GEOSYSTEMS
ENGINEERING, INC.

August 14, 2018

Newton County, Georgia
c/o Mr. Alex S. Wiseman
Carter & Sloope, Inc.
1031 Stonebridge Parkway
Watkinsville, Georgia 30677

Re: Subsurface Investigation
Newton County Water Treatment Plant Additions
GeoSystems Project No. 18-2653

Dear Mr. Wiseman:

GeoSystems Engineering, Inc. (GeoSystems) has completed the soil test borings as part of the authorized subsurface investigation for the proposed Newton County Water Treatment Plant additions. The purpose of the investigation was to evaluate subsurface conditions at the site and provide recommendations for foundation design and construction. This report summarizes the soil test boring findings and presents our initial conclusions concerning foundation support.

Five soil test borings (B-1 thru B-5) were drilled in the proposed clearwell location and eight borings (B-6 thru B-13) were drilled in the sludge thickener tanks and sludge press building locations. The majority of the borings were terminated at a depth of 30 feet below existing ground (beg); however, to determine the total thickness of compressible soils for settlement estimates and evaluate deep foundation support alternatives, four borings were drilled to deeper depths. Borings B-4, B-5, B-7 and B-9 were extended to auger refusal or into partially weathered rock at depths of 55, 34.5, 60 and 58 feet, respectively. Boring B-3 encountered auger refusal materials at a shallower depth of 29 feet. In addition to the borings, laboratory soil classification testing of selected split-spoon soil samples was completed to confirm visual soil classifications and to aid in predicting soil parameters.

A boring location plan (Figure 1), subsurface sections (Figure 2 & Figure 3), soil test boring logs and laboratory soil test reports are enclosed that present the subsurface investigation data. These documents provide details of the subsurface conditions encountered including unified soil classifications, standard penetration resistances and groundwater conditions at the time of investigation. Please note the horizontal lines on the soil test boring logs, designating the interfaces between various strata, represent approximate boundaries only, as transitions between materials may be gradual.

Subsurface conditions encountered in the clearwell location include some shallow fill overlying residual soils and then partially weathered rock and auger refusal materials. Groundwater was encountered in all borings at depths varying approximately from 4 to 10 feet below the existing

ground surface. The subsurface conditions are marginal for shallow foundation support of the clearwell due to required excavations below the water table and anticipated excessive differential settlement of the tank.

In the sludge thickener tanks and sludge press building area, the borings, except B-10, initially encountered an approximate 6 to 12-foot layer of fill associated with the existing sludge pond embankments. Below the fill, borings B-7, B-8, B-9, B-12 and B-13 then penetrated approximately 11 to 20 feet of weak alluvial soils. Residual soils were encountered at the ground surface in boring B-10, below the fill layer in B-6 and B-11, and below the alluvium in the remaining borings. In borings B-7 and B-9, 11 and 21 feet of partially weathered rock and/or very dense residual soil were found overlying auger refusal at depths of 60 and 58 feet, respectively. Groundwater in this area was encountered generally at a depth of about 6 feet bgs. In our opinion, the subsurface conditions found in these borings are not suitable for shallow foundation support of the proposed sludge thickener tanks and sludge press building.

Due to the poor subsurface conditions found at this site, we understand that an alternative location for the proposed plant additions is currently being explored. Once a new site is located, an additional subsurface investigation will be performed.

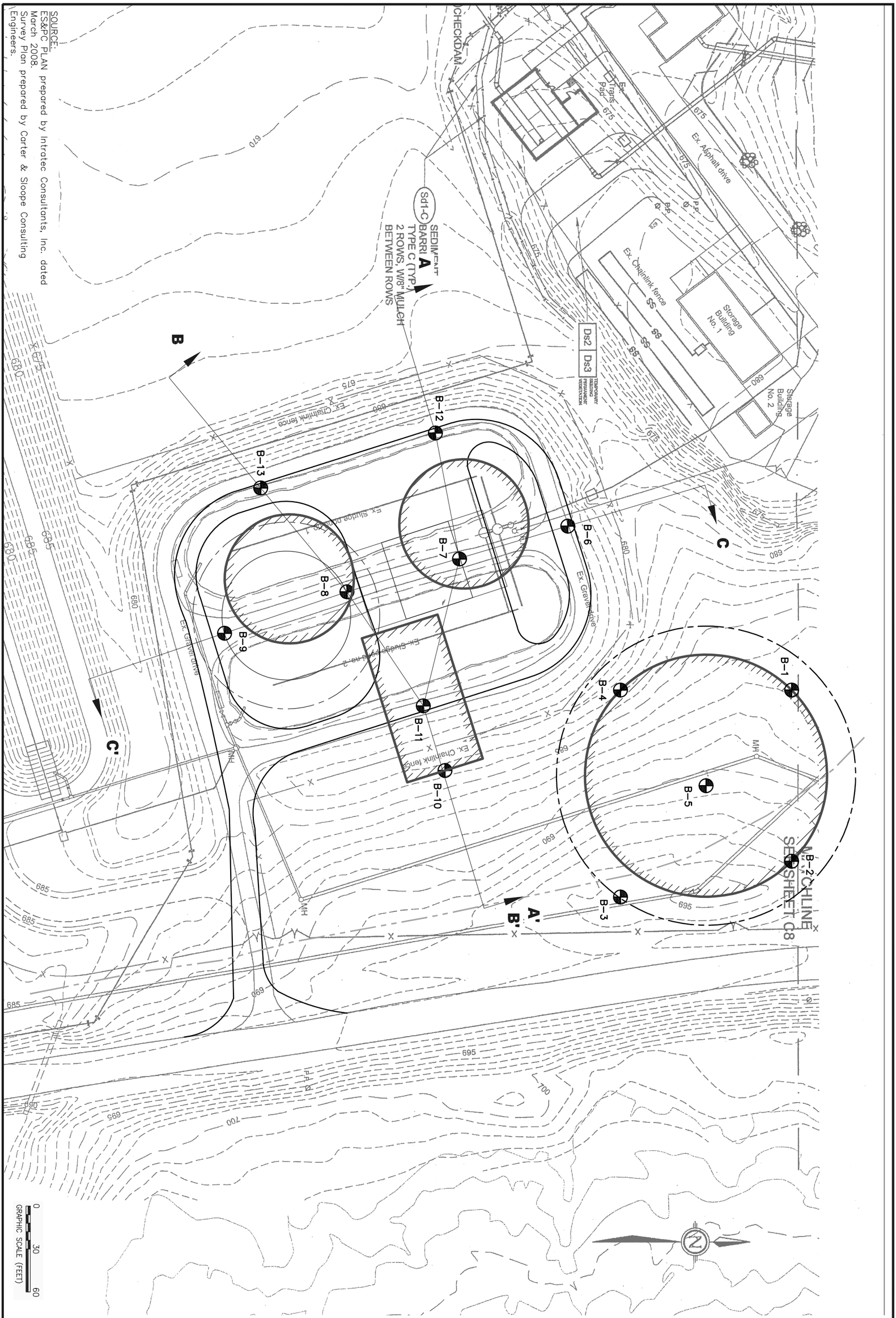
Thank you for allowing us to conduct the subsurface investigation to date on this project and look forward to assisting you with subsequent geotechnical engineering services, as needed. Please call me if you have any questions or need anything further at this time.

Sincerely,

GeoSystems Engineering, Inc.

Larry D. Mullins, P.E.
Principal Engineer

Enclosures: Boring Location Plan (Figure 1)
Sections (Figure 2 & Figure 3)
Key to Symbols and Classifications
Soil Test Boring Logs (13)
Laboratory Soil Test Reports (12 pages)



LEGEND

⊕ – SOIL TEST BORING

SCALE: 1" = 60' (APPROXIMATELY)

GEOSYSTEMS ENGINEERING, INC.

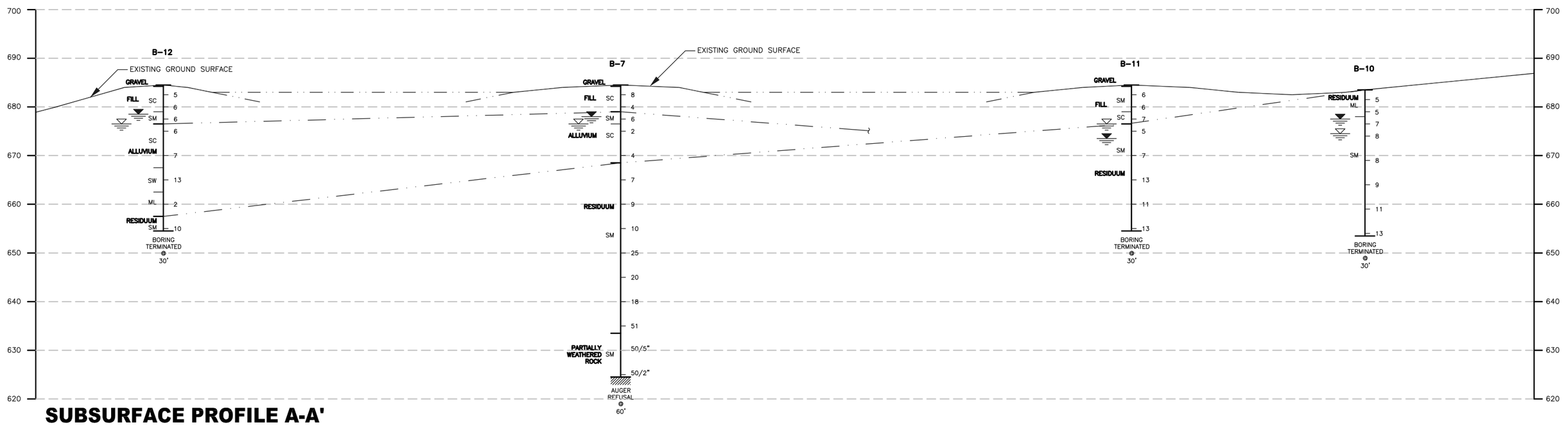
REFERENCE: Newton WTP BLP.dwg

BORING LOCATION PLAN

PROJECT: NEWTON COUNTY, GEORGIA
CORNISH CREEK WTP ADDITIONS
GeoSystems Project Number: 18-2653

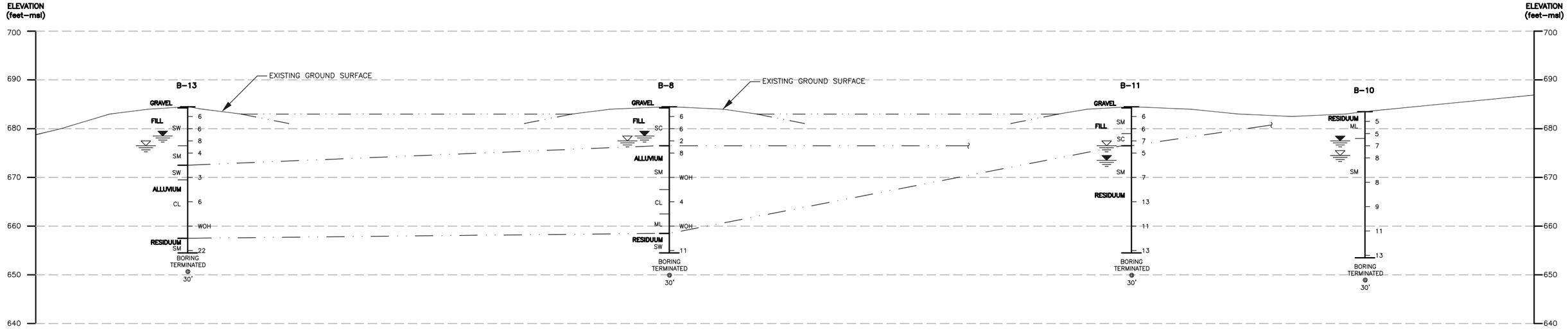
PREPARED BY: GEI	
DATE: 6/2/2018	
REVIEWED BY: LDM	
DATE: 6/2/2018	

FIGURE: 1



SUBSURFACE PROFILE A-A'

SCALE: 1" = 20'(HORIZONTAL), 1"=20'(VERTICAL)



SUBSURFACE PROFILE B-B'

SCALE: 1" = 20'(HORIZONTAL), 1"=20'(VERTICAL)

LEGEND

SCALE: 1" = 20' (APPROXIMATELY)

GEOSYSTEMS ENGINEERING, INC.

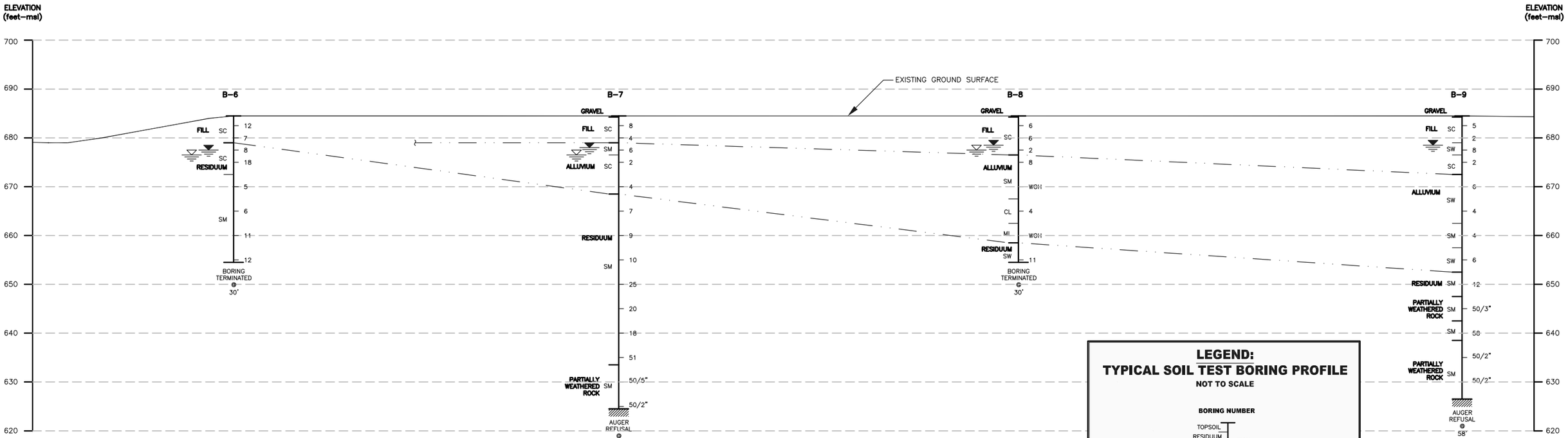
REFERENCE: Newton WTP BLP.dwg

SECTIONS

PROJECT: NEWTON COUNTY, GEORGIA
CORNISH CREEK WTP ADDITIONS
GeoSystems Project Number: 18–2653

PREPARED BY: GEI
DATE: 6/2/2018
REVIEWED BY: LDM
DATE: 6/2/2018

FIGURE: 2

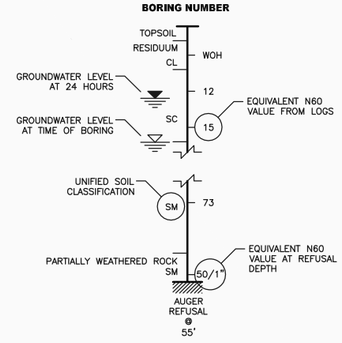


SUBSURFACE PROFILE C-C'

SCALE: 1" = 20'(HORIZONTAL), 1"=20'(VERTICAL)

LEGEND: TYPICAL SOIL TEST BORING PROFILE

NOT TO SCALE



UNIFIED SOIL CLASSIFICATIONS

OH – HIGH PLASTICITY ORGANICS
ML – LOW PLASTICITY SILT
SM – SILTY SAND
SP – POORLY GRADED SAND
SW – WELL GRADED SAND
CL – LOW PLASTICITY CLAY
CH – HIGH PLASTICITY CLAY

ADDITIONAL ABBREVIATIONS

N60 – PENETRATION RESISTANCE AT BLOWS PER FOOT (BPF) AT STANDARD 60% HAMMER EFFICIENCY
WOH – STATIC WEIGHT OF HAMMER SUFFICIENT TO PUSH SAMPLER ENTIRE SAMPLE INTERVAL

LEGEND

SCALE: 1" = 20' (APPROXIMATELY)

GEOSYSTEMS ENGINEERING, INC.

