1590 Canary Road, Quakertown, PA 18951 | 215-536-7006 | Fax: 215-538-6136

VW Consultants LLC

April 21, 2023

Steven N. Kline, AIA
Regan/Kline/Cross
7670 Queen Street, Suite 200
Wyndmoor, PA 19038
via email: s_kline@reganklinecrossllc.com

Re: Wetland/Waters Investigation
222 Church Road
Elkins Park, PA 19027
Cheltenham Township, Montgomery County
TM# 31-00-06637-001

Dear Mr. Kline,

VW Consultants, LLC (VW) is pleased to present this letter summarizing findings of a wetland evaluation completed on March 22, 2023 at the above referenced property. The purpose of the routine investigation was to identify and delineate wetlands and waters of the US and Commonwealth for a proposed residential land development project. This evaluation area was completed throughout the ±5.05 acres property. The property has frontage Church Road and Harrison Ave with paved driveways from each. The property currently contains a stone dwelling and associated outbuildings. The majority of the property is well maintained lawn with scattered mature trees. Site surface drainage is generally toward the south in the direction of Tookany Creek which traverses neighboring lots.

Methodology

The site was evaluated per routine procedures established by *Corps of Engineers Wetland Delineation Manual (1987)* and *Regional Supplement to the Corps of Engineers Wetland Manual: Eastern Mountains and Piedmont Region, (Version 2.0) (2012)*. To qualify as a wetland the manuals require the area to exhibit hydric soils, dominance of hydrophytic vegetation, and wetland hydrology.

VW traversed the project site to identify plant communities and wetland hydrology indicators. Samples points were located in and along low-lying sections of the site most likely to contain wetlands. The project site and delineated wetlands are depicted on the attached *Existing Features* plan, dated July 23, 2021, last revised April 10, 2023, prepared by Robert E. Blue Consulting Engineers, p.c. Locations of the sample points documented on the attached forms are also indicated on the site plan.

Desktop Resource Review and Setting

A review the U.S. Fish and Wildlife Services National Wetlands Inventory (NWI) Map revealed presence of riverine habitat associated with Tookany Creek and a forested wetland within the creeks floodway. Both mapped features are off site and down gradient of the project area.

The current Soil Survey of Montgomery County, Version 6, Sept. 17, 2019, published by the National Resource Conservation Service and accessed via Web Soil Survey indicates soils on the subject site are expected to be Hatboro silt loam (Ha) and Urban land-Udorthents of schist and gneiss (UugB & UugD). The Hatboro soil series is recognized as very deep and poorly drained Inceptisols formed in alluvium from metamorphic and crystalline rock. The Urban land-Udorthents mapping units indicate a combination of manmade impervious coverages and cut/fill lands. Given the site bedrock formation of Wissahickon schist and hillslope position the author would

expect to encountered well drained Glenelg type soil and moderately well Glenville type soil, with an urban component based on the developed condition. Evidence of significant and filling activity was not readily apparent in the upland portion of the project site based on our above grade observations.

Findings

The project site contains a manmade water conveyance structure reported to have been a mill raceway. This raceway is disconnected from the source of surface water as control structures have deteriorated and berms eroded allowing the outlet of water to Tookany Creek upgradient of the project site. A small on-site masonry structure is labelled as Spring House on the Existing Features Plan. During our site visit in late March following a warm wet winter no spring was present at the Spring House. Function of the spring house is likely impacted by changes to the local hydrologic regime as the result of extensive land development or it may have originally functioned as a root cellar.

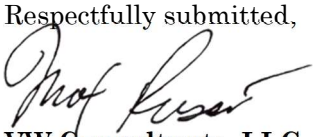
The raceway currently contains a small area of closed grading where surface water is present in small pools at the lowest points. This area meets the criteria of a wetland and was field delineated as such. It is unclear how much of the wetland's hydrology is the result of shallow groundwater or if the wetland is supported by transmission of infiltrated water transmitted via sediment deposits to this low point. To the east and west of the wetland feature the raceway plant communities become more neutral in their affinity for saturated soil conditions and hydrology and hydric soils become absent. The wettest portion of the wetland was unvegetated at the time of our site visit. Margin species include Eurasian buttercup (*Ficaria verna)*, boxelder maple (*Acer negundo)*, and Amur honeysuckle (*Lonicera maackii).*

A natural wetland located at the rear of the Tookany Creek floodplain is present along the toe of the raceway berm. This wetland extends off site to the south. A surface connection from the raceway wetland to the flooplain wetland is present in the form of an erosion channel through the berm. The hydrology source of the floodplain wetland is regional groundwater discharge. The connection with the raceway appears to have minimal impacts on the floodplain wetland hydrology and characteristics. Dominant plants include Eurasian butter cup and boxelder maple, along with skunk cabbage (*Symplocarpus foetidus)* in the most lowlying locations.

