

Penn's Trail Environmental, LLC

21 E. Lincoln Ave – Suite 160

Hatfield, PA 19440

Phone: (215) 362-4610

e-mail: staff@pennstrail.com

Robert E. Blue Consulting Engineers, P.C.
1149 Skippack Pike
Blue Bell, PA 19422

February 2, 2022

**RE: Stormwater Infiltration Study & Report
222 Church Road Tract
Cheltenham Twp., Montgomery Co., PA
PTE #5303**

Dear Mr. Pawlowski;

Penn's Trail Environmental, LLC has performed a subsurface soil and permeability investigation on the referenced parcel. The intent of this investigation was to evaluate the subsurface soil profile and determine the permeability characteristics of the areas indicated for proposed stormwater disposal via infiltration. Test excavations were developed with a backhoe and described in accordance with United States Department of Agriculture-Natural Resource Conservation Service (USDA-NRCS) methodology. In-situ permeability testing was conducted using the Double Ring Infiltrometer (DRI) method as described by ASTM-D3385-09 standards.

Current regulation requires that stormwater control be designed for this proposed new land development project. Permeability testing is required to determine if infiltrative capacity of the subsoil is present. Test locations were positioned throughout this site at the direction of the project engineer. Depth of testing was determined by final constructed grade of the stormwater facilities or adjusted for shallow bedrock or groundwater encountered in test excavations. A backhoe was required for excavation of the test probes and establishment of the double rings.

Soil profile descriptions were developed at each test point and include information such as texture, structure, soil depth, and indication (or lack thereof) of a seasonal high-water table or restricted drainage as would be indicated by redoximorphic features.

Redox features often occur when infiltrating water encounters a slowly permeable layer as it moves downward through the soil profile. These features do not indicate a true water table or zone that is saturated for prolonged periods by regional groundwater at this site. Regional groundwater was not encountered at this site, and redox features observed are an indicator of infiltration issues which are addressed by permeability testing and should not be considered a limiting design factor unless permeability rates reveal that to be the case.

Pre-development USDA-NRCS soil mapping at this site, or more specifically the test locations, was the Hatboro and Urban Land – Udorthents, schist and gneiss soil series. The Hatboro series consists of very deep and poorly drained soils formed in alluvium derived from metamorphic and crystalline rock. They are on flood plains. Saturated hydraulic conductivity is moderately high to high. Solum thickness ranges from 20 to 60 inches. Depth to bedrock ranges from 5 to 10 feet or more. Diagnostic horizons and features recognized in this pedon are an ochric epipedon from 0 to 9 inches (Ap horizon) and a cambic horizon from 9 to 44 inches (Bg1 and Bg2 horizons).

Udorthents are a complex collection of soils that consist of moderately well drained to excessively drained soils that have been disturbed by cutting or filling, and areas that are covered by buildings and pavement. Udorthents consist of gently sloping to moderately

sloping areas where the original soil has been cut away or covered with a loamy fill material. Permeability is moderate to slow throughout. Depth to bedrock is typically more than 60 inches. Seasonal high-water table depth is variable. Layers that restrict permeability, and buried objects may hinder deep excavations. The soil characteristics are variable, requiring on-site investigation before suitability for specific land uses can be evaluated.

The soils at the testing locations were found to be derived primarily from schist as mapped. This investigation was not conducted for the purpose of disputing current mapping or as a re-mapping effort. Loess material was found to overtop schist derived soils at certain test locations. Soil series designations are provided on the attached soil profile data sheets.

Soil profiles of backhoe excavated test pits were developed to depths at or near final constructed grade of proposed stormwater control facilities. The most restrictive barriers from the point of infiltration to contacting the base flow groundwater table were determined. The most common of these barriers in our region include restrictive soil horizons, varying lithology, fracturing of the bedrock or insufficient fracturing of the bedrock, and encountering groundwater among other factors. Our field observations, as reported on the attached soil profile data sheets, indicate that slowly diggable conditions were not encountered in the test pits. Redoximorphic features were noted in test pits 3, 4 and 6 throughout the lower argillic horizon (Bt2). Subsequent detailed testing more accurately predicts the ability of the soil to efficiently infiltrate stormwater and has been attached.

Testing sought to identify zones that would potentially allow the infiltration of stormwater. The testing protocol used considers regional construction practices, the likelihood of “silting in” during and following construction and the subsurface characteristics of the soil and geology. The determination at this site was that no restrictive condition was encountered to the established installation depth for infiltration of stormwater. The double rings were established at a level with sufficient residual subsoil above groundwater and bedrock to seat and seal the rings permitting unsaturated flow through the soil to the water table.