REFERENCE: Newton WTP BLP.dwg

SECTIONS

PROJECT: NEWTON COUNTY, GEORGIA
CORNISH CREEK WTP ADDITIONS
GeoSystems Project Number: 18–2653

PREPARED BY: GEI	FIGURE: 3
DATE: 6/2/2018	
REVIEWED BY: LDM	
DATE: 6/2/2018	

KEYS TO SYMBOLS AND CLASSIFICATIONS

SPECIAL STRATIGRAPHY IDENTIFIERS USED TO HIGHLIGHT SPECIFIC LAYERS	FILL TOPSOIL PAVEMENT	PARTIALLY WEATHERED ROCK ROCK ALLUVIUM
COARSE GRAINED SOIL - GRAVELS & SANDS (MORE THAN 50% OF MATERIAL IS RETAINED ON NO. 200 SIEVE)	CLEAN SANDS & GRAVELS (LOW FINES CONTENT)	SP: Poorly graded sands SW: Well graded sands GP: Poorly graded gravels GW: Well graded gravels
	SANDS & GRAVELS WITH HIGH FINES CONTENT	SM: Silty sands GM: Silty gravels SC: Clayey sands GC: Clayey gravels
FINE GRAINED SOIL - SILTS & CLAYS (MORE THAN 50% OF MATERIAL PASSES NO. 200 SEIVE)	HIGH & LOW PLASTICITY SILTS	ML: Low plasticity inorganic silts MH: High plasticity inorganic silts
	HIGH & LOW PLASTICITY CLAYS	CL: Low placticity inorganic clays CH: High plasticity inorganic clays
	HIGH & LOW PLASTICITY ORGANIC SILTS & CLAYS	OL: Low plasticity organic silts and clays OH: High plasticity organic silts and clays

CORRELATION OF PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY

	NUMBER OF BLOWS, N	APPROXIMATE RELATIVE DENSITY
SANDS AND GRAVELS	0 - 4	Very Loose
	5 - 10	Loose
	11 - 30	Medium Dense
	31 - 50	Dense
	OVER 50	Very Dense
	NUMBER OF BLOWS, N	APPROXIMATE RELATIVE CONSISTENCY
SILTS AND CLAYS	0 - 1	Very Soft
	2 - 4	Soft
	5 - 8	Firm
	9 - 15	Stiff
	16 - 30	Very Stiff
	31 - 50	Hard
	OVER 50	Very Hard

NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

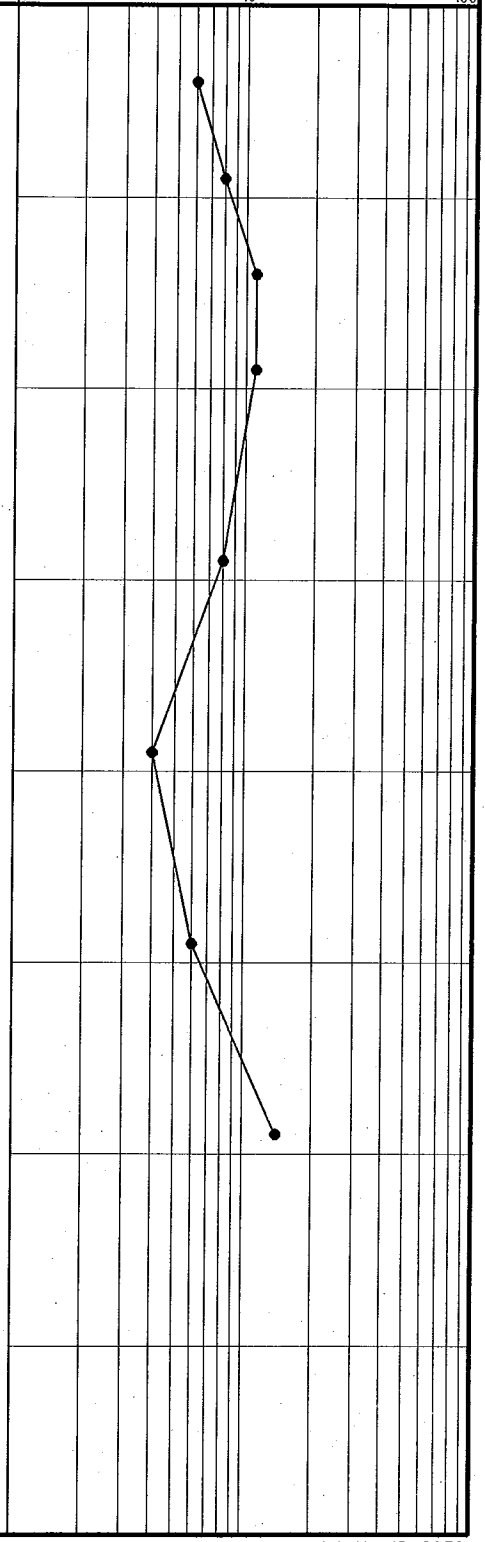
LOG OF BORING B-1

GEOLOGIST: *N/A*
ELEVATION: *689 Feet*
DATE DRILLED: *6/26/2018*
BORING DEPTH: *30 Feet*
DRILLER: *PREMIER DRILLING, LLC*
WATER LEVEL: *9.3 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*

NOTES: 1. Groundwater encountered 18.0 feet at time of boring (▼). 2. Borehole caved to a depth of 13.3 feet after drilling. 3. Stabilized groundwater (▼) measured at 9.3 feet in excess of 24 hours after drilling.

DEPTH (feet)	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
0		**3"-Gravel**		
		FILL – Loose gray and brown fine to coarse SAND (SW), trace gravel		6
		RESIDUUM – Loose red brown clayey fine to medium SAND (SC)		8
5			684.0	
		Medium dense reddish gray brown clayey fine to medium SAND (SC)		11
		Medium dense gray silty fine to medium SAND (SM) ▼		11
10			679.0	
		Loose tan brown micaceous silty fine to coarse SAND (SM)		8
15			674.0	
		Very loose to loose grey brown micaceous silty fine to coarse SAND (SM) ▽		4
20			669.0	
				6
25			664.0	
		Medium dense gray brown micaceous silty fine to coarse SAND (SM)		14
30		Boring Terminated at 30 feet	659.0	
35			654.0	
40			649.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



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NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

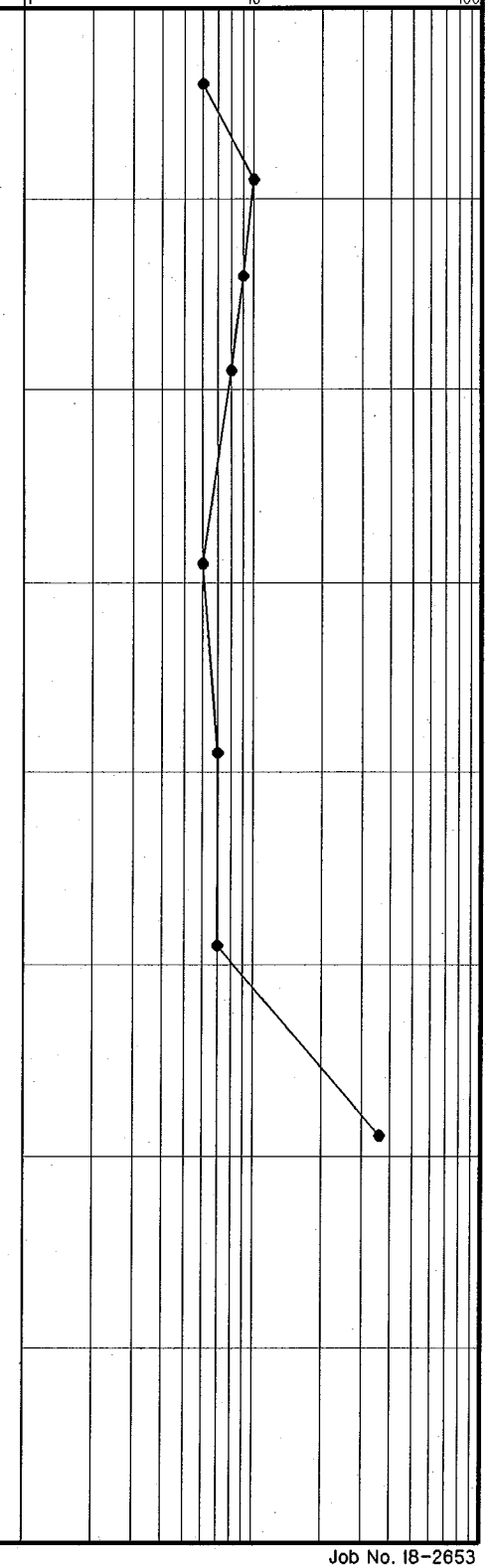
LOG OF BORING B-2

GEOLOGIST: *N/A*
ELEVATION: *692 Feet*
DATE DRILLED: *6/26/2018*
BORING DEPTH: *30 Feet*
DRILLER: *PREMIER DRILLING, LLC*
WATER LEVEL: *7 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*

NOTES: 1. Groundwater encountered 16.0 feet at time of boring (▽). 2. Borehole caved to a depth of 13.0 feet after drilling. 3. Stabilized groundwater (▼) measured at 7.0 feet in excess of 24 hours after drilling.

DEPTH (feet)	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
0	**FILL** – Loose red brown silty fine SAND (SM)		6
5	**RESIDUUM** – Loose red brown slightly micaceous silty fine to medium SAND (SM)	687.0	10
	Stiff tan brown and gray micaceous fine sandy SILT (ML) ▼		9
10	Firm gray slightly micaceous fine to medium sandy SILT (ML)	682.0	8
15	Loose gray brown and white micaceous silty fine to coarse SAND (SM), moist ▽	677.0	6
20		672.0	7
25		667.0	7
30	Dense gray black and white micaceous silty fine to medium SAND (SM), moist	662.0	36
	Boring Terminated at 30 feet		
35		657.0	
40		652.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



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NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

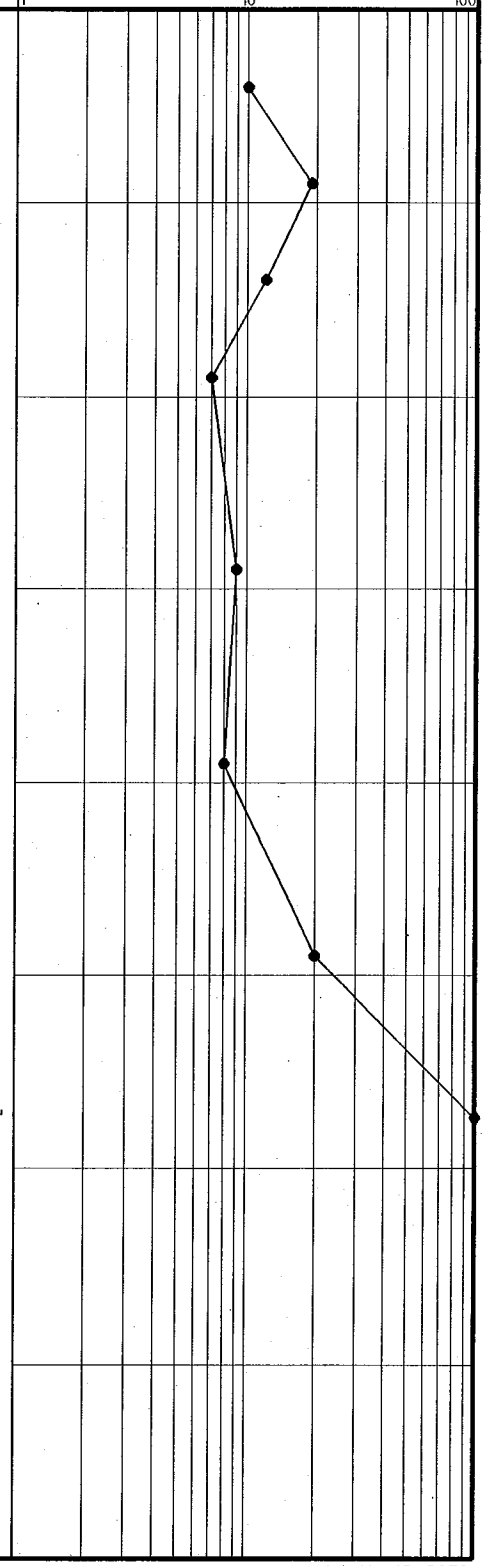
LOG OF BORING B-3

GEOLOGIST: *N/A*
ELEVATION: *695 Feet*
DATE DRILLED: *6/27/2018*
BORING DEPTH: *29 Feet*
DRILLER: *PREMIER DRILLING, LLC*
WATER LEVEL: *11 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*

NOTES: 1. Groundwater encountered 11.0 feet at time of boring (▽). 2. Borehole caved to a depth of 12.0 feet after drilling.

DEPTH (feet)	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
0		**FILL** – Medium dense brown silty fine to medium SAND (SM)		10
5		**RESIDUUM** – Medium dense red and gray brown clayey fine to fine to medium SAND (SC)	690.0	19
		Medium dense tan brown micaceous silty fine to medium SAND (SM)		12
10		Loose tan brown silty fine to medium SAND (SM) ▽	685.0	7
15		Loose pink brown micaceous silty fine to medium SAND (SM), wet	680.0	9
20		Loose pink tan brown micaceous silty fine to coarse SAND (SM), wet	675.0	8
25		Medium dense pink tan brown micaceous silty fine to coarse SAND (SM), wet	670.0	20
		PARTIALLY WEATHERED ROCK – Sampled as very dense brown and white micaceous silty fine to coarse SAND (SW), moist		50/2"
30		Auger refusal at 29.0 feet	665.0	
35			660.0	
40			655.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



GEOSYSTEMS ENGINEERING, INC.

