

Prepared For:

Abundant Solar Energy, Inc
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Prepared By:

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Environmental Impact Statement

SUNN 1020, LLC

MOUNT JOY TOWNSHIP
LANCASTER COUNTY, PENNSYLVANIA
SEPTEMBER 2026

Table of Contents

1.0	PROJECT DESCRIPTION	2
2.0	SOIL TYPES	2
3.0	SURFACE WATERS	2
4.0	GROUND COVER INCLUDING VEGETATION AND ANIMAL LIFE	3
5.0	TOPOGRAPHY AND GEOLOGY.....	4
6.0	GROUNDWATER	4
7.0	WATER SUPPLY	5
8.0	SEWAGE SYSTEM	5
9.0	SOLID WASTE	5
10.0	AIR QUALITY	5
11.0	NOISE.....	6
12.0	LAND AND WATER SURFACE USE AND COMMUNITY CHARACTERISTICS	6
13.0	CRITICAL IMPACT AREAS	6
14.0	HISTORIC RESOURCES	7
15.0	TRANSPORTATION NETWORK	7
16.0	LAW ENFORCEMENT	7
17.0	COMMUNITY FACILITIES AND SERVICES	7
18.0	ECONOMIC AND SOCIAL IMPACTS	7
19.0	CONSTITUENT LEACHING FROM ARRAY METAL POSTS	8
20.0	ADDITIONAL CONSIDERATIONS.....	8
21.0	REFERENCES.....	10
22.0	LIST OF PREPARERS	11

LIST OF APPENDICES

APPENDIX A – FIGURES

APPENDIX B – PROJECT DOCUMENTS

1.0 PROJECT DESCRIPTION

Abundant Solar (“Applicant”) is proposing the SUNN 1020, LLC (“Project”) to be located at 1127 Grandview Road in Mount Joy Township, Pennsylvania. The Project will consist of a 3.0-megawatt (MW_{ac}) AC Rated solar electric energy facility. The proposed Project’s limit of disturbance (“Project Site”) will occupy an approximately 14-acre area (refer to Appendix A, Figure 1 – USGS Site Location Map). The Project Area is located on one tax parcel; Parcel number 461-2308132-296713-0-000, with a total area of +/- 56.28 acres. The proposed solar project is an Accessory Use to the Principle Use of the property. Existing use of the Project Site is agricultural. As part of the Environmental Impact Statement (EIS) various studies and screenings were performed on the Project Site or Project Area. The results of those studies and the associated area as well as recent desktop analysis performed by LaBella Associates, DPC (LaBella) are discussed throughout this report.

The Project includes the construction, operation, and maintenance of the solar energy system. The Project Site is currently privately owned by Kevin L. Mummau, and the Project Area will be leased by the Applicant. As to maintain the continued use of farming operations the agreement between the landlord and the tenant allows both parties the right to conduct agrivoltaics on the property within the project area. Agrivoltaics involves active livestock grazing (in this case sheep grazing) to occur within the fenced area of the project. The Project will include proposed clearing, grading, installation of solar panels and electrical equipment, access roads, and stormwater control features. The panel area will be enclosed with a chain link perimeter fence and will have access from Cloverleaf Road.

2.0 SOIL TYPES

The Soil Survey from NRCS Web Soil Survey indicates there are five (5) soil map units within the project area. There is one soil map unit, Blairton silt loam, considered moderately well drained while all others are considered well drained. See Appendix B for Soils Map and additional characteristics of the soil.

3.0 SURFACE WATERS

- a. Distance of site from nearest surface water and head waters of streams:
 - Two (2) Intermittent PADEP TMDL Trout Stocking (TSF) with Migratory Fish Streams. Stream 1 enters the study area from the west, flows east, and continues to the outside of the eastern boundary of the study area. Stream 2 flows east via an underground culvert, surfaces shortly, and then continues alongside the eastern boundary of the study area.
 - This stream segment is a part of Chiques Creek and has an approved Total Maximum Daily Load (TMDL) addressing: siltation, total suspended solids, and turbidity.
 - One (1) Ephemeral PADEP Unclassified Ditch which flows north, joins stream 1, and continues outside the eastern boundary of the study area.
 - Two (2) Wetlands. Wetland 1 is a 0.01-acre palustrine emergent wetland originating from a depression around intermittent Stream 1 in the northern portion of the study area. Wetland 2 is a 0.37-acre palustrine emergent wetland originating

from a depression around intermittent Stream 1 at the bottom of the hillslope along the northeastern portion of the study area.

- b. Sources of water runoff:
 - Precipitation and surface runoff.
- c. Rate of runoff:
 - A PCSM Plan will be executed for the Project to ensure that the runoff peak rate and volume will be reduced to below pre-development conditions for all associated design storms.
- d. Destination of runoff and method of controlling downstream effects:
 - Stormwater Control Measures (SCMs) and Best Management Practices (BMPs) will be utilized during design and construction to protect against erosion and maintain peak rate, volume, and water quality.
- e. Chemical additives to runoff water on site:
 - N/A
- f. Submission of E&S Plan meeting requirements of Mount Joy Township and Lancaster County Conservation District:
 - An E&S Plan will be submitted to Mount Joy Township and Lancaster County Conservation District following the approval from the Zoning Board, as part of the Land Development Package for the Project.
- g. Stormwater management plan developed in coordination with the E&S Plan.
 - A Stormwater Management Plan will be submitted to Mount Joy Township and Lancaster County Conservation District following the approval from the Zoning Board, as part of the Land Development Package for the Project.

4.0 GROUND COVER INCLUDING VEGETATION AND ANIMAL LIFE

- a. Extent of existing impervious ground cover on site:
 - The Project Site does not include any existing structures, and there is no existing impervious ground cover on site. It should be noted that the Project Site is located on a larger parcel that includes a dwelling, two barns, a carport, and driveway.
- b. Extent of proposed impervious ground cover on site:
 - 0.22 acres of proposed impervious (access road, turnarounds, and associated equipment pads).
- c. Extent of existing vegetative cover on site:
 - Existing vegetative cover consists primarily of good condition pasture.
- d. Extent of proposed vegetative cover on site:
 - Approximately 14 acres of the project area will be vegetated with a meadow seed mix, including underneath the solar panels.
- e. Type of animal life and effect on the habitat:
 - The Project was submitted to the Pennsylvania Natural Diversity Inventory (PNDI) on June 4, 2026, to screen the project area for threatened, endangered, or candidate species as well as critical habitats under the PA Game Commission

(PCG), PA Department of Natural Resources (PA DCNR), PA Fish and Boat Commission, and US Fish and Wildlife service (USFWS) jurisdictions.

- According to PNDI, the Pennsylvania Department of Conservation and Natural Resources identified no known or anticipated impacts requiring further review or consultation. Further consultation is required with USFWS and PA Fish and Boat Commission.
- The USFWS publishes lists of the occurrence of Federally protected Species or potential “Critical Habitat” of protected species by County, which is available through the Information, Planning, and Conservation (IPaC) online service. A species lists states that the Indiana Bat (endangered), Tricolored Bat (endangered), Bog Turtle (endangered), and Monarch Butterfly (proposed threatened) were flagged within the vicinity of the Project Area. No USFWS critical habitats designated for the listed species overlap with the Study Area. Further consultation regarding the Bog Turtle is required through USFWS. See Appendix B for additional information regarding the PNDI report.
- No impact is expected to existing wildlife onsite, as vegetation will remain present beneath solar panels. The proposed chain link fence includes a wildlife gap to help animals pass in and out of the fenced area safely.

5.0 TOPOGRAPHY AND GEOLOGY

- a. Maximum existing elevation:
 - 490’
- b. Minimum existing elevation:
 - 418’
- c. Max proposed:
 - 490’
- d. Min proposed:
 - 418’
- e. Description of the topography of the site and any special topographic features, and any proposed changes in topography:
 - The topography of the Project Area is sloped in areas, with elevations ranging from 418 feet to 490 feet above mean sea level (AMSL). No changes in overall topography are anticipated as part of Project construction or operation.
- f. Surface and subsurface geology:
 - No geotechnical investigation has been performed to date.

6.0 GROUNDWATER

- a. Average depth to seasonal high-water table:
 - Unknown
- b. Minimum depth to water table:
 - 20.9 inches
- c. Maximum depth to water table:
 - >78.7 inches

- d. Quality:
- Unknown. No groundwater quality testing has been conducted. The proposed project does not include construction of private or community wells and is not expected to impact or reduce groundwater quality or supply.

7.0 WATER SUPPLY

- a. Source and adequacy of water to be provided to site:
- Sources of water include groundwater and two (2) Intermittent PADEP TSF Streams. Stream 1 enters the study area from the west, flows east, and continues on the outside of the eastern boundary of the study area. Stream 2 flows east via an underground culvert, surfaces shortly, and then continues alongside the eastern boundary of the study area. No water use is anticipated for the project.
- b. Projected water requirements (G.P.D.) for the site:
- N/A
- c. Uses to which the water will be put:
- N/A

8.0 SEWAGE SYSTEM

There is no existing sewage system within the project site. Any sewage treatment system would be associated with the dwelling located along Grandview Road.

9.0 SOLID WASTE

- a. Estimated quantity of solid waste to be developed and/or processed on site during and after construction:
- N/A
- b. Method of disposal and/or processing of solid waste during and after construction:
- N/A
- c. Plans for recycling solid waste during and after construction:
- N/A

10.0 AIR QUALITY

- a. Estimated changes in air quality due to construction activities at the site during and after construction:
- As the proposed improvements will not result in any air emissions, no impacts will occur. The operation of construction vehicles will result in minor, temporary emissions of exhaust but will not significantly impact air quality.
- b. Plans for control of emissions affecting air quality:
- N/A

11.0 NOISE

- a. Noise levels, above existing levels, anticipated to be generated at the site, (source and magnitude), for pre-construction, during construction, and post-construction:
 - There is no pre-construction noise aside from ambient levels; general noise associated with construction activities is anticipated; slight hum from panels/equipment pads, which are located towards the center of the project to be as far away from surrounding parcels as possible. See Noise Study provided for detailed information on anticipated noise generated at the site.
- b. Proposed method for controlling additional noise on-site during and after construction.
 - Noise associated with the construction of the project will be limited to the approved work hours of the project, usually Monday – Friday, 8am – 5pm with some limited weekend hours.

The Project will not produce operating noise exceeding the local ambient noise level. Any temporary, minor increases in noise during construction will not result in significant impacts.

12.0 LAND AND WATER SURFACE USE AND COMMUNITY CHARACTERISTICS

- a. Past and present use of the site with particular attention to storage and disposal of hazardous waste:
 - The Project Site has historically consisted of agricultural and forested land. There is no documentation of storage and/or disposal of hazardous waste.
- b. Adjoining land uses and character of the area:
 - Adjoining land uses include residential, agricultural, and undeveloped land.
- c. Type and concentration of existing watercraft use:
 - There are no navigable waterways within or adjacent to the Project Site.

It is noted that the Project will be surrounded by dense vegetation on the sides and will not be visible from Grandview Road.

13.0 CRITICAL IMPACT AREAS

Article 2 Critical Area Definition: An area with one or more of the following characteristics: (1) slopes in excess of twenty percent; (2) flood plain and/or wetlands; soils classified as having a high-water table; (4) soils classified as highly erodible, subject to erosion or highly acidic; (S) land incapable of meeting percolation requirements.

- Slopes do not exceed twenty percent on the Project Site. Soils include: BeD, Bedington Channery Silt Loam, 15 to 25 percent slope, 16.3% AOI. Project construction is not anticipated to negatively impact these areas, as vegetation will remain present on the slopes due to minimal disturbance when installing solar panels (driven piles) Additionally, compost filter socks will be utilized to help minimize soil erosion during construction and the entire project site is proposed to receive additional meadow seeding mix for any areas that were disturbed during construction.
- The Project Area is not located within any FEMA floodway or 100-Year flood zones

- A wetland and stream delineation completed by LaBella in July of 2026 identified two perennial streams, one ephemeral ditch, and two wetlands within the Project Site. Current project plans do not impact either watercourse or wetland including adjoining areas.
- Soils listed have Hydric properties and listed as Mineral Wetlands:
 - Blairton silt loam, 3 to 10 percent slopes.

14.0 HISTORIC RESOURCES

A review of the National Register of Historic Places (NRHP) did not indicate any NRHP listed sites on or in the immediate vicinity of the Project Site. A review of the PA-State Historic and Archaeological Resource Exchange (PA-SHARE) also did not flag any state listed sites or surveys within or adjoining the Project Site. Consultation with PA-SHPO is recommended to confirm any state resources that may be affected by the Project.

No archeological investigations have been performed.

15.0 TRANSPORTATION NETWORK

The Project is accessible by motor vehicle from Grandview Road. The Project is not anticipated to produce significant disturbances to transportation. Any temporary, minor increases in congestion during construction will not result in significant impacts.

16.0 LAW ENFORCEMENT

The Project Area is located in Mount Joy Township, Pennsylvania. This township is served by the Northwestern Regional Police. Minimal impacts to local law enforcement agencies are anticipated as part of this Project.

17.0 COMMUNITY FACILITIES AND SERVICES

The Project Site is in a rural area; the nearest hospital is Penn State Health Lancaster Medical Center located approximately eleven (11) miles southeast of the Project Site. Project construction and operation are not anticipated to impact current community facilities or services. The Project will provide clean energy to the nearby community.

18.0 ECONOMIC AND SOCIAL IMPACTS

The Pennsylvania Department of Environmental Protection (PADEP) defines Environmental Justice Areas as any census tract where 20% or more individuals live at or below the federal poverty line, and/or 30% or more of the population identifies as a non-white minority, based on data from the U.S. Census Bureau and the federal guidelines for poverty.

The Project is expected to improve public health conditions by helping to reduce the area's reliance on non-renewable energy sources that emit harmful air pollutants. Additionally, the Project Area is not within an Environmental Justice Area and will not have an impact on any disadvantaged community.

19.0 CONSTITUENT LEACHING FROM ARRAY METAL POSTS

Metal solar posts are typically fabricated from galvanized steel or aluminum and are designed to be resistant to environmental conditions including soil exposure. The risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens unprotected steel and contributes to the release of iron oxides. The rate of corrosion is based mainly on the following characteristics: electrical resistivity/conductivity, reduction/oxidation (Redox) potential, presence of sulfides, and chloride ion content (Cl⁻); soil moisture content, grain size distribution, and acidity (pH). Given the limited surface area of the posts relative to the size of the Project Area and the use of corrosion resistant materials, constituent leaching from the array posts is not anticipated to adversely impact soil, surface water, or groundwater resources.

20.0 ADDITIONAL CONSIDERATIONS

- a. Description of alternatives to the proposed use:
 - The Project was developed through an iterative design process that was intended to avoid impacts and increase efficiency. Through the iterative design process, numerous designs were evaluated before arriving at the proposed Project, which were eliminated due to their potential to impact natural resources present on the Project Area and/or their larger footprint.
- b. Statement of any adverse impacts which cannot be avoided:
 - No adverse impacts are anticipated due to Project construction or operation.
- c. Environmental protection measures, procedures, and schedules to minimize damage to critical impact areas during and after construction:
 - Some ways that the Project was mitigated to reduce potential impacts include limiting the footprint to avoid sensitive wetland habitat, consulting with federal and state agencies to avoid and mitigate impacts on threatened and endangered species and reseeding the site with native vegetation following construction activities.
- d. A list of all licenses, permits, and other approvals required by municipal, county, or state law and the status of each:
 - General NPDES Permit – To be Completed and Submitted to Lancaster County Conservation District
 - E&S Plans– To be Completed and Submitted to Lancaster County Conservation District
 - Land Development Plan –To be Completed and Submitted to Mount Joy Township
 - Special Exception – To be Approved by Mount Joy Township
 - Building Permit – To be Obtained from Mount Joy Township
 - PNDI Review – Submitted to Agency and No Impacts Found
 - PHMC Clearance Summary Letter – To Be Completed and Letter of No Effects Received from Agency

- PCSM Plans – To Be Completed and Submitted to Lancaster County Conservation District for Approval
 - Infiltration Test Results – To Be Completed
- e. A listing of steps proposed to minimize environmental damage to the site and region during and after construction:
- The Project was designed with a minimized footprint to avoid sensitive habitat. Additionally, an ES&C plan will be developed for the Project and BMPs will be implemented during and after construction to minimize any impact to the Project Area or surrounding region. The site will also be reseeded with native vegetation following construction.

