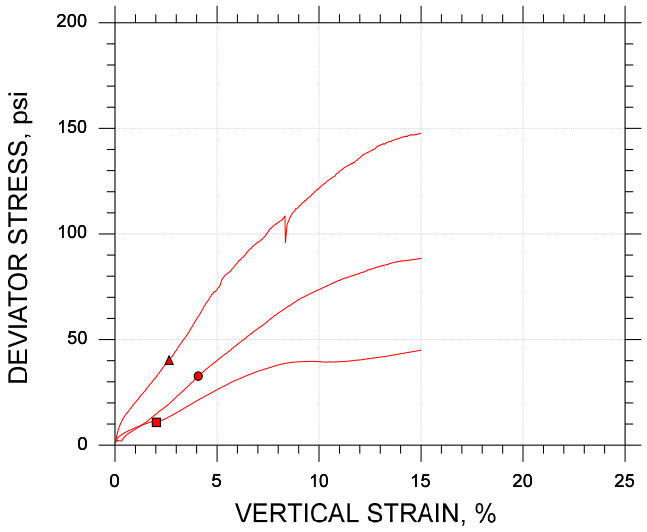
Thu, 06-FEB-2020 13:24:07

GeoTesting EXPRESS

Client: Anchor QEA, LLC	
Project Name: Gasco PDI	
Project Location: ---	
Project Number: GTX-310685	
Tested By: trm	Checked By: njh
Boring ID: PDI-107SPT	
Preparation: intact	
Description: Wet, dark gray sand	
Classification: ---	
Group Symbol: ---	
Liquid Limit: ---	Plastic Limit: ---
Plasticity Index: ---	Estimated Specific Gravity: 2.65

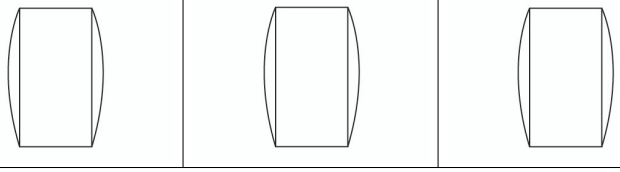
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767





Symbol		■	●	▲	
Sample ID		190924	190924	190924	
Depth, ft		39-41	39-41	39-41	
Test Number		CU-8-1	CU-8-2	CU-8-3	
Initial	Height, in	4.500	4.200	4.500	
	Diameter, in	1.930	1.930	1.930	
	Moisture Content (from Cuttings), %	34.2	33.5	33.9	
	Dry Density, pcf	79.6	82.9	73.8	
	Saturation (Wet Method), %	84.0	89.4	72.5	
	Void Ratio	1.08	0.995	1.24	
Before Shear	Moisture Content, %	41.0	37.5	48.6	
	Dry Density, pcf	79.2	82.9	72.3	
	Cross-sectional Area (Method A), in²	2.933	2.927	3.002	
	Saturation, %	100.0	100.0	100.0	
	Void Ratio	1.09	0.995	1.29	
	Back Pressure, psi	156.0	161.0	161.0	
Vertical Effective Consolidation Stress, psi		3.007	6.003	11.94	
Horizontal Effective Consolidation Stress, psi		2.994	5.987	11.96	
Vertical Strain after Consolidation, %		0.0000	0.01899	0.3484	
Volumetric Strain after Consolidation, %		0.1850	-0.07463	-2.490	
Time to 50% Consolidation, min		---	---	0.1600	
Shear Strength, psi		5.399	16.33	20.12	
Strain at Failure, %		2.03	4.08	2.65	
Strain Rate, %/min		0.01600	0.01600	0.01600	
Deviator Stress at Failure, psi		10.80	32.65	40.24	
Effective Minor Principal Stress at Failure, psi		1.973	8.368	10.11	
Effective Major Principal Stress at Failure, psi		12.77	41.02	50.35	
B-Value		0.95	0.95	0.99	

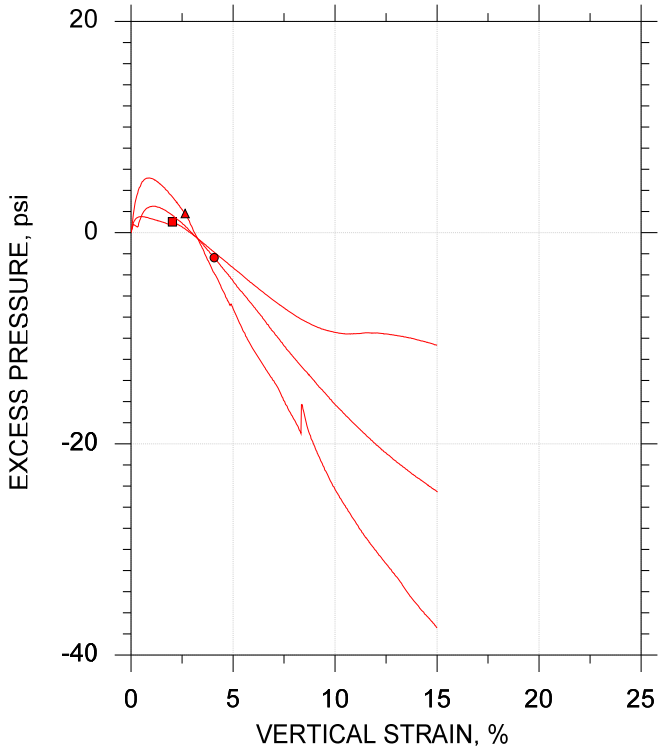
Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.

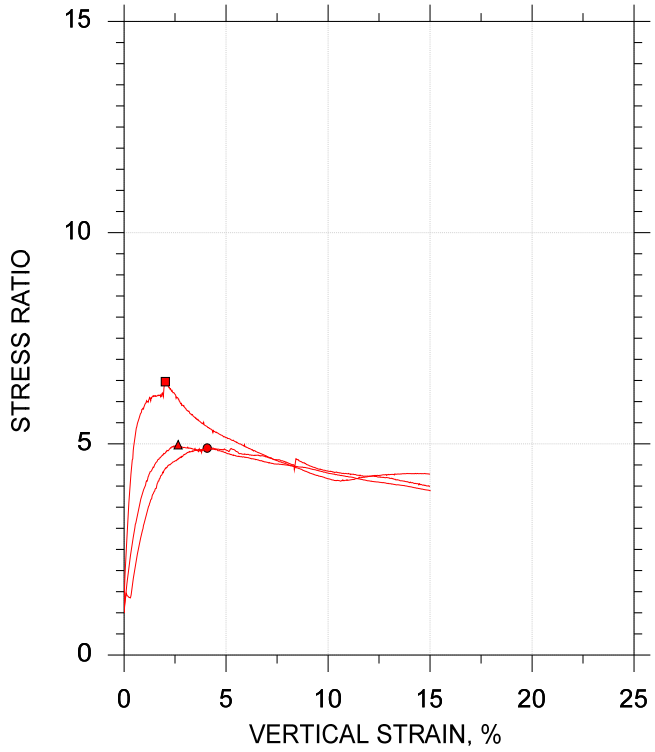


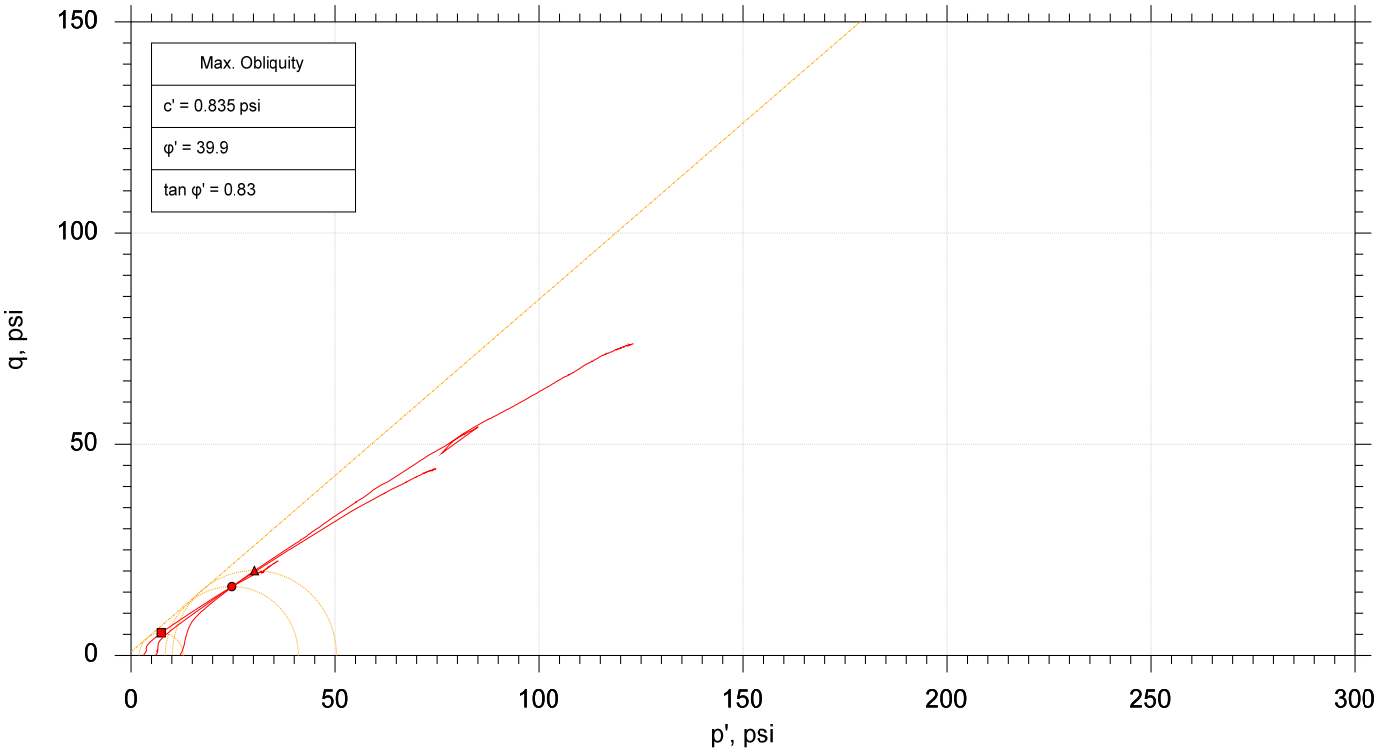
Remarks:

System R

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







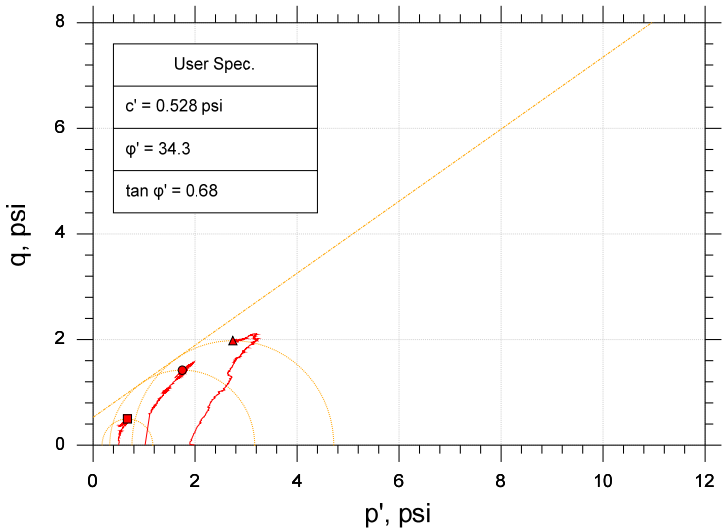
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	190924	CU-8-1	39-41	trm	12/13/19	njh	2/7/2020	310685-CU-8-1n.dat
●	190924	CU-8-2	39-41	trm	12/13/19	njh	2/7/2020	310685-CU-8-2n.dat
▲	190924	CU-8-3	39-41	trm	12/12/19	njh	2/7/2020	310685-CU-8-3n.dat

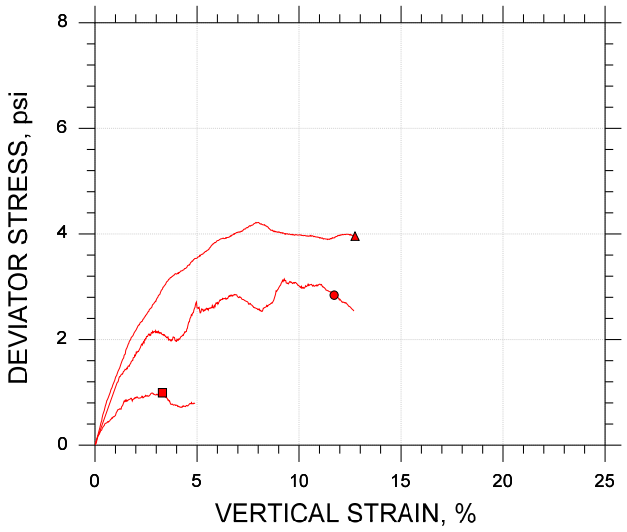
GeoTesting EXPRESS

Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-107SPT	Sample Type: intact	
Description: Wet, dark gray sand		
Remarks: System R		

Client: Anchor QEA, LLC	
Project Name: Gasco PDI	
Project Location: ---	
Project Number: GTX-310685	
Tested By: trm	Checked By: njh
Boring ID: PDI-109SPT	
Preparation: intact	
Description: Wet, dark olive gray silt	
Classification: ---	
Group Symbol: ---	
Liquid Limit: 75	Plastic Limit: 39
Plasticity Index: 36	Estimated Specific Gravity: 2.7

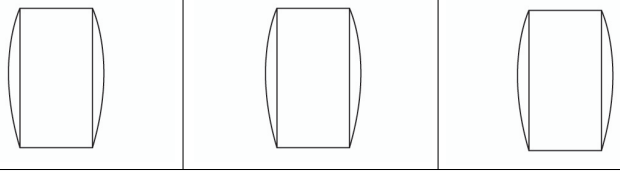
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767





Symbol		■	●	▲	
Sample ID		191004	191004	191004	
Depth, ft		6.5-8.5	6.5-8.5	6.5-8.5	
Test Number		CU-5-1	CU-5-2	CU-5-3	
Initial	Height, in	4.200	4.550	4.600	
	Diameter, in	1.930	1.930	1.930	
	Moisture Content (from Cuttings), %	76.1	90.2	82.4	
	Dry Density, pcf	55.1	47.9	50.6	
	Saturation (Wet Method), %	99.9	96.6	95.5	
	Void Ratio	2.06	2.52	2.33	
Before Shear	Moisture Content, %	67.0	91.5	87.2	
	Dry Density, pcf	60.0	48.6	50.3	
	Cross-sectional Area (Method A), in²	2.764	2.882	2.943	
	Saturation, %	100.0	100.0	100.0	
	Void Ratio	1.81	2.47	2.35	
	Back Pressure, psi	113.2	40.98	160.8	
Vertical Effective Consolidation Stress, psi		0.4813	1.022	1.979	
Horizontal Effective Consolidation Stress, psi		0.5062	1.017	1.988	
Vertical Strain after Consolidation, %		0.3160	0.002070	0.1552	
Volumetric Strain after Consolidation, %		0.8702	1.559	0.04152	
Time to 50% Consolidation, min		---	---	9.600	
Shear Strength, psi		0.4964	1.421	1.979	
Strain at Failure, %		3.30	11.7	12.7	
Strain Rate, %/min		0.01600	0.01600	0.01600	
Deviator Stress at Failure, psi		0.9928	2.841	3.958	
Effective Minor Principal Stress at Failure, psi		0.1773	0.3282	0.7621	
Effective Major Principal Stress at Failure, psi		1.170	3.169	4.720	
B-Value		0.96	0.98	0.95	

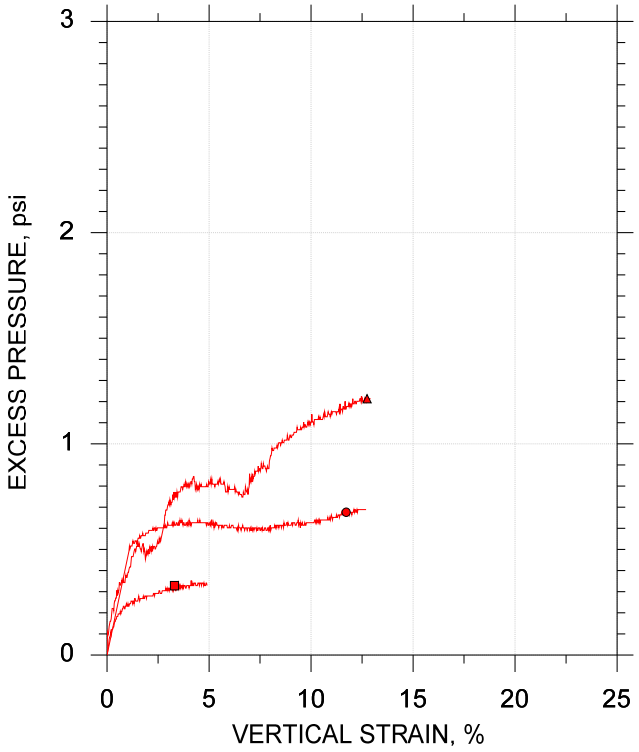
Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Atterberg Limits determined by ASTM D4318.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.

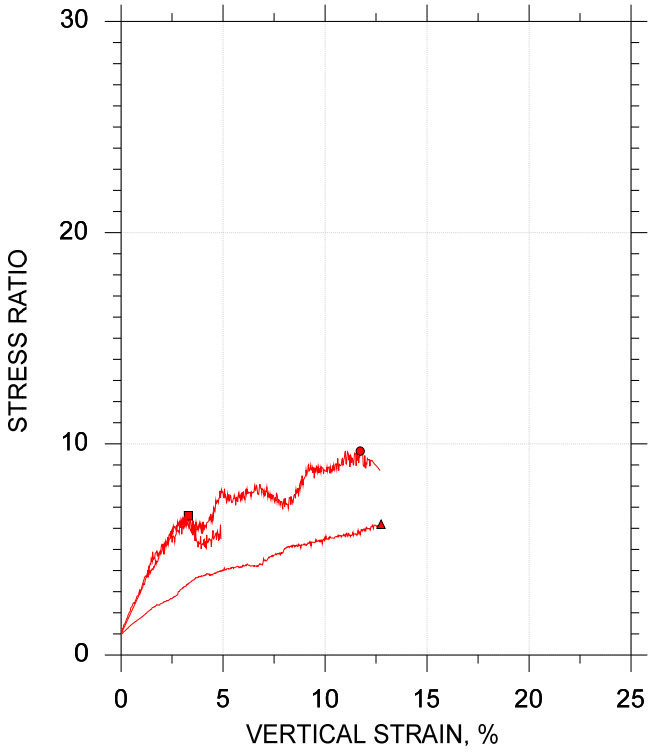


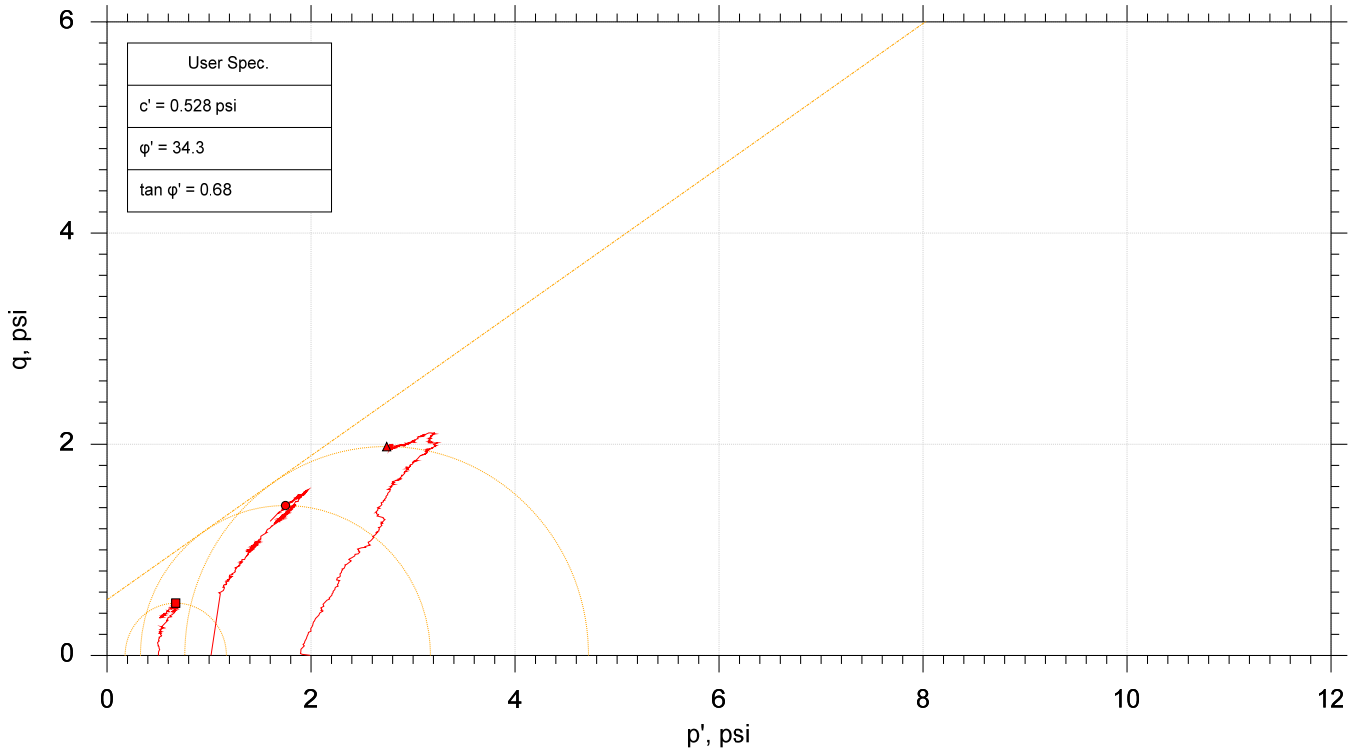
Remarks:

System E, Test Specimen CU-5-1 was not used in determining cohesion and friction values

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







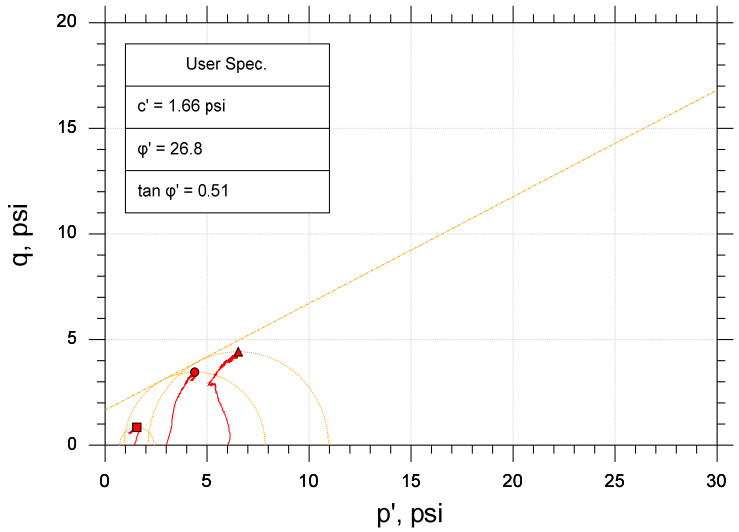
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	191004	CU-5-1	6.5-8.5	trm	12/5/19	njh	2/6/2020	310685-CU-5-1n.dat
●	191004	CU-5-2	6.5-8.5	jlw/trm	12/05/19	njh	2/6/2020	310685-CU-5-2n.dat
▲	191004	CU-5-3	6.5-8.5	jlw/trm	12/05/19	njh	2/6/2020	310685-CU-5-3n.dat

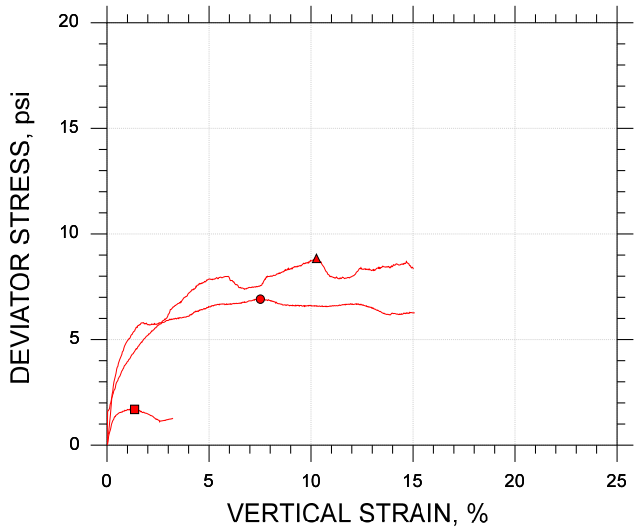
GeoTesting EXPRESS

Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-109SPT	Sample Type: intact	
Description: Wet, dark olive gray silt		
Remarks: System E, Test Specimen CU-5-1 was not used in determining cohesion and friction values		

Client: Anchor QEA, LLC	
Project Name: Gasco PDI	
Project Location: ---	
Project Number: GTX-310685	
Tested By: md	Checked By: njh
Boring ID: PDI-114SPT	
Preparation: intact	
Description: Wet, gray clay	
Classification: ---	
Group Symbol: ---	
Liquid Limit: ---	Plastic Limit: ---
Plasticity Index: ---	Estimated Specific Gravity: 2.7

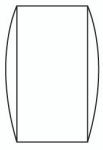
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

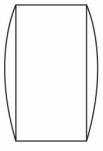




		■	●	▲	
Symbol					
Sample ID		191008	191008	191008	
Depth, ft		17.5-19.5	17.5-19.5	17.5-19.5	
Test Number		CU-3-1	CU-3-2	CU-3-3	
Initial	Height, in	4.000	4.180	4.400	
	Diameter, in	1.930	1.930	1.930	
	Moisture Content (from Cuttings), %	60.1	76.1	65.6	
	Dry Density, pcf	63.3	55.1	60.6	
	Saturation (Wet Method), %	97.6	99.9	99.4	
	Void Ratio	1.66	2.06	1.78	
Before Shear	Moisture Content, %	41.2	73.2	59.1	
	Dry Density, pcf	79.8	56.6	65.0	
	Cross-sectional Area (Method A), in²	2.419	2.867	2.792	
	Saturation, %	100.0	100.0	100.0	
	Void Ratio	1.11	1.98	1.59	
	Back Pressure, psi	151.0	103.0	161.0	
Vertical Effective Consolidation Stress, psi		1.408	2.963	5.947	
Horizontal Effective Consolidation Stress, psi		1.474	3.007	6.008	
Vertical Strain after Consolidation, %		0.8168	0.5256	0.7459	
Volumetric Strain after Consolidation, %		12.13	2.387	2.207	
Time to 50% Consolidation, min		---	---	4.400	
Shear Strength, psi		0.8463	3.457	4.421	
Strain at Failure, %		1.35	7.51	10.3	
Strain Rate, %/min		0.01600	0.01600	0.01600	
Deviator Stress at Failure, psi		1.693	6.913	8.841	
Effective Minor Principal Stress at Failure, psi		0.7134	0.9349	2.110	
Effective Major Principal Stress at Failure, psi		2.406	7.848	10.95	
B-Value		1.0	0.95	0.97	

Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.

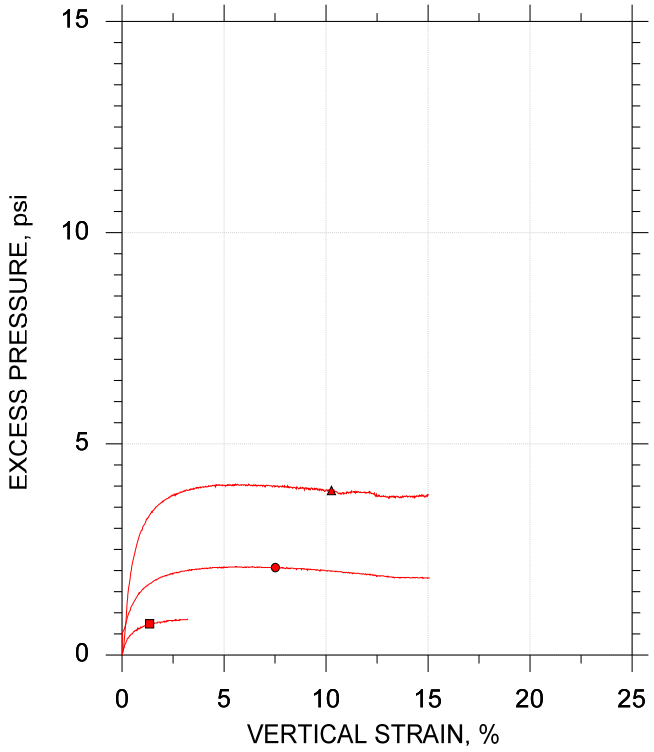


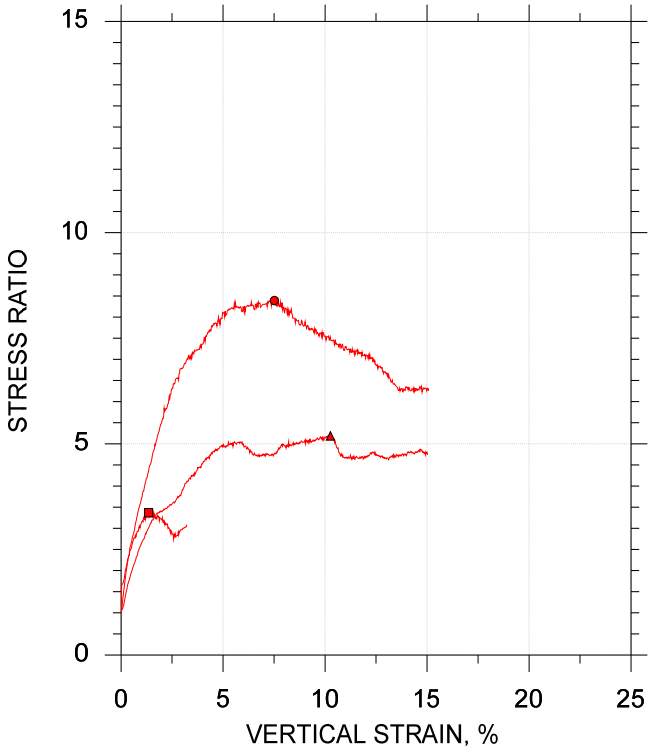


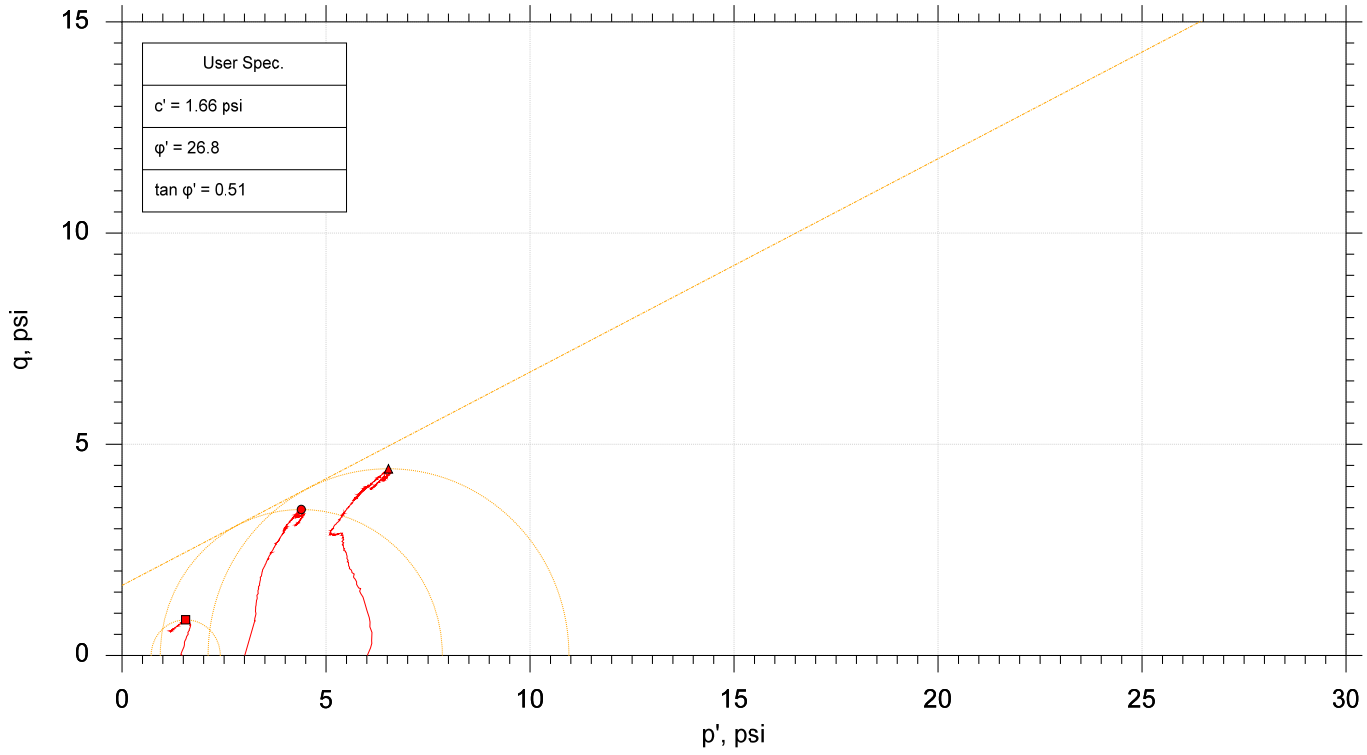
Remarks:

System QQ, Test Specimen CU-3-1 was not used in determining cohesion and friction values

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







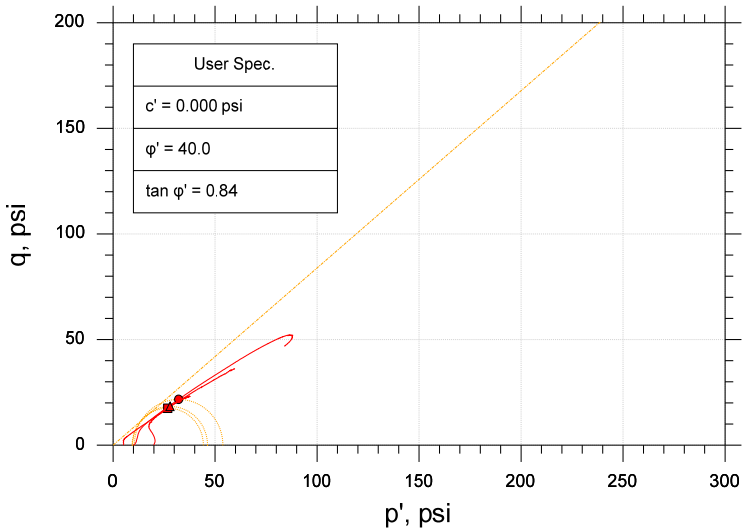
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	191008	CU-3-1	17.5-19.5	md	11/30/19	njh	1/28/2020	310685-CU-3-1n.dat
●	191008	CU-3-2	17.5-19.5	md	11/30/19	njh	1/28/2020	310685-CU-3-2n.dat
▲	191008	CU-3-3	17.5-19.5	md	11/30/19	njh	1/28/2020	310685-CU-3-3n.dat

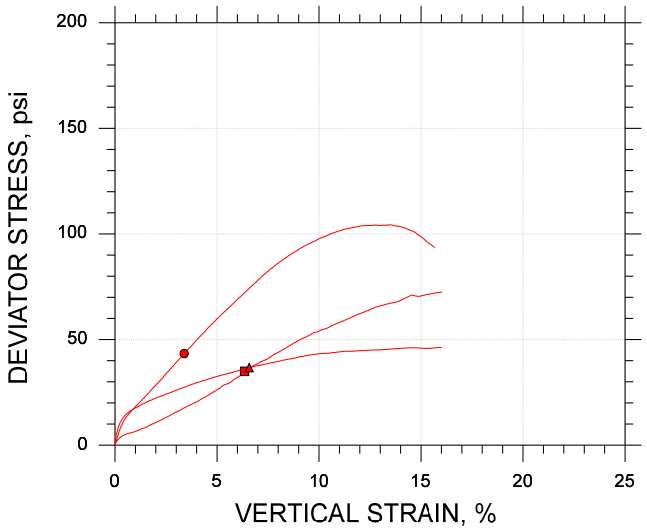
GeoTesting EXPRESS

Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-114SPT	Sample Type: intact	
Description: Wet, gray clay		
Remarks: System QQ, Test Specimen CU-3-1 was not used in determining cohesion and friction values		

Client: Anchor QEA, LLC	
Project Name: Gasco PDI	
Project Location: ---	
Project Number: GTX-310685	
Tested By: md	Checked By: njh
Boring ID: PDI-117SPT	
Preparation: intact	
Description: Moist, dark brownish gray silty sand	
Classification: ---	
Group Symbol: ---	
Liquid Limit: ---	Plastic Limit: ---
Plasticity Index: ---	Estimated Specific Gravity: 2.65

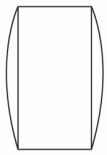
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

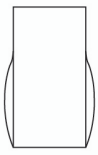


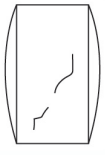


Symbol		■	●	▲	
Sample ID		191002	191002	191002	
Depth, ft		58.5-60.5	58.5-60.5	58.5-60.5	
Test Number		CU-1-1	CU-1-2	CU-1-3	
Initial	Height, in	4.400	4.500	4.500	
	Diameter, in	1.930	1.930	1.930	
	Moisture Content (from Cuttings), %	29.1	30.7	32.8	
	Dry Density, pcf	88.3	87.0	85.2	
	Saturation (Wet Method), %	88.2	90.3	92.2	
	Void Ratio	0.874	0.902	0.941	
Before Shear	Moisture Content, %	32.0	33.1	25.9	
	Dry Density, pcf	89.5	88.1	98.1	
	Cross-sectional Area (Method A), in²	2.899	2.901	2.663	
	Saturation, %	100.0	100.0	100.0	
	Void Ratio	0.849	0.878	0.687	
	Back Pressure, psi	135.0	151.0	151.0	
Vertical Effective Consolidation Stress, psi		4.971	9.967	19.87	
Horizontal Effective Consolidation Stress, psi		4.986	9.995	19.97	
Vertical Strain after Consolidation, %		0.2302	0.3939	1.304	
Volumetric Strain after Consolidation, %		0.6439	1.229	3.669	
Time to 50% Consolidation, min		---	---	0.2500	
Shear Strength, psi		17.46	21.68	18.36	
Strain at Failure, %		6.35	3.39	6.58	
Strain Rate, %/min		0.01600	0.01600	0.01600	
Deviator Stress at Failure, psi		34.93	43.36	36.71	
Effective Minor Principal Stress at Failure, psi		9.355	10.45	9.586	
Effective Major Principal Stress at Failure, psi		44.28	53.81	46.30	
B-Value		0.95	0.96	0.96	

Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.



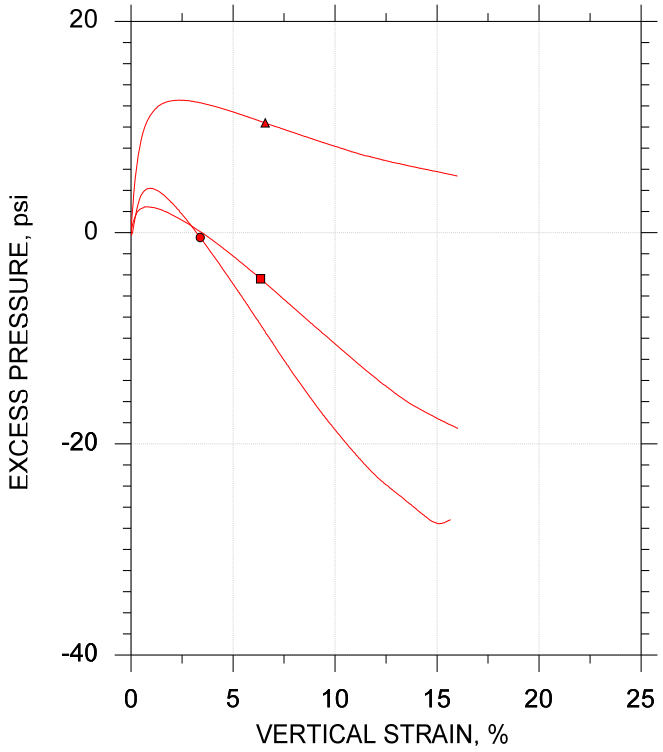


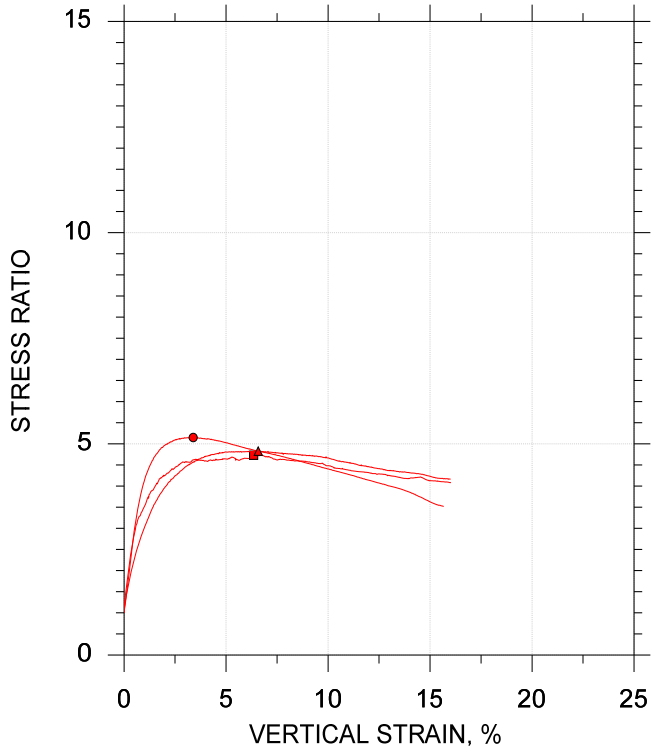


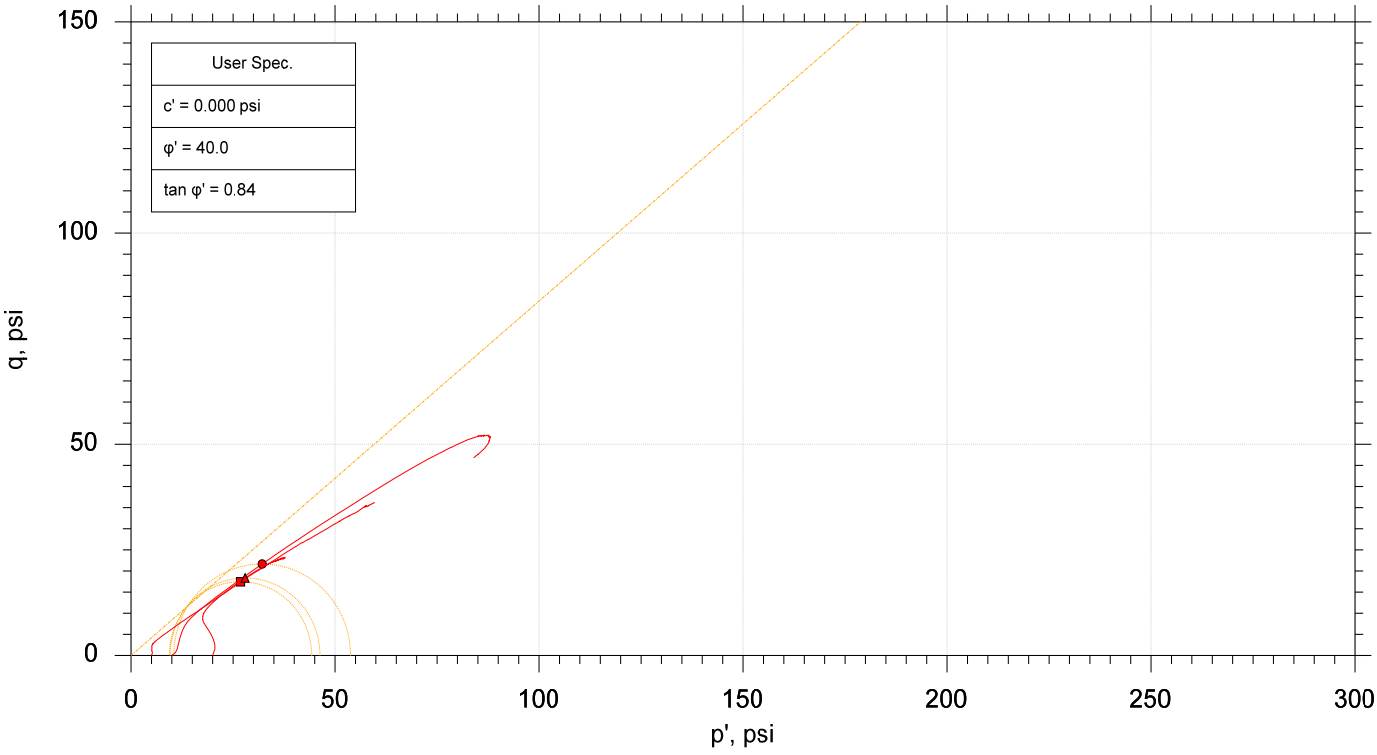
Remarks:

System R

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







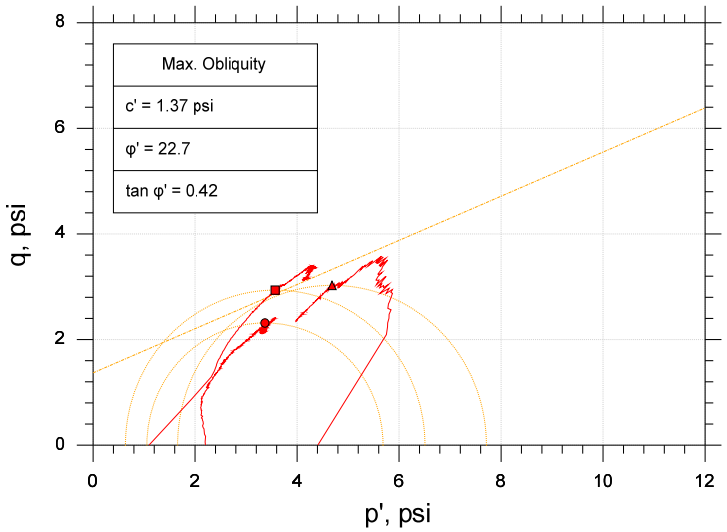
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	191002	CU-1-1	58.5-60.5	md	11/29/19	njh	1/28/2020	310685-CU-1-1n.dat
●	191002	CU-1-2	58.5-60.5	md	11/29/19	njh	1/28/2020	310685-CU-1-2n.dat
▲	191002	CU-1-3	58.5-60.5	md	11/29/19	njh	1/28/2020	310685-CU-1-3n.dat

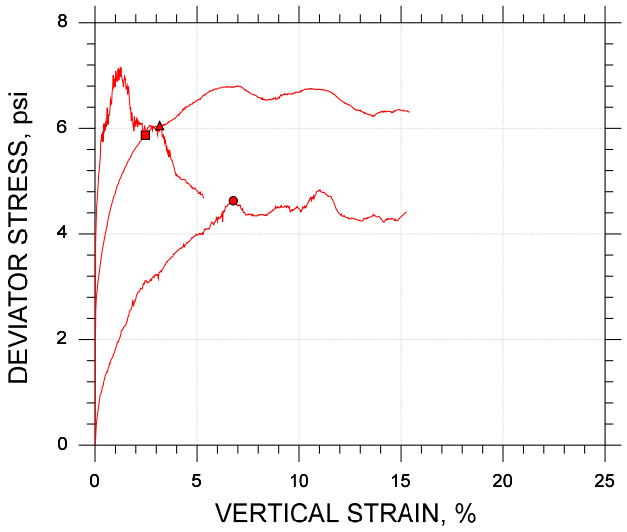
GeoTesting EXPRESS

Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-117SPT	Sample Type: intact	
Description: Moist, dark brownish gray silty sand		
Remarks: System R		

Client: Anchor QEA, LLC	
Project Name: Gasco PDI	
Project Location: ---	
Project Number: GTX-310685	
Tested By: md	Checked By: njh
Boring ID: PDI-118SPT	
Preparation: intact	
Description: Wet, black silt	
Classification: ---	
Group Symbol: ---	
Liquid Limit: ---	Plastic Limit: ---
Plasticity Index: ---	Estimated Specific Gravity: 2.7

CONSOLIDATED DRAINED TRIAXIAL TEST by ASTM D4767

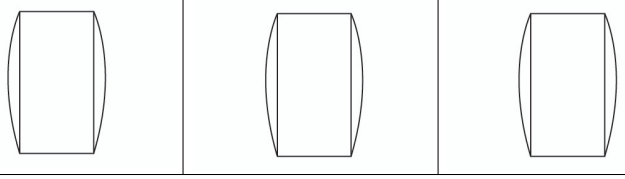




Symbol		■	●	▲	
Sample ID		191014	191014	191014	
Depth, ft		15-17	15-17	15-17	
Test Number		CU-2-1	CU-2-2	CU-2-3	
Initial	Height, in	4.330	4.410	4.000	
	Diameter, in	1.930	1.930	1.930	
	Moisture Content (from Cuttings), %	64.1	72.4	62.8	
	Dry Density, pcf	61.0	55.4	62.5	
	Saturation (Wet Method), %	98.2	95.6	100.0	
	Void Ratio	1.76	2.04	1.70	
Before Shear	Moisture Content, %	58.8	70.9	56.9	
	Dry Density, pcf	65.1	57.8	66.5	
	Cross-sectional Area (Method A), in²	2.788	2.842	2.816	
	Saturation, %	100.0	100.0	100.0	
	Void Ratio	1.59	1.91	1.54	
	Back Pressure, psi	62.74	86.98	95.01	
Vertical Effective Consolidation Stress, psi		1.102	2.150	4.300	
Horizontal Effective Consolidation Stress, psi		1.097	2.200	4.405	
Vertical Strain after Consolidation, %		0.005610	0.6233	1.267	
Volumetric Strain after Consolidation, %		1.401	1.928	2.949	
Time to 50% Consolidation, min		---	---	46.00	
Shear Strength, psi		2.936	2.314	3.027	
Strain at Failure, %		2.47	6.78	3.17	
Strain Rate, %/min		0.01600	0.01600	0.01600	
Deviator Stress at Failure, psi		5.872	4.628	6.053	
Effective Minor Principal Stress at Failure, psi		0.6345	1.056	1.659	
Effective Major Principal Stress at Failure, psi		6.506	5.684	7.712	
B-Value		0.97	0.96	0.96	

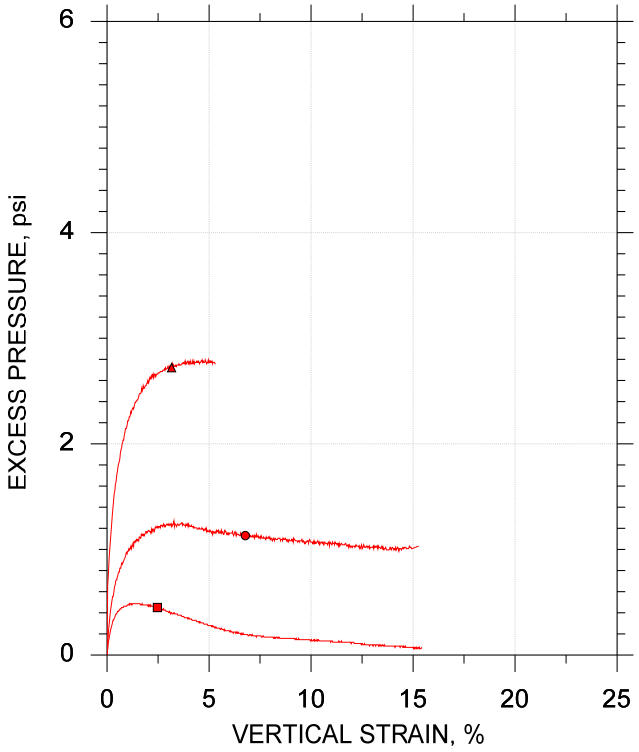
Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.

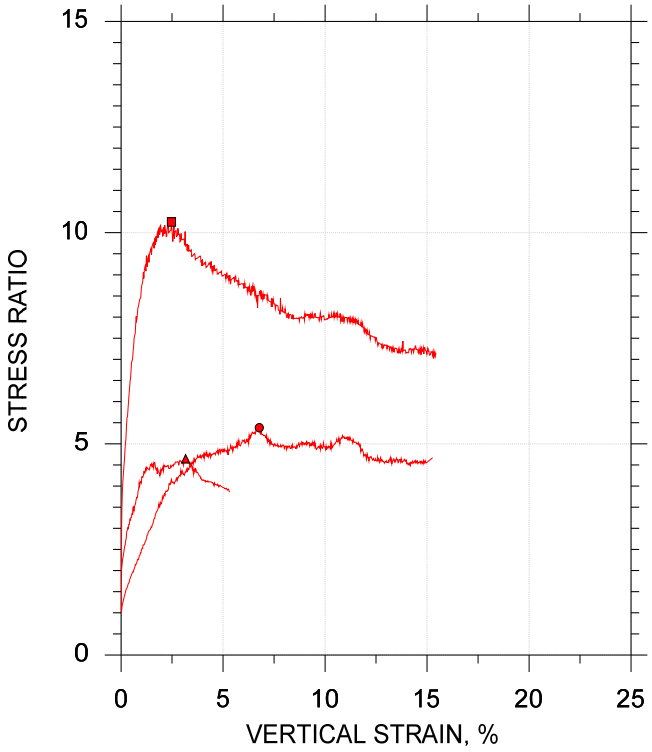
Remarks:

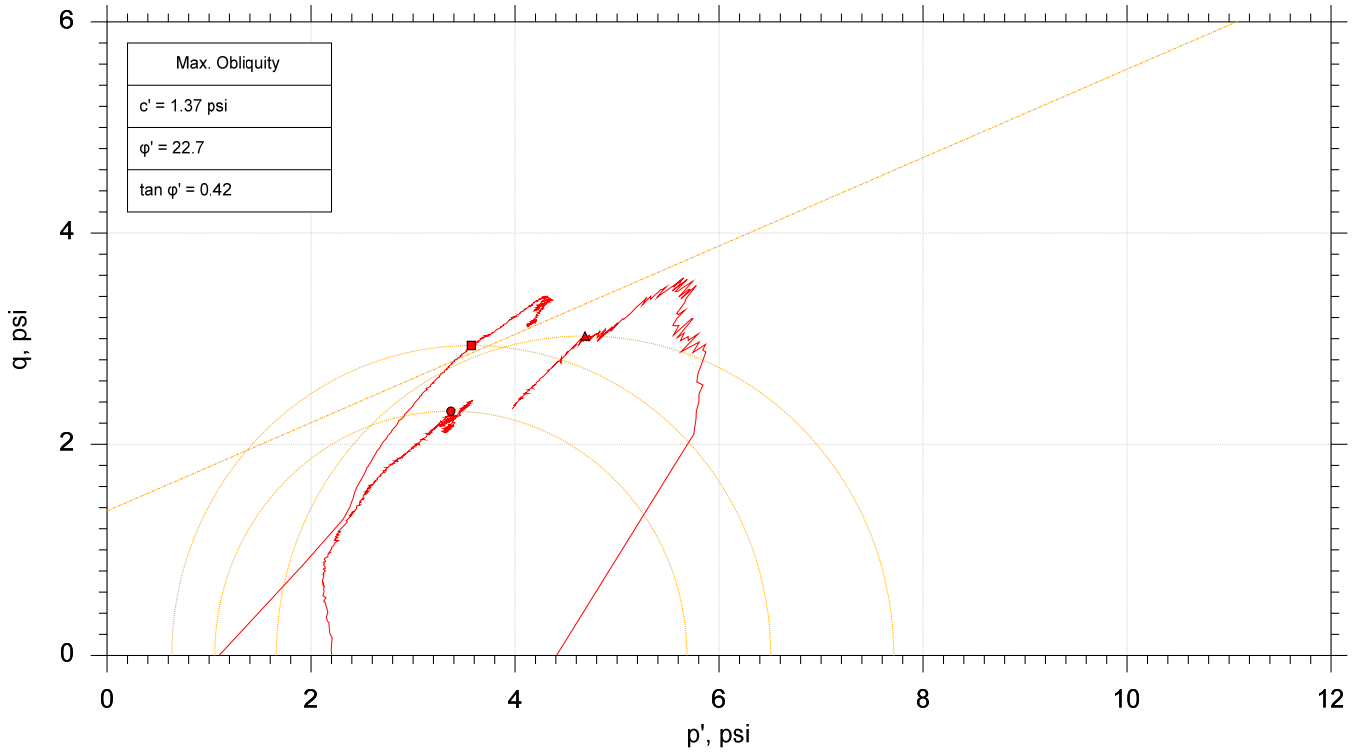


System E

CONSOLIDATED DRAINED TRIAXIAL TEST by ASTM D4767







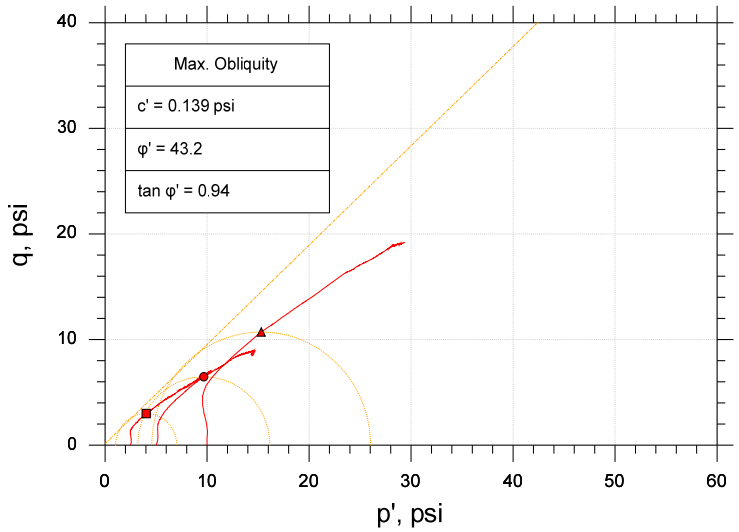
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	191014	CU-2-1	15-17	md	12/03/19	njh	1/28/2020	310685-CU-2-1n.dat
●	191014	CU-2-2	15-17	md	12/03/19	njh	1/28/2020	310685-CU-2-2n.dat
▲	191014	CU-2-3	15-17	md	12/03/19	njh	1/28/2020	310685-CU-2-3n.dat

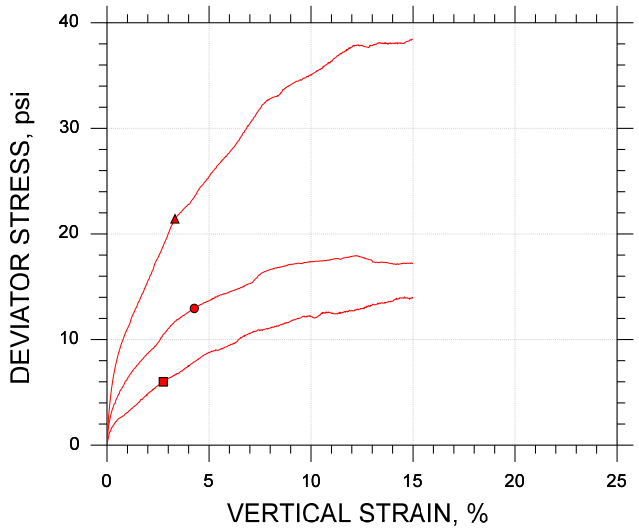
GeoTesting EXPRESS

Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-118SPT	Sample Type: intact	
Description: Wet, black silt		
Remarks: System E		

Client: Anchor QEA, LLC	
Project Name: Gasco PDI	
Project Location: ---	
Project Number: GTX-310685	
Tested By: trm	Checked By: njh
Boring ID: PDI-119SPT	
Preparation: intact	
Description: Moist, dark gray sandy clay	
Classification: ---	
Group Symbol: ---	
Liquid Limit: ---	Plastic Limit: ---
Plasticity Index: ---	Estimated Specific Gravity: 2.7

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

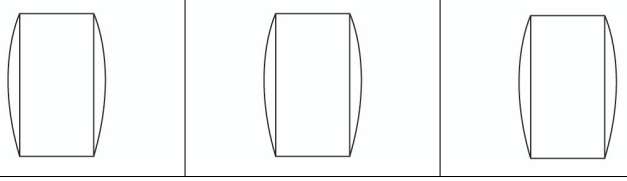




Symbol		■	●	▲	
Sample ID		191001	191001	191001	
Depth, ft		36.5-38.5	36.5-38.5	63.5-38.5	
Test Number		CU-6-1	CU-6-2	CU-6-3	
Initial	Height, in	4.100	4.500	4.650	
	Diameter, in	1.930	1.930	1.930	
	Moisture Content (from Cuttings), %	41.4	44.2	41.2	
	Dry Density, pcf	76.2	74.2	79.8	
	Saturation (Wet Method), %	92.3	93.9	100.0	
	Void Ratio	1.21	1.27	1.11	
Before Shear	Moisture Content, %	43.1	38.1	25.9	
	Dry Density, pcf	77.9	83.1	99.2	
	Cross-sectional Area (Method A), in²	2.883	2.630	2.383	
	Saturation, %	100.0	100.0	100.0	
	Void Ratio	1.16	1.03	0.700	
	Back Pressure, psi	131.0	161.0	163.0	
Vertical Effective Consolidation Stress, psi		2.475	4.965	9.938	
Horizontal Effective Consolidation Stress, psi		2.491	5.000	9.993	
Vertical Strain after Consolidation, %		0.3139	0.4299	0.8871	
Volumetric Strain after Consolidation, %		0.8759	10.07	18.69	
Time to 50% Consolidation, min		---	---	2.250	
Shear Strength, psi		2.995	6.473	10.72	
Strain at Failure, %		2.75	4.28	3.33	
Strain Rate, %/min		0.01600	0.01600	0.01600	
Deviator Stress at Failure, psi		5.991	12.95	21.44	
Effective Minor Principal Stress at Failure, psi		1.040	3.207	4.590	
Effective Major Principal Stress at Failure, psi		7.030	16.15	26.03	
B-Value		0.96	0.95	0.96	

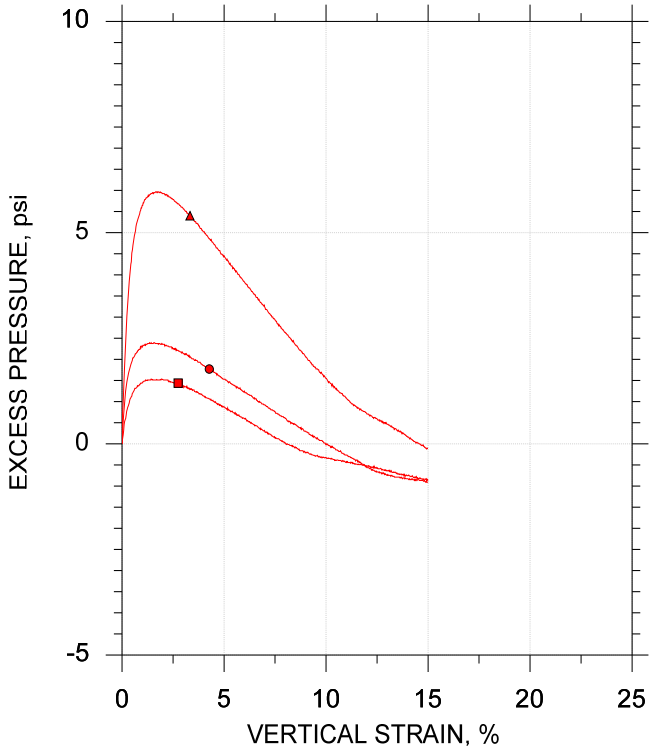
Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.

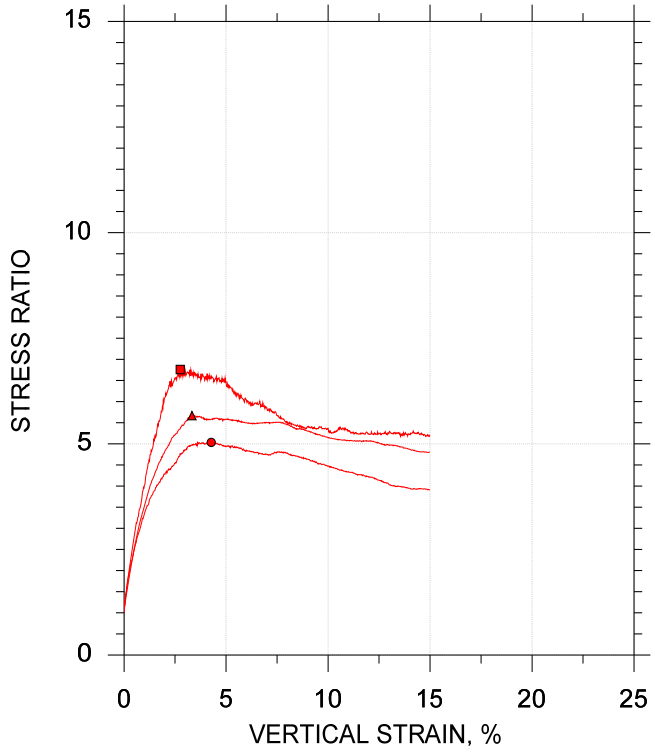
Remarks:

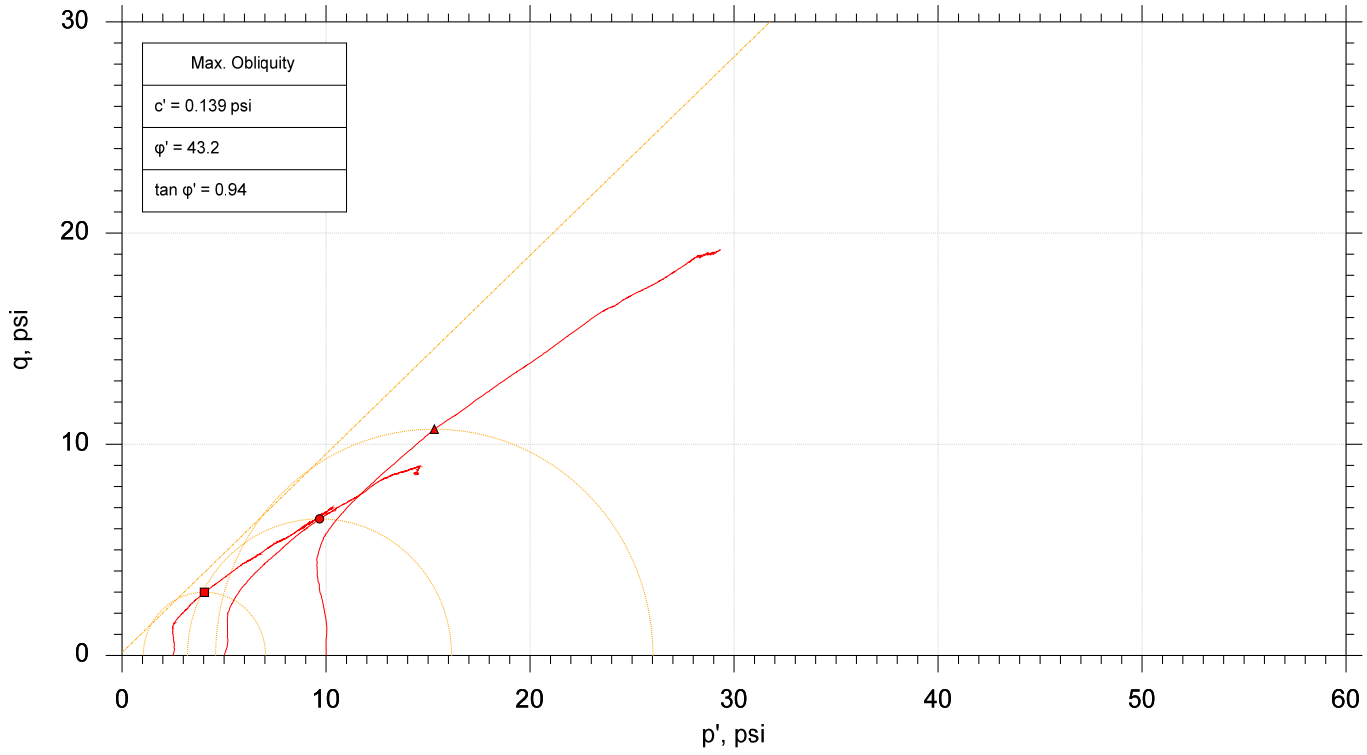


System OO

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







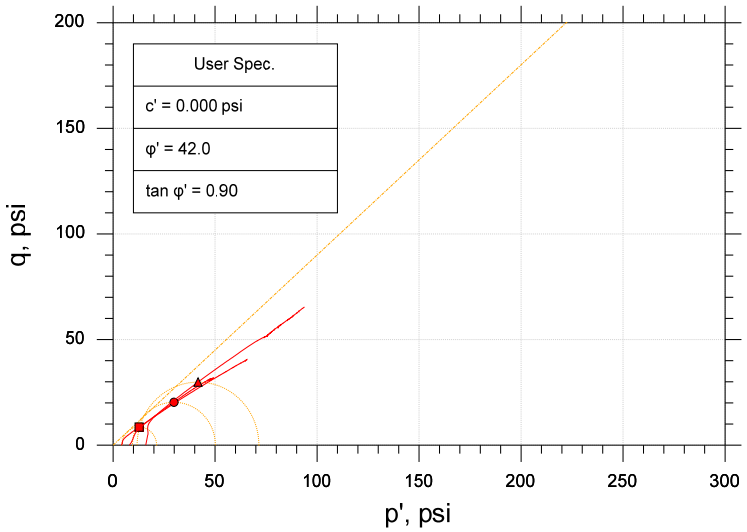
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	191001	CU-6-1	36.5-38.5	trm	12/13/19	njh	2/6/2020	310685-CU-6-1n.dat
●	191001	CU-6-2	36.5-38.5	trm	12/13/19	njh	2/6/2020	310685-CU-6-2n.dat
▲	191001	CU-6-3	63.5-38.5	trm	12/13/19	njh	2/6/2020	310685-CU-6-3n.dat

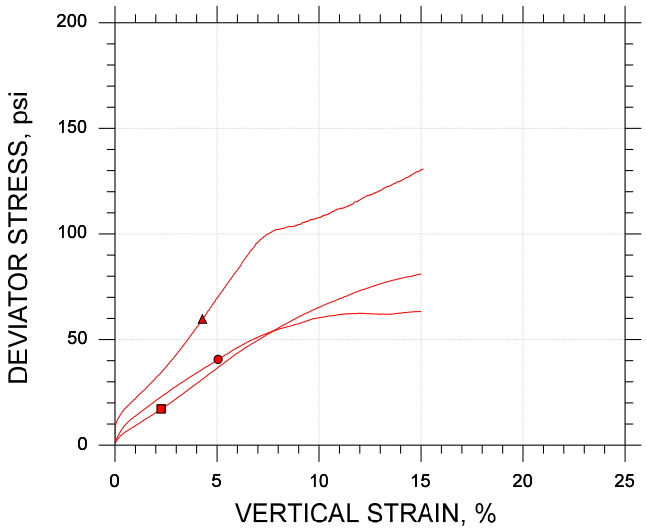
GeoTesting EXPRESS

Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-119SPT	Sample Type: intact	
Description: Moist, dark gray sandy clay		
Remarks: System OO		

Client: Anchor QEA, LLC	
Project Name: Gasco PDI	
Project Location: ---	
Project Number: GTX-310685	
Tested By: trm	Checked By: njh
Boring ID: PDI-122SPT	
Preparation: intact	
Description: Moist, dark gray sand	
Classification: ---	
Group Symbol: ---	
Liquid Limit: ---	Plastic Limit: ---
Plasticity Index: ---	Estimated Specific Gravity: 2.65

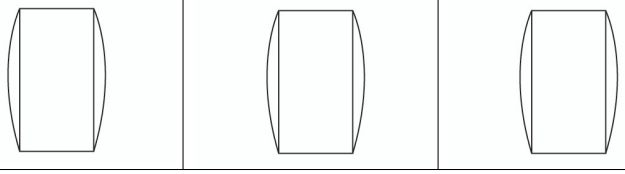
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767





Symbol		■	●	▲	
Sample ID		190926	190926	190926	
Depth, ft		44-46	44-46	44-46	
Test Number		CU-7-1	CU-7-2	CU-7-3	
Initial	Height, in	4.500	4.500	4.100	
	Diameter, in	1.930	1.930	1.930	
	Moisture Content (from Cuttings), %	30.3	29.9	28.3	
	Dry Density, pcf	77.7	78.3	82.2	
	Saturation (Wet Method), %	71.2	71.2	74.0	
	Void Ratio	1.13	1.11	1.01	
Before Shear	Moisture Content, %	42.6	33.6	17.9	
	Dry Density, pcf	77.7	87.5	112.	
	Cross-sectional Area (Method A), in²	2.921	2.635	2.201	
	Saturation, %	100.0	100.0	100.0	
	Void Ratio	1.13	0.891	0.476	
	Back Pressure, psi	125.0	29.00	119.0	
Vertical Effective Consolidation Stress, psi		3.996	7.987	15.90	
Horizontal Effective Consolidation Stress, psi		3.991	7.995	16.01	
Vertical Strain after Consolidation, %		0.004162	0.2147	1.453	
Volumetric Strain after Consolidation, %		0.5562	9.366	24.16	
Time to 50% Consolidation, min		---	---	0.1600	
Shear Strength, psi		8.557	20.30	29.85	
Strain at Failure, %		2.25	5.05	4.28	
Strain Rate, %/min		0.01600	0.01600	0.01600	
Deviator Stress at Failure, psi		17.11	40.60	59.71	
Effective Minor Principal Stress at Failure, psi		4.235	9.528	11.78	
Effective Major Principal Stress at Failure, psi		21.35	50.13	71.48	
B-Value		0.95	1.0	0.95	

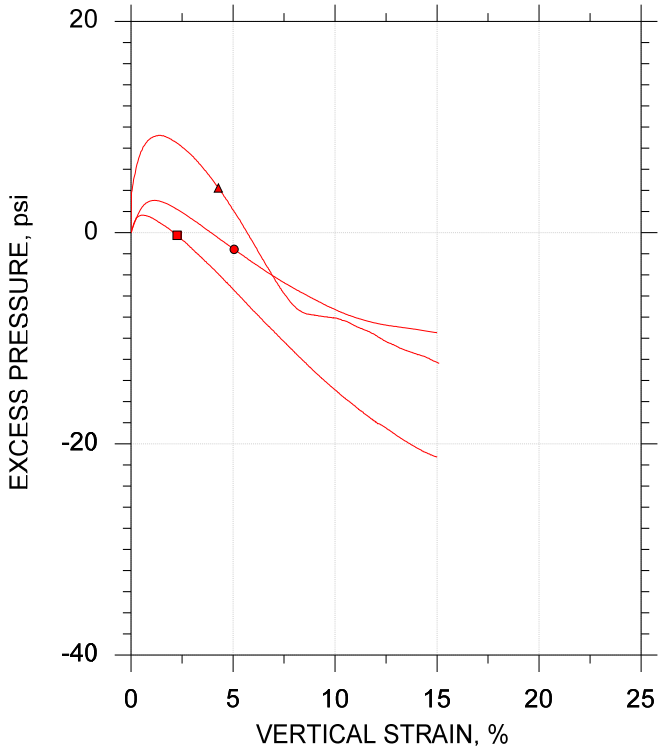
Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.