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NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

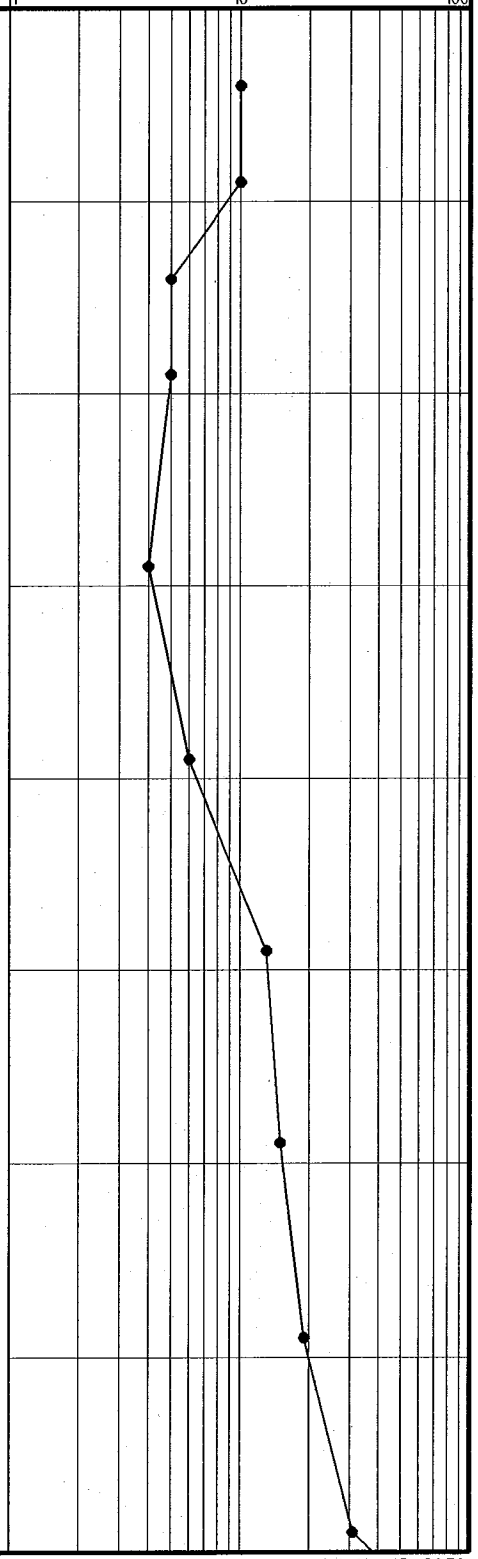
LOG OF BORING B-4

GEOLOGIST: *N/A*
ELEVATION: *683 Feet*
DATE DRILLED: *6/26/2018*
BORING DEPTH: *55 Feet*
DRILLER: *PREMIER DRILLING, LLC*
WATER LEVEL: *4 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*

NOTES: 1. Groundwater encountered 8.0 feet at time of boring (▽). 2. Borehole caved to a depth of 10.0 feet after drilling. 3. Stabilized groundwater (▼) measured at 4.0 feet in excess of 24 hours after drilling.

DEPTH (feet)	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
		RESIDUUM – Loose gray and tan clayey fine to medium SAND (SC)		10
		Loose red brown micaceous silty fine to medium SAND (SM)		10
5		▼	678.0	5
		▽ Loose gray brown slighty micaceous silty fine to medium SAND (SM)		5
10			673.0	
		Very loose to loose gray brown micaceous silty fine to medium SAND (SM)		4
15			668.0	
				6
20			663.0	
		Medium dense pink, gray brown micaceous silty fine to coarse SAND (SM)		13
25			658.0	
		Medium dense gray brown micaceous silty fine to medium SAND (SM), moist		15
30			653.0	
		Medium dense to dense gray brown and white micaceous silty fine to medium SAND (SM), moist		19
35			648.0	
40			643.0	31

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



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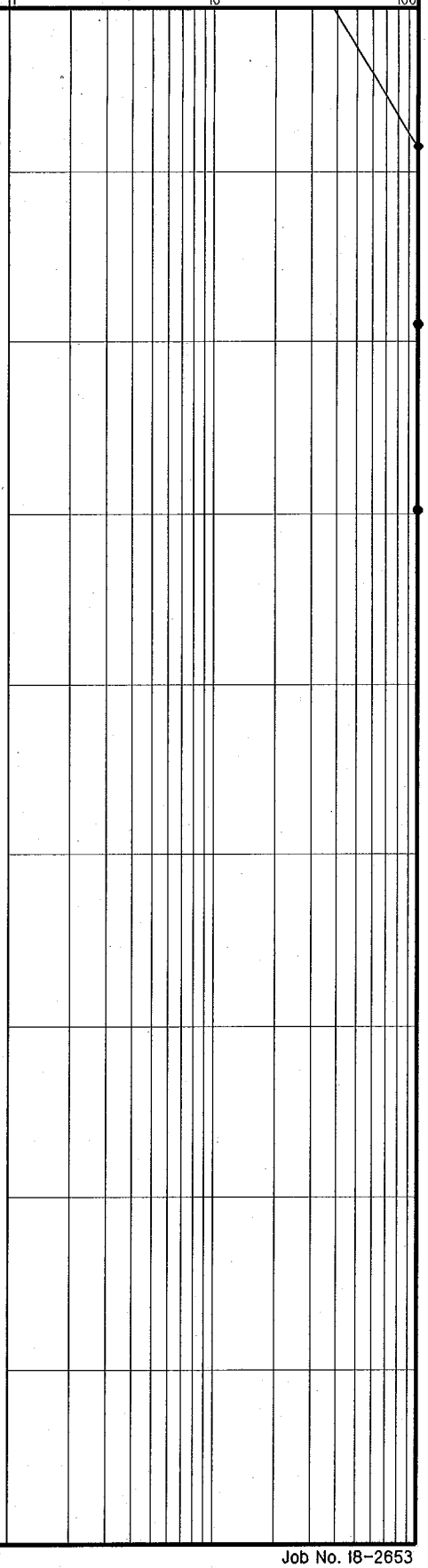
NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

LOG OF BORING B-4

DEPTH (feet)	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
		Medium dense to dense gray brown and white micaceous silty fine to medium SAND (SM), moist		
45		**PARTIALLY WEATHERED ROCK** – Sampled as very dense gray brown and white micaceous silty fine to medium SAND (SM), moist	638.0	50/3"
50			633.0	50/5"
55		Boring terminated at 55.0 feet	628.0	50/5"
60			623.0	
65			618.0	
70			613.0	
75			608.0	
80			603.0	
85			598.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

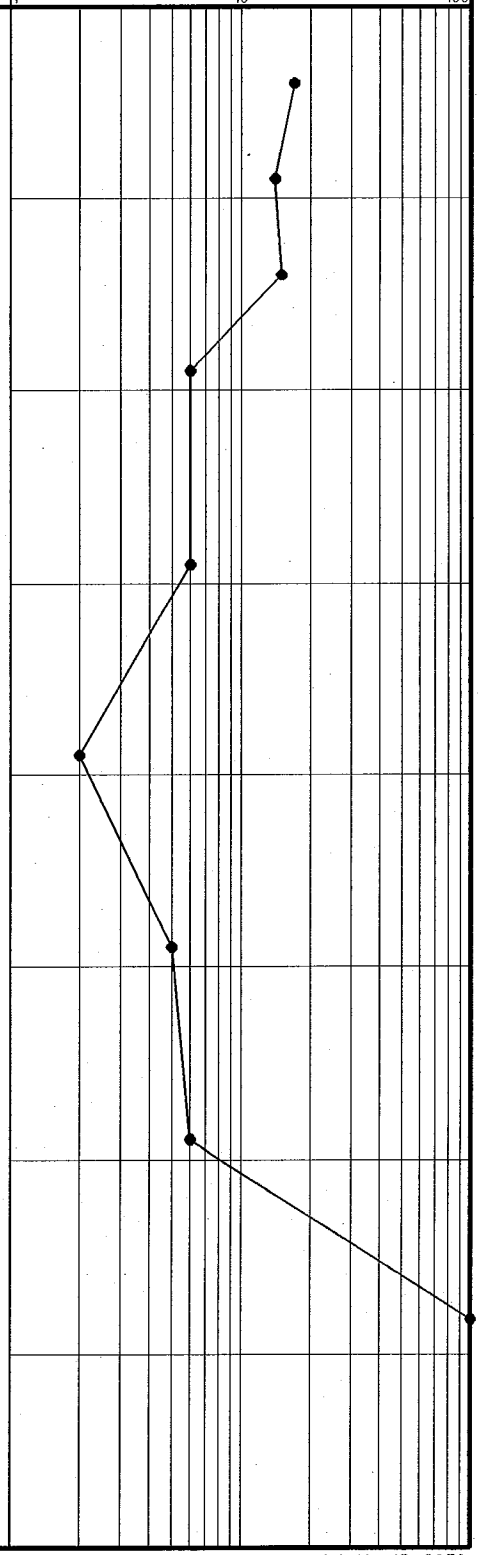
LOG OF BORING B-5

GEOLOGIST: *N/A*
ELEVATION: *692 Feet*
DATE DRILLED: *6/26/2018*
BORING DEPTH: *34.4 Feet*
DRILLER: *PREMIER DRILLING, LLC*
WATER LEVEL: *9 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*

NOTES: 1. Groundwater encountered 16.0 feet at time of boring (▽). 2. Borehole caved to a depth of 12.0 feet after drilling. 3. Stabilized groundwater (▼) measured at 9.0 feet in excess of 24 hours after drilling.

DEPTH (feet)	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
0	**FILL** – Medium dense red brown silty fine to medium SAND (SM), some coarse gravel		17
5	**RESIDUUM** – Medium dense tan and red brown slightly clayey fine to medium SAND (SC)	687.0	14
	Medium dense red tan slightly micaceous silty fine to medium SAND (SM)		15
10	Firm red gray micaceous slightly fine sandy SILT (ML), moist ▼	682.0	6
15	Loose to very loose gray brown micaceous silty fine to medium SAND (SM), moist to wet ▽	677.0	6
20		672.0	2
25	Loose black gray micaceous silty fine to medium SAND (SM), wet	667.0	5
30		662.0	6
35	**PARTIALLY WEATHERED ROCK** – Sampled as very dense black gray and white micaceous silty fine to coarse SAND (SM), wet	657.0	50/2"
40	Auger Refusal at 34.5 feet	652.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



GEOSYSTEMS ENGINEERING, INC.

Job No. 18-2653

NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

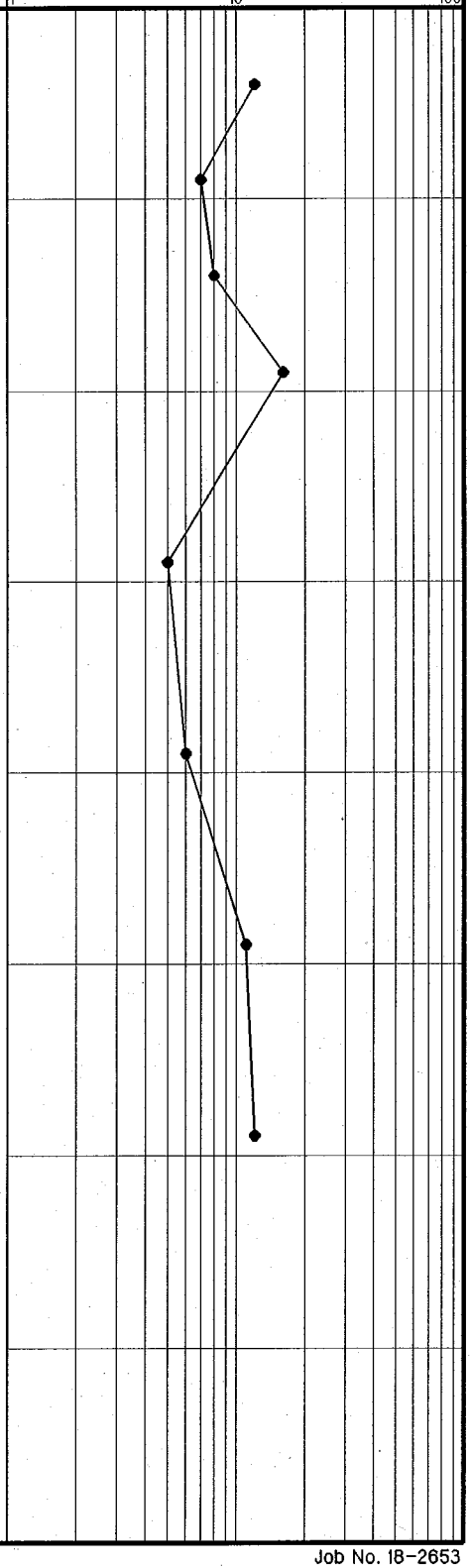
LOG OF BORING B-6

GEOLOGIST: *N/A*
ELEVATION: *685 Feet*
DATE DRILLED: *6/26/2018*
BORING DEPTH: *30 Feet*
DRILLER: *PREMIER DRILLING, LLC*
WATER LEVEL: *7 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*

NOTES: 1. Groundwater encountered at 8.0 feet at the time of boring (▽). 2. Borehole caved to a depth of 18.0 feet after drilling. 3. Stabilized groundwater (▼) measured at 7.0 feet in excess of 24 hours after drilling.

DEPTH (feet)	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
0	**FILL** – Medium dense red brown clayey fine to medium SAND (SC)		12
3	Loose dark gray brown slightly clayey fine to medium SAND (SC), some organic matter		7
5		680.0	
5	**RESIDUUM** – Loose yellow and gray brown clayey fine to medium SAND (SC), moist		8
8	▼ ▽		
10	Medium dense gray clayey fine to medium SAND (SC), moist	675.0	16
15	Loose tan and brown micaceous silty fine to medium SAND (SM), moist	670.0	5
20	Loose pink tan and brown micaceous silty fine to coarse SAND (SM), moist	665.0	6
25	Medium dense pink brown micaceous silty fine to medium SAND (SM), moist	660.0	11
30	Boring terminated at 30.0 feet	655.0	12
35		650.0	
40		645.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



GEOSYSTEMS ENGINEERING, INC.

Job No. 18-2653

NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

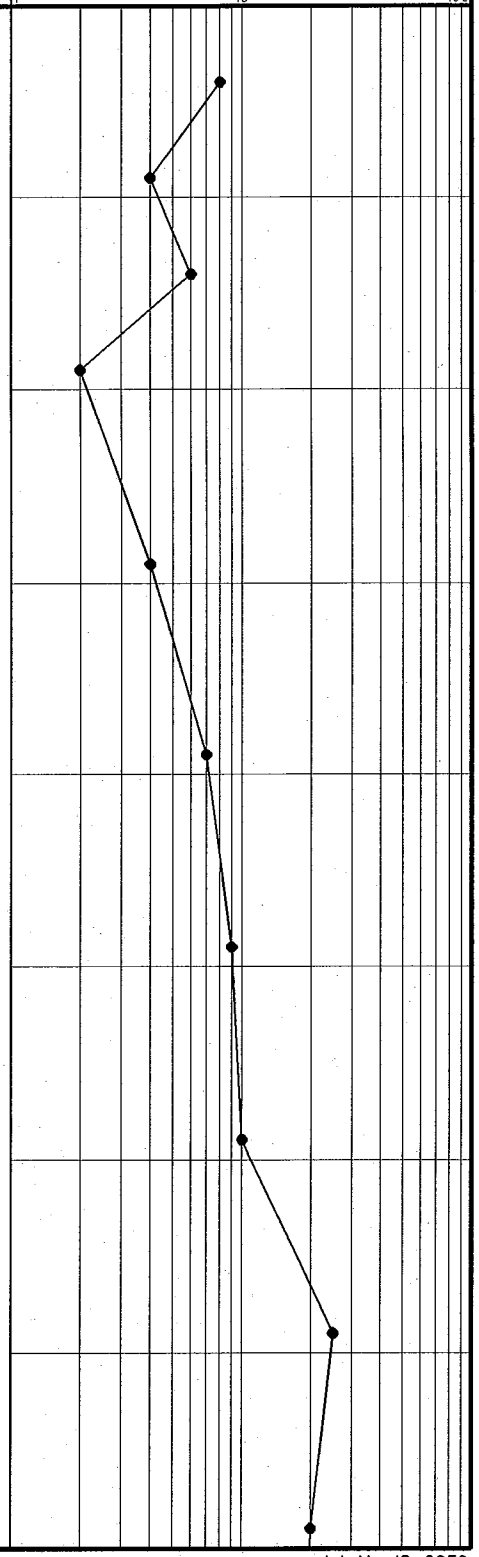
LOG OF BORING B-7

GEOLOGIST: *N/A*	ELEVATION: *684 Feet*
DATE DRILLED: *6/26/2018*	BORING DEPTH: *60 Feet*
DRILLER: *PREMIER DRILLING, LLC*	WATER LEVEL: *6.4 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*	

NOTES: 1. Groundwater encountered at 8.0 feet at time of boring (▽). 2. Borehole caved to a depth of 17.0 feet after drilling. 3. Stabilized groundwater (▼) measured at 6.4 feet in excess of 24 hours after drilling.

