

feet below the facility bottom, the soils should be over excavated and replaced with ASTM C33 Concrete Sand.

GTA recommends that infiltration facilities be excavated using a track-mounted excavator, which will generally eliminate the need to operate equipment directly on the subgrade.

Post-construction infiltration testing should be provided and the groundwater depth observed within proposed SWM facilities with the results reported to BMG for conformance with the facility design parameters. The earthwork contractor should anticipate that the post-construction infiltration testing will take two days to complete once the facility bottom is exposed.

If a portion of a SWM facility is to be used for a temporary sediment basin, GTA recommends excavating the basin to two feet above the planned pond bottom and limiting the footprint of the temporary basin, if practical, to minimize degradation (e.g., decreased permeability) of the infiltration facility basin.

If wet pond construction is considered, a pond liner will be required to maintain pool levels, depending upon pond bottoms. Depending upon conditions observed in the field at the time of construction and to assist in maintaining the wet pond levels during extended dry weather, an irrigation well may be considered to provide a supplemental water source for the pond due to potential loss of pond water levels mostly due to evaporation and during times of below normal average groundwater conditions. A sufficient quantity of USCS SC and CL materials may be available on site to be used for a pond liner. If enough SC and CL materials are not available GTA recommends a Geosynthetic Clay Liner (GCL; Bentonite matrix) or an appropriate PVC liner with relief valves may be used as a pond liner. Both types of liners will need to be provided with a 1-foot thick granular soil cover. The GCL or PVC liners should be installed in accordance with manufacturer's recommendations. On-site granular soils are considered suitable for use as a pond liner cover material if they are dried to near optimum. Pond liner cover materials should meet AASHTO classification designation A-2-4 or more granular and be approved by GTA.

Structural fill should be constructed in maximum 8-inch loose lifts and compacted to 95 percent of the maximum dry density as determined by ASTM D-698 (AASHTO T-99). If practical, GTA recommends reinforced concrete pipe be used as the principal spillway pipe. Also, a concrete cradle and anti-seep collar should be provided for the spillway pipe.

For wet pond construction, water levels may be above at least a portion of the pond bottom level during construction. The contractor should be prepared to stabilize and dewater pond excavations. Subgrades excavated below the water table will be prone to instability and softening.

All SWM pond construction should conform to *Delaware Conservation Practice Standard Pond Code 378* and *Code 521*, latest editions and *Delaware Sediment and Stormwater Regulations*, latest edition, as applicable.

Limitations

This report, including all supporting exploration logs, field data, field notes, estimates, and other documents prepared by GTA in connection with this project, has been prepared for the exclusive use of GED S. Main Dist. LLC. pursuant to the agreement between GTA and GED S. Main Dist. LLC dated October 7, 2021, and in accordance with generally accepted engineering practice. All terms and conditions set forth in the Agreement are incorporated herein by reference. No warranty, express or implied, is given herein. Use and reproduction of this report by any other person without the expressed written permission of GTA and GED S. Main Dist. LLC is unauthorized and such use is at the sole risk of the user.

Request GTA provide permission

The analysis and recommendations contained in this report are based on the data obtained from limited observation and testing of the encountered materials. Explorations indicate soil and groundwater conditions only at specific locations and times and only to the depths penetrated. They do not necessarily reflect strata variations that may exist between the exploration locations. Consequently, the analysis and recommendations must be considered preliminary until the subsurface conditions can be verified by direct observation at the time of construction. If variations in subsurface conditions from those described are noted during construction, recommendations in this report may need to be re-evaluated.

In the event that any changes in the nature, design, or location of the facilities are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report are verified in writing. Geo-Technology Associates, Inc. is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the expressed written authorization of Geo-Technology Associates, Inc.

The scope of our services for this geotechnical exploration did not include any environmental assessment or investigation for the presence or absence of wetlands, or hazardous or toxic materials in the soil, surface water, groundwater or air, on or below or around this site. Any statements in this report or on the logs regarding odors or unusual or suspicious items or conditions observed are strictly for the information of our Client. The subject matter of this report is limited to the facts and matters stated herein. Absence of a reference to any other conditions or subject matter shall not be constructed by the reader to imply approval by the writer.

4'+ water table should not have any wetlands, has GTA or another consultant been retained to certify to this?

GED S. Main Dist. LLC

Re: ***PODS Bridgeville – Report of SWM Subsurface Exploration***

December 3, 2021

Page 7

We appreciate the opportunity to be of assistance on this project. Should you have any questions or require additional information, please contact our office at (302) 855-9761.

Sincerely,
GEO-TECHNOLOGY ASSOCIATES, INC.



