WATERS OF THE U.S. DELINEATION



GREINER PROPERTY

2843 MT. PLEASANT ROAD MOUNT JOY TOWNSHIP, PENNSYLVANIA 17552

ECS PROJECT NO. 47:14225

FOR: LANDWORKS CIVIL DESIGN, LLC

APRIL 21, 2022



"Setting the Standard for Service"



Geotechnical • Construction Materials • Environmental • Facilities

April 21, 2022

Mr. Jeramy Bittinger Landworks Civil Design, LLC 1195 Virginia Avenue York, Pennsylvania 17403

ECS Project No. 47:14225

Reference: WATERS OF THE U.S. DELINEATION, Greiner Property, 2843 Mt. Pleasant Road, Mount Joy Township, Lancaster County, Pennsylvania

Dear Mr. Bittinger:

ECS Mid-Atlantic, LLC (ECS) is pleased to provide you with the results of our Waters of the U.S. (WOUS) Delineation Report for the referenced site. ECS' services were provided in general accordance with ECS Proposal No. 47:22536-EP-EP authorized on March 16, 2022 and generally meet the requirements of the 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0, dated April 2012.

If there are questions regarding this report, or a need for further information, please contact the undersigned.

Sincerely,

ECS Mid-Atlantic, LLC

Andrew Young Project Manager ayoung@ecslimited.com 717-767-4788

Garnett B. Williams, C.P.G. Environmental Principal gwilliams@ecslimited.com 703-471-8400

1.0 INTRODUCTION

This report presents the findings of a wetland and stream study conducted by ECS Mid-Atlantic, LLC (ECS) for Landworks Civil Design, LLC at the Greiner Property located at 2843 Mt. Pleasant Road, Mount Joy Township, Lancaster County, Pennsylvania (Latitude: 40.143477 N, Longitude: -76.545537 W); the site is identified by Lancaster County as Parcel No. 4618992200000. The site includes approximately 106-acres, as shown on the Site Location Map (Appendix I). The site is agricultural and wooded land with an outbuilding.

ECS conducted the wetland and stream delineation on March 22 and 25, 2022. The purpose of this study was to identify and delineate potentially jurisdictional Waters of the U.S. (WOUS) within the proposed project site.



2.0 METHODOLOGY

This wetland delineation is based on ECS's professional judgment and application of the technical criteria presented in the 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual, and on the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0, dated April 2012. Wetland boundaries were delineated using the routine onsite determination method described in the USACE Manual and Regional Supplement, in conjunction with the Eastern Mountains and Piedmont 2020 Regional Wetland Plant List, and the USDA Soil Survey. Field work was completed on March 22 and 25, 2022 by Andrew Young.

ECS completed the following tasks to identify and delineate potentially jurisdictional wetland boundaries onsite:

Desktop Review: ECS wetland scientists reviewed the U.S. Geological Survey (USGS) topographic map, U.S. Department of Agriculture Natural Resource Conservation Service (USDA-NRCS) Soil Survey of Lancaster County, Pennsylvania, U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, Federal Emergency Management Agency (FEMA) floodplain maps, and available aerial photographs to identify potentially jurisdictional Waters of the U.S. (i.e., streams, wetlands, natural ponds, lakes). Please reference Appendix I for the above-mentioned maps.

Field Investigation: ECS performed onsite wetland delineations as described above. First, site hydrology was observed and the plant community within the data plot was characterized. The dominant plant species within each community were then identified, and it was determined whether or not hydrophytic (wetland) plants dominated the plant community. The USFWS has defined the following wetland plant indicator categories:

Obligate wetland (OBL) – has >99% probability of occurring in wetlands Facultative wetland (FACW) – has 66% to 99% chance of occurring in wetlands Facultative (FAC) – has 33% to 66% chance of occurring in wetlands Facultative upland (FACU) – has 1 to 33% chance of occurring in wetlands Upland (UPL) – has <1% chance of occurring in wetlands No Indicator (NI) – no wetland indicator for the specified species

Plants identified as OBL, FACW, or FAC are considered wetland plants (or hydrophytes) by USACE.

In areas determined to have hydrophytic vegetation and potential wetland hydrology, an approximately 16-20 inch soil test hole was completed with a hand auger to determine if hydric soils were present. The soil boring was also inspected to determine if indicators of wetland hydrology (inundation, soil saturation, etc.) were present.

Once an area is determined to be a wetland, further testing was performed to locate the wetland/ upland (non-wetland) boundary. A second test hole was completed in the upland area to document non-wetland conditions. Wetland boundaries were marked with consecutively numbered surveyor's ribbon flags. The wetland flags were surveyed as part of this assessment using a sub-meter accuracy GPS unit.



Data forms specified in the Regional Supplement were completed for each wetland and non-wetland test hole location, referred to as data points. The data forms recorded the vegetation, soils, and hydrology observations used in making the wetland determinations. ECS did identify areas during the site reconnaissance which, in our professional opinion, would be considered jurisdictional wetlands by the USACE.

2.1 Methodology for Delineating Streams

During the field evaluation for wetlands, ECS observed the site for streams that would potentially be considered jurisdictional by state and federal regulatory agencies. ECS used field indicators such as the presence of an ordinary high water mark (OHWM) and continuous bed and banks to delineate stream channels and also observed characteristics such as flow, substrate composition, presence/ absence of defined bed and banks, origin of hydrologic source, presence/absence of vegetation in the stream channel, and composition and relative abundance of resident benthic macroinvertebrates to classify onsite streams into three stream types: ephemeral, intermittent, and perennial.

Streams located onsite are depicted on the Waters of the U.S. Delineation Map (Appendix IV). The individual stream lengths and classifications are summarized on Table 1. Photographs of the streams are presented in Appendix III.



3.0 FINDINGS

3.1 Desktop Review

The USGS Elizabethtown, PA quadrangle map shows an elevation range of 420 feet to 520 feet amsl and generally sloping to the north and west. The site drains to an unnamed tributary of Little Chiques Creek and is located within the Lower Susquehanna River watershed, identified as Hydrologic Unit Code (HUC) 02050306. The NWI map depicts one pond and one riverine feature within the project site boundaries. According to FEMA, the site is not mapped within the 100-year floodplain. The weather at the time of the site reconnaissance was 58 degrees and clear. The last precipitation event prior to the site reconnaissance was on March 20, 2022 and approximately 0.02-inches of precipitation was recorded according to data obtained from the Lancaster, PA station. According to the USACE Antecedent Precipitation Tool (APT), the 30-day rolling rainfall average was within the normal range for this location and time of year.

3.2 Site Soils

A review of the USDA Soil Survey for the project site identified seven mapping units within the site boundaries. These soil mapping units are: AbB – Abbottstown silt loam, 3 to 8 percent slopes, BdB – Bedington silt loam, 3 to 8 percent slopes, BdC – Bedington silt loam, 8 to 15 percent slopes, BeD – Bedington channery silt loam, 15 to 25 percent slopes, Bm– Blairton silt loam, 3 to 10 percent slopes, BuB – Bucks silt loam, 3 to 8 percent slopes and RaB – Readington silt loam, 3 to 8 percent slopes. Units AbB and Bm are classified as hydric by the NRCS.

3.3 Waters of the U.S.

Four potentially jurisdictional wetland areas totaling 0.988-acres and two potentially jurisdictional streams totaling 2,835-linear feet were identified and delineated within the study area. The size and USFWS Cowardin classifications are summarized below (Table 1) and the locations are illustrated on the Waters of the U.S. Delineation Map (Appendix IV).

A former farm pond that has a spring source combined with a high water table results in the presence of different wetland field indicators. Topography and surface water flow, as well as wetland seeps, are the primary hydrology sources for the site.

wous	Cowardin Classification	Onsite Linear Feet (LF)	Onsite Acreage (AC)	Onsite Square Footage (Sq. Ft.)
Wetland 1	PEM	-	0.87	37,897
Wetland 2	PEM	-	0.10	4,356
Wetland 3	PEM	-	0.007	305

Table 1: WOUS Summary Table



April 21, 2022

WOUS	Cowardin Classification	Onsite Linear Feet (LF)	Onsite Acreage (AC)	Onsite Square Footage (Sq. Ft.)
Wetland 4	PEM	-	0.011	479
Stream 1	Intermittent	410	-	-
Stream 3	Perennial	2,425	-	-



4.0 REGULATORY DISCUSSION

The WOUS are regulated by Sections 401 and 404 of the Clean Water Act. State and Federal law dictates that any disturbance to WOUS must be permitted through the appropriate agencies.

Upon your request, we will contact the USACE to schedule a field meeting to conduct a wetlands and Waters boundary confirmation and preliminary jurisdictional determination. This process takes an average of three to four months depending on the availability of USACE personnel. If any potential impacts are proposed, we can assist you with permitting options and support to complete the process. In the interim, we recommend further review of state and federal agency records pertaining to Section 7 (Federal Endangered Species Act) and Section 106 (National Historic Preservation Act). These reviews will generally be required to verify compliance with either the General Permit or Joint Permit conditions and early coordination may help prevent potential permitting delays.



5.0 CONCLUSIONS

Four potentially jurisdictional wetland areas totaling 0.988-acres and two potentially jurisdictional streams totaling 2,835-linear feet were identified and delineated within the study area. The locations and boundaries of potentially jurisdictional Waters are illustrated on the attached Waters of the U.S. Delineation Map (Appendix IV).

The flagged WOUS boundaries may be subject to change during the jurisdictional determination meeting with the USACE. Therefore, ECS cannot guarantee that field conditions and/or WOUS boundaries will not change over time.