The recommended acceptable range for subsurface disposal of stormwater is 0.10 inches per hour to 10.0 inches per hour according to current BMP guidance. Surface basins where additional storage is economical can have much slower rates and still provide some infiltration. Our office recommends that the design engineer assume zero infiltration for any stormwater area which achieves less than 0.10 inches per hour.

There are various means to arrive at an infiltrative rate for the substratum following testing. Our method is to average the last four stabilized readings as established in the PA BMP Manual. Another is to use the “last” reading as is common for percolation testing for wastewater disposal. Averaging more accurately reflects what would likely occur during a rain (soil saturation) event.

Testing was conducted at discreet locations selected by the project engineer using double ring infiltrometers. Data sheets containing the information recorded for the soil profile descriptions and double ring infiltrometers have been included as attachments to this report. A table summarizing the field data can be found below:

Stormwater Testing Summary					
Test Location	Depth of Test Pit	Depth to Water	Depth to Rock	Depth of Testing	Infiltration Rate
	Inches	Inches	Inches	Inches	Inches per hour
1	100	---	---	72	2.59
2	101	---	---	72	0.12

3	99	---	---	72	0.00
4	99	---	---	72	0.15
5	101	---	---	70*	0.43
6	101	---	---	77*	4.11

*Infiltration testing was conducted deeper than proposed due to the sandy texture of a deeper horizon that would promote better infiltration.

The soil encountered demonstrated varied infiltration rates. Subsurface conditions may change following construction and resultant redirection of surface water following development. Results suggest that the average infiltration rates at tested locations 1, 5 and 6 are within the recommended guidelines even after a safety factor of two is applied. Results suggest that the average infiltration rates tested locations 2, 3, and 4 are below the recommended guidelines of 0.10 inches per hour either before or after a safety factor of two is applied.

At test locations 1, 5, and 6, stormwater control devices can include surface and subsurface facilities that allow the design engineer flexibility in reducing velocity containing and disposing of stormwater on this site in select areas due to the channery composition of the soil at this site. Surface features such as vegetated swales and berms can be employed to reduce overland flow and retain water in-situ thus extending contact time and providing for additional infiltration.

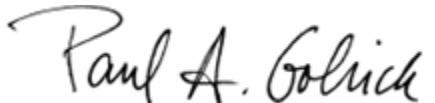
At test locations, 2, 3, and 4, stormwater control devices that allow the design engineer flexibility in reducing velocity containing and disposing of stormwater on this site should be limited to surface facilities due to the clayey composition and slow drainage of the soil at this location. Surface features such as vegetated swales and berms can be employed to reduce overland flow and retain water in-situ thus extending contact time and providing for additional infiltration.

Our findings are a result of testing conducted in specific locations and conditions. Should evidence contrary to the findings in this report be discovered prior to, during, or after construction of the stormwater control devices, our office must be notified immediately so our recommendations can be reviewed and revised if necessary.

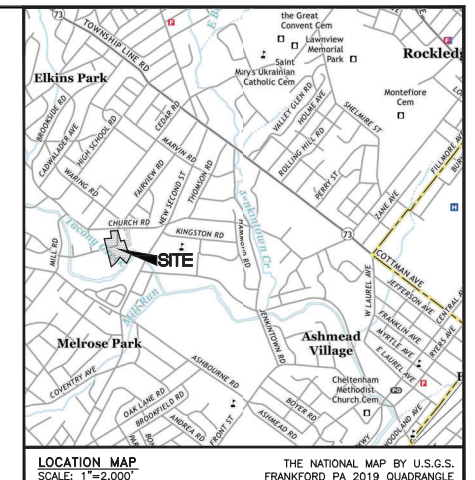
Penn's Trail Environmental, LLC expresses no guarantee that the soil conditions following excavation will be identical to those encountered during this investigation. We recommend that caution is exercised during construction to minimize compaction, or other disturbance in those areas intended for use as infiltration areas.

Please review the enclosed information and if any questions arise do not hesitate to contact our office.