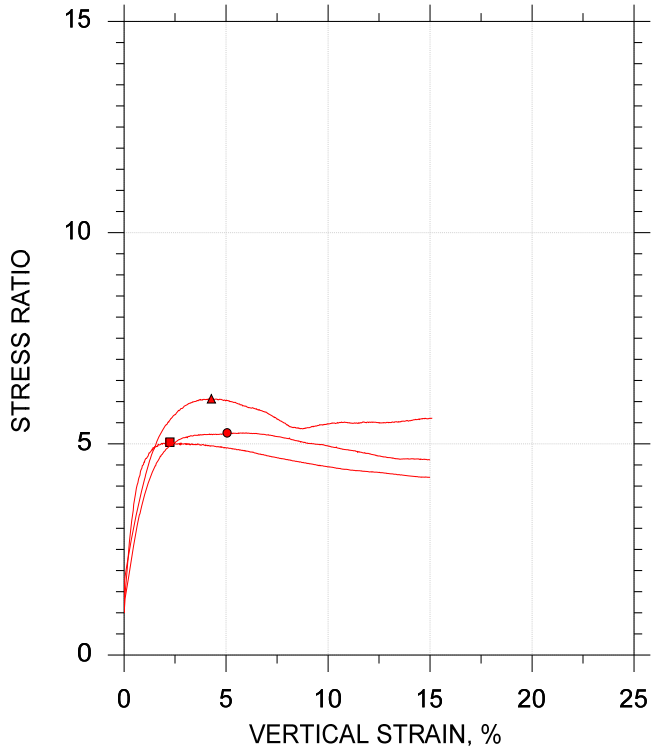


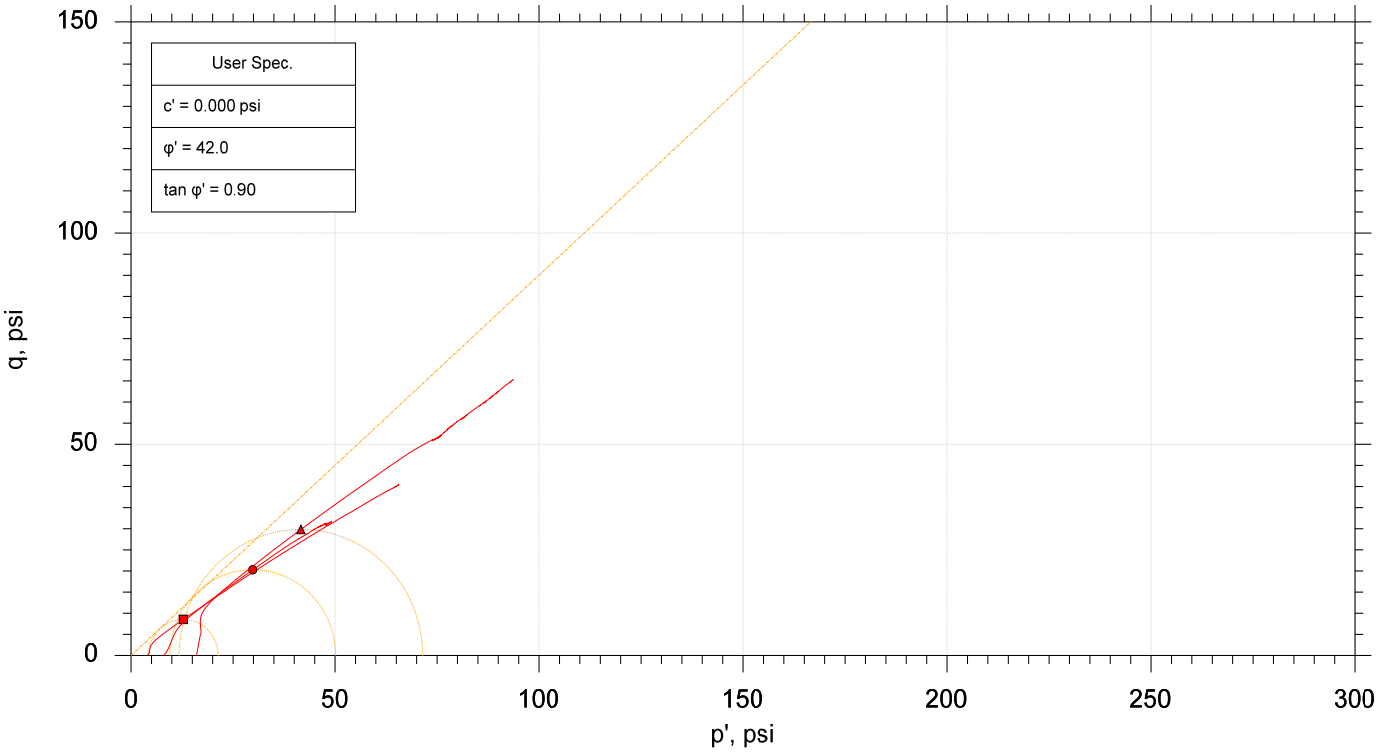
Remarks:

System KK

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







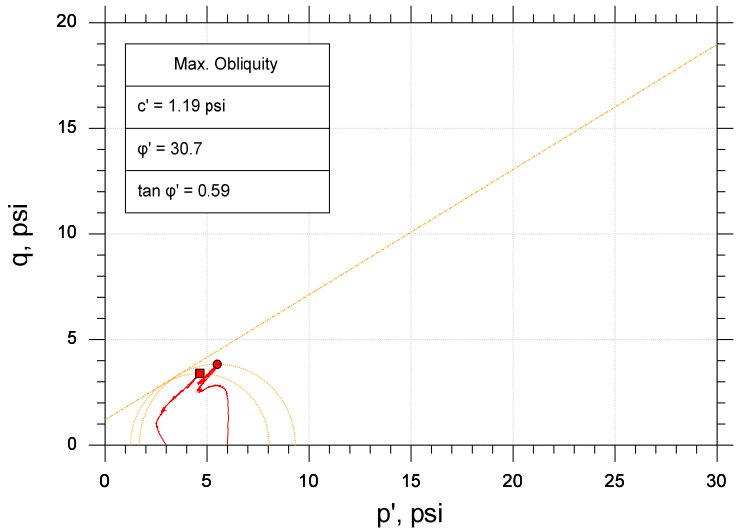
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	190926	CU-7-1	44-46	trm	12/12/19	njh	2/7/2020	310685-CU-7-1n.dat
●	190926	CU-7-2	44-46	trm	12/12/19	njh	2/7/2020	310685-CU-7-2n.dat
▲	190926	CU-7-3	44-46	trm	12/11/19	njh	2/7/2020	310685-CU-7-3n.dat

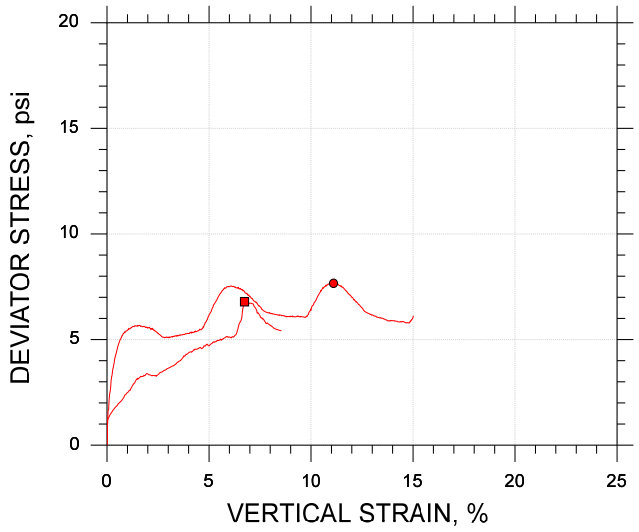
GeoTesting EXPRESS

Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-122SPT	Sample Type: intact	
Description: Moist, dark gray sand		
Remarks: System KK		

Client: Anchor QEA, LLC	
Project Name: Gasco PDI	
Project Location: ---	
Project Number: GTX-310685	
Tested By: trm	Checked By: njh
Boring ID: PDI-123SPT	
Preparation: intact	
Description: Wet, gray clay	
Classification: ---	
Group Symbol: ---	
Liquid Limit: ---	Plastic Limit: ---
Plasticity Index: ---	Estimated Specific Gravity: 2.7

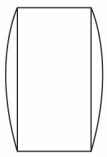
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

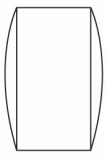




Symbol		■	●		
Sample ID		190924	190924		
Depth, ft		19.5-21.5	19.5-21.5		
Test Number		CU-4-2	CU-4-3		
Initial	Height, in	4.100	4.200		
	Diameter, in	1.930	1.930		
	Moisture Content (from Cuttings), %	67.5	73.0		
	Dry Density, pcf	57.0	56.5		
	Saturation (Wet Method), %	93.1	99.5		
	Void Ratio	1.96	1.98		
Before Shear	Moisture Content, %	71.7	62.3		
	Dry Density, pcf	57.4	62.9		
	Cross-sectional Area (Method A), in²	2.926	2.750		
	Saturation, %	100.0	100.0		
	Void Ratio	1.94	1.68		
	Back Pressure, psi	80.99	151.0		
Vertical Effective Consolidation Stress, psi		2.907	5.754		
Horizontal Effective Consolidation Stress, psi		2.987	5.992		
Vertical Strain after Consolidation, %		0.9609	2.758		
Volumetric Strain after Consolidation, %		1.277	5.489		
Time to 50% Consolidation, min		---	12.25		
Shear Strength, psi		3.397	3.831		
Strain at Failure, %		6.74	11.1		
Strain Rate, %/min		0.01600	0.01600		
Deviator Stress at Failure, psi		6.793	7.661		
Effective Minor Principal Stress at Failure, psi		1.253	1.670		
Effective Major Principal Stress at Failure, psi		8.046	9.331		
B-Value		0.98	0.96		

Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.

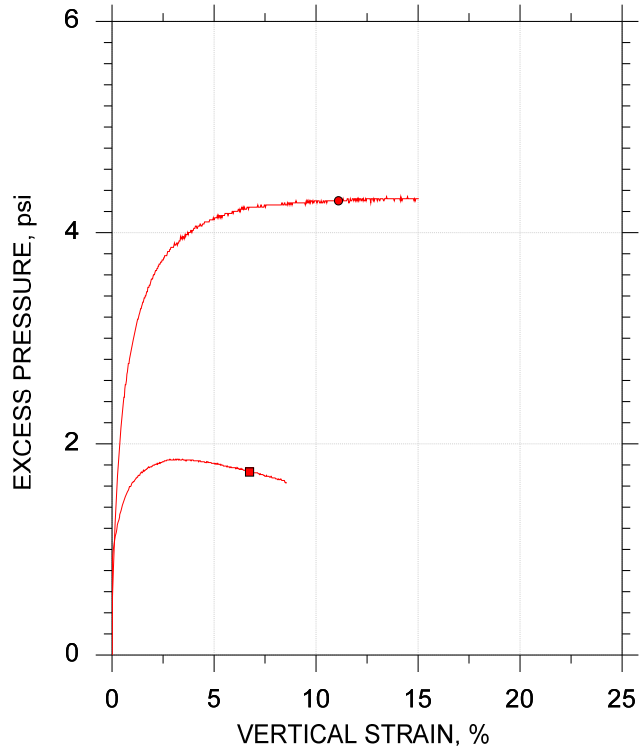


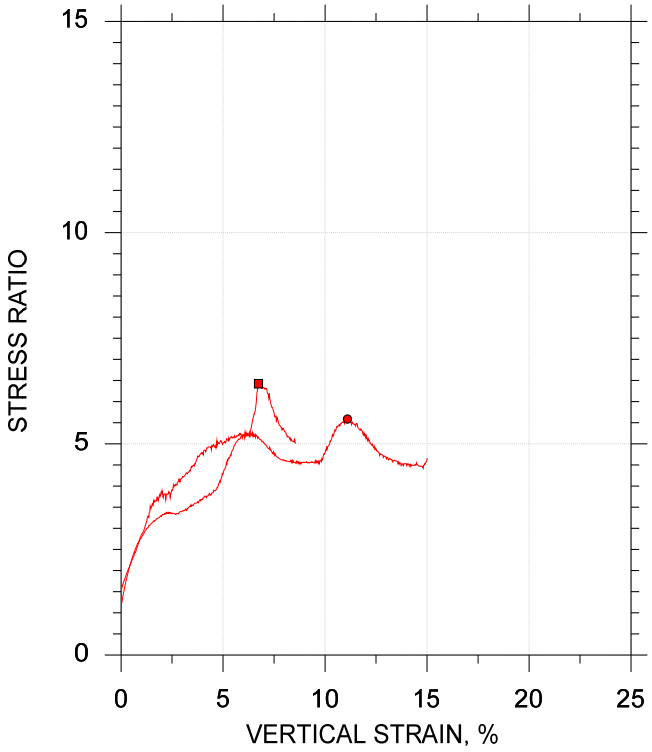


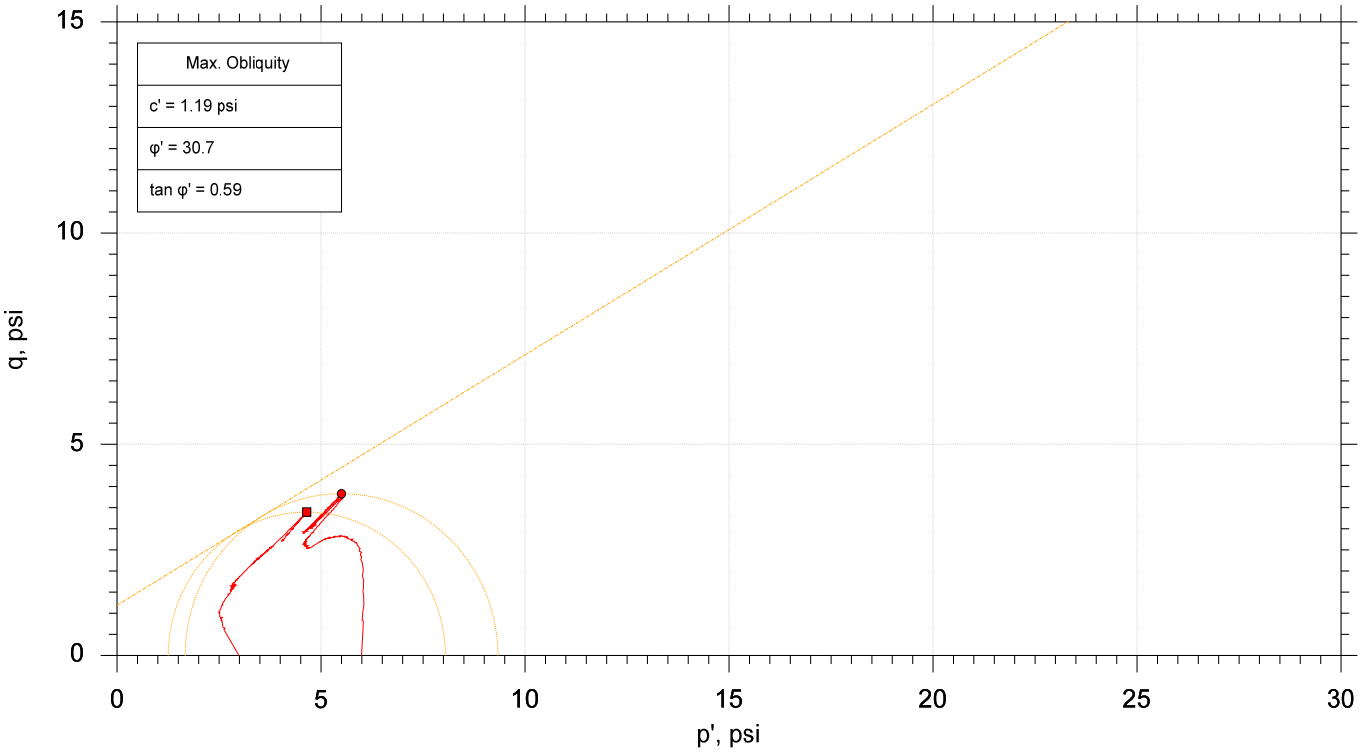
Remarks:

System Y

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







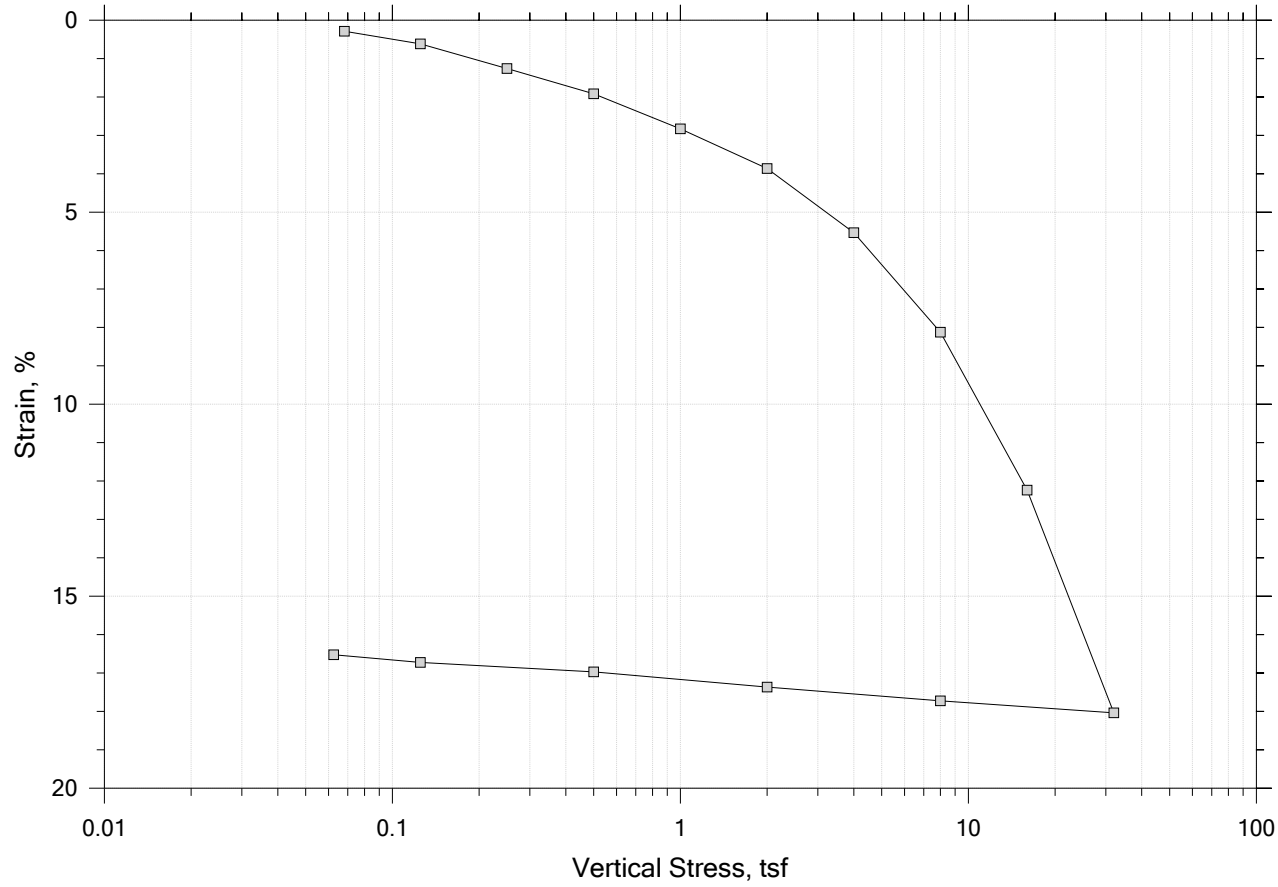
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	190924	CU-4-2	19.5-21.5	trm	12/4/19	njh	1/28/2020	310685-CU-4-2n.dat
●	190924	CU-4-3	19.5-21.5	trm	12/4/19	njh	1/28/2020	310685-CU-4-3n.dat

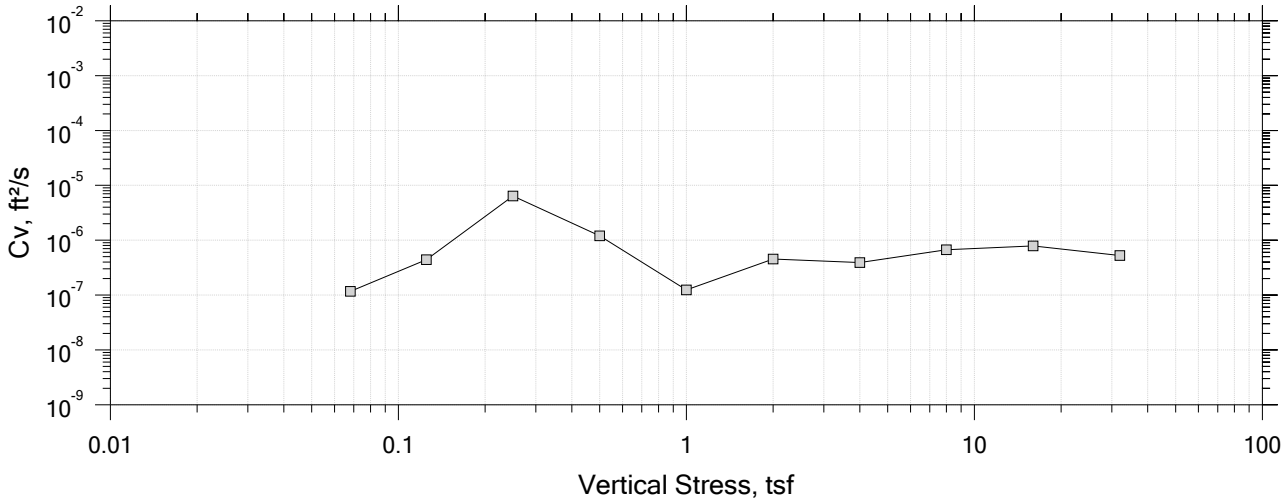
GeoTesting EXPRESS

Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-123SPT	Sample Type: intact	
Description: Wet, gray clay		
Remarks: System Y		

One-Dimensional Consolidation by ASTM D2435 - Method B

Summary Report





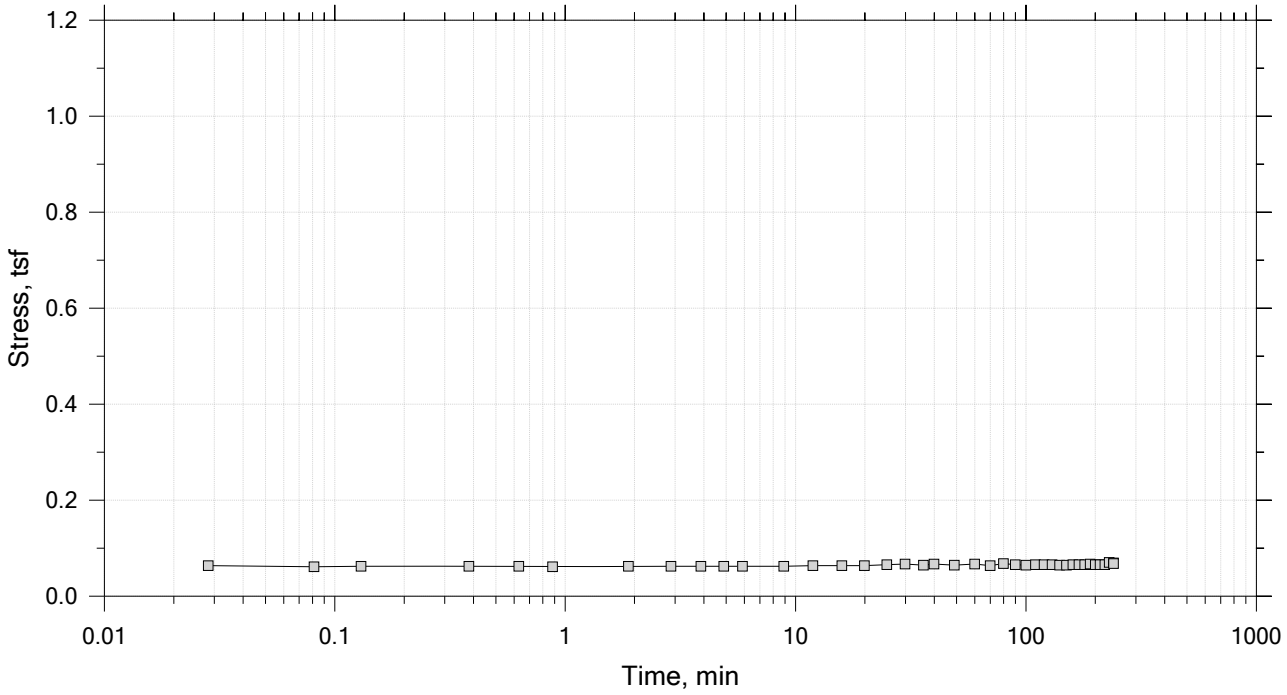
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		
	Displacement at End of Increment		

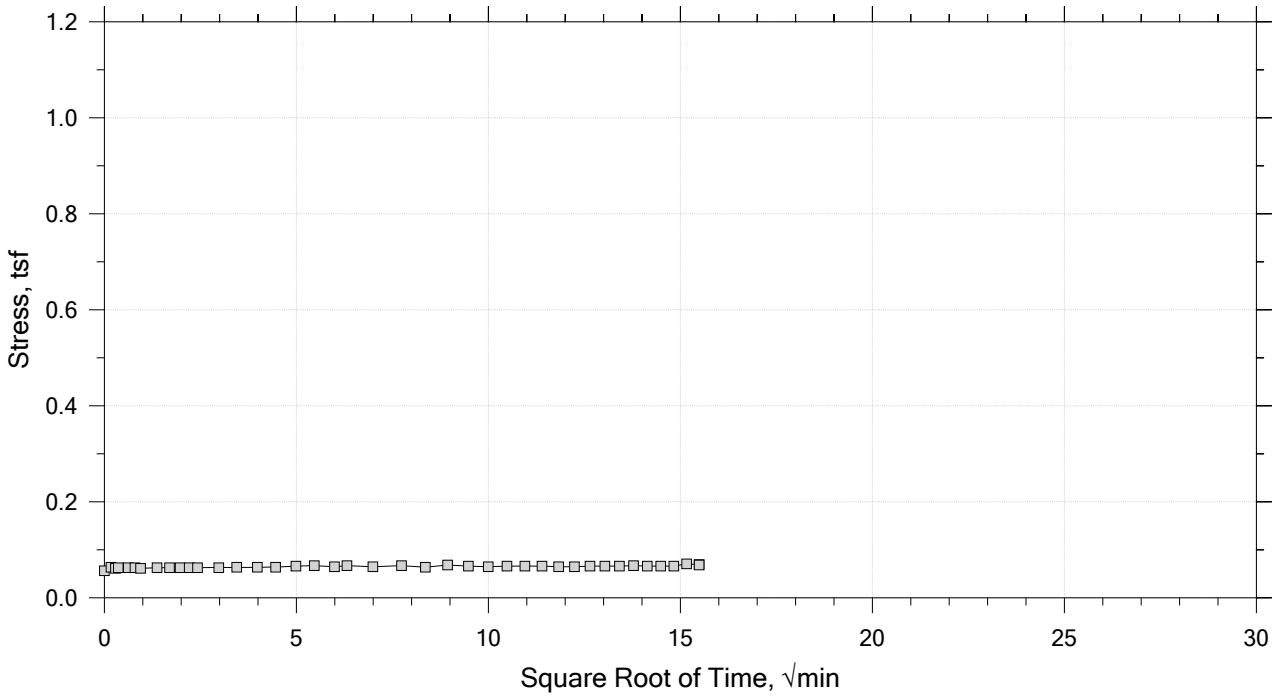
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 1 of 15

Constant Volume Step

Stress: 0.0681 tsf





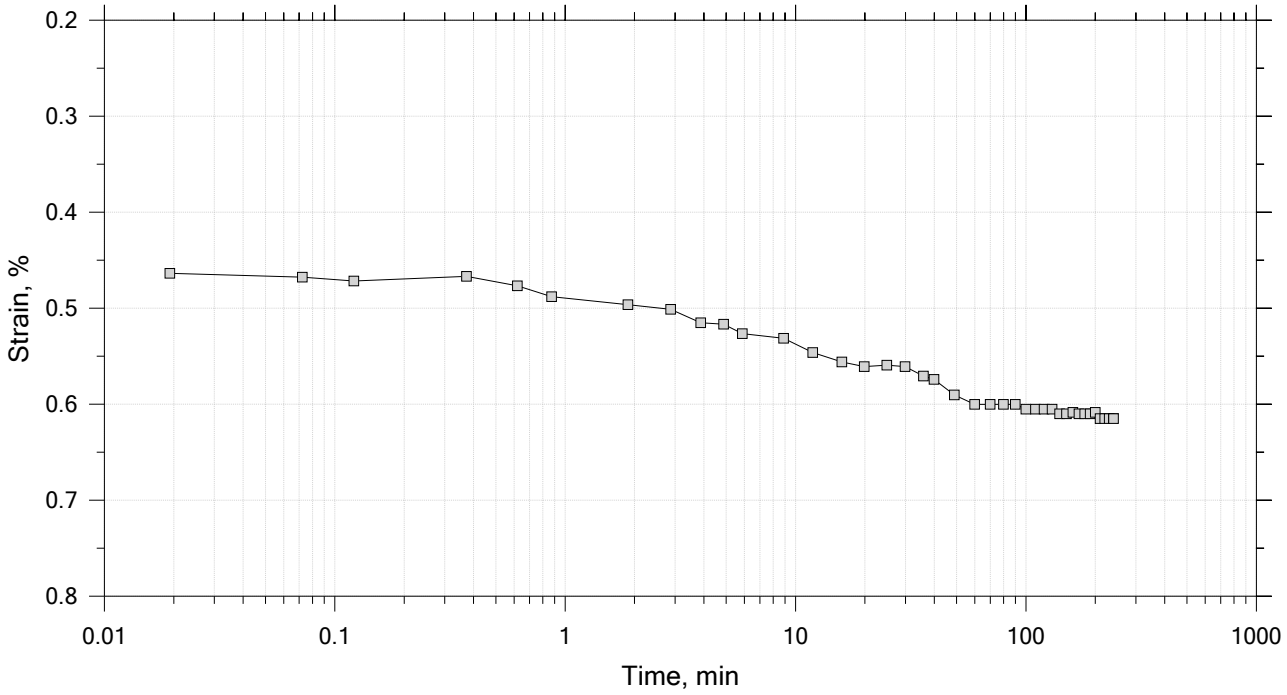
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

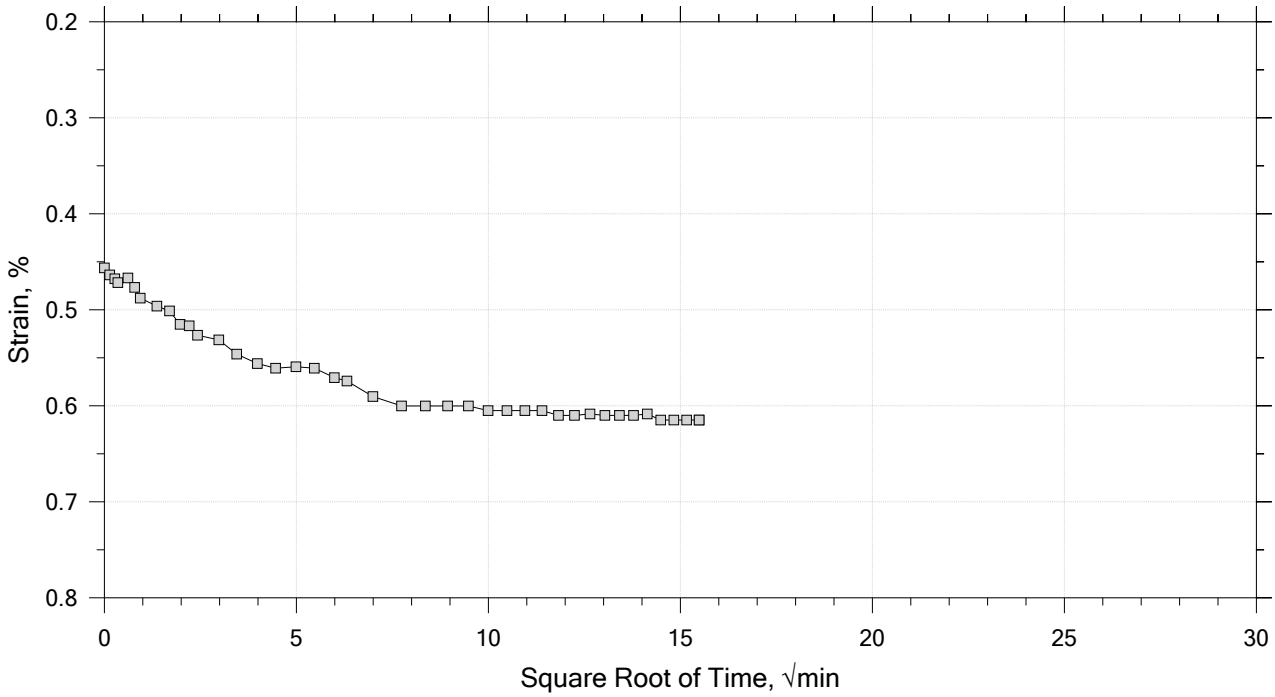
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 2 of 15

Constant Load Step

Stress: 0.125 tsf





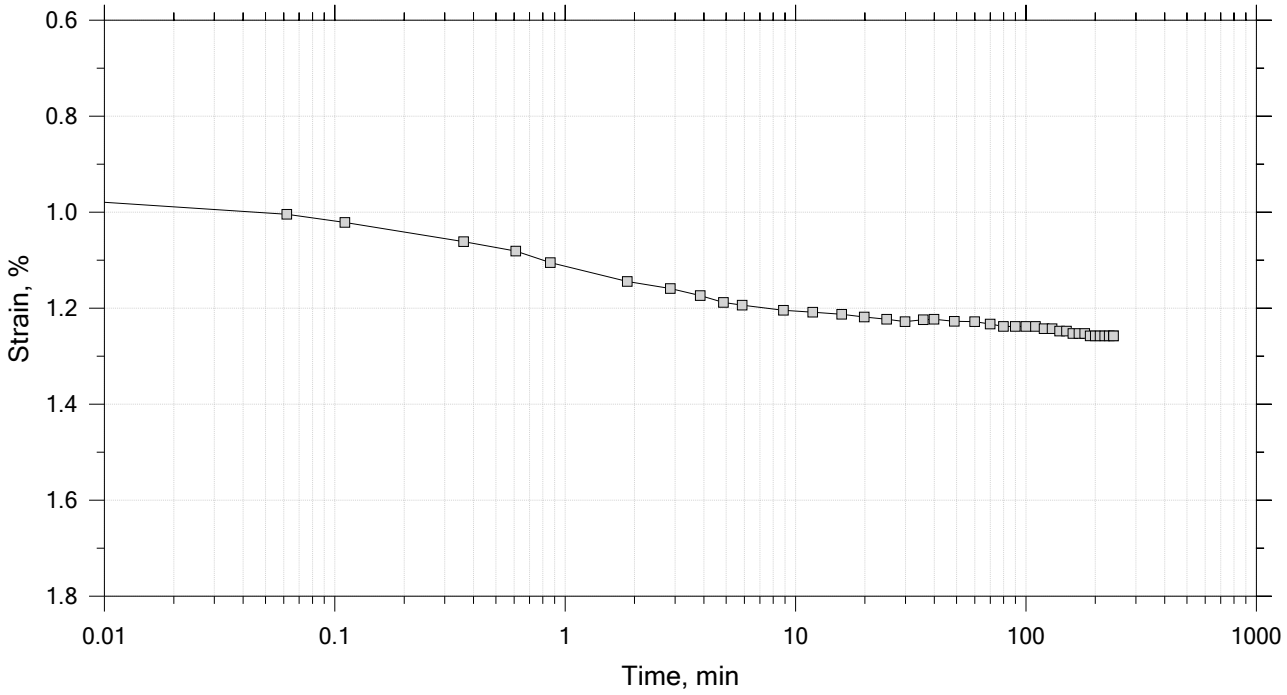
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

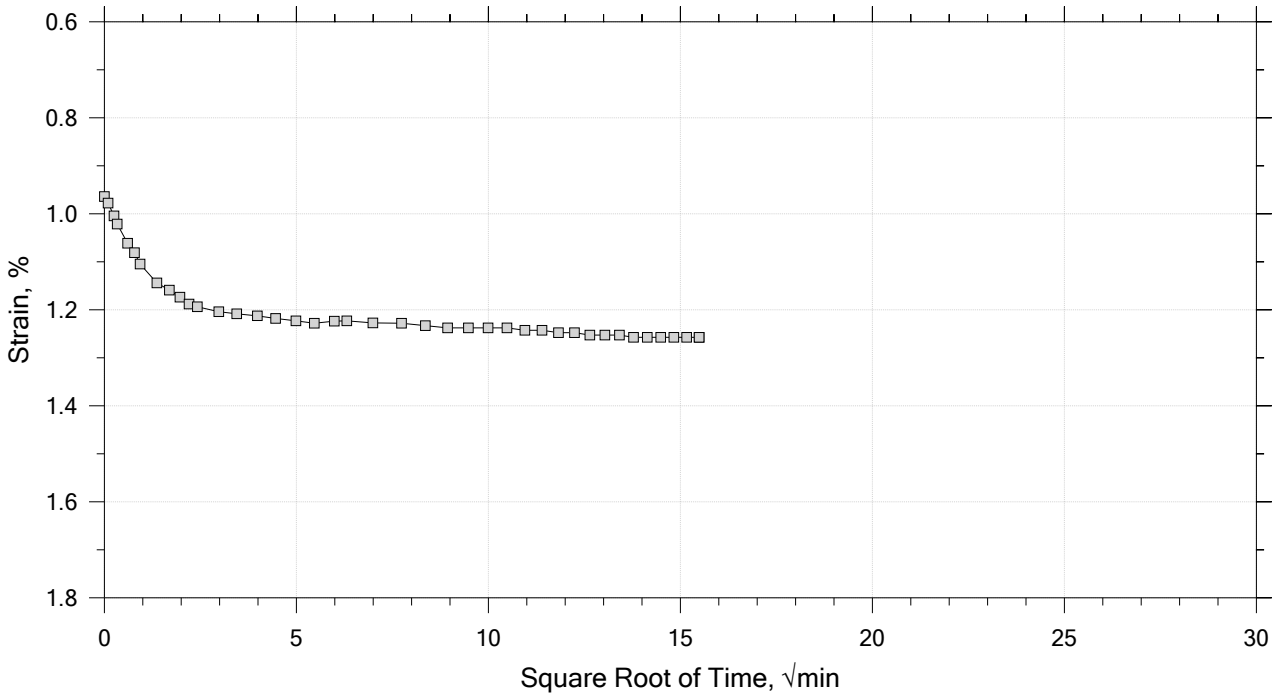
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 3 of 15

Constant Load Step

Stress: 0.25 tsf





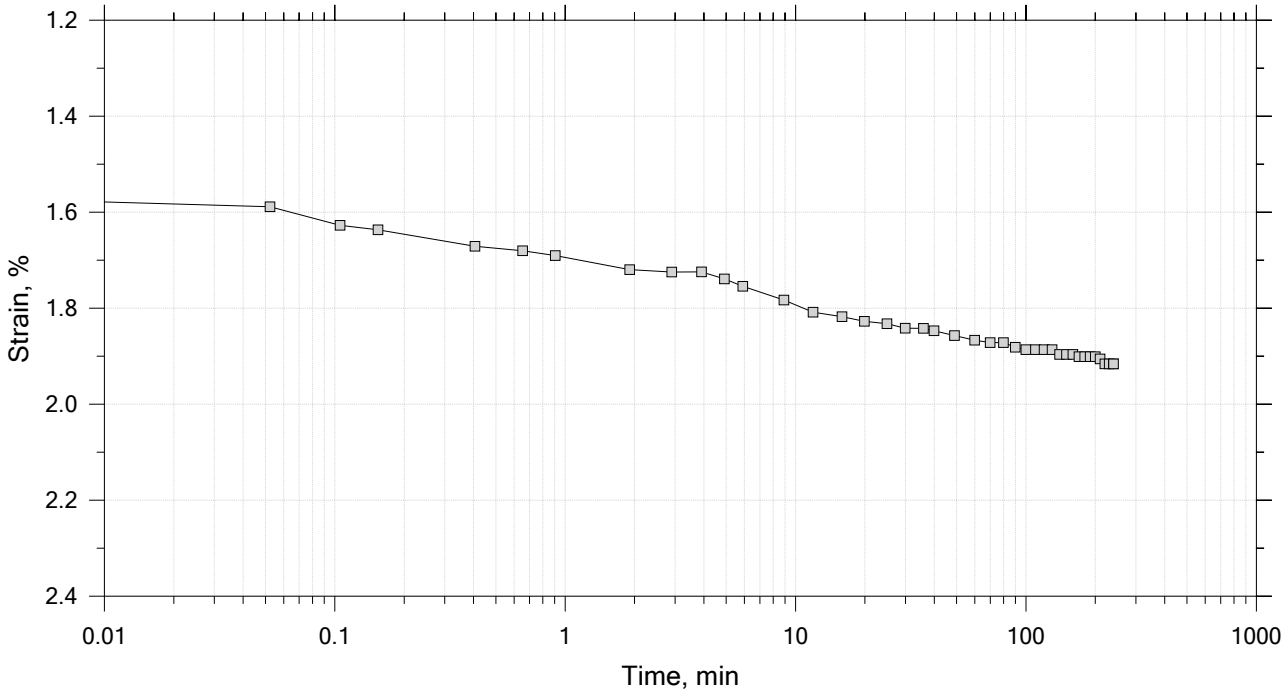
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

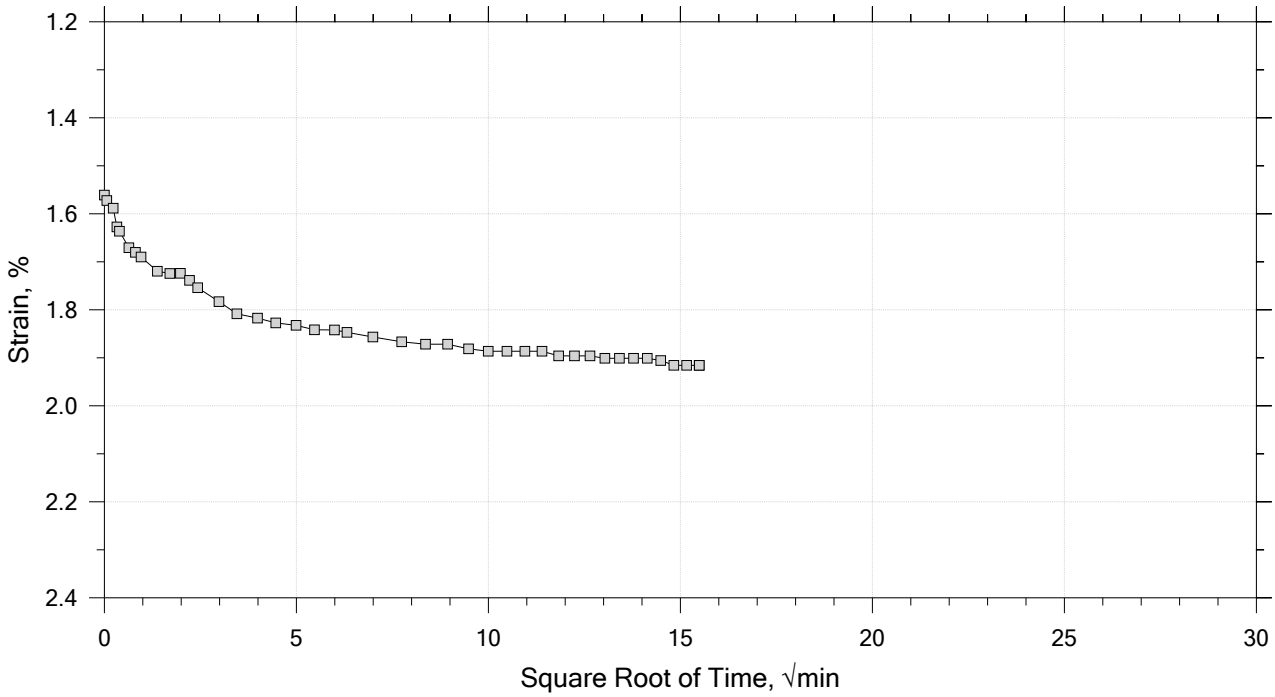
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 4 of 15

Constant Load Step

Stress: 0.5 tsf





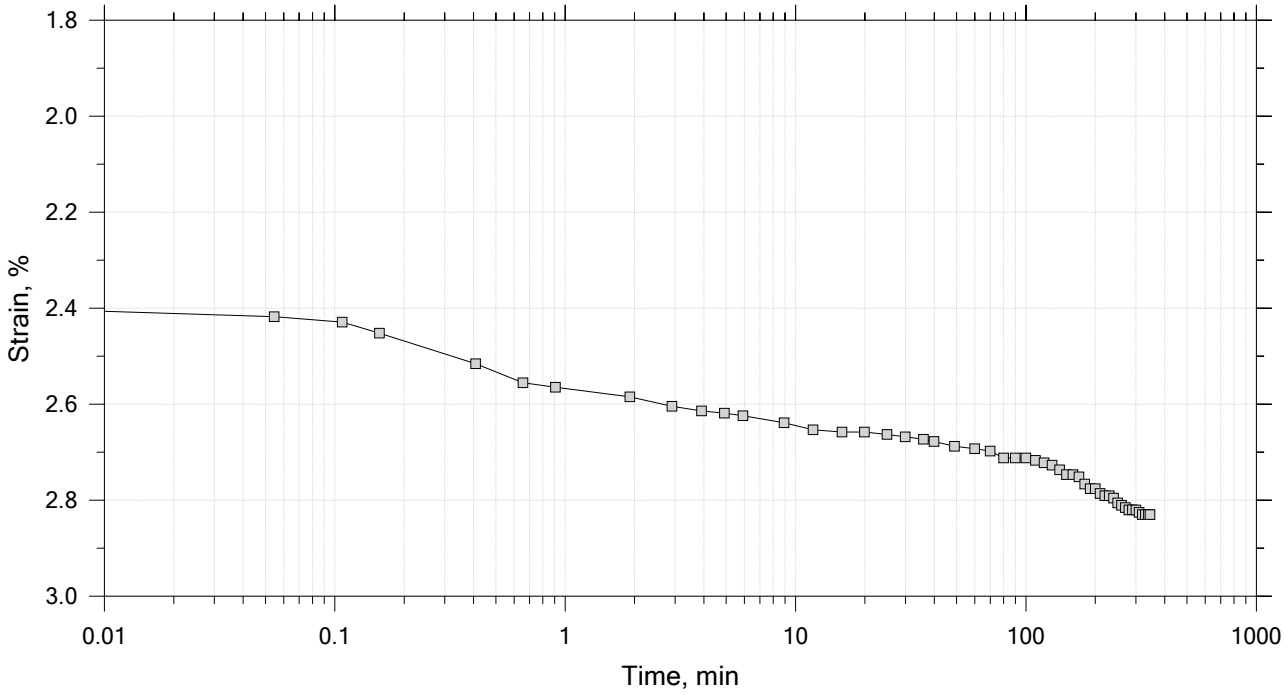
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

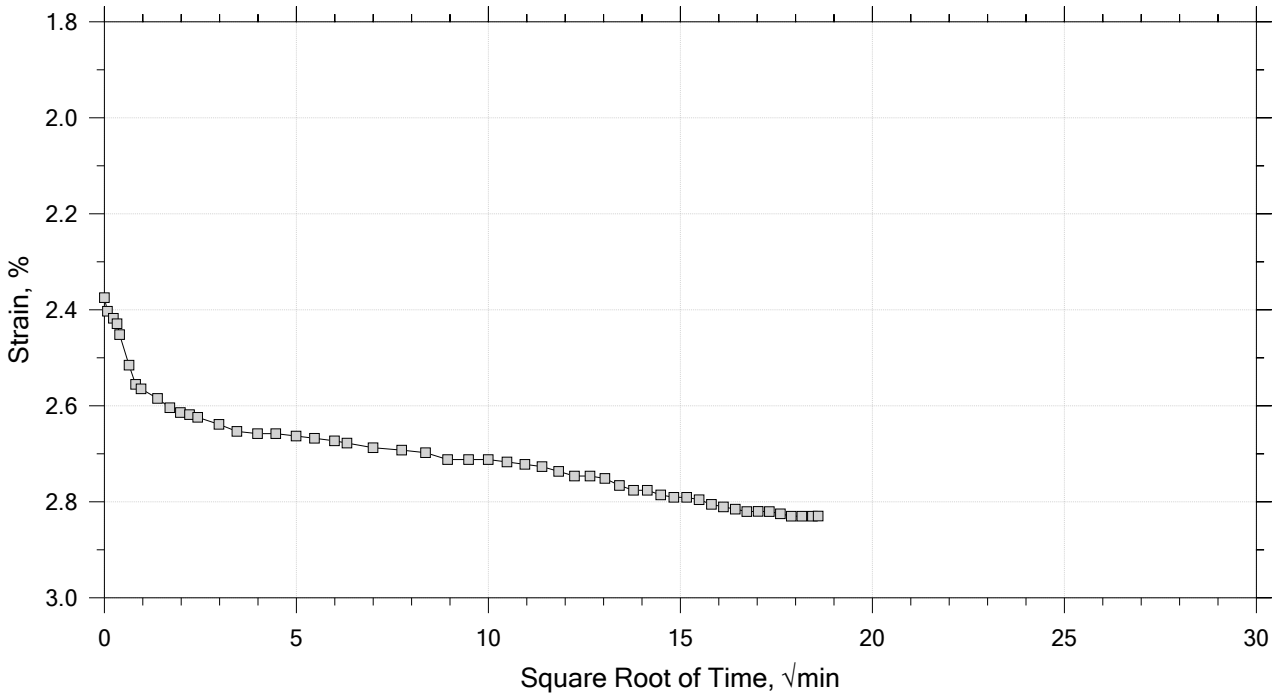
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 5 of 15

Constant Load Step

Stress: 1 tsf





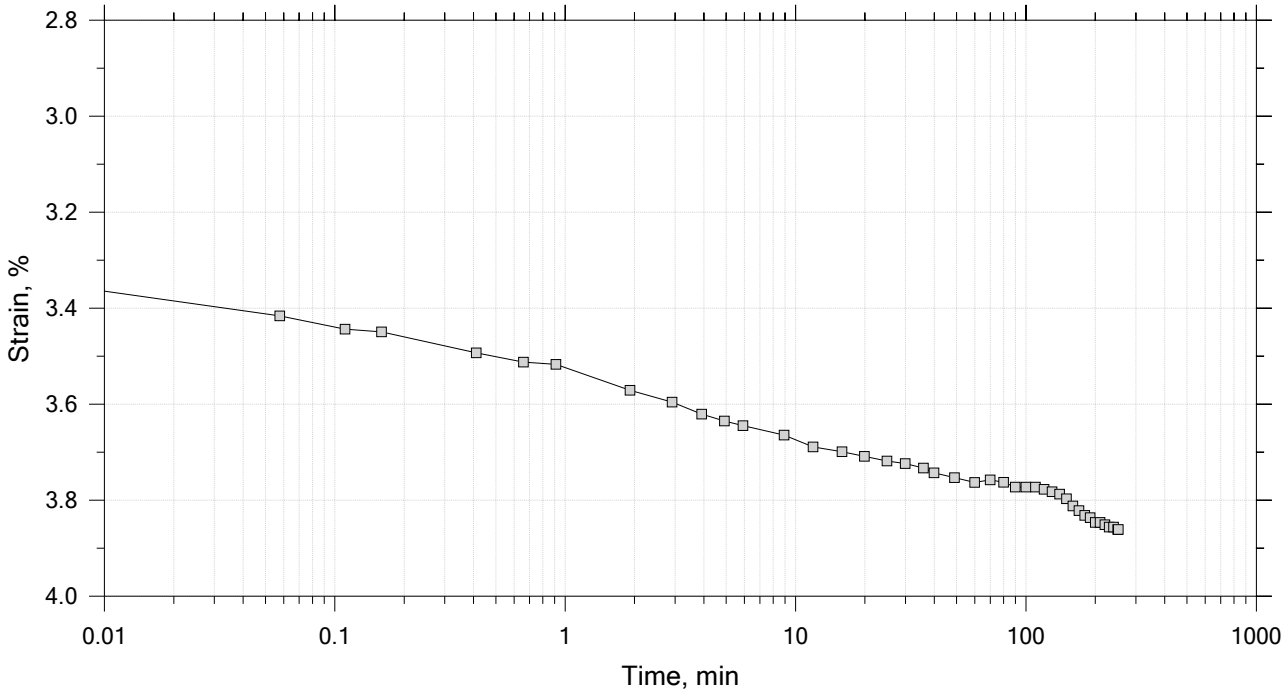
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

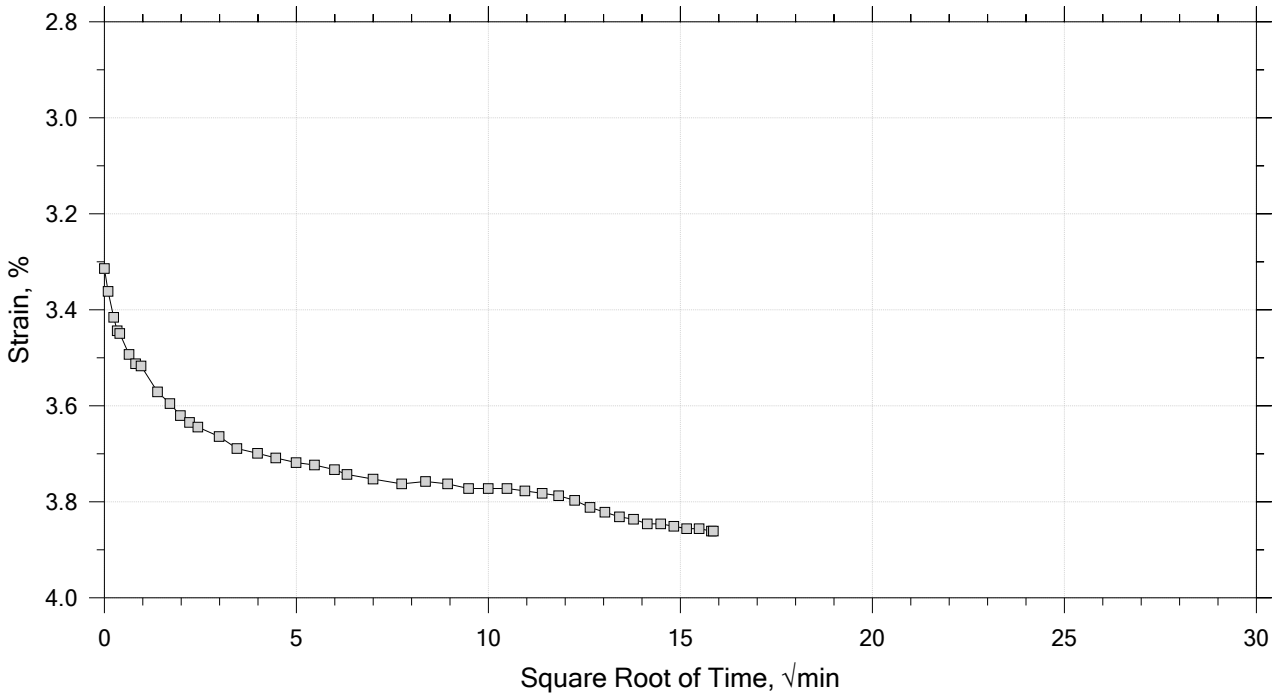
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 6 of 15

Constant Load Step

Stress: 2 tsf





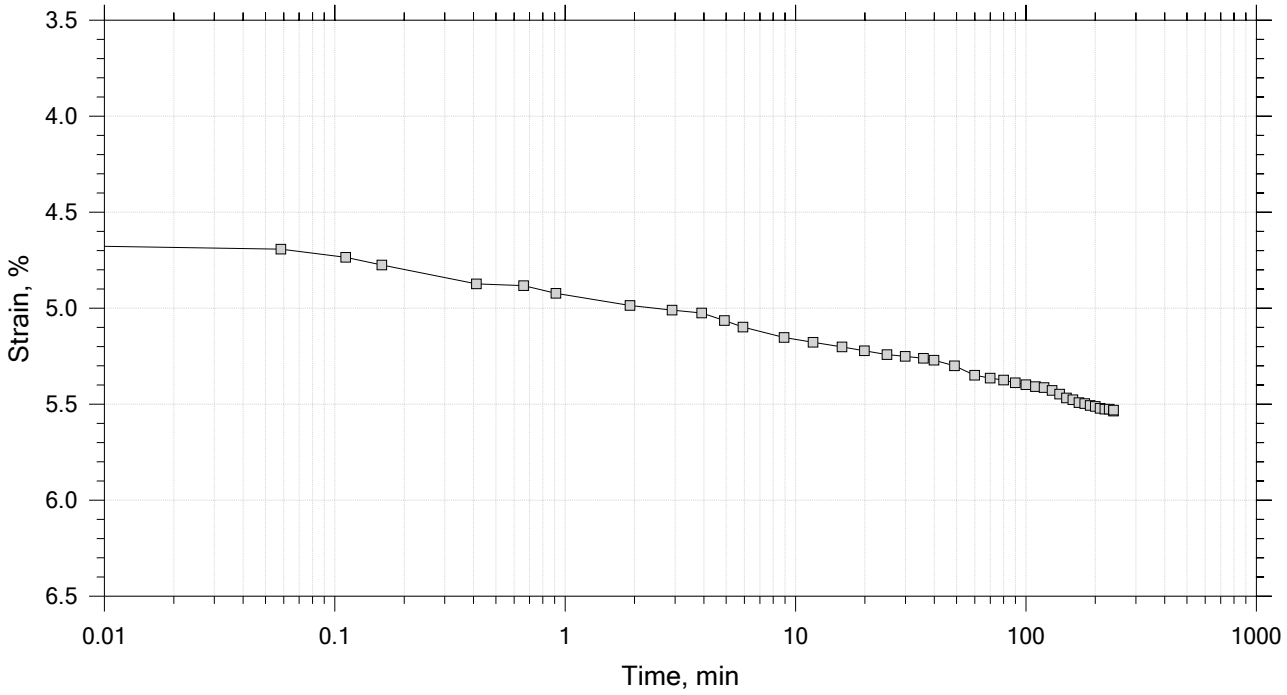
Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
Test No.: IP-4	Sample Type: intact	Elevation: ---
Description: Moist, very dark gray sand		
Remarks: System X, Swell Pressure = 0.0681 tsf		

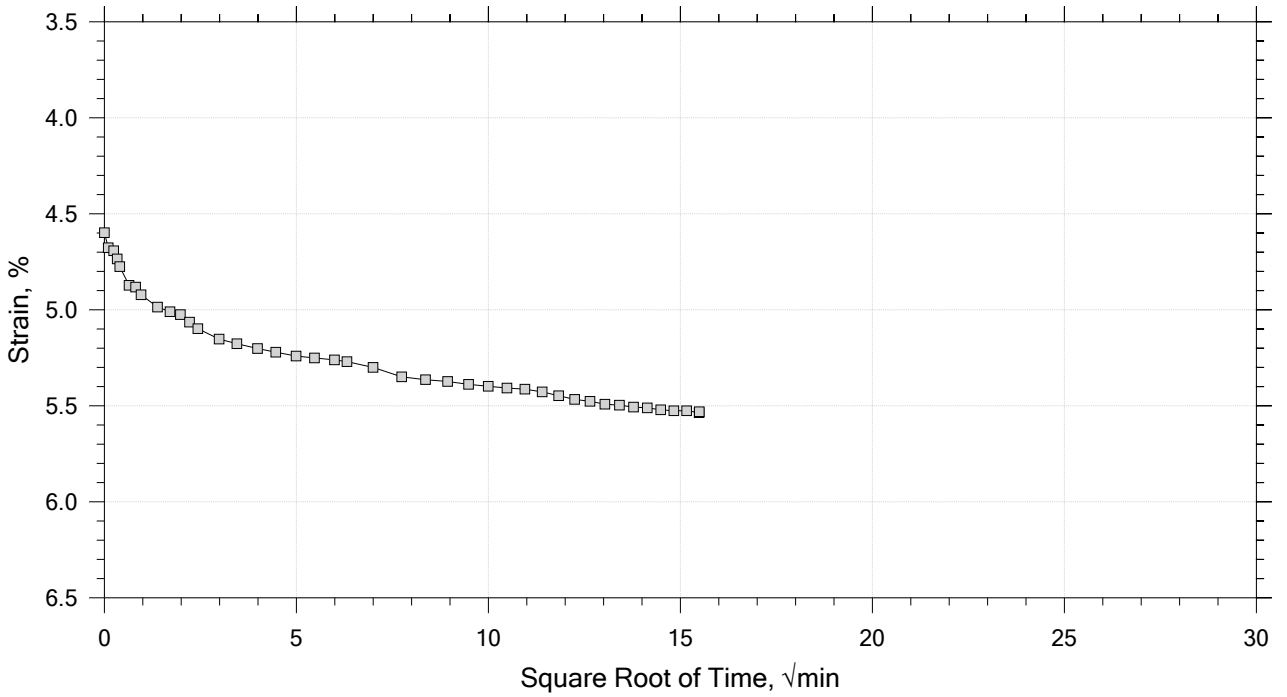
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 7 of 15

Constant Load Step

Stress: 4 tsf





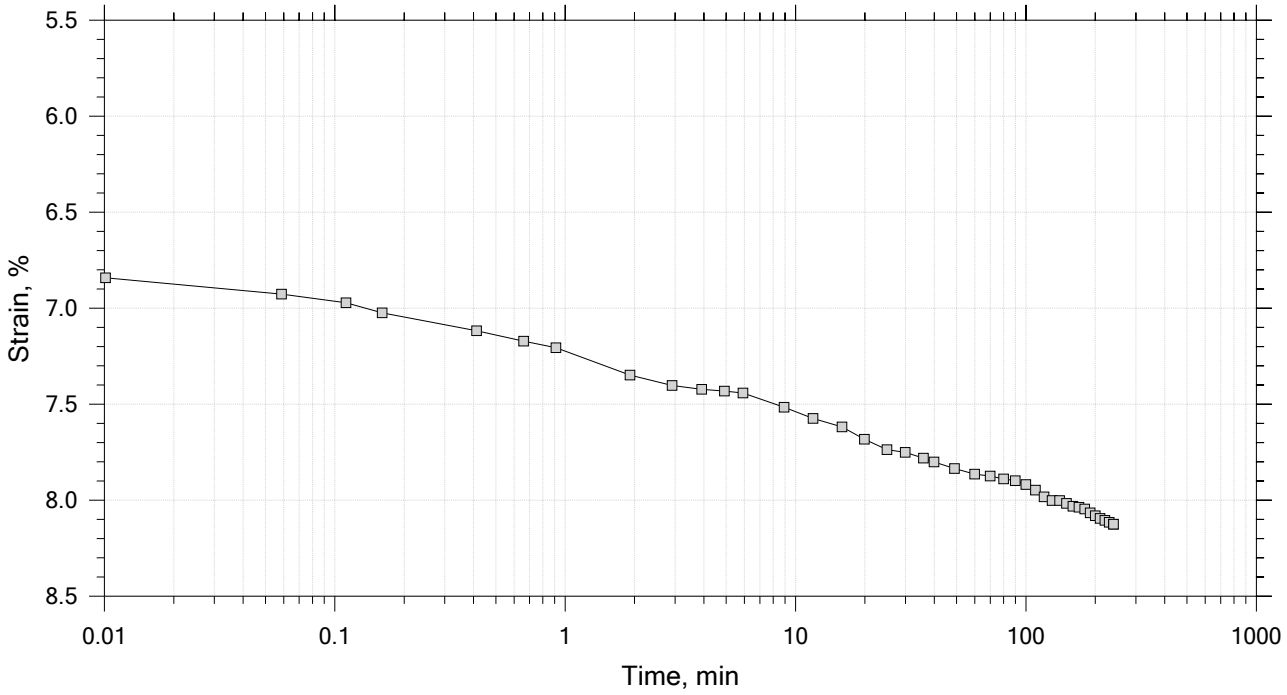
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

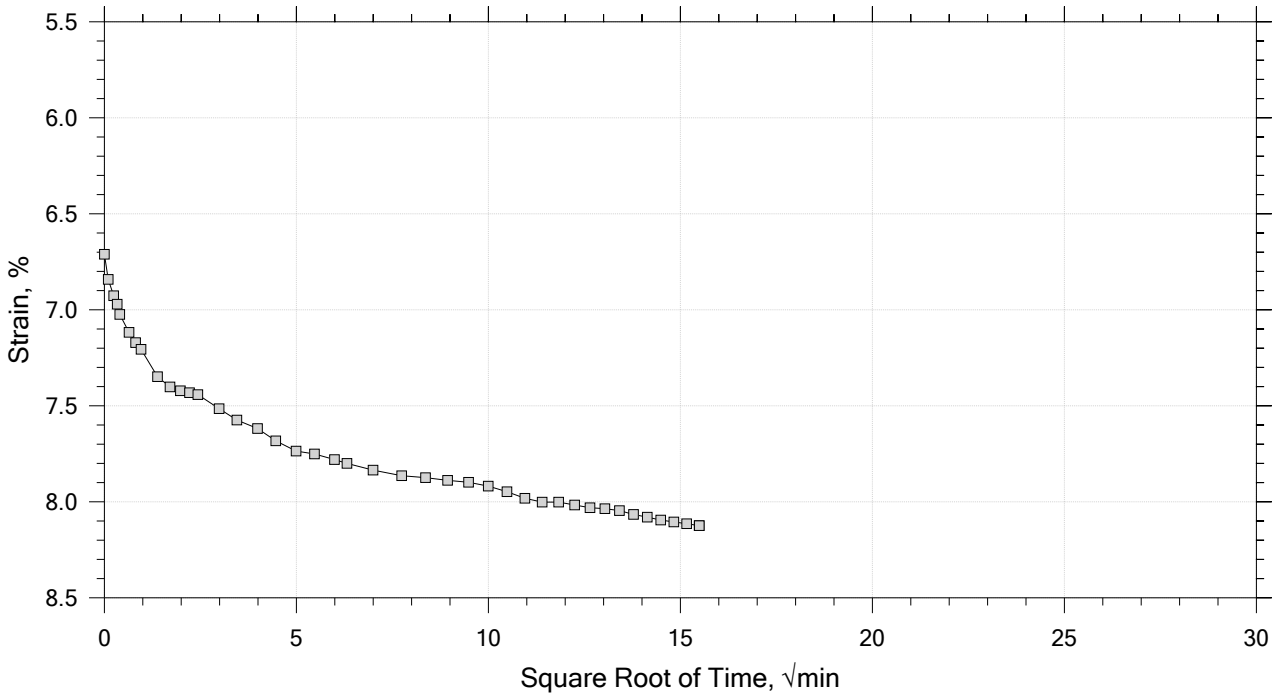
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 8 of 15