Appendix I: Figures







ECS Project No. 47:14225

Greiner Property 2843 Mount Pleasant Road

Project Acreage: +/- 106 acres Latitude: 40° 08' 42.0" North Longitude: 76° 32' 42.0 West

Figure 2 USGS Topography Map

USGS Quadrangle: Elizabethtown Watershed: Lower Susquehanna Hydrologic Unit Code: 02050306

Service Layer Credits: USA_Topo_Maps: Copyright:© 2013 National Geographic Society, i-cubed





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Figure 3 Aerial Imagery Map

USGS Quadrangle: Elizabethtown Watershed: Lower Susquehanna Hydrologic Unit Code: 02050306 Service Layer Credits: Hybrid Reference Layer: Esri Community Maps Contributors, Dauphin County, York County Planning Commission, data.pa.gov, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA World Imagery: Maxar





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Figure 4 NRCS Soils Map

USGS Quadrangle: Elizabethtown Watershed: Lower Susquehanna Hydrologic Unit Code: 02050306 Service Layer Credits: Hybrid Reference Layer: Esri Community Maps Contributors, Dauphin County, York County Planning Commission, data.pa.gov, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA World Imagery: Maxar

Soils data obtained from USDA Web Soil Survey





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Figure 5 National Wetlands Inventory Map

USGS Quadrangle: Elizabethtown Watershed: Lower Susquehanna Hydrologic Unit Code: 02050306

Service Layer Credits: Hybrid Reference Layer: Esri Community Maps Contributors, Dauphin County, York County Planning Commission, data.pa.gov, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA World Imagery: Maxar

Wetlands data obtained from National Wetland Inventory Mapper





ECS Project No. 47:14225

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Project Acreage: +/- 106 acres Latitude: 40° 08' 42.0" North Longitude: 76° 32' 42.0 West

Figure 6 FEMA Floodplain Map

USGS Quadrangle: Elizabethtown Watershed: Lower Susquehanna Hydrologic Unit Code: 02050306 Service Layer Credits: Hybrid Reference Layer: Esri Community Maps Contributors, Dauphin County, York County Planning Commission, data.pa.gov, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA World Imagery: Maxar

Flood zone data obtained from the FEMA National Flood Hazard Layer Viewer





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Project Acreage: +/- 106 acres Latitude: 40° 08' 42.0" North Longitude: 76° 32' 42.0 West

Figure 7 LIDAR Map

USGS Quadrangle: Elizabethtown Watershed: Lower Susquehanna Hydrologic Unit Code: 02050306 Service Layer Credits: Hybrid Reference Layer: Esri Community Maps Contributors, Dauphin County, York County Planning Commission, data.pa.gov, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA World Imagery: Maxar

LIDAR data obtained from USGS LidarExplorer

Appendix II: Antecedent Precipitation Tool (APT) Data



May 202	2 2	Jun Jul 2022 2022
ondition Value	Month Weight	Product
2		6
2	2	4
2 1		2
		Normal Conditions - 12

evation Δ	Weighted Δ	Days Normal	Days Antecedent
21.099	6.371	11330	87
41.011	0.66	0	3
51.838	1.088	1	0
29.856	4.206	22	0



Coordinates	40.146680, -76.544007
Observation Date	2022-03-25
Elevation (ft)	471.23
Drought Index (PDSI)	Mild drought (2022-02)
WebWIMP H ₂ O Balance	Wet Season

Version 1.0

Written by Jason Deters



30 Days Ending 30th %ile (in) 70th %ile (in) Observed (in) Wetness Condition Co 2022-03-25 2.862599 3.629921 3.165354 Normal 1.912598 2022-02-23 3.639764 2.80315 Normal 2022-01-24 2.320866 3.929528 3.405512 Normal Weather Station Name Coordinates 39.8843, -76.9837 ABBOTTSTOWN 0.3 E EAST BERLIN 0.2 W 39.9366, -76.9842 428.15 27.438 BERNVILLE 1.3 SW 40.4237, -76.1305 387.139 29.006 WERNERSVILLE 0.5 ESE 40.3284, -76.0747 410.105 27.755 39.9192, -76.9894 456.037 28.324 ABBOTTSTOWN 2.4 N 339.895 40.3684, -76.9935 DAUPHIN 3.3 W 28.221 40.2629, -76.7031 40.3134, -76.7578 HUMMELSTOWN 0.6 ESE 407.152 11.617 407.152 PAXTONIA 1.7 E 16.121 LEBANON 1.0 SE 40.3326, -76.4079 481.955 14.716 LEBANON 1.1 S 40.3259, -76.4267 501.969 13.843 ADAMSTOWN 2.5 SSE 40.2055, -76.0509 26.347 649.934 SHILOH 1.2 W 39.9722, -76.8148 394.029 18.719 442.913 39.9734, -76.9178 DOVER 4.2 WSW 23.11 40.4608, -76.7486 DEHART DAM 537.074 24.234 270.013 LANCASTER 2NE FLTR PLT 40.05, -76.2742 15,747

Jun	Jul	Aug
2022	2022	2022
2022	2022	2022

Product	Product			alue	ondition Va
6		3		2	
4		2		2	
2		1		2	
Days Antecedent	Normal	Days	ghted Δ	Weig	evation Δ
0	160		14.509		41.893
0	1611		13.529		43.08
42	752		15.492		84.091
0	1632		14.186		61.125
48	1074		13.176		15.193
0	490		16.406		131.335
0	8		5.972		64.078
0	6		8.287		64.078
0	3		6.78		10.725
0	8		6.655		30.739
0	2		16.564		178.704
0	6		9.869		77.201
0	9		11.054		28.317
0	2489		12.501		65.844
0	3016		10.255		201.217

Appendix III: USACE Wetland Data Forms and Stream Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Greiner Property City/County: Mt. Joy	y Twp./Lancaster	Sampling Date: <u>3/22/22</u>				
Applicant/Owner: Pannatoni Development	State: PA Sampling Point: W	1/DP-1				
Investigator(s): Andrew Young	Section, Township, Range: M	Section, Township, Range: <u>Mt. Joy Twp.</u>				
Landform (hillslope, terrace, etc.): Pond	Local relief (concave, convex	, none): <u>co</u>	ncave Slope (%): <u>3</u>		
Subregion (LRR or MLRA): LRR S	Lat: <u>40.145275</u>	Long: <u>-76</u>	<u>.546755</u>	Datum:		
Soil Map Unit Name: Bm-Blairton silt loam, RaB-R	eadington silt loam		NWI classification:	PEM		
Are climatic / hydrologic conditions on the site typi	🗌 No (If no, explai	n in Remar	ks.)			
Are Vegetation D, Soil D, or Hydrology Signifi	cantly disturbed? Are "Nor	mal Circum	nstances" present?	🛛 Yes	🗌 No	
Are Vegetation 🔲, Soil 🔲, or Hydrology 🗋 naturally problematic? 🛛 (If needed, explain any answers in Remarks.)						

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes ⊠ Yes ⊠ Yes	□ No □ No □ No	Is the Sampled Area within a Wetland?	🛛 Yes	□ No
Remarks:					

HYDROLOGY

Wetland Hydrology Indicators:					Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one is required; check all that apply)					☐ Surface Soil Cracks (B6)		
Surface Water (A1)		🗌 True	Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)		
🛛 High Water Table (A2)		🗌 Hydr	ogen Sulfide Odor (C1)		🛛 Drainage Patterns (B10)		
Saturation (A3)		🛛 Oxid	ized Rhizospheres on Living	g Roots (C3)	☐ Moss Trim Lines (B16)		
☐ Water Marks (B1)		Pres	ence of Reduced Iron (C4)		Dry-Season Water Table (C2)		
Sediment Deposits (B2)		🗌 Rece	ent Iron Reduction in Tilled S	Soils (C6)	Crayfish Burrows (C8)		
Drift Deposits (B3)		🗌 Thin	Muck Surface (C7)		Saturation Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		Othe	r (Explain in Remarks)		Stunted or Stressed Plants (D1)		
Iron Deposits (B5)					Geomorphic Position (D2)		
🛛 Inundation Visible on Aeria	I Imagery	′ (B7)			Shallow Aquitard (D3)		
☐ Water-Stained Leaves (B9))				Microtopographic Relief (D4)		
🗌 Aquatic Fauna (B13)				☐ FAC-Neutral Test (D5)			
Field Observations:							
Surface Water Present?	🛛 Yes	🗌 No	Depth (inches): <u>3</u>				
Water Table Present?	🛛 Yes	🗌 No	Depth (inches): <u>0</u>	Wetland Hy	drology Present? 🛛 🏹 Yes 🗌 No		
Saturation Present? (includes capillary fringe)	🛛 Yes	🗌 No	Depth (inches): <u>0</u>				
Describe Recorded Data (stre	am gauge	e, monitor	ing well, aerial photos, prev	ious inspectio	ns), if available:		
Demorker							
Remarks.							