Sincerely,
Penn's Trail Environmental, LLC



Paul A. Golrick/JH
Soil Scientist

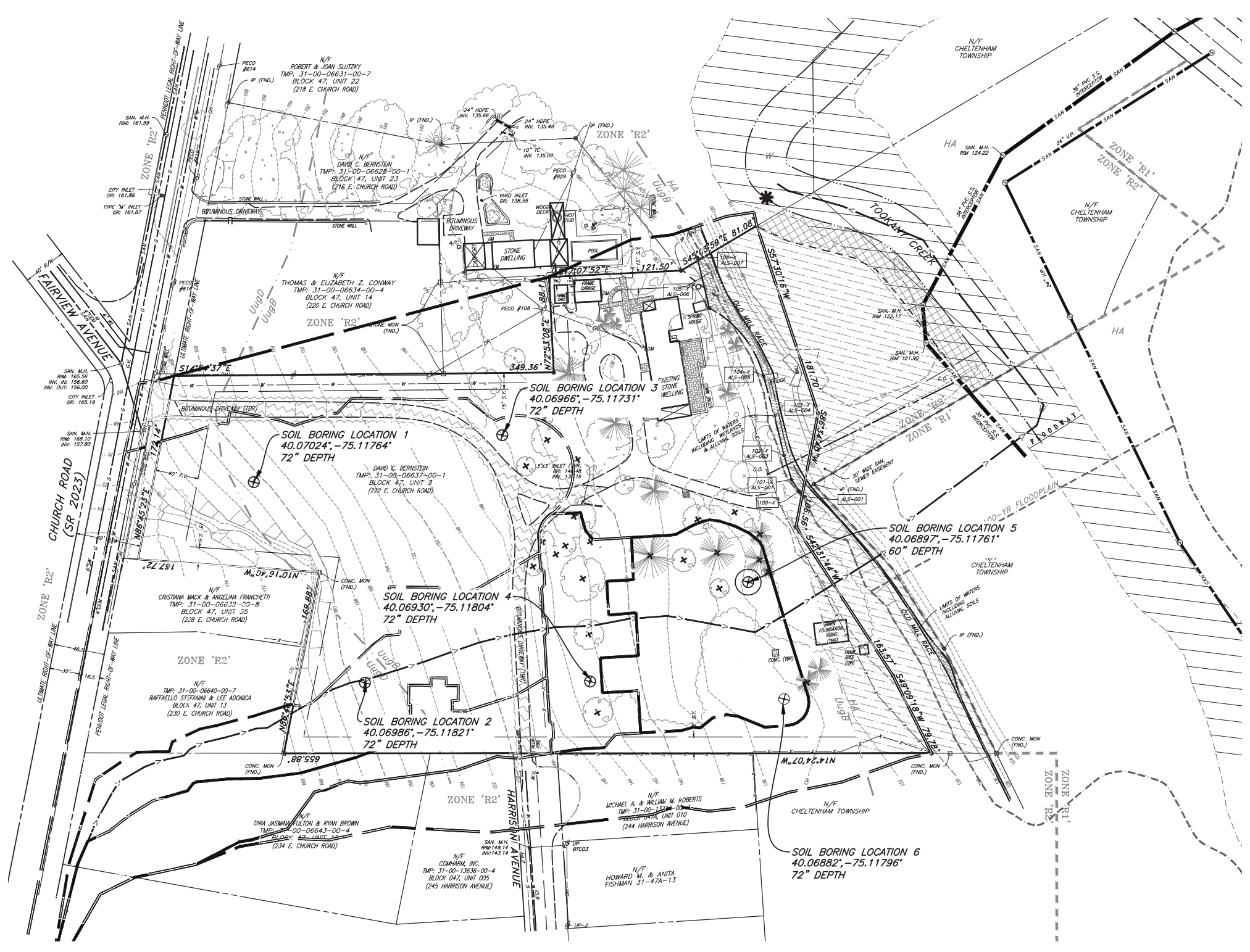


ZONING: R2 – RESIDENTIAL DISTRICT

	REQUIREMENTS	EXISTING (222 E. CHURCH)
\$295-602.A MINIMUM LOT AREA:	10,000 S.F.	6,2497 ACRES (272,238 S.F.)
\$295-602.A MINIMUM LOT WIDTH:	70 FT.	172.14 FT.
\$295-602.A SETBACKS:	FRONT YARD = 40 FT. SIDE YARD (AGG.) = 30 FT. SIDE YARD (MIN.) = 10 FT. REAR YARD = 25 FT.	FRONT YARD = 40 FT. SIDE YARD (AGG.) = 30 FT. SIDE YARD (MIN.) = 15 FT. REAR YARD = 25 FT.
\$295-602.A MAX. BUILDING COVERAGE:	20%	1.4% (3,788 S.F.)
\$295-602.A MAX. IMPERVIOUS COVERAGE:	40%	8.0% (21,590 S.F.)
\$295-602.A MAX. BUILDING HEIGHT:	<40 FT.	<40 FT.
\$295-602.A GARAGE SETBACK*	10 FT. FROM FRONT FACADE	N/A