Constant Load Step

Stress: 8 tsf





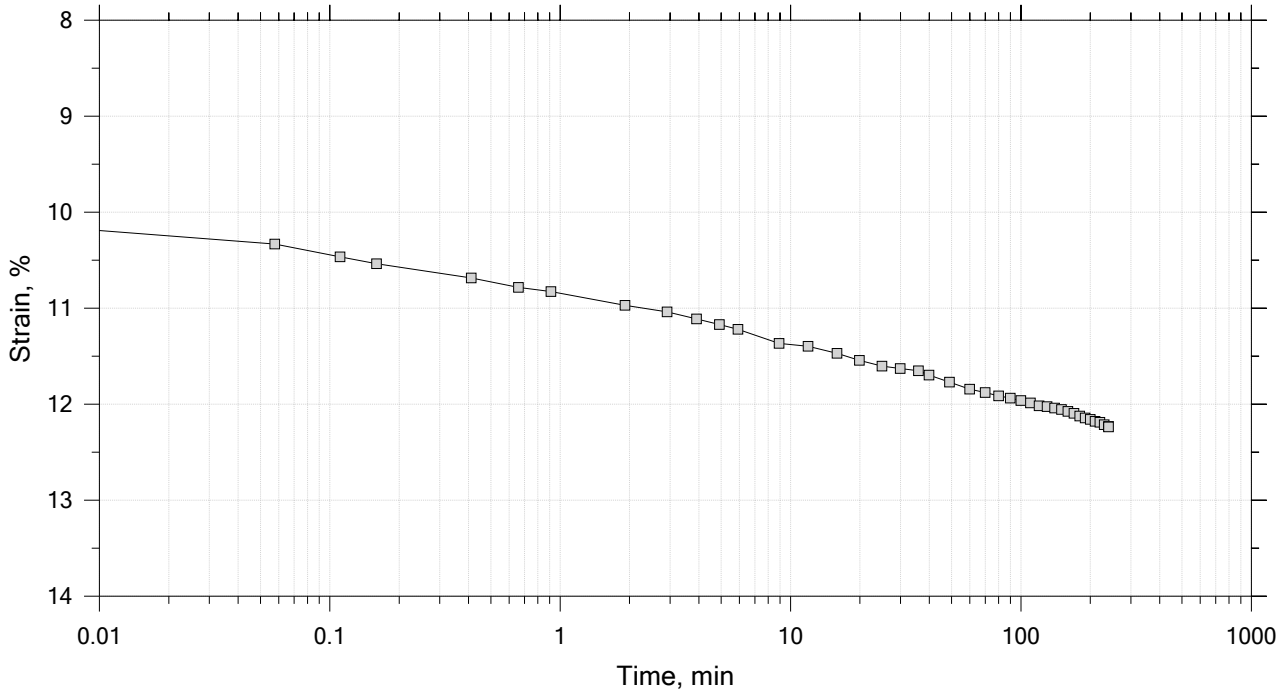
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

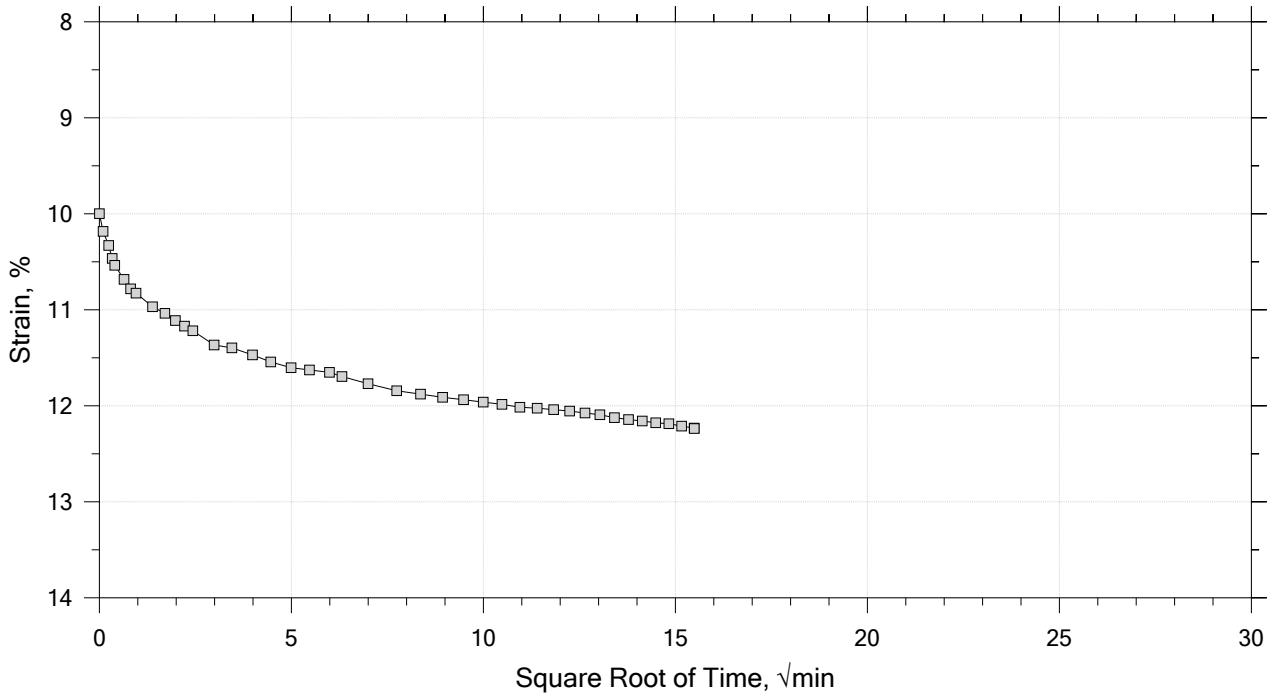
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 9 of 15

Constant Load Step

Stress: 16 tsf





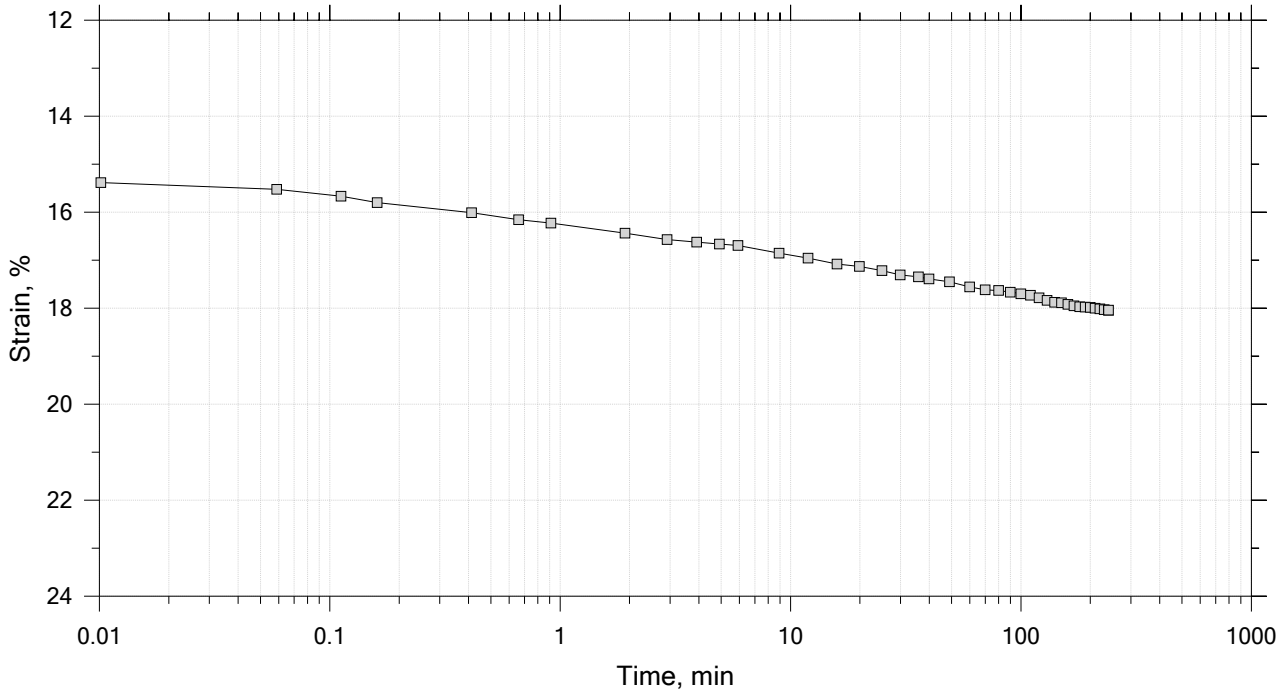
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

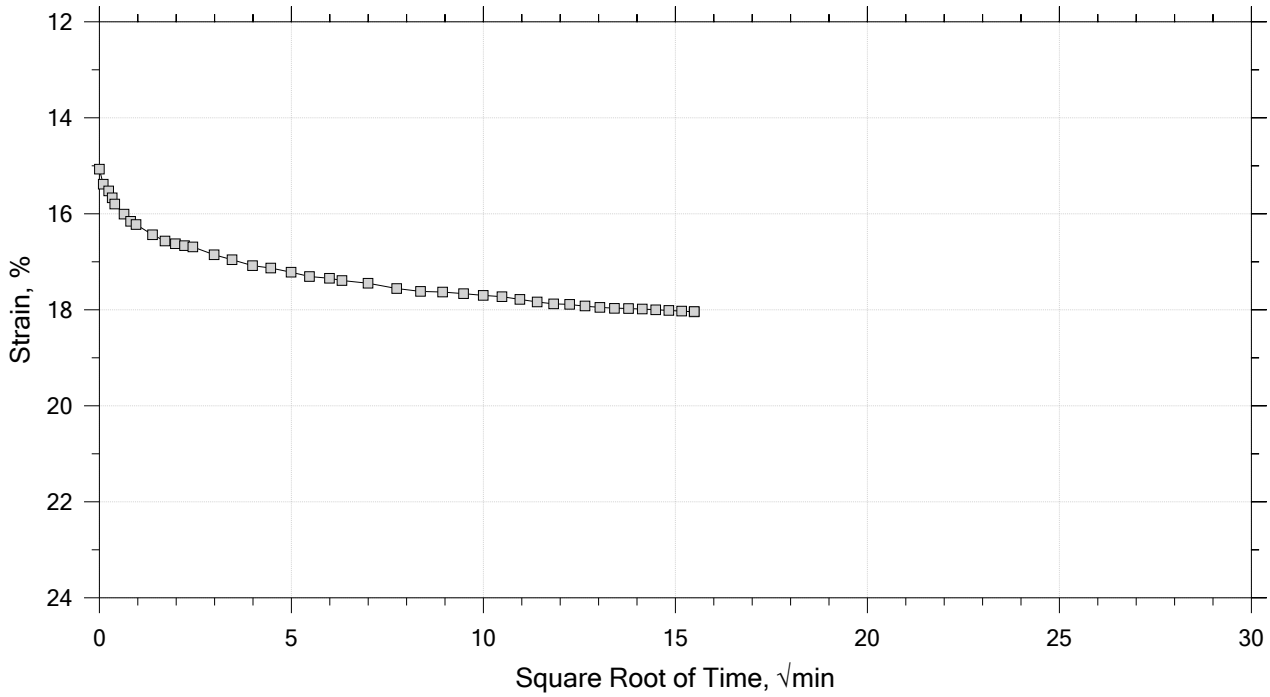
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 10 of 15

Constant Load Step

Stress: 32 tsf





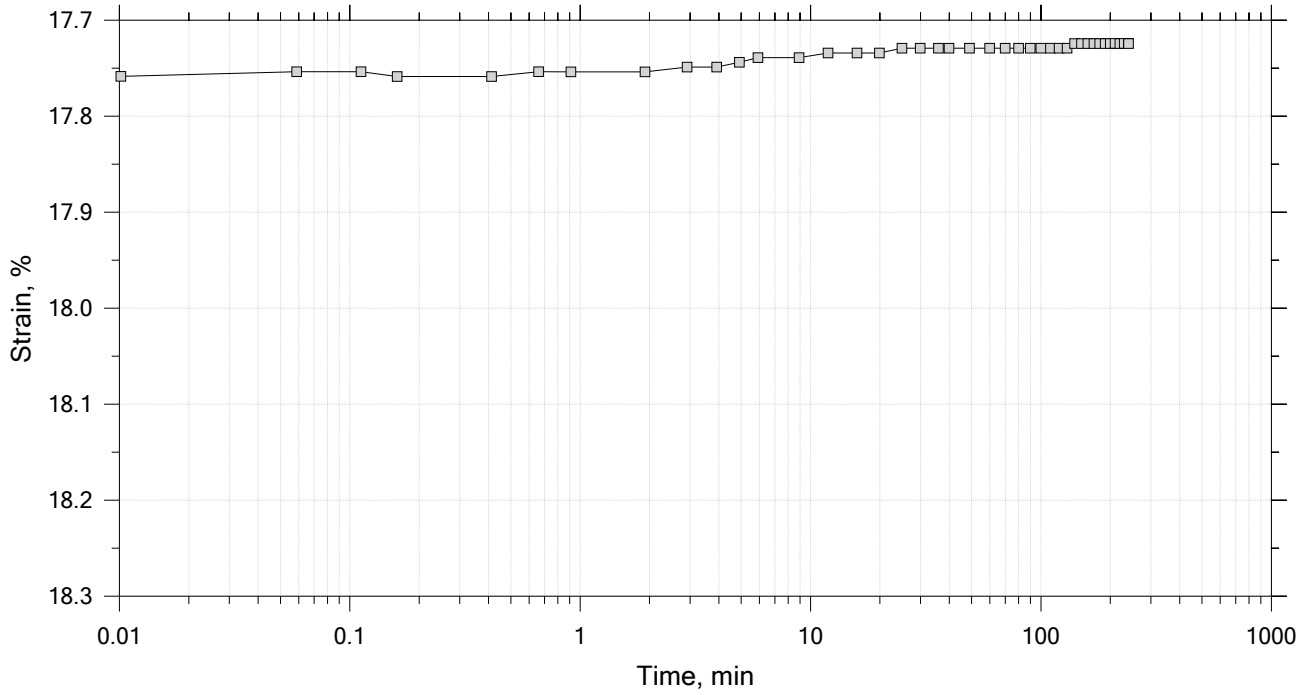
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

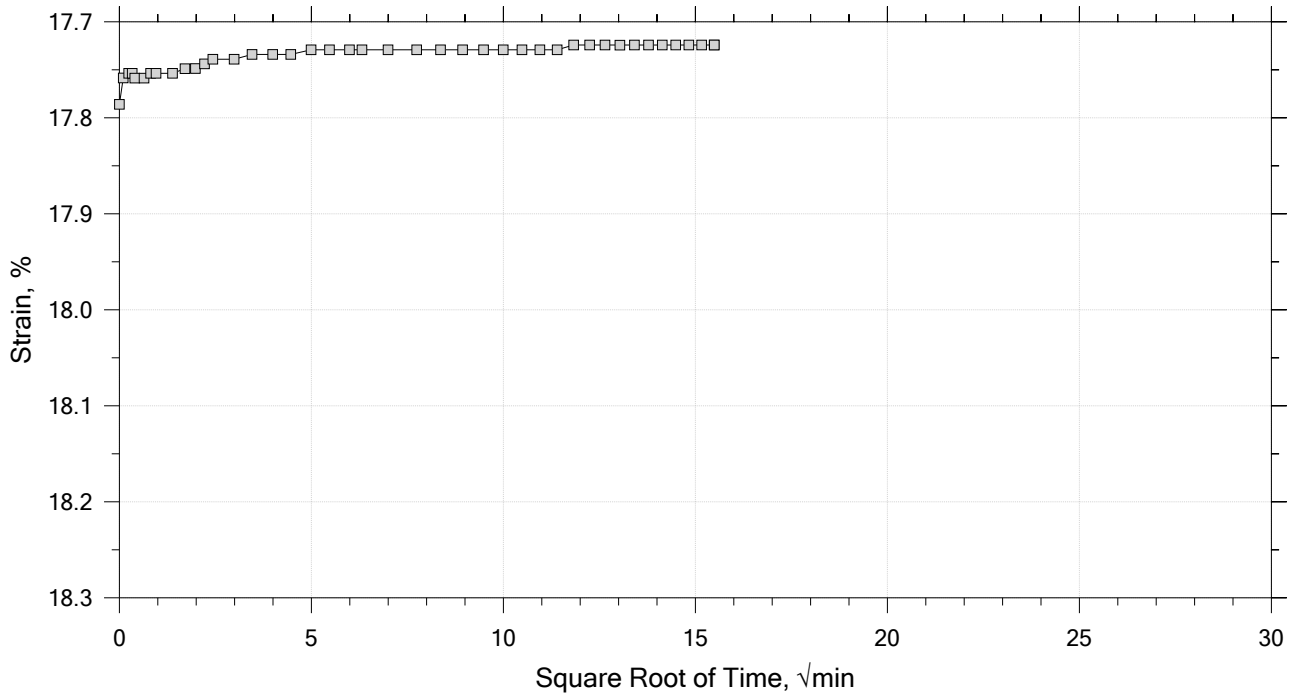
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 11 of 15

Constant Load Step

Stress: 8 tsf





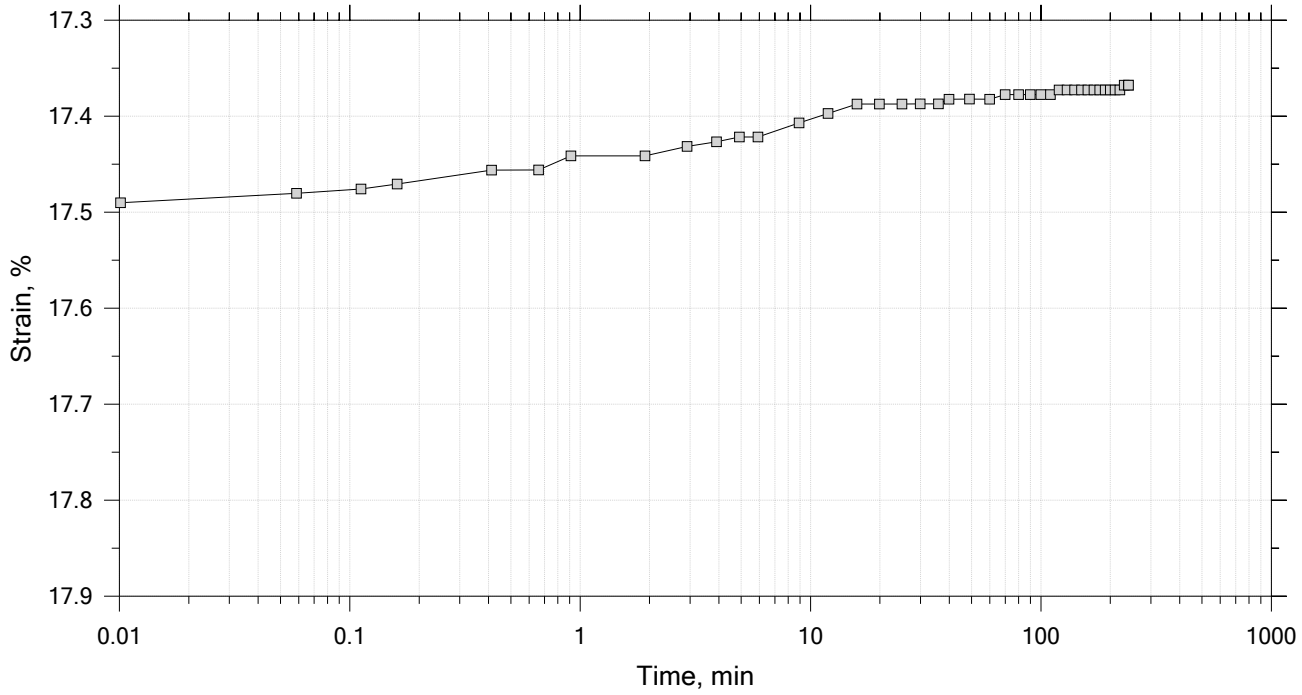
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

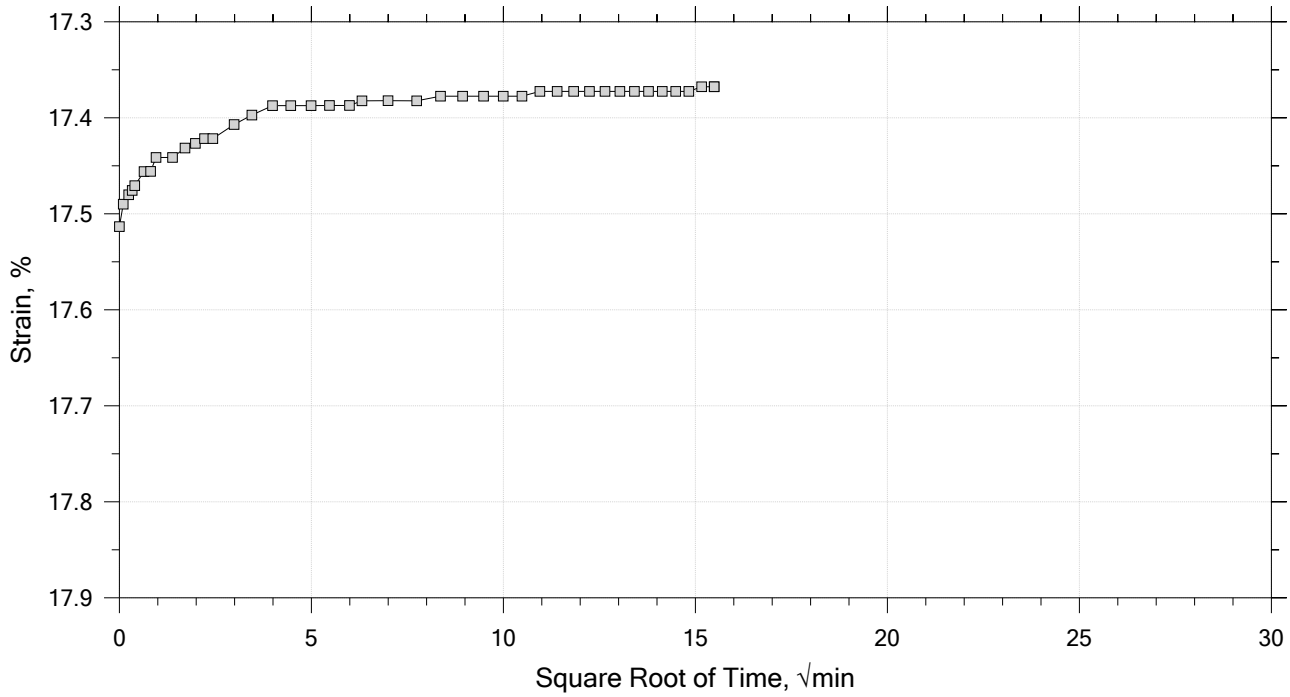
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 12 of 15

Constant Load Step

Stress: 2 tsf





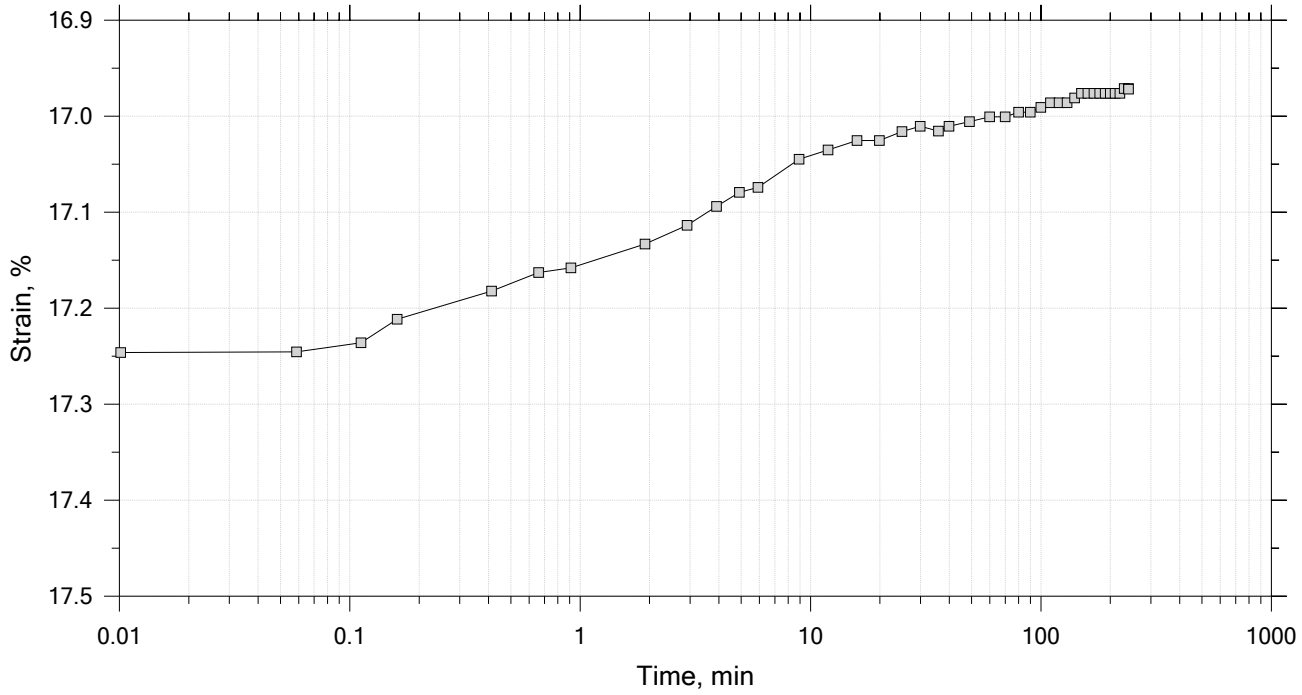
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

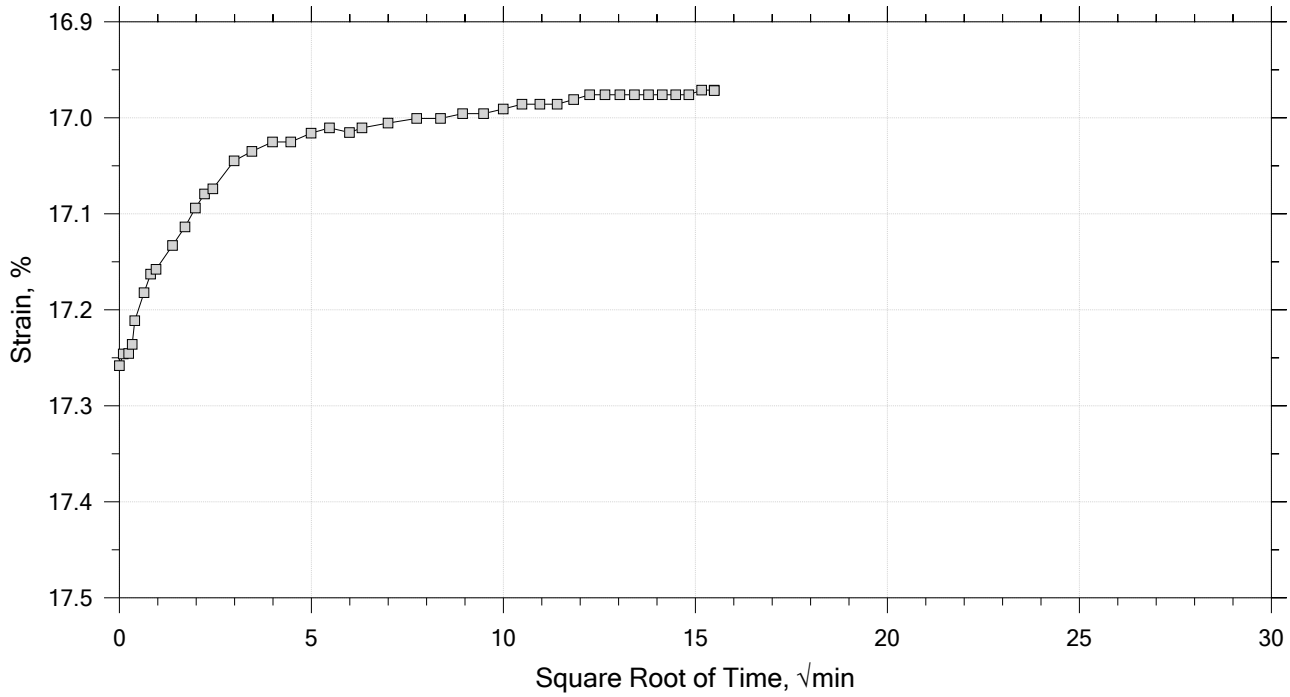
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 13 of 15

Constant Load Step

Stress: 0.5 tsf





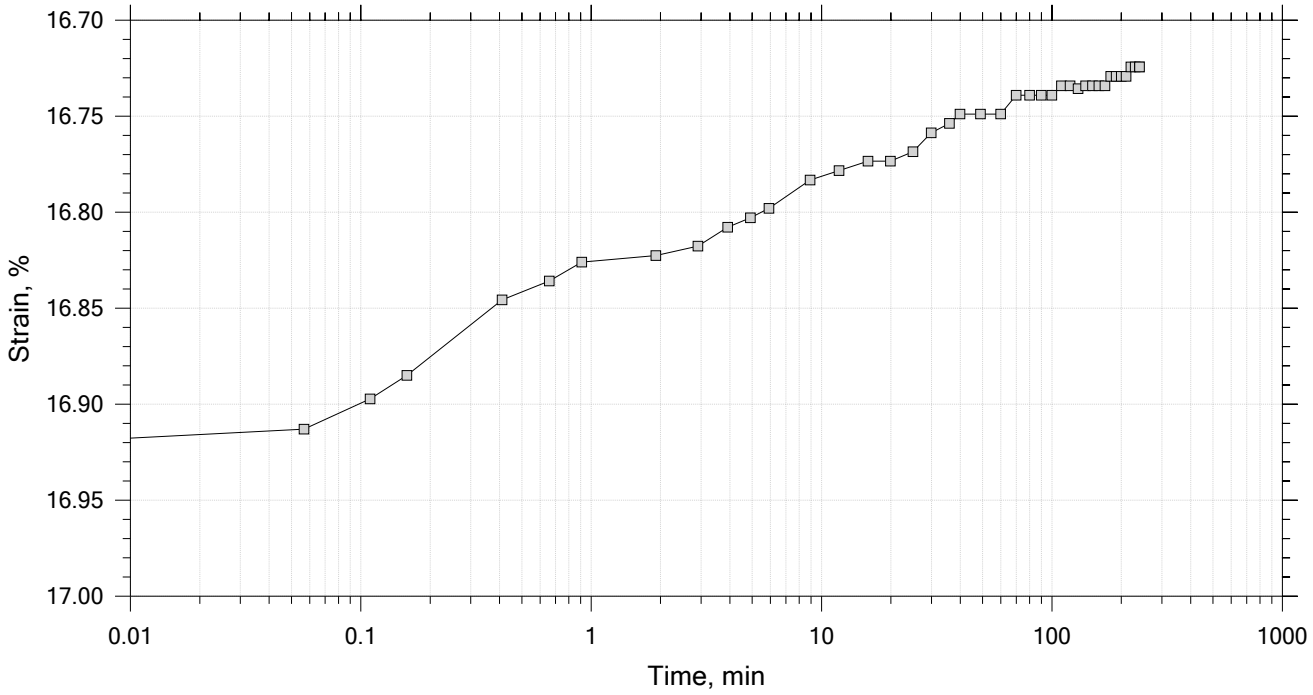
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

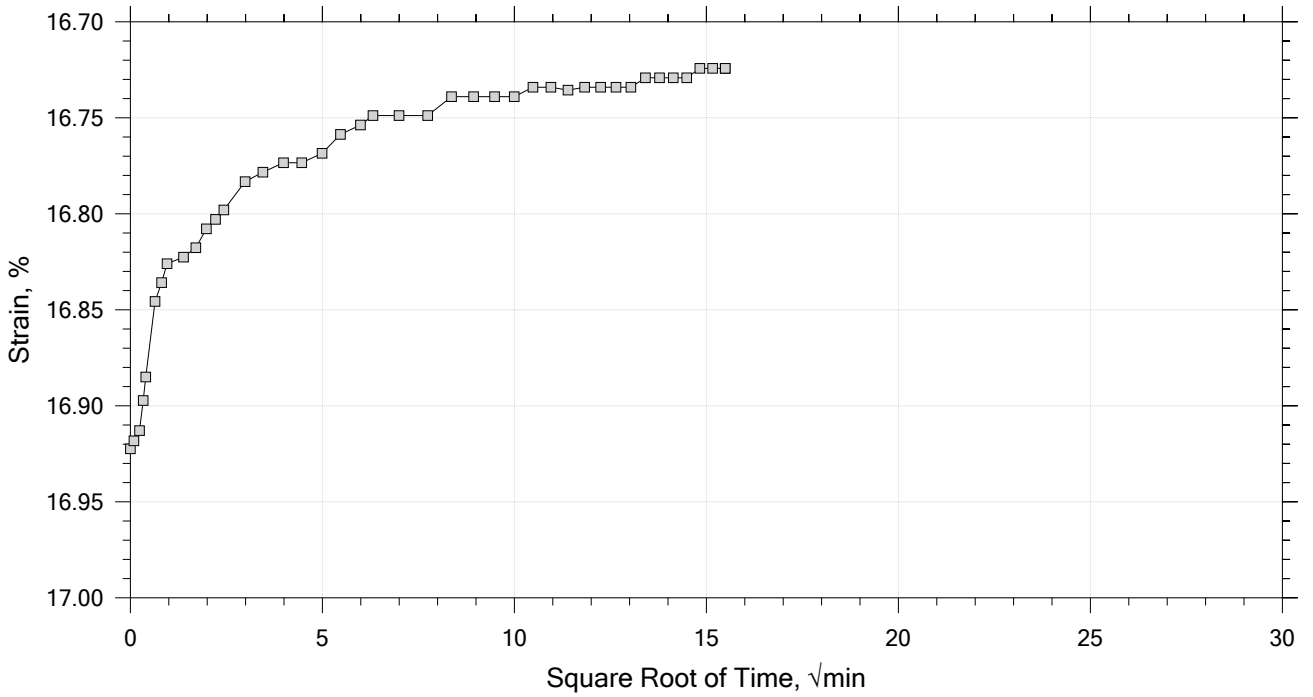
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 14 of 15

Constant Load Step

Stress: 0.125 tsf

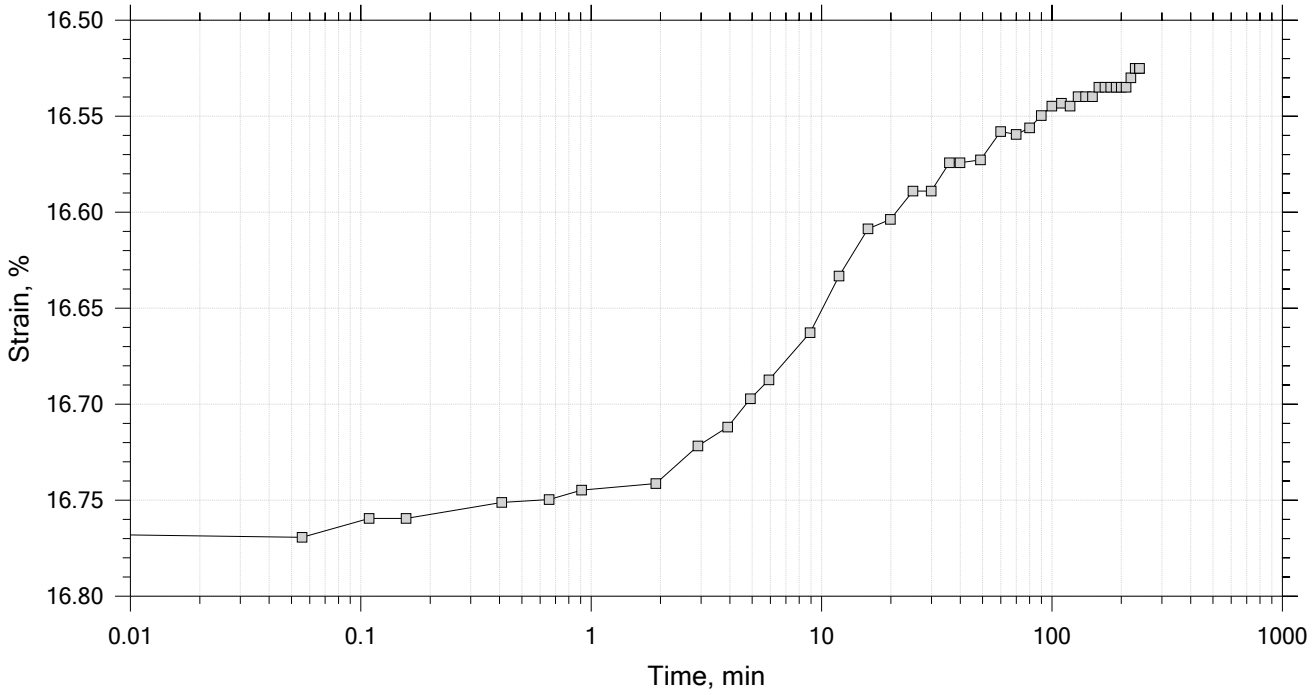


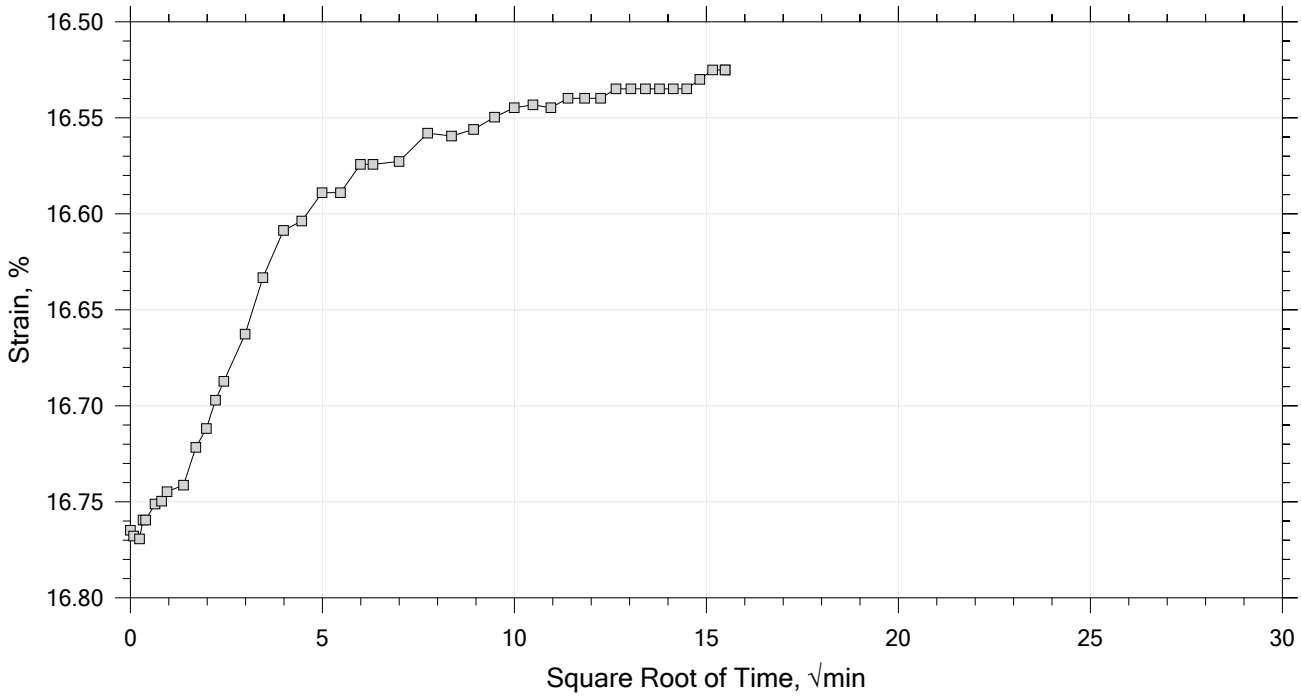


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 15 of 15
Constant Load Step
Stress: 0.0625 tsf





GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Specimen Diameter: 2.50 in	Estimated Specific Gravity: 2.65	Liquid Limit: ---
Initial Height: 1.00 in	Initial Void Ratio: 1.21	Plastic Limit: ---
Final Height: 0.86 in	Final Void Ratio: 0.9	Plasticity Index: ---

	Before Test Trimmings	Before Test Specimen	After Test Specimen	After Test Trimmings
Container ID	A1611	RING		B-2329
Mass Container, gm	8.86	108.85	108.85	9.13
Mass Container + Wet Soil, gm	244.76	248.35	238.1	137.71
Mass Container + Dry Soil, gm	165.44	205.34	205.34	105.12
Mass Dry Soil, gm	156.58	96.49	96.49	95.99
Water Content, %	50.66	44.57	33.95	33.95
Void Ratio	---	1.21	0.90	---
Degree of Saturation, %	---	97.70	100.00	---
Dry Unit Weight, pcf	---	74.884	87.075	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Log of Time Coefficients

Step	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	Log T50 min	Cv ft²/s	Mv 1/tsf	k ft/day	Ca %
1	0.0681	0.002859	1.20	0.286	0.000	0.00e+00	4.20e-02	0.00e+00	0.00e+00
2	0.125	0.006149	1.20	0.615	0.000	0.00e+00	5.79e-02	0.00e+00	0.00e+00
3	0.250	0.01258	1.18	1.26	0.902	6.20e-06	5.14e-02	8.60e-04	0.00e+00
4	0.500	0.01916	1.17	1.92	5.027	1.10e-06	2.63e-02	7.80e-05	0.00e+00
5	1.00	0.02830	1.15	2.83	0.000	0.00e+00	1.83e-02	0.00e+00	0.00e+00
6	2.00	0.03861	1.12	3.86	0.000	0.00e+00	1.03e-02	0.00e+00	0.00e+00
7	4.00	0.05531	1.09	5.53	0.000	0.00e+00	8.35e-03	0.00e+00	0.00e+00
8	8.00	0.08125	1.03	8.12	0.000	0.00e+00	6.48e-03	0.00e+00	0.00e+00
9	16.0	0.1224	0.938	12.2	0.000	0.00e+00	5.14e-03	0.00e+00	0.00e+00
10	32.0	0.1804	0.810	18.0	0.000	0.00e+00	3.63e-03	0.00e+00	0.00e+00
11	8.00	0.1772	0.817	17.7	0.000	0.00e+00	1.31e-04	0.00e+00	0.00e+00
12	2.00	0.1737	0.825	17.4	0.000	0.00e+00	5.94e-04	0.00e+00	0.00e+00
13	0.500	0.1697	0.834	17.0	0.000	0.00e+00	2.64e-03	0.00e+00	0.00e+00
14	0.125	0.1672	0.839	16.7	0.000	0.00e+00	6.60e-03	0.00e+00	0.00e+00
15	0.0625	0.1653	0.844	16.5	7.668	5.17e-07	3.19e-02	4.44e-05	0.00e+00

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
	Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
	Test No.: IP-4	Sample Type: intact	Elevation: ---
	Description: Moist, very dark gray sand		
	Remarks: System X, Swell Pressure = 0.0681 tsf		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Square Root of Time Coefficients

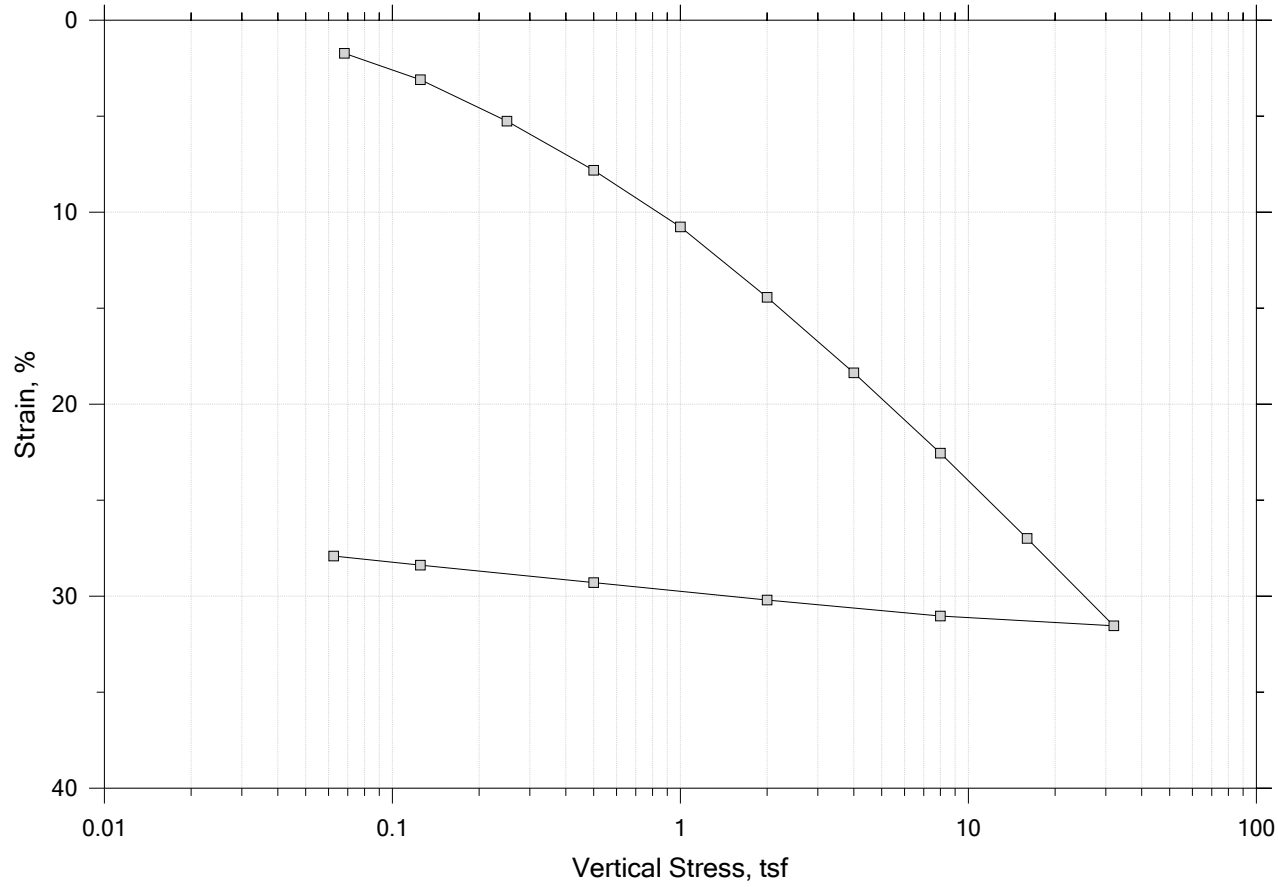
Step	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	Sq.Rt. T90 min	Cv ft²/s	Mv 1/tsf	k ft/day
1	0.0681	0.002859	1.20	0.286	226.194	1.08e-07	4.20e-02	1.22e-05
2	0.125	0.006149	1.20	0.615	59.870	4.06e-07	5.79e-02	6.34e-05
3	0.250	0.01258	1.18	1.26	5.104	4.72e-06	5.14e-02	6.54e-04
4	0.500	0.01916	1.17	1.92	13.275	1.79e-06	2.63e-02	1.27e-04
5	1.00	0.02830	1.15	2.83	270.954	8.63e-08	1.83e-02	4.26e-06
6	2.00	0.03861	1.12	3.86	191.862	1.19e-07	1.03e-02	3.32e-06
7	4.00	0.05531	1.09	5.53	66.166	3.37e-07	8.35e-03	7.59e-06
8	8.00	0.08125	1.03	8.12	29.579	7.20e-07	6.48e-03	1.26e-05
9	16.0	0.1224	0.938	12.2	26.937	7.35e-07	5.14e-03	1.02e-05
10	32.0	0.1804	0.810	18.0	33.262	5.31e-07	3.63e-03	5.20e-06
11	8.00	0.1772	0.817	17.7	24.912	6.64e-07	1.31e-04	2.34e-07
12	2.00	0.1737	0.825	17.4	15.909	1.05e-06	5.94e-04	1.68e-06
13	0.500	0.1697	0.834	17.0	9.994	1.68e-06	2.64e-03	1.20e-05
14	0.125	0.1672	0.839	16.7	9.119	1.86e-06	6.60e-03	3.31e-05
15	0.0625	0.1653	0.844	16.5	35.906	4.75e-07	3.19e-02	4.08e-05

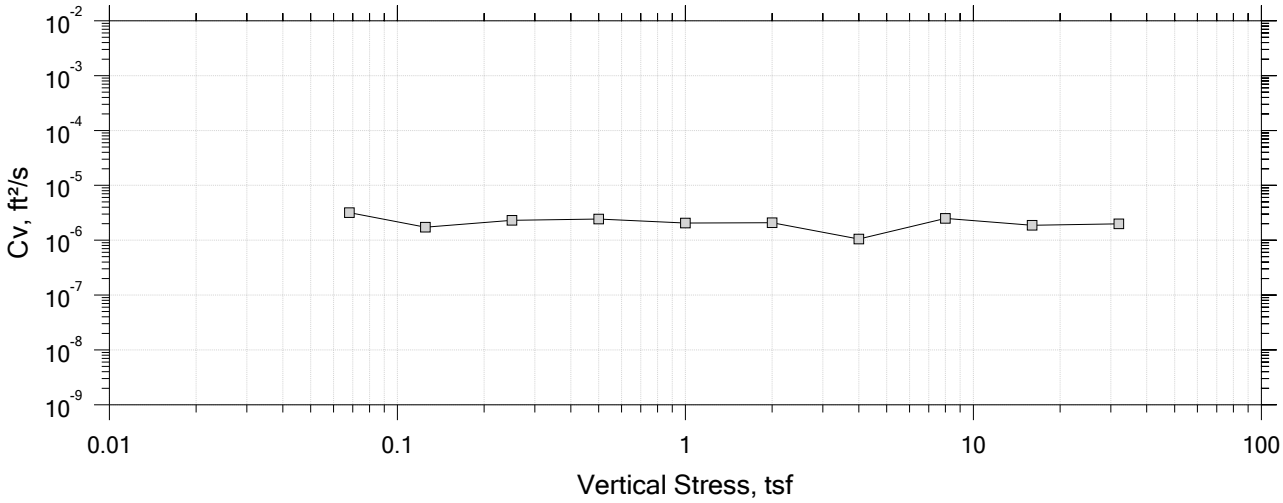
GeoTesting EXPRESS

Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-109SPT	Tested By: trm	Checked By: anm
Sample No.: 20-22-191004	Test Date: 12/6/19	Depth: ---
Test No.: IP-4	Sample Type: intact	Elevation: ---
Description: Moist, very dark gray sand		
Remarks: System X, Swell Pressure = 0.0681 tsf		
Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Summary Report





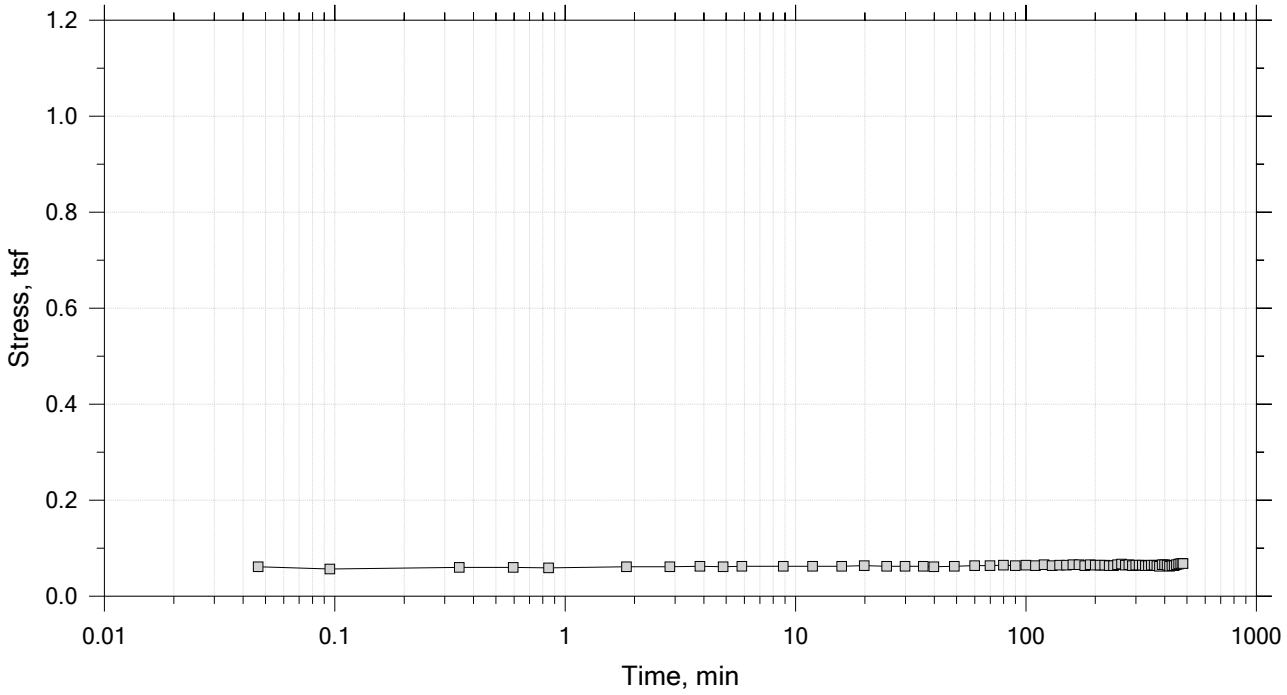
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		
	Displacement at End of Increment		

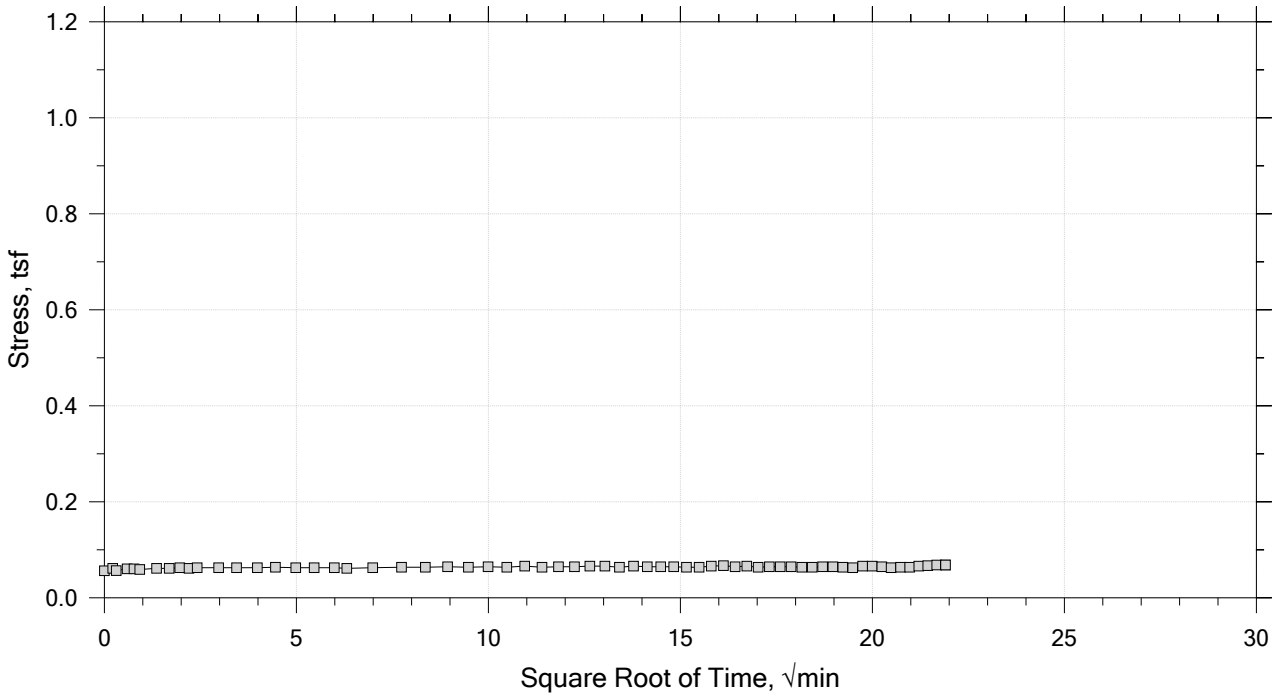
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 1 of 15

Constant Volume Step

Stress: 0.0681 tsf





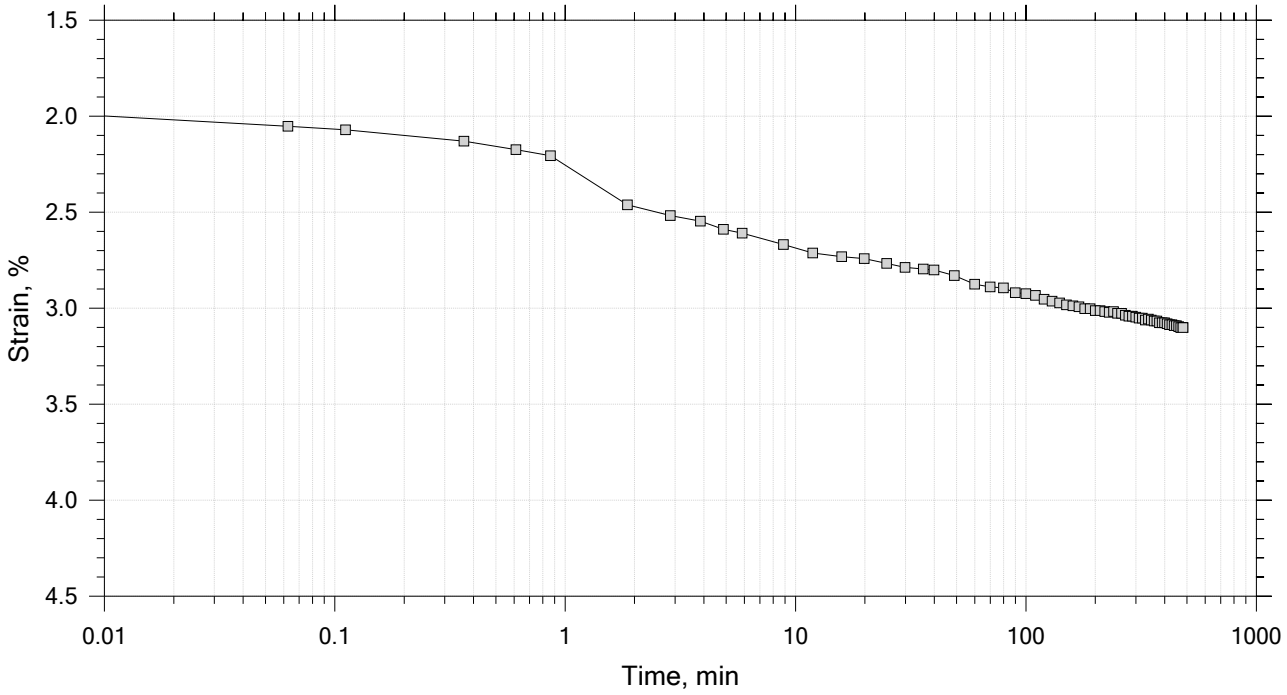
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

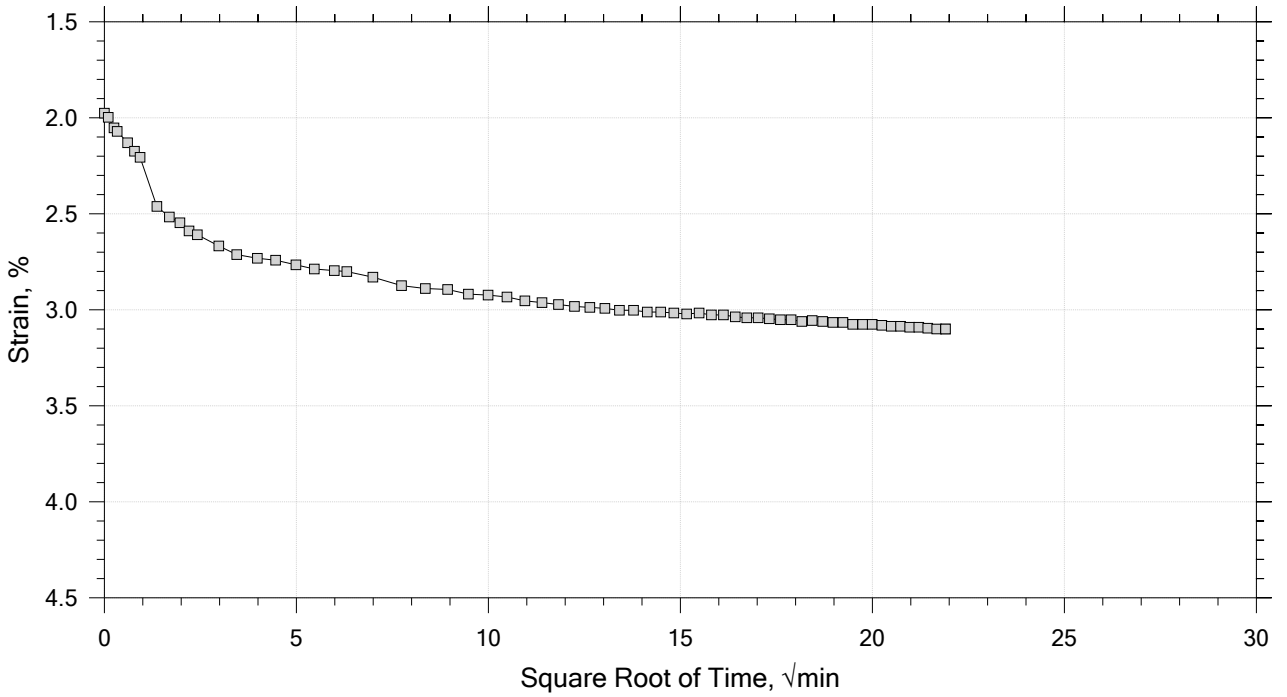
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 2 of 15

Constant Load Step

Stress: 0.125 tsf





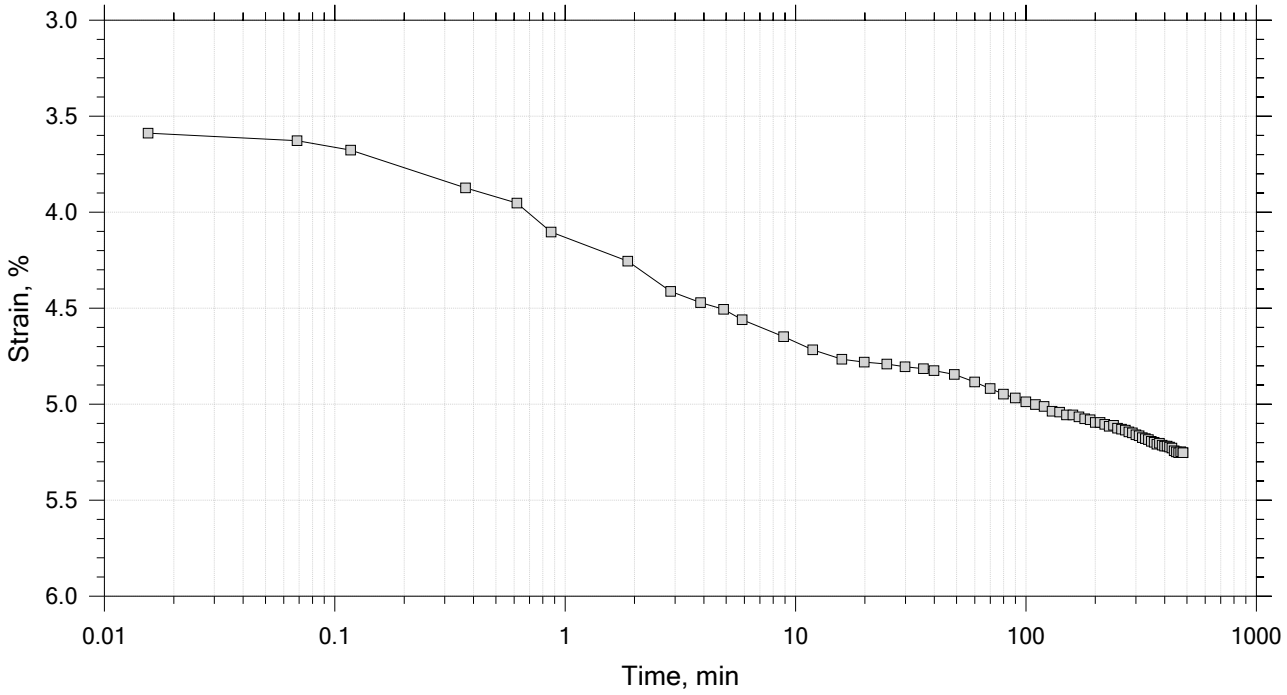
Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
Test No.: IP-2	Sample Type: intact	Elevation: ---
Description: Wet, gray clay with silt		
Remarks: System X, Swell Pressure = 0.0681 tsf		

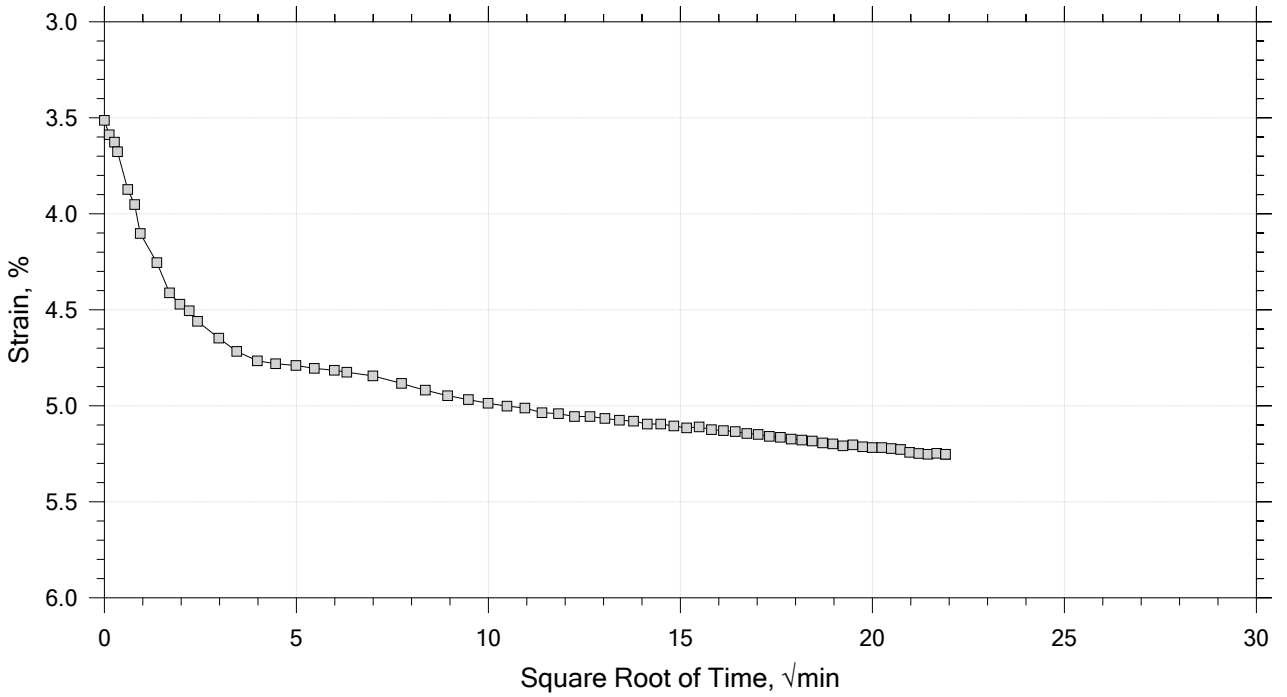
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 3 of 15

Constant Load Step

Stress: 0.25 tsf





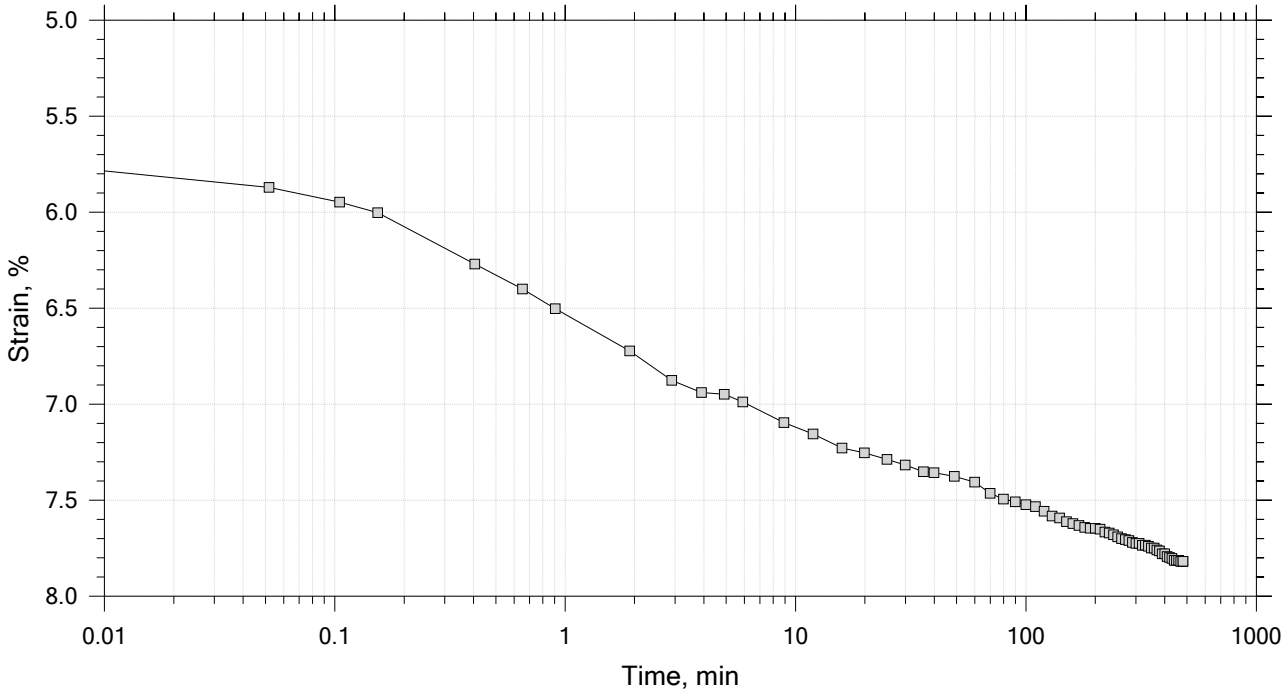
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