Travis P. Caraway, P.E.
Project Engineer



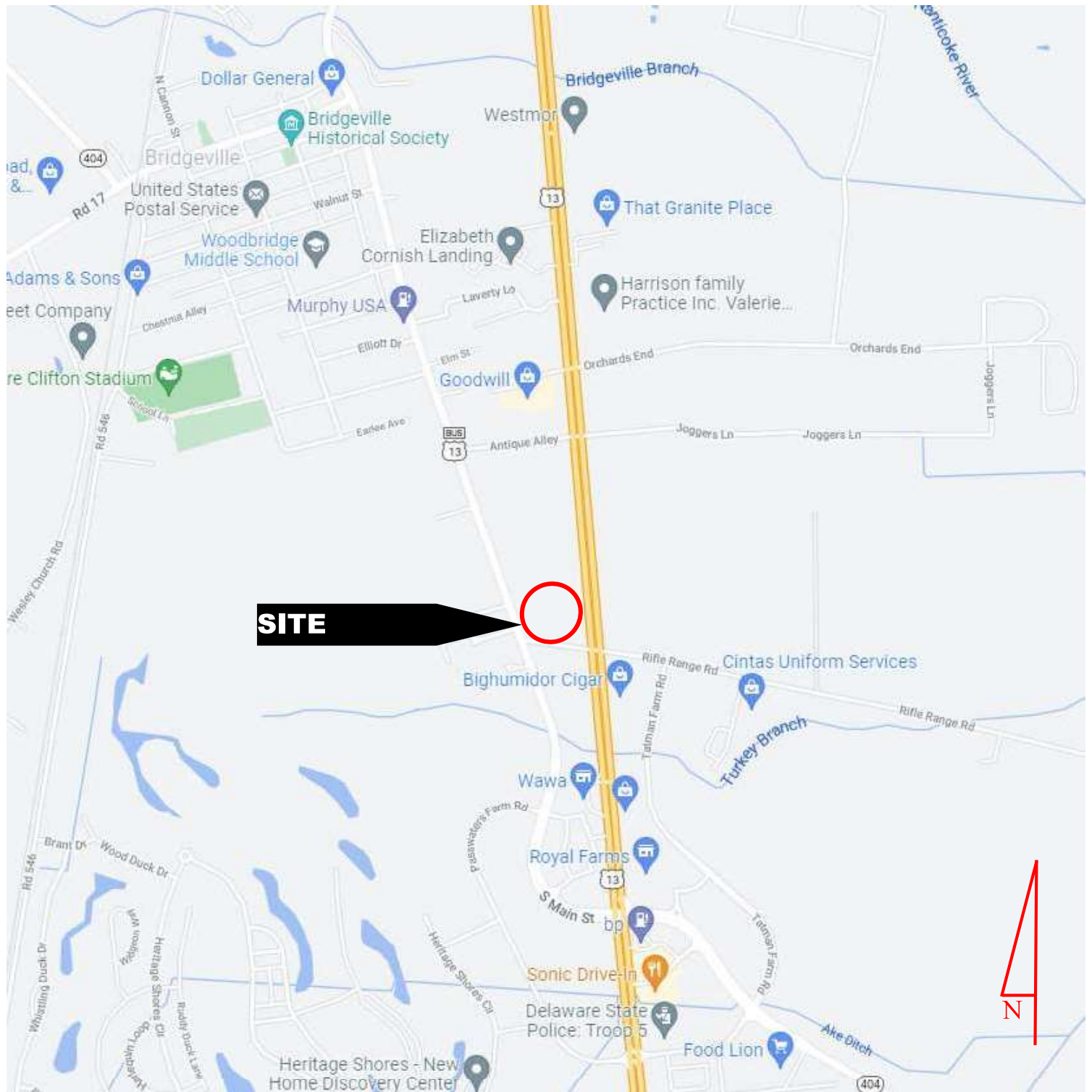
Gregory R. Sauter, P.E.
Vice President



GRS/TPC/llh
31211931

S:\1 Job File\2021 Projects\31211931-Pods Bridgeville\Report\SWM\PODS Bridgeville - GTA Report for SWM Subsurface Exploration.doc

Attachments: Site Location Plan (1 page)
Exploration Location Plan (1 page)
USDA Soil Survey Map (3 pages)
Sussex County Hydrologic Conditions (1 page)
Subsurface Profile (1 page)
Notes for Exploration Logs (1 page)
Exploration Logs (4 pages)
Infiltration Logs (4 pages)
Particle Size Distribution Report (1 page)
GBA – Important Information about your Geotechnical Engineering Report (2 pages)



Site Location Plan taken from Google Maps



GEO-TECHNOLOGY ASSOCIATES, INC.
 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
 21133 Sterling Avenue, Suite 7
 Georgetown, Delaware 19947
 (302) 855-9761 Fax (302) 856-3388

Site Location Plan
PODS Bridgeville
Sussex County, Delaware

SCALE	DATE	DRAWN BY	DESIGN BY	REVIEW BY	JOB NO.
NTS	November 2021	GTA	Google Maps	GRS	31211931



Exploration Location Plan taken from Google Earth and a plan titled *PODS STORAGE FACILITY* prepared by The Kent Architectural Collaborative, PLLC and revision dated August 30, 2021.

● Boring Location

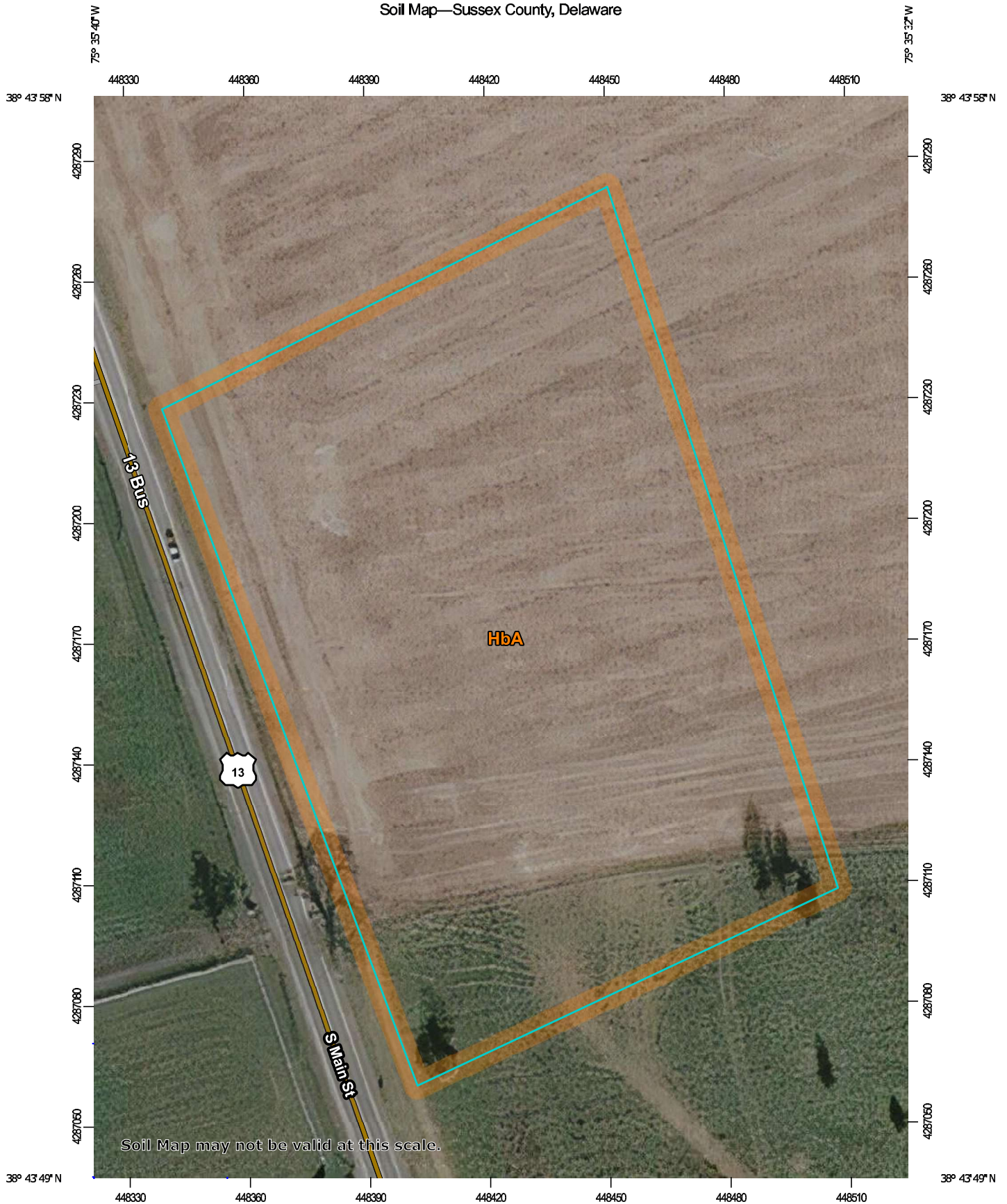


GEO-TECHNOLOGY ASSOCIATES, INC.
 GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
 21133 Sterling Avenue, Suite 7
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Exploration Location Plan
PODS Bridgeville
Sussex County, Delaware