* ADDITIONAL REGULATIONS UNDER §295-603
 † EXISTING NON-COMFORMITY

- SURVEY NOTES:**
- THIS PLAN REPRESENTS AN ACTUAL FIELD SURVEY PERFORMED BY CHARLES E. SHOEMAKER, INC. COMPLETED IN FEBRUARY, 2021.
 - SITE DATA:**
 CURRENT OWNER: DAVID C. BERNSTEIN
 222 E. CHURCH ROAD
 ELKINS PARK, PA 19027
 SITE ADDRESS: 222 E. CHURCH ROAD
 ELKINS PARK, PA 19027
 TAX MAP: BLOCK 47 - UNIT 3
 TAX NUMBER: PARCEL 31-00-06637-001
 DB 6206 PG 272
 RECORDED DATA: CHELTONHAM TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA
 - THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CONFIRM THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.
 - A PORTION OF THE PROJECT SITE SHOWN LIES WITHIN A SPECIAL FLOOD HAZARD AREA ("SFHA") - ZONE AE, AS DOCUMENTED ON THE FLOOD INSURANCE RATE MAP IDENTIFIED AS PANEL 403 OF 451, COMMUNITY NUMBER 420696, MAP NUMBER 42091C0403G; EFFECTIVE DATE: MARCH 2, 2016. THE DATUM FOR THIS MAP IS NAVD88.
 - THE VERTICAL DATUM FOR THIS SITE IS NAVD 1988 BASED ON GPS OBSERVATIONS.
 - PA ONE CALL SERIAL NUMBER: SERIAL #20212303507, DATED AUGUST 21, 2021
 - THE GROSS AND NET AREA OF 222 E. CHURCH ROAD IS 272,238 S.F. OR 6,2497 ACRES.
 - THIS PROPERTY HAS DIRECT ACCESS TO CHURCH ROAD (SR 2023), A PUBLIC STREET, THROUGH TWO (2) TWO-WAY MACADAM DRIVEWAYS. ADDITIONAL THIS PROPERTY HAS DIRECT ACCESS TO HARRISON AVENUE, A PUBLIC STREET.
 - AS OF THE DATE OF SURVEY (APRIL 10, 2020), THERE WAS NO EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS, EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
 - PLAN REFERENCES:**
 10.1. SUBDIVISION PLA FOR 216 & 222 E. CHURCH ROAD, PREPARED BY CHARLES E. SHOEMAKER, INC., DATED MARCH 1, 2021, LAST REVISED MARCH 31, 2021.



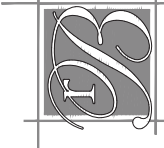
SOILS TABLE PER USDA NRCS

MAP SYMBOL	SOIL NAME	SLOPES	HYDROLOGIC GROUP	DEPTH TO WATER TABLE	DRAINAGE CHARACTERISTICS	HYDRIC SOIL
Ha	HATBORO SILT LOAM	0 - 3	B / D	0" - 6"	POORLY DRAINED	YES
UugB	URBAN LAND - UDRORTHERTS	0 - 8	C	> 60"	WELL DRAINED	NO
UugD	URBAN LAND - UDRORTHERTS	8 - 25	C	> 60"	WELL DRAINED	NO
W	WATER	-	-	-	-	-

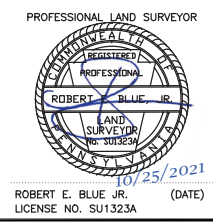
LEGEND

- STORM INLET TYPE 'C'
- STORM INLET TYPE 'M'
- STORM MANHOLE
- SANITARY MANHOLE
- UTILITY POLE
- LAMP POST
- FIRE HYDRANT
- WATER VALVE
- STEEP SLOPES (15%-25%)
- VERY STEEP SLOPES (>25%)
- STREAM
- FLOODPLAIN
- FENCE
- WALL
- MACADAM EDGE
- CONC. CURB
- DEPRESSED CURB
- CONCRETE
- SLATE
- TREELINE
- PROPERTY CORNER
- IRON PIN FOUND
- RIPARIAN CORRIDOR - ZONE 1
- RIPARIAN CORRIDOR - ZONE 2
- TO BE DEMOLISHED

robert e. blue
 consulting engineers, p.c.
 1149 Skippack Pike, Blue Bell, PA 19422
 tel: (610)-277-9441 fax: (610)-277-9897
 www.robertblue.com email: rblue@robertblue.com

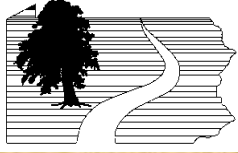


EXISTING FEATURES
 222 CHURCH ROAD
 CHELTONHAM TOWNSHIP
 MONTGOMERY COUNTY
 PENNSYLVANIA
 PREPARED FOR
REGAN KLINE CROSS, LLC
 7670 QUEEN ST., SUITE 200
 WYNDMOOR PA, 19038