DEPTH (feet)	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
0		**3"-Gravel**		
		FILL – Loose to very loose red brown clayey fine to medium SAND, (SC)		8
5			679.0	4
		ALLUVIUM – Loose gray brown silty fine to medium SAND (SM), organic odor		6
		▼ ▽		
		Very loose gray slightly clayey fine to medium SAND (SC), wet		2
10			674.0	
		Very loose brown slightly micaceous clayey fine to medium SAND (SC), organic matter, organic odor, wet		4
15			669.0	
		RESIDUUM – Loose brown micaceous silty fine to coarse SAND (SM), moist		7
20			664.0	
				9
25			659.0	
		Loose gray brown micaceous silty fine to medium SAND (SM), moist		10
30			654.0	
		Medium dense gray brown micaceous silty fine to medium SAND (SM), moist		25
35			649.0	
40			644.0	20

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



GEOSYSTEMS ENGINEERING, INC.

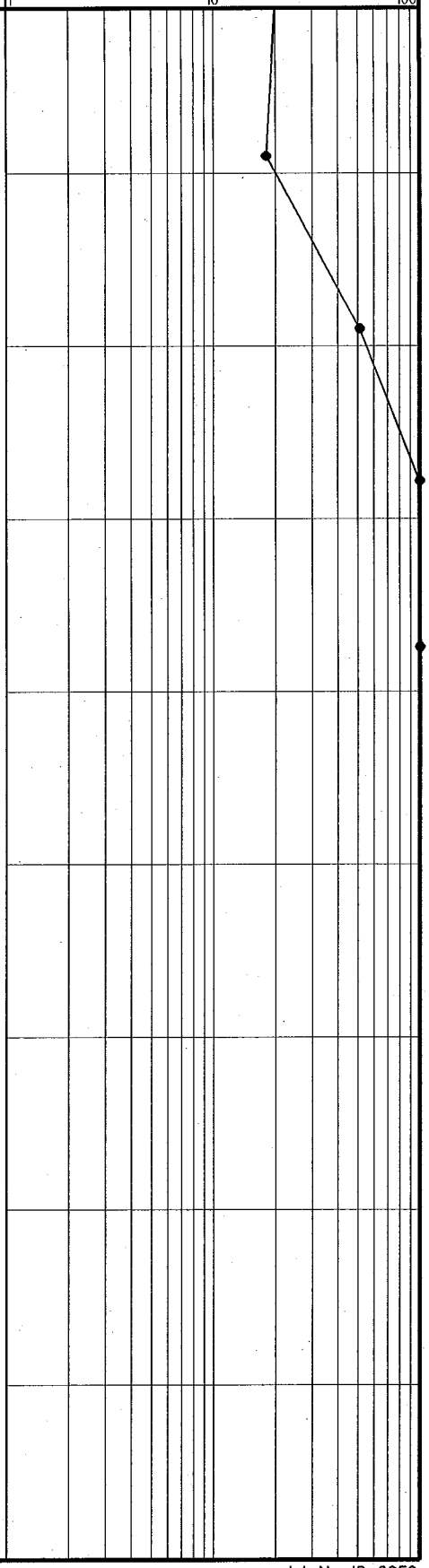
Job No. 18-2653

NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

LOG OF BORING B-7

DEPTH (feet)	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
45		Medium dense gray brown micaceous silty fine to medium SAND (SM), moist	639.0	18
50		Very dense gray brown and white micaceous silty fine to medium SAND (SM)	634.0	51
55		**PARTIALLY WEATHERED ROCK** - Sampled as very dense gray brown and white micaceous silty fine to medium SAND (SM)	629.0	50/5"
60		Auger Refusal at 60.0 feet	624.0	50/2"
65			619.0	
70			614.0	
75			609.0	
80			604.0	
85			599.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

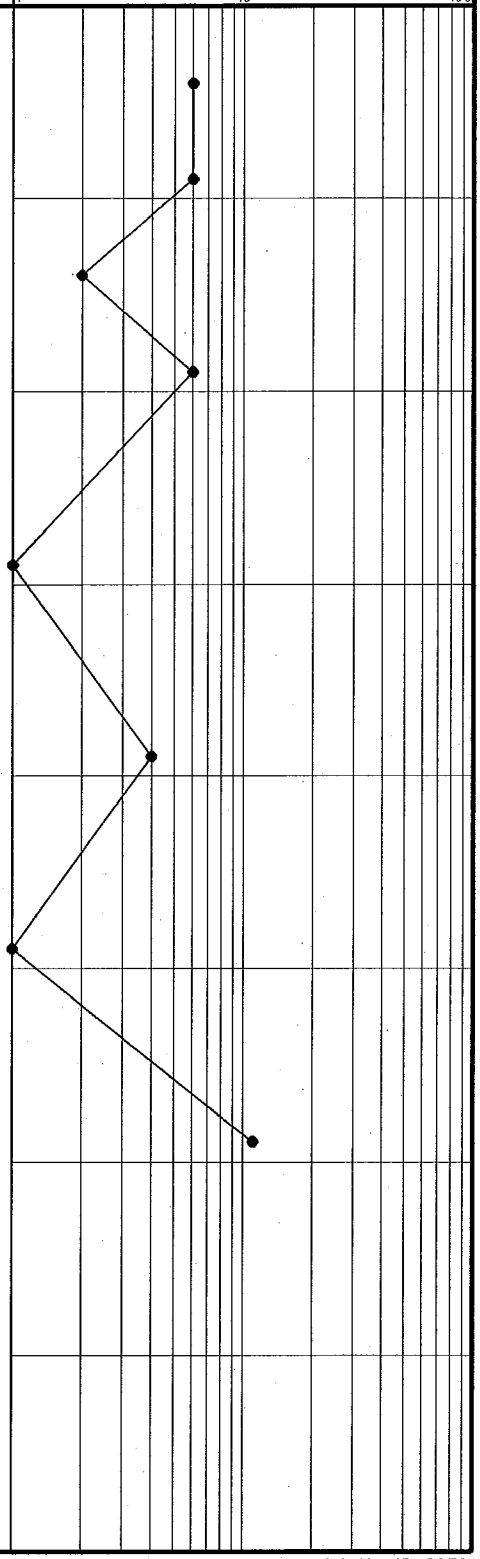
LOG OF BORING B-8

GEOLOGIST: *N/A*
ELEVATION: *684 Feet*
DATE DRILLED: *6/27/2018*
BORING DEPTH: *30 Feet*
DRILLER: *PREMIER DRILLING, LLC*
WATER LEVEL: *6 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*

NOTES: 1. Groundwater encountered at 7.0 feet at time of boring (▽). 2. Borehole caved to a depth of 16.0 feet after drilling. 3. Stabilized groundwater (▼) measured at 6.0 feet in excess of 12 hours after drilling. 4. WOH – Weight of hammer.

DEPTH (feet)	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
0	**3"–Gravel**		
	FILL – Loose red brown slightly micaceous clayey fine to medium SAND (SC)		6
5		679.0	6
	Very loose red brown slightly micaceous clayey fine to medium SAND (SC), trace organic matter ▼ ▽		2
	ALLUVIUM – Loose gray brown silty fine to medium SAND (SM), wet (no sample recovery from standard penetration test at 13.5 to 15 feet)		6
10		674.0	
			WOH
15		669.0	
	Soft gray slightly micaceous fine to medium sandy CLAY (CL)		
20		664.0	4
	Very soft dark gray micaceous fine to medium sandy SILT (ML)		
25		659.0	WOH
	RESIDUUM – Medium dense tan micaceous fine to coarse SAND (SW), wet		
30		654.0	11
	Boring terminated at 30.0 feet		
35		649.0	
40		644.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 — 10 — 100



Job No. 18-2653

GEOSYSTEMS ENGINEERING, INC.

NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

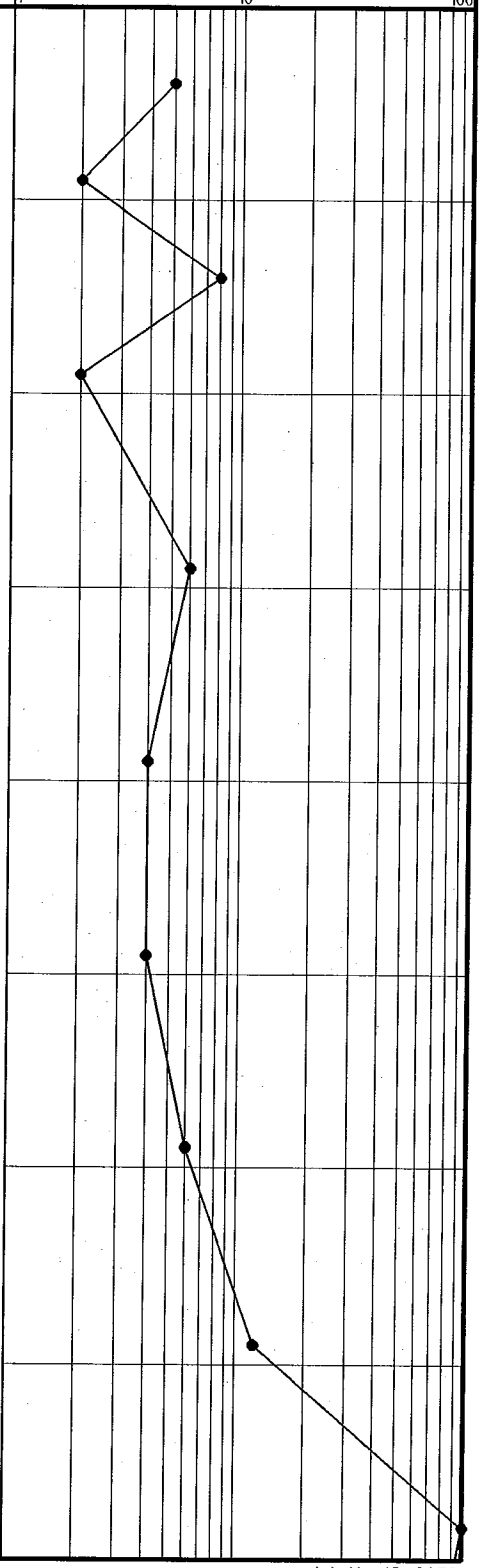
LOG OF BORING B-9

GEOLOGIST: *N/A*
ELEVATION: *684 Feet*
DATE DRILLED: *6/27/2018*
BORING DEPTH: *58 Feet*
DRILLER: *PREMIER DRILLING, LLC*
WATER LEVEL: *6 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*

NOTES: 1. Borehole caved to a depth of 14.0 feet after drilling. 3. Stabilized groundwater (▼) measured at 6.0 feet in excess of 12 hours after drilling.

DEPTH (feet)	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
0	**3"-Gravel**		
	FILL – Loose to very loose red brown clayey fine to medium SAND (SC)		5
5		679.0	2
	Loose brown fine to coarse SAND (SW), some gravel, wet ▼		8
	Very loose red brown clayey fine to medium SAND (SC), wet		2
10		674.0	
	POSSIBLE ALLUVIUM – Loose tan gray slightly micaceous fine to medium SAND (SW), wet		6
15		669.0	
	Very loose tan brown fine to coarse SAND (SW), wet		4
20		664.0	
	Very loose gray brown micaceous silty fine to medium SAND (SM), wet		4
25		659.0	
	Loose brown micaceous fine to coarse SAND (SW), some fine to coarse gravel, wet		6
30		654.0	
	RESIDUUM – Medium dense pink tan micaceous silty fine to coarse SAND (SM), wet		12
35		649.0	
	PARTIALLY WEATHERED ROCK – Sampled as very dense gray black brown micaceous silty fine to coarse SAND (SM), wet		50/3"
40		644.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 — 10 — 100



GEOSYSTEMS ENGINEERING, INC.

Job No. 18-2653

NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

LOG OF BORING B-9

DEPTH (feet)	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
45		**PARTIALLY WEATHERED ROCK** – Sampled as very dense gray black brown micaceous silty fine to coarse SAND (SM), wet		
		Very dense gray black brown micaceous silty fine to medium SAND (SM), moist	639.0	58
50		**PARTIALLY WEATHERED ROCK** – Sampled as very dense pink, gray brown and white micaceous silty fine to coarse SAND (SM), moist	634.0	50/2"
55			629.0	50/2"
		Auger refusal at 58.0 feet		
60			624.0	
65			619.0	
70			614.0	
75			609.0	
80			604.0	
85			599.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100

NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

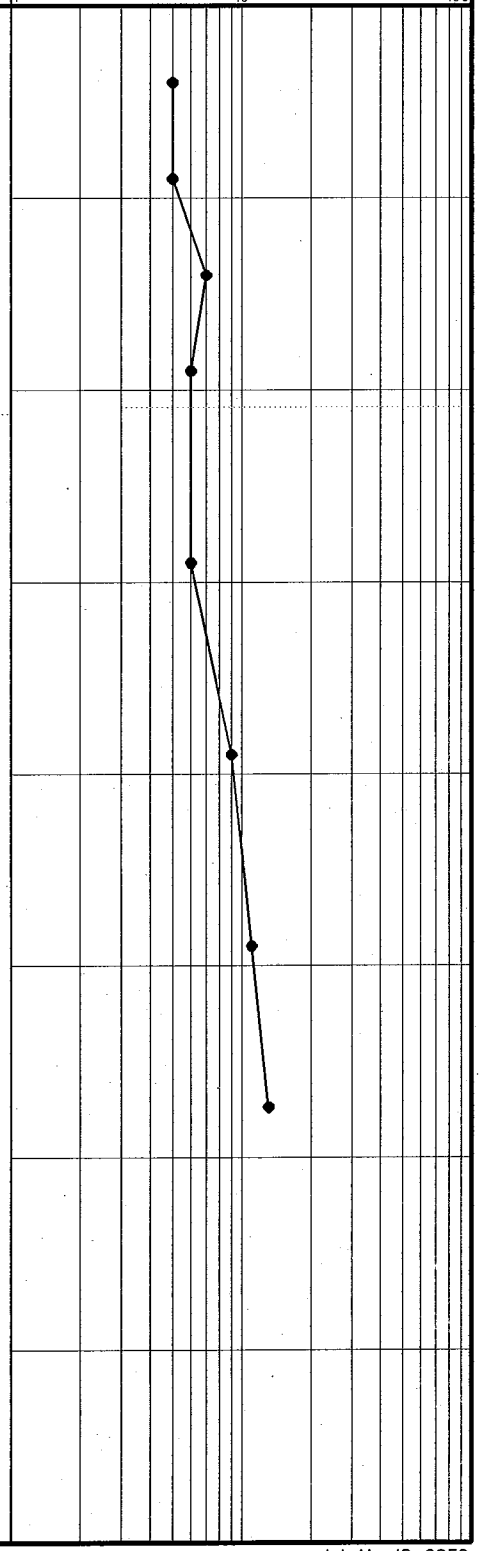
LOG OF BORING B-10

GEOLOGIST: *N/A*
ELEVATION: *684 Feet*
DATE DRILLED: *6/27/2018*
BORING DEPTH: *30 Feet*
DRILLER: *PREMIER DRILLING, INC.*
WATER LEVEL: *6 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*

NOTES: 1. Groundwater detected at 9.0 feet at time of boring (▼). 2. Borehole caved to a depth of 16.0 feet after drilling. 3. Stabilized groundwater depth (▼) measured at 6.0 feet in excess of 12 hours after drilling

DEPTH (feet)	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
0	**RESIDUUM** – Firm brown micaceous fine sandy SILT (ML)		5
	Firm pink brown micaceous fine sandy SILT (ML), wet		5
5		679.0	
	Loose gray brown micaceous silty fine to medium SAND (SM), wet ▼		7
	▼		6
10		674.0	
			6
15		669.0	
	Loose gray brown micaceous silty fine to coarse SAND (SM), some fine to coarse gravel		9
20		664.0	
	Medium dense grayish brown micaceous silty fine to coarse SAND (SM), moist		11
25		659.0	
			13
30	Boring terminated at 30.0 feet	654.0	
35		649.0	
40		644.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



GEOSYSTEMS ENGINEERING, INC.