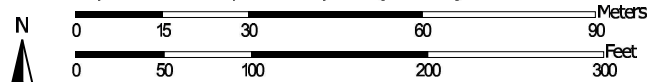
SCALE 11x17 1" ~ 35'	DATE November 2021	DRAWN BY GTA	DESIGN BY KAC	REVIEW BY GRS	JOB NO. 31211931	Figure 2
-------------------------	-----------------------	-----------------	------------------	------------------	---------------------	-------------

Soil Map—Sussex County, Delaware



Soil Map may not be valid at this scale.

Map Scale: 1:1,310 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

12/1/2021
Page 1 of 3

MAP LEGEND

- Area of Interest (AOI)
- Area of Interest (AOI)
- Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points
- Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features
- Water Features**
- Streams and Canals
- Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads
- Background**
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sussex County, Delaware
 Survey Area Data: Version 22, Aug 26, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 21, 2018—Mar 12, 2019

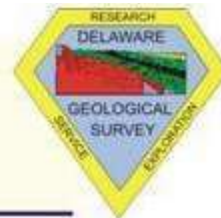
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HbA	Hambrook sandy loam, 0 to 2 percent slopes	5.4	100.0%
Totals for Area of Interest		5.4	100.0%

Delaware Geological Survey

State of Delaware
University of Delaware • Delaware Geological Survey Building
Newark, Delaware 19716-7501



Kent County Hydrologic Conditions – October 31, 2021

PRECIPITATION

Dover - running surplus/deficit

12-month: +10.92" 6-month: +5.18" 5-month: +5.61"

STREAMFLOW

St. Jones at Dover – 30-day moving average (Oct. 2 - Oct. 31)

32 mgd

Status: above normal

GROUNDWATER

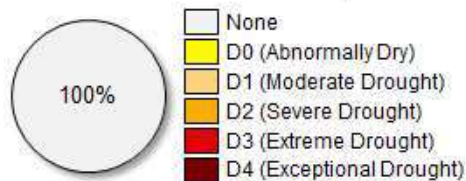
Well Mc51-01a

12.8 fbls

Status: normal

(normal for October is between 12.4 fbls and 14.4 fbls)

Kent County (DE) Percent Area in U.S. Drought Monitor Categories
November 4, 2021



Modified from the U.S. Drought Monitor
National Drought Mitigation Center

Sussex County Hydrologic Conditions – October 31, 2021

PRECIPITATION

Georgetown - running surplus/deficit

12-month: +12.07" 6-month: +1.64" 5-month: +3.28"

STREAMFLOW

Nanticoke River at Bridgeville – 30-day moving average (Oct. 2 - Oct. 31)

40 mgd

Status: above normal

GROUNDWATER

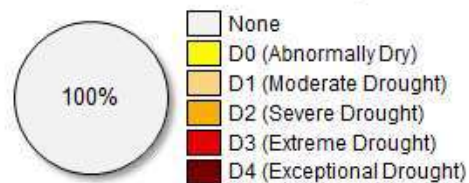
Pe54-51 (Jones Crossroads)

7.50 fbls

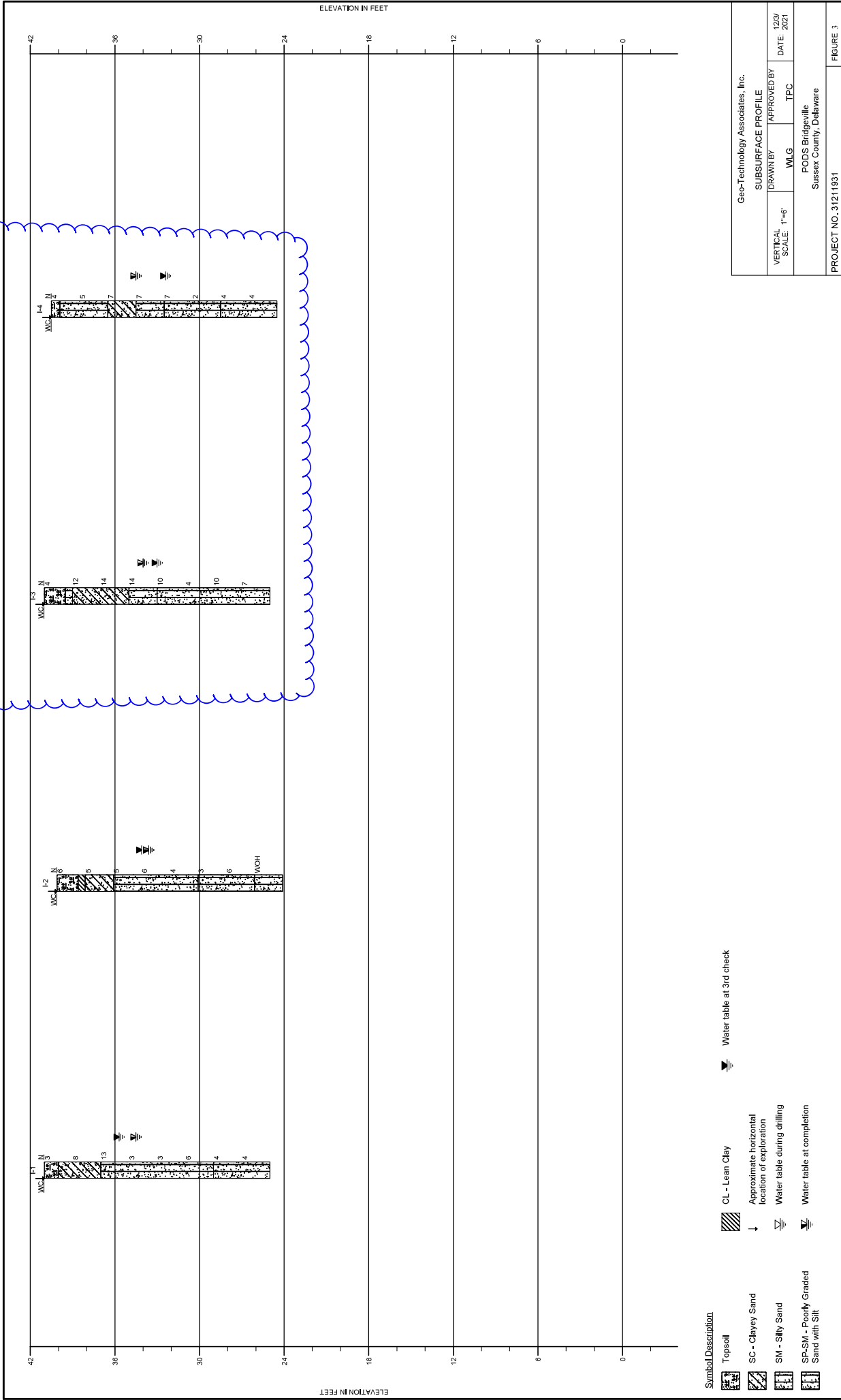
Status: normal

(normal for October is between 8.0 fbls and 10.8 fbls)