DATE: 10/25/2021	CHECKED BY: REB	SCALE: 1"=50'
DRAWN BY: DJG	CHECKED BY: DJG	SHEET NUMBER: 2154-10E
		SHEET NUMBER: X OF #

Penn's Trail Environmental, LLC



21 East Lincoln Ave - Suite 160
 Hatfield, PA 19440
 ph. (215) 362-4610

Date: 2/2/22 Pit # 1 PTE # 5303
 Project: 222 Church Road
 Location: 222 Church Road
Cheltenham Twp., Montgomery Co., PA
 Soil Series Glenelg

Horizon	Depth (in.)	Color	Redox Features	Texture	Structure	Consistence	Boundary
A	0-6	10YR 3/4		silt loam	strong coarse gr	very friable	clear wavy
Bt	6-42	10YR 5/6		channery sandy loam	weak fine sbk	friable	clear wavy
C	42-100	10YR 5/4		very channery loamy sand	weak very fine sbk	very friable	

Soil Scientist: Terry Harris

Notes

EPIPEDON

Ochric

SUBSURFACE HORIZON(S)

Argillic

SOIL ORDER

Ultisol

DRAINAGE CLASS

Well Drained

LANDFORM

Upland

POSITION

Backslope

PARENT MATERIAL

Colluvium

Residuum

BEDROCK LITHOLOGY

Schist

REDOX FEATURES

Abundance

Few <2%

Common .. 2-20%

Many>20%

Contrast

faint

hue & chroma of matrix and redox are closely related.

distinct

matrix & redox features vary 1-2 units of hue and several units of chroma & value.

prominent

Matrix & redox features vary several units in hue, value & chroma.

STRUCTURE

Grade

Structureless - No observable aggregation or arrangement of lines of weakness.

Weak - Poorly formed, indistinct peds barely observable in place.

Moderate - Well-formed, distinct peds moderately durable & evident in place.

Strong - Durable peds evident in undisturbed soil & become separated when disturbed.

COURSE FRAGMENTS (% of profile)

15-35%

gravelly

channery

cobbly

flaggy

stony

35-65%

very gravelly

very channery

very cobbly

very flaggy

very stony

>65%

extremely gravelly

extremely channery

extremely cobbly

extremely flaggy

extremely stony

BOUNDARY

Distinctness

abrupt ..<1" (thick)

clear ..1-2.5"

gradual ...2.5-5"

diffuse....>5"

Topography

smooth - boundary is nearly level

wavy - pockets with width greater than depth

irregular - pockets with depth greater than width

broken - boundary is discontinuous

and interrupted

Type

pl - platy

pr - prismatic

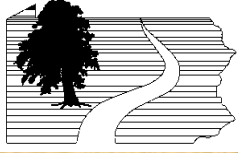
cpr - columnar

gr - granular

abk - angular blocky

sbk - subangular blocky

Penn's Trail Environmental, LLC



21 East Lincoln Ave - Suite 160
 Hatfield, PA 19440
 ph. (215) 362-4610

Date: 2/2/22 Pit # 2 PTE # 5303
 Project: 222 Church Road
 Location: 222 Church Road
Cheltenham Twp., Montgomery Co., PA
 Soil Series Glenelg

Horizon	Depth (in.)	Color	Redox Features	Texture	Structure	Consistence	Boundary
A1	0-4	10YR 3/4		silt loam	strong coarse gr	very friable	clear wavy
A2	4-10	10YR 5/3		silt loam	moderate medium gr	friable	clear wavy
Bt	10-90	10YR 5/6		channery sandy loam	weak fine sbk	friable	clear wavy
C	90-101	10YR 5/4		very channery loamy sand	weak very fine sbk	very friable	

Soil Scientist: Terry Harris

Notes

EPIPEDON

Ochric

SUBSURFACE HORIZON(S)

Argillic

SOIL ORDER

Ultisol

DRAINAGE CLASS

Well Drained

LANDFORM

Upland

POSITION

Backslope

PARENT MATERIAL

Colluvium

Residuum

BEDROCK LITHOLOGY

Schist

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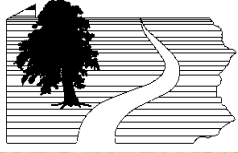
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 ph. (215) 362-4610

Date: 2/2/22 Pit # 3 PTE # 5303
 Project: 222 Church Road
 Location: 222 Church Road
Cheltenham Twp., Montgomery Co., PA
 Soil Series Duncannon

Horizon	Depth (in.)	Color	Redox Features	Texture	Structure	Consistence	Boundary
Ap	0-14	10YR 4/4		silt loam	moderate medium gr	very friable	clear wavy
Bt1	14-67	10YR 7/6		silt loam	moderate medium sbk	friable	clear wavy
Bt2	67-99	10YR 7/6	common distinct	silt loam	moderate medium sbk	friable	