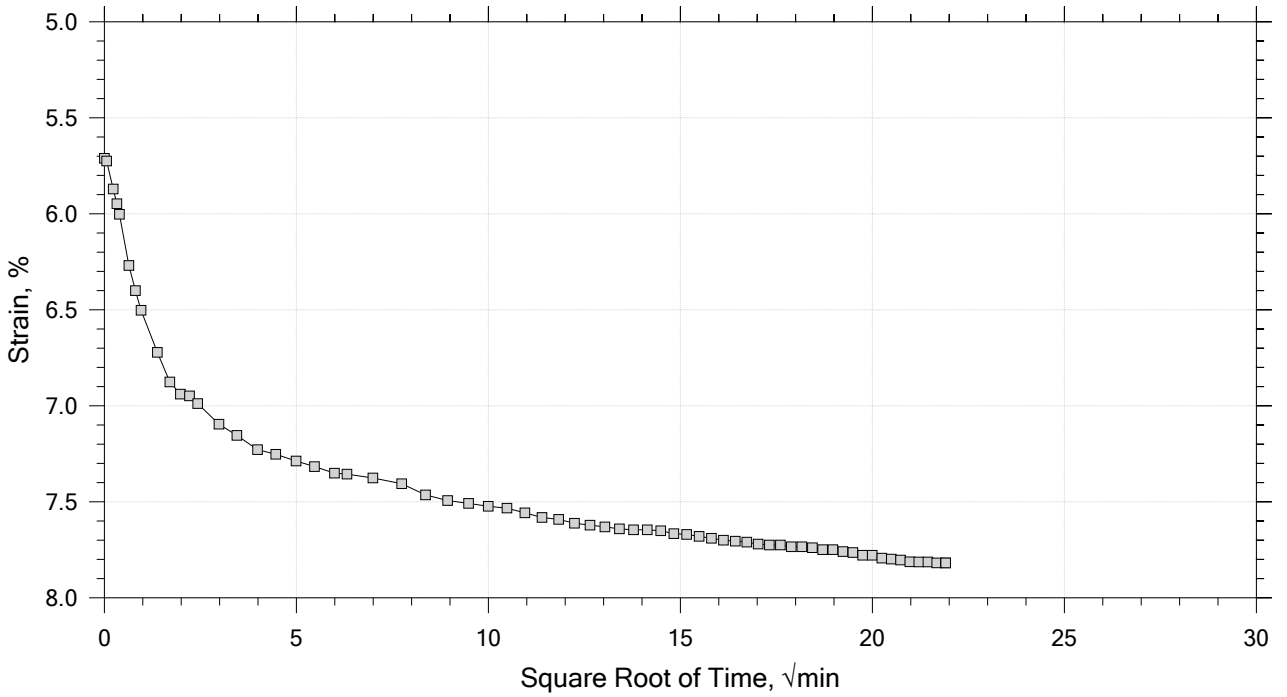
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 4 of 15

Constant Load Step

Stress: 0.5 tsf





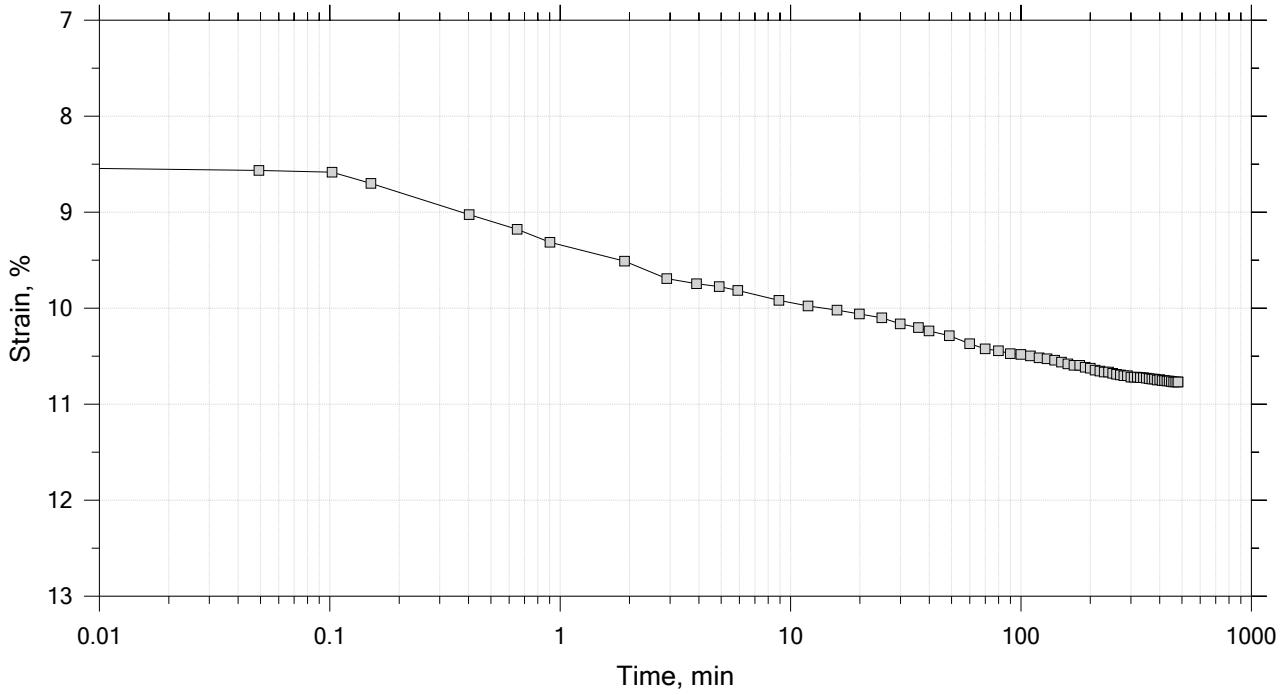
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

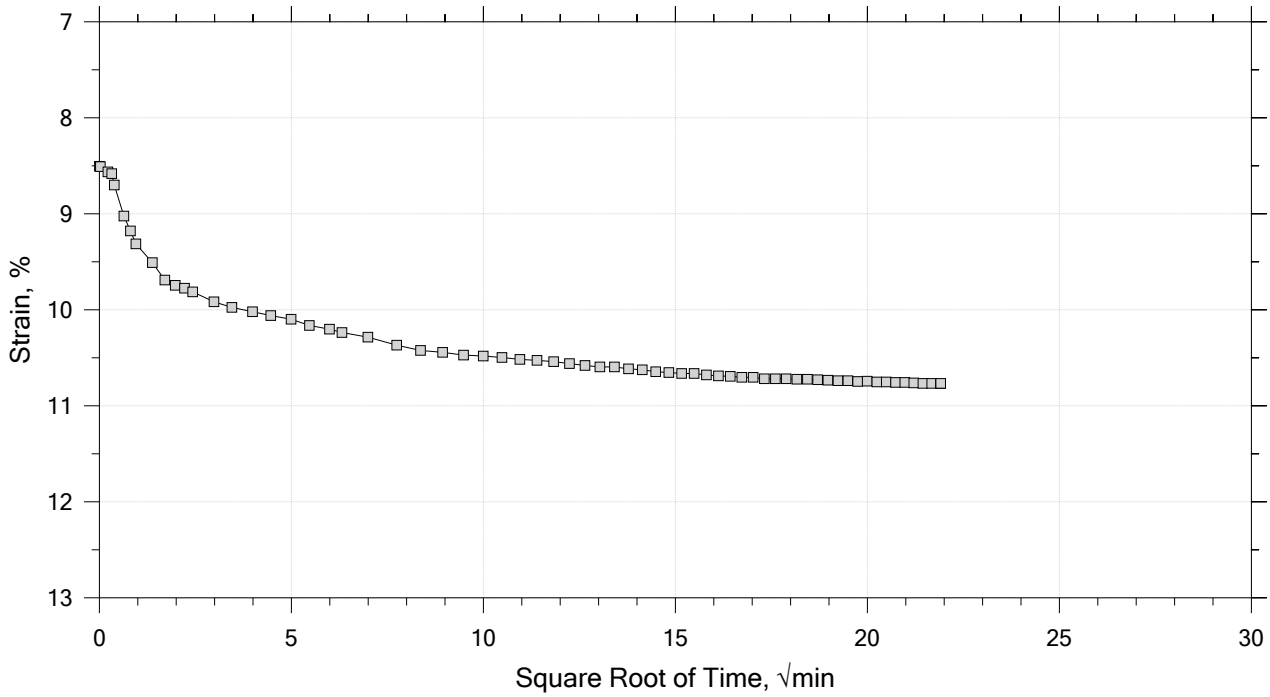
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 5 of 15

Constant Load Step

Stress: 1 tsf





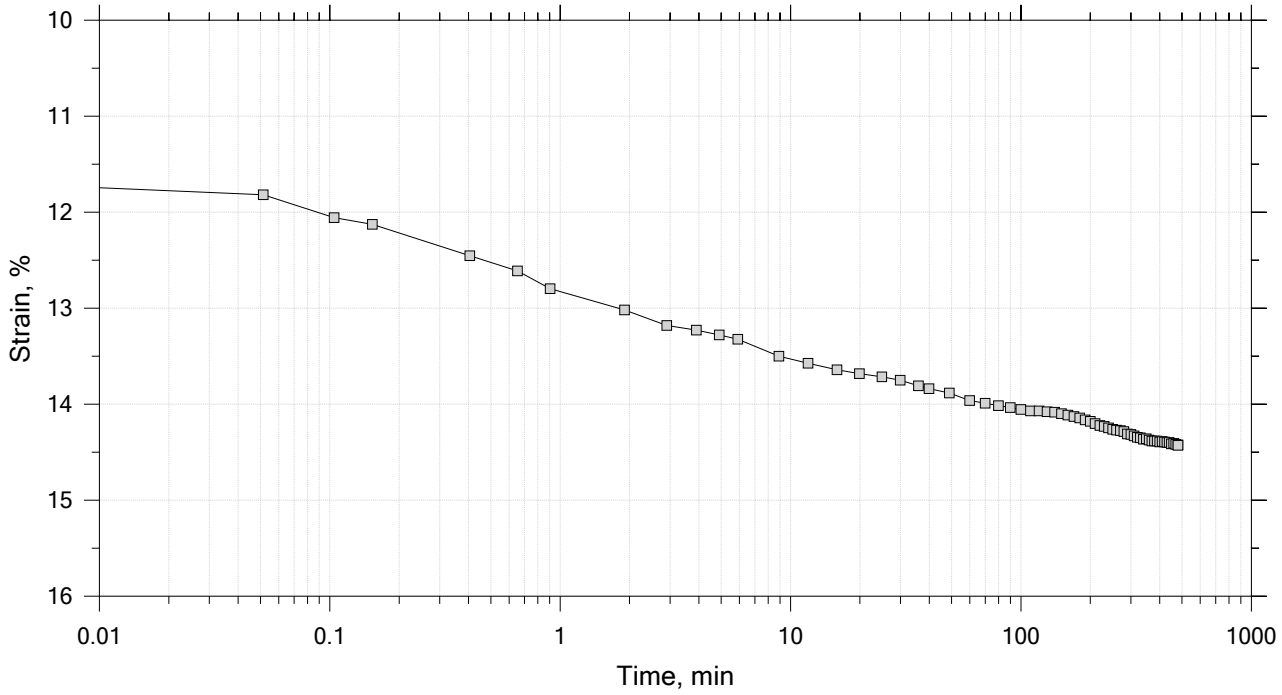
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

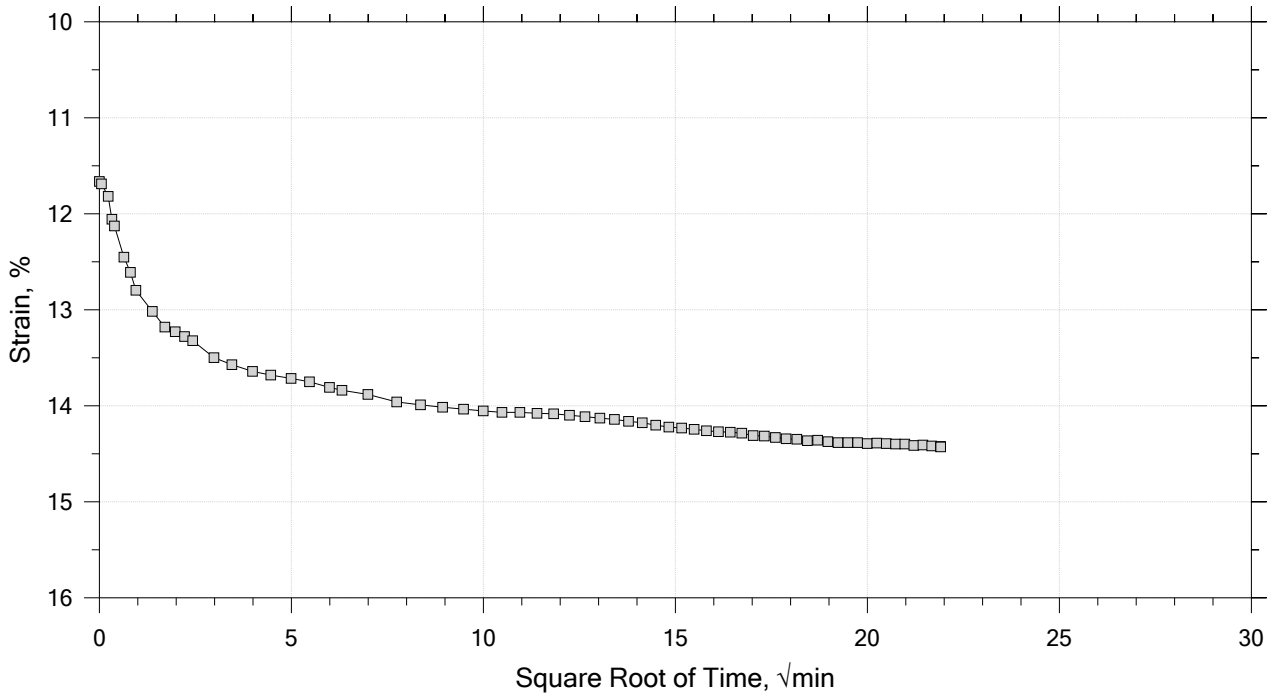
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 6 of 15

Constant Load Step

Stress: 2 tsf





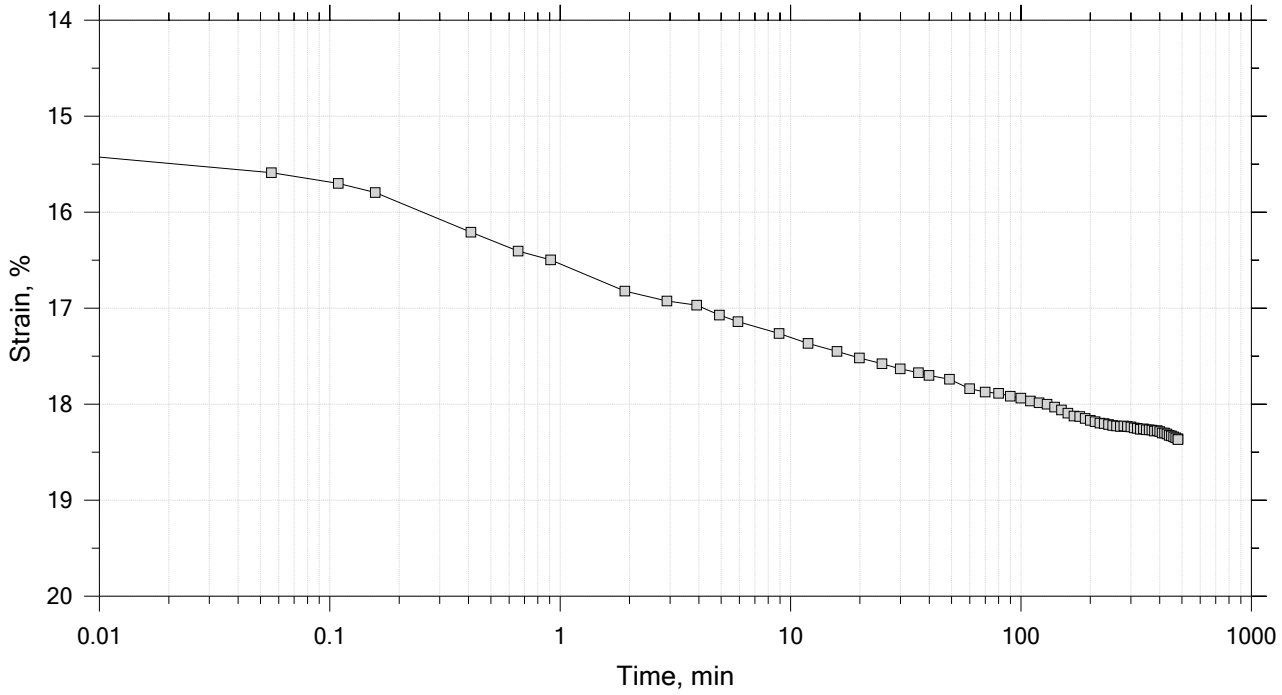
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

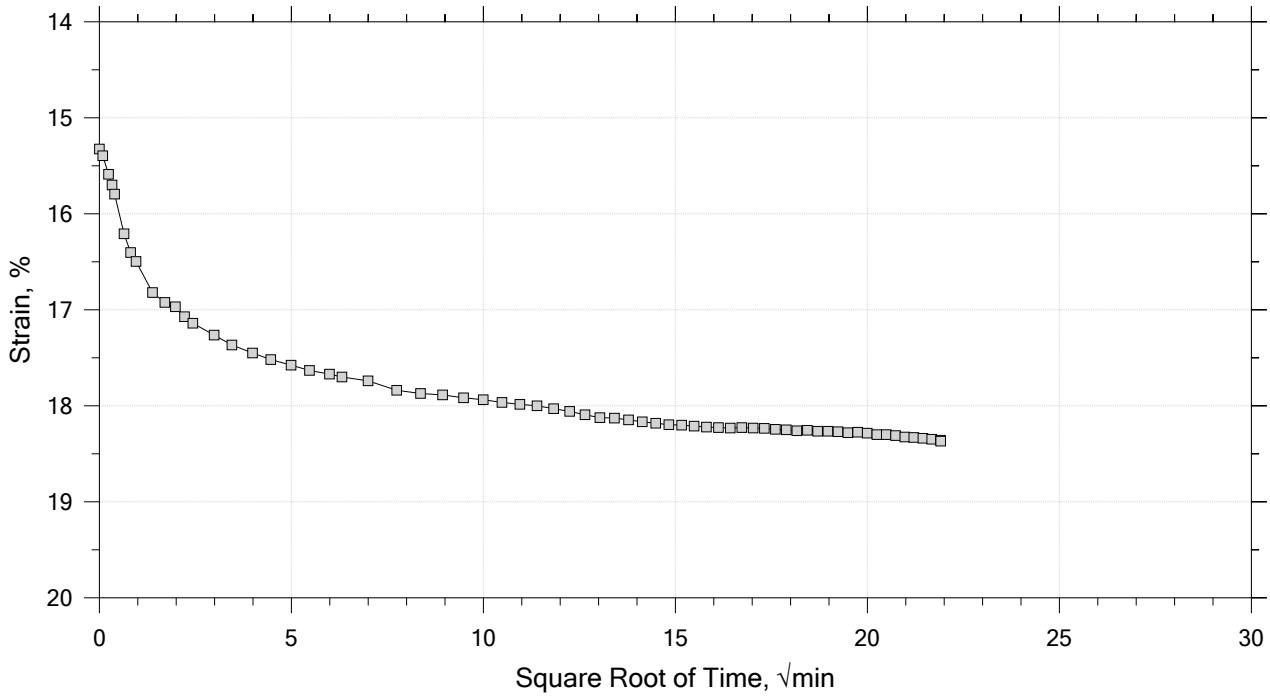
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 7 of 15

Constant Load Step

Stress: 4 tsf





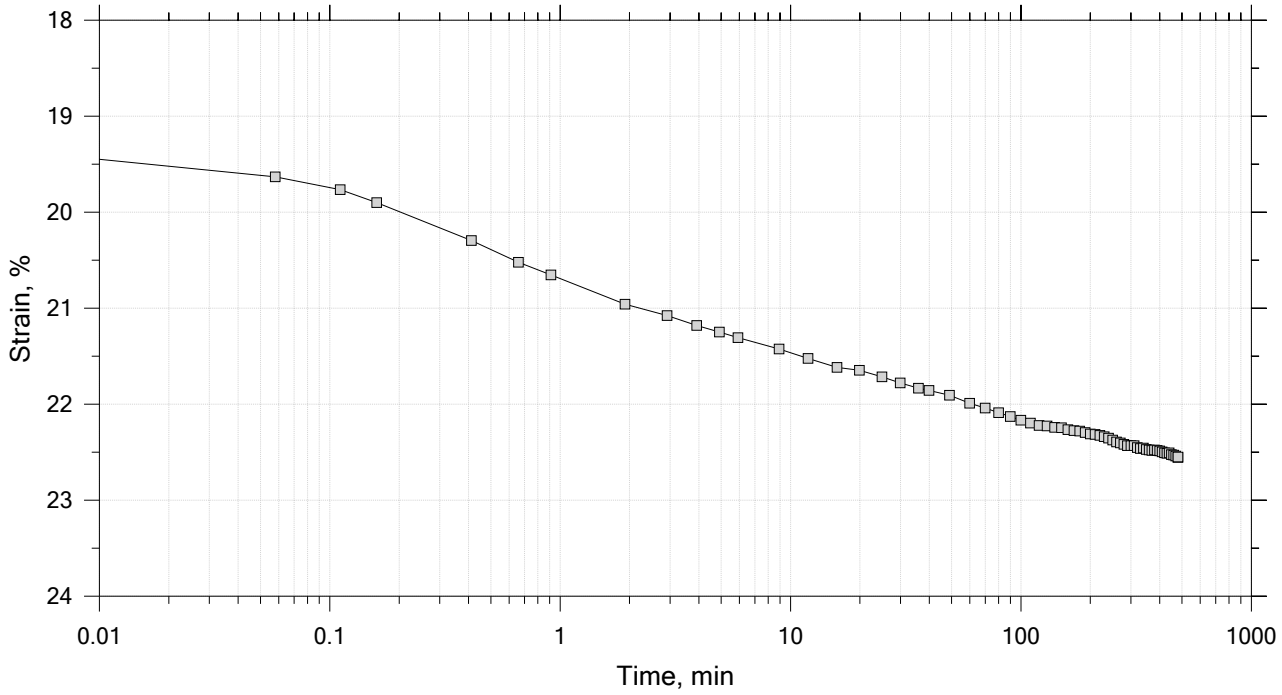
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

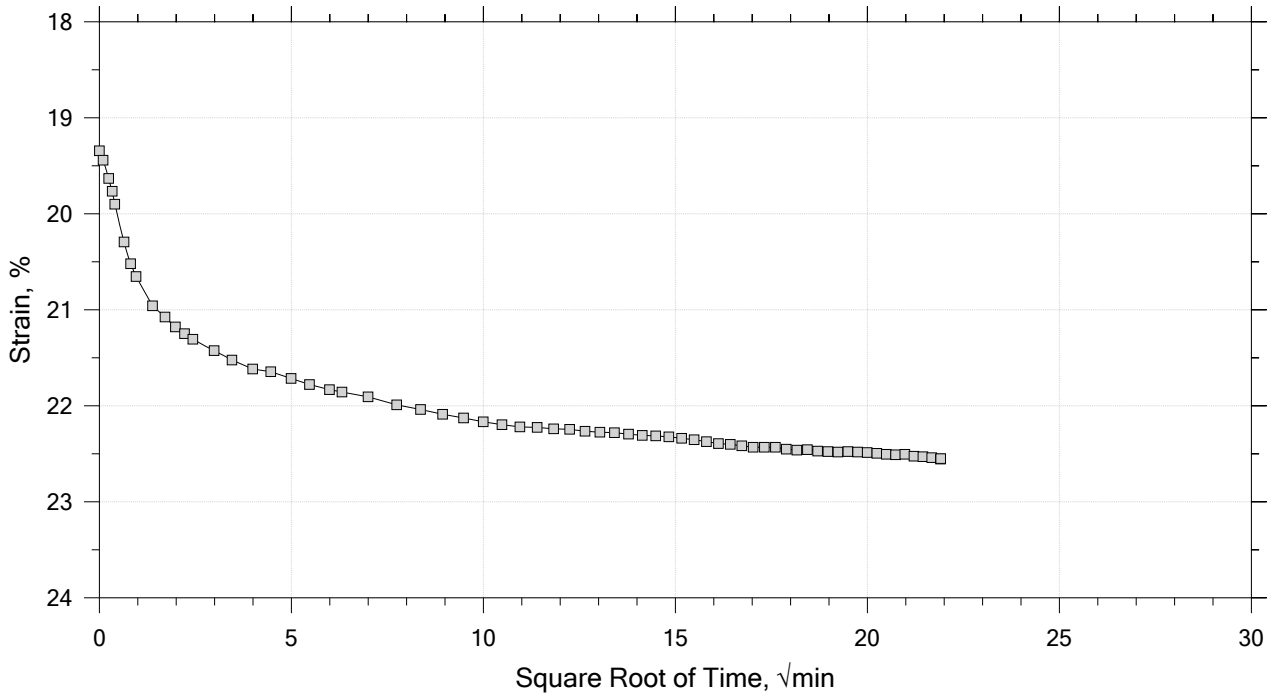
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 8 of 15

Constant Load Step

Stress: 8 tsf





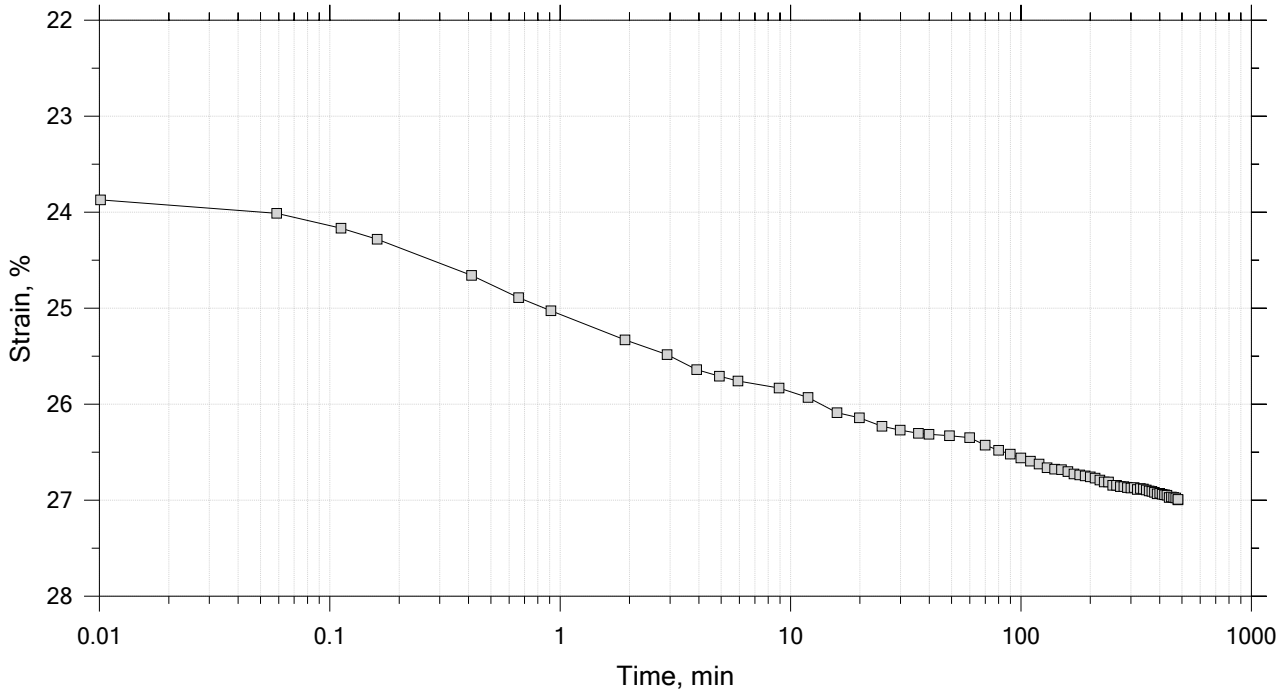
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

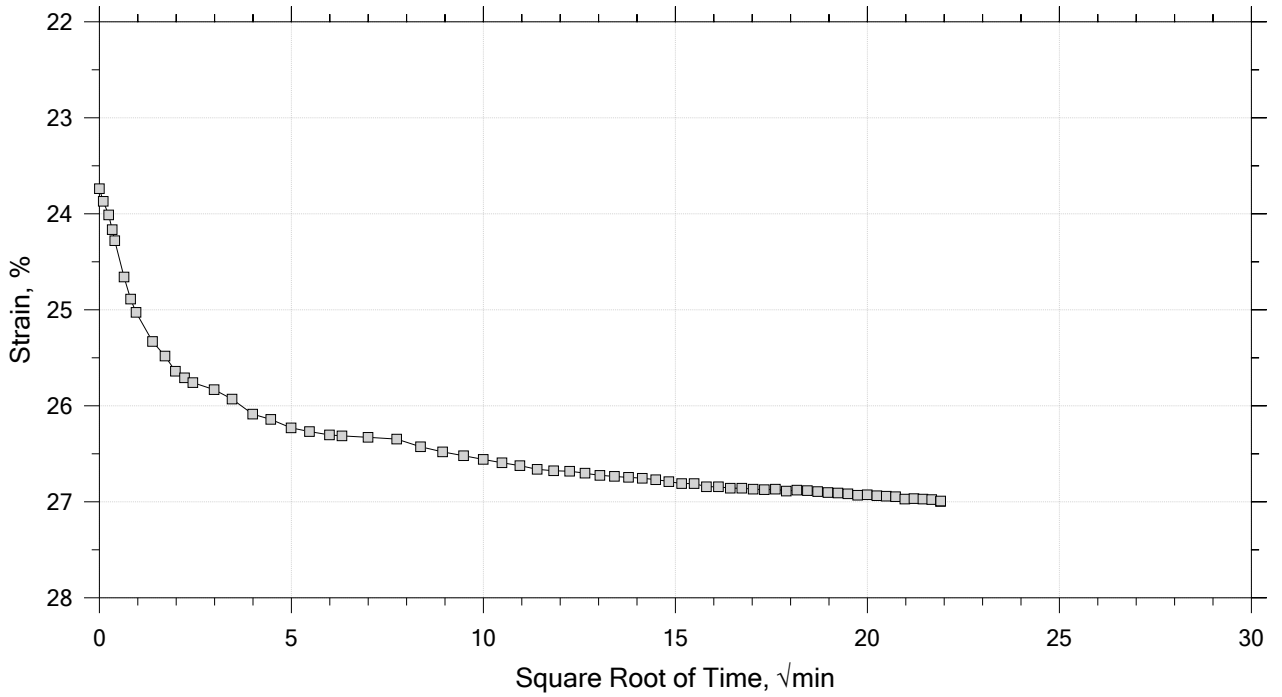
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 9 of 15

Constant Load Step

Stress: 16 tsf





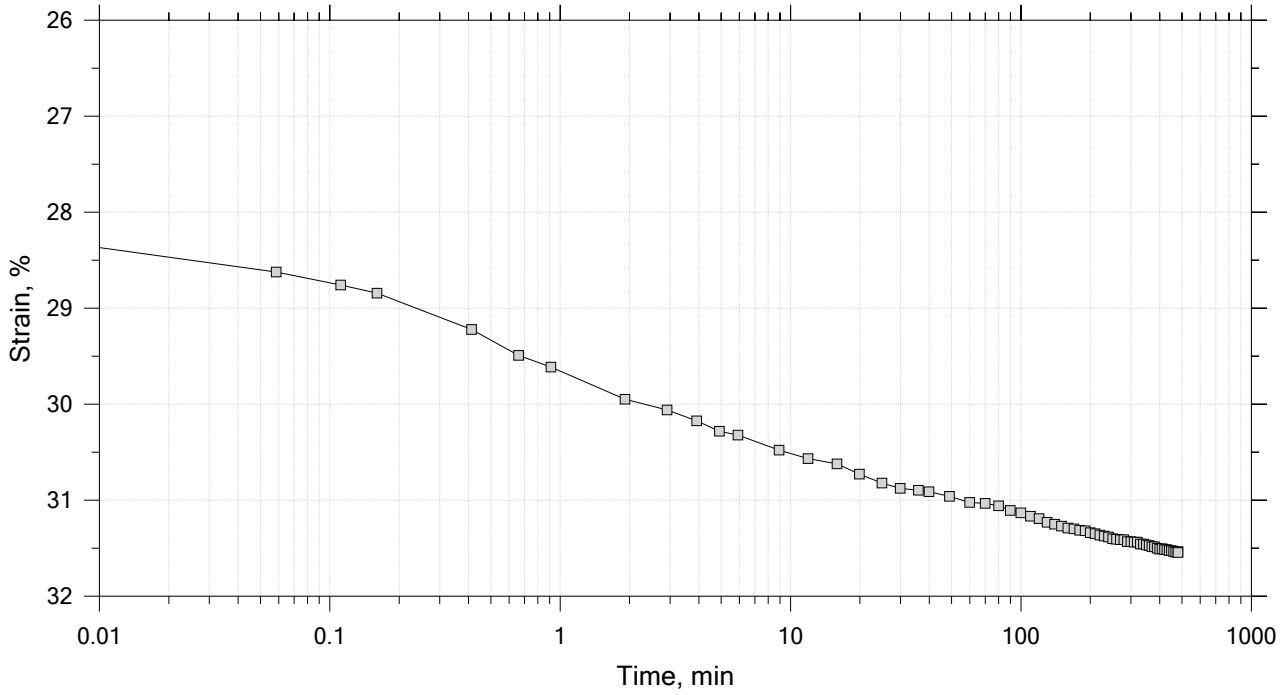
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

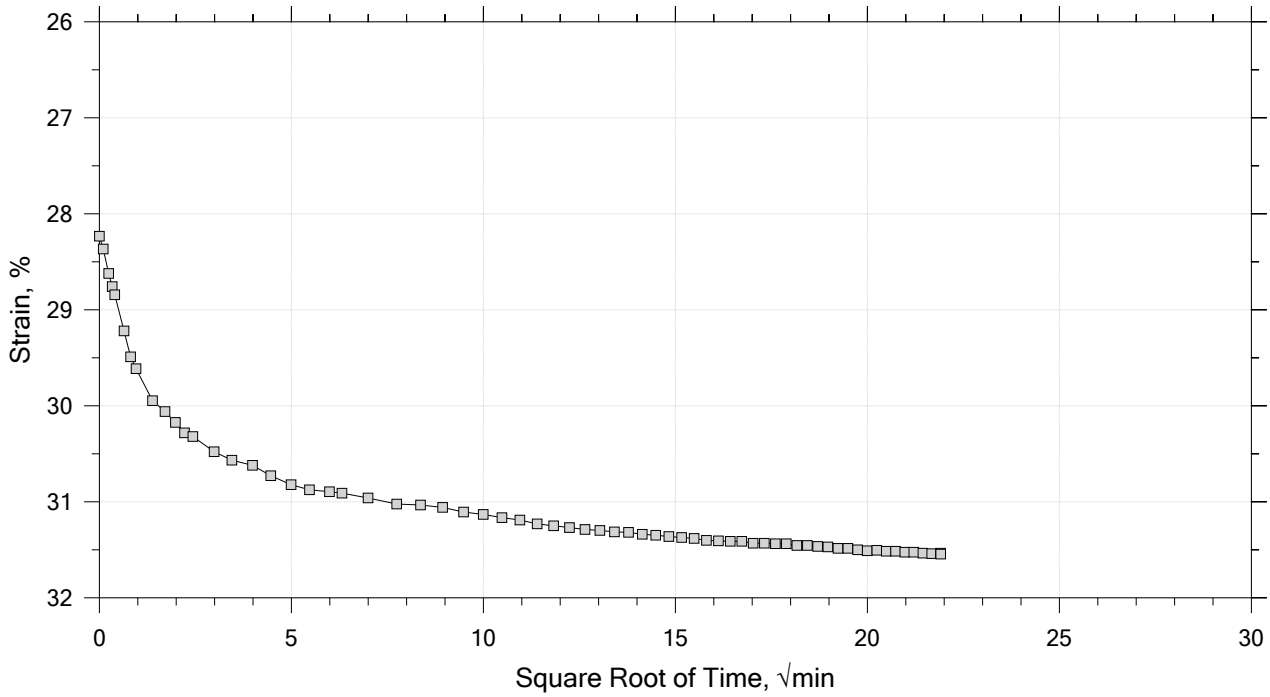
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 10 of 15

Constant Load Step

Stress: 32 tsf

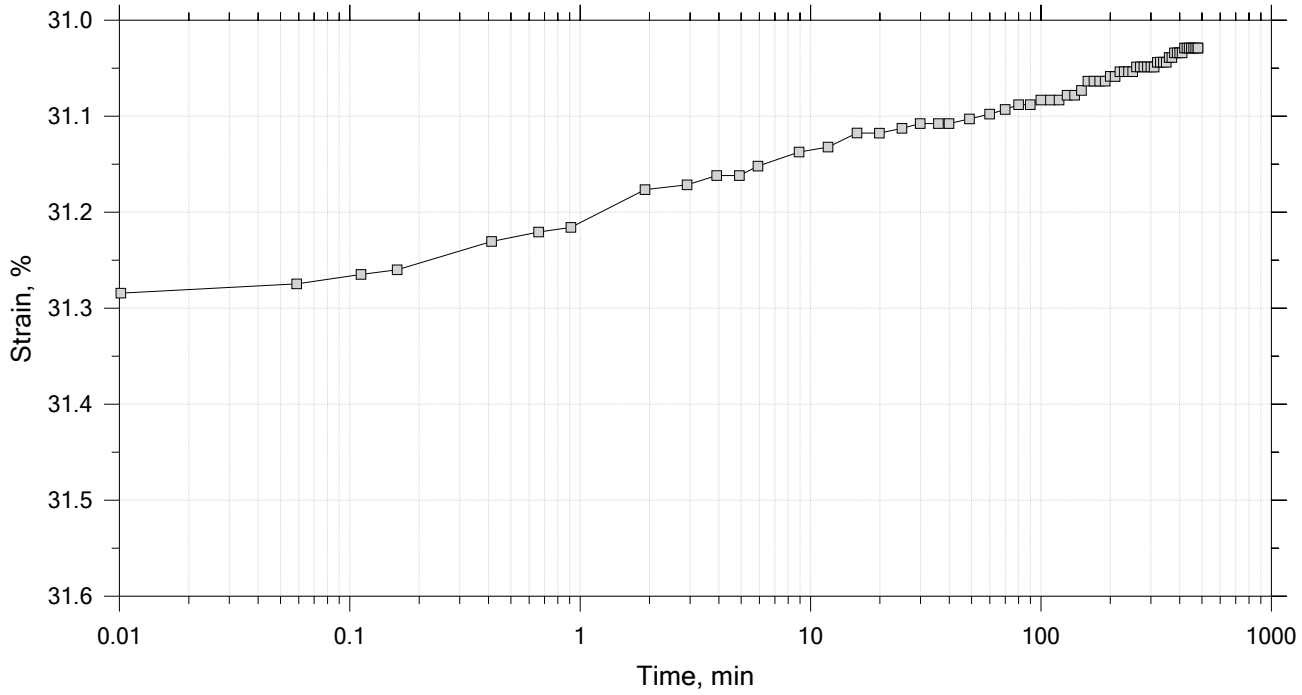


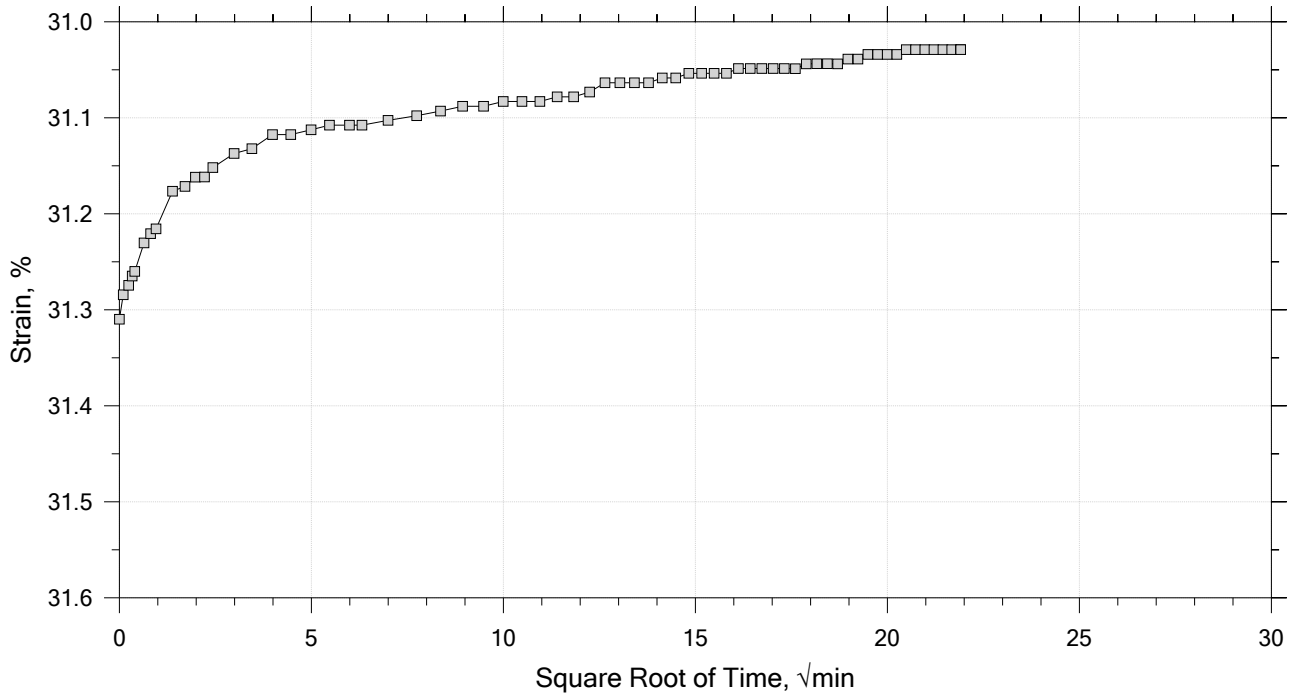


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 11 of 15
Constant Load Step
Stress: 8 tsf

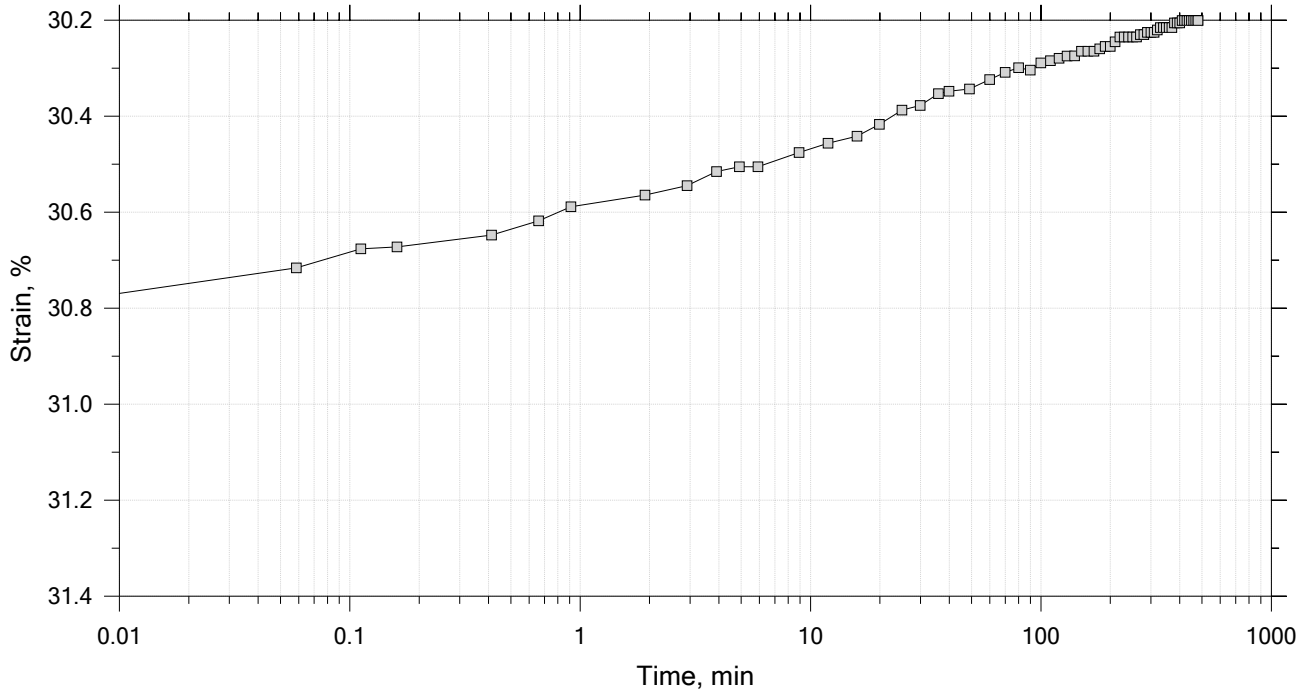


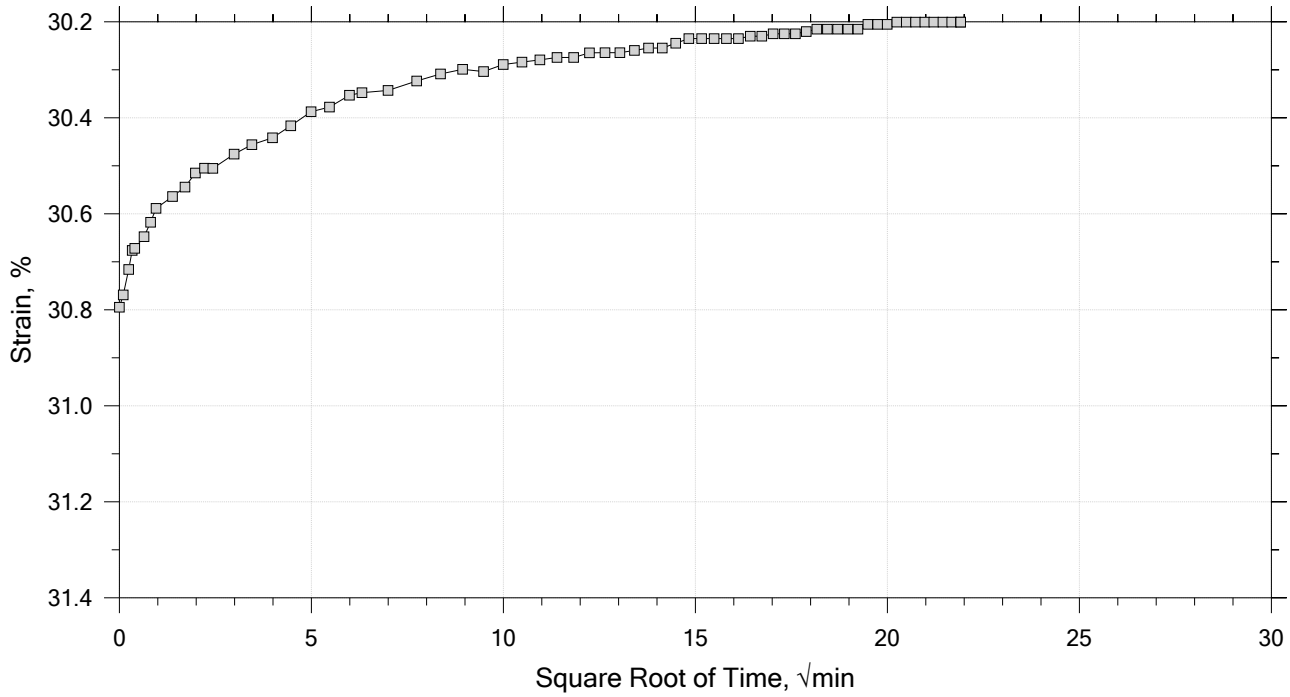


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 12 of 15
Constant Load Step
Stress: 2 tsf





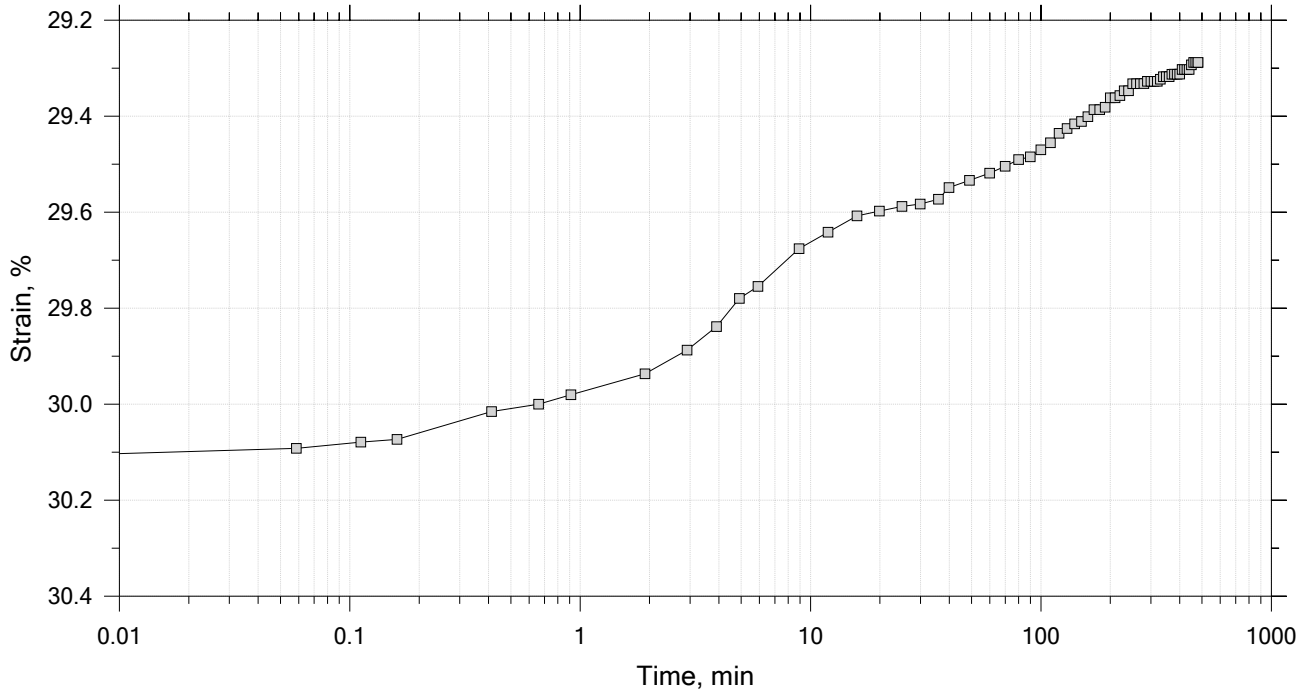
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

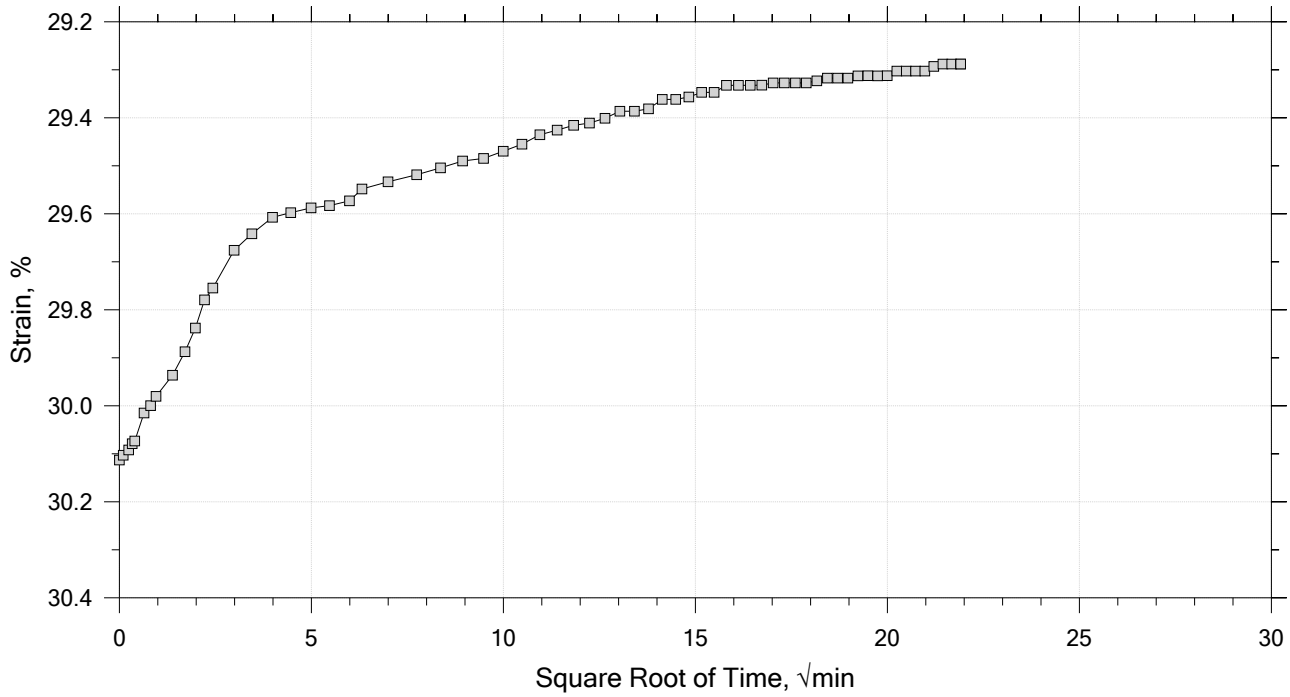
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 13 of 15

Constant Load Step

Stress: 0.5 tsf

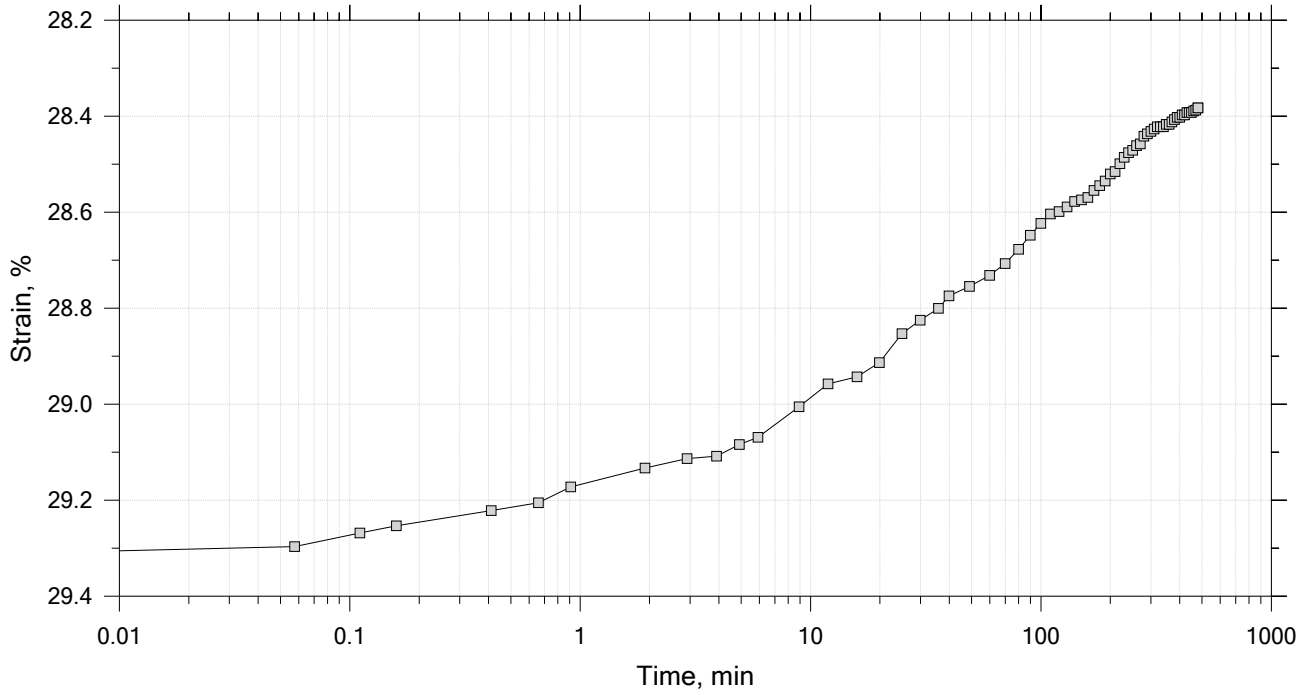


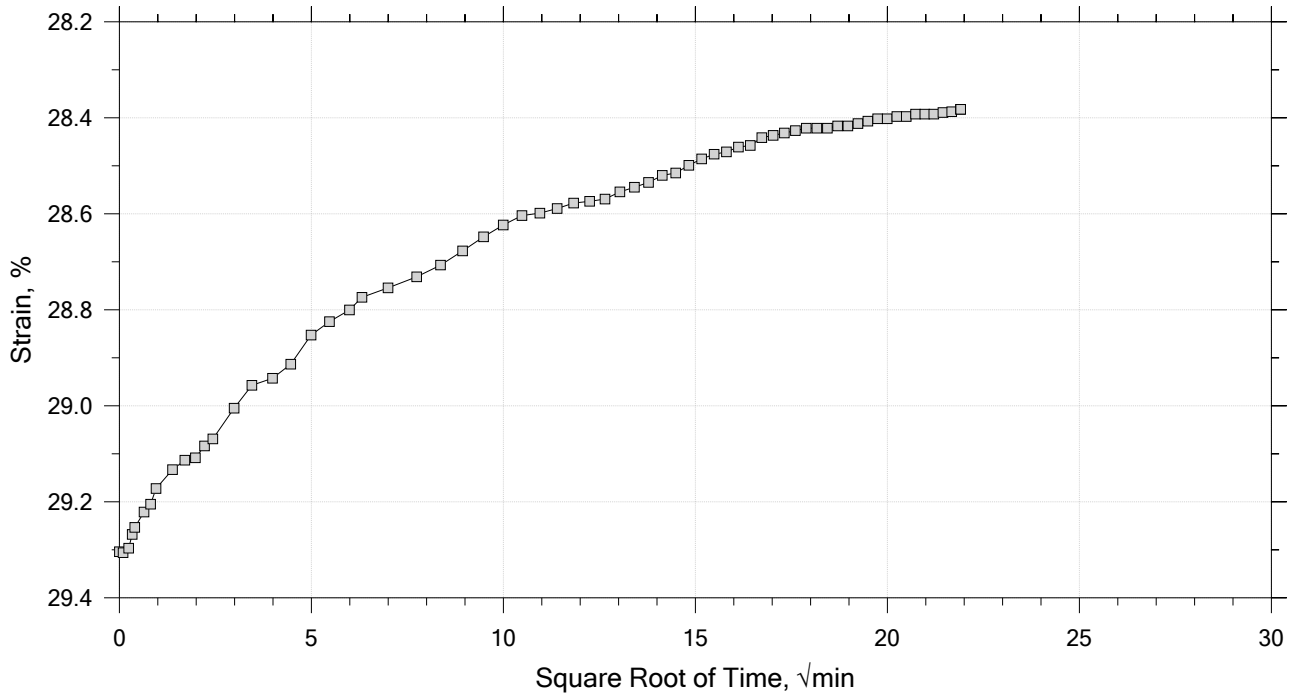


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 14 of 15
Constant Load Step
Stress: 0.125 tsf

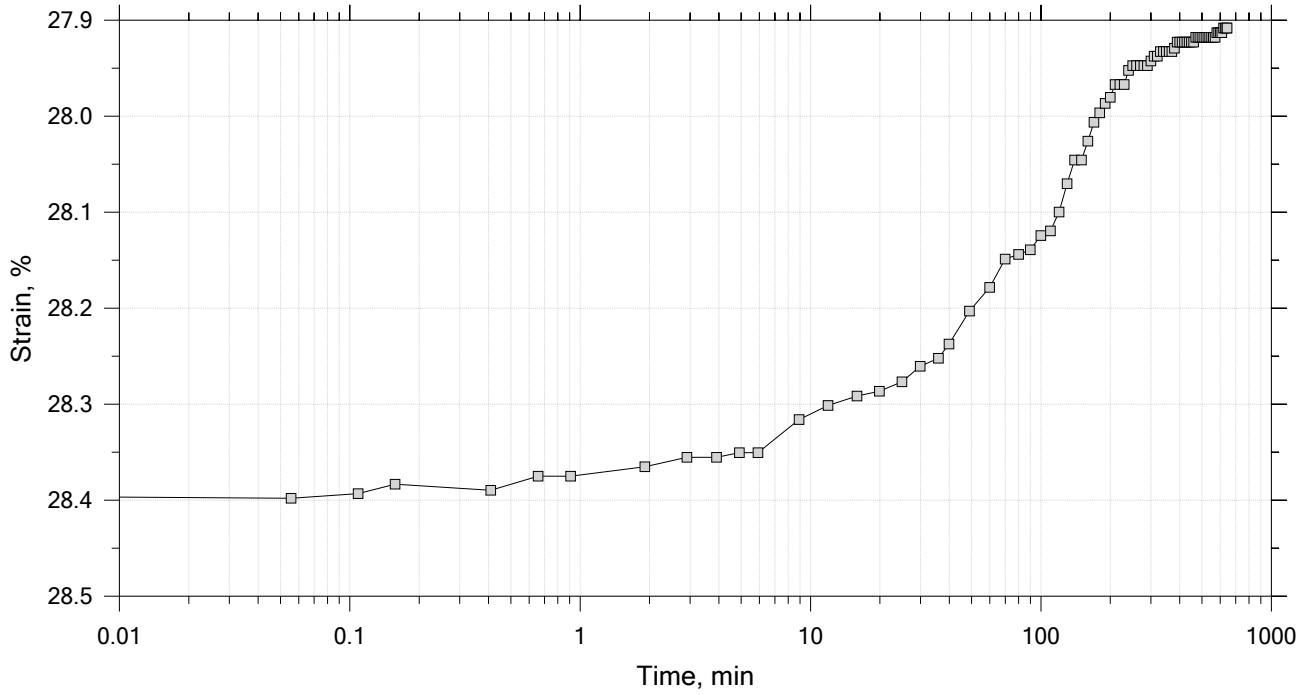


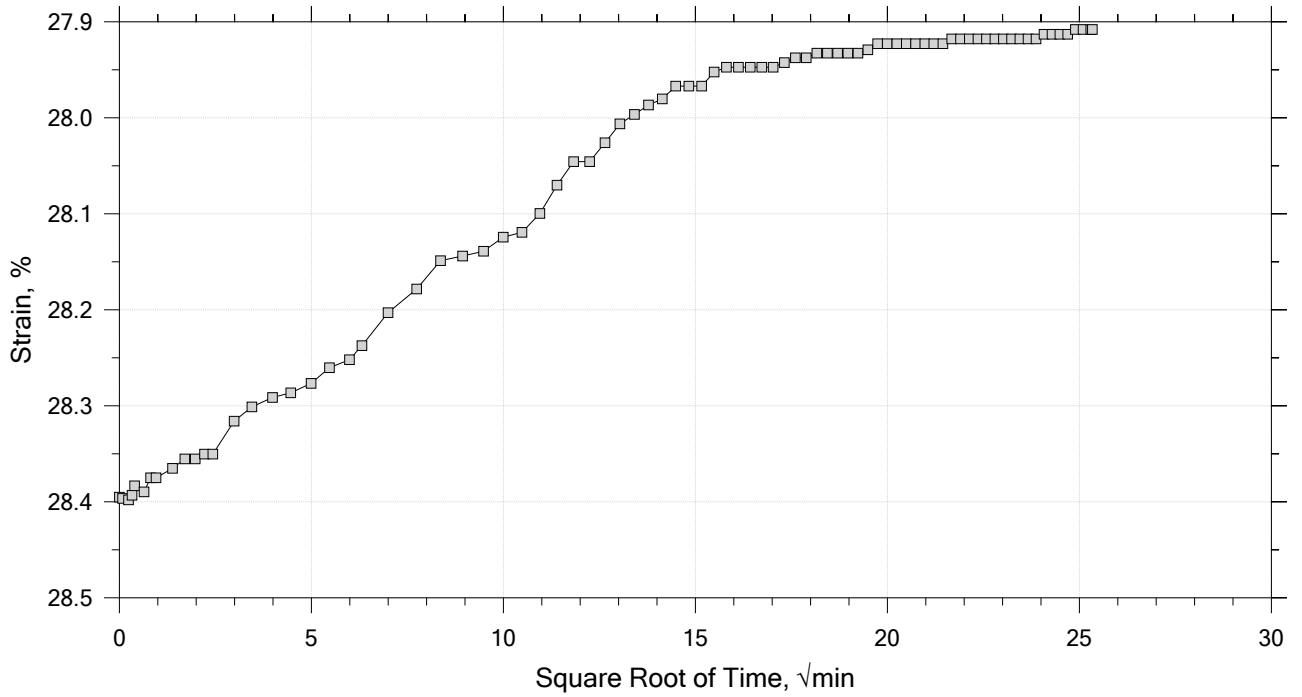


Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
Test No.: IP-2	Sample Type: intact	Elevation: ---
Description: Wet, gray clay with silt		
Remarks: System X, Swell Pressure = 0.0681 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 15 of 15
Constant Load Step
Stress: 0.0625 tsf





GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Specimen Diameter: 2.50 in	Estimated Specific Gravity: 2.74	Liquid Limit: ---
Initial Height: 1.00 in	Initial Void Ratio: 1.66	Plastic Limit: ---
Final Height: 0.74 in	Final Void Ratio: 0.967	Plasticity Index: ---

	Before Test Trimmings	Before Test Specimen	After Test Specimen	After Test Trimmings
Container ID	C-2810	RING		D-895
Mass Container, gm	9.08	108.81	108.81	8.25
Mass Container + Wet Soil, gm	173.54	240.58	220.97	120.22
Mass Container + Dry Soil, gm	117.77	191.7	191.7	91
Mass Dry Soil, gm	108.69	82.89	82.89	82.75
Water Content, %	51.31	58.97	35.31	35.31
Void Ratio	---	1.66	0.97	---
Degree of Saturation, %	---	97.40	100.00	---
Dry Unit Weight, pcf	---	64.33	86.932	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Log of Time Coefficients

Step	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	Log T50 min	Cv ft²/s	Mv 1/tsf	k ft/day	Ca %
1	0.0681	0.01724	1.61	1.72	0.000	0.00e+00	2.53e-01	0.00e+00	0.00e+00
2	0.125	0.03101	1.58	3.10	1.715	3.17e-06	2.42e-01	2.07e-03	0.00e+00
3	0.250	0.05252	1.52	5.25	0.000	0.00e+00	1.72e-01	0.00e+00	0.00e+00
4	0.500	0.07818	1.45	7.82	0.000	0.00e+00	1.03e-01	0.00e+00	0.00e+00
5	1.00	0.1077	1.37	10.8	1.217	3.85e-06	5.90e-02	6.13e-04	0.00e+00
6	2.00	0.1443	1.28	14.4	0.000	0.00e+00	3.66e-02	0.00e+00	0.00e+00
7	4.00	0.1837	1.17	18.4	0.000	0.00e+00	1.97e-02	0.00e+00	0.00e+00
8	8.00	0.2255	1.06	22.6	0.978	3.69e-06	1.05e-02	1.04e-04	0.00e+00
9	16.0	0.2699	0.941	27.0	1.187	2.72e-06	5.55e-03	4.07e-05	0.00e+00
10	32.0	0.3154	0.820	31.5	1.004	2.84e-06	2.85e-03	2.18e-05	0.00e+00
11	8.00	0.3103	0.834	31.0	0.000	0.00e+00	2.15e-04	0.00e+00	0.00e+00
12	2.00	0.3020	0.856	30.2	9.426	2.91e-07	1.38e-03	1.08e-06	0.00e+00
13	0.500	0.2929	0.880	29.3	0.000	0.00e+00	6.08e-03	0.00e+00	0.00e+00
14	0.125	0.2838	0.904	28.4	0.000	0.00e+00	2.41e-02	0.00e+00	0.00e+00
15	0.0625	0.2791	0.917	27.9	0.000	0.00e+00	7.59e-02	0.00e+00	0.00e+00

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

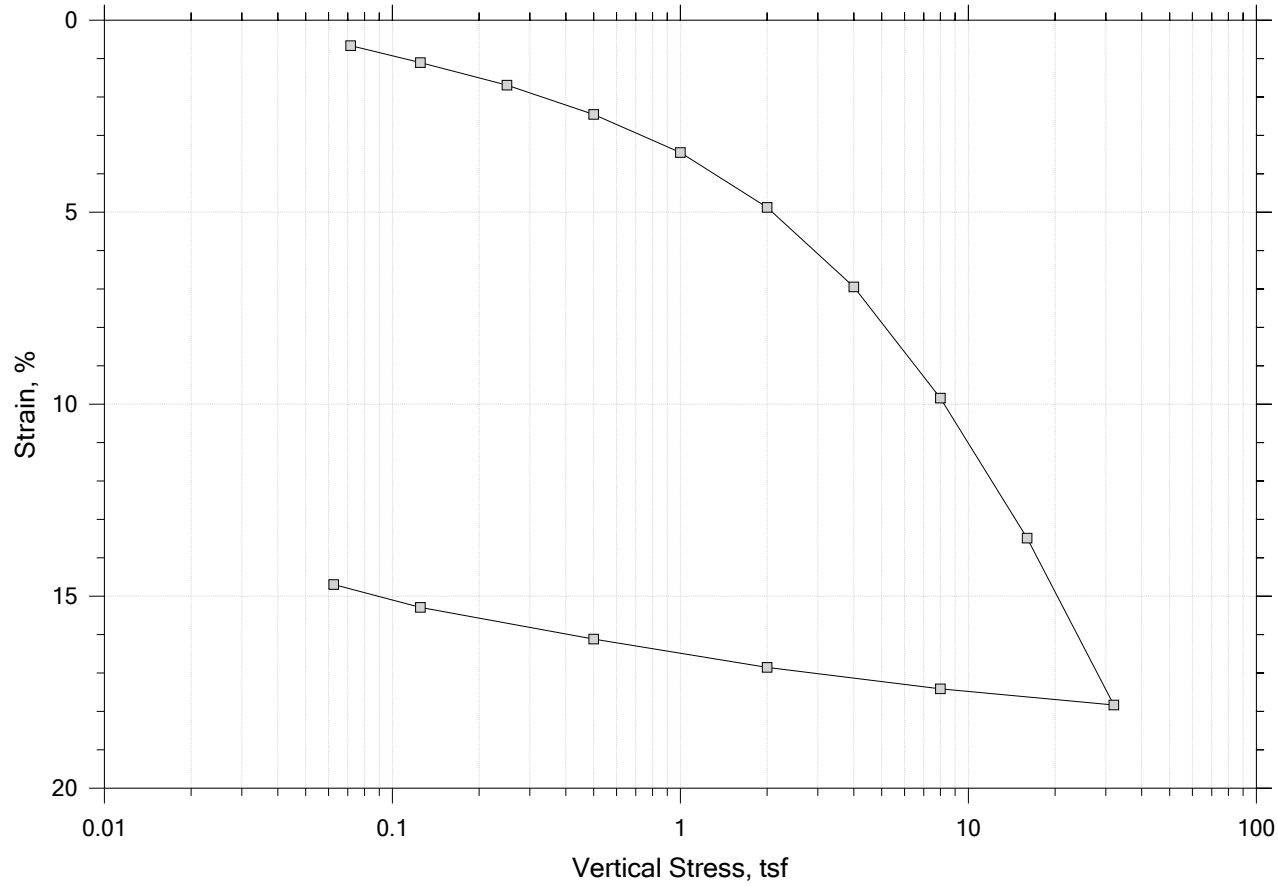
Square Root of Time Coefficients

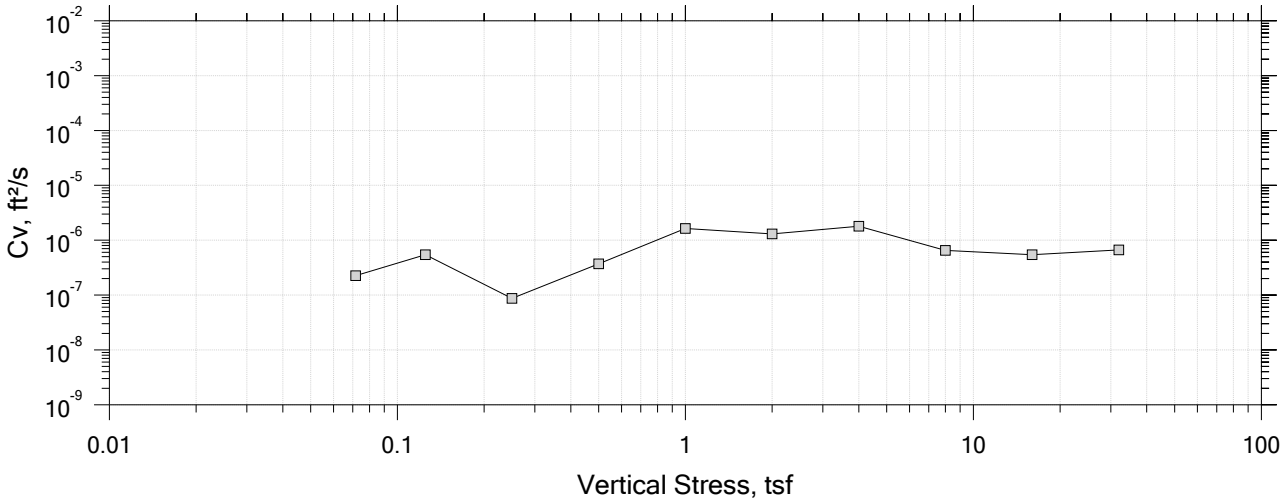
Step	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	Sq.Rt. T90 min	Cv ft²/s	Mv 1/tsf	k ft/day
1	0.0681	0.01724	1.61	1.72	11.235	2.15e-06	2.53e-01	1.46e-03
2	0.125	0.03101	1.58	3.10	30.010	7.79e-07	2.42e-01	5.08e-04
3	0.250	0.05252	1.52	5.25	15.043	1.50e-06	1.72e-01	6.95e-04
4	0.500	0.07818	1.45	7.82	14.890	1.44e-06	1.03e-01	3.98e-04
5	1.00	0.1077	1.37	10.8	24.725	8.17e-07	5.90e-02	1.30e-04
6	2.00	0.1443	1.28	14.4	15.174	1.24e-06	3.66e-02	1.22e-04
7	4.00	0.1837	1.17	18.4	21.371	8.02e-07	1.97e-02	4.26e-05
8	8.00	0.2255	1.06	22.6	14.991	1.04e-06	1.05e-02	2.92e-05
9	16.0	0.2699	0.941	27.0	15.800	8.79e-07	5.55e-03	1.32e-05
10	32.0	0.3154	0.820	31.5	14.438	8.50e-07	2.85e-03	6.53e-06
11	8.00	0.3103	0.834	31.0	42.571	2.72e-07	2.15e-04	1.58e-07
12	2.00	0.3020	0.856	30.2	38.421	3.07e-07	1.38e-03	1.14e-06
13	0.500	0.2929	0.880	29.3	46.081	2.63e-07	6.08e-03	4.31e-06
14	0.125	0.2838	0.904	28.4	109.804	1.13e-07	2.41e-02	7.37e-06
15	0.0625	0.2791	0.917	27.9	329.908	3.84e-08	7.59e-02	7.86e-06