Sussex County (DE) Percent Area in U.S. Drought Monitor Categories
November 4, 2021



Modified from the U.S. Drought Monitor
National Drought Mitigation Center



Geo-Technology Associates, Inc.			
SUBSURFACE PROFILE			
DRAWN BY	APPROVED BY	DATE	
WLG	TPC	1/29/2021	
PODS Bridgeville		Sussex County, Delaware	
PROJECT NO. 31211931			
FIGURE 3			

- Symbol Description**
- Topsoil
 - SC - Clayey Sand
 - SM - Silty Sand
 - SP-SM - Poorly Graded Sand with Silt
 - CL - Lean Clay
 - Approximate horizontal location of exploration
 - Water table during drilling
 - Water table at completion
 - Water table at 3rd check

NOTES FOR EXPLORATION LOGS

KEY TO USCS TERMINOLOGY AND GRAPHIC SYMBOLS

MAJOR DIVISIONS (BASED UPON ASTM D 2488)			SYMBOLS	
			GRAPHIC	LETTER
COARSE-GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 15% PASSING THE NO. 200 SIEVE)		GW
		GRAVELS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)		GP
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LESS THAN 15% PASSING THE NO. 200 SIEVE)		SW
		SANDS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)		SP
		SANDS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)		SM
		SANDS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)		SC
FINE-GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILT OR CLAY (<15% RETAINED ON THE NO. 200 SIEVE)			ML
	SILT OR CLAY WITH SAND OR GRAVEL (15% TO 30% RETAINED ON THE NO. 200 SIEVE)			CL
	SANDY OR GRAVELLY SILT OR CLAY (>30% RETAINED ON THE NO. 200 SIEVE)			OL
	ELASTIC SILTS AND FAT CLAYS LIQUID LIMIT LESS THAN 50			MH
	ELASTIC SILTS AND FAT CLAYS LIQUID LIMIT GREATER THAN 50			CH
	ELASTIC SILTS AND FAT CLAYS LIQUID LIMIT GREATER THAN 50			OH
HIGHLY ORGANIC SOILS				PT

NOTE: DUAL SYMBOLS ARE USED TO INDICATE COARSE-GRAINED SOILS WHICH CONTAIN AN ESTIMATED 5 TO 15% FINES BASED ON VISUAL CLASSIFICATION OR BETWEEN 5 AND 12% FINES BASED ON LABORATORY TESTING; AND FINE-GRAINED SOILS WHEN THE PLOT OF LIQUID LIMIT & PLASTICITY INDEX VALUES FALLS IN THE PLASTICITY CHART'S CROSS-HATCHED AREA. FINE-GRAINED SOILS ARE CLASSIFIED AS ORGANIC (OL OR OH) WHEN ENOUGH ORGANIC PARTICLES ARE PRESENT TO INFLUENCE ITS PROPERTIES. LABORATORY TEST RESULTS ARE USED TO SUPPLEMENT SOIL CLASSIFICATION BY THE VISUAL-MANUAL PROCEDURES OF ASTM D 2488.

ADDITIONAL TERMINOLOGY AND GRAPHIC SYMBOLS

ADDITIONAL DESIGNATIONS	DESCRIPTION		GRAPHIC SYMBOLS
		TOPSOIL	
	MAN MADE FILL		
	GLACIAL TILL		
	COBBLES AND BOULDERS		
RESIDUAL SOIL DESIGNATIONS	DESCRIPTION	"N" VALUE	
	HIGHLY WEATHERED ROCK	50 TO 50/1"	
	PARTIALLY WEATHERED ROCK	MORE THAN 50 BLOWS FOR 1" OF PENETRATION OR LESS, AUGER PENETRABLE	

COARSE-GRAINED SOILS (GRAVEL AND SAND)

DESIGNATION	BLOWS PER FOOT (BPF) "N"
VERY LOOSE	0 - 4
LOOSE	5 - 10
MEDIUM DENSE	11 - 30
DENSE	31 - 50
VERY DENSE	>50

NOTE: "N" VALUE DETERMINED AS PER ASTM D 1586

FINE-GRAINED SOILS (SILT AND CLAY)

CONSISTENCY	BPF "N"
VERY SOFT	<2
SOFT	2 - 4
MEDIUM STIFF	5 - 8
STIFF	9 - 15
VERY STIFF	16 - 30
HARD	>30

NOTE: ADDITIONAL DESIGNATIONS TO ADVANCE SAMPLER INDICATED IN BLOW COUNT COLUMN:
 WOH = WEIGHT OF HAMMER
 WOR = WEIGHT OF ROD(S)

SAMPLE TYPE

DESIGNATION	SYMBOL
SOIL SAMPLE	S-
SHELBY TUBE	U-
ROCK CORE	R-

WATER DESIGNATION

DESCRIPTION	SYMBOL
ENCOUNTERED DURING DRILLING	
UPON COMPLETION OF DRILLING	
24 HOURS AFTER COMPLETION	

NOTE: WATER OBSERVATIONS WERE MADE AT THE TIME INDICATED. POROSITY OF SOIL STRATA, WEATHER CONDITIONS, SITE TOPOGRAPHY, ETC. MAY CAUSE WATER LEVEL CHANGES.