Conclusion

The project site includes a wetland regulated by the Commonwealth of Pennsylvania and under Federal jurisdiction administered by the Army Corps of Engineers. The wetland exhibits varying characteristic. The upper portion can be characterized as a manmade depressional wetland to vernal pool during wet springs. The remainder is a backswamp floodplain wetland with drainage channel. The abandoned mill raceway does not exhibit fluvial characteristics that support regulation as a water course. Final jurisdictional boundaries are dependent upon Federal and State field determinations. Should you need any assistance with permitting of disturbance of wetlands or waters please feel free to contact me at 267-498-8778 or by email at mrussick@vw-consultants.com.

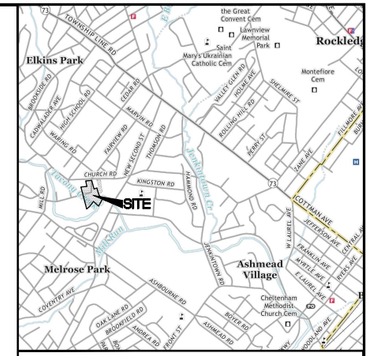
Respectfully submitted,



VW Consultants, *LLC*
Max Russick, CPSS
Soil Scientist

Enclosures: Existing Features Plan (reduced to 11"x17"), NWI Map Figure, Data Forms, NC DWQ Stream Identification Form, Photo Plates

CC: Robert Blue, P.E.- Robert E. Blue Consulting Engineers, P.C.
Michael Baginski, E.I.T.- Robert E. Blue Consulting Engineers, P.C.



LOCATION MAP
SCALE: 1"=2,000'

THE NATIONAL MAP BY U.S.G.S.
FRANKFORD PA 2019 QUADRANGLE

ZONING: R2 – RESIDENTIAL DISTRICT		
	REQUIREMENTS	EXISTING (222 E. CHURCH)
§295-602.A MINIMUM LOT AREA:	10,000 S.F.	5.0503 ACRES (219,992.75 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. BACK FROM FRONT FACADE	<10 FT.[1]
* ADDITIONAL REGULATIONS UNDER §295-603		
[1] EXISTING NON-CONFORMITY		

SURVEY NOTES:

1. THIS PLAN REPRESENTS AN ACTUAL FIELD SURVEY PERFORMED BY CHARLES E. SHOEMAKER, INC. COMPLETED IN FEBRUARY, 2021.
2. SITE DATA:
   CURRENT OWNER: 222 CHURCH ROAD LLC (C/O RABBI ZVI BLOOM)
   C/O RABBI ZVI BLOOM
   509 CEDARHILL ROAD
   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: CHELTENHAM TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA
3. 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.
4. 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.
5. THE VERTICAL DATUM FOR THIS SITE IS NAVD 1988 BASED ON GPS OBSERVATIONS.
6. PA ONE CALL SERIAL NUMBER: SERIAL #20212303507, DATED AUGUST 21, 2021
7. THE GROSS AND NET AREA OF 222 E. CHURCH ROAD IS 272,238 S.F. OR 6.2497 ACRES.
8. 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.
9. 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.
10. PLAN REFERENCES:
    10.1. SUBDIVISION PLAN 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 – URDORTHENTS	0 – 8	C	> 60"	WELL DRAINED	NO
UugD	URBAN LAND – UDORTHENTS	8 – 25	C	> 60"	WELL DRAINED	NO
W	WATER	–	–	–	–	–

LEGEND

- STORM INLET TYPE 'C'
- STORM INLET TYPE 'M'
- STORM MANHOLE
- SANITARY MANHOLE
- U.P. UTILITY POLE
- L.P. LAMP POST
- F.H. FIRE HYDRANT
- W.V. WATER VALVE
- STEEP SLOPES (15%–25%)
- VERY STEEP SLOPES (>25%)
- STREAM
- FLOODPLAIN
- Wetland Sample Point (added by VW)
- 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
- WETLANDS 'A'
- WETLANDS FLAG DESIGNATION