21.0 REFERENCES

Soil Survey Staff. 2026. Web Soil Survey. United States Department of Agriculture Natural Resource Conservation Service. Available at: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm> (accessed September 2026)

USDA-NRCS. 1985. Soil Survey of Lancaster County, Pennsylvania. United States Department of Agriculture Soil Conservation Service in cooperation with Cornell University Agricultural Experiment Station, Washington, D.C. Available at:

22.0 LIST OF PREPARERS

- LaBella Associates, DPC

APPENDIX A

Figures

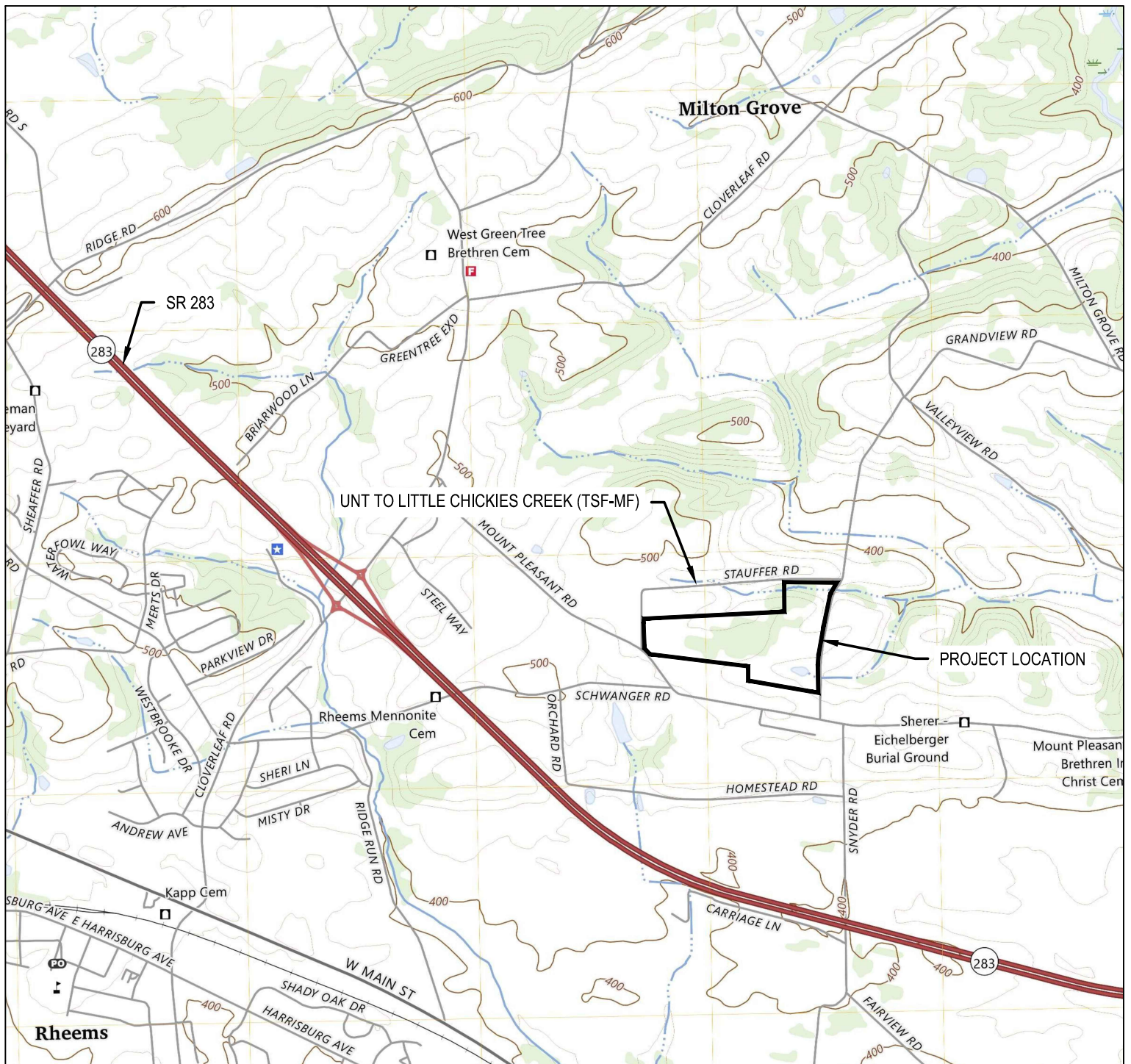
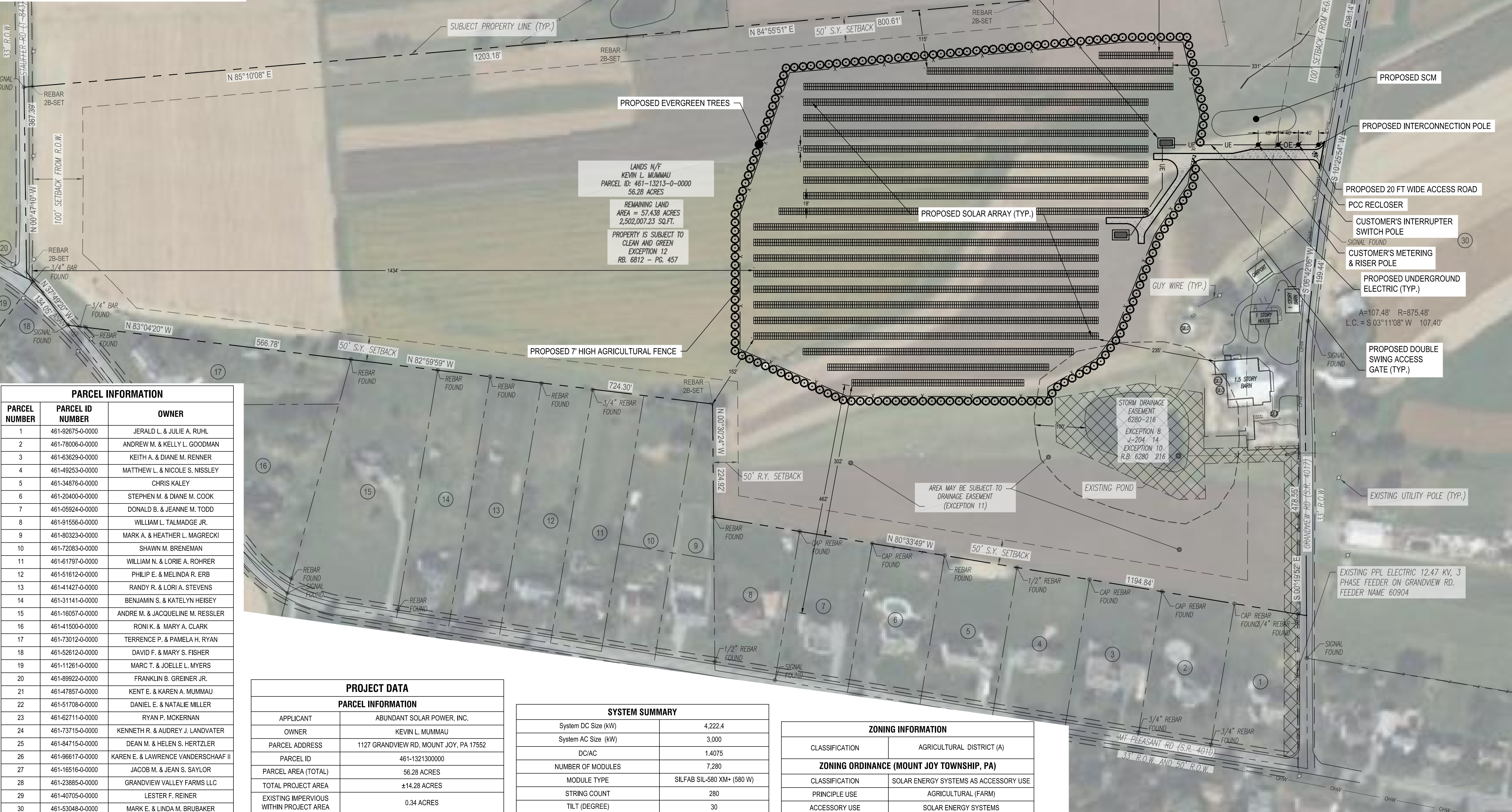


FIGURE 1
LOCATION MAP
1127 GRANDVIEW ROAD SOLAR PROJECT
1127 GRANDVIEW ROAD
MOUNT JOY TOWNSHIP
LANCASTER COUNTY, PA
US GEOLOGICAL SURVEY MAP
ELIZABETHTOWN, PA
SCALE: 1" = 2000'



LEGEND

EXISTING	PROPOSED	DESCRIPTION
---	---	SUBJECT PROPERTY LINE
---	---	PROPERTY LINE
---	---	RIGHT-OF-WAY
---	---	SETBACK LINE
---	---	EDGE OF PAVEMENT
		ACCESS ROAD
		BUILDING
-x-	-x-	AGRICULTURAL FENCE
---	---	STREAM
		WETLAND
---	---	WETLAND BUFFER
Ø	Ø	UTILITY POLE
---	---	UNDERGROUND ELECTRIC
---	---	OVERHEAD ELECTRIC



PARCEL INFORMATION		
PARCEL NUMBER	PARCEL ID NUMBER	OWNER
1	461-92675-0-0000	JERALD L. & JULIE A. RUHL
2	461-78006-0-0000	ANDREW M. & KELLY L. GOODMAN
3	461-63629-0-0000	KEITH A. & DIANE M. RENNER
4	461-49253-0-0000	MATTHEW L. & NICOLE S. NISSLEY
5	461-34876-0-0000	CHRIS KALEY
6	461-20400-0-0000	STEPHEN M. & DIANE M. COOK
7	461-05924-0-0000	DONALD B. & JEANNE M. TODD
8	461-91556-0-0000	WILLIAM L. TALMADGE JR.
9	461-80323-0-0000	MARK A. & HEATHER L. MAGRECKI
10	461-72083-0-0000	SHAWN M. BRENNEMAN
11	461-61797-0-0000	WILLIAM N. & LORIE A. ROHRER
12	461-51612-0-0000	PHILIP E. & MELINDA R. ERB
13	461-41427-0-0000	RANDY R. & LORI A. STEVENS
14	461-31141-0-0000	BENJAMIN S. & KATELYN HEISEY
15	461-16057-0-0000	ANDRE M. & JACQUELINE M. RESSLER
16	461-41500-0-0000	RONI K. & MARY A. CLARK
17	461-73012-0-0000	TERRENCE P. & PAMELA H. RYAN
18	461-52612-0-0000	DAVID F. & MARY S. FISHER
19	461-11261-0-0000	MARC T. & JOELLE L. MYERS
20	461-89922-0-0000	FRANKLIN B. GREINER JR.
21	461-47857-0-0000	KENT E. & KAREN A. MUMMAU
22	461-51708-0-0000	DANIEL E. & NATALIE MILLER
23	461-62711-0-0000	RYAN P. MCKERNAN
24	461-73715-0-0000	KENNETH R. & AUDREY J. LANDVATER
25	461-84715-0-0000	DEAN M. & HELEN S. HERTZLER
26	461-96617-0-0000	KAREN E. & LAWRENCE VANDERSCHAAF II
27	461-16516-0-0000	JACOB M. & JEAN S. SAYLOR
28	461-23885-0-0000	GRANDVIEW VALLEY FARMS LLC
29	461-40705-0-0000	LESTER F. REINER
30	461-53048-0-0000	MARK E. & LINDA M. BRUBAKER

PROJECT DATA	
PARCEL INFORMATION	
APPLICANT	ABUNDANT SOLAR POWER, INC.
OWNER	KEVIN L. MUMMAU
PARCEL ADDRESS	1127 GRANDVIEW RD, MOUNT JOY, PA 17552
PARCEL ID	461-1321300000
PARCEL AREA (TOTAL)	56.28 ACRES
TOTAL PROJECT AREA	±14.28 ACRES
EXISTING IMPERVIOUS WITHIN PROJECT AREA	0.34 ACRES
PROPOSED IMPERVIOUS WITHIN PROJECT AREA	±4.29 ACRES
PANEL COVERAGE	7.62%
TOTAL DISTURBANCE AREA	±14.28 ACRES

SYSTEM SUMMARY	
System DC Size (kW)	4,222.4
System AC Size (kW)	3,000
DC/AC	1.4075
NUMBER OF MODULES	7,280
MODULE TYPE	SILFAB SIL-580 XM+ (580 W)
STRING COUNT	280
TILT (DEGREE)	30
PITCH (FT)	31
AZIMUTH (DEGREE)	0
FENCED AREA FOOTPRINT (ACRE)	12.9
POI GPS COORDINATES	40.142008, -76.531866

ZONING INFORMATION		
CLASSIFICATION	AGRICULTURAL DISTRICT (A)	
ZONING ORDINANCE (MOUNT JOY TOWNSHIP, PA)		
CLASSIFICATION	SOLAR ENERGY SYSTEMS AS ACCESSORY USE	
PRINCIPLE USE	AGRICULTURAL (FARM)	
ACCESSORY USE	SOLAR ENERGY SYSTEMS	
	REQUIRED	PROVIDED
FRONT SETBACK	100 FT	331 FT
SIDE SETBACK	50 FT	115 FT
REAR SETBACK	50 FT	152 FT

1 SITE PLAN
C-100 SCALE: 1"=100'



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ABUNDANT SOLAR
POWER, INC.

700 WEST METRO PARK
ROCHESTER, NY 14623



ABUNDANT
Solar Power Inc.

PA-1127 GRANDVIEW RD

1127 GRANDVIEW RD, MOUNT JOY, PA 17552

NO.	DATE:	DESCRIPTION:

PROJECT NUMBER: 2263503

DRAWN BY: LSN

REVIEWED BY: CJR

ISSUED FOR: SPECIAL EXCEPTION

DATE: 08/07/2026

DRAWING NUMBER:

SITE PLAN

DRAWING NUMBER:

C-100

APPENDIX B

Documents



WETLAND AND STREAM DELINEATION REPORT

Grandview Solar
1127 Grandview Road
Mount Joy, Lancaster County, PA
LaBella Project No. 2263503

Prepared For: Abundant Solar Energy, Inc.
700 West Metro Park
Rochester, NY 14623
Spencer Leefe
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Spencer.leefe@powerbankcorp.com

Prepared By: LaBella Associates, D.P.C.
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Date: July 2026



TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
1.1	PROJECT DESCRIPTION.....	1
1.2	PURPOSE.....	1
2.0	METHODOLOGY.....	1
2.1	RESOURCES.....	1
2.2	JURISDICTIONAL AREA DELINEATION.....	2
3.0	PHYSICAL CHARACTERISTICS AND RESOURCES	2
3.1	PHYSIOGRAPHY	2
3.2	SOILS	3
3.3	HYDROLOGY.....	3
4.0	AGENCY RESOURCES.....	3
4.1	USFWS NATIONAL WETLAND INVENTORY.....	3
4.2	PADEP CLASSIFIED WATERBODIES	4
4.3	FEMA 100-YEAR FLOOD ZONES	4
5.0	RESULTS.....	4
5.1	UPLANDS.....	4
5.2	WETLANDS.....	4
5.2.1	WETLAND 1.....	5
5.2.2	WETLAND 2.....	5
5.3	STREAMS.....	5
5.3.1	STREAM 1.....	6
5.3.2	STREAM 2	6
5.3.3	DITCH 1.....	6
6.0	CONCLUSIONS.....	6
7.0	SIGNATURE OF WETLAND PROFESSIONALS	7
8.0	REFERENCES.....	8



LIST OF TABLES

TABLE 1. SOIL MAP UNITS WITHIN THE STUDY AREA.....	3
TABLE 2. USFWS-NWI MAPPED WETLANDS WITHIN THE STUDY AREA.....	4
TABLE 3. PADEP CLASSIFIED STREAMS WITHIN THE STUDY AREA.....	4
TABLE 4. DELINEATED WETLANDS	5
TABLE 5. DELINEATED STREAMS.....	6

LIST OF APPENDICES

APPENDIX A – FIGURES

FIGURE 1 – USGS SITE LOCATION

FIGURE 2 – NWI-MAPPED RESOURCES & PA CHAPTER 93 STREAMS-MAPPED RESOURCES

FIGURE 3 – FEMA FLOOD ZONES

FIGURE 4 – OVERVIEW MAP

FIGURE 5 – WETLAND AND STREAM DELINEATION SURVEY

APPENDIX B – DATA FORMS

APPENDIX C – PHOTOLOG

APPENDIX D – HYDRIC SOIL MAP

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

Abundant Solar Energy, Inc (Client) retained LaBella Associates, D.P.C. (LaBella) to perform a wetland and stream delineation for the Grandview Road Solar project. For the purposes of the wetland and stream delineation, the Study Area is defined as an approximately 57-acre area consisting of Tax Parcel ID 416-13213-0-000 in the town of Mt. Joy, Lancaster County, Pennsylvania. Please refer to Appendix A, Figure 1 for the Study Area location and boundary. The geographic coordinates of the approximate Study Area center are: 40.141357, -76.534794 (NAD83). Wetland and stream delineation field work was performed on June 8, 2026.

1.2 PURPOSE

This report was prepared for the purpose of obtaining concurrence with the United States Army Corps of Engineers (USACE)–Baltimore District and the Pennsylvania Department of Environmental Protection (PADEP) Southcentral Region on jurisdictional wetland and stream boundaries within the Study Area, in support of the Project. Specific tasks performed for this report include a field delineation of Federal Waters of the United States (WOTUS) encompassing wetlands and streams within the Study Area, a survey of jurisdictional water boundaries, and a detailed description of the delineated waters based on hydrology, vegetation, and soils information collected in the field.

This report describes the results of the delineation and data collection efforts performed by LaBella, and a description of the wetlands and streams that were delineated. This document is intended to provide the information required to support a Jurisdictional Determination with the USACE–Baltimore District, a State Programmatic General Permit (PASPGP-7), or an Individual Section 404 permit (if applicable). Within Pennsylvania, PASPGP-6 permits have been issued by the USACE for activities that would cause no more than minimal adverse environmental effects (e.g., less than 0.5 acres of permanent impacts).

2.0 METHODOLOGY

2.1 RESOURCES

Materials and literature supporting this investigation are derived from a number of sources, including: United States Geological Survey (USGS) 7.5-minute Topographic Quadrangles; United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Erie County, Pennsylvania Soil Survey (USDA-NRCS, 1986); USDA-NRCS Soil Map Unit shapefiles; USDA-NRCS Field Indicators of Hydric Soils in the United States (USDA-NRCS, 2018); Munsell Soil Color Charts (Kollmorgen Corporation, 1988); Federal Emergency Management Agency (FEMA) digital Flood Hazard data; United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) shapefiles, and PADEP Chapter 93 Existing Use Classified Streams shapefiles. Vascular plant names follow nomenclature found in the USDA PLANTS database (USDA, 2021). Wetland indicator status for vegetative species was determined by reference to the National Wetland Plant List (Lichvar et al., 2020). Jurisdictional features are characterized according to the NWI mapped wetlands and deepwater habitat classification system (Cowardin, 1979).

2.2 JURISDICTIONAL AREA DELINEATION

LaBella field staff performed the wetland and stream delineation within the Study Area on June 8, 2026, in accordance with the methods presented in the *1987 Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987), as supplemented by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0* (USACE, 2012).

Wetland and stream boundaries were defined in the field with sequentially numbered pink surveyor's flagging or pink pin flags. Each flag was digitally recorded using a sub-foot Global Positioning System unit. Data and observations were collected from both wetland and upland data points within the Study Area. These data points were recorded on routine USACE Wetland Determination Data Forms (Appendix B).

Representative photographs were taken of the data point locations, delineated wetlands, and streams within the Study Area (Appendix C).

The USACE has jurisdiction of WOTUS under section 404 of the Clean Water Act (CWA) (40 Code of Federal Regulations [CFR] 230) (CFR, 2010). The USACE also has jurisdiction over traditionally navigable WOTUS under Section 10 of the Rivers and Harbors Act (33 CFR 323; Section 10 Rivers and Harbors Act [33 United States Code] 403).

The PADEP regulates wetlands under Chapter 105 (Dam Safety and Waterway Management) of Pennsylvania Code (25 PA Code 105) and in accordance with USACE jurisdiction. Chapter 93 of PA Code (25 PA Code 93; Water Quality Standards) classifies mapped waterbodies as Designated Use (DU) or Existing Use (EU) streams. A list of designated use and existing use classified streams is maintained by PADEP. These classified streams are protected under Section 5 and 402 of the Clean Streams Law (PADEP, 2019). Both designated use and existing use streams can include the following classifications or standards: High Quality (HQ), Exceptional Value (EV), Cold Water Fishes (CWF), Warm Water Fishes (WWF), Migratory Fishes (MF), and Trout Stocking [TSF]). Special protection uses are provided with the designation of HQ or EV, with EV representing the highest protection status provided by the PADEP. Earth disturbances in special protection watersheds require the use of enhanced best management practices, non-discharge alternatives, anti-degradation analysis, and a stringent permitting process (i.e., Individual NPDES Permit). Additionally, certain general permits for wetland/stream crossings do not apply in special protection waters. The existing use may have a higher protection status than the designated use.