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-1

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:)	<u>% Cover</u>	Species?	<u>Status</u>	
1				Number of Dominant Species
2				That Are OBL, FACW, or FAC: 1 (A)
2.				
3			<u> </u>	Total Number of Dominant
4				Species Across All Strata 2 (B)
5				
6				Percent of Dominant Species
0				The Are OBL $\Box A C M$ or $\Box A C (A/B)$
7				That Ale OBL, FACW, OF FAC. 50 (A/B)
		= Total Cover		Brovalence Index worksheet:
Sapling Stratum (Plot size:)				Trevalence index worksheet.
1. ,				Total % Cover of: Multiply by:
2				
2				OBL species $5 \times 1 = 5$
3				EACW spacios 50 x 2 = 100
4				$\frac{1}{100}$
5				FAC species x 3 =
0				$EACH appaires 15 \times 4 = 60$
0			<u> </u>	FACO species $\underline{15} \times 4 = \underline{00}$
7				UPL species x 5 =
Oberth Obertaine (Distained)		= Total Cover		Column Totals: <u>70</u> (A) <u>165</u> (B)
<u>Shrub Stratum</u> (Plot size:)				Prevalence Index = $B/A = -2.35$
I	<u> </u>			
2				Hydrophytic vegetation indicators:
3				
4				1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6			·	\boxtimes 3 - Prevalence Index is $\leq 3.0^1$
T				4 Marphological Adoptational (Bravida
		= Total Cover		4 - Morphological Adaptations (Frovide
Herb Stratum (Plot size: 5)				supporting data in Remarks of on a
1. <u>Phalaris arundinacea</u>	<u>50</u>	<u>Y</u>	FACW	separate sneet)
2. Phytolacca americana	15	Y	FACU	Problematic Hydrophytic Vegetation ¹
3 Typha latifolia	5	N		(Evaluin)
	<u>u</u>	<u>II</u>	OBL	
4				¹ Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6.				Definitions of Five Vegetation Strata:
7			·	· · · · · · · · · · · · · · · · · · ·
·				Tree – Woody plants, excluding woody vines
8				approximately 20 ft (6 m) or more in height and 3 in
9				(7.6 cm) or larger in diameter at breast height (DBH)
10				
10. <u> </u>				Sanling Woody plants, excluding woody vines
II				approximately 20 ft (6 m) or more in height and loss
12				then 2 in (7.6 cm) DDU
	70	= Total Cover		than $5 \text{ In.} (7.6 \text{ cm}) \text{ DBH}.$
Woody Vine Stratum (Plot size:)				
<u>1</u> , <u> </u>				Snrub – woody plants, excluding woody vines,
2				approximately 3 to 20 ft (1 to 6 m) in height.
2				
3				Herb – All herbaceous (non-woody) plants, including
4.				herbaceous vines, regardless of size, and woody
5				plants, except woody vines, less than approximately
o				3 ft (1 m) in height.
		= Total Cover		
				Woody vine – All woody vines, regardless of height.
				Hydrophytic Vegetation Present? Yes No
-				
Remarks: (Include photo numbers here or on a separate	e sheet.)			

Profile Descr	iption: (Describe to t	ne depth ne	eded to document	t the indica	tor or conf	firm the ab	sence of indica	ators.)
Depth (inches)	<u>Matrix</u> Color (moist)	%	Color (moist)	Redox I	-eatures	loc^2	Toxture	Remarks
0-6	5YR 4/4	95	5YR 5/8	5	C	M/PL	Silt	Kemana
6-18	Glev 1 5/10V	100		-			loam	
<u>0-10</u>	<u>Oley 1 3/101</u>	100					Clay	
		·		<u> </u>				
¹ Type: C=Con	centration, D=Depletic	n, RM=Red	uced Matrix, MS=M	asked Sano	d Grains.	² Locatio	n: PL=Pore Lini	ing, M=Matrix.
Hydric Soil In	dicators:						Indicators for	Problematic Hydric Soils ³ :
Histosol (A	1)	Dark	Surface (S7)				2 cm Muck ((A10) (MLRA 147)
Histic Epip	edon (A2)	Dely	value Below Surfac	e (S8) (ML I	RA 147, 148	B)	Coast Prairie	e Redox (A16)
Black Histi	c (A3)	🗌 Thin	Dark Surface (S9)	(MLRA 147	′, 148) [′]		(MLRA 147,	148)
Hydrogen S	Sulfide (A4)	🛛 Loar	ny Gleyed Matrix (F	2)			Piedmont Fl	oodplain Soils (F19)
Stratified L	ayers (A5) (A10) (LPP N)		eted Matrix (F3)	3)			(MLRA 136, ⊠ Red Parent	147) Material (TE2)
	elow Dark Surface (A	11) □ Depl	eted Dark Surface	(F7)			Verv Shallov	w Dark Surface (TF12)
Thick Dark	Surface (A12)		ox Depressions (F8)			Other (Expla	ain in Remarks)
Sandy Muc	ky Mineral (S1) (LRR	N, 🗌 Iron-	Manganese Masse	s (F12) (LR	R N, MLRA	A 136)		
MLRA 147	, 148) 		ric Surface (F13) (N	/LRA 136,	122)			
Sandy Gie	$\log (S5)$		mont Floodplain So	nis (f 19) (n	ILKA 140)			
Stripped M	atrix (S6)							
	()							
³ Indicators of	hydrophytic vegetation	n and wetlan	d hydrology must b	e present, ι	unless distu	rbed or pro	blematic.	
Restrictive La	ayer (if observed):							
туре						Hydric Soi	I Present?	🖾 Yes 🛛 No
Depth (inches):					-		
Remarks:								

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Greiner Property City/County: Mt. Joy	<u>y Twp./Lancaster</u>	Sampling Date: <u>3/22</u>	2/22			
Applicant/Owner: Pannatoni Development	State: <u>PA</u> Sampling Point: <u>W</u>	/1/DP-2				
Investigator(s): <u>Andrew Young</u> Section, Township, Range: <u>Mt. Joy Twp.</u>						
Landform (hillslope, terrace, etc.): hill	Local relief (concave, conve	x, none): <u>convex</u>	Slope (%): <u>3</u>			
Subregion (LRR or MLRA): LRR S	Lat: <u>40.145275</u>	Long: <u>-76.546755</u>	Datum	:		
Soil Map Unit Name: <u>Bm-Blairton silt loam</u>	NWI cla	NWI classification: UPL				
Are climatic / hydrologic conditions on the site typi	cal for this time of year?	🗌 Yes 🗌 No (If	no, explain in Rer	narks.)		
Are Vegetation D, Soil D, or Hydrology Signifi	rmal Circumstances" p	oresent? 🛛 Yes	s 🗌 No			
Are Vegetation], Soil], or Hydrology anatura	ally problematic? (If need	ed, explain any answe	rs in Remarks.)			

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	☐ Yes ☐ Yes ☐ Yes	⊠ No ⊠ No ⊠ No	Is the Sampled Area within a Wetland?	🗌 Yes	🖾 No
Remarks:					

HYDROLOGY

Wetland Hydrology Indicate	ors:				Secondary Indicators (minimum of two required)
Primary Indicators (minimum	of one is i	equired;	check all that apply)		☐ Surface Soil Cracks (B6)
Surface Water (A1)		🗌 True	Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)		🗌 Hydr	ogen Sulfide Odor (C1)		Drainage Patterns (B10)
Saturation (A3)		🗌 Oxid	ized Rhizospheres on Living	g Roots (C3)	☐ Moss Trim Lines (B16)
UWater Marks (B1)		Pres	ence of Reduced Iron (C4)		Dry-Season Water Table (C2)
Sediment Deposits (B2)		🗌 Rece	ent Iron Reduction in Tilled S	Soils (C6)	Crayfish Burrows (C8)
Drift Deposits (B3)		🗌 Thin	Muck Surface (C7)		Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Othe	r (Explain in Remarks)		Stunted or Stressed Plants (D1)
☐ Iron Deposits (B5)					Geomorphic Position (D2)
Inundation Visible on Aeri	al Imagery	′ (B7)			Shallow Aquitard (D3)
☐ Water-Stained Leaves (B	9)				Microtopographic Relief (D4)
🗌 Aquatic Fauna (B13)					FAC-Neutral Test (D5)
				-	
Field Observations:					
Surface Water Present?	🗌 Yes	🛛 No	Depth (inches):		
Water Table Present?	🗌 Yes	🛛 No	Depth (inches):	Wetland Hy	drology Present? 🛛 Yes 🖾 No
Saturation Present? (includes capillary fringe)	🗌 Yes	🛛 No	Depth (inches):		
Describe Recorded Data (str	eam gaug	e, monitor	ing well, aerial photos, prev	ious inspectio	ns), if available:
Pomarka:					
Remarks.					

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-2

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:	% Cover	Species?	Status	Dominance rest worksheet.
1	<u>70 COver</u>	<u>opecies:</u>	<u>olalus</u>	Number of Dominant Species
·· <u></u>				That Are OBL_EACW or EAC (A)
2				
3				Total Number of Dominant
4				Species Across All Strata: (B)
5				
6				Percent of Dominant Species
7.				That Are OBL, FACW, or FAC: (A/B)
		= Total Cover		
Sapling Stratum (Plot size:				Prevalence index worksneet:
1.				Total % Cover of Multiply by:
2				
2				OBL species x 1 =
3				FACW species 10 x 2 = 20
4				
5				FAC species x 3 =
6				FACU species <u>50</u> x 4 = <u>200</u>
7.				UPL species x 5 =
		= Total Cover		
Shrub Stratum (Plot size: 15)				Column Totals: <u>60</u> (A) 220 (B)
1. Rosa multiflora	50	Y	FACU	Prevalence Index = $B/A = \frac{3.7}{2}$
2	<u></u>	<u> </u>		Hydrophytic Vegetation Indicators:
2	<u> </u>			
3	<u> </u>	·		1 - Rapid Test for Hydrophytic Vegetation
4	·			
5				2 - Dominance Test is >50%
6				\square 2. Drevelence index is <2.01
7.				
	50	= Total Cover		4 - Morphological Adaptations ¹ (Provide
Herb Stratum (Plot size: 5)	00			supporting data in Remarks or on a
1 Phalaris arundinacea	10	Y	FACW	separate sheet)
2	<u></u>	<u> </u>		
2				
3				(Explain)
4				¹ Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
7				
8.				Tree – Woody plants, excluding woody vines,
9				approximately 20 ft (6 m) or more in height and 3 in.
10				(7.6 cm) or larger in diameter at breast height (DBH).
		<u> </u>		Conting Woody planta avaluding woody vince
11				saping – woody plants, excluding woody vines,
12				than 3 in (7.6 cm) DBH
	<u>10</u>	= Total Cover		
Woody Vine Stratum (Plot size:)				Shrub – Woody plants, excluding woody vines.
1				approximately 3 to 20 ft (1 to 6 m) in height.
2				
3				Herb – All herbaceous (non-woody) plants, including
4.				herbaceous vines, regardless of size, and woody
5				plants, except woody vines, less than approximately
o				3 ft (1 m) in height.
		= Total Cover		
				woody vine – All woody vines, regardless of height.
				Hydrophytic Vegetation Present? □Yes ⊠No
Remarks: (Include photo numbers here or on a separate	e sheet.)			

