JOINT PERMIT APPLICATION
B50 TEMPORARY ABOVEGROUND WATERLINE PROJECT
ECONOMY BOROUGH, BEAVER COUNTY, PENNSYLVANIA

Prepared For:

PENNENERGY RESOURCES, LLC
1000 COMMERCE DRIVE
PARK PLACE ONE, SUITE 400
PITTSBURGH, PENNSYLVANIA 15275

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
4350 NORTHERN PIKE, SUITE 141
MONROEVILLE, PENNSYLVANIA 15146

CEC Project 317-457

March 14, 2022
Revised November 4, 2022
Revised March 9, 2023
Revised May 1, 2023

JOINT PERMIT APPLICATION
B50 TEMPORARY ABOVEGROUND WATERLINE PROJECT
PENNENERGY RESOURCES, LLC
ECONOMY BOROUGH, BEAVER COUNTY, PENNSYLVANIA

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This form is used by the Department of Environmental Protection (DEP) to inform our programs regarding what other DEP permits or authorizations may be needed for the proposed project or activity. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the DEP.

Related ID#s (If Known)				DEP USE ONLY
Client ID#		**APS ID#**		Date Received & General Notes
Site ID#		**Auth ID#**		
Facility ID#				

CLIENT INFORMATION

DEP Client ID#	Client Type / Code	Dun & Bradstreet ID#
294943	LLC	

Legal Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Is the EIN a SSN?
PennEnergy Resources, LLC	452673440	☐ Yes ☒ NO

State of Incorporation or Registration of Fictious Name	
PA	☐ Corporation ☒ LLC ☐ Partnership ☐ LLP ☐ LP ☐ Sole Proprietorship ☐ Association/Organization ☐ Estate/Trust ☐ Other

Individual Last Name	First Name	MI	Suffix
N/A			

Additional Individual Last Name	First Name	MI	Suffix
N/A			

Mailing Address Line 1	Mailing Address Line 2
1000 Commerce Drive	Park Place One, Suite 400

Address Last Line – City	State	ZIP+4	Country
Pittsburgh	PA	15275	USA

Client Contact Last Name	First Name	MI	Suffix
Watson	Richard		

Client Contact Title	Phone	Ext	Cell Phone
Project Manager	(412) 935-5027		

Email Address	FAX
rmwatson@pennenergyresources.com	

SITE INFORMATION

DEP Site ID#	Site Name
	B50 Temporary Above-Ground Waterline Project

EPA ID# **Estimated Number of Employees to be Present at Site** N/A

Description of Site
The project area consists of moderate to steep forested slopes and ridgetop, as well as two perennial stream valleys.

Tax Parcel ID(s): 60-185-0266.000, 60-185-0244.000, 60-185-0242.002

County Name(s)	Municipality(ies)	City	Boro	Twp	State
Beaver	Economy Borough	☐	☒	☐	PA

Site Location Line 1	Site Location Line 2
Cooney Hollow Road	

Site Location Last Line – City	State	ZIP+4
Sewickley	PA	15143

Detailed Written Directions to Site
From I-79 N, take exit 73 for PA-910 toward Wexford. Turn left onto PA-910 W/Wexford Bayne Road and drive for 1.9 miles. Continue straight onto Rochester Road and drive for 1.1 miles. Continue straight onto Big Sewickley Creek Road and drive for 2.9 miles. Turn right onto Hoenig Road and drive for 0.2 mile. Turn right onto Cooney Hollow Road and drive for approximately 320 feet. The withdrawal site will be on the right.

Site Contact Last Name	First Name	MI	Suffix
Watson	Richard		

Site Contact Title	Site Contact Firm
Project Manager	PennEnergy Resources, LLC

Mailing Address Line 1	Mailing Address Line 2
1000 Commerce Drive	Park Place One, Suite 400

Address Last Line – City	State	ZIP+4
Pittsburgh	PA	15275

Phone	Ext	FAX	Email Address
(412) 935-5027			rmwatson@pennenergyresources.com

NAICS Codes (Two- & Three-Digit Codes – List All That Apply): 221

6-Digit Code (Optional):

Client to Site Relationship
LESSOP

FACILITY INFORMATION

Modification of Existing Facility	Yes	No
1. **Will this project modify an existing facility, system, or activity?**	☐	☒
2. **Will this project involve an addition to an existing facility, system, or activity?**	☐	☒

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

	Facility Type	DEP Fac ID#		Facility Type	DEP Fac ID#
☐	Air Emission Plant		☐	Industrial Minerals Mining Operation	
☐	Beneficial Use (water)		☐	Laboratory Location	
☐	Blasting Operation		☐	Land Recycling Cleanup Location	
☐	Captive Hazardous Waste Operation		☐	Mine Drainage Treatment / Land Recycling Project Location	
☐	Coal Ash Beneficial Use Operation		☐	Municipal Waste Operation	
☐	Coal Mining Operation		☐	Oil & Gas Encroachment Location	
☐	Coal Pillar Location		☐	Oil & Gas Location	
☐	Commercial Hazardous Waste Operation		☐	Oil & Gas Water Poll Control Facility	
☐	Dam Location		☐	Public Water Supply System	
☐	Deep Mine Safety Operation -Anthracite		☐	Radiation Facility	
☐	Deep Mine Safety Operation -Bituminous		☐	Residual Waste Operation	
☐	Deep Mine Safety Operation -Ind Minerals		☐	Storage Tank Location	
☐	Encroachment Location (water, wetland)		☐	Water Pollution Control Facility	
☐	Erosion & Sediment Control Facility		☐	Water Resource	
☐	Explosive Storage Location		☐	Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Approximate center of site	40	36	41.92	80	10	32.34

Horizontal Accuracy Measure: Feet *--or--* Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☒ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code: GISDR

Reference Point Code: CENTER

Altitude: Feet 790-1,165 *--or--* Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☒ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code: POINT

Geometric Type Code: POINT

Data Collection Date: May 2020 - June 2021

Source Map Scale Number: 1 Inch(es) = 2,000 Feet
--or-- Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
B50 Temporary Above-Ground Waterline Project

Project Description
The project consists of a temporary water withdrawal on Big Sewickley Creek and installation of approximately 0.9 mile of 12-inch diameter high density polyethylene (HDPE) temporary aboveground waterline that will transport fresh water from Big Sewickley Creek to the PER B50 Well Pad.

Project Consultant Last Name	First Name	MI	Suffix
Kanouff	Paul	A	

Project Consultant Title	Consulting Firm
Principal	Civil & Environmental Consultants, Inc.

Mailing Address Line 1	Mailing Address Line 2
4350 Northern Pike	Suite 141

Address Last Line – City	State	ZIP+4
Monroeville	PA	15146

Phone	Ext	FAX	Email Address
(724) 327-5200		(724) 327-5280	pkanouff@cecinc.com

Time Schedules	Project Milestone (Optional)
January 2023	Start and complete installation

1. Is the project located in or within a 0.5-mile radius of an Environmental Justice community as defined by DEP? ☐ Yes ☒ No

To determine if the project is located in or within a 0.5-mile radius of an environmental justice community, please use the online Environmental Justice Areas Viewer.

2. Have you informed the surrounding community prior to submitting the application to the Department? ☒ Yes ☐ No

Method of notification: County and Municipal Letters

3. Have you addressed community concerns that were identified? ☒ Yes ☐ No ☐ N/A

If no, please briefly describe the community concerns that have been expressed and not addressed.

4. Is your project funded by state or federal grants? ☐ Yes ☒ No

Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.

Aspect of Project Related to Grant
Grant Source: _____
Grant Contact Person: _____
Grant Expiration Date: _____

5. Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) ☒ Yes ☐ No

Note: If "No" to Question 5, the application is not subject to the Land Use Policy.
If "Yes" to Question 5, the application is subject to this policy and the Applicant should answer the additional questions in the **Land Use Information** section.

LAND USE INFORMATION

Note: Applicants should submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1.	**Is there an adopted county or multi-county comprehensive plan?**	☒	Yes	☐	No
2.	**Is there a county stormwater management plan?**	☐	Yes	☒	No
3.	**Is there an adopted municipal or multi-municipal comprehensive plan?**	☒	Yes	☐	No
4.	**Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance?** **Note:** If the Applicant answers "No" to either Questions 1, 3 or 4, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 5 and 6 below. If the Applicant answers "Yes" to questions 1, 3 and 4, the Applicant should respond to questions 5 and 6 below.	☒	Yes	☐	No
5.	**Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval?** If zoning approval has been received, attach documentation.	☒	Yes	☐	No
6.	**Have you attached Municipal and County Land Use Letters for the project?**	☒	Yes	☐	No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 utilizing the Project Review Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	**Is this a coal mining project?** If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	☐	Yes	☒	No
1.1	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?**	☐	Yes	☐	No
1.2	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?**	☐	Yes	☐	No
1.3	**Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?**	☐	Yes	☐	No
1.4	**For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
1.5	**Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
1.6	**Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?**	☐	Yes	☐	No
2.0	**Is this a non-coal (industrial minerals) mining project?** If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	☐	Yes	☒	No
2.1	**Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?**	☐	Yes	☐	No
2.2	**Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?**	☐	Yes	☐	No

2.3	**Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?**	☐	Yes	☐	No
2.4	**For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
2.5	**Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
3.0	**Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well?** If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	☒	Yes	☐	No
3.1	**Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?**	☒	Yes	☐	No
3.2	**Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system?** If "Yes", discuss in *Project Description*.	☐	Yes	☒	No
3.3	**Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
4.0	**Will the project involve a construction activity that results in earth disturbance?** If "Yes", specify the total disturbed acreage.	☒	Yes	☐	No
	4.0.1 Total Disturbed Acreage up to 1.7 acres				
	4.0.2 Will the project discharge or drain to a special protection water (EV or HQ) or an EV wetland?	☐	Yes	☒	No
	4.0.3 Will the project involve a construction activity that results in earth disturbance in the area of the earth disturbance that are contaminated at levels exceeding residential or non-residential medium-specific concentrations (MSCs) in 25 Pa. Code Chapter 250 at residential or non-residential construction sites, respectively?	☐	Yes	☒	No
5.0	**Does the project involve any of the following: water obstruction and/or encroachment, wetland impacts, or floodplain project by the Commonwealth/political subdivision or public utility?** If "Yes", respond to 5.1-5.7. If "No", skip to Question 6.0.	☒	Yes	☐	No
5.1	**Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?**	☒	Yes	☐	No
5.2	**Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?**	☐	Yes	☒	No
5.3	**Floodplain Projects by the Commonwealth, a Political Subdivision of the Commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?**	☐	Yes	☒	No
5.4	**Is your project an interstate transmission natural gas pipeline?**	☐	Yes	☒	No

5.5	**Does your project consist of linear construction activities which result in earth disturbance in two or more DEP regions AND three or more counties?**	☐	Yes	☒	No
5.6	**Does your project utilize Floodplain Restoration as a best management practice for Post Construction Stormwater Management?**	☐	Yes	☒	No
5.7	**Does your project utilize Class V Gravity / Injection Wells as a best management practice for Post Construction Stormwater Management?**	☐	Yes	☒	No
6.0	**Will the project involve discharge of construction related stormwater to a dry swale, surface water, ground water or separate storm water system?**	☒	Yes	☐	No
6.1	**Will the project involve discharge of industrial waste stormwater or wastewater from an industrial activity or sewage to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?**	☐	Yes	☒	No
7.0	**Will the project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
8.0	**Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations?** If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the *Project Description*, where applicable. **8.0.1 Estimated Proposed Flow (gal/day)**	☐	Yes	☒	No
9.0	**Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system?**	☐	Yes	☒	No
	9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	☐	Yes	☐	No
10.0	**Is this project for the beneficial use of biosolids for land application within Pennsylvania?** If "Yes" indicate how much (i.e. gallons or dry tons per year). **10.0.1 Gallons Per Year (residential septage)** _____ **10.0.2 Dry Tons Per Year (biosolids)**	☐	Yes	☒	No
11.0	**Does the project involve construction, modification or removal of a dam?** If "Yes", identify the dam. **11.0.1 Dam Name**	☐	Yes	☒	No
12.0	**Will the project interfere with the flow from, or otherwise impact, a dam?** If "Yes", identify the dam. **12.0.1 Dam Name**	☐	Yes	☒	No
13.0	**Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?**	☐	Yes	☒	No
	13.0.1 If "Yes", is the operation subject to the agricultural exemption in 35 P.S. § 4004.1?	☐	Yes	☐	No
	13.0.2 If the answer to 13.0.1 is "No", identify each type of emission followed by the estimated amount of that emission. **Enter all types & amounts of emissions; separate each set with semicolons.**				

14.0	**Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year?** If "Yes", check all proposed sub-facilities.	☐	Yes	☒	No
	14.0.1 Number of Persons Served _____				
	14.0.2 Number of Employee/Guests _____				
	14.0.3 Number of Connections _____				
	14.0.4 Sub-Fac: Distribution System	☐	Yes	☐	No
	14.0.5 Sub-Fac: Water Treatment Plant	☐	Yes	☐	No
	14.0.6 Sub-Fac: Source	☐	Yes	☐	No
	14.0.7 Sub-Fac: Pump Station	☐	Yes	☐	No
	14.0.8 Sub Fac: Transmission Main	☐	Yes	☐	No
	14.0.9 Sub-Fac: Storage Facility	☐	Yes	☐	No
15.0	**Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?**	☐	Yes	☒	No
16.0	**Is your project to be served by an existing public water supply?** If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	☐	Yes	☒	No
	16.0.1 Supplier's Name _____				
	16.0.2 Letter of Approval from Supplier is Attached	☐	Yes	☐	No
17.0	**Will this project be served by on-lot drinking water wells?**	☐	Yes	☒	No
18.0	**Will this project involve a new or increased drinking water withdrawal from a river, stream, spring, lake, well or other water bod(ies)?** If "Yes", reference Safe Drinking Water Program.	☐	Yes	☒	No
	18.0.1 Source Name				
19.0	**Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste?** If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	☐	Yes	☒	No
	19.0.1 Type & Amount				
20.0	**Will your project involve the removal of coal, minerals, contaminated media, or solid waste as part of any earth disturbance activities?**	☐	Yes	☒	No
21.0	**Does your project involve installation of a field constructed underground storage tank?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	21.0.1 Enter all substances & capacity of each; separate each set with semicolons.				
22.0	**Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	22.0.1 Enter all substances & capacity of each; separate each set with semicolons.				
23.0	**Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	23.0.1 Enter all substances & capacity of each; separate each set with semicolons.				

24.0	**Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **24.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No

NOTE: If the project includes the installation of a regulated storage tank system, including diesel emergency generator systems, the project may require the use of a Department Certified Tank Handler. For a full list of regulated storage tanks and substances, please go to www.dep.pa.gov search term storage tanks

25.0	**Will the intended activity involve the use of a radiation source?**	☐	Yes	☒	No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

For applicants supplying an EIN number: I am applying for a permit or authorization from the Pennsylvania Department of Environmental Protection (DEP). As part of this application, I will provide DEP with an accurate EIN number for the applicant entity. By filing this application with DEP, I hereby authorize DEP to confirm the accuracy of the EIN number provided with the Pennsylvania Department of Revenue. As applicant, I further consent to the Department of Revenue discussing the same with DEP prior to issuance of the Commonwealth permit or authorization.

Type or Print Name Paul A. Kanouff

Signature	Title	Date
	Principal	04/28/2022

PART ONE: WATER OBSTRUCTIONS AND ENCROACHMENTS

SECTION A. APPLICATION FEES

☒ **WATER OBSTRUCTION AND ENCROACHMENT PERMIT** (Joint Permit Application)

Some activities or structures within a project may also qualify for an accumulation of General Permit fees, please mark the box above indicating an Individual Water Obstruction and Encroachment Permit AND the corresponding fee(s) in the General Permit section below those. Activities or structures not qualifying for a General Permit fee must include a disturbance fee.

☒ Administrative Filing Fee[1]		$ 1,750	+	
☒ Temporary Disturbance ($400/0.1ac)	*0.2* acres x $4,000 =	$ *800*	+	
☐ Permanent Disturbance ($800/0.1ac)	*0.1* acres x $8,000 =	$ *800*		= $ *3,350*
	WO&E FEE subtotal (a)			$ *3,350*

☐ **GENERAL PERMIT(S)** (select activity/structure(s) below, see page 4 for "#" explanation)

Some activities or structures within a project requiring an Individual Water Obstruction and Encroachment Permit may qualify for an accumulation of General Permit fees, please mark the corresponding fee(s) below but not the box above indicating a General Permit.

☐ GP-1 Fish Habitat Enhancement Structures		$ 50		= $ _____
☐ GP-2 Small Docks and Boat Launching Ramps	_____ (#) x	$ 175		= $ _____
☐ GP-3 Bank Rehabilitation, Bank Protection and Gravel Bar Removal	_____ (#) x	$ 250		= $ _____
☐ GP-4 Intake and Outfall Structures	_____ (#) x	$ 200		= $ _____
☐ GP-5 Utility Line Stream Crossings[2]	_____ (#) x _____ (#) x	$ 250		= $ _____
☐ GP-6 Agricultural Crossings and Ramps	_____ (#) x	$ 50		= $ _____
☐ GP-7 Minor Road Crossings[2]	_____ (#) x	$ 350		= $ _____
☐ GP-8 Temporary Road Crossings[2]	_____ (#) x	$ 175		= $ _____
☐ GP-9 Agricultural Activities		$ 50		= $ _____
☐ GP-10 Abandoned Mine Reclamation		$ 500		= $ _____
☐ GP-11 Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments[1]		$ 750	+	
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =	$ _____	+	
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =	$ _____		= $ _____
☐ GP-15 Private Residential Construction in Wetlands[1]		$ 750	+	
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =	$ _____	+	
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =	$ _____		= $ _____
	GP(s) FEE subtotal (b)			$ _____
	PART ONE: SECTION A. APPLICATION FEE(S) subtotal (a+b=c)			$ *3,350*

SECTION B. OTHER FEES

☐ Environmental Assessment for Waived Activities (§105.13(c)(2)(iv))		$ 500		$ _____
☐ Amendment to Water Obstruction and Encroachment Permit				
☐ Major Amendment[1]		$ 500	+	
☐ Temporary Disturbance	_____ acres x $4,000 =	$ _____	+	$ _____
☐ Permanent Disturbance	_____ acres x $8,000 =	$ _____		= $ _____
☐ Minor Amendment		$ 250		$ _____

Transfer of Water Obstruction and Encroachment Permit *does not require submission of this form; see Application for Transfer of Permit / Submerged Lands License Agreement (3150-PM-BWEW-0016)*

PART ONE: SECTION B. OTHER FEE(S) subtotal (d)	$ _____
PART ONE: FEE(S) TOTAL (c+d=e)	$ *3,350*

DEP USE ONLY			
FEE TOTAL:		Permit / Authorization Number (s):	
Correct Amount:		Check #:	
Check Amount:		Payable to:	

SECTION 2 – JOINT PERMIT APPLICATION

- JOINT PERMIT APPLICATION FORM
  - LIST OF PADEP VIOLATIONS

3150-PM-BWEW0036A Rev. 3/2022

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
and
DEPARTMENT OF ARMY CORPS OF ENGINEERS
(Baltimore, Philadelphia, and Pittsburgh Districts)

JOINT APPLICATION FOR PENNSYLVANIA CHAPTER 105 WATER OBSTRUCTION AND ENCROACHMENT PERMIT AND U.S. ARMY CORPS OF ENGINEERS SECTION 404 PERMIT

Before completing this form, please read the step-by-step instructions and Section F Application Completeness Checklist provided with this Joint Permit package.

AGENCY USE ONLY

Application ID# (Assigned by DEP) _____ RECEIVED DATE _____ CHECK NO. _____

Program Application No. _____ REQUIRED APP. FEE _____ AMOUNT $_____

SECTION A. APPLICATION TYPE

STANDARD ☒ SMALL PROJECTS ☐

SECTION B. APPLICANT IDENTIFIER

Applicant Name: PennEnergy Resources, LLC
Employer ID# (EIN): 45-2673440

Consulting Firm: Civil & Environmental Consultants, Inc.
Employer ID# (EIN): 25-1599565

SECTION C. PROJECT LOCATION DATA AND STATUS

Name of stream and/or body of water and Chapter 93 designation.
Big Sewickley Creek (TSF), Coony Hollow (TSF), and UNTs to Coony Hollow (TSF)

Corps District where project will occur.
☒ Pittsburgh (Ohio River Basin) ☐ Baltimore (Susquehanna River Basin) ☐ Philadelphia (Delaware River Basin)

Name of the U.S.G.S. 7 1/2 Minute Quadrangle Map where project is located: Ambridge, Pennsylvania

Indicate location of project: Latitude 40.611644; Longitude -80.175649

Project type, purpose and need: PER proposes to withdraw and transport fresh water from Big Sewickley Creek to the B50 Well Pad through a temporary aboveground waterline, for natural gas well development.

For more information, please refer to the Project Description in Module S1.

HAS ANY PORTION OF PROPOSED PROJECT BEEN AUTHORIZED? ☐ yes ☒ no _____ date authorized. If yes, attach description of those portions of the project that have been authorized and identify dates of authorization. See Module S1

SECTION D. AQUATIC RESOURCE IMPACT TABLE

HAS ALL INFORMATION INCLUDED ON THE IMPACT TABLE BEEN PROVIDED? ☒ yes ☐ no

If NO, indicate the information not included and the reason. Also attach a completed AQUATIC RESOURCES IMPACT TABLE (3150-PM-BWEW0557) worksheet or equivalent.

- Project Information: _____
- Corps / 404: _____
- DEP / 105: _____

SECTION E. COMPLIANCE REVIEW

Place an "X" in either the YES or NO block for each section below to indicate if applicant (owner and/or operator) are currently in violation pertaining to each question.

Yes **No**

☒ ☐ Is the applicant (owner and / or operator) currently in violation of any permit, authorization or approval issued by the Department?
If YES – complete the necessary information for questions 1 - 3.

1. Permit Number: See attached list
2. Nature of the violation(s) (if any): _____
3. Status of violation(s) (i.e., schedule for compliance, etc.): _____

Yes **No**

☐ ☒ Is the applicant in violation of the, the Dam Safety and Encroachments Act, Chapter 105 Dam Safety and Waterway Management regulations or other laws administered by the Department, PA Fish and Boat Commission or a river basin commission such as the Susquehanna River Basin Commission (SRBC), the Delaware River Basin Commission (DRBC) or the Ohio River Valley Water Sanitation Commission (ORSANCO)?. This includes a violation of an adjudication and order, agreement, consent order or decree, whether or not the applicant's violation resulted in an order or civil penalty assessment.
If YES – complete the necessary information for questions 1 – 2.

Use additional sheets of paper, if required, and attach to application

1. Nature of the violation(s) (if any): _____
2. Status of violation(s) (i.e. schedule for compliance, etc.): _____

SECTION F. APPLICATION COMPLETENESS CHECKLIST

Applicant must place an entry - Y = Yes, N = No, N/A = Not Applicable - in each left side column space. See Section 105.13 for additional details. If you are applying under the Small Projects Application format, place an entry in only those comments prefixed by an asterisk (*).

REQUIREMENT	Applicant Entry	DEP Use Only
a. GIF and permit application properly signed, sealed and witnessed	**Y – Section 1	
b. Application Fee & Worksheet enclosed (see Section G.)	*Y – Section 1	
c. Copies and proof of receipt - Act 14 notification - Acts 67/68/127	*Y – Appendix A	
d. Cultural Resource Notice (Notice, return receipt and PHMC review letter, as appropriate)	*Y – Appendix A	
e. Pennsylvania Natural Diversity Inventory (signed PNDI Receipt showing Avoidance Measures or Potential Impacts and proof of delivery to the appropriate jurisdictional agency(ies) where further coordination is required, as appropriate)	*Y – Module S2.C	
f. Plans (site plan including cross sections and profiles for Subsections 151, 191, 231, 261)	*Y – Figures	
g. Location map	Y - Figures	
h. Project description narrative including PNDI avoidance measures (if applicable) AND Aquatic Resource Impact Table	*Y – Module S1.A *Y – Module S1.B	
i. Color photographs with map showing location taken	*Y – Module S1.A and Figure 5	
j. Environmental Assessment form	*Y – Section 3	
k. Erosion and Sediment Control Plan and approval letter	Y – Appendix B	
l. Hydrologic and hydraulic analysis	N/A	
m. Stormwater Management Analysis with consistency letter	N/A	
n. Floodplain Management Analysis with consistency letter	N/A	
o. Risk Assessment	N/A	
p. Professional engineer’s seal and certification	Y – Appendix B	

COMPLIANCE HISTORY
PennEnergy Resources, LLC

Inspection Record No.	Permit Number Farm Name Site ID	Violation Nos.	Municipality	County	Date of Inspection / Violation	Reason for NOV	Response Date	Response/Action Taken	Steps Taken to Remediate	Current Status
3089067	ESX15-007-0009 B24 Well Pad Site 791178	896312 896313 896314 896315 896316 896317 896318 896319 896320	New Sewickley Township	Beaver	9/11/2020	Multiple E&S Items	10/22/2020	Communication to the department, requesting the following violations rescinded: 896313, 896314, 896315, 896317, 896318, 896320. Corrective actions taken on E&S items addressed and permit modification underway.	E&S violations corrected on 9/20/2021. ESCGP3 Permit Modification approved on 1/24/2022. Construction of PCSM BMPs to take place Spring 2022.	Open
3288051	ESG0700719-004 B17 Pipeline Project N/A	937755 937756 937757 937758 937759	Marion Township	Beaver	11/5/2021	Multiple E&S Items	12/17/2021	E&S items addressed. Site work will take place in Spring 2022.	Written response provided to PADEP 12/17/2021. Work to take place in Spring 2022.	Open
3297640	ESG081019013-00 Rape Well Pad Site 763061	939915 939916 939917 939918	Forward Township	Butler	12/17/2021	Synthetic Oil Release >42 gallons	3/15/2022	Clean-up and closure	Site remediation complete. Act 2 Report to be submitted by 3/15/2022.	Open
3314018	ESX14-019-0004 Dorsch Well Pad Site 780159	943646 943647 943648 943649	Lancaster Township	Butler	1/25/2022	Produced Water Release > 42 gallons	4/15/2022	Clean-up and closure	Site remediation underway. Act 2 Report to be submitted by 4/15/2022.	Open

SECTION G. DETERMINATION OF APPLICATION FEES (DEP FEES ONLY)

The fee required for a project authorized under this permit shall be consistent with 25 PA Code §105.13 (relating to regulated activities – information and fees). To determine the application fee, please complete the Chapter 105 Fee(s) Calculation Worksheet (3150-PM-BWEW0553). Please provide the completed worksheet and a check for the applicable fee(s) made payable to the "Commonwealth of Pennsylvania Clean Water Fund."

SECTION H. ADJOINING PROPERTY OWNERS

Please list the name and address of all property owners whose land adjoins the project property.

NAME	ADDRESS
VAN METER,TIMOTHY & CONSIGLIO,DEBORAH L, ETAL	245 HOENIG ROAD / SEWICKLEY, PA 15143
LAZAR, MARY & WILLIAM, C/O MARY BAJEK	300 AMSLER ROAD / SEWICKLEY, PA 15143
XXX GAS,LLC	9073 NEMO STREET / LOS ANGELES, CA 90069
ORCHARD ESTATES MHC LLC	120 BLOSSOM LANE / SEWICKLEY, PA 15143

SECTION I. CERTIFICATION AND SIGNATURE (see Instructions for clarification of signature requirements)

I certify under penalty of law that the information provided in this permit registration is true and correct to the best of my knowledge and information and that I possess the authority to undertake the proposed action. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (If any of the information and/or plans is found to be in error, falsified, and/or incomplete, this authorization/verification may be subject to modification, suspension, or revocation in accordance with applicable regulations.)

I certify that the project proposed in this application complies with and will be conducted in a manner that is consistent with the approved Coastal Zone Management program of the Commonwealth of Pennsylvania. (Only portions of Erie, Bucks, Philadelphia and Delaware Counties are in the Coastal Zone).

I grant permission to the agencies responsible for authorization of this work, or their duly authorized representative, to enter the project site for inspection purposes during working hours. I will abide by the conditions of the permit or license if issued and will not begin work without the appropriate authorization.

Signature of Applicant/Owner — Date: 4/20/22

Richard Watson, Project Manager
Typed / Printed Name & Title of Applicant/Owner

Mary E. McGinnis
Signature of Witness

Mary E. McGinnis
Typed / Printed Name & Title of Witness

SEAL

Commonwealth of Pennsylvania - Notary Seal
Mary E. McGinnis, Notary Public
Butler County
My commission expires February 11, 2023
Commission number 1347133
Member, Pennsylvania Association of Notaries

SECTION 3 – ENVIRONMENTAL ASSESSMENT

- ENVIRONMENTAL ASSESSMENT FORM

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

CHAPTER 105 ENVIRONMENTAL ASSESSMENT FORM

			Item Included	Item Location
Note: The Department may waive a specific information requirement in writing, at the request of the Applicant, during the pre-application review process if the Department determines the information is not necessary to complete the review.				
Module S1: Project Summary				
This module is intended to organize information in order to present an overall summary of the project scope, certain key information requirements and when applicable, a comprehensive view of the overall project and related projects.				
A. Provide an overall project description and If the answer to the question below is **YES**, address CEA requirements; otherwise proceed to **S1.B** Comprehensive Environmental Assessment (CEA) when applicable. Answer the following question:			☒	S1.A
Does the "overall" project require more than one Ch. 105 permit in more than one county or will the project be completed in more than one phase?	☐ Yes	☒ No		
B. Provide information related to the project purpose, need, water dependency and summarize the amount and type of resources present and the temporary and permanent impacts proposed to those resources.			☒	S1.B
Module S2: Resource Identification and Characterization				
This module is intended to organize information related to the identification of the resources present on the project site and to characterize those resources that may be affected by the proposed project.				
A. Provide the standard resource identification information, location map, wetland determination or delineation reports; watercourse reports; identification and qualifications of preparers; location map, and answer the related questions.			☒	S2.A
Is the site located within or adjacent to any of the following; or within 100 feet of items vii or viii?				
i. National, state or local park, forest or recreation area	☐ Yes	☒ No		
ii. National natural landmark	☐ Yes	☒ No		
iii. National wildlife refuge, or Federal, state, local or private wildlife or plant sanctuaries	☐ Yes	☒ No		
iv. State Game Lands	☐ Yes	☒ No		
v. Areas identified as prime farmland	☒ Yes	☐ No		S2.A
vi. Source for a public water supply	☐ Yes	☒ No		
vii. A National Wild or Scenic River or the Commonwealth's Scenic Rivers System	☐ Yes	☒ No		
viii. Designated Federal wilderness area	☐ Yes	☒ No		
B. Identify all aquatic resources present on the project site and provide an identifier, the resource type; size of the resource(s); fishery designations, Ch. 93 uses and special protection status; and Exceptional Value (EV) wetland analysis.			☒	S2.B
C. Provide the following information related to habitat for Federal threatened and endangered (T&E) plant and animal species or State T&E species or species of special concern - copies of search forms or search receipts; identification of avoidance and minimization efforts taken to resolve identified conflicts.			☒	S2.C
Did the PNDI search or agency coordination identify any potential conflicts?	☐ Yes	☒ No		
If the above is answered **YES**; answer the following two questions related to PNDI Coordination:				
a. ***Is the applicant utilizing a sequential review of the PNDI coordination?***	☐ Yes	☐ No		
b. ***Is the applicant utilizing a concurrent review of the PNDI coordination?***	☐ Yes	☐ No		
D. Characterize the aquatic resources: riverine, wetland and lacustrine present on the project site that are proposed to be directly or indirectly affected by the project. Including but not limited to the following, resource classification information, Level 2 rapid condition assessment results, discussion of resource functions, characterization of riparian properties and any other relevant information or studies conducted.			☒	S2.D
Module S3: Identification and Description of Potential Project Impacts				
*This module is intended to organize and present information concerning the potential impacts or effects of the proposed project **in this** application. Impacts related to the "over all" project that are proposed under related but separate application(s) should be addressed as part of the CEA Policy response under **S1.A**.*				
A. Provide a summary table of the proposed temporary and permanent direct and indirect impacts for each effected resource category (e.g. riverine, wetlands and lacustrine resources).			☒	S3.A
B. If any questions from **S2.A** Standard Information Response questions were answered YES, discuss in detail any potential impacts to those resource(s).			☒	S3.B
IMPORTANT NOTE: If either item vii or viii from S2.A is answered YES, the project is not eligible as a "Small Project Application" type. Complete all applicable sections of the EA form for the standard application type unless an item was otherwise waived by the Department in writing (see previous Note on waiving of information requirements).				

	Included	Item Location
C. Provide a table(s) of all proposed water obstruction(s), encroachment activities and dams (e.g. subfacility codes) and provide an identifier, the subfacility code and description, resource identifier from **S2.B**, latitude and longitude, the proposed temporary and permanent direct and indirect impacts and subfacility details.	☒	**S3.C**
D. Provide a discussion of how the proposed subfacility(ies) individually and in combination directly and/or indirectly impact the identified resource(s) and the effects on the applicable resource functions: hydrologic, biogeochemical, habitat, recreation, any other environmental impacts and the effects on the property or riparian rights of owners upstream, downstream or adjacent to the project.	☒	**S3.D**
E. **Antidegradation Analysis** - The applicant should demonstrate consistency with State antidegradation requirements as described in the Water Quality Antidegradation Implementation Guidance Policy Document Number 391-0300-002. Project application information provided below in **S3.F, G and H** may be cross-referenced.	☒	**S3.E**
F. **Alternatives Analysis** - The scope and extent of this analysis should be commensurate with the size and scope of the proposed project impacts *in this* application, information provided in **S4.A** below, related to avoidance and minimization efforts, may be cross-referenced.	☒	**S3.F**
G. **Potential Secondary Impact Evaluation** - Identify and describe environmental impacts on adjacent land and water resources associated with but not that direct result of the project.	☒	**S3.G**
H. Identify and evaluate the potential cumulative environmental impacts of this project and other potential or existing projects like it, and the impacts that may result through numerous piecemeal changes to the wetland resource.	☒	**S3.H**
Module S4: Mitigation Plan		
*This module is intended to organize and present information concerning actions undertaken in accordance with the definition of **Mitigation** in Title 25 Pa. Code Chapter 105 - §105.1, 105.16, 105.18a(a)(3), 105.18a(b)(7), 105.20a, and 105.21 as related to the potential impacts or effects of the proposed project **in this** application.*		
A. Identify and discuss any measures taken that resulted in avoiding or minimizing unavoidable resource impacts, provide detailed responses for individual proposed impact area(s) **and** the project as a whole.	☒	**S4.A**
B. Identify and discuss any repair, rehabilitation or restorative actions taken to rectify an impacted resource, provide detailed responses for individual proposed impact area(s) and the project as a whole. Identify and discuss any proposed preservation and maintenance operations that will be taken to reduce or eliminate an impact during the life of the project.	☒	**S4.B**
C. Provide the results from application of the Pennsylvania Function-Based Aquatic Resource Compensation Protocol. Identify and discuss any actions undertaken to provide compensatory mitigation , a detailed discussion of the proposed compensation actions and how they will offset the lost resource functions, include a comparison of the results from Section 6.0 of the Pennsylvania Function-Based Aquatic Resource Compensation Protocol with the results from Section 5.0. When applicable provide detailed plans including performance standards and success criteria.	☒	**S4**
Answer the following question. If the answer to the question is **YES**, provide the information regarding the mitigation credit provider; otherwise provide a detailed mitigation plan. If the application proposes to utilize both mitigation bank or in lieu fee credits **and** conduct permittee responsible mitigation; both the credit provider and mitigation plan information shall be submitted.	☐	
Does the applicant propose to utilize an approved mitigation bank or PA's in lieu fee program to provide all or a portion of the compensation? ☐ Yes ☐ No		
D. When applicable, provide a plan to monitor the identified actions proposed in **S4.B** and/or **S4.C** compensatory mitigation area. Applicants should utilize the Department's Design Criteria and the USACE's RGL 08-03 -(http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl08_03.pdf) to develop monitoring plans for compensatory mitigation proposals. The plan should include performance standards/success criteria, duration and timeframes of monitoring, monitoring report template, and template remedial action or adaptive management plan.	☐	
Note: All or portions of this Module likely apply to "Small Project" type applications and waiver of this section should be discussed during any pre-application meetings or prior to application submittal.		
CERTIFICATION		
I certify that the above statements, attachments including those labeled and identified as Enclosures, and all conclusions are true, correct, and based upon current environmental principles and science, to the best of my knowledge and belief.		
 Signature	4/28/2022 Date	

SECTION 3 – ENVIRONMENTAL ASSESSMENT (CONTINUED)

- MODULE S1 – PROJECT SUMMARY
    - S1.A – PROJECT DESCRIPTION
        - SITE PHOTOGRAPHS
    - S1.B – PROJECT INFORMATION
        - AQUATIC RESOURCE IMPACT TABLE

MODULE S1 – PROJECT SUMMARY

The proposed B50 Temporary Aboveground Waterline project is located in Economy Borough, Beaver County, Pennsylvania. The proposed project consists of a temporary water withdrawal on Big Sewickley Creek and installation of approximately 0.9 mile ***combination*** of a temporary 12-inch diameter high-density polyethylene (HDPE) ***and 12-inch plastic lay flat*** waterline that will transport fresh water to the existing B50 Well Pad. The waterline will be installed above-ground, except at road crossings, where it will be installed sub-surface via open cut or conventional bore. The waterline will not be placed in culverts or roadside ditches. The water withdrawal and waterline are both temporary in nature and will be removed after this proposed round of well development is complete.

On-site wetlands and streams were identified and delineated by Civil & Environmental Consultants, Inc (CEC). The Wetland and Stream Delineation Report is included in Section 3, Module S2. Five wetlands, totaling 0.065 acre, and 10 streams, totaling 2,596 feet, were identified within the delineation boundary during the on-site field review.

S1.A PROJECT DESCRIPTION

The temporary water withdrawal will consist of a ***series of hoses and*** surface intakes that will be placed in the stream while water is actively withdrawn from Big Sewickley Creek. ***To protect the stream bank and surrounding area during operations of the withdrawal, the installation, maintenance, and removal of the intakes will be done by hand. Once in place, the intakes will be anchored to a temporary t-post to minimize free movement. When in place, equipment above the stream will be kept at least 4 feet back from the top of bank. The hoses*** and surface intakes will be removed from the stream and floodway during inactive periods. The temporary waterline will be installed on the existing ground surface except at crossings of roads and streams. The temporary waterline will cross one stream/floodway and one additional floodway. The temporary waterline will cross the stream aerially, supported by an engineered super truss. Equipment will cross the stream using a timber mat bridge. Earth disturbance associated with the temporary waterline will be minimal and incidental, and no instream disturbance is proposed.

The majority of the proposed project area for the temporary waterline is ***40*** feet wide, although a portion of the project area near the southern terminus is larger to allow for ***the grading and repair of an existing abandoned gas well access road for project access***. The project will be accessed from existing public and private roads, including the B50 Well Pad access road, ***an existing abandoned gas well access road, and an existing logging road/quad path. This right-of-way (ROW)*** was designed to utilize these existing roads and trail to minimize disturbance to the extent possible. ***Due to the declining stability of the existing trail, it will be avoided in some areas and a new ROW will be cleared adjacent to it. The existing abandoned gas well access road will be improved and a short section permanently stabilized with gravel. Improving the continuous grade and cross slope of this access road will mitigate future deterioration and ensure permanent stabilization is achieved in this area.*** Appropriate best management practices (BMPs) will be utilized, and the Erosion and Sedimentation Control (E&S) Plan includes measures to protect aquatic resources both on-site and downstream of the project area. The total proposed ***limit of disturbance*** is approximately ***5.5*** acres***, although only 4.4 acres of earth disturbance is anticipated***. During installation of the temporary waterline, bigger trees will be avoided where possible and smaller trees ***and brush will be cleared for the*** ROW. Grubbing, stump removal, and stripping of topsoil will ***only*** take place ***in select areas of the ROW where the existing abandoned gas well access road will be repaired, where new travel lanes are established for construction, and where the line is buried under existing borough roads; there will be minimal tree removal within floodways***.

Three trees are proposed to be removed for the installation of the rock construction entrances on either side of Cooney Hollow Road. These trees have been called out on Sheet 3 in Appendix B. Outside of this area and the areas immediately adjacent to the temporary waterline between approximate Stations 2+00 and 4+00 and Stations 34+70 to 35+70, clearing of trees greater than 6 inches diameter at breast height (dbh) within 100 feet of perennial or intermittent streams is not anticipated. Where clearing of trees greater than 6 inches dbh is necessary within 100 feet of perennial or intermittent streams (i.e., between approximate Stations 2+00 and 4+00 and Stations 34+70 to 35+70), it will be limited to the extent possible. A note has been added to the erosion and sedimentation control plans in Appendix B between approximate Stations 2+00 and 4+00 and Stations 34+70 to 35+70 indicating that tree clearing

shall be limited to the extent possible within this area and all trees 6 inches dbh or larger shall be replaced at a 1:1 ratio. A detail for tree planting has been added as Detail 18 on Sheet ES04 in Appendix B.

Wetlands were identified on-site, and the proposed project was designed to avoid wetland impacts. Off-site resources will be protected through the use of BMPs, including compost filter sock, as detailed in the project E&S Plan included with this permit package. Based on the proposed project design and the use of BMPs, the project is not anticipated to have an adverse impact to safety or the protection of life, health, property, or the environment.

SITE PHOTOGRAPHS (FIGURE 5 - SITE PLAN)
B50 TEMPORARY ABOVEGROUND WATERLINE
PENNENERGY RESOURCES, LLC

Photo 1: Big Sewickley Creek
Facing upstream - May 17, 2021

Photo 2: Upland area adjacent to Big Sewickley Creek. Facing east - May 17, 2021

Photo 3: Overview of proposed temporary waterline route and staging area. Facing west - May 17, 2021

Photo 4: Overview of proposed temporary waterline route and staging area. Facing northeast - May 17, 2021

Photo 5: Overview of proposed temporary staging area.
Facing northwest - May 17, 2021

Photo 6: Overview of proposed temporary waterline route. Facing southwest - May 17, 2021

SITE PHOTOGRAPHS (FIGURE 5 - SITE PLAN)
B50 TEMPORARY ABOVEGROUND WATERLINE
PENNENERGY RESOURCES, LLC

Photo 7: Overview of proposed temporary waterline route. Facing northeast - May 17, 2021

Photo 8: Overview of proposed temporary waterline route. Facing northeast - May 17, 2021

Photo 9: Overview of proposed temporary waterline route. Facing northwest - May 26, 2021

Photo 10: Overview of proposed temporary waterline route. Facing southeast - May 26, 2021

Photo 11: Utility Line Crossing 1/Temporary Road Crossing 1 - Coony Hollow.
Facing upstream - August 10, 2020

Photo 12: Utility Line Crossing 2/Temporary Road Crossing 2 - UNT 2 to Coony Hollow Floodway.
Facing north - August 10, 2020

SITE PHOTOGRAPHS (FIGURE 5 - SITE PLAN)
B50 TEMPORARY ABOVEGROUND WATERLINE
PENNENERGY RESOURCES, LLC

Photo 13: Overview of proposed temporary waterline route. Facing northeast - August 10, 2020

Photo 14: Big Sewickley Creek - Withdrawal Location Facing downstream - April 27, 2023

hoto 15: Big Sewickley Creek - Withdrawal Location. Facing downstream - April 27, 2023

Photo 16: Upland area adjacent to proposed water withdrawal. Facing southeast - April 27, 2023

Photo 17: Top of right-descending stream bank at vater withdrawal. Facing downstream - April 27, 2023

S1.B PROJECT INFORMATION

S1.B.1 Project Purpose and Need

The purpose of the proposed project is to withdraw water from Big Sewickley Creek and transport it by temporary aboveground waterline to the B50 Well Pad for natural gas well development. The requirements for the project include the following criteria:

1. The water source, or sources, must be able to provide ***volumes from*** 1.5 million gallons per day ***up to 2.5 million gallons per day*** during well development. Sources with availability less than 1.5 million gallons per day are evaluated on a case-by-case basis. Because the B50 Well Pad does not have a freshwater storage facility, only volumes close to 1.5 million gallons per day can support the ***efficient*** development of these wells.
2. The water source must be close enough to the well pad to make a temporary waterline viable, all in terms of environmental impacts, community impacts, project costs, lease rights, and landowner approvals.
3. Potential impacts to public safety must be minimized to the extent practicable, including minimizing truck traffic.

S1.B.2 Water Dependency

The proposed project is dependent on a water source or sources able to provide ***a minimum of*** 1.5 million gallons per day during well development; therefore, the temporary impacts to Big Sewickley Creek are necessary to fulfill the project purpose. The remainder of the project is not water dependent by nature. However, due to the location of the existing B50 Well Pad, the locations of the existing streams and landowner constraints, the proposed temporary impacts to the other stream and floodways are necessary. As evidenced by the alternatives analysis in Section 3 Module S3.F, wetland and stream impacts have been avoided and/or minimized to the maximum extent practicable.

Table S1-1
Aquatic Resources Within the Proposed Project Area

Stream Name	On-Site Stream Length (feet)	On-Site Floodway Area (acres)	Average TOB[1] (feet)	Drainage Area[2] (acres/ square miles)	Stream Classification	Chapter 93 Designated Use[3]	Special Protection Use
Big Sewickley Creek	***54***	***0.008***	50	10,877/ 17	Perennial	TSF	None
Coony Hollow	***40***	***0.092***	20	331/0.52	Perennial	TSF	None
UNT 2 to Coony Hollow	0	***0.062***	N/A	3/0.01	Ephemeral	TSF	None
Totals	***94***	***0.162***					

[1] TOB – Top of bank width.
[2] Measured at the downstream extent of the delineated portion of stream.
[3] From Title 25, PA Code Chapter 93. Trout Stocking (TSF) – Maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna, which are indigenous to a warm water habitat.

Table S1-2
Proposed Aquatic Resource Impacts

Impact Identifier	Aquatic Resource Name	Length of Temporary Impact (feet)	Area of Temporary Impact (acres)	*Length of Permanent Impact (feet)*	*Area of Permanent Impact (acres)*	Coordinates
Proposed Temporary Intake	Big Sewickley Creek	***54*** (Stream) ***18*** (Floodway)	***0.020*** (Stream) ***0.008*** (Floodway)	***0***	***0***	***40.609350*** ***-80.180420***
Utility Line Crossing 1/ Temporary Road Crossing 1	Coony Hollow	***40*** (Stream) ***75*** (Floodway)	***0.018*** (Stream) ***0.059*** (Floodway)	***36 (Floodway)***	***0.033 (Floodway)***	***40.613140*** ***-80.170807***
Utility Line Crossing 2/ Temporary Road Crossing 2	UNT 2 to Coony Hollow Floodway	***90*** (Floodway)	***0.062*** (Floodway)	***0***	***0***	40.613124 -80.170074
Totals	**Wetland**	**0**	**0**	***0***	***0***	
	Stream	***94***	***0.038***	***0***	***0***	
	Floodway	***183***	***0.129***	***36***	***0.033***	

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

Applicant's Name / Client: PennEnergy Resources, LLC

AQUATIC RESOURCE IMPACT TABLE
FOR PENNSYLVANIA CHAPTER 105 WATER OBSTRUCTION AND ENCROACHMENT APPLICATION / REGISTRATION

Project / Site Name: B50 Temporary Above-Ground Waterline

Date: ***Revised March 9, 2023***

DEP USE ONLY	Project Information						PA DEP / 105						Enter Only If Different from DEP Impacts Army Corps Impacts:	
PADEP Permit Number	Structure / Activity unique identifier	Aquatic Resource Type	Latitude dd nad83	Longitude dd nad83	Waters Name	PA Code Chapter 93 Designation	Work Proposed	DEP Impact Type temp / perm	ACOE Impact Type temp / perm	Watercourse Impact *Top of Bank to Top of Bank* Length and Width in feet	Floodway Impact *Top of Bank Landward* Length and Width in feet	Wetland Impact Dimensions Length and Width in feet	Watercourse Impact Length and Width in feet	Wetland Impact Length and Width in feet
	Proposed Temporary Intake	Perennial	40.*609350*	-80.*180420*	Big Sewickley Creek	TSF	Temporary Water Withdrawal	Temp	Temp	***54 - 16***	***18 - 20***	N/A		
	Utility Line Crossing 1 and Temporary Road Crossing 1	Perennial	40.613*140*	-80.170*807*	Coony Hollow	TSF	Aerial/Super Truss	Temp	Temp	***28*** - 20	***60 - 40***	N/A		
							Excavation	***Perm***	***N/A***	***N/A***	***36 - 40***	***N/A***		
							Timber Mat	Temp	Temp	***12*** - 20	15 - 12	N/A		
	Utility Line Crossing 2 and Temporary Road Crossing 2	Ephemeral/ Intermittent	40.613124	-80.170074	UNT 2 to Coony Hollow Floodway	TSF	Placement on Existing Ground Surface	Temp	N/A	N/A	***45 - 37***	N/A		
							Construction Access	Temp	N/A	N/A	***45 - 23***	N/A		

SECTION 3 – ENVIRONMENTAL ASSESSMENT (CONTINUED)

- MODULE S2 – RESOURCE IDENTIFICATION AND CHARACTERIZATION
    - S2.A – RESOURCE IDENTIFICATION
        - WETLAND AND STREAM DELINEATION REPORT
        - STATEMENT OF QUALIFICATIONS
    - S2.B – AQUATIC RESOURCE INFORMATION
    - S2.C – THREATENED AND ENDANGERED SPECIES
        - PNDI RECEIPTS
        - PFBC CLEARANCE LETTER***S***
        - ***PFBC EMAILS - PNDI***
    - S2.D – DESCRIPTION OF AQUATIC HABITATS
        - RIVERINE CONDITION ASSESSMENT FORMS

MODULE S2 – RESOURCE IDENTIFICATION AND CHARACTERIZATION

S2.A RESOURCE IDENTIFICATION

On-site wetlands and streams were identified and delineated by Civil & Environmental Consultants, Inc. (CEC). Five wetlands, totaling 0.065 acre, and 10 streams, totaling 2,596 linear feet, were identified within the delineation boundary during the on-site field review. The Wetland and Stream Delineation Report and CEC's qualifications are attached. The wetland and stream delineation was conducted under the supervision of:

Paul A. Kanouff, PWS
Principal
Civil & Environmental Consultants, Inc.
4350 Northern Pike, Suite 141
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Phone Number: (724) 327-5200

Table S2-1 lists whether other natural, geographical, and physical resources are located within the proposed limit of disturbance (LOD) or within 100 feet of the LOD. The Resource Identification Map (Figure 2) is also attached.

The proposed staging area is located on land identified as prime farmland, and small portions of the waterline route are located on land identified as farmland of statewide importance. None of these areas are currently farmed. The current land uses for the areas of prime farmland are public and private roads and mixed deciduous forest. The areas of farmland of statewide importance are mixed deciduous forest.

Table S2-1
Resource Identification

Resource	Presence[(1)]
National, state or local park, forest or recreation area	No
National natural landmark	No
National wildlife refuge, or Federal, state, local or private wildlife or plant sanctuaries	No
State Game Lands	No
Areas identified as prime farmland	Yes
Source for a public water supply	No
A National Wild or Scenic River or the Commonwealth's Scenic Rivers System	No
Designated Federal wilderness area	No

[(1)] Presence within the LOD or within 100 feet of the LOD.

WETLAND AND STREAM DELINEATION REPORT

B50 TEMPORARY ABOVE-GROUND WATERLINE
PENNENERGY RESOURCES, LLC
ECONOMY BOROUGH,
BEAVER COUNTY, PENNSYLVANIA

Prepared For:

PENNENERGY RESOURCES, LLC
1000 COMMERCE DRIVE
PARK PLACE ONE, SUITE 400
PITTSBURGH, PENNSYLVANIA 15275

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
4350 NORTHERN PIKE, SUITE 141
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CEC Project 317-457

February 18, 2022
Revised May 1, 2023

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FIGURES

APPENDICES

1.0 INTRODUCTION

This report presents the findings of a wetland and stream delineation completed by Civil & Environmental Consultants, Inc. (CEC) for the proposed B50 Temporary Above-Ground Waterline Project located in Economy Borough, Beaver County, Pennsylvania (Figure WDR-1). CEC conducted the delineation at the request of PennEnergy Resources, LLC.

The purpose of the delineation was to identify and delineate wetlands, streams, and other waterbodies within the proposed project area.

1.1 METHODOLOGY

The wetland and stream delineation was based on CEC's professional judgment and interpretation of the technical criteria presented in the 1987 *U.S. Army Corps of Engineers* (USACE) *Wetlands Delineation Manual* (1987 Manual) and the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0* (2012 Regional Supplement). CEC completed the following scope of services to identify and delineate wetland and stream boundaries at the site:

1. Office Data Review: CEC personnel reviewed the U.S. Geological Survey (USGS) topographic mapping (Figure WDR-1), the U.S. Department of Agriculture (USDA)/Natural Resources Conservation Service (NRCS) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov) (Figure WDR-2), and the U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) Map (Figure WDR-2). These resources were used to establish site characteristics that could aid in the identification of potential wetlands and streams.

2. On-Site Field Review: Qualified CEC biologists performed the delineation at the site on August 10, 2020; May 17 and 26, 2021; June 2, 10, and 21, 2021; ***and January 25, 2023***. The delineation boundary comprised approximately 29 acres. CEC delineated wetland

boundaries using the routine on-site determination method described in the 1987 Manual supplemented by the 2012 Regional Supplement and the 2020 National Wetland Plant List. First, plant communities present on the site were identified. The dominant plant species within each community were identified and a determination made on whether the plant community was dominated by hydrophytic (wetland) plants. Next, a representative test site was located within the plant community and soils were sampled using a tile spade to determine if hydric soil indicators were present. Lastly, the test site was reviewed to determine if indicators of wetland hydrology (ponding, soil saturation, etc.) were present. Wetland boundaries and test site locations were georeferenced using a Trimble TDC150 Global Positioning System (GPS) unit.

In addition to identifying wetlands, CEC identified streams within the delineation boundary that would likely be considered jurisdictional by state and federal regulatory agencies. Streams were classified as perennial, intermittent, and ephemeral as defined below:

- Perennial Stream - A perennial stream has flowing water year-round during a typical year. The water table is located above the streambed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplementary source of water for stream flow;

- Intermittent Stream - An intermittent stream has flowing water during certain times of the year when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplementary source of water for stream flow; and

- Ephemeral Stream - An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round. Groundwater is not a source for stream flow. Runoff from rainfall is the primary source of water for stream flow.

3. Data Collection: Wetland determination data forms for the routine on-site determination method were completed for test site locations to record the vegetation, soils, and hydrology observations used in making the wetland determination. Stream data forms were completed for streams to record hydrological, flow, water quality, and biological characteristics. Completed data forms are included in Appendix A. Photographs taken during the field work are included in Appendix B.

2.0 FINDINGS

2.1 OFFICE DATA REVIEW

The USDA/NRCS on-line soil mapping tool, *Web Soil Survey*, identifies five soil mapping units within the delineation boundary (Figure WDR-2). These soils are summarized in Table 1.

TABLE 1
SOILS INFORMATION[(1)]

Soil Mapping Unit Symbol	Soil Mapping Unit Name	Drainage Class	Hydric Soil List Designation
At	Atkins silt loam, 0 to 3 percent slopes, frequently flooded	Poorly drained	Hydric
CmC	Clymer loam, 8 to 15 percent slopes	Well drained	Not listed
GpD	Gilpin-Upshur complex, 15 to 25 percent slopes	Well drained	Not listed
GpF	Gilpin-Upshur complex, 25 to 60 percent slopes	Well drained	Not listed
Ph	Philo silt loam, 0 to 3 percent slopes, occasionally flooded	Moderately well drained	Hydric inclusions
WhB	Wharton silt loam, 3 to 8 percent slopes	Moderately well drained	Not listed
WhC	Wharton silt loam, 8 to 15 percent slopes	Moderately well drained	Hydric inclusions

(1) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov), accessed 2/17/2022.

CEC reviewed the NWI mapping prepared for the Ambridge and Baden, Pennsylvania topographic quadrangle to determine if any NWI wetlands are located within the delineation boundary (Figure WDR-2). Three riverine NWI wetlands are shown within and directly adjacent to the delineation boundary. One riverine NWI wetland (R3UBH) corresponds to Big Sewickley Creek, and the other two riverine NWI wetlands (R4SBC) correspond to North Fork Big Sewickley Creek and Coony Hollow.

It is noted that NWI maps have been prepared by the USFWS based on high altitude infrared aerial photography and limited ground-truthing. Wetlands and deepwater habitats are identified on these maps and classified according to the system developed by Cowardin and co-workers (1979).

2.2 ON-SITE FIELD REVIEW

2.2.1 Wetlands

CEC identified and delineated five wetlands within the delineation boundary during the on-site field review (Figure WDR-3). The sizes, corresponding test site and photograph numbers, and CEC's opinions of the USFWS classifications of the delineated wetlands are summarized in Table 2.

TABLE 2
WETLAND CHARACTERISTICS

Wetland Name	On-Site Area (acres)	USFWS Classification[(1)]	Test Site Number	Photograph Number (Appendix B)
Wetland 1 (303-588)	0.003	PEM	1	1
Wetland 2 (303-588) (2A and 2B)	0.003 (0.001 and 0.002)	PEM	3	3
Wetland 3 (3A and 3B)	0.047 (0.026 and 0.021)	PEM	6	6
Wetland 20	0.004	PEM	40	8
Wetland 21 (21A and 21B)	0.008 (0.003 and 0.005)	PEM	42	10
Total	**0.065**			

(1) As interpreted from *Classification of Wetlands and Deepwater Habitats of the United States*. 1979. Cowardin, L. M., V. Carter, and F. C. Golet. USFWS. PEM – Palustrine Emergent.

2.2.2 Streams

Ten streams were identified within the delineation boundary during the on-site field review (Figure WDR-3). Table 3 presents the approximate on-site lengths and drainage areas of the streams, the corresponding photograph numbers, the Chapter 93 designations, and CEC's assignments of the stream classifications.

TABLE 3
STREAM CHARACTERISTICS

Stream Name	On-Site Length (feet)	Drainage Area (acres)	Stream Classification	Chapter 93 Designation[(1)]	Photograph Number(s) (Appendix B)
Big Sewickley Creek	594	10,877	Perennial	TSF	12
UNT 1 to Big Sewickley Creek	264	20	Intermittent	TSF	13
North Fork Big Sewickley Creek	478	5,422	Perennial	TSF	14
Coony Hollow	309	331	Perennial	TSF	15
UNT 1 to Coony Hollow	226	5	Intermittent	TSF	16
UNT 2 to Coony Hollow	157	3	Ephemeral/ Intermittent	TSF	17 and 18
UNT 3 to Coony Hollow	65	1	Intermittent	TSF	19
UNT 4 to Coony Hollow	228	3	Ephemeral/ Intermittent	TSF	20 and 21
UNT 5 to Coony Hollow	208	3	Ephemeral	TSF	22
UNT 6 to Coony Hollow	67	2	Intermittent	TSF	23
Total	**2,596**				

(1) From Title 25, PA Code Chapter 93. Trout Stocking (TSF) – Maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.

3.0 REGULATORY CONSIDERATIONS

The streams identified during the on-site field review are not designated as exceptional value (EV) by the Pennsylvania Department of Environmental Protection (PADEP), and the identified wetlands do not meet the criteria to be classified as EV.

4.0 CONCLUSIONS

CEC conducted the wetland and stream delineation on August 10, 2020; May 17 and 26, 2021; June 2, 10, and 21, 2021; ***and January 25, 2023***. Five wetlands, totaling 0.065 acre, and ten streams, totaling 2,596 linear feet, were identified within the delineation boundary during the on-site field review. The locations of these features are shown on Figure WDR-3.

5.0 LEVEL OF CARE

CEC conducted the wetland delineation in a manner consistent with the criteria contained in the 1987 Manual and 2012 Regional Supplement and with the level of care and skill ordinarily exercised by members of the environmental consulting profession practicing contemporaneously under similar conditions in the locality of the project. It must be recognized the wetland delineation was based on field observations and CEC's professional interpretation of the criteria in the 1987 Manual and the 2012 Regional Supplement at the time of our field work. Wetland determinations may change subsequent to CEC's delineation based on changes in the regulatory criteria, seasonal variations in hydrology, alterations to drainage patterns, and other human activities and/or land disturbances.

6.0 REFERENCES

Cowardin, L. M., V. Carter, and F. C. Golet. 1979. *Classification of Wetlands and Deep Water Habitats of the United States.* U.S. Department of the Interior, Fish and Wildlife Service. Washington D. C. FWS/OBS-79/31.

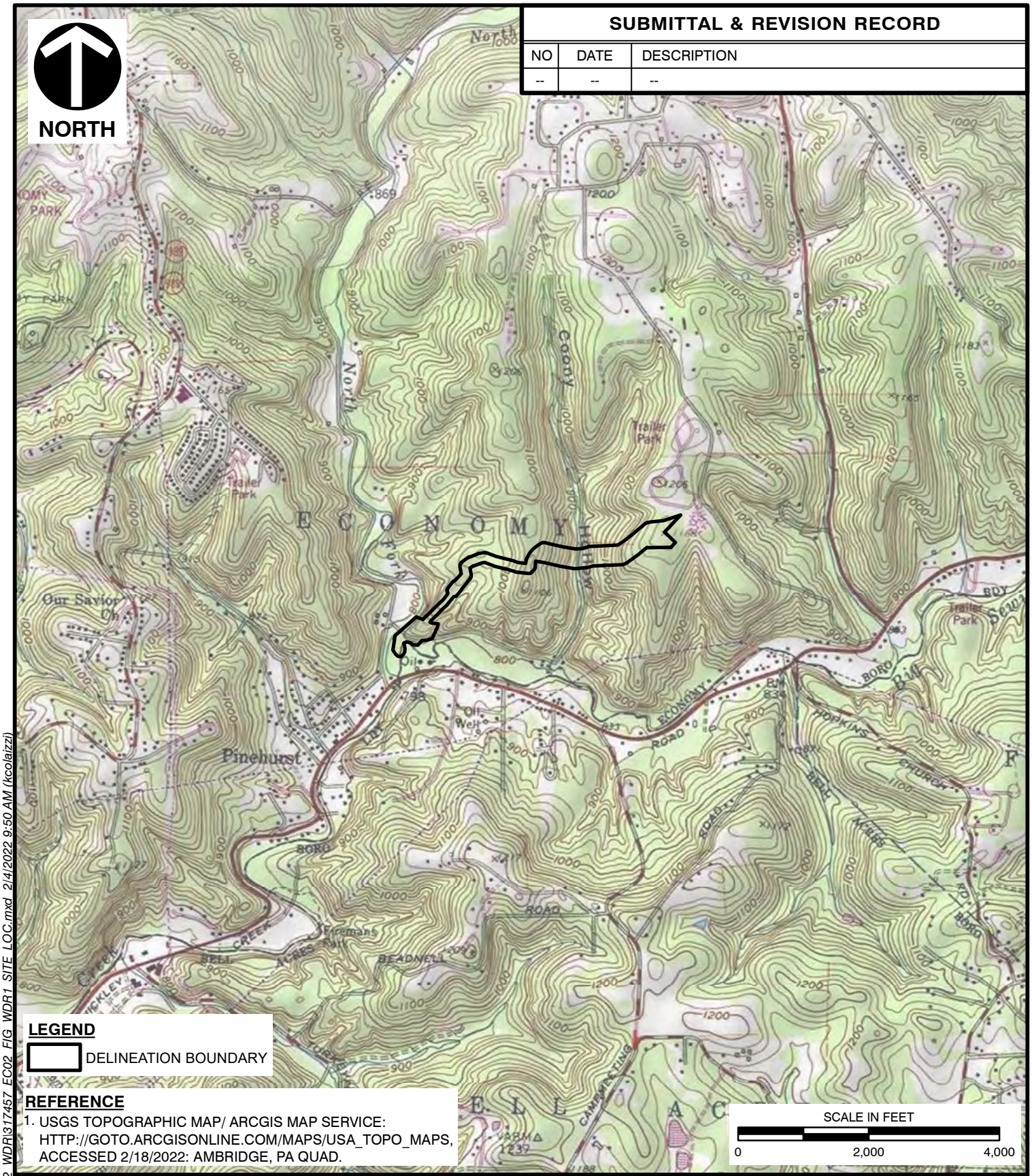
U.S. Army Corps of Engineers Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1, U.S. Army Engineer Waterway Experiment Station, Vicksburg, Mississippi.

U.S. Army Corps of Engineers. 2020. *National Wetland Plant List, Version 3.5*. http://wetland_plants.usace.army.mil. U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH.

Natural Resources Conservation Service (NRCS). 2012. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov. (Accessed 1/21/2022).

U.S. Army Corps of Engineers. 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0*, ERDC/EL TR-10-9, U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi.

FIGURES



SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
--	--	--

LEGEND

DELINEATION BOUNDARY

REFERENCE

1. USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS, ACCESSED 2/18/2022: AMBRIDGE, PA QUAD.

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B50 TEMPORARY ABOVE-GROUND WATERLINE
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BEAVER COUNTY, PENNSYLVANIA

SITE LOCATION MAP

DRAWN BY:	KMC	CHECKED BY:	SVP	APPROVED BY:	PAK*	FIGURE NO:	**WDR-1**
DATE:	02/18/2022	SCALE:	1 " = 2,000 '	PROJECT NO:	317-457	* Hand signature on file	

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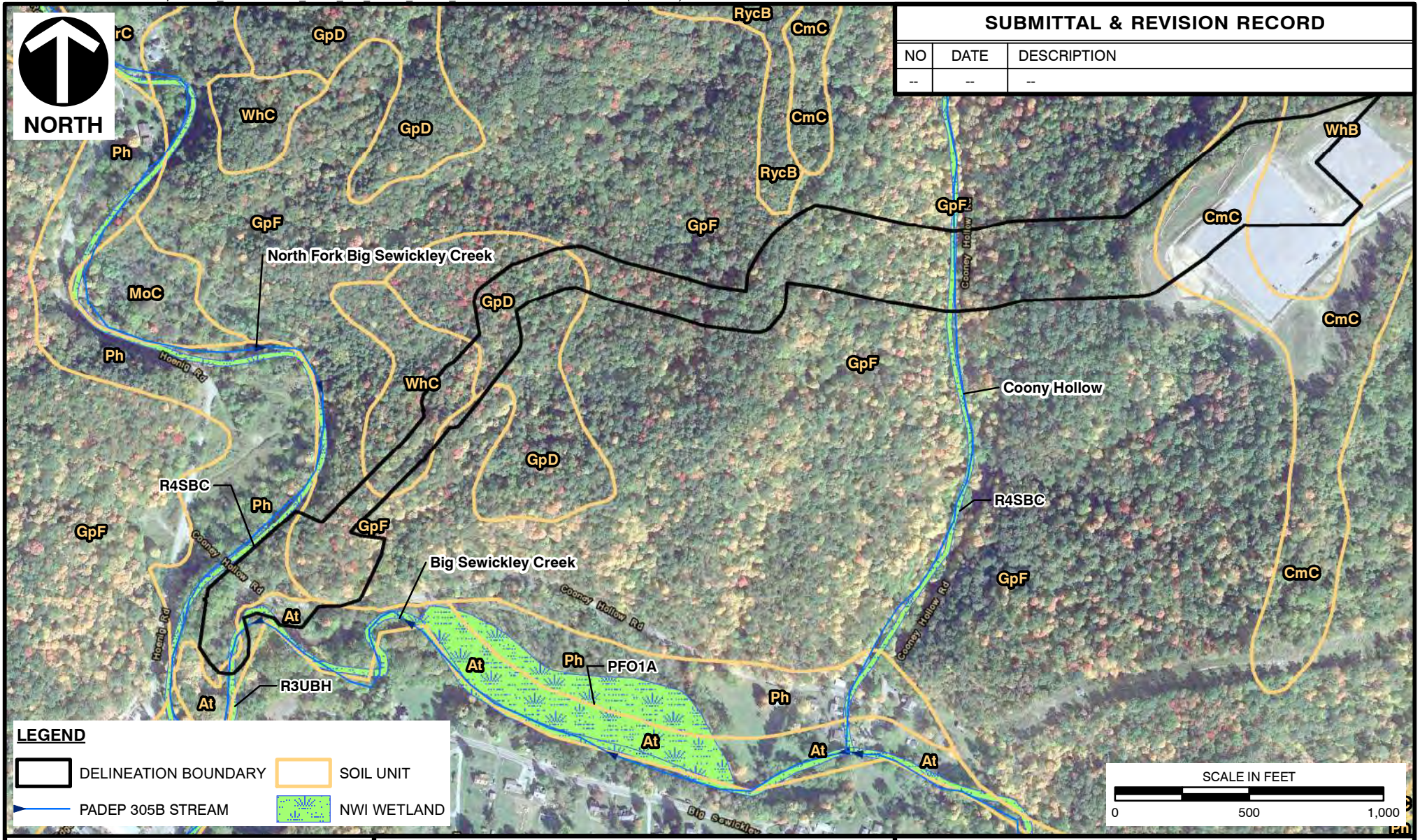
P:\310-000\317-457\-GIS\Maps\EC02_WDR\317457_EC01_FIG_WDR2_SOILS_NWI.mxd 1/18/2022 9:07 AM (kcolaizzi)



LEGEND

- DELINEATION BOUNDARY
- SOIL UNIT
- PADEP 305B STREAM
- NWI WETLAND

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
--	--	--

REFERENCES

1. PA DEPARTMENT OF ENVIRONMENTAL PROTECTION 305B STREAM DATA, 2004.
2. U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY (NWI) MAP AMBRIDGE AND BADEN, PENNSYLVANIA QUADS.
3. U.S.D.A., N.R.C.S. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR BEAVER COUNTY, PA, 2019.
4. AERIAL PHOTOGRAPHY COPYRIGHT GOOGLE EARTH PRO, EXPORTED 01/18/2022 IMAGERY DATE 10/08/2020.

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U.S. DEPARTMENT OF AGRICULTURE (USDA) SOILS AND NATIONAL WETLANDS INVENTORY (NWI) MAP

DRAWN BY:	KMC	CHECKED BY:	SVP	APPROVED BY:	PAK*	FIGURE NO:	**WDR-2**
DATE:	02/18/2022	SCALE:	1 " = 500 '	PROJECT NO:	317-457		

NORTH

REVISION RECORD		
NO	DATE	DESCRIPTION
1	04/21/2022	REVISED PER PADEP COMMENTS DATED 03/30/2022.
2	04/28/2023	REVISED PER PADEP COMMENTS DATED 04/19/2023.

SUBMITTAL RECORD		
NO	DATE	DESCRIPTION

LEGEND

- TEST SITE
- PHOTO LOCATION
- EPHEMERAL STREAM
- INTERMITTENT STREAM
- PERENNIAL STREAM
- PADEP 305B STREAM
- WETLAND - PEM
- DELINEATION BOUNDARY
- INDEX CONTOUR
- INTERMEDIATE CONTOUR

REFERENCES

1. PA DEPARTMENT OF ENVIRONMENTAL PROTECTION
   305B STREAM DATA, 2004.
2. PAMAP PROGRAM LIDAR DATA, 2' INTERVAL, 2006.
3. AERIAL PHOTOGRAPHY COPYRIGHT
   GOOGLE EARTH PRO, EXPORTED 01/18/2022
   IMAGERY DATE 10/08/2020.

NOTES

1. THE WETLAND AND STREAM DELINEATION WAS CONDUCTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. ON BE 08/10/2020, 05/17/2021, 05/26/2021, 06/02/2021, 06/10/2021, AND 6/21/2021.
2. CIVIL & ENVIRONMENTAL CONSULTANTS, INC. CONDUCTED THE WETLAND DELINEATION IN A MANNER CONSISTENT WITH THE CRITERIA CONTAINED IN THE 1987 U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987 MANUAL) AND THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: EASTERN MOUNTAINS AND PIEDMONT REGION, VERSION 2.0 (2012 REGIONAL SUPPLEMENT), AND WITH THE LEVEL OF CARE AND SKILL ORDINARILY EXERCISED BY MEMBERS OF THE ENVIRONMENTAL CONSULTING PROFESSION PRACTICING CONTEMPORANEOUSLY UNDER SIMILAR CONDITIONS IN THE LOCALITY OF THE PROJECT. IT MUST BE RECOGNIZEDTHE WETLAND DELINEATION WAS BASED ON FIELD OBSERVATIONS AND CIVIL & ENVIRONMENTAL CONSULTANTS' PROFESSIONAL INTERPRETATION OF THE CRITERIA IN THE 1987 MANUAL AND THE 2012 REGIONAL SUPPLEMENT. WETLAND DETERMINATIONS MAY CHANGE SUBSEQUENT TO CIVIL & ENVIRONMENTAL CONSULTANTS' DELINEATION BASED ON CHANGES TO REGULATORY CRITERIA, CHANGES TO DRAINAGE, AND OTHER HUMAN ACTIVITIES AND/OR LAND DISTURBANCES.

SCALE IN FEET

0 200 400 600 800

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DRAWN BY:	KMC	CHECKED BY:	SVP	APPROVED BY:	PAK*
DATE:	02/18/2022	SCALE:	1 " = 200 '	PROJECT NO:	317-457

WETLAND AND STREAM DELINEATION MAP

FIGURE NO: WDR-3

SHEET 1 OF 1

* Hand signature on file

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APPENDIX A

COMPLETED DATA FORMS

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: 317-457 B50 Temporary Above-Ground Waterline City/County: Beaver Township Sampling Date: August 10, 2020

Applicant/Owner: PennEnergy Resources, LLC State: PA Sampling Point: TS-1

Investigator(s): JWR Section, Township, Range: Economy Township

Landform (hillslope, terrace, etc.): Terrace Local Relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR or MLRA): LRRN Lat: 40.612968 Long: -80.169961 Datum: NAD83

Soil Map Unit Name: GpF - Gilpin-Upshur complex, 25 to 60 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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 ____	
Hydric Soil Present?	Yes X	No ____	Is the Sampled Area within a Wetland? Yes X No ____
Wetland Hydrology Present?	Yes X	No ____	**Wetland 1 (PEM)**

Remarks:

>Wetland was located on a forested terrace.