Soil Scientist: Terry Harris

Notes

EPIPEDON

Ochric

SUBSURFACE HORIZON(S)

Argillic

SOIL ORDER

Alfisol

DRAINAGE CLASS

Well Drained

LANDFORM

Upland

POSITION

Backslope

PARENT MATERIAL

Loess

BEDROCK LITHOLOGY

Schist

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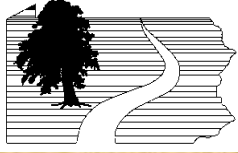
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Date: 2/2/22 Pit # 4 PTE # 5303
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 Location: 222 Church Road
Cheltenham Twp., Montgomery Co., PA
 Soil Series Duncannon

Horizon	Depth (in.)	Color	Redox Features	Texture	Structure	Consistence	Boundary
Ap	0-10	10YR 4/4		silt loam	moderate medium gr	very friable	clear wavy
Bt1	10-55	10YR 7/6		silt loam	moderate medium sbk	friable	clear wavy
Bt2	55-99	10YR 7/6	common distinct	silt loam	moderate medium sbk	friable	

Soil Scientist: Terry Harris

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EPIPEDON

Ochric

SUBSURFACE HORIZON(S)

Argillic

SOIL ORDER

Alfisol

DRAINAGE CLASS

Well Drained

LANDFORM

Upland

POSITION

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PARENT MATERIAL

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BEDROCK LITHOLOGY

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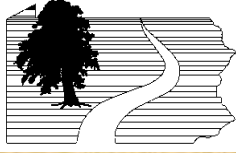
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Date: 2/2/22 Pit # 5 PTE # 5303
 Project: 222 Church Road
 Location: 222 Church Road
Cheltenham Twp., Montgomery Co., PA
 Soil Series Duncannon taxadjunct

Horizon	Depth (in.)	Color	Redox Features	Texture	Structure	Consistence	Boundary
Ap	0-15	10YR 4/4		silt loam	strong medium gr	very friable	gradual wavy
Bt/2C	15-65	10YR 7/6 10YR 5/3		silt loam loamy sand	moderate medium sbk	friable	clear wavy
2C	65-101	10YR 5/3		channery loamy sand	weak very fine sbk	very friable	

Soil Scientist: Terry Harris

Notes

EPIPEDON

Ochric

SUBSURFACE HORIZON(S)

Argillic

SOIL ORDER

Alfisol

DRAINAGE CLASS

Well Drained

LANDFORM

Upland

POSITION

Backslope

PARENT MATERIAL

Loess
 Residuum

BEDROCK LITHOLOGY

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>65%

extremely gravelly

extremely channery

extremely cobbly

extremely flaggy

extremely stony

BOUNDARY

Distinctness

abrupt ..<1" (thick)

clear ..1-2.5"

gradual ...2.5-5"

diffuse....>5"

Topography

smooth - boundary is nearly level

wavy - pockets with width greater than depth

irregular - pockets with depth greater than width

broken - boundary is discontinuous

and interrupted

Type

pl - platy

pr - prismatic

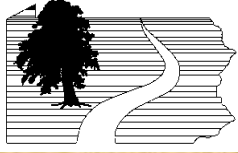
cpr - columnar

gr - granular

abk - angular blocky

sbk - subangular blocky

Penn's Trail Environmental, LLC



21 East Lincoln Ave - Suite 160
 Hatfield, PA 19440
 ph. (215) 362-4610

Date: 2/2/22 Pit # 6 PTE # 5303
 Project: 222 Church Road
 Location: 222 Church Road
Cheltenham Twp., Montgomery Co., PA
 Soil Series Lawrenceville taxadjunct

Horizon	Depth (in.)	Color	Redox Features	Texture	Structure	Consistence	Boundary
Ap	0-13	10YR 4/4		silt loam	strong medium gr	very friable	gradual wavy
Bt1	13-31	10YR 7/6		silt loam	moderate medium sbk	friable	clear wavy
Bt2	31-62	10YR 7/6	common distinct	silt loam	moderate medium sbk	friable	gradual wavy
2C	62-101	10YR 5/3		channery loamy sand	weak very fine sbk	very friable	

Soil Scientist: Terry Harris

Notes

EPIPEDON

Ochric

SUBSURFACE HORIZON(S)

Argillic

SOIL ORDER

Alfisol

DRAINAGE CLASS

Moderately Well Drained

LANDFORM

Upland

POSITION

Backslope

PARENT MATERIAL

Loess
 Residuum

BEDROCK LITHOLOGY

Schist

REDOX FEATURES

Abundance

Few <2%

Common .. 2-20%

Many>20%

Contrast

faint

hue & chroma of matrix and redox are closely related.

distinct

matrix & redox features vary 1-2 units of hue and several units of chroma & value.

prominent

Matrix & redox features vary several units in hue, value & chroma.