3.0 PHYSICAL CHARACTERISTICS AND RESOURCES

3.1 PHYSIOGRAPHY

The Project is located in the Northern Atlantic Slope Diversified Farming Land Resource Region (LRR S), Northern Piedmont Major Land Resource Area (MLRA 148). The Study Area topography consists of relatively flat successional agricultural field and forest in the northern portion of the Study Area that contains moderate slopes leading to concave wetlands and a stream. Land cover within the Study Area consists of successional crop fields, a pond in the southeast portion, and forested area in the north.

Elevations within the Study Area range from approximately 418 feet above mean sea level (AMSL) to approximately 491 feet AMSL.

3.2 SOILS

The Soil Survey of Lancaster County, Pennsylvania and NRCS Web Soil Survey indicates there are five (5) soil map units within the Project Study Area, as outlined in Table 1.

Table 1. Soil Map units within the Study Area

NRCS Soil Map Unit	Map Unit Symbol	Drainage Class	Hydric Soil?	Hydric Rating (%)
Bedington silt loam, 3 to 8 percent slopes	BdB	Well drained	No	0%
Bedington silt loam, 8 to 15 percent slopes	BdC	Well drained	No	0%
Bedington channery silt loam, 15 to 25 percent slopes	BeD	Well drained	No	0%
Blairton silt loam, 3 to 10 percent slopes	Bm	Moderately well drained	Yes	5%
Water	W	N/A	No	0%

Source: USDA, NRCS, 1994; Soil Survey Staff, 2026

The Hydric Soil ratings outlined in Table 1 and the Web Soil Survey map provided in Appendix D indicates there is one soil map unit containing hydric components. Blairton silt loam is the only soil considered moderately well drained, while all other are considered well drained soils.

3.3 HYDROLOGY

The Study Area is located in the Lower Susquehanna watershed (USGS Hydrologic Unit code 02050306).

Stream 1 and Stream 2 traverse portions of the Study Area flowing in an easterly direction. The source of surface hydrology for the Study Area is runoff from precipitation of adjacent hillslopes and groundwater. The Town of Mt. Joy receives an average of 46.6 inches of precipitation annually (NRCC, 2020).

4.0 AGENCY RESOURCES

4.1 USFWS NATIONAL WETLAND INVENTORY

USFWS NWI mapping indicates there is one (1) NWI-mapped Freshwater Pond classification within the Study Area (refer to Appendix A, Figure 2), as outlined in Table 2. This Freshwater Pond was mapped as part of the field work completed by LaBella but is not classified as a wetland in this report. Due to the man-made depression, connection facilitated through a man-made culvert and drainage feature, and lack of hydrophytic vegetation this Freshwater Pond lacks necessary attributes to be classified as a wetland by USACE and the PADEP.

Table 2. USFWS-NWI Mapped Wetlands within the Study Area

NWI Wetland Code	Classification Code description	Delineated Wetland
PUBHh	Palustrine, Unconsolidated Bottom, Permanently Flooded, Diked/Impounded	N/A

4.2 PADEP Classified Waterbodies

According to PADEP stream classification mapping there are two State-classified streams within the Study Area (refer to Appendix A, Figure 2), as outlined in Table 3.

Table 3. PADEP Classified Streams within the Study Area

Stream Name	Stream Classification	Delineated Stream
Unnamed Tributary to Little Chiques Creek	Trout Stocked (TSF)	Stream 1
Unnamed Tributary to Little Chiques Creek	Trout Stocked (TSF)	Stream 2

4.3 FEMA 100-YEAR FLOOD ZONES

There are no FEMA 100-year flood zones within the Study Area. The nearest FEMA flood zone is located approximately 500 feet northeast of the Study Area. Refer to Appendix A, Figure 3.

5.0 RESULTS

5.1 UPLANDS

Dominant vegetation in upland forested areas includes black locust (*Robinia pseudoacacia*), black cherry (*Prunus serotina*) and bitternut hickory (*Carya cordiformis*), and multiflora rose (*Rosa multiflora*) in the understory. Dominant vegetation in the upland fields includes soybean (*Glycine max*), corn (*Zea mays*), common teasel (*Dipsacus fullonum*), and ribwort plantain (*Plantago lanceolata*) in the herbaceous layer. Data Forms, provided in Appendix B, summarize the observed conditions adequate to characterize all uplands and wetlands within the Study Area.

5.2 WETLANDS

LaBella field staff delineated two palustrine emergent (PEM) wetlands within the Study Area (See Appendix A, Figure 4). Table 4 provides location, size, and classifications of the delineated wetlands. These areas were found to contain hydrophytic vegetation, wetland hydrology, and hydric soils necessary for classification of a wetland. Data forms, provided in Appendix B, summarize the observed conditions adequate to characterize these wetlands within the Study Area.

Table 4. Delineated Wetlands

Wetland ID	Cowardin Classification	Acreage On-site	Latitude, Longitude (NAD83)
Wetland 1	PEM	0.01	40.143803 , -76.532882
Wetland 2	PEM	0.37	40.143563 , -76.531509

5.2.1 Wetland 1

Wetland 1 is a 0.01-acre palustrine emergent wetland (PEM) originating from a depression around intermittent Stream 1 in the northern portion of the Study Area. The wetland has a hydrologic regime driven by ground water and surface water inputs from precipitation to adjacent hillslopes. Primary hydrology indicators at the time of visit include saturation and geomorphic position.

The plant community of PEM Wetland 1 is dominated by jewelweed (*Impatiens capensis*) with lesser amounts of flat top goldenrod (*Euthamia graminifolia*) and bedstraw (*Galium aparine*). The twelve inches of soil sampled within the wetland consisted of loamy clays with a very dark gray matrix (10YR 3/1) and dark yellowish brown (10YR 4/6) redoximorphic concentrations. This soil is considered to be hydric.

5.2.2 Wetland 2

Wetland 2 is a 0.37-acre palustrine emergent wetland (PEM) originating from a depression around intermittent Stream 1 at the bottom of a hillslope in the northeastern portion of the Study Area. The wetland has a hydrologic regime driven by ground water and surface water inputs from precipitation. Primary hydrology indicators at the time of visit include saturation and geomorphic position.

The plant community of PEM Wetland 1 is dominated by reed canary grass (*Phalaris arundinacea*), and sweet flag (*Acorus calamus*) with lesser amounts of soft rush (*Juncus effusus*) and fox sedge (*Carex vulpinoidea*). The fourteen inches of soil sampled within the wetland consisted of loamy clays with a very dark gray matrix (10YR 3/1) and dark yellowish brown (10YR 4/6) redoximorphic concentrations. This soil is considered to be hydric.

5.3 STREAMS

LaBella field staff delineated two intermittent streams and one ephemeral ditch within the Study Area (see Appendix A, Figure 4). Table 5 provides areas and classifications of the delineated streams.

Table 5. Delineated Streams

Stream ID	Flow Regime	PADEP Class	Stream Length/Width in Study Area (lf)	Stream Bed Substrate	Latitude, Longitude (NAD83)
Stream 1	Intermittent	TSF	945 / 5	Silt/gravel	40.143716, -76.532469
Stream 2	Intermittent	TSF	20 / 3	Silt/gravel	40.140337, -76.532144
Ditch 1	Ephemeral	Unclassified	600 / 5	Silt/organic materials	40.142755, -76.531828

5.3.1 Stream 1

Stream 1 is an intermittent stream that enters the Study Area from the west, flowing east and continuing outside the eastern boundary of the Study Area. The stream is approximately 945 linear feet within the Study Area with an average width of 5 feet and has a substrate of silt and gravel. The hydraulic regime for the stream originates from a combination of groundwater sources and precipitation from surrounding hillslopes.

5.3.2 Stream 2

Stream 2 is an intermittent stream that flows east via an underground culvert from Pond 1, surfacing shortly before continuing outside the eastern boundary of the Study Area. The stream is approximately 20 linear feet within the Study Area with an average width of 3 feet and has a substrate of silt and gravel. The hydraulic regime of the stream is facilitated through groundwater seepage and overflow drainage of Pond 1 through various man-made drainage features and culverts.

5.3.3 Ditch 1

Ditch 1 is an ephemeral ditch that flows north and joins Stream 1 and then continues outside the eastern boundary of the Study Area. The ditch originates from a drain tile in the eastern part of the Study Area. The ditch is approximately 600 linear feet and has a substrate of silt and organic materials. No flow was noted from the drain tile at the time of the delineation field work. The ditch appears to have been constructed to facilitate drainage of the surrounding agricultural fields.

6.0 CONCLUSIONS

LaBella delineated two palustrine emergent (PEM) wetlands, two intermittent streams, one pond, and one ephemeral ditch within the Study Area. The wetlands were identified based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology indicators. Streams are generally identified by the presence of a continuous bed and bank and an ordinary high-water mark (OHWM). The primary function of the wetlands on site appears to include water retention, water quality improvement, and wildlife habitat.

Ditch 1 is not considered jurisdictional WOTUS due to its facilitation through man-made construction and ephemeral designation.

Pond 1 is not considered a wetland due to a lack of hydrophytic vegetation, though it may be jurisdictional due to its relatively continuous flow via culvert into a DEP regulated stream designated as Trout Stocking (TSF).

Stream 1 and Stream 2 are considered jurisdictional WOTUS under the CWA due to a continuous surface water connection with the nearest Traditional Navigable Water (TNW), which is the Susquehanna River.

Wetland 1 and Wetland 2 are considered jurisdictional under Section 404 of the CWA due to their surface connection to TNW of the Susquehanna River facilitated through a connection to Stream 1.

All Project-related filling or disturbances within the delineated boundaries of all aforementioned WOTUS will require federal CWA Section 404 authorization through the USACE and would also require a CWA Section 401 Water Quality Certification from the PADEP. Finally, any Project-related filling or disturbances within these WOTUS will require Chapter 105 authorizations through the PADEP. These authorizations may be obtained through the Joint Permit Application process.

The final jurisdictional status and boundaries of all delineated wetlands and streams are subject to final determination by the USACE – Baltimore District and PADEP – South-Central Region.

7.0 SIGNATURE OF WETLAND PROFESSIONALS

We appreciate the opportunity to serve your professional environmental needs. If you have any questions, please do not hesitate to contact Doug McCarty at 570-904-6204 or dmccarty@labellapc.com

Report Prepared By:



Doug McCarty
Environmental Scientist

Report Prepared By:



Maddie Dworek
Environmental Analyst

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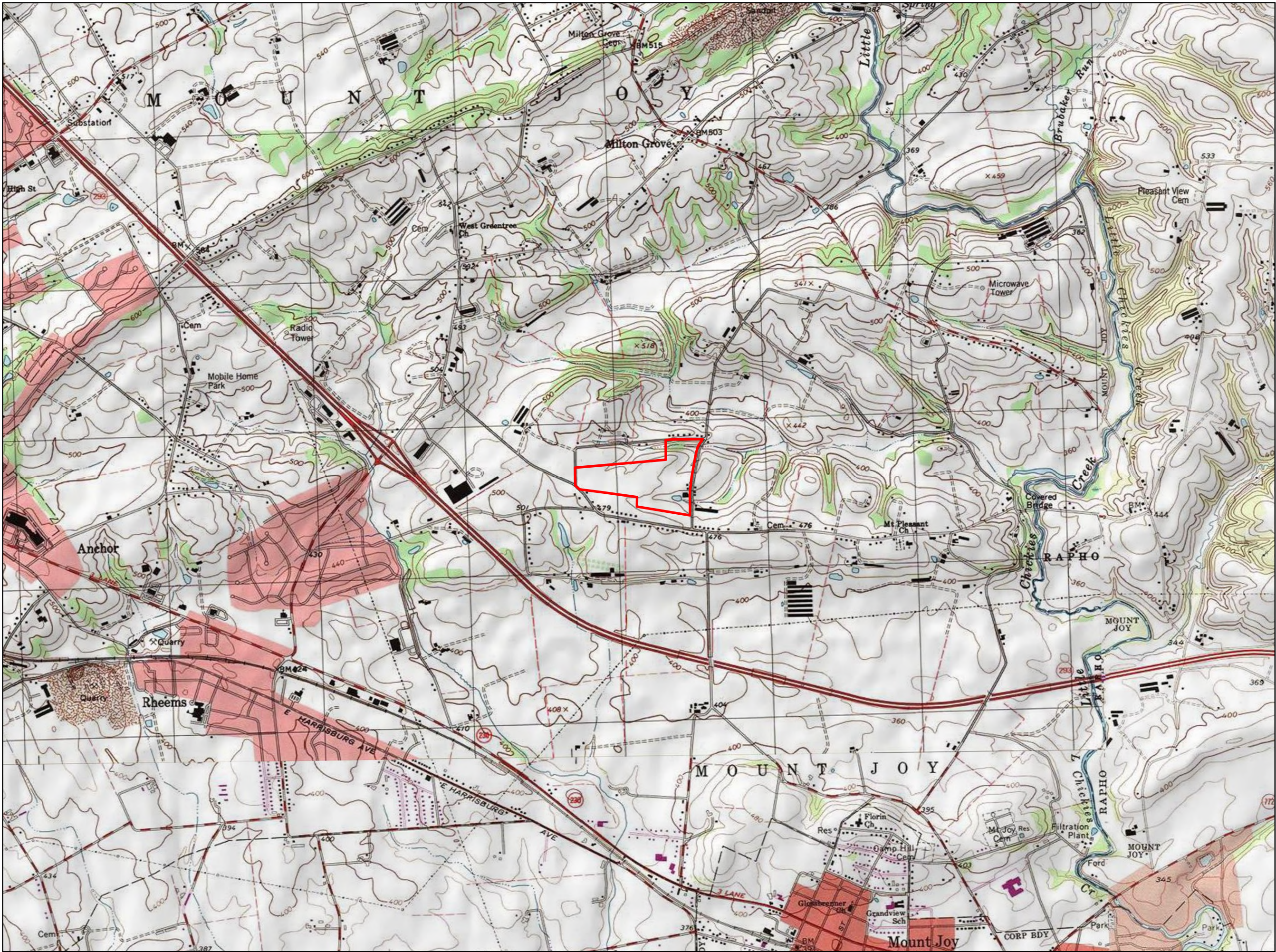
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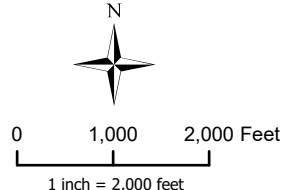
APPENDIX A

FIGURES



**Abundant Solar Power
Wetland and Stream
Delineation Report**

**1127 Grandview Road
Mount Joy, PA**

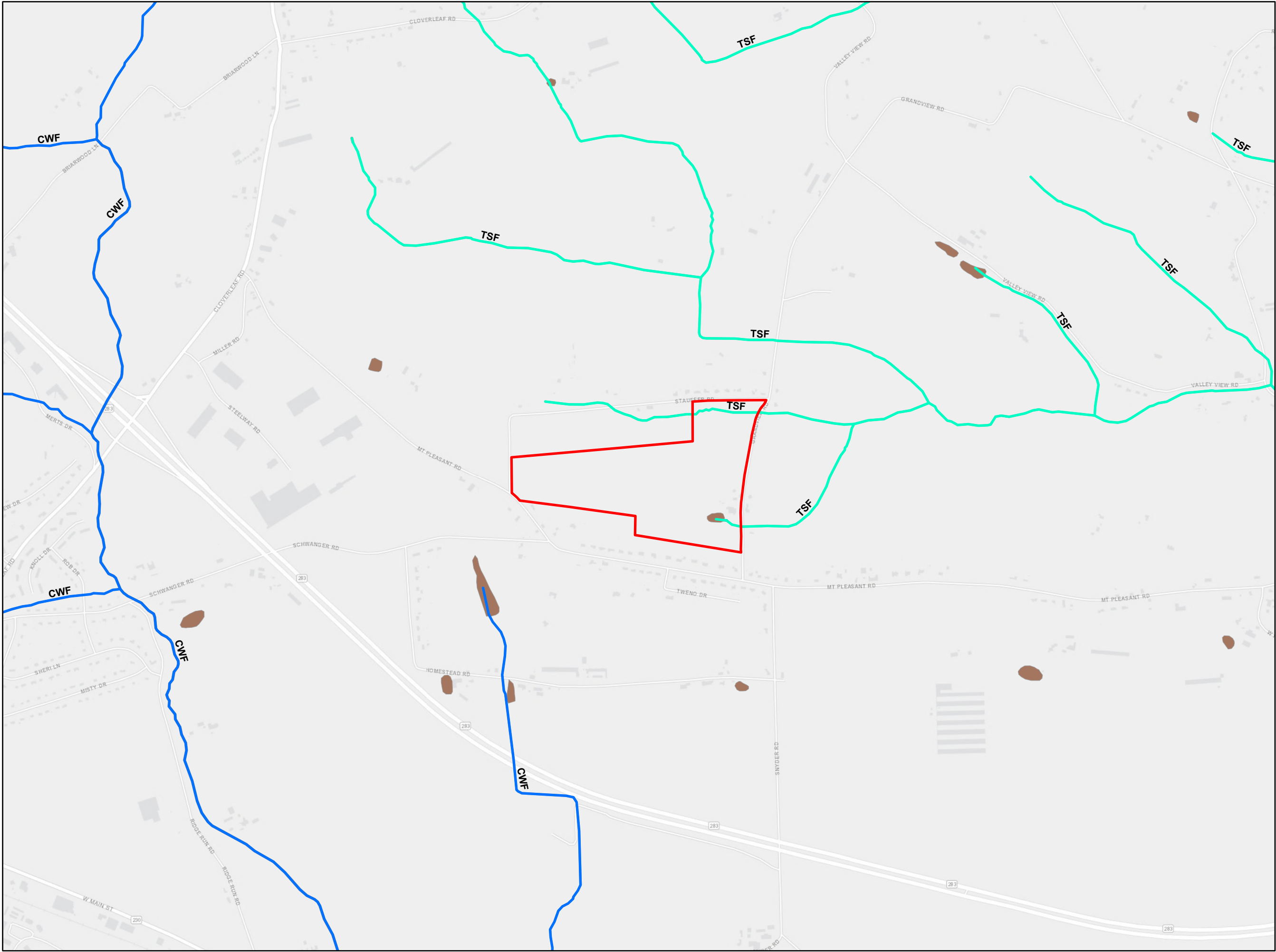


Legend
 Study Area

Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Basemap: ESRI USA Topo Map (Updated: 2019) in reference to USGS Topographic Elizabethtown and Columbia West (1964) Quadrangles.