HYDROLOGY

Wetland Hydrology Indicators:

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

X Surface Water (A1)	____ True Aquatic Plants (B14)	____ Surface Soil Cracks (B6)
X High Water Table (A2)	X Hydrogen Sulfide Odor (C1)	____ Drainage Patterns (B10)
X Saturation (A3)	X Oxidized Rhizospheres on Living Roots (C3)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Presence of Reduced Iron (C4)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Thin Muck Surface (C7)	____ Saturation Visible on Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Other (Explain in Remarks)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)		X Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)		____ Shallow Aquitard (D3)
____ Water-Stained Leaves (B9)		____ Mircotopographic Relief (D4)
____ Aquatic Fauna (B13)		____ FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	+ < 1	
Water Table Present?	Yes X	No ____	Depth (inches):	-10	**Wetland Hydrology Present?**
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	-0	Yes X No ____

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

Remarks:
>Groundwater source
>No UPL or FACU

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

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5' Radius)			
1. *Microstegium vimineum*	5	Yes	FAC
2. *Persicaria virginiana*	2	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	7 =Total Cover		
50% of total cover: 4	20% of total cover:	2	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None			
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: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

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

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

SOIL

Sampling Point: TS-1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 5/2	85	7.5 YR 5/6	15	C	PL M	Si Lo	
10-16	10YR 5/3	95	7.5 YR 5/6	5	C	PL M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL= Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147,148)**
- ___ Thin Dark Surface (S9) **(MLRA147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: 317-457 B50 Temporary Above-Ground Waterline City/County: Beaver Township Sampling Date: August 10, 2020

Applicant/Owner: PennEnergy Resources, LLC State: PA Sampling Point: TS-2

Investigator(s): JWR Section, Township, Range: Economy Township

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): None Slope (%): 2-5

Subregion (LRR or MLRA): LRRN Lat: 40.612966 Long: -80.170152 Datum: NAD83

Soil Map Unit Name: GpF - Gilpin-Upshur complex, 25 to 60 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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		**Upland**	
Wetland Hydrology Present?	Yes ____	No X			

Remarks:

>Upland TS was located on a forested hillslope.

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)
- ____ Mircotopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____		
Water Table Present?	Yes ____	No X	Depth (inches): ____	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____	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: TS-2

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	35	Yes	FACU
2. *Quercus rubra*	20	Yes	FACU
3. *Quercus alba*	25	Yes	FACU
4. *Ulmus americana*	15	No	FACW
5.			
6.			
7.			
	95	=Total Cover	
50% of total cover: 48		20% of total cover:	19
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. *Lindera benzoin*	15	Yes	FAC
2. *Acer saccharum*	20	Yes	FACU
3. *Ulmus americana*	5	No	FACW
4. *Carpinus caroliniana*	10	Yes	FAC
5.			
6.			
7.			
8.			
9.			
	50	=Total Cover	
50% of total cover: 25		20% of total cover:	10
Herb Stratum (Plot size: 5' Radius)			
1. *Leersia virginica*	5	Yes	FACW
2. *Carya ovata*	5	Yes	FACU
3. *Lindera benzoin*	3	Yes	FAC
4. *Geum canadense*	2	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	=Total Cover	
50% of total cover: 8		20% of total cover:	3
Woody Vine Stratum (Plot size: 30' Radius)			
1. None			
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: 4 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 44.4% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

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

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

SOIL

Sampling Point: TS-2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					Si Lo	
3-16	10YR 4/3	100					CL LO	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL= Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147,148)**
- ___ Thin Dark Surface (S9) **(MLRA147, 148)**
- ___ 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: 317-457 B50 Temporary Above-Ground Waterline City/County: Beaver Township Sampling Date: August 10, 2020

Applicant/Owner: PennEnergy Resources, LLC State: PA Sampling Point: TS-3

Investigator(s): JWR Section, Township, Range: Economy Township

Landform (hillslope, terrace, etc.): Hillsope Local Relief (concave, convex, none): None Slope (%): 2-5

Subregion (LRR or MLRA): LRRN Lat: 40.612916 Long: -80.171584 Datum: NAD83

Soil Map Unit Name: GpF - Gilpin-Upshur complex, 25 to 60 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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 ____	
Hydric Soil Present?	Yes X	No ____	Is the Sampled Area within a Wetland? Yes X No ____
Wetland Hydrology Present?	Yes X	No ____	**Wetland 2 (PEM)**

Remarks:

>Wetland was located on a forested hillslope.

HYDROLOGY

Wetland Hydrology Indicators:

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

____ Surface Water (A1)	____ True Aquatic Plants (B14)	____ Surface Soil Cracks (B6)
____ High Water Table (A2)	____ Hydrogen Sulfide Odor (C1)	____ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	X 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)		X Geomorphic Position (D2)
____ Water-Stained Leaves (B9)		X Shallow Aquitard (D3)
____ Aquatic Fauna (B13)		____ Mircotopographic Relief (D4)
		____ FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____		
Water Table Present?	Yes ____	No X	Depth (inches): ____	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): -0	Yes X	No ____

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

Remarks:
>Groundwater source
>Clay at 3"
>No UPL or FACU

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

Sampling Point: TS-3

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5' Radius)			
1. *Microstegium vimineum*	25	Yes	FAC
2. *Persicaria maculosa*	10	Yes	FACW
3. *Pilea pumila*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 =Total Cover		
50% of total cover: 20	20% of total cover:	8	
Woody Vine Stratum (Plot size: 30' Radius)			
1. None			
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: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)
Prevalence Index = B/A =		

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

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

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

SOIL

Sampling Point: TS-3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	3/N	85	7.5 YR 5/6	15	C	PL M	LO	
3-16	5/N	95	7.5 YR 5/6	5	C	PL M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL= Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147,148)**
- ___ Thin Dark Surface (S9) **(MLRA147, 148)**
- X Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: 317-457 B50 Temporary Above-Ground Waterline City/County: Beaver County Sampling Date: August 10, 2020

Applicant/Owner: PennEnergy Resources, LLC State: PA Sampling Point: TS-4

Investigator(s): DWL, JWR, ARS Section, Township, Range: Economy Borough

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): None Slope (%):

Subregion (LRR or MLRA): LRR N Lat: 40.61296 Long: -80.171662 Datum: NAD83

Soil Map Unit Name: GpF - Gilpin-Upshur complex, 25 to 60 percent slopes NWI classification: N/A

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

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

Are Vegetation No, Soil No, or Hydrology No 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			
Hydric Soil Present?	Yes	No X	Is the Sampled Area within a Wetland?	Yes	No X
Wetland Hydrology Present?	Yes	No X		Upland	

Remarks:

Upland test site adjacent to Wetland 2, located on a forested hillslope.

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)
- Mircotopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes No X

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

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: TS-4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	70	Y	FACU
2. *Nyssa sylvatica*	10	N	FAC
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	

Sapling Stratum: (Plot Size: 15)			
1. *Quercus rubra*	10	Y	FACU
2. *Tilia americana*	10	Y	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	

Shrub Stratum: (Plot Size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum: (Plot size: 5)			
1. *Alliaria petiolata*	20	Y	FACU
2. *Polystichum acrostichoides*	15	Y	FACU
3. *Fraxinus americana*	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	

Woody Vine Stratum: (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	0	= 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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling - Woody plants, excluding woody vines, aproximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, aproximately 3 to 20 ft (1 to 6 m) in height.

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

Woody Vines - 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.)

The herbaceous layer at TS-4 is sparsely vegetated due to heavy canopy cover.

SOIL

Sampling Point: TS-4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					Silt Loam	
4-8	10YR 5/3	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL= Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147,148)**
- ___ Thin Dark Surface (S9) **(MLRA147, 148)**
- ___ 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Tree Roots

Depth (inches): 8

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

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: 1 317-457 B50 Temporary Above-Ground Waterline City/County: Beaver County Sampling Date: May 17, 2021

Applicant/Owner: PennEnergy Resources, LLC State: PA Sampling Point: TS-5

Investigator(s): DWL, ARS Section, Township, Range: Economy Borough

Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR N Lat: 40.609572 Long: -80.180178 Datum: NAD 83

Soil Map Unit Name: Ph - Philo silt loam, 0 to 3 percent, occasionally flooded NWI classification: N/A

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

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

Are Vegetation No, Soil No, or Hydrology No 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			
Hydric Soil Present?	Yes	No X	Is the Sampled Area within a Wetland?	Yes	No X
Wetland Hydrology Present?	Yes	No X		Upland	

Remarks:

Representative upland test site at a proposed water withdrawal location along the bank of Big Sewickley Creek.

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)
- Mircotopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes No X

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

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: TS-5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Sapling Stratum: (Plot Size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Shrub Stratum: (Plot Size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum: (Plot size: 5)			
1. *Fallopia japonica*	45	Y	FACU
2. *Rumex obtusifolius*	10	N	FACU
3. *Taraxacum officinale*	10	N	FACU
4. *Lamium purpureum*	5	N	UPL
5. *Stellaria media*	5	N	UPL
6 *Glechoma hederacea*	15	Y	FACU
7. *Plantago major*	5	N	FACU
8. *Hydrophyllum canadense*	5	N	FACU
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum: (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling - Woody plants, excluding woody vines, aproximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, aproximately 3 to 20 ft (1 to 6 m) in height.

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

Woody Vines - 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: TS-5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/2	100					Clay Loam	with gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL= Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147,148)**
- ___ Thin Dark Surface (S9) **(MLRA147, 148)**
- ___ 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: 5

Depth (inches): Rock

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

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: 317-457 B50 Temporary Above-Ground Waterline City/County: Beaver County Sampling Date: May 17, 2021

Applicant/Owner: PennEnergy Resources, LLC State: PA Sampling Point: TS-6

Investigator(s): DWL, ARS Section, Township, Range: Economy Borough

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR N Lat: 40.611098 Long: -80.177872 Datum: NAD 83

Soil Map Unit Name: WhC - Wharton silt loam, 8 to 15 percent slopes NWI classification: N/A

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

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

Are Vegetation No, Soil No, or Hydrology No 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			
Hydric Soil Present?	Yes X	No	Is the Sampled Area within a Wetland?	Yes X	No
Wetland Hydrology Present?	Yes X	No		Wetland 3 - PEM	

Remarks:

Wetland 3 is a PEM wetland that is located in a depression adjacent an old gas/oil well and a dirt trail through a wooded area. It is comprised of two parts, Wetland 3A and Wetland 3B.

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)
- X 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)
- ___ Mircotopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes	No X	Depth (inches):		**Wetland Hydrology Present?**
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):		Yes X No

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

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: TS-6

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Sapling Stratum: (Plot Size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Shrub Stratum: (Plot Size: 15)			
1. *Salix nigra*	10	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	

Herb Stratum: (Plot size: 5)			
1. *Scirpus cyperinus*	75	Y	FACW
2. *Persicaria sagittata*	10	N	OBL
3. *Microstegium vimineum*	10	N	FAC
4. *Typha angustifolia*	5	N	OBL
5.			
6			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum: (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling - Woody plants, excluding woody vines, aproximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, aproximately 3 to 20 ft (1 to 6 m) in height.

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

Woody Vines - All woody vines greater than 3.28 ft in height.

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

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

SOIL

Sampling Point: TS-6

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y 5/2	70	7.5YR 5/8	30	C	PL/M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL= Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147,148)**
- ___ Thin Dark Surface (S9) **(MLRA147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: 317-457 B50 Temporary Above-Ground Waterline City/County: Beaver County Sampling Date: May 17, 2021

Applicant/Owner: PennEnergy Resources, LLC State: PA Sampling Point: TS-7

Investigator(s): DWL, ARS Section, Township, Range: Economy Borough

Landform (hillslope, terrace, etc.): Flat Plain Local Relief (concave, convex, none): None Slope (%):

Subregion (LRR or MLRA): LRR N Lat: 40.611221 Long: -80.177961 Datum: NAD 83

Soil Map Unit Name: WhC - Wharton silt loam, 8 to 15 percent slopes NWI classification: N/A

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

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

Are Vegetation No, Soil No, or Hydrology No 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		Upland	
Wetland Hydrology Present?	Yes	No X			

Remarks:

Upland test site adjacent to Wetland 3, located in a forested area and adjacent to an old gas/oil well and dirt trail.

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)
- Mircotopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes No X

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

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: TS-7

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	50	Y	FACU
2. *Sassafras albidum*	15	N	FACU
3. *Prunus serotina*	10	N	FACU
4. *Betula lenta*	5	N	FACU
5.			
6.			
7.			
	80	= Total Cover	

Sapling Stratum: (Plot Size: 15)			
1. *Rubus allegheniensis*	15	Y	FACU
2. *Quercus alba*	10	Y	FACU
3. *Frangula alnus*	5	N	FAC
4. *Crataegus crus-galli*	5	N	FACU
5.			
6.			
7.			
	35	= Total Cover	

Shrub Stratum: (Plot Size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum: (Plot size: 5)			
1. *Microstegium vimineum*	30	Y	FAC
2. *Dennstaedtia punctilobula*	20	Y	FACU
3. *Galium aparine*	5	N	FACU
4.			
5.			
6			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	

Woody Vine Stratum: (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling - Woody plants, excluding woody vines, aproximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, aproximately 3 to 20 ft (1 to 6 m) in height.

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

Woody Vines - 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.)

The herbaceous layer at TS-7 is sparsely vegetated due to the presence of heavy leaf litter and dense canopy cover.

SOIL

Sampling Point: TS-7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100					Silt Loam	
5-8	10YR 5/4	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL= Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147,148)**
- ___ Thin Dark Surface (S9) **(MLRA147, 148)**
- ___ 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: 8

Depth (inches): Tree Roots

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

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

317-457 B50 Temporary Above-Ground Waterline

Project/Site: | City/County: BEAVER COUNTY | Sampling Date: 5/26/21

Applicant/Owner: PENN ENERGY RESOURCES LLC | State: PA | Sampling Point: TS-40

Investigator(s): CRK, SVP, ARS | Section, Township, Range: ECONOMY BOROUGH

Landform (hillslope, terrace, etc.): HILLSLOPE | Local Relief (concave, convex, none): CONCAVE | Slope (%): 2-5%

Subregion (LRR or MLRA): LRR N | Lat: 40.612776 | Long: -80.176653 | Datum: NAD83

Soil Map Unit Name: GpD - Gilpin-Upshur complex, 15 to 25 percent slopes | NWI classification: N/A

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

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

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		WETLAND 4 - PEM
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: SMALL, SEEP FED WETLAND ALONG A DIRT ACCESS ROAD, IN A FORESTED AREA

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)
- ____ Mircotopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches):	0-1 in.
Water Table Present?	Yes ✓	No ____	Depth (inches):	10 in.
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches):	____

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: TS-40

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' radius)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum: (Plot Size: 15' radius)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum: (Plot Size: 15' radius)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum: (Plot size: 5' radius)			
1. ONOCLEA SENSIBILIS	40%	Y	FACW
2. MICROSTEGIUM VIMINEUM	40%	Y	FAC
3. NYSSA SYLVATICA	5%	N	FAC
4. LYCOPUS UNIFLORUS	3%	N	OBL
5. IMPATIENS CAPENSIS	3%	N	FACW
6. RUBUS SP.	1%	N	
7. TOXICODENDRON RADICANS	1%	N	FAC
8. PARATHELYPTERIS NOVEBORACENSIS	3%	N	FAC
9.			
10.			
11.			
12.			
	96 = Total Cover		
Woody Vine Stratum: (Plot size: 30' radius)			
1. N/A			
2.			
3.			
4.			
5.			
	= Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling - Woody plants, excluding woody vines, aproximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, aproximately 3 to 20 ft (1 to 6 m) in height.

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

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

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

50% of 96% = 48%

20% of 96% = 19%

SOIL

Sampling Point: TS-40

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

Depth (inches)	Color (moist)	%	Redox Features: Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2 in.	2.5Y 3/1	90	7.5YR 4/6	10	C	M	SILO	
2-9 in.	2.5Y 5/2	60	7.5YR 4/6	40	C	M/PL	CLLO	
9-16 in.	10YR 5/6	60	7.5YR 4/6	5%	C	M	CLLO	MIXED MATRIX
	5Y 6/1	35						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL= Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147,148)**
- ___ Thin Dark Surface (S9) **(MLRA147, 148)**
- ___ 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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 ___

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: 317-457 850 TNL City/County: BEAVER COUNTY Sampling Date: 5/26/21

Applicant/Owner: PENNENERGY RESOURCES LLC. State: PA Sampling Point: TS-41

Investigator(s): CRL, SUP, ARS Section, Township, Range: ECONOMY BOROUGH

Landform (hillslope, terrace, etc.): HILLSLOPE Local Relief (concave, convex, none): NONE Slope (%): 0-1

Subregion (LRR or MLRA): LRR N Lat: 40.612832 Long: -80.176778 Datum: NAD83

Soil Map Unit Name: GpD - Gilpin-Upshur complex, 15 to 25 percent slopes NWI classification: N/A

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

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

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland?	Yes ____	No ✓
Hydric Soil Present?	Yes ____	No ✓		UPLAND	
Wetland Hydrology Present?	Yes ____	No ✓			

Remarks: TEST SITE 41 IS UPLAND ADJACENT TO WETLAND 4

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No ✓

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

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: TS-41

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. [redacted]			
2. TSUGA CANADENSIS	30	Y	FACU
3. QUERCUS VELUTINA	15	Y	UPL
4. BETULA ALLEGHENIENSIS	15	Y	FAC
5. ACER RUBRUM	10	N	FAC
6. PINUS VIRGINIANA	10	N	UPL
7.			
	80	= Total Cover	

Sapling Stratum: (Plot Size: 15' radius)			
1. CARYA GLABRA	20	Y	FACU
2. BETULA ALLEGHENIENSIS	10	Y	FAC
3. ACER RUBRUM	10	Y	FAC
4.			
5.			
6.			
7.			
	40	= Total Cover	

Shrub Stratum: (Plot Size: 15' radius)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Herb Stratum: (Plot size: 5' radius)			
1. DENNSTAEDTIA PUNCTILOBULA	35	Y	FACU
2. PODOPHYLLUM PELTATUM	18	N	FACU
3. MICROSTEGIUM VIMINEUM	15	Y	FAC
4. RUBUS SP.	5	N	N/A
5. MEDEOLA VIRGINIANA	10	N	FAC
6. CARYA GLABRA	5	N	FACU
7. DANTHONIA SPICATA	10	N	UPL
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	

Woody Vine Stratum: (Plot size: 30' radius)			
1. N/A			
2.			
3.			
4.			
5.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling - Woody plants, excluding woody vines, aproximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, aproximately 3 to 20 ft (1 to 6 m) in height.

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

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL

Sampling Point: TS-41

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

Depth (inches)	Color (moist)	%	Redox Features: Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-3	10 YR 2/2	100					SiLo	
3-10	10 YR 5/4	90					SiLO	
	10 YR 2/2	10						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL= Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147,148)**
- ___ Thin Dark Surface (S9) **(MLRA147, 148)**
- ___ 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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 ✓

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: 317-457 B50 Temporary Above-Ground Waterline City/County: BEAVER COUNTY Sampling Date: 5/26/21

Applicant/Owner: PENNENERGY RESOURCES LLC State: PA Sampling Point: TS-42

Investigator(s): CRL, SVP, ARS Section, Township, Range: ECONOMY BOROUGH

Landform (hillslope, terrace, etc.): HILLTOP Local Relief (concave, convex, none): CONCAVE Slope (%): 0-1

Subregion (LRR or MLRA): LRR N Lat: 40.612696 Long: -80.173313 Datum: NAD83

Soil Map Unit Name: GpF - Gilpin-Upshur complex, 25 to 60 percent slopes NWI classification: N/A

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

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

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____		WETLAND 5 - PEM
Wetland Hydrology Present?	Yes ✓	No ____		

Remarks: Two-parted PEM wetland (5A and 5B) located in depressions on and adjacent to an old access road in a forested area.

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)
- ____ Mircotopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches):	0-3
Water Table Present?	Yes ____	No ✓	Depth (inches):	____
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: TS-42

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' radius)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum: (Plot Size: 15' radius)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum: (Plot Size: 15' radius)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum: (Plot size: 5' radius)			
1. SCIRPUS POLYPHYLLUS	10	Y	OBL
2. GLYCERIA STRIATA	7	Y	OBL
3. CARDAMINE PENSYLVANICA	3	N	OBL
4. IMPATIENS CAPENSIS	3	N	FACW
5. LEERSIA VIRGINICA	3	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	26 = Total Cover		
Woody Vine Stratum: (Plot size: 30' radius)			
1. N/A			
2.			
3.			
4.			
5.			
	= Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling - Woody plants, excluding woody vines, aproximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, aproximately 3 to 20 ft (1 to 6 m) in height.

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

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

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

ROSA MULTIFLORA IS OVERHANGING WETLAND, BUT NOT ROOTED WITHIN.

SOIL

Sampling Point: TS-42

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

Depth (inches)	Color (moist)	%	Redox Features: Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	97	7.5 YR 4/6	3	C	M/PL	SICO	
2-8	7.5 YR 5/3	90	7.5 YR 6/1	10	C	M	CL	
8-16	5 YR 4/4	90	7.5 YR 6/1	10	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL= Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147,148)**
- ___ Thin Dark Surface (S9) **(MLRA147, 148)**
- ___ 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: hard clay

Depth (inches): 2

Hydric Soil Present? Yes ✓ No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: 317-457 B50 TUL City/County: BEAVER COUNTY Sampling Date: 5/26/21

Applicant/Owner: PENNENERGY RESOURCES LLC State: PA Sampling Point: TS-43

Investigator(s): CHL, SUP, AKS Section, Township, Range: ECONOMY BOROUGH

Landform (hillslope, terrace, etc.): HILLTOP Local Relief (concave, convex, none): NONE Slope (%): 0-1

Subregion (LRR or MLRA): LRR N Lat: 40.612605 Long: -80.173301 Datum: NAD83

Soil Map Unit Name: GpF - Gilpin-Upshur complex, 25 to 60 percent slopes NWI classification: N/A

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

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

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland?	Yes ____	No ✓
Hydric Soil Present?	Yes ____	No ✓			
Wetland Hydrology Present?	Yes ____	No ✓			

Remarks:

UPLAND TEST SITE ADJACENT TO WETLAND 5.

HYDROLOGY

Wetland Hydrology Indicators:

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

____ 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)		____ Mircotopographic Relief (D4)
		____ FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____	
Water Table Present?	Yes ____	No ✓	Depth (inches): ____	**Wetland Hydrology Present?**
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____	Yes ____ No ✓

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

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: TS-43

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' radius)			
1. PRUNUS SEROTINA	10	N	FACU
2. ACER RUBRUM	10	N	FAC
3. ACER SACCHARUM	45	Y	FACU
4. QUERCUS RUBRA	10	N	FACU
5. ULMUS AMERICANA	5	N	FACW
6. CARYA CORDIFORMS	5	N	FACU
7.			
	85	= Total Cover	
Sapling Stratum: (Plot Size: 15' radius)			
1. ULMUS AMERICANA	3	Y	FACW
2. MALUS SP.	3	Y	-
3. ACER SACCHARUM	3	Y	FACU
4.			
5.			
6.			
7.			
	9	= Total Cover	
Shrub Stratum: (Plot Size: 15' radius)			
1. LIGUSTRUM VULGARE	2	Y	FACU
2. CARYA CORDIFORMS	2	Y	FACU
3.			
4.			
5.			
6.			
7.			
	4	= Total Cover	
Herb Stratum: (Plot size: 5' radius)			
1. PODOPHYLLUM PELTATUM	10	Y	FACU
2. ALLIARIA PETIOLATA	5	Y	FACU
3. QUERCUS RUBRA	2	N	FACU
4. SASSAFRAS ALBIDUM	1	N	FACU
5. FRAXINUS AMERICANA	1	N	FACU
6. PARTHENOCISSUS QUINQUEFOLIA	3	N	FACU
7. MAIANTHEMUM RACEMOSUM	2	N	FACU
8. CARDAMINE IMPATIENS	2	N	FAC
9.			
10.			
11.			
12.			
	26	= Total Cover	
Woody Vine Stratum: (Plot size: 30' radius)			
1. N/A			
2.			
3.			
4.			
5.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling - Woody plants, excluding woody vines, aproximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, aproximately 3 to 20 ft (1 to 6 m) in height.

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

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

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

SOIL

Sampling Point: TS-43

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

Depth (inches)	Color (moist)	%	Redox Features: Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 2/2	100					SILO	
6-12	10 YR 2/2	50					SILO	MIXED MATRIX
	10 YR 6/6	50						
12-16	10 YR 6/6	80					SILO	MIXED MATRIX
	10 YR 2/2	20						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL= Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147,148)**
- ___ Thin Dark Surface (S9) **(MLRA147, 148)**
- ___ 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators 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 ✓

Remarks:

STREAM SURVEY DATA COLLECTION FORM

PROJECT 317-457
DATE 1/25/23
STREAM FIELD ID Stream 3
STREAM NAME Big Sewickley Creek
REVIEWER(S) DWE, ARS

Weather Conditions: ☒ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain
Any precipitation in the last 5 days? ☐ Yes ☒ No

Stream Type: ☒ Perennial ☐ Intermittent ☐ Ephemeral

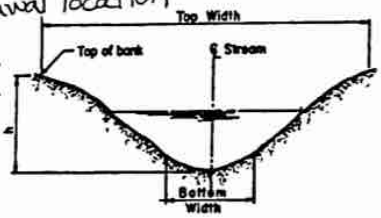
☒ Photographs taken Photograph numbers: 43 upstream 44 downstream ___ crossing
☒ Flagged (_____ total flags)
☒ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☐ Yes ☒ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☒ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate): @withdrawal location
Average top of bank width (feet): 30-50' At centerline: 50'
Average top of bank depth (feet): 4-8' At centerline: 8'
Wetted width (feet): 20-35' At centerline: 35'
Wetted depth (feet): 1-4' At centerline: 4'
Average side slopes: Vertical (1:1 or less); 2:1; 3:1; 4:1 or more
Ordinary High Water Mark (OHWM), if observed:



Primary tributary substrate composition (check all that apply):
X Silt
X Sand
_____ Clay
X Gravel (0.25" to 2")
X Cobble (2" to 10")
X Boulder (>10")
_____ Bedrock
_____ Vegetation (_____%)
_____ Other. Explain:

Flow Characteristics:

Water present: ☐ No water, streambed dry ☐ Streambed moist ☐ Standing water ☒ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☒ Normal ☐ Low
Bank erosion: ☒ Extensive ☐ Moderate ☐ Little / None

Tributary has (check all that apply): ☒ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics: (Roadside)
☒ forested ☐ open field ☐ farmland ☐ wetland ☒ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☐ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☒ 0 - 24%
Wetland fringe: ☐ Yes (☐ Abutting or ☐ Adjacent) ☒ No
Wetland ID:

Biological Characteristics:

Macroinvertebrates observed? ☒ Yes ☐ No Describe: Caddisflies
Fish or wildlife observed? ☐ Yes ☒ No Describe:

Other Observations and Comments:

Stream flows through a forested valley and continues both upstream and downstream of the delineation boundary. The proposed water withdrawal location is near a pull off just south of Cooney Hollow Road. The max pool depth is approximately 4' and the substrate is predominantly cobble and gravel.

STREAM SURVEY DATA COLLECTION FORM

317-457 B50 Temporary Above-Ground Waterline

PROJECT
DATE 6/21/21
STREAM FIELD ID Stream 8
STREAM NAME UNT 1 to Big Sewickley Creek
REVIEWER(S) DWL, ARS

Weather Conditions: ☒ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain
Any precipitation in the last 5 days? ☒ Yes ☐ No

Stream Type: ☐ Perennial ☒ Intermittent ☐ Ephemeral

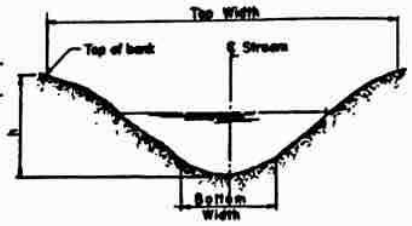
☒ Photographs taken Photograph numbers: 22 upstream 23 downstream ___ crossing
☒ Flagged (_____ total flags)
☒ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☐ Yes ☒ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☒ Culvert (Diameter: 18") (Plastic)

Hydrological Characteristics:

Tributary is: ☒ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 6-8' At centerline: ___
Average top of bank depth (feet): 2-3' At centerline: ___
Wetted width (feet): 1-2' At centerline: ___
Wetted depth (feet): 0-18" At centerline: ___
Average side slopes: Vertical (1:1 or less); 2:1; 3:1; 4:1 or more
Ordinary High Water Mark (OHWM), if observed:



Primary tributary substrate composition (check all that apply):

X Silt	X Gravel (0.25" to 2")	___ Bedrock
X Sand	X Cobble (2" to 10")	___ Vegetation (___%)
___ Clay	X Boulder (>10")	___ Other. Explain:

Flow Characteristics:

Water present: ☐ No water, streambed dry ☐ Streambed moist ☐ Standing water ☒ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☒ Normal ☐ Low
Bank erosion: ☐ Extensive ☒ Moderate ☐ Little / None

Tributary has (check all that apply): ☒ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics: (Roadside)
☒ forested ☐ open field ☐ farmland ☐ wetland ☒ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☒ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☐ Yes (☐ Abutting or ☐ Adjacent) ☒ No
Wetland ID:

Biological Characteristics:

Macroinvertebrates observed? ☒ Yes ☐ No Describe: Stoneflies, Flatworms
Fish or wildlife observed? ☐ Yes ☒ No Describe:

Other Observations and Comments:

Stream flows down a forested hillslope and crosses under Cooney Hollow Rd via an 18" plastic culvert. It continues both upstream and downstream of the delineation boundary.

STREAM SURVEY DATA COLLECTION FORM

PROJECT 317-457 B50 Temporary Above-Ground Waterline
DATE 6/2/21
STREAM FIELD ID STREAM 2 SOUTH (adjacent to Big Sewickley Creek proposed withdrawal location)
STREAM NAME NORTH FORK BIG SEWICKLEY CREEK
REVIEWER(S) CRR, DWL

Weather Conditions: ☐ Sunny ☐ Partly Cloudy ☑ Cloudy ☐ Rain
Any precipitation in the last 5 days? ☑ Yes ☐ No

Stream Type: ☑ Perennial ☐ Intermittent ☐ Ephemeral

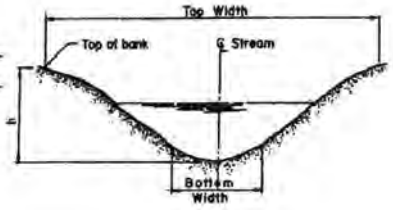
☒ Photographs taken Photograph numbers: ___ upstream ___ downstream ___ crossing
☐ Flagged (_____ total flags)
☒ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance: ☐ Yes ☐ No Crossing length _____ feet
Road crossing and type: ☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☑ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 20-35 At centerline: -
Average top of bank depth (feet): 2-5 At centerline: -
Wetted width (feet): 10-20 At centerline: -
Wetted depth (feet): 1-12 in. At centerline: -
Average side slopes: Vertical (1:1 or less); 2:1; 3:1; 4:1 or more
Ordinary High Water Mark (OHWM), if observed:



Primary tributary substrate composition (check all that apply):

✓ Silt	✓ Gravel (0.25" to 2")	_____ Bedrock
✓ Sand	✓ Cobble (2" to 10")	_____ Vegetation (_____%)
_____ Clay	✓ Boulder (>10")	_____ Other. Explain:

Flow Characteristics:

Water present: ☐ No water, streambed dry ☐ Streambed moist ☐ Standing water ☑ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☑ Normal ☐ Low
Bank erosion: ☐ Extensive ☐ Moderate ☑ Little / None

Tributary has (check all that apply): ☑ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:
☑ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☐ 75 - 100% ☑ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☐ Yes (☐ Abutting or ☐ Adjacent) ☑ No
Wetland ID:

Biological Characteristics:

Macroinvertebrates observed? ☑ Yes ☐ No Describe: STONEFLY, CADDIS, MAYFLY, WATER PENNY
Fish or wildlife observed? ☑ Yes ☐ No Describe: MALLARDS, FISH

Other Observations and Comments:

CONFLUENCES WITH Big Sewickley Creek OUTSIDE BOUNDARY

STREAM SURVEY DATA COLLECTION FORM

317-457 B50 Temporary Above-Ground Waterline

PROJECT _____ Weather Conditions: ☑ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain
DATE 8-10-20 Any precipitation in the last 5 days? ☑ Yes ☐ No
STREAM FIELD ID Stream 4
STREAM NAME Coony Hollow
REVIEWER(S) JWR

Stream Type: ☑ Perennial ☐ Intermittent ☐ Ephemeral

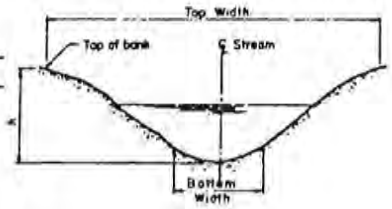
☑ Photographs taken
☑ Flagged
☑ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☑ Yes ☐ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☑ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 8-20' At centerline: —
Average top of bank depth (feet): 2-8' At centerline: —
Wetted width (feet): Ave 2.5' At centerline: —
Wetted depth (inches): Ave 4" At centerline: —
Average side slopes: Vertical (1:1 or less); 2:1; (3:1); 4:1 or more
Ordinary High Water Mark (OHWM), if observed:
AVG OW: 5-7' OD: 6-12"



Primary tributary substrate composition (check all that apply):

✓ Silt	✓ Gravel (0.25" to 2")	✓ Bedrock
✓ Sand	✓ Cobble (2" to 10")	☐ Vegetation (____%)
☐ Clay	✓ Boulder (>10")	☐ Other. Explain:

Flow Characteristics:

Water present: ☑ No water, streambed dry ☑ Streambed moist ☑ Standing water ☑ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☐ Normal ☑ Low
Bank erosion: ☐ Extensive ☑ Moderate ☐ Little / None

Tributary has (check all that apply): ☑ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:
☑ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☑ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☐ Yes (☐ Abutting or ☐ Adjacent) ☑ No
Wetland ID:

Biological Characteristics:

Macroinvertebrates observed? ☑ Yes ☐ No Describe: Tricoptera, Water Penny, Flatworm
Fish or wildlife observed? ☐ Yes ☑ No Describe:

Other Observations and Comments:

-USGS DCE @ SB

STREAM SURVEY DATA COLLECTION FORM

317-457 B50 Temporary Above-Ground Waterline

PROJECT _____ Weather Conditions: ☒ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain
DATE 8/10/20 Any precipitation in the last 5 days? ☒ Yes ☐ No
STREAM FIELD ID Stream 1
STREAM NAME UNT 1 to Coony Hollow
REVIEWER(S) DWL, JWR, ARS

Stream Type: ☐ Perennial ☒ Intermittent ☐ Ephemeral

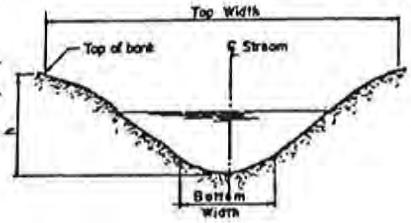
☒ Photographs taken Photograph numbers: 3 upstream 4 downstream ___ crossing
☒ Flagged (_____ total flags)
☒ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☐ Yes ☒ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☒ Culvert (Diameter: 15") (Plastic)

Hydrological Characteristics:

Tributary is: ☒ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 4-6.5' At centerline: _____
Average top of bank depth (feet): 1.5-4' At centerline: _____
Wetted width (feet): 1-2.5' At centerline: _____
Wetted depth (feet): 1/8 - 1/4" At centerline: _____
Average side slopes: Vertical (1:1 or less); 2:1; 3:1; 4:1 or more
Ordinary High Water Mark (OHWM), if observed:



Primary tributary substrate composition (check all that apply):

___ Silt	☒ Gravel (0.25" to 2")	☒ Bedrock
☒ Sand	☒ Cobble (2" to 10")	___ Vegetation (___ %)
☒ Clay	☒ Boulder (>10")	☒ Other. Explain: Leaf Litter

Flow Characteristics:

Water present: ☐ No water, streambed dry ☐ Streambed moist ☐ Standing water ☒ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☒ Normal ☐ Low
Bank erosion: ☐ Extensive ☒ Moderate ☐ Little / None (at toe of slope)
Tributary has (check all that apply): ☒ Defined bed and banks ☒ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:
☒ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☒ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☐ Yes (☐ Abutting or ☐ Adjacent) ☒ No
Wetland ID:

Biological Characteristics:

Macroinvertebrates observed? ☒ Yes ☐ No Describe: Caddisflies
Fish or wildlife observed? ☐ Yes ☒ No Describe:

Other Observations and Comments:

Stream flows down a forested hillslope and begins at a groundwater seep along an old logging road. It loses definition at the toe of slope, but ultimately confluences with Stream 4 via a culvert under Cooney Hollow Rd.

STREAM SURVEY DATA COLLECTION FORM

317-457 B50 Temporary Above-Ground Waterline

PROJECT _____ Weather Conditions: ☑ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain
DATE 8-10-11 Any precipitation in the last 5 days? ☑ Yes ☐ No
STREAM FIELD ID Stream 2
STREAM NAME UNT 2 to Coony Hollow
REVIEWER(S) JWR

Stream Type: ☐ Perennial ☐ Intermittent ☑ Ephemeral

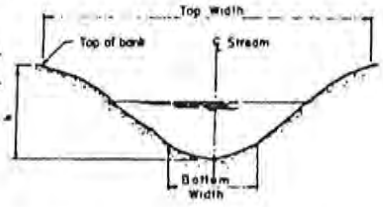
☑ Photographs taken
☑ Flagged
☑ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☐ Yes ☐ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☑ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 0.7-3.5' At centerline: —
Average top of bank depth (feet): 0.5-2.0' At centerline: —
Wetted width (feet): Dry At centerline: —
Wetted depth (inches): Dry At centerline: —
Average side slopes: Vertical (1:1 or less); 2:1; (3:1) 4:1 or more
Ordinary High Water Mark (OHWM), if observed:
OW: 0.5-2.0 OD 2-3'



Primary tributary substrate composition (check all that apply):

☑ Silt	☑ Gravel (0.25" to 2")	☐ Bedrock
☑ Sand	☑ Cobble (2" to 10")	☐ Vegetation (____%)
☐ Clay	☐ Boulder (>10")	☐ Other. Explain:

Flow Characteristics:

Water present: ☑ No water, streambed dry ☐ Streambed moist ☐ Standing water ☐ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☐ Normal ☐ Low
Bank erosion: ☐ Extensive ☐ Moderate ☑ Little / None

Tributary has (check all that apply): ☑ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:
☑ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☑ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☐ Yes (☐ Abutting or ☐ Adjacent) ☑ No
Wetland ID:

Biological Characteristics:

Macroinvertebrates observed? ☐ Yes ☑ No Describe:
Fish or wildlife observed? ☐ Yes ☑ No Describe:

Other Observations and Comments:

Eph/INT loss of Flow and change in chnl morphology
- DsE to loss of RtB

STREAM SURVEY DATA COLLECTION FORM

317-457 B50 Temporary Above-Ground Waterline

PROJECT
DATE 8-10-20
STREAM FIELD ID Stream - 2
STREAM NAME UNT 2 to Coony Hollow
REVIEWER(S) JWR

Weather Conditions: ☑ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain
Any precipitation in the last 5 days? ☑ Yes ☐ No

Stream Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

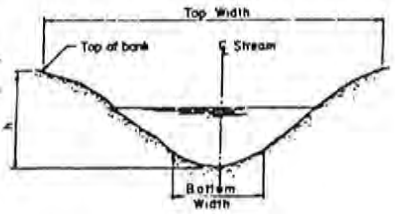
☑ Photographs taken
☑ Flagged
☑ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☐ Yes ☐ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☑ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 0.5-1.2 At centerline: —
Average top of bank depth (feet): 0.2-0.7 At centerline: —
Wetted width (feet): Dry-0.2 At centerline: —
Wetted depth (inches): Dry-<1" At centerline: —
Average side slopes: Vertical (1:1 or less); 2:1; 3:1; 4:1 or more
Ordinary High Water Mark (OHWM), if observed:
OW: 0.5-0.7 DD: 2-3"



Primary tributary substrate composition (check all that apply):

☑ Silt	☑ Gravel (0.25" to 2")	☐ Bedrock
☑ Sand	☑ Cobble (2" to 10")	☐ Vegetation (___%)
☐ Clay	☐ Boulder (>10")	☐ Other. Explain:

Flow Characteristics:

Water present: ☑ No water, streambed dry ☑ Streambed moist ☐ Standing water ☑ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☐ Normal ☑ Low
Bank erosion: ☐ Extensive ☐ Moderate ☑ Little / None

Tributary has (check all that apply): ☑ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:
☑ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☑ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☑ Yes (☑ Abutting or ☐ Adjacent) ☐ No
Wetland ID: WTL-1 (PEM)

Biological Characteristics:

Macroinvertebrates observed? ☐ Yes ☑ No Describe:
Fish or wildlife observed? ☐ Yes ☑ No Describe:

Other Observations and Comments:

- USEW WTL-1
- DSEW Loss of B+B

STREAM SURVEY DATA COLLECTION FORM

317-457 B50 Temporary Above-Ground Waterline

PROJECT
DATE 8-10-20
STREAM FIELD ID Stream 3
STREAM NAME UNT 3 to Coony Hollow
REVIEWER(S) JWR

Weather Conditions: ☑ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain
Any precipitation in the last 5 days? ☑ Yes ☐ No

Stream Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

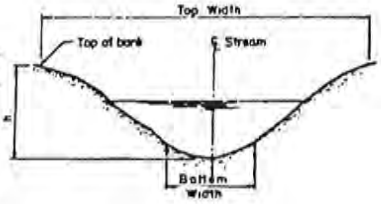
☑ Photographs taken
☑ Flagged
☑ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☐ Yes ☐ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☑ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 0.5-1.2 At centerline: —
Average top of bank depth (feet): 0.5-1.2 At centerline: —
Wetted width (feet): — Dry At centerline: —
Wetted depth (inches): — Dry At centerline: —
Average side slopes: Vertical (1:1 or less); 2:1; (3:1); 4:1 or more
Ordinary High Water Mark (OHWM), if observed:
OW: 0.7-1.0 OD: 2-3"



Primary tributary substrate composition (check all that apply):

✓ Silt	____ Gravel (0.25" to 2")	____ Bedrock
✓ Sand	✓ Cobble (2" to 10")	____ Vegetation (____%)
____ Clay	____ Boulder (>10")	____ Other. Explain:

Flow Characteristics:

Water present: ☑ No water, streambed dry ☐ Streambed moist ☐ Standing water ☐ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☐ Normal ☐ Low
Bank erosion: ☐ Extensive ☐ Moderate ☑ Little / None

Tributary has (check all that apply): ☑ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:
☑ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☑ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☐ Yes (☐ Abutting or ☐ Adjacent) ☑ No
Wetland ID:

Biological Characteristics:

Macroinvertebrates observed? ☐ Yes ☑ No Describe:
Fish or wildlife observed? ☐ Yes ☑ No Describe:

Other Observations and Comments:

- USS @ B+P
- DSC @ loss of BTR

STREAM SURVEY DATA COLLECTION FORM

PROJECT 317-457 B50 Temporary Above-Ground Waterline
DATE 8-10-20
STREAM FIELD ID Stream 5
STREAM NAME UNT 4 to Coony Hollow
REVIEWER(S) JWR

Weather Conditions: ☑ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain
Any precipitation in the last 5 days? ☑ Yes ☐ No

Stream Type: ☐ Perennial ☐ Intermittent ☑ Ephemeral

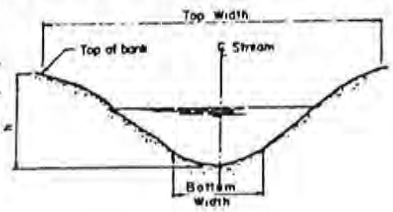
☑ Photographs taken
☑ Flagged
☑ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☐ Yes ☐ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☑ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 2.0-2.5' At centerline: —
Average top of bank depth (feet): 0.5-2.0 At centerline: —
Wetted width (feet): Dry At centerline: —
Wetted depth (inches): Dry At centerline: —
Average side slopes: Vertical (1:1 or less); 2:1; (3:1); 4:1 or more
Ordinary High Water Mark (OHWM), if observed:
OW: 1.0-1.7' OD: 2-5'



Primary tributary substrate composition (check all that apply):

✓ Silt	✓ Gravel (0.25" to 2")	_____ Bedrock
✓ Sand	✓ Cobble (2" to 10")	_____ Vegetation (_____%)
_____ Clay	_____ Boulder (>10")	_____ Other. Explain:

Flow Characteristics:

Water present: ☑ No water, streambed dry ☐ Streambed moist ☐ Standing water ☐ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☐ Normal ☐ Low
Bank erosion: ☐ Extensive ☐ Moderate ☑ Little / None

Tributary has (check all that apply): ☑ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:
☑ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☑ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☑ Yes (☐ Abutting or ☑ Adjacent) ☐ No
Wetland ID: WTL-2A +2B

Biological Characteristics:

Macroinvertebrates observed? ☐ Yes ☑ No Describe:
Fish or wildlife observed? ☐ Yes ☑ No Describe:

Other Observations and Comments:

USGS @ R+B

STREAM SURVEY DATA COLLECTION FORM

317-457 B50 Temporary Above-Ground Waterline

PROJECT
DATE 8-10-20
STREAM FIELD ID Stream - 5
STREAM NAME UNT 4 to Coony Hollow
REVIEWER(S) JWR

Weather Conditions: ☑ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain
Any precipitation in the last 5 days? ☑ Yes ☐ No

Stream Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

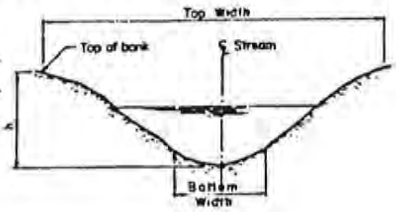
☐ Photographs taken
☐ Flagged
☐ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☐ Yes ☐ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☑ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 2.5 - 4.5 At centerline: —
Average top of bank depth (feet): 1 - 1.2' At centerline: —
Wetted width (feet): 0.4 - 0.2' At centerline: —
Wetted depth (inches): 0.4 - 2" At centerline: —
Average side slopes: Vertical (1:1 or less); 2:1; ☑ 3:1; 4:1 or more
Ordinary High Water Mark (OHWM), if observed: OW: 1.7 - 2.7 0-4-8'



Primary tributary substrate composition (check all that apply):

☑ Silt	☑ Gravel (0.25" to 2")	☐ Bedrock
☑ Sand	☑ Cobble (2" to 10")	☐ Vegetation (___%)
☐ Clay	☑ Boulder (>10")	☐ Other. Explain:

Flow Characteristics:

Water present: ☑ No water, streambed dry ☑ Streambed moist ☐ Standing water ☑ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☐ Normal ☑ Low
Bank erosion: ☐ Extensive ☐ Moderate ☑ Little / None

Tributary has (check all that apply): ☑ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:
☑ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☑ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☐ Yes (☐ Abutting or ☑ Adjacent) ☑ No
Wetland ID: WTL-2A + 2B (PEM)

Biological Characteristics:

Macroinvertebrates observed? ☑ Yes ☐ No Describe: Trichoptera Odonata
Fish or wildlife observed? ☐ Yes ☑ No Describe:

Other Observations and Comments:

Eph/INT: loss of flow / confl / substrate / chnl morphology
- Dsc @ 68

STREAM SURVEY DATA COLLECTION FORM

317-457 B50 Temporary Above-Ground Waterline

PROJECT _____ Weather Conditions: ☒ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain

DATE 8/10/20 Any precipitation in the last 5 days? ☒ Yes ☐ No

STREAM FIELD ID Stream 6

STREAM NAME UNT 5 to Coony Hollow

REVIEWER(S) DWL, JWR, ARS

Stream Type: ☐ Perennial ☐ Intermittent ☒ Ephemeral

☒ Photographs taken Photograph numbers: 7 upstream 8 downstream ___ crossing

☒ Flagged (_____ total flags)

☒ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance: ☐ Yes ☒ No Crossing length _____ feet

Road crossing and type: ☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☒ Natural.

☐ Artificial (man-made). Explain:

☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):

Average top of bank width (feet): 2.5-5.5' At centerline: ___

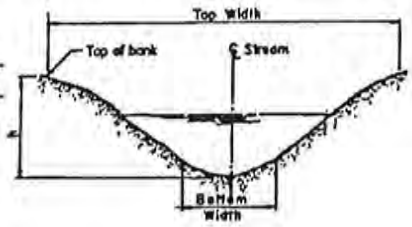
Average top of bank depth (feet): 1.5-4.5' At centerline: ___

Wetted width (feet): 0 At centerline: ___

Wetted depth (feet): 0 At centerline: ___

Average side slopes: Vertical (1:1 or less); 2:1; 3:1; 4:1 or more

Ordinary High Water Mark (OHWM), if observed:



Primary tributary substrate composition (check all that apply):

___ Silt	☒ Gravel (0.25" to 2")	___ Bedrock
___ Sand	☒ Cobble (2" to 10")	___ Vegetation (___%)
☒ Clay	___ Boulder (>10")	☒ Other. Explain: Leaf Litter

Flow Characteristics:

Water present: ☒ No water, streambed dry ☐ Streambed moist ☐ Standing water ☐ Flowing water

If flow present, estimate stage at time of survey: ☐ High ☐ Normal ☐ Low

Bank erosion: ☐ Extensive ☒ Moderate ☐ Little / None

Tributary has (check all that apply): ☒ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:

☒ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☒ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%

Wetland fringe: ☐ Yes (☐ Abutting or ☐ Adjacent) ☒ No

Wetland ID:

Biological Characteristics:

Macroinvertebrates observed? ☐ Yes ☒ No Describe:

Fish or wildlife observed? ☐ Yes ☒ No Describe:

Other Observations and Comments:

Stream starts at the edge of an old logging road and flows down a forested hillslope before confluencing with Stream 4.

STREAM SURVEY DATA COLLECTION FORM

317-457 B50 Temporary Above-Ground Waterline

PROJECT _____ Weather Conditions: ☑ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain

DATE 8-10-20 Any precipitation in the last 5 days? ☑ Yes ☐ No

STREAM FIELD ID Stream 7

STREAM NAME UNT 6 to Coony Hollow

REVIEWER(S) JWR

Stream Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

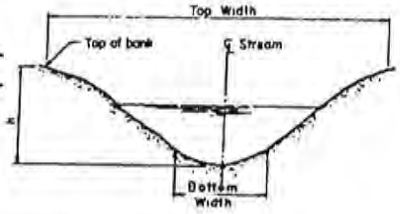
☐ Photographs taken
☐ Flagged
☐ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☐ Yes ☐ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☑ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 2.5-3.0 At centerline: —
Average top of bank depth (feet): 1.5-2.0 At centerline: —
Wetted width (feet): 0.5-0.7 At centerline: —
Wetted depth (inches): 21" At centerline: —
Average side slopes: Vertical (1:1 or less); 2:1; (3:1); 4:1 or more
Ordinary High Water Mark (OHWM), if observed:
OW: 1.5-2.0 OB 3-4"



Primary tributary substrate composition (check all that apply):

☑ Silt	☑ Gravel (0.25" to 2")	☐ Bedrock
☑ Sand	☑ Cobble (2" to 10")	☐ Vegetation (___%)
☐ Clay	☐ Boulder (>10")	☐ Other. Explain:

Flow Characteristics:

Water present: ☐ No water, streambed dry ☑ Streambed moist ☐ Standing water ☑ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☐ Normal ☑ Low
Bank erosion: ☐ Extensive ☑ Moderate ☐ Little / None

Tributary has (check all that apply): ☑ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:
☑ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☑ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☑ Yes (☑ Abutting or ☐ Adjacent) ☐ No
Wetland ID: WTL-2A (PEM)

Biological Characteristics:

Macroinvertebrates observed? ☐ Yes ☑ No Describe:
Fish or wildlife observed? ☐ Yes ☑ No Describe:

Other Observations and Comments:

- USSW-8+B and WTL-2A
- DCF 19 Cmpl 51-5

APPENDIX B

PHOTOGRAPHS

PHOTOGRAPHS
B50 TEMPORARY ABOVE-GROUND WATERLINE
PENNENERGY RESOURCES, LLC

Photo 1: Test Site 1 (303-588), Wetland 1 (303-588).
Facing southeast - August 10, 2020

Photo 2: Test Site 2 (303-588), non-wetland.
Facing north - August 10, 2020

Photo 3: Test Site 3 (303-588), Wetland 2 (303-588).
Facing north - August 10, 2020

Photo 4: Test Site 4 (303-588), non-wetland.
Facing north - August 10, 2020

Photo 5: Test Site 5, non-wetland.
Facing south - May 17, 2021

Photo 6: Test Site 6, Wetland 3.
Facing northwest - May 17, 2021

PHOTOGRAPHS
B50 TEMPORARY ABOVE-GROUND WATERLINE
PENNENERGY RESOURCES, LLC

Photo 7: Test Site 7, non-wetland.
Facing east - May 17, 2021

Photo 8: Test Site 40, Wetland 20.
Facing southwest - May 26, 2021

Photo 9: Test Site 41, non-wetland.
Facing northwest - May 26, 2021

Photo 10: Test Site 42, Wetland 21.
Facing north - May 26, 2021

Photo 11: Test Site 43, non-wetland.
Facing south - May 26, 2021

Photo 12: Big Sewickley Creek.
Facing upstream - May 17, 2021

PHOTOGRAPHS
B50 TEMPORARY ABOVE-GROUND WATERLINE
PENNENERGY RESOURCES, LLC

Photo 13: UNT 1 to Big Sewickley Creek.
Facing downstream - June 21, 2021

Photo 14: North Fork Big Sewickley Creek.
Facing upstream - June 2, 2021

Photo 15: Coony Hollow.
Facing upstream - August 20, 2020

Photo 16: UNT 1 to Coony Hollow.
Facing upstream - August 20, 2020

Photo 17: UNT 2 to Coony Hollow (Ephemeral).
Facing upstream - August 20, 2020

Photo 18: UNT 2 to Coony Hollow (Intermittent).
Facing downstream - August 20, 2020

PHOTOGRAPHS
B50 TEMPORARY ABOVE-GROUND WATERLINE
PENNENERGY RESOURCES, LLC

Photo 19: UNT 3 to Coony Hollow.
Facing downstream - August 20, 2020

Photo 20: UNT 4 to Coony Hollow (Ephemeral).
Facing upstream - August 20, 2020

Photo 21: UNT 4 to Coony Hollow (Intermittent).
Facing upstream - August 20, 2020

Photo 22: UNT 5 to Coony Hollow.
Facing downstream - August 20, 2020

Photo 23: UNT 6 to Coony Hollow.
Facing upstream - August 20, 2020

Photo 24: Big Sewickley Creek - Withdrawal Location.
Facing downstream - April 27, 2023

Photo 25: Big Sewickley Creek - Withdrawal Location. Facing downstream - April 27, 2023

STATEMENT OF QUALIFICATIONS

Civil & Environmental Consultants, Inc. (CEC) has extensive experience in preparing U.S. Army Corps of Engineers (USACE) and Pennsylvania Department of Environmental Protection (PADEP) Joint Permit Applications, including environmental assessments, alternatives analyses, and mitigation plans, for a variety of construction projects throughout Pennsylvania. CEC's wetland personnel receive both formal and on-the-job training in wetland and stream identification, delineation, permitting, and mitigation.

Mr. Paul A. Kanouff, PWS, is a Principal with CEC and has a B.S. Degree in Biology (Saint Francis University, 1999). Mr. Kanouff has over 22 years of experience performing wetland delineations, stream surveys, environmental assessments, wetland and stream permitting, and mitigation design and monitoring.

Ms. Sarah V. Parker is an Assistant Project Manager with CEC and has a B.S. Degree in Ecology and Evolution (University of Pittsburgh, 2004). Ms. Parker has over 11 years of experience performing wetland delineations, threatened and endangered species surveys, environmental assessments, stream and wetland permitting, and mitigation monitoring.

Mr. Dylan Lutz is an Assistant Project Manager with CEC and has a M.S. Degree in Environmental Science & Management (Duquesne University, 2014). Mr. Lutz has over 8 years of experience performing wetland delineations, threatened and endangered species surveys, environmental assessments, stream and wetland permitting, and mitigation monitoring.

Copies of training certificates for Mr. Kanouff, Ms. Parker, and Mr. Lutz are attached to this Statement of Qualifications.

Wetland Training Institute

This certifies that

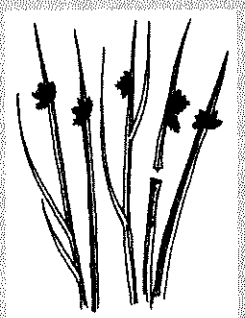
Paul A. Kanouff

has completed training based in part on the U.S. Army Corps of Engineers Wetland Delineation Manual Technical Report Y-87-1 (1987 Manual), as provided for in the training materials developed in conjunction with Section 307(e) of the Water Resources Development Act of 1990 for the Wetland Delineator Certification Program

Given at Seattle, Washington

On September 24-28, 20 01

Course Coordinator



Certificate of Completion

Awarded To

Paul Kanouff

For satisfactorily completing a 3-day course in

Advanced Wetland Delineation
Winter Determinations

February 24-26, 2004
St. Michaels, Maryland

02/26/04
Suzanne Slear, President — Date

2/26/04
Albert McCullough, Instructor — Date

Environmental
Concern Inc.
www.wetland.org

INSTITUTE FOR WETLAND & ENVIRONMENTAL

EDUCATION & RESEARCH, INC.

CERTIFICATE OF TRAINING

This certifies that

PAUL A. KANOUFF

completed a two-day training course in the

IDENTIFICATION OF FRESHWATER WETLAND SEDGES, GRASSES & RUSHES

taught by Bill Sipple in Lothian, MD

Barbara J. Tiner, President

September 2005
Date

P.O. Box 612, Leverett, MA 01054 (413) 441-3708 www.wetlanded.com

Certificate of Training

Wetland Delineation and Regional Supplement Updates

This certifies that

Sarah Parker

has participated in 36 hours of field and classroom instruction.

Date: August 31, 2012

SwampSchool,LLC
702 OBERLIN RD, SUITE 400
RALEIGH, NC 27605
1-877-479-2673
www.swampschool.org

SWS PCP PWS MARC SEELINGER 00001236 WETLAND SCIENTIST

SIGNATURE OF AUTHORIZATION

ACCREDITED NAACWS

Certificate of Training

Wetland Delineation & Regional Supplement Training

This certifies that

Dylan Lutz

has participated in 36 hours of classroom & field instruction.

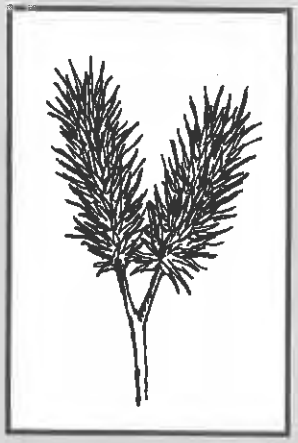
Date: August 29, 2014

SwampSchool, LLC
RALEIGH, NC 27603
1-877-479-2673
www.SwampSchool.org

MARC SEELINGER
00001236

SIGNATURE OF AUTHORIZATION

Professional Wetland Scientist
Accredited Training Provider



Environmental Concern Inc.

All About Wetlands Since 1972

Certificate of Completion

Awarded To:

Dylan Lutz

For satisfactorily completing a 3 day course in

Winter Woody Plant ID

February 14-16, 2017
Environmental Concern
Wetland Learning Center
St. Michaels, Maryland

William Sipple 2/16/17

William Sipple, Instructor — Date

Suzanne Pittenger-Slear 2/16/17

Suzanne Pittenger-Slear, President — Date

www.wetland.org

S2.B AQUATIC RESOURCE INFORMATION

Two perennial streams, Big Sewickley Creek and Coony Hollow, and the floodway of one intermittent/ephemeral stream, unnamed tributary (UNT) 2 to Coony Hollow, are located within the proposed project area (Figure 5). The wetlands and remaining streams identified during the wetland and stream delineation are located outside of the proposed project area and were excluded from this assessment.

The stream characteristics are summarized in Table S2-2. Figure 3 shows the drainage areas of the streams.

Table S2-2
Stream Summary

Stream Name	On-Site Stream Length (feet)	On-Site Floodway Area (acres)	Average TOB[1] (feet)	Drainage Area[2] (acres/ square miles)	Stream Classification	Chapter 93 Designated Use[3]	Special Protection Use
Big Sewickley Creek	*54*	*0.008*	50	10,877/ 17	Perennial	TSF	None
Coony Hollow	*40*	*0.092*	20	331/0.52	Perennial	TSF	None
UNT 2 to Coony Hollow	0	*0.062*	N/A	3/0.01	Ephemeral	TSF	None
Totals	*94*	*0.162*					

(1) TOB – Top of bank width.
(2) Measured at the downstream extent of the delineated portion of stream.
(3) From Title 25, PA Code Chapter 93. Warm Water Fishes (WWF) — Maintenance and propagation of fish species and additional flora and fauna, which are indigenous to a warm water habitat.

S2.C THREATENED AND ENDANGERED SPECIES

CEC conducted a Pennsylvania Natural Diversity Inventory (PNDI) review using the Pennsylvania Conservation Explorer website for the proposed project. The PNDI receipt indicates that no potential conflicts exist regarding threatened, endangered, or special concern species. The PNDI receipt is attached. However, further coordination with the Pennsylvania Fish & Boat Commission (PFBC) was required as part of PennEnergy's Water Management Plan for Big Sewickley Creek due to the probable presence of the southern redbelly dace (*Chrosomus erythrogaster*, PA Threatened). The PFBC clearance letter**s** for the Water Management Plan ***are*** attached. ***Additionally, at the request of the Pennsylvania Department of Environmental Protection (PADEP), PennEnergy contacted the PFBC on December 29, 2022, to discuss if the proposed changes to the project impact the PFBC's previous conclusion. The PFBC's email response, dated January 3, 2023, is also attached. In addition, since the water withdrawal location was moved downstream, the LOD had to be adjusted. The updated PNDI receipt is attached. Since the PNDI receipt was updated, PennEnergy contacted the PFBC again on March 1, 2023, to discuss the updates to the project. The PFBC responded in an email on March 9, 2023 (attached), stating that the PFBC has no additional concerns.*** Refer to Module S3.D.4 for additional information on the PFBC coordination. ***Additionally, the PNDI receipt was updated again on April 6, 2023, due to the U.S. Fish & Wildlife Service listing the northern long-eared bat as endangered. The April 6, 2023 PNDI receipt is also attached. No potential impacts were identified.***

The natural geographic range of the southern redbelly dace is the Great Lakes and Mississippi River basins, extending from Western New York to Minnesota, and south to Oklahoma, Arkansas, and Alabama. Additionally, there are isolated populations in Colorado and New Mexico. The southern redbelly dace is not considered endangered or threatened at the federal level in the United States, and NatureServe considers it globally secure (Global Rank: G5). In Pennsylvania, the southern redbelly dace is considered critically imperiled (State Rank: S1).

The southern redbelly dace prefers cool, continuously flowing, spring-fed waters with heavily vegetated and undercut banks and sand and gravel substrates. Clear water is integral to the fish

species as it relies on sight for both feeding and spawning. Therefore, increases in sediment and turbidity are the main threats to its survival, as well as reduced flows, predation, and use as a bait fish. Southern redbelly dace spawn in Pennsylvania from May to July.

The project has incorporated avoidance and minimization measures to reduce potential impacts to the southern redbelly dace. Refer to Module S3.D.4 for a detailed analysis of the project's potential impact to threatened and endangered species.

1. PROJECT INFORMATION

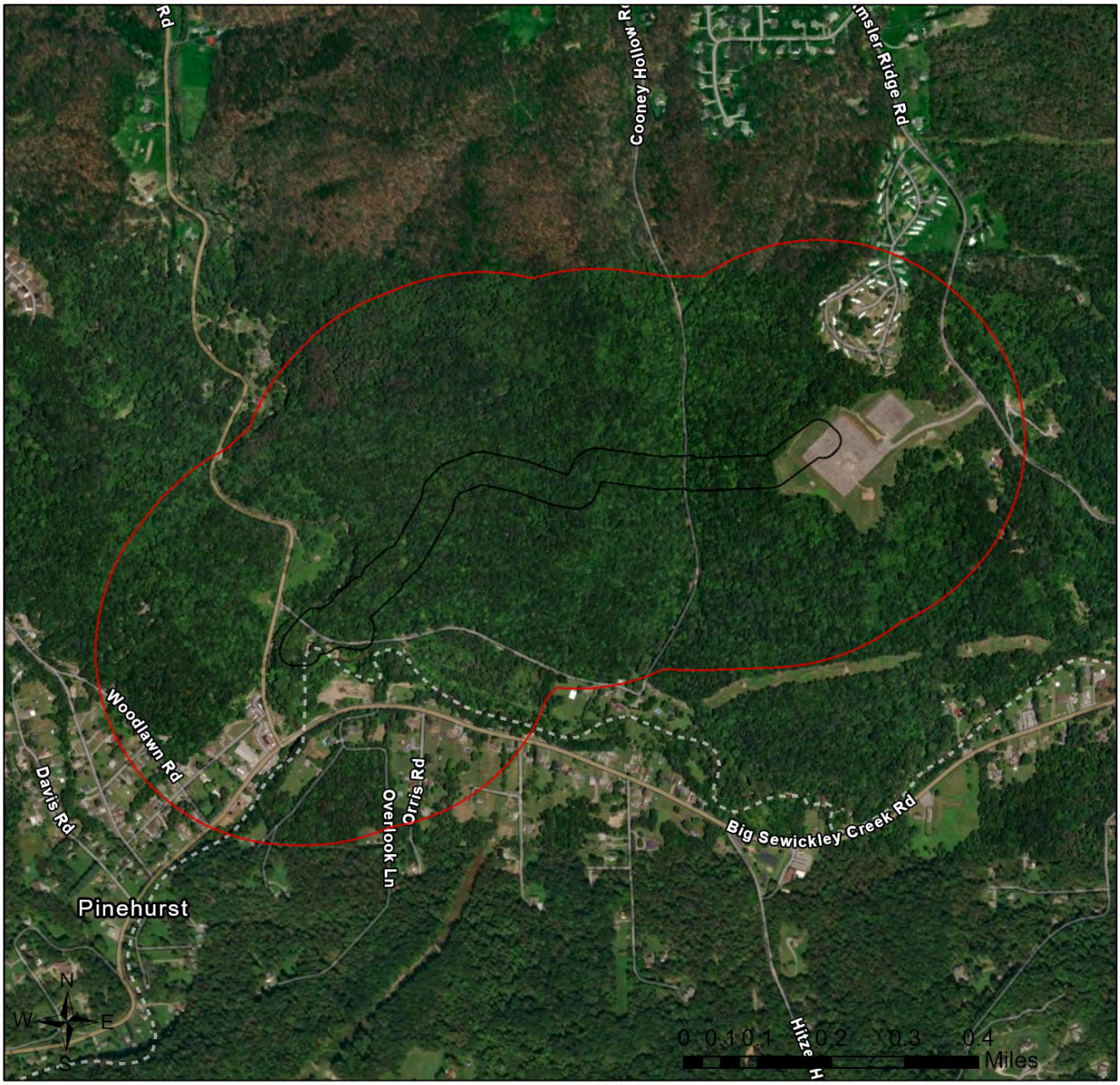
Project Name: **B50 Temporary Above-Ground Waterline**
Date of Review: **4/6/2023 04:21:00 PM**
Project Category: **Water extraction/transfer, Water line construction**
Project Area: **28.53 acres**
County(s): **Allegheny; Beaver**
Township/Municipality(s): **BELL ACRES; ECONOMY**
ZIP Code:
Quadrangle Name(s): **AMBRIDGE**
Watersheds HUC 8: **Upper Ohio**
Watersheds HUC 12: **Big Sewickley Creek**
Decimal Degrees: **40.612702, -80.173845**
Degrees Minutes Seconds: **40° 36' 45.7272" N, 80° 10' 25.8436" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

B50 Temporary Above-Ground Waterline



Buffered Project Boundary

Project Boundary

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

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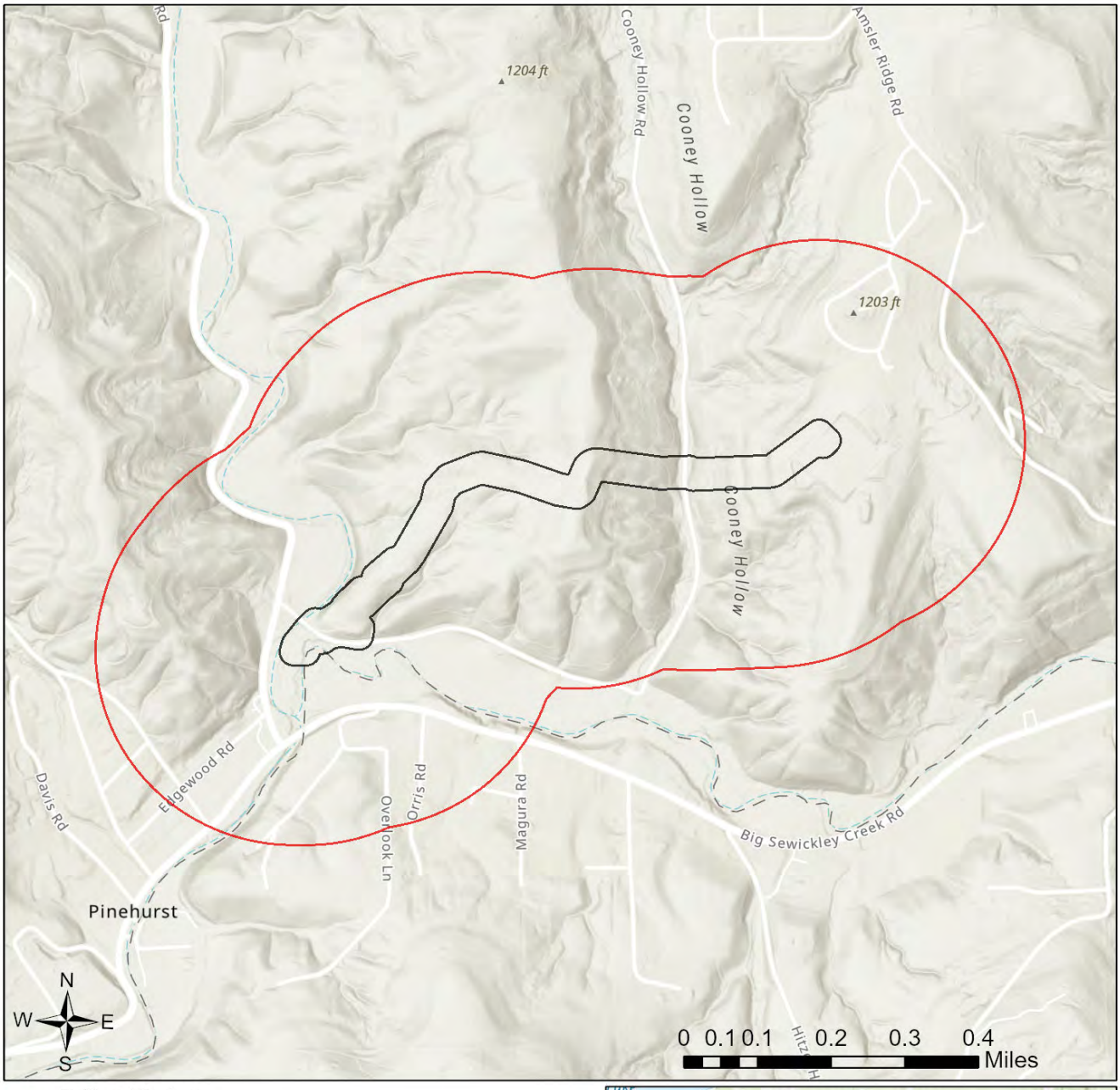

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Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some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

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PA Game Commission

RESPONSE:

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

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:

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

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

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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.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Management
Division of Environmental Review
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

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Company/Business Name: CEC
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City, State, Zip: Monroeville, PA 15146
Phone: (724) 327-5200 Fax: ( )
Email: aslee@cecinc.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

_____ Ashley Slee _____ 4/6/23
applicant/project p date

1. PROJECT INFORMATION

Project Name: **B50 Temporary Above-Ground Waterline**
Date of Review: **2/24/2023 11:45:56 AM**
Project Category: **Water extraction/transfer, Water line construction**
Project Area: **28.53 acres**
County(s): **Allegheny; Beaver**
Township/Municipality(s): **BELL ACRES; ECONOMY**
ZIP Code:
Quadrangle Name(s): **AMBRIDGE**
Watersheds HUC 8: **Upper Ohio**
Watersheds HUC 12: **Big Sewickley Creek**
Decimal Degrees: **40.612702, -80.173845**
Degrees Minutes Seconds: **40° 36' 45.7272" N, 80° 10' 25.8436" W**

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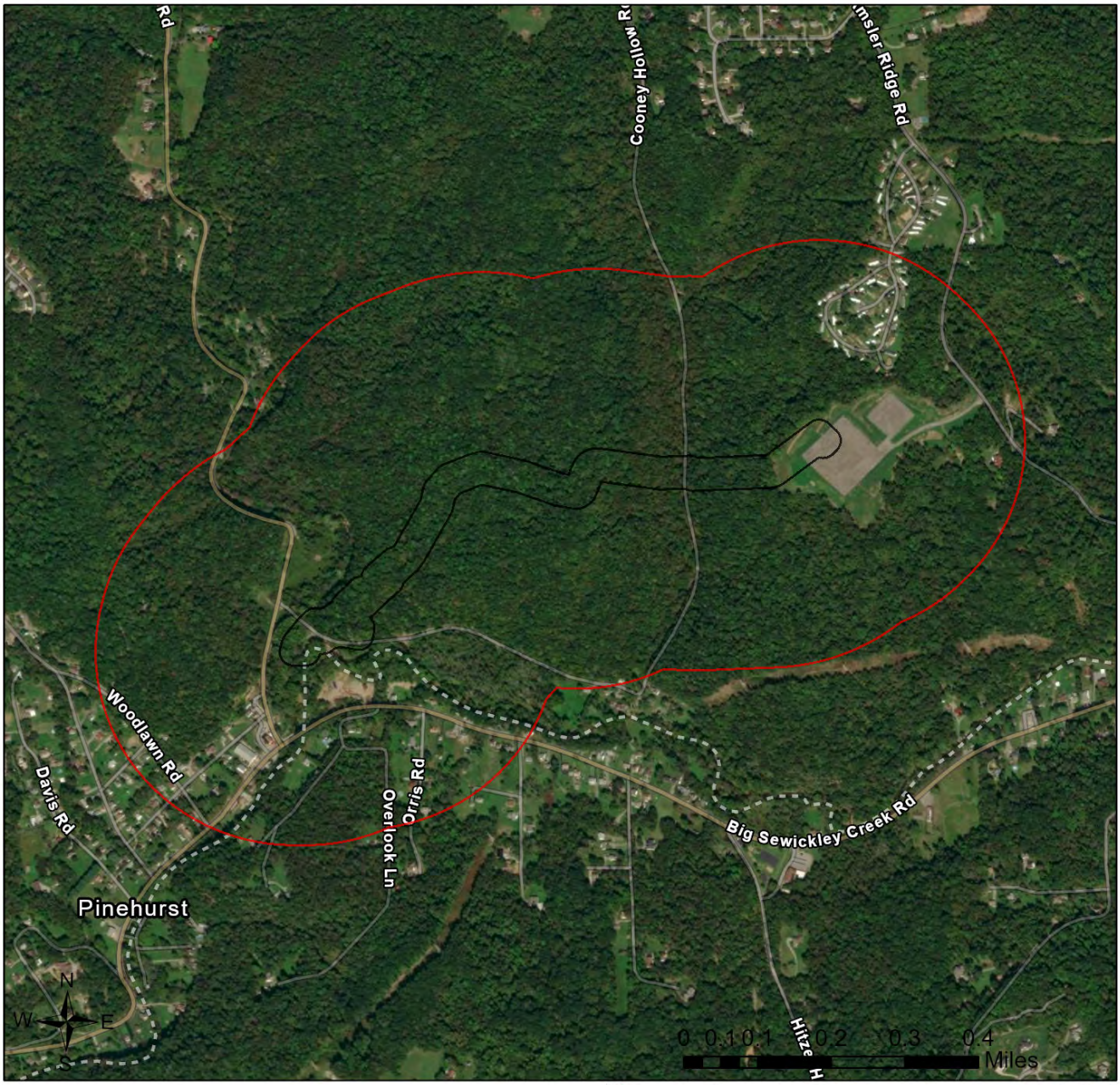
B50 Temporary Above-Ground Waterline