Profile Description: (Describe	to the depth needed to documen	t the indicator or confi	irm the absence of indica	tors.)
Depth <u>N</u>	t) % Color (moist)	Redox Features	Loc ² Texture	Pemarks
0-6 2.5YR 4/4	100 <u>2001 (Moist)</u>	<u>///</u>	<u>Silt</u>	Nemarks
<u> </u>	<u></u>		loam	
	<u> </u>	<u> </u>		
¹ Type: C=Concentration, D=Dep	pletion, RM=Reduced Matrix, MS=N	lasked Sand Grains.	² Location: PL=Pore Lini	ng, M=Matrix.
Hydric Soil Indicators:			Indicators for	Problematic Hydric Soils [®] :
☐ Histosol (A1)	Dark Surface (S7)		☐ 2 cm Muck (/	A10) (MLRA 147)
Histic Epipedon (A2)	🗍 Polyvalue Below Śurfac	ce (S8) (MLRA 147, 148	s) 🗌 Coast Prairie	e Redox (A16)
Black Histic (A3)	Thin Dark Surface (S9)	(MLRA 147, 148)	(MLRA 147,	148)
Stratified Layers (A5)	Loamy Gleyed Matrix (I Depleted Matrix (E3)	-2)		147)
\square 2 cm Muck (A10) (LRR N)	Redox Dark Surface (F	6)	Red Parent N	Material (TF2)
Depleted Below Dark Surfac	e (A11) 🗍 Depleted Dark Surface	(F7)	🗍 Very Shallow	v Dark Surface (TF12)
Thick Dark Surface (A12)	Redox Depressions (F8	3)	Other (Expla	in in Remarks)
Sandy Mucky Mineral (S1) (L	LRR N, I Iron-Manganese Masse	es (F12) (LRR N, MLRA MI PA 136 122)	136)	
\Box Sandy Gleved Matrix (S4)	Piedmont Floodplain So	oils (F19) (MLRA 148)		
Sandy Redox (S5)		ono () (<u>-</u>)		
Stripped Matrix (S6)				
³ Indicators of hydrophytic years	tation and watland hydrology must h	o procent uplace distur	had ar problematic	
Restrictive Laver (if observed):	be present, uniess distur		
Type:	,-			
Depth (inches):		ŀ	Hydric Soil Present?	🗋 Yes 🖂 No
Remarks:				

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Greiner Property City/County: Mt. Jo	y Twp./Lancaster	Sampling Date: <u>3/22/22</u>	<u>2</u>			
Applicant/Owner: Pannatoni Development	State: <u>PA</u> Sampling Point: <u>W</u>	<u>/2/DP-3</u>				
Investigator(s): Andrew Young	Section, Township, Range: <u>New York Section</u>	<u>Mt. Joy Twp.</u>				
Landform (hillslope, terrace, etc.): Swale	Local relief (concave, conve	x, none): <u>concave</u> Slo	ope (%): <u>2</u>			
Subregion (LRR or MLRA): LRR S	Lat: <u>40.145579</u>	Long: <u>-76.546843</u>	Datum:			
Soil Map Unit Name: <u>Bm-Blairton silt loam</u>	NWI cla	NWI classification: <u>PEM</u>				
Are climatic / hydrologic conditions on the site typi	cal for this time of year?	🗌 Yes 🛛 No (If no,	explain in Remarks.)			
Are Vegetation D, Soil D, or Hydrology Signif	rmal Circumstances" pres	sent? 🛛 Yes 🗌 No				
Are Vegetation], Soil], or Hydrology anatura	ally problematic? (If need	ed, explain any answers i	n Remarks.)			

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes ⊠ Yes ⊠ Yes	□ No □ No □ No	Is the Sampled Area within a Wetland?	⊠ Yes	□ No
Remarks:					

HYDROLOGY

Wetland Hydrology Indicat	ors:				Secondary Indicators (minimum of two required)		
Primary Indicators (minimum	of one is	required;	check all that apply)		Surface Soil Cracks (B6)		
Surface Water (A1)		🗌 True	Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)		
High Water Table (A2)		🗌 Hydr	ogen Sulfide Odor (C1)		⊠ Drainage Patterns (B10)		
Saturation (A3)		🛛 Oxid	ized Rhizospheres on Living	g Roots (C3)	☐ Moss Trim Lines (B16)		
☐ Water Marks (B1)		Pres	ence of Reduced Iron (C4)		Dry-Season Water Table (C2)		
Sediment Deposits (B2)		🗌 Rece	ent Iron Reduction in Tilled	Soils (C6)	Crayfish Burrows (C8)		
Drift Deposits (B3)		🗌 Thin	Muck Surface (C7)		Saturation Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		Other	er (Explain in Remarks)		Stunted or Stressed Plants (D1)		
Iron Deposits (B5)					Geomorphic Position (D2)		
Inundation Visible on Aer	al Imagery	ι (B7)			☐ Shallow Aquitard (D3)		
UWater-Stained Leaves (B	9)				Microtopographic Relief (D4)		
🗌 Aquatic Fauna (B13)					☐ FAC-Neutral Test (D5)		
Field Observations:							
Surface Water Present?	🛛 Yes	🗌 No	Depth (inches): <u>1</u>				
Water Table Present?	🗌 Yes	🛛 No	Depth (inches):	Wetland Hy	rdrology Present? 🛛 🏹 Yes 🗌 No		
Saturation Present? (includes capillary fringe)	🛛 Yes	🗌 No	Depth (inches): <u>0</u>				
Describe Recorded Data (str	eam gaug	e, monitor	ring well, aerial photos, prev	vious inspectio	ns), if available:		
Pomarka:							
itemarks.							

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-3

Absolute Dominant Indicator Dominant Secure 3 1					
Tree Stratum (Plot size:		Absolute	Dominant	Indicator	Dominance Test worksheet:
1	Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	<u>Status</u>	
2	1				Number of Dominant Species
3	2				That Are OBL, FACW, or FAC: 1 (A)
3.	2				
4	3				Total Number of Dominant
S. Percent of Dominant Spacies 7.	4				Species Across All Strata: 1 (B)
6	5				
0.	0				Dereent of Deminent Species
7.	o				Percent of Dominant Species
Saping Stratum (Plot size:) = Total Cover Prevalence index worksheet: 1	7				That Are OBL, FACW, of FAC: 100 (A/B)
Sanding Stratum (Plot size:)			= Total Cover		Drevelan ee hadew werkeleest
add by the stratum (Plot size:) Total % Cover of: Multiply by: 2 3 4 5 6 7 2 3 4 5 6 7 2 3 4 5 2 3 4 5 6 7 8 9 Problematic hydrophylic Vegetation ¹ (Explain) 1 Problematic hydrophylic Vegetation ¹ (Explain) 1 2 3 4 5 6 7 8	Sanling Stratum (Plot size:				Prevalence index worksheet:
2	1				
2	··				Total % Cover of: Multiply by:
3.	2				OBL species x 1 =
4	3.				
FAC species x 3 = 6	Λ				FACW species x 2 =
5.					FAC species x 3 =
6.	5				
7.	6.				FACU species x 4 =
Strub Strub Total Cover Other Totals:(A)(B) Strub Column Totals:(A)(B) Prevalence Index = B/A =	7				
Shrub Stratum (Plot size:)	/·				
Shratum (Plot size:) Prevalence Index = B/A = 2. Hydrophytic Vegetation Indicators: 3. Hydrophytic Vegetation Indicators: 4. Image: Stratum (Plot size: 5) 1. Prevalence Index is 3.0 ° 2. Image: Stratum (Plot size: 5) 1. Pataris arundinacea 2. Image: Stratum (Plot size: 5) 3. Image: Stratum (Plot size: 5) 3. Image: Stratum (Plot size: 5) 4. Image: Stratum (Plot size: 5) 3. Image: Stratum (Plot size: 5) 4. Image: Stratum (Plot size: 5) 5. Image: Stratum (Plot size: 5) 6. Image: Stratum (Plot size: 5) 7. Image: Stratum (Plot size: 5) 8. Image: Stratum (Plot size: 5) 9. Image: Stratum (Plot size: 5) 1. Image			= Total Cover		Column Totals: (A) (B)
1.	<u>Shrub Stratum</u> (Plot size:)				
2	1				Prevalence Index = B/A =
3.	2				Hydrophytic Vegetation Indicators:
3.	2.				
4.	3				1 Banid Test for Hydrophytic Vegetation
5.	4				
6.	5				2 - Dominance Test is >50%
7.	6				□ 3 - Prevalence Index is $\leq 3.0^{1}$
Herb Stratum (Plot size: 5)	<i>I</i>				
Herb Stratum (Plot size: 5) supporting data in Remarks or on a separate sheet) 2.			= Total Cover		4 - Morphological Adaptations ¹ (Provide
1. Phalaris arundinacea 100 Y FACW separate sheet) 2	Herb Stratum (Plot size: 5)				supporting data in Remarks or on a
1 1 1 1 1 2 1 1 1 1 1 3 1 <td>1 Phalaris arundinacea</td> <td>100</td> <td>Y</td> <td>FACW</td> <td>separate sheet)</td>	1 Phalaris arundinacea	100	Y	FACW	separate sheet)
2.	0		<u> </u>	<u></u>	
3.	Z				Problematic Hydrophytic Vegetation ¹
4	3				(Explain)
Simular Implications of injuite solination Weitand hydrology indist 6. Implications of Five Vegetation Strata: 7. Implications of Five Vegetation Strata: 9. Implications of Five Vegetation Strata: 9. Implications of Five Vegetation Strata: 9. Implications of Five Vegetation Strata: 10. Implications of Five Vegetation Strata: 11. Implications of Five Vegetation Strata: 12. Implications of Five Vegetation Strata: 13. Implications of Five Vegetation Strata: 14. Implications of Five Vegetation Strata: 15. Implications of Five Vegetation Present? 16. Implications of Five Vegetation Present? 17. Implications of Five Vegetation Present? 18. Implications of Five Vegetation Present? 19. Implications of Five Vegetation Present? 100 Implications of Five Ve	4.				Indicators of hydric coil and watland hydrology must
3.					have a set of the solution of the set of the
6.	5. <u> </u>				be present, unless disturbed or problematic.
7.	6				Definitions of Five Vegetation Strata:
8.	7.				
0.	o				Tree – Woody plants, excluding woody vines,
9	0				approximately 20 ft (6 m) or more in height and 3 in.
10.	9				(7.6 cm) or larger in diameter at breast height (DBH).
11.	10.				
11.	11				Sapling – Woody plants, excluding woody vines
12:					approximately 20 ft (6 m) or more in height and less
100 = Total Cover 1.	12				than 3 in (7.6 cm) DBH
Woody Vine Stratum (Plot size:)		100	= Total Cover		
1.	Woody Vine Stratum (Plot size:)				
2.	<u>1</u> ,				Snrub – vvoody plants, excluding woody vines,
2.	<u></u>				approximately 3 to 20 ft (1 to 6 m) in height.
3.	2				
4	3				Herb – All herbaceous (non-woody) plants, including
5.	4.				herbaceous vines, regardless of size, and woody
	5			<u> </u>	plants, except woody vines, less than approximately
= Total Cover Woody vine – All woody vines, regardless of height. Hydrophytic Vegetation Present? Yes Remarks: (Include photo numbers here or on a separate sheet.) No	J				3 ft (1 m) in height.
Woody vine – All woody vines, regardless of height. Hydrophytic Vegetation Present? No Remarks: (Include photo numbers here or on a separate sheet.)			= Total Cover		
Hydrophytic Vegetation Present? Yes No Remarks: (Include photo numbers here or on a separate sheet.) Image: Comparison of the second seco					Woody vine – All woody vines, regardless of height.
Remarks: (Include photo numbers here or on a separate sheet.)					Hydrophytic Vegetation Present? ⊠Yes □No
remains. (include proto numbers here or on a separate sheet.)	Pomarka: (Includo photo numbero horo er en e esternite	aboot)			
	remarks. (include prioto numbers here or on a separate	sneet.)			