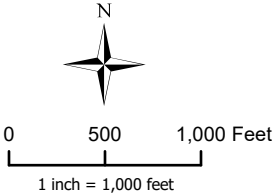
USGS Site Location

FIGURE 1



**Abundant Solar Power
Wetland and Stream
Delineation Report**

**1127 Grandview Road
Mount Joy, PA**

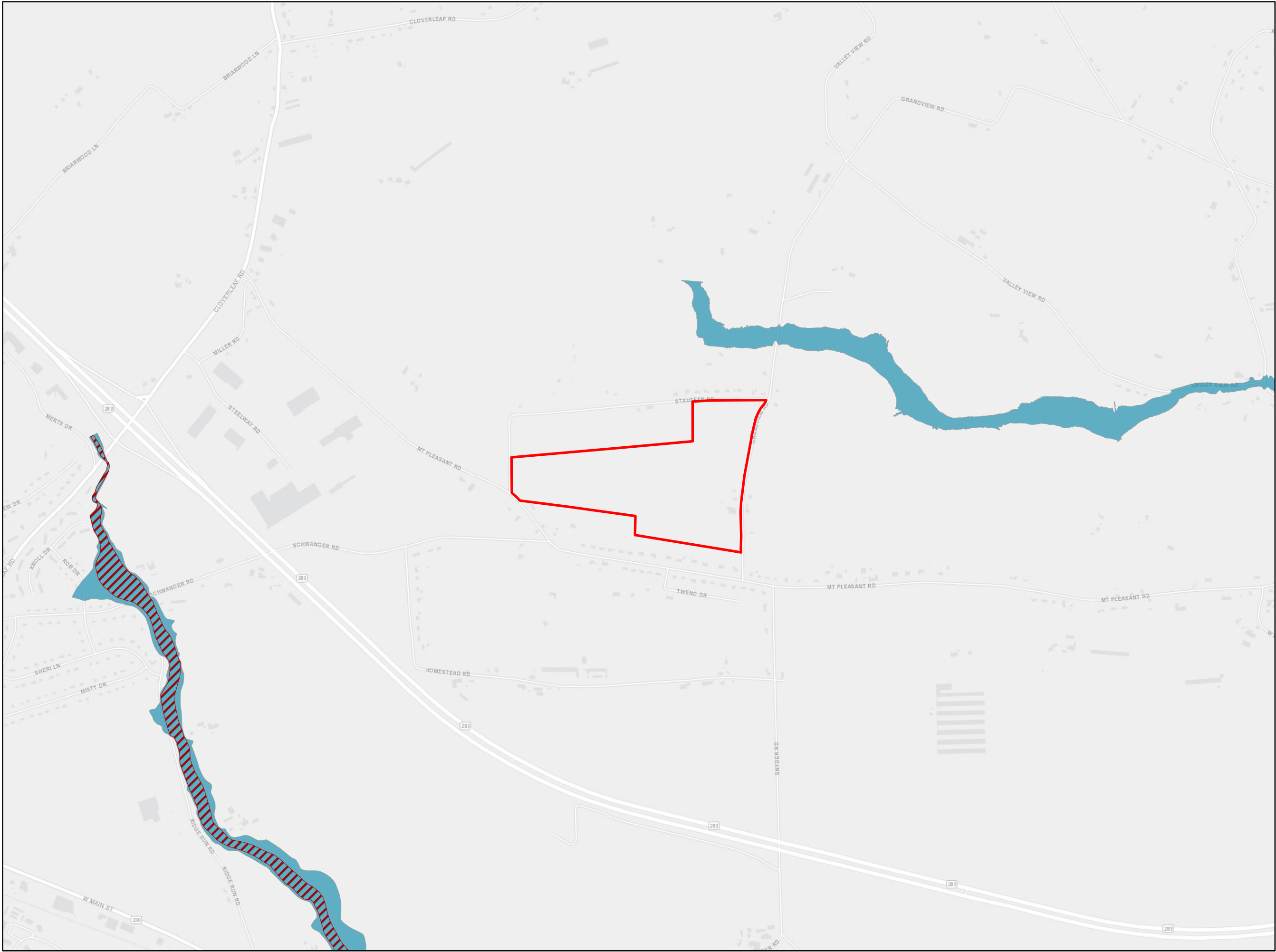


- Legend**
- Study Area
 - CWF (Cold Water Fishes)
 - EV (Exceptional Value)
 - HQ-CWF (High Quality-Cold Water Fishes)
 - HQ-TSF (High Quality-Trout Stocking)
 - HQ-WWF (High Quality-Warm Water Fishes)
 - TSF (Trout Stocking)
 - WWF (Warm Water Fishes)
 - National Wetlands Inventory

Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Basemap: York County Planning Commission, Esri, HERE, Garmin, GeoTechnologies, Inc., Intermap, USGS, EPA, 2026

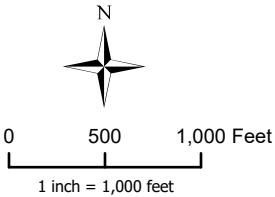
**Mapped Wetland and
Stream Resources**

FIGURE 2



**Abundant Solar Power
Wetland and Stream
Delineation Report**

**1127 Grandview Road
Mount Joy, PA**



- Legend**
- Study Area
 - FEMA Floodway
 - 100-Year FEMA Flood Zone

Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Basemap: York County Planning Commission, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, 2026
3. FEMA Flood Zone: FIRM Panels 42071C0118F and 42071C0119F, Effective Date: 04/05/2016

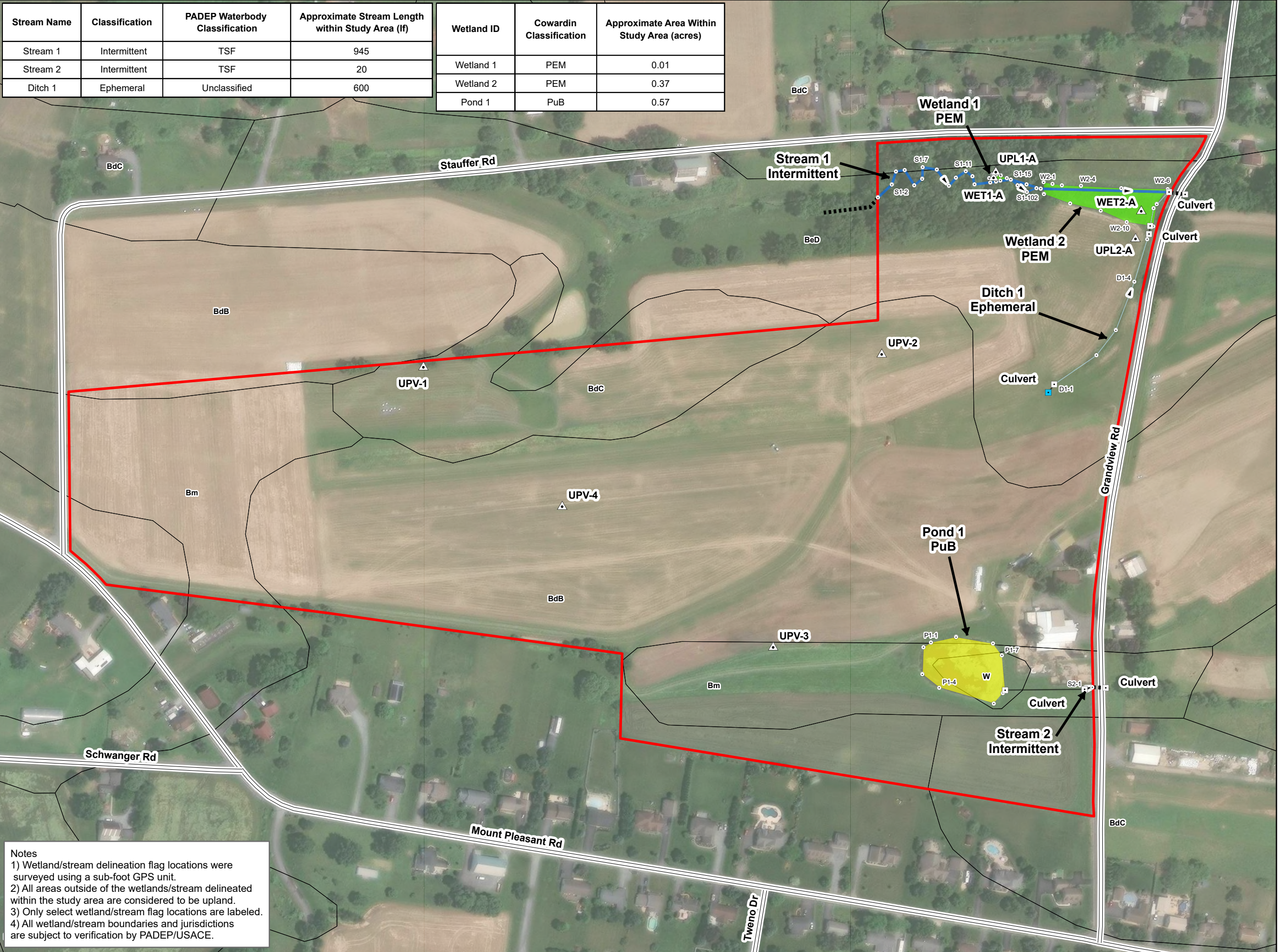
FEMA Flood Zones

FIGURE 3

Creator: VB Reviewer: LD

Path: B:\GLOBAL\Projects\Abundant Solar Power\2263503 - Grandview Rd Solar Permitting\06_Drawings\Environmental\Wetland Delineation\Grandview Road Solar.aprx

Stream Name	Classification	PADEP Waterbody Classification	Approximate Stream Length within Study Area (lf)	Wetland ID	Cowardin Classification	Approximate Area Within Study Area (acres)
Stream 1	Intermittent	TSF	945	Wetland 1	PEM	0.01
Stream 2	Intermittent	TSF	20	Wetland 2	PEM	0.37
Ditch 1	Ephemeral	Unclassified	600	Pond 1	PuB	0.57

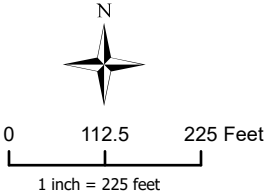


Notes
1) Wetland/stream delineation flag locations were surveyed using a sub-foot GPS unit.
2) All areas outside of the wetlands/stream delineated within the study area are considered to be upland.
3) Only select wetland/stream flag locations are labeled.
4) All wetland/stream boundaries and jurisdictions are subject to verification by PADEP/USACE.



Abundant Solar Power
Wetland and Stream
Delineation Report

1127 Grandview Road
Mount Joy, PA



- Legend**
- Study Area
 - Data Point Location
 - Wetland/Stream Flag Location
 - Culvert
 - Drain Tile
 - Emergent Wetland (PEM)
 - Pond (PuB)
 - Intermittent Stream
 - Ephemeral Ditch
 - Culvert Area
 - Approximate Offsite Wetland/Stream Boundary
 - Stream Flow Direction
 - Road
 - Soil

Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Basemap: Microsoft, Vantor, 2025
3. Mapped soils data were obtained from the NRCS online Soil Data (soildatamart.nrcs.usda.gov).

Wetland and Stream
Delineation Survey

FIGURE 4

APPENDIX B

Data Forms

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: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Grandview Solar City/County: Mt. Joy/Lancaster Sampling Date: 5/8/26

Applicant/Owner: Abundant Solar Power State: PA Sampling Point: UPL1-A

Investigator(s): DM & MD Section, Township, Range: _____

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope (%): 5-10

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: 40.143841 Long: -76.532861 Datum: NAD83

Soil Map Unit Name: Bedington channery silt loam, 15 to 25 percent slopes NWI classification: _____

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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ 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)	<u>Secondary Indicators (minimum of two required)</u> ☐ 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 _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	

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

 Sampling Point: UPL1-A

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Prunus serotina</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. <u>Carya cordiformis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
30 = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>6</u></td> <td>x 3 = <u>18</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>20</u></td> <td>x 5 = <u>100</u></td> </tr> <tr> <td>Column Totals: <u>116</u> (A)</td> <td><u>478</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.12</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>6</u>	x 3 = <u>18</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>20</u>	x 5 = <u>100</u>	Column Totals: <u>116</u> (A)	<u>478</u> (B)	Prevalence Index = B/A = <u>4.12</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>6</u>	x 3 = <u>18</u>																			
FACU species <u>90</u>	x 4 = <u>360</u>																			
UPL species <u>20</u>	x 5 = <u>100</u>																			
Column Totals: <u>116</u> (A)	<u>478</u> (B)																			
Prevalence Index = B/A = <u>4.12</u>																				
50% of total cover: <u>15</u> 20% of total cover: <u>6</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Rosa multiflora</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Rubus pensilvanicus</u>	<u>6</u>	<u>No</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
36 = Total Cover																				
50% of total cover: <u>18</u> 20% of total cover: <u>8</u>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Podophyllum peltatum</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	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.																
2. <u>Convolvulus arvensis</u>	<u>20</u>	<u>Yes</u>	<u>UPL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50 = Total Cover																				
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>																				
Woody Vine Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: UPL1-A

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 4/3	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)	☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
☐ Histic Epipedon (A2)	☐ Thin Dark Surface (S9) (MLRA 147, 148)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (MLRA 136)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5)	☐ Depleted Matrix (F3)
☐ 2 cm Muck (A10) (LRR N)	☐ Redox Dark Surface (F6)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)
☐ Iron Monosulfide (A18)	☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
☐ Sandy Mucky Mineral (S1)	☐ Umbric Surface (F13) (MLRA 122, 136)
☐ Sandy Gleyed Matrix (S4)	☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Sandy Redox (S5)	☐ Red Parent Material (F21) (MLRA 127, 147, 148)
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	

Indicators for Problematic Hydric Soils³:

☐ 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)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

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: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site:	Grandview Solar	City/County:	Mt. Joy/Lancaster	Sampling Date:	5/8/26
Applicant/Owner:	Abundant Solar Power	State:	PA	Sampling Point:	UPL2-A
Investigator(s):	DM & MD	Section, Township, Range:			
Landform (hillside, terrace, etc.):	hillside	Local relief (concave, convex, none):	convex	Slope (%):	5-10
Subregion (LRR or MLRA):	LRR S, MLRA 148	Lat:	40.143379	Long:	-76.531643
		Datum:	NAD83		
Soil Map Unit Name:	Bedington channery silt loam, 15 to 25 percent slopes		NWI classification:		
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
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	X	Is the Sampled Area within a Wetland?	Yes _____ No	X
Hydric Soil Present?	Yes _____ No	X			
Wetland Hydrology Present?	Yes _____ No	X			
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? Water Table Present? Saturation Present? (includes capillary fringe) Yes _____ Yes _____ Yes _____ No _____ No _____ No _____ Depth (inches): _____ Depth (inches): _____ Depth (inches): _____	Wetland Hydrology Present? Yes _____ No X
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

 Sampling Point: UPL2-A

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>40</u></td> <td>x 5 = <u>200</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>440</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.40</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>40</u>	x 5 = <u>200</u>	Column Totals: <u>100</u> (A)	<u>440</u> (B)	Prevalence Index = B/A = <u>4.40</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>60</u>	x 4 = <u>240</u>																			
UPL species <u>40</u>	x 5 = <u>200</u>																			
Column Totals: <u>100</u> (A)	<u>440</u> (B)																			
Prevalence Index = B/A = <u>4.40</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Taraxacum officinale</u>	<u>15</u>	<u>No</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Dactylis glomerata</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Plantago lanceolata</u>	<u>40</u>	<u>Yes</u>	<u>UPL</u>																	
4. <u>Dipsacus fullonum</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
100 =Total Cover																				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>																				
Woody Vine Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: UPL2-A**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 5/3	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: 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)
☐ Iron Monosulfide (A18)
☐ 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 Soils³:

☐ 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)

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

Restrictive Layer (if observed):

Type: _____ Rock _____
 Depth (inches): _____ 12 _____

Hydric Soil Present? Yes _____ No X

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: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site:	Grandview Solar	City/County:	Mt. Joy/Lancaster	Sampling Date:	5/8/26
Applicant/Owner:	Abundant Solar Power	State:	PA	Sampling Point:	UPV-1
Investigator(s):	DM & MD	Section, Township, Range:			
Landform (hillside, terrace, etc.):	field	Local relief (concave, convex, none):	convex	Slope (%):	2-5
Subregion (LRR or MLRA):	LRR S, MLRA 148	Lat:	40.142579	Long:	-76.537911
		Datum:	NAD83		
Soil Map Unit Name:	Bedington silt loam, 8 to 15 percent slopes		NWI classification:		
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?		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		No	X	Is the Sampled Area within a Wetland?	Yes		No	X
Hydric Soil Present?	Yes		No	X					
Wetland Hydrology Present?	Yes		No	X					
Remarks:									

HYDROLOGY

Wetland Hydrology Indicators:				Secondary Indicators (minimum of two required)					
<u>Primary Indicators (minimum of one is required; check all that apply)</u>									
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)			☐ Surface Soil Cracks (B6)					
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)			☐ Sparsely Vegetated Concave Surface (B8)					
☐ Saturation (A3)	☐ Oxidized Rhizospheres on Living Roots (C3)			☐ Drainage Patterns (B10)					
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)			☐ Moss Trim Lines (B16)					
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)			☐ Dry-Season Water Table (C2)					
☐ Drift Deposits (B3)	☐ Thin Muck Surface (C7)			☐ Crayfish Burrows (C8)					
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)			☐ Saturation Visible on Aerial Imagery (C9)					
☐ Iron Deposits (B5)				☐ Stunted or Stressed Plants (D1)					
☐ Inundation Visible on Aerial Imagery (B7)				☐ Geomorphic Position (D2)					
☐ Water-Stained Leaves (B9)				☐ Shallow Aquitard (D3)					
☐ Aquatic Fauna (B13)				☐ Microtopographic Relief (D4)					
				☐ FAC-Neutral Test (D5)					
Field Observations:									
Surface Water Present?	Yes		No		Wetland Hydrology Present?	Yes		No	X
Water Table Present?	Yes		No	Depth (inches):					
Saturation Present?	Yes		No	Depth (inches):					
(includes capillary fringe)									
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:									

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

 Sampling Point: UPV-1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u><i>Robinia pseudoacacia</i></u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>20</u> = Total Cover		
50% of total cover: <u>10</u>		20% of total cover: <u>4</u>	

Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u><i>Robinia pseudoacacia</i></u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
	<u>5</u> = Total Cover		
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>	

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u><i>Cirsium arvense</i></u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
2. <u><i>Fallopia convolvulus</i></u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
3. <u><i>Arrhenatherum elatius</i></u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	<u>35</u> = Total Cover		
50% of total cover: <u>18</u>		20% of total cover: <u>7</u>	

Woody Vine Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
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: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>60</u>	x 4 = <u>240</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>60</u> (A)	<u>240</u> (B)
Prevalence Index = B/A = <u>4.00</u>	

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 X

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

SOIL

Sampling Point: UPV-1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 5/3	100					Loamy/Clayey	silty loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: 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)
☐ Iron Monosulfide (A18)
☐ 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 Soils³:

☐ 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)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

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

HYDROLOGY

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)

Surface Water Present? Yes _____ No _____ Depth (inches): _____
 Water Table Present? Yes _____ No _____ Depth (inches): _____
 Saturation Present? Yes _____ No _____ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present?	Yes	No	X
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Remarks:

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

 Sampling Point: UPV-2

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>2</u></td> <td>x 4 = <u>8</u></td> </tr> <tr> <td>UPL species <u>50</u></td> <td>x 5 = <u>250</u></td> </tr> <tr> <td>Column Totals: <u>52</u> (A)</td> <td><u>258</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.96</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>50</u>	x 5 = <u>250</u>	Column Totals: <u>52</u> (A)	<u>258</u> (B)	Prevalence Index = B/A = <u>4.96</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>2</u>	x 4 = <u>8</u>																			
UPL species <u>50</u>	x 5 = <u>250</u>																			
Column Totals: <u>52</u> (A)	<u>258</u> (B)																			
Prevalence Index = B/A = <u>4.96</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Zea mays</u>	<u>50</u>	<u>Yes</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Dipsacus fullonum</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
52 =Total Cover																				
50% of total cover: <u>26</u> 20% of total cover: <u>11</u>																				
Woody Vine Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (Include photo numbers here or on a separate sheet.)																				