LOG OF BORING NO. I-1

PROJECT: **PODS Bridgeville**
 PROJECT NO.: **31211931**
 PROJECT LOCATION: **Sussex County, Delaware**

WATER LEVEL (ft): ∇ 6.5 ∇ 5.3
 DATE: 11/2/21 11/3/21
 CAVED (ft): - -

DATE STARTED: **11/2/2021**
 DATE COMPLETED: **11/2/2021**
 DRILLING CONTRACTOR: **Manos Drilling Associates**
 DRILLER: **K. Manos**
 DRILLING METHOD: **Hollow Stem Auger**
 SAMPLING METHOD: **Splitspoon**

WATER ENCOUNTERED DURING DRILLING (ft) ∇ **6.5**
 GROUND SURFACE ELEVATION: **41.0**
 DATUM: **Survey**
 EQUIPMENT: **CME 55**
 LOGGED BY: **WLG**
 CHECKED BY: **TPC**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION		REMARKS
									DESCRIPTION		
1	0.0	24	2-2-1-2	3	41.0	0	TS		Topsoil: 12 inches		
					40.0		SC		Brown, moist, very loose to loose, Clayey SAND USDA: Sandy Clay Loam		
2	2.0	20	3-4-4-5	8		3					
3	4.0	20	6-7-6-8	13	37.0		SM		Brown-gray, moist to wet, very loose to medium dense, Silty SAND USDA: Sandy Loam		∇ ∇
					6						
4	6.0	24	2-2-1-1	3							
5	8.0	24	2-2-1-2	3		9					
6	10.0	24	2-2-4-5	6							
7	12.0	10	3-2-2-2	4	29.0	12	SP-SM		Gray, wet, very loose, Poorly-graded SAND with Silt USDA: Loamy Sand		
					15						
8	14.0	24	1-2-2-3	4		15					
					25.0				Bottom of hole 16 feet		
						18					

NOTES: **Air Temp.: 53, 48 Hr. Precip.: 0.0 in., Coords: N: 266628.7013, E: 605528.5314**
ASTM 1586



GEO-TECHNOLOGY ASSOCIATES, INC.

21133 Sterling Avenue, Suite 7
 Georgetown, DE 19947

LOG OF BORING NO. I-1



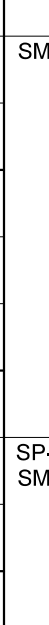



LOG OF BORING NO. I-2

PROJECT: **PODS Bridgeville**
 PROJECT NO.: **31211931**
 PROJECT LOCATION: **Sussex County, Delaware**

WATER LEVEL (ft): ∇ 6.5 ∇ ∇ 6.0
 DATE: 11/2/21 11/3/21
 CAVED (ft): - -

DATE STARTED: **11/2/2021**
 DATE COMPLETED: **11/2/2021**
 DRILLING CONTRACTOR: **Manos Drilling Associates**
 DRILLER: **K. Manos**
 DRILLING METHOD: **Hollow Stem Auger**
 SAMPLING METHOD: **Splitspoon**

WATER ENCOUNTERED DURING DRILLING (ft) ∇ **6.5**
 GROUND SURFACE ELEVATION: **40.1**
 DATUM: **Survey**
 EQUIPMENT: **CME 55**
 LOGGED BY: **WLG**
 CHECKED BY: **TPC**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION		REMARKS
									DESCRIPTION		
1	0.0	20	2-3-3-4	6	40.1	0	TS		Topsoil: 18 inches		
						38.6	CL		Gray, moist, medium stiff, Lean CLAY USDA: Clay Loam		
2	2.0	18	2-3-2-3	5	38.1	3	SC		Gray-orange, moist, loose, Clayey SAND USDA: Sandy Clay Loam		
						36.1	SM		Gray, moist to wet, very loose to loose, Silty SAND USDA: Sandy Loam		
3	4.0	22	2-2-3-4	5	36.1	6					
4	6.0	18	2-3-3-2	6							
5	8.0	10	2-2-2-2	4		9					
6	10.0	18	WOH/12"- 3-5	3	30.1	12	SP-SM		Gray, wet, very loose to loose, Poorly-graded SAND with Silt USDA: Loamy Sand		
7	12.0	16	2-3-3-2	6							
8	14.0	20	WOH/12"- WOH/12"	WOH	26.1	15	SM		Gray, wet, very loose, Silty SAND USDA: Sandy Loam		
						24.1			Bottom of hole 16 feet		
						18					

NOTES: Air Temp.: 53, 48 Hr. Precip.: 0.0 in., Coords: N: 266487.7611, E: 605558.4248
 ASTM 1586



GEO-TECHNOLOGY ASSOCIATES, INC.

21133 Sterling Avenue, Suite 7
 Georgetown, DE 19947

LOG OF BORING NO. I-2

LOG OF BORING NO. I-3

PROJECT: **PODS Bridgeville**
 PROJECT NO.: **31211931**
 PROJECT LOCATION: **Sussex County, Delaware**

WATER LEVEL (ft): ∇ 7.0 ∇ 8.0
 DATE: 11/3/21 11/5/21
 CAVED (ft): - -

DATE STARTED: **11/3/2021**
 DATE COMPLETED: **11/3/2021**
 DRILLING CONTRACTOR: **Manos Drilling Associates**
 DRILLER: **K. Manos**
 DRILLING METHOD: **Hollow Stem Auger**
 SAMPLING METHOD: **Splitspoon**

WATER ENCOUNTERED DURING DRILLING (ft) ∇ **7.0**
 GROUND SURFACE ELEVATION: **41.0**
 DATUM: **Survey**
 EQUIPMENT: **CME 55**
 LOGGED BY: **WLG**
 CHECKED BY: **TPC**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION		REMARKS
									DESCRIPTION		
1	0.0	18	2-2-2-3	4	41.0	0	TS		Topsoil: 18 inches		
2	2.0	20	5-6-6-5	12	39.5	3	SM		Brown, moist, very loose, Silty SAND		
					39.0		SC		USDA: Loam Brown, moist, medium dense, Clayey SAND USDA: Sandy Clay Loam		
3	4.0	20	4-6-8-6	14							
4	6.0	22	3-7-7-7	14	35.0	6	SM		Brown, moist to wet, medium dense, Silty SAND USDA: Sandy Loam		∇
5	8.0	24	5-5-5-5	10	33.0	9	SP-SM		Brown-gray, wet, very loose to loose, Poorly-graded SAND with Silt		∇
6	10.0	20	1-1-3-3	4							
7	12.0	24	3-4-6-6	10		12					
8	14.0	24	3-3-4-4	7		15					
					25.0				Bottom of hole 16 feet		
						18					

NOTES: Air Temp.: 42, 48 Hr. Precip.: 0.3 in., Coords: N: 266232.3238, E: 605703.8384
 ASTM 1586



GEO-TECHNOLOGY ASSOCIATES, INC.