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-114SPT	Tested By: md	Checked By: anm
	Sample No.: 17.5-19.5191008	Test Date: 11/30/19	Depth: ---
	Test No.: IP-2	Sample Type: intact	Elevation: ---
	Description: Wet, gray clay with silt		
	Remarks: System X, Swell Pressure = 0.0681 tsf		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Summary Report





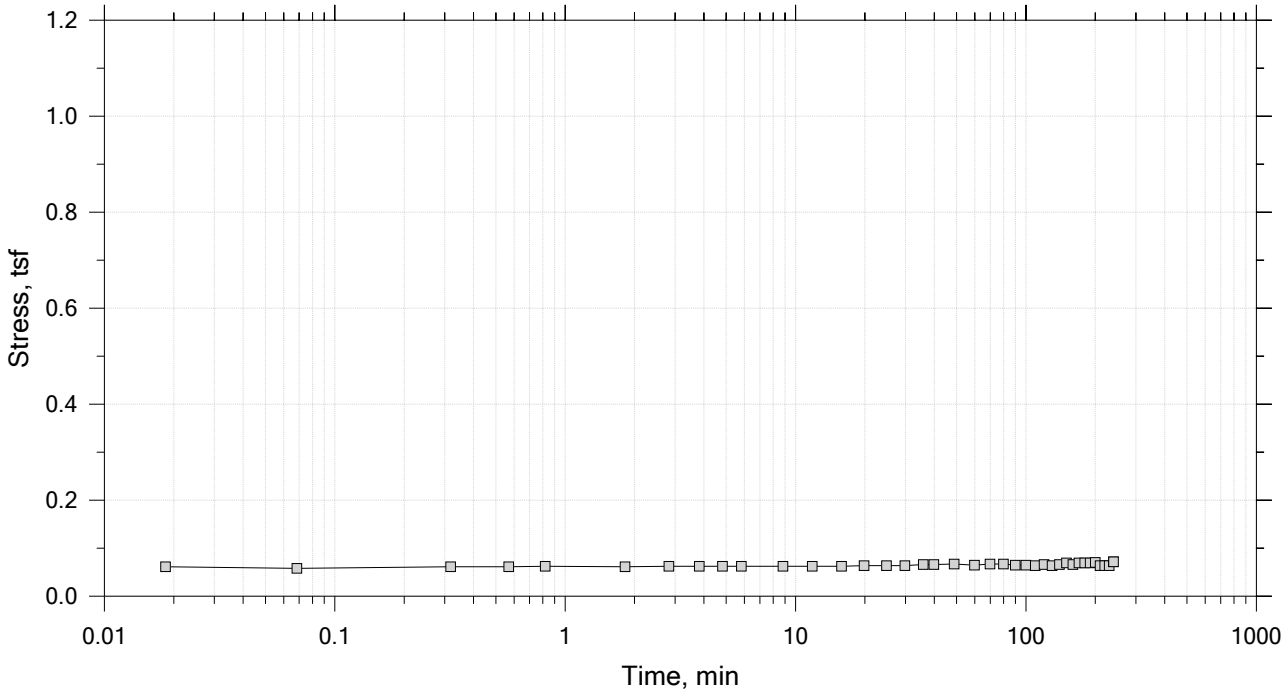
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		
	Displacement at End of Increment		

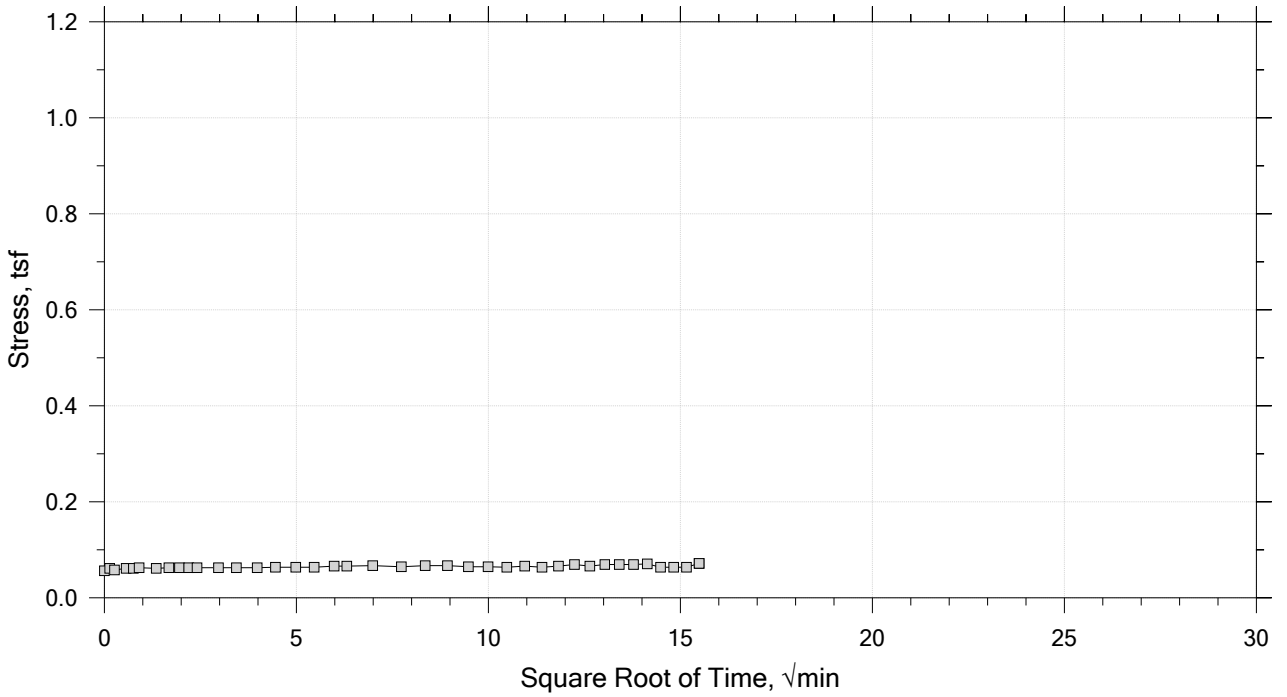
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 1 of 15

Constant Volume Step

Stress: 0.0716 tsf





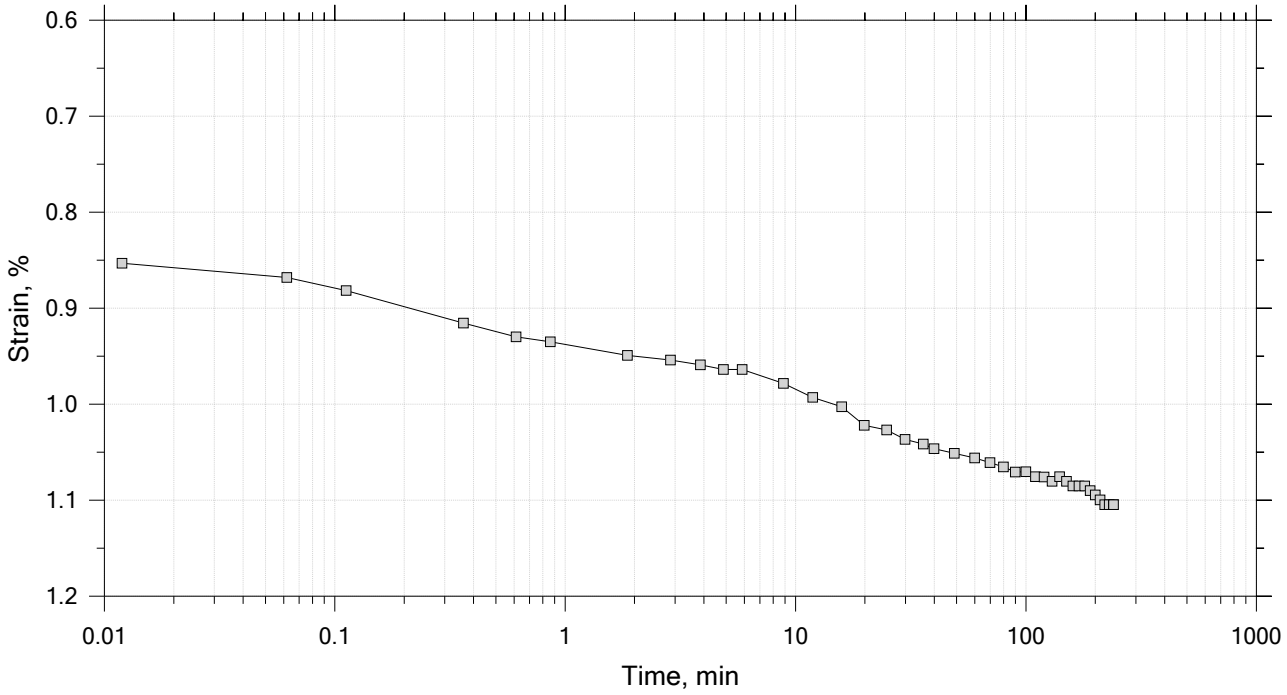
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

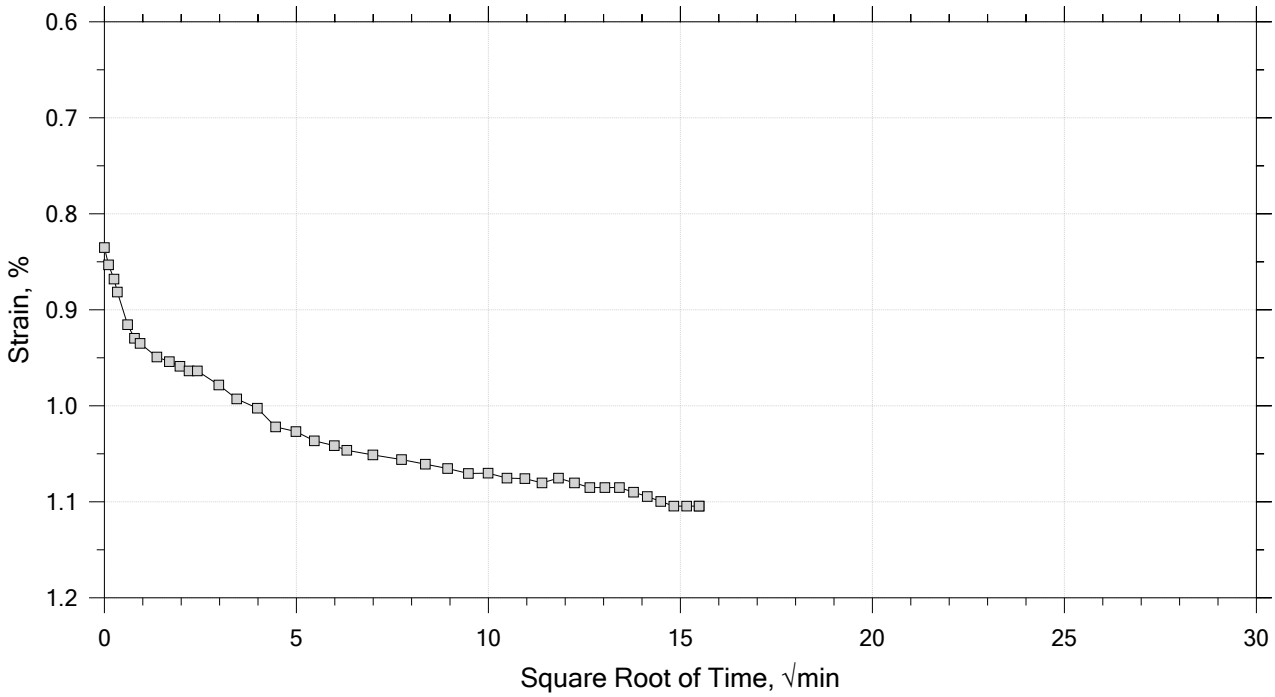
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 2 of 15

Constant Load Step

Stress: 0.125 tsf





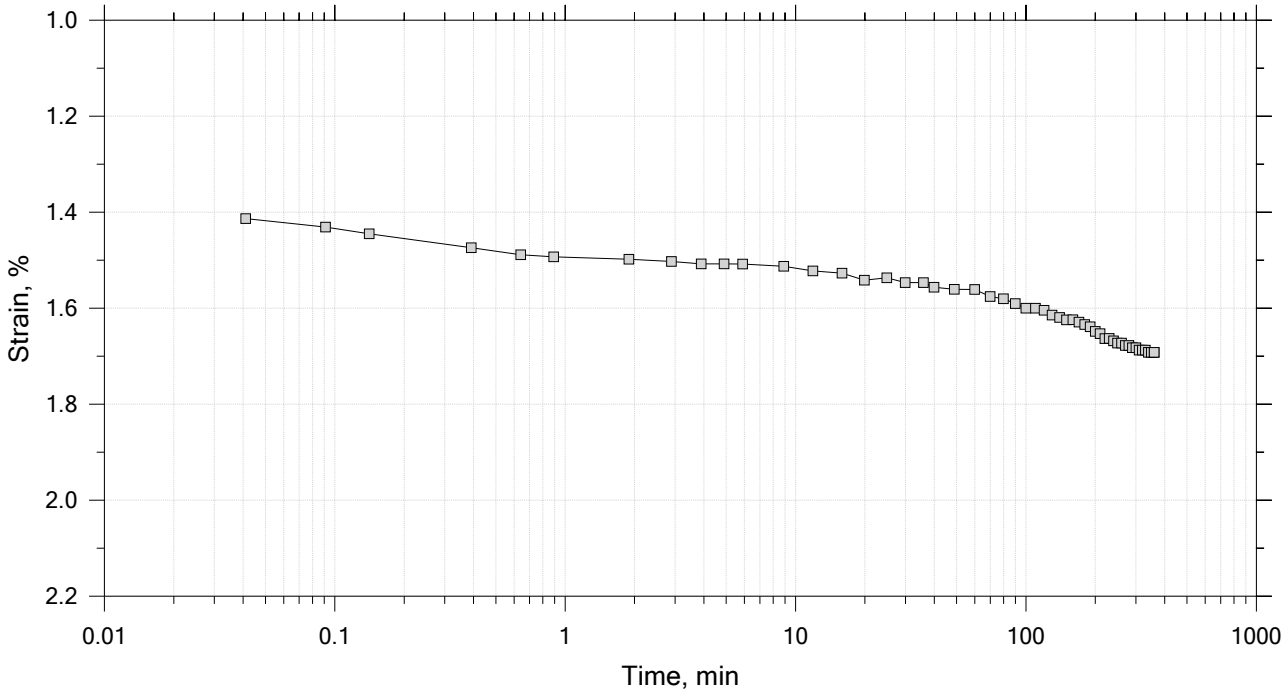
Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
Test No.: IP-1	Sample Type: intact	Elevation: ---
Description: Moist, dark gray sandy silt		
Remarks: System JJ, Swell Pressure = 0.0716 tsf		

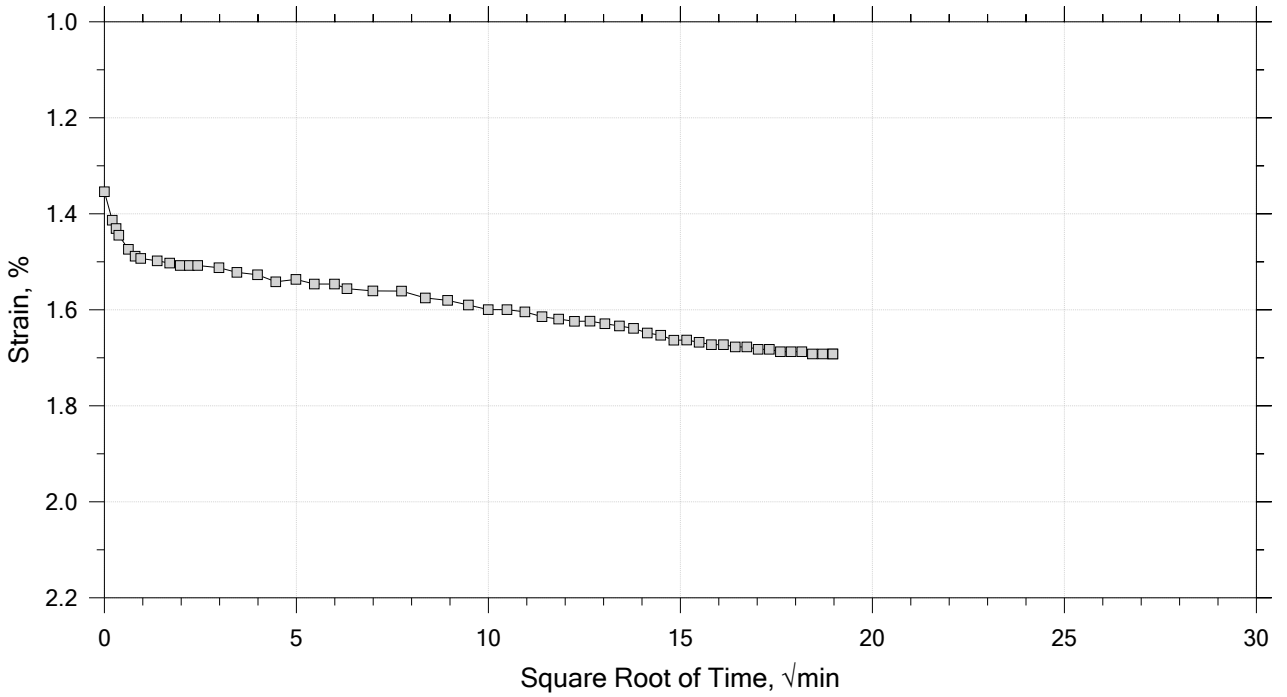
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 3 of 15

Constant Load Step

Stress: 0.25 tsf





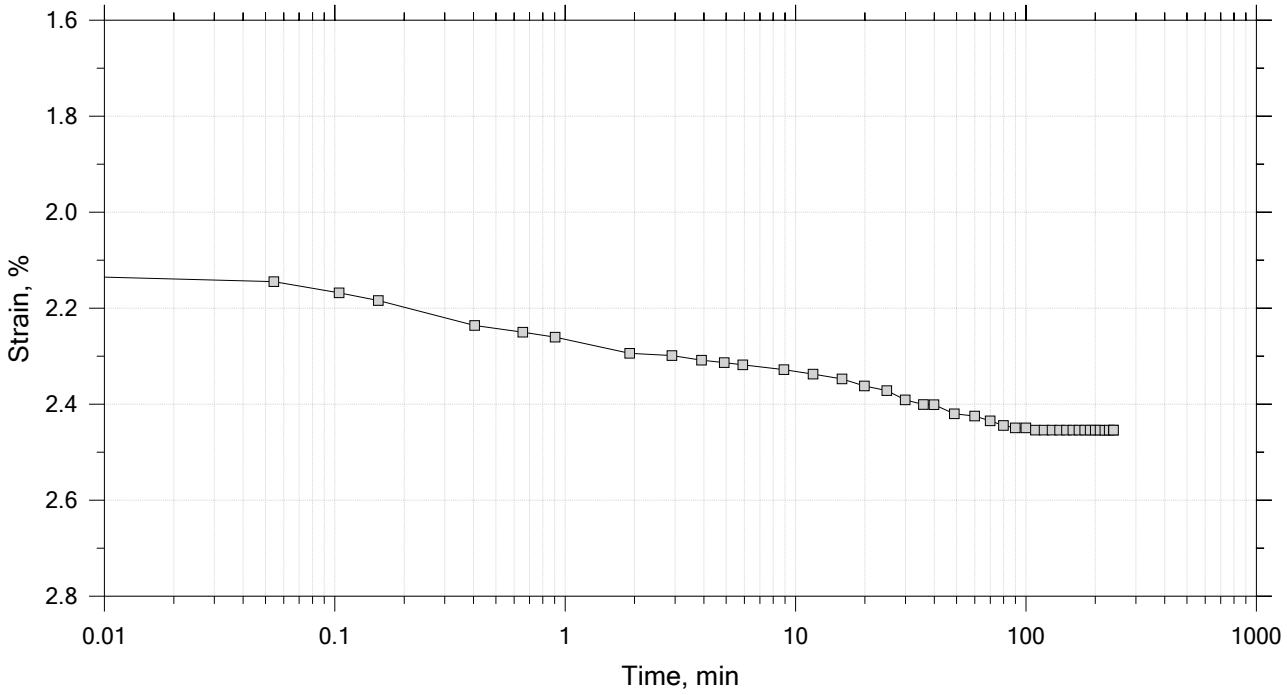
Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
Test No.: IP-1	Sample Type: intact	Elevation: ---
Description: Moist, dark gray sandy silt		
Remarks: System JJ, Swell Pressure = 0.0716 tsf		

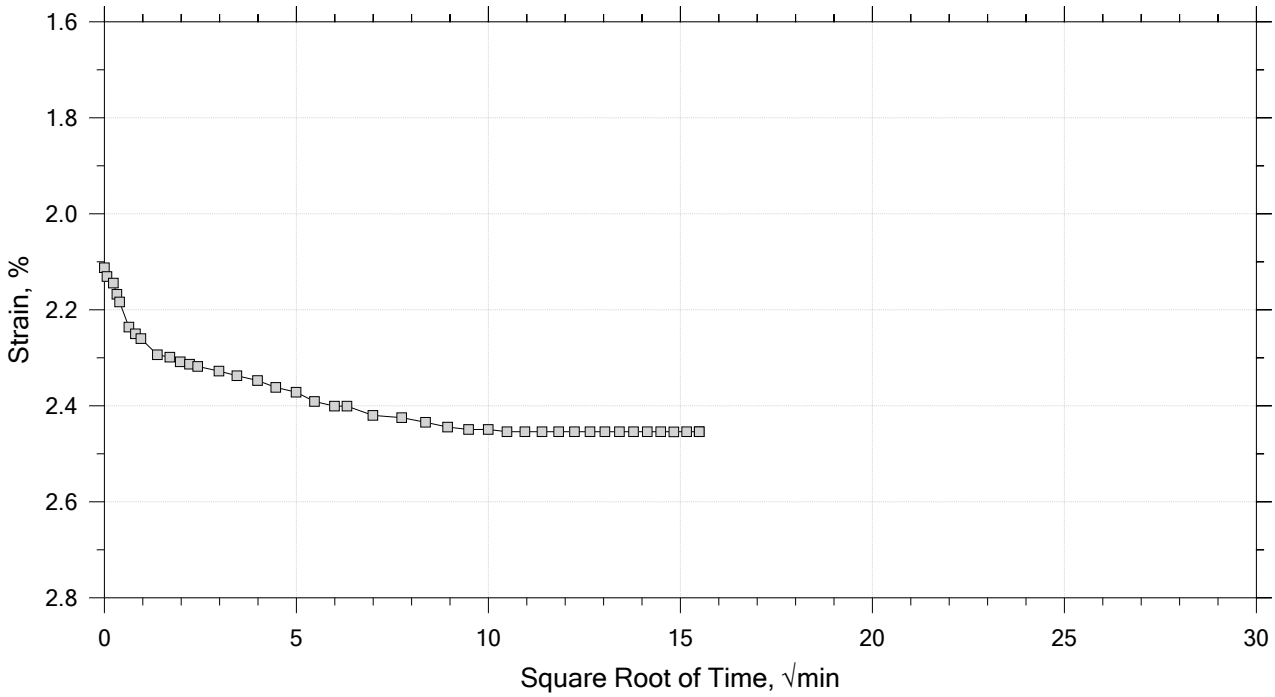
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 4 of 15

Constant Load Step

Stress: 0.5 tsf





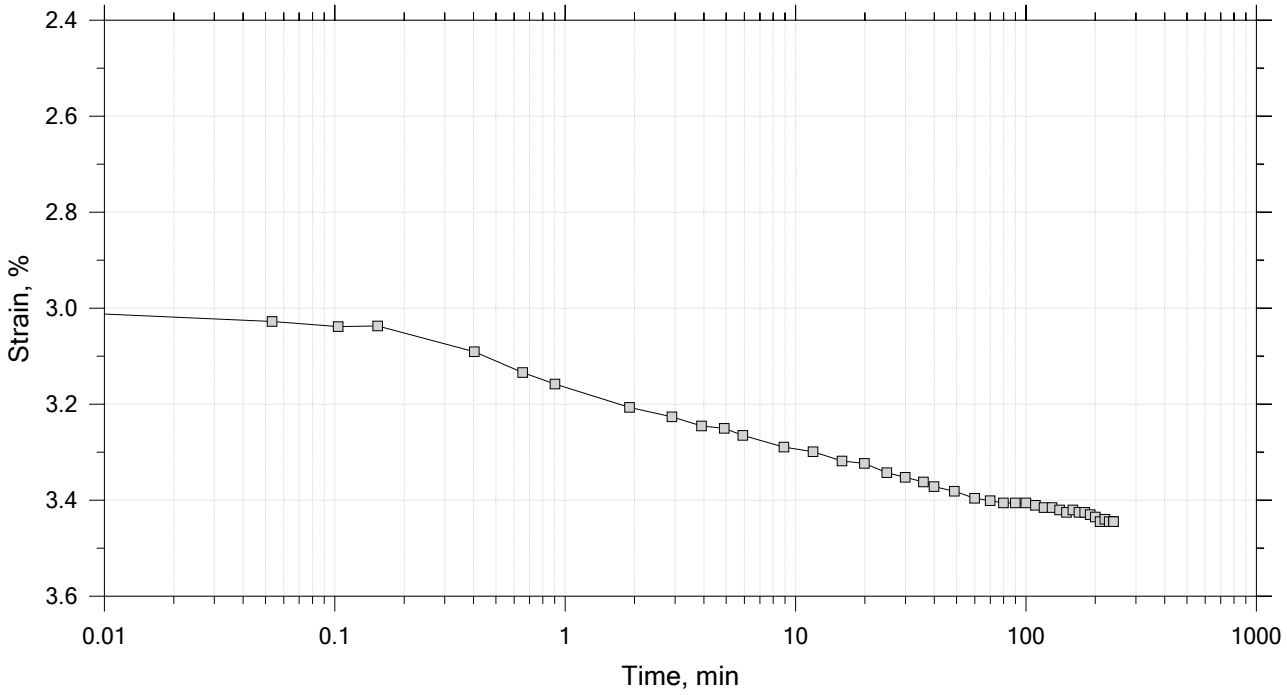
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

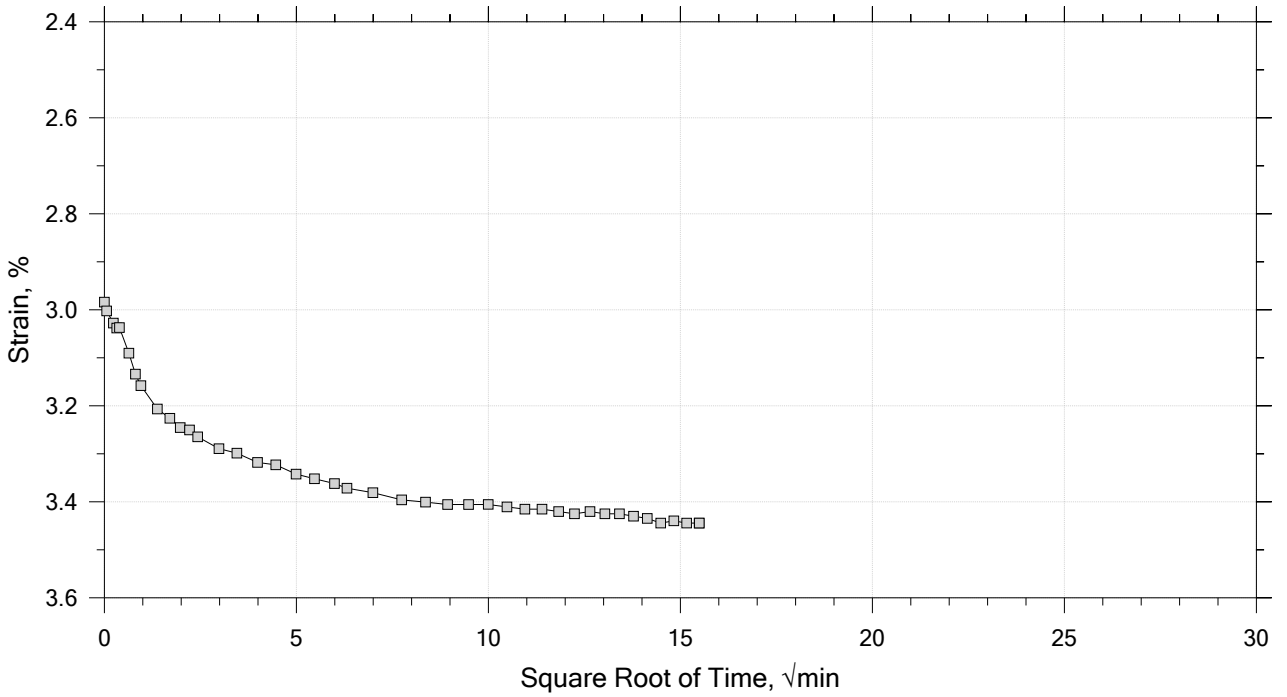
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 5 of 15

Constant Load Step

Stress: 1 tsf





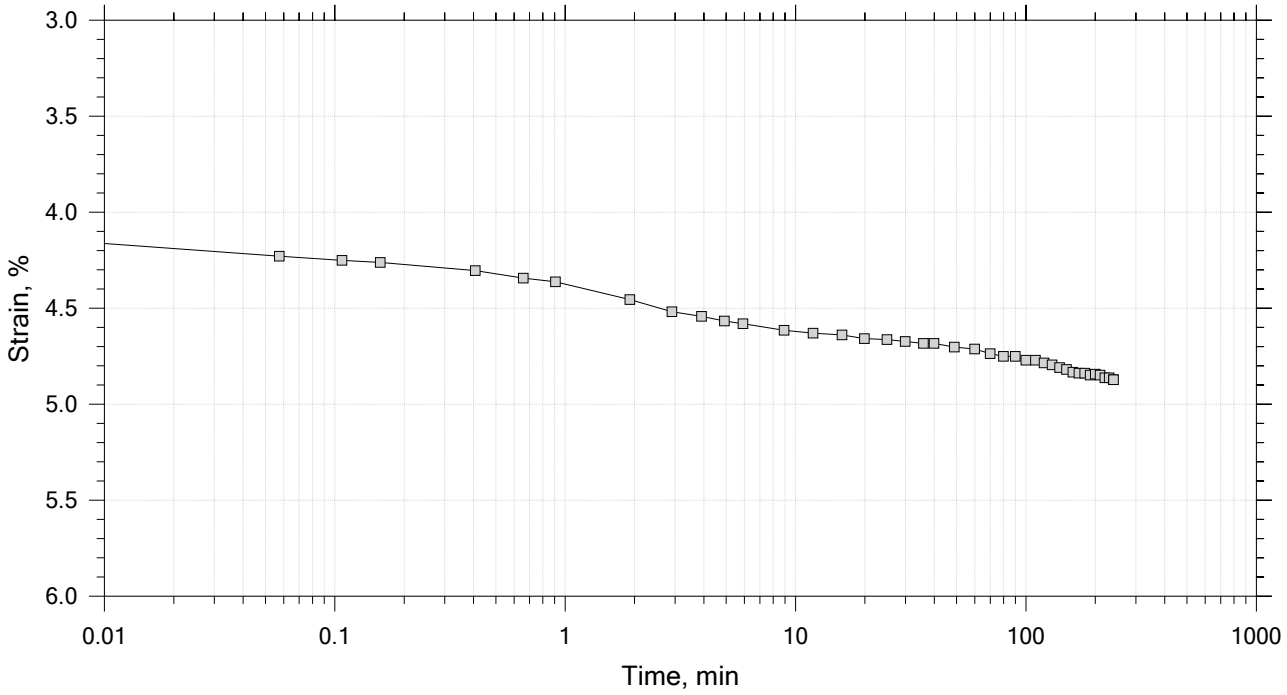
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

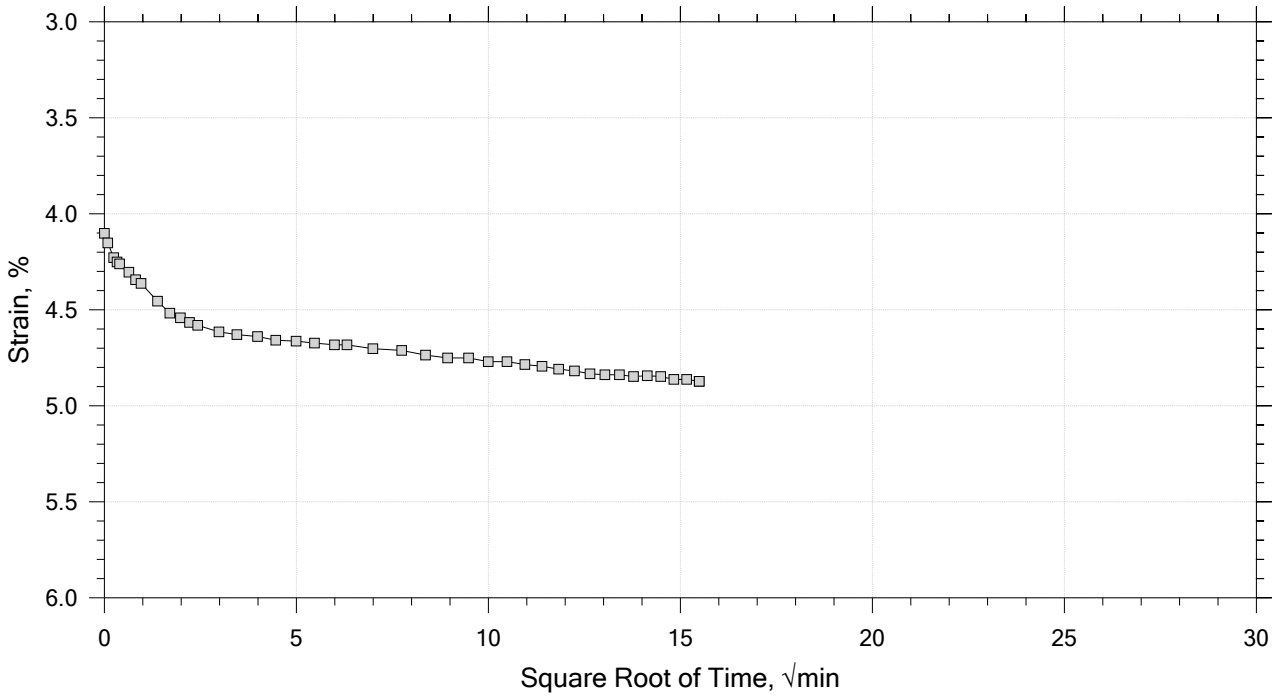
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 6 of 15

Constant Load Step

Stress: 2 tsf





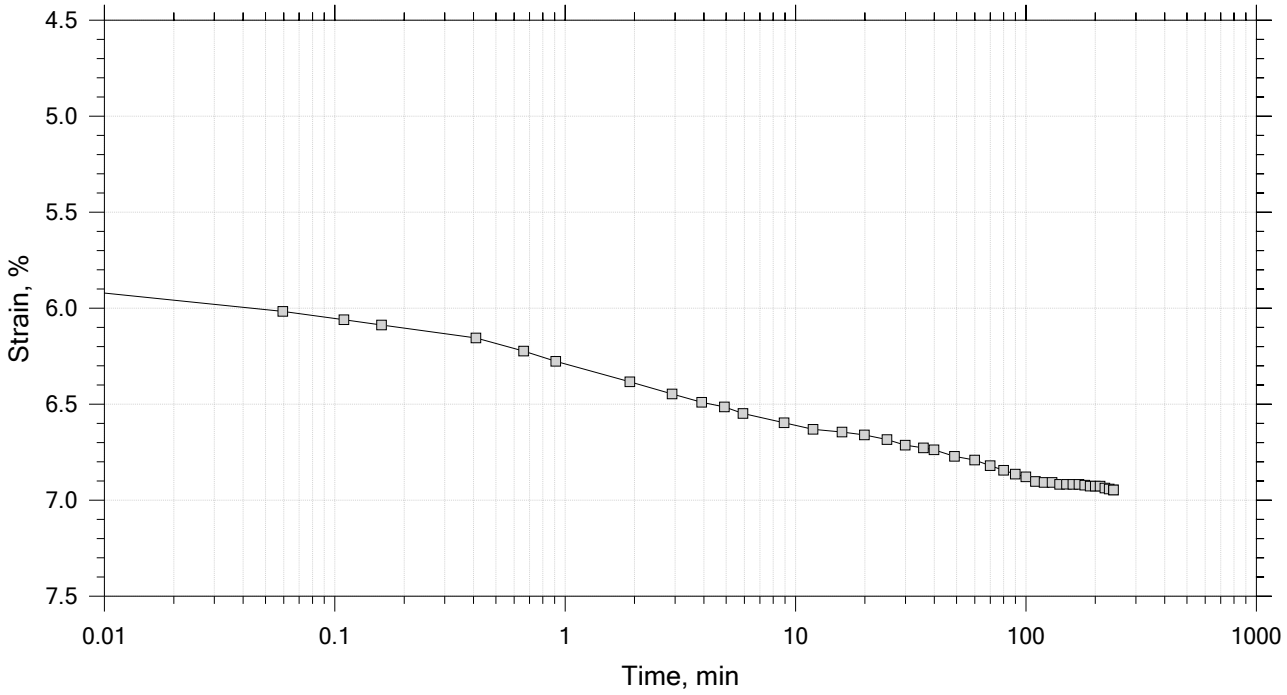
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

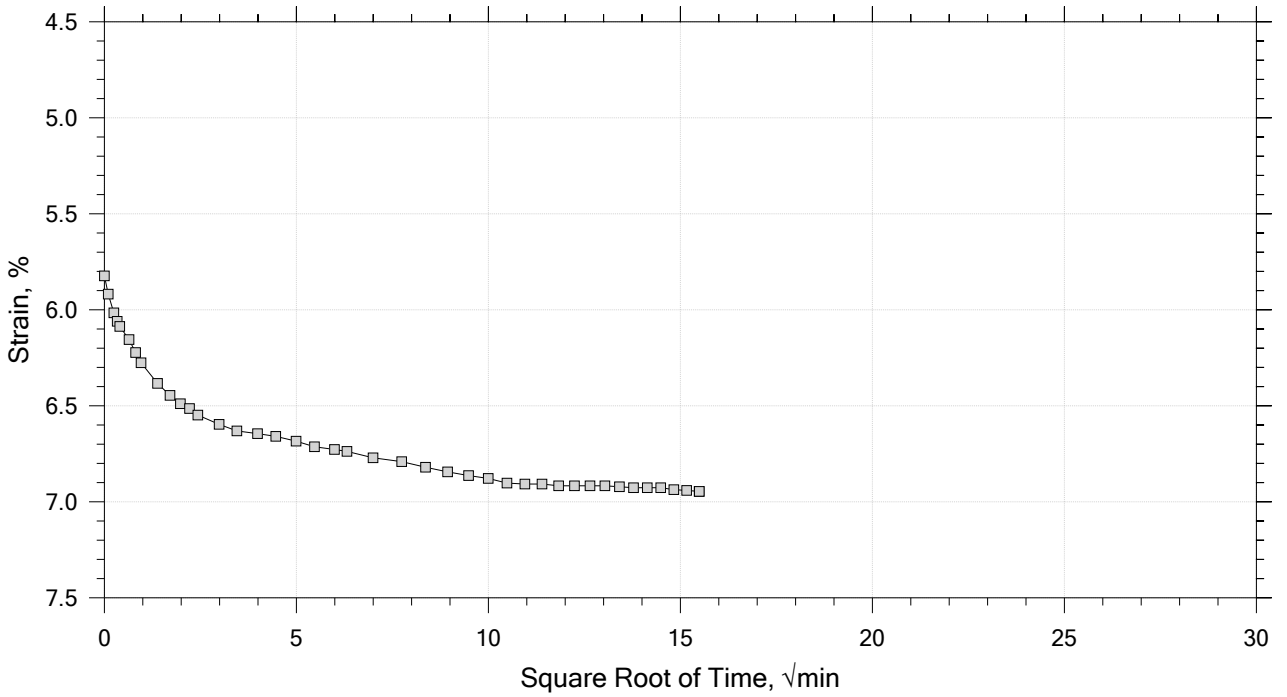
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 7 of 15

Constant Load Step

Stress: 4 tsf





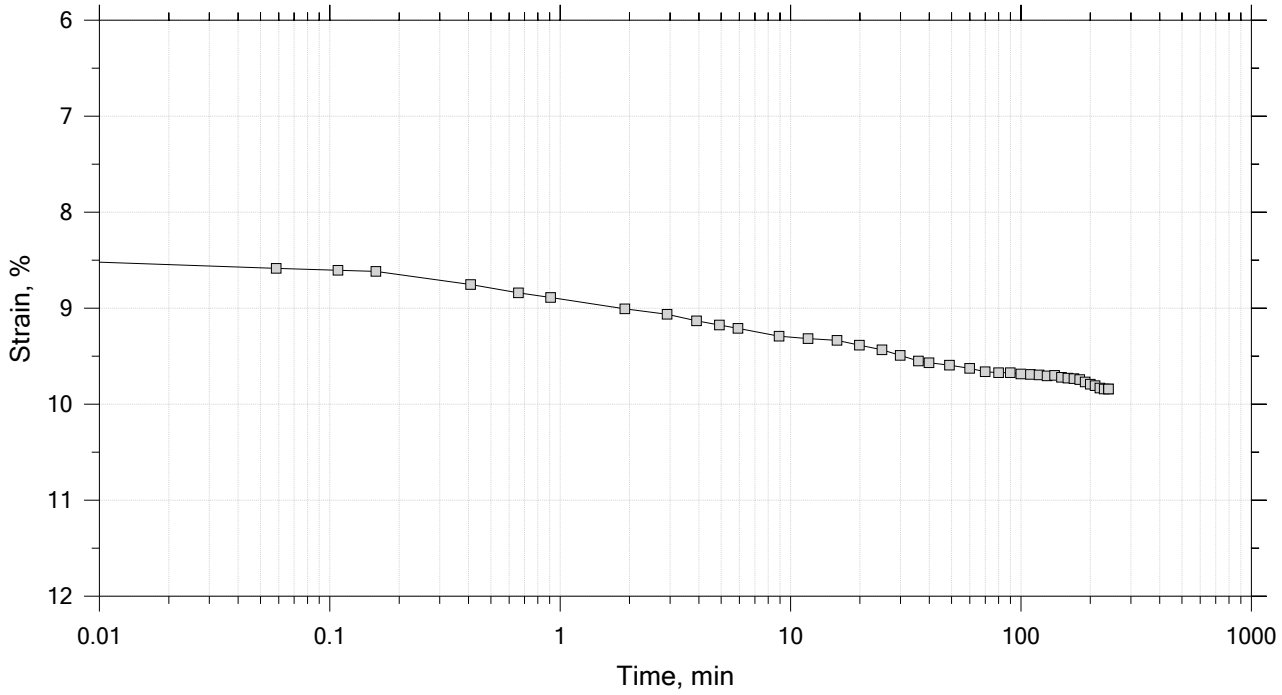
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

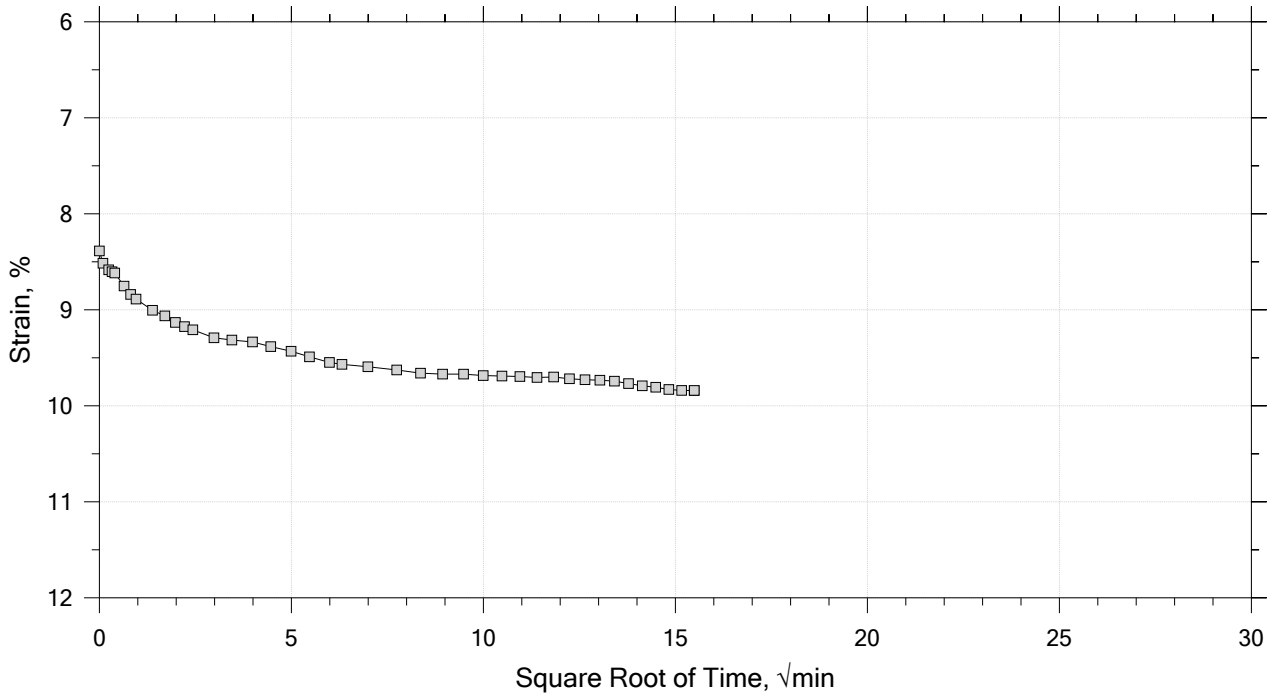
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 8 of 15

Constant Load Step

Stress: 8 tsf





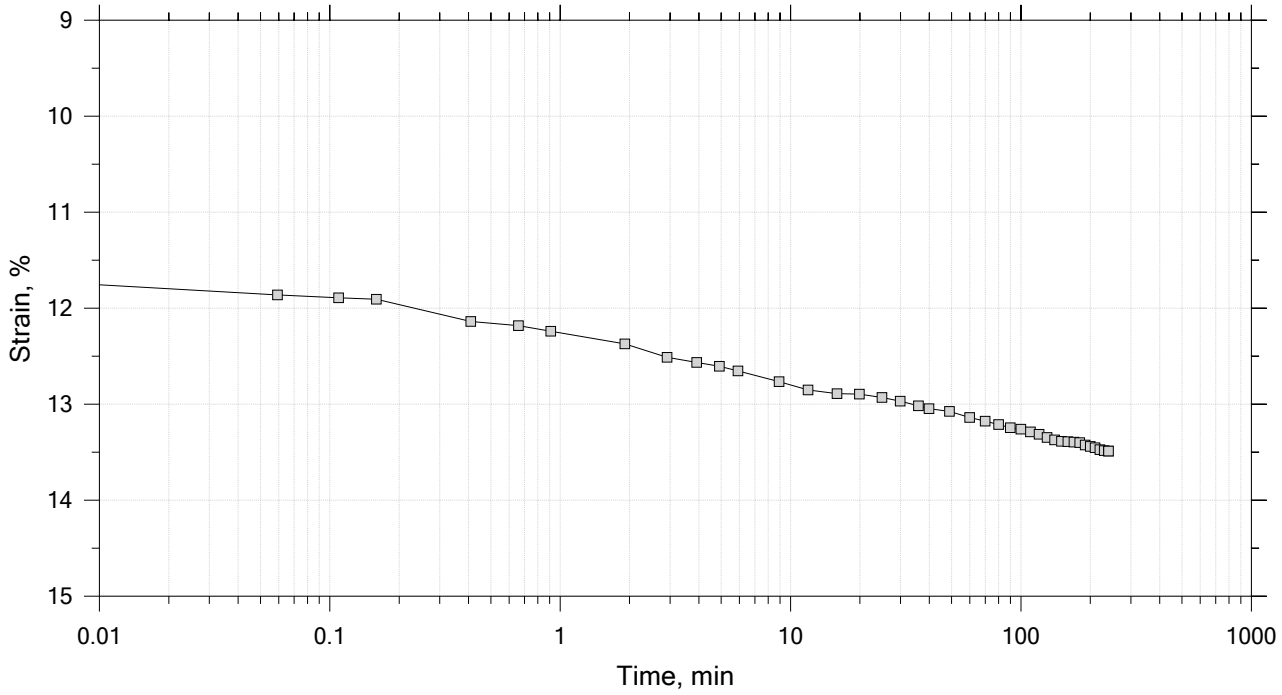
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

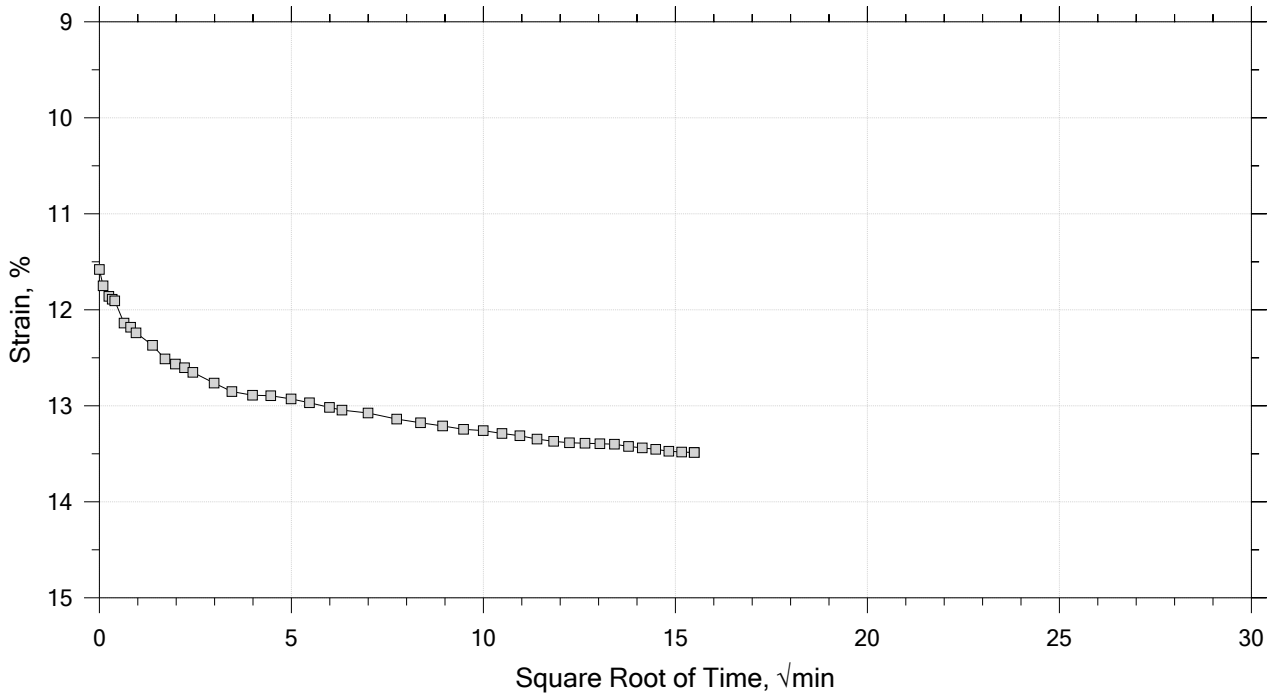
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 9 of 15

Constant Load Step

Stress: 16 tsf





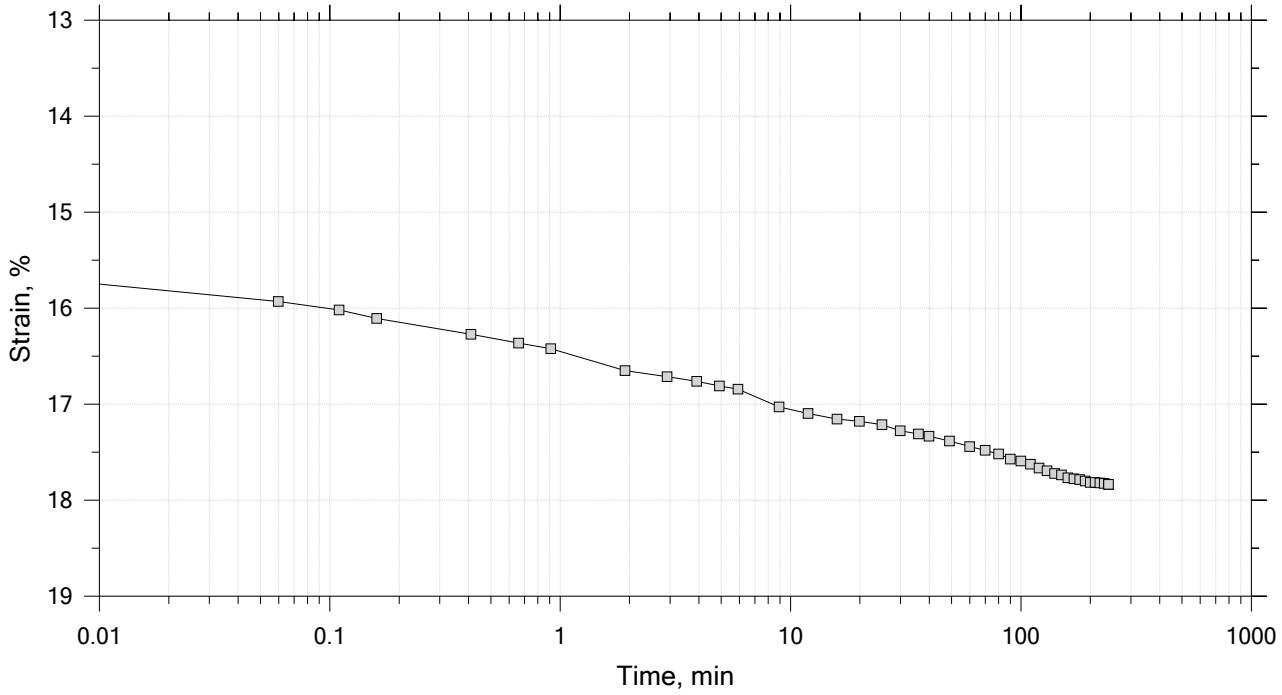
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

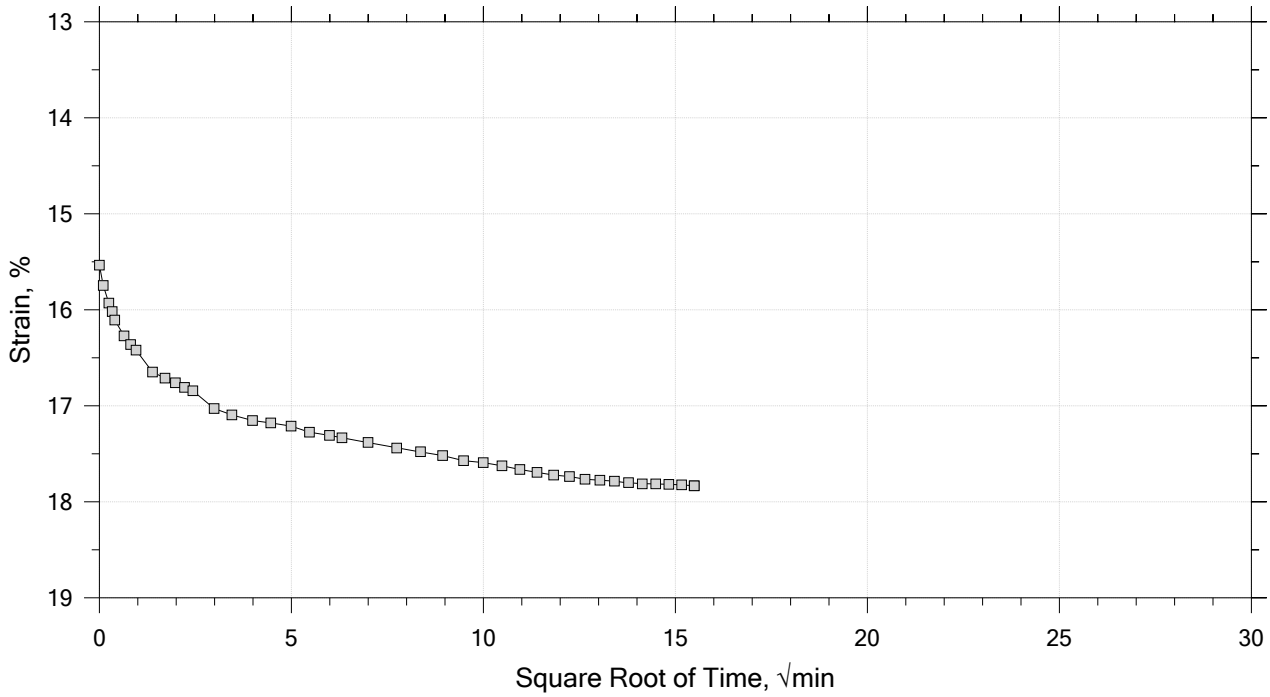
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 10 of 15

Constant Load Step

Stress: 32 tsf

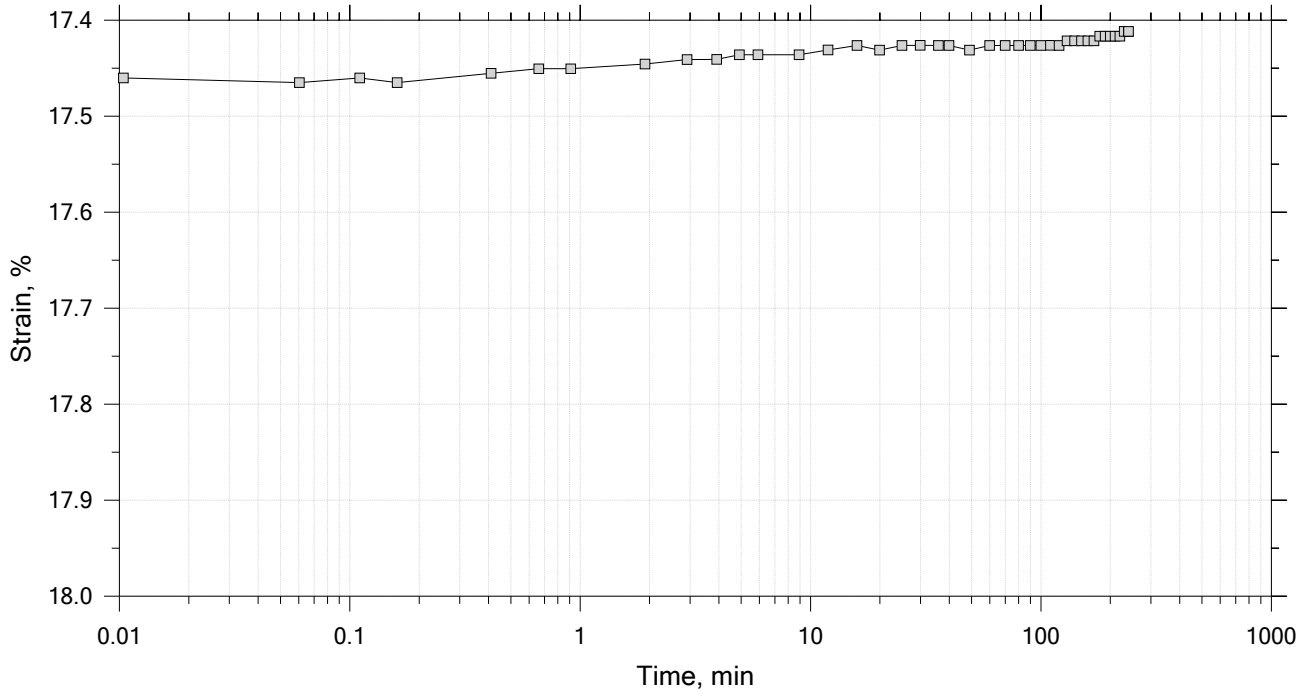


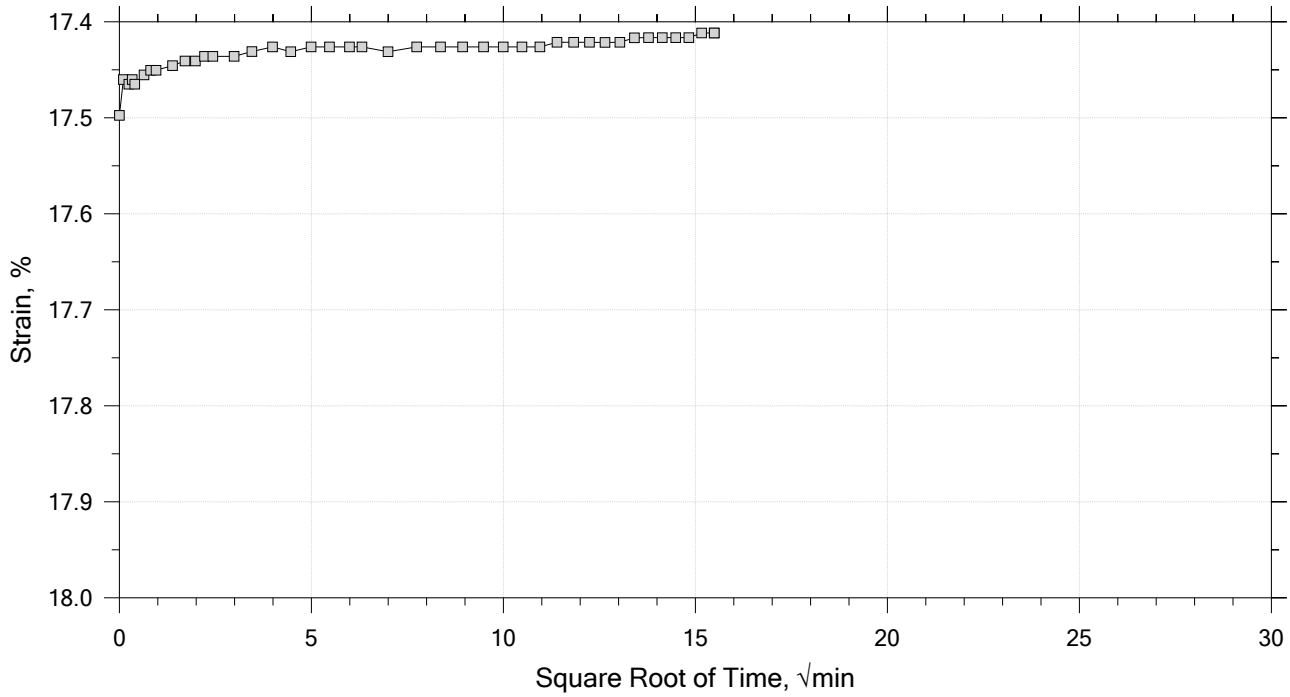


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 11 of 15
Constant Load Step
Stress: 8 tsf

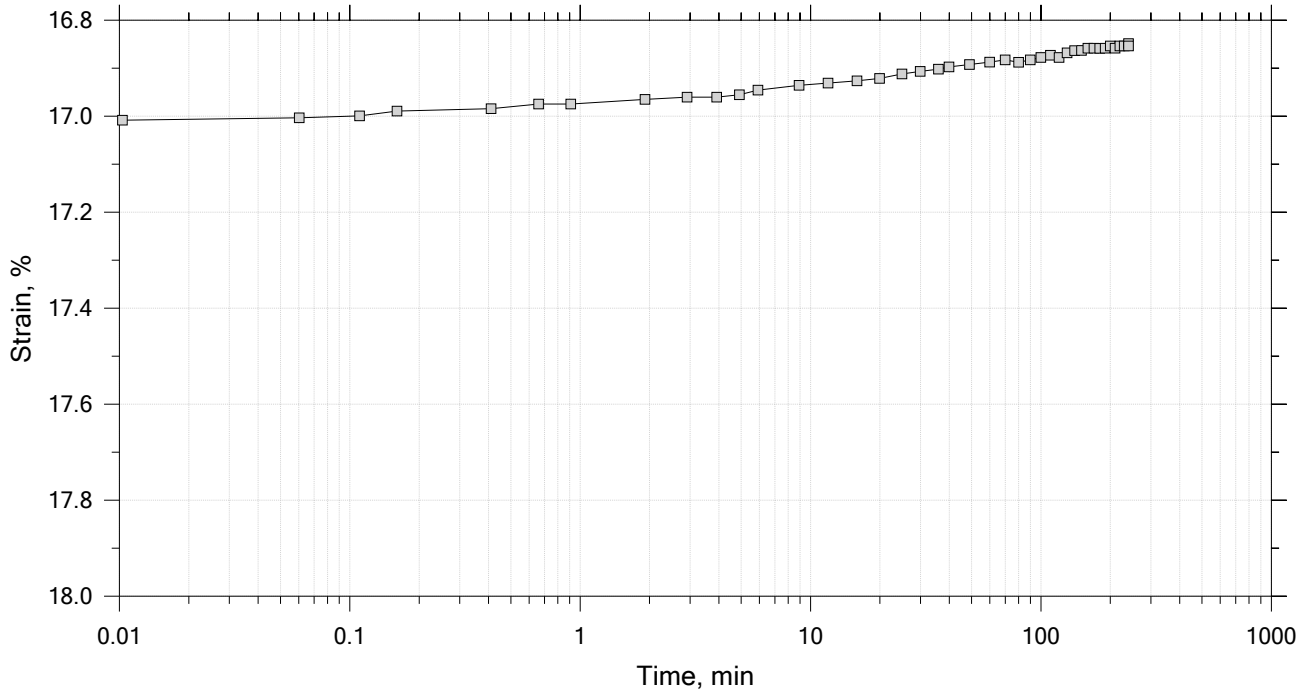


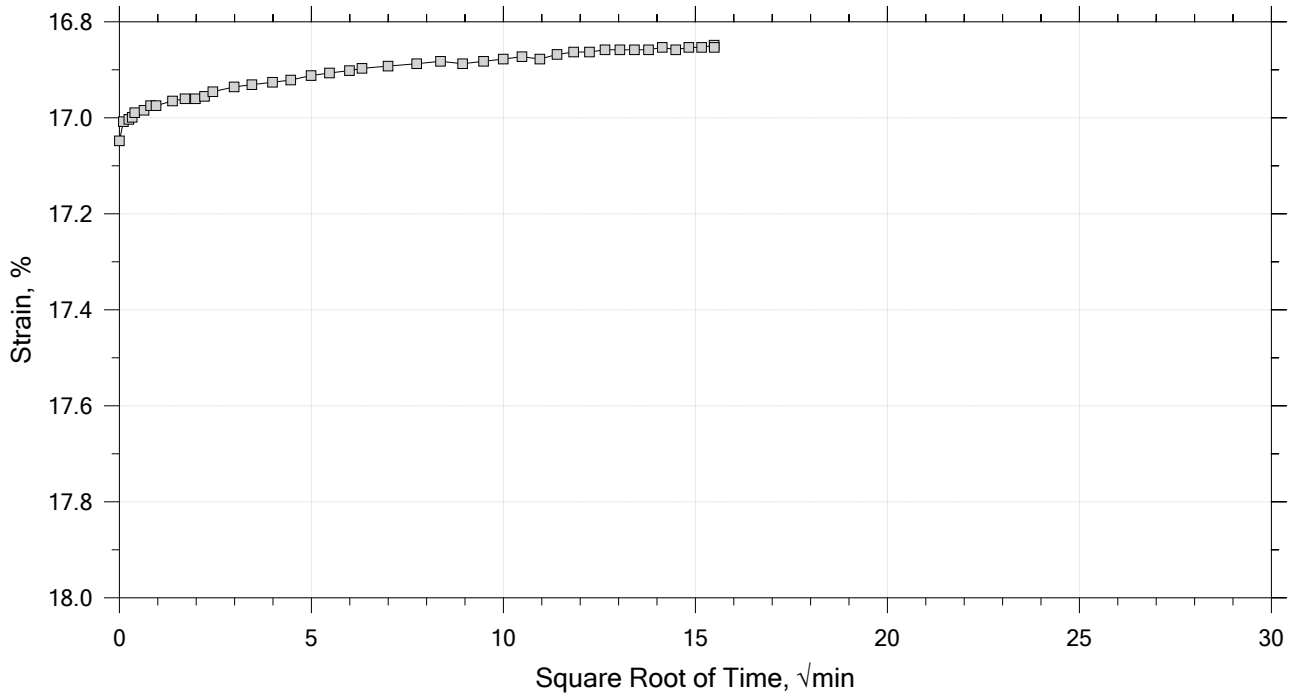


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 12 of 15
Constant Load Step
Stress: 2 tsf