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: UPV-2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 5/3	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: 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)
☐ Iron Monosulfide (A18)
☐ 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 Soils³:

☐ 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)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

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: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Grandview Solar City/County: Mt. Joy/Lancaster Sampling Date: 5/8/26

Applicant/Owner: Abundant Solar Power State: PA Sampling Point: UPV-3

Investigator(s): DM & MD Section, Township, Range: _____

Landform (hillside, terrace, etc.): field Local relief (concave, convex, none): convex Slope (%): 2-5

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: 40.140660 Long: -76.534874 Datum: NAD83

Soil Map Unit Name: Blairton silt loam, 3 to 10 percent slopes NWI classification: _____

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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ 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)	<u>Secondary Indicators (minimum of two required)</u> ☐ 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 _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

 Sampling Point: UPV-3

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>45</u></td> <td>x 4 = <u>180</u></td> </tr> <tr> <td>UPL species <u>25</u></td> <td>x 5 = <u>125</u></td> </tr> <tr> <td>Column Totals: <u>70</u> (A)</td> <td><u>305</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.36</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>45</u>	x 4 = <u>180</u>	UPL species <u>25</u>	x 5 = <u>125</u>	Column Totals: <u>70</u> (A)	<u>305</u> (B)	Prevalence Index = B/A = <u>4.36</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>45</u>	x 4 = <u>180</u>																			
UPL species <u>25</u>	x 5 = <u>125</u>																			
Column Totals: <u>70</u> (A)	<u>305</u> (B)																			
Prevalence Index = B/A = <u>4.36</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u>Problematic Hydrophytic Vegetation¹ (Explain)</u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
=Total Cover				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.																
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5</u>)				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
1. <u>Glycine max</u>	<u>15</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Dipsacus fullonum</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Poa pratensis</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Plantago lanceolata</u>	<u>10</u>	<u>No</u>	<u>UPL</u>																	
5. <u>Taraxacum officinale</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
70 =Total Cover																				
50% of total cover: <u>35</u> 20% of total cover: <u>14</u>																				
Woody Vine Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: UPV-3**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 5/3	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)	☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
☐ Histic Epipedon (A2)	☐ Thin Dark Surface (S9) (MLRA 147, 148)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (MLRA 136)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5)	☐ Depleted Matrix (F3)
☐ 2 cm Muck (A10) (LRR N)	☐ Redox Dark Surface (F6)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)
☐ Iron Monosulfide (A18)	☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
☐ Sandy Mucky Mineral (S1)	☐ Umbric Surface (F13) (MLRA 122, 136)
☐ Sandy Gleyed Matrix (S4)	☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Sandy Redox (S5)	☐ Red Parent Material (F21) (MLRA 127, 147, 148)
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	

Indicators for Problematic Hydric Soils³:

☐ 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)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: rock
Depth (inches): 16Hydric Soil Present? Yes ☐ 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: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site:	Grandview Solar	City/County:	Mt. Joy/Lancaster	Sampling Date:	5/8/26							
Applicant/Owner:	Abundant Solar Power	State:	PA	Sampling Point:	UPV-4							
Investigator(s):	DM & MD	Section, Township, Range:										
Landform (hillside, terrace, etc.):	hillside	Local relief (concave, convex, none):	convex	Slope (%):	5							
Subregion (LRR or MLRA):	LRR S, MLRA 148	Lat:	40.141627	Long:	-76.536710							
Datum:	NAD83	Soil Map Unit Name:	Bedington silt loam, 3 to 8 percent slopes	NWI classification:								
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		No	X	Is the Sampled Area within a Wetland?	Yes		No	X
Hydric Soil Present?	Yes		No	X					
Wetland Hydrology Present?	Yes		No	X					
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? Water Table Present? Saturation Present? (includes capillary fringe) Yes Yes Yes No No No Depth (inches): Depth (inches): Depth (inches):	Wetland Hydrology Present? Yes No X
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

 Sampling Point: UPV-4

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>50</u></td> <td>x 5 = <u>250</u></td> </tr> <tr> <td>Column Totals: <u>60</u> (A)</td> <td><u>290</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.83</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>50</u>	x 5 = <u>250</u>	Column Totals: <u>60</u> (A)	<u>290</u> (B)	Prevalence Index = B/A = <u>4.83</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>50</u>	x 5 = <u>250</u>																			
Column Totals: <u>60</u> (A)	<u>290</u> (B)																			
Prevalence Index = B/A = <u>4.83</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Glycine max</u>	<u>50</u>	<u>Yes</u>	<u>UPL</u>	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.																
2. <u>Arrhenatherum elatius</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>30</u> 20% of total cover: <u>12</u>																				
Woody Vine Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: UPV-4**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 5/3	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: 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)
☐ Iron Monosulfide (A18)
☐ 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 Soils³:

☐ 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)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

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

 Sampling Point: WET1-A

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>12</u></td> <td>x 3 = <u>36</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>2</u></td> <td>x 5 = <u>10</u></td> </tr> <tr> <td>Column Totals: <u>104</u> (A)</td> <td><u>226</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.17</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>90</u>	x 2 = <u>180</u>	FAC species <u>12</u>	x 3 = <u>36</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>2</u>	x 5 = <u>10</u>	Column Totals: <u>104</u> (A)	<u>226</u> (B)	Prevalence Index = B/A = <u>2.17</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>90</u>	x 2 = <u>180</u>																			
FAC species <u>12</u>	x 3 = <u>36</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>2</u>	x 5 = <u>10</u>																			
Column Totals: <u>104</u> (A)	<u>226</u> (B)																			
Prevalence Index = B/A = <u>2.17</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Acer negundo</u>	<u>2</u>	<u>No</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>1</u> 20% of total cover: <u>1</u>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Impatiens capensis</u>	<u>90</u>	<u>Yes</u>	<u>FACW</u>	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.																
2. <u>Euthamia graminifolia</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
3. <u>Galium verum</u>	<u>2</u>	<u>No</u>	<u>UPL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>51</u> 20% of total cover: <u>21</u>																				
Woody Vine Stratum (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (Include photo numbers here or on a separate sheet.)																				

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: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
---	---

Project/Site:	Grandview Solar	City/County:	Mt. Joy/Lancaster	Sampling Date:	5/8/26	
Applicant/Owner:	Abundant Solar Power	State:	PA	Sampling Point:	WET2-A	
Investigator(s):	DM & MD	Section, Township, Range:				
Landform (hillside, terrace, etc.):	hillside	Local relief (concave, convex, none):	concave	Slope (%):	5	
Subregion (LRR or MLRA):	LRR S, MLRA 148	Lat:	40.143563	Long:	-76.531509	
Datum:	NAD83					
Soil Map Unit Name:	Bedington channery silt loam, 15 to 25 percent slopes	NWI classification:				
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		No	X
Hydric Soil Present?	Yes	X	No						
Wetland Hydrology Present?	Yes	X	No						
Remarks:									

HYDROLOGY

Wetland Hydrology Indicators:				Secondary Indicators (minimum of two required)			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>							
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)			☐ Surface Soil Cracks (B6)			
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)			☐ Sparsely Vegetated Concave Surface (B8)			
☒ Saturation (A3)	☐ Oxidized Rhizospheres on Living Roots (C3)			☐ Drainage Patterns (B10)			
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)			☐ Moss Trim Lines (B16)			
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)			☐ Dry-Season Water Table (C2)			
☐ Drift Deposits (B3)	☐ Thin Muck Surface (C7)			☐ Crayfish Burrows (C8)			
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)			☐ Saturation Visible on Aerial Imagery (C9)			
☐ Iron Deposits (B5)				☐ Stunted or Stressed Plants (D1)			
☐ Inundation Visible on Aerial Imagery (B7)				☒ Geomorphic Position (D2)			
☐ Water-Stained Leaves (B9)				☐ Shallow Aquitard (D3)			
☐ Aquatic Fauna (B13)				☐ Microtopographic Relief (D4)			
				☐ FAC-Neutral Test (D5)			
Field Observations:				Wetland Hydrology Present? Yes ☒ No ☐			
Surface Water Present?	Yes ☐ No ☐	Depth (inches):					
Water Table Present?	Yes ☐ No ☐	Depth (inches):					
Saturation Present?	Yes ☐ No ☐	Depth (inches):					
(includes capillary fringe)							
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
Remarks:							

Sampling Point: WET2-A

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	
1.				
2.				
3.				
4.				
5.				
6.				
7.				
			=Total Cover	
50% of total cover:		20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
			=Total Cover	
50% of total cover:		20% of total cover:		
Herb Stratum (Plot size: 5)				
1.	<i>Impatiens capensis</i>	5	No	FACW
2.	<i>Juncus effusus</i>	20	Yes	FACW
3.	<i>Phalaris arundinacea</i>	40	Yes	FACW
4.	<i>Acorus calamus</i>	20	Yes	OBL
5.	<i>Carex vulpinoidea</i>	5	No	OBL
6.				
7.				
8.				
9.				
10.				
11.				
			90 =Total Cover	
50% of total cover:		45	20% of total cover: 18	
Woody Vine Stratum (Plot size: 15)				
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
50% of total cover:		20% of total cover:		

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

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 25	x 1 = 25
FACW species 65	x 2 = 130
FAC species 0	x 3 = 0
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column Totals: 90 (A)	155 (B)
Prevalence Index = B/A = 1.72	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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

SOIL

Sampling Point: WET2-A**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR 3/1	85	10YR 4/6	15	C	M	Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: 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)
☐ Iron Monosulfide (A18)
☐ 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 Soils³:

☐ 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)

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

Restrictive Layer (if observed):

Type: Rock
 Depth (inches): 14

Hydric Soil Present? Yes ☒ No ☐

Remarks:

APPENDIX C

Photo Log



Wetland and Stream Delineation Photos – Grandview Solar

1127 Grandview Road, Mt. Joy, PA – June 8, 2026



Upland field



PEM Wetland 1



Intermittent Stream 1



Ephemeral ditch



Wetland and Stream Delineation Photos - Grandview Solar

1127 Grandview Road, Mt. Joy, PA – June 8, 2026



Drainage tile and culvert in ephemeral ditch



PEM Wetland 2



Upland agricultural field

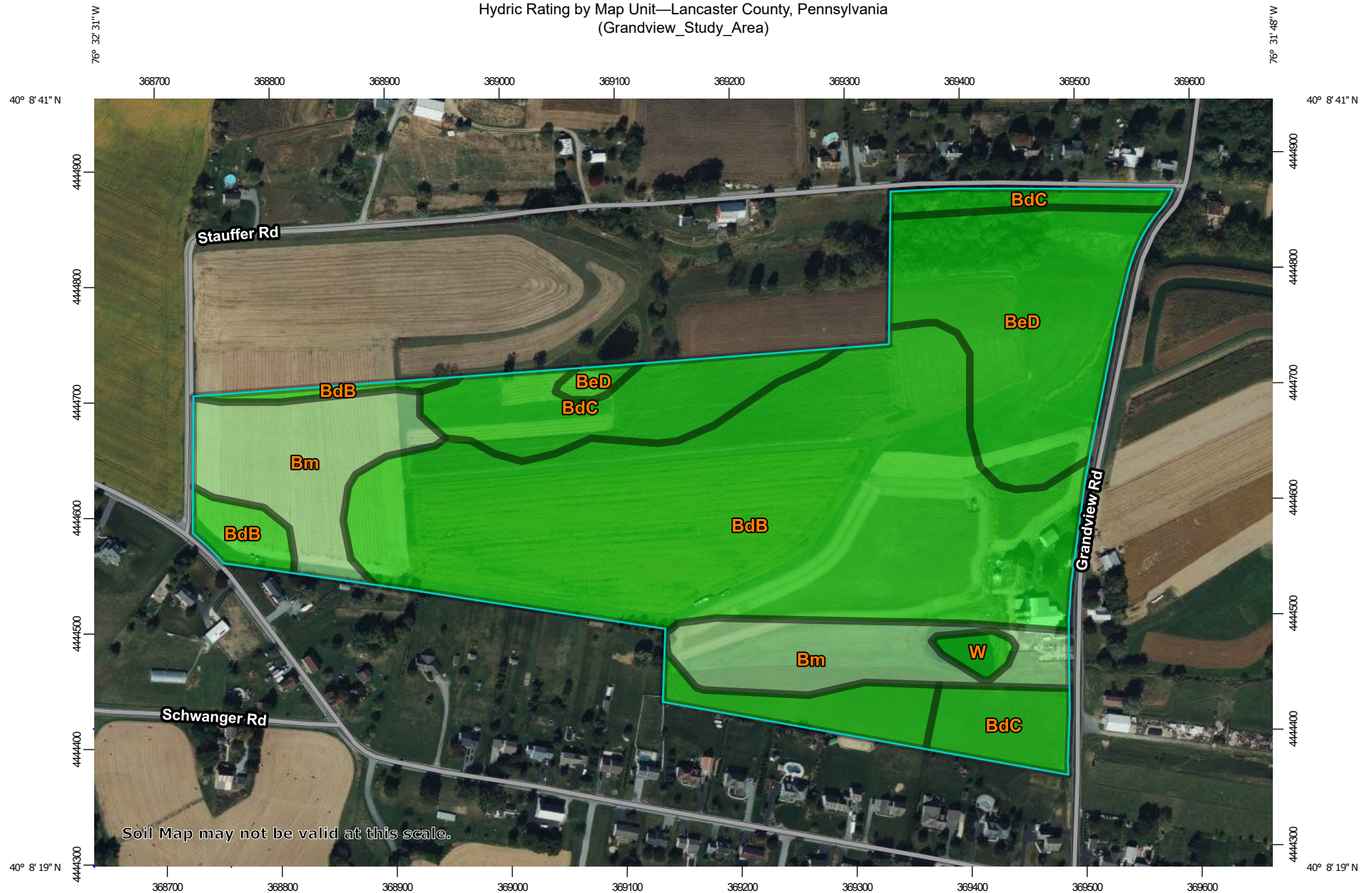


Pond (PuB)

APPENDIX D

Hydric Soil Map

Hydric Rating by Map Unit—Lancaster County, Pennsylvania (Grandview_Study_Area)



Map Scale: 1:4,690 if printed on A landscape (11" x 8.5") sheet.

0 50 100 200 300 Meters

0 200 400 800 1200 Feet

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



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

6/18/2026
Page 1 of 5

Hydric Rating by Map Unit—Lancaster County, Pennsylvania
(Grandview_Study_Area)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Soil Rating Lines

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Soil Rating Points

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

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

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

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

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

Soil Survey Area: Lancaster County, Pennsylvania
Survey Area Data: Version 24, Sep 3, 2025

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

Date(s) aerial images were photographed: Jul 6, 2020—Nov 7, 2020

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

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BdB	Bedington silt loam, 3 to 8 percent slopes	0	29.8	52.9%
BdC	Bedington silt loam, 8 to 15 percent slopes	0	7.5	13.3%
BeD	Bedington channery silt loam, 15 to 25 percent slopes	0	9.3	16.5%
Bm	Blairton silt loam, 3 to 10 percent slopes	5	9.2	16.3%
W	Water	0	0.5	0.9%
Totals for Area of Interest			56.3	100.0%

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

THREATENED AND ENDANGERED SPECIES MEMO

TO: Abundant Solar Energy, Inc.

FROM: Emma Hinkle, Environmental Analyst
LaBella Associates, DPC

DATE: September 9, 2026

PROJECT: Grandview Road Solar

The Client is proposing the Grandview Road Project (“Project”) to be located within an approximately 57-acre tax parcel (ID: 416-13213-0-000) (“Study Area”) in the Township of Mt. Joy, Lancaster County, Pennsylvania. The Project consists of a 3.0-megawatt (MWAC) ground mounted solar photovoltaic (PV) system, and the Study Area is composed primarily of agricultural land and a residential property.

The entire Study Area (inclusive of the proposed solar array) was evaluated using the United States Fish and Wildlife Service’s (USFWS) Information Planning and Consultation (IPaC) report and the Pennsylvania Natural Diversity Index (PNDI) Screening Tool to screen the project area for endangered, threatened, and rare species and ecologically sensitive resources.

Through the evaluations, it was determined that further consultation is required with USFWS and PA Fish and Boat Commission.

PENNSYLVANIA ECOLOGICALLY SENSITIVE RESOURCES AND STATE SPECIES

The Pennsylvania Natural Diversity Index (PNDI) Screening Tool was utilized on June 4, 2026 (Project Code: PNDI-865544) to screen the Study Area for threatened, endangered, or candidate species as well as critical habitats under the PA Game Commission, and PA Department of Natural Resources (PA DCNR), and PA Fish and Boat, and USFWS jurisdictions.

According to the PA PNDI, the Pennsylvania Department of Conservation and Natural Resources identified no known or anticipated impacts requiring further review or consultation. The PA Game Commission provided comments but deferred their review to USFWS. The PA Fish and Boat Commission indicated that further consultation is required for agency review.

It is recommended that further project information such as a project narrative and a boundary map be uploaded through the PNDI website to further review for required PA agencies, as well as voluntary options to augment, restore or reduce impacts to identified species.



PA Game Commission

The PA Game Commission (PCG) identified that there are potential impacts to state and federally listed species which are under the jurisdiction of both the PGC and USFWS. PGC does not require further consultation as they defer their comments on potential impacts to federally listed species to USFWS.