Job No. 18-2653

NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

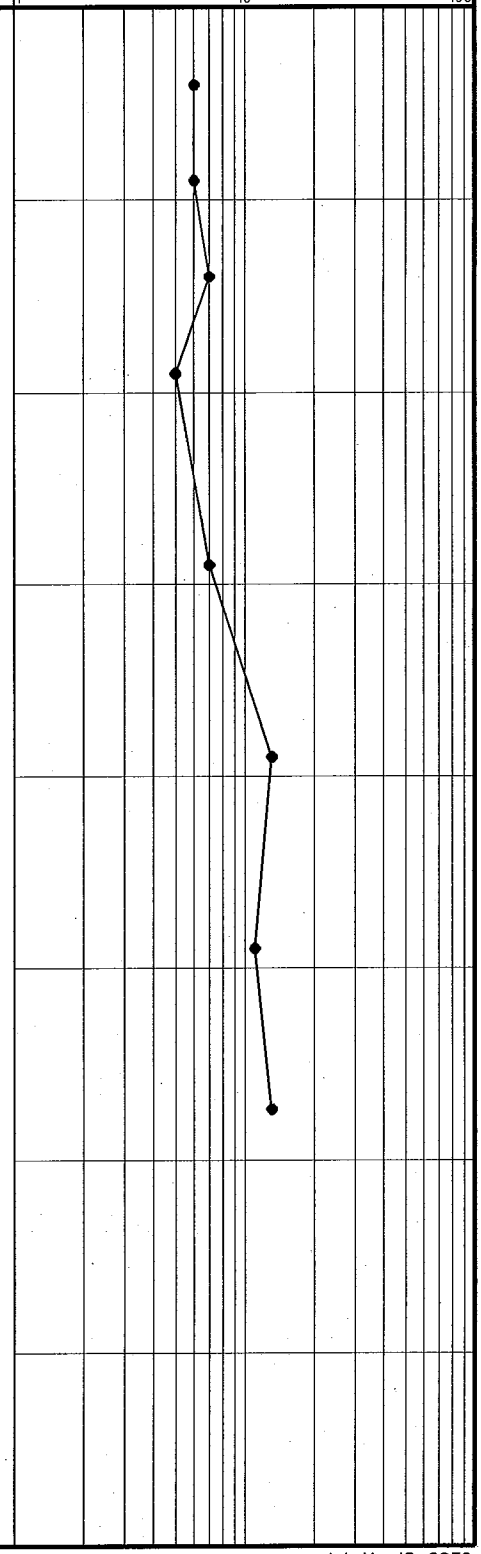
LOG OF BORING B-11

GEOLOGIST: *N/A*
ELEVATION: *685 Feet*
DATE DRILLED: *6/27/2018*
BORING DEPTH: *30 Feet*
DRILLER: *PREMIER DRILLING, INC.*
WATER LEVEL: *11 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*

NOTES: 1. Groundwater encountered 8.0 feet at time of boring (▽). 2. Borehole caved to a depth of 18.0 feet after drilling. 3. Stabilized groundwater depth (▼) measured at 11.0 feet in excess of 12 hours after drilling

DEPTH (feet)	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
	3"-Gravel		
	FILL – Loose red brown slightly micaceous silty fine to medium SAND (SM)		6
	Loose gray silty fine to medium SAND (SM), organic matter, organic odor		6
5		680.0	
	Loose red brown and gray micaceous clayey fine to medium SAND (SC), slight organic odor		7
	▽		
	RESIDUUM – Loose tan gray to brown micaceous silty fine to medium SAND (SM)		5
10		675.0	
	▼		
	Loose pink, gray brown and white micaceous silty fine to coarse SAND (SM), moist		7
15		670.0	
	Medium dense gray brown and white micaceous silty fine to coarse SAND (SM), moist		13
20		665.0	
			11
25		660.0	
			13
30	Boring terminated at 30.0 feet	655.0	
35		650.0	
40		645.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



GEOSYSTEMS ENGINEERING, INC.

Job No. 18-2653

NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

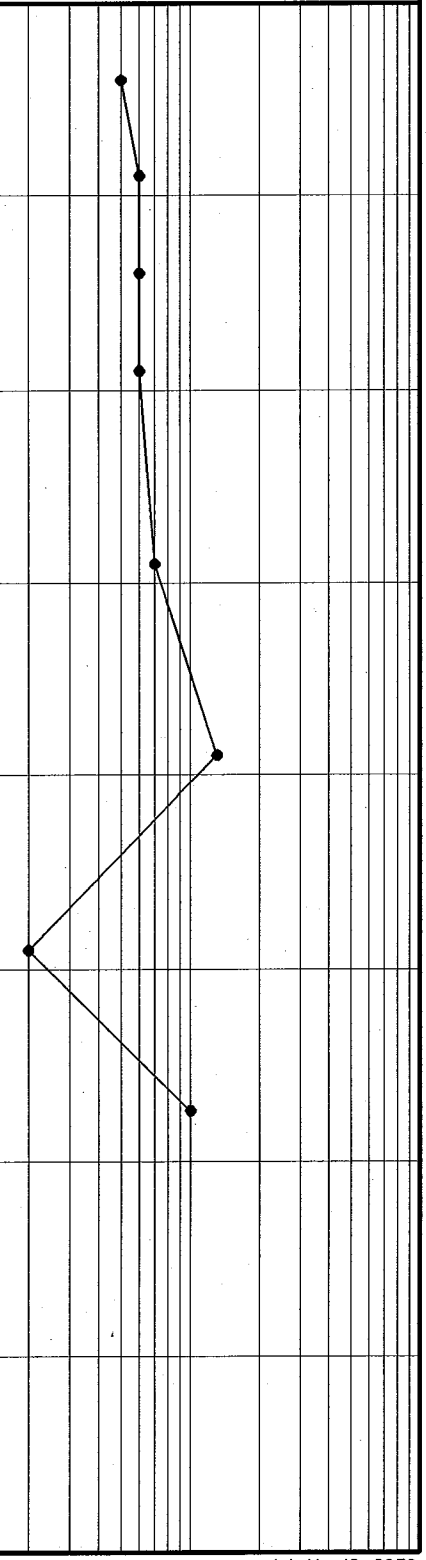
LOG OF BORING B-12

GEOLOGIST: *N/A*	ELEVATION: *684 Feet*
DATE DRILLED: *6/27/2018*	BORING DEPTH: *30 Feet*
DRILLER: *PREMIER DRILLING, INC.*	WATER LEVEL: *8 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*	

NOTES: 1. Groundwater encountered 8.0 feet at time of boring (▽). 2. Borehole caved to a depth of 9.0 feet after drilling. 3. Stabilized groundwater depth (▼) measured at 8.0 feet in excess of 12 hours after drilling.

DEPTH (feet)	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
0	**3"-Gravel**		
	FILL – Loose red brown slightly micaceous clayey fine to medium SAND (SC)		5
5		679.0	6
	Loose red brown and gray micaceous silty fine to medium Sand (SM)		6
	▼ ▽		
10	**ALLUVIUM** – Loose gray brown slightly micaceous clayey fine to medium SAND (SC), moist, organic odor	674.0	6
			7
15		669.0	
	Medium dense gray tan fine to coarse SAND (SW), wet		13
20		664.0	
	Soft gray micaceous fine sandy SILT (ML), slight organic odor		2
25		659.0	
	RESIDUUM – Loose yellow brown silty micaceous fine to medium SAND (SM), wet		10
30		654.0	
	Boring terminated at 30.0 feet		
35		649.0	
40		644.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100



Job No. 18-2653

GEOSYSTEMS ENGINEERING, INC.

NEWTON COUNTY WATER & SEWERAGE AUTHORITY
CORNISH CREEK WATER TREATMENT PLANT ADDITIONS
NEWTON COUNTY, GEORGIA

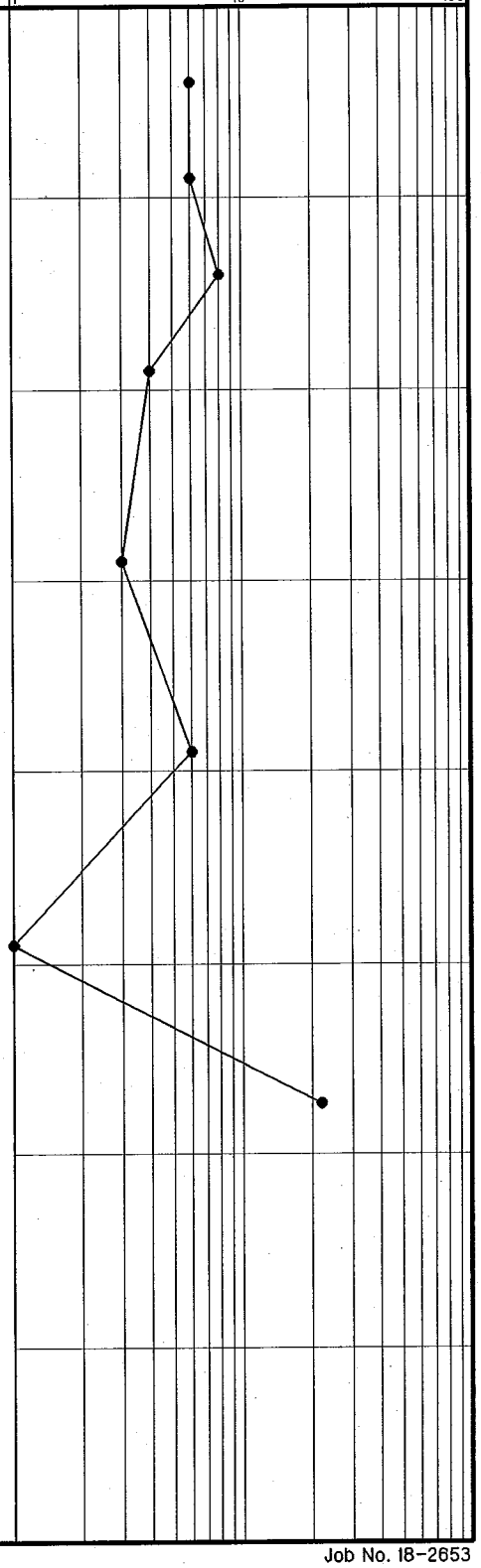
LOG OF BORING B-13

GEOLOGIST: *N/A*	ELEVATION: *685 Feet*
DATE DRILLED: *6/27/2018*	BORING DEPTH: *30 Feet*
DRILLER: *PREMIER DRILLING, INC.*	WATER LEVEL: *10 Feet*
DRILLING METHOD: *HOLLOW STEM AUGER WITH AUTOMATIC HAMMER*	

NOTES: 1. Groundwater encountered 8.0 feet at time of boring (▽). 2. Borehole caved to a depth of 17.0 feet after drilling. 3. Stabilized groundwater depth (▼) measured at 10.0 feet in excess of 12 hours after drilling. 4. WOH – Weight of hammer.

DEPTH (feet)	GEOLOGIC DESCRIPTION	ELEVATION (feet)	N VALUE
0	**3"-Gravel**		
	FILL – Loose red brown slightly clayey fine to coarse SAND (SW), trace coarse gravel		6
5		680.0	6
	Loose brown gray slightly clayey fine to coarse SAND (SW), organic odor, wet		8
	▽		
	Very loose red brown micaceous silty fine to medium SAND (SM)		4
10	▼	675.0	
	ALLUVIUM – Very loose grey slightly clayey fine to coarse SAND (SW), wet, organic odor		3
15		670.0	
	Firm to very soft gray and black organic CLAY (OL), trace to some organic matter, organic odor		6
20		665.0	
			WOH
25		660.0	
	RESIDUUM – Medium dense red brown silty fine to coarse SAND (SM), wet		22
30		655.0	
	Boring terminated at 30.0 feet		
35		650.0	
40		645.0	

STANDARD PENETRATION RESISTANCE (blows/ft)
1 10 100

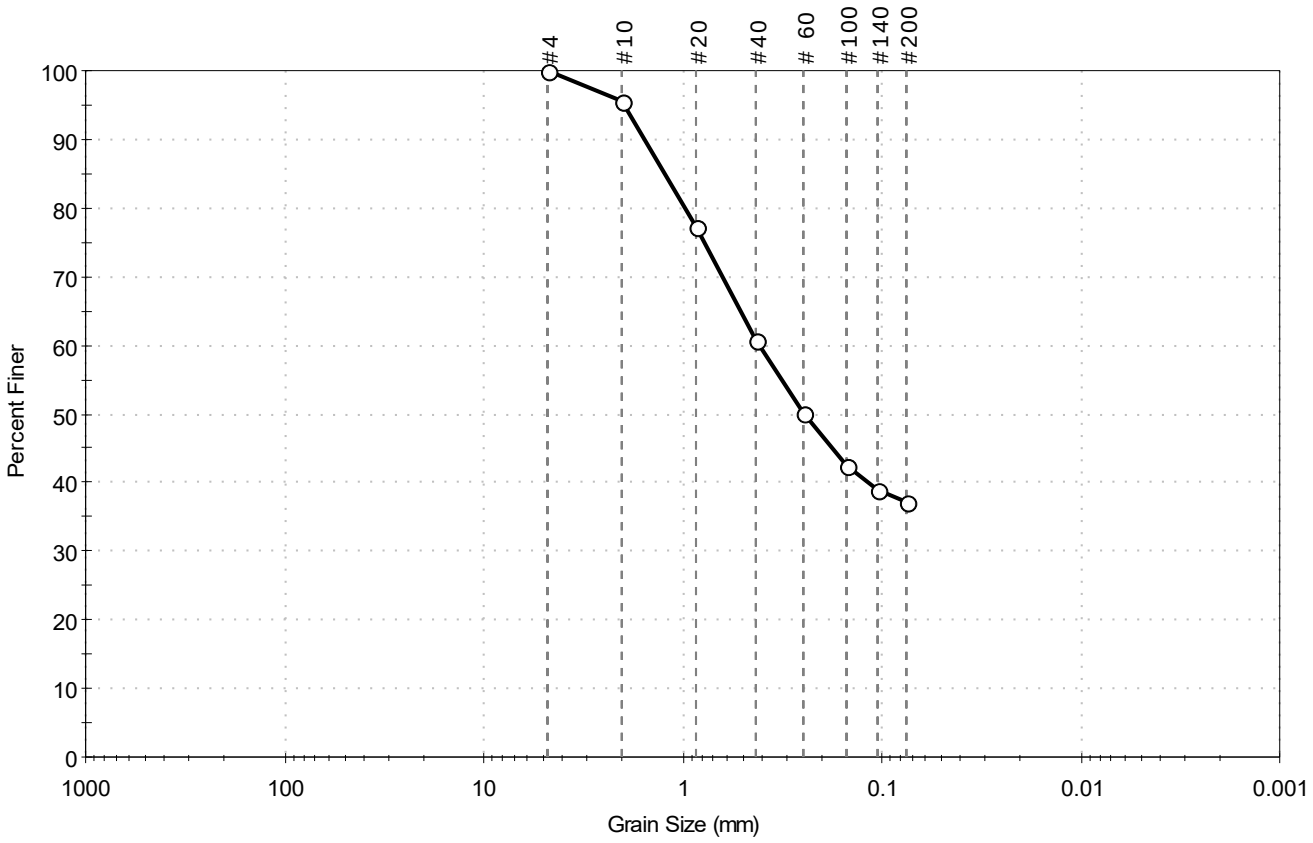


GEOSYSTEMS ENGINEERING, INC.