REVISIONS
3) 2021-12-23: REV. PER TREE SURVEY
4) 2022-02-01: REV. PER TWP. REVIEW LETTERS
5) 2022-02-25: REV. PER ADD'L TREE SURVEY
6) 2022-03-04: REV. PER ADD'L TREE SURVEY
7) 2022-04-14: REV. PER ADD'L TREE SURVEY
8) 2022-08-01: REV. PER TWP. REVIEWS
9) 2022-09-28: ISSUED FOR FINAL LD REVIEW
10) 2023-02-03: REV. PER TWP. REVIEWS
11) 2023-03-31: REV. PER TWP. REVIEWS
12) 2023-04-05: REV. WETLANDS DELINEATION & FLAGGING

U.S. 5 STATEMENT
ALL KNOWN PERSONS, FIRMS OR CORPORATIONS OWNING PROPERTY ADJOINING THE SUBDIVISION OR LAND DEVELOPMENT AS WELL AS ALL KNOWN PERSONS, FIRMS OR CORPORATIONS WHO HAVE AN EASEMENT OR RIGHT-OF-WAY ACROSS THE PROPERTY TO BE SUBDIVIDED OR DEVELOPED, INCLUDING THOSE ACROSS A ROAD OR OTHER PUBLIC WAY, HAVE BEEN NOTIFIED OF THE PROPOSED SUBDIVISION OR LAND DEVELOPMENT PLAN.

FINAL PLAN
EXISTING FEATURES

222 CHURCH ROAD
CHELTENHAM TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA

PREPARED FOR
222 CHURCH ROAD LLC
C/O RABBI ZVI BLOOM
509 CEDARHILL ROAD
FAR ROCKAWAY, NY 11691

REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA – REGISTERED PROFESSIONAL – ROBERT E. BLUE, JR. – ENGINEER No. PE045915
4/11/2023
ROBERT E. BLUE JR. (DATE)
LICENSE NO. 26169-E

PROFESSIONAL LAND SURVEYOR
COMMONWEALTH OF PENNSYLVANIA – REGISTERED PROFESSIONAL – ROBERT E. BLUE, JR. – LAND SURVEYOR No. SU1323A
4/11/2023
ROBERT E. BLUE JR. (DATE)
LICENSE NO. SU1323A