PA Department of Natural Resources

The PA Department of Natural Resources identified no known or anticipated impacts requiring further review or consultation.

PA Fish and Boat Commission

The PA Fish and Boat Commission indicated that further review of the Project is necessary to resolve potential impacts.

U.S. Fish and Wildlife Service

Within the PNDI, USFWS identified the Indiana bat and bog turtle as a species of concern based on the proposed Study Area.

Table 1. State Listed U.S. Fish and Wildlife Service Listed Species

Species	Scientific Name	PA Status	Federal Status	Habitat Type
Indiana Bat	<i>Myotis sodalis</i>	Endangered	Endangered	Generally found in forests during the summer and caves/mines during hibernation
Bog Turtle	<i>Glyptemys muhlenbergii</i>	Endangered	Threatened	Generally found in wet meadows and bogs where tussock sedge and grasses dominate wetlands

Coordination with USFWS for the identified species through the PNDI are further discussed below.

FEDERAL SPECIES AND ECOLOGICALLY SENSITIVE RESOURCES

Section 7(a) of the Endangered Species Act (ESA) includes a national program, headed by USFWS, focused on the conservation of threatened and endangered species and their respective habitats. The USFWS Pennsylvania field office publishes lists of the occurrence of Federally-protected species or potential “Critical Habitat” of protected species by County, which is available through the Information for Planning and Consultation (IPaC) online service (USFWS, 2026). An IPaC Official Species List was obtained on June 5, 2026 (Project Code: 2026-0099264) from the USFWS website to identify any federally listed species which may occur within or near the Study Area.



Table 2. Federally Listed Species

Species	Scientific Name	PA Status	Federal Status	Habitat Type
Indiana Bat	<i>Myotis sodalis</i>	Endangered	Endangered	Generally found in forests during the summer and caves/mines during hibernation
Tricolored Bat	<i>Perimyotis sybfkavus</i>	Endangered	Proposed Endangered	Generally found in forests during the summer and caves/mines during hibernation
Bog Turtle	<i>Glyptemys muhlenbergii</i>	Endangered	Threatened	Generally found in wet meadows and bogs where tussock sedge and grasses dominate wetlands
Monarch Butterfly	<i>Danaus plexippus</i>	Not Listed	Proposed Threatened	Early successional open lands with milkweed abundance

No USFWS critical habitats designated for the above species overlap the Study Area.

USFWS has developed a determination key to review projects and produce pre-determined biological effect outcomes such as “no effect,” “not likely to adversely affect,” or “may affect.” These outcomes are designed to reflect the USFWS’s recommended determinations and may be used to complete Section 7 consultations for federal actions or to obtain technical assistance for non-federal projects.

The determination key for the Indiana bat and bog turtle was completed for the Project on July 2, 2026. The Indiana bat received a determination of “not likely to adversely affect”, and the bog turtle received a determination of “may affect”. The determination key was completed for the tricolored bat for the Project on July 2, 2026, and received a determination of “no effect.”

Important assumptions made when completing the determination keys included that the Project does not involve the application of herbicides or pesticides, there will be no tree clearing, and there is no federal nexus.

The Indiana bat requires forests for foraging and roosting. These bats generally roost in cavities of both live and dead trees, in caves and mines, and occasionally in structures like barns and sheds. As the Project received a determination of “not likely to adversely affect” for the Indiana bat, and there is no federal nexus, no additional USFWS coordination is required for this species.

The tricolored bat is classified as Proposed Threatened, so there are no Section 7 consultation requirements for this species currently. In addition, as the Project received a determination of “no effect” for the tricolored bat, no additional USFWS is required or recommended for this species.

The bog turtle is found in wet meadows and bogs where tussock sedge and grasses dominate wetlands. They are often associated with early-successional wetlands with substrates of deep and mucky soils. As the Project received a determination of “may affect” for the bog turtle, additional USFWS is required for this species. For additional context, the bog turtle was likely flagged due to the



presence of a wetland in the Study Area and within 300 feet of the proposed solar array. However, this wetland is a pond and is not typically recognized as suitable habitat for the bog turtle as this species requires very shallow surface water, saturated mud, and low-growing wetland plants. Therefore a bog turtle survey is not expected to be required from USFWS. Other wetlands and streams located within and immediately adjacent to the Study Area may provide suitable habitat, but these areas are located more than 300 feet from the proposed project features shown on the provided site plan. If the site layout is modified such that proposed features encroach within 300 feet of these wetlands or streams, additional coordination with USFWS would be required and a bog turtle habitat survey may be necessary.

Because the monarch butterfly is classified as Proposed Threatened there are no Section 7 consultation requirements for this species currently.

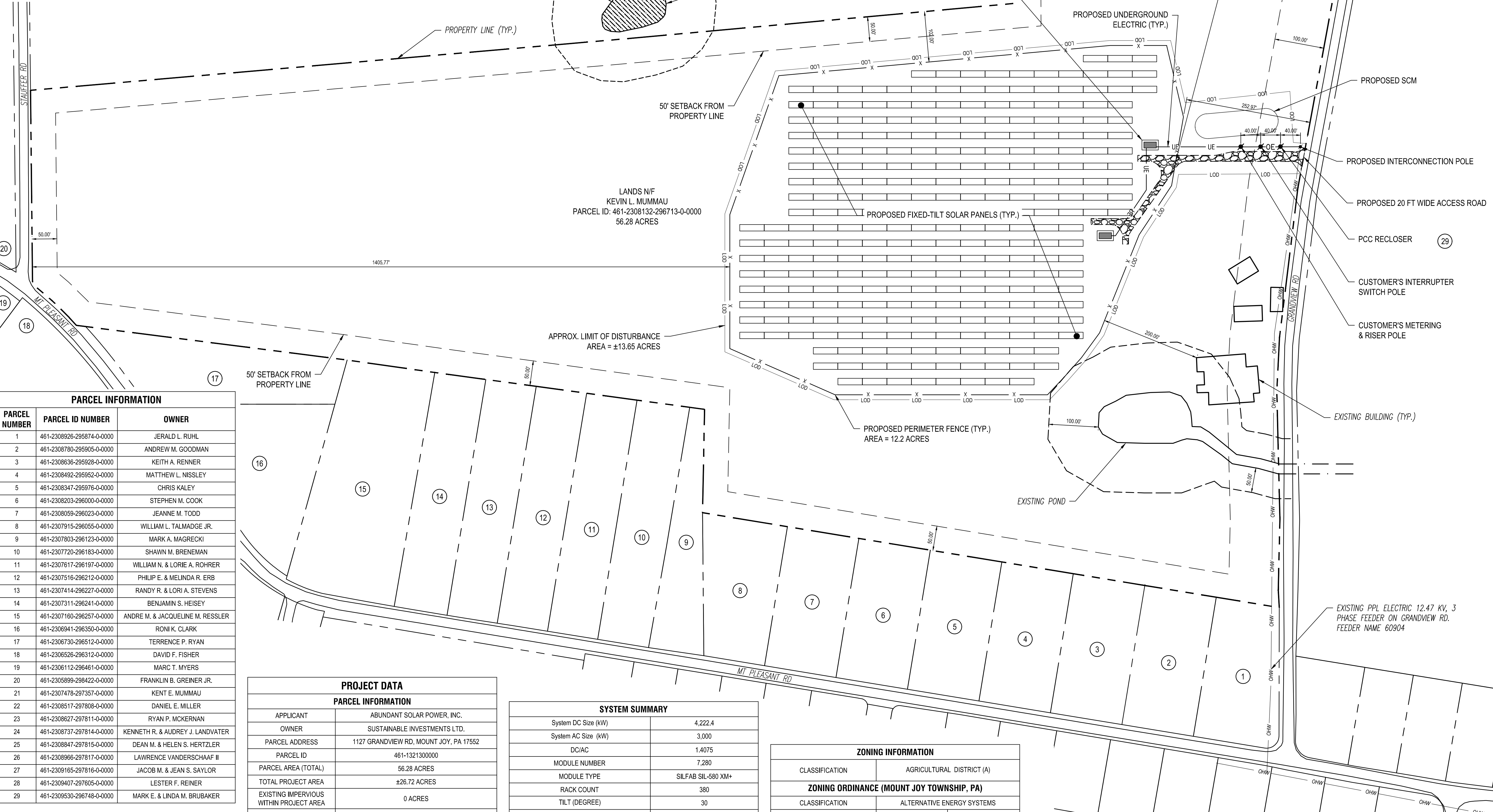
APPENDIX A

STUDY AREA



LEGEND

EXISTING	PROPOSED	DESCRIPTION
		SUBJECT PROPERTY LINE
		PROPERTY LINE
		SETBACK LINE
		EDGE OF PAVEMENT
		ACCESS ROAD
		BUILDING
		AGRICULTURAL FENCE
		STREAM
		WETLAND
		WETLAND BUFFER
		UTILITY POLE
		UNDERGROUND ELECTRIC
		OVERHEAD ELECTRIC
		LIMIT OF DISTURBANCE



PARCEL INFORMATION		
PARCEL NUMBER	PARCEL ID NUMBER	OWNER
1	461-2308926-295874-0-0000	JERALD L. RUHL
2	461-2308780-295905-0-0000	ANDREW M. GOODMAN
3	461-2308636-295928-0-0000	KEITH A. RENNER
4	461-2308492-295952-0-0000	MATTHEW L. NISSLEY
5	461-2308347-295976-0-0000	CHRIS KALEY
6	461-2308203-296000-0-0000	STEPHEN M. COOK
7	461-2308059-296023-0-0000	JEANNE M. TODD
8	461-2307915-296055-0-0000	WILLIAM L. TALMADGE JR.
9	461-2307803-296123-0-0000	MARK A. MAGRECKI
10	461-2307720-296183-0-0000	SHAWN M. BRENNEMAN
11	461-2307617-296197-0-0000	WILLIAM N. & LORIE A. ROHRER
12	461-2307516-296212-0-0000	PHILIP E. & MELINDA R. ERB
13	461-2307414-296227-0-0000	RANDY R. & LORI A. STEVENS
14	461-2307311-296241-0-0000	BENJAMIN S. HEISEY
15	461-2307160-296257-0-0000	ANDRE M. & JACQUELINE M. RESSLER
16	461-2306941-296350-0-0000	RONI K. CLARK
17	461-2306730-296512-0-0000	TERRENCE P. RYAN
18	461-2306526-296312-0-0000	DAVID F. FISHER
19	461-2306112-296461-0-0000	MARC T. MYERS
20	461-2305899-298422-0-0000	FRANKLIN B. GREINER JR.
21	461-2307478-297357-0-0000	KENT E. MUMMAU
22	461-2308517-297808-0-0000	DANIEL E. MILLER
23	461-2308627-297811-0-0000	RYAN P. MCKERNAN
24	461-2308737-297814-0-0000	KENNETH R. & AUDREY J. LANDVATER
25	461-2308847-297815-0-0000	DEAN M. & HELEN S. HERTZLER
26	461-2308966-297817-0-0000	LAWRENCE VANDERSCHAAF II
27	461-2309165-297816-0-0000	JACOB M. & JEAN S. SAYLOR
28	461-2309407-297805-0-0000	LESTER F. REINER
29	461-2309530-296748-0-0000	MARK E. & LINDA M. BRUBAKER

PROJECT DATA	
PARCEL INFORMATION	
APPLICANT	ABUNDANT SOLAR POWER, INC.
OWNER	SUSTAINABLE INVESTMENTS LTD.
PARCEL ADDRESS	1127 GRANDVIEW RD, MOUNT JOY, PA 17552
PARCEL ID	461-1321300000
PARCEL AREA (TOTAL)	56.28 ACRES
TOTAL PROJECT AREA	±26.72 ACRES
EXISTING IMPERVIOUS WITHIN PROJECT AREA	0 ACRES
PROPOSED IMPERVIOUS WITHIN PROJECT AREA	±0.25 ACRES
PANEL COVERAGE	7.3%
TOTAL DISTURBANCE AREA	±13.65 ACRES

SYSTEM SUMMARY	
System DC Size (kW)	4,222.4
System AC Size (kW)	3,000
DC/AC	1.4075
MODULE NUMBER	7,280
MODULE TYPE	SILFAB SIL-580 XM+
RACK COUNT	380
TILT (DEGREE)	30
PITCH (FT)	31
AZIMUTH (DEGREE)	0
FENCED AREA FOOTPRINT (ACRE)	12.9
POI GPS COORDINATES	40.142008, -76.531866

ZONING INFORMATION		
CLASSIFICATION	AGRICULTURAL DISTRICT (A)	
ZONING ORDINANCE (MOUNT JOY TOWNSHIP, PA)		
CLASSIFICATION	ALTERNATIVE ENERGY SYSTEMS	
	REQUIRED	PROVIDED
FRONT SETBACK	50 FT	252.97 FT
SIDE SETBACK	20 FT	102.00 FT
REAR SETBACK	50 FT	1,405.77 FT

1 SITE PLAN
C-200 SCALE: 1"=100'



1000 Dunham Drive
Dunmore, PA 18512
570-342-3101
labellapc.com

NOT FOR CONSTRUCTION

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ABUNDANT SOLAR POWER, INC.
700 WEST METRO PARK
ROCHESTER, NY 14623



ABUNDANT
Solar Power Inc.

GRANDVIEW SOLAR PROJECT
1127 GRANDVIEW RD, MOUNT JOY, PA 17552

NO.	DATE	DESCRIPTION

PROJECT NUMBER:	2263503
DRAWN BY:	LSN
REVIEWED BY:	CJR
ISSUED FOR:	SPECIAL EXCEPTION
DATE:	06/08/2026
DRAWING NAME:	

SITE PLAN

DRAWING NUMBER:

C-200

APPENDIX B

PENNSYLVANIA ECOLOGICALLY SENSITIVE RESOURCES AND STATE SPECIES

1. PROJECT INFORMATION

Project Name: **Grandview Rd Solar**

Date of Review: **6/4/2026 09:26:24 PM**

Project Category: **Energy Storage, Production, and Transfer, Energy Production (generation), Solar Power Facility -- new or expansion**

Project Area: **56.28 acres**

County(s): **Lancaster**

Township/Municipality(s): **Mount Joy Township**

ZIP Code:

Quadrangle Name(s): **ELIZABETHTOWN**

Watersheds HUC 8: **Lower Susquehanna**

Watersheds HUC 12: **Donegal Creek; Little Chickies Creek**

Decimal Degrees: **40.141724, -76.535300**

Degrees Minutes Seconds: **40° 8' 30.2060" N, 76° 32' 7.808" W**

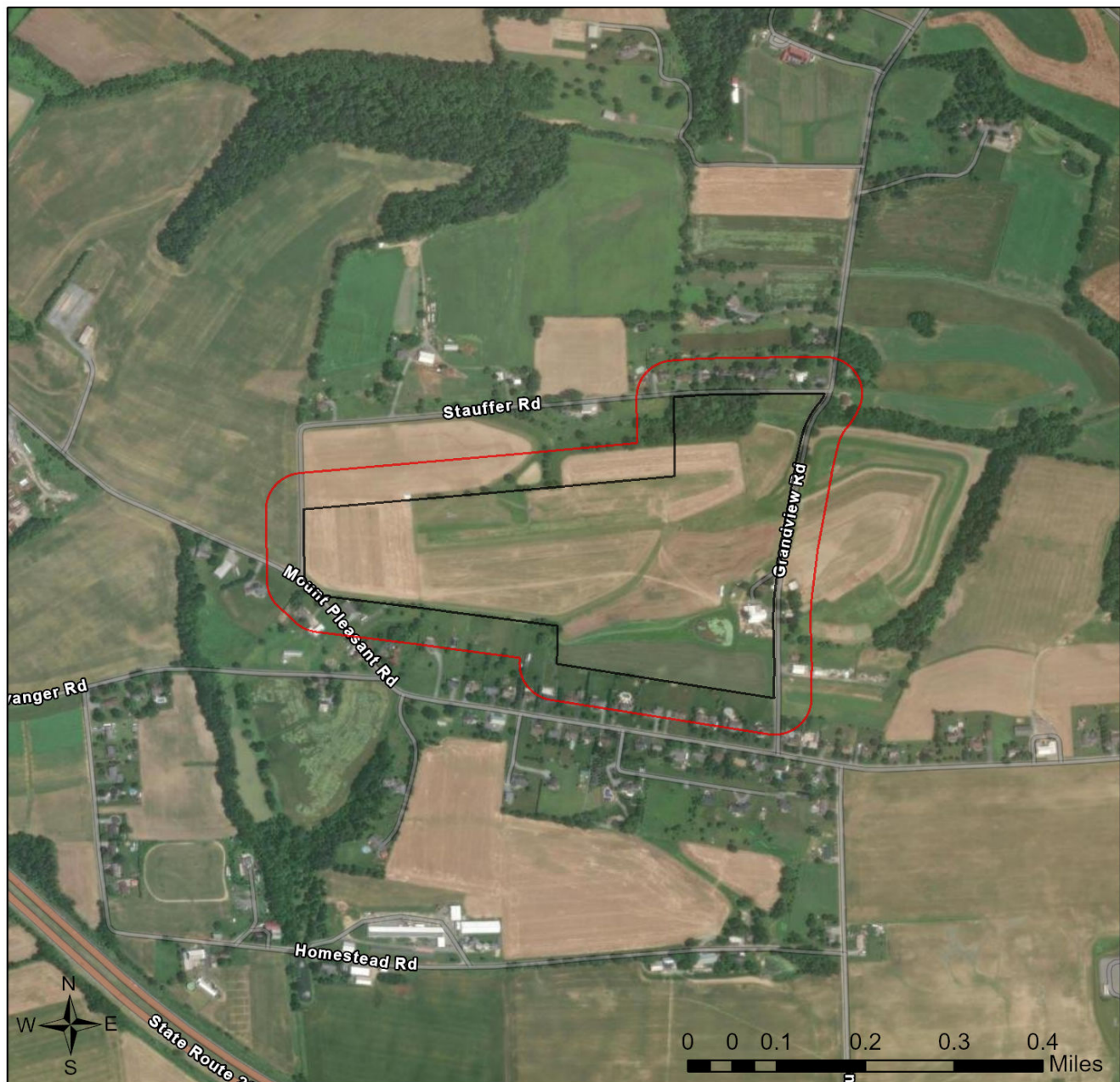
This is a draft receipt for information only. It has not been submitted to jurisdictional agencies for review.