STRUCTURE

Grade

Structureless - No observable aggregation or arrangement of lines of weakness.

Weak - Poorly formed, indistinct peds barely observable in place.

Moderate - Well-formed, distinct peds moderately durable & evident in place.

Strong - Durable peds evident in undisturbed soil & become separated when disturbed.

COURSE FRAGMENTS (% of profile)

15-35%

gravelly

channery

cobbly

flaggy

stony

35-65%

very gravelly

very channery

very cobbly

very flaggy

very stony

>65%

extremely gravelly

extremely channery

extremely cobbly

extremely flaggy

extremely stony

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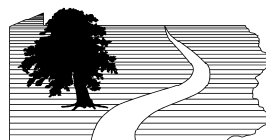
abk - angular blocky

sbk - subangular blocky

Double Ring Infiltrometer Data Reporting Sheet

Job Name:	222 Church Road	Job #:	5303
Location:	222 Church Road	Date:	2/2/2022
Township:	Cheltenham	Ring #:	1
County:	Montgomery	Technician:	Cody Kline
Witness:	-----	Tax Parcel:	31-00-06637-00-1
Water Temp:	50's °F	Weather:	cloudy 30's °F
Test Depth:	72 inches	pH:	6.9

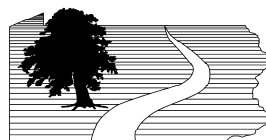
Time (hr:min)	Interval (min.)	Inner Ring Drop (in.)	Inner Ring Volume change (ml)	Outer Ring Drop (in.)	Outer Ring Volume Change (ml)	Rate (ml/min)	Infiltration rate (in/hr)
8:35 AM	 		fill		fill	 	
9:05 AM	30	2 1/8	1,000	2 1/8	1,750	33.33	4.32
9:35 AM	30	2	900	1	800	30.00	3.88
9:45 AM	10	3/8	200	2/8	250	20.00	2.59
9:55 AM	10	4/8	210	2/8	250	21.00	2.72
10:05 AM	10	3/8	190	2/8	240	19.00	2.46
10:15 AM	10	3/8	200	2/8	250	20.00	2.59
<i>Average</i>	 		200.00		247.50	20.00	2.59



Double Ring Infiltrometer Data Reporting Sheet

Job Name:	222 Church Road	Job #:	5303
Location:	222 Church Road	Date:	2/2/2022
Township:	Cheltenham	Ring #:	2
County:	Montgomery	Technician:	Cody Kline
Witness:	-----	Tax Parcel:	31-00-06637-00-1
Water Temp:	50's °F	Weather:	cloudy 30's °F
Test Depth:	72 inches	pH:	6.9

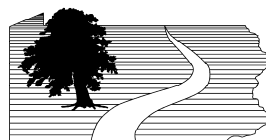
Time (hr:min)	Interval (min.)	Inner Ring Drop (in.)	Inner Ring Volume change (ml)	Outer Ring Drop (in.)	Outer Ring Volume Change (ml)	Rate (ml/min)	Infiltration rate (in/hr)
9:00 AM	 		fill		fill	 	
9:30 AM	30	2 1/8	1,000	1 2/8	1,000	33.33	4.32
10:00 AM	30	2/8	90	1/8	100	3.00	0.39
10:30 AM	30	< 1/8	20	< 1/8	30	0.67	0.09
11:00 AM	30	1/8	30	< 1/8	30	1.00	0.13
11:30 AM	30	1/8	30	< 1/8	30	1.00	0.13
12:00 PM	30	1/8	30	< 1/8	30	1.00	0.13
<i>Average</i>	 		27.50		30.00	0.92	0.12



Double Ring Infiltrometer Data Reporting Sheet

Job Name:	222 Church Road	Job #:	5303
Location:	222 Church Road	Date:	2/2/2022
Township:	Cheltenham	Ring #:	3
County:	Montgomery	Technician:	Cody Kline
Witness:	-----	Tax Parcel:	31-00-06637-00-1
Water Temp:	50's °F	Weather:	cloudy 30's °F
Test Depth:	72 inches	pH:	6.9