Buffered Project Boundary

Project Boundary

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

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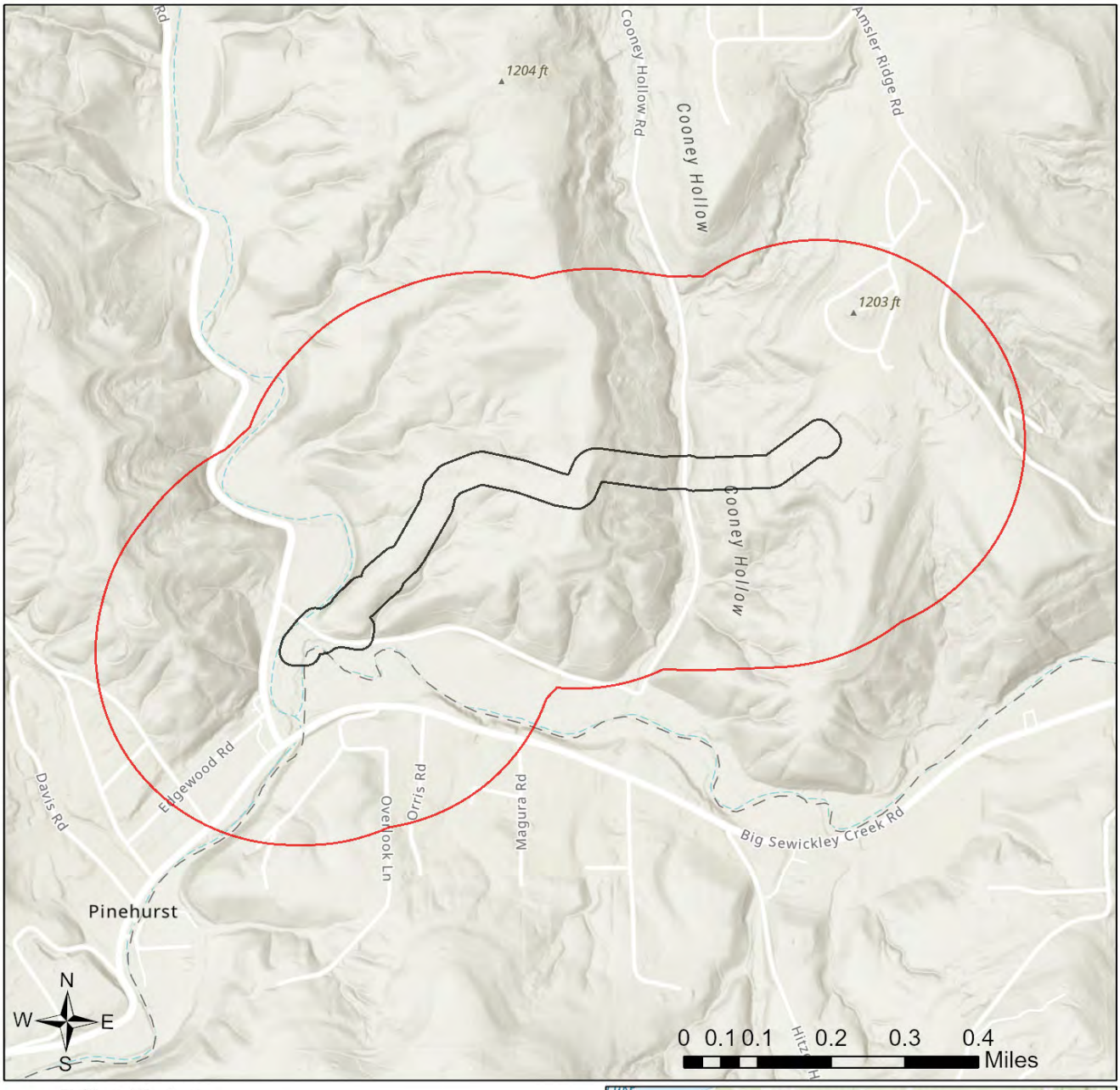

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PA Game Commission

RESPONSE:

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Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
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Bureau of Wildlife Management
Division of Environmental Review
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Paul A. Kanouff
Company/Business Name: Civil & Environmental Consultants, Inc.
Address: 4350 Northern Pike, Suite 141
City, State, Zip: Monroeville, PA 15146
Phone: (724) 327-5200 Fax: (724) 327-5280
Email: pkanouff@cecinc.com

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applicant/project proponent signature

2/28/2023
date

1. PROJECT INFORMATION

Project Name: **B50 Temporary Above-Ground Waterline**
Date of Review: **3/3/2022 04:23:12 PM**
Project Category: **Water extraction/transfer, Water line construction**
Project Area: **4.65 acres**
County(s): **Beaver**
Township/Municipality(s): **ECONOMY**
ZIP Code:
Quadrangle Name(s): **AMBRIDGE**
Watersheds HUC 8: **Upper Ohio**
Watersheds HUC 12: **Big Sewickley Creek**
Decimal Degrees: **40.612086, -80.177051**
Degrees Minutes Seconds: **40° 36' 43.5105" N, 80° 10' 37.3819" W**

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B50 Temporary Above-Ground Waterline

Project Boundary

Buffered Project Boundary

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
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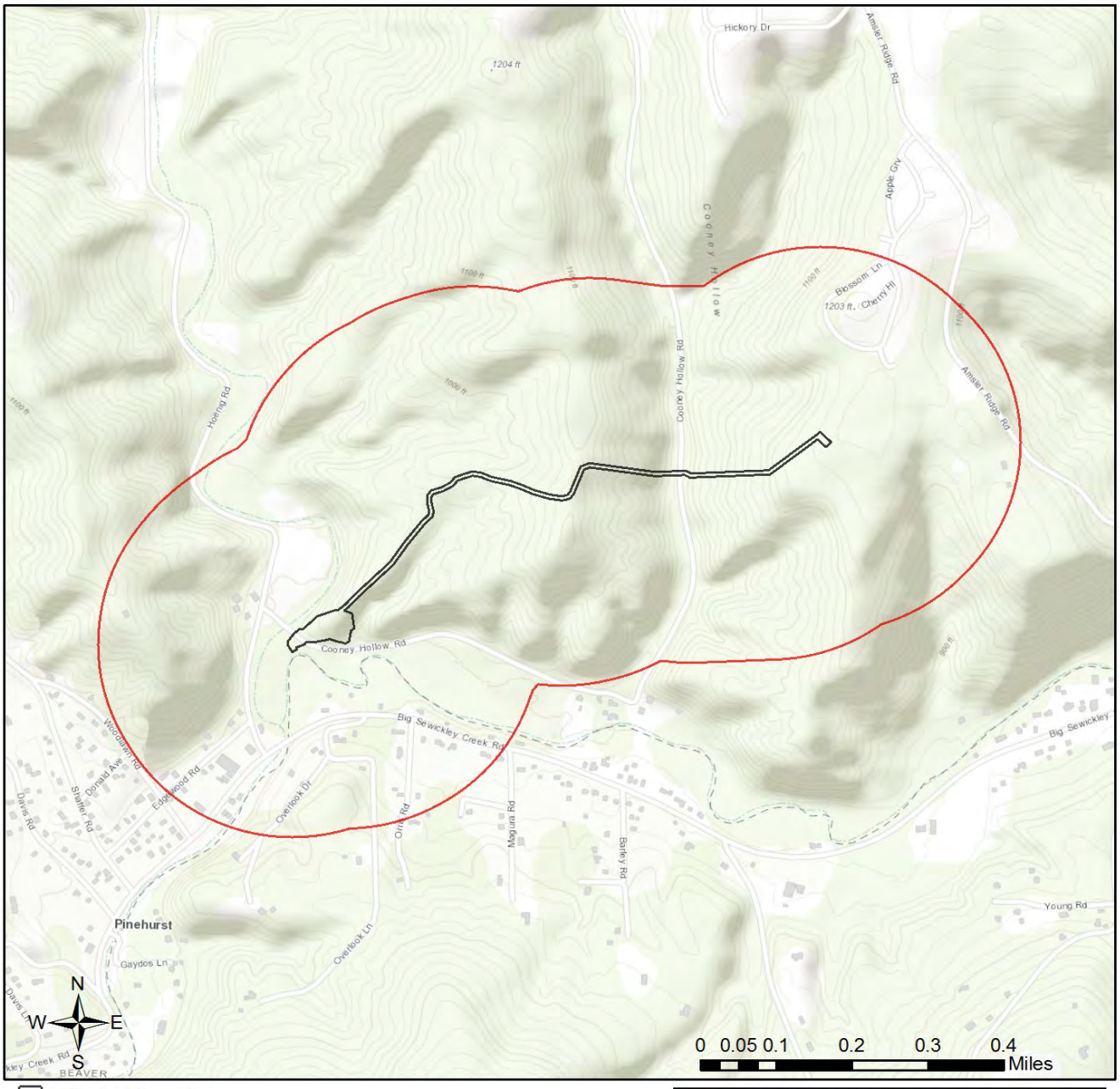

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110 Radnor Rd; Suite 101
State College, PA 16801
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PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
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Name: Paul A. Kanouff
Company/Business Name: Civil & Environmental Consultants, Inc.
Address: 4350 Northern Pike, Suite 141
City, State, Zip: Monroeville, PA 15146
Phone: (724) 327-5200 Fax: (724) 327-5280
Email: pkanouff@cecinc.com

8. CERTIFICATION

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applicant/project proponent signature

3/3/2022
date

1. PROJECT INFORMATION

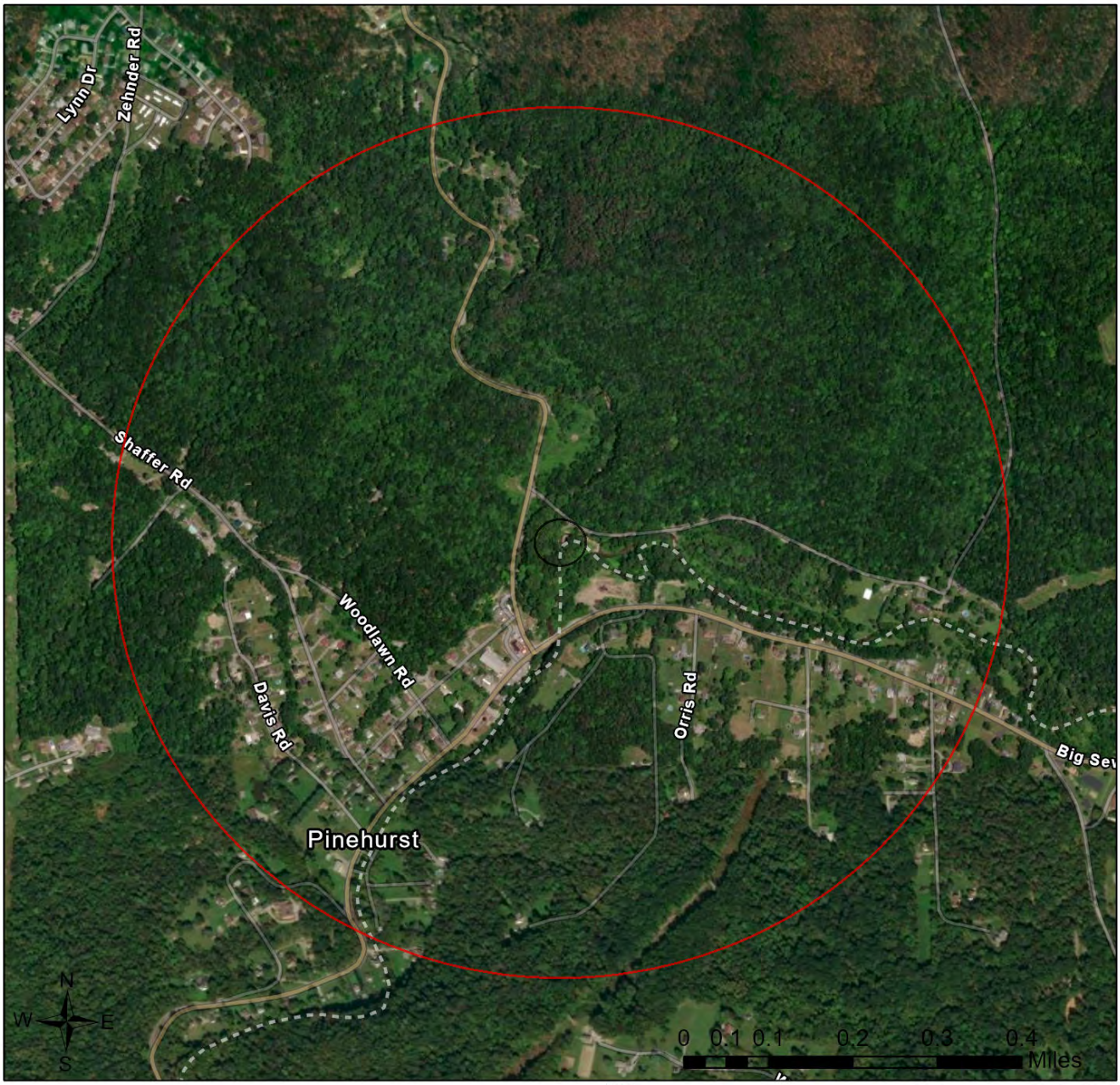
Project Name: **Big Sewickley Creek April 2023**
Date of Review: **4/18/2023 05:56:20 PM**
Project Category: **Water extraction/transfer, Extraction of surface water (e.g., from stream, river, creek, lake, or pond)**
Project Area: **1.72 acres**
County(s): **Allegheny; Beaver**
Township/Municipality(s): **BELL ACRES; ECONOMY**
ZIP Code:
Quadrangle Name(s): **AMBRIDGE**
Watersheds HUC 8: **Upper Ohio**
Watersheds HUC 12: **Big Sewickley Creek**
Decimal Degrees: **40.609354, -80.180373**
Degrees Minutes Seconds: **40° 36' 33.6753" N, 80° 10' 49.3414" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

Big Sewickley Creek April 2023

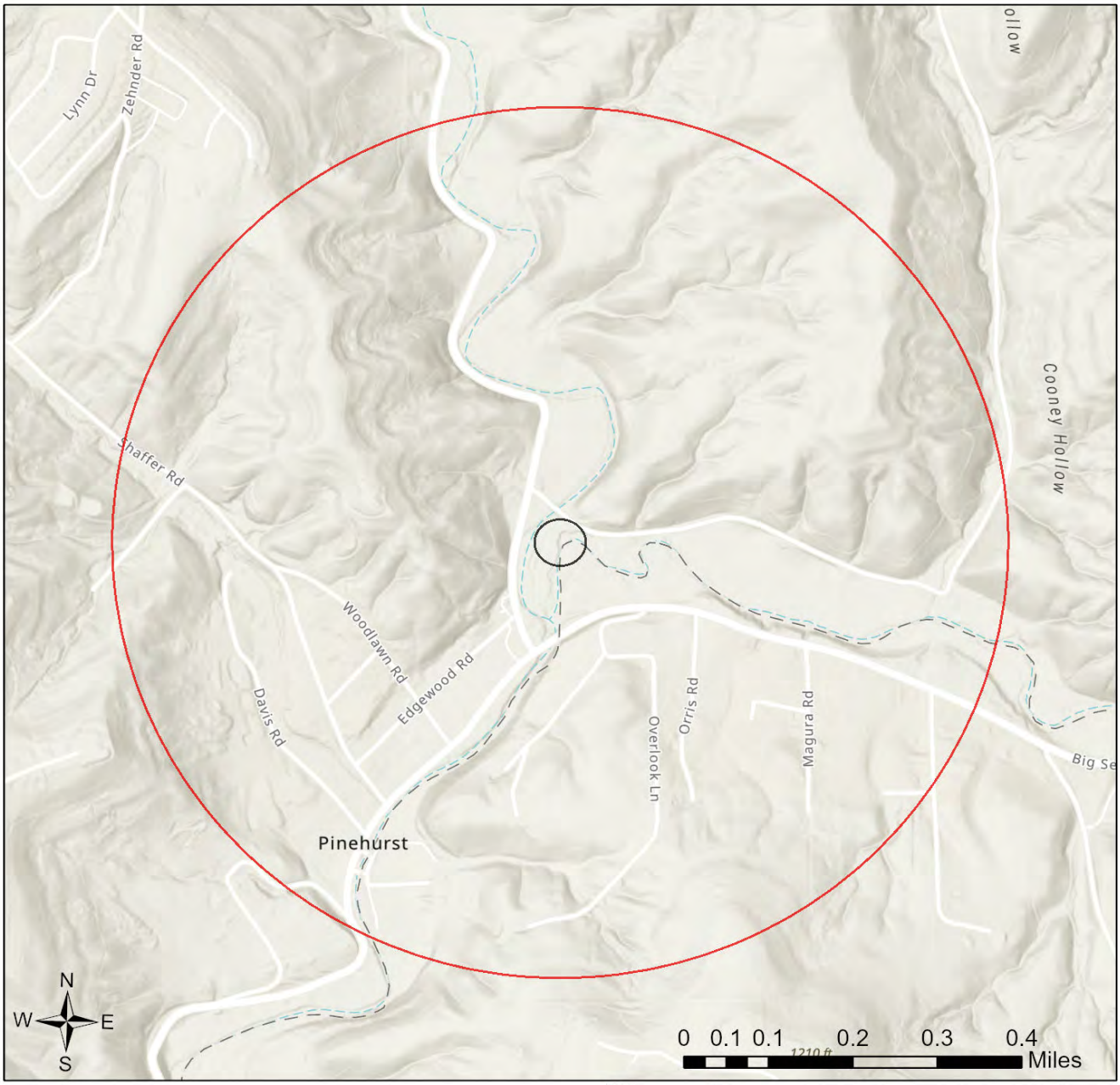


Buffered Project Boundary

Project Boundary

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

Big Sewickley Creek April 2023



Buffered Project Boundary

Project Boundary

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

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 jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

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

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:

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

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

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.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Management
Division of Environmental Review
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Richard Watson
Company/Business Name: PennEnergy Resources, LLC
Address: 300 Westinghouse Drive, Suite 300
City, State, Zip: Cranberry, PA 16066
Phone:(412) 275-3200 Fax:( )
Email: rmwatson@pennenergyresources.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature

4-21-2023
date

1. PROJECT INFORMATION

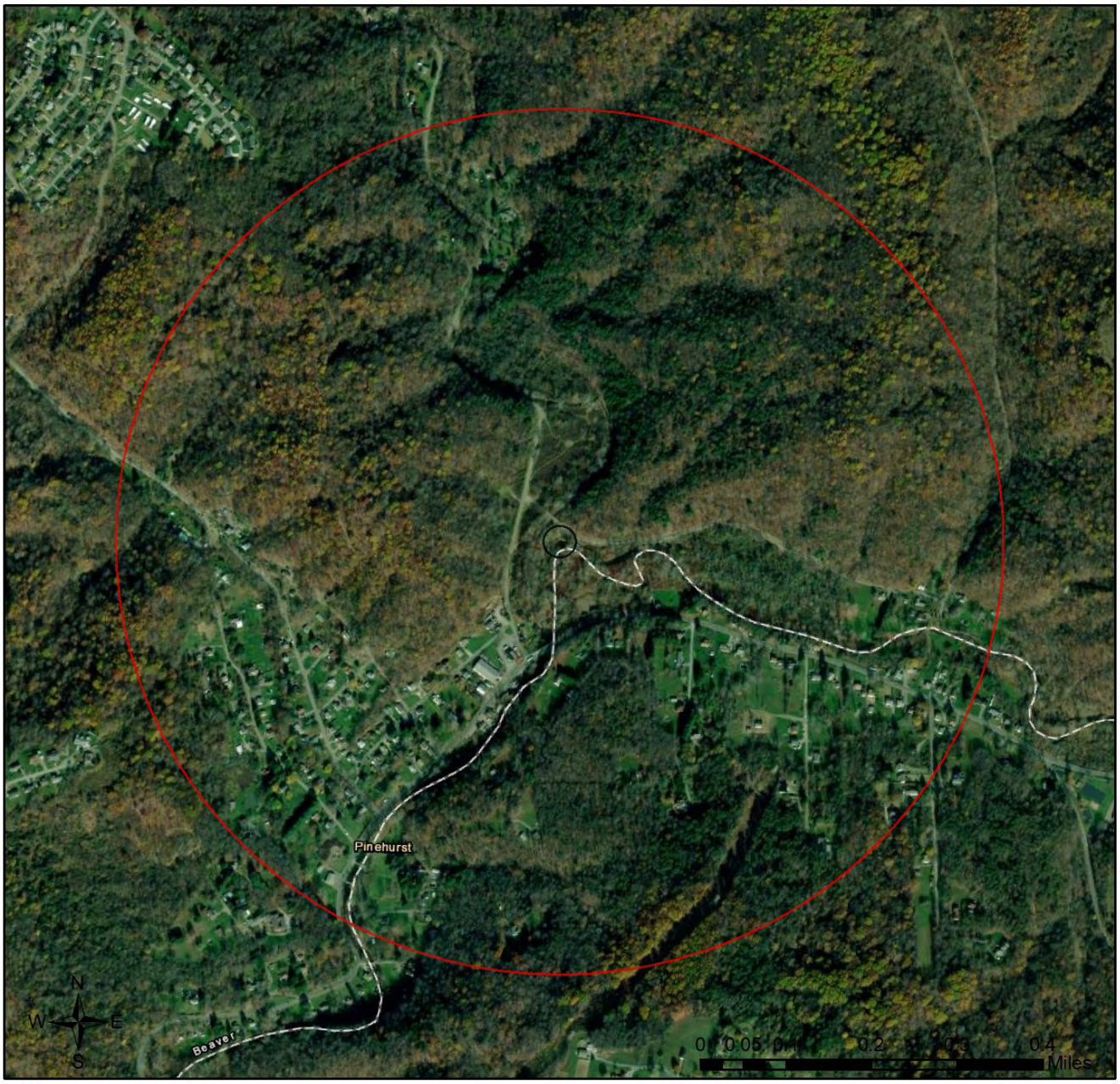
Project Name: **Big Sewickley Creek**
Date of Review: **5/17/2021 02:12:14 PM**
Project Category: **Water extraction/transfer, Extraction of surface water (e.g., from stream, river, creek, lake, or pond)**
Project Area: **0.72 acres**
County(s): **Allegheny; Beaver**
Township/Municipality(s): **BELL ACRES; ECONOMY**
ZIP Code:
Quadrangle Name(s): **AMBRIDGE**
Watersheds HUC 8: **Upper Ohio**
Watersheds HUC 12: **Big Sewickley Creek**
Decimal Degrees: **40.609506, -80.180274**
Degrees Minutes Seconds: **40° 36' 34.2231" N, 80° 10' 48.9852" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

Big Sewickley Creek

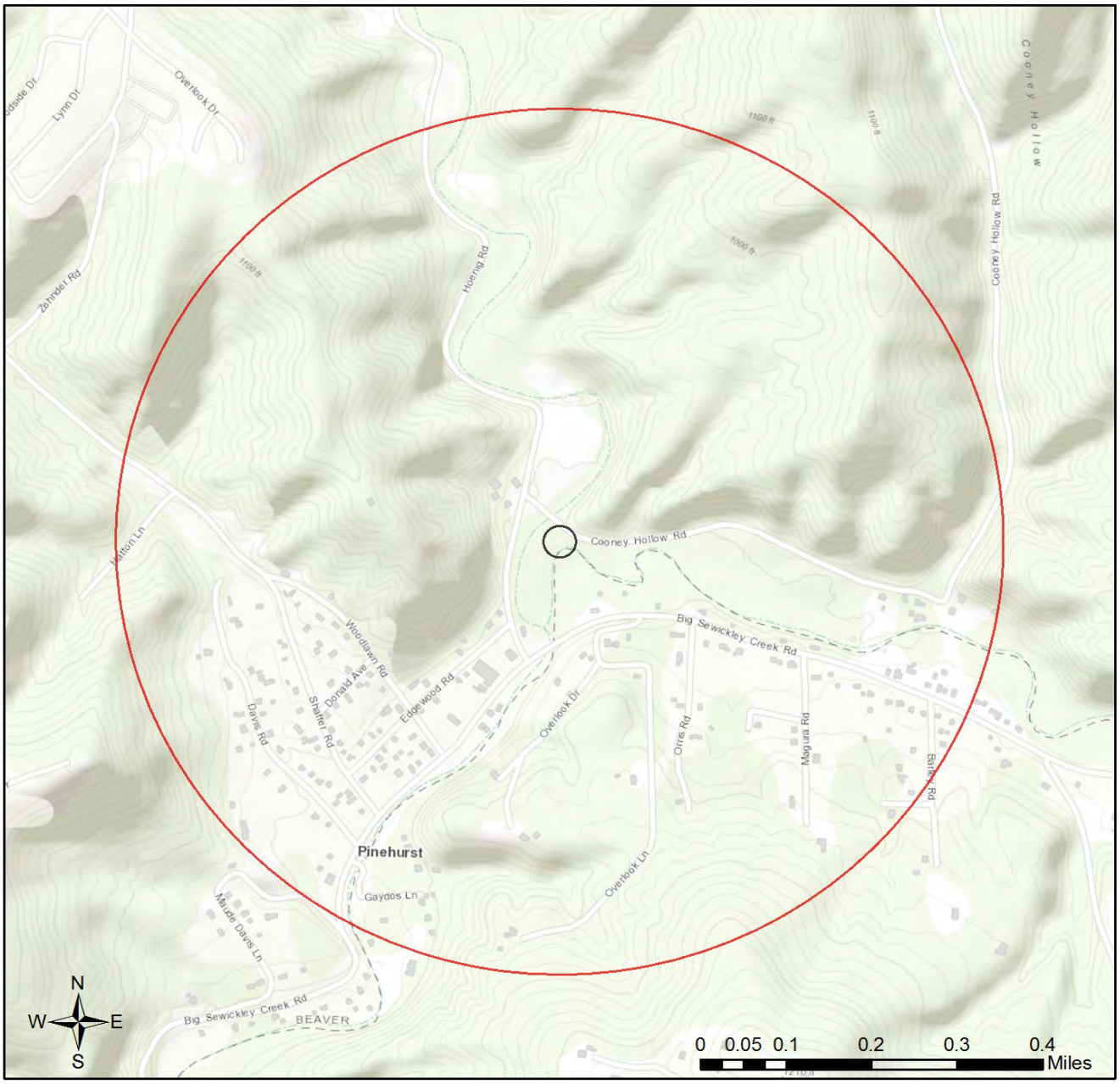


Project Boundary

Buffered Project Boundary

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

Big Sewickley Creek



Project Boundary

Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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.

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PA Game Commission

RESPONSE:

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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:

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

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

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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.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: RICHARD WATSON
Company/Business Name: PENN ENERGY RESOURCES
Address: 600 CRANBERRY WOODS DR. SUITE 250
City, State, Zip: CRANBERRY TWP, PA, 16066
Phone: (412) 935-5027 Fax: ( )
Email: RMWATSON@PENNENERGYRESOURCES.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature

7/2/2021
date

Pennsylvania Fish & Boat Commission
established 1866

Division of Environmental Services
Resource Extraction Section
595 E Rolling Ridge Dr.
Bellefonte, PA 16823

August 23, 2021

IN REPLY REFER TO
SIR# 54553
PNDI# 734429

Moody & Associates, Inc.
Jordan Bell
11548 Cotton Road
Meadville, Pennsylvania 16335

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No. 734425_1 & 734429
North Fork - Big Sewickley Creek & Big Sewickley Creek
BEAVER County: Economy Borough

Dear Jordan Bell:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code.

Southern Redbelly Dace (*Chrosomus erythrogaster*, PA Threatened)

On Tuesday, August 17, 2021 we conducted a field view to discuss the protection of this species and the needs of the proposed project. You have requested to withdrawal up to 2 MGD from Big Sewickley Creek and 1 MGD from North Fork Sewickley Creek and have proposed maintaining passby flow equal to 20% of the Average Daily Flow (ADF) in accordance with Susquehanna River Basin Commission (SRBC) Policy No. 2003-1. While both Big Sewickley Creek and North Fork Big Sewickley Creek are designated as trout stocked fisheries (TSF) by the Pennsylvania Department of Environmental Protection (DEP), due to the presence of this threatened species, we request that Policy No. 2003-1 guidance for High Quality (HQ) and Exceptional Value (EV) watersheds be followed. Policy No. 2003-1 states that "withdrawals may not cause greater than a 5% loss of habitat" and is based on SRBC Publication 191A. As such, we request that passby flow be adjusted to 25% and 35% for Big Sewickley and North Fork Big Sewickley Creek, respectively. Furthermore, we request that gaging stations be established at both locations as soon as practicable to build site specific curves for flow

estimation over the course of the withdrawals. Intake screen spacing and entrance velocities must not exceed 3/16" and 0.5 ft/sec as stated in the water management plan. Additionally, withdrawals from the Big Sewickley Creek site should be prioritized once waterlines and related infrastructure for transport to the B15 well pad are installed.

A report of total daily withdrawals shall be provided to this office on a monthly basis by mail or via email to draab@pa.gov while pumping operations are active. We also request that installation of pumps be coordinated with this office and our regional Waterways Conservation Officer Matthew Raetsch at mraetsch@pa.gov.

Provided that these requirements and best management practices are followed, I do not anticipate the proposed activity having any significant adverse impacts to Southern Redbelly Dace populations in the Big Sewickley Creek Watershed.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Dakota Raab at 814-359-5117 and refer to the SIR # 54553. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

Dakota Raab, Fisheries Biologist
Resource Extraction Section

DR/dn

pennsylvania
FISH AND BOAT COMMISSION

August 5, 2022

IN REPLY REFER TO
SIR# 56633

Moody & Associates, Inc.
Jordan Bell
11548 Cotton Road
Meadville, Pennsylvania 16335

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No. 734429
Big Sewickley Creek Withdrawal
Economy Borough: BEAVER County

Dear Jordan Bell:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish and Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish and Boat Code (Chapter 75), or the Wildlife Code.

Southern Redbelly Dace (*Chrosomus erythrogaster*, PA Threatened)

PennEnergy Resources has requested to withdrawal 1.5 million gallons of water per day from Big Sewickley Creek for development of the B50 well-pad. Ongoing coordination with this office has led to reductions in the proposed daily withdrawal volume from Big Sewickley Creek and the abandonment of plans to withdrawal water from North Fork Big Sewickley Creek. Through coordination, we have requested that multiple methods be employed to estimate water level changes in Big Sewickley Creek resulting from the proposed withdrawal. This level of analysis was requested to evaluate potential impacts to the Southern Redbelly Dace and its habitat.

To date, four iterations of the Big Sewickley Creek water management plan (WMP) have been submitted for review. At our recommendation, you submitted an amended plan on March 10, 2022 following pass-by flow recommendations outlined in the Susquehanna River Basin Commission's *Low Flow Protection Policy* (Policy # 2003-01) utilizing stream discharge information derived from the United State Geological Service's (USGS) online StreamStats application. Due to ongoing concerns for potential impacts to instream habitat for the Southern Redbelly Dace, we requested that a similar analysis be performed employing the Tennant Method based on instream flow statistics calculated from decommissioned USGS gauge # 03086110. An additional WMP amendment describing the potential impact of the project utilizing these recommendations was submitted on July 15, 2022.

We have reviewed both the submitted plans and request that the recommendations outlined using the Tennant Method be applied to instream flow estimates provided by the USGS StreamStats online application for Big Sewickley Creek. The Tennant method recommends a pass by flow of 30% of the average daily flow (ADF) for the months of October through March and 50% of the ADF from April to September. This pass by flow recommendation is deemed to be protective of instream habitat minimizing decreases in wetted width. Please amend the WMP using the recommendation described above for our review and concurrence.

If approved, we request that a report detailing daily withdrawals be provided to this office on a monthly basis via email (draab@pa.gov). Additionally, we request that installation of pumps be coordinated with this office.

This response supersedes our letter of August 23, 2021 for PNDI # 734429 & 734425 and represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Dakota Raab at 814-359-5117 or draab@pa.gov and refer to the SIR # 56633. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

Dakota Raab, Fisheries Biologist
Resource Extraction Section

/DR/dn

From: Raab, Dakota
To: Richard M. Watson
Cc: Kanouff, Paul; Scicchitano, Vincent; Allison, Jordan; Lutz, Samantha
Subject: RE: [External] PNDI Review Requested
Date: Tuesday, January 3, 2023 1:38:28 PM
Attachments: image002.png

Rich,

Happy new year, we're doing well, hope you can say the same.

As far as the B50 TAWL project goes I have no additional comments or concerns based on the changes that have been made since August 23, 2021. PNDI # 748039 did not generate a conflict with any PFBC protected species and has limited in-stream work (Coony Hollow, not currently occupied by protected species); furthermore, the August 23, 2021 response for SIR # 54553 referenced below has been superseded by our August 5, 2022 response for SIR # 56633 regarding the WMP for Big Sewickley Creek. As long as the associated water withdrawal is operated according to our recommendations outlined in SIR # 56633, I do not have any concerns with the B50 TAWL project itself.

Please use this email to document our correspondence on the matter.

Thanks,

Dakota Raab | Fisheries Biologist
Pennsylvania Fish and Boat Commission | Resource Extraction Section
595 E. Rolling Ridge Drive | Bellefonte, PA 16841
Office: 814.359.5117 | Fax: 814.359.5175
fishandboat.com

From: Richard M. Watson <RMWatson@pennenergyresources.com>
Sent: Thursday, December 29, 2022 2:18 PM
To: Raab, Dakota <draab@pa.gov>
Cc: Kanouff, Paul <pkanouff@cecinc.com>; Scicchitano, Vincent <vscicchitano@cecinc.com>
Subject: [External] PNDI Review Requested

Good Afternoon, Dakota,

I hope you, your family, and the PFBC team are all doing well.

DEP has requested we seek an official correspondence from your team in regards to the attached

PNDI for the temporary waterline project proposed from the Big Sewickley Creek Intake to PER's B50 Well Pad. Please see the attached PNDI for your reference and review.

> *"PNDI: Because the project plans have changed for the B50 Temporary Above-Ground Waterline since the August 23, 2021 letter from the PA Fish & Boat Commission (PFBC), please reinitiate consultation with PFBC and provide an updated PNDI clearance letter. Please ensure that correspondence from the PFBC addresses the recent PNDI Search ID #748039 (Date of Review: 10/10/2022). 102.6(a)(2)"*

Could you please respond with an email or official correspondence for this PNDI so that we can include it in our comment response to DEP? Let me know if you have any questions or need anything else for your review. Thanks.

Best Regards,
Rich

Richard Watson/Manager, Permitting and Compliance
PennEnergy Resources, LLC
600 Cranberry Woods Drive, Suite 250
Cranberry Township, PA 16066
O (412) 935-5027
C (724) 288-1987
rmwatson@pennenergyresources.com
www.pennenergyresources.com

From: Raab, Dakota <draab@pa.gov>
Sent: Friday, May 27, 2022 10:56 AM
To: Richard M. Watson <RMWatson@pennenergyresources.com>
Subject: Tennant Method

Rich,

Attached is the summary of the Tennant Method we spoke about on the phone. There is a longer publication out there somewhere but I have yet to locate it. If I find the full version I'll be sure to send it along. Enjoy the holiday weekend

Dakota

Dakota Raab | Fisheries Biologist
Pennsylvania Fish and Boat Commission | Resource Extraction Section
595 E. Rolling Ridge Drive | Bellefonte, PA 16841
Office: 814.359.5117 | Fax: 814.359.5175
fishandboat.com

From:	Allison, Jordan
To:	Richard M. Watson; Raab, Dakota
Cc:	Scott M. Sweder; Kanouff, Paul; Paul Martin; Scicchitano, Vincent; Lutz, Samantha
Subject:	RE: [External] Big Sewickley Creek Species Impact Review Update
Date:	Thursday, March 9, 2023 11:38:23 AM
Attachments:	image001.png image003.png

Rich,

Removing the intake while not in use alleviates any additional concerns the Commission has. I am looping Samantha Lutz back in to make her aware of our additional coordination in the email chain below.

Thanks,

Jordan Allison | Fisheries Biologist
Pennsylvania Fish and Boat Commission | Environmental Services
595 East Rolling Ridge Drive | Bellefonte, PA 16823
Phone: 814.359.5236 | Fax: 814.359.5175
fishandboat.com

From: Richard M. Watson <RMWatson@pennenergyresources.com>
Sent: Thursday, March 9, 2023 10:57 AM
To: Allison, Jordan <jorallison@pa.gov>; Raab, Dakota <draab@pa.gov>
Cc: Scott M. Sweder <smsweder@pennenergyresources.com>; Kanouff, Paul <pkanouff@cecinc.com>; Paul Martin <PMartin@moody-s.com>; Scicchitano, Vincent <vscicchitano@cecinc.com>
Subject: Re: [External] Big Sewickley Creek Species Impact Review Update

Jordan,

Thank you for the reply.

The intake raft will be removed from the stream when not in use. Let me know if you have any other questions.

Best Regards,
Rich

Richard Watson
Manager, Permitting and Compliance
PennEnergy Resources

From: Allison, Jordan <jorallison@pa.gov>
Sent: Thursday, March 9, 2023 9:27:58 AM
To: Richard M. Watson <RMWatson@pennenergyresources.com>; Raab, Dakota <draab@pa.gov>

Cc: Scott M. Sweder <smsweder@pennenergyresources.com>; Kanouff, Paul <pkanouff@cecinc.com>; Paul Martin <PMartin@moody-s.com>; Scicchitano, Vincent <vscicchitano@cecinc.com>
Subject: RE: [External] Big Sewickley Creek Species Impact Review Update

CAUTION: This email originated from outside of the organization.

Rich,

According to the table contained in the notes of Drawing JP01, the water surface elevation of Big Sewickley Creek at the 30% passby flow threshold within the pool the intake will be located in is 787.50'. The surveyed cross sections of the creek (A-A and B-B) indicate the distance from the intake to the stream bottom will be 1.7' and 1.4' respectively at that water surface elevation which is the worst case scenario. Since the intakes were designed according to Commission's recommendation to have a through screen velocity of 0.5 ft/ second or less, I would not think any impacts to the streambed would be expected as a result of the intakes "vacuuming" up sediment in this scenario. The only question that remains, is do you plan to remove the intake raft from the stream when it is not in use? Removing the intake raft when not in use may prevent streambed scour and damage to the equipment from both high and low flow events.

Thanks,

Jordan Allison | Fisheries Biologist
Pennsylvania Fish and Boat Commission | Environmental Services
595 East Rolling Ridge Drive | Bellefonte, PA 16823
Phone: 814.359.5236 | Fax: 814.359.5175
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From: Richard M. Watson <RMWatson@pennenergyresources.com>
Sent: Wednesday, March 8, 2023 4:22 PM
To: Allison, Jordan <jorallison@pa.gov>; Raab, Dakota <draab@pa.gov>
Cc: Scott M. Sweder <smsweder@pennenergyresources.com>; Kanouff, Paul <pkanouff@cecinc.com>; Paul Martin <PMartin@moody-s.com>; Scicchitano, Vincent <vscicchitano@cecinc.com>
Subject: RE: [External] Big Sewickley Creek Species Impact Review Update

Good Afternoon, Jordan,

Just left you a voicemail about the wording in the comment and concerns that your email might not fully address what Ms. Lutz is looking for. The comment specifically mentions not causing disturbance to the stream bed – most notably 1.e. and 1.f. below. Do you have enough information to make the statement that the withdrawal as designed will prevent impingement and entrainment AND is of sufficient depth for a withdrawal to occur with no disturbance to the stream bed?

I've removed Ms. Lutz from the email chain as to avoid any confusion if you don't concur.

The comment is as follows:

1) . Please address the following comments in order to justify that the intake will remain floating and not cause disturbance to the stream bed. 25 Pa. Code §105.13 (e)(l); §105.14 (b) & (c); § 78a.69 (b) (2); § 78a.69 (c) (6)

    a. Provide the surveyed ground (stream bed bottom) elevation of Big Sewickley Creek at the proposed withdrawal location.
    b. Provide a justification that the delineated max pool depth is an adequate representative of the normal pool depth of Big Sewickley Creek. The actual normal pool depth should be reflected.
    c. In addition to the normal pool depth, update Cross-section A-A to show the water elevations associated with the required flow rates (i.e. 8.8 and 13.1 cfs) for the full withdrawal rate to occur.
    d. Show the actual dimensions of the dolphin intake(s) that will be utilized during withdrawals.
    e. Document that the water elevations at various flows is of sufficient depth for a withdrawal to occur without stream bed disturbance. Specifically, the

location of the intake structure, normal pool depth at that location, 30 % average daily flow pass by, 50% average daily flow pass by, and the depth of the intake structure should be evaluated so that stream bed disturbance is minimized. It is suggested that the PA Fish and Boat Commission's Recommendations Surface Water Intake Design Criteria to Reduce Aquatic Species Impacts be followed as it relates to habitat selection.

f. Provide a stream profile through each of the seven (7) intake structure locations clearly depicting that each individual intake structure is suspended at a sufficient depth for a withdrawal to occur and that no streambed impacts will occur.

The PA Fish and Boat Commission (PBFC) also noted the inconsistencies in pool levels on September 27, 2022, when water levels present at the withdrawal location were stated to only be six inches; that the cross-section of Big Sewickley is changing, and that there may be times that the proposed floating intake exceeds the depth of water of Big Sewickley Creek. Please evaluate the notations of the PBFC in your analysis and when updating the Operations Plan intake profile.

Sorry I didn't provide this information earlier to avoid revisions. Please feel free to call if anything warrants a discussion. Let me know your thoughts when you can. Thanks.

Best Regards,
Rich

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From: Allison, Jordan <jorallison@pa.gov>
Sent: Wednesday, March 8, 2023 12:01 PM
To: Richard M. Watson <RMWatson@pennenergyresources.com>; Raab, Dakota <draab@pa.gov>
Cc: Scott M. Sweder <smsweder@pennenergyresources.com>; Kanouff, Paul <pkanouff@cecinc.com>; Paul Martin <PMartin@moody-s.com>; Scicchitano, Vincent <vscicchitano@cecinc.com>; Lutz, Samantha <samlutz@pa.gov>
Subject: RE: [External] Big Sewickley Creek Species Impact Review Update

Mr. Watson,

I have reviewed the revised plans you and Dakota discussed last week concerning meeting the Commission's recommendations for water depth when citing floating surface water intakes. Reorienting the intake "raft" to be perpendicular to flow along its longest access shifts it slightly down stream into deeper water as per the Stream Bed Profile (H-H). This change increases the water depth from your initial proposal to a minimum of 2.8 feet at a normal pool elevation of 787.68'. This

change alleviates our concern for the impingement and entrainment of aquatic life resolving any outstanding coordination for threatened or endangered species with the Commission. Please note that I have copied the Samantha Lutz of the Departments Southwest Regional Office to make her aware of our coordination. Thank you for your consideration and let me know if you have any questions.

Sincerely,

Jordan Allison | Fisheries Biologist
Pennsylvania Fish and Boat Commission | Environmental Services
595 East Rolling Ridge Drive | Bellefonte, PA 16823
Phone: 814.359.5236 | Fax: 814.359.5175
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From: Richard M. Watson <RMWatson@pennenergyresources.com>
Sent: Monday, March 6, 2023 3:27 PM
To: Raab, Dakota <draab@pa.gov>
Cc: Allison, Jordan <jorallison@pa.gov>; Scott M. Sweder <smsweder@pennenergyresources.com>; Kanouff, Paul <pkanouff@cecinc.com>; Paul Martin <PMartin@moody-s.com>; Scicchitano, Vincent <vscicchitano@cecinc.com>
Subject: RE: [External] Big Sewickley Creek Species Impact Review Update

Good Afternoon,

As discussed last week, attached is the updated site plan and cross sections for PennEnergy's proposed Big Sewickley Creek for your review. The strainer intake orientation, cross sections, and pool elevation have been revised. Please let me know if you have any questions or need anything further for your review.

Best Regards,
Rich

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PENNENERGY RESOURCES

From: Richard M. Watson <RMWatson@pennenergyresources.com>
Sent: Friday, March 3, 2023 5:08 PM
To: Raab, Dakota <draab@pa.gov>
Cc: Allison, Jordan <jorallison@pa.gov>; Scott M. Sweder <smsweder@pennenergyresources.com>; Kanouff, Paul <pkanouff@cecinc.com>; Paul Martin <PMartin@moody-s.com>; Scicchitano, Vincent <vscicchitano@cecinc.com>
Subject: Re: [External] Big Sewickley Creek Specie Impact Review Update

Thanks, Dakota and Jordan. I appreciate the update.

Best Regards,
Rich

Richard Watson
Manager, Permitting and Compliance
PennEnergy Resources

From: Raab, Dakota <draab@pa.gov>
Sent: Friday, March 3, 2023 3:25:51 PM
To: Richard M. Watson <RMWatson@pennenergyresources.com>
Cc: Allison, Jordan <jorallison@pa.gov>; Scott M. Sweder <smsweder@pennenergyresources.com>; Kanouff, Paul <pkanouff@cecinc.com>; Paul Martin <PMartin@moody-s.com>; Scicchitano, Vincent <vscicchitano@cecinc.com>
Subject: RE: [External] Big Sewickley Creek Specie Impact Review Update

Rich,

I will be on vacation next week (3/6 - 3/13) and will likely be unavailable to approve the revisions we discussed on the phone today. I have kept Jordan Allison up to date on our coordination. Please keep Jordan copied when you provide the updated plan so he is able to give comments/approval to DEP next week.

Thanks,

Dakota

Dakota Raab | Fisheries Biologist
Pennsylvania Fish and Boat Commission | Resource Extraction Section
595 E. Rolling Ridge Drive | Bellefonte, PA 16841
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From: Richard M. Watson <RMWatson@pennenergyresources.com>
Sent: Wednesday, March 1, 2023 10:18 AM
To: Raab, Dakota <draab@pa.gov>
Cc: Allison, Jordan <jorallison@pa.gov>; Scott M. Sweder <smsweder@pennenergyresources.com>; Kanouff, Paul <pkanouff@cecinc.com>; Paul Martin <PMartin@moody-s.com>; Scicchitano, Vincent <vscicchitano@cecinc.com>
Subject: [External] Big Sewickley Creek Specie Impact Review Update

Good Morning, Dakota,

Thanks for taking my call this morning, Attached for your review and approval are the updated PNDI's for PennEnergy Resources' proposed B50 Temporary Waterline Project and the Big Sewickley Creek Intake, along with the revised site plan, cross sections, and KMZ files for reference.

As discussed, the intake location has moved downstream approximately 70'. However, all other project details and parameters will remain largely the same. PennEnergy still plans to withdraw up to 1.5 million gallons per day at the site, using the Tennant Method for determining minimum pass-by standards for "Excellent" of 30% and 50% ADF, utilizing floating dolphin strainer intakes, and other parameters previously approved in SIR#56633, dated August 5, 2022, also attached. The temporary waterline will not have any in stream work associated with construction, operation, removal or restoration.

We plan to resubmit the various applications with this information to DEP as soon as we hear back from you.

Please let me know if you have any questions, comments, recommendations or need anything else for your review.

Best Regards,
Rich

Richard Watson/Manager, Permitting and Compliance

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S2.D DESCRIPTION OF AQUATIC HABITATS

S2.D.1 Resource Characterization

The proposed project will temporarily impact Big Sewickley Creek, Coony Hollow, and the floodway of UNT 2 to Coony Hollow.

Big Sewickley Creek is a third-order perennial stream that originates outside of the proposed project area and flows east to west through the southwestern portion of the proposed project area. Big Sewickley Creek is a stocked trout stream. The banks of the stream are severely eroded. The majority of the riparian area is wooded with maintained lawns interspersed along the left descending bank of the stream.

Coony Hollow is a second-order perennial stream that originates outside of the proposed project area and flows north to south through the eastern portion of the proposed project area. Coony Hollow empties into Big Sewickley Creek after crossing Cooney Hollow Road. The banks of the stream are moderately eroded, and the riparian area is wooded.

UNT 2 to Coony Hollow is a first-order stream located outside of the eastern portion of the proposed project area; however, the 50-foot assumed floodway of the stream falls within the proposed project area. UNT 2 to Coony Hollow begins as an intermittent stream from Wetland 1, flows downslope for a short distance, and loses bed and bank characteristics as the water disperses into sheet flow. The channel regains bed and bank characteristics further downslope as an ephemeral stream. The banks of the stream are moderately eroded, and the riparian area is wooded.

The streams were assessed as riverine resources using the Pennsylvania (PA) Riverine Condition Level 2 Rapid Assessment Protocol (RAP). Please refer to the attached Riverine Assessment Forms and the PA Riverine Condition Level 2 RAP Map (Figure 4) for details of the assessment. Characteristics of the streams and the Level 2 RAP scores are presented in Table S2-3.

Table S2-3
Stream Characteristics

Stream Name	Slope Category[(1)]	Watershed Size[(2)]	Level 2 RAP Score
Big Sewickley Creek	2	3	0.68
Coony Hollow	3	1	0.74
UNT 2 to Coony Hollow	3	1	0.83

[(1)] 1 = Low gradient. 2 = Moderate gradient. 3 = High gradient.
[(2)] 1 = Headwaters. 2 = Small stream. 3 = Mid-reach stream. 4 = Large stream/river.

The project was designed to avoid impacts to wetlands, including secondary impacts. Refer to Module S3.D for an analysis of the project's potential impacts to aquatic resources.

S2.D.2 Discussion of Resource Functions

Hydrologic Functions

Big Sewickley Creek is a perennial third-order stream and has a moderate gradient, a well-defined channel, and a somewhat narrow floodplain. The stream is incised in places and often parallels roads. The floodplain widens around the proposed withdrawal site but then constricts downstream after the confluence with North Fork Big Sewickley Creek. The stream flushes relatively quickly after rain events, and the narrow floodplain provides low levels of storm and floodwater storage and control. As a moderate gradient, perennial stream, Big Sewickley Creek likely provides both groundwater recharge and groundwater discharge.

Coony Hollow is a perennial second-order stream and has a high gradient, a well-defined channel, and a narrow floodplain. The stream closely parallels Cooney Hollow Road. The stream is expected to flush relatively quickly after rain events, and the narrow floodplain provides low levels of storm and floodwater storage and control. This stream likely provides minimal groundwater recharge due to a high gradient. However, as a perennial stream, Coony Hollow provides groundwater discharge.

UNT 2 to Coony Hollow is a first-order, high gradient, intermittent/ephemeral stream that loses bed and bank characteristics prior to reaching another stream. The stream is expected to flush quickly after storm events and likely flows only during and directly after storm events and during times of elevated water table levels. The stream has little capability to provide flood water control and storage during storm events. The high gradient of the channel results in the water flowing too rapidly to provide a significant amount of groundwater recharge. The intermittent portion of the stream provides groundwater discharge for an adjacent wetland during times when the ground water levels are elevated.

Biogeochemical

Big Sewickley Creek has a large drainage area and a moderate gradient but it also has a relatively narrow floodplain. As such, this stream likely provides moderate levels of biogeochemical functions. The stream carries nutrients and sediment washed downstream from its large watershed, providing carbon cycling and nutrient transformation. In areas where the floodplain is broader, nutrient-rich sediment deposition also occurs, thereby enriching those floodplain habitats. Sediment control is also provided by the stream's pool-riffle sequences. However, the stream and floodplain's capacity to provide nutrient and sediment storage is limited by narrow natural floodplain areas, high velocity flow, and highly eroded streambanks.

Coony Hollow has a significantly smaller drainage area than Big Sewickley Creek with a more restricted floodplain, few depositional features, and a higher gradient. Therefore, this stream likely provides lower levels of biogeochemical functions. Nutrients and sediment are expected to be flushed downstream more quickly with less storage capacity in the stream and floodplain.

UNT 2 to Coony Hollow has a very small drainage area with a high gradient and a narrow floodplain. As such, this stream likely provides few biogeochemical functions. In addition, the stream is isolated and has little impact on downstream waters.

Habitat Attributes

As a larger stream with moderately diverse substrate, Big Sewickley Creek is expected to support healthy populations of macroinvertebrates, which in turn support natural fish populations as well as maintenance of stocked trout. Riffle and pool sequences, with structures such as rootwads and woody debris, provide habitat for a variety of fauna. The stream segments with naturally vegetated floodplain areas also provide habitat for amphibians, reptiles, birds, and mammals. The stream and floodplain is also expected to attract migrating waterfowl, albeit in relatively small numbers. These would include species such as mallard (*Anas platyrhynchos*), wood duck (*Aix sponsa*), and Canada goose (*Branta canadensis*). Low to moderate nesting, rearing, and feeding habitat is present. Other piscivorous birds, such as great blue heron (*Ardea herodias*) and belted kingfisher (*Megaceryle alcyon*), may also reside in the watershed and utilize the stream as feeding habitat.

Coony Hollow is a smaller stream with less diverse habitat options available and, therefore, provides lower habitat attributes for wildlife. The stream generally consists of riffle habitat without developed pool areas. While various sizes of gravel, cobble, and boulder substrate are present, a relatively high degree of embeddedness was observed, thus limiting available macroinvertebrate habitat. In addition, portions of the streambed are anticipated to exhibit dry periods during portions of the year, further limiting the stream's capacity to support healthy macroinvertebrate populations and fish populations. The stream's narrow floodplain is expected to provide low levels of waterfowl habitat attributes.

As an ephemeral/intermittent stream, UNT 2 to Coony Hollow only flows periodically. The stream, therefore, has limited potential to provide habitat or food chain production. The floodway consists of mixed deciduous forest, and this area has low to moderate potential to provide nesting and rearing opportunities for bird species, escape cover and rearing opportunities for other wildlife species, and food chain production.

Recreation

The project is located on private property, and the majority of the project area is not open to the public for outdoor recreational purposes. Big Sewickley Creek is an approved and stocked trout water, and access to the portion of the project area located along Big Sewickley Creek is not restricted. As such, this portion of Big Sewickley Creek is used by the public for trout fishing. There is no evidence to suggest this section of stream is used for canoeing or kayaking, and the proximity to the road does not support the use of this area for hunting.

Upstream and Downstream Property

The project is bordered by private properties consisting of mainly mixed deciduous forest. Upstream and downstream property is mainly mixed deciduous forest with a few isolated private residences located further upstream and downstream of the proposed water withdrawal.

Based on a review of the PADEP's eMap Tool, no water withdrawals or other water uses are identified along Big Sewickley Creek upstream or downstream of the proposed water withdrawal. Additionally, no water withdrawals or other water uses are identified along North Branch Big Sewickley Creek or East Branch Big Sewickley Creek.

Other Environmental Factors Determined by Site Investigation

No other environmental factors were identified during CEC's site visits that would warrant special consideration in the evaluation of this permit application.

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

Pennsylvania Department of Environmental Protection

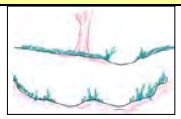
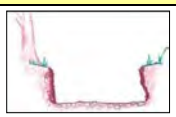
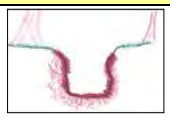
For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification	AA Id	Length
317-457	B50 Temporary Above-Ground Waterline	Economy Borough, Beaver County	5/17/2021	Designated: TSF / Existing: N/A	3	570

Latitude	Longitude	FGM Level 1 Channel Classification
40.609538	-80.180296	

Evaluator(s)	Stream Name and Information	Notes: Perennial
Dylan Lutz	Big Sewickley Creek	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments: The stream banks are severely eroded/unstable along the majority of the AA. However, point bars and benches are occasionally present and there is an active connection to the floodplain, primarily along the LDB.

CI = (Score)/20	CI
SCORE 7	0.35

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High / Low	High / Low	High / Low	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: The riparian area along both both banks of the stream within the AA is primarily comprised of a forested valley between Cooney Hollow Road and several residential yards. A small portion of the riparian area along the LDB is comprised of a maintained lawn.

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index
Right Side	% Riparian Area:	100%	0%	0%	0%	0%	0%	**0.85**
	Score:	17	0	0	0	0	0	
	Total Sub-score:	**17.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	
	Condition Category							
Left Side	% Riparian Area:	95%	0%	0%	0%	0%	5%	**0.82**
	Score:	17	0	0	0	0	5	
	Total Sub-score:	**16.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	

Side Sub-Index = SUM(%Areas*Scores)/20

CI = (Left Side CI + Right Side CI)/2	CI
	0.84

Riverine Assessment Form 1 - Page 2

2/4/2017

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category															Comments: The riparian ZOI along the LDB is comprised of a mixture of forested area, residential lawns, and a an impervious road surface (Big Sewickley Creek Road). The ZOI along the RDB is comprised of a mixture of forested area and an impervious road surface (Cooney Hollow Road).
	Optimal					Suboptimal					Marginal				Poor					
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with		**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.		**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
						High		Low			High			Low	High			Low		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below.

Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	70%	0%	0%	0%	0%	30%	0.61	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	16	0	0	0	0	3		
	Total Sub-score:	**11.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.90**		
	Condition Category								
Left Side	% Riparian Area:	60%	0%	0%	0%	30%	10%	0.57	CI = (Left Side CI + Right Side CI)/2 = 0.59
	Score:	16	0	0	0	5	3		
	Total Sub-score:	**9.60**	**0.00**	**0.00**	**0.00**	**1.50**	**0.30**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category															Comments: Although substrate diversity is lacking along portions of the AA, the stream has moderate amounts of rootwads, woody debris, and overhanging vegetation to help support the needs of aquatic life.	
	Optimal					Suboptimal					Marginal				Poor					
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.					Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.					Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.					Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.					CI = (Score)/20	CI
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	SCORE 13	0.65

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category															Comments: None of the listed channel alterations were observed within the AA.	
	Negligible					Minor					Moderate				Severe					
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.					**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not		**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent		**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.					
						High		Low			High		Low								CI = (Score)/20	CI
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	SCORE 20	1.00

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.68**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments:

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

Pennsylvania Department of Environmental Protection

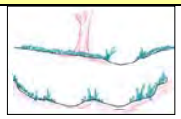
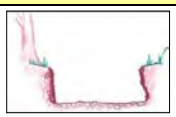
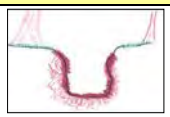
For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification	AA Id	Length
317-457	B50 Temporary Above-Ground Waterline	Economy Borough, Beaver County	8/10/2020	Designated: TSF Existing: N/A	1	308'

Latitude	Longitude	FGM Level 1 Channel Classification
40.613087	-80.170799	

Evaluator(s)	Stream Name and Information	Notes: Perennial
Dylan Lutz	Coony Hollow	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments: Active bank erosion is present along a large portion of the AA, with very few depositional features present.

CI = (Score)/20		CI
SCORE	9	0.45

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High / Low	High / Low	High / Low	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: The riparian area along the left descending bank is comprised of a steep forested hillslope for the entirety of the AA. The right descending bank is paralleled by a gravel road with a steep forested hillslope on the opposite side for the entire AA.

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index
Right Side	% Riparian Area:	100%	0%	0%	0%	0%	0%	**0.90**
	Score:	18	0	0	0	0	0	
	Total Sub-score:	**18.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	
	Condition Category							
Left Side	% Riparian Area:	60%	0%	0%	0%	0%	40%	**0.64**
	Score:	18	0	0	0	0	5	
	Total Sub-score:	**10.80**	**0.00**	**0.00**	**0.00**	**0.00**	**2.00**	

Side Sub-Index = SUM(%Areas*Scores)/20

CI = (Left Side CI + Right Side CI)/2	CI
	0.77

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2/4/2017

3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category															Comments: The riparian ZOI along both banks of the stream consists of a steep forested hillslope for the entirety of the AA. There are also two unnamed tributaries on each bank within the delineation boundary.
	Optimal		Suboptimal			Marginal			Poor							
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.		**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.			
			High	Low		High	Low		High	Low						
SCORE	20	19 18 17 16	15	14 13 12 11		10	9 8 7 6		5	4 3 2 1						

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

	Condition Category							Side Sub-Index	
Right Side	% Riparian Area:	100%	0%	0%	0%	0%	0%	0.90	Side Sub-Index = SUM(%Areas*Scores)/20
	Score:	18	0	0	0	0	0		
	Total Sub-score:	**18.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		
	Condition Category								
Left Side	% Riparian Area:	100%	0%	0%	0%	0%	0%	0.90	CI = (Left Side CI + Right Side CI)/2 — CI: 0.90
	Score:	18	0	0	0	0	0		
	Total Sub-score:	**18.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: There is a good variety of different substrate sizes available in the stream (sand, gravel, cobble, boulder) for macroinvertebrate and fish colonization. However, there is also some embeddedness present, which limits colonization opportunities
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	CI = (Score)/20 — CI
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	SCORE 12 — CI: 0.60

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category										Comments: None of the listed channel alterations were observed within the AA.
	Negligible	Minor		Moderate		Severe					
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.					
		High	Low	High	Low						CI = (Score)/20 — CI
SCORE	20 19 18 17 16	15	14 13 12 11	10	9 8 7 6	5	4 3 2 1				SCORE 20 — CI: 1.00

RIVERINE CONDITION INDEX (RCI)		RCI
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/5**	**0.74**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments: The stream flows through a forested valley adjacent to Cooney Hollow Road. It continues both upstream and downstream of the delineation boundary.

Riverine Assessment Form 1

Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol (Document No. 310-2137-003)

Pennsylvania Department of Environmental Protection

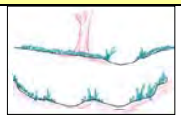
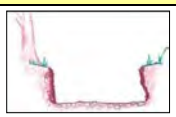
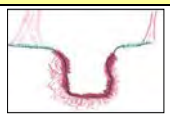
For use in intermittent or perennial watercourses with drainage areas ≤ 2,000 square mile drainage areas.

Project #	Project Name	Locality	Date	Ch 93 Classification	AA Id	Length
317-457	B50 Temporary Above-Ground Waterline	Economy Borough, Beaver County	8/10/2020	Designated: TSF Existing: N/A	2	157'

Latitude	40.613124	Longitude	-80.170074	FGM Level 1 Channel Classification	

Evaluator(s)	Stream Name and Information	Notes: Intermittent/Ephemeral
Dylan Lutz	UNT 2 to Coony Hollow	

1. CHANNEL/FLOODPLAIN: Assess the cross-section of the stream and prevailing conditions along the AA.

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Severe**
Channel / Floodplain	 **Channel Geometry:** These channels show very little incision or widening and little or no evidence of active erosion. Anastomosing channels may be present. **Channel Stability:** Visual indicators include: 1) the banks are not eroding along greater than 5% of the reach; 2) natural vegetative or rock stability features are present along greater than 80% of the banks; 2) stable point bars and bankfull benches may be present; 3) mid-channel bars and transverse bars are rare and if transient channel sediment deposition is present, it covers less than or equal to 10% of the stream bottom; 4) baseflow is connected to the rooting depths of vegetation in the active floodplain. **Active Floodplain Connection:** The bankfull stream flows have frequent access to the active floodplain and fully developed point bars or bankfull benches that are accessed at most flows greater than baseflow.	 **Channel Geometry:** These channels are slightly incised or overwidened and contain a few areas of active erosion. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding along less than 25% of the reach; 2) depositional features such as point bars and bankfull benches are present and stable during high flows and occur along greater than 50% of the reach; 3) natural bank protection like vegetation or rock is providing stability along greater than 50% of the reach; 4) baseflow is connected to vegetated point bars and bankfull benches. **Active Floodplain Connection:** The bankfull stream flows frequently access bankfull benches, or point bars along portions of the reach and may frequently inundate the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised, but to a lesser degree than the Severe and Poor channel conditions. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 25% and less than or equal to 50% of the reach; 2) depositional features like point bars or bankfull benches occur along greater than 25% and less than or equal to 50% of the reach; 3) the stream banks may consist of some vertical or undercut banks or nick points associated with head cuts; **Active Floodplain Connection:** The bankfull stream flows have infrequent connection to the active floodplain.	 **Channel Geometry:** These channels are over-widened or incised and eroding vertically and/or laterally. **Channel Stability:** Visual indicators include: 1) the banks are eroding or severely undercut along greater than 50% of the reach; 2) active or recent bank sloughing is present along greater than 50% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion along the reach; 4) depositional features, such as point bars and bank full benches, are absent from the reach or newly developing along less than 25% of the reach; 5) bank full benches and point bars frequently scour during high flows; 6) baseflow is disconnected from plant rooting depths and the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are not connected to the active floodplain.	 **Channel Geometry:** These channels are deeply incised and actively eroding vertically and/or laterally. Over widened channels may contain sections of unstable braided channels from aggradation. **Channel Stability:** Visual indicators include: 1) the banks are actively eroding or being undercut along greater than 80% of the reach; 2) active or recent bank sloughing is occurring along greater than 80% of the reach; 3) natural bank protection like vegetation is not preventing bank erosion or sloughing; 4) depositional features such as point bars and bankfull benches are absent; 5) flood flows are disconnected from the active floodplain. **Active Floodplain Connection:** The bankfull stream flows are never connected to the active floodplain.
SCORE	20 19 18 17	16 15 14 13	12 11 10 9	8 7 6 5	4 3 2 1

Comments: The stream has moderate erosion and little floodplain connectivity along the studied reach.

CI = (Score)/20		CI
SCORE	10	0.50

2. RIPARIAN VEGETATION: Assess the floodplain along the entire AA (Visual estimates of areal coverage from aerial photos with field verification acceptable).

	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	
Riparian Vegetation (Floodplain)	Riparian area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** Riparian area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** Riparian area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained	**High Poor:** Riparian area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** Riparian area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High / Low	High / Low	High / Low	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: The riparian area along both banks of the stream is comprised of a steep forested hillslope for the entirety of the AA. There is also a small PEM wetland present in the stream's headwaters that provides hydrology.

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in in decimal form (0.00) and Score for each category in the blocks below. Ensure the sum of the % Riparian Area Blocks equal 100

	Condition Category							Side Sub-Index
Right Side	% Riparian Area:	100%	0%	0%	0%	0%	0%	0.90
	Score:	18	0	0	0	0	0	
	Total Sub-score:	**18.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	
Left Side	Condition Category							
	% Riparian Area:	100%	0%	0%	0%	0%	0%	0.90
	Score:	18	0	0	0	0	0	
	Total Sub-score:	**18.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	

Side Sub-Index = SUM(%Areas*Scores)/20

CI = (Left Side CI + Right Side CI)/2	CI
	0.90

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3. RIPARIAN ZONE OF INFLUENCE: Assess land cover along both sides, 100 feet from edge of floodplain into the upland along the entire AA. (rough measurements of length & width may be acceptable)

	Condition Category					Comments: The riparian ZOI is comprised of a steep forested hillslope for the entirety of the AA. There is also an unnamed tributary present within the ZOI.
	Optimal	Suboptimal		Marginal		Poor	
Riparian ZOI	Riparian ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** Riparian ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with	**High Poor:** Riparian ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Riparian ZOI area consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.
		High	Low	High	Low	High	Low
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	

1. Identify Condition Category areas along the floodplain using the descriptors above.
2. Estimate the % area within each condition category.
3. Enter the % Riparian Area in decimal form (0.00) and Score for each category in the blocks below. Ensure the sums of % Riparian ZOI Blocks equal 100

								Side Sub-Index	
Right Side	Condition Category								
	% Riparian Area:	100%	0%	0%	0%	0%	0%	**0.90**	**Side Sub-Index = SUM(%Areas*Scores)/20**
	Score:	18	0	0	0	0	0		
	Total Sub-score:	**18.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		
Left Side	Condition Category								
	% Riparian Area:	100%	0%	0%	0%	0%	0%	**0.90**	**CI = (Left Side CI + Right Side CI)/2**
	Score:	18	0	0	0	0	0		**CI**
	Total Sub-score:	**18.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.90**

4. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths, woody and leafy debris, stable substrate, low embeddedness, shade, undercut banks, root mats, SAV, macrophytes, emergent vegetation, riffle-pool complexes, stable features.

	Condition Category				Comments: N/A	
	Optimal	Suboptimal	Marginal	Poor		
Instream Habitat/ Available Cover	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 50% of the reach. Substrate is favorable for colonization by a diverse and abundant epifaunal community, and there are many suitable areas for epifaunal colonization and/or fish cover.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 30% and less than 50% of the reach. Conditions are mostly desirable and are generally suitable for full colonization by a moderately diverse and abundant epifaunal community.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in greater than or equal to 10% and less than 30% of the reach. Conditions are generally suitable for partial colonization by epifaunal and/or fish communities.	Physical Elements that enhance a stream's ability to support aquatic organisms are present in less than 10% of the reach. Conditions are generally unsuitable for colonization by epifaunal and/or fish communities. The reach.	**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	**SCORE**	

5. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel/channelization, embankments, spoil piles, constrictions, etc.

	Condition Category					Comments: None of the listed channel alterations were observed within the AA.	
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channel alterations listed above are absent in the SAR. The stream has unaltered pattern or has normalized.	**Minor High:** Less than or equal to 20% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent alteration is not	**Minor Low:** Greater than 20% and less than or equal to 40% of the stream reach is disrupted by any of the channel alterations listed above. Alteration or channelization present, usually adjacent to structures, (such as bridge abutments or culverts); evidence of past alteration, (i.e., channelization) may be present, but stream pattern and stability have recovered; recent	**Moderate High:** Greater than 40% and less than or equal to 60% of reach is disrupted by any of the channel alterations listed above. If the stream has been channelized, normal stable stream meander pattern has not recovered.	**Moderate Low:** Greater than 60% and less than or equal to 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If the stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed above. Greater than 80% of banks shored with gabion, riprap, or concrete.	
		High	Low	High	Low		**CI = (Score)/20**	**CI**
SCORE	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6		5 4 3 2 1	**SCORE 20**	**1.00**

RIVERINE CONDITION INDEX (RCI)		**RCI**
NOTE: **The CIs and RCI should be rounded to 2 decimal places.**	**RCI = (Sum of all CI's)/4**	**0.83**

If a CI is not applicable (e.g. due to use on intermittent watercourse or >100 sq. mile drainage area) in order to utilize the auto calculator feature the user will need to modify the RCI formula or enter the maximum score for that CI to achieve a CI of 1.0 which will offset the divisor difference.

General Comments: The stream is fed by flow from Wetland 1 (303-588). It flows down a steep forested hillslope and loses channel definition for a short stretch before regaining channel and then ending along the eastern edge of Cooney Hollow Road.

SECTION 3 – ENVIRONMENTAL ASSESSMENT (CONTINUED)

- MODULE S3 – IDENTIFICATION AND DESCRIPTION OF POTENTIAL PROJECT IMPACTS
    - S3.A – IMPACT SUMMARY TABLE
    - S3.B – STANDARD INFORMATION RESPONSES
    - S3.C – SUBFACILITY DETAILS TABLE
    - S3.D – RESOURCE FUNCTION EFFECTS
        - ***PFBC Email - ATON Plan***
    - S3.E – ANTIDEGRADATION ANALYSIS
    - S3.F – ALTERNATIVES ANALYSIS
    - S3.G – POTENTIAL SECONDARY IMPACT EVALUATION
    - S3.H – POTENTIAL CUMULATIVE ENVIRONMENTAL IMPACTS

MODULE S3 – IDENTIFICATION AND DESCRIPTION OF POTENTIAL PROJECT IMPACTS

S3.A IMPACT SUMMARY TABLE

Table S3-1 provides a summary of the type and size of each proposed aquatic resource impact. Refer to Drawing JP01 for plan views and profiles of each proposed impact.

All of the proposed impacts are temporary and will be restored following completion of the project. See Module S4 – Mitigation Plan for additional details regarding restoration. Indirect impacts to on-site resources are not anticipated due to the implementation of erosion and sedimentation (E&S) best management practices (BMPs), the passby ***flows*** for the water withdrawal ***[30 percent (%) from October through March and 50% from April through September]***, and the temporary nature of the project.

Table S3-1
Proposed Impacts

Impact Identifier	Aquatic Resource Name	Length of Temporary Impact (feet)	Area of Temporary Impact (acres)	*Length of Permanent Impact (feet)*	*Area of Permanent Impact (acres)*	Coordinates
Proposed Temporary Intake	Big Sewickley Creek	***54*** (Stream) ***18*** (Floodway)	***0.020*** (Stream) ***0.008*** (Floodway)	***0***	***0***	***40.609350*** ***-80.180420***
Utility Line Crossing 1/ Temporary Road Crossing 1	Coony Hollow	***40*** (Stream) ***75*** (Floodway)	***0.018*** (Stream) ***0.059*** (Floodway)	***36 (Floodway)***	***0.033 (Floodway)***	***40.613140*** ***-80.170807***
Utility Line Crossing 2/ Temporary Road Crossing 2	UNT 2 to Coony Hollow Floodway	***90*** (Floodway)	***0.062*** (Floodway)	***0***	***0***	40.613124 -80.170074
Totals	**Wetland**	**0**	**0**	***0***	***0***	
	Stream	***94***	***0.038***	***0***	***0***	
	Floodway	***183***	***0.129***	***36***	***0.033***	

S3.B STANDARD INFORMATION RESPONSES

A review of the United States Geological Survey Ambridge, Pennsylvania topographic quadrangle and the Pennsylvania Department of Environmental Protection (PADEP) "eMapPA" tool for the project area indicates there are no national, state, or local parks; forest or recreational areas; natural, wild, or wilderness areas; national, state or local historic sites; national natural landmarks, national wildlife refuges; federal, state, local, and/or private plant or wildlife sanctuaries; or State Game Lands present on the project site. The ***temporary*** staging area is located on land identified as prime farmland, and small portions of the waterline route are located on land identified as farmland of statewide importance (Figure 2). None of these areas are currently farmed. Earth disturbance is proposed for portions of prime farmland within the ***right-of way*** (***ROW)***. Given the area has been previously disturbed by the existing access road to an abandoned oil well, no loss of prime farmland is anticipated. Earth disturbance within areas of farmland of statewide importance will be minimal and incidental to the proposed waterline installation activities. The waterline will be placed on the existing ground surface, so no loss of farmland of statewide importance is anticipated.

The Pennsylvania State Historic Preservation Office (PA SHPO) was contacted to identify known or potential cultural or archaeological resources within the project area. Refer to Appendix A for copies of the project review form and the PA SHPO clearance letter.