21133 Sterling Avenue, Suite 7
 Georgetown, DE 19947

LOG OF BORING NO. I-3

LOG OF BORING NO. I-4

PROJECT: **PODS Bridgeville**
 PROJECT NO.: **31211931**
 PROJECT LOCATION: **Sussex County, Delaware**

WATER LEVEL (ft): ∇ 6.0 ∇ 8.1
 DATE: 11/3/21 11/5/21
 CAVED (ft): - -

DATE STARTED: **11/3/2021**
 DATE COMPLETED: **11/3/2021**
 DRILLING CONTRACTOR: **Manos Drilling Associates**
 DRILLER: **K. Manos**
 DRILLING METHOD: **Hollow Stem Auger**
 SAMPLING METHOD: **Splitspoon**

WATER ENCOUNTERED DURING DRILLING (ft) ∇ **6.0**
 GROUND SURFACE ELEVATION: **40.5**
 DATUM: **Survey**
 EQUIPMENT: **CME 55**
 LOGGED BY: **WLG**
 CHECKED BY: **TPC**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION		REMARKS
									DESCRIPTION		
1	0.0	12	1-2-2-1	4	40.5	0	TS		Topsoil: 7 inches		
					39.9		SM		Orange, moist, very loose to loose, Silty SAND USDA: Sandy Loam		
2	2.0	24	3-2-3-2	5		3					
3	4.0	18	3-3-4-3	7	36.5		SC		Tan, moist, loose, Clayey SAND USDA: Sandy Clay Loam		
					34.5	6	SM		Tan, wet, loose, Silty SAND USDA: Sandy Loam		
4	6.0	24	3-3-4-4	7							∇
5	8.0	20	3-2-5-3	7	32.5	9	SP-SM		Gray, wet, very loose to loose, Poorly-graded SAND with Silt USDA: Loamy Sand		
6	10.0	18	1-1-1-1	2							
7	12.0	24	1-1-3-3	4	28.5	12	SM		Gray, wet, very loose, Silty SAND USDA: Sandy Loam		
8	14.0	24	1-1-3-3	4		15					
					24.5				Bottom of hole 16 feet		
						18					

NOTES: Air Temp.: 42, 48 Hr. Precip.: 0.3 in., Coords: N: 266263.9323, E: 605888.7415
 ASTM 1586



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21133 Sterling Avenue, Suite 7
 Georgetown, DE 19947

LOG OF BORING NO. I-4



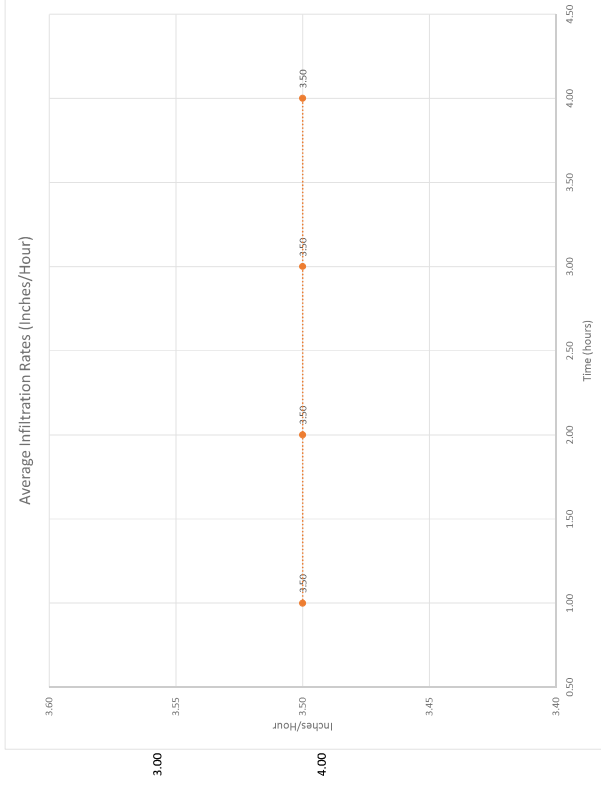
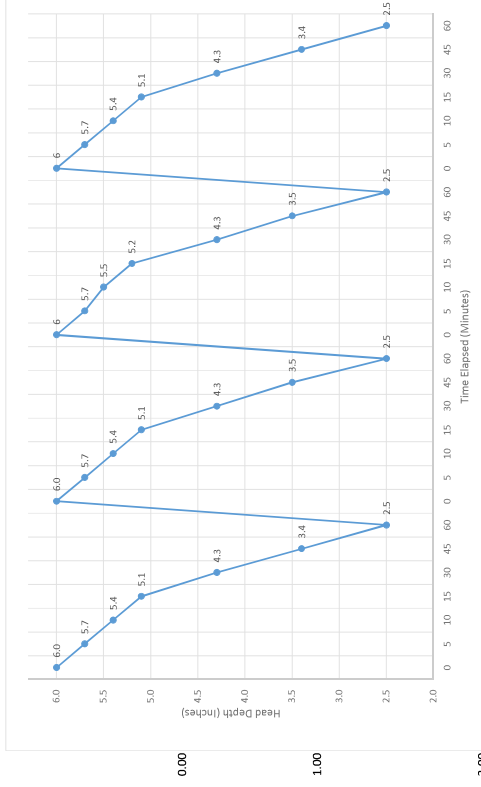
Geo-Technology Associates, Inc.

Single Ring Falling Head Infiltration Testing

Name: Mitchell
 Date: 11/29/2021
 Temp: 44°F Weather: Clear
 I.D. of Pipe: 12 in.
 Rainfall Last 24 hrs: 0.0"
 Test Depth: 4.5 / 36.5 ft. / EL
 Location: I-1
 Depth of Casing Penetration: 3'
 Presoak: 12" drop 15" hour
 Soil Type Tested: Sandy Loam

Date	Time	Δt (min.)	Head of Water (in.)	Comments
11/29/2021	11:02	0	6.0	
	11:07	5	5.7	
	11:12	10	5.4	
	11:17	15	5.1	
	11:32	30	4.3	
	11:47	45	3.4	
	12:02	60	2.5	Rate: 3.5 in/hr"
	12:07	5	5.7	
	12:12	10	5.4	
	12:17	15	5.1	
	12:32	30	4.3	
	12:47	45	3.5	
	1:02	60	2.5	Rate: 3.5 in/hr"
	1:12	0	6	
	1:17	5	5.7	
	1:32	10	5.5	
	1:47	15	5.2	
	2:02	30	4.3	
	2:07	45	3.5	
	2:12	0	6	
	2:17	5	5.7	
	2:32	10	5.4	
	2:47	15	5.1	
	3:02	30	4.3	
	3:17	45	3.4	
	3:32	60	2.5	Rate: 3.5 in/hr"

Average Infiltration Rate:



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 31211931

Location: I-1
 Test Depth: 4.5



Geo-Technology Associates, Inc.