Job No. 18-2653

Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-1	Sample Type:	jar	Tested By:	twh
Sample ID:	4	Test Date:	07/10/18	Checked By:	jm
Depth :	8.5-10 ft	Test Id:	298170		
Test Comment:	---				
Visual Description:	Moist, pale yellow silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	62.9	37.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	96		
#20	0.85	77		
#40	0.42	61		
# 60	0.25	50		
#100	0.15	43		
#140	0.11	39		
#200	0.075	37		

Coefficients

D_{85} = 1.2184 mm	D_{30} = N/A
D_{60} = 0.4079 mm	D_{15} = N/A
D_{50} = 0.2483 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

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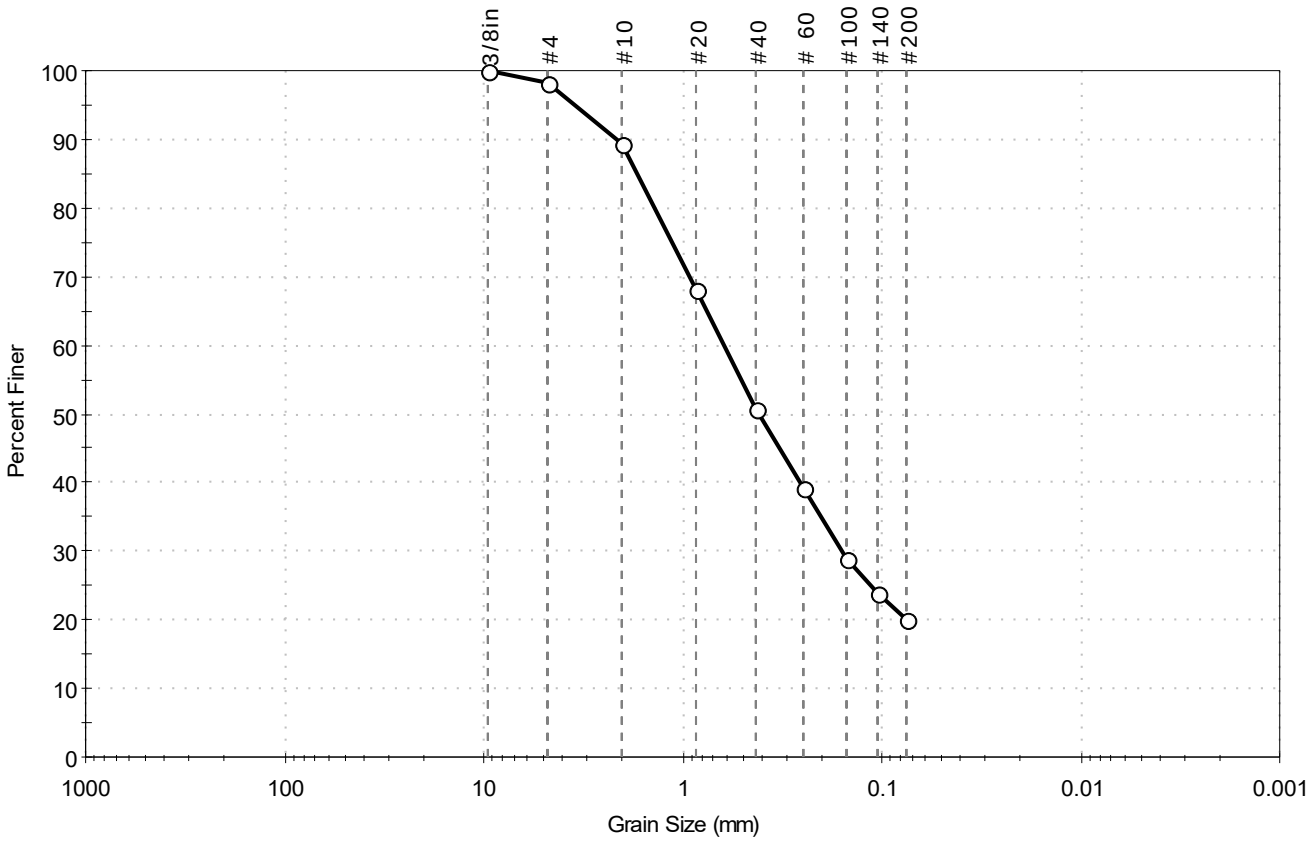
Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-1	Sample Type:	jar	Tested By:	twh
Sample ID:	6	Test Date:	07/10/18	Checked By:	jm
Depth :	18.5-20 ft	Test Id:	298171		
Test Comment:	---				
Visual Description:	Moist, grayish brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.7	78.4	19.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8in	9.50	100		
#4	4.75	98		
#10	2.00	89		
#20	0.85	68		
#40	0.42	51		
# 60	0.25	39		
#100	0.15	29		
#140	0.11	24		
#200	0.075	20		

Coefficients

D_{85} = 1.6807 mm	D_{30} = 0.1591 mm
D_{60} = 0.6140 mm	D_{15} = N/A
D_{50} = 0.4125 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))

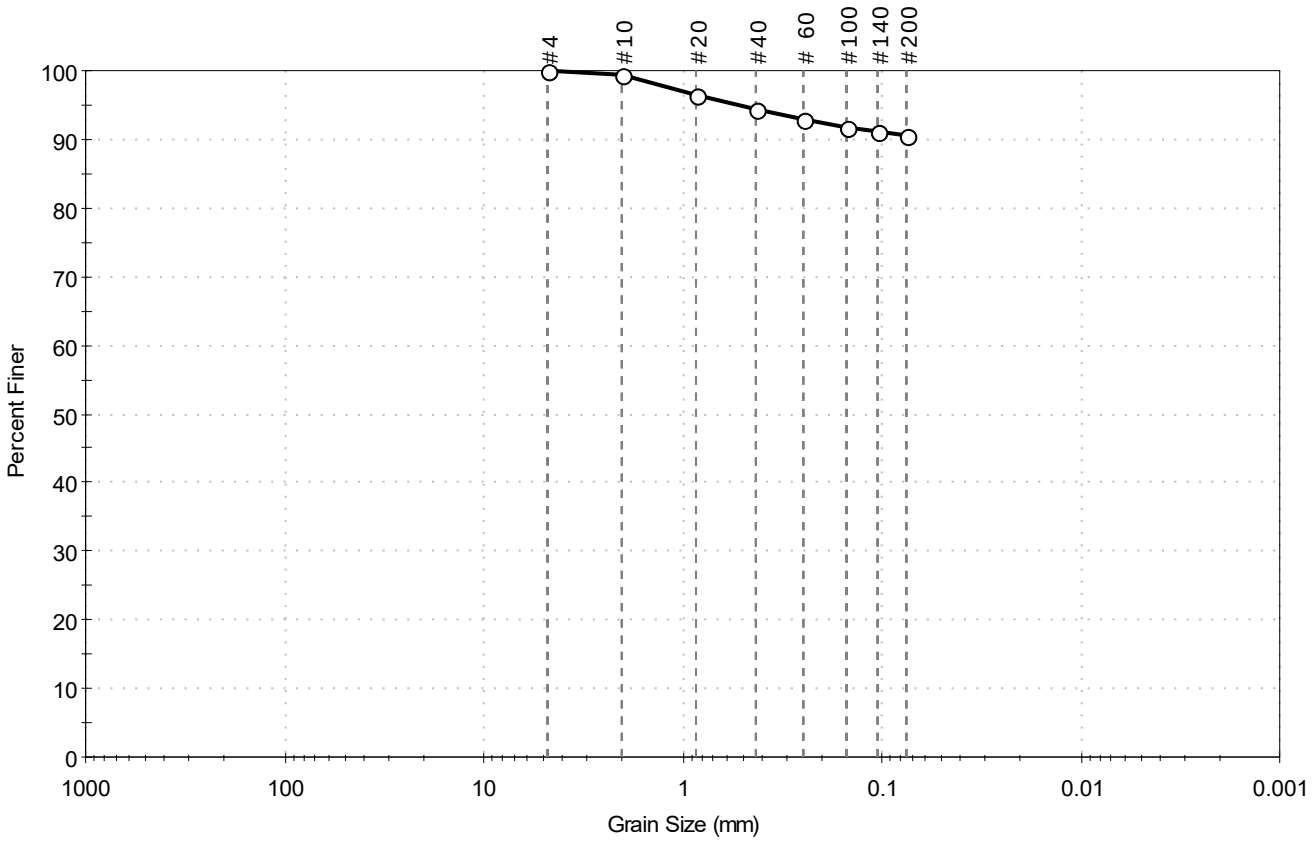
Sample / Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-2	Sample Type:	jar	Tested By:	twh
Sample ID:	4	Test Date:	07/10/18	Checked By:	jm
Depth :	8.5-10 ft	Test Id:	298172		
Test Comment:	---				
Visual Description:	Moist, pale yellow silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	9.4	90.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	96		
#40	0.42	94		
# 60	0.25	93		
#100	0.15	92		
#140	0.11	91		
#200	0.075	91		

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 Elastic SILT (MH)

AASHTO Clayey Soils (A-7-5 (17))

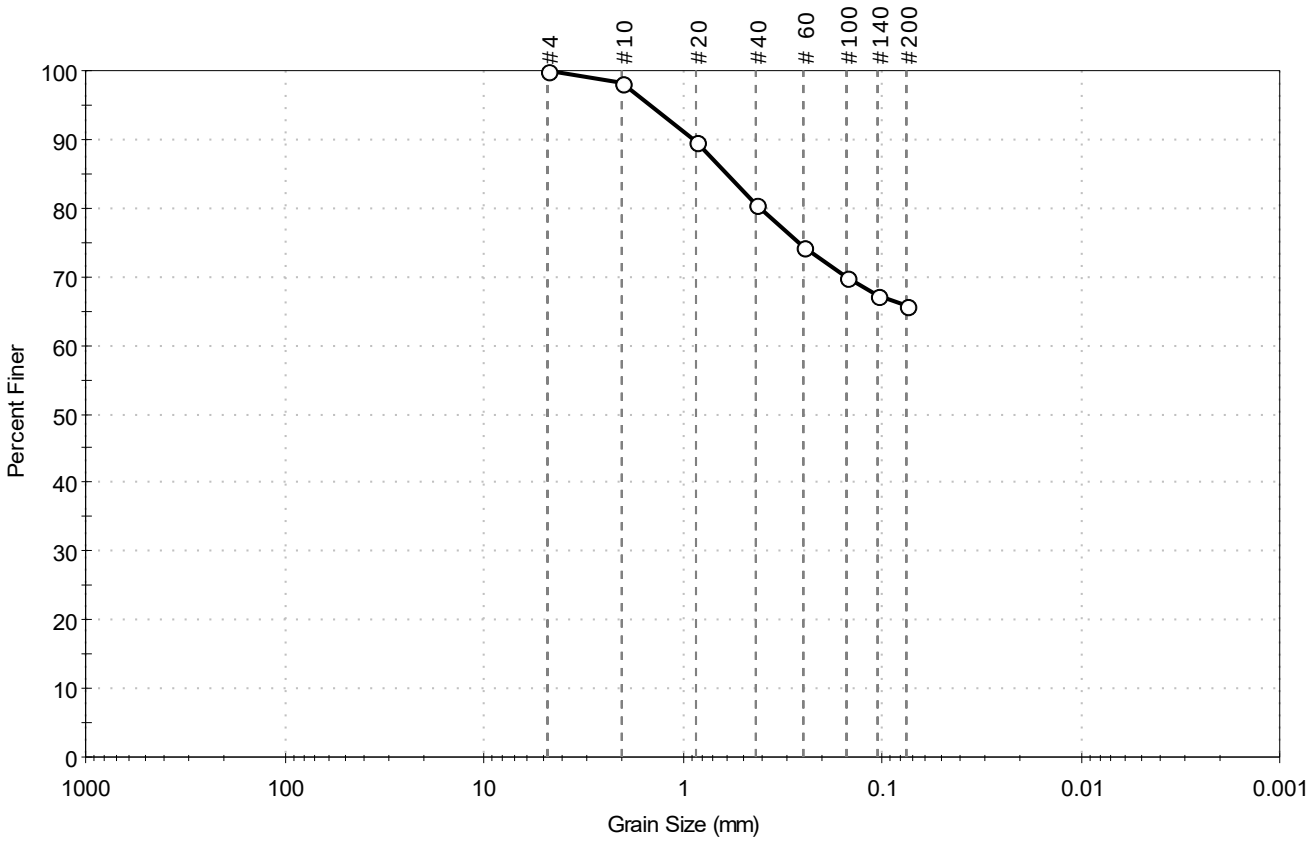
Sample / Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-8	Sample Type:	jar	Tested By:	twh
Sample ID:	6	Test Date:	07/10/18	Checked By:	jm
Depth :	18.5-20 ft	Test Id:	298173		
Test Comment:	---				
Visual Description:	Moist, dark grayish brown sandy clay				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	34.3	65.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.85	90		
#40	0.42	81		
# 60	0.25	74		
#100	0.15	70		
#140	0.11	67		
#200	0.075	66		

Coefficients

D_{85} = 0.5948 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 Sandy Lean CLAY (CL)

AASHTO Clayey Soils (A-7-6 (10))