S3.C SUBFACILITY DETAILS TABLE

Table S3-2
Subfacility Details

Subfacility Type	INTAK	Intake Structure			
County	Beaver		**Municipality**		Economy Boro.
ID	Proposed Temporary Intake	Big Sewickley Creek			
Coordinates	***40.609350 -80.180420***				
Intake Type	IP	Industrial Processing		**Velocity**	0.5 fps
WOB Material	OPLAS	Other Plastic		**Capacity**	2.32 cfs
Diameter	0.833	**Structure Width**	N/A	**Pipe Length**	***16***
Protective Measures	SCRN	Screened		**Location**	INSTREAM

Subfacility Type	PIPE	Pipeline or Conduit			
County	Beaver		**Municipality**		Economy Boro.
ID	Utility Line Crossing 1 & Temporary Road Crossing	Coony Hollow			
Coordinates	***40.613140 -80.170807***				
Pipe Conduit Type	AER	Aerial	**Attached Water Obstruction?**		Yes - Cribbing
Product	OTHER	Other (Fresh Water)			
Diameter	1.0	**ROW Width**	***40***	**Pipe Length**	20
Cover Depth	N/A	**Line Encased**	No	**Shut Off Controls**	Yes

Subfacility Type	FLACT	Floodway Activity			
ID	Utility Line Crossing 2 & Temporary Road Crossing 2	UNT 2 to Coony Hollow Floodway			
County	Beaver		**Municipality**		Economy Boro.
Coordinates	40.613124, -80.170074				
Floodway Method	50RU	**Design Flood**	100-year	**Free Board Height**	N/A
Flowage Easement	No	**Protection Measures**	No	**Interior Drainage**	No

S3.D RESOURCE FUNCTION EFFECTS

The proposed B50 Temporary Aboveground Waterline Project will temporarily impact ***94*** linear feet of stream and ***0.129*** acre of floodway. The proposed project does not include impacts to wetlands or to exceptional value (EV) streams.

S3.D.1 Passby Flow

The primary mitigation measure that will be utilized to protect streams, wetlands, and threatened and endangered species is the use of a passby flow. ***The passby flows that will be used are 30% from October through March and 50% from April through September***, which ***are*** the highest passby flow percentage***s*** assigned to proposed water withdrawals and ***higher than those typically*** assigned to EV and high quality (HQ) streams. A passby flow is a prescribed quantity of flow that must be allowed to pass a fixed point downstream of a surface water intake while water is being withdrawn. If the measured stream flow is equal to, or less than, the prescribed passby flow, no water may be withdrawn.

According to the U.S. Geological Survey (USGS) StreamStats Application, the mean average daily flow (ADF) for Big Sewickley Creek at the proposed withdrawal location is 21.6 cubic feet per second (cfs). Therefore, the ***30 and 50***% passby flows ***are 6.5 and 10.8*** cfs***, respectively***, which must be maintained downstream of the withdrawal at all times while water is being withdrawn. PennEnergy proposes a withdrawal rate of 2.3 cfs, which means the measured stream flow at the withdrawal location must be greater than ***8.8 and 13.1*** cfs (proposed flow rate + ***applicable*** passby flow) to withdraw the entire proposed amount of water (1.5 million gallons per day). The withdrawal amount can be reduced, provided that the ***applicable*** passby flow rate ***(30 or 50%)*** is maintained at all times.

Passby flows are based on acceptable habitat loss and are used to help protect aquatic resources, competing water users, and instream flow uses downstream of the withdrawal point. The Pennsylvania Fish & Boat Commission (PFBC) determined the ***30 and 50***% passby flow***s are*** appropriate due to the probable presence of the southern redbelly dace and, combined with

prescribed intake screen spacing and entrance velocities, would be protective of the state-threatened fish species. The passby flow was calculated based on the guidance presented ***in the "Instream Flow Regimens for Fish, Wildlife, Recreation and Related Environmental Resources" by Donald Leroy Tennant, also known as the Montana Method, or the Tennant Method. The method describes separate minimum flow regimens for October through March, and April through September. It states that 10% of average flow is the minimum required for short-term fish survival, whereas 30% and 50% of average flow during the previously mentioned monthly spans, respectively, is considered an "excellent" instream flow regimen for fish, wildlife, recreation, and related environmental resources. The less restrictive of the two passby percentages (30%) is adequately protective of both instream flows and low flows. Tennant lists 30% ADF as representative of "excellent" flow conditions and states, "This is a base flow recommended to sustain good survival habitat for most aquatic life forms." During the late May through early June spawning season of the southern redbelly dace, an enhanced passby of 50% ADF is proposed to offer additional habitat protection for the species. The PAFBC has concurred with this assessment of flow protection and stated in their Species Impact Review (SIR) letter (SIR #56633) that, "This pass by flow recommendation is deemed to be protective of instream habitat minimizing decreases in wetted width." During average flow conditions, 89.4% of ADF will remain in the creek. Considering that seasonal passby restrictions of 30 and 50% ADF are protective of low flows as described above, and considering that those base flow recommendations are deemed to sustain survival habitat and minimize decreases in wetted width, allowing 89.4% of ADF to remain in the creek will not materially impact aquatic life and, with the inclusion of passby requirements, will be protective of instream flows, satisfying 25 Pa. Code §78a.69 (b)(1).***

S3.D.2 Threatened and Endangered Species

As stated in Module S2, a Pennsylvania Natural Diversity Inventory (PNDI) review using the Pennsylvania Conservation Explorer website indicated that no potential conflicts exist regarding threatened, endangered, or special concern species. However, coordination with the PFBC was required for the Water Management Plan due to the probable presence of the southern redbelly dace (*Chrosomus erythrogaster*, PA Threatened). Based on an August 17, 2021, field visit

conducted by the PFBC, the PADEP, and PennEnergy, ***and the August 5, 2022 SIR letter,*** the PFBC concluded the proposed activity should not have a significant adverse impact to southern redbelly dace populations in the Big Sewickley Creek watershed provided that certain requirements and best management practices are followed. ***At the request of the PADEP, PennEnergy contacted the PFBC on December 29, 2022, to discuss if the proposed changes to the project impact the PFBC's previous conclusion. In an email dated January 3, 2023 (included in Module S2), the PFBC reiterated their conclusion that the proposed activity should not have a significant adverse impact to southern redbelly dace populations in the Big Sewickley Creek watershed provided that the water withdrawal is operated according to their recommendations outlined in SIR # 56633. In addition, since the water withdrawal location was moved downstream, the limit of disturbance (LOD) had to be adjusted. The updated PNDI receipt is included in Module S2. Since the PNDI receipt was updated, PennEnergy contacted the PFBC again on March 1, 2023, to discuss the updates to the project. The PFBC responded in an email on March 9, 2023 (included in Module S2), stating that the PFBC has no additional concerns. PennEnergy will operate the withdrawal according to the PFBC's recommendations outlined in SIR #56633***, which include:

- Instituting a passby flow of ***30% (Oct – Mar) and 50% (Apr – Sept)*** for Big Sewickley Creek;
- Establishing gaging station***s*** and collecting preliminary data for use in preparing site-specific curves for flow estimation for use during water withdrawals;
- Restricting intake screen spacing and entrance velocities to not exceed 3/16 inches and 0.5 feet per second, respectively, as stated in the water management plan;
- Reporting total daily withdrawals on a monthly basis by mail or via email to draab@pa.gov while pumping operations are active; and
- Coordinating pump installations with the PFBC Resource Extraction Section and the regional Waterways Conservation Officer.

In addition to the PFBC determination that the project will have no adverse impacts to the southern redbelly dace, the following analysis was prepared to demonstrate the project will not adversely impact the southern redbelly dace.

Clear water is integral to the southern redbelly dace for feeding and spawning. Therefore, the proposed project will incorporate measures to reduce the potential for E&S, which would increase turbidity in downstream waters. The water withdrawal will be temporary in nature and will consist of a floating, screened, surface intake system, which will avoid any in-stream construction that would be required to install a permanent intake structure. The intake will pull water from just below the surface, thereby avoiding disturbance to the stream bottom that could disperse sediment and increase turbidity. The intake will use the multiple 6-inch Megator Dolphin Floating Suction Strainers connected by 6-inch PVC cam-lock hoses to a fabricated 12-inch HDPE manifold. The HDPE manifold will connect to the pump by a 10-inch PVC cam-lock hose.

To protect the stream bank and surrounding area at Big Sewickley Creek during operations of the withdrawal, the installation, maintenance, and removal of the intakes will be done by hand. Once in place, the intakes will be anchored to a temporary t-post to minimize free movement and keep the intakes centered at the deepest pool. Equipment above the stream will be kept at least 4 feet back from the top of bank.

The waterline portion of the project has been designed to avoid instream construction, including crossing Coony Hollow aerially using an engineered super truss. This will directly reduce siltation and future potential erosion that could result from disturbing the stream banks and substrate to bury the waterline below Coony Hollow.

The diet and spawning behavior of the southern redbelly dace are concentrated on and occur in the vicinity of the stream bottom. Southern redbelly dace eat vegetation and small invertebrates and will graze on algae from rocks and other submerged items. Spawning takes place near the stream bottom, usually over gravel substrates. Due to these characteristics, the proposed intakes are ideal to minimize potential impacts to the southern redbelly dace. ***An exhibit has been created to show the proposed intakes, their respective placement in the stream, and proximity to the stream bottom during various flow regimes.***

To reduce the potential for impingement and entrainment of the southern redbelly dace and other fish species, the intake will have a mesh size of 3/16 inches and the entrance velocity will be less

than 0.5 feet per second, as outlined in the Water Management Plan. The entrance velocity will be attained by using seven (7) of the Dolphin Floating Suction Strainers for the maximum withdrawal rate. Fewer Dolphin Floating Suction Strainers may be used for lower rate of withdrawals, depending on operational needs and water storage levels.

S3.D.3 Wetlands

An on-site wetland and stream delineation was conducted at the proposed water withdrawal location on May 17, 2021, and the delineation boundary extended approximately 300 feet upstream and downstream of the withdrawal point on Big Sewickley Creek. No wetlands were identified within this area. The U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) Mapper was reviewed to determine if large wetlands are located further downstream of the withdrawal point. The NWI Mapper shows a large palustrine forested wetland approximately 0.2 mile upstream of the withdrawal point but does not show any wetlands downstream of the withdrawal point. Therefore, the water withdrawal is not anticipated to impact wetlands because wetlands were not identified at or downstream of the water withdrawal. The water withdrawal will not impact wetlands upstream. An on-site wetland and stream delineation was conducted at the proposed staging area and along the temporary waterline route on August 10, 2020; May 26, 2021; and June 2, 10, and 21, 2021. Wetlands were identified along the temporary waterline route, however, the project has been designed to avoid impacts to wetlands. Additionally, the project is not anticipated to indirectly impact wetlands because appropriate E&S controls will be installed and a passby flow will be implemented.

S3.D.4 Streams

Impacts to the on-site streams will be limited to the proposed project area and will be temporary in nature. Prior to construction, E&S BMPs will be installed as outlined in the E&S Plan.

Hydrologic

Based on the strict implementation of E&S BMPs prior to, during, and following construction, impacts to hydrologic functions of the streams are anticipated to be temporary and minimal. The water withdrawal will have temporary impacts to hydrologic functions when water is actively being withdrawn. The overall quantity of water will be temporarily reduced downstream of the water withdrawal, which will temporarily impact streamflow and flushing characteristics. However, the ability to store and control stormwater and floodwater will be increased while water is being actively withdrawn. Temporary impacts will be mitigated through the implementation of the ***30% and 50%*** passby flow**s**.

Biogeochemical

The contributions provided to pollution prevention by the on-site resources are not anticipated to be impacted by the project because the impacts are temporary and instream disturbance has been avoided.

Habitat Attributes

No long-term impacts to habitat attributes are anticipated. The water withdrawal involves the temporary placement of a hose and surface intake into the stream, which will be removed when water is not being actively withdrawn. The intake will float on the surface or be supported off the bottom to pull water from the top of the water column, just below the surface. The ***30% and 50%*** passby flow**s** will be maintained to limit potential impacts to habitat during water withdrawals.

The temporary waterline will be above ground and will be placed on the ground surface, except at stream and road crossings. The temporary waterline will be elevated over streams. Road crossings will be accomplished via open cut or conventional bore. No instream construction is needed for the project.

Disturbance to riparian vegetation will be ***minimized to the extent practicable, and no tree clearing will occur within floodways.*** ***Three trees are proposed to be removed for the installation of the rock construction entrances on either side of Cooney Hollow Road. These trees have been called out on Sheet 3 in Appendix B. Outside of this area and the areas immediately adjacent to the temporary waterline between approximate Stations 2+00 and 4+00 and Stations 34+70 to 35+70, clearing of trees greater than 6 inches diameter at breast height (dbh) within 100 feet of perennial or intermittent streams is not anticipated. Where clearing of trees greater than 6 inches dbh is necessary within 100 feet of perennial or intermittent streams (i.e., between approximate Stations 2+00 and 4+00 and Stations 34+70 to 35+70), it will be limited to the extent possible. A note has been added to the erosion and sedimentation control plans in Appendix B between approximate Stations 2+00 and 4+00 and Stations 34+70 to 35+70 indicating that tree clearing shall be limited to the extent possible within this area and all trees 6 inches dbh or larger shall be replaced at a 1:1 ratio. A detail for tree planting has been added as Detail 18 on Sheet ES04 in Appendix B.***

Recreation

Big Sewickley Creek is a stocked trout stream, and the proposed withdrawal site is one of many locations on this property used by the public to access the stream for trout fishing. The withdrawal site is located on private property, but the private landowner allows public access to the stream. While the fishing spot at the withdrawal site will not be accessible to the public while equipment is present, passage around the withdrawal site will remain open to anglers and will provide access to several other fishing spots on the property. Therefore, the only restrictions will be at the pumping area and the withdrawal point, and the restrictions will only be in place while equipment is present. PennEnergy will have the pump and facilities fenced in and personnel on-site while equipment is present to ensure the safety of the public and deter third-party acts.

The need for an Aids to Navigation (ATON) plan was discussed with the PFBC's Bureau of Boating. The PFBC's Aids to Navigation Manager stated in a February 27, 2023 email (attached) that an ATON plan was not needed because Big Sewickley Creek is not used for boating, recreational or otherwise.

Upstream and Downstream Property

Through the use of E&S BMPs and implementation of a passby flow, no impacts to upstream or downstream properties or riparian rights are anticipated. Stream access on adjacent properties will not be affected.

Other Environmental Factors Determined by Site Investigation

Since no other environmental factors were identified, no other impacts requiring consideration are anticipated as a result of the proposed project.

From: Morder, Richard
To: Kanouff, Paul
Subject: RE: [External] ATON Plan Question
Date: Monday, February 27, 2023 10:34:06 AM
Attachments: image001.png

Paul,

Good morning. I have reached out to the local Waterways Conservation Officer and he has never seen a boater on these waters due to water depths. No ATON plan will be needed for this project.

Thank you
Rich M

Richard Morder | Aids to Navigation Manager
Pennsylvania Fish and Boat Commission | Bureau of Boating
P.O. Box 67000, Harrisburg, PA 17106-7000
Mobile: (717) 226-3400 | Office: (717)836-3294
www.fishandboat.com

From: Kanouff, Paul <pkanouff@cecinc.com>
Sent: Thursday, February 23, 2023 4:08 PM
To: Morder, Richard <rmorder@pa.gov>
Subject: [External] ATON Plan Question

Hi, Rich.

I am working on a project on Big Sewickley Creek up in Economy Borough, PA. I'm not aware of recreational boating on the stream, but the DEP requested that we check with you to see if an ATON Plan is needed. I included a kmz and a screenshot to help your review. If you need more information, please let me know.

Thanks,
Paul

Paul A. Kanouff, PWS | *Principal*
Civil & Environmental Consultants, Inc.
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www.cecinc.com

S3.E ANTIDEGRADATION ANALYSIS

CEC is providing an antidegradation analysis for the proposed project. Among Pennsylvania's water quality standards are antidegradation requirements, which are described in Section 93.4a of the PA Code. The antidegradation analysis was prepared to ensure consistency with State antidegradation requirements contained in Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements, and E&S control) and the Clean Water Act (CWA) (33 U.S.C.A. § § 1251—1376). The antidegradation requirements are aimed at protecting the existing instream uses of surface waters, in addition to maintaining and protecting the water quality of HQ and EV waters, wild trout streams, and non-special protection watersheds impaired for sediment. Projects in these watersheds must demonstrate that construction and post-construction discharges will not degrade the physical, chemical, or biological characteristics of the surface waters.

The PADEP's eMapPA online database was utilized to determine that the receiving waters of the project are not classified as HQ, EV, or wild trout streams. In addition, the receiving waters are not listed as impaired on the PADEP eMapPA tool. The streams have not been assigned an existing use or special protection.

S3.E.1 Chapter 93 Requirements

Chapter 93 antidegradation requirements include the protection of existing instream water uses and the level of water quality necessary to protect the existing uses, and the protection of HQ waters, EV waters, and endangered and threatened species. Existing instream uses and water quality will be protected through implementation of an E&S plan. Additional details on the E&S plan are provided in S3.E.3. below. The receiving waters of the project are not classified as either HQ or EV, so the antidegradation requirements related to HQ and EV waters are not applicable to this project. Threatened and endangered species, including the probable presence of the southern redbelly dace, will be protected through the use of ***the 30 and 50%*** passby flow***s*** and additional measures requested by the PFBC.

S3.E.2 Chapter 95 Requirements

Chapter 95 antidegradation requirements include the treatment of wastewater to protect receiving waters. Stormwater will be controlled through implementation of an E&S plan, which is designed to maintain drainage patterns, soil conditions, and vegetative cover, and to retain the area's original stormwater drainage regime. The use of BMPs and site restoration will allow the project area to maintain its natural ability to control runoff volume and velocity, infiltrate stormwater, filter sediments and pollutants, and recycle nutrients.

S3.E.3 Chapter 102 Requirements

Most of the Chapter 102 antidegradation requirements are only applicable to special protection watersheds. As stated above, the receiving waters for this project are not designated HQ or EV. As such, the antidegradation requirements related to the protection of HQ and EV waters are not applicable to the proposed project. The remaining Chapter 102 antidegradation requirement is the protection of existing riparian buffers through the management of stormwater runoff, and the protection of wetlands within existing riparian buffers. Existing riparian buffers and wetlands within those buffers will be protected. Stormwater runoff will be controlled through implementation of an E&S plan, which was designed in accordance with the PADEP's BMPs, designed to minimize erosion at the source, collect and control sediment-laden stormwater, and discharge treated stormwater in a manner similar to pre-development conditions.

To protect the existing and designated stream use, an E&S plan will be implemented. The E&S plan will utilize the following BMPs:

- Minimize the extent and duration of earth disturbance by constructing the project in stages;
- Maximize protection of existing drainage features and vegetation through limiting site disturbance to only those areas necessary to facilitate the site development;
- Minimize soil compaction by incorporating appropriate construction standards;

- Preserve the integrity of stream channels and maintain and protect the physical, biological, and chemical qualities of the receiving stream by utilizing proposed stormwater filtration BMPs; and
- Utilize measures and controls that prevent or minimize generation of increased stormwater runoff including constructing diversion ditches to redirect as much stormwater as possible away from the construction area.

S3.E.4 Clean Water Act Requirements

Clean Water Act requirements pertaining to antidegradation are for the control of effluent and other pollutants in discharges that would interfere with the attainment and maintenance of water quality standards of a specific water, including sediment, oil and hazardous substances, and thermal discharges. Sediment will be controlled through the implementation of the E&S plan. Oil and hazardous substances will be controlled by industry best practices as outlined in the B50 Well Pad Integrated Environmental Emergency Response Plan (IEERP). Lastly, the project will not result in thermal discharges.

S3.F ALTERNATIVES ANALYSIS

This alternatives analysis has been prepared to present the alternatives that were evaluated for the proposed B50 Temporary Aboveground Waterline Project. This analysis is provided to demonstrate compliance with the federal Clean Water Act Section 404 (b) (1) guidelines (40 CFR 230) and Pennsylvania Chapter 105 regulations [105.18a (b)], which require that non-water dependent projects avoid or minimize impacts to aquatic resources to the greatest extent practicable (i.e., considering cost, existing technology, and logistics in light of overall project purposes) and demonstrate that any proposed aquatic impacts are necessary to achieve the basic project purpose.

S3.F.1 Project Purpose and Need

The purpose of the proposed project is to withdraw water from Big Sewickley Creek and transport

it by temporary aboveground waterline to the B50 Well Pad for natural gas well development. The requirements for the project include the following criteria:

1. ***The water source, or sources, must be able to provide volumes from 1.5 million gallons per day up to 2.5 million gallons per day during well development. Sources with availability less than 1.5 million gallons per day are evaluated on a case-by-case basis. Because the B50 Well Pad does not have a freshwater storage facility, only volumes close to 1.5 million gallons per day can support the efficient development of these wells.***
2. The water source must be close enough to the well pad to make a temporary waterline viable, all in terms of environmental impacts, community impacts, project costs, lease rights, and landowner approvals.
3. Potential impacts to public safety must be minimized to the extent practicable, including minimizing truck traffic.

S3.F.2 Preliminary Alternatives

PennEnergy's due diligence for this project examined a wide range of options that could potentially be used to provide water for the B50 Well Pad. Primarily, these options focused on locating a viable water source and then determining the best method of transporting the water to the well pad. Preliminarily, PennEnergy considered the following factors and alternative options:

- Water Reuse and Recycling;
- Public Water Sources;
- Local Streams; and
- Transporting Water using Trucks and Waterlines.

S3.F.2.1 Water Reuse and Recycling

PennEnergy reuses and recycles as much water as possible to conserve water and reduce costs. PennEnergy continues to increase the efficiency of their water use and is currently averaging a 35% reduction in total water consumption for well development activities through the recycling

and reuse of water. PennEnergy will continue this practice and anticipates a similar percentage for the proposed B50 well development. Reusing and recylcling water will enable PennEnergy to reduce the total amount of water required for the project but is not a practical option on its own. A viable source of water is still needed.

S3.F.2.2 Public Water Sources

The Ambridge Water Authority (AWA) and the Cranberry Township Water Authority (CTWA) were both consulted for potential water sourcing options relatively near the well pad. PennEnergy made multiple requests for water service from 2018 to ***the present***, and AWA ***is still*** unable to provide water for the project. A specific reason was not provided to PennEnergy for AWA's decision. PennEnergy made a follow-up request in a letter to AWA, dated January 12, 2022. A copy of the letter is included in Appendix A. ***AWA has yet to respond to the January 12, 2022 letter or follow up to email requests sent on April 12, September 11, and September 12, 2022. If AWA responds,*** PennEnergy will provide updated information to the PADEP upon receipt. In ***previous requests***, PennEnergy requested a minimum of 300,000 gallons per day; however, this amount of water would not negate the need for the water withdrawal on Big Sewickley Creek because 1.5 million gallons per day (MGD) is required for efficient well development. The CTWA was consulted for water service closer to another well pad in 2018 and was not able to provide an amount near 1.5 MGD at that time. Regardless of the volumes available, the length and difficulty to build the waterline to this well pad made a source from CTWA impractical.

S3.F.2.3 Local Streams

Local streams can be a viable and economical source of water provided that challenges regarding volume, access, and distance can be overcome. To be a viable source, the stream must be able to provide a sufficient amount of water, be in a location that is both accessible and amenable to landowners, and be relatively close to the project. The closest streams to the site, capable of supporting or supplementing well development, are Big Sewickley Creek and North Fork Big Sewickley Creek. Both of these streams were considered to be viable options and were further examined. Other nearby streams that were considered were the Ohio River, Crows Run, and East

Branch Big Sewickley Creek. The Ohio River was considered a potentially viable option that required further examination, but Crows Run and East Branch Big Sewickley Creek were deemed unviable due to lower available volumes, length, and difficulty of the waterline construction to the B50 Well Pad.

S3.F.2.4 Transporting Water using Trucks and Waterlines

Sourcing water locally to reduce truck traffic is one of the most successful and widespread best practices used in natural gas development today. Natural gas development requires materials and equipment that can only be transported to the location by truck, like the drill rig and drill pipe. During well development, ***reducing truck traffic, when possible, greatly benefits the surrounding community.*** PennEnergy practices sourcing water locally for well development not solely for the cost benefit but for how much this practice does for ***reducing community impacts***.

PennEnergy considered using nearby water storage facilities and/or other sources in their approved water management plan to exclusively transport the water by truck to the B50 Well Pad. However, trucking the total required volume of water would increase truck traffic by at least 200 trips per day and extend the duration of well development activities approximately 15 days. This added traffic is compounded due to loads of supplies and materials already going to B50 Well Pad during development. When forced to exclusively truck fresh water, PennEnergy endeavors to use multiple trucking stations and temporary waterlines to spread out truck traffic, avoiding a bottleneck effect at the well pad and maximizing the daily volumes achievable by trucking alone. As such, a trucking facility and temporary above-ground waterline is proposed on Big Sewickley Creek Road about one mile away from the well pad. While the facility would not replace the need for the Big Sewickley Creek water withdrawal and temporary above-ground waterline, it will be used as a supplemental source to maximize daily water volumes for efficient well development and as a contingency measure in the event the withdrawal is curtailed or unavailable due to passby flow requirements. Transporting the maximum volumes of freshwater by truck to the well pad and trucking terminal, approximately 1,000,000 gallons per day, would increase the cost of the project, put strain on local infrastructure and extend the duration of well development by approximately 15 days. Therefore, PennEnergy prefers to proceed with the

proposed temporary water withdrawal and temporary waterline, supported by transporting water by trucking, based on its minimal impact to the local community and the environment.

S3.F.3 Final Alternatives

The following final alternatives were considered for the project:

- ***New*** Ohio River Water Withdrawal and Temporary Waterline;
- Existing Ohio River Water Withdrawal and Temporary Waterline;
- B15 to B50 Temporary Waterline;
- ***ETC Northeast Field Services, LLC (ETC) B50 Pipeline ROW;***
- ***B50 Trucking Terminal and Temporary Waterline;***
- *Big Sewickley Creek to B50 Well Pad Alternatives; and*
- B50 Temporary Aboveground Waterline (Proposed Project).

The following narrative includes a description of each alternative and an analysis of its ablity to meet the the stated project purpose.

S3.F.3.1 ***New*** *Ohio River Temporary Waterline*

This alternative would include a ***new*** water withdrawal from the Ohio River and a temporary waterline to transport the water from the Ohio River to the B50 Well Pad. The Ohio River is approximately 3.3 direct miles from the B50 Well Pad and would provide a sufficient amount of water for well development. The temporary waterline would need to be at least 4 miles long due to terrain and landowner agreements, and a water withdrawal would still be needed, albeit on the Ohio River instead of Big Sewickley Creek. Additionally, the temporary waterline would require at least 15 aquatic resource crossings. The temporary waterline would further be constrained by existing railroad infrastructure, industrial development, and densely populated urban areas. These issues made this alternative economically infeasible. In addition, it would result in much greater environmental impacts than the proposed project, including requiring crossings of North Fork Big Sewickley Creek, tributaries to North Fork Big Sewickley Creek,

and additional tributaries to Big Sewickley Creek. Therefore, this project did not meet the basic project purpose and need due to environmental and economic constraints.

S3.F.3.2 Existing Ohio River Waterline and Temporary Waterline

This alternative would include using a combination of existing infrastructure and a new temporary waterline that would transport the water to the B50 Well Pad. PennEnergy has an existing Ohio River intake near Freedom, Pennsylvania as well as an associated permanent waterline and storage facilities. PennEnergy considered using these existing facilities as well as only using portions of the existing facilities, such as the withdrawal location itself. Any required temporary waterline from these facilities to the B50 Well Pad would need to be approximately 10 miles long, cross over 50 properties, and traverse difficult terrain. Additionally, the temporary waterline would require approximately 30 aquatic resource crossings, including crossings of North Fork Big Sewickley Creek and tributaries to both North Fork Big Sewickley Creek and Big Sewickley Creek. Therefore, this project did not meet the basic project purpose and need due to environmental and economic constraints.

S3.F.3.3 B15 to B50 Temporary Waterline

PennEnergy considered a new surface water intake and a temporary waterline from the B15 Well Development Impoundment to service the B50 Well Pad. This plan would not avoid the need for the proposed water withdrawal at Big Sewickley Creek but would have allowed a reduction of daily maximum volume. ***The surface water intake did not materialize and there is no fresh water source to the B15 Well Development Impoundment. Considerations were given to installing the temporary waterline from B15 to the B50 Well Pad to only use the existing storage at B15 and/or supplement water trucks.*** However, the proposed waterline from the B15 Impoundment to the B50 Well Pad would be approximately ***3*** miles long, traverse difficult terrain, and require temporary impacts to approximately 15 aquatic resources, including the same waterline crossings as the proposed project as well as crossings of North Fork Big Sewickley Creek and approximately 10 of its tributaries.

Existing water storage volume at the B15 Well Development Impoundment will be transported by truck to the proposed trucking terminal to support the water needs of the project. There is approximately 2.5 million gallons available at the B15 Well Development Impoundment.

S3.F.3.4 ETC B50 Pipeline ROW

ETC **has permitted a ROW for their B50 Pipeline,** *which is* **a buried, steel gas gathering line** *connecting the B15 Well Pad to the B50 Well Pad. Considerations* **were given to use this ROW for a buried or temporary above-ground waterline route** *from the B15 Well Pad* **to reduce environmental impacts to the watershed and provide water for the B50 well development.** *However, working within an active construction ROW presents a number of challenges due to different target dates to start construction, potentially overlapping construction schedules, different and potentially conflicting restoration schedules, the duration of and different methods of construction (aerial crossings of streams vs. buried), and working with limited space in difficult terrain. These challenges* **would likely result in longer construction timelines and environmentally sensitive areas being disturbed multiple times or for longer periods than if planned and constructed independently.** *Overlapping schedules could require that work be conducted by both operators at the same time, which would present an increased safety risk. However, if the schedules do not overlap, then restoration timeframes/requirements will present issues because restoration efforts by one operator could be undermined by construction activities from the other operator. For these reasons, the sharing of ROW with the B50 Pipeline project would not be feasible. In addition, when compared to the proposed project, using the B50 Pipeline ROW would result in greater cumulative impacts to the watershed. Therefore, sharing the B50 Pipeline ROW* **was not further considered.**

S3.F.3.5 B50 Trucking Terminal and Temporary Waterline

A new site for a trucking terminal and temporary waterline is proposed as part of this project to supplement the proposed Big Sewickley Creek surface water intake volumes and, if needed, as a contingency measure should the creek withdrawal be reduced or unavailable due to passby flow requirements. The B50 Trucking Terminal is located less than one mile away from the

B50 Well Pad and is planned along with a temporary above-ground waterline to support PennEnergy's water needs. The B50 well development is proposed to utilize approximately 2.5 million gallons of fresh water daily. With Big Sewickley Creek proposed to provide 1.5 million gallons daily, up to an additional 1 million gallons of water will be trucked to the terminal daily, stored in a temporary storage structure, and transferred to the well pad location by temporary above-ground waterline. Although the trucking terminal may be able to provide up to 1 million gallons of water per day, it will average much less over the course of development. The temporary waterline will require approximately one stream, one wetland and floodway crossings that will be permitted separately.

The storage structure will have a volume of 1.5 million gallons. However, with the only source to the terminal being trucking, it cannot be backfilled fast enough to provide more than the 1 million gallons per day and cannot be a viable water source alone to support efficient well development, for the reasons outlined in S3.F.2.4 Transporting Water using Trucks and Waterlines. Water trucked to the terminal will come primarily from PennEnergy's Fritsch Farm Well Development Impoundment, which is sourced from PennEnergy's existing Ohio River Intake in Freedom, Pennsylvania. That source will be supplemented with existing volumes of water at PennEnergy's existing well development impoundments in the vicinity. The existing volumes of water were sourced from PennEnergy's existing approved Water Management Plan sources including: Ohio River in Freedom Borough, Beaver County; Brush Creek in New Sewickley Township, Beaver County; Oakmont Water Authority/Ken Beck Trucking in West Deer Township, Allegheny County; Connoquenessing Creek in Marion Township, Beaver County; and Rock Run Enterprises/Harrison Township Water Authority in Harrison Township, Allegheny County. There is no surface water intake or withdrawal from Big Sewickley Creek associated with the B50 Trucking Terminal and temporary waterline.

S3.F.3.6 *Big Sewickley Creek to B50 Well Pad Alternatives*

Other withdrawal locations along Big Sewickley Creek were field viewed and considered but were not chosen due to difficult access points. Also, moving the withdrawal point to a different location along Big Sewickley Creek does not provide any environmental benefits over the

proposed location because the withdrawal would still be located along a section of stocked trout stream and would still be within the probable range of the southern redbelly dace.

PennEnergy also evaluated alternative temporary waterline routes from Big Sewickley Creek to the B50 Well Pad and decided on the current general alignment because of the minimal aquatic resource impacts and the use of an existing trail through the woods. Originally, this alignment included temporarily crossing Wetlands 3A and 20 and permanently burying the waterline under Coony Hollow but was adjusted to avoid impacts to wetlands and to further minimize stream impacts by changing the crossing of Coony Hollow to an aerial crossing. Any alternate routes from Big Sewickley Creek to the B50 Well Pad would require either the same amount or a greater amount of impacts. Therefore, the proposed temporary waterline route is the preferred route.

S3.F.3.7 *B50 Temporary Aboveground Waterline (Proposed Project)*

The proposed B50 Temporary Aboveground Waterline project consists of a temporary water withdrawal from Big Sewickley Creek and the installation of approximately 0.9 mile of temporary above-ground waterline. The proposed temporary waterline will transport fresh water from Big Sewickley Creek to the existing B50 Well Pad and will only require 2 aquatic resource crossings. The proposed alignment avoids wetland and instream impacts and minimizes stream impacts to the greatest extent practicable, while also making use of an existing trail and significantly minimizing tree clearing. The proposed project will avoid the need for the significant increase in the amount of truck traffic and will avoid impacts to North Fork Big Sewickley Creek and its tributaries. In addition, the passby flow, temporary surface intake, and other mitigation measures will minimize potential impacts to the southern redbelly dace.

S3.F.3.8 *Comparison of Final Alternatives*

Table S3-3 provides a comparison of the sizes and aquatic resource impacts for the final alternatives. Although each alternative could provide a viable means of water for well development, the option that best meets the purpose of the project and minimizes wetland and stream impacts to the greatest amount practicable is the proposed project. Further, the difference

in impacts between the proposed project and the alternatives is significant. ***The proposed project, in conjunction with the B50 Truck Terminal and Temporary Waterline, will avoid and significantly minimize cumulative impacts to the watershed.***

Table S3-3
Final Alternatives Comparison

Alternative	Length (miles)	Aquatic Resource Crossings	Wetland Impacts? (yes/no)
New Ohio River Water Withdrawal and Temporary Waterline	***6***	15+	Yes
Existing Ohio River Waterline and Temporary Waterline	10	30	Yes
B15 to B50 Temporary Waterline	***3***	15	Yes
Energy Transfer B50 Pipeline ROW	***2.7***	***21***	***Yes***
B50 Trucking Terminal and Temporary Waterline	***0.9***	***3***	***Yes***
B50 Temporary Aboveground Waterline (Proposed Project)	0.9	2	No

S3.F.4 Additional Considerations

PennEnergy made the following project concessions during the planning process for the proposed project:

- Canceled plans for a proposed water withdrawal from North Fork Big Sewickley Creek as well as a significantly longer associated waterline; and
- Reduced the proposed Big Sewickley Creek water withdrawal amount from 2 MGD to 1.5 MGD.

S3.F.5 Conclusion

In conclusion, PennEnergy has conducted their due diligence and has prepared a plan that not only meets the basic project purpose and need but also sensibly and feasibly minimizes environmental

impacts to the greatest extent practicable. The analysis of practicable alternatives demonstrates that the proposed project provides the best alternative. The proposed project requires only minimal temporary impacts to two streams and one additional floodway, avoids wetland and instream impacts, and maximizes public safety. In addition, the proposed water withdrawal amount from Big Sewickley Creek is sustainable and reasonable, and the proposed passby flow and other measures will mitigate impacts for the proposed temporary withdrawal. Therefore, PennEnergy prefers to proceed with the proposed temporary water withdrawal and temporary waterline based on its minimal impact to the local community and the environment.

S3.G POTENTIAL SECONDARY IMPACT EVALUATION

Temporary E&S BMPs will be utilized during construction to reduce and/or eliminate offsite erosion and sedimentation to the greatest extent practicable. An E&S Plan has been submitted as part of this permit application. This plan includes provisions for directing stormwater away from and around disturbed areas, grading disturbed areas in a systematic fashion to minimize potential for erosion, and temporarily or permanently stabilizing disturbed areas as quickly as possible. Therefore, potential secondary impacts associated with stormwater runoff during construction and post-construction will be mitigated.

S3.H POTENTIAL CUMULATIVE ENVIRONMENTAL IMPACTS

The overall impacts from the project are anticipated to range from minimal to negligible. Based on the temporary nature of the project, the installation of E&S controls, the implementation of ***30 and 50%*** passby flow**s**, and the minimal environmental impacts, this project is not anticipated to contribute to cumulative environmental impacts. ***Further, cumulative impacts to the Big Sewickley watershed will be avoided and/or minimized to the greatest extent possible with the implementation of the B50 Well Pad system, comprised of ETC's B50 Pipeline, the Big Sewickley Creek surface intake, the B50 Temporary Aboveground Waterline, and the B50 Truck Terminal and Temporary Waterline.***

At this time, no other dams, water obstructions, or encroachments are needed to fulfill the project purpose.

SECTION 3 – ENVIRONMENTAL ASSESSMENT (CONTINUED)

- MODULE S4 – MITIGATION PLAN
    - S4.A – AVOIDANCE AND MINIMIZATION
    - S4.B – RESTORATION AND MAINTENANCE

MODULE S4 – MITIGATION PLAN

In accordance with the definition of mitigation in 25 Pa. Code § 105.1, mitigation for this project includes compensating for stream impacts by avoiding and minimizing impacts, restoring the impacted environment, and reducing the impact over time through maintenance. Direct compensation for the proposed stream impacts are not proposed as the impacts are temporary in nature. The project will not impact wetlands.

S4.A AVOIDANCE AND MINIMIZATION

The project was designed to avoid and minimize wetland, stream, and floodway impacts to the greatest extent practicable while still meeting the project requirements listed in Module S3. The waterline alignment was specifically modified to avoid wetland impacts. Stream and floodway impacts are temporary and minimal, and no instream disturbance is proposed. Impacts to the southern redbelly dace have been minimized by following the Pennsylvania Fish & Boat Commission's (PFBC) project recommendations and by using a surface intake.

Earth disturbance was significantly reduced and instream disturbance was avoided by crossing streams and floodways aerially as opposed to burying the temporary waterline. Earth disturbance and tree clearing were also reduced by using an existing trail for the temporary waterline route.

S4.B RESTORATION AND MAINTENANCE

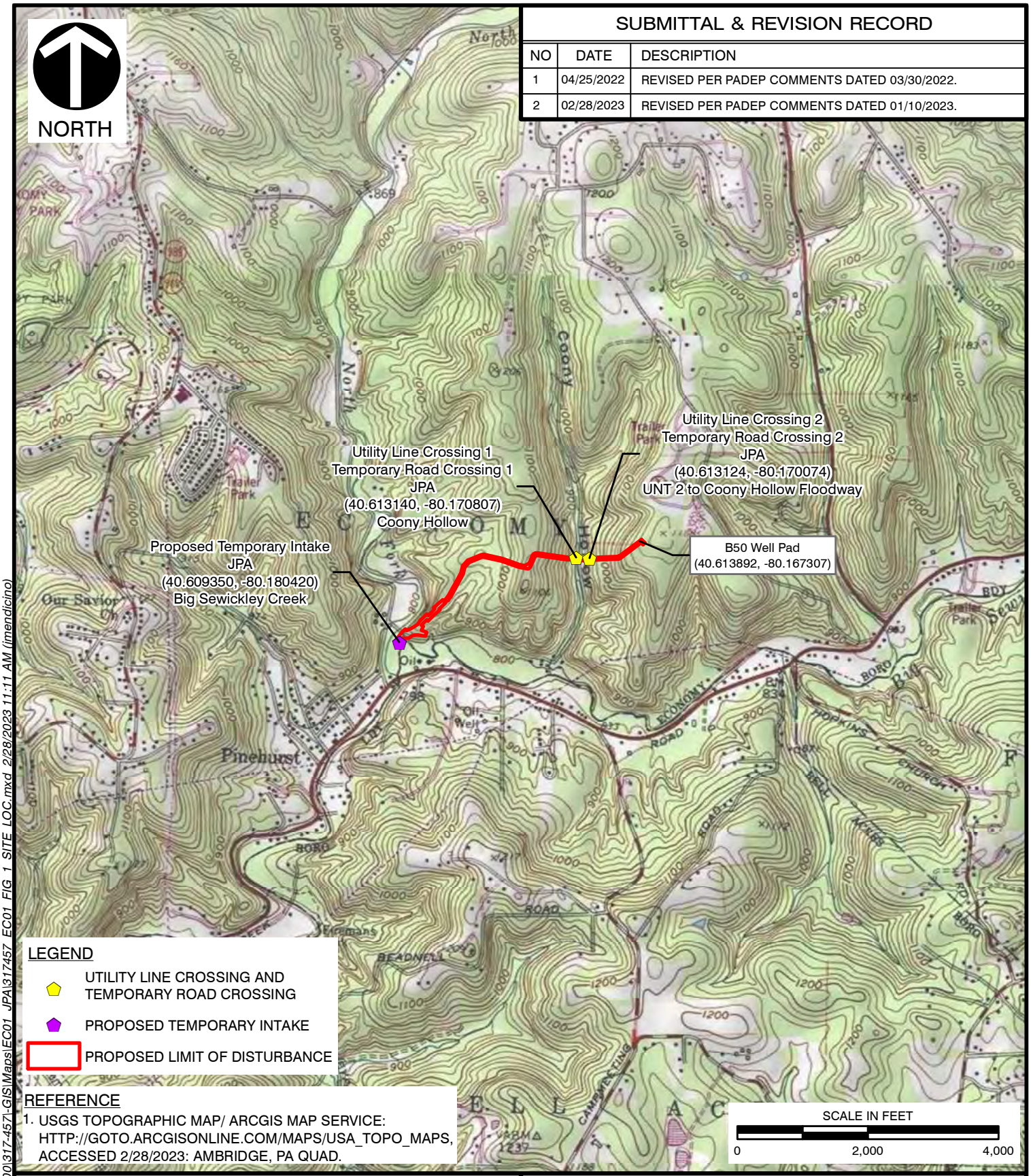
The streams and floodways within the project area are only subjected to temporal direct and/or indirect impacts, and disturbed areas will be restored within one year of impact. Impacted areas will be restored to original contours, where possible, and seeded and mulched as detailed in the site Erosion and Sedimentation (E&S) Control Plan. Appropriate E&S controls will be employed and maintained to protect both on-site and off-site resources.

FIGURES

- FIGURE 1 – SITE LOCATION MAP
- FIGURE 2 – RESOURCE IDENTIFICATION MAP
- FIGURE 3 – DRAINAGE AREA MAP
- FIGURE 4 – PA RIVERINE CONDITION LEVEL 2 RAPID ASSESSMENT PROTOCOL MAP
- FIGURE 5 – SITE PLAN
- ***FIGURE 6 – ALTERNATIVES ANALYSIS MAP***
- DRAWING***S*** JP01***, JP02, AND RC01*** – STREAM AND FLOODWAY CROSSING DETAILS – SEE APPENDIX B
- DRAWINGS 0 THROUGH ***10 AND*** ES01 ***THROUGH ES04*** – EROSION AND SEDIMENT CONTROL PLANS AND DETAILS – SEE APPENDIX B

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	04/25/2022	REVISED PER PADEP COMMENTS DATED 03/30/2022.
2	02/28/2023	REVISED PER PADEP COMMENTS DATED 01/10/2023.



REFERENCE

1. USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS, ACCESSED 2/28/2023: AMBRIDGE, PA QUAD.

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B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

SITE LOCATION MAP

DRAWN BY:	KMC	CHECKED BY:	SVP	APPROVED BY:	PAK*	FIGURE NO:	1
DATE:	03/08/2022	SCALE:	1 " = 2,000 '	PROJECT NO:	317-457	* Hand signature on file	

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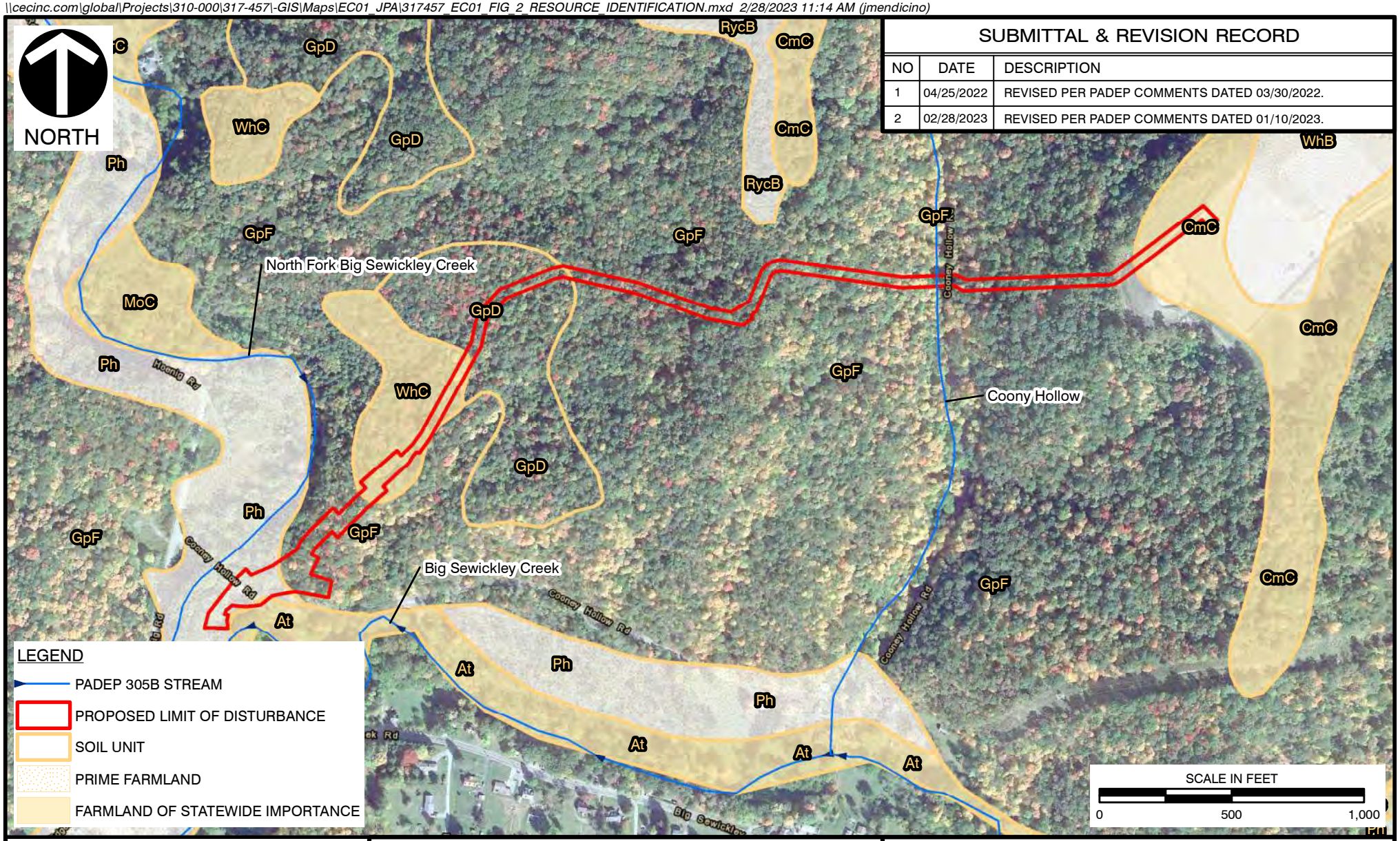

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	04/25/2022	REVISED PER PADEP COMMENTS DATED 03/30/2022.
2	02/28/2023	REVISED PER PADEP COMMENTS DATED 01/10/2023.

REFERENCES

1. PA DEPARTMENT OF ENVIRONMENTAL PROTECTION 305B STREAM DATA, 2004.
2. U.S.D.A., N.R.C.S. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR BEAVER COUNTY, PA, 2019.
3. AERIAL PHOTOGRAPHY COPYRIGHT GOOGLE EARTH PRO, EXPORTED 01/18/2022 IMAGERY DATE 10/08/2020.

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RESOURCE IDENTIFICATION MAP

DRAWN BY:	KMC	CHECKED BY:	SVP	APPROVED BY:	PAK*	FIGURE NO:	2
DATE:	03/08/2022	SCALE:	1 " = 500 '	PROJECT NO:	317-457	* Hand signature on file	

NORTH

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
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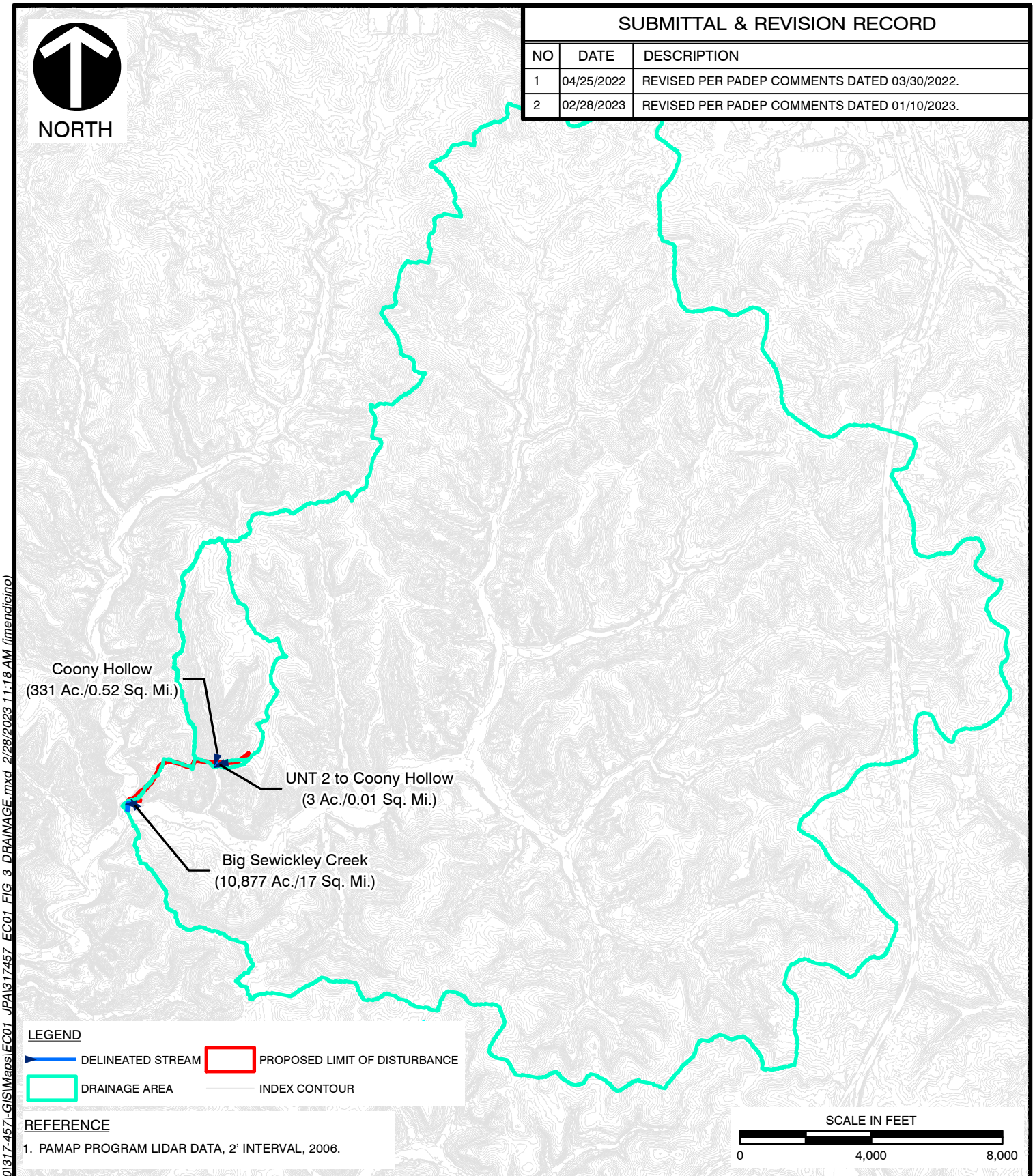
2	02/28/2023	REVISED PER PADEP COMMENTS DATED 01/10/2023.



REFERENCE

1. PAMAP PROGRAM LIDAR DATA, 2' INTERVAL, 2006.

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DRAINAGE AREA MAP

DRAWN BY:	KMC	CHECKED BY:	SVP	APPROVED BY:	PAK*	FIGURE NO:	3
DATE:	03/08/2022	SCALE:	1 " = 4,000 '	PROJECT NO:	317-457	* Hand signature on file	

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NORTH

UNT-5 to Coony Hollow
Coony Hollow
UNT-4 to Coony Hollow
UNT-6 to Coony Hollow
UNT-7 to Coony Hollow
Wetland-1 (303-568) -PEM
Wetland-2B (303-568) -PEM
Wetland-2A (303-568) -PEM
Wetland-2 -PEM
Wetland-2A -PEM
Wetland-2B -PEM
UNT-3 to Coony Hollow
Loss of Defined Bed and Bank
Loss of Defined Bed and Bank
UNT-3 to Coony Hollow
Wetland-3B -PEM
Wetland-3A -PEM
North Fork Big Sewickley Creek
UNT-1 to Big Sewickley Creek
Big Sewickley Creek
Overflow Channel

REVISION RECORD

NO	DATE	DESCRIPTION
1	04/21/2022	REVISED PER PADEP COMMENTS DATED 03/30/2022.
2	02/28/2023	REVISED PER PADEP COMMENTS DATED 01/10/2023.

SUBMITTAL RECORD

NO	DATE	DESCRIPTION

LEGEND

- TEMPORARY ABOVE-GROUND WATERLINE
- EPHEMERAL STREAM
- INTERMITTENT STREAM
- PERENNIAL STREAM
- RIPARIAN VEGETATION ASSESSMENT AREA
- RIPARIAN ZONE OF INFLUENCE
- WETLAND - PEM
- PROPOSED LIMIT OF DISTURBANCE
- FEMA ZONE AE FLOODWAY
- DELINEATION BOUNDARY

REFERENCES

1. FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), THE NATIONAL FLOOD HAZARD LAYER (NFHL), 2018.
2. AERIAL PHOTOGRAPHY COPYRIGHT GOOGLE EARTH PRO, EXPORTED 01/18/2022 IMAGERY DATE 10/08/2020.

SCALE IN FEET

0 200 400 600 800

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DATE:	03/08/2022	SCALE:	1 " = 200 '	PROJECT NO:	317-457

PA RIVERINE CONDITION LEVEL 2
RAPID ASSESSMENT PROTOCOL MAP

FIGURE NO: 4

SHEET 1 OF 1

* Hand signature on file

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REVISION RECORD		
NO	DATE	DESCRIPTION
1	04/25/2022	REVISED PER PADEP COMMENTS DATED 03/30/2022.
2	02/28/2023	REVISED PER PADEP COMMENTS DATED 01/10/2023.
3	04/28/2023	REVISED PER PADEP COMMENTS DATED 04/19/2023.

SUBMITTAL RECORD		
NO	DATE	DESCRIPTION

LEGEND

- UTILITY LINE CROSSING AND TEMPORARY ROAD CROSSING
- PROPOSED TEMPORARY INTAKE
- PHOTO LOCATION & ORIENTATION
- INSTALLED STAFF GAGE
- TEMPORARY ABOVE-GROUND WATERLINE
- WATERLINE TO BE LEFT IN PLACE
- PROPOSED STREAM IMPACT
- EPHEMERAL STREAM
- INTERMITTENT STREAM
- PERENNIAL STREAM
- PADEP 305B STREAM
- FEMA ZONE AE FLOODWAY
- ASSUMED 100 YEAR FLOODWAY
- WETLAND - PEM
- PROPOSED LIMIT OF DISTURBANCE
- DELINEATION BOUNDARY
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- APPROXIMATE PARCEL BOUNDARY

REFERENCES

1. PA DEPARTMENT OF ENVIRONMENTAL PROTECTION 305B STREAM DATA, 2004.
2. PAMAP PROGRAM LIDAR DATA, 2' INTERVAL, 2006.
3. FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), THE NATIONAL FLOOD HAZARD LAYER (NFHL), 2018.
4. AERIAL PHOTOGRAPHY COPYRIGHT GOOGLE EARTH PRO, EXPORTED 01/18/2022 IMAGERY DATE 10/08/2020.

NOTES

1. THE WETLAND AND STREAM DELINEATION WAS CONDUCTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. ON 08/10/2020, 05/17/2021, 05/26/2021, 06/02/2021, 06/10/2021, AND 6/21/2021.
2. IN ACCORDANCE WITH 25 PA. CODE § 105.1, THE ASSUMED FLOODWAYS WERE GENERATED AS A 50-FOOT BUFFER FROM THE TOP OF THE BANK OF THE STREAM. NO FEMA MAPS OR STUDIES HAVE DEFINED THE BOUNDARY OF THE 100-YEAR FREQUENCY FLOODWAYS IN THESE AREAS. THE AVERAGE TOP OF BANK WIDTH WAS MEASURED DURING THE ON-SITE FIELD REVIEW CONDUCTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. ON 08/10/2020, 05/17/2021, 05/26/2021, 06/02/2021, 06/10/2021, AND 6/21/2021.

SCALE IN FEET

0 200 400 600 800

Civil & Environmental Consultants, Inc.
4350 Northern Pike, Suite 141 - Monroeville, PA 15146
Ph: 724-327-5200 - 800-899-3610
www.cecinc.com

PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

DRAWN BY:	KMC	CHECKED BY:	SVP	APPROVED BY:	PAK*
DATE:	03/08/2022	SCALE:	1 " = 200 '	PROJECT NO:	317-457

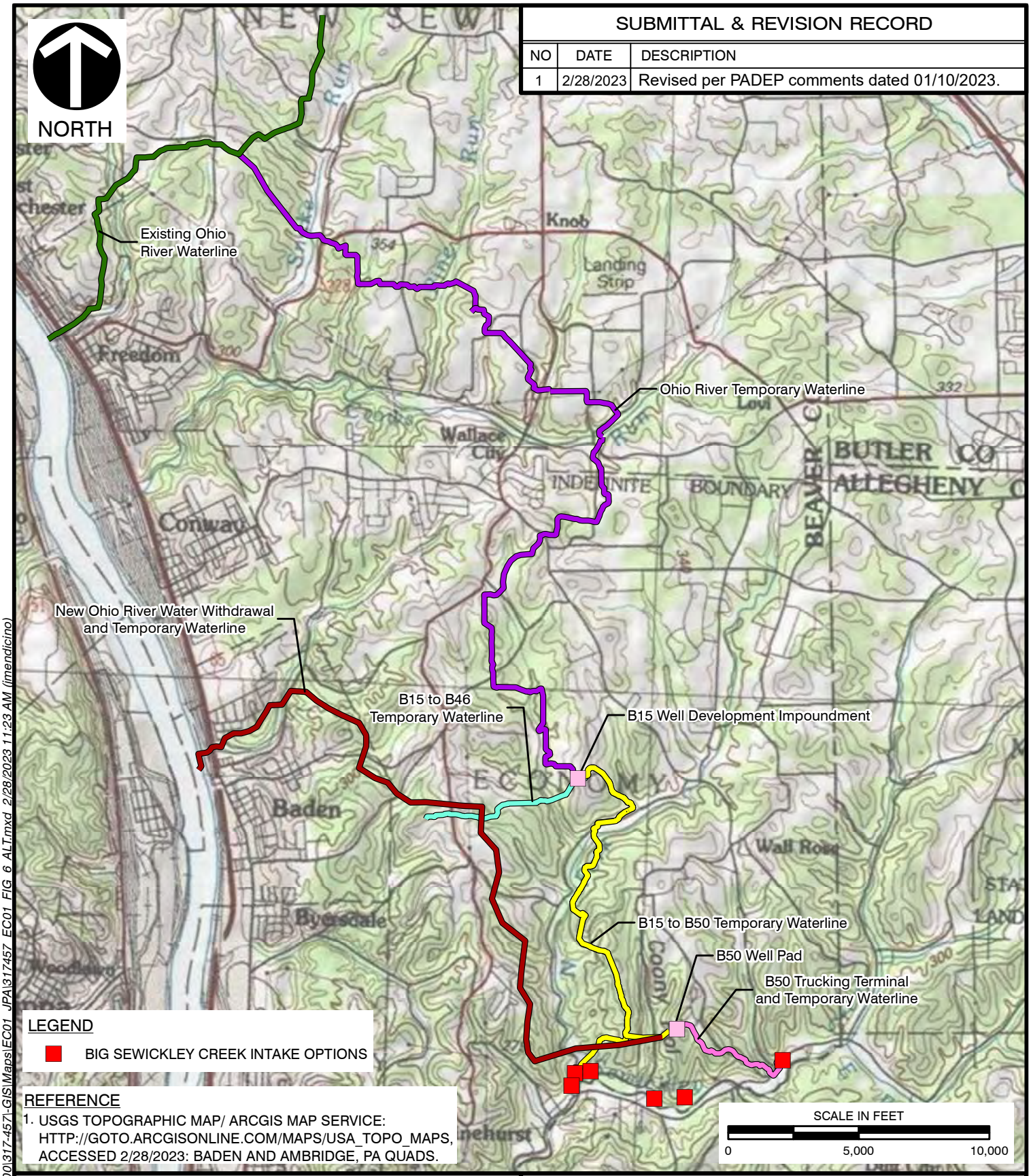
SITE PLAN

FIGURE NO: 5

SHEET 1 OF 1

* Hand signature on file

\\cecinc.com\global\Projects\310-000\317-457\GIS\Mxd\EC01_JPA\317457_EC01_FIG_5_SITE_PLAN.mxd 2/28/2023 11:21 AM (jmendicino)



SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	2/28/2023	Revised per PADEP comments dated 01/10/2023.

REFERENCE

1. USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS, ACCESSED 2/28/2023: BADEN AND AMBRIDGE, PA QUADS.

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ALTERNATIVES ANALYSIS MAP

DRAWN BY:	KMC	CHECKED BY:	SVP	APPROVED BY:	PAK*	FIGURE NO:	6
DATE:	10/28/2022	SCALE:	1 " = 5,000 '	PROJECT NO:	317-457	* Hand signature on file	

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APPENDIX A – CORRESPONDENCE

- ACTS 14/67/68/127 NOTIFICATIONS AND LAND USE LETTERS
    - BEAVER COUNTY NOTIFICATION AND RETURN RECEIPT
    - BEAVER COUNTY LAND USE LETTER AND RETURN RECEIPT
    - ECONOMY BOROUGH NOTIFICATION/LAND USE LETTER AND RETURN RECEIPT
- LAND USE RESPONSES
    - BEAVER COUNTY
    - ECONOMY BOROUGH
- CULTURAL RESOURCES PROJECT REVIEW FORM AND CORRESPONDENCE
    - CULTURAL RESOURCES PROJECT REVIEW FORM AND ATTACHMENTS
    - PA SHPO CLEARANCE LETTER
- AMBRIDGE WATER AUTHORITY LETTER

7016 1370 0002 1178 3238

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total
$

Sent
Stree
City,

Postmark Here
MAR - 8 2022

Ms. Nicole Long, Chief Clerk
Commissioners Office
Beaver County Courthouse, First Floor
810 Third Street
Beaver, Pennsylvania 15009

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

---

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ms. Nicole Long, Chief Clerk
Commissioners Office
Beaver County Courthouse, First Floor
810 Third Street
Beaver, Pennsylvania 15009

9590 9402 3090 7124 9583 70

2. Article Number *(Transfer from service label)*
7016 1370 0002 1178 3238

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery
3-10-22

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

RECEIVED
MAR 11 2022
BY:

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- Mail
- Mail Restricted Delivery
- (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

March 8, 2022

CERTIFIED TRACKING NO.: 7016 1370 0002 1178 3238

Ms. Nicole Long, Chief Clerk
Commissioners Office
Beaver County Courthouse, First Floor
810 Third Street
Beaver, Pennsylvania 15009

Dear Ms. Long:

Subject: County Notification
B50 Temporary Aboveground Waterline Project
PennEnergy Resources, LLC
Economy Borough, Beaver County, Pennsylvania
CEC Project 317-457

This notice, under the requirements of Acts 14, 67, 68, and 127 of the Municipalities Planning Code, is to inform you that PennEnergy Resources, LLC (PER) is submitting a Joint Permit Application (JPA) for a Pennsylvania Chapter 105 Water Obstruction and Encroachment Permit and U.S. Army Corps of Engineers (USACE) Section 404 Permit to the Pennsylvania Department of Environmental Protection (PADEP) for temporary stream and floodway impacts associated with the B50 Temporary Aboveground Waterline Project.

The proposed project is located off Cooney Hollow Road in Economy Borough, Beaver County, Pennsylvania. The purpose of this project is to deliver fresh water for the development of shale gas and/or oil. A site location map is enclosed.

Enclosed is a copy of the General Information Form. If you wish to submit comments to the PADEP, you must respond within 30 days to the PADEP Permitting and Technical Services Section at Pennsylvania Department of Environmental Protection, Southwest Regional Office, 400 Waterfront Drive, Pittsburgh, Pennsylvania 15222. If you do not submit comments by the end of the comment period, PADEP will assume that there are no substantive conflicts and proceed with the normal application review process.

Sincerely,

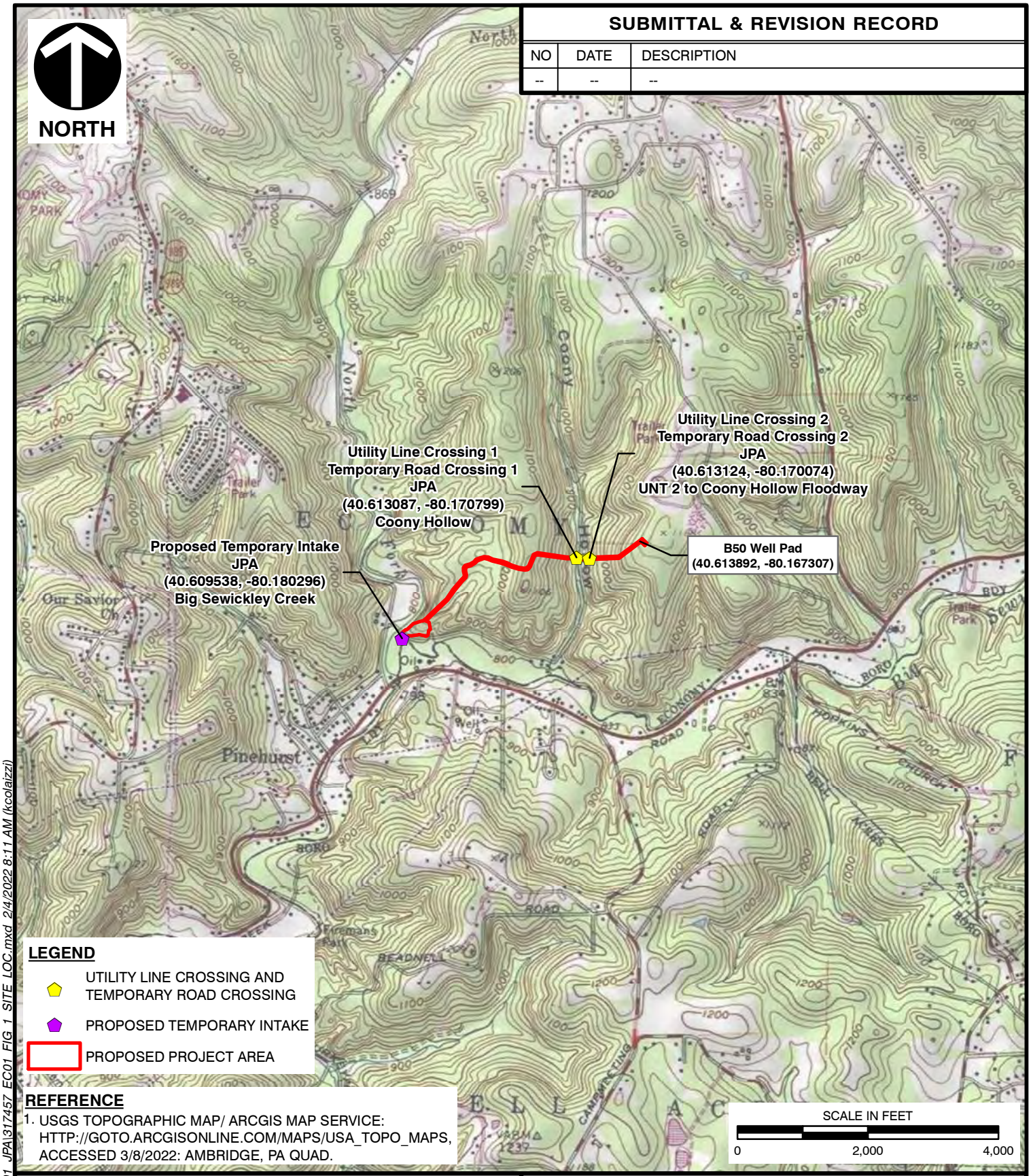
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Sarah V. Parker
Assistant Project Manager

Paul A. Kanouff, PWS
Principal

SVP:PAK/ad
Enclosures

L-317457.Mar8/P



SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
--	--	--

LEGEND

- UTILITY LINE CROSSING AND TEMPORARY ROAD CROSSING
- PROPOSED TEMPORARY INTAKE
- PROPOSED PROJECT AREA

REFERENCE

1. USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS, ACCESSED 3/8/2022: AMBRIDGE, PA QUAD.

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B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

SITE LOCATION MAP

DRAWN BY:	KMC	CHECKED BY:	SVP	APPROVED BY:	PAK*	FIGURE NO:	1
DATE:	03/08/2022	SCALE:	1 " = 2,000 '	PROJECT NO:	317-457	* Hand signature on file	

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This form is used by the Department of Environmental Protection (DEP) to inform our programs regarding what other DEP permits or authorizations may be needed for the proposed project or activity. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the DEP.

Related ID#s (If Known)				DEP USE ONLY
Client ID#		**APS ID#**		Date Received & General Notes
Site ID#		**Auth ID#**		
Facility ID#				

CLIENT INFORMATION

DEP Client ID#	Client Type / Code	Dun & Bradstreet ID#
294943	LLC	

Legal Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Is the EIN a SSN?
PennEnergy Resources, LLC	452673440	☐ Yes ☒ NO

State of Incorporation or Registration of Fictious Name	
PA	☐ Corporation ☒ LLC ☐ Partnership ☐ LLP ☐ LP ☐ Sole Proprietorship ☐ Association/Organization ☐ Estate/Trust ☐ Other

Individual Last Name	First Name	MI	Suffix
N/A			

Additional Individual Last Name	First Name	MI	Suffix
N/A			

Mailing Address Line 1	Mailing Address Line 2
1000 Commerce Drive	Park Place One, Suite 400

Address Last Line – City	State	ZIP+4	Country
Pittsburgh	PA	15275	USA

Client Contact Last Name	First Name	MI	Suffix
Watson	Richard		

Client Contact Title	Phone	Ext	Cell Phone
Project Manager	(412) 935-5027		

Email Address	FAX
rmwatson@pennenergyresources.com	

SITE INFORMATION

DEP Site ID#	Site Name
	B50 Temporary Above-Ground Waterline Project

EPA ID# **Estimated Number of Employees to be Present at Site** N/A

Description of Site
The project area consists of moderate to steep forested slopes and ridgetop, as well as two perennial stream valleys.

Tax Parcel ID(s): 60-185-0266.000, 60-185-0244.000, 60-185-0242.002

County Name(s)	Municipality(ies)	City	Boro	Twp	State
Beaver	Economy Borough	☐	☒	☐	PA

Site Location Line 1	Site Location Line 2
Cooney Hollow Road	

Site Location Last Line – City	State	ZIP+4
Sewickley	PA	15143

Detailed Written Directions to Site
From I-79 N, take exit 73 for PA-910 toward Wexford. Turn left onto PA-910 W/Wexford Bayne Road and drive for 1.9 miles. Continue straight onto Rochester Road and drive for 1.1 miles. Continue straight onto Big Sewickley Creek Road and drive for 2.9 miles. Turn right onto Hoenig Road and drive for 0.2 mile. Turn right onto Cooney Hollow Road and drive for approximately 320 feet. The withdrawal site will be on the right.

Site Contact Last Name	First Name	MI	Suffix
Watson	Richard		

Site Contact Title	Site Contact Firm
Project Manager	PennEnergy Resources, LLC

Mailing Address Line 1	Mailing Address Line 2
1000 Commerce Drive	Park Place One, Suite 400

Address Last Line – City	State	ZIP+4
Pittsburgh	PA	15275

Phone	Ext	FAX	Email Address
(412) 935-5027			rmwatson@pennenergyresources.com

NAICS Codes (Two- & Three-Digit Codes – List All That Apply): 221

6-Digit Code (Optional):

Client to Site Relationship
LESSOP

FACILITY INFORMATION

Modification of Existing Facility	Yes	No
1. **Will this project modify an existing facility, system, or activity?**	☐	☒
2. **Will this project involve an addition to an existing facility, system, or activity?**	☐	☒

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

	Facility Type	DEP Fac ID#		Facility Type	DEP Fac ID#
☐	Air Emission Plant		☐	Industrial Minerals Mining Operation	
☐	Beneficial Use (water)		☐	Laboratory Location	
☐	Blasting Operation		☐	Land Recycling Cleanup Location	
☐	Captive Hazardous Waste Operation		☐	Mine Drainage Treatment / Land Recycling Project Location	
☐	Coal Ash Beneficial Use Operation		☐	Municipal Waste Operation	
☐	Coal Mining Operation		☐	Oil & Gas Encroachment Location	
☐	Coal Pillar Location		☐	Oil & Gas Location	
☐	Commercial Hazardous Waste Operation		☐	Oil & Gas Water Poll Control Facility	
☐	Dam Location		☐	Public Water Supply System	
☐	Deep Mine Safety Operation -Anthracite		☐	Radiation Facility	
☐	Deep Mine Safety Operation -Bituminous		☐	Residual Waste Operation	
☐	Deep Mine Safety Operation -Ind Minerals		☐	Storage Tank Location	
☐	Encroachment Location (water, wetland)		☐	Water Pollution Control Facility	
☐	Erosion & Sediment Control Facility		☐	Water Resource	
☐	Explosive Storage Location		☐	Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Approximate center of site	40	36	41.92	80	10	32.34

Horizontal Accuracy Measure: Feet *--or--* Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☒ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code: GISDR

Reference Point Code: CENTER

Altitude: Feet 790-1,165 *--or--* Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☒ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code: POINT

Geometric Type Code: POINT

Data Collection Date: May 2020 - June 2021

Source Map Scale Number: 1 Inch(es) = 2,000 Feet
--or-- Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
B50 Temporary Above-Ground Waterline Project

Project Description
The project consists of a temporary water withdrawal on Big Sewickley Creek and installation of approximately 0.9 mile of 12-inch diameter high density polyethylene (HDPE) temporary aboveground waterline that will transport fresh water from Big Sewickley Creek to the PER B50 Well Pad.