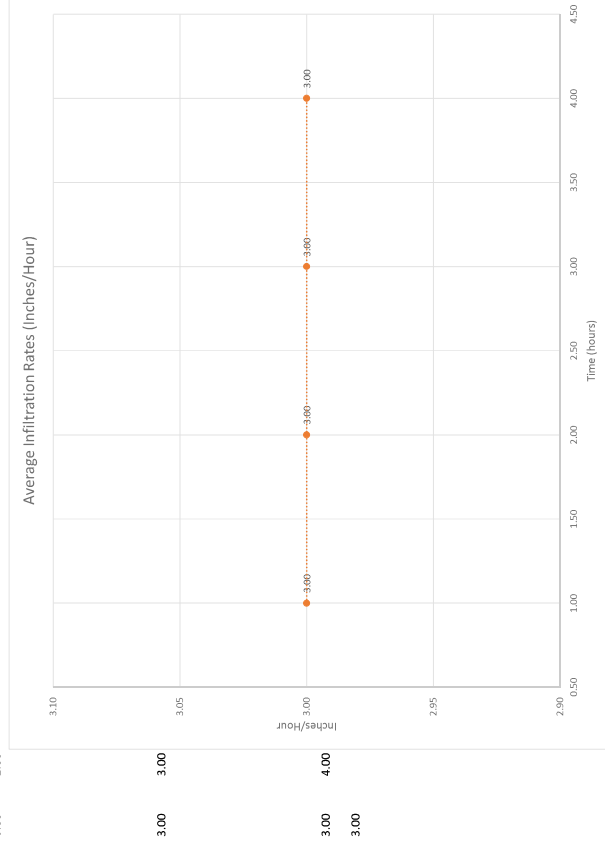
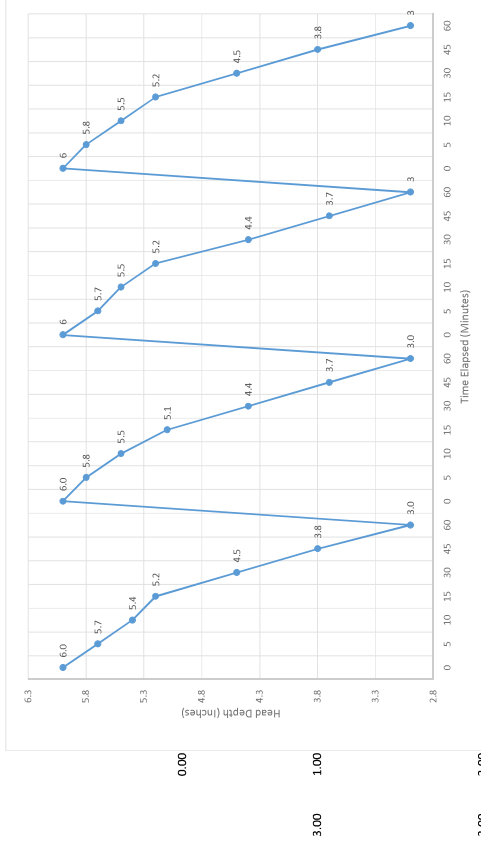
Single Ring Falling Head Infiltration Testing

Name: Mitchell Date: 11/29/2021
 I.D. of Pipe: 4.0 / 36.1 in. Temp: 44°F Weather: Clear
 Rainfall Last 24 hrs: 0.0" Location: 12
 Depth of Casing Penetration: 1' Presoak: 12" drop 15" hour
 Soil Type Tested: Sandy Loam

Date	Time	Δt (min.)	Head of Water (in.)	Comments
11/29/2021	10:52	0	6.0	
	10:57	5	5.7	
	11:02	10	5.4	
	11:07	15	5.2	
	11:22	30	4.5	
	11:37	45	3.8	
	11:52	60	3.0	Rate: 3 in/hr"
	11:52	0	6.0	
	11:57	5	5.8	
	12:02	10	5.5	
	12:07	15	5.1	
	12:22	30	4.4	
	12:37	45	3.7	
	12:52	60	3.0	Rate: 3 in/hr"
	12:52	0	6	
	12:57	5	5.7	
	1:02	10	5.5	
	1:07	15	5.2	
	1:22	30	4.4	
	1:37	45	3.7	
	1:52	60	3	Rate: 3 in/hr"
	1:52	0	6	
	1:57	5	5.8	
	2:02	10	5.5	
	2:07	15	5.2	
	2:22	30	4.5	
	2:37	45	3.8	
	2:52	60	3	Rate: 3 in/hr"

Average Infiltration Rate:

3.00



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Location: 12
Test Depth: 4



Geo-Technology Associates, Inc.

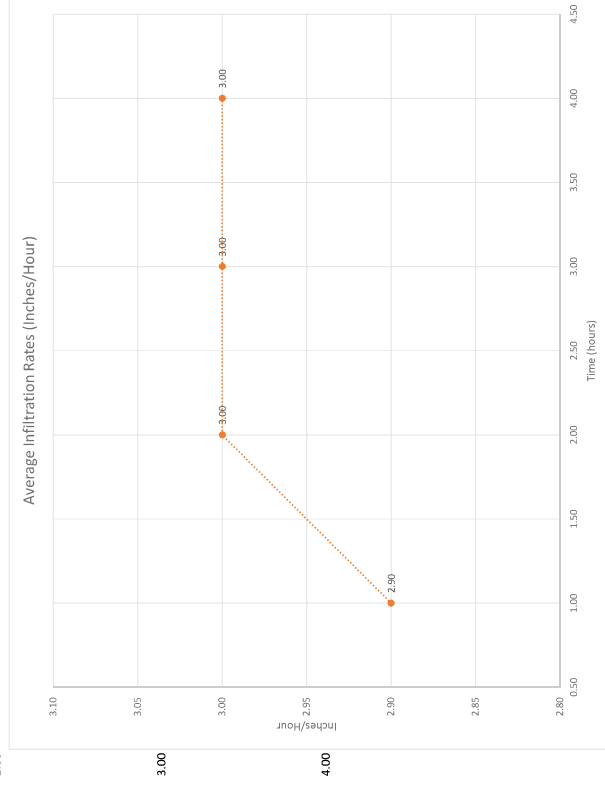
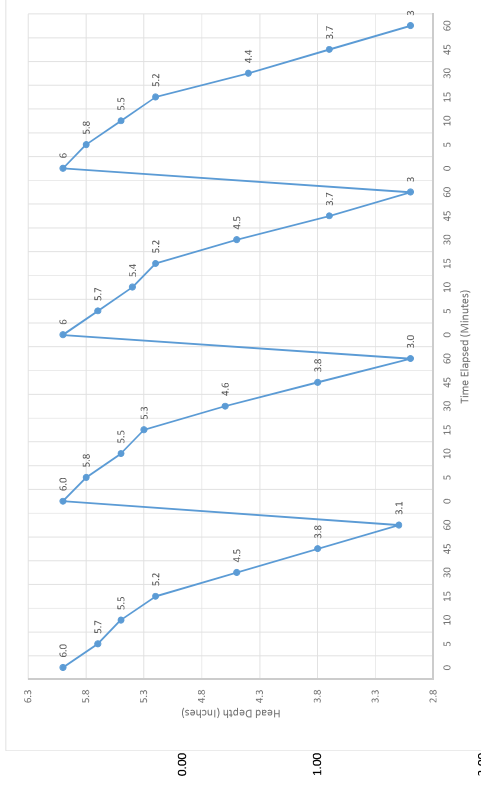
Single Ring Falling Head Infiltration Testing