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

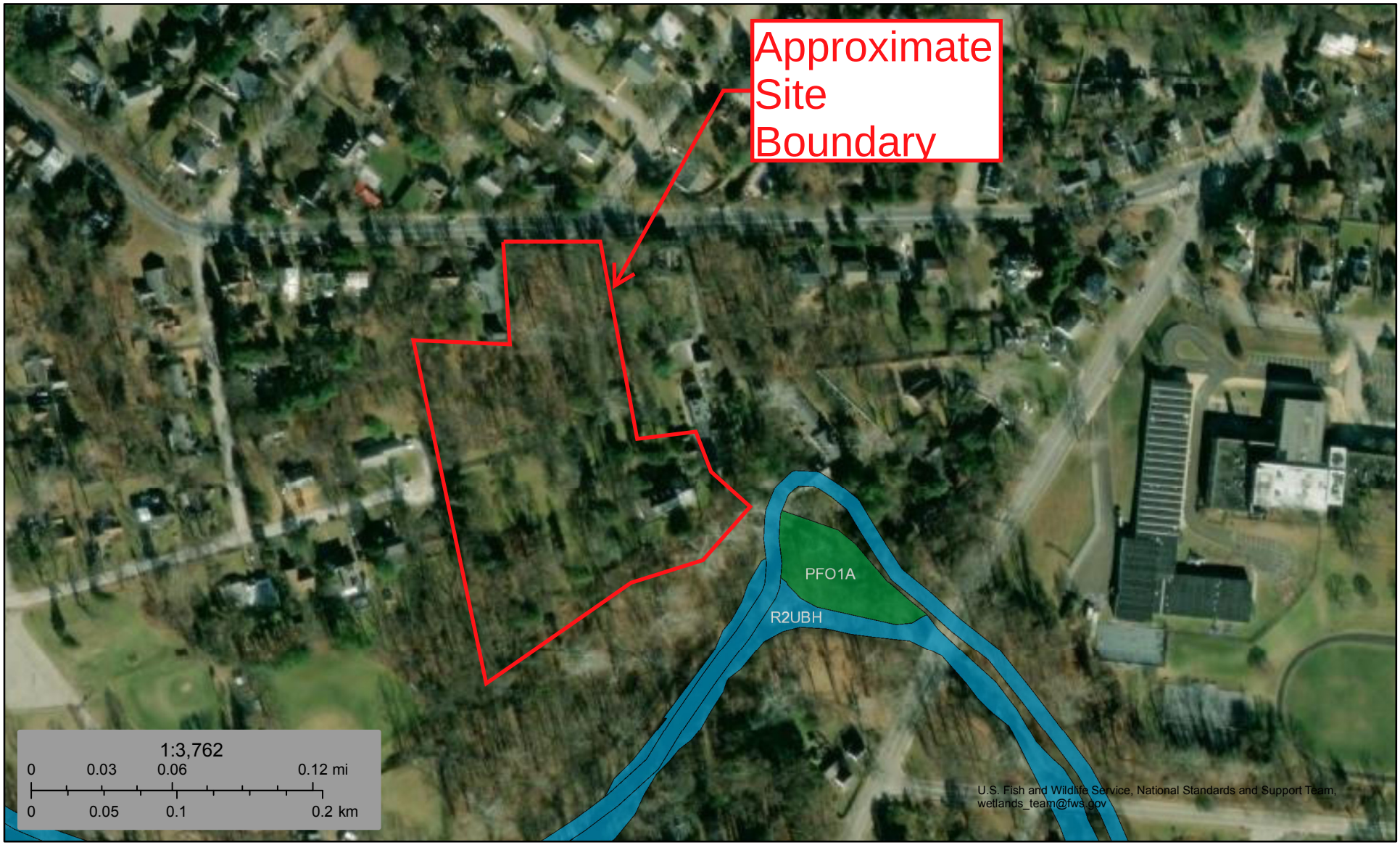
GRAPHIC SCALE 0 50 100 150 200

DRAWN BY: DJG	CHECKED BY: REB	SCALE: 1"=50'
DATE: 2021-07-23	JOB NUMBER: 2154-10E	SHEET NUMBER: 4 of 31

LAST SAVED: W:\Proj\2154-10\dwg\Sets\LD\2154-10 EX FEATURES.dwg ON 4/11/2023 8:54 AM

U.S. Fish and Wildlife Service
National Wetlands Inventory

222 Church Road



April 20, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: 222 Church Road City/County: Montgomery Co. Sampling Date: 3/22/23

Applicant/Owner: 222 Church Road LLC State: PA Sampling Point: 1

Investigator(s): Max Russick Section, Township, Range: Cheltanham Twp.

Landform (hillside, terrace, etc.): Artificial Terrace Local relief (concave, convex, none): Concave Slope (%): 1-2

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: 40.06911 Long: -75.11680 Datum: WGS 84

Soil Map Unit Name: Hatboro NWI classification: Vernal Pool/PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes X	No ____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Site Evaluated during seasonally wet conditions at beginning of growing season.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 1

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	5	Yes	FAC
2. *Fraxinus americana*	1	No	FACU
3.			
4.			
5.			
6.			
7.			
	6	=Total Cover	
50% of total cover: 3		20% of total cover:	2
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. *Lonicera maackii*	15	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15	=Total Cover	
50% of total cover: 8		20% of total cover:	3
Herb Stratum (Plot size: 5' Radius)			
1. *Ficaria verna*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2
Woody Vine Stratum (Plot size: 30' Radius)			
1. *Vitis sp.*	2	No	
2. *Celastrus sp.*	2	No	
3.			
4.			
5.			
	4	=Total Cover	
50% of total cover: 2		20% of total cover:	1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	1	x 4 =	4
UPL species	15	x 5 =	75
Column Totals:	31 (A)		124 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 2.5/1	100					Loamy/Clayey	
3-16	2.5Y 3/1	92	7.5YR 4/6	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations
			2.5Y 4/2	2	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None Observed

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: 222 Church Road City/County: Montgomery Co. Sampling Date: 3/22/23

Applicant/Owner: 222 Church Road LLC State: PA Sampling Point: 2

Investigator(s): Max Russick Section, Township, Range: Cheltanham Twp.