Project Consultant Last Name	First Name	MI	Suffix
Kanouff	Paul	A	

Project Consultant Title	Consulting Firm
Principal	Civil & Environmental Consultants, Inc.

Mailing Address Line 1	Mailing Address Line 2
4350 Northern Pike	Suite 141

Address Last Line – City	State	ZIP+4
Monroeville	PA	15146

Phone	Ext	FAX	Email Address
(724) 327-5200		(724) 327-5280	pkanouff@cecinc.com

Time Schedules	Project Milestone (Optional)
January 2023	Start and complete installation

1. Is the project located in or within a 0.5-mile radius of an Environmental Justice community as defined by DEP? ☐ Yes ☒ No

To determine if the project is located in or within a 0.5-mile radius of an environmental justice community, please use the online Environmental Justice Areas Viewer.

2. Have you informed the surrounding community prior to submitting the application to the Department? ☒ Yes ☐ No

Method of notification: County and Municipal Letters

3. Have you addressed community concerns that were identified? ☒ Yes ☐ No ☐ N/A

If no, please briefly describe the community concerns that have been expressed and not addressed.

4. Is your project funded by state or federal grants? ☐ Yes ☒ No

Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.

Aspect of Project Related to Grant
Grant Source: _____
Grant Contact Person: _____
Grant Expiration Date: _____

5. Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) ☒ Yes ☐ No

Note: If "No" to Question 5, the application is not subject to the Land Use Policy.
If "Yes" to Question 5, the application is subject to this policy and the Applicant should answer the additional questions in the **Land Use Information** section.

LAND USE INFORMATION

Note: Applicants should submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1.	**Is there an adopted county or multi-county comprehensive plan?**	☒	Yes	☐	No
2.	**Is there a county stormwater management plan?**	☐	Yes	☒	No
3.	**Is there an adopted municipal or multi-municipal comprehensive plan?**	☒	Yes	☐	No
4.	**Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance?** **Note:** If the Applicant answers "No" to either Questions 1, 3 or 4, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 5 and 6 below. If the Applicant answers "Yes" to questions 1, 3 and 4, the Applicant should respond to questions 5 and 6 below.	☒	Yes	☐	No
5.	**Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval?** If zoning approval has been received, attach documentation.	☒	Yes	☐	No
6.	**Have you attached Municipal and County Land Use Letters for the project?**	☒	Yes	☐	No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 utilizing the Project Review Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	**Is this a coal mining project?** If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	☐	Yes	☒	No
1.1	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?**	☐	Yes	☐	No
1.2	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?**	☐	Yes	☐	No
1.3	**Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?**	☐	Yes	☐	No
1.4	**For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
1.5	**Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
1.6	**Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?**	☐	Yes	☐	No
2.0	**Is this a non-coal (industrial minerals) mining project?** If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	☐	Yes	☒	No
2.1	**Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?**	☐	Yes	☐	No
2.2	**Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?**	☐	Yes	☐	No

2.3	**Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?**	☐	Yes	☐	No
2.4	**For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
2.5	**Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
3.0	**Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well?** If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	☒	Yes	☐	No
3.1	**Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?**	☒	Yes	☐	No
3.2	**Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system?** If "Yes", discuss in *Project Description*.	☐	Yes	☒	No
3.3	**Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
4.0	**Will the project involve a construction activity that results in earth disturbance?** If "Yes", specify the total disturbed acreage.	☒	Yes	☐	No
	4.0.1 Total Disturbed Acreage up to 1.7 acres				
	4.0.2 Will the project discharge or drain to a special protection water (EV or HQ) or an EV wetland?	☐	Yes	☒	No
	4.0.3 Will the project involve a construction activity that results in earth disturbance in the area of the earth disturbance that are contaminated at levels exceeding residential or non-residential medium-specific concentrations (MSCs) in 25 Pa. Code Chapter 250 at residential or non-residential construction sites, respectively?	☐	Yes	☒	No
5.0	**Does the project involve any of the following: water obstruction and/or encroachment, wetland impacts, or floodplain project by the Commonwealth/political subdivision or public utility?** If "Yes", respond to 5.1-5.7. If "No", skip to Question 6.0.	☒	Yes	☐	No
5.1	**Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?**	☒	Yes	☐	No
5.2	**Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?**	☐	Yes	☒	No
5.3	**Floodplain Projects by the Commonwealth, a Political Subdivision of the Commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?**	☐	Yes	☒	No
5.4	**Is your project an interstate transmission natural gas pipeline?**	☐	Yes	☒	No

5.5	**Does your project consist of linear construction activities which result in earth disturbance in two or more DEP regions AND three or more counties?**	☐	Yes	☒	No
5.6	**Does your project utilize Floodplain Restoration as a best management practice for Post Construction Stormwater Management?**	☐	Yes	☒	No
5.7	**Does your project utilize Class V Gravity / Injection Wells as a best management practice for Post Construction Stormwater Management?**	☐	Yes	☒	No
6.0	**Will the project involve discharge of construction related stormwater to a dry swale, surface water, ground water or separate storm water system?**	☐	Yes	☒	No
6.1	**Will the project involve discharge of industrial waste stormwater or wastewater from an industrial activity or sewage to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?**	☐	Yes	☒	No
7.0	**Will the project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
8.0	**Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations?** If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the *Project Description*, where applicable. **8.0.1 Estimated Proposed Flow (gal/day)**	☐	Yes	☒	No
9.0	**Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system?**	☐	Yes	☒	No
	9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	☐	Yes	☐	No
10.0	**Is this project for the beneficial use of biosolids for land application within Pennsylvania?** If "Yes" indicate how much (i.e. gallons or dry tons per year). **10.0.1 Gallons Per Year (residential septage)** _____ **10.0.2 Dry Tons Per Year (biosolids)**	☐	Yes	☒	No
11.0	**Does the project involve construction, modification or removal of a dam?** If "Yes", identify the dam. **11.0.1 Dam Name**	☐	Yes	☒	No
12.0	**Will the project interfere with the flow from, or otherwise impact, a dam?** If "Yes", identify the dam. **12.0.1 Dam Name**	☐	Yes	☒	No
13.0	**Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?**	☐	Yes	☒	No
	13.0.1 If "Yes", is the operation subject to the agricultural exemption in 35 P.S. § 4004.1?	☐	Yes	☐	No
	13.0.2 If the answer to 13.0.1 is "No", identify each type of emission followed by the estimated amount of that emission. **Enter all types & amounts of emissions; separate each set with semicolons.**				

14.0	**Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year?** If "Yes", check all proposed sub-facilities.	☐	Yes	☒	No
	14.0.1 Number of Persons Served _____				
	14.0.2 Number of Employee/Guests _____				
	14.0.3 Number of Connections _____				
	14.0.4 Sub-Fac: Distribution System	☐	Yes	☐	No
	14.0.5 Sub-Fac: Water Treatment Plant	☐	Yes	☐	No
	14.0.6 Sub-Fac: Source	☐	Yes	☐	No
	14.0.7 Sub-Fac: Pump Station	☐	Yes	☐	No
	14.0.8 Sub Fac: Transmission Main	☐	Yes	☐	No
	14.0.9 Sub-Fac: Storage Facility	☐	Yes	☐	No
15.0	**Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?**	☐	Yes	☒	No
16.0	**Is your project to be served by an existing public water supply?** If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	☐	Yes	☒	No
	16.0.1 Supplier's Name _____				
	16.0.2 Letter of Approval from Supplier is Attached	☐	Yes	☐	No
17.0	**Will this project be served by on-lot drinking water wells?**	☐	Yes	☒	No
18.0	**Will this project involve a new or increased drinking water withdrawal from a river, stream, spring, lake, well or other water bod(ies)?** If "Yes", reference Safe Drinking Water Program.	☐	Yes	☒	No
	18.0.1 Source Name				
19.0	**Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste?** If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	☐	Yes	☒	No
	19.0.1 Type & Amount				
20.0	**Will your project involve the removal of coal, minerals, contaminated media, or solid waste as part of any earth disturbance activities?**	☐	Yes	☒	No
21.0	**Does your project involve installation of a field constructed underground storage tank?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	21.0.1 Enter all substances & capacity of each; separate each set with semicolons.				
22.0	**Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	22.0.1 Enter all substances & capacity of each; separate each set with semicolons.				
23.0	**Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	23.0.1 Enter all substances & capacity of each; separate each set with semicolons.				

24.0	**Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **24.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No

NOTE: If the project includes the installation of a regulated storage tank system, including diesel emergency generator systems, the project may require the use of a Department Certified Tank Handler. For a full list of regulated storage tanks and substances, please go to www.dep.pa.gov search term storage tanks

25.0	**Will the intended activity involve the use of a radiation source?**	☐	Yes	☒	No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

For applicants supplying an EIN number: I am applying for a permit or authorization from the Pennsylvania Department of Environmental Protection (DEP). As part of this application, I will provide DEP with an accurate EIN number for the applicant entity. By filing this application with DEP, I hereby authorize DEP to confirm the accuracy of the EIN number provided with the Pennsylvania Department of Revenue. As applicant, I further consent to the Department of Revenue discussing the same with DEP prior to issuance of the Commonwealth permit or authorization.

Type or Print Name Paul A. Kanouff

	Principal	
Signature	**Title**	**Date**

7016 1370 0002 1178 3245

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Mr. Lance Grable, Director
Beaver County Office of Planning and Redevelopment
Beaver County Courthouse
810 Third Street
Beaver, Pennsylvania 15009

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

---

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Lance Grable, Director
Beaver County Office of Planning and Redevelopment
Beaver County Courthouse
810 Third Street
Beaver, Pennsylvania 15009

9590 9402 6060 0125 1335 55

2. Article Number *(Transfer from service label)*
7016 1370 0002 1178 3245

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Jennene Zimmel ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Jennene Zimmel
C. Date of Delivery 3-9-22

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

RECEIVED
MAR 10 2022
By:

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
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- ☐ Signature Confirmation™
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Domestic Return Receipt

March 8, 2022

CERTIFIED TRACKING NO.: 7016 1370 0002 1178 3245

Mr. Lance Grable, Director
Beaver County Office of Planning and Redevelopment
Beaver County Courthouse
810 Third Street
Beaver, Pennsylvania 15009

Dear Mr. Grable:

Subject: Land Use Letter Request
B50 Temporary Aboveground Waterline Project
PennEnergy Resources, LLC
Economy Borough, Beaver County, Pennsylvania
CEC Project 317-457

PennEnergy Resources, LLC (PER) is submitting a Joint Permit Application (JPA) for a Pennsylvania Chapter 105 Water Obstruction and Encroachment Permit and U.S. Army Corps of Engineers (USACE) Section 404 Permit to the Pennsylvania Department of Environmental Protection (PADEP) for temporary stream and floodway impacts associated with the B50 Temporary Aboveground Waterline Project.

The proposed project is located off Cooney Hollow Road in Economy Borough, Beaver County, Pennsylvania. The purpose of this project is to deliver fresh water for the development of shale gas and/or oil. A site location map is enclosed.

Acts 67, 68, and 127, which amended the Municipalities Planning Code, direct state agencies to consider comprehensive plans and zoning ordinances when reviewing applications for permitting of facilities and infrastructure and specify that state agencies may rely upon comprehensive plans and zoning ordinances under certain conditions as described in Sections 619.2 and 1105 of the Municipalities Planning Code. The PADEP's Policy for Consideration of Local Comprehensive Plans and Zoning Ordinances in PADEP Review of Permits for Facilities and Infrastructure (PADEP's Land Use Policy) provides direction and guidance to PADEP staff, permit applicants, and local and county governments for the implementation of Acts 67, 68, and 127 of 2000. This policy can be found at www.dep.pa.gov, search: Land Use.

PADEP invites you to review the attached General Information Form and comment on the land use aspects of this project. Please be specific with descriptions of any areas of conflict. The comments will affect the review process for the permit application. In accordance with PADEP's Land Use Policy, enclosed please find a Land Use letter that is to be submitted with PER's permit application to PADEP.

Please complete the attached land use letter and return within 30 days to:

Civil & Environmental Consultants, Inc.
Attention: Paul A. Kanouff
4350 Northern Pike, Suite 141
Monroeville, Pennsylvania 15146

Please do not send the attached land use letter to PADEP. If the land use letter is not submitted with PER's application and proof is provided to PADEP that PER attempted to obtain the letter, then PADEP will assume there are no substantive land use conflicts and proceed with the normal application review process.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

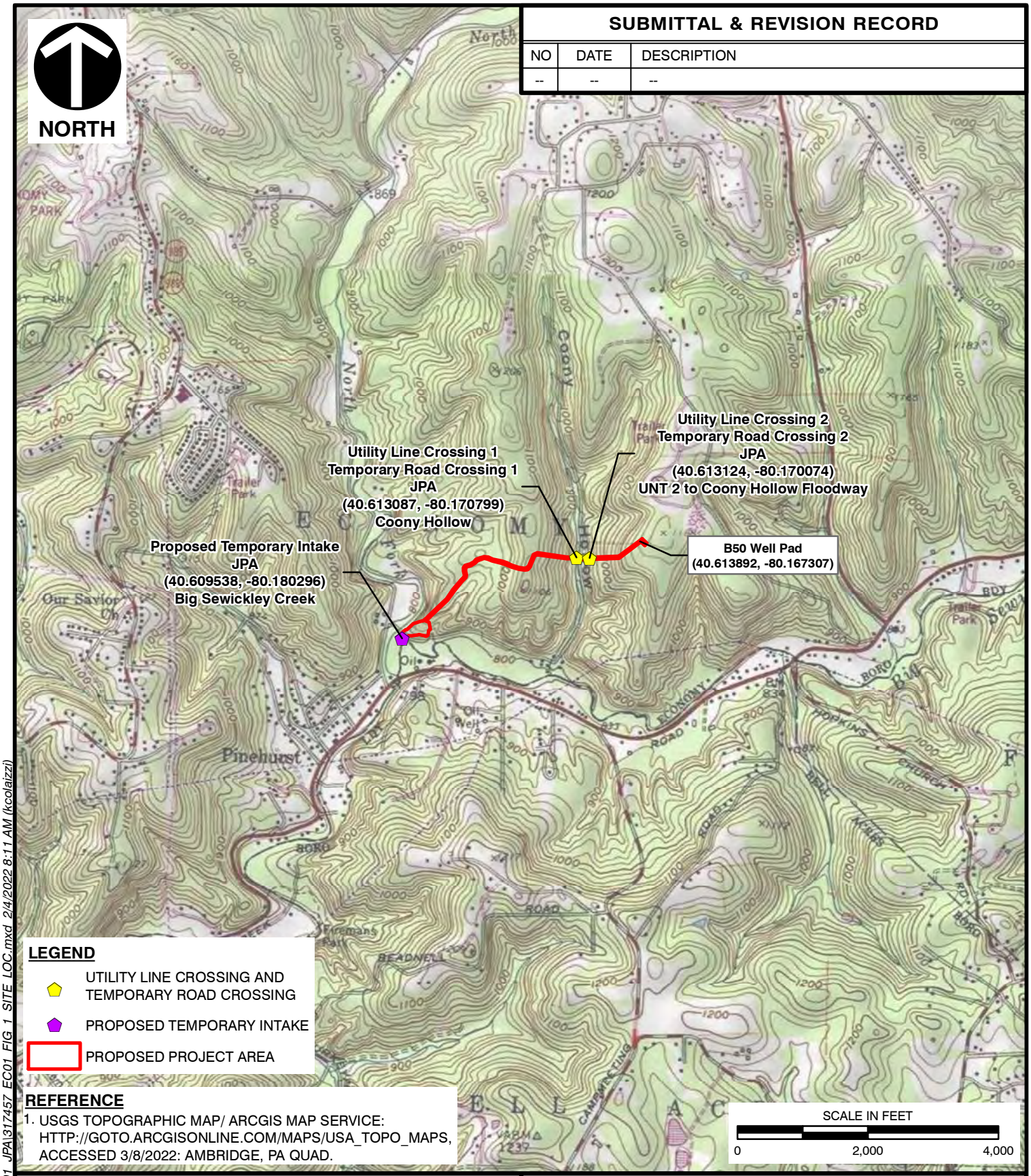
Sarah V. Parker
Assistant Project Manager

Paul A. Kanouff, PWS
Principal

SVP:PAK/ad
Enclosures

cc: Beaver County Commissioners

L-317457.Mar8/P



SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
--	--	--

LEGEND

- UTILITY LINE CROSSING AND TEMPORARY ROAD CROSSING
- PROPOSED TEMPORARY INTAKE
- PROPOSED PROJECT AREA

REFERENCE

1. USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS, ACCESSED 3/8/2022: AMBRIDGE, PA QUAD.

Civil & Environmental Consultants, Inc.
4350 Northern Pike, Suite 141 - Monroeville, PA 15146
724-327-5200 • 800-899-3610
www.cecinc.com

PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

SITE LOCATION MAP

DRAWN BY:	KMC	CHECKED BY:	SVP	APPROVED BY:	PAK*	FIGURE NO:	1
DATE:	03/08/2022	SCALE:	1 " = 2,000 '	PROJECT NO:	317-457	* Hand signature on file	

P:\310-000\317-457\-GIS\Maps\EC01_JPA\317457_EC01_FIG 1_SITE_LOC.mxd 2/4/2022 8:11 AM (kcolaizzi)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This form is used by the Department of Environmental Protection (DEP) to inform our programs regarding what other DEP permits or authorizations may be needed for the proposed project or activity. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the DEP.

Related ID#s (If Known)				DEP USE ONLY
Client ID#		**APS ID#**		Date Received & General Notes
Site ID#		**Auth ID#**		
Facility ID#				

CLIENT INFORMATION

DEP Client ID#	Client Type / Code	Dun & Bradstreet ID#
294943	LLC	

Legal Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Is the EIN a SSN?
PennEnergy Resources, LLC	452673440	☐ Yes ☒ NO

State of Incorporation or Registration of Fictious Name	
PA	☐ Corporation ☒ LLC ☐ Partnership ☐ LLP ☐ LP ☐ Sole Proprietorship ☐ Association/Organization ☐ Estate/Trust ☐ Other

Individual Last Name	First Name	MI	Suffix
N/A			

Additional Individual Last Name	First Name	MI	Suffix
N/A			

Mailing Address Line 1	Mailing Address Line 2
1000 Commerce Drive	Park Place One, Suite 400

Address Last Line – City	State	ZIP+4	Country
Pittsburgh	PA	15275	USA

Client Contact Last Name	First Name	MI	Suffix
Watson	Richard		

Client Contact Title	Phone	Ext	Cell Phone
Project Manager	(412) 935-5027		

Email Address	FAX
rmwatson@pennenergyresources.com	

SITE INFORMATION

DEP Site ID#	Site Name
	B50 Temporary Above-Ground Waterline Project

EPA ID# **Estimated Number of Employees to be Present at Site** N/A

Description of Site
The project area consists of moderate to steep forested slopes and ridgetop, as well as two perennial stream valleys.

Tax Parcel ID(s): 60-185-0266.000, 60-185-0244.000, 60-185-0242.002

County Name(s)	Municipality(ies)	City	Boro	Twp	State
Beaver	Economy Borough	☐	☒	☐	PA

Site Location Line 1	Site Location Line 2
Cooney Hollow Road	

Site Location Last Line – City	State	ZIP+4
Sewickley	PA	15143

Detailed Written Directions to Site
From I-79 N, take exit 73 for PA-910 toward Wexford. Turn left onto PA-910 W/Wexford Bayne Road and drive for 1.9 miles. Continue straight onto Rochester Road and drive for 1.1 miles. Continue straight onto Big Sewickley Creek Road and drive for 2.9 miles. Turn right onto Hoenig Road and drive for 0.2 mile. Turn right onto Cooney Hollow Road and drive for approximately 320 feet. The withdrawal site will be on the right.

Site Contact Last Name	First Name	MI	Suffix
Watson	Richard		

Site Contact Title	Site Contact Firm
Project Manager	PennEnergy Resources, LLC

Mailing Address Line 1	Mailing Address Line 2
1000 Commerce Drive	Park Place One, Suite 400

Address Last Line – City	State	ZIP+4
Pittsburgh	PA	15275

Phone	Ext	FAX	Email Address
(412) 935-5027			rmwatson@pennenergyresources.com

NAICS Codes (Two- & Three-Digit Codes – List All That Apply): 221

6-Digit Code (Optional):

Client to Site Relationship
LESSOP

FACILITY INFORMATION

Modification of Existing Facility	Yes	No
1. **Will this project modify an existing facility, system, or activity?**	☐	☒
2. **Will this project involve an addition to an existing facility, system, or activity?**	☐	☒

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

	Facility Type	DEP Fac ID#		Facility Type	DEP Fac ID#
☐	Air Emission Plant		☐	Industrial Minerals Mining Operation	
☐	Beneficial Use (water)		☐	Laboratory Location	
☐	Blasting Operation		☐	Land Recycling Cleanup Location	
☐	Captive Hazardous Waste Operation		☐	Mine Drainage Treatment / Land Recycling Project Location	
☐	Coal Ash Beneficial Use Operation		☐	Municipal Waste Operation	
☐	Coal Mining Operation		☐	Oil & Gas Encroachment Location	
☐	Coal Pillar Location		☐	Oil & Gas Location	
☐	Commercial Hazardous Waste Operation		☐	Oil & Gas Water Poll Control Facility	
☐	Dam Location		☐	Public Water Supply System	
☐	Deep Mine Safety Operation -Anthracite		☐	Radiation Facility	
☐	Deep Mine Safety Operation -Bituminous		☐	Residual Waste Operation	
☐	Deep Mine Safety Operation -Ind Minerals		☐	Storage Tank Location	
☐	Encroachment Location (water, wetland)		☐	Water Pollution Control Facility	
☐	Erosion & Sediment Control Facility		☐	Water Resource	
☐	Explosive Storage Location		☐	Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Approximate center of site	40	36	41.92	80	10	32.34

Horizontal Accuracy Measure: Feet *--or--* Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☒ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code: GISDR

Reference Point Code: CENTER

Altitude: Feet 790-1,165 *--or--* Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☒ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code: POINT

Geometric Type Code: POINT

Data Collection Date: May 2020 - June 2021

Source Map Scale Number: 1 Inch(es) = 2,000 Feet
--or-- Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
B50 Temporary Above-Ground Waterline Project

Project Description
The project consists of a temporary water withdrawal on Big Sewickley Creek and installation of approximately 0.9 mile of 12-inch diameter high density polyethylene (HDPE) temporary aboveground waterline that will transport fresh water from Big Sewickley Creek to the PER B50 Well Pad.

Project Consultant Last Name	First Name	MI	Suffix
Kanouff	Paul	A	

Project Consultant Title	Consulting Firm
Principal	Civil & Environmental Consultants, Inc.

Mailing Address Line 1	Mailing Address Line 2
4350 Northern Pike	Suite 141

Address Last Line – City	State	ZIP+4
Monroeville	PA	15146

Phone	Ext	FAX	Email Address
(724) 327-5200		(724) 327-5280	pkanouff@cecinc.com

Time Schedules	Project Milestone (Optional)
January 2023	Start and complete installation

1. Is the project located in or within a 0.5-mile radius of an Environmental Justice community as defined by DEP? ☐ Yes ☒ No

To determine if the project is located in or within a 0.5-mile radius of an environmental justice community, please use the online Environmental Justice Areas Viewer.

2. Have you informed the surrounding community prior to submitting the application to the Department? ☒ Yes ☐ No

Method of notification: County and Municipal Letters

3. Have you addressed community concerns that were identified? ☒ Yes ☐ No ☐ N/A

If no, please briefly describe the community concerns that have been expressed and not addressed.

4. Is your project funded by state or federal grants? ☐ Yes ☒ No

Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.

Aspect of Project Related to Grant
Grant Source: _____
Grant Contact Person: _____
Grant Expiration Date: _____

5. Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) ☒ Yes ☐ No

Note: If "No" to Question 5, the application is not subject to the Land Use Policy.
If "Yes" to Question 5, the application is subject to this policy and the Applicant should answer the additional questions in the **Land Use Information** section.

LAND USE INFORMATION

Note: Applicants should submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1.	**Is there an adopted county or multi-county comprehensive plan?**	☒	Yes	☐	No
2.	**Is there a county stormwater management plan?**	☐	Yes	☒	No
3.	**Is there an adopted municipal or multi-municipal comprehensive plan?**	☒	Yes	☐	No
4.	**Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance?** **Note:** If the Applicant answers "No" to either Questions 1, 3 or 4, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 5 and 6 below. If the Applicant answers "Yes" to questions 1, 3 and 4, the Applicant should respond to questions 5 and 6 below.	☒	Yes	☐	No
5.	**Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval?** If zoning approval has been received, attach documentation.	☒	Yes	☐	No
6.	**Have you attached Municipal and County Land Use Letters for the project?**	☒	Yes	☐	No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 utilizing the Project Review Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	**Is this a coal mining project?** If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	☐	Yes	☒	No
1.1	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?**	☐	Yes	☐	No
1.2	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?**	☐	Yes	☐	No
1.3	**Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?**	☐	Yes	☐	No
1.4	**For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
1.5	**Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
1.6	**Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?**	☐	Yes	☐	No
2.0	**Is this a non-coal (industrial minerals) mining project?** If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	☐	Yes	☒	No
2.1	**Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?**	☐	Yes	☐	No
2.2	**Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?**	☐	Yes	☐	No

2.3	**Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?**	☐	Yes	☐	No
2.4	**For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
2.5	**Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
3.0	**Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well?** If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	☒	Yes	☐	No
3.1	**Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?**	☒	Yes	☐	No
3.2	**Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system?** If "Yes", discuss in *Project Description*.	☐	Yes	☒	No
3.3	**Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
4.0	**Will the project involve a construction activity that results in earth disturbance?** If "Yes", specify the total disturbed acreage.	☒	Yes	☐	No
	4.0.1 Total Disturbed Acreage up to 1.7 acres				
	4.0.2 Will the project discharge or drain to a special protection water (EV or HQ) or an EV wetland?	☐	Yes	☒	No
	4.0.3 Will the project involve a construction activity that results in earth disturbance in the area of the earth disturbance that are contaminated at levels exceeding residential or non-residential medium-specific concentrations (MSCs) in 25 Pa. Code Chapter 250 at residential or non-residential construction sites, respectively?	☐	Yes	☒	No
5.0	**Does the project involve any of the following: water obstruction and/or encroachment, wetland impacts, or floodplain project by the Commonwealth/political subdivision or public utility?** If "Yes", respond to 5.1-5.7. If "No", skip to Question 6.0.	☒	Yes	☐	No
5.1	**Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?**	☒	Yes	☐	No
5.2	**Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?**	☐	Yes	☒	No
5.3	**Floodplain Projects by the Commonwealth, a Political Subdivision of the Commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?**	☐	Yes	☒	No
5.4	**Is your project an interstate transmission natural gas pipeline?**	☐	Yes	☒	No

5.5	**Does your project consist of linear construction activities which result in earth disturbance in two or more DEP regions AND three or more counties?**	☐	Yes	☒	No
5.6	**Does your project utilize Floodplain Restoration as a best management practice for Post Construction Stormwater Management?**	☐	Yes	☒	No
5.7	**Does your project utilize Class V Gravity / Injection Wells as a best management practice for Post Construction Stormwater Management?**	☐	Yes	☒	No
6.0	**Will the project involve discharge of construction related stormwater to a dry swale, surface water, ground water or separate storm water system?**	☐	Yes	☒	No
6.1	**Will the project involve discharge of industrial waste stormwater or wastewater from an industrial activity or sewage to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?**	☐	Yes	☒	No
7.0	**Will the project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
8.0	**Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations?** If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the *Project Description*, where applicable. **8.0.1 Estimated Proposed Flow (gal/day)**	☐	Yes	☒	No
9.0	**Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system?**	☐	Yes	☒	No
	9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	☐	Yes	☐	No
10.0	**Is this project for the beneficial use of biosolids for land application within Pennsylvania?** If "Yes" indicate how much (i.e. gallons or dry tons per year). **10.0.1 Gallons Per Year (residential septage)** _____ **10.0.2 Dry Tons Per Year (biosolids)**	☐	Yes	☒	No
11.0	**Does the project involve construction, modification or removal of a dam?** If "Yes", identify the dam. **11.0.1 Dam Name**	☐	Yes	☒	No
12.0	**Will the project interfere with the flow from, or otherwise impact, a dam?** If "Yes", identify the dam. **12.0.1 Dam Name**	☐	Yes	☒	No
13.0	**Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?**	☐	Yes	☒	No
	13.0.1 If "Yes", is the operation subject to the agricultural exemption in 35 P.S. § 4004.1?	☐	Yes	☐	No
	13.0.2 If the answer to 13.0.1 is "No", identify each type of emission followed by the estimated amount of that emission. **Enter all types & amounts of emissions; separate each set with semicolons.**				

14.0	**Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year?** If "Yes", check all proposed sub-facilities.	☐	Yes	☒	No
	14.0.1 Number of Persons Served _____				
	14.0.2 Number of Employee/Guests _____				
	14.0.3 Number of Connections _____				
	14.0.4 Sub-Fac: Distribution System	☐	Yes	☐	No
	14.0.5 Sub-Fac: Water Treatment Plant	☐	Yes	☐	No
	14.0.6 Sub-Fac: Source	☐	Yes	☐	No
	14.0.7 Sub-Fac: Pump Station	☐	Yes	☐	No
	14.0.8 Sub Fac: Transmission Main	☐	Yes	☐	No
	14.0.9 Sub-Fac: Storage Facility	☐	Yes	☐	No
15.0	**Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?**	☐	Yes	☒	No
16.0	**Is your project to be served by an existing public water supply?** If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	☐	Yes	☒	No
	16.0.1 Supplier's Name _____				
	16.0.2 Letter of Approval from Supplier is Attached	☐	Yes	☐	No
17.0	**Will this project be served by on-lot drinking water wells?**	☐	Yes	☒	No
18.0	**Will this project involve a new or increased drinking water withdrawal from a river, stream, spring, lake, well or other water bod(ies)?** If "Yes", reference Safe Drinking Water Program.	☐	Yes	☒	No
	18.0.1 Source Name				
19.0	**Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste?** If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	☐	Yes	☒	No
	19.0.1 Type & Amount				
20.0	**Will your project involve the removal of coal, minerals, contaminated media, or solid waste as part of any earth disturbance activities?**	☐	Yes	☒	No
21.0	**Does your project involve installation of a field constructed underground storage tank?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	21.0.1 Enter all substances & capacity of each; separate each set with semicolons.				
22.0	**Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	22.0.1 Enter all substances & capacity of each; separate each set with semicolons.				
23.0	**Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	23.0.1 Enter all substances & capacity of each; separate each set with semicolons.				

24.0	**Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **24.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No

NOTE: If the project includes the installation of a regulated storage tank system, including diesel emergency generator systems, the project may require the use of a Department Certified Tank Handler. For a full list of regulated storage tanks and substances, please go to www.dep.pa.gov search term storage tanks

25.0	**Will the intended activity involve the use of a radiation source?**	☐	Yes	☒	No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

For applicants supplying an EIN number: I am applying for a permit or authorization from the Pennsylvania Department of Environmental Protection (DEP). As part of this application, I will provide DEP with an accurate EIN number for the applicant entity. By filing this application with DEP, I hereby authorize DEP to confirm the accuracy of the EIN number provided with the Pennsylvania Department of Revenue. As applicant, I further consent to the Department of Revenue discussing the same with DEP prior to issuance of the Commonwealth permit or authorization.

Type or Print Name Paul A. Kanouff

	Principal	
Signature	**Title**	**Date**

COUNTY LAND USE LETTER

Date: _____

To: Civil & Environmental Consultants, Inc.

From: Beaver County

Re: PennEnergy Resources, LLC
B50 Temporary Aboveground Waterline Project

Beaver County states that it:

____ Has adopted a municipal or multi-municipal comprehensive plan.
If yes, please provide date of adoption: _____

____ Has not adopted a municipal or multi-municipal comprehensive plan.

If applicable:

The above referenced project:

___ Is consistent with the adopted county or multi-county comprehensive plan.

___ Is not consistent with the adopted county or multi-county comprehensive plan.

Additional Comments (attach additional sheets if necessary):

_____

_____

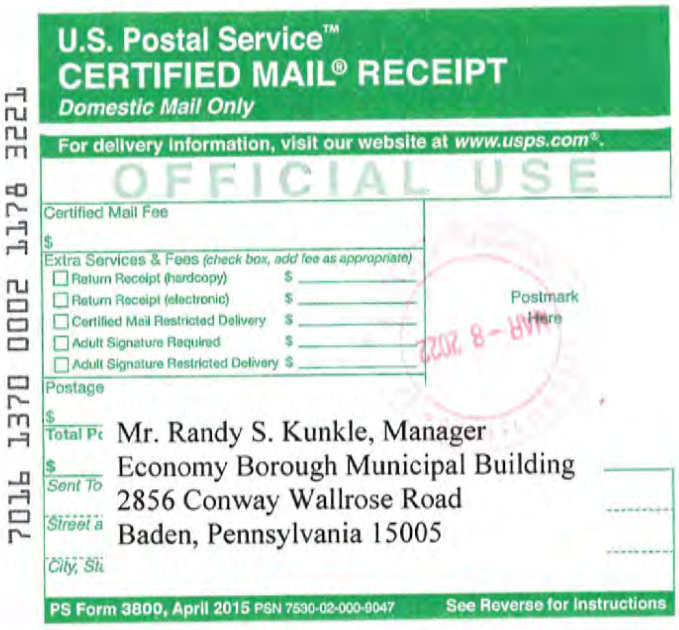
_____

_____

_____

Submitted By:

Name	
Title	
Contact Information (Address & Phone)	
Signature	
Date	



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Domestic Mail Only

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OFFICIAL USE

Certified Mail Fee
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Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total Pc
$

Sent To
Mr. Randy S. Kunkle, Manager
Economy Borough Municipal Building
2856 Conway Wallrose Road

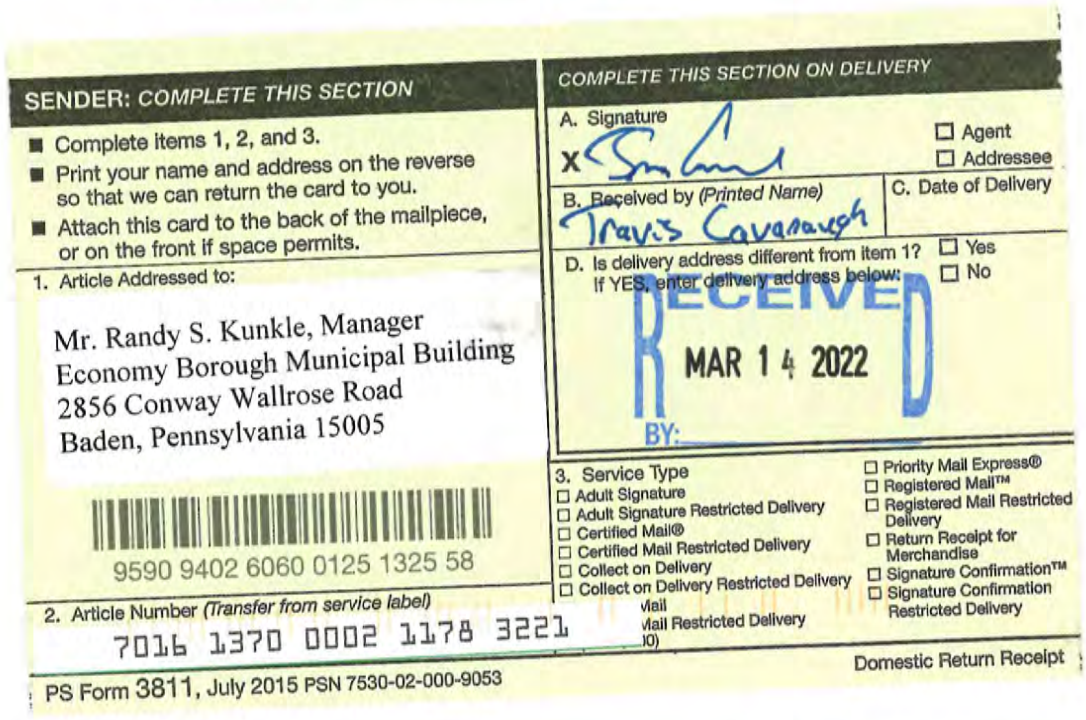
Street a
Baden, Pennsylvania 15005

City, St

Postmark Here

7016 1370 0002 1178 3221

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Randy S. Kunkle, Manager
Economy Borough Municipal Building
2856 Conway Wallrose Road
Baden, Pennsylvania 15005

9590 9402 6060 0125 1325 58

2. Article Number (Transfer from service label)
7016 1370 0002 1178 3221

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X
☐ Agent
☐ Addressee

B. Received by (Printed Name) Travis Cavanaugh
C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

RECEIVED
MAR 14 2022
BY:

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

March 8, 2022

CERTIFIED TRACKING NO.: 7016 1370 0002 1178 3221

Mr. Randy S. Kunkle, Manager
Economy Borough Municipal Building
2856 Conway Wallrose Road
Baden, Pennsylvania 15005

Dear Mr. Kunkle:

Subject: Municipal Notification and Land Use Request
B50 Temporary Aboveground Waterline Project
PennEnergy Resources, LLC
Economy Borough, Beaver County, Pennsylvania
CEC Project 317-457

This notice, under the requirements of Acts 14, 67, 68, and 127 of the Municipalities Planning Code, is to inform you that PennEnergy Resources, LLC (PER) is submitting a Joint Permit Application (JPA) for a Pennsylvania Chapter 105 Water Obstruction and Encroachment Permit and U.S. Army Corps of Engineers (USACE) Section 404 Permit to the Pennsylvania Department of Environmental Protection (PADEP) for temporary stream and floodway impacts associated with the B50 Temporary Aboveground Waterline Project.

The proposed project is located off Cooney Hollow Road in Economy Borough, Beaver County, Pennsylvania. The purpose of this project is to deliver fresh water for the development of shale gas and/or oil. A site location map is enclosed.

Enclosed is a copy of the General Information Form. If you wish to submit comments to the PADEP, you must respond within 30 days to the PADEP Permitting and Technical Services Section at Pennsylvania Department of Environmental Protection, Southwest Regional Office, 400 Waterfront Drive, Pittsburgh, Pennsylvania 15222. If you do not submit comments by the end of the comment period, PADEP will assume that there are no substantive conflicts and proceed with the normal application review process.

Acts 67, 68, and 127, which amended the Municipalities Planning Code, direct state agencies to consider comprehensive plans and zoning ordinances when reviewing applications for permitting of facilities and infrastructure and specify that state agencies may rely upon comprehensive plans and zoning ordinances under certain conditions as described in Sections 619.2 and 1105 of the Municipalities Planning Code. The PADEP's Policy for Consideration of Local Comprehensive Plans and Zoning Ordinances in PADEP Review of Permits for Facilities and Infrastructure (PADEP's Land Use Policy) provides direction and guidance to PADEP staff, permit applicants, and local and county governments for the implementation of Acts 67, 68, and 127 of 2000. This policy can be found at www.dep.pa.gov, search: Land Use. In accordance with PADEP's Land Use Policy, enclosed please find a Land Use letter that is to be submitted with PER's permit application to PADEP.

Please complete the attached land use letter and return within 30 days to:

Civil & Environmental Consultants, Inc.
Attention: Paul A. Kanouff
4350 Northern Pike, Suite 141
Monroeville, Pennsylvania 15146

Please do not send the attached land use letter to PADEP. If the land use letter is not submitted with PER's application and proof is provided to PADEP that PER attempted to obtain the letter, then PADEP will assume there are no substantive land use conflicts and proceed with the normal application review process.

Sincerely,

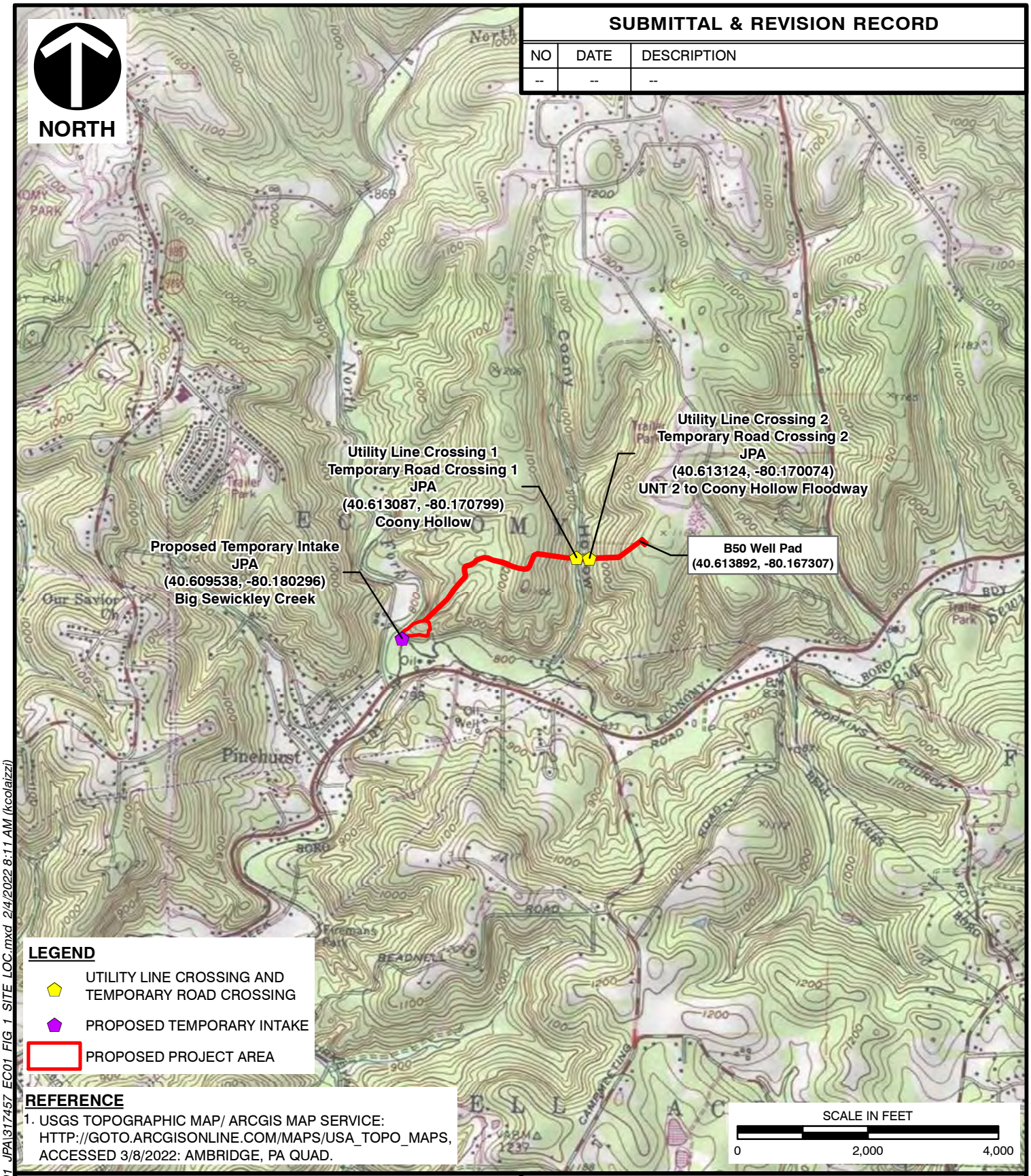
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Sarah V. Parker
Assistant Project Manager

Paul A. Kanouff, PWS
Principal

SVP:PAK/ad
Enclosures

L-317457.Mar8/P



SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
--	--	--

LEGEND

- UTILITY LINE CROSSING AND TEMPORARY ROAD CROSSING
- PROPOSED TEMPORARY INTAKE
- PROPOSED PROJECT AREA

REFERENCE

1. USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS, ACCESSED 3/8/2022: AMBRIDGE, PA QUAD.

Civil & Environmental Consultants, Inc.
4350 Northern Pike, Suite 141 - Monroeville, PA 15146
724-327-5200 • 800-899-3610
www.cecinc.com

PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

SITE LOCATION MAP

DRAWN BY:	KMC	CHECKED BY:	SVP	APPROVED BY:	PAK*	FIGURE NO:	1
DATE:	03/08/2022	SCALE:	1 " = 2,000 '	PROJECT NO:	317-457	* Hand signature on file	

P:\310-000\317-457\-GIS\Maps\EC01_JPA\317457_EC01_FIG 1_SITE_LOC.mxd 2/4/2022 8:11 AM (kcolaizzi)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This form is used by the Department of Environmental Protection (DEP) to inform our programs regarding what other DEP permits or authorizations may be needed for the proposed project or activity. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the DEP.

Related ID#s (If Known)				DEP USE ONLY
Client ID#		**APS ID#**		Date Received & General Notes
Site ID#		**Auth ID#**		
Facility ID#				

CLIENT INFORMATION

DEP Client ID#	Client Type / Code	Dun & Bradstreet ID#
294943	LLC	

Legal Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Is the EIN a SSN?
PennEnergy Resources, LLC	452673440	☐ Yes ☒ NO

State of Incorporation or Registration of Fictious Name	
PA	☐ Corporation ☒ LLC ☐ Partnership ☐ LLP ☐ LP ☐ Sole Proprietorship ☐ Association/Organization ☐ Estate/Trust ☐ Other

Individual Last Name	First Name	MI	Suffix
N/A			

Additional Individual Last Name	First Name	MI	Suffix
N/A			

Mailing Address Line 1	Mailing Address Line 2
1000 Commerce Drive	Park Place One, Suite 400

Address Last Line – City	State	ZIP+4	Country
Pittsburgh	PA	15275	USA

Client Contact Last Name	First Name	MI	Suffix
Watson	Richard		

Client Contact Title	Phone	Ext	Cell Phone
Project Manager	(412) 935-5027		

Email Address	FAX
rmwatson@pennenergyresources.com	

SITE INFORMATION

DEP Site ID#	Site Name
	B50 Temporary Above-Ground Waterline Project

EPA ID# **Estimated Number of Employees to be Present at Site** N/A

Description of Site
The project area consists of moderate to steep forested slopes and ridgetop, as well as two perennial stream valleys.

Tax Parcel ID(s): 60-185-0266.000, 60-185-0244.000, 60-185-0242.002

County Name(s)	Municipality(ies)	City	Boro	Twp	State
Beaver	Economy Borough	☐	☒	☐	PA

Site Location Line 1	Site Location Line 2
Cooney Hollow Road	

Site Location Last Line – City	State	ZIP+4
Sewickley	PA	15143

Detailed Written Directions to Site
From I-79 N, take exit 73 for PA-910 toward Wexford. Turn left onto PA-910 W/Wexford Bayne Road and drive for 1.9 miles. Continue straight onto Rochester Road and drive for 1.1 miles. Continue straight onto Big Sewickley Creek Road and drive for 2.9 miles. Turn right onto Hoenig Road and drive for 0.2 mile. Turn right onto Cooney Hollow Road and drive for approximately 320 feet. The withdrawal site will be on the right.

Site Contact Last Name	First Name	MI	Suffix
Watson	Richard		

Site Contact Title	Site Contact Firm
Project Manager	PennEnergy Resources, LLC

Mailing Address Line 1	Mailing Address Line 2
1000 Commerce Drive	Park Place One, Suite 400

Address Last Line – City	State	ZIP+4
Pittsburgh	PA	15275

Phone	Ext	FAX	Email Address
(412) 935-5027			rmwatson@pennenergyresources.com

NAICS Codes (Two- & Three-Digit Codes – List All That Apply): 221

6-Digit Code (Optional):

Client to Site Relationship
LESSOP

FACILITY INFORMATION

Modification of Existing Facility	Yes	No
1. **Will this project modify an existing facility, system, or activity?**	☐	☒
2. **Will this project involve an addition to an existing facility, system, or activity?**	☐	☒

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

	Facility Type	DEP Fac ID#		Facility Type	DEP Fac ID#
☐	Air Emission Plant		☐	Industrial Minerals Mining Operation	
☐	Beneficial Use (water)		☐	Laboratory Location	
☐	Blasting Operation		☐	Land Recycling Cleanup Location	
☐	Captive Hazardous Waste Operation		☐	Mine Drainage Treatment / Land Recycling Project Location	
☐	Coal Ash Beneficial Use Operation		☐	Municipal Waste Operation	
☐	Coal Mining Operation		☐	Oil & Gas Encroachment Location	
☐	Coal Pillar Location		☐	Oil & Gas Location	
☐	Commercial Hazardous Waste Operation		☐	Oil & Gas Water Poll Control Facility	
☐	Dam Location		☐	Public Water Supply System	
☐	Deep Mine Safety Operation -Anthracite		☐	Radiation Facility	
☐	Deep Mine Safety Operation -Bituminous		☐	Residual Waste Operation	
☐	Deep Mine Safety Operation -Ind Minerals		☐	Storage Tank Location	
☐	Encroachment Location (water, wetland)		☐	Water Pollution Control Facility	
☐	Erosion & Sediment Control Facility		☐	Water Resource	
☐	Explosive Storage Location		☐	Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Approximate center of site	40	36	41.92	80	10	32.34

Horizontal Accuracy Measure: Feet *--or--* Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☒ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code: GISDR

Reference Point Code: CENTER

Altitude: Feet 790-1,165 *--or--* Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☒ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code: POINT

Geometric Type Code: POINT

Data Collection Date: May 2020 - June 2021

Source Map Scale Number: 1 Inch(es) = 2,000 Feet
--or-- Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
B50 Temporary Above-Ground Waterline Project

Project Description
The project consists of a temporary water withdrawal on Big Sewickley Creek and installation of approximately 0.9 mile of 12-inch diameter high density polyethylene (HDPE) temporary aboveground waterline that will transport fresh water from Big Sewickley Creek to the PER B50 Well Pad.

Project Consultant Last Name	First Name	MI	Suffix
Kanouff	Paul	A	

Project Consultant Title	Consulting Firm
Principal	Civil & Environmental Consultants, Inc.

Mailing Address Line 1	Mailing Address Line 2
4350 Northern Pike	Suite 141

Address Last Line – City	State	ZIP+4
Monroeville	PA	15146

Phone	Ext	FAX	Email Address
(724) 327-5200		(724) 327-5280	pkanouff@cecinc.com

Time Schedules	Project Milestone (Optional)
January 2023	Start and complete installation

1. Is the project located in or within a 0.5-mile radius of an Environmental Justice community as defined by DEP? ☐ Yes ☒ No

To determine if the project is located in or within a 0.5-mile radius of an environmental justice community, please use the online Environmental Justice Areas Viewer.

2. Have you informed the surrounding community prior to submitting the application to the Department? ☒ Yes ☐ No

Method of notification: County and Municipal Letters

3. Have you addressed community concerns that were identified? ☒ Yes ☐ No ☐ N/A

If no, please briefly describe the community concerns that have been expressed and not addressed.

4. Is your project funded by state or federal grants? ☐ Yes ☒ No

Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.

Aspect of Project Related to Grant
Grant Source: _____
Grant Contact Person: _____
Grant Expiration Date: _____

5. Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) ☒ Yes ☐ No

Note: If "No" to Question 5, the application is not subject to the Land Use Policy.
If "Yes" to Question 5, the application is subject to this policy and the Applicant should answer the additional questions in the **Land Use Information** section.

LAND USE INFORMATION

Note: Applicants should submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1.	**Is there an adopted county or multi-county comprehensive plan?**	☒	Yes	☐	No
2.	**Is there a county stormwater management plan?**	☐	Yes	☒	No
3.	**Is there an adopted municipal or multi-municipal comprehensive plan?**	☒	Yes	☐	No
4.	**Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance?** **Note:** If the Applicant answers "No" to either Questions 1, 3 or 4, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 5 and 6 below. If the Applicant answers "Yes" to questions 1, 3 and 4, the Applicant should respond to questions 5 and 6 below.	☒	Yes	☐	No
5.	**Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval?** If zoning approval has been received, attach documentation.	☒	Yes	☐	No
6.	**Have you attached Municipal and County Land Use Letters for the project?**	☒	Yes	☐	No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 utilizing the Project Review Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	**Is this a coal mining project?** If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	☐	Yes	☒	No
1.1	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?**	☐	Yes	☐	No
1.2	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?**	☐	Yes	☐	No
1.3	**Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?**	☐	Yes	☐	No
1.4	**For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
1.5	**Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
1.6	**Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?**	☐	Yes	☐	No
2.0	**Is this a non-coal (industrial minerals) mining project?** If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	☐	Yes	☒	No
2.1	**Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?**	☐	Yes	☐	No
2.2	**Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?**	☐	Yes	☐	No

2.3	**Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?**	☐	Yes	☐	No
2.4	**For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
2.5	**Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
3.0	**Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well?** If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	☒	Yes	☐	No
3.1	**Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?**	☒	Yes	☐	No
3.2	**Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system?** If "Yes", discuss in *Project Description*.	☐	Yes	☒	No
3.3	**Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
4.0	**Will the project involve a construction activity that results in earth disturbance?** If "Yes", specify the total disturbed acreage.	☒	Yes	☐	No
	4.0.1 Total Disturbed Acreage up to 1.7 acres				
	4.0.2 Will the project discharge or drain to a special protection water (EV or HQ) or an EV wetland?	☐	Yes	☒	No
	4.0.3 Will the project involve a construction activity that results in earth disturbance in the area of the earth disturbance that are contaminated at levels exceeding residential or non-residential medium-specific concentrations (MSCs) in 25 Pa. Code Chapter 250 at residential or non-residential construction sites, respectively?	☐	Yes	☒	No
5.0	**Does the project involve any of the following: water obstruction and/or encroachment, wetland impacts, or floodplain project by the Commonwealth/political subdivision or public utility?** If "Yes", respond to 5.1-5.7. If "No", skip to Question 6.0.	☒	Yes	☐	No
5.1	**Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?**	☒	Yes	☐	No
5.2	**Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?**	☐	Yes	☒	No
5.3	**Floodplain Projects by the Commonwealth, a Political Subdivision of the Commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?**	☐	Yes	☒	No
5.4	**Is your project an interstate transmission natural gas pipeline?**	☐	Yes	☒	No

5.5	**Does your project consist of linear construction activities which result in earth disturbance in two or more DEP regions AND three or more counties?**	☐	Yes	☒	No
5.6	**Does your project utilize Floodplain Restoration as a best management practice for Post Construction Stormwater Management?**	☐	Yes	☒	No
5.7	**Does your project utilize Class V Gravity / Injection Wells as a best management practice for Post Construction Stormwater Management?**	☐	Yes	☒	No
6.0	**Will the project involve discharge of construction related stormwater to a dry swale, surface water, ground water or separate storm water system?**	☐	Yes	☒	No
6.1	**Will the project involve discharge of industrial waste stormwater or wastewater from an industrial activity or sewage to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?**	☐	Yes	☒	No
7.0	**Will the project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
8.0	**Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations?** If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the *Project Description*, where applicable. **8.0.1 Estimated Proposed Flow (gal/day)**	☐	Yes	☒	No
9.0	**Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system?**	☐	Yes	☒	No
	9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	☐	Yes	☐	No
10.0	**Is this project for the beneficial use of biosolids for land application within Pennsylvania?** If "Yes" indicate how much (i.e. gallons or dry tons per year). **10.0.1 Gallons Per Year (residential septage)** _____ **10.0.2 Dry Tons Per Year (biosolids)**	☐	Yes	☒	No
11.0	**Does the project involve construction, modification or removal of a dam?** If "Yes", identify the dam. **11.0.1 Dam Name**	☐	Yes	☒	No
12.0	**Will the project interfere with the flow from, or otherwise impact, a dam?** If "Yes", identify the dam. **12.0.1 Dam Name**	☐	Yes	☒	No
13.0	**Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?**	☐	Yes	☒	No
	13.0.1 If "Yes", is the operation subject to the agricultural exemption in 35 P.S. § 4004.1?	☐	Yes	☐	No
	13.0.2 If the answer to 13.0.1 is "No", identify each type of emission followed by the estimated amount of that emission. **Enter all types & amounts of emissions; separate each set with semicolons.**				

14.0	**Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year?** If "Yes", check all proposed sub-facilities.	☐	Yes	☒	No
	14.0.1 Number of Persons Served _____				
	14.0.2 Number of Employee/Guests _____				
	14.0.3 Number of Connections _____				
	14.0.4 Sub-Fac: Distribution System	☐	Yes	☐	No
	14.0.5 Sub-Fac: Water Treatment Plant	☐	Yes	☐	No
	14.0.6 Sub-Fac: Source	☐	Yes	☐	No
	14.0.7 Sub-Fac: Pump Station	☐	Yes	☐	No
	14.0.8 Sub Fac: Transmission Main	☐	Yes	☐	No
	14.0.9 Sub-Fac: Storage Facility	☐	Yes	☐	No
15.0	**Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?**	☐	Yes	☒	No
16.0	**Is your project to be served by an existing public water supply?** If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	☐	Yes	☒	No
	16.0.1 Supplier's Name _____				
	16.0.2 Letter of Approval from Supplier is Attached	☐	Yes	☐	No
17.0	**Will this project be served by on-lot drinking water wells?**	☐	Yes	☒	No
18.0	**Will this project involve a new or increased drinking water withdrawal from a river, stream, spring, lake, well or other water bod(ies)?** If "Yes", reference Safe Drinking Water Program.	☐	Yes	☒	No
	18.0.1 Source Name				
19.0	**Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste?** If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	☐	Yes	☒	No
	19.0.1 Type & Amount				
20.0	**Will your project involve the removal of coal, minerals, contaminated media, or solid waste as part of any earth disturbance activities?**	☐	Yes	☒	No
21.0	**Does your project involve installation of a field constructed underground storage tank?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	21.0.1 Enter all substances & capacity of each; separate each set with semicolons.				
22.0	**Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	22.0.1 Enter all substances & capacity of each; separate each set with semicolons.				
23.0	**Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	23.0.1 Enter all substances & capacity of each; separate each set with semicolons.				

24.0	**Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **24.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No

NOTE: If the project includes the installation of a regulated storage tank system, including diesel emergency generator systems, the project may require the use of a Department Certified Tank Handler. For a full list of regulated storage tanks and substances, please go to www.dep.pa.gov search term storage tanks

25.0	**Will the intended activity involve the use of a radiation source?**	☐	Yes	☒	No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

For applicants supplying an EIN number: I am applying for a permit or authorization from the Pennsylvania Department of Environmental Protection (DEP). As part of this application, I will provide DEP with an accurate EIN number for the applicant entity. By filing this application with DEP, I hereby authorize DEP to confirm the accuracy of the EIN number provided with the Pennsylvania Department of Revenue. As applicant, I further consent to the Department of Revenue discussing the same with DEP prior to issuance of the Commonwealth permit or authorization.

Type or Print Name Paul A. Kanouff

	Principal	
Signature	**Title**	**Date**

MUNICIPAL LAND USE LETTER

Date: _____

To: Civil & Environmental Consultants, Inc.

From: Economy Borough

Re: PennEnergy Resources, LLC
B50 Temporary Aboveground Waterline Project

Economy Borough states that it:

____ Has adopted a municipal or multi-municipal comprehensive plan.
If yes, please provide date of adoption: _____

____ Has not adopted a municipal or multi-municipal comprehensive plan.

Economy Borough states that it:

____ Has adopted a county zoning ordinance, or a municipal or joint-municipal zoning ordinance.

____ Has not adopted a county zoning ordinance, or a municipal or joint-municipal zoning ordinance.

If applicable:

Economy Borough states that its zoning ordinance is generally consistent with its municipal comprehensive plan and the county comprehensive plan.

The above referenced proposed project:

___ Meets the provisions of the local zoning ordinance.

If zoning approval is required for the project to proceed, the above referenced project:

___ Has received zoning approval.
___ Has not received zoning approval.

If the proposed project has not received zoning approval:

What is the status of the zoning request for the proposed project? (e.g., Special Exception Approval from the Zoning Hearing Board required, Conditional Use approval from the Governing Body required)

_____

_____

_____

Re: PennEnergy Resources, LLC
B50 Temporary Aboveground Waterline Project

MUNICIPAL LAND USE LETTER
(Continued)

Is there a legal challenge by the applicant with regard to zoning for the proposed project? ___

Name and Contact Information for Municipal Zoning Officer:

_____

_____

_____

Additional Comments (attach additional sheets if necessary):

_____

_____

_____

_____

_____

Submitted By:

Name	
Title	
Contact Information (Address & Phone)	
Signature	
Date	

BEAVER COUNTY PLANNING COMMISSION

Date: March 29, 2022

To: Civil & Environmental Consultants, Inc.
Attention Paul Kanouff
4350 Northern Pike Suite 141
Monroeville, PA 15146

From: Beaver County Planning Commission

Re: Act 14, 67, 68 and 127 Notifications for –Application for a Chapter 105 and U.S. Army Corps of Engineers Section 404 Joint Permit
B50 Temporary Above Ground Waterline Project
Economy Borough, Beaver County, PA

The County of Beaver states that it:

X___ has adopted a county or multi-county comprehensive plan.
If yes, please provide date of adoption: May 2010

The above referenced project:
_X_ is consistent with the adopted county or multi-county comprehensive plan.
___ is not consistent with the adopted county or multi-county comprehensive plan.

Additional Comments:

1. PennEnergy Resources, LLC is applying for Chapter 105 and USACE Section 404 Joint Permit. The proposed project consists of a temporary water withdrawal on Big Sewickley Creek and installation of approximately 0.9 mile of 12 inch high density polyethylene temporary above ground waterline that will transport fresh water from Big Sewickley Creek to the B50 Well Pad.

2. This consistency letter does not waive any local or county land development or subdivision submission requirements. Please confirm that all plans have been submitted to applicable municipalities and county agencies for review and comment in accordance with the PA Municipal Planning Code.

Submitted by: Beaver County Office of Planning and Redevelopment

Daniel M. Distler, CFM
Environmental Planner/Redevelopment Specialist

Signature:

Date: March 29, 2022

Cc: Joseph C. West, Planning Director
File

MUNICIPAL LAND USE LETTER

Date: 11 Mar 22

To: Civil & Environmental Consultants, Inc.

From: Economy Borough

Re: PennEnergy Resources, LLC
B50 Temporary Aboveground Waterline Project

Economy Borough states that it:

_X_ Has adopted a municipal or multi-municipal comprehensive plan.
If yes, please provide date of adoption: 22 Aug 2006

____ Has not adopted a municipal or multi-municipal comprehensive plan.

Economy Borough states that it:

_X_ Has adopted a county zoning ordinance, or a municipal or joint-municipal zoning ordinance.

____ Has not adopted a county zoning ordinance, or a municipal or joint-municipal zoning ordinance.

If applicable:

Economy Borough states that its zoning ordinance is generally consistent with its municipal comprehensive plan and the county comprehensive plan.

The above referenced proposed project:

_X_ Meets the provisions of the local zoning ordinance.

If zoning approval is required for the project to proceed, the above referenced project:

___ Has received zoning approval.
___ Has not received zoning approval.

If the proposed project has not received zoning approval:

What is the status of the zoning request for the proposed project? (e.g., Special Exception Approval from the Zoning Hearing Board required, Conditional Use approval from the Governing Body required)

_____

_____

_____

Re: PennEnergy Resources, LLC
B50 Temporary Aboveground Waterline Project

MUNICIPAL LAND USE LETTER
(Continued)

Is there a legal challenge by the applicant with regard to zoning for the proposed project? ___

Name and Contact Information for Municipal Zoning Officer:

John Thomas 2856 Conway Wallrose Rd Baden, PA 15005 724 869 4779 x5

john@economyborough.org

Additional Comments (attach additional sheets if necessary):

Submitted By:

Name	Randy S Kunkle
Title	Borough Manager
Contact Information (Address & Phone)	2856 Conway Wallrose Rd Baden, PA 15005 724 869 4779 x1
Signature	
Date	11 Mar 22

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY	Reviewers: ____/____
DATE RECEIVED:	DATE DUE:
ER NUMBER:	HRSF: _____

REV: 06/2018

SECTION A: PROJECT NAME & LOCATION

Is this a new submittal? (•) YES ( ) NO **OR** ( ) **This is additional information for ER Number:**

Project Name: B50 Temporary Above-Ground Waterline | County: Beaver | Municipality: Economy

Project Address: 40.611725, -80.173837 | City/State/ Zip: Sewickley | PA | 15143

SECTION B: CONTACT INFORMATION & MAILING ADDRESS

Name: Jim Snyder | Phone: (877) 746-0749

Company: Civil & Environmental Consultants, Inc. | Fax: (317) 655-7778

Street/PO Box: 530 E Ohio Street, Suite G | Email: jsnyder@cecinc.com

City/State/Zip: Indianapolis | IN | 46204

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☐ Federal property ☐ State property ☐ Municipal property ☑ Private property

List all federal and state agencies and programs providing funds, permits, licenses.

Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)
State	PADEP	JPA
Federal	USACE	404 Permit

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☑ Construc on ☐ Demoli on ☐ Rehabili on ☐ Disposi on

Total acres of project area: 5 | Total acres of earth disturbance: 2

Are there any buildings or structures within the project area? ( ) Yes (•) No | Approximate age of buildings:

Does this project involve prop es listed in or eligible for the Na onal Register of Historic Places, or designated as historic by a local government?	Yes	No	Unsure	Name of historic property or historic districts
	( )	(•)	( )	

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

- ☑ **Map –** 7.5' USGS quad showing project boundary and Area of Poten al Effect
- ☑ **Description/Scope –** Describe the project, including any ground disturbance and previous land use
- ☑ **Site Plans/Drawings –** Indicate past and present land use, location and dates of buildings, and proposed improvements
- ☑ **Photographs –** A ch prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

SHPO DETERMINATION (SHPO USE ONLY)

- ☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☐ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties:
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

SHPO REVIEWER: _____ **DATE:** _____

PROJECT DESCRIPTION

PennEnergy Resources, LLC (PER) is proposing the B50 Temporary Above-Ground Waterline Project located in Economy Borough, Beaver County, Pennsylvania (Figures 1–20). The overall project involves a water intake, a temporary above ground waterline, a staging area, and an intersection widening. The proposed project area is 2 ha (5 ac), but the anticipated earth disturbance is only 0.8 ha (2 ac). Earth disturbance will occur at the two crossings of Cooney Hollow Road, the crossing of Cooney Hollow, the staging area, and the intersection widening. No other digging or excavation is needed for this project because the water intake and aboveground sections of waterline are temporary. With the exception of the two road crossings and the one stream crossing, the waterline will be placed directly on the ground surface. The intersection widening and staging area are outside any Corps jurisdictional areas and will require ground disturbances.

A background and literature review was conducted on December 20, 2021, using the data available on the Pennsylvania State Historic Preservation Office (PHMC) online Pennsylvania's Historic & Archaeological Resource Exchange (PA-SHARE). Four archaeological surveys have been conducted within the 1.6 km (1 mi) radius of the project area: Baker 1997, Davis 1999, Davis et al. 2000, and Davis and Biondich 2009. The project area has been encapsulated by the Davis et al. 2000 Phase I survey.

Three archaeological sites have been recorded within the records check area (Table 1). Site types include pre-contact (n=2) and historic (n=1). The closest archaeological site (36AL351-Hopkins Cemetery) is located 1.1 km (0.68 mi) southeast of the project area.

Table 1. Archaeological Resources within the Records Check Area

Site No.	Site Name	Temporal Period	Site Type	NR Eligibility	Assoc. Survey
36BV246	Slappo Farm	Pre-contact	Open	Undetermined	Amateur Survey 1989
36AL351	Hopkins Cemetery	Historic	Cemetery	Undetermined	
36BV344	Economy #2	Pre-contact	Lithic scatter	Not eligible	Davis et al. 2000

There are four aboveground historic sites within the records check area (Table 2). These resources include houses (n=3) and a structure (n=1). The closest above ground (Key#7835-Dede Strouse) resource is located 0.14 mi (0.23 km) south of the project area.

Table 2. Above Ground Resources within the Records Check Area

Key No.	Resource Name	Address	Dates	NR Eligibility
7835	Dede Strouse		1880–1899	Undetermined
7836	Drewnoski House	564 Big Sewickley Creek Road	1860–1879	Undetermined
7810	Mr. And Mrs. Richard Smith	Ortis Road, off Big Sewickley Creek Road	1820–1839	Undetermined
129452		Sewickley Creek Road; Allegheny-Beaver County Line		Not Eligible

There is one cemetery (36AL351/Hopkins Cemetery) mapped in the PA-SHARE. The 7.5-minute USGS topographic maps show no cemeteries located within the records check area.

Pre-contact probability layers on PA-SHARE show that approximately 10 percent of the project area is within high pre-contact probability areas, 45 percent is within moderate pre-contact probability areas, and 45 percent is within low pre-contact probability areas.

The 1906 Sewickley, PA, 15-minute quadrangle shows nothing in the project area (Figure 4). The 1953, 1960, 1969, 1979, and 1990 Ambridge, PA, 7.5-minute topographic maps show nothing in the project area (Figures 2, 5, and 6). Historic aerial photographs from 1939, 1949, 1958, and 1967 were examined for cultural resources and land use changes (Figures 7–10). Images show no land changes throughout the years.

Google Earth imagery from 1993–2020 reveals the landscape in the general vicinity has not changed drastically through the images (Figure 3). The only change was from 2019 to 2020 when the well pad on the eastern portion of the project area was constructed. The project is currently located in an area that is heavily wooded and sloped (Figures 11–20).

REFERENCES

Baker, Thomas R.
1997 *Phase I Archaeological Survey of the Proposed Pitt Sewn (Lily Property) Cell Site Project Area, Sewickley Township, Allegheny County, Pennsylvania.* Prepared by Thomas R. Baker, Greensburg, Pennsylvania. Prepared for PSI, Pittsburgh, Pennsylvania.

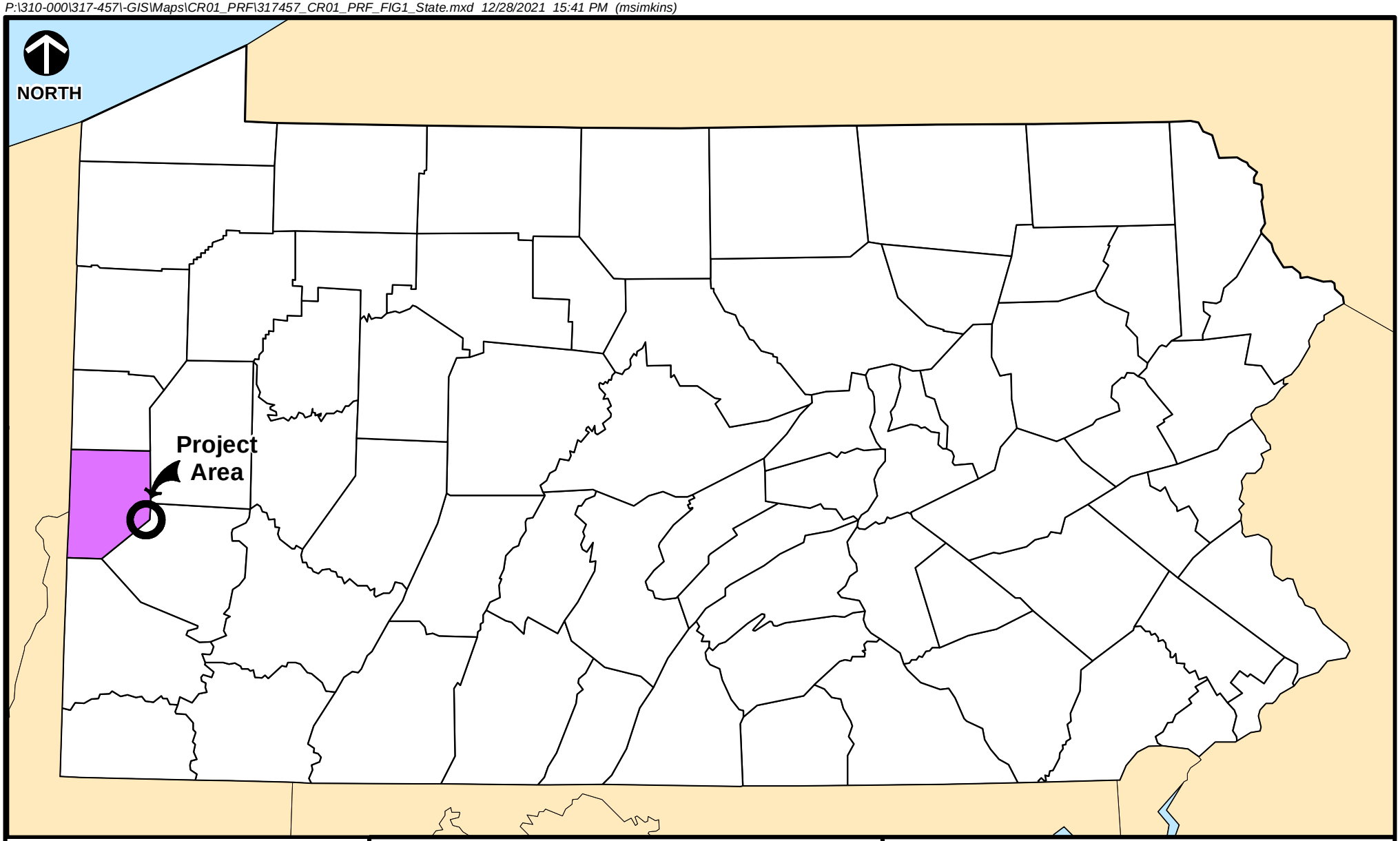
Davis, Christine E.
1999 *Phase I Archaeological Survey Economy Borough Sewer Project: Wastewater Treatment Plant Site, Beaver County, Pennsylvania.* Prepared by Christine Davis Consultants. Prepared for KLH Engineers.

Davis, Christine E. and Curtis Biondich
2009 *Phase I Archaeological Survey, Big Sewickley Creek Sanitary Sewer, Marshall Township and Franklin Park Borough, Allegheny County, and Economy Borough, Beaver County Pennsylvania.* Prepared by Christine Davis Consultants, Verona, Pennsylvania. Prepared for Marshall Township Municipal Sanitary Sewer Authority.

Davis, Christine E. Amy K. Wilks, Curtis L. Biondich, Christopher K. Allison
2000 *Phase I Archaeological Survey Economy Borough Sewer Project, Beaver County, Pennsylvania.* Prepared by Christine Davis Consultants. Prepared for KLH Engineers.