Name: Mitchell Date: 11/29/2021
 I.D. of Pipe: 5 in. Temp: 44°F Weather: Clear
 Rainfall Last 24 hrs.: 0.0" Location: 13
 Test Depth: 6.0 / 35.0 ft. / EL. Presoak: 12" drop 15" hour
 Depth of Casing Penetration: 3' Soil Type Tested: Sandy Loam

Date	Time	Δt (min.)	Head of Water (in.)	Comments
11/29/2021	10:40	0	6.0	
	10:45	5	5.7	
	10:50	10	5.5	
	10:55	15	5.2	
	11:00	30	4.5	
	11:25	45	3.8	
	11:40	60	3.1	Rate: 2.9 in/hr"
	11:40	0	6.0	
	11:45	5	5.8	
	11:50	10	5.5	
	11:55	15	5.3	
	12:10	30	4.6	
	12:25	45	3.8	
	12:40	60	3.0	Rate: 3 in/hr"
	12:40	0	6	
	12:45	5	5.7	
	12:50	10	5.4	
	12:55	15	5.2	
	1:00	30	4.5	
	1:25	45	3.7	
	1:40	60	3	Rate: 3 in/hr"
	1:40	0	6	
	1:45	5	5.8	
	1:50	10	5.5	
	1:55	15	5.2	
	2:10	30	4.4	
	2:25	45	3.7	
	2:40	60	3	Rate: 3 in/hr"

Average Infiltration Rate:

2.88



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Location: 13
Test Depth: 6



Geo-Technology Associates, Inc.

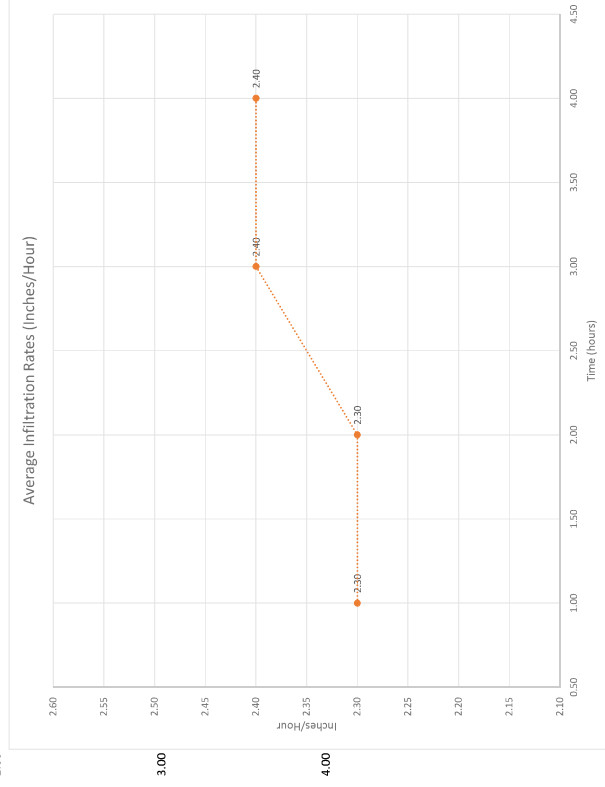
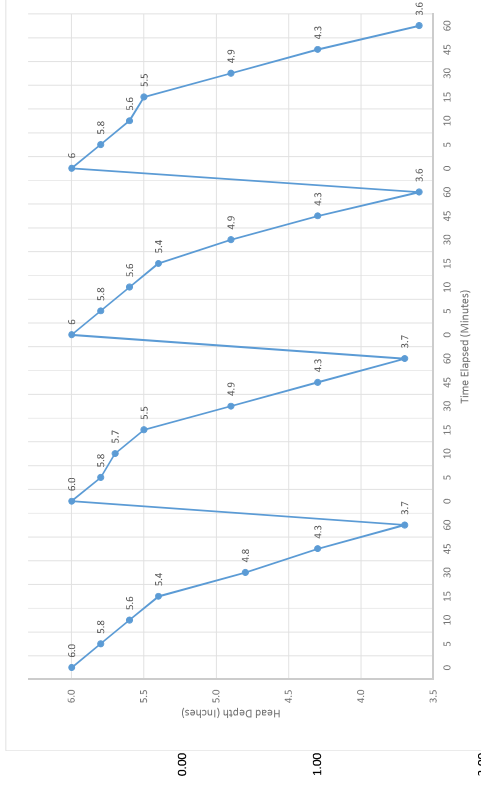
Single Ring Falling Head Infiltration Testing

Name: Mitchell Date: 11/29/2021
 I.D. of Pipe: 12 in. Temp: 44°F Weather: Clear
 Test Depth: 2.0 / 38.5 ft. / EL. Rainfall Last 24 hrs.: 0.0"
 Depth of Casing Penetration: 3' Location: 1-4
 Soil Type Tested: Sandy Loam Presoak: 12" drop 15-hour

Date	Time	Δt (min.)	Head of Water (in.)	Comments
11/29/2021	10:46	0	6.0	
	10:51	5	5.8	
	10:56	10	5.6	
	11:01	15	5.4	
	11:16	30	4.8	
	11:31	45	4.3	
	11:46	60	3.7	Rate: 2.3 in/hr"
	11:46	0	6.0	
	11:51	5	5.8	
	11:56	10	5.7	
	12:01	15	5.5	
	12:16	30	4.9	
	12:31	45	4.3	
	12:46	60	3.7	Rate: 2.3 in/hr"
	12:46	0	6	
	12:51	5	5.8	
	12:56	10	5.6	
	1:01	15	5.4	
	1:16	30	4.9	
	1:31	45	4.3	
	1:46	60	3.6	Rate: 2.4 in/hr"
	1:46	0	6	
	1:51	5	5.8	
	1:56	10	5.6	
	2:01	15	5.5	
	2:16	30	4.9	
	2:31	45	4.3	
	2:46	60	3.6	Rate: 2.4 in/hr"

Average Infiltration Rate:

2.35



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Location: 1-4
Test Depth: 2