Profile Description	on: (Describe to th	e depth ne	eded to document	the indica	tor or conf	firm the at	osence of indica	ators.)
Depth (inchoo)	<u>Matrix</u>	0/	Color (majot)	Redox F	eatures	1.002	- Toyturo	Pomorko
(inches) 0-16	$\frac{COOT}{T}$ (moist) 7 5VR 4/2	95	$\frac{COIOI (IIIOISI)}{5VR 5/6}$	<u>%</u> 10	<u>Type</u>	<u>LOC-</u> M/PI	Silt	Remarks
<u>0-10</u>	<u>1.511(4/2</u>	<u>55</u>	<u>011(0/0</u>	10	<u> </u>		loam	
¹ Type: C=Concen	tration, D=Depletio	n, RM=Redu	uced Matrix, MS=Ma	asked Sand	Grains.	² Locati	on: PL=Pore Lin	ing, M=Matrix.
Hydric Soil Indic	ators:						Indicators for	Problematic Hydric Soils ³ :
			Curfage (07)					
	n (A2)		Junace (S7)	- (S8) /MI 🖬	2 147 14	8)	Coast Prairi	(A10) (IVILKA 147) e Redox (A16)
Black Histic (A	(3)		Dark Surface (S9)	MLRA 147	. 148)	•,	(MLRA 147	. 148)
Hydrogen Sulf	ide (A4)	Loan	ny Gleyed Matrix (F	2)	, ··,		Piedmont Fl	oodplain Soils (F19)
Stratified Laye	rs (A5)	🛛 Depl	eted Matrix (F3)				(MLRA 136	, 147)
2 cm Muck (A	10) (LRR N)		x Dark Surface (F6	<u>)</u>			Red Parent	Material (TF2)
Depleted Belo	w Dark Surface (A1	1) Depl	eted Dark Surface (F7)			U Very Shallov	w Dark Surface (TF12)
Sandy Mucky	Mineral (S1) (I RR I		Mandanese Masse) s (F12) (I R I		136)		am m Remarks)
MLRA 147. 14	18)	∎, ⊡ ‼ollª	ric Surface (F13) (N	ILRA 136.	122)	L 100)		
Sandy Gleyed	Matrix (S4)	Pied	mont Floodplain So	ils (F19) (M	LRÁ 148)			
Sandy Redox	(S5)							
Stripped Matrix	x (S6)							
3Indiactors of hus	Ironhutio vogototion	and watlan	d budrologu must b	- proport i	nlaga diatu	rhad ar pro	blomotio	
Restrictive Laver	r (if observed):	and wettand	a nyarology must be	e present, u	niess aistu	rbed of pro	ppiematic.	
Type:	i (ii observeu).							
- <u> </u>						Hydric So	il Present?	🖾 Yes 🗌 No
Depth (inches):								
Remarks:								

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Greiner Property City/County: Mt. Joy	Samp	ing Date: <u>3/22/22</u>			
Applicant/Owner: Pannatoni Development	State: PA Sampling	Point: <u>W2/DP-4</u>			
Investigator(s): Andrew Young	Range: <u>Mt. Joy T</u>	wp.			
Landform (hillslope, terrace, etc.): hillslope	Local relie	ef (concave, conv	ex, none): <u>convex</u>	Slope (%): <u>3</u>
Subregion (LRR or MLRA): LRR S	Lat: <u>40.145579</u>	Long:	<u>-76.546842</u>	Datum:	
Soil Map Unit Name: <u>Bm-Blairton silt loam</u>		NWI classification	n: <u>UPL</u>		
Are climatic / hydrologic conditions on the site typi	cal for this time of yea	ar? 🗌 Ye	s 🛛 🗌 No (If no, explai	n in Rema	rks.)
Are Vegetation [], Soil [], or Hydrology [] signifi	cantly disturbed?	Are "Normal Circ	cumstances" present?	🛛 Yes	🗌 No
Are Vegetation], Soil], or Hydrology anatura	ally problematic?	(If needed, explain any answers in Remarks.)			

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	☐ Yes ☐ Yes ☐ Yes	⊠ No ⊠ No ⊠ No	Is the Sampled Area within a Wetland?	🗌 Yes	🛛 No
Remarks:					

HYDROLOGY

Wetland Hydrology Indicators:					Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of one is required; check all that apply)					Surface Soil Cracks (B6)			
Surface Water (A1)		🗌 True	Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)			
☐ High Water Table (A2)		🗌 Hydr	ogen Sulfide Odor (C1)		☐ Drainage Patterns (B10)			
Saturation (A3)		🗌 Oxid	ized Rhizospheres on Living	g Roots (C3)	☐ Moss Trim Lines (B16)			
☐ Water Marks (B1)		Pres	ence of Reduced Iron (C4)		Dry-Season Water Table (C2)			
Sediment Deposits (B2)		🗌 Rece	ent Iron Reduction in Tilled	Soils (C6)	Crayfish Burrows (C8)			
Drift Deposits (B3)		🗌 Thin	Muck Surface (C7)		Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)		Other	er (Explain in Remarks)		Stunted or Stressed Plants (D1)			
☐ Iron Deposits (B5)					Geomorphic Position (D2)			
Inundation Visible on Aeri	al Imagery	/ (B7)			Shallow Aquitard (D3)			
UWater-Stained Leaves (B	9)				Microtopographic Relief (D4)			
🗌 Aquatic Fauna (B13)	🗌 Aquatic Fauna (B13)			FAC-Neutral Test (D5)				
Field Observations:								
Surface Water Present?	🗌 Yes	🛛 No	Depth (inches):					
Water Table Present?	🗌 Yes	🛛 No	Depth (inches):	Wetland Hy	/drology Present? □ Yes ⊠ No			
Saturation Present? (includes capillary fringe)	🗌 Yes	🛛 No	Depth (inches):					
Describe Recorded Data (str	eam gaug	e, monitor	ing well, aerial photos, prev	vious inspectio	ons), if available:			
Pomarka:								
itemains.								

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-4

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:	% Cover	Species?	Status	
1	10 00101	000000.	otatao	Number of Dominant Species
1				That Are OBLE FACIAL or FAC: 1 (A)
2				That Are OBL, FACW, of FAC. T (A)
3				
				Total Number of Dominant
4				Species Across All Strata: 3 (B)
5				
				Dereent of Deminent Species
0				Percent of Dominant Species
7.				That Are OBL, FACW, or FAC: 33 (A/B)
		- Tatal Causa		
		- Total Cover		Prevalence Index worksheet:
Sapling Stratum (Plot size:)				
1				Total % Cover of Multiply by
2				Total / Covor of Munipry by:
2				OBL species x 1 =
3				
Δ				FACW species x 2 =
				FAC species x 3 -
5				1 AO species X 3 =
6				FACU species x 4 =
7				
/				UPL species x 5 =
		= Total Cover		
Shruh Stratum (Blat aiza: 15)				Column Totals: (A) (B)
<u>Shrub Stratum</u> (Plot Size. <u>15</u>)	10		54011	Provalance Index = B/A =
1. <u>Rosa multiflora</u>	<u>10</u>	<u>Y</u>	FACU	
2 Dipsacus fullonum	30	Y	FACU	Hydrophytic Vegetation Indicators:
	<u></u>	<u> </u>		
3				
4.				1 - Rapid Test for Hydrophytic Vegetation
			·	
ə				2 - Dominance Test is >50%
6.				
7				3 - Prevalence Index is ≤3.0 ¹
7. <u></u>				
	40	= Total Cover		4 - Morphological Adaptations' (Provide)
Herb Stratum (Plot size: 5)				supporting data in Remarks or on a
1 Phalaris arundinacea	5	V	FACW	separate sheet)
	<u>5</u>	<u> </u>	TACW	
2				Problematic Hydrophytic Vegetation ¹
3				(Evoloin)
J				(Explain)
4				¹ Indicators of hydric soil and wetland hydrology must
5				be present unless disturbed or problematic
<u>. </u>				
6				Definitions of Five vegetation Strata:
7.				
			·	Tree – Woody plants, excluding woody vines,
ð				approximately 20 ft (6 m) or more in height and 3 in
9.				(7.6 cm) or larger in diameter at breast beight (DBH)
10				(7.0 cm) of larger in diameter at breast height (DDFT).
10				
11.				Sapling – Woody plants, excluding woody vines,
12				approximately 20 ft (6 m) or more in height and less
12				than 3 in (7.6 cm) DBH
	<u>5</u>	= Total Cover		
Woody Vine Stratum (Plot size:)				
1				Shrub – woody plants, excluding woody vines,
<u>.</u>			<u> </u>	approximately 3 to 20 ft (1 to 6 m) in height.
2				
3				Herb – All herbaceous (non-woody) plants including
·	<u> </u>			herbaceous vines regardless of size and woody
4				
5.				plants, except woody vines, less than approximately
				3 ft (1 m) in height.
		= Total Cover		
				Woody vine – All woody vines, regardless of height
				,
				Hydrophytic Vegetation Present? Yes No
Remarks: (Include photo numbers here or on a separate	e sheet)			
	511001.7			