Time (hr:min)	Interval (min.)	Inner Ring Drop (in.)	Inner Ring Volume change (ml)	Outer Ring Drop (in.)	Outer Ring Volume Change (ml)	Rate (ml/min)	Infiltration rate (in/hr)
8:45 AM	 		fill		fill	 	
9:15 AM	30	1/8	70	1/8	75	2.33	0.30
9:45 AM	30	< 1/8	20	< 1/8	50	0.67	0.09
10:15 AM	30	0	0	< 1/8	10	0.00	0.00
10:45 AM	30	0	0	0	0	0.00	0.00
11:15 AM	30	0	0	0	0	0.00	0.00
11:45 AM	30	0	0	0	0	0.00	0.00
<i>Average</i>	 		0.00		2.50	0.00	0.00



Double Ring Infiltrometer Data Reporting Sheet

Job Name:

222 Church Road
222 Church Road
Cheltenham
Montgomery

50's °F
72 inches

Job #

5303
2/2/2022
4
Terry Harris
31-00-06637-00-1
cloudy 30's °F
6.9

Location:

Date:

Township:

Ring #:

County:

Technician:

Witness:

Tax Parcel:

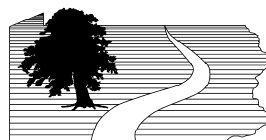
Water Temp:

Weather:

Test Depth:

pH:

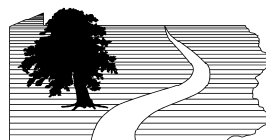
Time (hr:min)	Interval (min.)	Inner Ring Drop (in.)	Inner Ring Volume change (ml)	Outer Ring Drop (in.)	Outer Ring Volume Change (ml)	Rate (ml/min)	Infiltration rate (in/hr)
9:16 AM	 		fill		fill	 	
9:46 AM	30	1/8	70	4/8	400	2.33	0.30
10:16 AM	30	1/8	30	< 1/8	30	1.00	0.13
10:46 AM	30	1/8	50	1/8	60	1.67	0.22
11:16 AM	30	< 1/8	20	< 1/8	30	0.67	0.09
11:46 AM	30	1/8	40	< 1/8	30	1.33	0.17
12:16 PM	30	1/8	30	< 1/8	30	1.00	0.13
Average	 		35.00		37.50	1.17	0.15



Double Ring Infiltrometer Data Reporting Sheet

Job Name:	222 Church Road	Job #:	5303
Location:	222 Church Road	Date:	2/2/2022
Township:	Cheltenham	Ring #:	5
County:	Montgomery	Technician:	Terry Harris
Witness:	-----	Tax Parcel:	31-00-06637-00-1
Water Temp:	50's °F	Weather:	cloudy 30's °F
Test Depth:	70 inches	pH:	6.9

Time (hr:min)	Interval (min.)	Inner Ring Drop (in.)	Inner Ring Volume change (ml)	Outer Ring Drop (in.)	Outer Ring Volume Change (ml)	Rate (ml/min)	Infiltration rate (in/hr)
9:49 AM	 		fill		fill	 	
10:19 AM	30	1/8	70	3/8	330	2.33	0.30
10:49 AM	30	2/8	100	3/8	340	3.33	0.43
11:19 AM	30	2/8	100	2/8	210	3.33	0.43
11:49 AM	30	2/8	110	3/8	310	3.67	0.47
12:19 PM	30	2/8	100	3/8	270	3.33	0.43
12:49 PM	30	2/8	90	2/8	250	3.00	0.39
<i>Average</i>	 		100.00		260.00	3.33	0.43



Double Ring Infiltrometer Data Reporting Sheet

Job Name:	222 Church Road	Job #	5303
Location:	222 Church Road	Date:	2/2/2022
Township:	Cheltenham	Ring #:	6
County:	Montgomery	Technician:	Terry Harris
Witness:	-----	Tax Parcel:	31-00-06637-00-1
Water Temp:	50's °F	Weather:	cloudy 30's °F
Test Depth:	77 inches	pH:	6.9

Time (hr:min)	Interval (min.)	Inner Ring Drop (in.)	Inner Ring Volume change (ml)	Outer Ring Drop (in.)	Outer Ring Volume Change (ml)	Rate (ml/min)	Infiltration rate (in/hr)
9:31 AM	 		fill		fill	 	
10:01 AM	30	2 4/8	1,160	2 6/8	2,260	38.67	5.01
10:31 AM	30	2 2/8	1,040	2 1/8	1,750	34.67	4.49
10:41 AM	10	6/8	360	1 1/8	890	36.00	4.66
10:51 AM	10	5/8	300	3/8	350	30.00	3.88
11:01 AM	10	5/8	290	3/8	320	29.00	3.75
11:11 AM	10	6/8	320	4/8	410	32.00	4.14
<i>Average</i>	 		317.50		492.50	31.75	4.11