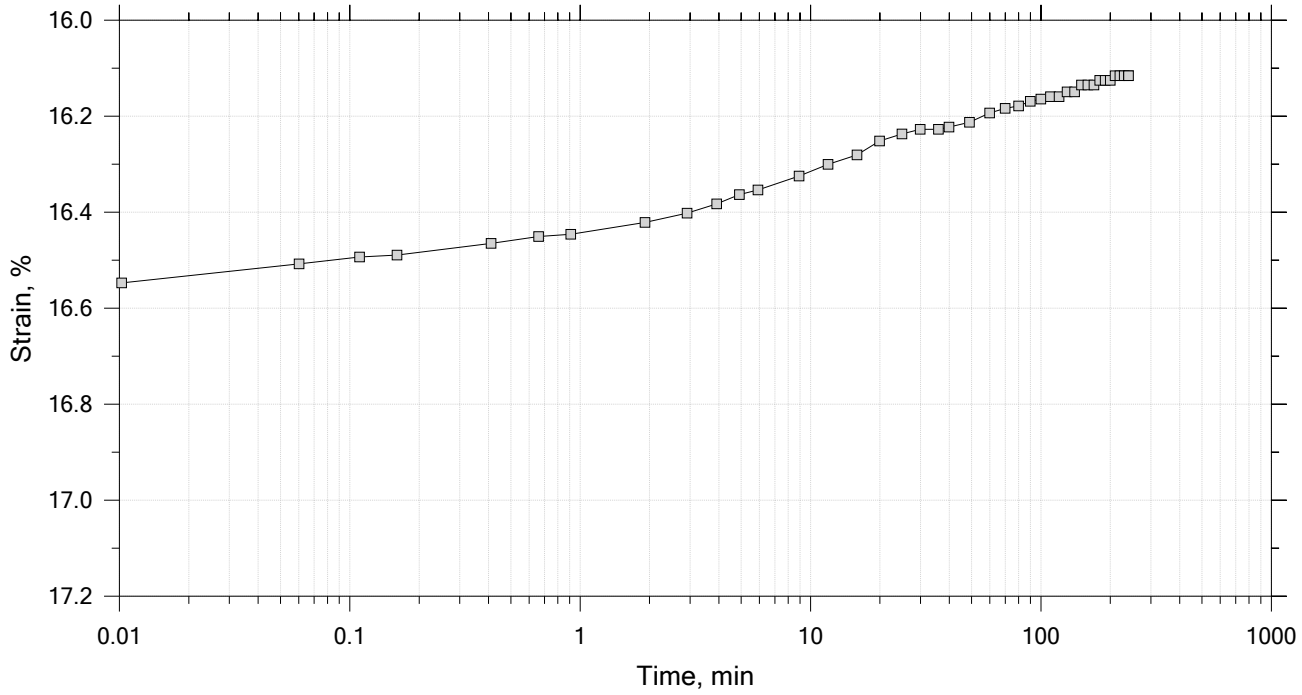


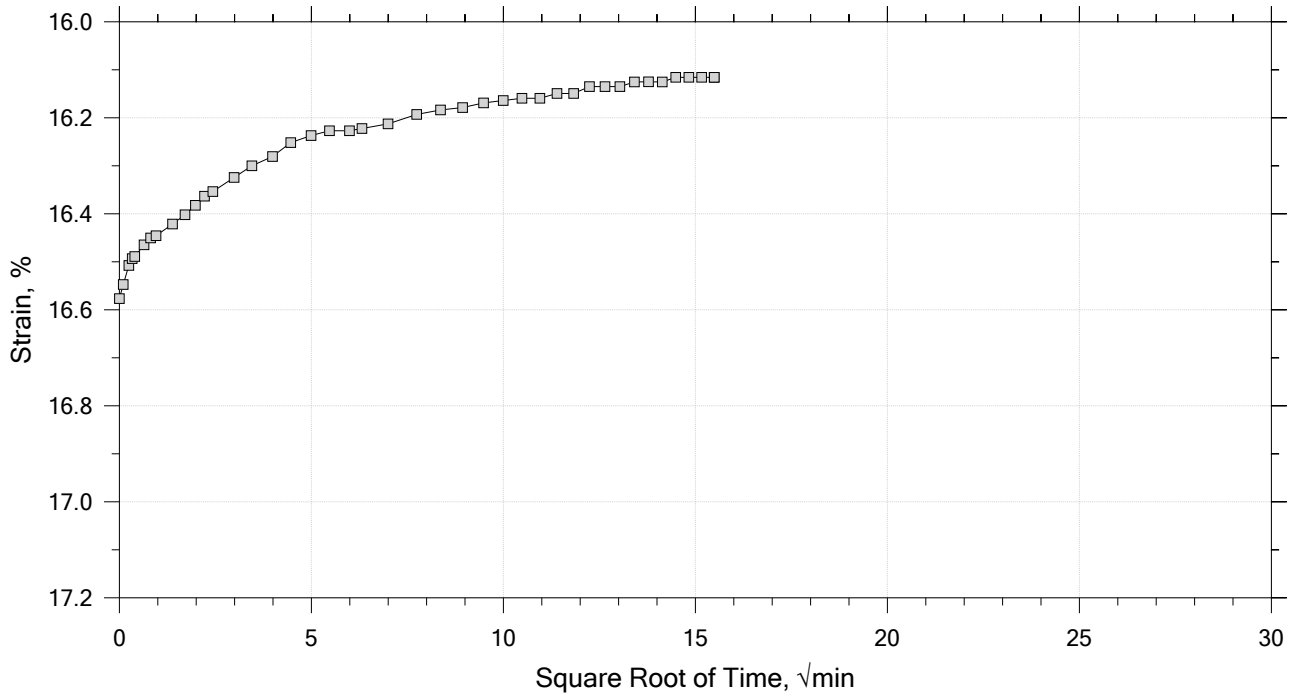


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 13 of 15
Constant Load Step
Stress: 0.5 tsf

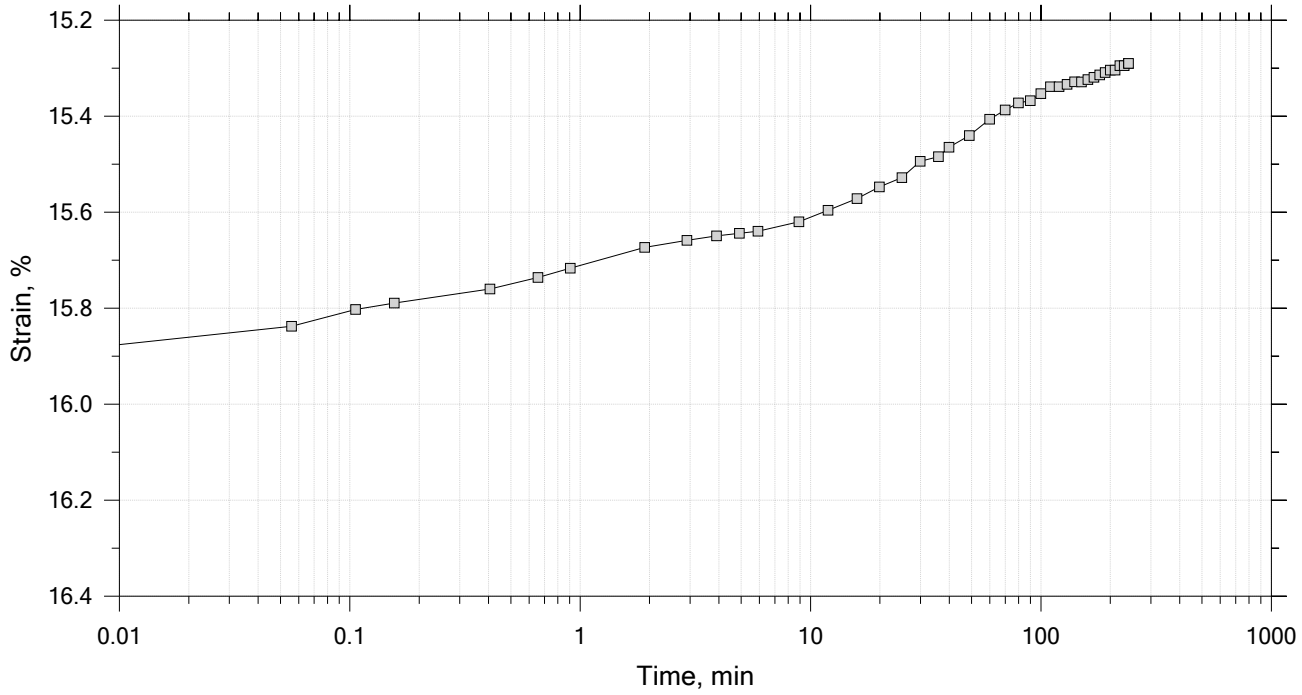


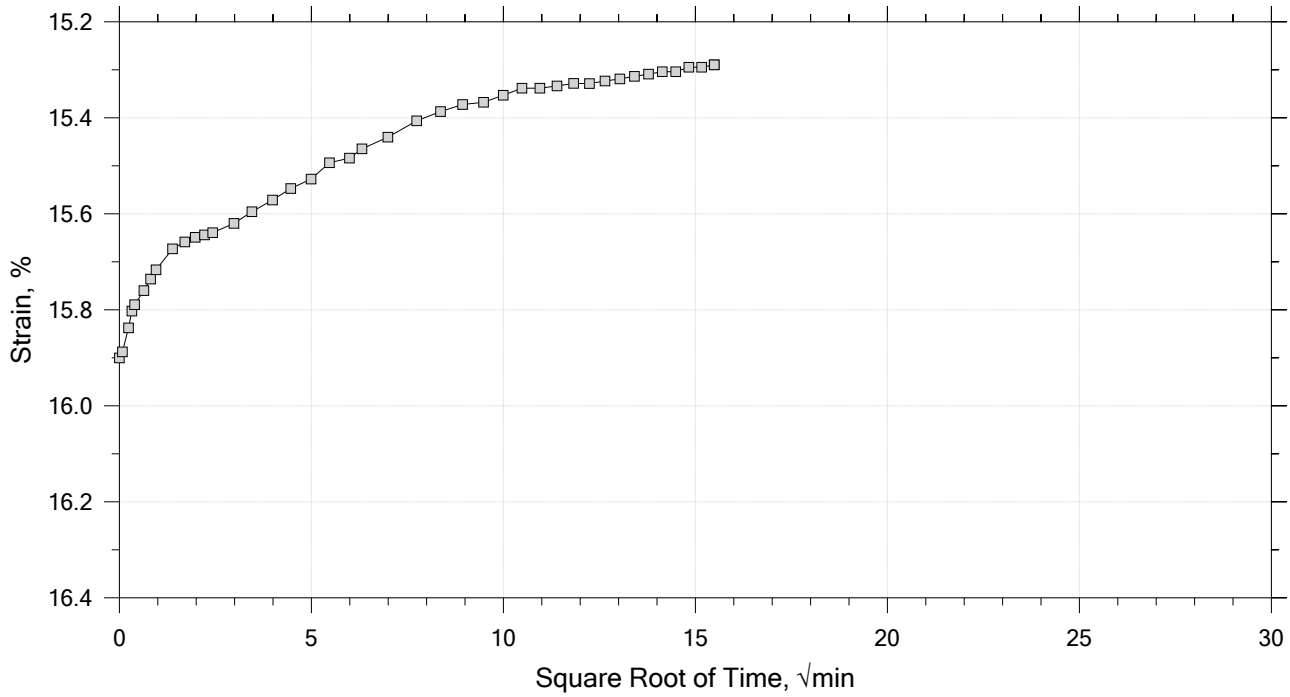


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 14 of 15
Constant Load Step
Stress: 0.125 tsf

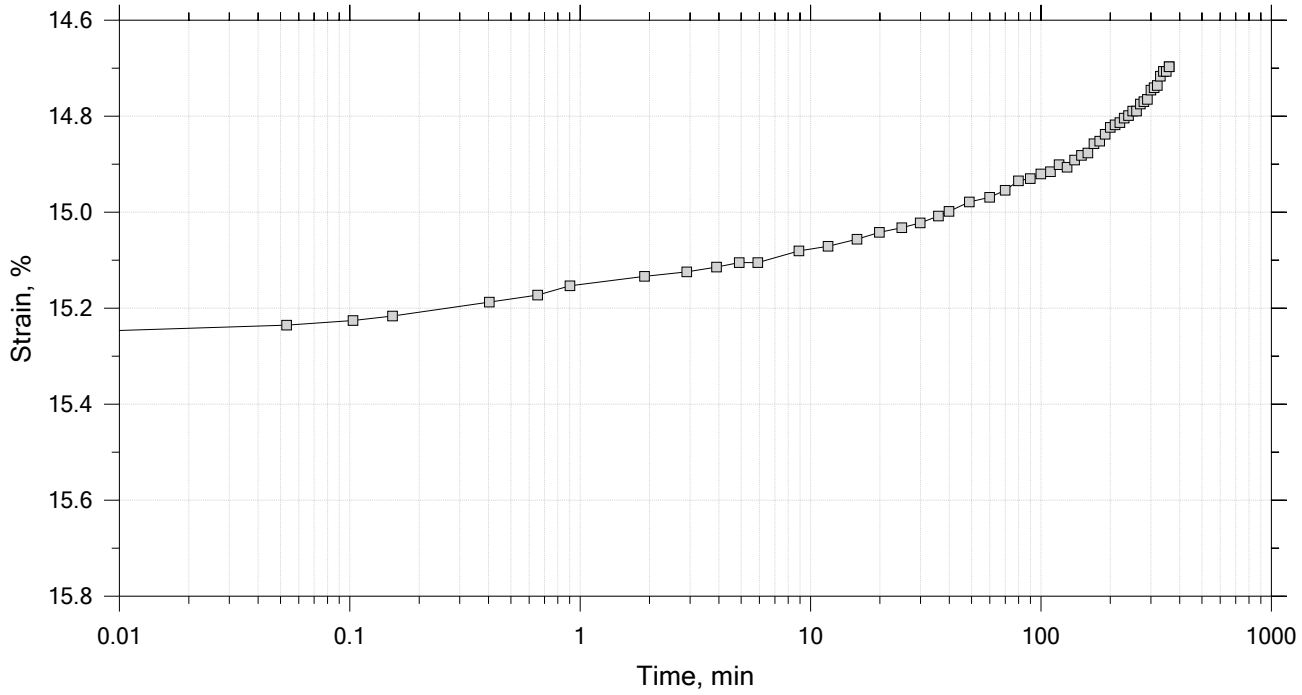


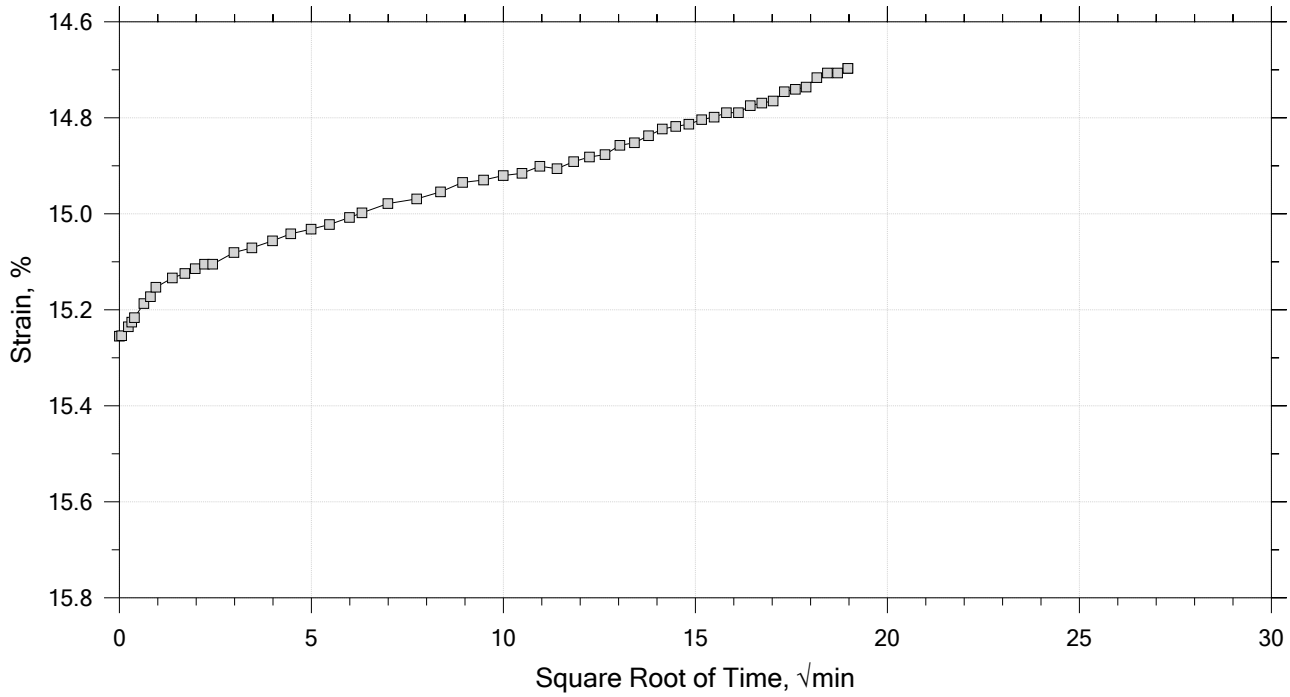


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 15 of 15
Constant Load Step
Stress: 0.0625 tsf





Project: Gasco PDI	Location: ---	Project No.: GTX-310685
Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
Test No.: IP-1	Sample Type: intact	Elevation: ---
Description: Moist, dark gray sandy silt		
Remarks: System JJ, Swell Pressure = 0.0716 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Specimen Diameter: 2.50 in	Estimated Specific Gravity: 2.68	Liquid Limit: ---
Initial Height: 1.00 in	Initial Void Ratio: 1.11	Plastic Limit: ---
Final Height: 0.83 in	Final Void Ratio: 0.747	Plasticity Index: ---

	Before Test Trimmings	Before Test Specimen	After Test Specimen	After Test Trimmings
Container ID	B2573	RING		A-2270
Mass Container, gm	9.15	108.66	108.66	8.22
Mass Container + Wet Soil, gm	125.7	252.46	239.45	139.71
Mass Container + Dry Soil, gm	92.66	210.89	210.89	111
Mass Dry Soil, gm	83.51	102.23	102.23	102.78
Water Content, %	39.56	40.66	27.93	27.93
Void Ratio	---	1.11	0.75	---
Degree of Saturation, %	---	98.43	100.00	---
Dry Unit Weight, pcf	---	79.341	95.592	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Log of Time Coefficients

Step	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	Log T50 min	Cv ft²/s	Mv 1/tsf	k ft/day	Ca %
1	0.0716	0.006595	1.09	0.659	0.000	0.00e+00	9.21e-02	0.00e+00	0.00e+00
2	0.125	0.01105	1.08	1.10	0.000	0.00e+00	8.33e-02	0.00e+00	0.00e+00
3	0.250	0.01692	1.07	1.69	0.000	0.00e+00	4.70e-02	0.00e+00	0.00e+00
4	0.500	0.02454	1.05	2.45	0.000	0.00e+00	3.05e-02	0.00e+00	0.00e+00
5	1.00	0.03445	1.03	3.44	0.000	0.00e+00	1.98e-02	0.00e+00	0.00e+00
6	2.00	0.04872	1.00	4.87	0.000	0.00e+00	1.43e-02	0.00e+00	0.00e+00
7	4.00	0.06946	0.959	6.95	0.000	0.00e+00	1.04e-02	0.00e+00	0.00e+00
8	8.00	0.09841	0.898	9.84	0.000	0.00e+00	7.24e-03	0.00e+00	0.00e+00
9	16.0	0.1349	0.821	13.5	0.000	0.00e+00	4.56e-03	0.00e+00	0.00e+00
10	32.0	0.1783	0.730	17.8	0.000	0.00e+00	2.72e-03	0.00e+00	0.00e+00
11	8.00	0.1741	0.739	17.4	0.000	0.00e+00	1.76e-04	0.00e+00	0.00e+00
12	2.00	0.1685	0.751	16.9	0.000	0.00e+00	9.30e-04	0.00e+00	0.00e+00
13	0.500	0.1612	0.766	16.1	5.549	7.16e-07	4.92e-03	9.50e-06	0.00e+00
14	0.125	0.1529	0.783	15.3	0.000	0.00e+00	2.20e-02	0.00e+00	0.00e+00
15	0.0625	0.1470	0.796	14.7	0.000	0.00e+00	9.49e-02	0.00e+00	0.00e+00

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

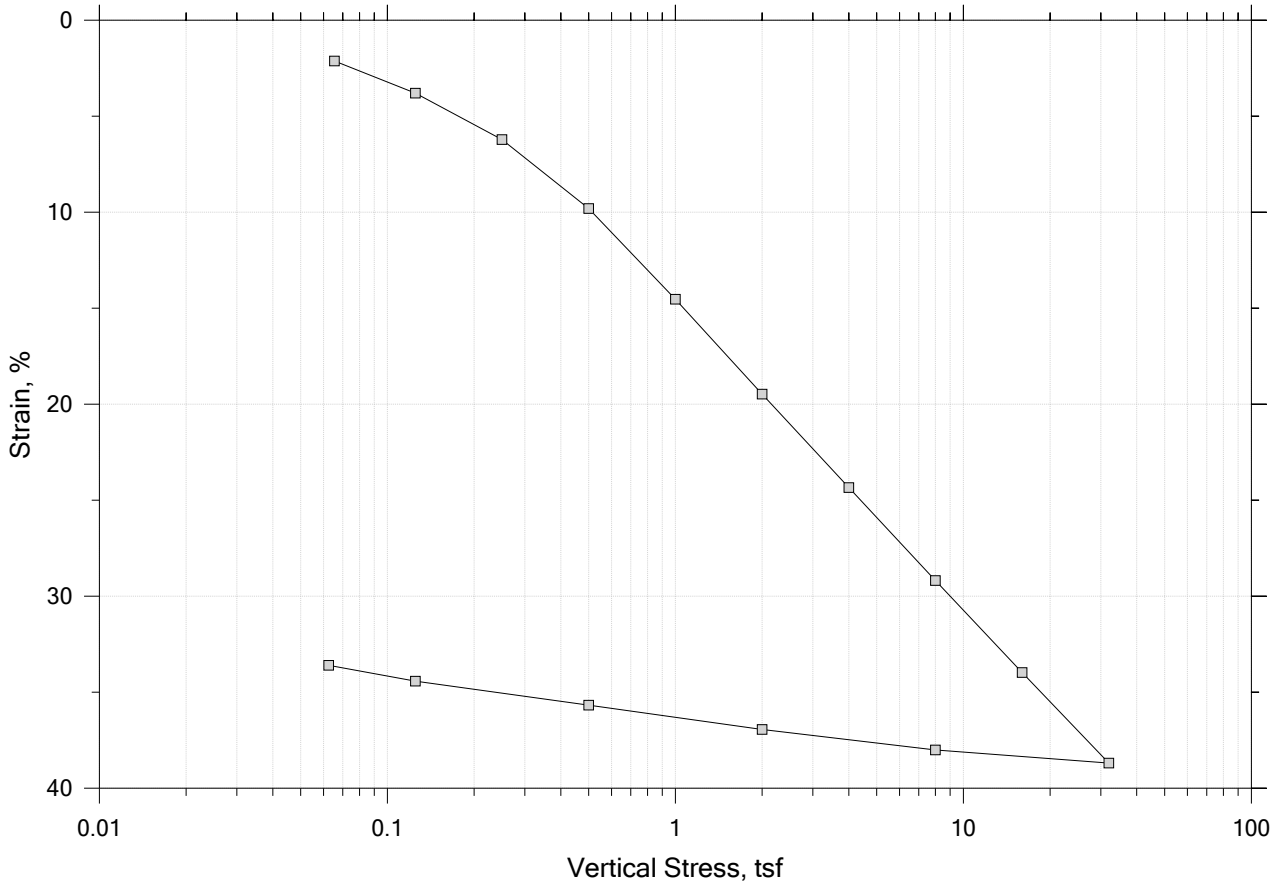
Square Root of Time Coefficients

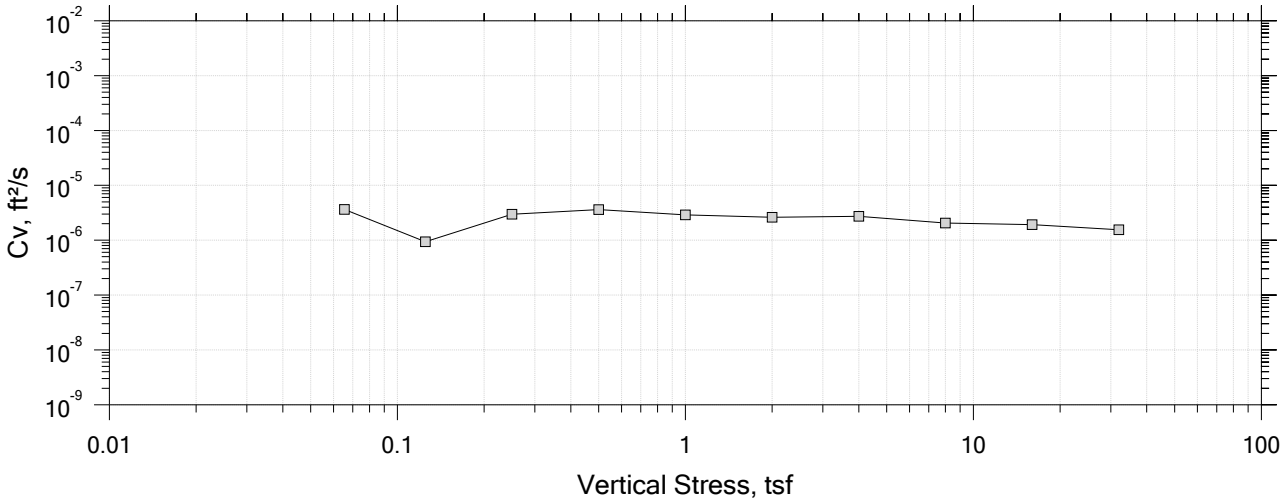
Step	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	Sq.Rt. T90 min	Cv ft²/s	Mv 1/tsf	k ft/day
1	0.0716	0.006595	1.09	0.659	181.433	1.34e-07	9.21e-02	3.34e-05
2	0.125	0.01105	1.08	1.10	40.385	5.97e-07	8.33e-02	1.34e-04
3	0.250	0.01692	1.07	1.69	305.688	7.80e-08	4.70e-02	9.89e-06
4	0.500	0.02454	1.05	2.45	52.375	4.49e-07	3.05e-02	3.69e-05
5	1.00	0.03445	1.03	3.44	16.782	1.38e-06	1.98e-02	7.36e-05
6	2.00	0.04872	1.00	4.87	20.097	1.12e-06	1.43e-02	4.32e-05
7	4.00	0.06946	0.959	6.95	13.993	1.55e-06	1.04e-02	4.34e-05
8	8.00	0.09841	0.898	9.84	37.898	5.43e-07	7.24e-03	1.06e-05
9	16.0	0.1349	0.821	13.5	40.484	4.73e-07	4.56e-03	5.81e-06
10	32.0	0.1783	0.730	17.8	24.923	7.00e-07	2.72e-03	5.13e-06
11	8.00	0.1741	0.739	17.4	0.000	0.00e+00	1.76e-04	0.00e+00
12	2.00	0.1685	0.751	16.9	42.506	3.96e-07	9.30e-04	9.95e-07
13	0.500	0.1612	0.766	16.1	21.830	7.84e-07	4.92e-03	1.04e-05
14	0.125	0.1529	0.783	15.3	71.935	2.42e-07	2.20e-02	1.44e-05
15	0.0625	0.1470	0.796	14.7	0.000	0.00e+00	9.49e-02	0.00e+00

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-115SPT	Tested By: trm	Checked By: anm
	Sample No.: 41.5-43.5191009	Test Date: 11/27/19	Depth: ---
	Test No.: IP-1	Sample Type: intact	Elevation: ---
	Description: Moist, dark gray sandy silt		
	Remarks: System JJ, Swell Pressure = 0.0716 tsf		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Summary Report





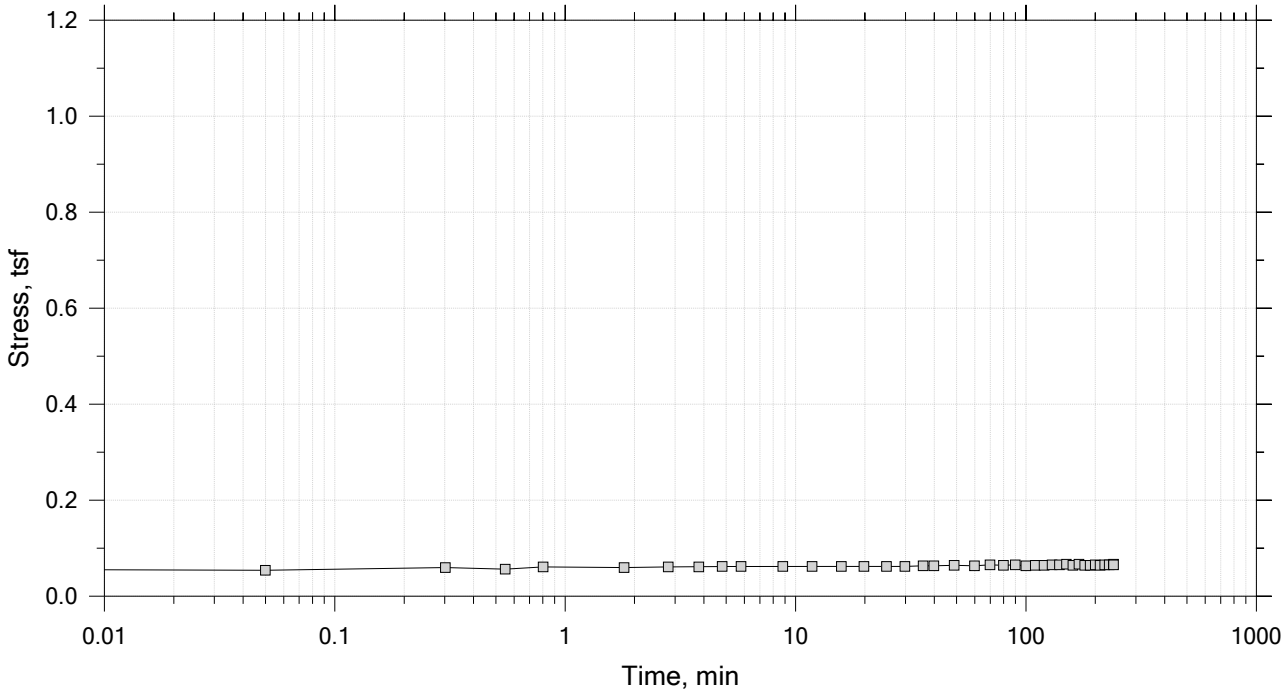
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		
	Displacement at End of Increment		

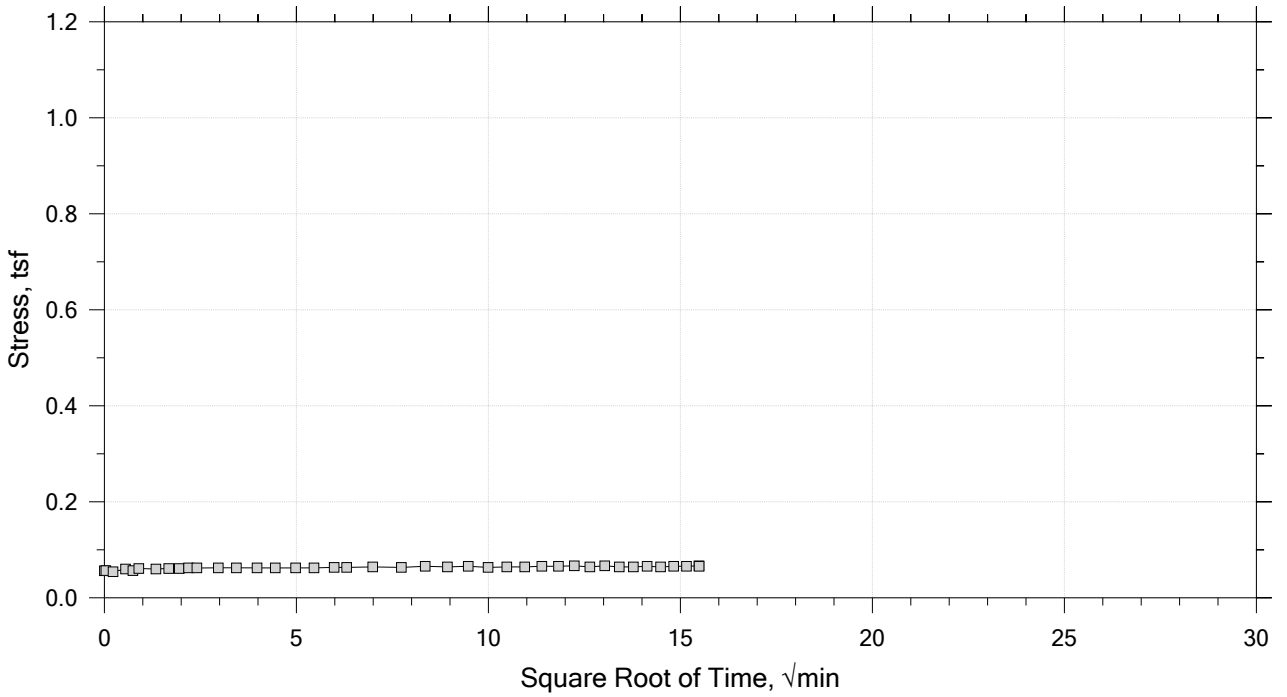
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 1 of 15

Constant Volume Step

Stress: 0.0655 tsf





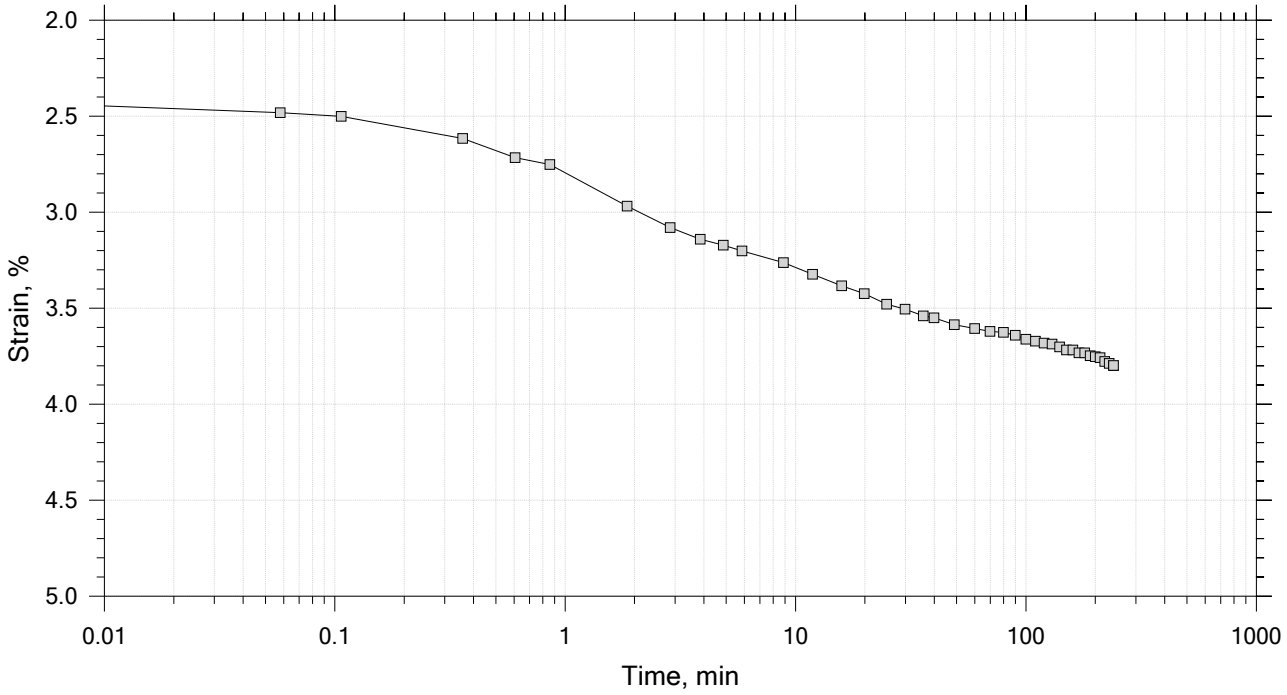
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

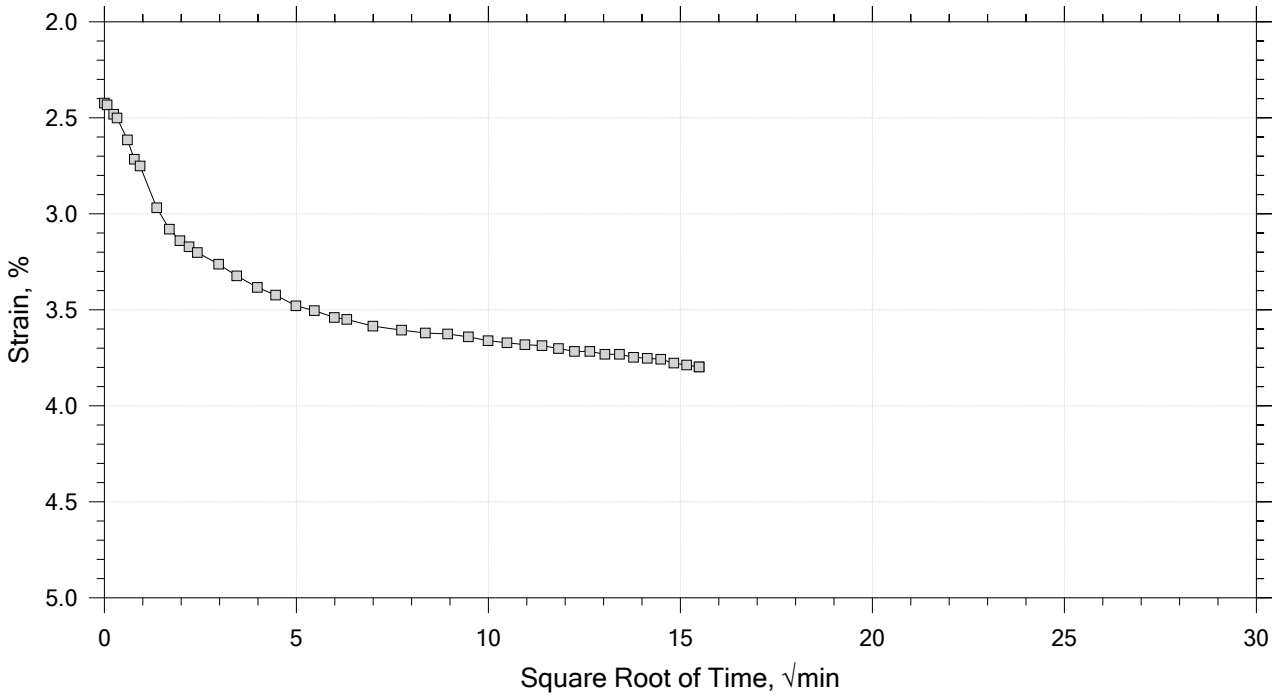
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 2 of 15

Constant Load Step

Stress: 0.125 tsf





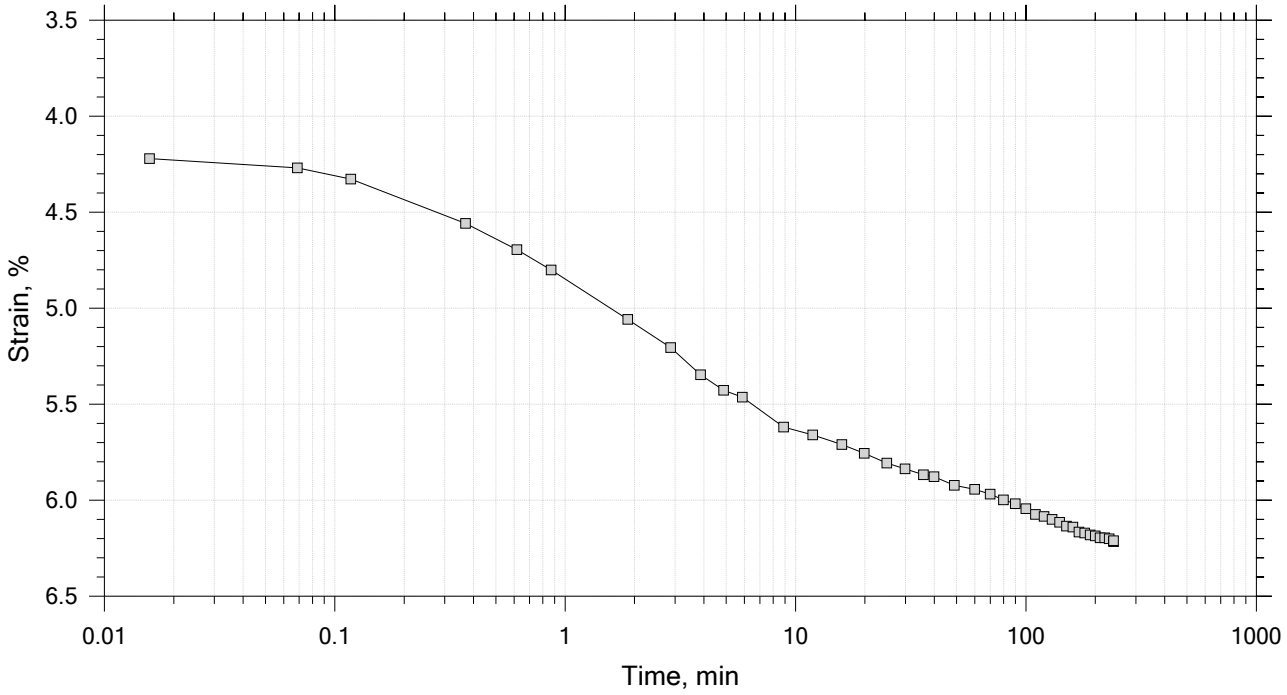
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

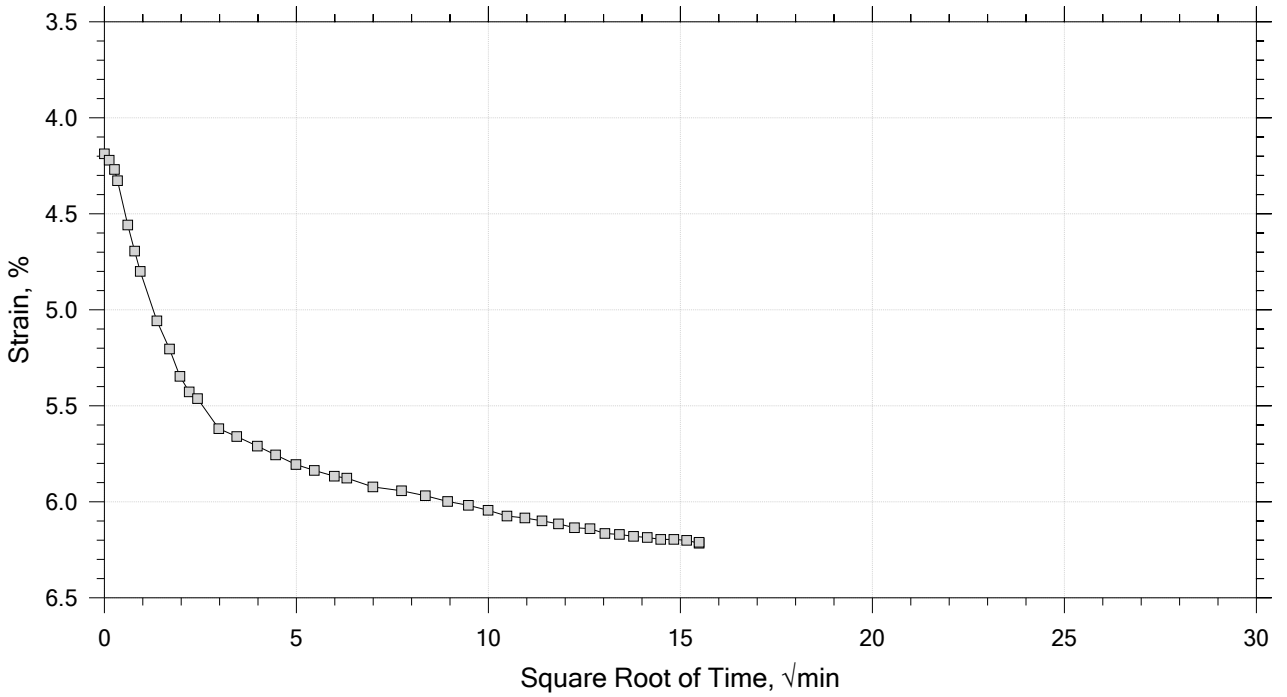
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 3 of 15

Constant Load Step

Stress: 0.25 tsf





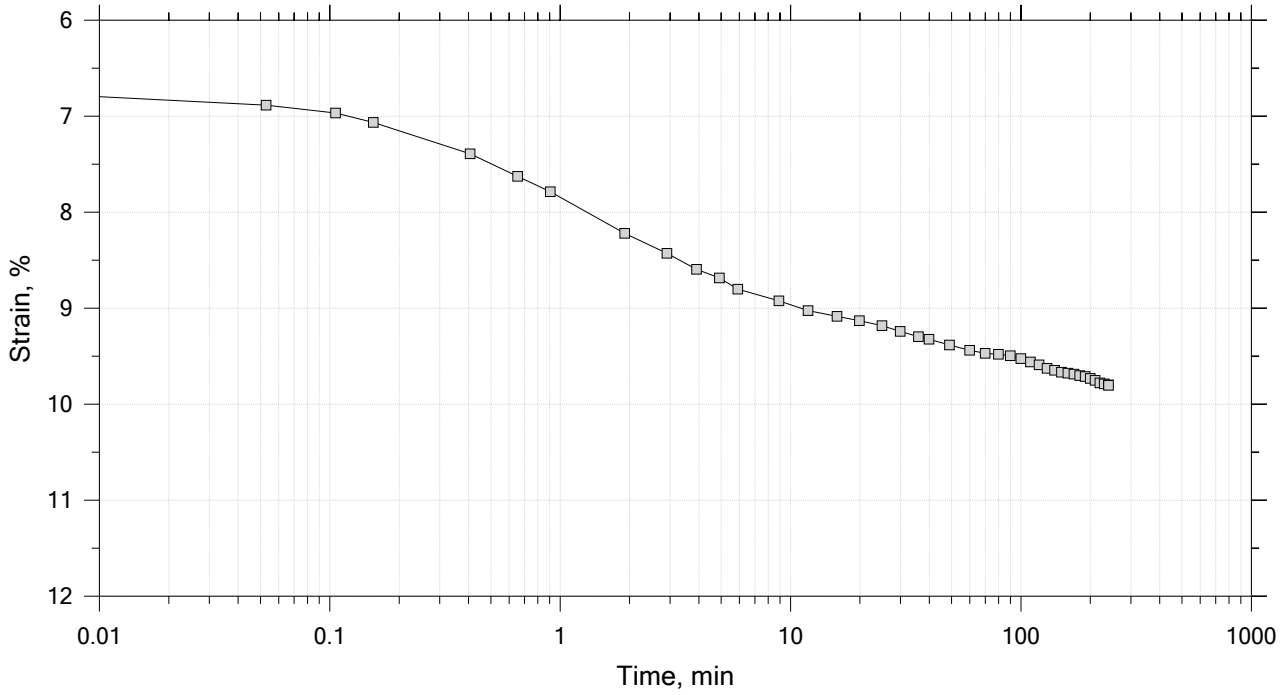
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

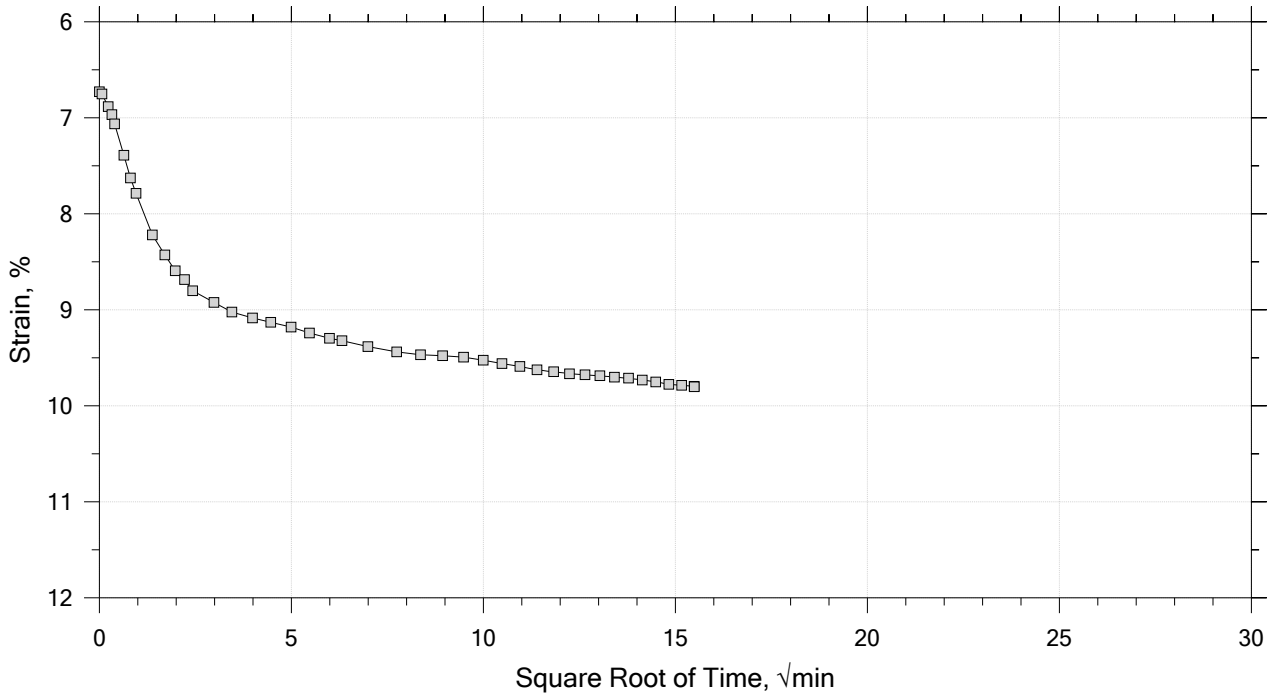
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 4 of 15

Constant Load Step

Stress: 0.5 tsf





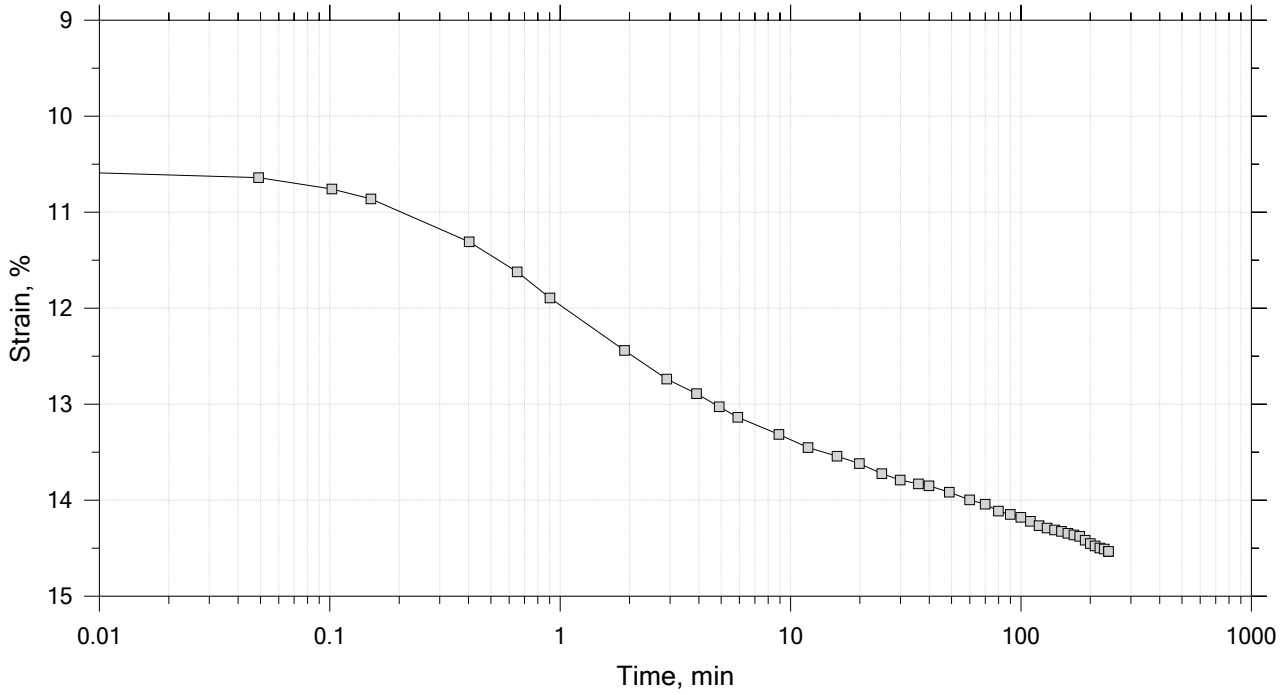
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

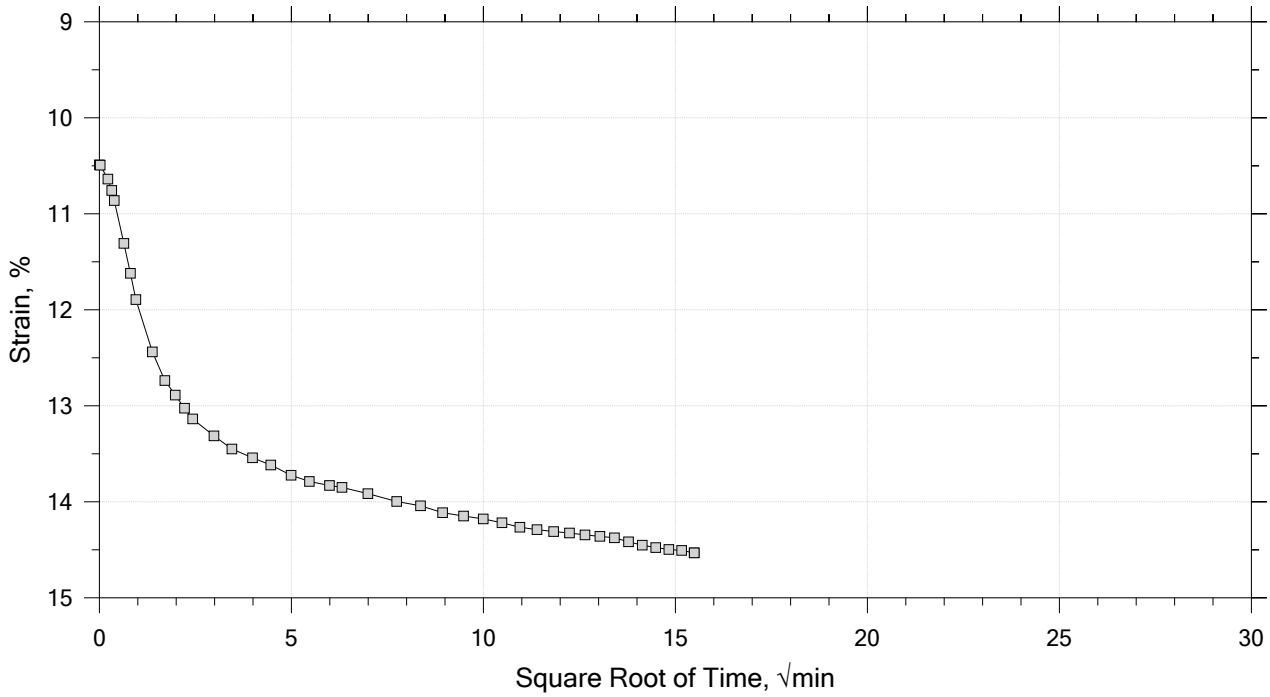
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 5 of 15

Constant Load Step

Stress: 1 tsf





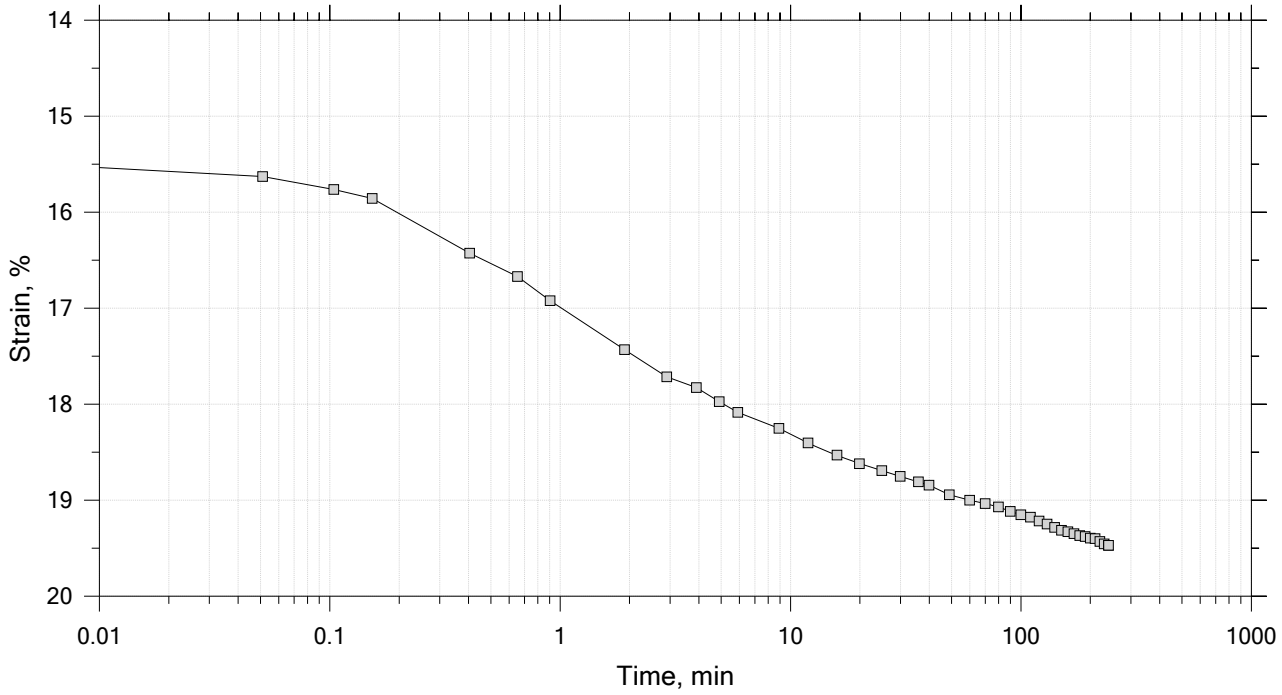
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

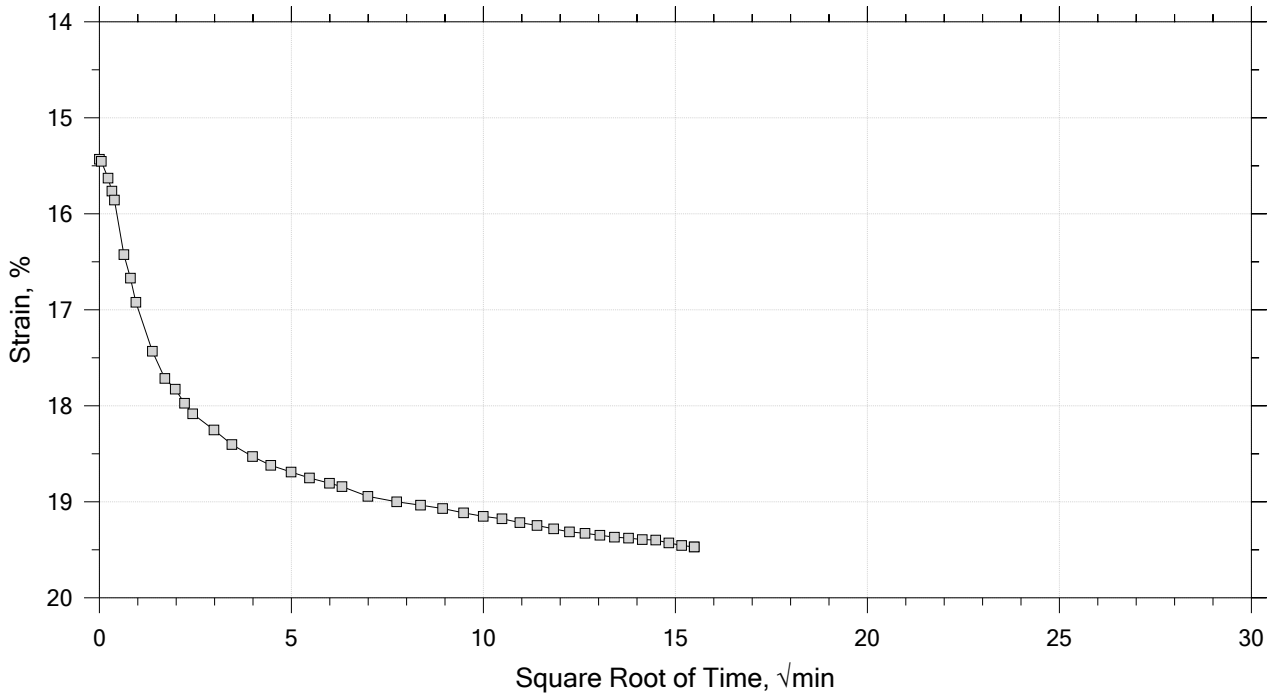
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 6 of 15

Constant Load Step

Stress: 2 tsf





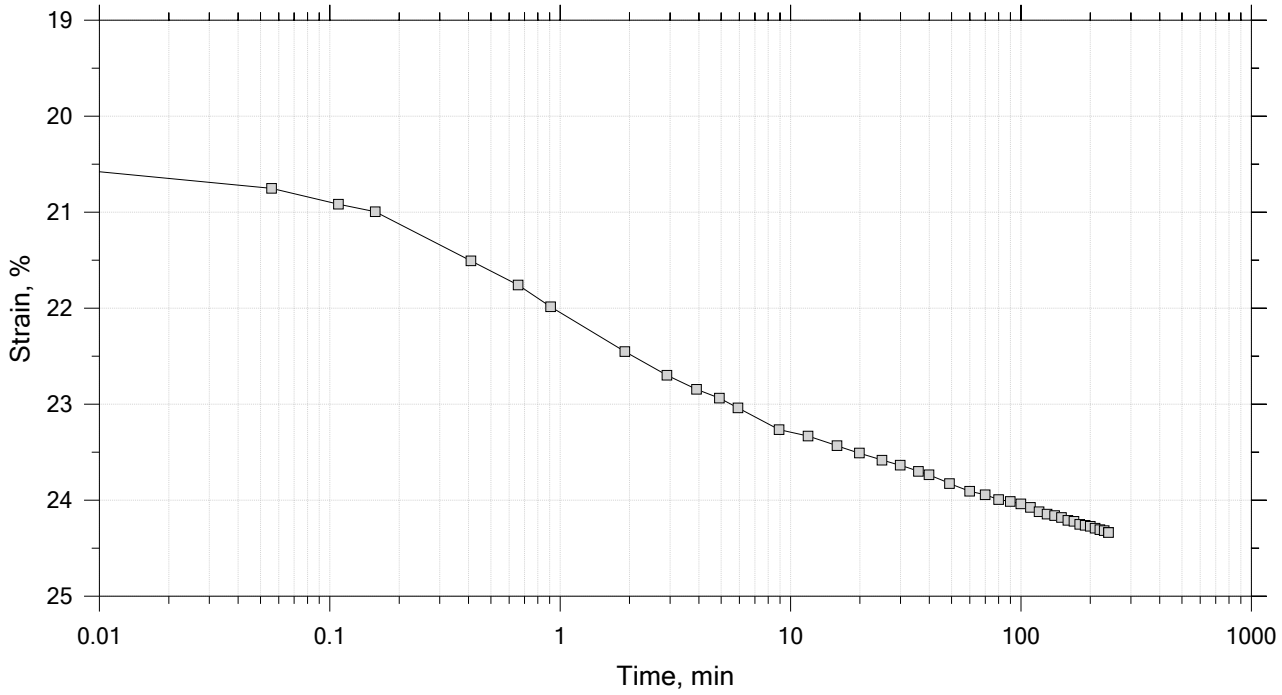
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

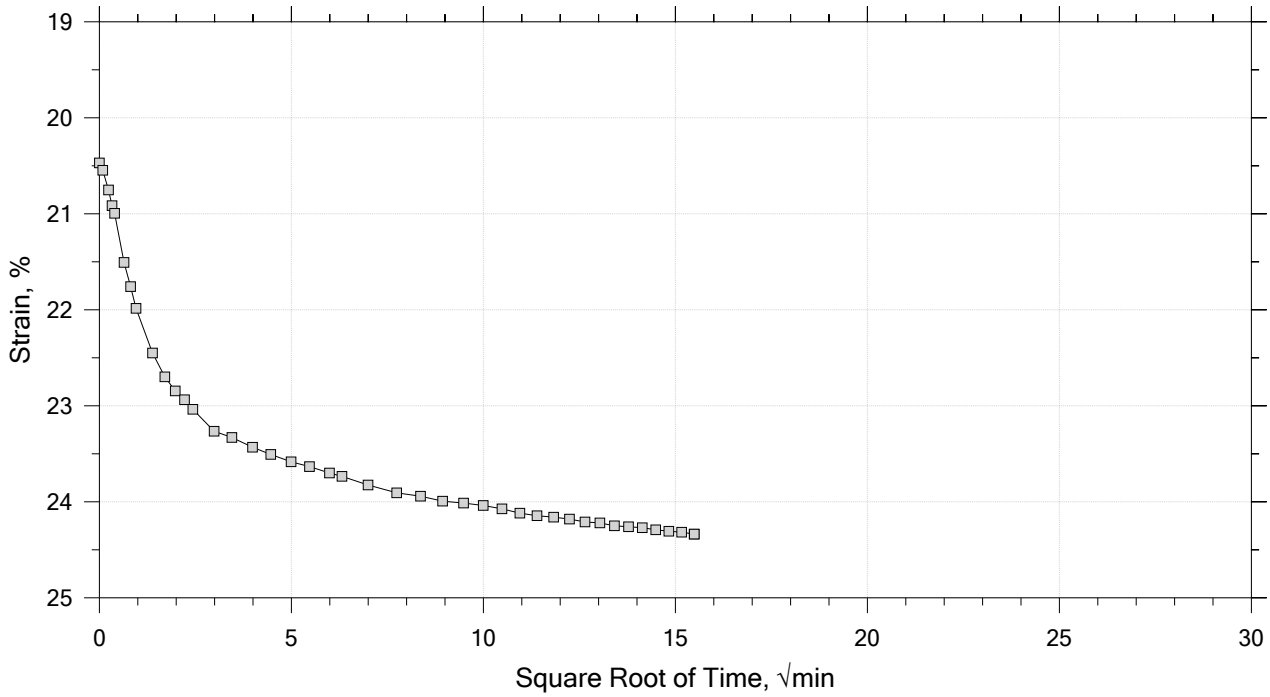
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 7 of 15

Constant Load Step

Stress: 4 tsf





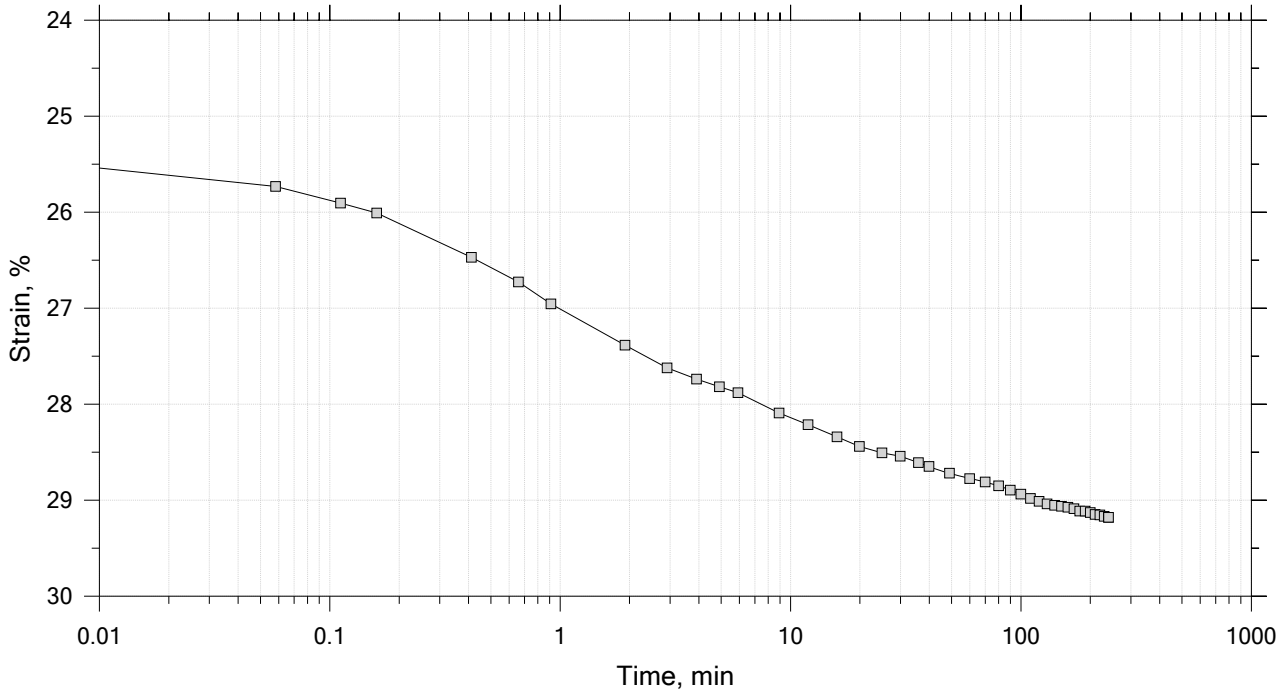
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