Profile Descripti	on: (Describe to th	ne depth ne	eded to document	the indic	ator or conf	firm the a	bsence of indica	ators.)
Depth (inches)	<u>Matrix</u>	0/2	Color (moist)	Redox	<u>Features</u>	L oc ²	Texture	Remarks
0-16	7.5YR 4/3	100		70	туре	<u>L00</u>	Silt	Remains
<u></u>	<u></u>						loam	
<u> </u>								
	<u> </u>							
				<u> </u>				
	stration D-Depletio	n RM-Rodi	uced Matrix MS-M	askad Sar	d Grains	² 1 oca	tion: PI -Pore I ini	ing M-Matrix
Hydric Soil Indic	ators			askeu Gai		LUCA	Indicators for	Problematic Hydric Soils ³
	,						indicators for	r robiematic rryune cons .
Histosol (A1)		🗌 Dark	Surface (S7)				🗌 2 cm Muck (A10) (MLRA 147)
Histic Epipedo	on (A2)	Poly	value Below Surface	e (S8) (ML	.RA 147, 148	B)	Coast Prairie	e Redox (A16)
Black Histic (A	A3)		Dark Surface (S9)	(MLRA 14	7, 148)		(MLRA 147,	148)
Hyarogen Sulf	lide (A4)		ny Gleyed Matrix (F	∠)				0000piain Solis (F19) 147)
\Box 2 cm Muck (A	10) (I RR N)		eleu Maliix (FS) ox Dark Surface (F6	;)			Red Parent	147) Material (TF2)
Depleted Belo	w Dark Surface (A1	1) □ Depl	eted Dark Surface (,, F7)			Verv Shallov	w Dark Surface (TF12)
Thick Dark Su	rface (A12)		ox Depressions (F8)) ´			Other (Expla	ain in Remarks) Ý
Sandy Mucky	Mineral (S1) (LRR	N, 🗌 Iron-	Manganese Masse	s (F12) (L	RR N, MLRA	136)		
MLRA 147, 14	48)		ric Surface (F13) (N	ILRA 136	, 122)			
Sandy Gleyed	Matrix (S4)	Pied	mont Floodplain So	ils (F19) (I	MLRA 148)			
Sandy Redox	(55) x (56)							
	x (00)							
³ Indicators of hyd	drophytic vegetatior	and wetlan	d hydrology must be	e present,	unless distu	rbed or pi	oblematic.	
Restrictive Laye	r (if observed):							
Туре:						Uvdric S	ail Prosont?	
Depth (inches):						Hyunc S	JIFIESent	
Remarks:								

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Greiner Property City/County: Mt. Joy	y Twp./Lancaster	Sampling Date: <u>3/25/22</u>				
Applicant/Owner: Pannatoni Development	State: PA Sampling Point: W3	<u>3/DP-5</u>				
Investigator(s): Andrew Young	Section, Township, Range: <u>M</u>	t. Joy Twp	<u>.</u>			
Landform (hillslope, terrace, etc.): Seep	Local relief (concave, convex,	, none): <u>co</u>	ncave Slope (%): <u>2</u>		
Subregion (LRR or MLRA): LRR S	Lat: <u>40.148884</u>	Long: <u>-76</u>	.541455	Datum:		
Soil Map Unit Name: BeD-Bedington channery silt	loam	NWI classification: <u>PEM</u>				
Are climatic / hydrologic conditions on the site typi	cal for this time of year?	🗌 Yes	🗌 No (If no, explain	n in Rema	rks.)	
Are Vegetation [], Soil [], or Hydrology [] signifi	icantly disturbed? Are "Norr	nal Circum	stances" present?	🛛 Yes	🗌 No	
Are Vegetation ⊠, Soil □, or Hydrology □ natura	ally problematic? (If neede	d, explain a	any answers in Rem	arks.)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes ⊠ Yes ⊠ Yes	□ No □ No □ No	Is the Sampled Area within a Wetland?	🛛 Yes	🗌 No
Remarks: Winter/early spring growing c	onditio	ns			

HYDROLOGY

Wetland Hydrology Indicators:					Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one is required; check all that apply)					☐ Surface Soil Cracks (B6)		
Surface Water (A1)		🗌 True	Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)		
🛛 High Water Table (A2)		🗌 Hydr	ogen Sulfide Odor (C1)		🖾 Drainage Patterns (B10)		
Saturation (A3)		🗌 Oxid	ized Rhizospheres on Living	g Roots (C3)	☐ Moss Trim Lines (B16)		
☐ Water Marks (B1)		Pres	ence of Reduced Iron (C4)		Dry-Season Water Table (C2)		
Sediment Deposits (B2)		🗌 Rece	ent Iron Reduction in Tilled S	Soils (C6)	Crayfish Burrows (C8)		
Drift Deposits (B3)		🗌 Thin	Muck Surface (C7)		Saturation Visible on Aerial Imagery (C9)		
☐ Algal Mat or Crust (B4)		🗌 Othe	r (Explain in Remarks)		Stunted or Stressed Plants (D1)		
☐ Iron Deposits (B5)					Geomorphic Position (D2)		
Inundation Visible on Aerial I	Imagery	(B7)			Shallow Aquitard (D3)		
☐ Water-Stained Leaves (B9)					☐ Microtopographic Relief (D4)		
🗋 Aquatic Fauna (B13)					FAC-Neutral Test (D5)		
Field Observations:							
Surface Water Present?	🛛 Yes	🗌 No	Depth (inches): <u>1</u>				
Water Table Present?	Yes Yes	🗌 No	Depth (inches): <u>5</u>	Wetland Hy	drology Present? 🛛 🏹 Yes 🗌 No		
Saturation Present?	🛛 Yes	🗌 No	Depth (inches): <u>0</u>				
Describe Recorded Data (stream	m gauge	e, monitor	ing well, aerial photos, prev	ious inspectio	ns), if available:		
Demention							
Remarks:							

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-5

	A 1 1. 1	Dura in t	La Part	Development Testandark (
	Absolute	Dominant	Indicator	Dominance Test worksneet:
<u>Tree Stratum</u> (Plot size: <u>30</u>)	<u>% Cover</u>	Species?	<u>Status</u>	
1. <u>Juglans nigra</u>	<u>20</u>	<u>Y</u>	FACU	Number of Dominant Species
2				That Are OBL, FACW, or FAC: 2 (A)
2				
J				Total Number of Dominant
4.				Species Across All Strata: 4 (P)
5				$\frac{1}{2}$
				Description (Description)
6				Percent of Dominant Species
7.				That Are OBL, FACW, or FAC: 50 (A/B)
	20	- Total Cavar		
	20	- Total Cover		Prevalence Index worksheet:
Sapling Stratum (Plot size:)				
1				Total % Cover of: Multiply by:
2.				
3				
3				FACW species 5 x 2 = 10
4				
5.				FAC species $10 \times 3 = 30$
6				FACU species $30 \times 4 = 120$
1				UPL species x 5 =
		= Total Cover		Column Totals: (A) (B)
Shrub Stratum (Plot size: 15)				
1 Rosa multiflora	10	Y	FACU	Prevalence Index = B/A = 3.55
	10	<u> </u>	17100	Hydrophytic Vagatation Indicators:
2				Hydrophytic vegetation indicators.
3				
4				1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				\square 2. Dravalance Index is <2.01
7				
··	10	- Tatal Cause		1 - Morphological Adaptations ¹ (Provide
	<u>10</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5</u>)				supporting data in Remarks of on a
1. Impatiens capensis	<u>5</u>	<u>Y</u>	<u>FACW</u>	separate sheet)
2. Microstegium vimineum	10	Y	FAC	Droblematic Hydrophytic Vegetation
	10	<u> </u>	NU	
3. <u>Grass sp.</u>	10		<u>INI</u>	(Explain)
4				¹ Indicators of hydric soil and wetland hydrology must
5				be present unless disturbed or problematic
				Definitions of Five Vegetation Strate:
0				Demilions of Five vegetation Strata.
7				
8.				I ree – Woody plants, excluding woody vines,
0				approximately 20 ft (6 m) or more in height and 3 in.
9				(7.6 cm) or larger in diameter at breast height (DBH).
10				
11.				Sapling – Woody plants, excluding woody vines.
12				approximately 20 ft (6 m) or more in height and less
12				than 3 in. (7.6 cm) DBH.
	<u>25</u>	= Total Cover		
Woody Vine Stratum (Plot size:)				Shrub - Woody plants, excluding woody vince
1.				approximately 2 to 20 ft (1 to 6 m) in height
2				
3				Herb – All herbaceous (non-woody) plants, including
4.				herbaceous vines, regardless of size, and woody
5				plants, except woody vines, less than approximately
J				3 ft (1 m) in height.
		= Total Cover		
				Woody vine – All woody vines regardless of height
				Hydrophytic Vegetation Present? Yes No
Remarks: (Include photo numbers here or on a separate	e sheet.)			
Winter/early spring growing conditions				