Sample / Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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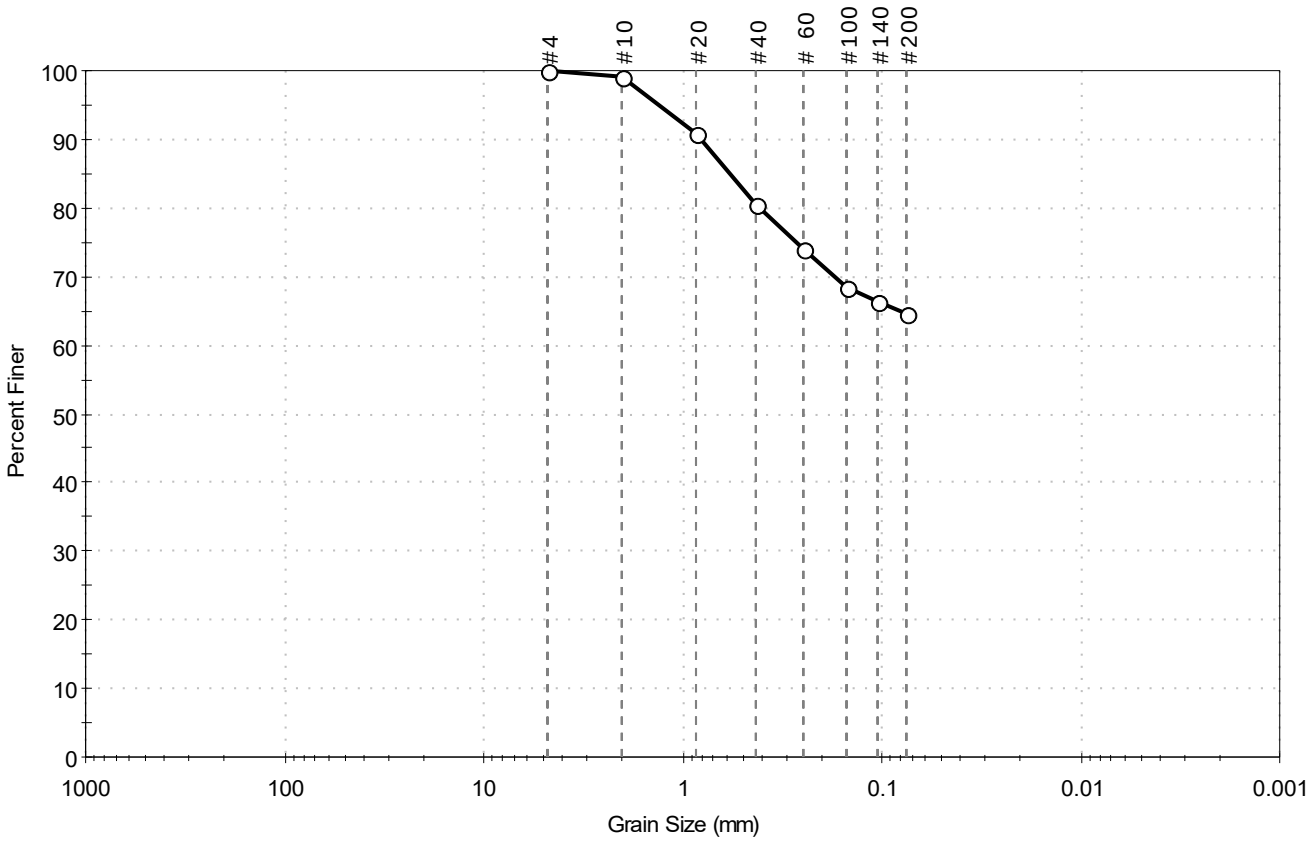
Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-8	Sample Type:	jar	Tested By:	twh
Sample ID:	7	Test Date:	07/10/18	Checked By:	jm
Depth :	23.5-25 ft	Test Id:	298174		
Test Comment:	---				
Visual Description:	Moist, dark gray sandy silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	35.3	64.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	91		
#40	0.42	80		
# 60	0.25	74		
#100	0.15	69		
#140	0.11	66		
#200	0.075	65		

Coefficients

D_{85} = 0.5770 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 Sandy SILT (ML)

AASHTO Clayey Soils (A-7-6 (12))

Sample / Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

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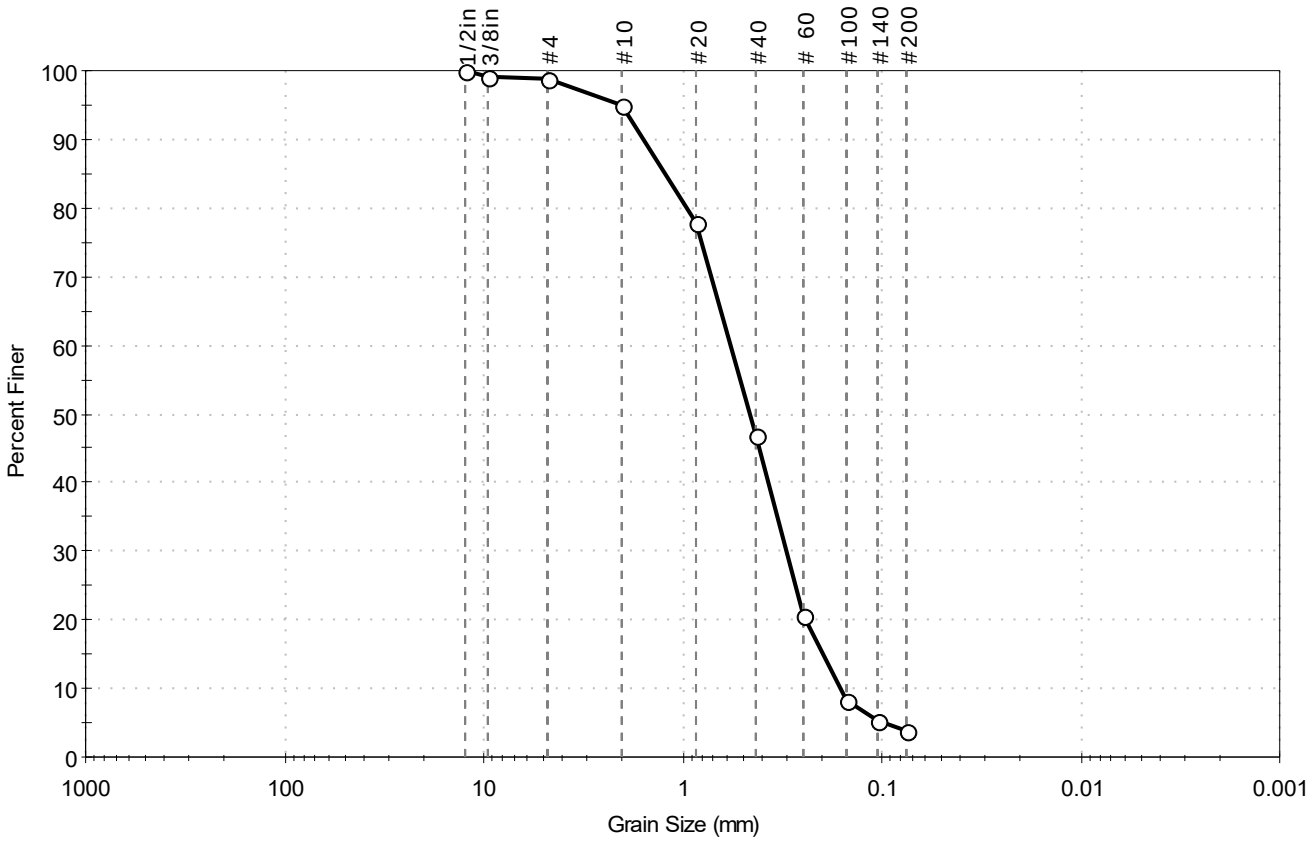
Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-8	Sample Type:	jar	Tested By:	twh
Sample ID:	8	Test Date:	07/10/18	Checked By:	jm
Depth :	28.5-30 ft	Test Id:	298175		
Test Comment:	---				
Visual Description:	Moist, brownish yellow sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.3	94.8	3.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2in	12.50	100		
3/8in	9.50	99		
#4	4.75	99		
#10	2.00	95		
#20	0.85	78		
#40	0.42	47		
# 60	0.25	21		
#100	0.15	8		
#140	0.11	5		
#200	0.075	3.9		

Coefficients

D_{85} = 1.2098 mm	D_{30} = 0.3019 mm
D_{60} = 0.5695 mm	D_{15} = 0.1982 mm
D_{50} = 0.4552 mm	D_{10} = 0.1615 mm
C_u = 3.526	C_c = 0.991

Classification

ASTM — Poorly graded SAND (SP)

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

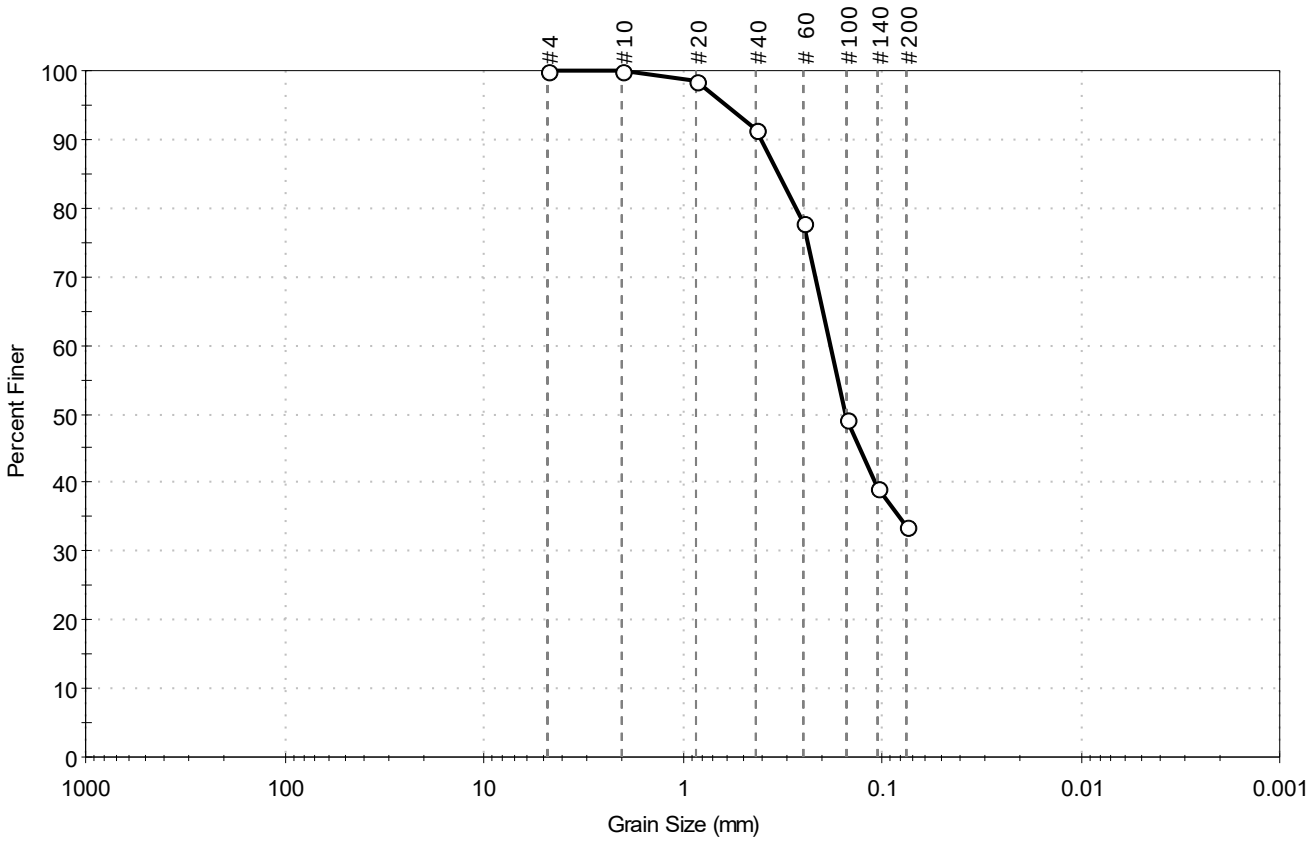
Sample / Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-9	Sample Type:	jar	Tested By:	twh
Sample ID:	7	Test Date:	07/10/18	Checked By:	jm
Depth :	23.5-25 ft	Test Id:	298176		
Test Comment:	---				
Visual Description:	Moist, gray silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	66.4	33.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	98		
#40	0.42	91		
# 60	0.25	78		
#100	0.15	49		
#140	0.11	39		
#200	0.075	34		

Coefficients

D_{85} = 0.3306 mm D_{30} = N/A

D_{60} = 0.1816 mm D_{15} = N/A

D_{50} = 0.1519 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 : ---

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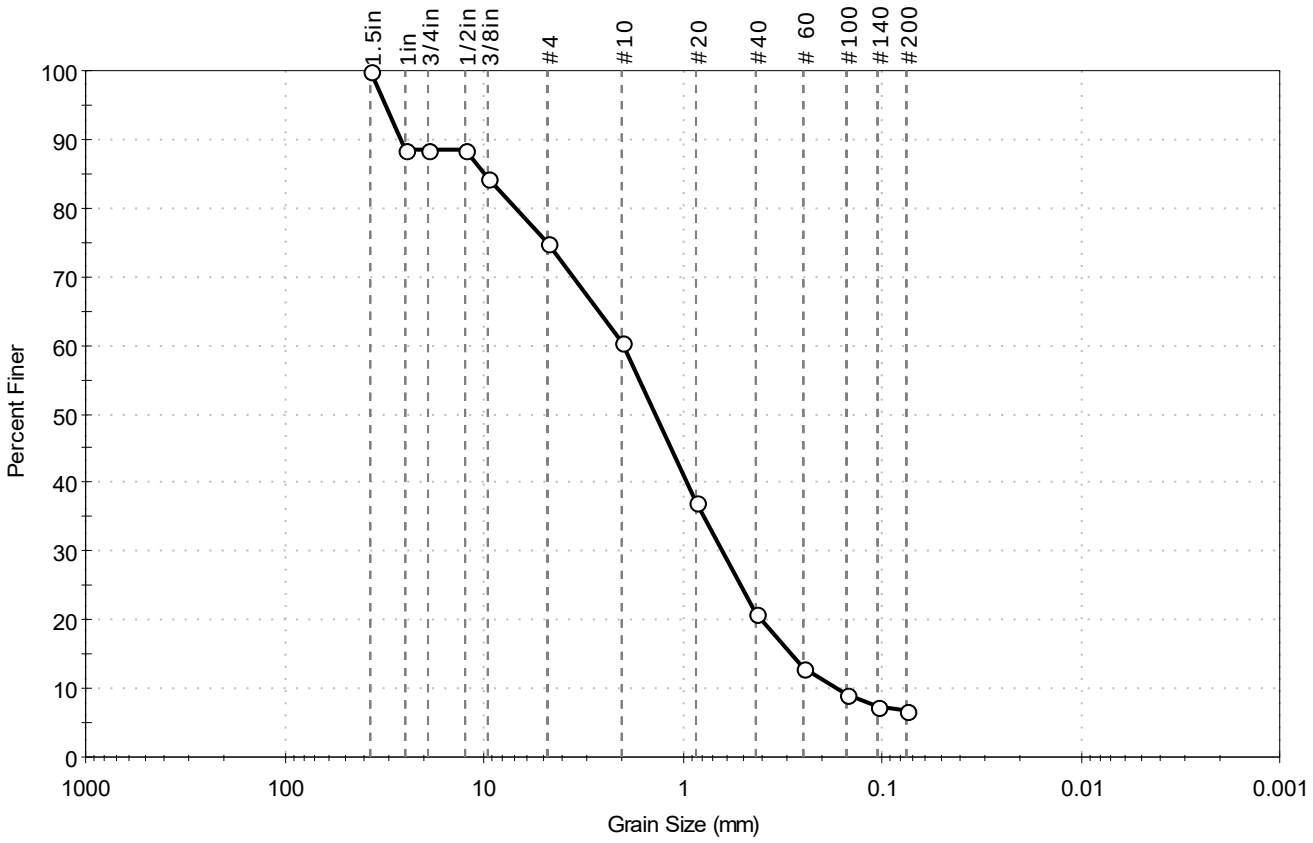
Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-9	Sample Type:	jar	Tested By:	twh
Sample ID:	8	Test Date:	07/10/18	Checked By:	jm
Depth :	28.5-30 ft	Test Id:	298177		
Test Comment:	---				
Visual Description:	Moist, brown sand with silt and gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	25.1	68.3	6.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5in	37.50	100		
1in	25.00	89		
3/4in	19.00	89		
1/2in	12.50	89		
3/8in	9.50	84		
#4	4.75	75		
#10	2.00	61		
#20	0.85	37		
#40	0.42	21		
# 60	0.25	13		
#100	0.15	9		
#140	0.11	7		
#200	0.075	6.6		

Coefficients

D_{85} = 9.8450 mm	D_{30} = 0.6238 mm
D_{60} = 1.9585 mm	D_{15} = 0.2855 mm
D_{50} = 1.3565 mm	D_{10} = 0.1698 mm
C_u = 11.534	C_c = 1.170