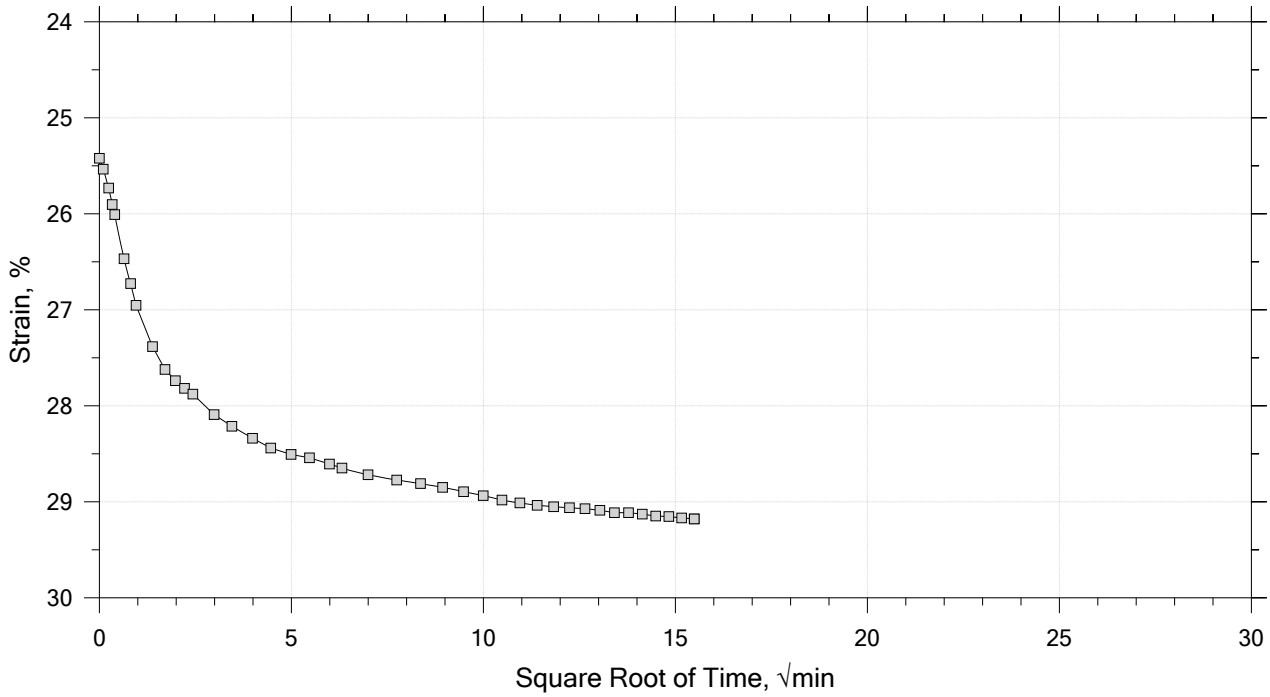
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 8 of 15

Constant Load Step

Stress: 8 tsf





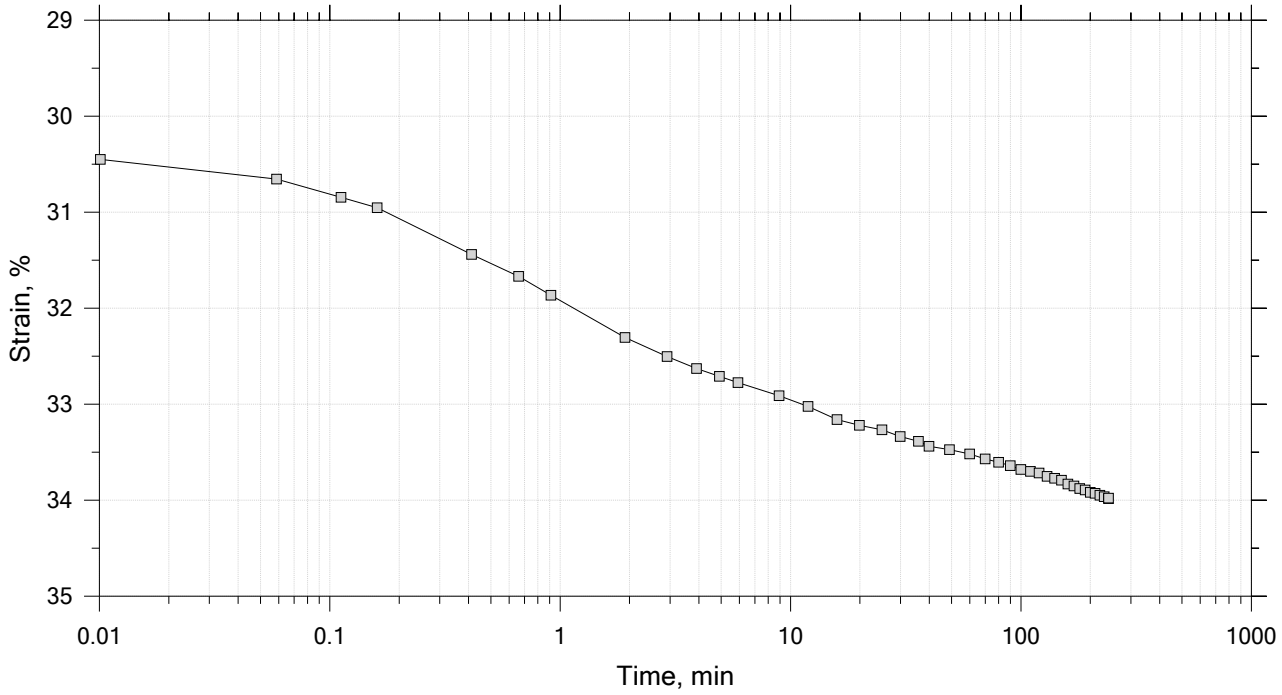
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

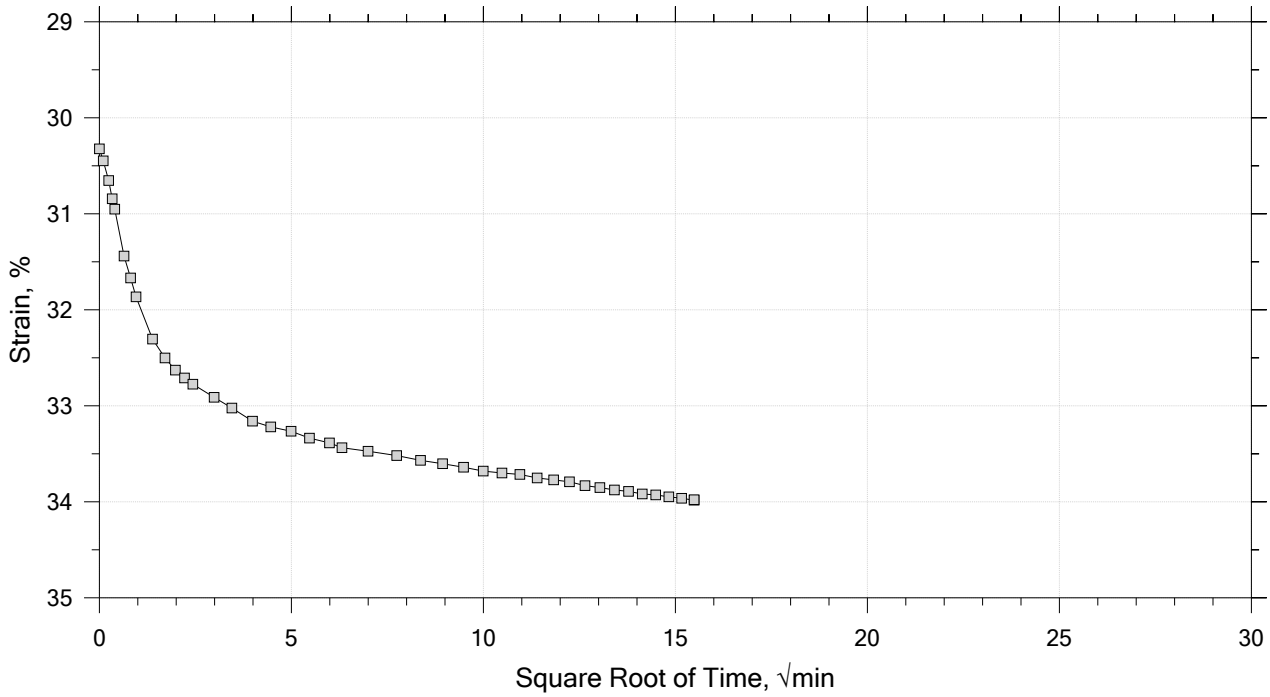
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 9 of 15

Constant Load Step

Stress: 16 tsf





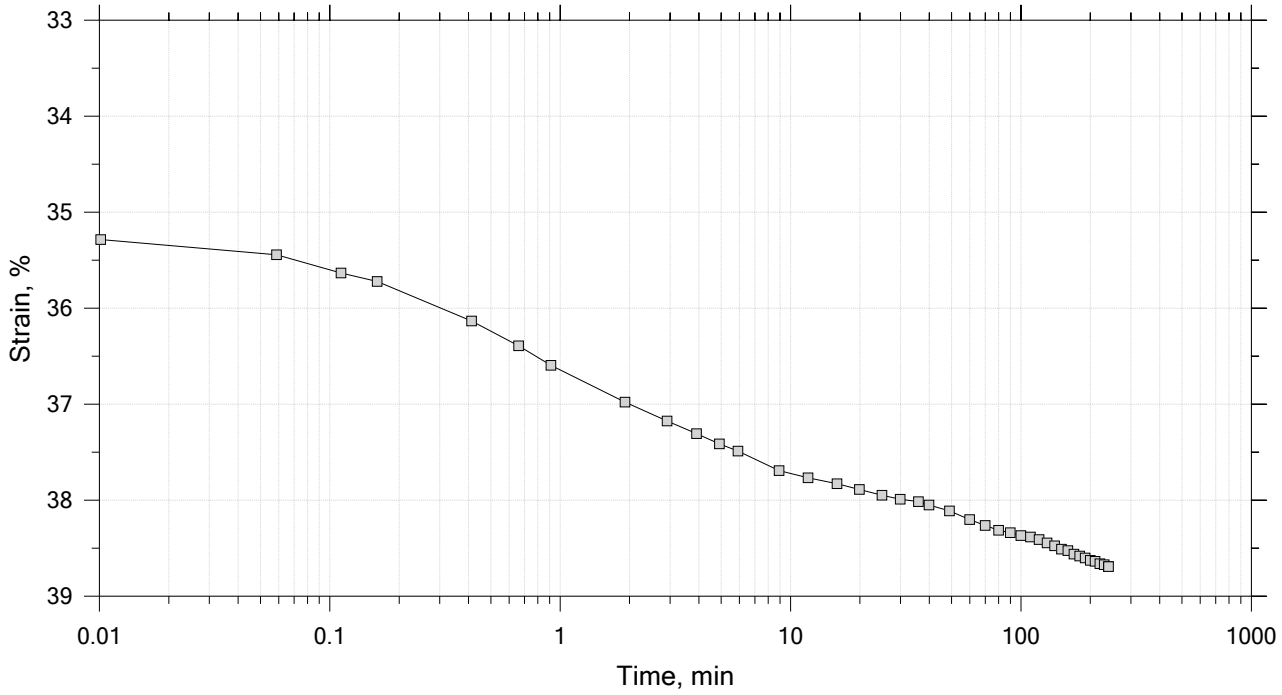
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

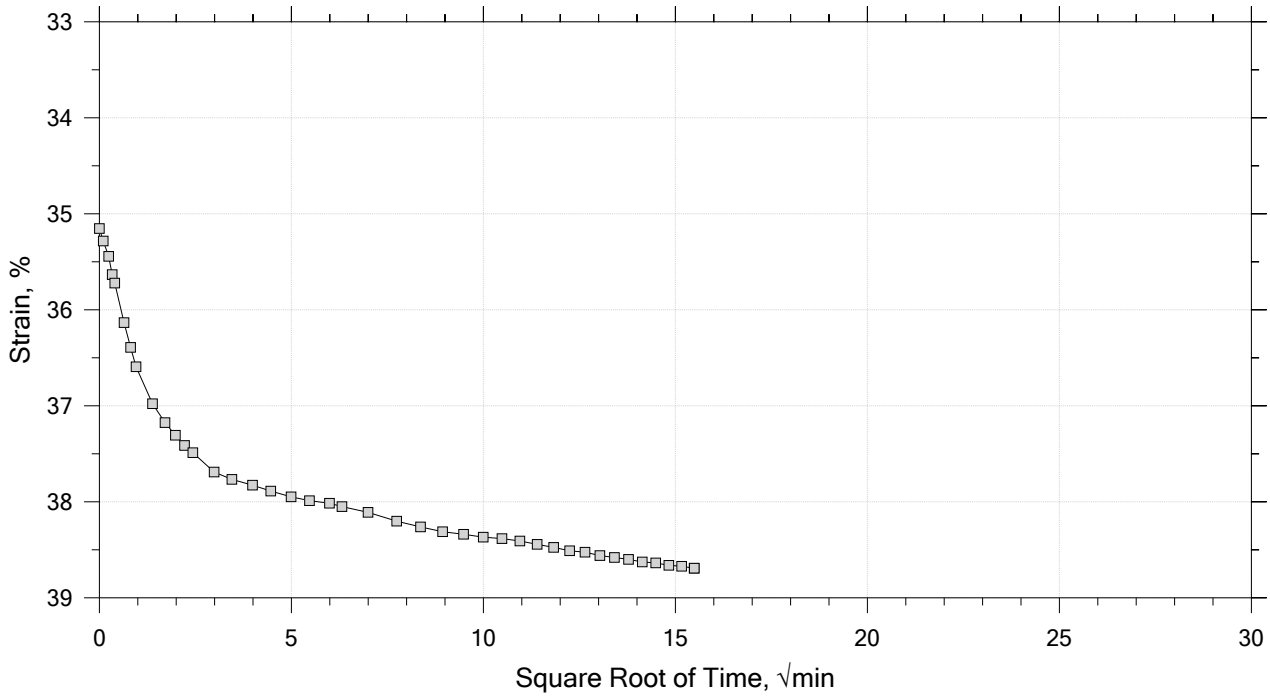
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 10 of 15

Constant Load Step

Stress: 32 tsf





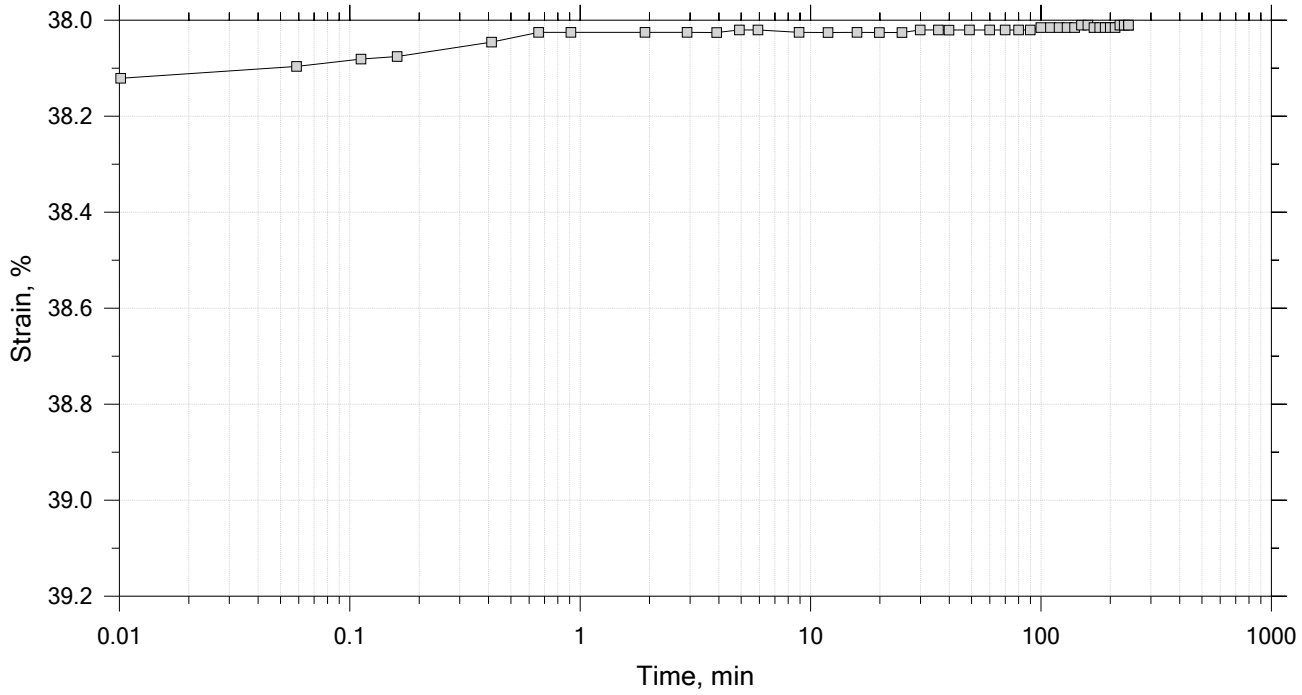
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

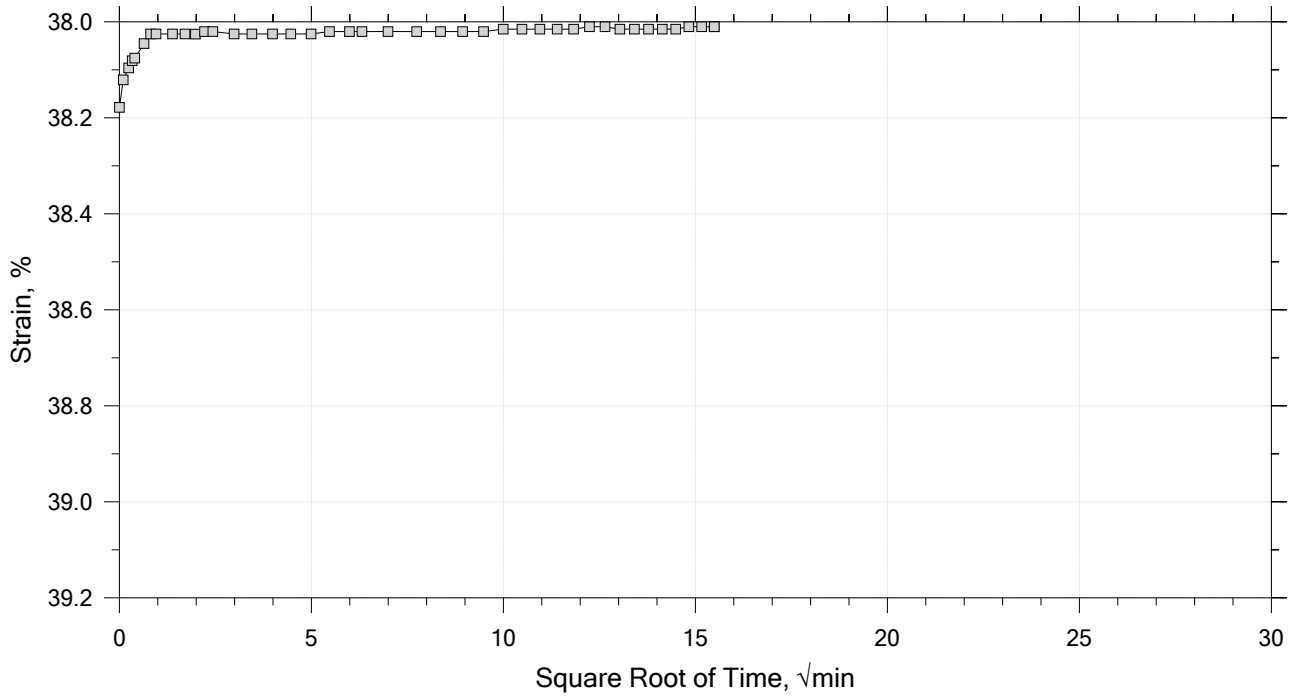
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 11 of 15

Constant Load Step

Stress: 8 tsf

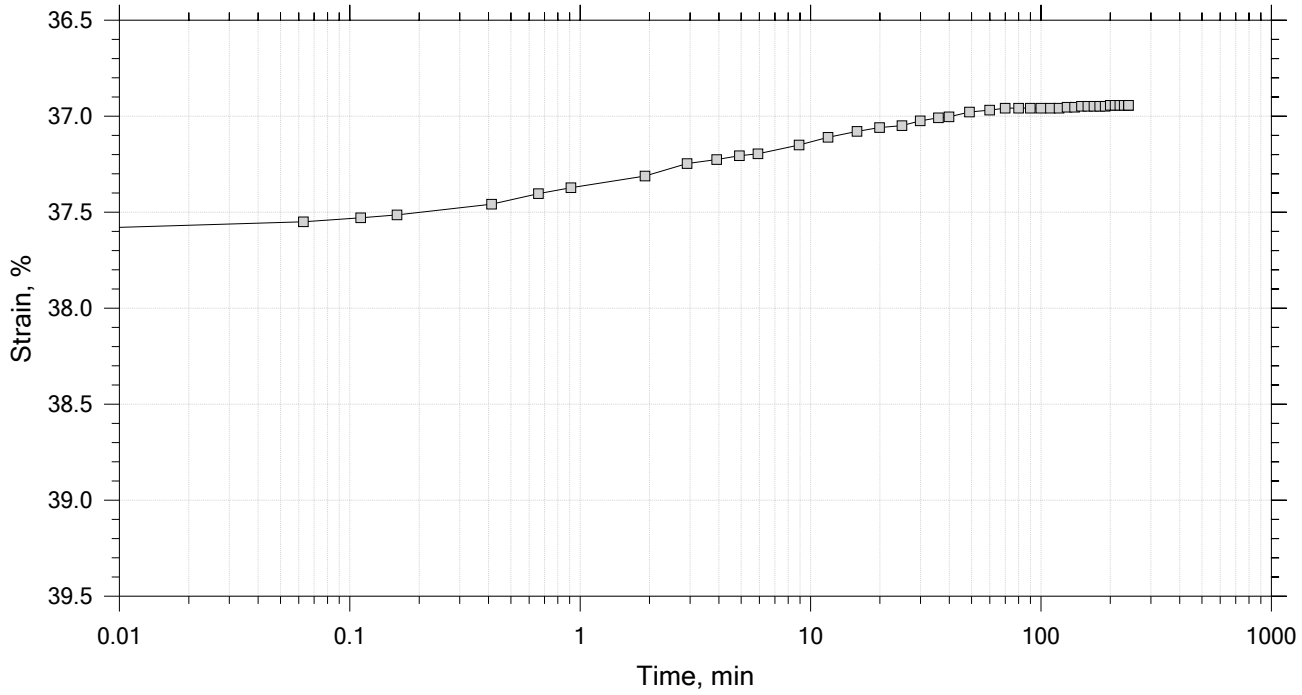


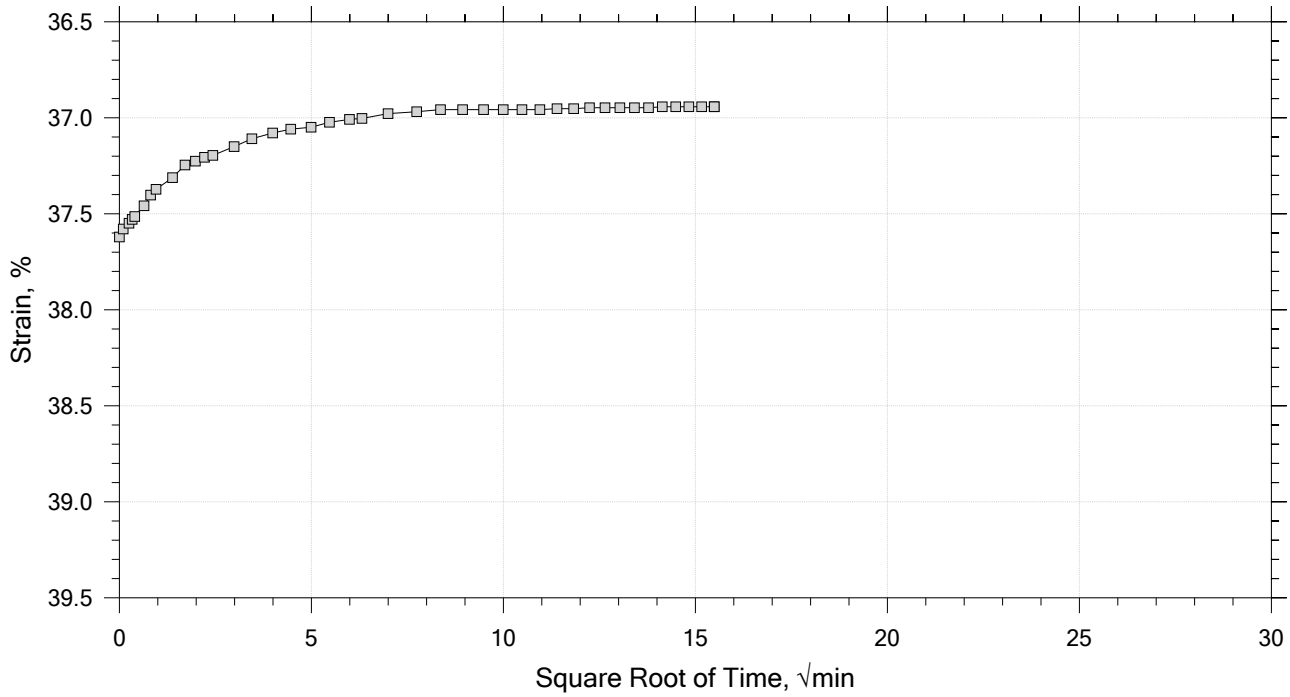


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 12 of 15
Constant Load Step
Stress: 2 tsf





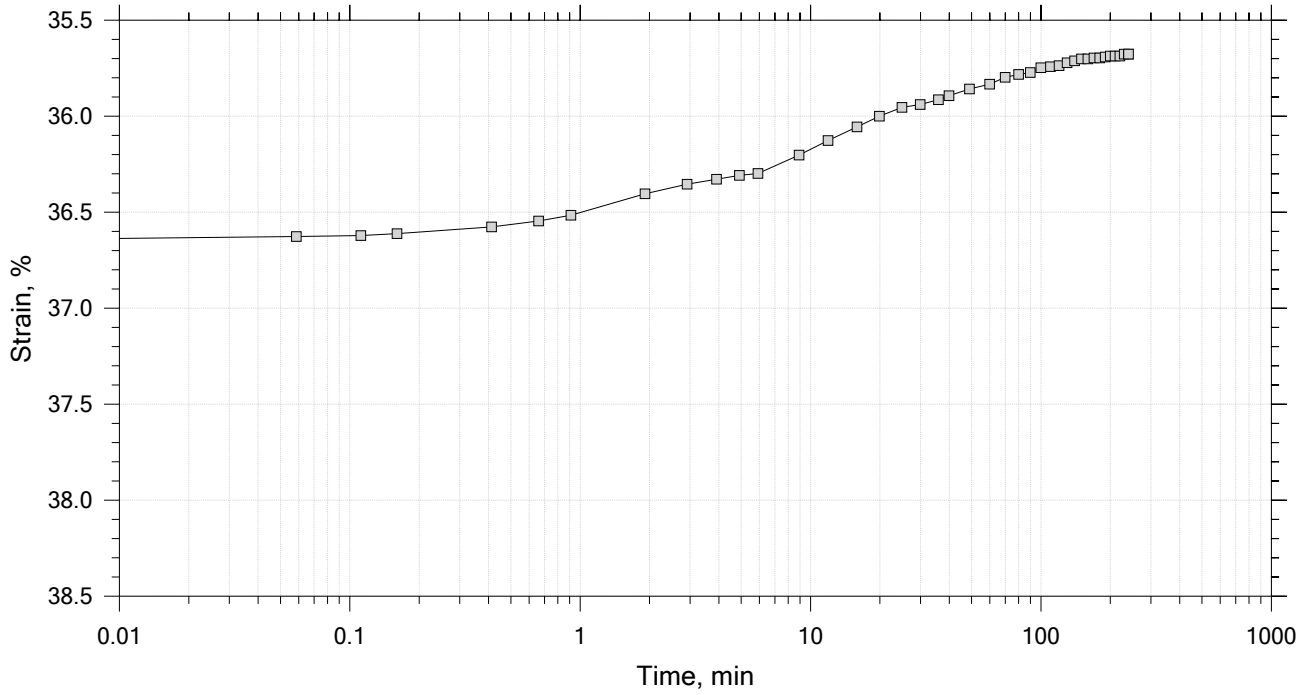
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

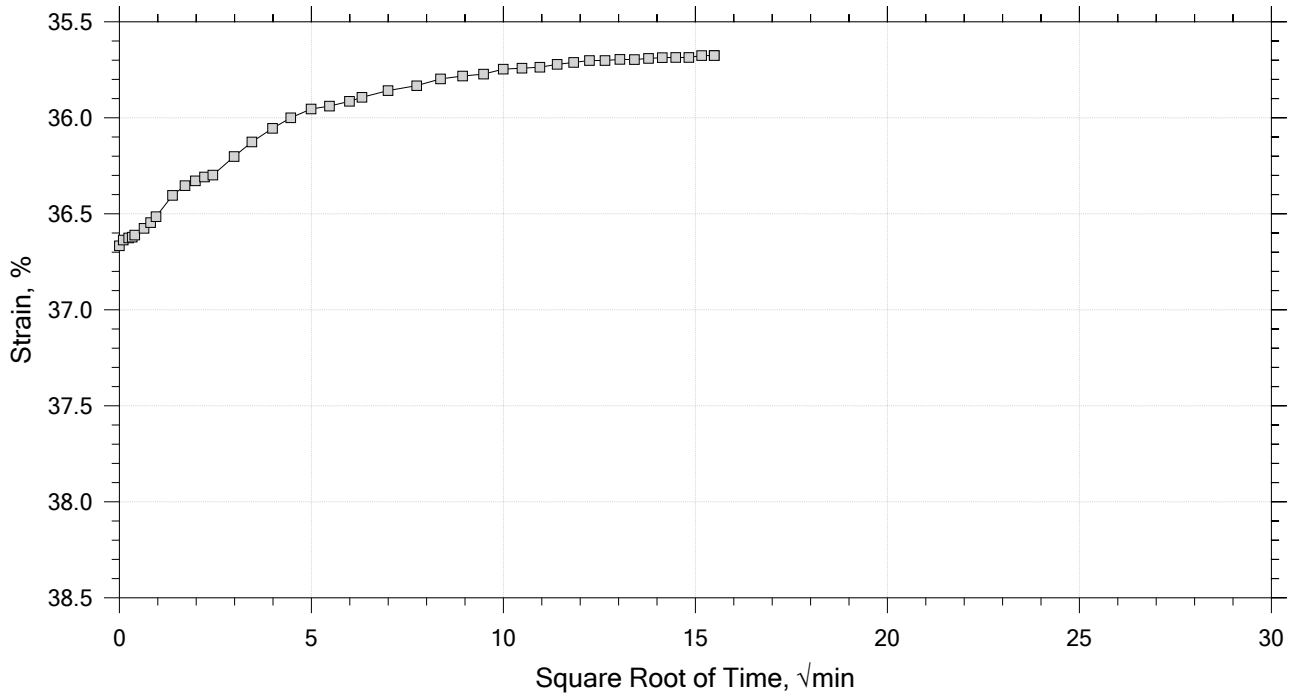
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 13 of 15

Constant Load Step

Stress: 0.5 tsf





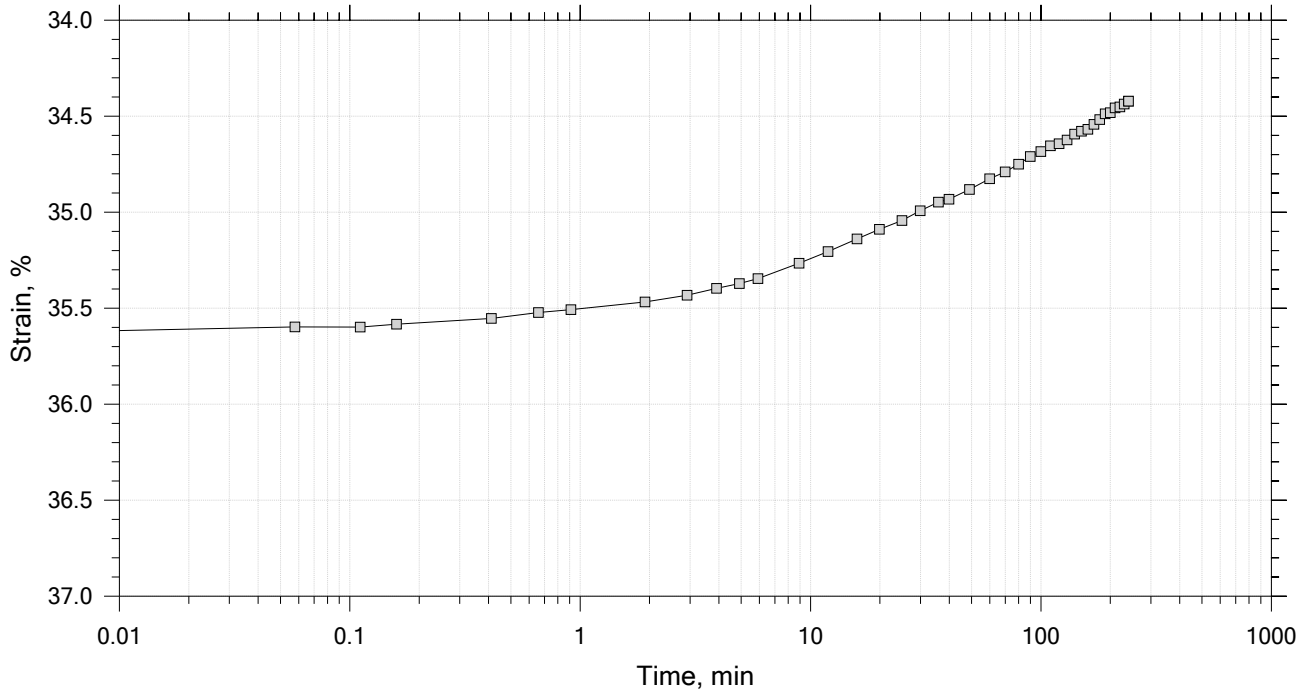
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

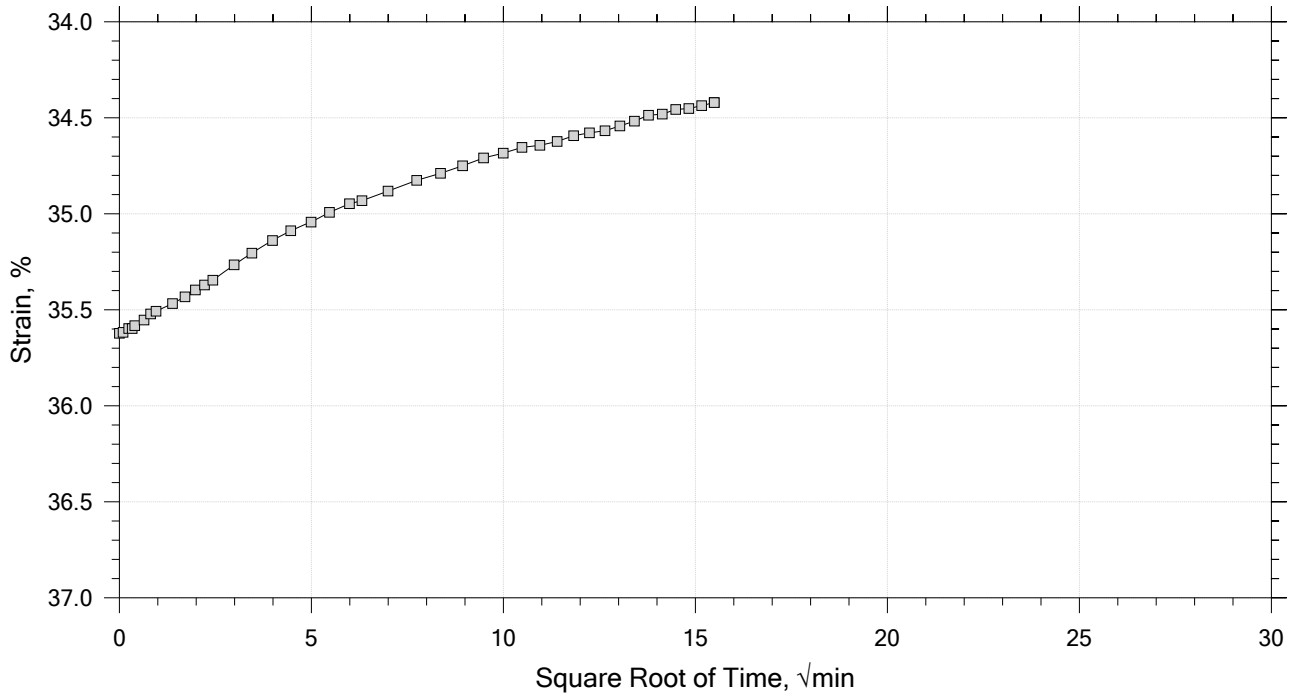
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 14 of 15

Constant Load Step

Stress: 0.125 tsf

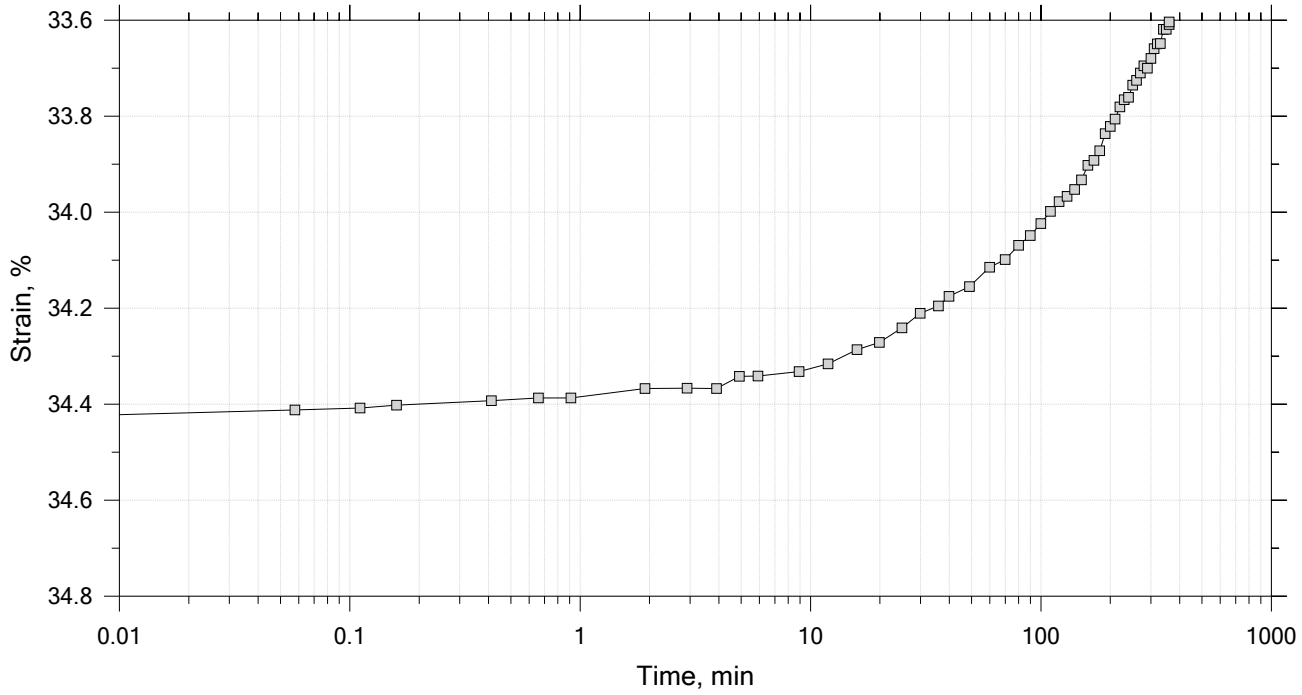


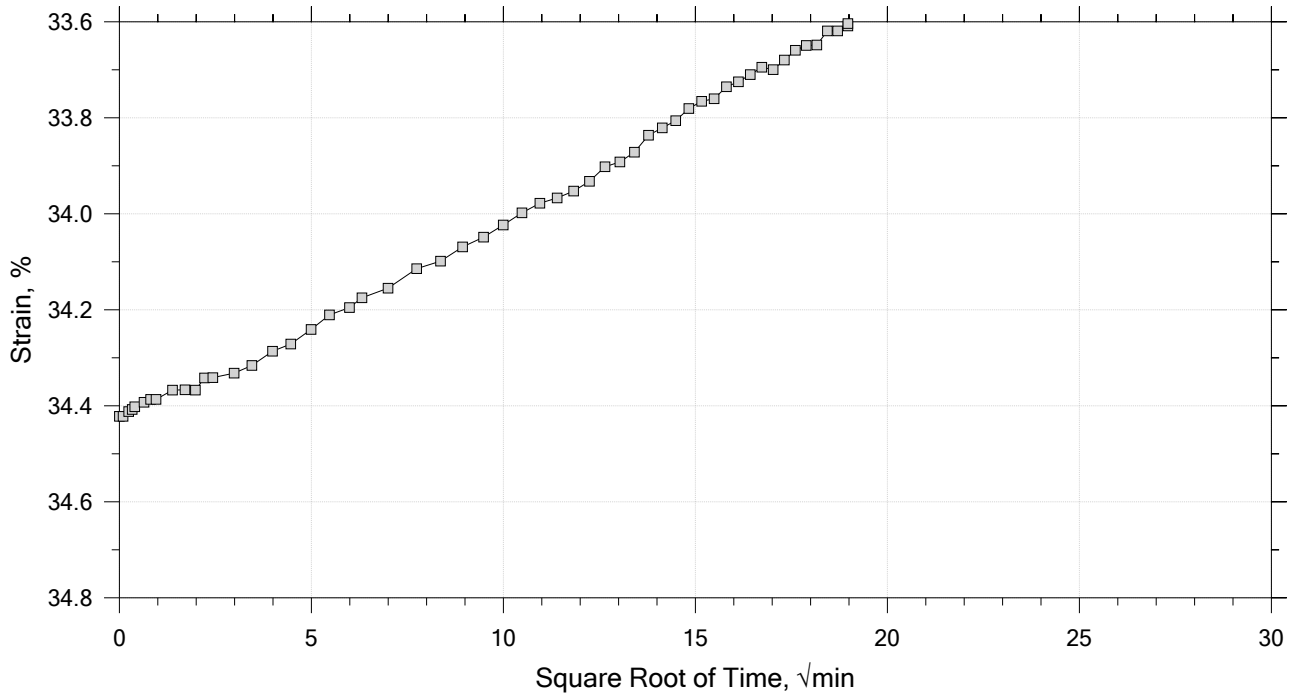


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 15 of 15
Constant Load Step
Stress: 0.0625 tsf





GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Specimen Diameter: 2.50 in	Estimated Specific Gravity: 2.69	Liquid Limit: 74
Initial Height: 1.00 in	Initial Void Ratio: 1.68	Plastic Limit: 38
Final Height: 0.70 in	Final Void Ratio: 0.877	Plasticity Index: 36

	Before Test Trimmings	Before Test Specimen	After Test Specimen	After Test Trimmings
Container ID	D909	RING		B-2656
Mass Container, gm	8.3	109.13	109.13	8.27
Mass Container + Wet Soil, gm	258.06	239.47	216	111.39
Mass Container + Dry Soil, gm	163.24	189.69	189.69	86
Mass Dry Soil, gm	154.94	80.557	80.557	77.73
Water Content, %	61.20	61.80	32.66	32.66
Void Ratio	---	1.68	0.88	---
Degree of Saturation, %	---	98.69	100.00	---
Dry Unit Weight, pcf	---	62.519	89.312	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Log of Time Coefficients

Step	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	Log T50 min	Cv ft²/s	Mv 1/tsf	k ft/day	Ca %
1	0.0655	0.02125	1.62	2.12	1.440	3.87e-06	3.24e-01	3.39e-03	0.00e+00
2	0.125	0.03798	1.58	3.80	0.000	0.00e+00	2.81e-01	0.00e+00	0.00e+00
3	0.250	0.06211	1.52	6.21	1.694	3.04e-06	1.93e-01	1.58e-03	0.00e+00
4	0.500	0.09803	1.42	9.80	1.197	4.03e-06	1.44e-01	1.56e-03	0.00e+00
5	1.00	0.1453	1.29	14.5	1.190	3.69e-06	9.46e-02	9.43e-04	0.00e+00
6	2.00	0.1947	1.16	19.5	1.121	3.50e-06	4.94e-02	4.66e-04	0.00e+00
7	4.00	0.2434	1.03	24.3	1.063	3.27e-06	2.43e-02	2.15e-04	0.00e+00
8	8.00	0.2918	0.899	29.2	1.030	2.97e-06	1.21e-02	9.69e-05	0.00e+00
9	16.0	0.3398	0.771	34.0	0.993	2.69e-06	6.00e-03	4.35e-05	0.00e+00
10	32.0	0.3869	0.644	38.7	0.987	2.34e-06	2.95e-03	1.86e-05	0.00e+00
11	8.00	0.3801	0.662	38.0	0.000	0.00e+00	2.84e-04	0.00e+00	0.00e+00
12	2.00	0.3694	0.691	36.9	1.994	1.12e-06	1.78e-03	5.36e-06	0.00e+00
13	0.500	0.3568	0.725	35.7	8.202	2.82e-07	8.44e-03	6.42e-06	0.00e+00
14	0.125	0.3442	0.759	34.4	0.000	0.00e+00	3.35e-02	0.00e+00	0.00e+00
15	0.0625	0.3360	0.781	33.6	0.000	0.00e+00	1.31e-01	0.00e+00	0.00e+00

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

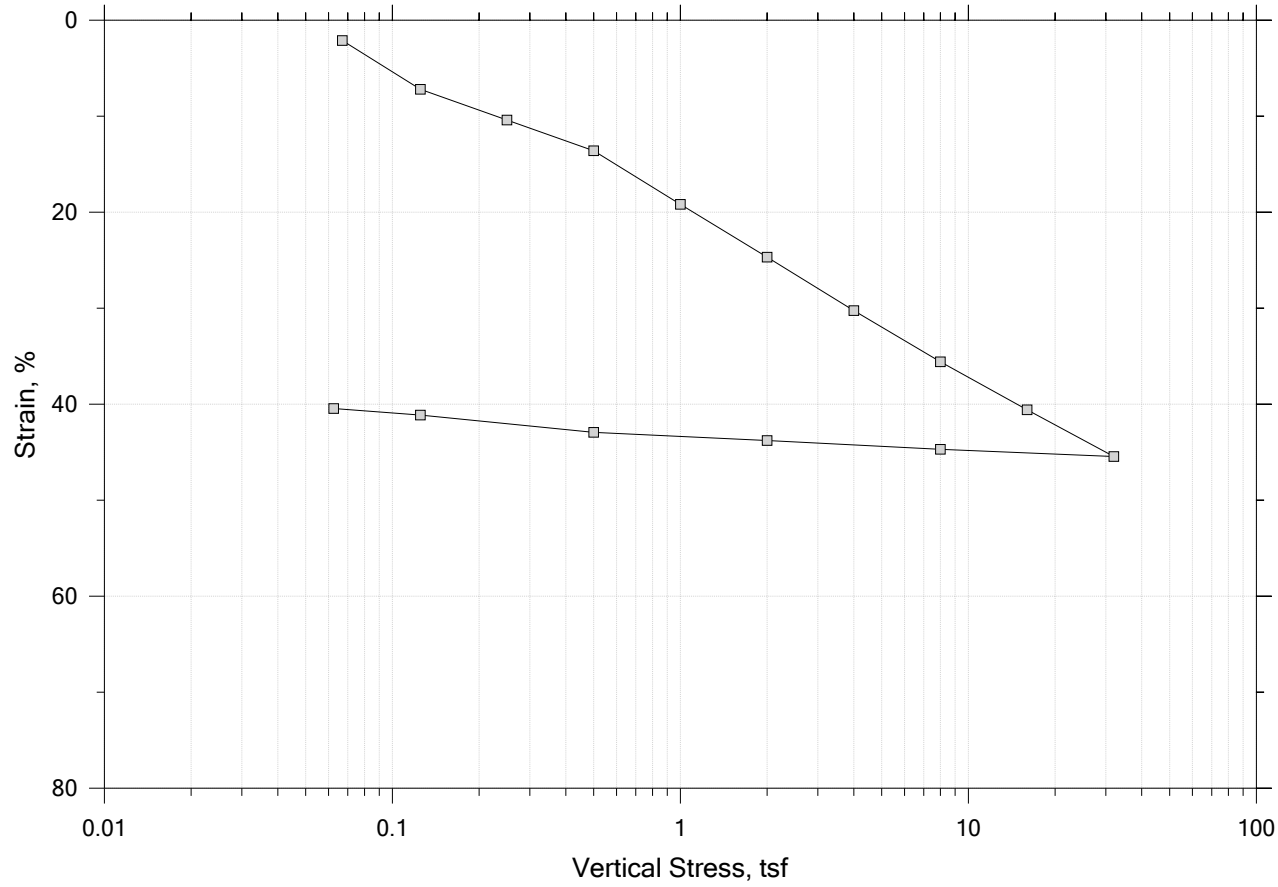
Square Root of Time Coefficients

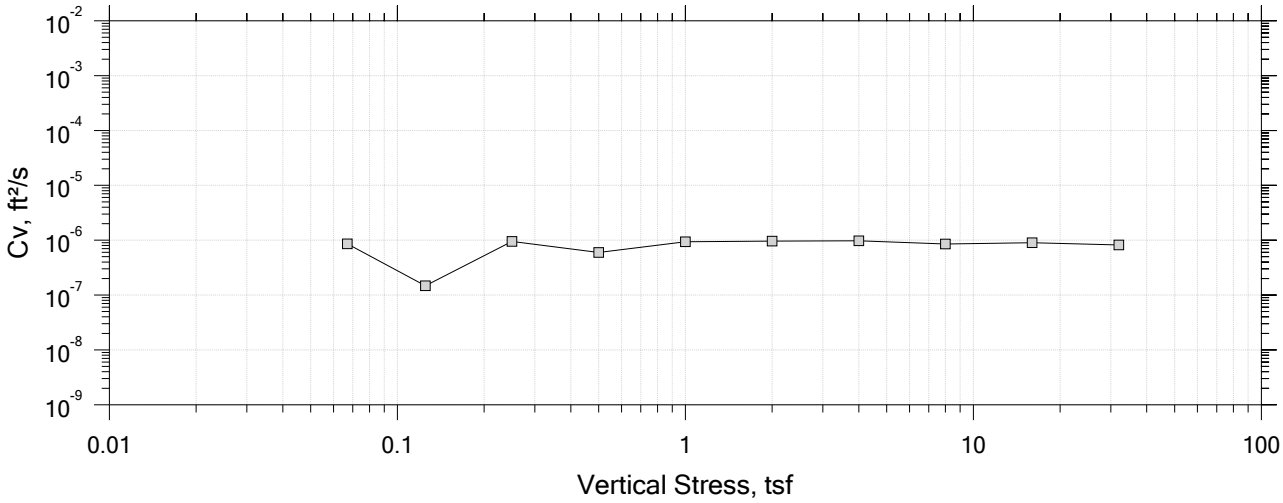
Step	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	Sq.Rt. T90 min	Cv ft²/s	Mv 1/tsf	k ft/day
1	0.0655	0.02125	1.62	2.12	7.427	3.23e-06	3.24e-01	2.83e-03
2	0.125	0.03798	1.58	3.80	27.984	8.26e-07	2.81e-01	6.26e-04
3	0.250	0.06211	1.52	6.21	8.732	2.54e-06	1.93e-01	1.32e-03
4	0.500	0.09803	1.42	9.80	7.566	2.74e-06	1.44e-01	1.06e-03
5	1.00	0.1453	1.29	14.5	9.964	1.90e-06	9.46e-02	4.85e-04
6	2.00	0.1947	1.16	19.5	10.289	1.64e-06	4.94e-02	2.19e-04
7	4.00	0.2434	1.03	24.3	7.994	1.87e-06	2.43e-02	1.23e-04
8	8.00	0.2918	0.899	29.2	10.821	1.22e-06	1.21e-02	3.97e-05
9	16.0	0.3398	0.771	34.0	9.891	1.16e-06	6.00e-03	1.88e-05
10	32.0	0.3869	0.644	38.7	10.669	9.32e-07	2.95e-03	7.41e-06
11	8.00	0.3801	0.662	38.0	1.531	6.09e-06	2.84e-04	4.67e-06
12	2.00	0.3694	0.691	36.9	14.086	6.81e-07	1.78e-03	3.27e-06
13	0.500	0.3568	0.725	35.7	30.578	3.26e-07	8.44e-03	7.41e-06
14	0.125	0.3442	0.759	34.4	70.876	1.46e-07	3.35e-02	1.32e-05
15	0.0625	0.3360	0.781	33.6	268.654	3.98e-08	1.31e-01	1.40e-05

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-118SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-191014	Test Date: 12/12/19	Depth: ---
	Test No.: IP-5	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray silt		
	Remarks: System O, Swell Pressure = 0.0655 tsf		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Summary Report





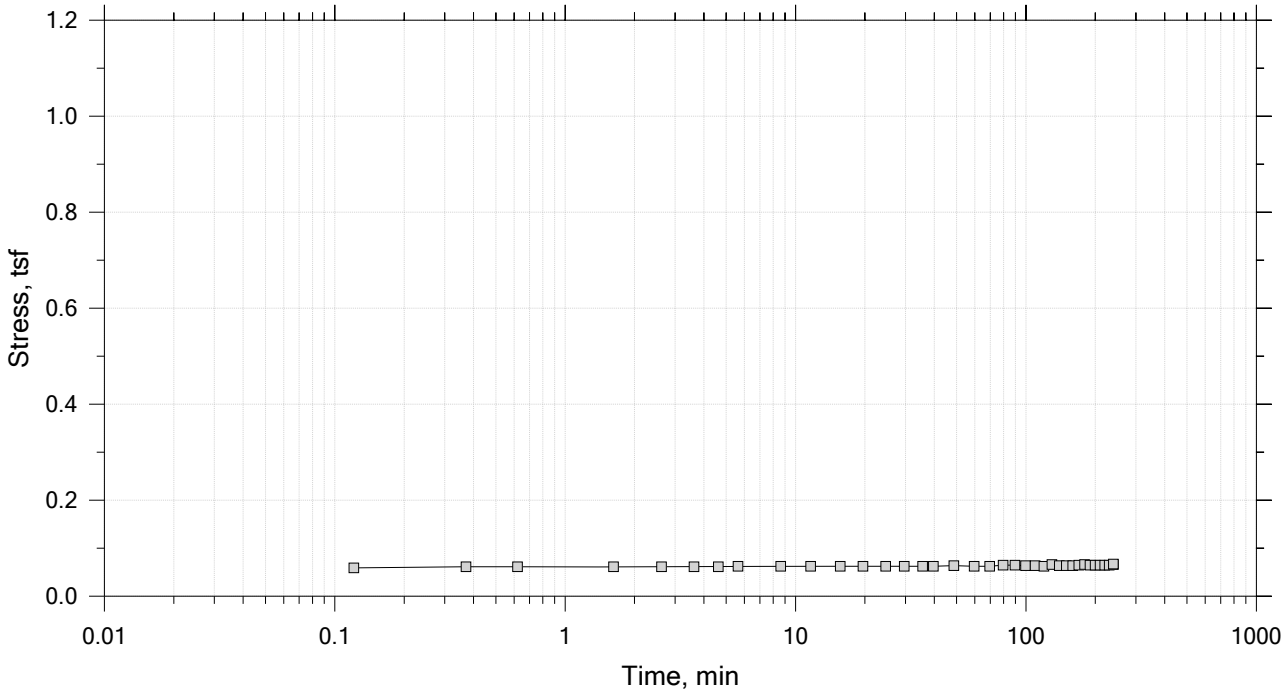
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		
	Displacement at End of Increment		

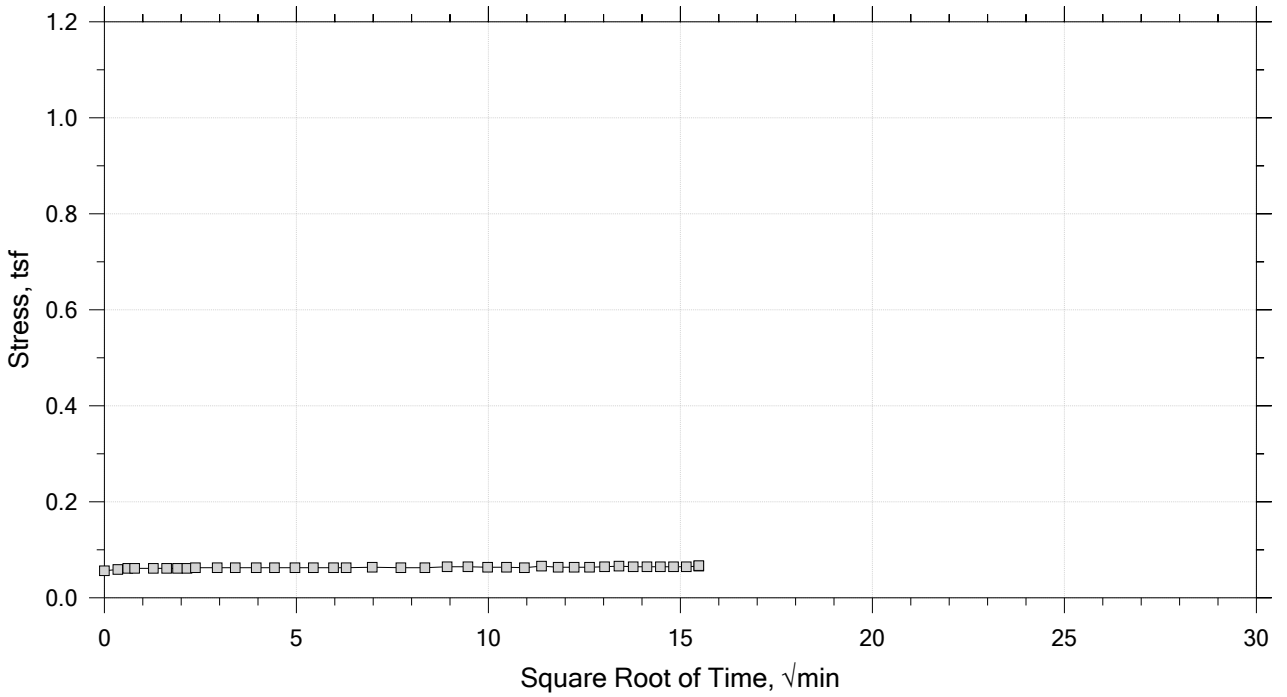
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 1 of 15

Constant Volume Step

Stress: 0.067 tsf





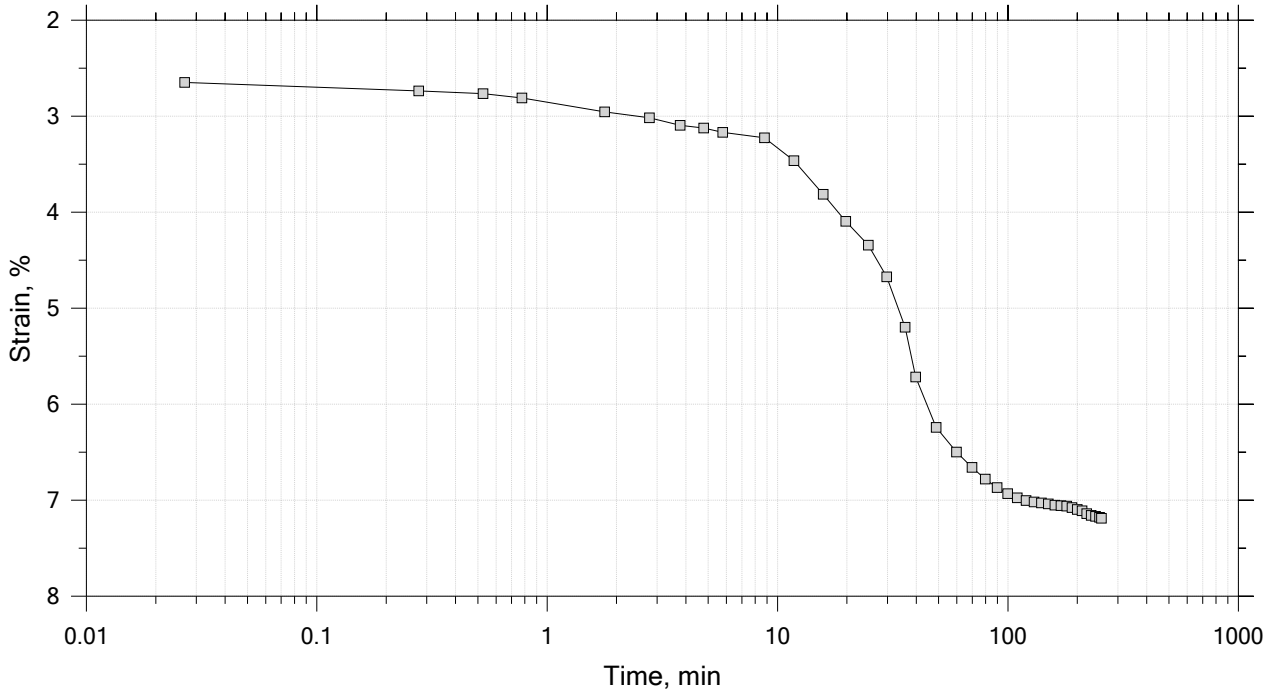
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

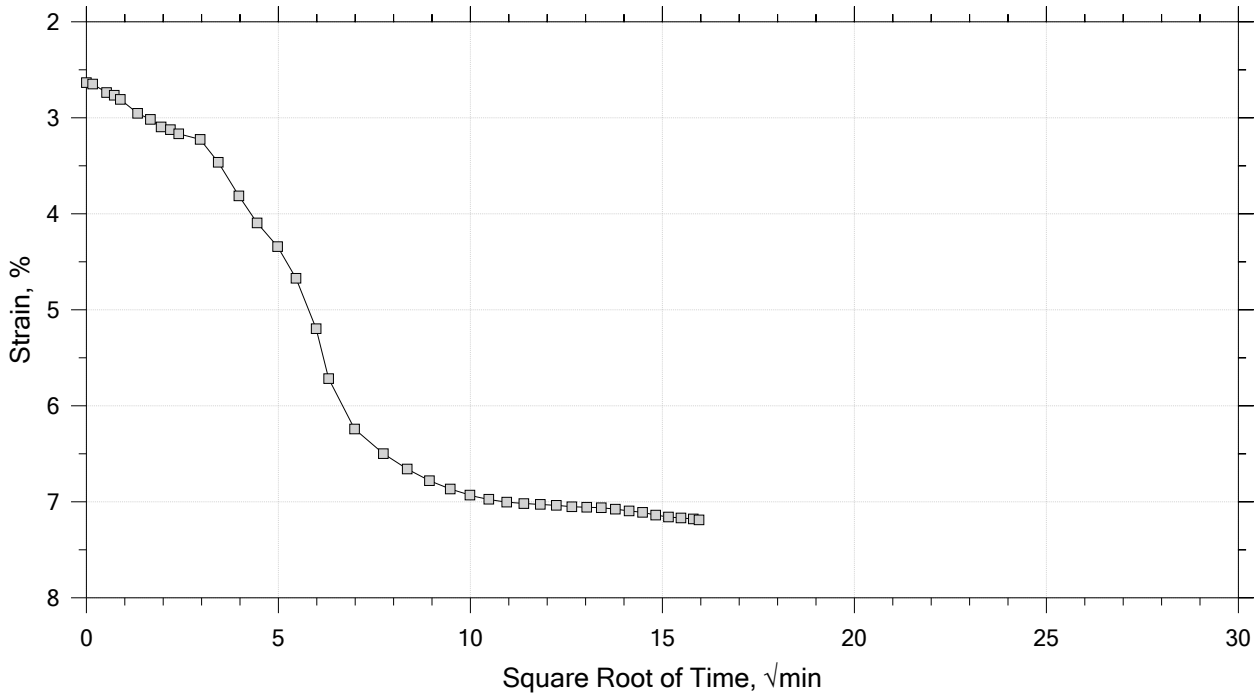
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 2 of 15

Constant Load Step

Stress: 0.125 tsf





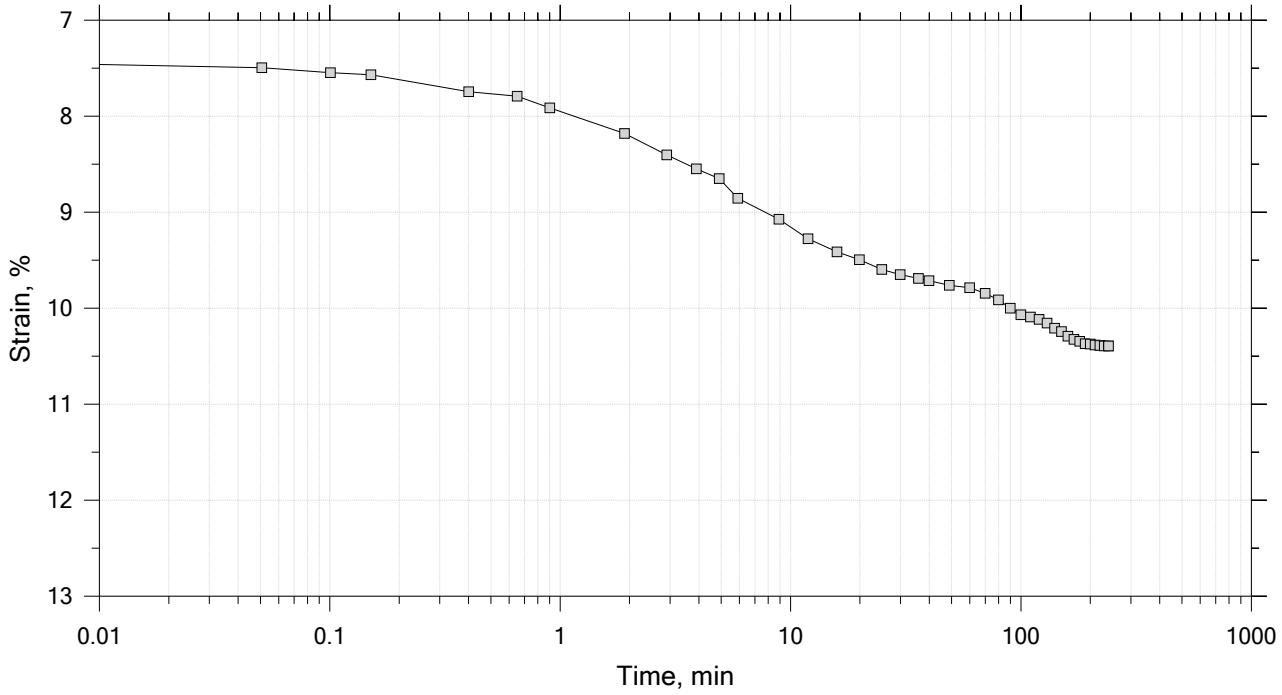
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

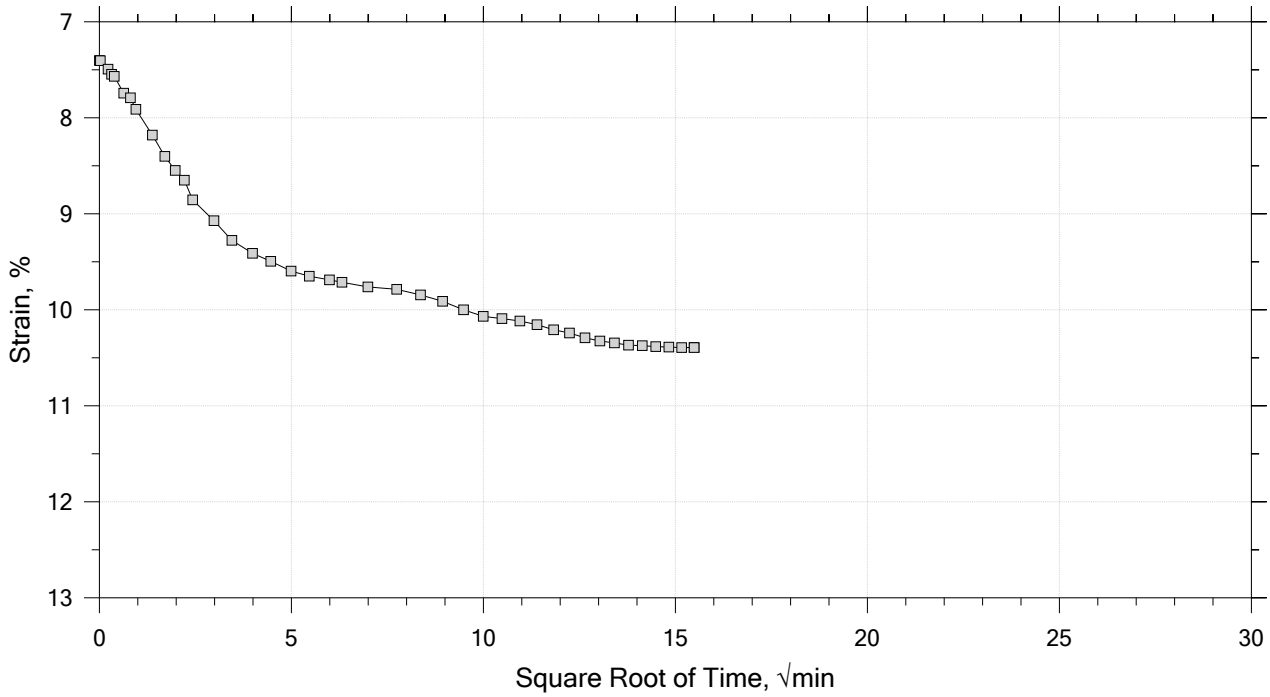
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 3 of 15

Constant Load Step

Stress: 0.25 tsf





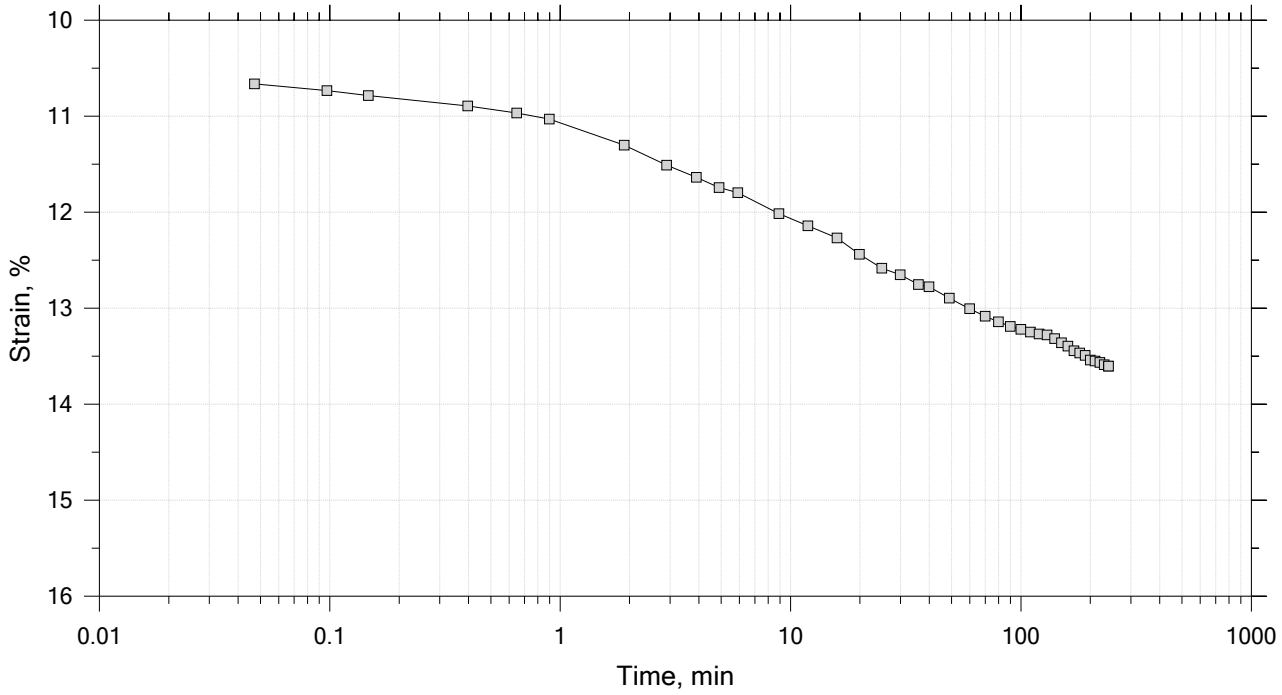
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