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	Conservation Measure	No Further Review Required, See Agency Comments
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	Potential Impact	MORE INFORMATION REQUIRED, See Agency Response

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Grandview Rd Solar

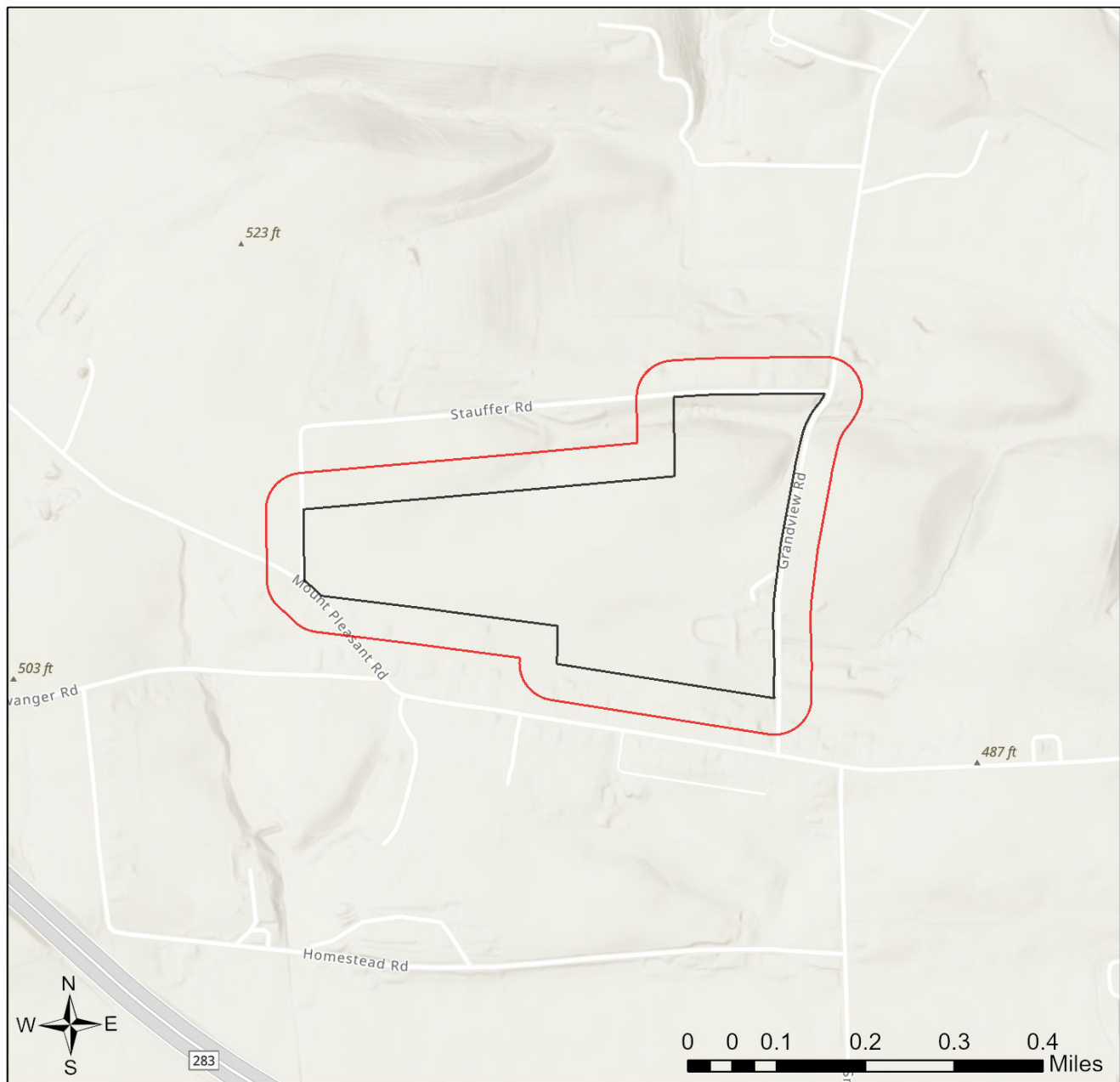


-  Buffered Project Boundary
-  Project Boundary



Sources: Esri, Vantor, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community

Grandview Rd Solar



-  Buffered Project Boundary
-  Project Boundary



Sources: Esri, Vantor, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.

Your answer is: The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands (holding a natural resource degree or equivalent work experience), or it is currently unknown if the project or project activities will affect wetlands.

Q2: Will the action include disturbance to trees such as tree cutting (or other means of knocking down, or bringing down trees, tree topping, or tree trimming), pesticide/herbicide application or prescribed fire?

Your answer is: Unknown

Q3: Does the action area contain any caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, culverts, or tunnels that could provide habitat for hibernating bats?

Your answer is: Unknown

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

Conservation Measure: Potential impacts to state and federally listed species which are under the jurisdiction of both the Pennsylvania Game Commission (PGC) and the U.S. Fish and Wildlife Service may occur as a result of this project. As a result, the PGC defers comments on potential impacts to federally listed species to the U.S. Fish and Wildlife Service. No further coordination with the Pennsylvania Game Commission is required at this time.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

U.S. Fish and Wildlife Service

RESPONSE:

Information Request: Your project is within the range of the federally listed Indiana bat. Enter project information into IPaC (<http://ecos.fws.gov/ipac/>). Follow the step-by-step process to review this project's potential effect on federally listed species. For step-by-step instructions, please see our Project Review Page (<https://www.fws.gov/office/pennsylvania-ecological-services/project-revi...>)

Information Request: Your project is within the range of the federally listed bog turtle. Enter project information into IPaC (<http://ecos.fws.gov/ipac/>). Follow the step-by-step process to review this project's potential effect on federally listed species. For step-by-step instructions, please see our Project Review Page (<https://www.fws.gov/office/pennsylvania-ecological-services/project-revi...>)

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email the following information to the agency(s) (see AGENCY CONTACT INFORMATION). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies (but not USFWS).

*If information was requested by USFWS, applicants must submit their project using [IPaC](#), following the [USFWS Project Submission](#) Instructions. USFWS will not accept or review project materials uploaded via the Conservation Explorer.

Check-list of Minimum Materials to be submitted:

___ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

___ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

___ SIGNED copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

___ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

___ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.



APPENDIX C

FEDERAL SPECIES AND ECOLOGICALLY SENSITIVE RESOURCES



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Ecological Services Field Office
110 Radnor Road Suite 101
State College, PA 16801-7987
Phone: (814) 298-4392



In Reply Refer To:
Project Code: 2026-0099264
Project Name: Grandview Rd Solar

06/05/2026 01:47:12 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Pennsylvania Ecological Services Field Office

110 Radnor Road Suite 101

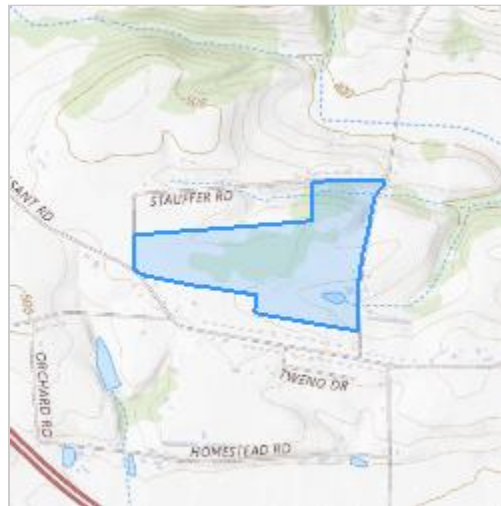
State College, PA 16801-7987

(814) 298-4392

PROJECT SUMMARY

Project Code: 2026-0099264
Project Name: Grandview Rd Solar
Project Type: Power Gen - Solar
Project Description: solar development
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@40.1417711,-76.53646988634617,14z>



Counties: Lancaster County, Pennsylvania

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

REPTILES

NAME	STATUS
Bog Turtle <i>Glyptemys muhlenbergii</i> Population: Wherever found, except GA, NC, SC, TN, VA No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6962	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Emma Hinkle
Address: 1000 Dunham Drive
Address Line 2: Suite B
City: Dunmore
State: PA
Zip: 18512
Email: ehinkle@labellapc.com
Phone: 5702258358



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Ecological Services Field Office
110 Radnor Road Suite 101
State College, PA 16801-7987
Phone: (814) 298-4396



In Reply Refer To:
Project code: 2026-0099264
Project Name: Grandview Rd Solar

07/02/2026 18:00:42 UTC

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Technical assistance for 'Grandview Rd Solar'

Dear Emma Hinkle:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on July 02, 2026, for “Grandview Rd Solar” (here forward, Project). This project has been assigned Project Code 2026-0099264 and all future correspondence should clearly reference this number.

The Service developed the IPaC system and associated species’ determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. Failure to accurately represent or implement the Project as detailed in IPaC or the Northeast Determination Key (Dkey), invalidates this letter. **Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.**

The IPaC results indicated the following species is (are) potentially present in your project area and, based on your responses to the Service’s Northeast DKey, you determined the proposed Project will have the following effect determinations:

Species	Listing Status	Determination
bog turtle (<i>Glyptemys muhlenbergii</i>)	Threatened	May affect
Indiana bat (<i>Myotis sodalis</i>)	Endangered	NLAA

Further coordination with the Service is voluntary for those species with a determination of “May Affect.” A “May Affect” determination in this key indicates that the project, as entered, is not consistent with the questions in the key. Not all projects that reach a “May Affect” determination are anticipated to result in adverse impacts to listed species. Through the technical assistance process, the Service might be able to provide information that either indicates incidental take is not reasonably certain to occur, or the Service might be able to provide recommendations that enable the project to be conducted in a way that avoids the likelihood of incidentally taking listed species. Please contact our Pennsylvania Ecological Services Field Office for more information.

Other Species and Critical Habitat that May be Present in the Action Area

In addition to the species listed above, the following species and/or critical habitats may also occur in your project area and are not covered by this conclusion:

- Monarch butterfly *Danaus plexippus* Proposed Threatened
- Tricolored bat *Perimyotis subflavus* Proposed Endangered

Please Note: If the Action may impact bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d) by the prospective permittee may be required. Please contact the Migratory Birds Permit Office, (413) 253-8643, or PermitsR5MB@fws.gov, with any questions regarding potential impacts to Eagles.

If you have any questions regarding this letter or need further assistance, please contact the Pennsylvania Ecological Services Field Office and reference the Project Code associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

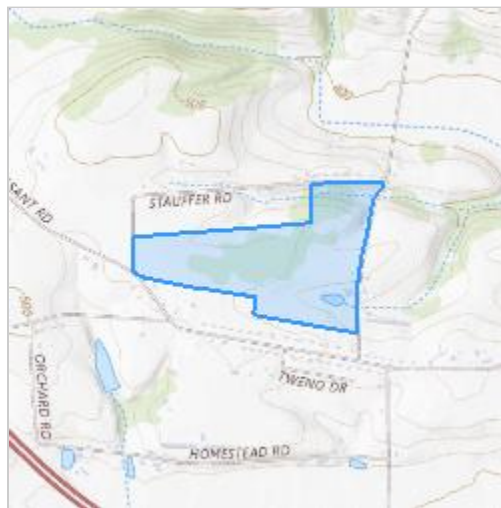
Grandview Rd Solar

2. Description

The following description was provided for the project 'Grandview Rd Solar':

solar development

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@40.141583350000005,-76.5364870715589,14z>



QUALIFICATION INTERVIEW

1. As a representative of this project, do you agree that all items submitted represent the complete scope of the project details and you will answer questions truthfully?

Yes

2. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed species?

Note: This question could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered, or proposed species.

No

3. Is the action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Note: for projects in Pennsylvania: Projects requiring authorization under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act would be considered as having a federal nexus. Since the U.S. Army Corps of Engineers (Corps) has issued the Pennsylvania State Programmatic General Permit (PASPGP), which may be verified by the PA Department of Environmental Protection or certain Conservation Districts, the need to receive a Corps authorization to perform the work under the PASPGP serves as a federal nexus. As such, if proposing to use the PASPGP, you would answer 'yes' to this question.

No

4. Will the proposed project involve the use or storage of herbicide?

No

5. Will the proposed project involve herbaceous native vegetation removal (including prescribed fire that would result in burning of plants) or mowing?

Yes

6. Will the proposed project result in **permanent** changes to surface water or groundwater quantity, retention, quality or timing? For example, will the proposed project include any activities that would alter stream flow, surface water or groundwater such as water withdrawal, water recharge, wells, infiltration effects, stormwater outlets, hydropower energy production, impoundments, intake structures, water or stream diversion structures, mining, impoundments, dams, surface water drainage, and/or turbines? Projects that include temporary and limited water reductions that will not displace listed species or appreciably change water availability for listed species (e.g. listed species will experience no changes to feeding, breeding or sheltering) can answer "No". Note: This question refers only to the amount of water present in a stream, other water quality factors, including sedimentation and turbidity, will be addressed in following questions.

No

7. Does the project include activity in or within 300 feet of a freshwater wetland?

This includes, for example, project activities within wetlands, project activities within 300 feet of wetlands that may have impacts on wetlands, water withdrawals and/or discharge of contaminants (even with a NPDES). Activities include, but are not limited to wetland draining, ditching, tilling, filling, excavation, stream diversion, impoundments, mowing, grazing of vegetation, access roads, detention basins, water or sewer lines, irrigation, increase in impervious surfaces, and application of pesticides, deicing agents, or fertilizers.

Yes

8. Does any component of the project associated with this action include activities or structures that may pose a collision risk to **birds** (e.g., plane-based surveys, land-based or offshore wind turbines, new or enlarged communication towers or broadcast towers, high voltage transmission lines, any type of towers with or without guy wires)?

Yes

9. Will the proposed project involve demolition, rehabilitation, property elevation, renovation, and/or rebuilding of one or more existing buildings (e.g., residential, commercial and industrial buildings, or utilities)? Note: if project activities include modification of bridges and/or culverts, answer this question "No".

No

10. Does the project area intersect the boundary of VAFO?

Automatically answered

No

11. Does the project area intersect the boundary of CBFO?

Automatically answered

No

12. [Hidden Semantic] Does the project intersect WV?

Automatically answered

No

13. Does the proposed project involve construction or installation of a non-commercial boat dock on a stream?

No

14. Does any component of the project associated with this action include activities or structures that may pose a collision risk to **bats** (e.g., plane-based surveys, land-based or offshore wind turbines)?

No

15. Is the project an aquatic restoration project being funded, lead, or managed in whole or in part by U.S. Fish and Wildlife Restoration and Recovery Program (e.g., Partners, Coastal, Fisheries, Wildlife and Sport Fish Restoration, Refuges)?

No

16. Will the proposed project result in permanent changes to water availability or water quality where **bats** may be present?

No

17. Will the proposed project involve blasting where bats may be present?

No

18. Will the proposed project involve earth moving or ground disturbance that could cause erosion, sedimentation, and/or contamination within waterbodies potentially used by bats?

Note: Answer yes if erosion and sediment control measures will be used.

Yes

19. Will erosion and sedimentation control Best Management Practices (BMPs) associated with applicable state and/or federal permits be applied to the project? If BMPs have been provided by and/or coordinated with and approved by the appropriate Ecological Services Field Office, answer "Yes" to this question.

Yes

20. Does the project intersect the Indiana bat species list area?

Automatically answered

Yes

21. [Hidden Semantic] Is the project wholly within MD?

Automatically answered

No

22. Are there any caves, mines, or mine features that are suitable for hibernating Indiana bats within the area expected to be impacted by the project?

No

23. Has a presence/probable absence bat survey (acoustic or mist-net summer active season survey) following the [USFWS's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines](#) been conducted within the action area?

No

24. Does the project involve removal or modification of a human-made structure (barn, house, or other building) known or suspected to contain roosting bats? **Note:** Most maintenance and general human disturbance in and around structures will not affect Indiana bats as bats roosting in human structures are adjusted to a certain level of routine noise and are generally expected to roost away from areas with excessive disturbance. Answer 'no' if the proposed action will not include disturbance to human structures known or suspected to contain roosting bats or if the structure does not offer suitable roosting habitat for northern long-eared bats. If unsure, answer 'yes.'

No

25. Does the project include removal/modification of an existing culvert?

No

26. Does the project include removal/modification of an existing bridge?

No

27. Are trees present within 1000 feet of the action area?

Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags ≥ 5 inches dbh (12.7 centimeter), answer "Yes". If unsure, answer "Yes." Or refer to the USFWS' [Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines](#) for definitions and an assessment form that will assist you in determining if suitable habitat is present within your project's action area. Suitable summer habitat for Indiana bat consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 5 inches dbh (12.7 centimeter) that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat.

Yes

28. Will the project include tree cutting, other means of knocking down or bringing down trees, or tree trimming?

No

29. Will the project result in the use of prescribed fire?

No

30. Does the project include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s)?

No

31. Will the proposed project involve earth moving or ground disturbance that could cause erosion and sedimentation, and/or contamination within 300 feet of a freshwater wetland? Answer "yes" to this question if erosion and sediment control measures will be used.

Yes

32. Does the project intersect the Bog Turtle species list area?

Automatically answered

Yes

33. Does the project intersect the PA consultation area?

Automatically answered

No

34. Is this a PennDOT project in Pennsylvania covered under the [Programmatic Biological Opinion on the Effects of Transportation Actions on the Bog Turtle in PA](#)?

Note: If you answer yes, your Northeast Dkey generated letter will have a May Affect determination for bog turtle. This determination will be superceded by the concurrence on the bog turtle PBO project submittal form. Please see the [PennDOT Procedures for Completing Project Reviews](#) for more details.

No

35. Has a bog turtle [Phase 1 habitat assessment](#) been conducted?

Note: If Yes, upload Phase 1 Survey report, which includes Phase 1 Field Form and photos of bog turtle habitat.

No

36. Without a Phase 1 bog turtle habitat survey, projects must assume presence of suitable bog turtle habitat to continue through the key. Do you want to assume presence of suitable bog turtle habitat and continue answering questions in the key?

Yes

37. Will there be direct impacts to any part of a wetland containing suitable bog turtle habitat or wetlands containing deep mucky soils or spring-fed persistent groundwater hydrology? If direct impacts will not occur, upload a map or diagram showing the areas containing wetland features in relation to the areas where project impacts are expected to occur.

Note: Direct impacts could include, but are not limited to, personnel, vehicles or equipment travelling within the wetland, placement of equipment or structures, addition of sediment or fill, pesticide or chemical application, or other activities that could result in ground disturbance, vegetation removal, or soil compaction.

No

SUBMITTED DOCUMENTS

- C-200_SITE LAYOUT PLAN.pdf <https://ipac.ecosphere.fws.gov/project/R7RQ5GBZEZBVLCEPO7MTYYIJM/projectDocuments/183963686>

38. Will project activities include the use of pesticide within 50 feet of a freshwater wetland?

No

39. Will project activities include ground disturbance, other than disking an existing crop field, within 300 feet of a freshwater wetland?