Profile Descript	ion: (Describe to t	he depth ne	eded to documen	t the indica	ator or conf	irm the al	bsence of indica	ators.)
Depth (inchos)	<u>Matrix</u>	X	Color (moist)	Redox	Features	1.002		Pomarka
0-16	7.5YR 4/2	9 <u>5</u>	5YR 4/6	5	<u>Type</u> C	<u>LUC</u> M	Silt	Nelliaiks
<u> </u>	<u></u>	<u></u>	<u></u>	-	-			
							<u> </u>	
							<u> </u>	
							<u> </u>	
							. <u> </u>	
							<u> </u>	
¹ Type: C=Concer	ntration, D=Depletic	on, RM=Red	uced Matrix, MS=M	lasked San	d Grains.	² Locati	on: PL=Pore Lin	ing, M=Matrix.
Hydric Soil Indie	cators:						Indicators for	Problematic Hydric Soils ³ :
			(Surface (S7)				2 cm Muck ((A10) (MI DA 147)
Histic Epipedo	on (A2)		value Below Surfac	e (S8) (ML	RA 147. 148	3)		e Redox (A16)
Black Histic (A	A3) ´	🗌 Thin	Dark Surface (S9)	(MLRA 14	7, 148) ์	,	(MLRA 147,	, 148)
Hydrogen Sul	fide (A4)	Loar	my Gleyed Matrix (F	-2)			Piedmont FI	oodplain Soils (F19)
\square Stratified Laye	ers (A5) 10) (I RR N)		ox Dark Surface (F6	6)			Red Parent	, 147) Material (TF2)
Depleted Belo	w Dark Surface (A	11) Dep	leted Dark Surface	(F7)			Very Shallov	w Dark Surface (TF12)
Thick Dark Su	irface (A12)	🧴 🔲 Red	ox Depressions (F8	s) í			Other (Expla	ain in Remarks)
Sandy Mucky	Mineral (S1) (LRR	N, ∐ Iron-	Manganese Masse	es (F12) (LF	RR N, MLRA	136)		
\square Sandy Glever	40) I Matrix (S4)		mont Floodplain Sc	vilka 130, bils (F19) (N	122) 11 RA 148)			
Sandy Redox	(S5)			, , , , , , , , , , , , , , , , , , ,				
Stripped Matr	ix (S6)							
³ Indicators of by	drophytic vogotatio	n and wotlan	d bydrology must b	o procont	unloss distur	bod or pr	ablomatic	
Restrictive Lave	er (if observed):		id flydrology ffidst b	e present,		bed of pro		
Type:								
Depth (inches)					1	Hydric So	oil Present?	🖾 Yes 📋 No
Remarks:								

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Greiner Property City/County: Mt. Joy	<u>y Twp./Lancaster</u>	Sampling Date: <u>3/25/22</u>				
Applicant/Owner: Pannatoni Development	ner: <u>Pannatoni Development</u> State: <u>PA</u> Sampling Poin					
Investigator(s): Andrew Young	Section, Township, Rang	je: <u>Mt. Joy Twp</u>	<u>1t. Joy Twp.</u>			
Landform (hillslope, terrace, etc.): Toe of slope	rm (hillslope, terrace, etc.): <u>Toe of slope</u> Local relief (conca): <u>3</u>	
Subregion (LRR or MLRA): LRR S	pregion (LRR or MLRA): LRR S Lat: 40.148884				Datum:	
Soil Map Unit Name: BeD-Bedington channery silt	loam	NWI classification: UPL				
Are climatic / hydrologic conditions on the site typi	cal for this time of year?	🗌 Yes	🗌 No (If no, explain	n in Rema	rks.)	
Are Vegetation [], Soil [], or Hydrology [] signifi	icantly disturbed? Are '	Normal Circum	stances" present?	🛛 Yes	🗌 No	
Are Vegetation , Soil , or Hydrology anatura	ally problematic? (If ne	eeded, explain a	any answers in Rem	arks.)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	☐ Yes ☐ Yes ☐ Yes	⊠ No ⊠ No ⊠ No	Is the Sampled Area within a Wetland?	🗌 Yes	⊠ No
Remarks:					

HYDROLOGY

Wetland Hydrology Indicators:					Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of one is required; check all that apply)					☐ Surface Soil Cracks (B6)			
□ Surface Water (A1) □ True Aquatic Plants (B14)			Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2)		🗌 Hydr	ogen Sulfide Odor (C1)		☐ Drainage Patterns (B10)			
Saturation (A3)		🗌 Oxid	ized Rhizospheres on Living	g Roots (C3)	☐ Moss Trim Lines (B16)			
☐ Water Marks (B1)		Pres	ence of Reduced Iron (C4)		Dry-Season Water Table (C2)			
Sediment Deposits (B2)		🗌 Rece	ent Iron Reduction in Tilled	Soils (C6)	Crayfish Burrows (C8)			
Drift Deposits (B3)		🗌 Thin	Muck Surface (C7)		Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)		Othe	r (Explain in Remarks)		Stunted or Stressed Plants (D1)			
Iron Deposits (B5)					Geomorphic Position (D2)			
Inundation Visible on Aer	ial Imagery	r (B7)			☐ Shallow Aquitard (D3)			
UWater-Stained Leaves (B	9)				Microtopographic Relief (D4)			
🗌 Aquatic Fauna (B13)					☐ FAC-Neutral Test (D5)			
Field Observations:								
Surface Water Present?	🗌 Yes	🛛 No	Depth (inches):					
Water Table Present?	🗌 Yes	🛛 No	Depth (inches):	Wetland Hy	drology Present? 🛛 🗌 Yes 🖾 No			
Saturation Present? (includes capillary fringe)	🗌 Yes	🛛 No	Depth (inches):					
Describe Recorded Data (str	eam gaug	e, monitor	ing well, aerial photos, prev	ious inspectio	ns), if available:			
Remarks:								

VEGETATION (Five Strata) – Use scientific names of plants.

	-			
	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30</u>)	<u>% Cover</u>	Species?	<u>Status</u>	
1. Jugians nigra	<u>30</u>	<u>Y</u>	FACU	Number of Dominant Species
2				That Are OBL, FACVV, of FAC: 0 (A)
3				Total Number of Dominant
4.				Species Across All Strata: 2 (B)
5				
6.				Percent of Dominant Species
0				That Are OBL_EACW_or EAC: 0 (A/B)
<i>I</i>				
	<u>30</u>	= Total Cover		Prevalence Index worksheet:
Sapling Stratum (Plot size:)				
1	<u> </u>			Total % Cover of: Multiply by:
2				OBL species x 1 =
3				
4.				FACW species x 2 =
5				FAC species x 3 =
6				FACU species x 4 =
0				
/	·			UPL species x 5 =
		= Total Cover		Column Totals: (A) (B)
Shrub Stratum (Plot size: <u>15</u>)			54011	$\frac{1}{2} = \frac{1}{2} $
1. <u>Rosa multiflora</u>	20	<u>Y</u>	FACU	
2				Hydrophytic Vegetation Indicators:
3				
4.				1 - Rapid Test for Hydrophytic Vegetation
5.				2 - Dominance Test is >50%
6				\square 3. Dravelance index is <3.01
7.				
	20	= Total Cover		4 - Morphological Adaptations ¹ (Provide
Herb Stratum (Plot size:	20			supporting data in Remarks or on a
1				separate sheet)
·· 2				
2				Problematic Hydrophytic Vegetation
3	·	<u> </u>		(Explain)
4				¹ Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
7.				
8				Tree – Woody plants, excluding woody vines,
0				approximately 20 ft (6 m) or more in height and 3 in.
9				(7.6 cm) or larger in diameter at breast height (DBH).
10				
11				Sapling – Woody plants, excluding woody vines,
12				then 2 in (7.6 cm) DBU
		= Total Cover		unan 3 m. (7.0 cm) DBH.
Woody Vine Stratum (Plot size:)				Shruh Woody plants, excluding woody vines
1				approximately 3 to 20 ft (1 to 6 m) in height
2.				
3				Herb – All herbaceous (non-woody) plants including
A.				herbaceous vines, regardless of size, and woody
ч Е				plants, except woody vines. less than approximately
ə. <u> </u>				3 ft (1 m) in height.
		= Total Cover		· · · ·
				Woody vine – All woody vines, regardless of height.
				Hydrophytic Vegetation Present? □Yes ⊠No
Remarks: (Include photo numbers here or on a separate	sheet)			
Remaine. (molado proto nambolo noro or on a separate	5 511000.)			