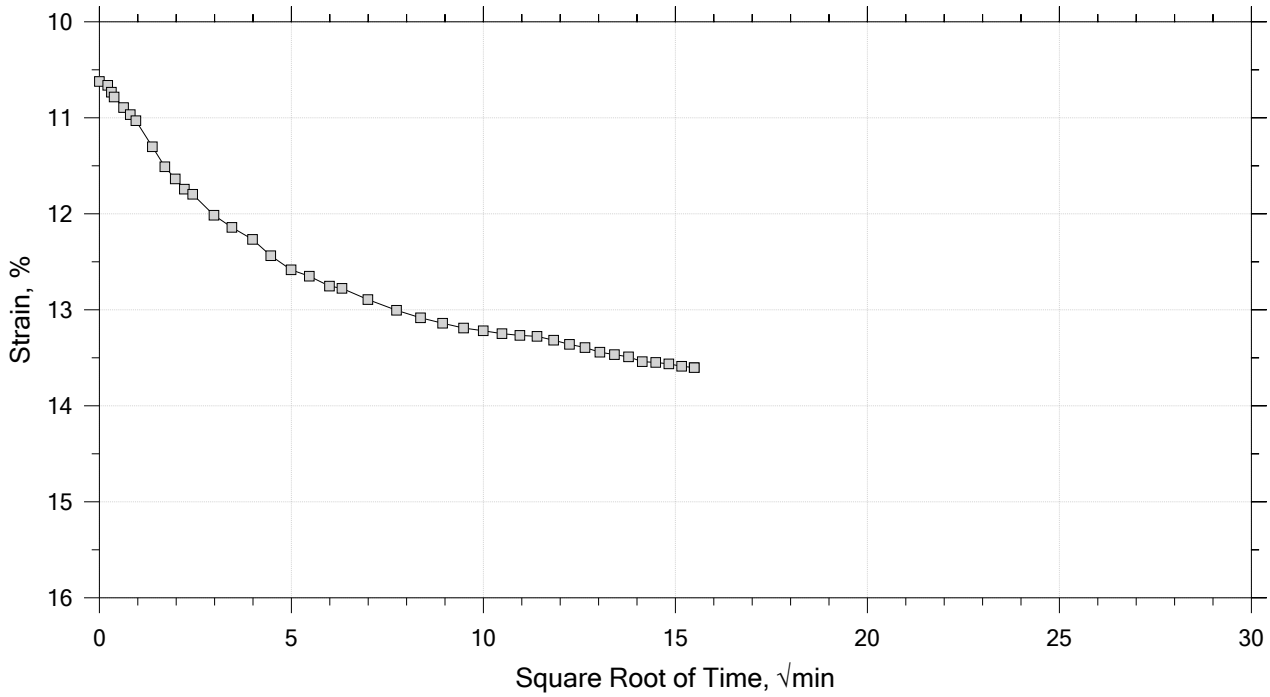
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 4 of 15

Constant Load Step

Stress: 0.5 tsf





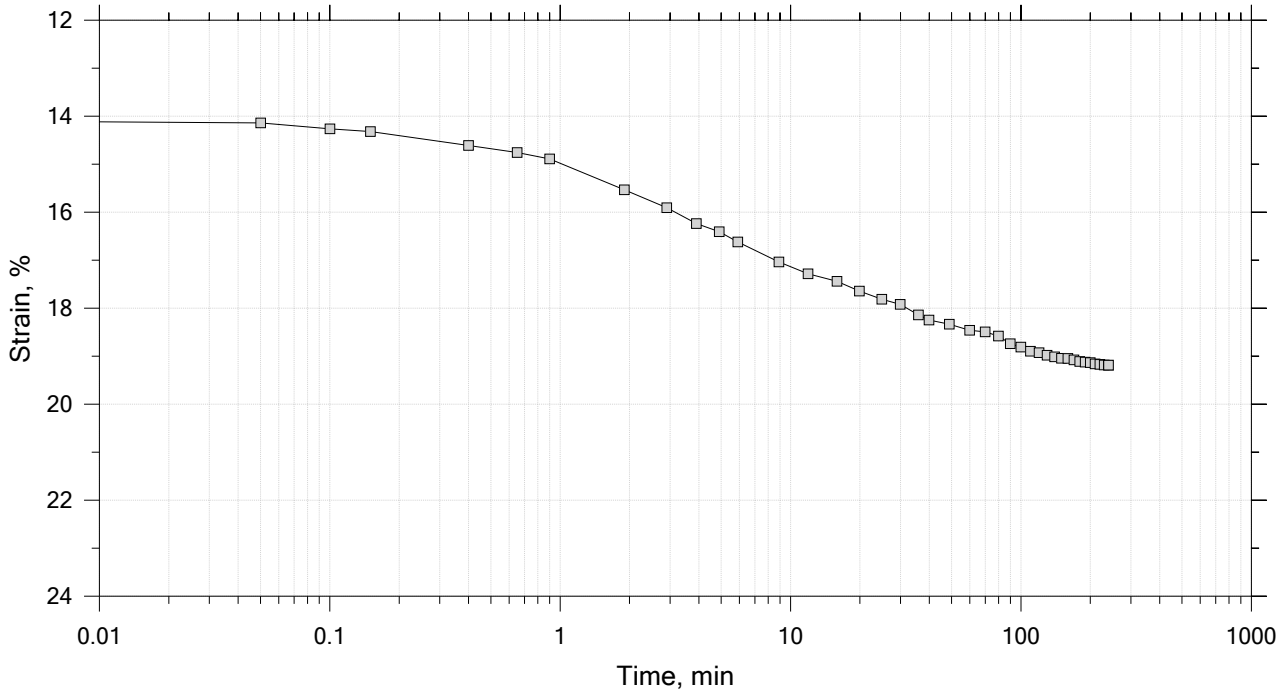
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

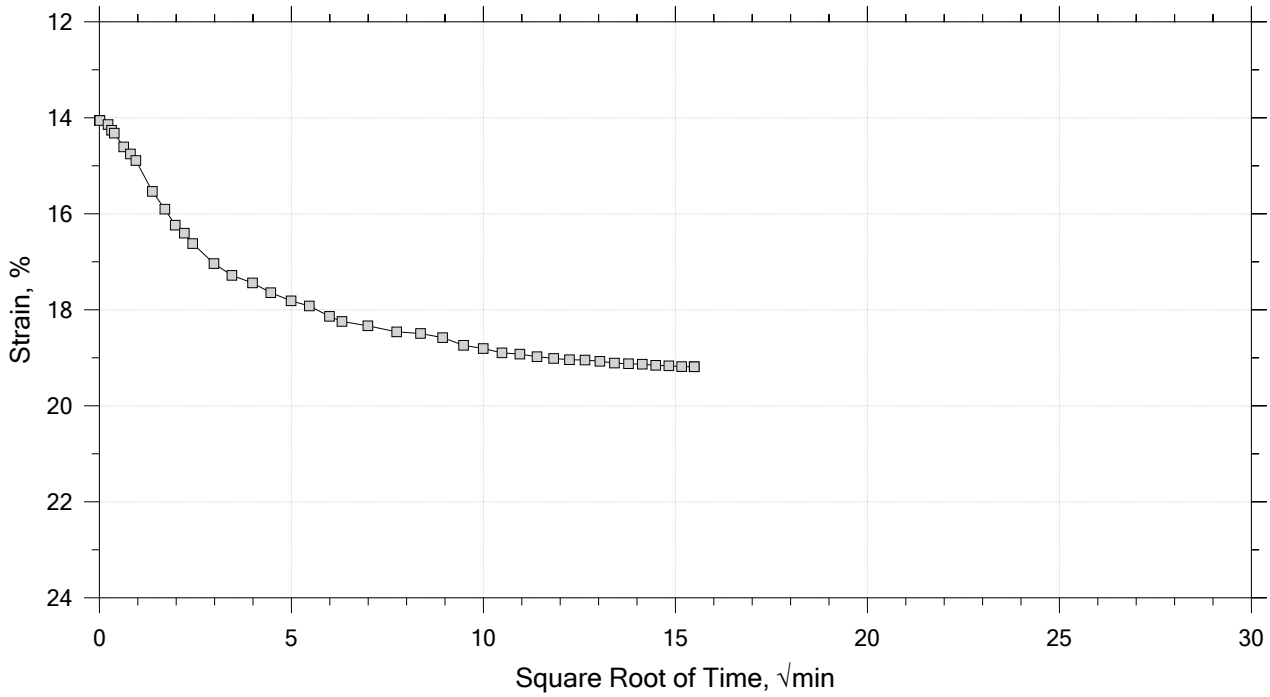
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 5 of 15

Constant Load Step

Stress: 1 tsf





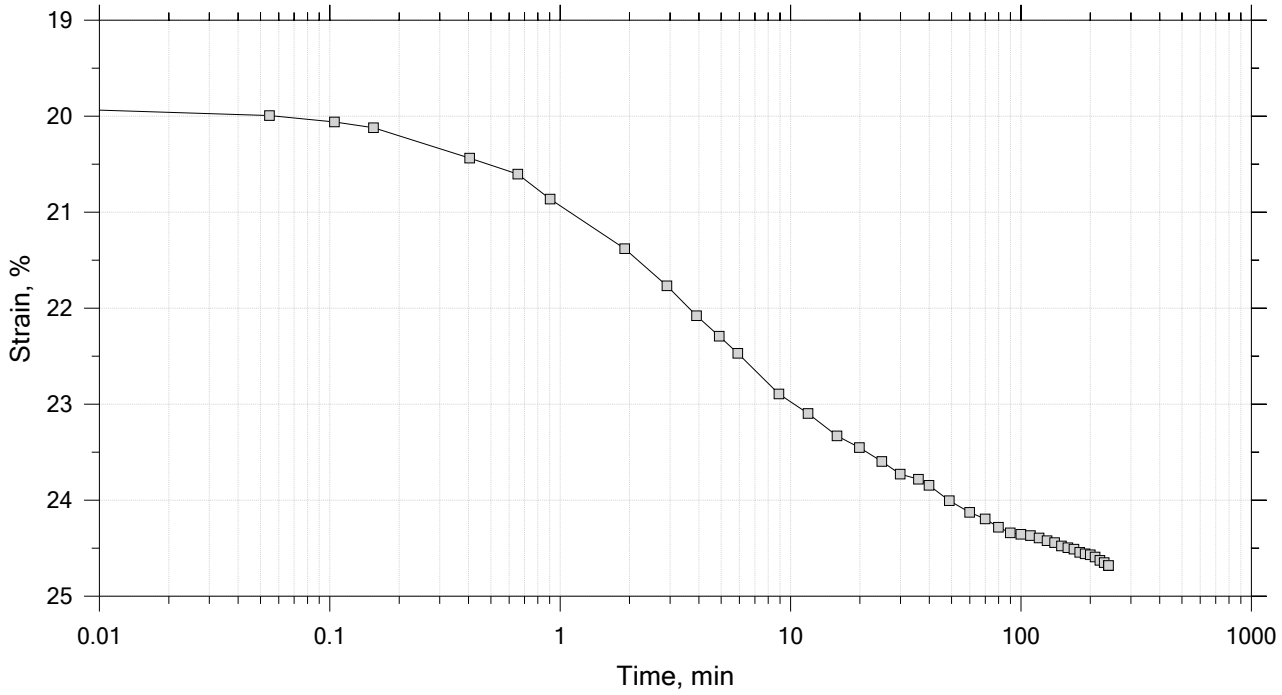
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

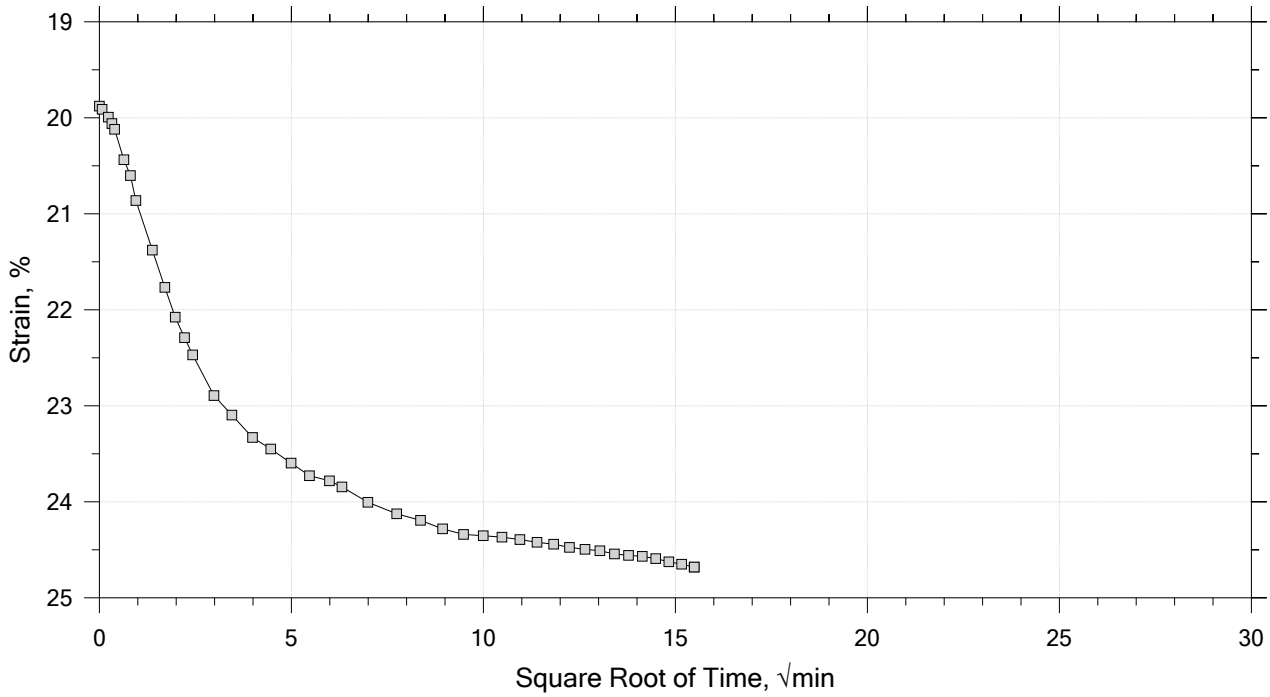
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 6 of 15

Constant Load Step

Stress: 2 tsf





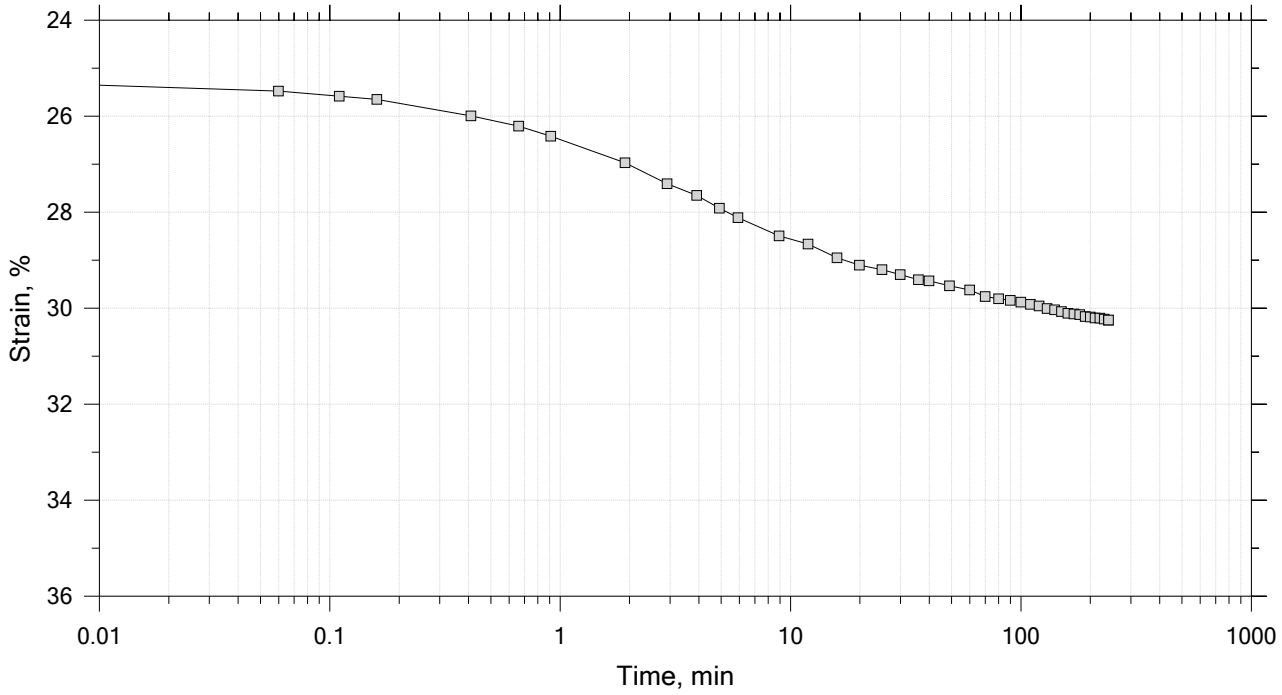
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

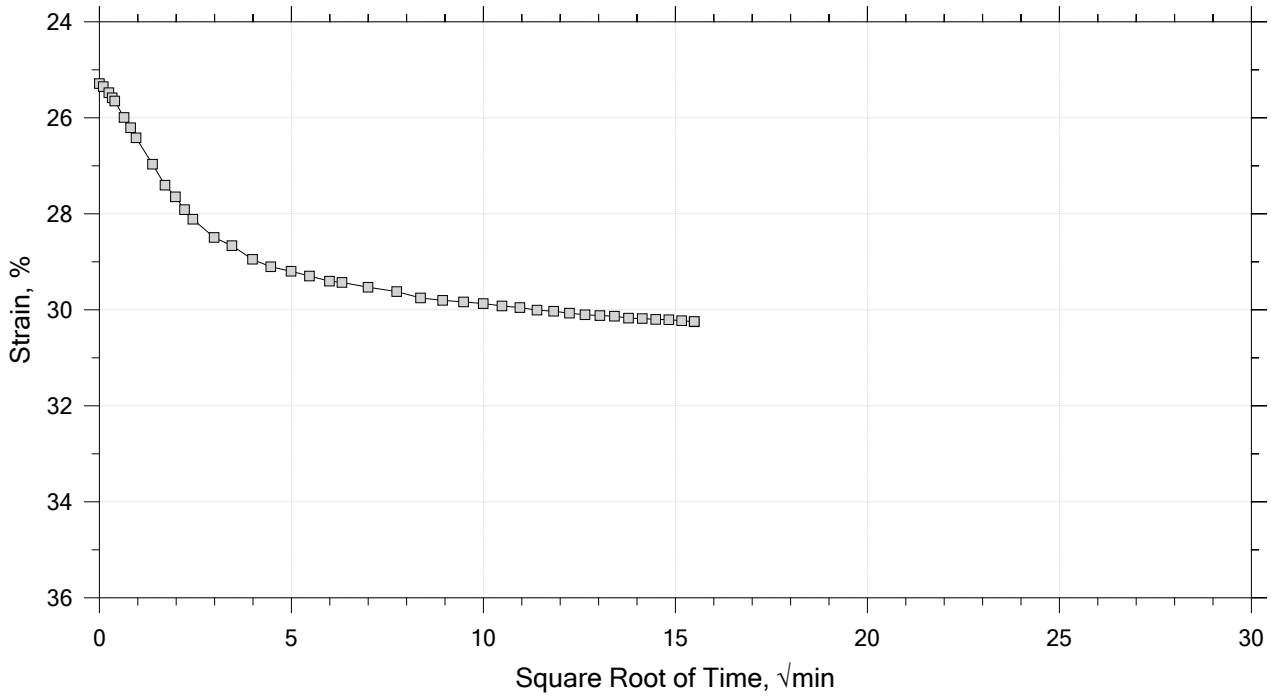
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 7 of 15

Constant Load Step

Stress: 4 tsf





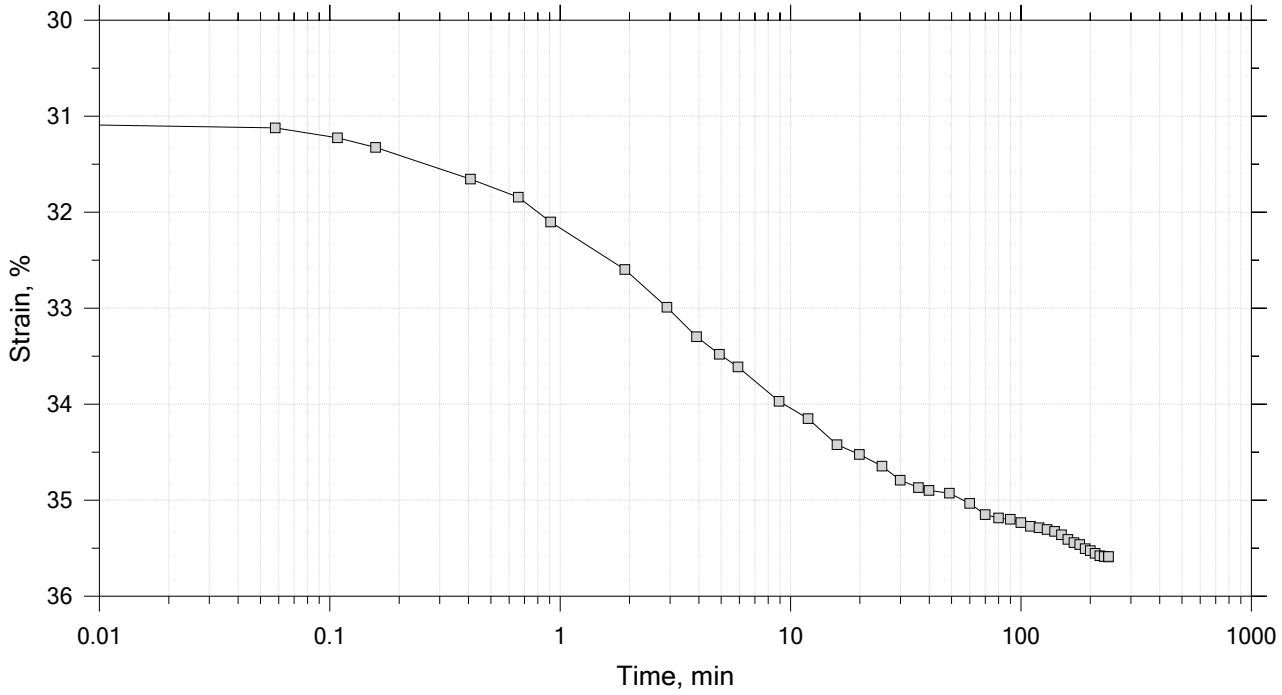
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

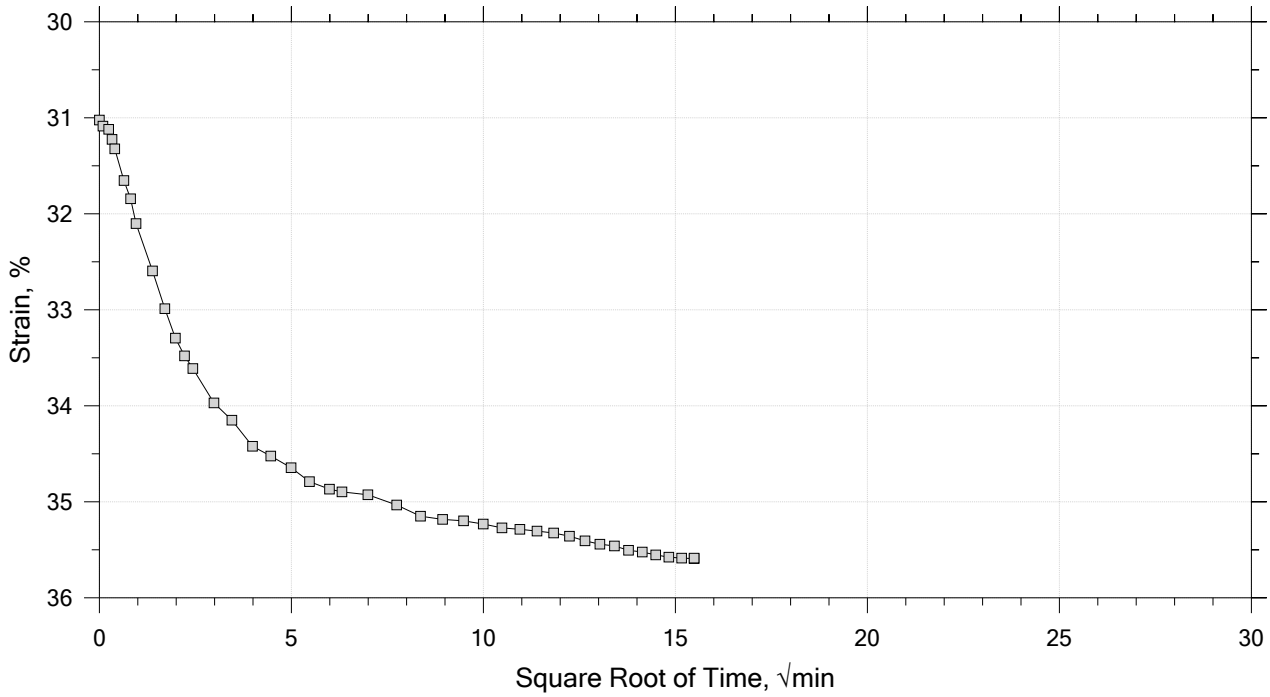
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 8 of 15

Constant Load Step

Stress: 8 tsf





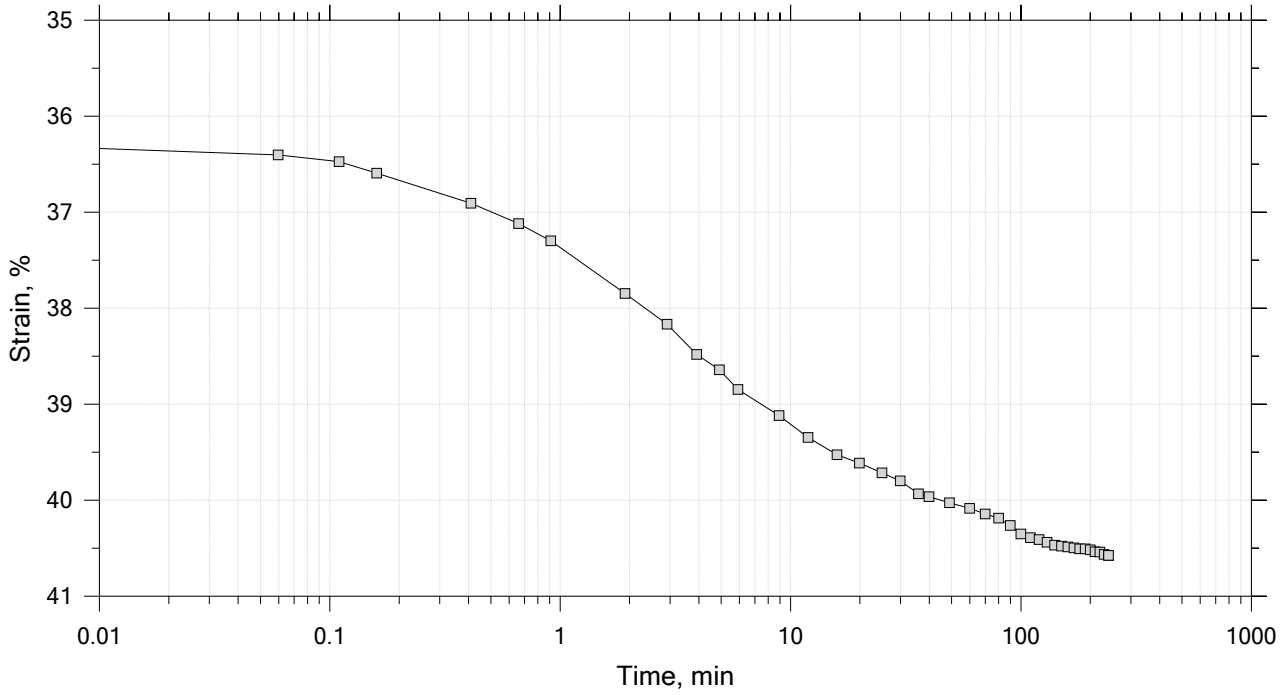
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

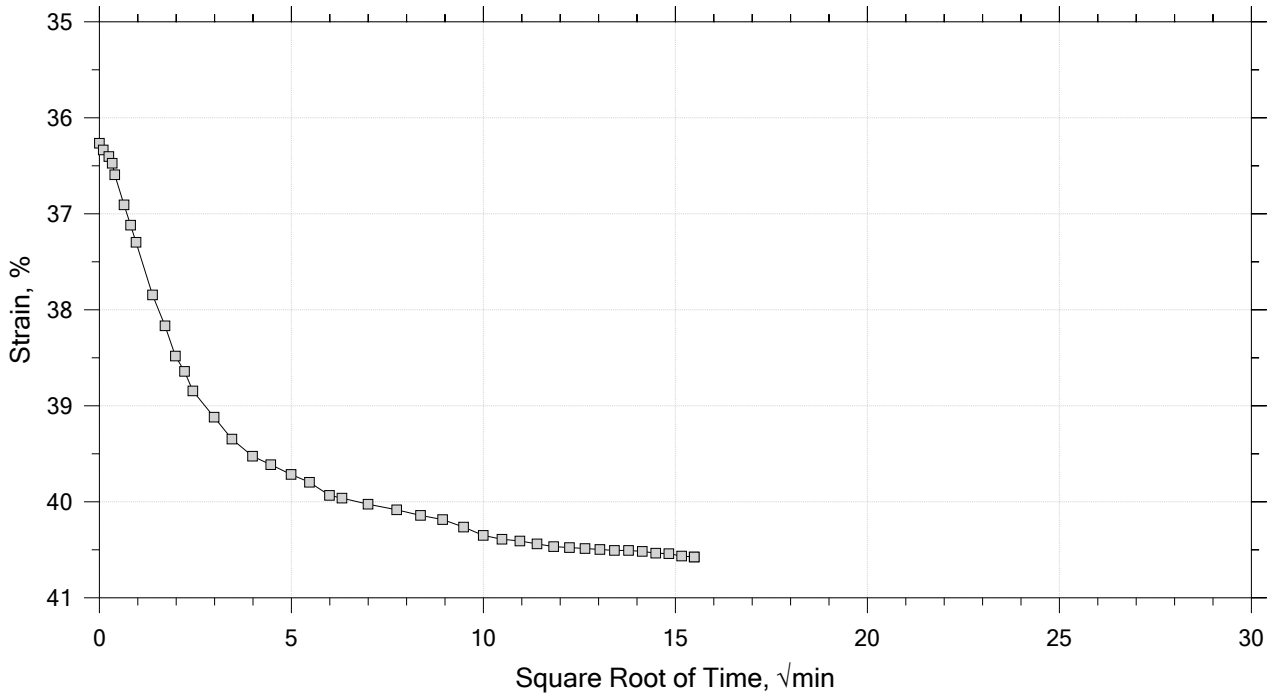
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 9 of 15

Constant Load Step

Stress: 16 tsf





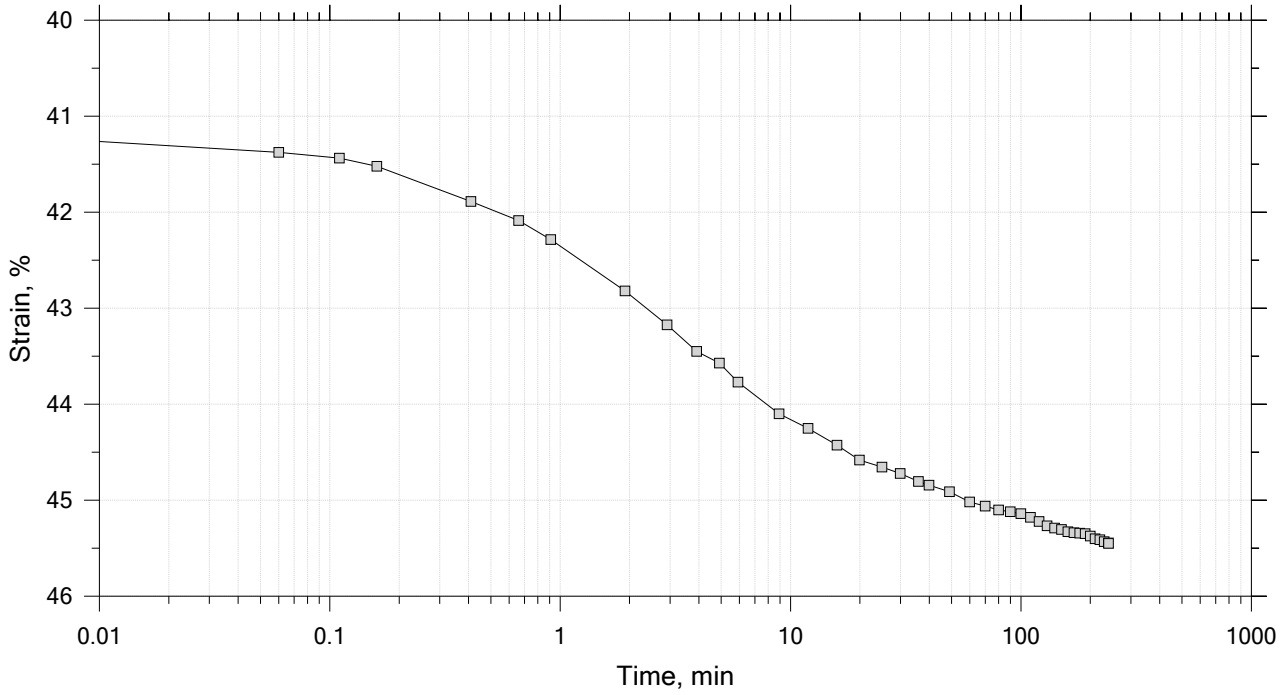
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

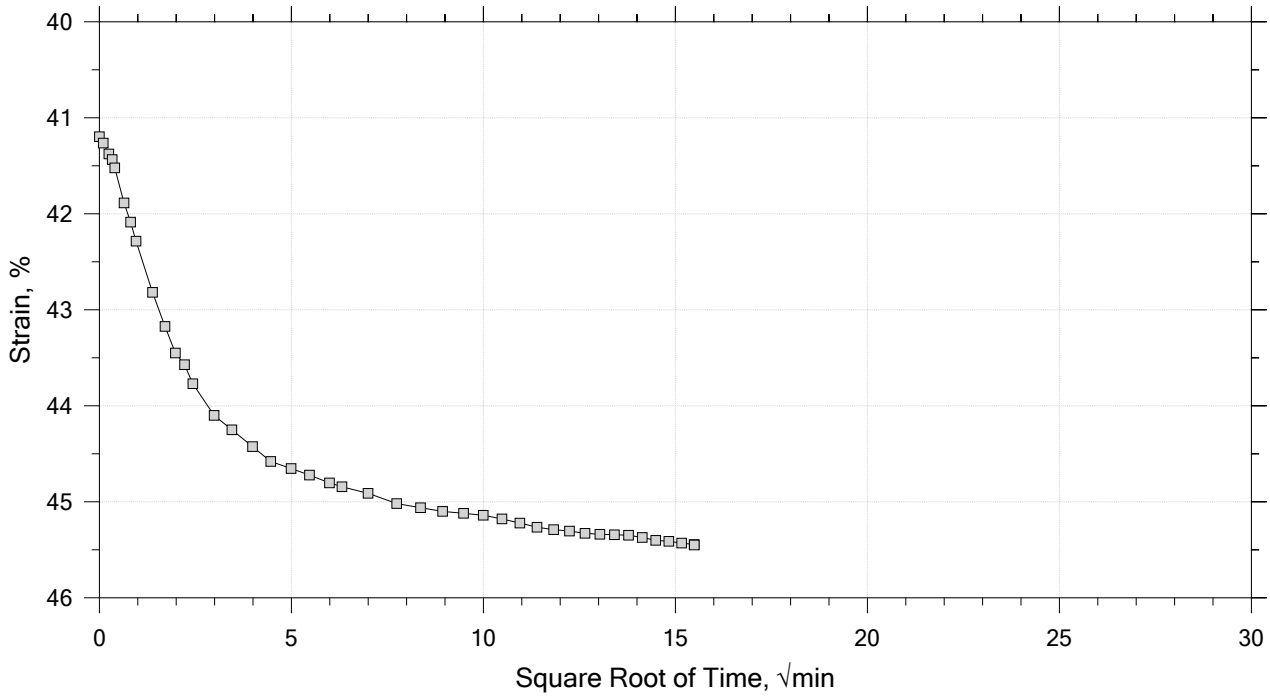
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 10 of 15

Constant Load Step

Stress: 32 tsf

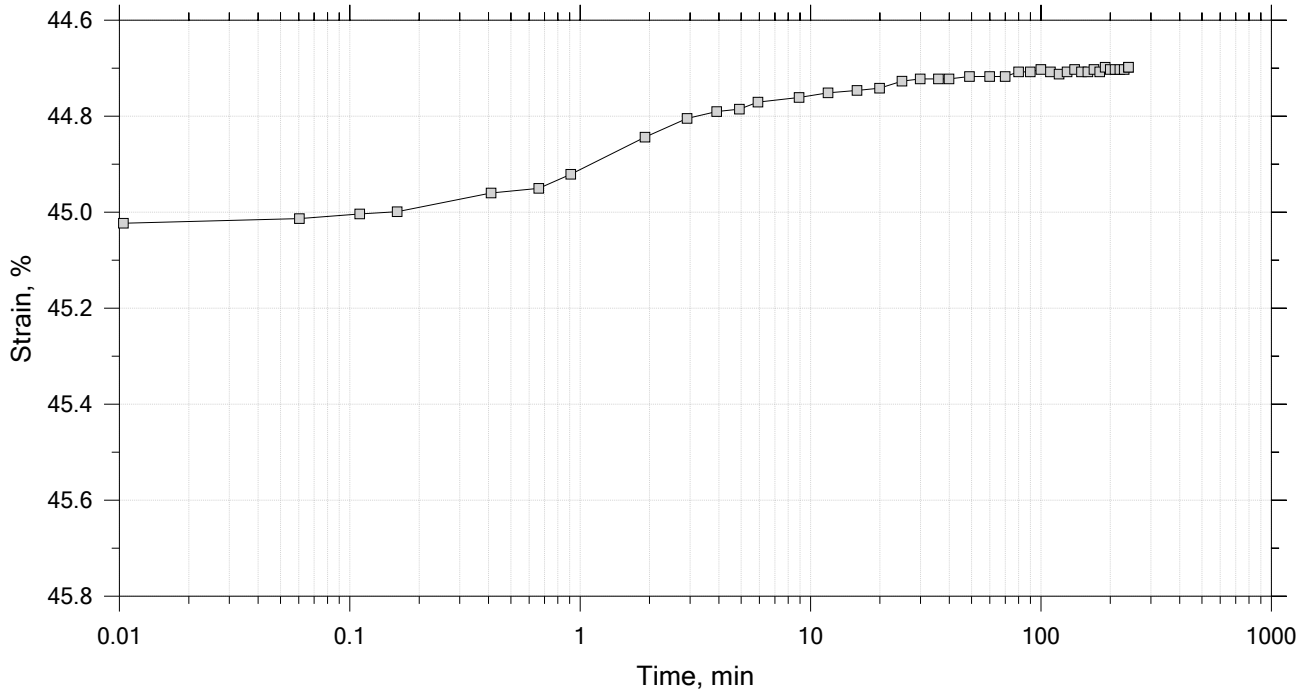


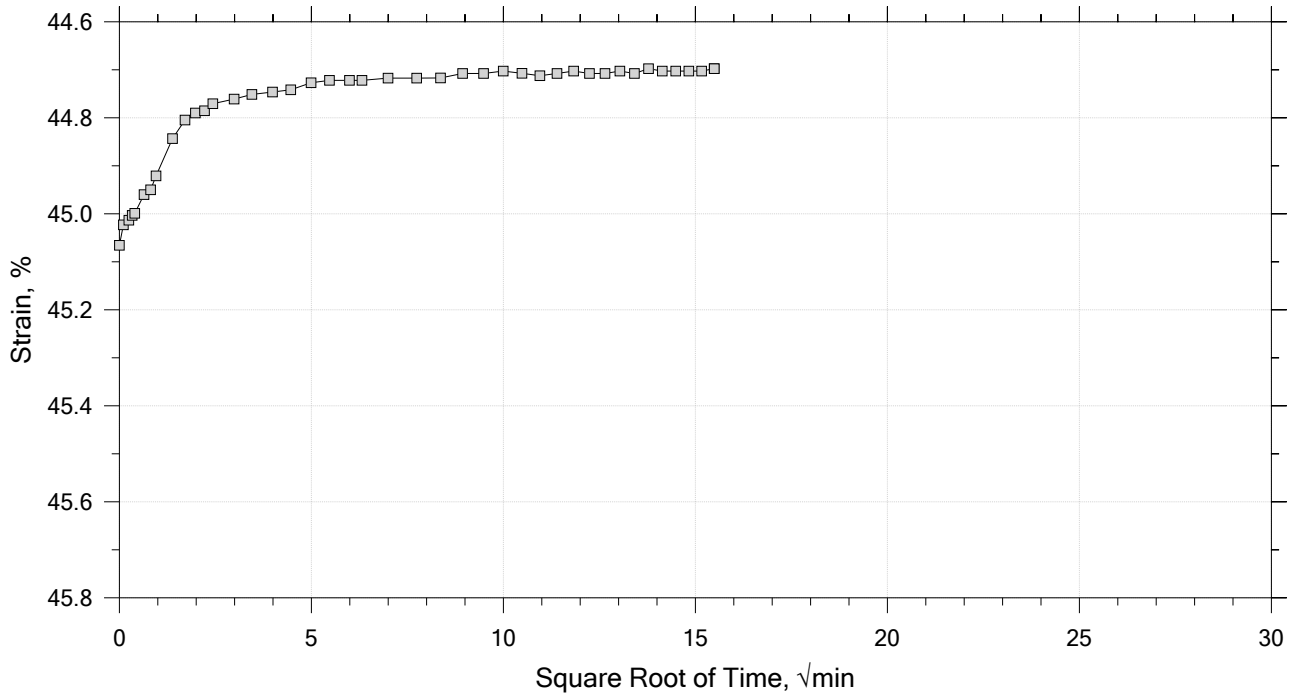


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 11 of 15
Constant Load Step
Stress: 8 tsf

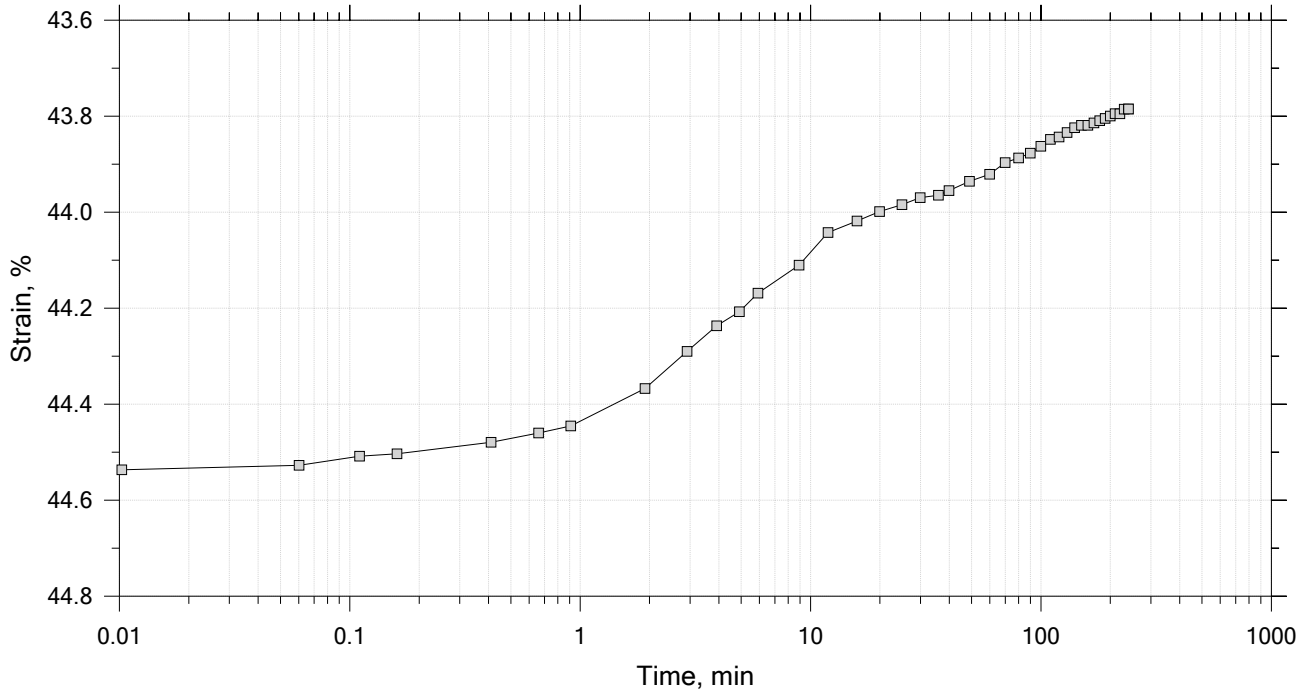


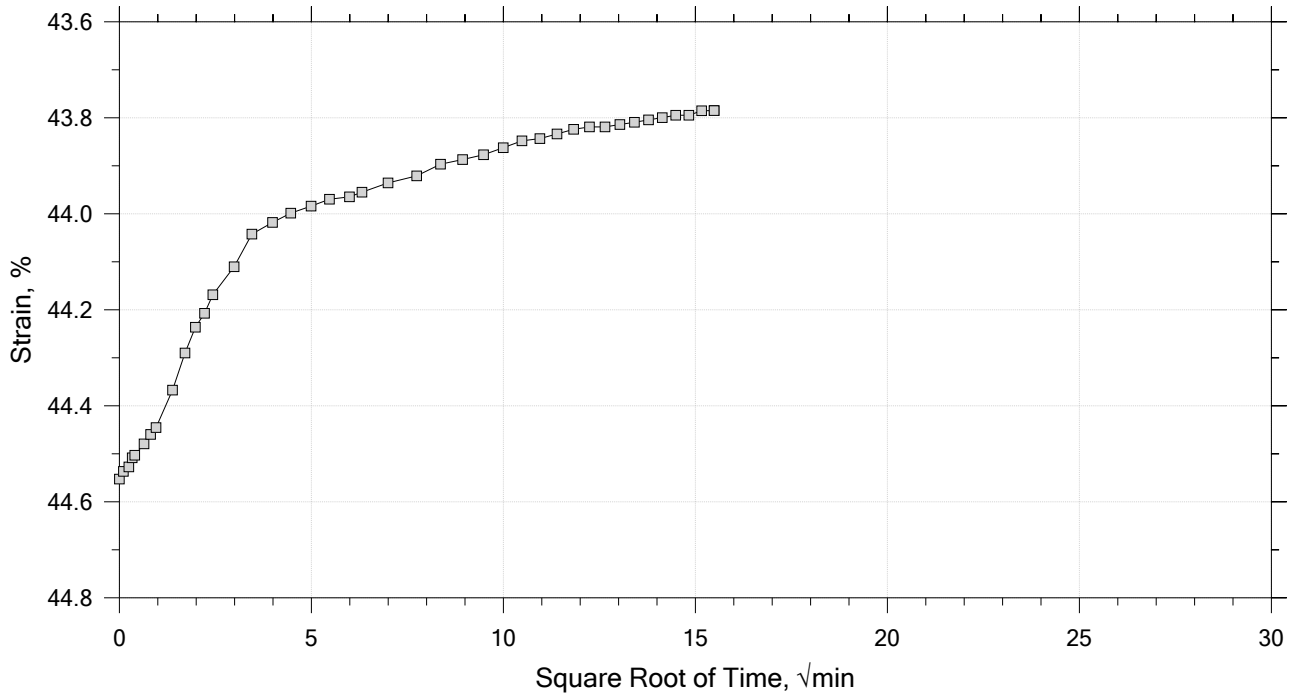


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 12 of 15
Constant Load Step
Stress: 2 tsf





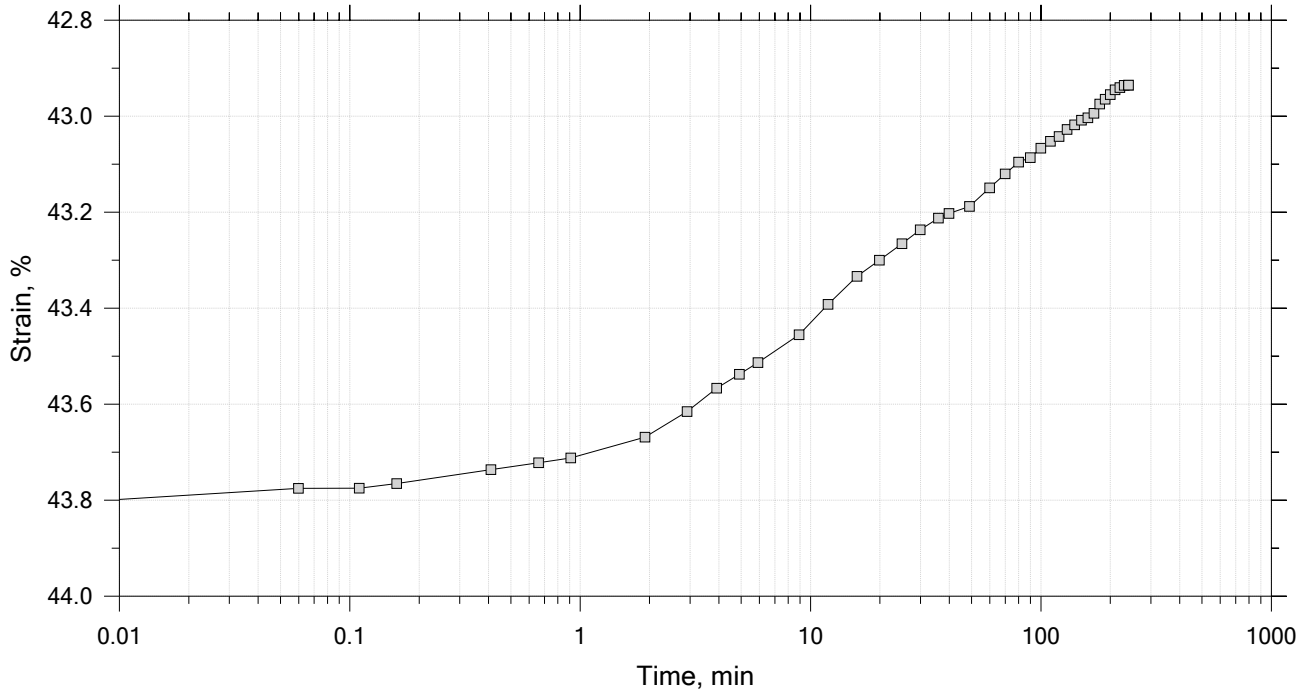
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

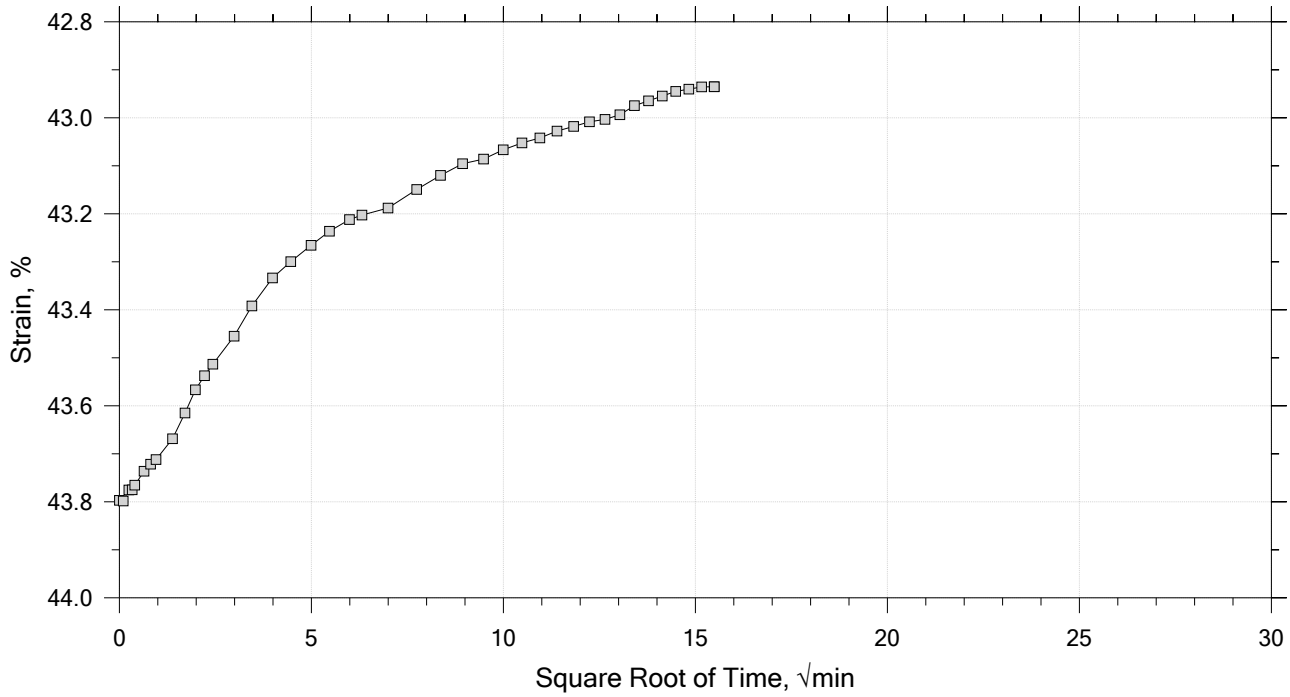
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 13 of 15

Constant Load Step

Stress: 0.5 tsf





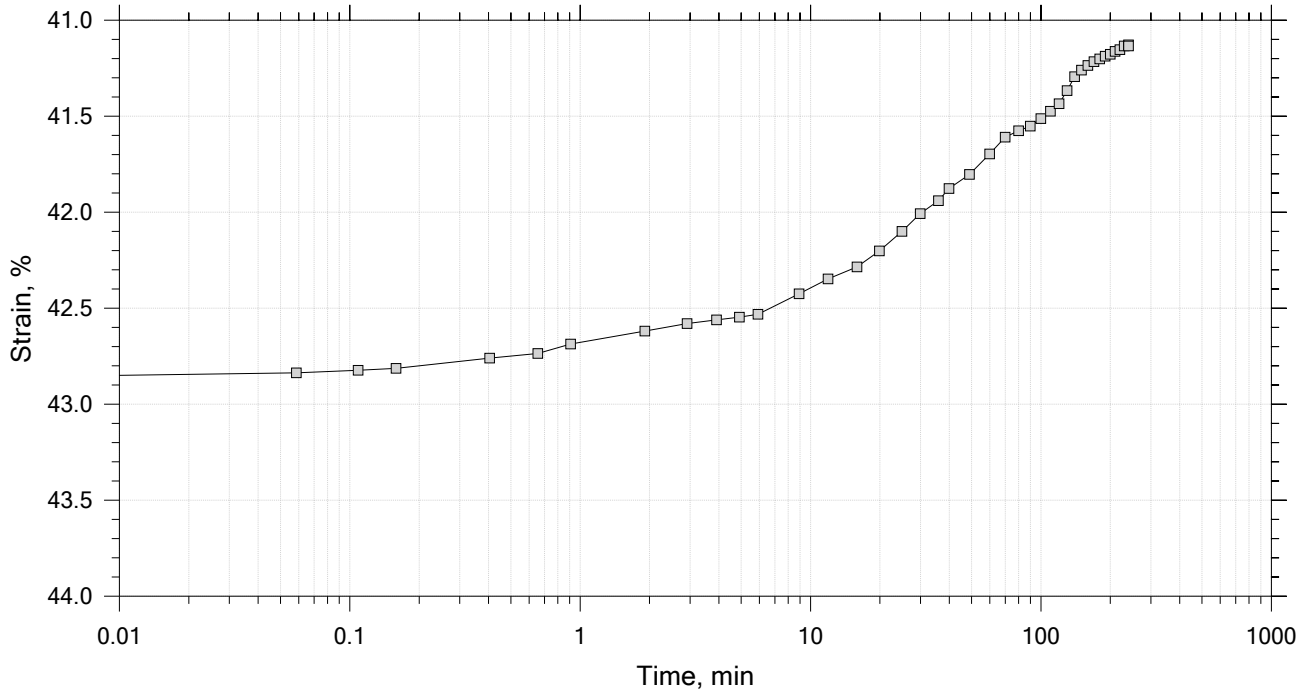
GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

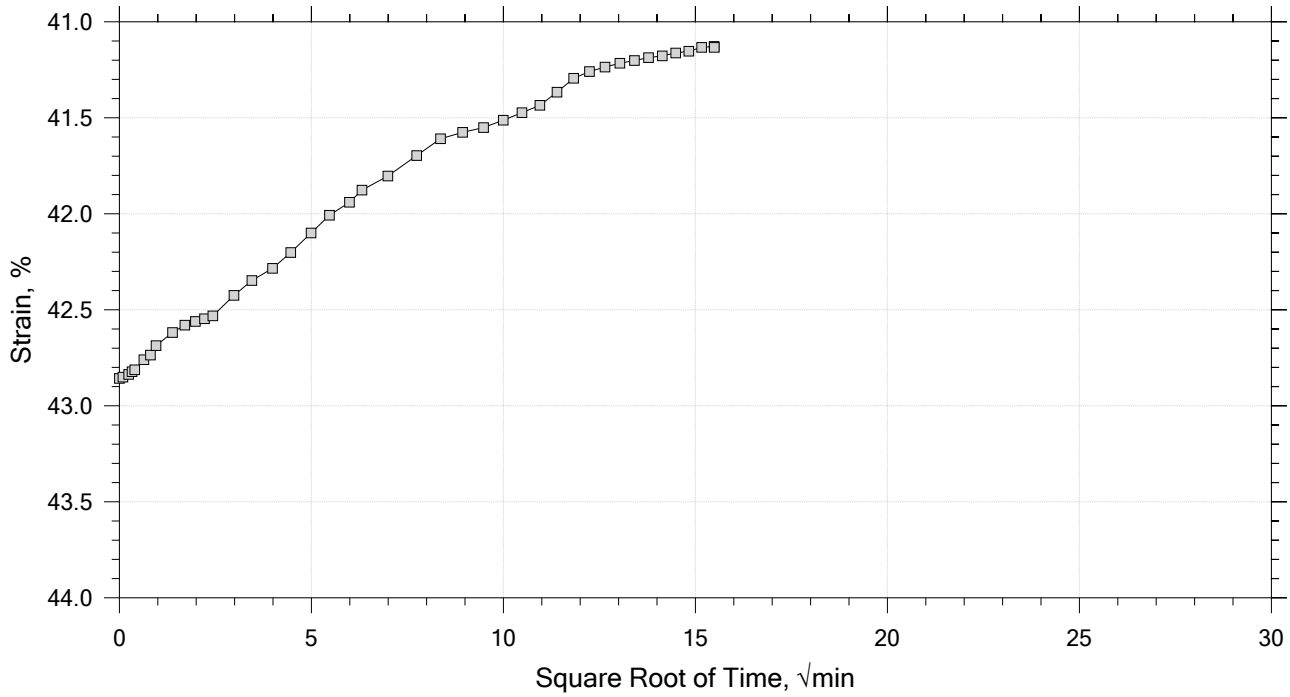
One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 14 of 15

Constant Load Step

Stress: 0.125 tsf

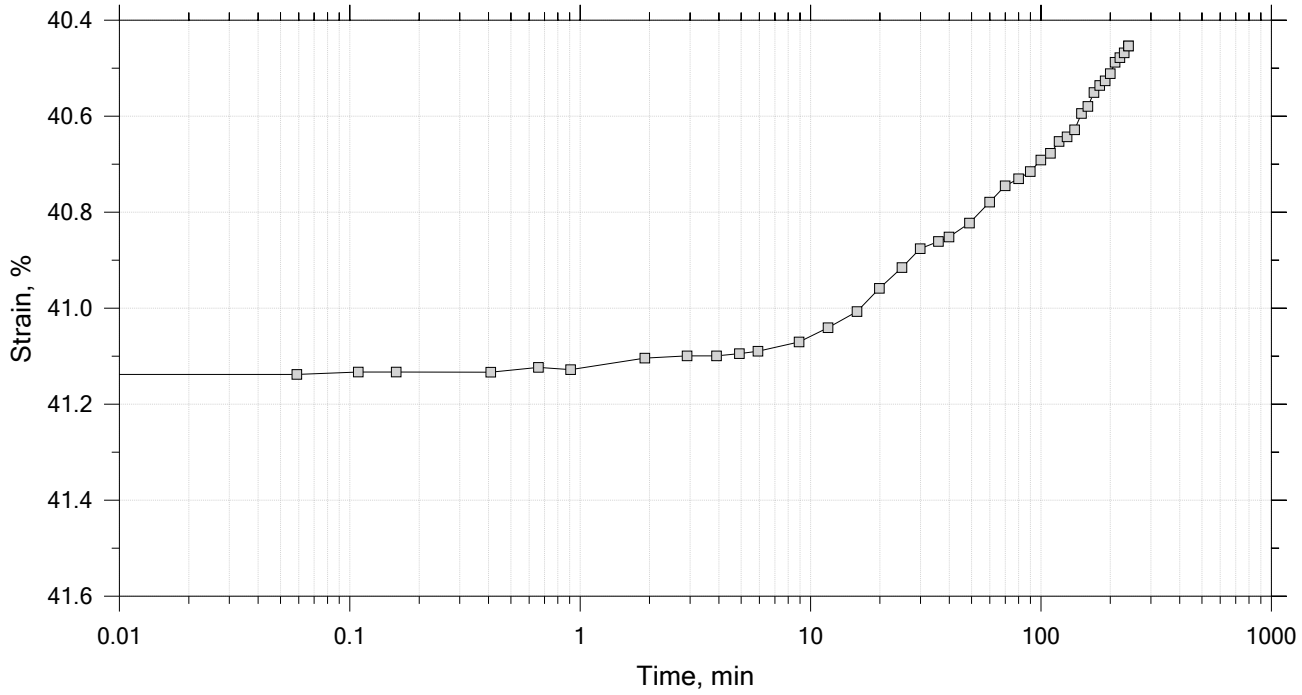


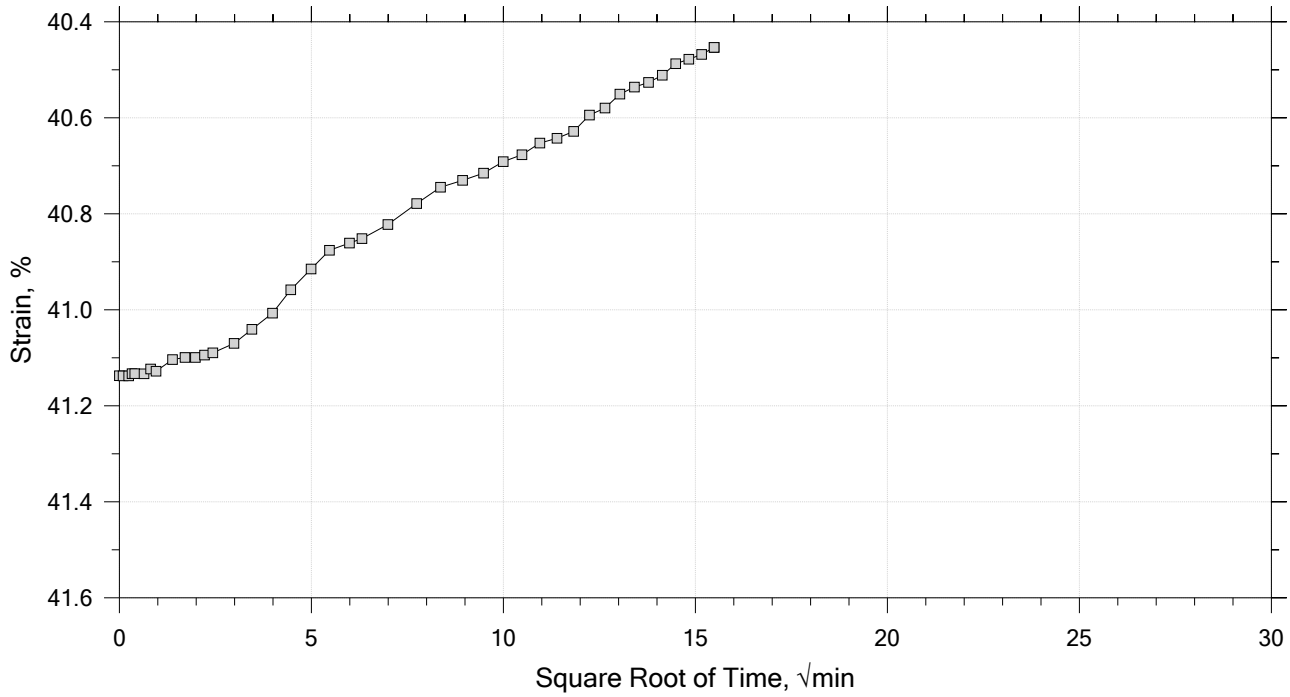


GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 15 of 15
Constant Load Step
Stress: 0.0625 tsf





GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Specimen Diameter: 2.50 in	Estimated Specific Gravity: 2.69	Liquid Limit: 50
Initial Height: 1.00 in	Initial Void Ratio: 2.04	Plastic Limit: 33
Final Height: 0.60 in	Final Void Ratio: 0.821	Plasticity Index: 17

	Before Test Trimmings	Before Test Specimen	After Test Specimen	After Test Trimmings
Container ID	D891	RING		B-2399
Mass Container, gm	8.37	112.4	112.4	9.31
Mass Container + Wet Soil, gm	196.24	236.54	205.38	101.76
Mass Container + Dry Soil, gm	116.71	183.62	183.62	80.12
Mass Dry Soil, gm	108.34	71.216	71.216	70.81
Water Content, %	73.41	74.31	30.56	30.56
Void Ratio	---	2.04	0.82	---
Degree of Saturation, %	---	98.12	100.00	---
Dry Unit Weight, pcf	---	55.269	92.116	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		

One-Dimensional Consolidation by ASTM D2435 - Method B

Log of Time Coefficients

Step	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	Log T50 min	Cv ft²/s	Mv 1/tsf	k ft/day	Ca %
1	0.0670	0.02107	1.97	2.11	5.467	1.02e-06	3.14e-01	8.66e-04	0.00e+00
2	0.125	0.07188	1.82	7.19	31.574	1.64e-07	8.76e-01	3.88e-04	0.00e+00
3	0.250	0.1039	1.72	10.4	0.000	0.00e+00	2.56e-01	0.00e+00	0.00e+00
4	0.500	0.1360	1.62	13.6	0.000	0.00e+00	1.28e-01	0.00e+00	0.00e+00
5	1.00	0.1919	1.45	19.2	3.725	1.07e-06	1.12e-01	3.22e-04	0.00e+00
6	2.00	0.2468	1.29	24.7	3.773	9.21e-07	5.49e-02	1.36e-04	0.00e+00
7	4.00	0.3025	1.12	30.2	2.692	1.11e-06	2.78e-02	8.36e-05	0.00e+00
8	8.00	0.3559	0.955	35.6	2.615	9.81e-07	1.34e-02	3.53e-05	0.00e+00
9	16.0	0.4057	0.804	40.6	2.286	9.56e-07	6.23e-03	1.61e-05	0.00e+00
10	32.0	0.4545	0.656	45.5	2.134	8.68e-07	3.05e-03	7.13e-06	0.00e+00
11	8.00	0.4470	0.679	44.7	0.000	0.00e+00	3.14e-04	0.00e+00	0.00e+00
12	2.00	0.4379	0.706	43.8	4.047	4.38e-07	1.52e-03	1.80e-06	0.00e+00
13	0.500	0.4294	0.732	42.9	0.000	0.00e+00	5.66e-03	0.00e+00	0.00e+00
14	0.125	0.4113	0.787	41.1	0.000	0.00e+00	4.80e-02	0.00e+00	0.00e+00
15	0.0625	0.4045	0.808	40.5	0.000	0.00e+00	1.09e-01	0.00e+00	0.00e+00

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Square Root of Time Coefficients

Step	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	Sq.Rt. T90 min	Cv ft²/s	Mv 1/tsf	k ft/day
1	0.0670	0.02107	1.97	2.11	31.257	7.69e-07	3.14e-01	6.52e-04
2	0.125	0.07188	1.82	7.19	120.733	1.85e-07	8.76e-01	4.37e-04
3	0.250	0.1039	1.72	10.4	21.662	9.42e-07	2.56e-01	6.52e-04
4	0.500	0.1360	1.62	13.6	34.061	5.58e-07	1.28e-01	1.93e-04
5	1.00	0.1919	1.45	19.2	22.369	7.67e-07	1.12e-01	2.31e-04
6	2.00	0.2468	1.29	24.7	16.263	9.20e-07	5.49e-02	1.36e-04
7	4.00	0.3025	1.12	30.2	16.588	7.78e-07	2.78e-02	5.84e-05
8	8.00	0.3559	0.955	35.6	16.801	6.57e-07	1.34e-02	2.37e-05
9	16.0	0.4057	0.804	40.6	12.123	7.76e-07	6.23e-03	1.30e-05
10	32.0	0.4545	0.656	45.5	11.467	6.95e-07	3.05e-03	5.71e-06
11	8.00	0.4470	0.679	44.7	8.666	8.54e-07	3.14e-04	7.22e-07
12	2.00	0.4379	0.706	43.8	20.035	3.81e-07	1.52e-03	1.56e-06
13	0.500	0.4294	0.732	42.9	42.100	1.87e-07	5.66e-03	2.86e-06
14	0.125	0.4113	0.787	41.1	149.871	5.50e-08	4.80e-02	7.13e-06
15	0.0625	0.4045	0.808	40.5	178.907	4.81e-08	1.09e-01	1.41e-05

GeoTesting EXPRESS	Project: Gasco PDI	Location: ---	Project No.: GTX-310685
	Boring No.: PDI-123-SPT	Tested By: trm	Checked By: anm
	Sample No.: 4.5-6.5-190924	Test Date: 12/4/19	Depth: ---
	Test No.: IP-3B	Sample Type: intact	Elevation: ---
	Description: Wet, olive gray silt		
	Remarks: System JJ, Swell Pressure = 0.067 tsf		
	Displacement at End of Increment		