FIGURES

P:\310-000\317-457\-GIS\Maps\CR01_PRF\317457_CR01_PRF_FIG1_State.mxd 12/28/2021 15:41 PM (msimkins)



LEGEND

- Pennsylvanian Counties
- Beaver County

Scale in Kilometers
20 0 20 40

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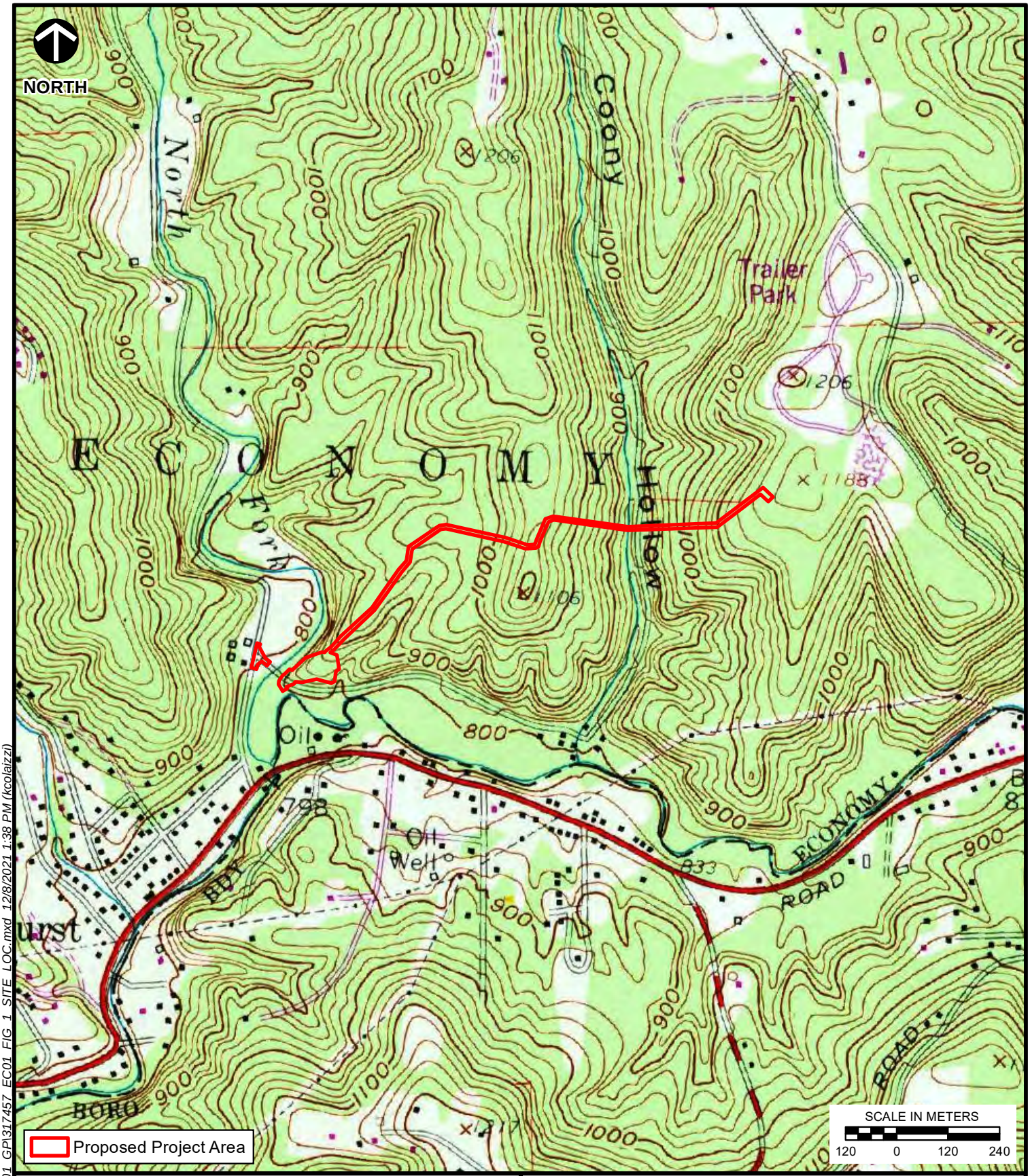
PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

PROJECT LOCATION

DRAWN BY:	MHS	CHECKED BY:	KMHF	APPROVED BY:	CJW*	FIGURE NO:	1
DATE:	12/28/2021	SCALE:	1 cm = 20 km	PROJECT NO:	317-457	* Hand signature on file	



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BEAVER COUNTY, PENNSYLVANIA

PROPOSED PROJECT AREA ON A PORTION OF THE 1990 AMBRIDGE, PA, 7.5-MINUTE USGS QUADRANGLE

DRAWN BY:	MHS	CHECKED BY:	KMHF	APPROVED BY:	CJW*	FIGURE NO:	2
DATE:	Jan 10, 2022	SCALE:	1 cm = 120 m	PROJECT NO:	317-457	* Hand signature on file	

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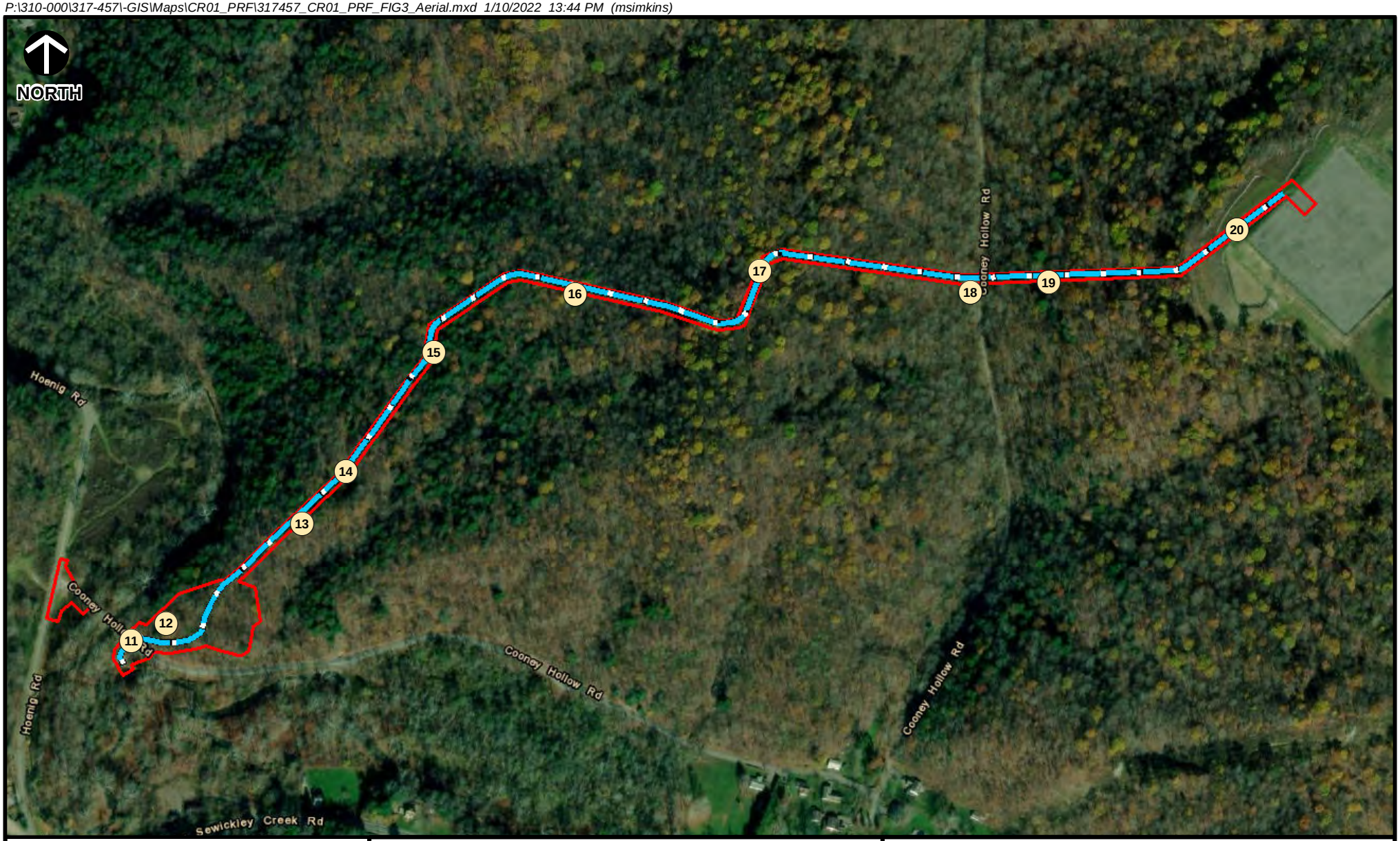

LEGEND

- Proposed Project Area
- Proposed Waterline
- Photograph Location

Scale in Meters

50 0 50 100

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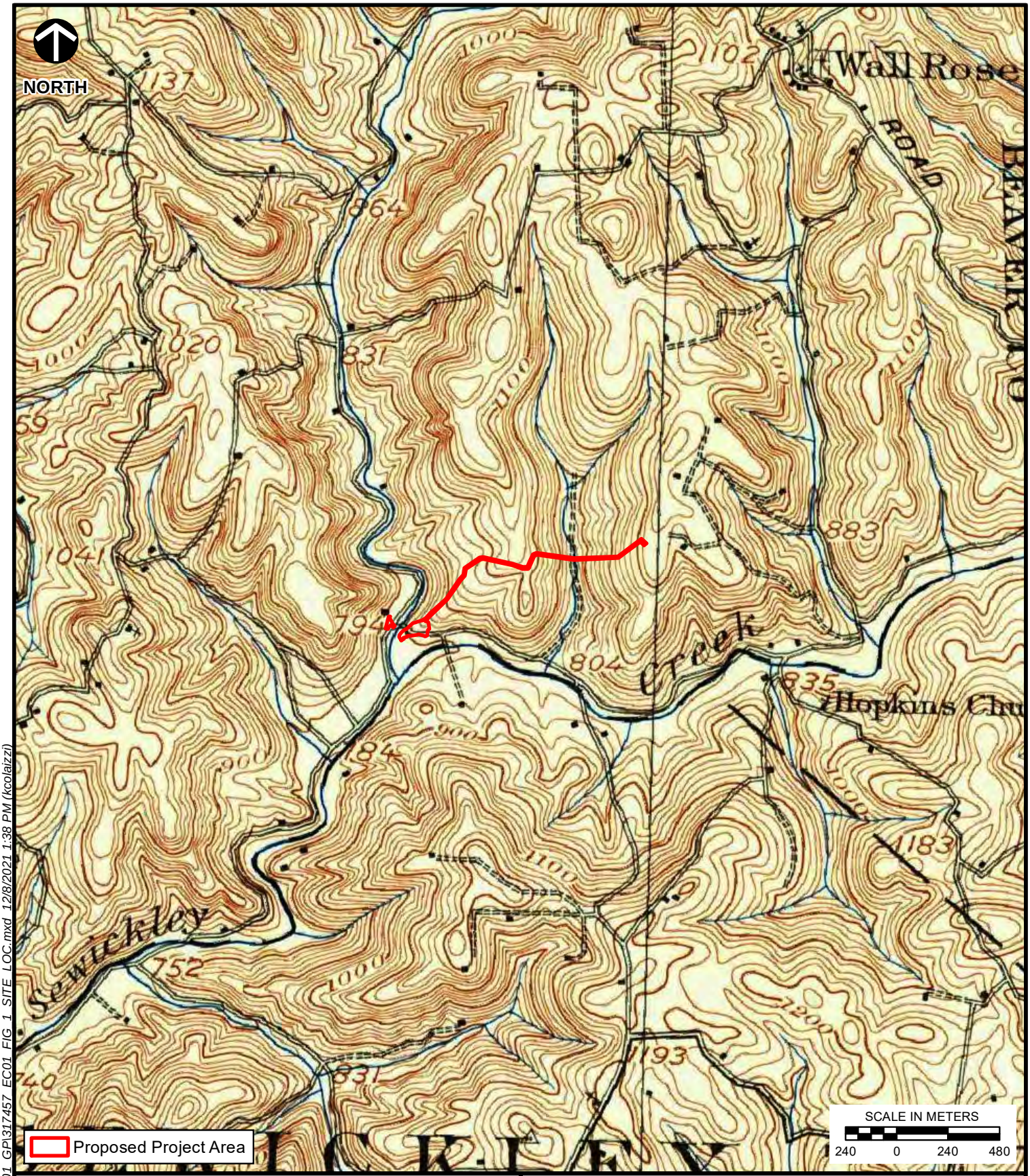
BEAVER COUNTY, PENNSYLVANIA

PROPOSED PROJECT AREA ON AERIAL IMAGERY

DRAWN BY:	MHS	CHECKED BY:	KMHF	APPROVED BY:	CJW*	FIGURE NO:	3
DATE:	1/10/2022	SCALE:	1 cm = 50 m	PROJECT NO:	317-457	* Hand signature on file	



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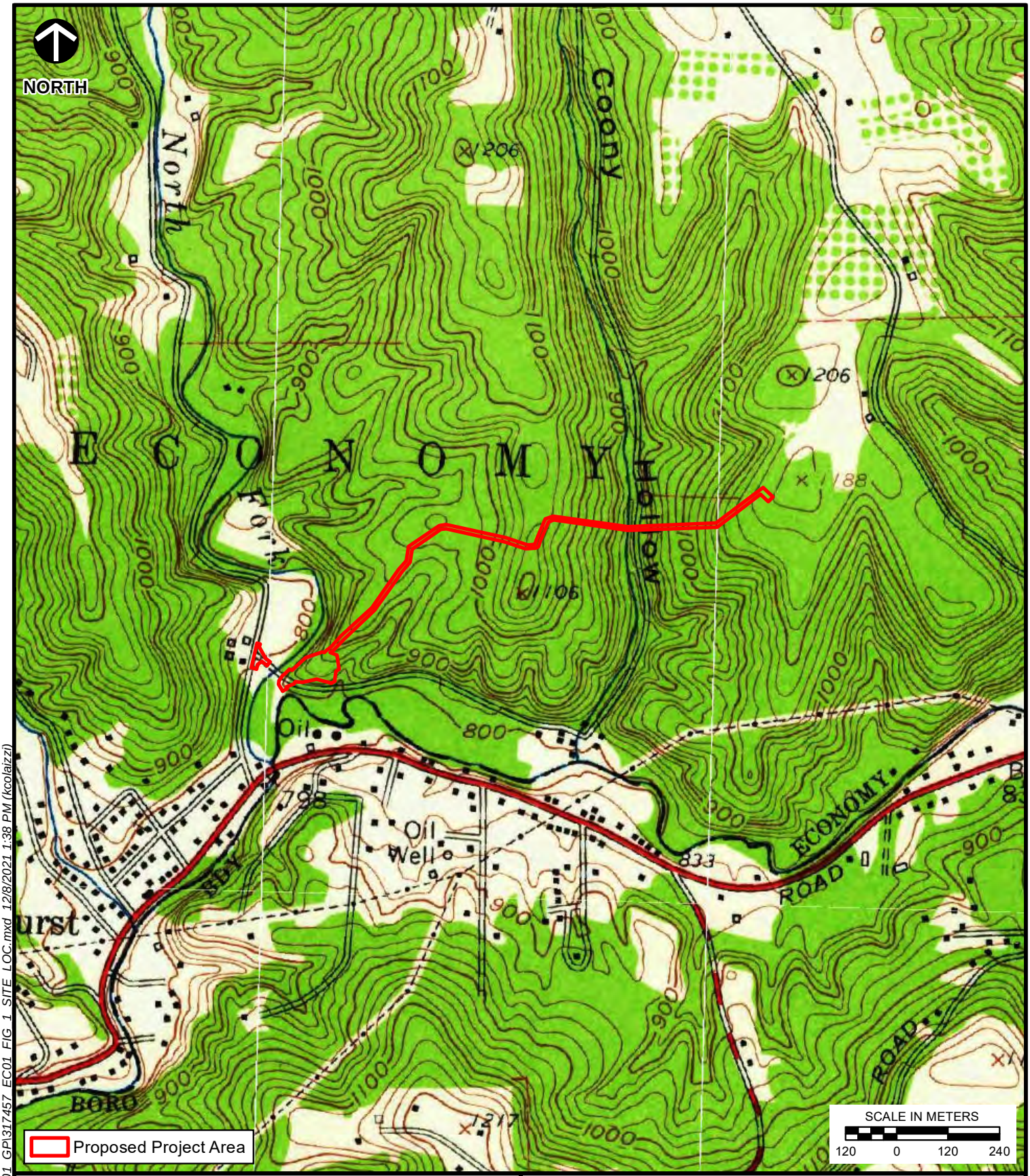
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

PROPOSED PROJECT AREA ON A PORTION OF THE 1906 SEWICKLEY, PA, 15-MINUTE USGS QUADRANGLE

DRAWN BY:	MHS	CHECKED BY:	KMHF	APPROVED BY:	CJW*	FIGURE NO:	4
DATE:	Jan 10, 2022	SCALE:	1 cm = 240 m	PROJECT NO:	317-457	* Hand signature on file	



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ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

PROPOSED PROJECT AREA ON A PORTION OF THE 1960 AMBRIDGE, PA, 7.5-MINUTE USGS QUADRANGLE

DRAWN BY:	MHS	CHECKED BY:	KMHF	APPROVED BY:	CJW*	FIGURE NO:	5
DATE:	Jan 10, 2022	SCALE:	1 cm = 120 m	PROJECT NO:	317-457	* Hand signature on file	

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B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

PROPOSED PROJECT AREA ON A PORTION OF THE 1979 AMBRIDGE, PA, 7.5-MINUTE USGS QUADRANGLE

DRAWN BY:	MHS	CHECKED BY:	KMHF	APPROVED BY:	CJW*	FIGURE NO:	6
DATE:	Jan 10, 2022	SCALE:	1 cm = 120 m	PROJECT NO:	317-457	* Hand signature on file	

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LEGEND

Proposed Project Area

Scale in Meters

50 0 50 100

Civil & Environmental Consultants, Inc.
530 East Ohio Street - Suite G - Indianapolis, IN 46204
(317) 655-777 - (877) 746-0749
www.cecinc.com

PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

PROPOSED PROJECT AREA ON
1939 AERIAL IMAGERY

DRAWN BY:	MHS	CHECKED BY:	KMHF	APPROVED BY:	CJW*	FIGURE NO:	7
DATE:	1/10/2022	SCALE:	1 cm = 50 m	PROJECT NO:	317-457	* Hand signature on file	

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LEGEND

Proposed Project Area

Scale in Meters

50 0 50 100

Civil & Environmental Consultants, Inc.
530 East Ohio Street - Suite G - Indianapolis, IN 46204
(317) 655-777 - (877) 746-0749
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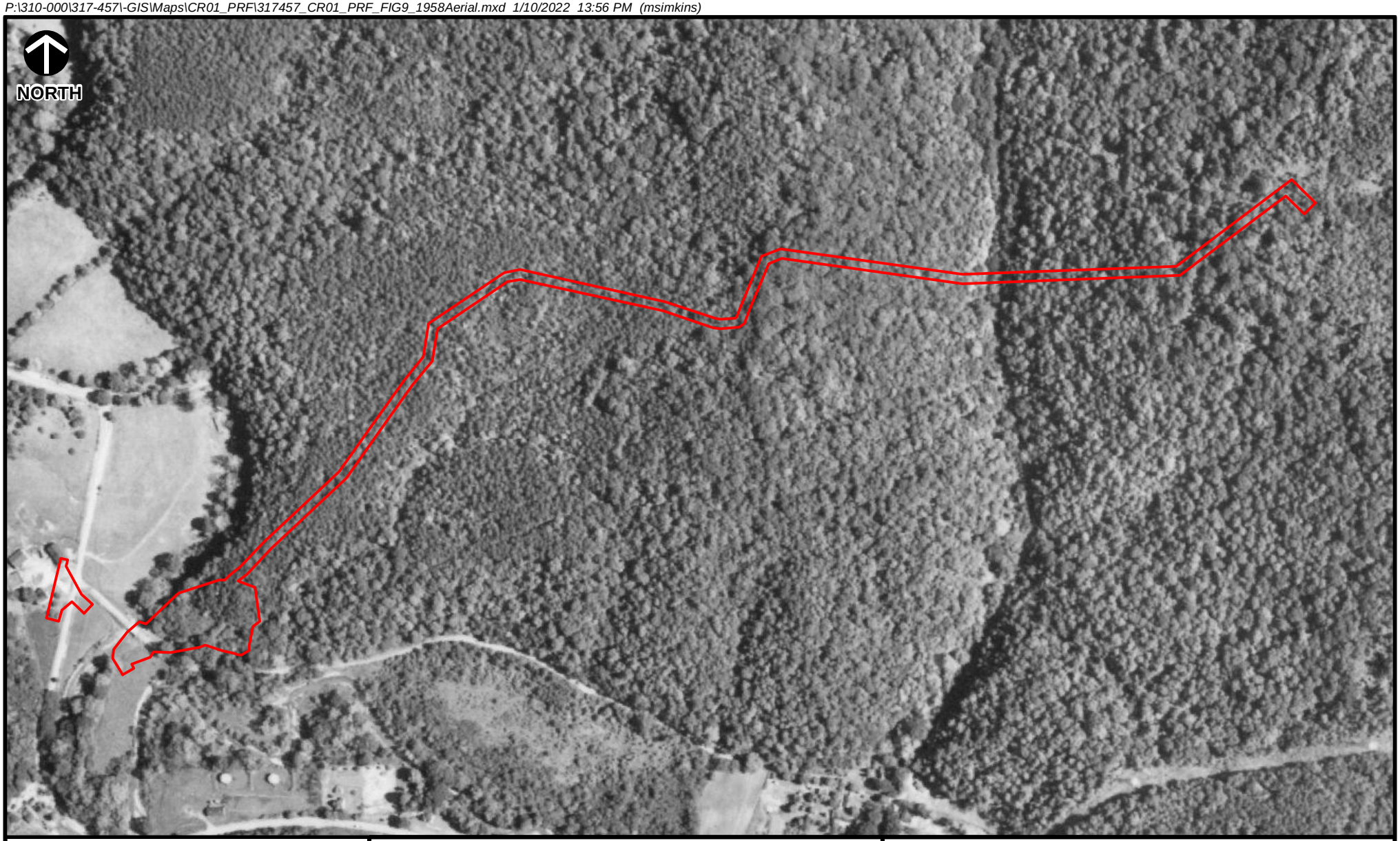
PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

PROPOSED PROJECT AREA ON
1949 AERIAL IMAGERY

DRAWN BY:	MHS	CHECKED BY:	KMHF	APPROVED BY:	CJW*	FIGURE NO:	8
DATE:	1/10/2022	SCALE:	1 cm = 50 m	PROJECT NO:	317-457	* Hand signature on file	

P:\310-000\317-457\-GIS\Maps\CR01_PRF\317457_CR01_PRF_FIG9_1958Aerial.mxd 1/10/2022 13:56 PM (msimkins)



LEGEND

Proposed Project Area

Scale in Meters

50 0 50 100

Civil & Environmental Consultants, Inc.
530 East Ohio Street - Suite G - Indianapolis, IN 46204
(317) 655-777 - (877) 746-0749
www.cecinc.com

PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

PROPOSED PROJECT AREA ON
1958 AERIAL IMAGERY

DRAWN BY:	MHS	CHECKED BY:	KMHF	APPROVED BY:	CJW*	FIGURE NO:	9
DATE:	1/10/2022	SCALE:	1 cm = 50 m	PROJECT NO:	317-457	* Hand signature on file	

P:\310-000\317-457\-GIS\Maps\CR01_PRF\317457_CR01_PRF_FIG10_1967Aerial.mxd 1/10/2022 13:40 PM (msimkins)

LEGEND

Proposed Project Area

Scale in Meters

50 0 50 100

Civil & Environmental Consultants, Inc.
530 East Ohio Street - Suite G - Indianapolis, IN 46204
(317) 655-777 - (877) 746-0749
www.cecinc.com

PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

PROPOSED PROJECT AREA ON
1967 AERIAL IMAGERY

DRAWN BY:	MHS	CHECKED BY:	KMHF	APPROVED BY:	CJW*	FIGURE NO:	10
DATE:	1/10/2022	SCALE:	1 cm = 50 m	PROJECT NO:	317-457	* Hand signature on file	

Figure 11. Overview of the project area along Cooney Hollow Road, looking southeast.

Figure 12. Overview of the project area, looking southwest.

Figure 13. Overview of the southern portion of the project area, looking southwest.

Figure 14. Overview of the project area, looking southwest.

Figure 15. Overview of the project area, looking northeast.

Figure 16. Overview of the project area, looking southeast.

Figure 17. Overview of the project area, looking southwest.

Figure 18. Overview of the project area, looking west.

Figure 19. Overview of slope in the project area, looking east.

Figure 20. Overview of the project area at the well pad, looking northeast.

Pennsylvania State Historic Preservation Office
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

February 3, 2022

Kathryn Finney
Civil & Environmental Consultants, Inc.
530 East Ohio St., Suite G
Indianapolis PA 462040000

RE: ER Project # 2022PR00129.001, B50 Temporary Above-Ground Waterline, Army Corps of Engineers, Economy Borough, Beaver County

Dear Kathryn Finney:

Thank you for submitting information concerning the above referenced project. The Pennsylvania State Historic Preservation Office (PA SHPO) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

Above Ground Resources
No Above Ground Concerns - Environmental Review - No Effect - Above Ground

Based on the information received and available within our files, it is our opinion that the proposed project will have No Effect on above ground historic properties, including historic buildings, districts, structures, and/or objects, should they exist. Should the scope of the project change and/or should you be made aware of historic property concerns, you will need to reinitiate consultation with our office using PA-SHARE.

For questions concerning above ground resources, please contact Taylor Napoleon at tnapoleon@pa.gov.

Archaeological Resources
No Archaeological Concerns - Environmental Review - No Effect - Archaeological

Based on the information received and available in our files, in our opinion, the proposed project should have No Effect on archaeological resources. Our analysis indicates that archaeological resources are potentially located in this project area. Should the scope of the project be amended to include additional ground-disturbing activity and/or should you be made aware of historic property concerns, you will need to reinitiate consultation with our office using PA-SHARE.

For questions concerning archaeological resources, please contact Justin McKeel at jusmckeel@pa.gov.

Sincerely,

Emma Diehl
Environmental Review Division Manager

Pennsylvania State Historic Preservation Office
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

February 7, 2023

Kathryn Finney
Civil & Environmental Consultants, Inc.
530 East Ohio St., Suite G
Indianapolis PA 462040000

RE: ER Project # 2022PR00129.002, B50 Temporary Above-Ground Waterline, Army Corps of Engineers, Economy Borough, Beaver County

Dear Kathryn Finney:

Thank you for submitting information concerning the above referenced project. The Pennsylvania State Historic Preservation Office (PA SHPO) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

Above Ground Resources
No Above Ground Concerns - Environmental Review - No Effect - Above Ground

Based on the information received and available within our files, it is our opinion that the proposed project will have No Effect on above ground historic properties, including historic buildings, districts, structures, and/or objects, should they exist. Should the scope of the project change and/or should you be made aware of historic property concerns, you will need to reinitiate consultation with our office using PA-SHARE.

For questions concerning above ground resources, please contact Emma Diehl at emdiehl@pa.gov.

Archaeological Resources
No Archaeological Concerns - Environmental Review - No Effect - Archaeological

Based on the information received and available in our files, in our opinion, the proposed project should have No Effect on archaeological resources. Our analysis indicates that archaeological resources are potentially located in this project area. Should the scope of the project be amended to include additional ground-disturbing activity and/or should you be made aware of historic property concerns, you will need to reinitiate consultation with our office using PA-SHARE.

For questions concerning archaeological resources, please contact Emma Diehl at emdiehl@pa.gov.

Sincerely,

Emma Diehl
Environmental Review Division Manager

PENNENERGY RESOURCES

January 12th, 2022

Ambridge Water Authority
Attn.: Board Chairperson and General Manager
600 Eleventh Street
Ambridge, Pennsylvania 15003

RE: Request to Purchase Water

Dear Mr. Bell and Mr. Dominick,

PennEnergy Resources, LLC is a Pittsburgh based Oil and Gas exploration and development company active in some of the same municipalities that the Ambridge Water Authority serves. PennEnergy's development of the Marcellus and Burkett Shales in eastern Beaver County requires water for the completion phase of our operations. As PennEnergy considers all local water sources, we write to the Ambridge Water Authority requesting to purchase a minimum volume of Three Hundred Thousand (300,000) gallons of water per day to support well development efforts on the PER B50 well pad located on Amsler Ridge Road. PennEnergy would have interest in purchasing substantially higher volumes as available. We anticipate this demand for water would continue for approximately 60 days, commencing late 2022 or early 2023. In this scenario, PennEnergy would transport the water from an agreed take point/tap to its operation on the B50 well pad.

The PennEnergy team would appreciate any response related to this proposal and would welcome an opportunity to meet and review this proposal in more detail in person or on a call.

Respectfully,

Steven Harris

Steven Harris

Director - Field Operations
412-935-5033
smharris@pennenergyresources.com

APPENDIX B – EROSION AND SEDIMENT CONTROL PLAN

An Erosion and Sediment Control General Permit (ESCGP-3) is being submitted under separate cover. The narrative, calculations, and drawings are included with this application package.

EROSION AND SEDIMENT CONTROL REPORT

B50 Temporary Above-Ground Waterline

Prepared for:

PennEnergy Resources, LLC

Prepared by:

Civil & Environmental Consultants, Inc.
Pittsburgh, Pennsylvania

CEC Project 317-457

November 2022
Revised February 2023

02/28/2023

EROSION AND SEDIMENT CONTROL REPORT
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

TABLE OF CONTENTS

EROSION AND SEDIMENT CONTROL REPORT
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

1.0 INTRODUCTION

The PennEnergy Resources, LLC (PER) B50 Temporary Above-Ground Waterline project consists of a temporary water withdrawal on Big Sewickley Creek and installation of approximately 0.9 mile combination of a temporary 12-inch diameter high-density polyethylene (HDPE) and 12-inch plastic lay flat waterline that will transport freshwater to the existing B50 Well Pad. The project is located in Economy Borough, Beaver County, Pennsylvania (Refer to Figure 1 in Appendix B for a site location map).

The project involves temporary disturbance to present land use conditions. Currently, the topography of the surrounding area is steep to gently sloping and includes wooded areas, meadows, and existing roadways. When the temporary waterline is no longer needed, it will be removed and all areas will be returned to pre-construction land use conditions or meadow in good condition.

The project will require road crossings and utility crossings of a stream and floodways. Erosion and Sedimentation Best Management Practices (BMPs) have been designed for these areas as well as any other areas within the right-of-way that are anticipated to be disturbed. Since the waterline will be installed above ground some areas within the right-of-way are not anticipated to be cleared or disturbed during installation of the waterline. Refer to the plan drawings for additional detail regarding the location and extent of proposed disturbance as well as proposed BMPs and details to manage erosion and sedimentation.

The majority of the proposed project area for the temporary waterline is 40 feet wide, although a portion of the project area near the southern terminus is larger to allow for material and equipment staging. The project will be accessed from existing public and private roads, including well pad access roads, and was designed to minimize disturbance to the extent possible. Wetlands, streams, and other potential natural resource conservation areas were considered during the planning stage

of this project. Wetland areas and streams were delineated by Civil & Environmental Consultants, Inc. Consideration was given during the preparation of the erosion and sedimentation control plans to limit the impacts to these sensitive areas to the extent practicable while still achieving the overall project purpose.

2.0 SOIL CHARACTERISTICS

A soils map for this project has been included in the ESCGP-3 package. The following table presents the soils and their respective characteristics and limitations that will be encountered during construction of this project.

TABLE 1
SOILS INFORMATION[(1)]

Map Symbol	Soil Name	Easily Erodible	Cut Banks Cave	Corrosive to Concrete or Steel	High Water Table	Low Strength	Poor Topsoil	Potentially Hydric
At	Atkins silt loam, 0 to 3 percent slopes, frequently flooded		X	C/S	X	X	X	X
CmC	Clymer loam, 8 to 15 percent slopes	X	X	C		X	X	X
GpD	Gilpin-Upshur complex, 15 to 25 percent slopes	X	X	C/S		X	X	X
GpF	Gilpin-Upshur complex, 25 to 60 percent slopes	X	X	C/S		X	X	X
Ph	Philo silt loam, 0 to 3 percent slopes, occasionally flooded	X	X	C		X	X	X
WhC	Wharton silt loam, 8 to 15 percent slopes	X	X	C/S	X	X	X	X

[(1)] Web Soil Survey (http://websoilsurvey.nrcs.usda.gov), accessed 1/7/22.

Soil Limitations and Resolutions

Limitation	Resolution
Erodible	All disturbed areas shall be seeded in accordance with the Site Restoration detail shown on the ESCGP-3 Plans. BMPs have been provided to minimize erosion and prevent sediment from leaving the site.
Cut Banks Cave	Trench walls shall be excavated with appropriate layback to prevent cave-ins. Stockpiles shall be located at a sufficient distance away from the trench. Applicable OSHA standards and regulations should be implemented.
Corrosive to Concrete or Steel	Neither concrete nor steel pipes are specified as part of this plan.

Limitation	Resolution
High Water Table	Pumps and water filter bags shall be utilized if groundwater is encountered.
Low Strength	Trench walls shall be excavated with appropriate layback to prevent cave-ins. Stockpiles shall be located at a sufficient distance away from the trench.
Piping	Water shall be diverted away from open trenches.
Poor Topsoil	The soil amendments required with each vegetative stabilization mix specified by the Site Restoration detail on the ESCGP-3 Plans are designed to counteract this limitation.
Potentially Hydric	A wetland study has been performed by Civil & Environmental Consultants, Inc. There are no wetlands located within the project area.

3.0 PROJECT SITE RUNOFF

E&S BMPs are proposed to control sediment laden runoff from the project area. BMPs were designed in accordance with the PADEP Erosion and Sedimentation Control Manual. Because all disturbed areas will be returned to pre-project conditions or meadow in good condition, the volume and rate of runoff were not analyzed.

4.0 SURFACE WATER CLASSIFICATION

Stormwater runoff from this project will drain to the receiving waters listed in the table below. The receiving waters, as with all streams in Pennsylvania, are classified based upon their designated and existing uses and water quality criteria, which were obtained from the PADEP eMap online database, accessed on 9/12/22.

Stream Name	Watershed	Chapter 93 Designation		Siltation Impaired	Naturally Reproducing Trout Water
		Designated Use	Existing Use		
North Fork Big Sewickley Creek	Big Sewickley Creek	TSF	N/A	No	No
Big Sewickley Creek	Big Sewickley Creek	TSF	N/A	No	No
UNTs to Big Sewickley Creek	Big Sewickley Creek	TSF	N/A	No	No
Coony Hollow	Big Sewickley Creek	TSF	N/A	No	No
UNTs to Coony Hollow	Big Sewickley Creek	TSF	N/A	No	No

Secondary Water: Coony Hollow (TSF), North Fork Big Sewickley Creek (TSF) & Big Sewickley Creek (TSF)

5.0 BMP DESCRIPTION & MAINTENANCE PROGRAM

Limiting areas of earth disturbance will be the main E&S BMP employed to reduce the potential for erosion to occur. Additional BMPs are proposed in the areas where earth disturbance is anticipated and also along streams and floodways. If areas in addition to those shown on the plan drawings are disturbed during construction, additional BMPs will be required. The contractor shall notify PER and the Engineer if additional disturbance occurs.

The waterline will be placed directly onto the ground surface, except at stream and road crossings. The stream crossing will be aerial, with the waterline being placed on a truss and equipment crossing the stream via a timber mat. At the road crossings, the waterline will be installed below the existing roadway via open cut.

The BMPs listed in this plan shall be installed and maintained in accordance with the Erosion and Sediment Pollution Control Manual No. 363-2134-008, as amended and updated, and the Oil and Gas Operator's Manual No. 550-0300-001, as amended and updated. The BMPs contained in this plan shall be installed and maintained as shown on the approved E&S drawings prior to earth disturbance (including clearing and grubbing) within the tributary area of each BMP. Appropriate BMPs shall be provided for each stage of activity. Each BMP shall be kept functional until all earth disturbing activities within the tributary area are completed and a uniform 70% perennial vegetated cover is achieved over the entire disturbed area or other suitable permanent erosion protection has been installed. The permittee shall keep a written record documenting each inspection and BMP repair or replacement and maintenance activities.

The following standard BMPs have been provided to fulfill the requirements of this plan. Additional BMPs are listed in the Erosion and Sedimentation Pollution Control Manual. Details of the proposed BMPs are provided on the E&S drawings. Supporting calculations for each BMP, if applicable, are provided in Appendix A.

1. Rock Construction Entrance/Exit: Stabilized road entrances (also known as "rock construction entrances") shall be provided at all access points to the construction site from public or private roadways. These entrances shall consist of 8" minimum thick AASHTO #1 size rock with underlying geotextile matting. A rock stockpile should be provided and maintained next to the rock construction entrance. Refer to Rock Construction Entrance details specified in the E&S drawings. The construction entrances shall be constantly maintained. Rock construction entrances shall be inspected daily.

2. Filter Sock: Filter socks shall be installed on or parallel to the contour at the edge of disturbed areas. Both ends of each sock section must be extended upslope at 45 degrees to the main sock alignment. Filter socks shall be installed in accordance with the manufacturer's specifications. Traffic shall not be permitted to cross filter socks. Accumulated sediment shall be removed when it reaches one-half of the above ground height of the filter sock. Refer to detail specified in the E&S drawings for filler material specifications and additional notes. Upon stabilization of the area tributary to the sock, stakes shall be removed. The sock may be left in place or removed. If the sock is left in place, the mesh shall be cut open and the mulch spread as a soil supplement and then vegetated. Filter socks shall be inspected at least weekly and after each runoff event. Damaged socks shall be repaired according to manufacturer's specification or replaced within 24 hours.

3. Slope Stabilization: Slope stabilization shall be installed in disturbed areas for all slopes 3H:1V or steeper, within 50 feet of a surface water, and where soil conditions indicate stabilization is needed to achieve adequate vegetative cover. Refer to the detail specified in the E&S drawings for anchoring and stapling requirements (for Erosion Control Blanket) and application rates (for hydraulically applied stabilization). Manufacturer's recommendations should be followed for installation and maintenance requirements.

4. Waterbars: Waterbars shall be installed in the locations shown on the plans and in accordance with the standard detail provided. Waterbars shall be installed across the entire right-of-way on all slopes greater than 5%. Waterbars shall be constructed at a slope of 2%

and discharge to a well-vegetated area. Waterbars should not discharge into an open trench. Waterbars should be oriented so that the discharge does not flow back onto the right-of-way. Waterbars shall be inspected weekly (daily on active roads) and after each runoff event. Damaged or eroded Waterbars shall be restored to original dimensions within 24 hours of inspection. Maintenance of waterbars shall be provided until the roadway, skidtrail, or right-of-way has achieved permanent stabilization. Waterbars on retired right-of-ways, skidtrails, and right-of-ways shall be left in place after permanent stabilization has been achieved.

5. Channels: Channels have been designed to have sufficient capacity to safely convey the design flows to the points of discharge in such a manner that the channel beds and side slopes will be stable. Channels have been aligned to provide positive drainage throughout. Sharp turns, high angles of confluence, and very low gradients have been avoided wherever possible. Channel location, size, and linings are shown on the project drawings. Channels should be maintained and clear of debris. Sediment shall be removed when the total channel depth is reduced by 25 percent. Damaged channel linings shall be repaired or replaced immediately. Channel shall be inspected once per week during construction and after every runoff event.

6. Riprap Aprons: Riprap aprons have been designed in accordance with the PADEP E&S Manual to prevent scour and reduce the potential for erosion to occur at the outfall of proposed channels and culverts. Aprons should be constructed at or near zero grade from front to back and side to side. In no case should riprap aprons be constructed with a back to front gradient exceeding 0.05 ft/ft. Terminal widths of riprap aprons should be adjusted as necessary to match receiving channels. All aprons shall be inspected at least weekly and after each runoff event. Displaced riprap within the apron shall be replaced immediately.

7. Rock Filter: Rock filters shall be installed within existing channels or swales adjacent to proposed areas of disturbance. These filters shall consist of R-3 rock with a minimum of one foot of AASHTO #57 stone. Sediment shall be removed when accumulations reach one third the height of the filter. Refer to the rock filter detail specified in the E&S drawings. Rock filters shall be inspected at least weekly and after each runoff event.

6.0 CONSTRUCTION SEQUENCE

A preconstruction meeting is required prior to the start of construction activities. PADEP must be invited to this meeting at least seven days in advance. At least three days before starting earth disturbance activities, the contractor shall notify the Pennsylvania One-Call system to locate utilities. After installation or stabilization of all perimeter sediment control BMPs, the DEP shall be notified at least three days prior to proceeding with bulk earth disturbance activities.

The following is a generalized construction sequence for the project. This construction sequence was developed to provide the necessary steps in order to achieve erosion and sedimentation control protection throughout earthmoving activities. Since the waterline will be installed above ground, minimal earth disturbance is anticipated. As such, E&S BMPs shown on the plans and referenced below only need to be installed if actual earth disturbance is expected. The contractor shall perform all necessary activities for proper and complete execution of this plan, whether specifically mentioned or not, and may be required to alter controls based on effectiveness of controls or differing conditions that are encountered during the project. Alterations to the approved E&S plan must be communicated to the PADEP water quality specialist or permit reviewer (depending on the nature of the change). Unless there is an imminent risk of sediment or other pollution to waters of the commonwealth, or health and safety risks, the alteration or addition must be approved by the PADEP prior to implementation.

1. Prior to commencement of any potential earth disturbance activity, the contractor shall layout the limits of the site and establish benchmarks, reference points, and any areas which are to be preserved or avoided during construction.

2. Rock construction entrance/site access – This is the first land-disturbance activity to take place at the site. The contractor should provide the rock construction entrance in addition to other BMPs, as shown on the plans, to minimize accelerated erosion and sedimentation from the following areas: entrance to the site, construction routes, and areas designated for equipment or other use at the site including parking, staging areas, and stockpiles.

3. Sediment barriers - Install perimeter BMPs and orange construction fence in areas where earth disturbance may be required after the waterline right-of-way is accessed. The contractor shall keep the associated clearing and grubbing limited to only that amount required for installing perimeter BMPs. Additional sediment barrier(s) shall be added as required to prevent sediment-laden runoff from leaving the site.

4. Waterline Installation – Install the waterline with as little disturbance as possible. During installation, install and maintain any additional erosion and sediment control BMPs that are required to control disturbed areas. Minimal land clearing and grading, as shown on the plan drawings, may be required to install the temporary waterline. Clearing and grading may be completed once all perimeter controls have been installed downslope of the proposed work area.

5. Surface stabilization - Apply temporary or permanent stabilization measures immediately to any disturbed areas where work has reached final grade, has been delayed, or has otherwise been temporarily suspended.

6. Final stabilization/site restoration – Once the waterline is no longer needed, it shall be removed and the waterline right-of-way shall be returned to preconstruction conditions in terms of approximate grade and land cover to restore drainage patterns. After restoration is completed, install stabilization BMPs including: placing topsoil, permanent seeding, and mulching.

7. After 70% uniform, vegetative cover has been achieved and the site has been stabilized, remove all erosion and sedimentation controls and stabilize any disturbances associated with the removal of the BMPs.

7.0 MATERIAL RECYCLING AND DISPOSAL

All construction materials and wastes shall be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1

et seq., 271.1, and 287.1 et. seq. No construction materials shall be burned, buried, dumped or discharged at the site. Construction wastes are refuse materials that are existing onsite or generated during the course of construction and include, but are not limited to: paper, plastic, rubber, wood, textile, metal products, and all construction water associated with the temporary E&S control BMPs (i.e., compost filter sock, inlet protection, etc.).

8.0 NATURALLY OCCURRING GEOLOGIC FORMATIONS AND SOIL CONDITIONS

The United States Department of Agriculture (USDA) National Resources Conservation Service Web Soil Survey indicates the near-surface site soils in the vicinity of the staging area are from the Clymer loam, Gilpin-Upshur complex, Philo silt loam, and Wharton silt loam. These consist primarily of residual (derived from the decomposition of the parent bedrock) soils weathered from sandstone, shale, or in the case of Philo soils, recent coarse loamy alluvium derived from sandstone and shale over old sandy and gravelly alluvium derived from sandstone. According to this source, depth to a restrictive feature (fragipan or bedrock) ranges from 20 to more than 80 inches below the existing ground surface. The depth to the water table is estimated to range from 15 to more than 80 inches below the existing ground surface.

According to the United States Geological Survey (USGS) Open File Maps 78-1057 (E-15) "Landslide and Related Features of the Ambridge, PA Quadrangle", landslide-susceptible soils are present in the vicinity of the project. However, landslide-susceptible soils are generally present in areas where earth disturbance, if proposed, will be limited and no proposed trenches or site grading are proposed. As such, the risk of landsliding associated with these areas is low.

According to the USGS online source, the bedrock at the site is Pennsylvanian-aged and belongs to the Casselman and Glenshaw Formations of the Conemaugh Group. The Casselman Formation consists of cyclic sequences of shale, siltstone, sandstone, redbeds, thin, impure limestone, and thin, nonpersistent coal. The base of the Casselman Formation is at the top of Ames limestone. The Glenshaw Formation consists of cyclic sequences of shale, sandstone, red beds, and thin

limestone and coal seams. The base of the Glenshaw Formation is at the top of Upper Freeport coal.

Coal references assessed for this site include the Pennsylvania Department of Environmental Protection's Mine Subsidence Insurance website, the U.S. Geologic Survey – Ambridge Quadrangle map, and the Penn State Pennsylvania Mine Map Atlas. The coal references reviewed indicate that no surface or underground coal mining has occurred at the site. The shallowest mineable coal seam is the Upper Freeport coal, which is approximately 120 feet beneath the site. Earthmoving associated with the project will be limited to shallow trenching for buried sections associated with road crossings and is not anticipated to encounter coal.

Based on the research above and the limited extent of the earthwork required for the project, CEC does not anticipate encountering any geologic formations or soil conditions which may have the potential to cause pollution during or after earth disturbing activities. Should issues related to geologic formations, landslides, or slope stability be encountered during construction, CEC should be notified immediately to provide recommendations to minimize or avoid potential problems.

9.0 THERMAL IMPACTS

No new permanent gravel surfaces are being proposed for this project and all existing pervious areas that will be disturbed will be restored to pre-project conditions or meadow in good condition. Any potential thermal impacts will be mitigated by allowing runoff to flow over vegetated surfaces prior to entering any surface waters.

Construction of the project will be performed in a continuous effort from commencement to completion. The extent of disturbance was minimized by proposing the minimum area of disturbance that will allow the project to be completed. The duration of disturbance will be minimized by installing the waterline as quickly as is practical and safe.

10.0 E&S PLAN AND PCSM/SR PLAN CONSISTENCY

In accordance with 25 PA Code Chapter 102.4(b)(5)(xiv), this E&S Plan has been planned, designed, and implemented to be consistent with the Site Restoration (SR) Plan under § 102.8.

11.0 RIPARIAN FOREST BUFFERS

There are no regulated riparian buffers that will be impacted as part of this project.

12.0 ANTIDEGRADATION ANALYSIS

Projects that are located in special protection watersheds that have a designated or existing use of high quality (HQ) or exceptional value (EV), Wild Trout Streams, or non-special protection watersheds impaired for sediment must demonstrate that all construction and post construction discharges will not degrade the physical, chemical, or biological characteristics of the surface waters. The Pennsylvania Department of Environmental Protection (PADEP) eMapPA v.4.0 was utilized to determine that the receiving waters for the project are not classified as special protection or siltation-impaired. "Non-discharge" BMPs have been utilized to the greatest extent possible in the preparation of this plan, and calculations have been provided as necessary.

13.0 REFERENCES

The E&S Control Plan has been prepared using guidance and/or requirements from the following references:

Commonwealth of Pennsylvania, Department of Environmental Protection. *Erosion and Sediment Pollution Control Program Manual, Technical Guidance Number 363-2134-008*. Harrisburg, Pennsylvania, March 2012.

Natural Resources Conservation Service (NRCS). 2012. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov. (Accessed 1/7/2022)

APPENDIX A

CALCULATIONS

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER A

SILT FENCE OR COMPOST FILTER SOCK TYPE:	12 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	35	SLOPE LENGTH =	33	40	40	7	18%	OK
SEGMENT B	SLOPE =	50	SLOPE LENGTH =	4	25	4	0	2%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	37

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER B

SILT FENCE OR COMPOST FILTER SOCK TYPE:	24 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	27	SLOPE LENGTH =	38	100	100	62	62%	OK
SEGMENT B	SLOPE =	14	SLOPE LENGTH =	69	250	155	86	34%	OK
SEGMENT C	SLOPE =	50	SLOPE LENGTH =	16	50	17	1	2%	OK
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	123

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER C

SILT FENCE OR COMPOST FILTER SOCK TYPE:	18 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	14	SLOPE LENGTH =	56	200	200	144	72%	OK
SEGMENT B	SLOPE =	50	SLOPE LENGTH =	12	40	29	17	42%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	68

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER D

SILT FENCE OR COMPOST FILTER SOCK TYPE:	12 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	10	SLOPE LENGTH =	17	150	150	133	89%	OK
SEGMENT B	SLOPE =	18	SLOPE LENGTH =	22	70	62	40	57%	OK
SEGMENT C	SLOPE =	33	SLOPE LENGTH =	7	40	23	16	40%	OK
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	46

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER E

SILT FENCE OR COMPOST FILTER SOCK TYPE:	24 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	26	SLOPE LENGTH =	97	100	100	3	3%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	97

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER F

SILT FENCE OR COMPOST FILTER SOCK TYPE:	18 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	23	SLOPE LENGTH =	76	100	100	24	24%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	76

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER G

SILT FENCE OR COMPOST FILTER SOCK TYPE:	18 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	24	SLOPE LENGTH =	12	100	100	88	88%	OK
SEGMENT B	SLOPE =	14	SLOPE LENGTH =	71	200	176	105	53%	OK
SEGMENT C	SLOPE =	6	SLOPE LENGTH =	62	250	131	69	28%	OK
SEGMENT D	SLOPE =	20	SLOPE LENGTH =	35	150	42	7	4%	OK
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	180

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER H

SILT FENCE OR COMPOST FILTER SOCK TYPE:	12 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	24	SLOPE LENGTH =	13	60	60	47	78%	OK
SEGMENT B	SLOPE =	16	SLOPE LENGTH =	47	70	55	8	11%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	60

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER I

SILT FENCE OR COMPOST FILTER SOCK TYPE:	18 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	4	SLOPE LENGTH =	101	350	350	249	71%	OK
SEGMENT B	SLOPE =	9	SLOPE LENGTH =	46	250	178	132	53%	OK
SEGMENT C	SLOPE =	32	SLOPE LENGTH =	29	65	34	5	8%	OK
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	176

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER J

SILT FENCE OR COMPOST FILTER SOCK TYPE:	12 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	3	SLOPE LENGTH =	16	250	250	234	94%	OK
SEGMENT B	SLOPE =	37	SLOPE LENGTH =	31	35	33	2	5%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	47

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** VJS
DATE: 11/4/2022 **DATE:** 11/4/2022

BARRIER K

SILT FENCE OR COMPOST FILTER SOCK TYPE:	18 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	33	SLOPE LENGTH =	54	65	65	11	17%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	54

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER L

SILT FENCE OR COMPOST FILTER SOCK TYPE:	12 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	50	SLOPE LENGTH =	24	25	25	1	4%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	24

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** TLW
DATE: 9/19/2022 **DATE:** 10/25/2022

BARRIER M

SILT FENCE OR COMPOST FILTER SOCK TYPE:	18 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	50	SLOPE LENGTH =	26	40	40	14	35%	OK
SEGMENT B	SLOPE =	8	SLOPE LENGTH =	23	250	88	65	26%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	49

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: B50 Temporary Above-Ground Waterline
PROJECT #: 317-457
PREPARED BY: JTD **CHECKED BY:** VJS
DATE: 11/2/2022 **DATE:** 11/3/2022

BARRIER N

SILT FENCE OR COMPOST FILTER SOCK TYPE:	12 INCH FILTREXX SILTSOXX

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	30	SLOPE LENGTH =	50	50	50	0	0%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

TOTAL ACTUAL FLOW LENGTH (FT)	50

***Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0**
***Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)**
***Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™**
***Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC**
****Based on the percent remaining from upslope segments**

Channel Flow Calculations
Project: B50 Temporary Above-Ground Waterline
CEC Project #: 317-457
Prepared By: JTD&EAH Checked By: VJS&NAF
Date: 1/14/2022&3/1/2023 Date: 3/2/2022&3/1/2023

																Unvegetated State				Vegetated State				
														Manning's 'n' (Vegetated State)[1]		Shear Stress [6]		Velocity [7]		Shear Stress [6]		Velocity [6]		
Channel	Drainage Area (AC)	Time of Concentration (min)	Temporary or Permanent?	Design Storm	Intensity (in/hr)	Runoff Coefficient	Flow, Q=CiA (cfs)	Min. Slope (%)	Max. Slope (%)	Bottom Width (FT)	Side Slope, x (X:1)	Channel Depth (FT)	Normal Depth (min slope) (FT)	Freeboard (FT) [5]	For use with Min. Slope	For use with Max. Slope	Calculated (PSF)	Allowable (PSF)	Calculated (FPS)	Allowable (FPS)	Calculated (PSF)	Allowable (PSF)	Calculated (FPS)	Allowable (FPS)	Channel Lining
Channel 1	0.46	5	Permanent	10 Year	6.19	0.32	0.90	4.0	31.0	1.0	2.0	1.5	0.13	1.37	-	-	0.32	1.00	3.41	6.50	-	-	-	-	R-3

[1] "Manning's 'n' values for vegetated state determined using PADEP E&S Manual (Document No. 363-2134-008) Manning's 'n' equations on Chapter 6 pages 128-129 and Table 6.3 on page 131. Manning's 'n' values for unvegetated state (not listed) taken from the online North American Green Erosion Control Materials Design Software, Version 5.0."

[2] North American Green channel lining performance is evaluated soley on the basis of shear stress. Therefore, maximum allowable velocities are not applicable in the lined, unvegetated state or in any state for TRM liners.

[3] Shear Stress for Unreinforced Vegetation value based on PADEP E&S Manual Maximum Permissible Shear Stresses for Non Reinforced Vegetation from Table 6.2 on page 130 .

[4] Allowable Velocity for Unreinforced Vegetation value based on PADEP E&S Manual Maximum Permissible Velocity for Channels Lined with Vegetation from Table 6.4, Additional Note 2 on page 132.

[5] Freeboard conservatively evaluated using normal depth minimum slope.

[6] Shear Stress conservatively evaluated at minimum channel slope conditions.

[7] Velocity conservatively evaluated at maximum channel slope conditions.

STANDARD WORKSHEET
Riprap Channel Design Data

	CHANNEL OR CHANNEL SECTION		1	1
	TEMPORARY OR PERMANENT	(T OR P)	P	P
	DESIGN STORM	(YR)	10	10
	DRAINAGE AREA	(Acres)	0.46	0.46
1	MULTIPLIER		#N/A	#N/A
	Qr (REQUIRED CAPACITY)	(CFS)	0.90	0.90
	Q (CALCULATED AT FLOW DEPTH d)	(CFS)	0.90	0.90
2	PROTECTIVE LINING		Riprap	Riprap
	VEGETATIVE LINING RETARDANCE		N/A	N/A
	RIPRAP GRADATION		R-3	R-3
2	n (MANNING'S COEFFICIENT)		0.053	0.066
	Va (ALLOWABLE VELOCITY)	(FPS)	6.5	6.5
	V (CALCULATED AT FLOW DEPTH d)	(FPS)	1.94	3.41
	ta (MAX ALLOWABLE SHEER STRESS)	(LB/FT^2)	1.00	1.00
7	td (CALCULATED AT FLOW DEPTH d)	(LB/FT^2)	0.32	0.00
	CHANNEL BOTTOM WIDTH	(FT)	1	1
	CHANNEL LEFT SIDE SLOPE	(H:1V)	2	2
	CHANNEL RIGHT SIDE SLOPE	(H:1V)	2	2
	D (TOTAL DEPTH)	(FT)	1.50	1.50
	CHANNEL TOP WIDTH @ D	(FT)	7.00	7.00
	d (CALCULATED FLOW DEPTH)	(FT)	0.29	0.19
7	da (FLOW DEPTH ABOVE STONE)	(FT)	0.13	0.00
	CHANNEL TOP WIDTH @ FLOW DEPTH d	(FT)	1.51	1.00
	BOTTOM WIDTH: FLOW DEPTH RATIO	(12:1 MAX)	3	5
	d50 STONE SIZE	(IN)	3	3
	RIPRAP THICKNESS	(IN)	9	9
6	RIPRAP VOID SPACE	(SQ. FT.)	0.30	0.30
	A (CROSS-SECTIONAL AREA)	(SQ. FT.)	0.46	0.26
7	Aa (FLOW AREA ABOVE STONE)	(SQ. FT.)	0.16	0.00
	P (WETTED PERIMETER)	(FT)	2.31	1.85
	R (HYDRAULIC RADIUS)		0.20	0.14
3	S (BED SLOPE)	(FT/FT)	0.040	0.310
	Sc (CRITICAL SLOPE)	(FT/FT)	0.105	0.226
	0.7 Sc	(FT/FT)	0.074	0.158
	1.3 Sc	(FT/FT)	0.137	0.294
	STABLE FLOW?	(Y/N)	YES	YES
	FREEBOARD BASED ON UNSTABLE FLOW	(FT)	X	X
	FREEBOARD BASED ON STABLE FLOW	(FT)	0.07	0.05
4	FREEBOARD BASED ON CHANNEL DEPTH	(FT)	0.50	0.50
4	MINIMUM REQUIRED FREEBOARD	(FT)	0.50	0.50
	MINIMUM DEPTH REQUIRED	(FT)	0.63	0.50
5	DESIGN METHOD FOR PROTECTIVE LINING PERMISSIBLE VELOCITY (V) OR SHEAR STRESS (S)		S	S

1 Use 1.6 for Temporary Channels; 2.25 for Temporary Channels in Special Protection (HQ or EV) Watersheds; 2.75 for Permanent Channels. For other methods enter N/A and attach appropriate worksheets.

2 Adjust "n" value for changes in channel liner and flow depth. For vegetated channels, provide data for manufactured linings without vegetation and with vegetation in separate columns

3 Slopes may not be averaged

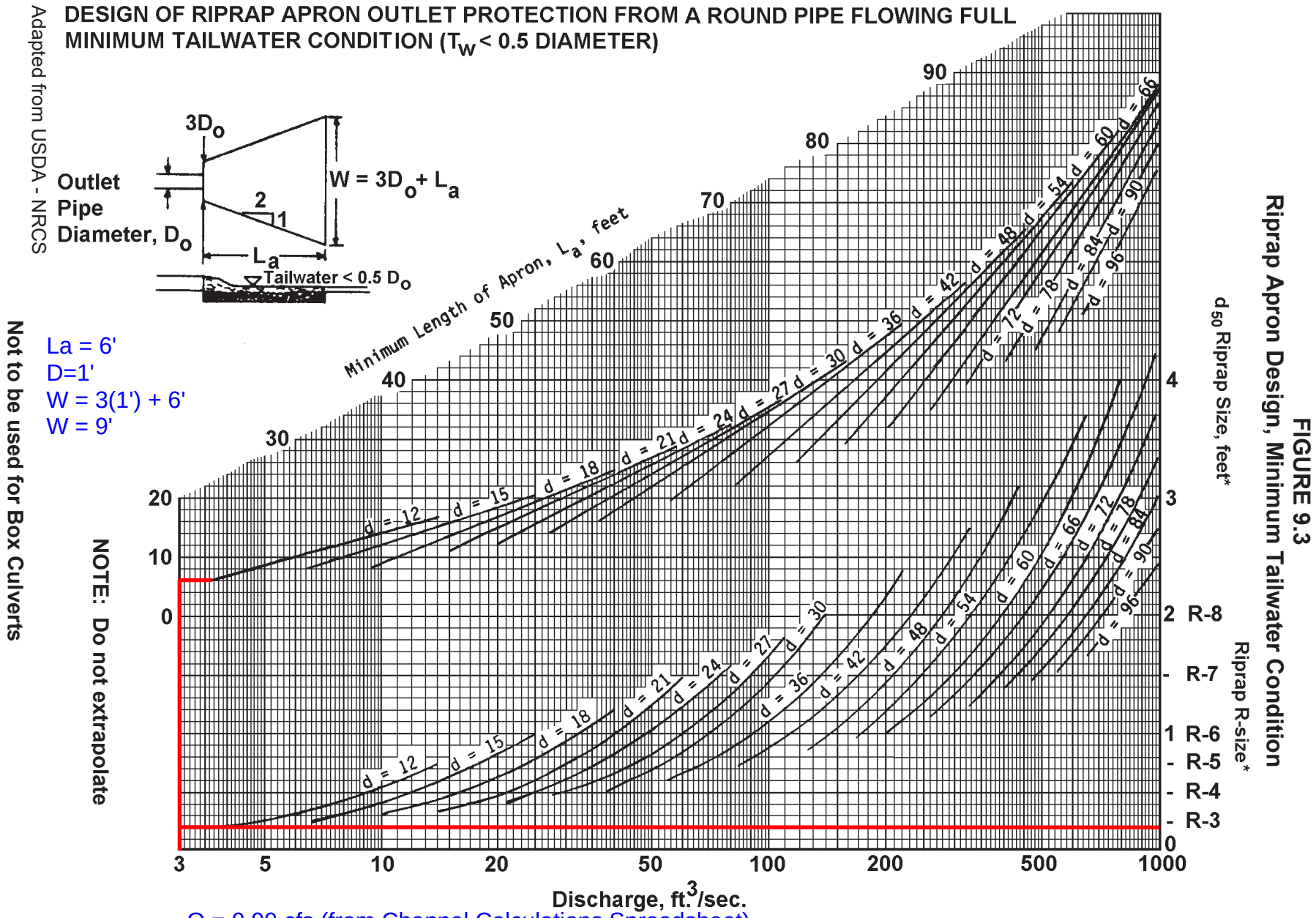
4 Minimum freeboard is 0.5 ft. or 1/4 total channel depth, whichever is greater

5 Permissible velocity lining design method is not acceptable for channels with bed slope of 10% or greater. Shear stress lining method is required for channels with a bed slope of 10% or greater. Shear stress lining design

6 Assume 40% void space for flow in channel bottom, ignore side slopes

7 if flow depth above stone is less than 0, use maximum velocity to size riprap

Riprap Apron 1 (Channel 1)



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Prepared by: EAH 2/23/2023

Checked by: NAF 3/1/2023

Q = 0.90 cfs (from Channel Calculations Spreadsheet)

* For discharge velocities exceeding Maximum Allowable for Riprap indicated, increase d_{50} stone size and/or provide velocity reduction device.

Velocity = 3.41 ft/s (from Riprap Chanel Design Data worksheet) < Vmax for R-3 = 6.5 ft/s ====> Use R-3

BACKGROUND AND PURPOSE:

The PennEnergy Resources, LLC (PER) B50 Temporary Above-Ground Waterline project consists of a temporary water withdrawal on Big Sewickley Creek and installation of approximately 0.9 mile combination of a temporary 12-inch diameter high-density polyethylene (HDPE) and 12-inch plastic lay flat waterline that will transport freshwater to the existing B50 Well Pad. The project proposes to cross Coony Hollow via aerial crossing methods. In accordance with Civil & Environmental Consultants, Inc.'s past experience in permitting temporary waterline projects with the Pennsylvania Department of Environmental Protection, it is our understanding that the waterline must be elevated above the 25-year/24-hour water surface elevation (WSEL) at stream crossings.

METHODOLOGY:

Hydrology: The SCS Runoff Curve Number Method was used to determine the peak 25-year discharge rate for the Coony Hollow crossing. Hydrologic parameters, including drainage area, runoff curve number, and time of concentration, were derived from publically available LiDAR topography and aerial photography. For determining the composite curve number, hydrologic soil group data pertinent to the site location was derived from the United States Department of Agriculture Web Soil Survey for the project site. The rainfall depth corresponding to the aforementioned frequency of the storm event derived from the National Oceanic and Atmospheric Administration (NOAA), along with the drainage area and composite curve number, were used to develop the peak flow for the 25-year/24-hour event.

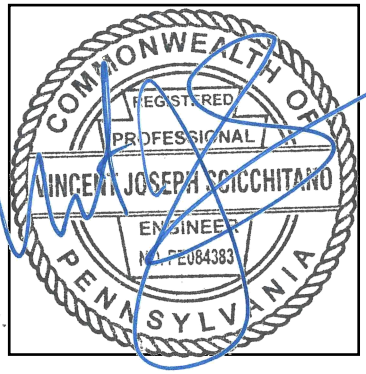
The Rational Method was used to determine the peak 25-year discharge rate for UNT 2 to Coony Hollow. Hydrologic parameters, including drainage area, runoff coefficient, and time of concentration, were derived from publically available LiDAR topography and aerial photography. The underlying assumption of the Rational Method is that the duration of the design storm event is equal to the time of concentration. The rainfall intensity corresponding to the aforementioned duration of the storm event, along with the drainage area and average runoff coefficient, were used to develop the peak flow for the 25-yr/24-hour event.

Hydraulics: The calculated 25-year peak discharge was used to determine the corresponding depth of water that is anticipated to occur in the stream. Stream channel geometry was determined based on field observations. Other pertinent geometric data, including stream slope, was estimated from publically available LiDAR topography. Manning's equation was utilized to determine the depth of water corresponding to the 25-year peak discharge in the channel sections utilizing the FlowMaster software program.

RESULTS:

The results of the calculations, including pertinent reference information, are included on the following pages. This analysis has determined that the 25-year WSELs for Coony Hollow and UNT 2 to Coony Hollow are contained entirely within the stream banks. Therefore, timber cribbing is not required to elevate the waterline above the calculated WSEL at the Coony Hollow stream crossing or UNT 2 to Coony Hollow floodway crossing. However, the waterline will be placed on a truss for stability at the Cooney Hollow crossing due to the length of the stream crossing.

I, Vincent J. Scicchitano, do hereby certify pursuant to the penalties of 18 Pa.C.S.A. Sec. 4904 to the best of my knowledge, information and belief, that the information contained in the accompanying plans, specifications and reports has been prepared in accordance with accepted engineering practice, is true and correct, and is in conformance with Chapter 105 of the rules and regulations of the Department of Environmental Protection.



25 Year Elevation at Stream Crossing Calculation

Project: B50 Temporary Above-Ground Waterline

Stream Name: Coony Hollow

Prepared By: JTD Checked By: VJS

Date: 10/31/2022 Date: 11/1/2022

SCS Method

Drainage Area (acres)	Weighted CN	TC path (min)	Q (cfs)
331.0	73	36.4	346.1

Find 25 yr storm depth

Depth of 25 YR Storm From Bentley Flow Master (ft)	2.7
Observed Top of Bank Depth (ft)	3.5

Determination:

Stream	Depth of 25 YR Storm From Bentley Flow Master (ft)	< or >	Observed Top of Bank Depth (ft)
Coony Hollow	2.7	<	3.5

25 year storm depth is below the top of bank. Therefore, cribbing is not required.

Summary for Subcatchment 9: Coony Hollow

Runoff = 346.12 cfs @ 12.34 hrs, Volume= 35.632 af, Depth> 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YR Rainfall=3.88"

Area (ac)	CN	Description
* 23.0	98	Impervious
10.0	58	Meadow, non-grazed, HSG B
8.8	71	Meadow, non-grazed, HSG C
52.2	78	Meadow, non-grazed, HSG D
14.0	55	Woods, Good, HSG B
189.5	70	Woods, Good, HSG C
33.5	77	Woods, Good, HSG D
331.0	73	Weighted Average
308.0		93.05% Pervious Area
23.0		6.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0800	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.34"
1.8	211	0.1600	2.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	347	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	19	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.2	104	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	66	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.7	821	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	43	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.1	5,638	0.0500	18.40	1,545.41	**Trap/Vee/Rect Channel Flow,** Bot.W=1.70' D=8.00' Z= 1.1 '/' Top.W=19.30' n= 0.040 Earth, cobble bottom, clean sides
36.4	7,349	Total			

Worksheet for Coony Hollow

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.050
Channel Slope	0.050 ft/ft
Left Side Slope	1.400 H:V
Right Side Slope	3.100 H:V
Bottom Width	7.00 ft
Discharge	346.10 cfs

Results	
Normal Depth	32.8 in = 2.7 ft
Flow Area	35.9 ft²
Wetted Perimeter	20.6 ft
Hydraulic Radius	20.9 in
Top Width	19.30 ft
Critical Depth	36.8 in
Critical Slope	0.031 ft/ft
Velocity	9.63 ft/s
Velocity Head	1.44 ft
Specific Energy	4.17 ft
Froude Number	1.244
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	32.8 in
Critical Depth	36.8 in
Channel Slope	0.050 ft/ft
Critical Slope	0.031 ft/ft

STREAM SURVEY DATA COLLECTION FORM

317-457 B50 Temporary Above-Ground Waterline

PROJECT _____ Weather Conditions: ☑ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain
DATE 8-10-20 Any precipitation in the last 5 days? ☑ Yes ☐ No
STREAM FIELD ID Stream 4
STREAM NAME Coony Hollow
REVIEWER(S) JWR

Stream Type: ☑ Perennial ☐ Intermittent ☐ Ephemeral

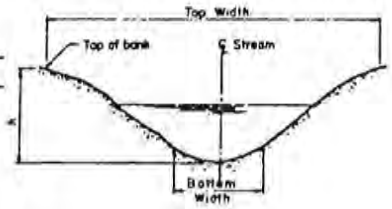
☑ Photographs taken
☑ Flagged
☑ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☑ Yes ☐ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☑ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 8-20' At centerline: —
Average top of bank depth (feet): 2-8' At centerline: —
Wetted width (feet): Ave 2.5' At centerline: —
Wetted depth (inches): Ave 4" At centerline: —
Average side slopes: Vertical (1:1 or less); 2:1; (3:1); 4:1 or more
Ordinary High Water Mark (OHWM), if observed:
AVG OW: 5-7' OD: 6-12"



Primary tributary substrate composition (check all that apply):

✓ Silt	✓ Gravel (0.25" to 2")	✓ Bedrock
✓ Sand	✓ Cobble (2" to 10")	☐ Vegetation (____%)
☐ Clay	✓ Boulder (>10")	☐ Other. Explain:

Flow Characteristics:

Water present: ☑ No water, streambed dry ☑ Streambed moist ☑ Standing water ☑ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☐ Normal ☑ Low
Bank erosion: ☐ Extensive ☑ Moderate ☐ Little / None

Tributary has (check all that apply): ☑ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:
☑ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☑ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☐ Yes (☐ Abutting or ☐ Adjacent) ☑ No
Wetland ID:

Biological Characteristics:

Macroinvertebrates observed? ☑ Yes ☐ No Describe: Tricoptera, Water Penny, Flatworm
Fish or wildlife observed? ☐ Yes ☑ No Describe:

Other Observations and Comments:

-USGS DCE @ SB

25 Year Elevation at Stream Crossing Calculation

Project: B50 Temporary Above-Ground Waterline

Stream Name: UNT 2 to Coony Hollow

Prepared By: JTD Checked By: KNK

Date: 3/4/2022 Date: 3/4/2022

Rational Method: Q=CiA

Drainage Area (A) (acres)	Runoff Coefficient (C)	TC path (min)	Intensity (i) (inches/hour)	Q (cfs)
0.4	0.21	6.9	6.48	0.5

Find 25 yr storm depth

Depth of 25 YR Storm From Bentley Flow Master (ft)	0.2
Observed Top of Bank Depth (ft)	0.7

Determination:

Stream	Depth of 25 YR Storm From Bentley Flow Master (ft)	< or >	Observed Top of Bank Depth (ft)
UNT 2 to Coony Hollow	0.2	<	0.7

25 year storm depth is below the top of bank. Therefore, cribbing is not required.