Landform (hillside, terrace, etc.): Artificial Terrace Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: 40.06898 Long: -75.11710 Datum: WGS 84

Soil Map Unit Name: Hatboro NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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?	Yes ____	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 14
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 13

Wetland Hydrology Present? **Yes** ____ **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Site Evaluated during seasonally wet conditions at beginning of growing season. Stream assessment data also collected at this location.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 2

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10 =Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. *Lonicera maackii*	5	Yes	UPL
2. *Ligustrum sp.*	5	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 =Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5' Radius)			
1. *Ficaria verna*	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 =Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30' Radius)			
1. *Vitis sp.*	2	No	
2.			
3.			
4.			
5.			
	2 =Total Cover		
50% of total cover: 1	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	10	x 5 =	50
Column Totals:	110 (A)		350 (B)

Prevalence Index = B/A = 3.18

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 2/1	100					Loamy/Clayey	
14-20	2.5Y 3/2	90	7.5YR 5/6	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10) **(LRR N)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Mucky Mineral (F1) **(MLRA 136)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 122, 136)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(MLRA 147)**
___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None Observed
Depth (inches): ____

Hydric Soil Present? **Yes** ____ **No** ____

Remarks:
Soil derived from deposition in mill raceway. No oxidized rhizospheres could be located along living roots.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: 222 Church Road City/County: Montgomery Co. Sampling Date: 3/22/23

Applicant/Owner: 222 Church Road LLC State: PA Sampling Point: 3

Investigator(s): Max Russick Section, Township, Range: Cheltanham Twp.

Landform (hillside, terrace, etc.): Floodplain Terrace Local relief (concave, convex, none): Linear Slope (%): 0-2

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: 40.069035 Long: -75.1167 Datum: WGS 84

Soil Map Unit Name: Hatboro NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 14
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 6

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Site Evaluated during seasonally wet conditions at beginning of growing season. Surface water only present in chanel traversing the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 3

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	20	Yes	FAC
2. *Acer platanoides*	5	Yes	UPL
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5

Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. *Acer negundo*	5	Yes	FAC
2. *Viburnum dentatum*	2	No	FAC
3. *Euonymus alatus*	10	Yes	UPL
4.			
5.			
6.			
7.			
8.			
9.			
	17	=Total Cover	
50% of total cover: 9		20% of total cover:	4

Herb Stratum (Plot size: 5' Radius)			
1. *Ficaria verna*	90	Yes	FAC
2. *Symplocarpus foetidus*	5	No	OBL
3. *Reynoutria japonica*	1	No	FACU
4. *Ligustrum sp.*	1	No	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	97	=Total Cover	
50% of total cover: 49		20% of total cover:	20

Woody Vine Stratum (Plot size: 30' Radius)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	117	x 3 =	351
FACU species	1	x 4 =	4
UPL species	15	x 5 =	75
Column Totals:	138 (A)		435 (B)

Prevalence Index = B/A = 3.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Loamy/Clayey	
8-14	2.5Y 4/1	80	7.5YR 5/6	5	C	PL	Loamy/Clayey	Prominent redox concentrations
			10YR 4/2	5	D	M		
14-20	10YR 4/2	90	7.5YR 5/6	5	C	PL	Loamy/Clayey	Prominent redox concentrations
			10YR 4/2	5	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None Observed

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

NC DWQ Stream Identification Form Version 4.11

Date: 3-22-2023	**Project/Site:** 222 Church Rd	**Latitude:**
Evaluator: Max Russick	**County:** Montgomery	**Longitude:**
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 4.5	**Stream Determination (circle one)** Ephemeral Intermittent Perennial	**Other** *e.g. Quad Name:*

Abandoned / Disconnected Mill Raceway – not a water course

A. Geomorphology (Subtotal = 1)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	(0)	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	(0)	0.5	1	1.5
11. Second or greater order channel	(No = 0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 3.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		(Yes = 3)	

C. Biology (Subtotal = 0)				
18. Fibrous roots in streambed	3	2	1	(0)
19. Rooted upland plants in streambed	3	2	1	(0)
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Sample reach is centered around wetland Sample Point - 2. Raceway floor is blanketed by Eurasian buttercup, a terrestial facultative species.

Sketch:

See Existing Features plan by Robert E. Blue Consulting Engineers, P.C.

<u>222 Church Road</u>

Cheltenham Twp., Montgomery County

March 22, 2023

Photo 1: View of Raceway From Lawn; Facing South

Photo 2: View of Raceway at SP-2,Facing North-northeast

Photo 3: Typical Upland Lawn Condition

Photo 4: Wetland within Floodplain; Facing West