Profile Description: (Describe to the depth needed to document the in	dicator or confirm the absence of indicators.)
Depth <u>Matrix</u> Rei	<u>dox Features</u>
0-16 7.5YR 4/4 100	<u>Silt</u>
	<u>loam</u>
¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix. MS=Masked	Sand Grains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
	_
Histosol (A1)	2 cm Muck (A10) (MLRA 147)
☐ Histic Epipedon (A2) ☐ Polyvalue Below Surface (S8)	(MLRA 147, 148) ∐ Coast Prairie Redox (A16)
□ Black Histic (A3) □ Thin Dark Surface (S9) (MLRA	. 147, 148) (MLKA 147, 148) □ Diadmont Electrologic Soile (510)
\square Hydrogen Sunde (A4) \square Loarny Gleyed Matrix (F2)	
\square 2 cm Muck (A10) (LRR N) \square Redox Dark Surface (F6)	\boxtimes Red Parent Material (TF2)
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7)	Very Shallow Dark Surface (TF12)
Thick Dark Surface (A12)	Other (Explain in Remarks)
Sandy Mucky Mineral (S1) (LRR N, 🔲 Iron-Manganese Masses (F12)	(LRR N, MLRA 136)
MLRA 147, 148)	136, 122)
Sandy Gleyed Matrix (54)	<i>9)</i> (MLRA 148)
\Box Saluy Redux (SS)	
³ Indicators of hydrophytic vegetation and wetland hydrology must be prese	ent, unless disturbed or problematic.
Restrictive Layer (if observed):	
Туре:	Hydric Soil Present? Ves 🕅 No
Depth (inches):	
Remarks:	

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Greiner Property City/County: Mt. Joy	<u>y Twp./Lancaster</u>	Sampling Da	te: <u>3/25/22</u>		
Applicant/Owner: Pannatoni Development	State: PA Sampling Point: W4	/DP-7			
Investigator(s): Andrew Young	Section, Township, Range: <u>M</u>	t. Joy Twp.			
Landform (hillslope, terrace, etc.): Seep	Local relief (concave, convex,	none): <u>conca</u>	<u>ive</u> Slope (%)): <u>2</u>	
Subregion (LRR or MLRA): LRR S	Lat: <u>40.148850</u>	Long: <u>-76.54</u>	1817	Datum:	
Soil Map Unit Name: BeD-Bedington channery silt	loam	NWI classific	ation: <u>PEM</u>		
Are climatic / hydrologic conditions on the site typi	cal for this time of year?	🗌 Yes 🛛	No (If no, explair	n in Remar	ˈks.)
Are Vegetation D, Soil D, or Hydrology Signifi	cantly disturbed? Are "Norr	nal Circumsta	inces" present?	🛛 Yes	🗌 No
Are Vegetation], Soil], or Hydrology anatura	ally problematic? (If neede	d, explain any	answers in Rema	arks.)	

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	⊠ Yes ⊠ Yes ⊠ Yes	□ No □ No □ No	Is the Sampled Area within a Wetland?	🛛 Yes	🗌 No
Remarks: Winter growing conditions					

HYDROLOGY

Wetland Hydrology Indicators:					Secondary Indicators (minimum of two required)		
Primary Indicators (minimum	of one is	required;	check all that apply)		Surface Soil Cracks (B6)		
Surface Water (A1)		🗌 True	Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)		
🛛 High Water Table (A2)		🗌 Hydr	rogen Sulfide Odor (C1)		🛛 Drainage Patterns (B10)		
Saturation (A3)		🗌 Oxid	ized Rhizospheres on Living	g Roots (C3)	☐ Moss Trim Lines (B16)		
Water Marks (B1)		□ Presence of Reduced Iron (C4)			Dry-Season Water Table (C2)		
Sediment Deposits (B2)		🗌 Rece	ent Iron Reduction in Tilled	Soils (C6)	Crayfish Burrows (C8)		
Drift Deposits (B3)		🗌 Thin	Muck Surface (C7)		Saturation Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		Other	er (Explain in Remarks)		Stunted or Stressed Plants (D1)		
Iron Deposits (B5)					Geomorphic Position (D2)		
Inundation Visible on Aer	al Imagery	ι (B7)			☐ Shallow Aquitard (D3)		
UWater-Stained Leaves (B	9)				Microtopographic Relief (D4)		
🗌 Aquatic Fauna (B13)					☐ FAC-Neutral Test (D5)		
				•			
Field Observations:							
Surface Water Present?	🛛 Yes	🗌 No	Depth (inches): <u>1</u>				
Water Table Present?	🛛 Yes	🗌 No	Depth (inches): <u>1</u>	Wetland Hy	drology Present? 🛛 🛛 Yes 🗌 No		
Saturation Present? (includes capillary fringe)	🛛 Yes	🗌 No	Depth (inches): <u>0</u>				
Describe Recorded Data (str	eam gaug	e, monitor	ring well, aerial photos, prev	vious inspectio	ns), if available:		
Remarks [.]							

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-7

				1
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	
1				Number of Dominant Species
2				That Are OBL, FACW, or FAC: 1 (A)
2				
3				Total Number of Dominant
4.				Species Across All Strata: 1 (B)
5				Species Across Air Strata. 1 (D)
5		·		Demonstrat Demoissant Oracian
6				Percent of Dominant Species
7.				That Are OBL, FACW, or FAC: 100 (A/B)
		= Total Cover		Durantan an Indonesia da barte
Sanling Stratum (Plot size:				Prevalence index worksneet:
				I otal % Cover of: Multiply by:
2				OBL species x 1 =
3.				
<u> </u>				FACW species x 2 =
	<u> </u>			FAC species x 3 =
5				
6				FACU species x 4 =
7				LIPI species x 5 -
··		- Tatal Cause		
Ohmeth Other terms (Dile to size	·	= Total Cover		Column Totals:(A)(B)
Shrub Stratum (Plot size:)				$D_{rovelence} \ln d_{ov} = D/\Lambda =$
1				
2.				Hydrophytic Vegetation Indicators:
3				
				1 - Rapid Test for Hydrophytic Vegetation
4				
5				2 - Dominance Test is >50%
6				
7				3 - Prevalence Index is ≤3.0 ¹
<i>1</i>				
		= Total Cover		4 - Morphological Adaptations' (Provide
<u>Herb Stratum</u> (Plot size: <u>5</u>)				supporting data in Remarks or on a
1. Impatiens capensis	20	Y	FACW	separate sheet)
2 Grass sp	70	—	NI	
2. <u>01000 0p.</u>	10		<u>141</u>	
3				(Explain)
4				¹ Indicators of hydric soil and wetland hydrology must
5				be present unless disturbed or problematic
<u> </u>				Definitions of Five Verstetion Strate:
0	<u> </u>			Demnitions of Five vegetation Strata:
7				The state of the s
8.				ree – woody plants, excluding woody vines,
Q				approximately 20 ft (6 m) or more in height and 3 in.
				(7.6 cm) or larger in diameter at breast height (DBH).
10				
11				Sapling – Woody plants, excluding woody vines,
12				approximately 20 ft (6 m) or more in height and less
12	00	Tatal Oscilla		than 3 in. (7.6 cm) DBH.
Mandu Mine Other (Distains)	90	= Total Cover		
Woody Vine Stratum (Plot size:)				Shrub – Woody plants, excluding woody vines.
1				approximately 3 to 20 ft (1 to 6 m) in height
2.				
3				Herb – All berbaceous (non-woody) plants, including
5				herbaceous vines, regardless of size, and woody
4				nente executive eductions less than approximately
5				plants, except woody vines, less than approximately
		- Total Cover		3 ft (1 m) in neight.
	<u> </u>			
				Woody vine – All woody vines, regardless of height.
				Hydrophytic Vegetation Present? Myss Mis
Remarks: (Include photo numbers here or on a separate	e sheet.)			
Winter/early spring growing conditions				

Profile Description	on: (Describe to th	e depth ne	eded to documen	t the indica	tor or con	firm the ab	sence of indic	ators.)
Depth (inches)	Color (moist)	%	Color (moist)	<u>Redox I</u> %	-eatures	$l oc^2$	_ Texture	Remarks
0-16	5YR 4/2	95	5YR 4/6	5	<u>Type</u> C	<u>LUC</u> M	Silt	Remarks
<u> </u>	<u></u>		<u></u>	-	-			
							<u> </u>	
							<u> </u>	
				·			<u> </u>	
							<u> </u>	
				·			<u> </u>	
							<u> </u>	
¹ Type: C=Concent	ration, D=Depletior	n, RM=Red	uced Matrix, MS=M	lasked Sand	d Grains.	² Locati	on: PL=Pore Lin	ing, M=Matrix.
Hydric Soil Indica	ators:						Indicators for	Problematic Hydric Soils ³ :
	n (A2)		Surface (S7) value Below Surfac	e (S8) (MI I	RA 147 14	(8)	Coast Prairi	(A10) (MLRA 147) ie Redox (A16)
Black Histic (A	3)		Dark Surface (S9)	(MLRA 147	(, 148)	.0)	(MLRA 147)	, 148)
Hydrogen Sulfi	de (A4)	🗌 Loar	ny Gleyed Matrix (F	-2)			Piedmont F	loodplain Soils (F19)
Stratified Layer	s (A5)	🛛 Dep	eted Matrix (F3)				(MLRA 136	, 147)
2 cm Muck (A1	0) (LRR N)		ox Dark Surface (F	6) (F7)			Red Parent	Material (TF2)
Depleted Belov	V Dark Surface (A1		eted Dark Surface	(F7)			U Very Shallo	w Dark Surface (TF12)
Sandy Mucky M	/ineral (S1) (I RR N		Manganese Masse	9) as (F12) (I R		Δ 136)		
MLRA 147. 14	8)	Umb	ric Surface (F13) (I	MLRA 136.	122)	H 100)		
Sandy Gleyed	Matrix (S4)	Pied	mont Floodplain So	oils (F19) (M	ILRÁ 148)			
Sandy Redox (S5)							
Stripped Matrix	(S6)							
³ Indicators of hvd	rophytic vegetation	and wetlan	d hydrology must b	e present. ι	unless distu	urbed or pro	blematic.	
Restrictive Layer	(if observed):		u julielegy	e precent, e		and out pro		
Туре:						Hydric So	il Procont?	
Depth (inches):						Hyunc 30	II Flesent?	
Pomorko:								
Remarks.								

Appendix IV: Photographic Log



1 - Wetland 1



2 - Wetland 1



3 - Wetland 2



4 - Wetland 3



5 - Wetland 4



6 - Stream 1



7 - Stream 3

Appendix V: Waters of the U.S. Delineation Map



DATE

04/20/2022



ES MD-ATLANTC.LLC HQ26 HUADEBEDTFLACE SLITTE ON SLITTE O	"SETTING THE STANDARD FOR SERVICE"
GRENIER PROPERTY 2843 MT. PLEASANT ROAD	MOUNT JOY, PA
WATERS OF THE US DRAWING	LANDWORKS CIVIL DESIGN, LLC
ECS REVISION ENGINEER DRAF ALY AE SCALE 1" = 1 PROJECT NO. 47:14. SHEET 1 C	5 TING CM 92' 225 DF 1