Yes

40. Do you have any other documents that you want to include with this submission?

No

PROJECT QUESTIONNAIRE

1. Approximately how many acres of trees would the proposed project remove?
0
2. Approximately how many total acres of disturbance are within the disturbance/
construction limits of the proposed project?
14.2
3. Briefly describe the habitat within the construction/disturbance limits of the project site.
mostly agricultural fields

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Emma Hinkle
Address: 1000 Dunham Drive
Address Line 2: Suite B
City: Dunmore
State: PA
Zip: 18512
Email: ehinkle@labellapc.com
Phone: 5702258358



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Ecological Services Field Office
110 Radnor Road Suite 101
State College, PA 16801-7987
Phone: (814) 298-4396



In Reply Refer To:
Project code: 2026-0099264
Project Name: Grandview Rd Solar

07/02/2026 18:14:08 UTC

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Record of project representative's no effect determination for 'Grandview Rd Solar'

Dear Emma Hinkle:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on July 02, 2026, for 'Grandview Rd Solar' (here forward, Project). This project has been assigned Project Code 2026-0099264 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the **Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey)**, invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat and/or Tricolored Bat

Based upon your IPaC submission and a standing analysis, your project has reached the following effect determinations:

Species	Listing Status	Determination
Tricolored bat (<i>Perimyotis subflavus</i>)	Proposed	No effect
	Endangered	

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate.

To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- bog turtle *Glyptemys muhlenbergii* Threatened
- Indiana bat *Myotis sodalis* Endangered
- Monarch butterfly *Danaus plexippus* Proposed Threatened

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

If there are no updates on listed species, no further consultation/coordination for this project is required with respect to the species covered by this key. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical

habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the Pennsylvania Ecological Services Field Office and reference Project Code 2026-0099264 associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

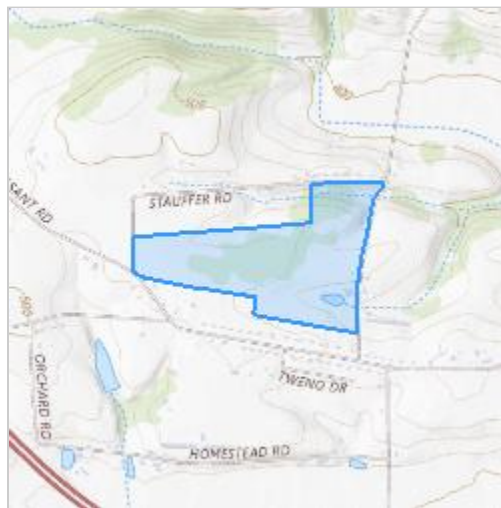
Grandview Rd Solar

2. Description

The following description was provided for the project 'Grandview Rd Solar':

solar development

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@40.141583350000005,-76.5364870715589,14z>



DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the species covered by this determination key. Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

Automatically answered

No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

Automatically answered

No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Note for projects in Pennsylvania: Projects requiring authorization under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act would be considered as having a federal nexus. Since the U.S. Army Corps of Engineers (Corps) has issued the Pennsylvania State Programmatic General Permit (PASPGP), which may be verified by the PA Department of Environmental Protection or certain Conservation Districts, the need to receive a Corps authorization to perform the work under the PASPGP serves as a federal nexus. As such, if proposing to use the PASPGP, you would answer 'yes' to this question.

No

6. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum or winter roost? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

Automatically answered

No

7. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

No

8. Does the action area contain (1) talus or (2) anthropogenic or naturally formed rock shelters or crevices in rocky outcrops, rock faces or cliffs?

No

9. Is the action located in New England (CT, MA, ME, NH, RI, or VT)?

No

10. Will the action cause effects to a bridge?

Note: Covered bridges should be considered as bridges in this question.

No

11. Will the action result in effects to a culvert or tunnel at any time of year?

No

12. Are trees present within 1000 feet of the action area? **Note:** If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in the USFWS' [Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines](#).

Yes

13. Does the action include the intentional exclusion of bats from a building or building-like structure? **Note:** Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

No

14. Does the action involve removal, modification, or maintenance of a human-made building-like structure (barn, house, or other building) **known or suspected to contain roosting bats?**

No

15. Will the action cause construction of one or more new roads open to the public?

For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

No

16. Will the action include or cause any construction or other activity that is reasonably certain to increase average night-time traffic permanently or temporarily on one or more existing roads? **Note:** For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

No

17. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

No

18. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

Note: For information regarding NSF/ANSI 60 please visit <https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects>

No

19. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

No

20. Will the action include drilling or blasting?

Yes

21. Will the drilling or blasting produce noise or vibrations above existing background levels that will affect suitable summer habitat for northern long-eared bats and/or tricolored bats?

Note: Additional information defining suitable summer habitat for the northern long-eared bat and/or tricolored bat, can be found in the USFWS' [Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines](#).

No

22. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use at night)?

No

23. Will the proposed action involve the use of herbicides or pesticides (e.g., fungicides, insecticides, or rodenticides)?

No

24. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season? Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining. **Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in the USFWS' [Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines](#).

No

25. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable forested northern long-eared bat or tricolored bat roosting habitat? **Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in the USFWS' [Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines](#).

No

26. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

No

27. Will the proposed action result in the use of prescribed fire?

Note: If the prescribed fire action includes other activities than application of fire (e.g., tree cutting, fire line preparation) please consider impacts from those activities within the previous representative questions in the key. This set of questions only considers impacts from flame and smoke.

No

28. Does the action area intersect the tricolored bat species list area?

Automatically answered

Yes

29. Is the action area located within 0.5-mile of radius of an entrance/opening to any known tricolored bat hibernacula or winter roost?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

Automatically answered

No

30. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

Automatically answered

No

31. Has a presence/probable absence bat survey targeting the [tricolored bat and following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines](#) been conducted within the project area?

No

32. Is suitable summer habitat for the tricolored bat present within 1000 feet of project activities? (If unsure, answer ""Yes."") **Note:** If there are trees within the action area that may provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (*Tillandsia usneoides*), clusters of dead pine needles of large live pines) answer ""Yes."" For a complete definition of suitable summer habitat for the tricolored bat, please see the [Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines](#).

Yes

33. Do you have any documents that you want to include with this submission?

No

PROJECT QUESTIONNAIRE

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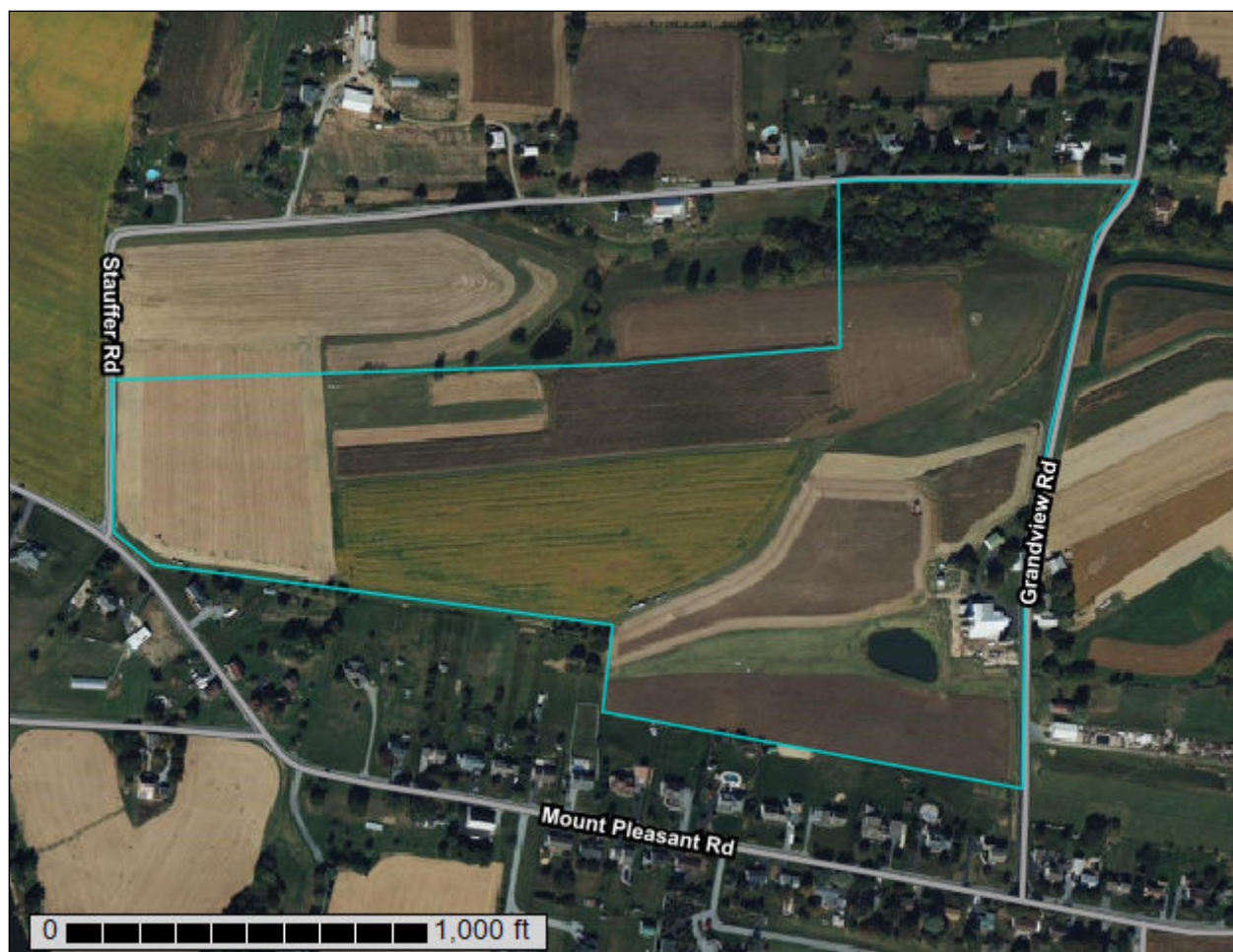
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Lancaster County, Pennsylvania**



September 11, 2026

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Lancaster County, Pennsylvania.....	13
BdB—Bedington silt loam, 3 to 8 percent slopes.....	13
BdC—Bedington silt loam, 8 to 15 percent slopes.....	14
BeD—Bedington channery silt loam, 15 to 25 percent slopes.....	16
Bm—Blairton silt loam, 3 to 10 percent slopes.....	17
W—Water.....	19
References	20

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

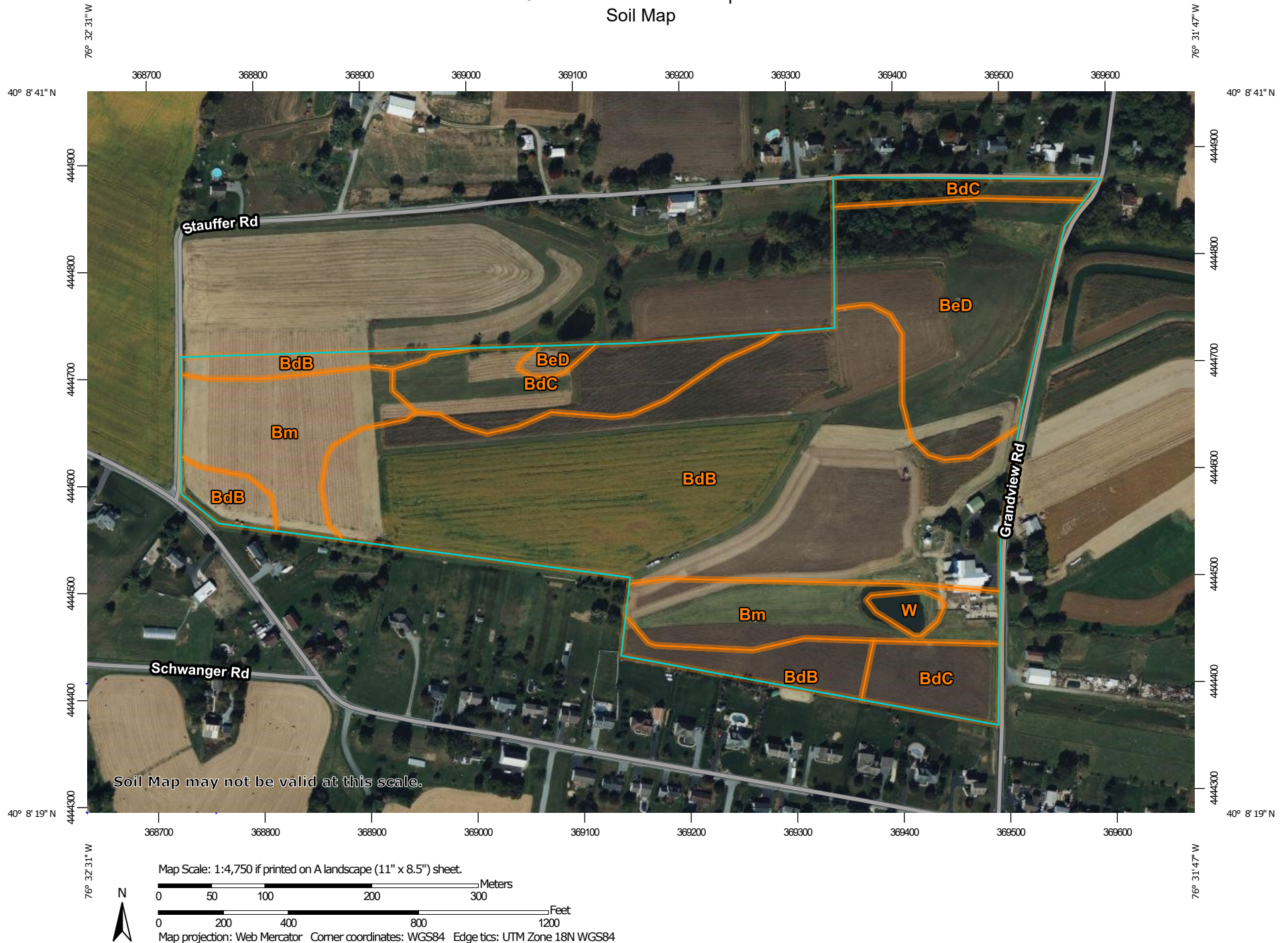
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

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

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

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

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

Soil Survey Area: Lancaster County, Pennsylvania
Survey Area Data: Version 24, Sep 3, 2025

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

Date(s) aerial images were photographed: Jul 6, 2020—Nov 7, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BdB	Bedington silt loam, 3 to 8 percent slopes	29.7	52.5%
BdC	Bedington silt loam, 8 to 15 percent slopes	7.7	13.6%
BeD	Bedington channery silt loam, 15 to 25 percent slopes	9.5	16.8%
Bm	Blairton silt loam, 3 to 10 percent slopes	9.1	16.2%
W	Water	0.5	0.9%
Totals for Area of Interest		56.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

Custom Soil Resource Report

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Lancaster County, Pennsylvania

BdB—Bedington silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 16r2
Landscape: Valleys
Elevation: 300 to 1,500 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 140 to 217 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Bedington and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bedington

Setting

Landscape: Valleys
Landform: Shale hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 47 inches: channery silty clay loam
H3 - 47 to 63 inches: very channery clay loam
R - 63 to 67 inches: weathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 48 to 99 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F147XY002PA - Mixed Sedimentary Upland
Hydric soil rating: No

Minor Components

Berks

Percent of map unit: 10 percent

Hydric soil rating: No

Edom

Percent of map unit: 5 percent

Landform: Hillslopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Hartleton

Percent of map unit: 5 percent

Landform: — error in exists on —

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Concave, linear

Across-slope shape: Linear, concave

Hydric soil rating: No

Watson

Percent of map unit: 5 percent

Landform: Valley sides

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

BdC—Bedington silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: l6r3

Landscape: Valleys

Elevation: 300 to 1,500 feet

Mean annual precipitation: 35 to 50 inches

Mean annual air temperature: 45 to 57 degrees F

Frost-free period: 140 to 217 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Bedington and similar soils: 75 percent

Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bedington

Setting

Landscape: Valleys
Landform: Shale hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 47 inches: channery silty clay loam
H3 - 47 to 63 inches: very channery clay loam
R - 63 to 67 inches: weathered bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 48 to 99 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F147XY002PA - Mixed Sedimentary Upland
Hydric soil rating: No

Minor Components

Berks

Percent of map unit: 10 percent
Hydric soil rating: No

Edom

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Watson

Percent of map unit: 5 percent
Landform: Valley sides
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Linear

Hydric soil rating: No

Hartleton

Percent of map unit: 5 percent

Landform: — error in exists on —

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Concave, linear

Across-slope shape: Linear, concave

Hydric soil rating: No

BeD—Bedington channery silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 16r4

Elevation: 300 to 1,600 feet

Mean annual precipitation: 35 to 50 inches

Mean annual air temperature: 45 to 57 degrees F

Frost-free period: 120 to 214 days

Farmland classification: Not prime farmland

Map Unit Composition

Bedington and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bedington

Setting

Landform: Slightly dissected hills

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Nose slope, side slope

Down-slope shape: Linear

Across-slope shape: Concave

Parent material: Acid residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 9 inches: channery silt loam

H2 - 9 to 29 inches: channery silty clay loam

H3 - 29 to 72 inches: very channery silt loam

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: 60 to 80 inches to lithic bedrock

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: F147XY002PA - Mixed Sedimentary Upland

Hydric soil rating: No

Minor Components

Comly

Percent of map unit: 7 percent

Hydric soil rating: No

Berks

Percent of map unit: 5 percent

Hydric soil rating: No

Weikert

Percent of map unit: 3 percent

Hydric soil rating: No

Bm—Blairton silt loam, 3 to 10 percent slopes

Map Unit Setting

National map unit symbol: l6r5

Elevation: 300 to 1,500 feet

Mean annual precipitation: 35 to 50 inches

Mean annual air temperature: 45 to 57 degrees F

Frost-free period: 120 to 200 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Blairton and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blairton

Setting

Landform: Depressions

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Head slope

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Local silty colluvium derived from shale and siltstone over acid silty residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 10 inches: silt loam

Custom Soil Resource Report

Bt - 10 to 35 inches: channery silty clay loam
Cg - 35 to 39 inches: very channery loam
R - 39 to 43 inches: bedrock

Properties and qualities

Slope: 3 to 10 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 6 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F148XY024PA - Moist, Piedmont - felsic, Upland, Mixed Oak - Hardwood - Conifer Forest
Hydric soil rating: No

Minor Components

Poorly drained areas

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Ungers

Percent of map unit: 2 percent
Hydric soil rating: No

Bucks

Percent of map unit: 2 percent
Landscape: Uplands
Landform: Rolling hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Bedington

Percent of map unit: 1 percent
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: 16tr

Mean annual precipitation: 36 to 50 inches

Mean annual air temperature: 46 to 59 degrees F

Frost-free period: 120 to 214 days

Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting

Parent material: Rivers streams ponds

Properties and qualities

Frequency of ponding: Frequent

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