Classification

ASTM N/A

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

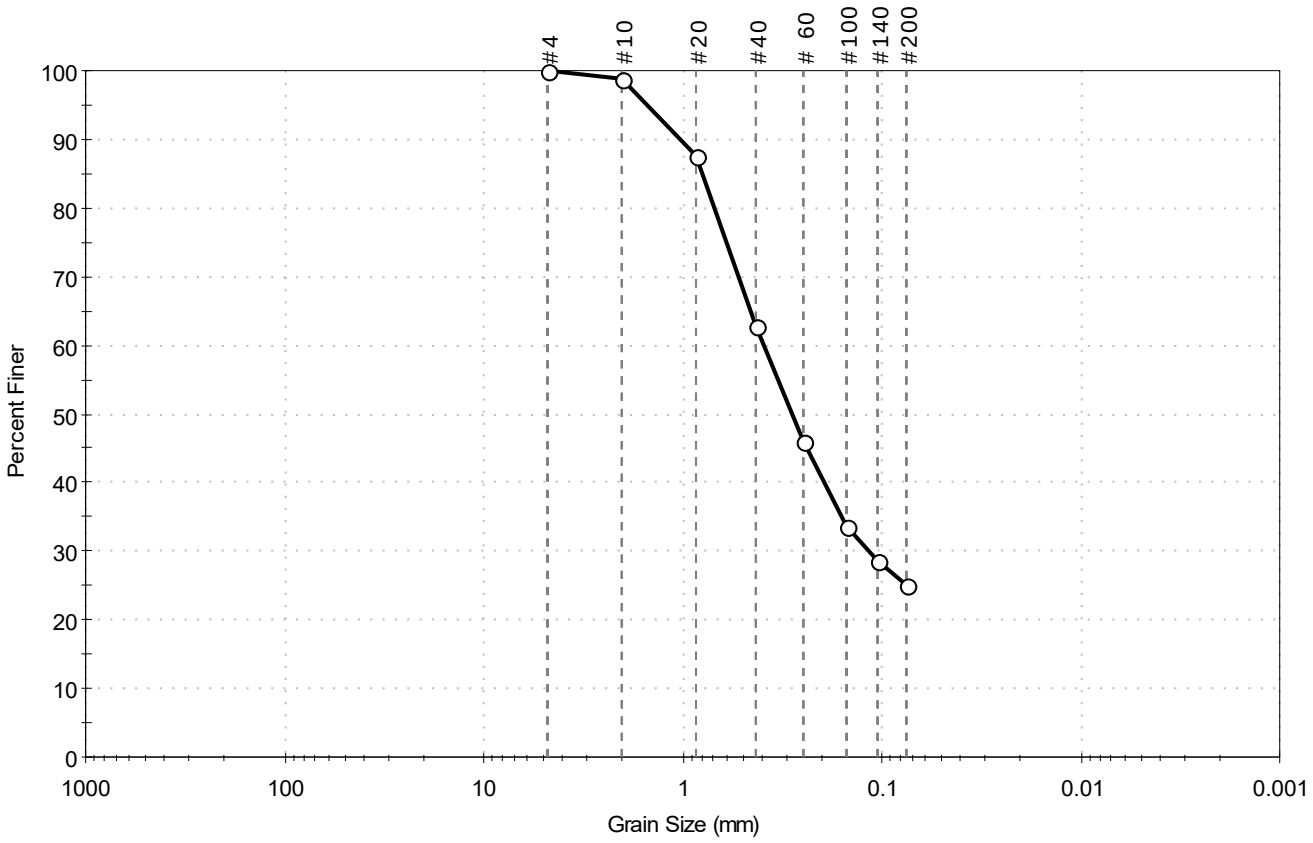
Sample / Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-9	Sample Type:	jar	Tested By:	twh
Sample ID:	11	Test Date:	07/10/18	Checked By:	jm
Depth :	43.5-45 ft	Test Id:	298178		
Test Comment:	---				
Visual Description:	Moist, mottled dark gray and light gray silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	74.8	25.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	88		
#40	0.42	63		
# 60	0.25	46		
#100	0.15	34		
#140	0.11	29		
#200	0.075	25		

Coefficients

D_{85} = 0.7903 mm	D_{30} = 0.1163 mm
D_{60} = 0.3886 mm	D_{15} = N/A
D_{50} = 0.2826 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 : ---

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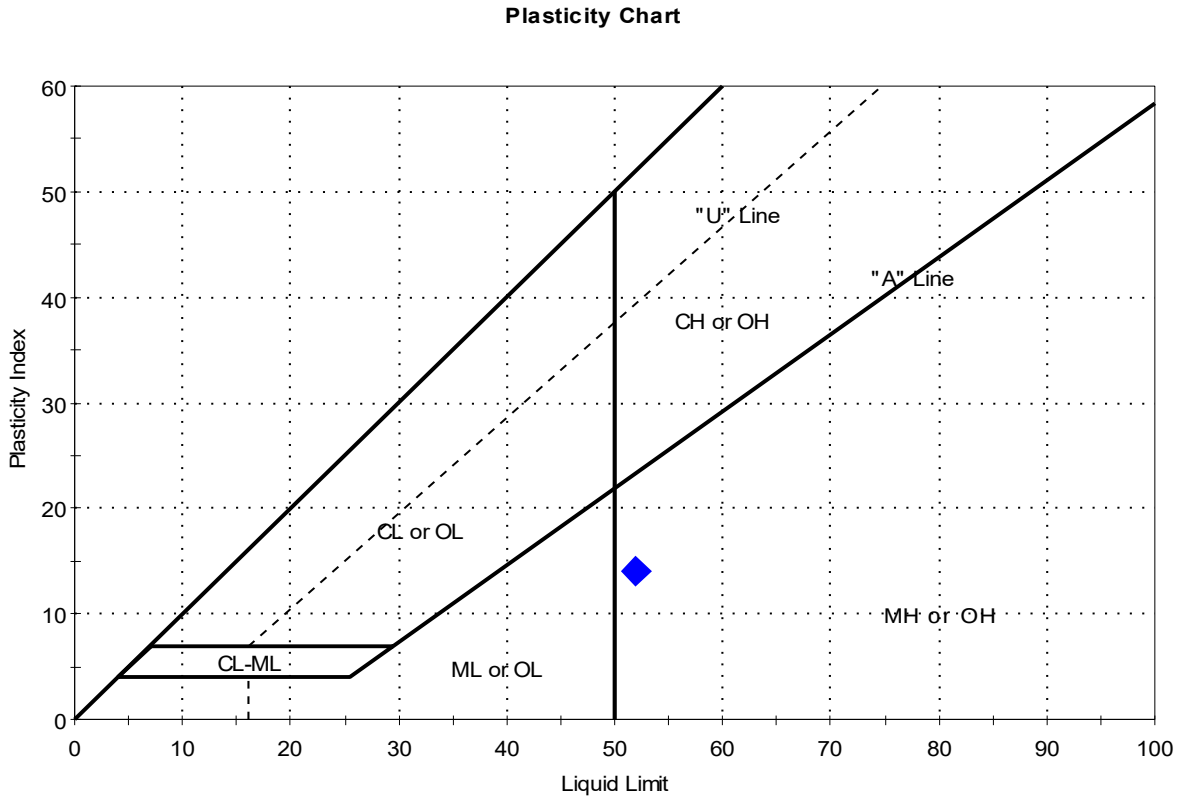
Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-2	Sample Type:	jar	Tested By:	twh
Sample ID:	4	Test Date:	07/10/18	Checked By:	jm
Depth :	8.5-10 ft	Test Id:	298179		
Test Comment:	---				
Visual Description:	Moist, pale yellow silt				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

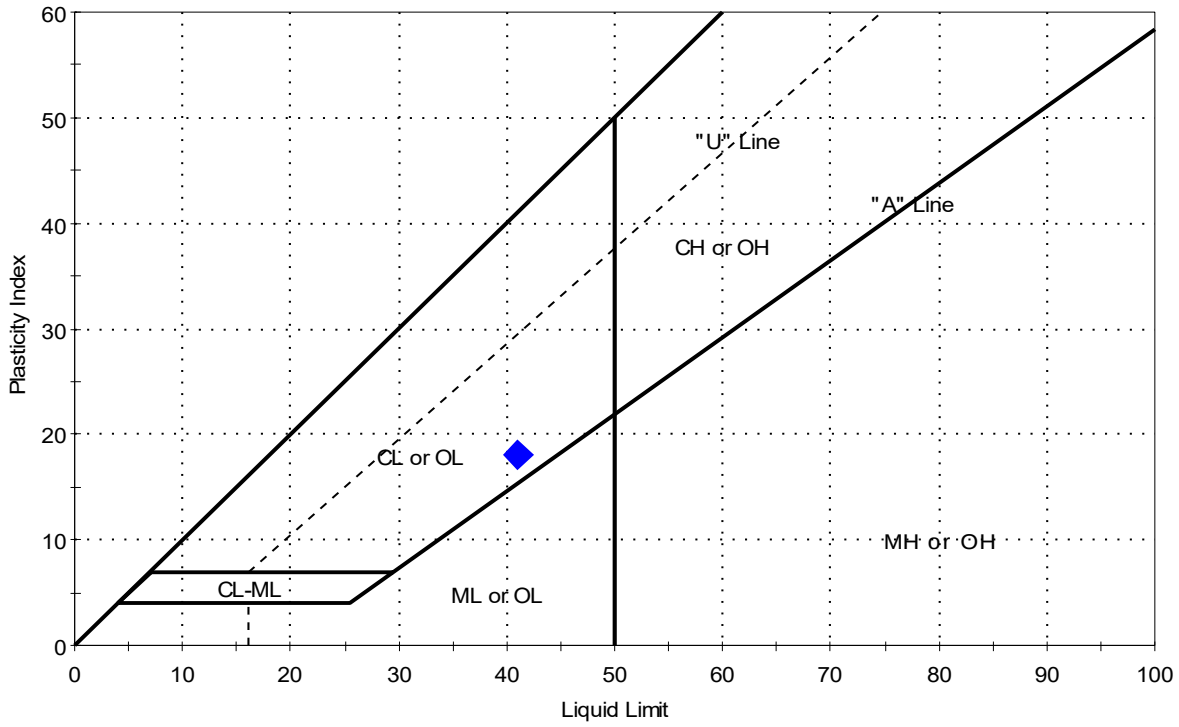


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	4	B-2	8.5-10 ft	34	52	38	14	-0.3	Elastic SILT (MH)

Sample Prepared using the WET method
6% Retained on #40 Sieve
Dry Strength: MEDIUM
Dilatancy: NONE
Toughness: LOW

Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-8	Sample Type:	jar	Tested By:	twh
Sample ID:	6	Test Date:	07/10/18	Checked By:	jm
Depth :	18.5-20 ft	Test Id:	298180		
Test Comment:	---				
Visual Description:	Moist, dark grayish brown sandy clay				
Sample Comment:	---				

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	6	B-8	18.5-20 ft	28	41	23	18	0.3	Sandy Lean CLAY (CL)

Sample Prepared using the WET method

19% Retained on #40 Sieve

Dry Strength: HIGH

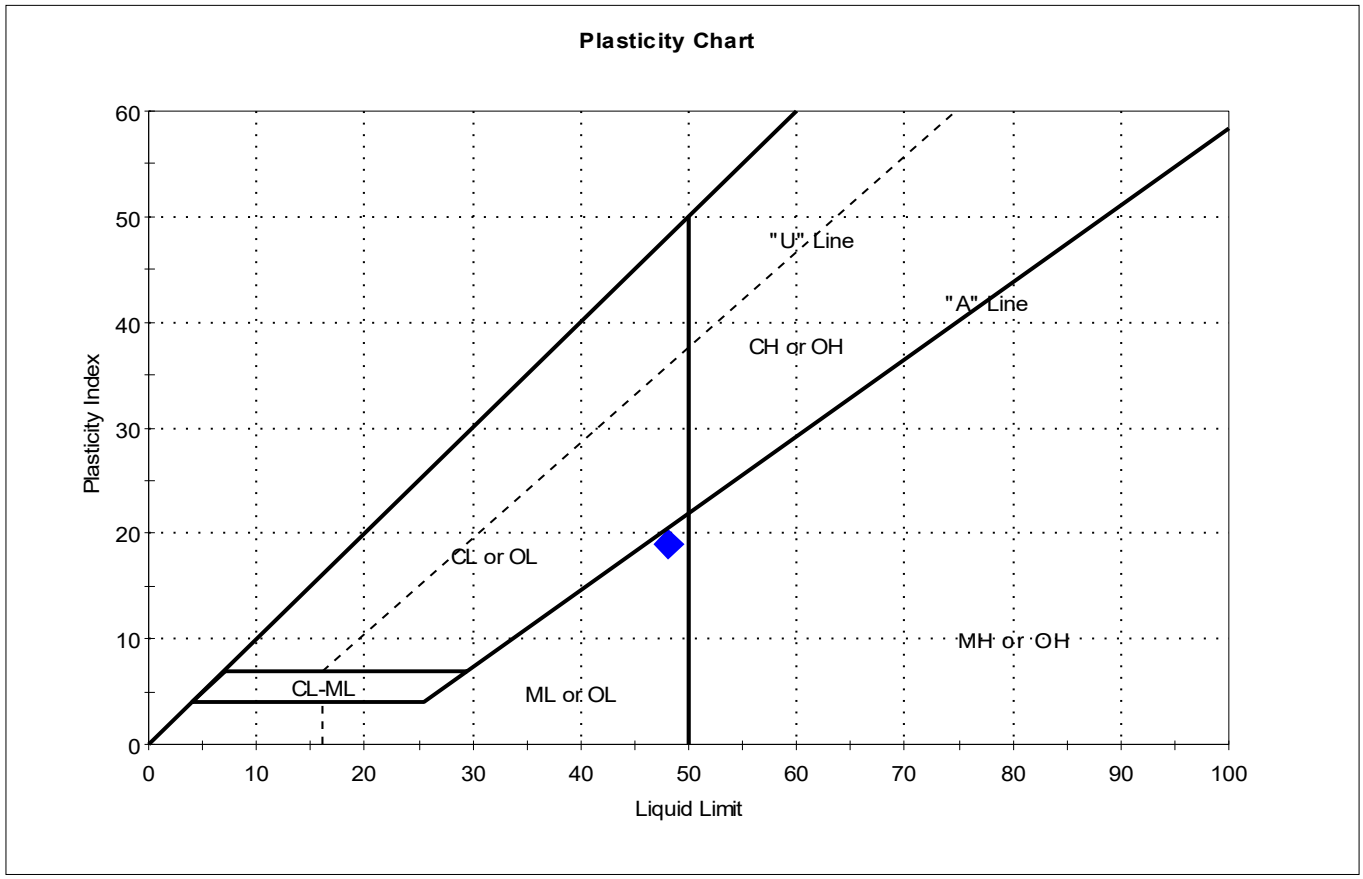
Dilatancy: NONE

Toughness: MEDIUM

In order to properly describe the soil an Oven Dried Liquid Limit test was performed.
The Oven Dried Liquid Limit was 38

Client:	GeoSystems Engineering, Inc.				
Project:	Newton County - Cornish Creek WTP Additions				
Location:				Project No:	GTX-308438
Boring ID:	B-8	Sample Type:	jar	Tested By:	twh
Sample ID:	7	Test Date:	07/10/18	Checked By:	jm
Depth :	23.5-25 ft	Test Id:	298181		
Test Comment:	---				
Visual Description:	Moist, dark gray sandy 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	B-8	23.5-25 ft	41	48	29	19	0.6	Sandy SILT (ML)

Sample Prepared using the WET method

20% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: NONE

Toughness: MEDIUM

In order to properly describe the soil an Oven Dried Liquid Limit test was performed.
The Oven Dried Liquid Limit was 43