Summary for Subcatchment 10: UNT 2 to Coony Hollow

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YR Rainfall=3.88"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	100	0.2800	0.42		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.34"
0.2	30	0.2600	2.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	57	0.6000	3.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	116	0.2200	2.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	50	0.6000	3.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	89	0.3100	2.78		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.0	193	0.4100	3.20		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.9	635	Total			

Worksheet for UNT 2 to Coony Hollow

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data		
Roughness Coefficient	0.030	
Channel Slope	0.330	ft/ft
Left Side Slope	3.000	H:V
Right Side Slope	3.000	H:V
Discharge	0.50	cfs

Results		
Normal Depth	2.1	in = 0.2 ft
Flow Area	0.1	ft²
Wetted Perimeter	1.1	ft
Hydraulic Radius	1.0	in
Top Width	1.05	ft
Critical Depth	3.4	in
Critical Slope	0.027	ft/ft
Velocity	5.42	ft/s
Velocity Head	0.46	ft
Specific Energy	0.63	ft
Froude Number	3.225	
Flow Type	Supercritical	

GVF Input Data		
Downstream Depth	0.0	in
Length	0.0	ft
Number Of Steps	0	

GVF Output Data		
Upstream Depth	0.0	in
Profile Description	N/A	
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.1	in
Critical Depth	3.4	in
Channel Slope	0.330	ft/ft
Critical Slope	0.027	ft/ft

STREAM SURVEY DATA COLLECTION FORM

317-457 B50 Temporary Above-Ground Waterline

PROJECT
DATE 8-10-20
STREAM FIELD ID Stream - 2
STREAM NAME UNT 2 to Coony Hollow
REVIEWER(S) JWR

Weather Conditions: ☑ Sunny ☐ Partly Cloudy ☐ Cloudy ☐ Rain
Any precipitation in the last 5 days? ☑ Yes ☐ No

Stream Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

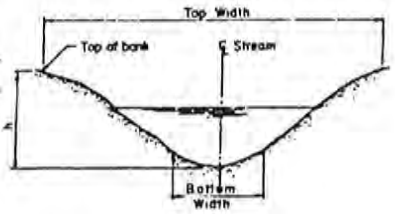
☑ Photographs taken
☑ Flagged
☑ GPS coordinates collected

Stream crossed/encroached by centerline or limit of disturbance:
☐ Yes ☐ No Crossing length _____ feet
Road crossing and type:
☐ Bridge ☐ Ford crossing ☐ Culvert (Diameter: ___)

Hydrological Characteristics:

Tributary is: ☑ Natural.
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain (rip/rap, gabions, stream channelized, filled, or truncated):

Stream channel properties with respect to top of bank (estimate):
Average top of bank width (feet): 0.5-1.2 At centerline: —
Average top of bank depth (feet): 0.2-0.7 At centerline: —
Wetted width (feet): Dry-0.2 At centerline: —
Wetted depth (inches): Dry-<1" At centerline: —
Average side slopes: Vertical (1:1 or less); 2:1; 3:1; 4:1 or more
Ordinary High Water Mark (OHWM), if observed:
OW: 0.5-0.7 DD: 2-3"



Primary tributary substrate composition (check all that apply):

☑ Silt	☑ Gravel (0.25" to 2")	☐ Bedrock
☑ Sand	☑ Cobble (2" to 10")	☐ Vegetation (___%)
☐ Clay	☐ Boulder (>10")	☐ Other. Explain:

Flow Characteristics:

Water present: ☑ No water, streambed dry ☑ Streambed moist ☐ Standing water ☑ Flowing water
If flow present, estimate stage at time of survey: ☐ High ☐ Normal ☑ Low
Bank erosion: ☐ Extensive ☐ Moderate ☑ Little / None

Tributary has (check all that apply): ☑ Defined bed and banks ☐ Poorly defined bed and banks

Water Quality Characteristics

General watershed or riparian area characteristics:
☑ forested ☐ open field ☐ farmland ☐ wetland ☐ mixed use ☐ industrial ☐ mining ☐ residential

Stream Shading: ☑ 75 - 100% ☐ 50 - 74% ☐ 25 - 49% ☐ 0 - 24%
Wetland fringe: ☑ Yes (☑ Abutting or ☐ Adjacent) ☐ No
Wetland ID: WTL-1 (PEM)

Biological Characteristics:

Macroinvertebrates observed? ☐ Yes ☑ No Describe:
Fish or wildlife observed? ☐ Yes ☑ No Describe:

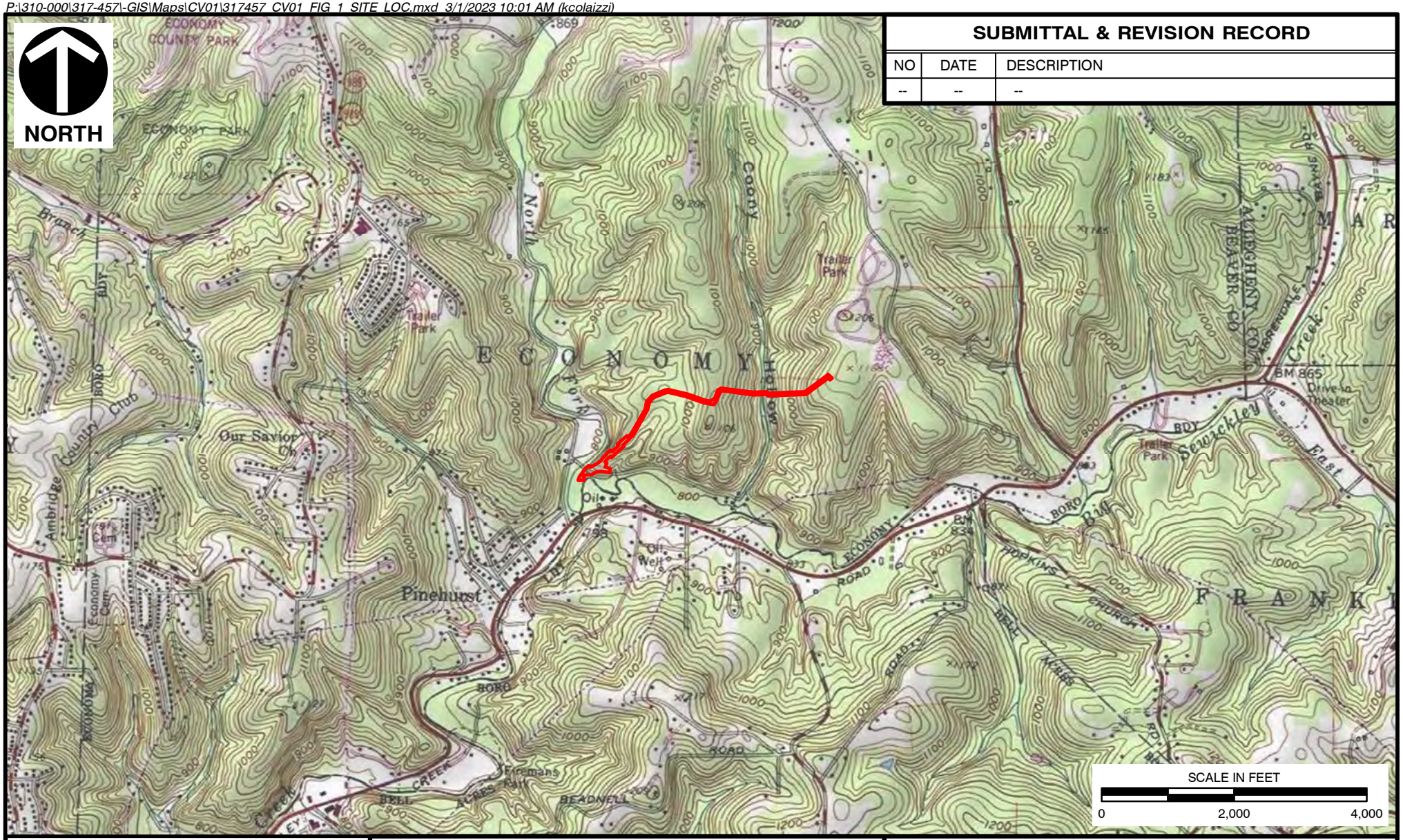
Other Observations and Comments:

- USEW WTL-1
- DSEW Loss of B+B

APPENDIX B

SITE LOCATION MAP

P:\310-000\317-457\-GIS\Maps\CV01\317457_CV01_FIG_1_SITE_LOC.mxd 3/1/2023 10:01 AM (kcolaizzi)



SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
--	--	--

LEGEND

PROPOSED LIMIT OF DISTURBANCE

REFERENCE

1. USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS, ACCESSED 3/1/2023. AMBRIDGE, PA QUAD.

Civil & Environmental Consultants, Inc.
4350 Northern Pike, Suite 141 - Monroeville, PA 15146
724-327-5200 · 800-899-3610
www.cecinc.com

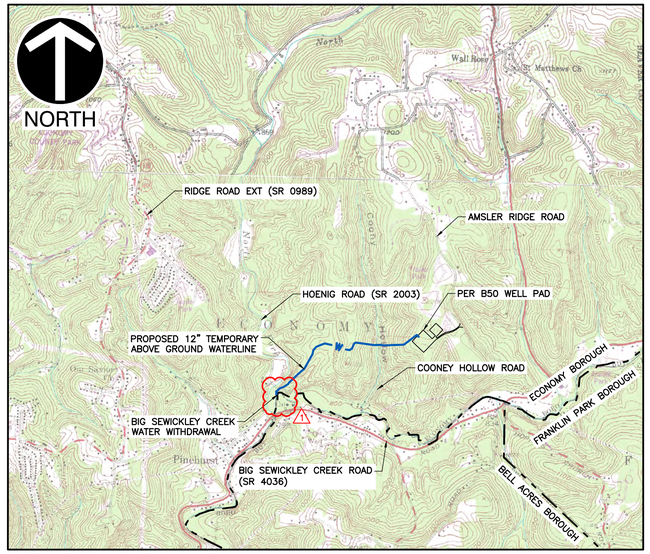
PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA

SITE LOCATION MAP

DRAWN BY:	KMC	CHECKED BY:	JTD	APPROVED BY:	VJS*	FIGURE NO:	1
DATE:	03/01/2023	SCALE:	1 " = 2,000 '	PROJECT NO:	317-457	* Hand signature on file	

PENNENERGY RESOURCES, LLC

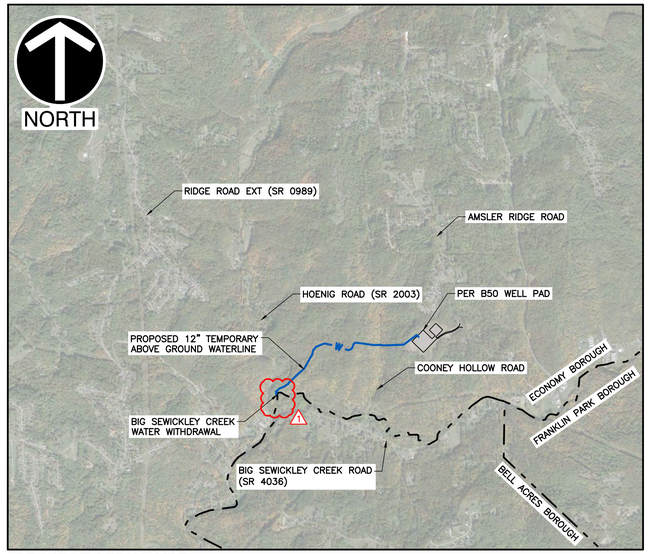
B50 TEMPORARY ABOVE-GROUND WATERLINE
ESCGP-3 PERMIT DRAWINGS
ECONOMY BOROUGH
BEAVER COUNTY, PENNSYLVANIA



PROJECT LOCATION MAP

REFERENCE: USGS 7.5 MIN. TOPOGRAPHIC QUADRANGLE MAPS AMBRIDGE, PA, IMAGE DATED 1960; PHOTOREVISED 1990 AND BADEN, PA, IMAGE DATED 1953; PHOTOREVISED 1990

SCALE IN FEET
0 2,000 4,000



PROJECT AERIAL MAP

REFERENCE: AERIAL PHOTOGRAPHY TAKEN FROM GOOGLE EARTH PRO; IMAGERY DATED OCTOBER 8, 2020.

SCALE IN FEET
0 2,000 4,000

SHEET INDEX

PA ONE CALL DESIGN SERIAL NUMBER: 20211673191 & 20211653277

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL PENNSYLVANIA ONE CALL SYSTEM, INC.
1–800–242–1776

PENNSYLVANIA ACT 38 (1991) REQUIRES NO LESS THAN 3 WORKING DAYS NOTICE NOR MORE THAN 10 WORKING DAYS NOTICE FROM EXCAVATORS WHO ARE ABOUT TO: DIG, DRILL, BLAST, AUGER, BORE, GRADE, TRENCH, OR DEMOLISH WHEN IN THE CONSTRUCTION PHASE. FOR LOCATION REQUESTS IN THE STATE OF PENNSYLVANIA, CALL TOLL FREE 1–800–242–1776. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THE LOCATION MUST BE CONSIDERED APPROXIMATE. OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN ALL PHYSICAL LOCATIONS OF UTILITY LINES PRIOR TO THE TIME OF CONSTRUCTION. IN NO WAY SHALL THE CONTRACTOR HOLD THE SURVEYOR RESPONSIBLE FOR ANY UTILITY LOCATION SHOWN ON THIS PLAN.

REFERENCES

1. EXISTING TOPOGRAPHY OF BIG SEWICKLEY CREEK, IN THE VICINITY OF THE WITHDRAWAL LOCATION, OBTAINED FROM FIELD SURVEY PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. (CEC) IN JANUARY 2023. AS–BUILT TOPOGRAPHY FOR THE PER B50 WELL PAD SURVEYED BY CEC IN FEBRUARY 2020. EXISTING CONTOURS OUTSIDE OF THESE AREAS DERIVED FROM THE PAMAP PROGRAM 3.2 FT DIGITAL ELEVATION MODEL OF PENNSYLVANIA; DEVELOPED BY PAMAP PROGRAM, PA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY; DATED MAY 2006. ⚠1
2. AERIAL PHOTOGRAPHY TAKEN FROM GOOGLE EARTH PRO; IMAGERY DATED OCTOBER 8, 2020.
3. STREAM AND WETLAND DELINEATION COMPLETED BY CEC, INC. IN AUGUST 2020 AND MAY/JUNE 2021.
4. PROPERTY LINES DERIVED FROM BEAVER COUNTY TAX PARCEL DATA AND SUPPLEMENTED BY FIELD SURVEY PERFORMED BY CEC, INC. IN NOVEMBER & DECEMBER 2020 AND JUNE 2021.
5. SOURCES, INCLUDING THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION TYPE 5B MAPS FOR ECONOMY BOROUGH AND BELL ACRES BOROUGH, INDICATE THAT THE MUNICIPAL BOUNDARY FOLLOWS THE CENTERLINE OF BIG SEWICKLEY CREEK. THE MUNICIPAL BOUNDARY SHOWN ON THE PLANS WAS DIGITIZED BASED ON THE EXISTING STREAM LOCATION. ⚠1

REVISION RECORD

NO	DATE	DESCRIPTION
⚠1	02/28/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE.

PENNENERGY RESOURCES

Civil & Environmental Consultants, Inc.
700 Cherrington Parkway · Moon Township, PA 15108
412-429-2324 · 800-365-2324
www.cecinc.com

PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — VINCENT JOSEPH SOLOCHITANO — ENGINEER — NO. PE054363
02/28/2023

COVER SHEET

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	1"=2,000'	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			VJS

DRAWING NO.: **0**

P:\317\0-000\317-457\1-CAD\Dwg\CVR\317457-CVR03-0-COVER.dwg[0] 02/28/2023 - ewebling - LP: 2/28/2023 8:34 PM

GENERAL NOTES

1. THE UNDERLYING PREMISE FOR THIS PROJECT IS THAT DISTURBANCE IN SOME PROJECT AREAS WILL BE MINIMAL. EROSION AND SEDIMENTATION (E&S) BEST MANAGEMENT PRACTICES (BMPS) SHALL BE IMPLEMENTED FOR ALL DISTURBED AREAS. ALL E&S BMPS SHALL BE DESIGNED AND MAINTAINED IN ACCORDANCE WITH THE MOST CURRENT VERSION OF THE PA DEP EROSION AND SEDIMENT POLLUTION CONTROL MANUAL. E&S BMPS ARE SHOWN IN THE AREAS WHERE DISTURBANCE IS ANTICIPATED. IF DISTURBANCE OCCURS IN OTHER AREAS, ADDITIONAL BMPS WILL BE REQUIRED. THE CONTRACTOR SHALL ALERT PENNENERGY RESOURCES, LLC IF ADDITIONAL DISTURBANCE IS ANTICIPATED TO OCCUR.

2. EXISTING CONDITIONS AS DEPICTED ON THESE PLANS ARE GENERAL AND ILLUSTRATIVE IN NATURE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE SITE AND BE FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING ON THIS PROJECT. IF CONDITIONS ENCOUNTERED DURING EXAMINATION ARE SIGNIFICANTLY DIFFERENT THAN THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY PENNENERGY RESOURCES, LLC IMMEDIATELY.

3. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLYING WITH APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK.

4. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER AND OWNER'S REPRESENTATIVE FOR ANY AND ALL INJURIES AND/OR DAMAGES TO PERSONNEL, EQUIPMENT, AND/OR EXISTING FACILITIES OCCURRING IN THE COURSE OF THE CONSTRUCTION DESCRIBED IN THE PLANS AND SPECIFICATIONS.

5. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL CODES, OBTAIN ALL APPLICABLE PERMITS, AND PAY ALL REQUIRED FEES PRIOR TO BEGINNING WORK.

6. THE CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS SET AND ANY REFERENCED PLANS AND PERMITS FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICTS ALL WORK ASSOCIATED WITH THE PROJECT.

7. THE CONTRACTOR SHALL REFER TO THE JOINT PERMIT PACKAGE FOR ADDITIONAL INFORMATION PERTAINING TO THE CROSSING OF WETLANDS, STREAMS, AND/OR FLOODWAYS.

8. THE CONTRACTOR SHALL REFER TO THE APPROVED DRIVEWAY AND ROAD CROSSING PERMITS FOR ADDITIONAL INFORMATION PERTAINING TO PROPOSED CONSTRUCTION ENTRANCES AND WATERLINE CROSSINGS OF ROADS.

9. THE CONTRACTOR SHALL REFER TO THE WATER MANAGEMENT PLAN FOR ADDITIONAL INFORMATION PERTAINING TO THE BIG SEWICKLEY CREEK WITHDRAWAL.

10. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED IN ACCORDANCE WITH THE DETAILS PROVIDED IN THIS PLAN SET.

11. CEC HAS PERFORMED A DESKTOP GEOHAZARD ANALYSIS FOR THIS PROJECT. BASED ON THE DESKTOP ANALYSIS AND THE LIMITED EXTENT OF THE EARTHWORK REQUIRED FOR THE PROJECT, CEC DOES NOT ANTICIPATE ENCOUNTERING ANY GEOLOGIC FORMATIONS OR SOIL CONDITIONS WHICH MAY HAVE THE POTENTIAL TO CAUSE POLLUTION DURING OR AFTER EARTH DISTURBANCE ACTIVITIES. SHOULD ISSUES RELATED TO GEOLOGIC FORMATIONS, LANDSLIDES, OR SLOPE STABILITY BE ENCOUNTERED DURING CONSTRUCTION, CEC SHOULD BE NOTIFIED IMMEDIATELY TO PROVIDE RECOMMENDATIONS TO MINIMIZE OR AVOID POTENTIAL PROBLEMS.

12. COAL IS NOT ANTICIPATED TO BE ENCOUNTERED. IF UNEXPECTEDLY ENCOUNTERED DURING CONSTRUCTION, IT SHALL BE STOCKPILED AND COVERED WITH TARPS. COAL SHALL BE TESTED TO DETERMINE IF IT HAS THE POTENTIAL TO PRODUCE ACIDIC RUNOFF. IF THE COAL HAS THE POTENTIAL TO BE ACID PRODUCING, IT SHALL BE PLACED IN A DUMPSTER AND PROPERLY DISPOSED OF. IF THE COAL IS NOT ACID PRODUCING, IT MAY BE BLENDED WITH OTHER ONSITE MATERIAL AND USED FOR FILL. THE CONTRACTOR SHALL CONSULT PADEP DOCUMENT NO. 5600-FS-DEP4284, "HOW TO AVOID AND HANDLE ACID-PRODUCING ROCK FORMATIONS ENCOUNTERED DURING WELL SITE DEVELOPMENT," AND PENNENERGY RESOURCES, LLC OR THE ENGINEER. PENNENERGY RESOURCES, LLC OR THE ENGINEER WILL MAKE THE DETERMINATION AS TO HOW THE COAL SHALL BE HANDLED.

13. AFTER USE OF THE TEMPORARY WATERLINE IS NO LONGER NEEDED, THE TEMPORARY WATERLINE SHALL BE REMOVED. ALL EROSION AND SEDIMENT CONTROL MEASURES AND MEASURES TO PROTECT STREAMS AND WETLANDS SHOWN HEREON SHALL BE IN PLACE AND PROPERLY FUNCTIONING DURING REMOVAL OF THE TEMPORARY WATERLINE. EROSION AND SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED ON ALL DISTURBED AREAS.

14. THE 100-YEAR FLOODWAY SHOWN ON THESE PLANS IS BASED ON THE PA CODE TITLE 25 CHAPTER 105 SECTION 1 FLOODWAY DEFINITION. THE PA DEP DEFINES THE FLOODWAY AS THE CHANNEL OF THE WATERCOURSE AND PORTIONS OF THE ADJOINING FLOODPLAINS WHICH ARE REASONABLY REQUIRED TO CARRY AND DISCHARGE THE 100-YEAR FREQUENCY FLOOD. UNLESS OTHERWISE SPECIFIED, THE BOUNDARY OF THE FLOODWAY IS AS INDICATED ON MAPS AND FLOOD INSURANCE STUDIES PROVIDED BY FEMA. IN AN AREA WHERE NO FEMA MAPS OR STUDIES HAVE DEFINED THE BOUNDARY OF THE 100-YEAR FREQUENCY FLOODWAY, IT IS ASSUMED, ABSENT EVIDENCE TO THE CONTRARY, THAT THE FLOODWAY EXTENDS 50 FEET FROM THE TOP OF BANK OF THE STREAM. PORTIONS OF THE PROJECT AREA ARE MAPPED ON THE FEMA INSURANCE RATE MAP PANEL 42007C0281D. ACCORDING TO THIS INFORMATION, PORTIONS OF THE PROJECT AREA ARE LOCATED IN OR ADJACENT TO ZONE AE FOR WHICH A FEMA FLOODWAY HAS BEEN ESTABLISHED. STREAMS NOT INDICATED TO HAVE A DETAILED FLOOD STUDY ARE ASSUMED TO HAVE FLOODWAYS THAT EXTEND 50' FROM THE TOP OF STREAM BANKS, IN ACCORDANCE WITH THE DEFINITION OF A FLOODWAY PROVIDED IN 25 PA CODE CHAPTER 105.

15. A LOG SHOWING THE DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.

16. PER B50 WELL PAD PREVIOUSLY PERMITTED AND CONSTRUCTED UNDER ESCGP PERMIT NO. ESX17-007-0014.

17. WHEN CONDUCTING EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE SHALL PROTECT ARCHAEOLOGICAL SPECIMENS AND HISTORIC RESOURCES IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL LAWS.

18. THE EROSION AND SEDIMENTATION CONTROL BMPS SHOWN HEREON HAVE BEEN DESIGNED USING TOPOGRAPHY MAPPED AT TWO FOOT CONTOUR INTERVALS. SOME LIMITATIONS ARE INHERENT IN TOPOGRAPHIC MAPPING AT THIS INTERVAL, INCLUDING THE INABILITY TO DEPICT LOCALIZED DEVIATIONS WITH LESS THAN TWO FEET OF ELEVATION CHANGE. IN ADDITION, SITE SPECIFIC CONDITIONS SUCH AS ROCK OUTCROPPINGS, TREES, STUMPS, UTILITIES, FENCES, OR FEATURES INSTALLED SUBSEQUENT TO PROCUREMENT OF THE TOPOGRAPHIC MAPPING MAY NOT BE REFLECTED ON THE PLAN. THE INTENT OF THIS PLAN IS TO MINIMIZE EROSION AND PREVENT SEDIMENT-LADEN RUNOFF FROM DISCHARGING BEYOND THE LIMITS OF CONSTRUCTION OR TO SENSITIVE NATURAL RESOURCES. BMPS SHALL BE INSTALLED AS CLOSELY AS POSSIBLE TO THE LOCATIONS INDICATED ON THE PLANS; HOWEVER, DEVIATIONS MAY BE REQUIRED TO ADDRESS THE AFOREMENTIONED LIMITATIONS AND SITE-SPECIFIC CONDITIONS AND PROTECT THE ENVIRONMENT.

EROSION AND SEDIMENTATION CONTROL NOTES

1. CHANGES TO THE EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE APPROVED BY THE ENGINEER AND THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PADEP).

2. WORK SHALL BE DONE IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL PREPARED BY THE PADEP, BUREAU OF SOIL AND WATER CONSERVATION, LATEST EDITION.

3. ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY THE PADEP, OWNER, OR THE TOWNSHIP IN THE EVENT THAT ANY UNFORESEEN PROBLEMS ARISE DURING CONSTRUCTION.

4. THE CONTRACTOR SHALL INSTALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES PRIOR TO ANY SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAIN THEM UNTIL PERMANENT STABILIZATION IS ESTABLISHED.

5. THE AGGREGATE BASE COURSE SHALL BE APPLIED AS SOON AS PRACTICABLE FOLLOWING ROUGH GRADING IN ORDER TO STABILIZE THE PROPOSED ACCESS OFF OF COONEY HOLLOW ROAD.

6. THE CONTRACTOR SHALL VERIFY THAT ALL EXISTING UTILITIES TO BE REMOVED, RELOCATED, AND/OR RAZED (IF APPLICABLE) ARE DISCONNECTED PRIOR TO INITIATING EARTHMOVING ACTIVITIES.

7. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES. SLOPES LESS THAN 3:1 (HORIZONTAL:VERTICAL) SHALL BE SEEDED, MULCHED, OR OTHERWISE PROTECTED. EROSION CONTROL BLANKETS OR HYDRAULICALLY APPLIED SLOPE STABILIZATION SHALL BE INSTALLED OVERTOP OF ALL SLOPES GREATER THAN OR EQUAL TO 3:1, AREAS WITHIN 100' OF A STREAM OR WETLAND, AND OTHER LOCATIONS SHOWN ON THE PLANS.

8. CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF AT AN APPROVED WASTE SITE. BURNING SHALL NOT BE PERMITTED.

9. AT THE TIME WHEN THE SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER SHALL BE REMOVED OR TREATED BY THE CONTRACTOR TO MAKE IT SUITABLE TO SUPPORT VEGETATIVE GROUND COVER.

10. THE CONTRACTOR SHALL CONTROL DUST WITH WATER OR OTHER METHODS APPROVED BY THE PADEP AND THE OWNER.

11. THE CONTRACTOR SHALL SUBMIT A PREPAREDNESS, PREVENTION AND CONTINGENCY (PPC) PLAN TO THE OWNER PRIOR TO CONSTRUCTION IF CHEMICALS, SOLVENTS OR OTHER HAZARDOUS WASTES OR MATERIALS WITH THE POTENTIAL TO CAUSE ACCIDENTAL POLLUTION DURING EARTHMOVING OR OTHER CONSTRUCTION ACTIVITIES ARE STORED OR USED ON SITE. THE PPC PLAN SHALL BE PREPARED IN ACCORDANCE WITH "GUIDELINES FOR THE DEVELOPMENT AND IMPLEMENTATION OF PREPAREDNESS, PREVENTION AND CONTINGENCY (PPC) PLANS", PREPARED BY PADEP BUREAU OF SOLID WASTE MANAGEMENT AND PADEP BUREAU OF WATER QUALITY MANAGEMENT.

12. THE CONTRACTOR SHALL CONSTRUCT A BERM AROUND AREAS WHERE HYDRAULIC FLUID AND DIESEL FUEL WILL BE STORED DURING CONSTRUCTION TO SERVE AS A CONTAINMENT AREA FOR THE CONTROL OF POSSIBLE SPILLS. ANY SPILL WITHIN THE CONTAINMENT AREA SHALL BE IMMEDIATELY CLEANED. TELEPHONE NUMBERS OF EMERGENCY RESPONSE TEAMS ARE TO BE KEPT ON SITE, AND THEY ARE TO BE NOTIFIED IN THE CASE OF A SPILL.

13. THE CONTRACTOR SHALL PROVIDE THE LOCATION AND ANY APPLICABLE PERMIT NUMBERS OF ALL THE OFF SITE DISPOSAL AND BORROW SITES THAT WILL BE UTILIZED DURING CONSTRUCTION TO THE PADEP PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL ALSO IDENTIFY THE EROSION AND SEDIMENTATION CONTROL MEASURES, WHICH WILL BE IMPLEMENTED AT THE DISPOSAL AND/OR BORROW SITES. IF THE DISPOSAL AND/OR BORROW SITES ARE NOT PERMITTED, AN EROSION AND SEDIMENTATION PLAN MUST BE APPROVED BY THE PADEP PRIOR TO THEIR USE.

14. RUNOFF DRAINS TO NORTH FORK BIG SEWICKLEY CREEK, BIG SEWICKLEY CREEK, UNTs TO BIG SEWICKLEY CREEK, COONY HOLLOW, AND UNTs TO COONY HOLLOW OF THE BIG SEWICKLEY CREEK WATERSHED. ACCORDING TO THE CHAPTER 93 WATER QUALITY STANDARDS, DEPARTMENT OF ENVIRONMENTAL PROTECTION, TITLE 25 ENVIRONMENTAL RESOURCES, COMMONWEALTH OF PENNSYLVANIA, THESE STREAMS ARE CLASSIFIED AS TSF (TROUT STOCKING FISHERY), AND ARE NOT IMPAIRED FOR SILTATION.

15. SEE EROSION AND SEDIMENT CONTROL REPORT FOR DESCRIPTION OF PROPOSED CONTROLS.

16. PRACTICES AND PROCEDURES MUST BE IN PLACE TO ENSURE THE PROPER HANDLING, STORAGE, CONTROL, DISPOSAL, AND RECYCLING OF GARBAGE, FUELS OR ANY SUBSTANCE WHICH MAY BE HARMFUL TO HUMAN, AQUATIC OR FISH LIFE. THESE ITEMS SHALL BE PREVENTED FROM ENTERING SPRINGS, STREAMS, PONDS, LAKES, WETLANDS, OR ANY WATER COURSE OR WATER BODY. OILS, FUELS, LUBRICANTS AND COOLANTS SHALL BE PLACED IN SUITABLE CONTAINERS AND DISPOSED OF PROPERLY. ALL TRASH AND GARBAGE SHALL BE COLLECTED AND DISPOSED OF PROPERLY AS WELL.

UTILITY NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH PENNENERGY RESOURCES, LLC TO DETERMINE WHAT PROVISIONS ARE REQUIRED TO CROSS OR WORK ADJACENT TO UTILITIES OWNED/OPERATED BY OTHERS.

2. THE LOCATION OF EXISTING UTILITIES AND UNDERGROUND STRUCTURES SHOWN ARE APPROXIMATE AND THOSE SHOWN ARE NOT NECESSARILY ALL THE EXISTING UTILITIES AND STRUCTURES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATION OF ALL ABOVE AND BELOW GROUND UTILITIES AND STRUCTURES PRIOR TO INITIATING CONSTRUCTION ACTIVITIES.

3. THE CONTRACTOR SHALL CONTACT THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776 AND THE APPROPRIATE UTILITY COMPANIES AT LEAST 3 DAYS PRIOR TO THE INITIATION OF EARTHMOVING ACTIVITIES.

UTILITY CONTACTS

AMBRIDGE WATER AUTHORITY
19TH & MERCHANT ST EXT PO BOX C
PO BOX 257
AMBRIDGE, PA 15003
JEFF ALLEN
JALLEN@AMBWATER.ORG

COLUMBIA GAS OF PA, INC
1600 DUBLIN RD
COLUMBUS, OH 43215
LISA COLLINS
LDUGAN@NISOURCE.COM

COMCAST
2810 DARLINGTON RD
BEAVER FALLS, PA 15010
DOUG BALIN
DOUGLAS_BALIN@CABLE.COMCAST.COM

DUQUESNE LIGHT COMPANY
2645 NEW BEAVER AVE
PA-TD
PITTSBURGH, PA 15233
KYLIE PARRISON
KPARISON@DUQLIGHT.COM

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BADEN, PA 15005
TED BRICKNER
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ECONOMY BOROUGH MUNICIPAL AUTHORITY
2860 CONWAY WALLROSE RD
BADEN, PA 15005
JOSEPH DELUCA
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ENERGY TRANSFER
1300 MAIN ST
HOUSTON, TX 77002
MOLLY CARRIERE
MOLLY.CARRIERE@ENERGYTRANSFER.COM

PENNENERGY RESOURCES LLC
1000 COMMERCE DR
PARK PLACE ONE SUITE 400
PITTSBURGH, PA 15275
WILLIAM BROWN
WABROWN@PENNENERGYRESOURCES.COM

VERIZON PENNSYLVANIA, LLC
1026 HAY ST
PITTSBURGH, PA 15221
DEBORAH BARUM
DEBORAH.D.DELIA@VERIZON.COM

CONSTRUCTION SEQUENCE

A PRECONSTRUCTION MEETING IS REQUIRED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. PADEP MUST BE INVITED TO THIS MEETING AT LEAST SEVEN DAYS IN ADVANCE. AT LEAST THREE DAYS BEFORE STARTING EARTH DISTURBANCE ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM TO LOCATE UTILITIES. AFTER INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS, THE DEP SHALL BE NOTIFIED AT LEAST THREE DAYS PRIOR TO PROCEEDING WITH BULK EARTH DISTURBANCE ACTIVITIES.

THE FOLLOWING IS A GENERALIZED CONSTRUCTION SEQUENCE FOR THE PROJECT. THIS CONSTRUCTION SEQUENCE WAS DEVELOPED TO PROVIDE THE NECESSARY STEPS IN ORDER TO ACHIEVE EROSION AND SEDIMENTATION CONTROL PROTECTION THROUGHOUT EARTHMOVING ACTIVITIES. THE CONTRACTOR SHALL PERFORM ALL NECESSARY ACTIVITIES FOR PROPER AND COMPLETE EXECUTION OF THIS PLAN, WHETHER SPECIFICALLY MENTIONED OR NOT, AND MAY BE REQUIRED TO ALTER CONTROLS BASED ON EFFECTIVENESS OF CONTROLS OR DIFFERING CONDITIONS THAT ARE ENCOUNTERED DURING THE PROJECT. ALTERATIONS TO THE APPROVED E&S PLAN MUST BE COMMUNICATED TO THE PADEP WATER QUALITY SPECIALIST OR PERMIT REVIEWER (DEPENDING ON THE NATURE OF THE CHANGE). UNLESS THERE IS AN IMMINENT RISK OF SEDIMENT OR OTHER POLLUTION TO WATERS OF THE COMMONWEALTH, OR HEALTH AND SAFETY RISKS, THE ALTERATION OR ADDITION MUST BE APPROVED BY THE PADEP PRIOR TO IMPLEMENTATION.

1. PRIOR TO COMMENCEMENT OF ANY POTENTIAL EARTH DISTURBANCE ACTIVITY, THE CONTRACTOR SHALL LAYOUT THE LIMITS OF THE SITE AND ESTABLISH BENCHMARKS, REFERENCE POINTS, AND ANY AREAS WHICH ARE TO BE PRESERVED OR AVOIDED DURING CONSTRUCTION.

2. ROCK CONSTRUCTION ENTRANCE/SITE ACCESS - THIS IS THE FIRST LAND-DISTURBANCE ACTIVITY TO TAKE PLACE AT THE SITE. THE CONTRACTOR SHOULD PROVIDE THE ROCK CONSTRUCTION ENTRANCE IN ADDITION TO OTHER BMPS, AS SHOWN ON THE PLANS, TO MINIMIZE ACCELERATED EROSION AND SEDIMENTATION FROM THE FOLLOWING AREAS: ENTRANCE TO THE SITE, CONSTRUCTION ROUTES, AND AREAS DESIGNATED FOR EQUIPMENT OR OTHER USE AT THE SITE INCLUDING PARKING, STAGING AREAS, AND STOCKPILES.

3. SEDIMENT BARRIERS - INSTALL PERIMETER BMPS AND ORANGE CONSTRUCTION FENCE IN AREAS WHERE EARTH DISTURBANCE MAY BE REQUIRED AFTER THE WATERLINE RIGHT-OF-WAY IS ACCESSED. THE CONTRACTOR SHALL KEEP THE ASSOCIATED CLEARING AND GRUBBING LIMITED TO ONLY THAT AMOUNT REQUIRED FOR INSTALLING PERIMETER BMPS. ADDITIONAL SEDIMENT BARRIER(S) SHALL BE ADDED AS REQUIRED TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE.

4. WATERLINE INSTALLATION - INSTALL THE WATERLINE WITH AS LITTLE DISTURBANCE AS POSSIBLE. DURING INSTALLATION, INSTALL AND MAINTAIN ANY ADDITIONAL EROSION AND SEDIMENT CONTROL BMPS THAT ARE REQUIRED TO CONTROL DISTURBED AREAS. MINIMAL LAND CLEARING AND GRADING, AS SHOWN ON THE PLAN DRAWINGS, MAY BE REQUIRED TO INSTALL THE TEMPORARY WATERLINE. CLEARING AND GRADING MAY BE COMPLETED ONCE ALL PERIMETER CONTROLS HAVE BEEN INSTALLED DOWNSLOPE OF THE PROPOSED WORK AREA.

5. SURFACE STABILIZATION - APPLY TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY TO ANY DISTURBED AREAS WHERE WORK HAS REACHED FINAL GRADE, HAS BEEN DELAYED, OR HAS OTHERWISE BEEN TEMPORARILY SUSPENDED.

6. FINAL STABILIZATION/SITE RESTORATION - ONCE THE WATERLINE IS NO LONGER NEEDED, IT SHALL BE REMOVED AND THE WATERLINE RIGHT-OF-WAY SHALL BE RETURNED TO PRECONSTRUCTION CONDITIONS IN TERMS OF APPROXIMATE GRADE AND LAND COVER TO RESTORE DRAINAGE PATTERNS. AFTER RESTORATION IS COMPLETED, INSTALL STABILIZATION BMPS INCLUDING: PLACING TOPSOIL, PERMANENT SEEDING, AND MULCHING.

7. AFTER 70% UNIFORM, VEGETATIVE COVER HAS BEEN ACHIEVED AND THE SITE HAS BEEN STABILIZED, REMOVE ALL EROSION AND SEDIMENTATION CONTROLS AND STABILIZE ANY DISTURBANCES ASSOCIATED WITH THE REMOVAL OF THE BMPS.

REVISION RECORD

NO	DATE	DESCRIPTION

PENNENERGY RESOURCES

Civil & Environmental Consultants, Inc.
700 Cherrington Parkway · Moon Township, PA 15108
412-429-2324 · 800-365-2324
www.cecinc.com

PENNENERGY RESOURCES, LLC
B50 TEMPORARY
ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — JOSEPH SOCCHITANO — ENGINEER NO. PE084383 — 11/3/2022

NOTES

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	N/A	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			VJS

DRAWING NO.: 1

A:\310-000\317-457\-CAD\DWG\CV03\317457-CV03-1-NOTES.dwg[1] LS(1/1/2022 - Jesse) LP: 11/3/2022 9:50 AM

NORTH

TAX PARCEL LINE (TYP.)

HOENIG ROAD (SR 2003)

EXISTING STREAM (TYP.)

EXISTING WETLAND (TYP.)

VAN METER, TIMOTHY & CONSIGLIO, DEBORAH L ETAL 601850266000

ORCHARD ESTATES MHP LLC 601850242000

XXX GAS, LLC 601850242002

PER B50 WELL PAD

4/8

5/9

6/10

3/7

DRAWINGS 4 & 8
STA. 6+00 TO STA. 20+00

DRAWINGS 5 & 9
STA. 20+00 TO STA. 33+00

DRAWINGS 6 & 10
STA. 33+00 TO STA. 46+23

DRAWINGS 3 & 7
STA. ~~-0+68~~ TO STA. 6+00

UTILITY LINE CROSSING 1 AND TEMPORARY ROAD CROSSING 1 (COONY HOLLOW)

UTILITY LINE CROSSING 2 AND TEMPORARY ROAD CROSSING 2 (UNT 2 TO COONY HOLLOW FLOODWAY)

ASSUMED 50' FLOODWAY (TYP.)

EXISTING FEMA FLOODWAY (TYP.)

SURVEYED PROPERTY LINE (TYP.)

COONEY HOLLOW ROAD

CONSTRUCTION ACCESS

BIG SEWICKLEY CREEK TEMPORARY INTAKE

LAZAR, MARY & WILLIAM 601850244000

ECONOMY BOROUGH

BELL ACRES BOROUGH

GvD GpD WhB RycB GpF WhF CmC WhC MoC GsC Ph At RaB ErC GvC

LEGEND

- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- TAX PARCEL LINE
- PROPERTY LINE BASED ON FIELD EVIDENCE
- EXISTING WETLAND
- EXISTING STREAM
- ASSUMED 50' FLOODWAY
- FEMA FLOODWAY
- MUNICIPAL BOUNDARY
- PROPOSED TEMPORARY ABOVE GROUND WATERLINE
- PROPOSED LIMIT OF DISTURBANCE
- SOIL BOUNDARY
- GpF SOIL TYPE

REVISION RECORD

NO	DATE	DESCRIPTION
1	02/28/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE.

SCALE IN FEET
0 200 400

PENNENERGY RESOURCES

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ECONOMY BOROUGH
BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — VINCENT JOSEPH SCICCHITANO — NO. PE034383

02/28/2023

OVERALL PLAN

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	1"=200'	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			VJS

DRAWING NO.: 2

P:\310-0001\317-457\~CAD\[Dwg]\CVD\317457-CVD3-2-Overall Plan.dwg[2] LS:(2/28/2023 - ehaibing) - LP: 2/28/2023 9:03 PM

OWNERSHIP

0+68	6+00
601850266000 VAN METER, TIMOTHY & CONSIGLIO, DEBORAH L ETAL	

MATERIAL

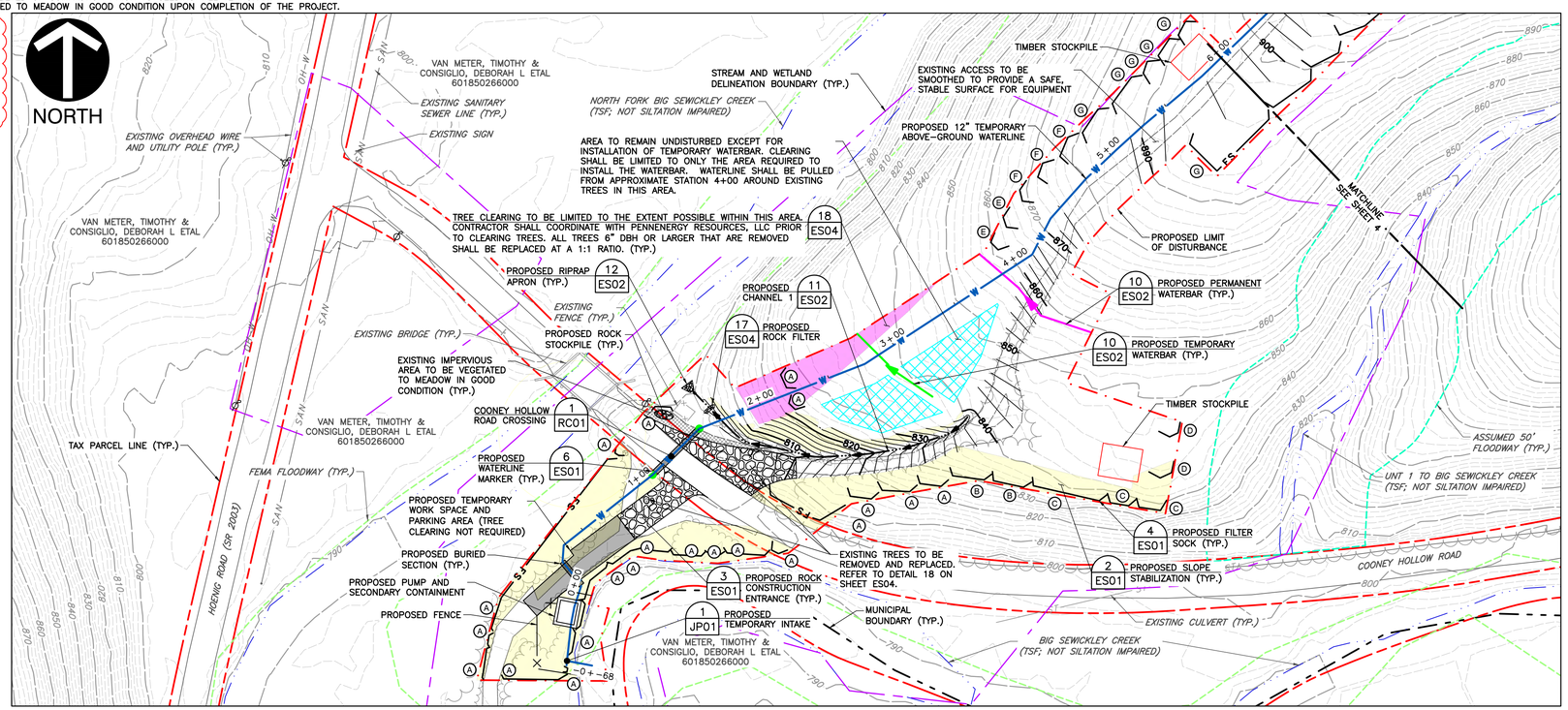
0+68	0+11	1+55	6+00
COMBINATION 6" CAM LOCK HOSING, 12" HDPE MANIFOLD, AND 10" CAM LOCK HOSING	12" HDPE	12" LAYFLAT	

NOTE:
IF GRAVEL IS PLACED IN TEMPORARY WORKSPACES, IT MUST BE REMOVED AS SOON AS IT IS NO LONGER NEEDED OR WITHIN 12 MONTHS FOLLOWING INITIAL INSTALLATION, WHICHEVER IS LESS. THE EXISTING SOIL SHOULD BE SCARIFIED AND RELIEVED OF COMPACTION PRIOR TO SEEDING. ALL TEMPORARY WORKSPACES, WHETHER GRAVEL OF NOT, SHALL BE SEEDED, STABILIZED, AND RESTORED TO MEADOW IN GOOD CONDITION UPON COMPLETION OF THE PROJECT.

COONEY HOLLOW ROAD NOTE:
THE CONTRACTOR SHALL LIMIT VEHICLE ENTRY AND EXIT TO THE PROPOSED ROCK CONSTRUCTION ENTRANCES AND TAKE PRECAUTIONS TO AVOID TRACKING SEDIMENT ONTO THE PUBLIC ROADWAY FROM WORK AREAS OTHER THAN THE ACTUAL OPEN CUT CROSSING OF COONEY HOLLOW ROAD.

ANY SEDIMENT DEPOSITED ON COONEY HOLLOW ROAD AS A RESULT OF THE OPEN CUT ROAD CROSSING SHOULD BE CLEANED IMMEDIATELY FOLLOWING COMPLETION OF THE OPEN CUT OR AT THE END OF EACH WORK DAY IF WORK IS NOT COMPLETED IN ONE DAY.

2



FILTER SOCK TABLE		
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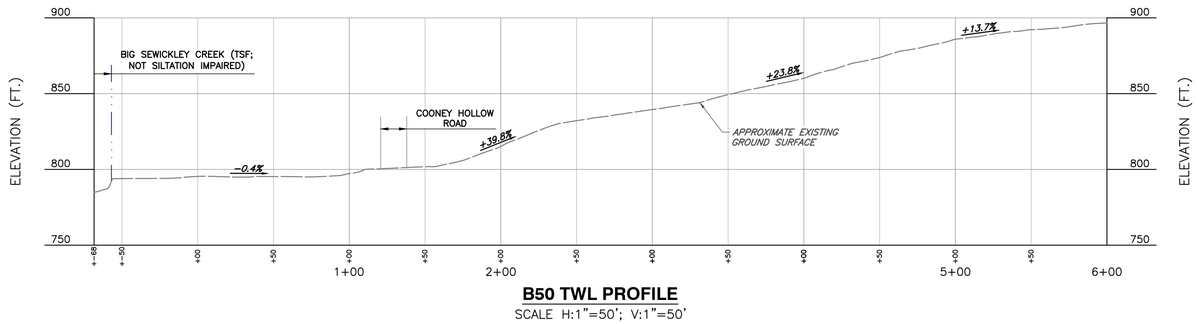
(A) (D)	12"	730
(C) (F) (G)	18"	433
(B) (E)	24"	113

PROFILE



B50 TWL PROFILE
SCALE H:1"=50'; V:1"=50'

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- TAX PARCEL LINE
- PROPERTY LINE BASED ON FIELD EVIDENCE
- STREAM/WETLAND DELINEATION BOUNDARY
- EXISTING WETLAND
- EXISTING STREAM
- ASSUMED 50' FLOODWAY
- FEMA FLOODWAY
- EXISTING OVERHEAD WIRE/UTILITY POLE
- EXISTING FENCE
- EXISTING GAS PIPELINE/MARKER
- EXISTING TREELINE
- EXISTING SANITARY SEWER/MANHOLE
- EXISTING SIGN
- EXISTING CHANNEL
- EXISTING RIPRAP
- EXISTING CULVERT/STORM PIPE/INLET
- PROPOSED GAS PIPELINE (BY OTHERS)
- EXISTING RIGHT-OF-WAY
- PROPOSED TEMPORARY ABOVE GROUND WATERLINE
- PROPOSED BURIED WATERLINE SECTION
- PROPOSED WATERLINE MARKER
- PROPOSED ROCK FILTER
- AREA NOT TO BE DISTURBED
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED TIMBER MAT
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED SLOPE STABILIZATION
- PROPOSED TEMPORARY WATERBAR
- PROPOSED PERMANENT WATERBAR
- PROPOSED RIPRAP APRON
- GRAVEL TO BE REMOVED
- LIMITED TREE CLEARING/TREE REPLACEMENT AREA

REVISION RECORD

NO	DATE	DESCRIPTION
1	02/28/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE.
2	05/01/2023	REVISED PER ESCGP-3 (4/6/23), JPA (4/19/23) & WMP (4/19/23) COMMENTS

SCALE IN FEET
0 50 100

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PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
JOSEPH V. SCHIAVONE
PE-075040
05/01/2023

EROSION AND SEDIMENT CONTROL PLAN

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	1"=50'	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			VJS

DRAWING NO.: 3

\\server-fs-pa\Projects\317-000\317-457\1-CAD\Dwg\GIS\317457-GIS3-Alignment Plans.mxd[3] LS\4/25/2023 - bondroski - LP: 4/27/2023 3:41 PM

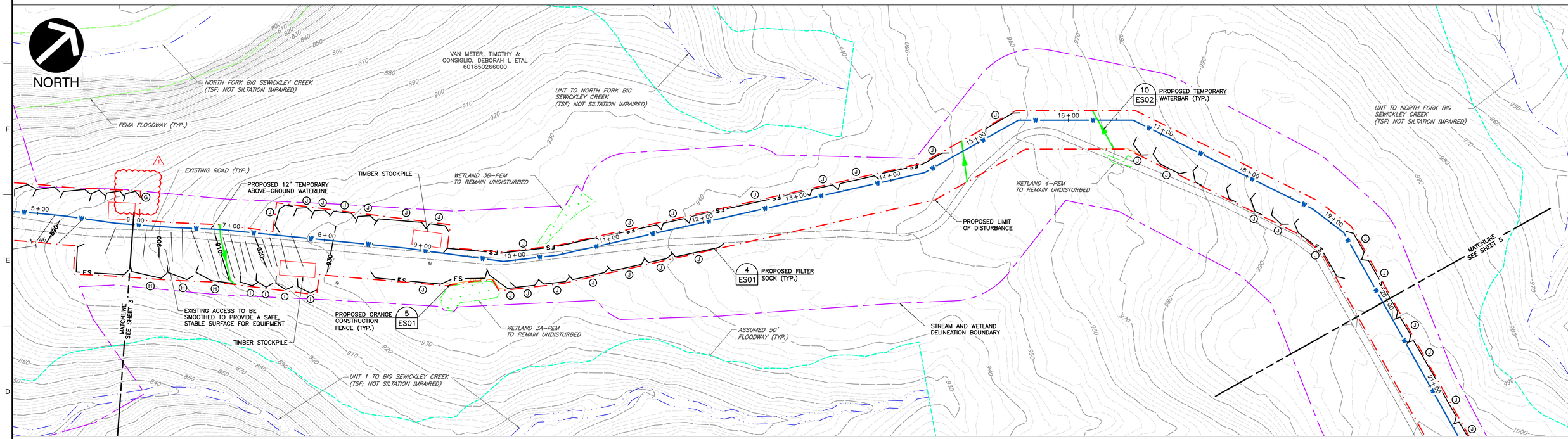
OWNERSHIP

6+00	601850266000 VAN METER, TIMOTHY & CONSIGLIO, DEBORAH L ETAL	20+00

MATERIAL

6+00	12" LAYFLAT	20+00

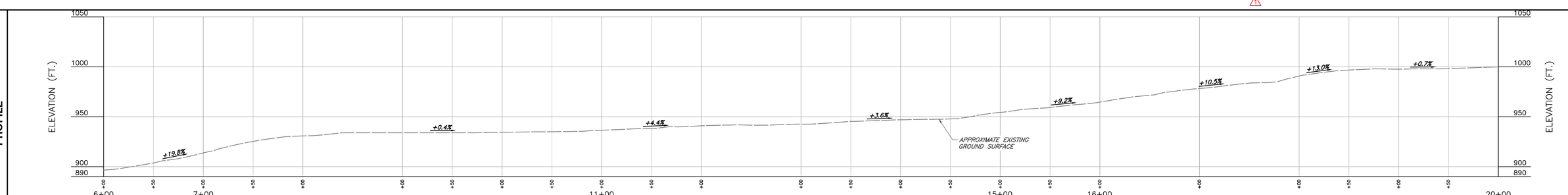
NOTE:
IF GRAVEL IS PLACED IN TEMPORARY WORKSPACES, IT MUST BE REMOVED AS SOON AS IT IS NO LONGER NEEDED OR WITHIN 12 MONTHS FOLLOWING INITIAL INSTALLATION, WHICHEVER IS LESS. THE EXISTING SOIL SHOULD BE SCARIFIED AND RELIEVED OF COMPACTION PRIOR TO SEEDING. ALL TEMPORARY WORKSPACES, WHETHER GRAVEL OF NOT, SHALL BE SEEDED, STABILIZED, AND RESTORED TO MEADOW IN GOOD CONDITION UPON COMPLETION OF THE PROJECT.



FILTER SOCK TABLE

ID	SIZE	QUANTITY (LF)
H J	12"	1761
I G	18"	113

PROFILE



B50 TWL PROFILE

SCALE H:1"=50'; V:1"=50'

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- TAX PARCEL LINE
- PROPERTY LINE BASED ON FIELD EVIDENCE
- STREAM/WETLAND DELINEATION BOUNDARY
- EXISTING WETLAND
- EXISTING STREAM
- ASSUMED 50' FLOODWAY
- FEMA FLOODWAY
- EXISTING OVERHEAD WIRE/UTILITY POLE
- EXISTING FENCE
- EXISTING GAS PIPELINE/MARKER
- EXISTING TREELINE
- EXISTING SANITARY SEWER/MANHOLE
- EXISTING SIGN
- EXISTING WATERLINE
- EXISTING CHANNEL
- EXISTING RIPRAP
- EXISTING CULVERT/STORM PIPE/INLET
- PROPOSED GAS PIPELINE (BY OTHERS)
- EXISTING RIGHT-OF-WAY
- PROPOSED TEMPORARY ABOVE GROUND WATERLINE
- PROPOSED BURIED WATERLINE SECTION
- PROPOSED WATERLINE MARKER
- AREA NOT TO BE DISTURBED
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED TIMBER MAT
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED SLOPE STABILIZATION
- PROPOSED PERMANENT WATERBAR
- PROPOSED TEMPORARY WATERBAR
- PROPOSED RIPRAP APRON
- GRAVEL TO BE REMOVED
- LIMITED TREE CLEARING/TREE REPLACEMENT AREA

REVISION RECORD

NO	DATE	DESCRIPTION
1	03/03/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE.

SCALE IN FEET: 0 50 100

PENNENERGY RESOURCES

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700 Cherrington Parkway · Moon Township, PA 15108
412-429-2324 · 800-365-2324
www.cecinc.com

PENNENERGY RESOURCES, LLC
B50 TEMPORARY
ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — VINCENT JOSEPH SCICHITANO — ENGINEER — NO. PE036383
02/28/2023

EROSION AND SEDIMENT CONTROL PLAN

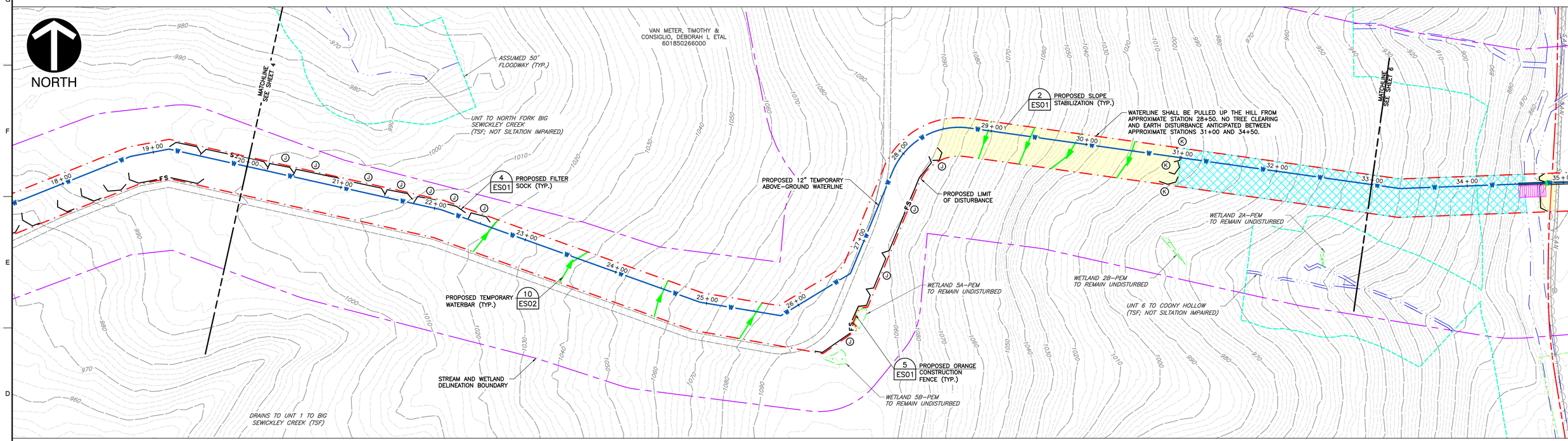
DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	1"=50'	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			VJS

DRAWING NO.: 4

C:\Users\vhelbing\Desktop\317-457\--DGD\Dwg\CVDI\317457--CVD3--Alignment Plans.dwg[4] 1:5/2/27/2023 — vhelbing — LP: 2/28/2023 5:12 PM

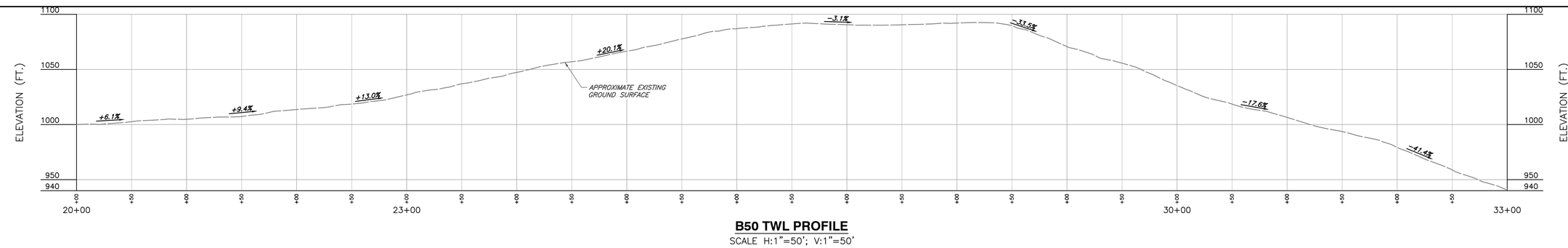
OWNERSHIP	20+00	601850266000 VAN METER, TIMOTHY & CONSIGLIO, DEBORAH L ETAL	33+00
MATERIAL	20+00	12" LAYFLAT	33+00

NOTE:
IF GRAVEL IS PLACED IN TEMPORARY WORKSPACES, IT MUST BE REMOVED AS SOON AS IT IS NO LONGER NEEDED OR WITHIN 12 MONTHS FOLLOWING INITIAL INSTALLATION, WHICHEVER IS LESS. THE EXISTING SOIL SHOULD BE SCARIFIED AND RELIEVED OF COMPACTION PRIOR TO SEEDING. ALL TEMPORARY WORKSPACES, WHETHER GRAVEL OF NOT, SHALL BE SEEDED, STABILIZED, AND RESTORED TO MEADOW IN GOOD CONDITION UPON COMPLETION OF THE PROJECT



FILTER SOCK TABLE		
ID	SIZE	QUANTITY (LF)
J	12"	563
K	18"	64

PROFILE



B50 TWL PROFILE
SCALE H:1"=50'; V:1"=50'

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- TAX PARCEL LINE
- PROPERTY LINE BASED ON FIELD EVIDENCE
- STREAM/WETLAND DELINEATION BOUNDARY
- EXISTING WETLAND
- EXISTING STREAM
- ASSUMED 50' FLOODWAY
- FEMA FLOODWAY
- EXISTING OVERHEAD WIRE/UTILITY POLE
- EXISTING FENCE
- EXISTING GAS PIPELINE/MARKER
- EXISTING TREELINE
- EXISTING SANITARY SEWER/MANHOLE
- EXISTING SIGN
- EXISTING WATERLINE
- EXISTING CHANNEL
- EXISTING RIPRAP
- EXISTING CULVERT/STORM PIPE/INLET
- PROPOSED GAS PIPELINE (BY OTHERS)
- EXISTING RIGHT-OF-WAY
- PROPOSED TEMPORARY ABOVE GROUND WATERLINE
- PROPOSED BURIED WATERLINE SECTION
- PROPOSED WATERLINE MARKER
- AREA NOT TO BE DISTURBED
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED TIMBER MAT
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED SLOPE STABILIZATION
- PROPOSED PERMANENT WATERBAR
- PROPOSED TEMPORARY WATERBAR
- PROPOSED RIPRAP APRON
- GRAVEL TO BE REMOVED
- LIMITED TREE CLEARING/TREE REPLACEMENT AREA

SCALE IN FEET
0 50 100

REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/03/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE.

PENNENERGY RESOURCES

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PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL VINCENT JOSEPH SCHIAVONE ENGINEER NO. PE064383
02/28/2023

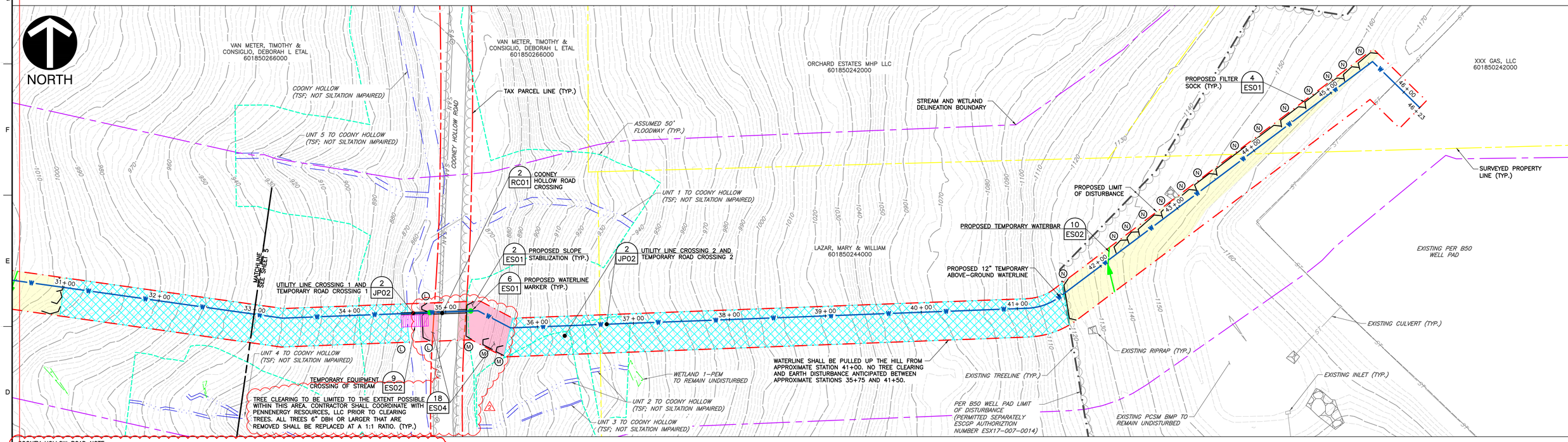
EROSION AND SEDIMENT CONTROL PLAN

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	1"=50'	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			VJS

DRAWING NO.: 5

OWNERSHIP																
	33+00	601850266000 VAN METER, TIMOTHY & CONSIGLIO, DEBORAH L ETAL	36+65	601850244000 LAZAR, MARY & WILLIAM	39+00	39+00	601850244000 LAZAR, MARY & WILLIAM		43+94	601850242000 XXX GAS, LLC	46+23					
MATERIAL	33+00	12" LAYFLAT	34+78	12" HDPE	35+26	39+00	12" LAYFLAT	39+00		12" LAYFLAT		46+23				

NOTE:
IF GRAVEL IS PLACED IN TEMPORARY WORKSPACES, IT MUST BE REMOVED AS SOON AS IT IS NO LONGER NEEDED OR WITHIN 12 MONTHS FOLLOWING INITIAL INSTALLATION, WHICHEVER IS LESS. THE EXISTING SOIL SHOULD BE SCARIFIED AND RELIEVED OF COMPACTION PRIOR TO SEEDING. ALL TEMPORARY WORKSPACES, WHETHER GRAVEL OF NOT, SHALL BE SEEDED, STABILIZED, AND RESTORED TO MEADOW IN GOOD CONDITION UPON COMPLETION OF THE PROJECT.

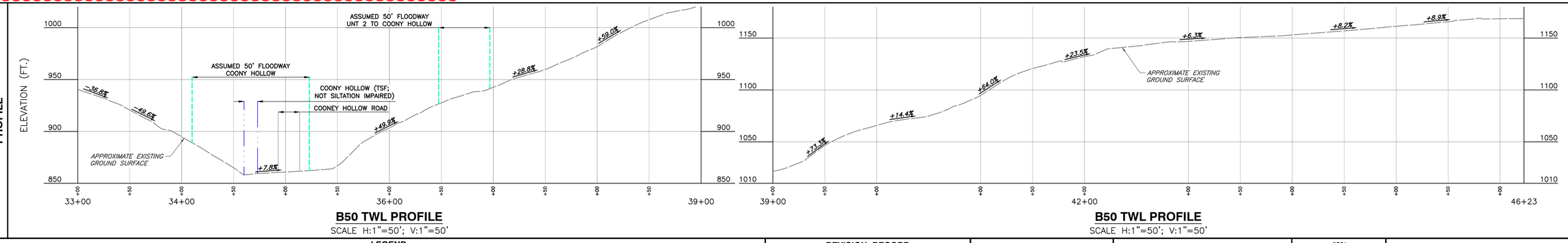


COONEY HOLLOW ROAD NOTE:
THE CONTRACTOR SHOULD LIMIT VEHICLE MOVEMENTS ON AND OFF THE PUBLIC ROADWAY DURING INSTALLATION OF THE STREAM CROSSING AND TEMPORARY WATERLINE ADJACENT TO COONEY HOLLOW ROAD TO LIMIT THE POTENTIAL FOR DISTURBANCE AND SEDIMENT DEPOSITION ON THE PUBLIC ROADWAY. SEDIMENT SHOULD BE MANUALLY REMOVED FROM VEHICLE TIRES OR TRACKS AS NEEDED PRIOR TO EXITING THE WORK AREA ONTO THE PUBLIC ROADWAY. IF SEDIMENT IS DEPOSITED ON THE ROADWAY DURING ACTIVITIES OTHER THAN THE ACTUAL OPEN CUT CROSSING OF COONEY HOLLOW ROAD, IT SHOULD BE REMOVED FROM THE ROADWAY IMMEDIATELY AND REPLACED WITHIN THE DISTURBED AREA, AND STABILIZED IN AN APPROPRIATE MANNER.

ANY SEDIMENT DEPOSITED ON COONEY HOLLOW ROAD AS A RESULT OF THE OPEN CUT ROAD CROSSING SHOULD BE CLEANED IMMEDIATELY FOLLOWING COMPLETION OF THE OPEN CUT OR AT THE END OF EACH WORK DAY IF WORK IS NOT COMPLETED IN ONE DAY.

FILTER SOCK TABLE		
ID	SIZE	QUANTITY (LF)
(L) (N)	12"	527
(M)	18"	89

PROFILE



B50 TWL PROFILE
SCALE H:1"=50'; V:1"=50'

B50 TWL PROFILE
SCALE H:1"=50'; V:1"=50'

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- TAX PARCEL LINE
- PROPERTY LINE BASED ON FIELD EVIDENCE
- STREAM/WETLAND DELINEATION BOUNDARY
- EXISTING WETLAND
- EXISTING STREAM
- ASSUMED 50' FLOODWAY
- FEMA FLOODWAY
- EXISTING OVERHEAD WIRE/UTILITY POLE
- EXISTING FENCE
- EXISTING GAS PIPELINE/MARKER
- EXISTING TREELINE
- EXISTING SANITARY SEWER/MANHOLE
- EXISTING SIGN
- EXISTING WATERLINE
- EXISTING CHANNEL
- EXISTING RIPRAP
- EXISTING CULVERT/STORM PIPE/INLET
- PROPOSED GAS PIPELINE (BY OTHERS)
- EXISTING RIGHT–OF–WAY
- PROPOSED TEMPORARY ABOVE GROUND WATERLINE
- PROPOSED BURIED WATERLINE SECTION
- PROPOSED WATERLINE MARKER
- AREA NOT TO BE DISTURBED
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED TIMBER MAT
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED SLOPE STABILIZATION
- PROPOSED PERMANENT WATERBAR
- PROPOSED TEMPORARY WATERBAR
- PROPOSED RIPRAP APRON
- GRAVEL TO BE REMOVED
- LIMITED TREE CLEARING/TREE REPLACEMENT AREA

REVISION RECORD

NO	DATE	DESCRIPTION
1	02/28/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE.
2	05/01/2023	REVISED PER ESCGP-3 (4/6/23), JPA (4/19/23) & WMP (4/19/23) COMMENTS

SCALE IN FEET
0 50 100

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700 Cherrington Parkway · Moon Township, PA 15108
412-429-2324 · 800-365-2324
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PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — VINCENT JOSEPH SCICHITANO — ENGINEER — NO. PE070453 — 05/01/2023

EROSION AND SEDIMENT CONTROL PLAN

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	1"=50'	CHECKED BY:	VJS
PROJECT NO:	317-457		
APPROVED BY:	VJS		

DRAWING NO.: 6

\\ svr–fs–pit\Projects\310–200\317–457\–Cad\Dwg\CVS\317457–CVS3–Alignment Plans.dwg(6) LS(4/27/2023 – vasicchilonis) – LP: 4/27/2023 3:55 PM

OWNERSHIP

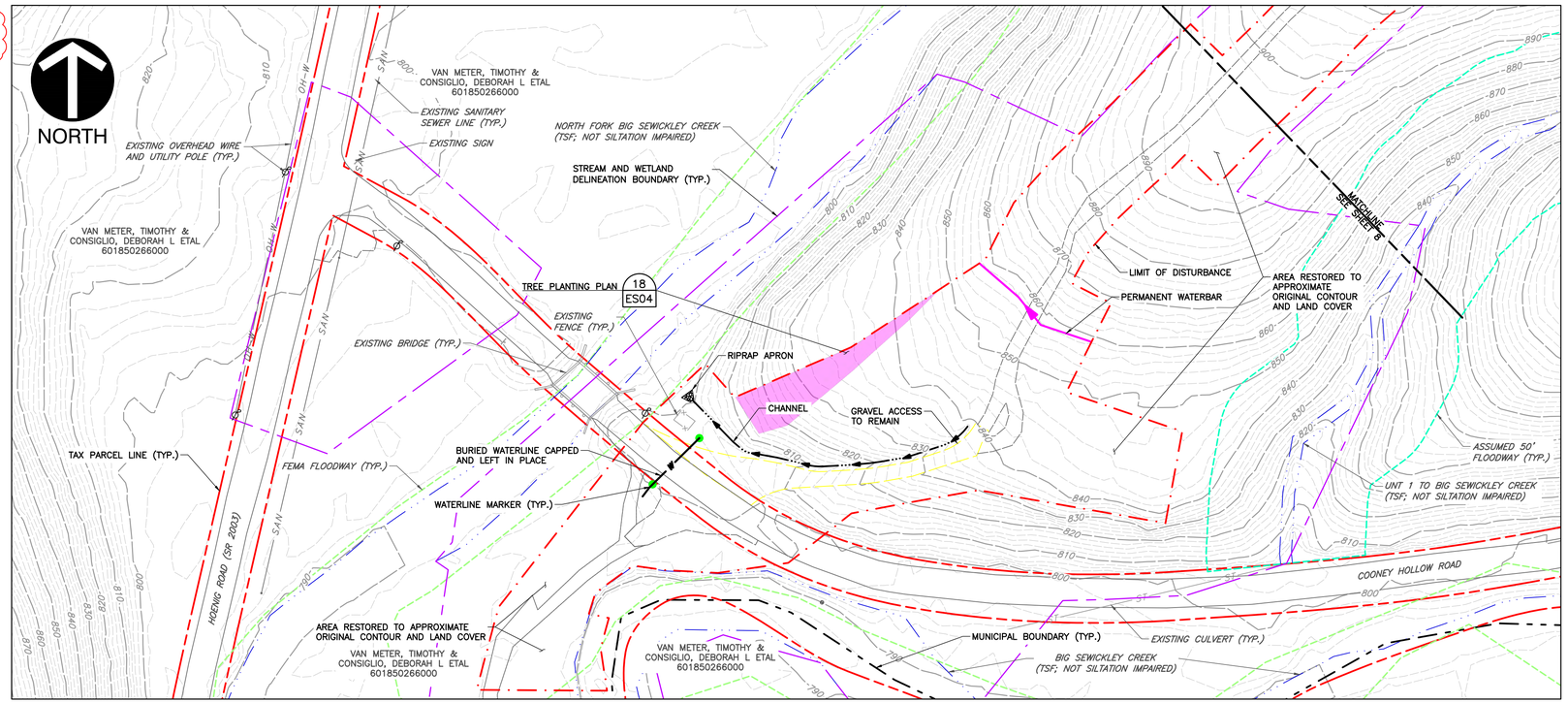
89+00

601850266000
VAN METER, TIMOTHY &
CONSIGLIO, DEBORAH L ETAL

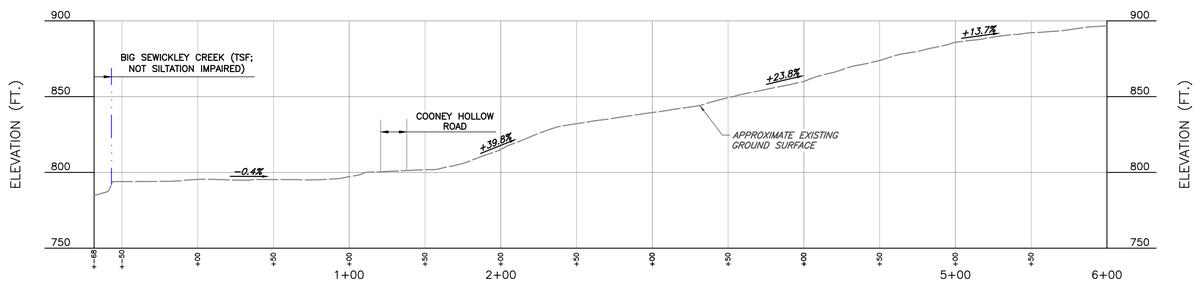
90+00

COONEY HOLLOW ROAD NOTE:
THE CONTRACTOR SHALL LIMIT VEHICLE ENTRY AND EXIT TO THE PROPOSED ROCK CONSTRUCTION ENTRANCES AND TAKE PRECAUTIONS TO AVOID TRACKING SEDIMENT ONTO THE PUBLIC ROADWAY FROM WORK AREAS.

2



PROFILE



B50 TWL PROFILE
SCALE H:1"=50'; V:1"=50'

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- TAX PARCEL LINE
- PROPERTY LINE BASED ON FIELD EVIDENCE
- STREAM/WETLAND DELINEATION BOUNDARY
- EXISTING WETLAND
- EXISTING STREAM
- ASSUMED 50' FLOODWAY
- FEMA FLOODWAY
- EXISTING OVERHEAD WIRE/UTILITY POLE
- EXISTING FENCE
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- EXISTING TREELINE
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- EXISTING SIGN
- EXISTING WATERLINE
- EXISTING CHANNEL
- EXISTING RIPRAP
- EXISTING CULVERT/STORM PIPE/INLET
- EXISTING RIGHT-OF-WAY
- BURIED WATERLINE SECTION
- WATERLINE MARKER
- LIMITED TREE CLEARING/TREE REPLACEMENT AREA
- LIMIT OF DISTURBANCE
- PERMANENT WATERBAR
- GRAVEL ACCESS TO REMAIN

REVISION RECORD

NO	DATE	DESCRIPTION
1	02/28/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE.
2	05/01/2023	REVISED PER ESCGP-3 (4/6/23), JPA (4/19/23) & WMP (4/19/23) COMMENTS

SCALE IN FEET
0 50 100

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BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
VINCENT JOSEPH SCUCHITANO
NO. 082504363
05/01/2023

SITE RESTORATION PLAN

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	1"=50'	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			VJS

DRAWING NO.: 7

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OWNERSHIP

6+00

601850266000
VAN METER, TIMOTHY &
CONSIGLIO, DEBORAH L ETAL

20+00

NORTH

NORTH FORK BIG SEWICKLEY CREEK
(TSF; NOT SILTATION IMPAIRED)

FEMA FLOODWAY (TYP.)

VAN METER, TIMOTHY &
CONSIGLIO, DEBORAH L ETAL
601850266000

UNT TO NORTH FORK BIG
SEWICKLEY CREEK
(TSF; NOT SILTATION IMPAIRED)

EXISTING ROAD (TYP.)

WETLAND 3B–PEM
TO REMAIN UNDISTURBED

AREA RESTORED TO
APPROXIMATE
ORIGINAL CONTOUR
AND LAND COVER

WETLAND 4–PEM
TO REMAIN UNDISTURBED

LIMIT OF DISTURBANCE

UNT TO NORTH FORK BIG
SEWICKLEY CREEK
(TSF; NOT SILTATION IMPAIRED)

1+46

MATCHLINE
SEE SHEET 7

MATCHLINE
SEE SHEET 9

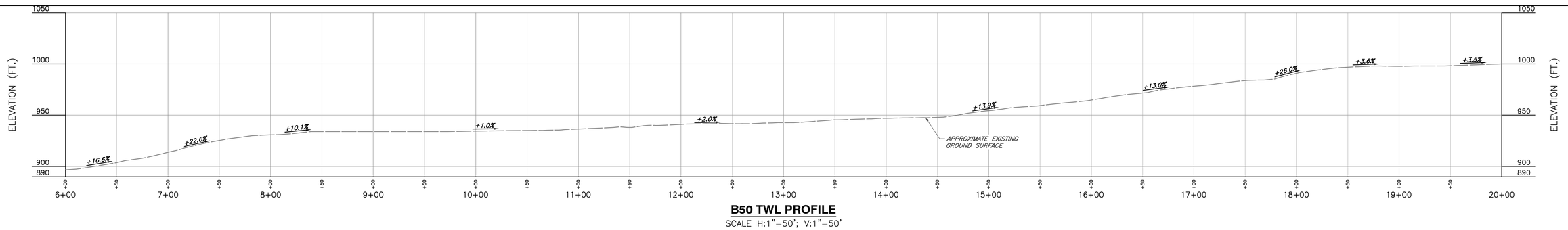
WETLAND 3A–PEM
TO REMAIN UNDISTURBED

ASSUMED 50'
FLOODWAY (TYP.)

STREAM AND WETLAND
DELINEATION BOUNDARY

UNT 1 TO BIG SEWICKLEY CREEK
(TSF; NOT SILTATION IMPAIRED)

PROFILE



B50 TWL PROFILE

SCALE H:1"=50'; V:1"=50'

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- TAX PARCEL LINE
- PROPERTY LINE BASED ON FIELD EVIDENCE
- STREAM/WETLAND DELINEATION BOUNDARY
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- BURIED WATERLINE SECTION
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- GRAVEL ACCESS TO REMAIN

SCALE IN FEET
0 50 100

REVISION RECORD

NO	DATE	DESCRIPTION

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BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
VINCENT JOSEPH CICHITANO
ENGINEER
PE-075043
11/3/2022

SITE RESTORATION PLAN

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	1"=50'	CHECKED BY:	VJS
PROJECT NO:	317-457		
APPROVED BY:	VJS		

DRAWING NO.:
8

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OWNERSHIP

601850266000
VAN METER, TIMOTHY &
CONSIGLIO, DEBORAH L ETAL

20+00

33+00

NORTH

MATCHLINE SEE SHEET 8

MATCHLINE SEE SHEET 10

VAN METER, TIMOTHY &
CONSIGLIO, DEBORAH L ETAL
601850266000

ASSUMED 50' FLOODWAY (TYP.)

UNT TO NORTH FORK BIG SEWICKLEY CREEK (TSF; NOT SILTATION IMPAIRED)

AREA RESTORED TO APPROXIMATE ORIGINAL CONTOUR AND LAND COVER

LIMIT OF DISTURBANCE

WETLAND 2A–PEM TO REMAIN UNDISTURBED

WETLAND 2B–PEM TO REMAIN UNDISTURBED

UNT 6 TO COONY HOLLOW (TSF; NOT SILTATION IMPAIRED)

WETLAND 5A–PEM TO REMAIN UNDISTURBED

STREAM AND WETLAND DELINEATION BOUNDARY

WETLAND 5B–PEM TO REMAIN UNDISTURBED

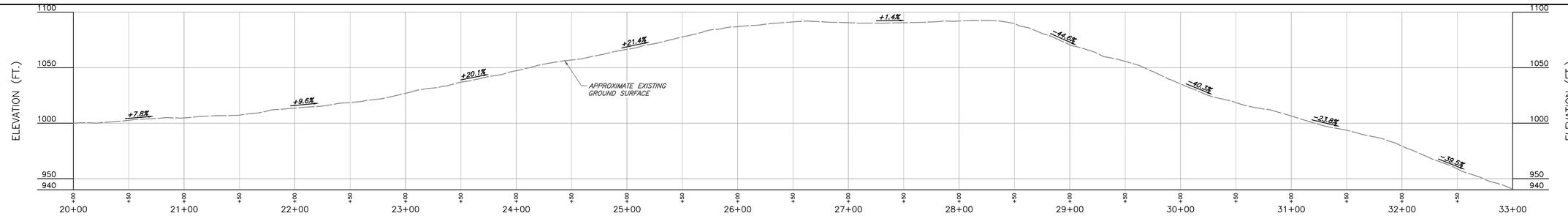
DRAINS TO UNT 1 TO BIG SEWICKLEY CREEK (TSF)

S-A-N

S-A-N

S-A-N

PROFILE



B50 TWL PROFILE
SCALE H:1"=50'; V:1"=50'

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
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REVISION RECORD

NO	DATE	DESCRIPTION

SCALE IN FEET
0 50 100

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BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
VINCENT JOSEPH SCICHITANO
ENGINEER
No. PE034383

11/3/2022

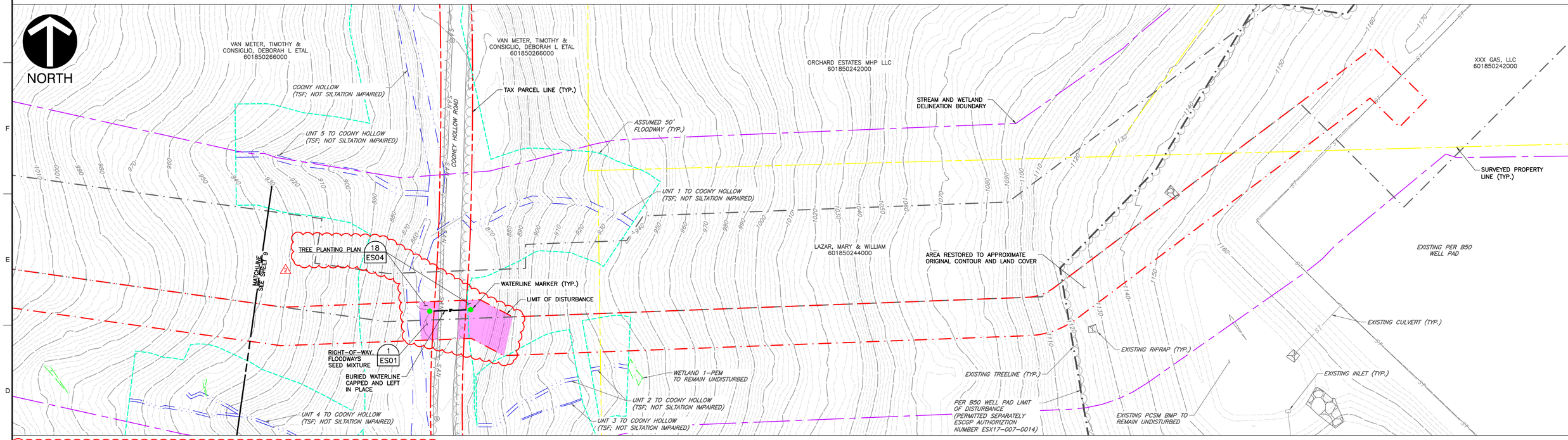
SITE RESTORATION PLAN

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	1"=50'	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			VJS

DRAWING NO.: **9**

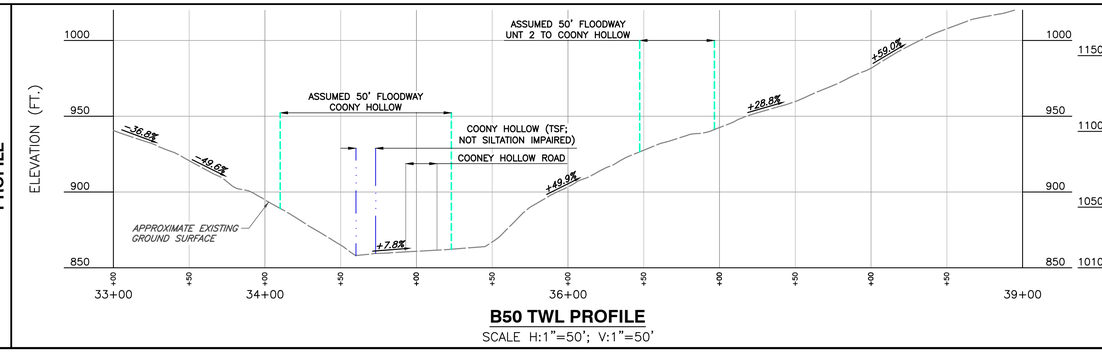
P:\310-2001\317-457\--CAD\Dwg\CVD\317457-CVD3-Site Restoration.dwg[B] LS:(11/3/2022 - jkiss) - LP: 11/3/2022 1:49 PM

OWNERSHIP	33+00	36+65	39+00	39+00	43+94	46+23
	601850266000 VAN METER, TIMOTHY & CONSIGLIO, DEBORAH L ETAL	601850244000 LAZAR, MARY & WILLIAM		601850244000 LAZAR, MARY & WILLIAM	601850242000 XXX GAS, LLC	

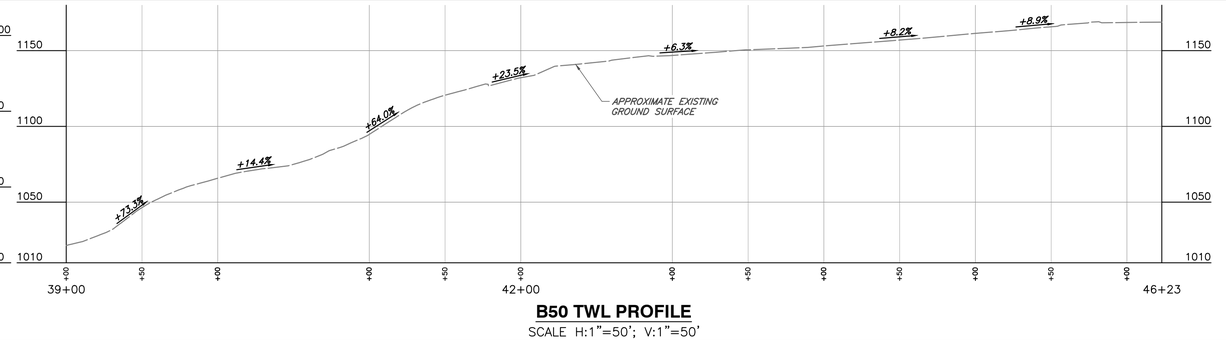


COONEY HOLLOW ROAD NOTE:
THE CONTRACTOR SHOULD LIMIT VEHICLE MOVEMENTS ON AND OFF THE PUBLIC ROADWAY DURING REMOVAL OF THE STREAM CROSSING AND TEMPORARY WATERLINE ADJACENT TO COONEY HOLLOW ROAD TO LIMIT THE POTENTIAL FOR DISTURBANCE AND SEDIMENT DEPOSITION ON THE PUBLIC ROADWAY. SEDIMENT SHOULD BE MANUALLY REMOVED FROM VEHICLE TIRES OR TRACKS AS NEEDED PRIOR TO EXITING THE WORK AREA ONTO THE PUBLIC ROADWAY. IF SEDIMENT IS DEPOSITED ON THE ROADWAY DURING ACTIVITIES IT SHOULD BE REMOVED FROM THE ROADWAY IMMEDIATELY AND REPLACED WITHIN THE DISTURBED AREA, AND STABILIZED IN AN APPROPRIATE MANNER. 2

PROFILE



B50 TWL PROFILE
SCALE H:1"=50'; V:1"=50'



B50 TWL PROFILE
SCALE H:1"=50'; V:1"=50'

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- TAX PARCEL LINE
- PROPERTY LINE BASED ON FIELD EVIDENCE
- STREAM/WETLAND DELINEATION BOUNDARY
- EXISTING WETLAND
- EXISTING STREAM
- ASSUMED 50' FLOODWAY
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- LIMITED TREE CLEARING/TREE REPLACEMENT AREA
- LIMIT OF DISTURBANCE
- PERMANENT WATERBAR
- GRAVEL ACCESS TO REMAIN

REVISION RECORD

NO	DATE	DESCRIPTION
1	02/28/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE.
2	05/01/2023	REVISED PER ESCGP-3 (4/6/23), JPA (4/19/23) & WMP (4/19/23) COMMENTS

SCALE IN FEET
0 50 100

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ECONOMY BOROUGH
BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — VINCENT JOSEPH SCICHITANO — ENGINEER NO. PE059543 — 05/01/2023

SITE RESTORATION PLAN

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	1"=50'	CHECKED BY:	VJS
PROJECT NO:	317-457		
APPROVED BY:	VJS		

DRAWING NO.: 10

\\Serv-pa\Projects\310-200\317-457\-CAD\Dwg\CVG\317457-CVG1-Site Restoration.dwg[10] LS:(4/25/2023 - bonatrow) - LP: 4/27/2023 4:02 PM

SEED MIXTURE USE

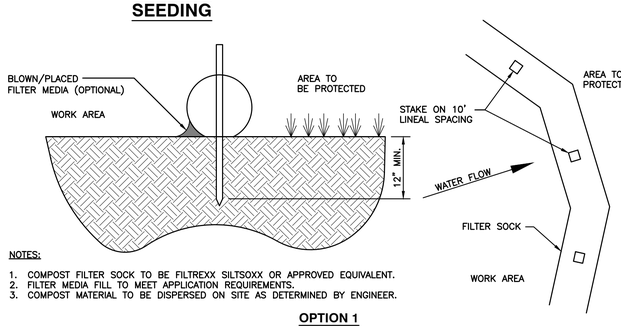
SITE CONDITION	SEED MIXTURE (SELECT ONE)*
CUT SLOPES AND FILLS (NOT MOWED) WELL DRAINED	4
CUT SLOPES AND FILL (NOT MOWED) VARIABLE DRAINAGE	4
CUT SLOPES AND FILLS (MOWED)	1
CUT SLOPES AND FILLS (GRAZED/HAY)	1 OR 2
GULLIES AND ERODED AREAS	4
EROSION CONTROL BMPS – CHANNELS, DRAINAGE DITCHES, TRAPS, EMBANKMENTS, ETC.	1
EROSION CONTROL BMPS – FOR HAY OR SILAGE	2
RIGHT–OF–WAY, WELL–DRAINED	1, 2, OR 4
RIGHT–OF–WAY, VARIABLE DRAINAGE	2 OR 3
RIGHT–OF–WAY, WELL–DRAINED AREAS FOR GRAZING/HAY	2
RIGHT–OF–WAY, FLOODWAYS	5
STRIP MINED AREAS – SPOILS, WASTE AREAS, FLY ASH, SLAG, ETC.	2, 3, OR 4
STRIP MINED AREAS – FOR GRAZING/HAY	2 OR 4

* PLUS "NURSE CROP" OF 64 LBS/ACRE OF OATS OR 112 LBS/ACRE OF WINTER RYE

PERMANENT SEED MIXTURES			
MIXTURE NUMBER	SEASON	SPECIES	SEEDLING RATE LB/AC
1	COOL	FINE FESCUE, PLUS REDTOP, PLUS BIRDSFOOT TREFOIL	46 4 8
2	COOL	ORCHARDGRASS PLUS BIRDSFOOT TREFOIL	26 8
3	WARM	DEERTONGUE, PLUS BIRDSFOOT TREFOIL	21 8
4	WARM	SWITCHGRASS OR BIG BLUESTEM, PLUS BIRDSFOOT TREFOIL	15 15 8
5	COOL/WARM	ERNST RIPARIAN BUFFER MIX	20

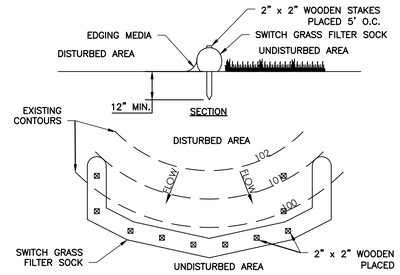
NOTES:
1. TEMPORARY SEED MIXTURES: 75 LBS/ACRE OF SPRING OATS OR 85 LBS/ACRE OF WINTER RYE. SEEDING APPLICATION RATES MAY NEED TO BE INCREASED BASED ON SITE SPECIFIC SOIL CONDITIONS. ALTERNATE SEED MIXTURES MAY BE UTILIZED WITH PRIOR APPROVAL BY PENNENRGY RESOURCES, LLC. AND THE ENGINEER.
2. IT IS RECOMMENDED THAT A SOIL TEST BE PERFORMED TO DETERMINE THE TYPE AND RATE OF APPLICATION OF SOIL AMENDMENTS REQUIRED FOR THE PROJECT AREA. IN THE ABSENCE OF A SOIL TEST, THE FOLLOWING SOIL AMENDMENTS SHALL BE USED:
   – LIME SHOULD BE APPLIED AT A RATE OF 6 TONS/ACRE. FOR TEMPORARY SEEDING, A LIMING RATE OF 2 TONS/ACRE IS ACCEPTABLE.
   – FERTILIZER SHOULD BE APPLIED AT THE RATE OF 100 LB. N, 200 LB. OF P205, AND 200 LB. OF K20 PER ACRE (E.G., 1000 LB./ACRE OF 10–20–20 FERTILIZER). FOR TEMPORARY SEEDING, A RATE OF 50 LB. N, 50 LB. P205, AND 50 LB. K20 PER ACRE (E.G., 500 LB. OF 10–10–10 FERTILIZER) IS ACCEPTABLE.
3. FOR RIPARIAN BUFFER SEED MIX, REFER TO ERNST MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION.

DETAIL 1
SEEDING



NOTES:
1. COMPOST FILTER SOCK TO BE FILTREXX SILTSOXX OR APPROVED EQUIVALENT.
2. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE AS DETERMINED BY ENGINEER.

OPTION 1
COMPOST FILTER SOCK



NOTES:
1. SOCK FABRIC SHALL MEET REGULATORY STANDARDS. COMPOST SHALL MEET REGULATORY STANDARDS.
2. SWITCH GRASS FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED REGULATORY STANDARDS. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.

OPTION 2
SWITCH GRASS FILTER SOCK

INSPECTION: SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.

MAINTENANCE: DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND REDISTRIBUTED ON SITE.

BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

E&S CONTROL EQUIVALENCIES		
12" FILTER SOCK	30" SILT FENCE	SILTRON®16
18" FILTER SOCK	SUPER SILT FENCE	SILTRON®16
24" FILTER SOCK	–	SILTRON®21
32" FILTER SOCK	–	SILTRON®28

REFER TO DETAIL 16 ON SHEET ES03 FOR SILT FENCE DETAIL.

DETAIL 4
FILTER SOCK
N.T.S.

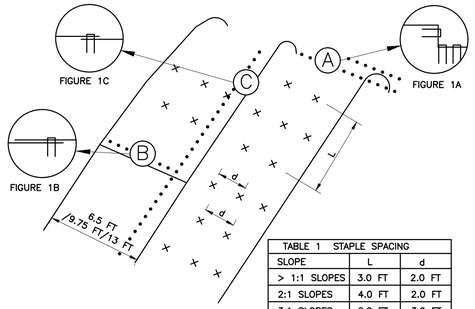


TABLE 1 STAPLE SPACING		
SLOPE	L	d
> 1:1 SLOPES	3.0 FT	2.0 FT
2:1 SLOPES	4.0 FT	2.0 FT
3:1 SLOPES	6.0 FT	3.0 FT
4:1 SLOPES	8.0 FT	3.0 FT

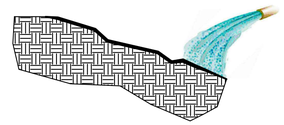
NOTES:
1. EROSION CONTROL BLANKETS SHALL BE INSTALLED OVERTOP OF ALL SLOPES GREATER THAN OR EQUAL TO 3:1 (HORIZONTAL:VERTICAL). EROSION CONTROL BLANKETS SHALL BE NORTH AMERICAN GREEN S150BN OR APPROVED EQUAL.
2. USE BIODEGRADABLE EROSION CONTROL MATS (JUTE, COIR, ETC.) WHERE SPECIFIED ON STREAM BANKS, DITCHES, AND STEEP SLOPES FOR TEMPORARY STABILIZATION OF UNVEGETATED SOIL.
3. PREPARE SOIL, INCLUDING GRADING, APPLICATION OF SOIL AMENDMENTS, AND SEED. THE SURFACE OF THE SOIL SHOULD BE SMOOTH AND FREE OF ROCKS, ROOTS AND OTHER OBSTRUCTIONS.
4. LAY BLANKETS ON STREAM BANKS AT RIGHT ANGLE TO THE STREAM CHANNEL, UNLESS THE ENTIRE STREAM BANK (FROM TOE TO TOP OF BANK) CAN BE COVERED BY A SINGLE WIDTH LAID PARALLEL TO THE CHANNEL. LAY MATS LOOSELY ON THE GROUND ALLOWING GOOD CONTACT BETWEEN SOIL AND BLANKETS.
5. ANCHOR MATS IN A 6–INCH DEEP x 6–INCH WIDE ANCHOR TRENCH AT THE TOE OF THE STREAM BANK OR SHORELINE, STAPLE/STAKE THE MAT IN THE TRENCH, BACKFILL AND COMPACT THE TRENCH WITH SOIL.
6. STAPLE THE OPEN MAT EDGE USING ONE ROW OF STAPLES AT 1.5 – 2 FOOT INTERVALS. THE MIDDLE OF THE MAT SHOULD BE STAPLED USING A PREFERRED STAPLE PATTERN (TABLE 1).
7. WHEN MAT SPLICING DOWN THE SLOPE IS NECESSARY, OVERLAP MATS 8 INCHES WITH THE UPSLOPE MAP EDGE ON TOP. USE TWO ROWS OF STAPLES/STAKES AND 12–INCH SPACING TO ANCHOR MATS (FIG. 1B). TO SPLICE MATS ACROSS THE SLOPE, OVERLAP THE SIDES OF MATS AT LEAST 6 INCHES WITH THE TRAILING EDGE OF THE TOP OVERLAPPING MAP ORIENTED IN A DOWNSTREAM DIRECTION. USE ONE ROW OF STAPLES/STAKES AND 12–INCH SPACING TO ANCHOR MATS (FIG. 1C).
8. ANCHOR THE MAT AT THE TOP OF THE SLOPE IN A 6–INCH DEEP X 6–INCH WIDE ANCHOR TRENCH. PLACE MAT, STAPLE/STAKE, BACKFILL AND COMPACT (FIG. 1A)

SOURCE: MODIFIED FROM ROLANKA INTERNATIONAL, HTTP://WWW.ROLANKA.COM/

INSPECTION: ALL STABILIZED AREAS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE STABILIZED AREA.

MAINTENANCE: DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

OPTION 1
EROSION CONTROL BLANKET



INSTALLATION

STRICTLY COMPLY WITH EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS. USE APPROVED HYDRO–SPRAYING MACHINES WITH FAN–TYPE NOZZLE (50–DEGREE TIP). TO ACHIEVE OPTIMUM SOIL SURFACE COVERAGE, APPLY HP–FGM FROM OPPOSING DIRECTIONS TO SOIL SURFACE. ROUGH SURFACES (ROCKY TERRAIN, CAT TRACKS AND RIPPED SOILS) MAY REQUIRE HIGHER APPLICATION RATES TO ACHIEVE 100% COVER. SLOPE INTERRUPTION DEVICES OR WATER DIVERSION TECHNIQUES ARE RECOMMENDED WHEN SLOPE LENGTHS EXCEED 100 FEET. MAXIMUM SLOPE LENGTH IS FOR PRODUCT APPLICATIONS ON A 3H:1V SLOPE. FOR APPLICATION ON STEEPER SLOPES, SLOPE INTERRUPTION LENGTHS MAY NEED TO BE DECREASED BASED ON ACTUAL SITE CONDITIONS. NOT RECOMMENDED FOR CHANNELS OR AREAS WITH CONCENTRATED WATER FLOW. NO CHEMICAL ADDITIVES WITH THE EXCEPTION OF FERTILIZER, LIMING AND BIOSTIMULANT MATERIALS SHOULD BE ADDED TO THIS PRODUCT: TO ENSURE PROPER APPLICATION RATES, MEASURE AND STAKE AREA. FOR MAXIMUM PERFORMANCE, APPLY HP–FGM IN A TWO–STEP PROCESS AS FOLLOWS:

1. STEP ONE: APPLY FERTILIZER WITH SPECIFIED PRESCRIPTIVE AGRONOMIC FORMULATIONS AND 50% OF SEED WITH A SMALL AMOUNT OF HP–FGM FOR VISUAL METERING.
2. STEP TWO: MIX BALANCE OF SEED AND APPLY HP–FGM AT A RATE OF 50 LB PER 125 GALLONS OF WATER OVER FRESHLY SEEDED SURFACES. CONFIRM LOADING RATES WITH EQUIPMENT MANUFACTURER. DO NOT LEAVE SEEDED SURFACES UNPROTECTED, ESPECIALLY IF PRECIPITATION IS IMMINENT.

APPLICATION RATES: THESE APPLICATION RATES ARE FOR STANDARD CONDITIONS. DESIGNERS MAY WISH TO REDUCE RATES TO ENCOURAGE FASTER VEGETATION ESTABLISHMENT OR MAY NEED TO INCREASE APPLICATION RATES ON ROUGH SURFACES. CONSULT APPLICATION AND LOADING CHARTS TO DETERMINE NUMBER OF BAGS TO BE ADDED FOR DESIRED AREA AND APPLICATION RATE.

SLOPE GRADIENT / CONDITION	APPLICATION RATE
≤ 4H TO 1V	2500 LB/AC
> 4H TO 1V AND ≤ 3H TO 1V	3000 LB/AC
> 3H TO 1V AND ≤ 2H TO 1V	3500 LB/AC
> 2H TO 1V AND ≤ 1H TO 1V	4000 LB/AC
> 1H TO 1V	4500 LB/AC
BELOW ECB OR TRM	1500 LB/AC
AS INFILL FOR TRM	3500 LB/AC

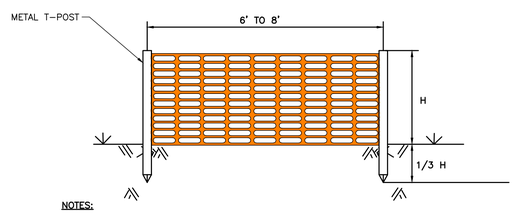
SOURCE: MODIFIED FROM ACF ENVIRONMENTAL, HTTP://ACFENVIRONMENTAL.COM

INSPECTION: ALL STABILIZED AREAS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE STABILIZED AREA.

MAINTENANCE: DAMAGED OR DISPLACED HYDRAULICALLY APPLIED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

OPTION 2
HYDRAULICALLY APPLIED SLOPE STABILIZATION

DETAIL 2
SLOPE STABILIZATION



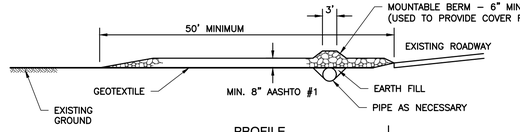
NOTES:
1. POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/3 OF THE HEIGHT OF THE POST. FOR EXAMPLE A 6 FOOT POST SHOULD BE AT LEAST 2 FEET IN THE GROUND.
2. SPACE POSTS EVERY 6 TO 8 FEET.
3. SECURE FENCING TO POSTS WITH NYLON CABLE TIES ("ZIP–TIES"). WOOD STRIPS MAY ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.

DETAIL 5
ORANGE CONSTRUCTION FENCE
N.T.S.

MULCH TYPE	APPLICATION RATE (MIN.)			NOTES
	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	
STRAW	3 TONS	140 LB.	1240	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LB.	1240	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES
WOOD CHIPS	4–6 TONS	185–275 LB.	1650–2500	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES
HYDROMULCH	1 TON	47 LB.	415	SEE LIMITATIONS BELOW

NOTES:
1. MULCH SHALL BE USED ON SLOPES NO STEEPER THAN 3H:1V. FOR SLOPES 3H:1V AND STEEPER, EROSION CONTROL BLANKETS OR HYDRAULICALLY APPLIED SLOPE STABILIZATION SHALL BE USED.
2. MULCH SHALL BE APPLIED AT THE RATES SHOWN IN THE TABLE ABOVE.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR–DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED PARALLEL TO THE CONTOUR. CRIMPING HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.
4. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24–HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45°F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ON TO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS GENERALLY MORE EFFECTIVE.
5. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAYBE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON–TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
6. MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLES OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.

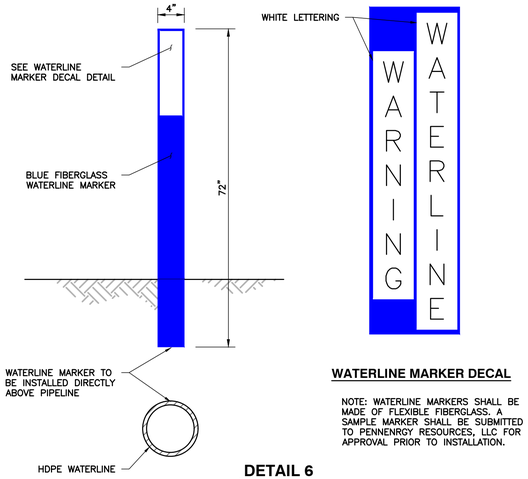
OPTION 3
MULCHING



INSPECTION: ROCK CONSTRUCTION ENTRANCES SHALL BE INSPECTED DAILY.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

DETAIL 3
ROCK CONSTRUCTION ENTRANCE
N.T.S.



WATERLINE MARKER DECAL

NOTE: WATERLINE MARKERS SHALL BE MADE OF FLEXIBLE FIBERGLASS. A SAMPLE MARKER SHALL BE SUBMITTED TO PENNENRGY RESOURCES, LLC FOR APPROVAL PRIOR TO INSTALLATION.

DETAIL 6
WATERLINE MARKER
N.T.S.

REVISION RECORD		
NO	DATE	DESCRIPTION

PENNENERGY RESOURCES

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PENNENERGY RESOURCES, LLC
B50 TEMPORARY
ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA
REGISTERED
PROFESSIONAL
VINCE JOSEPH SCIULLI CHITANO
ENGINEER
11/3/2022

EROSION AND SEDIMENT CONTROL AND SITE RESTORATION DETAILS

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	AS SHOWN	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			VJS

DRAWING NO.: **ES01**

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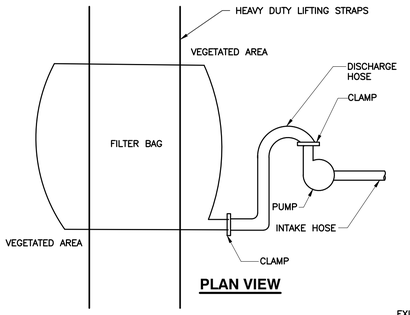


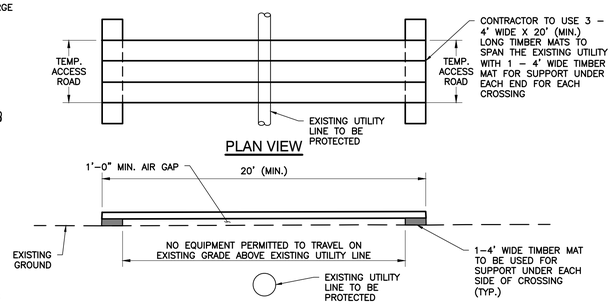
PLAN VIEW

NOTES:

1. FILTER BAGS MAY BE USED TO FILTER WATER PUMPED FROM DISTURBED AREAS SUCH AS UTILITY TRENCHES.
2. FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.
3. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE FILLED OR FAILED.
4. BAGS SHALL BE LOCATED IN WELL VEGETATED (GRASSY) AREAS, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS FAR ENOUGH AWAY FROM STREAMS AND WETLANDS TO ALLOW THE WATER TO EITHER INFILTRATE INTO THE GROUND OR SPREAD OUT AS SHEET FLOW PRIOR TO REACHING THE STREAM OR WETLAND. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5 PERCENT.
5. THE PUMP RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
6. FILTER BAGS SHALL BE INSPECTED DAILY AND ANY CORRECTIVE ACTION REQUIRED SHALL BE DONE IMMEDIATELY.

DETAIL 7
PUMP AND FILTER BAG

N.T.S.

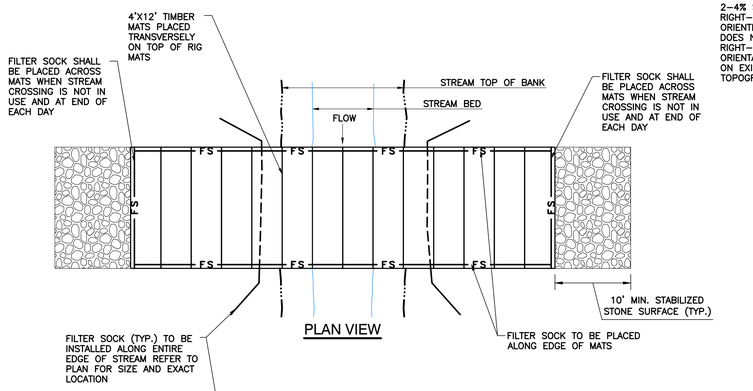


PLAN VIEW

CROSS SECTION

DETAIL 8
TIMBER MAT AIR BRIDGE

N.T.S.



PLAN VIEW

CROSS SECTION

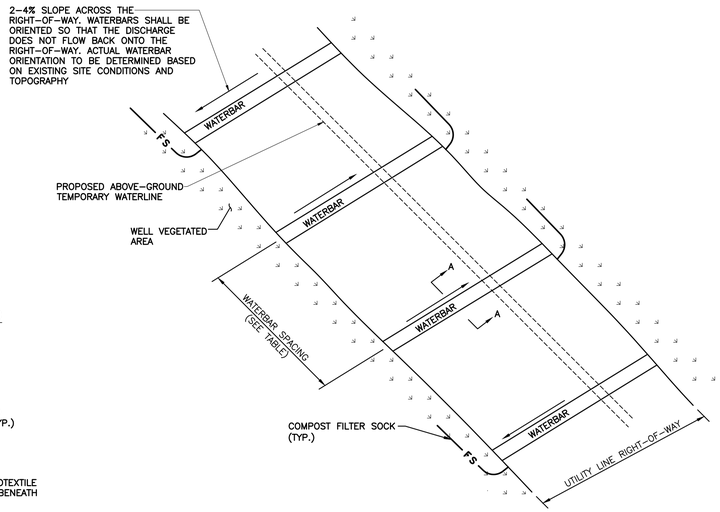
STREAM CROSSING

NOTES:

1. ALL STONE SURFACES ASSOCIATED WITH TEMPORARY EQUIPMENT CROSSINGS SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.
2. ANY SEDIMENT TRACKED ONTO THE TIMBER MATS SHALL BE IMMEDIATELY REMOVED AND EVENLY DISPERSED UPSLOPE OF A PROPERLY FUNCTIONING FILTER SOCK.

DETAIL 9
TEMPORARY EQUIPMENT CROSSING OF STREAM

N.T.S.

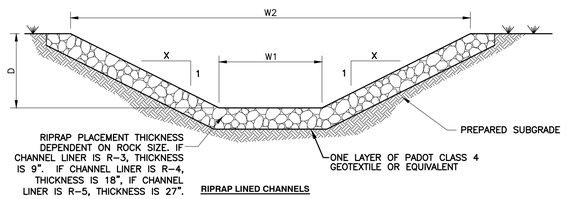


NOTE:

1. WATERBARS (SLOPE BREAKERS, INTERCEPTOR DIKES) SHOULD BE INSTALLED ACROSS THE ENTIRE RIGHT-OF-WAY ON ALL SLOPES GREATER THAN 5%.
2. WATERBARS SHALL BE PLACED AT A 2-4% SLOPE DOWNHILL. THEY SHALL BE SPACED AT THE INCREMENTS AS SHOWN ON THE PLANS, AND IN ACCORDANCE WITH PADEP OIL & GAS E&S STANDARDS.
3. WATERBARS SHOULD BE CONSTRUCTED AT 2-4% SLOPE AND DISCHARGE TO A WELL-VEGETATED AREA. WATERBARS SHOULD NOT DISCHARGE INTO AN OPEN TRENCH. WATERBARS SHOULD BE ORIENTED SO THAT THE DISCHARGE DOES NOT FLOW BACK ONTO THE RIGHT-OF-WAY. COMPOST FILTER SOCK SHOULD BE LOCATED BELOW THE DISCHARGE END OF THE WATERBAR.
4. REFER TO PADEP MANUAL FOR MORE INFORMATION.

DETAIL 10
TYPICAL WATERBAR INSTALLATION

N.T.S.



RIPRAP LINED CHANNELS

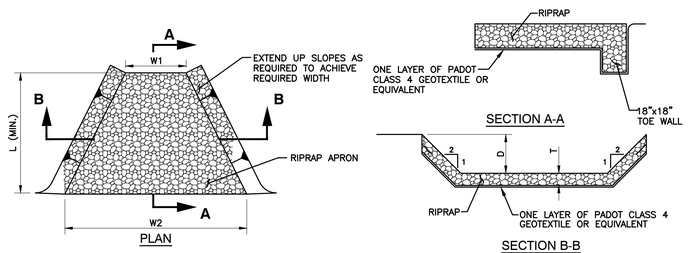
CHANNEL	BOTTOM WIDTH W1 (FEET)	TOP WIDTH W2 (FEET)	DEPTH D (FEET)	LEFT SIDE SLOPES (X:1)	RIGHT SIDE SLOPES (X:1)	LINER
CHANNEL 1	1	7	1.5	2	2	R-3

INSPECTION: ALL CHANNELS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE STABILIZED AREA.

MAINTENANCE: CHANNELS SHOULD BE MAINTAINED TO ENSURE THAT THE SPECIFIED DESIGN DIMENSIONS AND PROTECTIVE LININGS ARE AVAILABLE AT ALL TIMES. A CHANNEL SHOULD BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. DAMAGED CHANNEL LININGS SHOULD BE REPAIRED OR REPLACED IMMEDIATELY.

DETAIL 11
CHANNEL

N.T.S.



PLAN

SECTION B-B

RIPRAP APRON DIMENSION TABLE							
RIPRAP APRON	L (FT)	W1 (FT)	W2 (FT)	D50 (IN)	D (FT)	T (IN)	NSA NO.
1	6	3.0	9.0	6	2.0	18	R-4

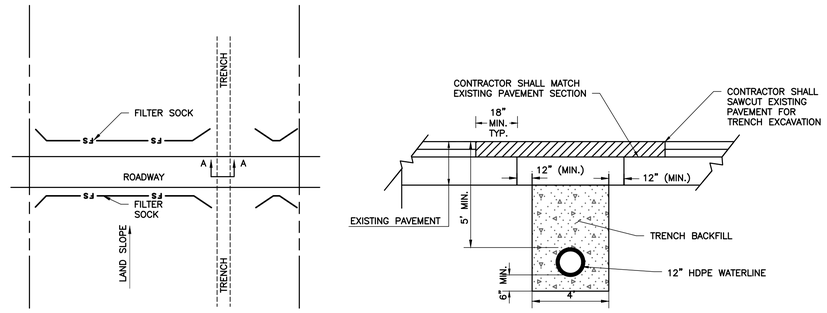
NOTE: APRON SIZES LISTED ABOVE ARE THE MINIMUM AS REQUIRED BY THE PADEP E&S MANUAL. REFER TO PLAN DRAWINGS FOR ACTUAL APRON SIZES.

INSPECTION: ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE STABILIZED AREA.

MAINTENANCE: DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

DETAIL 12
RIPRAP APRON

N.T.S.



PLAN

SECTION A-A

NOTES:

1. INSTALL COMPOST FILTER SOCK BEFORE CONDUCTING EARTH DISTURBANCE OPERATIONS UPSTREAM OF THE CROSSING AREA.
2. TEMPORARY TRENCH SPOIL STOCKPILE LOCATION VARIES. REFER TO DRAWING RC-01 FOR MORE INFORMATION.
3. ROADWAY CROSSINGS MAY BE SUBJECT TO THE CONDITIONS OF CROSSING OR HIGHWAY OCCUPANCY PERMITS. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO THE CONDITIONS OF THE PERMITS.
4. FOLLOWING WATERLINE INSTALLATION, RESTORE CONSTRUCTION AREAS INCLUDING TRENCHES TO PRE-CONSTRUCTION CONDITIONS.

DETAIL 13
OPEN CUT ROAD CROSSING

N.T.S.

REVISION RECORD		
NO	DATE	DESCRIPTION
1	02/28/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE

PENNENERGY RESOURCES

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PENNENERGY RESOURCES, LLC
B50 TEMPORARY
ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — VINCENT JOSEPH SOLCHITANO — ENGINEER — PE 090453 — 02/28/2023

EROSION AND SEDIMENT CONTROL AND SITE RESTORATION DETAILS

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	AS SHOWN	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			DRAFT

DRAWING NO.: ES02

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GENERAL PURPOSE TRUSS 12 × 12

12" x 12" General Purpose truss is manufactured from 2" dia x 0.125" wall and 1" dia x 0.125" wall 6082T6 or 6061T6 aluminum tubing. Bolts are supplied for assembly of truss elements. This truss is ideal for conference, exhibition, and small venue work. By incorporating suitable sleeve blocks and towers, this truss can be used with our Ground Support System.

Loading chart

Allowable Load Data	Maximum Allowable Uniform Loads		Maximum Allowable Center Point Loads	
Span feet	Loads pounds	Maximum deflection inches	Loads pounds	Maximum deflection inches
10	6140	0.276	4497	0.315
20	3100	1.10	1550	1.10
30	1726	2.21	864	2.21
40	855	2.96	428	2.96

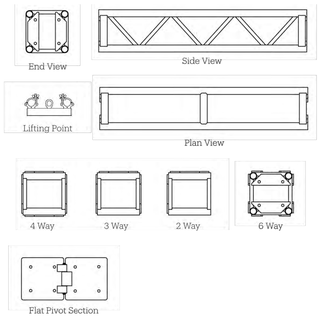
LOADING FIGURES show maximum loads between supports in addition to the self weight of the truss. Information extracted from the structural report by Broadhurst, Goodwin, and Dunn for Truss manufactured after November 1993. * denotes load limited to suit maximum shear capacity. All loads include 20% overload factor for dynamic effects.

Standard lengths and weights

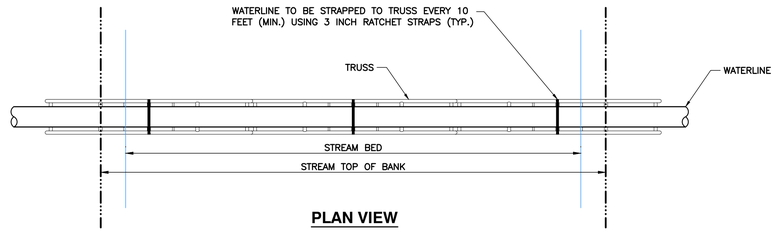
PRODUCT CODE	DESCRIPTION	WT lbs
B0700	10' Section	55
B0701	8' Section	46
B0702	5' Section	35
B0703	2' 6" Section	24

Corners

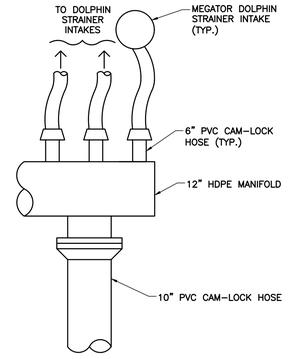
PRODUCT CODE	DESCRIPTION	WT lbs
B4705	2 Way Corner Block	15
B4705A	3 Way Corner Block	17.5
B4706	4 Way Corner Block	19.5
B4706A	5 Way Corner Block	25.9
B4707	6 Way Corner Block	26.5
B4708	Flat Plate Hinge Section	14



SOURCE: DETAIL FROM JAMES THOMAS ENGINEERING

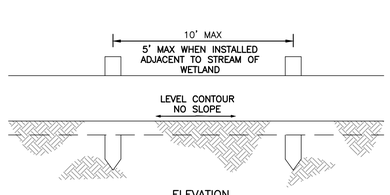


PLAN VIEW

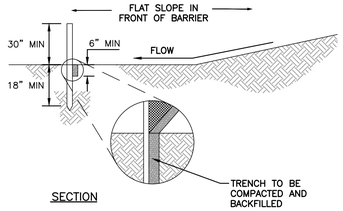


DETAIL 15
STREAM INTAKE
N.T.S.

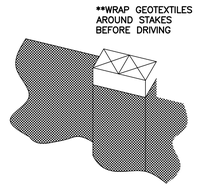
DETAIL 14
TEMPORARY TRUSS STREAM CROSSING
N.T.S.



ELEVATION



SECTION



JOINING SECTIONS OF SILT FENCE

NOTES:

1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS THAT MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
3. ENDS OF THE SILT FENCES SHALL BE BROUGHT UPSLOPE SLIGHTLY SO THAT WATER PONDED BY THE SILT FENCE WILL BE PREVENTED FROM FLOWING AROUND THE ENDS.
4. SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE.
6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 30 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. THE SILT FENCE SHALL BE PLACED IN AN EXCAVATED OR SLICED TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE MADE WITH A TRENCHER, CABLE LAYING MACHINE, SLICING MACHINE, OR OTHER SUITABLE DEVICE THAT WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE. A MINIMUM OF 8 INCHES OF GEOTEXTILE MUST BE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6–INCH DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.
9. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6" OVERLAP PRIOR TO DRIVING INTO THE GROUND (SEE DETAILS).
10. SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSED FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER THE FABRIC OR AROUND THE FENCE ENDS, OR IN ANY OTHER WAYS ALLOWS A CONCENTRATED FLOW DISCHARGE, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) A ROCK FILTER OUTLET SHALL BE INSTALLED.

CRITERIA FOR SILT FENCE MATERIALS:

1. FENCE POST – THE LENGTH SHALL BE A MINIMUM OF 48 INCHES. WOOD POSTS SHALL BE 2" BY 2" NOMINAL DIMENSIONED HARDWOOD OF SOUND QUALITY. THEY SHALL BE FREE OF KNOTS, SPLITS AND OTHER VISIBLE IMPERFECTIONS THAT WILL WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FT AND WHERE INSTALLED ADJACENT TO A STREAM OR WETLAND, THE MAXIMUM POST SPACING SHALL BE 5'. POSTS SHALL BE DRIVEN A MINIMUM 18 INCHES INTO THE GROUND, WHERE POSSIBLE. IF NOT POSSIBLE, THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT/WATER LOADING.
2. SILT FENCE FABRIC – SEE CHART BELOW.

FABRIC PROPERTIES	VALUES	TEST METHOD
MINIMUM TENSILE STRENGTH	120 LBS. (535 N)	ASTM D 4632
MAXIMUM ELONGATION AT 60 LBS	50%	ASTM D 4632
MINIMUM PUNCTURE STRENGTH	50 LBS (220 N)	ASTM D 4833
MINIMUM TEAR STRENGTH	40 LBS (180 N)	ASTM D 4533
APPARENT OPENING SIZE	< OR = 0.84 MM	ASTM D4751
MINIMUM PERMITTIVITY	1X10–2 SEC. –1	ASTM D 4491
UV EXPOSURE STRENGTH RETENTION	70%	ASTM G 4355

INSPECTION: SILT FENCE SHALL BE INSPECTED WEEKLY, AFTER EACH RUNOFF EVENT, AND AT LEAST DAILY DURING PROLONGED RAINFALL.

MAINTENANCE: DAMAGED SILT FENCE SHALL BE REPAIRED BY INSTALLING A ROCK FILTER OUTLET OR REPLACED WITHIN 24 HOURS. SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THEY REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE SILT FENCE.

30" SILT FENCE

DETAIL 16
SILT FENCE
N.T.S.

FABRIC PROPERTIES	VALUES	TEST METHOD
MINIMUM TENSILE STRENGTH	120 LBS. (535 N)	ASTM D 4632
MAXIMUM ELONGATION AT 60 LBS	50%	ASTM D 4632
MINIMUM PUNCTURE STRENGTH	50 LBS (220 N)	ASTM D 4833
MINIMUM TEAR STRENGTH	40 LBS (180 N)	ASTM D 4533
APPARENT OPENING SIZE	< OR = 0.84 MM	ASTM D4751
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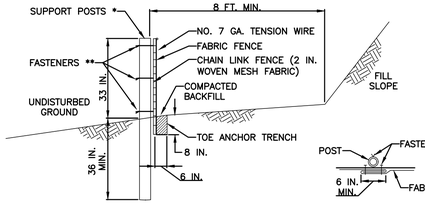
UV EXPOSURE STRENGTH RETENTION	70%	ASTM G 4355



SECTION VIEW

JOINING FENCE SECTIONS

* POSTS SPACED AT 10 FT. MAX. WHERE INSTALLED ADJACENT TO A STREAM OR WETLAND, MAX POST SPACING SHALL BE 5'. USE 2–1/2 IN. DIA HEAVY DUTY GALVANIZED OR ALUMINUM POSTS.

** CHAIN LINK TO POST FASTENERS SPACED AT 14 IN. MAX. USE NO. 9 GA. ALUMINUM WIRE OR NO. 9 GALVANIZED STEEL WIRE. FABRIC TO CHAIN FASTENERS SPACED AT 24 IN. MAX. ON CENTER.

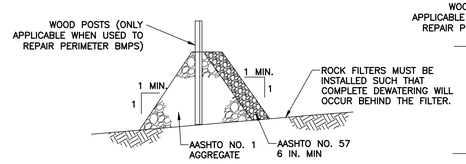
NOTES:

1. FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE ABOVE.
2. FABRIC WIDTH SHALL BE 42 IN. MINIMUM.
3. POSTS SHALL BE INSTALLED USING A POSTHOLE DRILL.
4. CHAIN LINK SHALL BE GALVANIZED NO. 11.5 GA. STEEL WIRE WITH 2–1/4 IN. OPENING, NO. 11 GA. ALUMINUM COATED STEEL WIRE IN ACCORDANCE WITH ASTM–A–491, OR GALVANIZED NO. 9 GA. STEEL WIRE TOP AND BOTTOM WITH GALVANIZED NO. 11 GA. STEEL INTERMEDIATE WIRES. NO. 7 GAGE TENSION WIRE TO BE INSTALLED HORIZONTALLY THROUGH HOLES AT TOP AND BOTTOM OF CHAIN–LINK FENCE OR ATTACHED WITH HOG RINGS AT 5 FT MAX. CENTERS.
5. SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.
6. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.
7. FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

INSPECTION: SILT FENCE SHALL BE INSPECTED WEEKLY, AFTER EACH RUNOFF EVENT, AND AT LEAST DAILY DURING PROLONGED RAINFALL.

MAINTENANCE: DAMAGED SILT FENCE SHALL BE REPAIRED BY INSTALLING A ROCK FILTER OUTLET OR REPLACED WITHIN 24 HOURS. SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THEY REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE SILT FENCE.

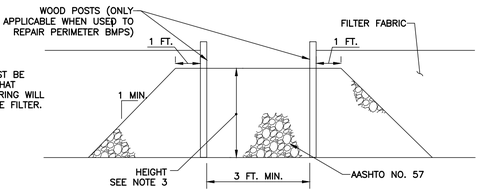
SUPER SILT FENCE



OUTLET CROSS–SECTION

NOTES:

1. ROCK FILTER OUTLET MAY BE INSTALLED WHERE FAILURE OF A SILT FENCE HAS OCCURRED DUE TO CONCENTRATED FLOW OR AS A STANDALONE BMP WHERE INDICATED ON THE PLAN.
2. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE OUTLET.
3. HEIGHT OF SILT FENCE WHEN USED TO REPAIR PERIMETER BMPS.
4. ROCK FILTERS MUST BE INSTALLED SUCH THAT COMPLETE DEWATERING WILL OCCUR BEHIND THE FILTER.

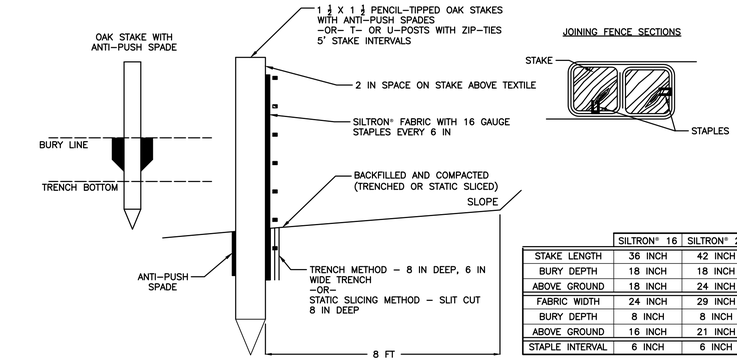


UP–SLOPE FACE

MAINTENANCE: CLOGGED FILTER STONE (AASHTO #57) SHOULD BE REPLACED.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH ½ THE HEIGHT OF THE FILTER.

ROCK FILTER OUTLET DETAIL



	SILTRON® 16	SILTRON® 21	SILTRON® 28
STAKE LENGTH	36 INCH	42 INCH	48 INCH
BURY DEPTH	18 INCH	18 INCH	18 INCH
ABOVE GROUND	18 INCH	24 INCH	30 INCH
FABRIC WIDTH	24 INCH	29 INCH	36 INCH
BURY DEPTH	8 INCH	8 INCH	8 INCH
ABOVE GROUND	16 INCH	21 INCH	28 INCH
STAPLE INTERVAL	6 INCH	6 INCH	6 INCH

NOTES:

1. WOOD STAKES SHALL BE A 1 ½ IN X 1 ½ IN PENCIL–TIPPED OAK STAKE AND MUST INCLUDE INTEGRATED ANTI–PUSH SPADE –OR– EQUIVALENT STEEL (U OR T) STAKE. STAKES PLACED AT 5 FT INTERVALS.
2. FENCE SHALL BE PLACED LEVEL AT EXISTING GRADE. BOTH ENDS OF FENCE SHALL BE EXTENDED AT LEAST 8 FT UP SLOPE AT 45 DEGREES TO MAIN FENCE ALIGNMENT.

MAINTENANCE:

1. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.
2. ANY SECTION OF FENCE WHICH HAS BEEN COMPROMISED THROUGH PHYSICAL DAMAGE OR IS BLINDED WITH SEDIMENT OR HYDROCARBONS SHALL BE IMMEDIATELY REPLACED WITH SILTRON, ROCK FILTER OUTLET CONFIGURATION, OR COMPOST FILTER SOCK.
3. IF UNDERCUTTING OCCURS, FILL MUST BE ADDED TO TRENCH AND AREA RE–COMPACTED.
4. FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

SILTRON® SILT FENCE

REVISION RECORD

NO	DATE	DESCRIPTION

PENNENERGY RESOURCES

Civil & Environmental Consultants, Inc.
700 Cherrington Parkway · Moon Township, PA 15108
412-429-2324 · 800-365-2324
www.cecinc.com

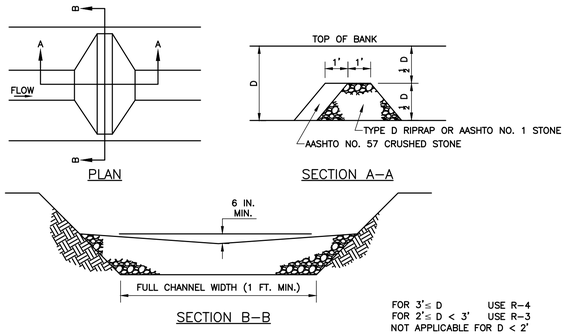
PENNENERGY RESOURCES, LLC
B50 TEMPORARY ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — VINCE JOSEPH SCICHITANO — ENGINEER — 11/3/2022

EROSION AND SEDIMENT CONTROL AND SITE RESTORATION DETAILS

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	AS SHOWN	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			VJS

DRAWING NO.: **ES03**



FOR 3'≤ D USE R-4
FOR 2'≤ D < 3' USE R-3
NOT APPLICABLE FOR D < 2'

INSPECTION: ROCK FILTERS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT.

MAINTENANCE: CLOGGED FILTER STONE (AASHTO #57) SHOULD BE REPLACED.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH ½ THE HEIGHT OF THE FILTER.

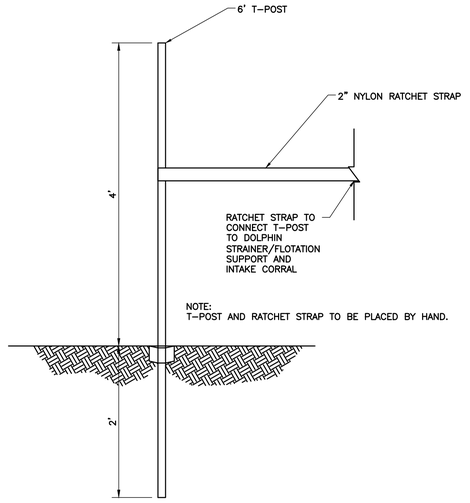
IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, INSTALLER SHALL REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

DETAIL 17
ROCK FILTER
N.T.S.

GENERAL PLANTING NOTES

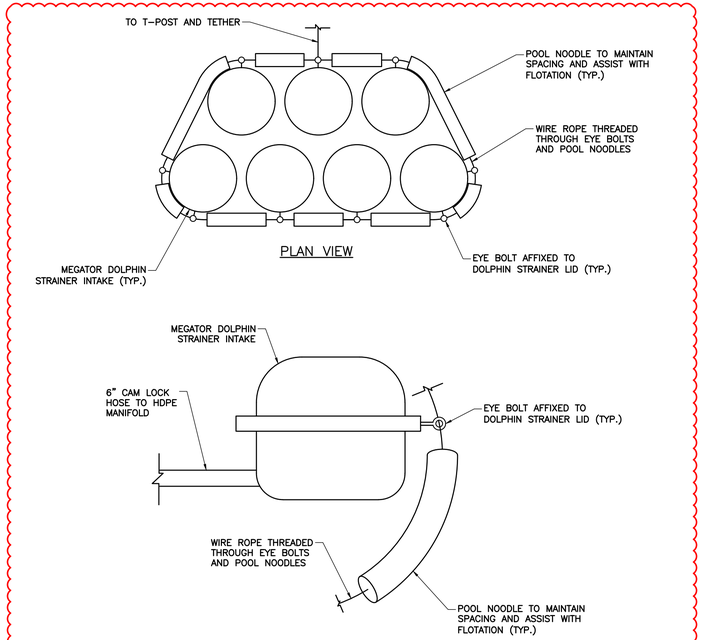
1. PLANTING OF TREES SHALL BE DONE IN THE FALL (SEPTEMBER 15 TO NOVEMBER 15) OR SPRING (APRIL 15 TO JUNE 1).
2. TREES SHALL BE PLANTED AT A 1:1 RATIO PER TREE 6" DBH OR LARGER THAT IS REMOVED WITHIN THE DESIGNATED AREA. TREES SHALL BE PLANTED WITHIN THE DESIGNATED AREA.
3. TREES SHALL BE A GALLON CONTAINER AT MINIMUM AND 24" IN HEIGHT ABOVE THE ROOTS WITH A TREE TUBE/HARDWOOD STAKE.
4. THE CONTRACTOR WILL SELECT NATIVE TREES FROM THE FOLLOWING BASED ON AVAILABILITY, WATER TOLERANCE, AND THE GENERAL SIZE AND HEALTH OF AVAILABLE NATIVE TREE SPECIES:
   - RED MAPLE (ACER RUBRUM)
   - SILVER MAPLE (ACER SACCHARINUM)
   - SYCAMORE (PLATANUS OCCIDENTALIS
   - RED OAK (QUERCUS RUBRA)
   - WHITE OAK (QUERCUS ALBA)
   - IRONWOOD (OSTRYA VIRGINIANA)
   - YELLOW BIRCH (BETULA ALLEGHANIENSIS)
5. UPON COMPLETION OF THE PROJECT, THE LIMITS OF THE PROJECT WILL REVERT TO THE RIGHTS OF THE LANDOWNER. THEREFORE, THE SURVIVAL OF PLANTINGS CANNOT BE GUARANTEED BEYOND THE LIFE OF THE ESCGP.

DETAIL 18
TREE PLANTING PLAN
N.T.S.



NOTE:
T–POST AND RATCHET STRAP TO BE PLACED BY HAND.

DETAIL 19
T-POST AND TETHER
N.T.S.



DETAIL 20
FLOTATION CORRAL
N.T.S.

REVISION RECORD		
NO	DATE	DESCRIPTION
1	02/28/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE
2	04/24/2023	REVISED PER ESCGP-3 (4/6/23), JPA (4/19/23), AND WMP (4/19/23) COMMENTS

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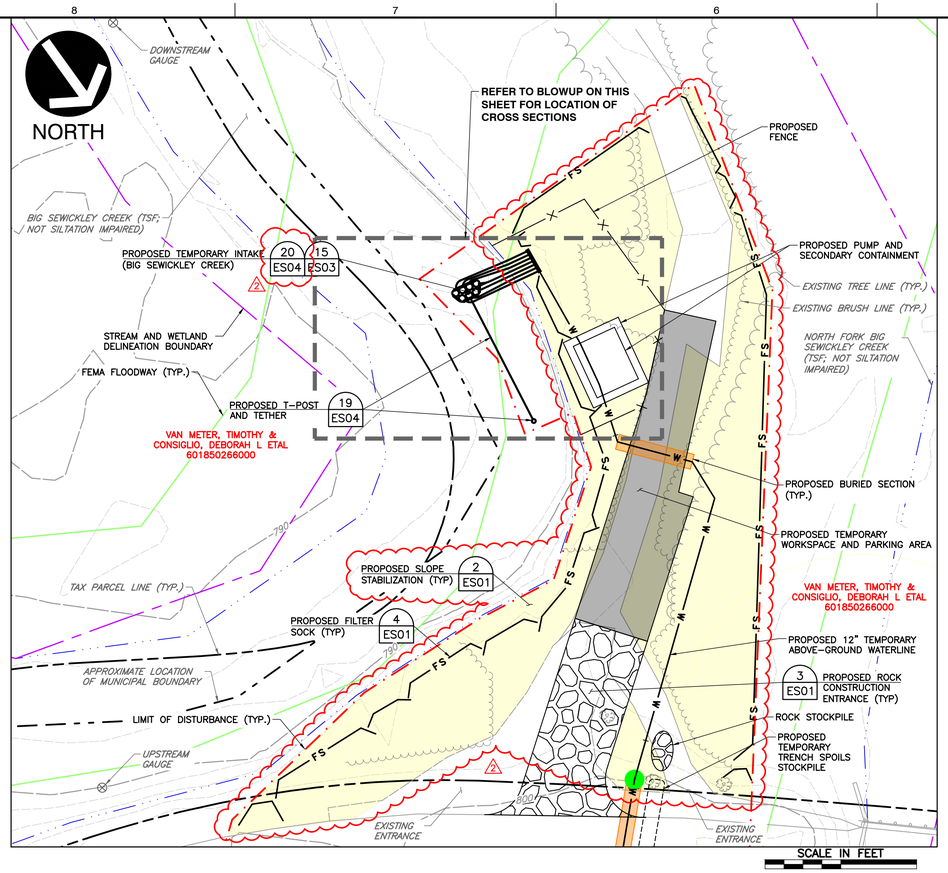
B50 TEMPORARY
ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PA

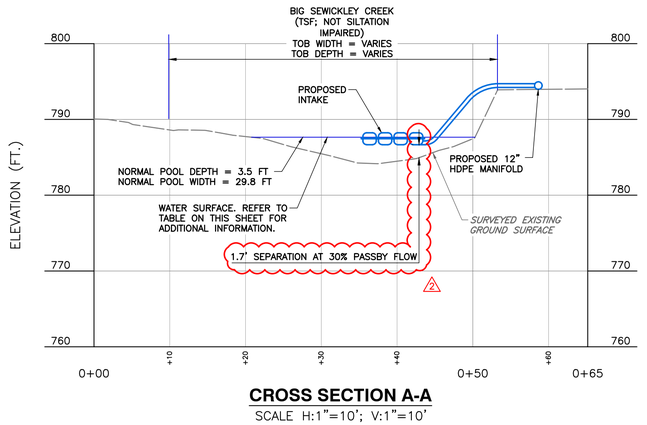
COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — VINCENT JOSEPH SCUCHITANO — PE 085004363
04/24/2023

EROSION AND SEDIMENT CONTROL AND SITE RESTORATION DETAILS

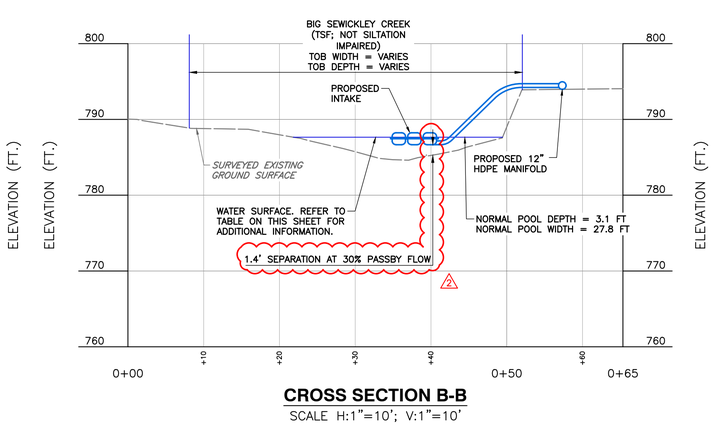
DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	AS SHOWN	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			DRAFT

DRAWING NO.: **ES04**

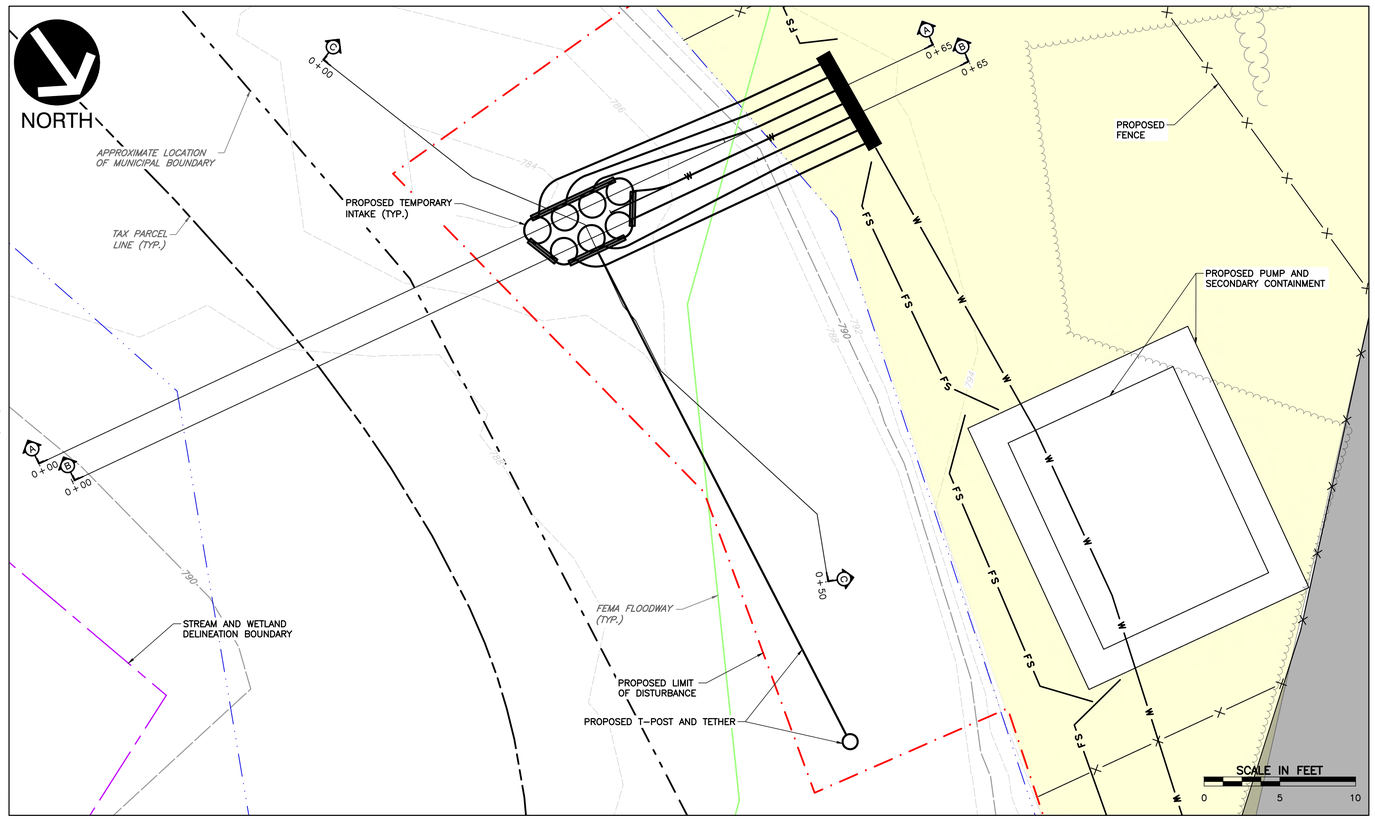


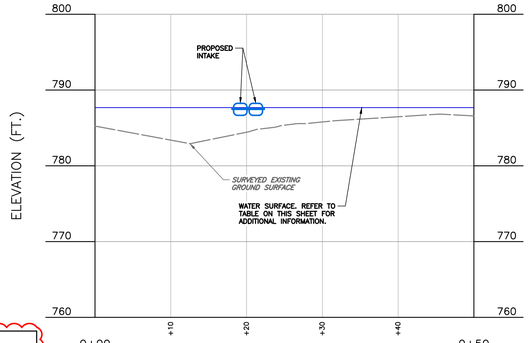


CROSS SECTION A-A
SCALE H:1"=10'; V:1"=10'



CROSS SECTION B-B
SCALE H:1"=10'; V:1"=10'





STREAM BED PROFILE (C-C)
SCALE H:1"=10'; V:1"=10'

DETAIL 1
PROPOSED TEMPORARY INTAKE (BIG SEWICKLEY CREEK)

REFERENCES:
1. EXISTING TOPOGRAPHY OF BIG SEWICKLEY CREEK, IN THE VICINITY OF THE WITHDRAWAL LOCATION, OBTAINED FROM FIELD SURVEY PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. (CEC) IN JANUARY 2023. AS-BUILT TOPOGRAPHY FOR THE PER B50 WELL PAD SURVEYED BY CEC IN FEBRUARY 2020. EXISTING CONTOURS OUTSIDE OF THESE AREAS DERIVED FROM THE PAMAP PROGRAM 3.2 FT DIGITAL ELEVATION MODEL OF PENNSYLVANIA; DEVELOPED BY PAMAP PROGRAM, PA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY; DATED MAY 2006.
2. AERIAL PHOTOGRAPHY TAKEN FROM GOOGLE EARTH PRO; IMAGERY DATED OCTOBER 8, 2020.
3. STREAM AND WETLAND DELINEATION COMPLETED BY CEC, INC. IN AUGUST 2020 AND MAY/JUNE 2021.
4. PROPERTY LINES DERIVED FROM BEAVER COUNTY TAX PARCEL DATA AND SUPPLEMENTED BY FIELD SURVEY PERFORMED BY CEC, INC. IN NOVEMBER & DECEMBER 2020 AND JUNE 2021.
5. SOURCES, INCLUDING THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION TYPE 5B MAPS FOR ECONOMY BOROUGH AND BELL ACRES BOROUGH, INDICATE THAT THE MUNICIPAL BOUNDARY FOLLOWS THE CENTERLINE OF BIG SEWICKLEY CREEK. THE MUNICIPAL BOUNDARY SHOWN ON THE PLANS WAS DIGITIZED BASED ON THE EXISTING STREAM LOCATION.

NOTE:
IF GRAVEL IS PLACED IN TEMPORARY WORKSPACES, IT MUST BE REMOVED AS SOON AS IT IS NO LONGER NEEDED OR WITHIN 12 MONTHS FOLLOWING INITIAL INSTALLATION, WHICHEVER IS LESS. THE EXISTING SOIL SHOULD BE SCARIFIED AND RELIEVED OF COMPACTION PRIOR TO SEEDING. ALL TEMPORARY WORKSPACES, WHETHER GRAVEL OF NOT, SHALL BE SEEDED, STABILIZED, AND RESTORED TO MEADOW IN GOOD CONDITION UPON COMPLETION OF THE PROJECT.

CROSS SECTION	ELEVATION			SEPARATION FROM STRAINER TO STREAM BED AT 30% PASSBY (FT)	POOL DEPTH		
	30% PASSBY (8.8 CFS)	50% PASSBY (13.1 CFS)	NORMAL POOL (21.6 CFS)		30% PASSBY (8.8 CFS)	50% PASSBY (13.1 CFS)	NORMAL POOL (21.6 CFS)
A-A	787.48	787.55	787.65	1.7	3.3	3.4	3.5
B-B				1.4	2.9	3.0	3.1

NOTES:
1. THE VERTICAL PLACEMENT OF THE STRAINERS SHOWN ON THE CROSS SECTIONS ON THIS DRAWING IS BASED ON THE 30% PASSBY FLOW ELEVATION.
2. THE SEPARATION VALUES LISTED IN THE TABLE ARE THE MINIMUM SEPARATION FOR ALL STRAINERS SHOWN ON THAT CROSS SECTION.

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- TAX PARCEL LINE
- PROPERTY LINE BASED ON FIELD EVIDENCE
- STREAM/WETLAND DELINEATION BOUNDARY
- EXISTING WETLAND
- EXISTING STREAM
- ASSUMED 50' FLOODWAY
- FEMA FLOODWAY
- EXISTING OVERHEAD WIRE/UTILITY POLE
- EXISTING FENCE
- EXISTING GAS PIPELINE/MARKER
- EXISTING TREELINE
- EXISTING SANITARY SEWER/MANHOLE
- EXISTING SIGN
- EXISTING WATERLINE
- EXISTING CHANNEL
- EXISTING RIPRAP
- EXISTING CULVERT/STORM PIPE/INLET
- PROPOSED TEMPORARY ABOVE GROUND WATERLINE
- AREA NOT TO BE DISTURBED
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED TIMBER MAT
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED ROCK STOCKPILE
- PROPOSED PERMANENT WATERBAR
- PROPOSED TEMPORARY WATERBAR
- PROPOSED RIPRAP APPRON
- PROPOSED SLOPE STABILIZATION

REVISION RECORD

NO	DATE	DESCRIPTION
1	02/28/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE
2	04/24/2023	REVISED PER ESCGP-3 (4/6/23), JPA (4/19/23), AND WMP (4/19/23) COMMENTS

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BEAVER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — JOSEPH S. CICHANO — PE 075045 — 04/24/2023

STREAM AND FLOODWAY CROSSING DETAILS

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	AS SHOWN	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			DRAFT

DRAWING NO.: **JP01**

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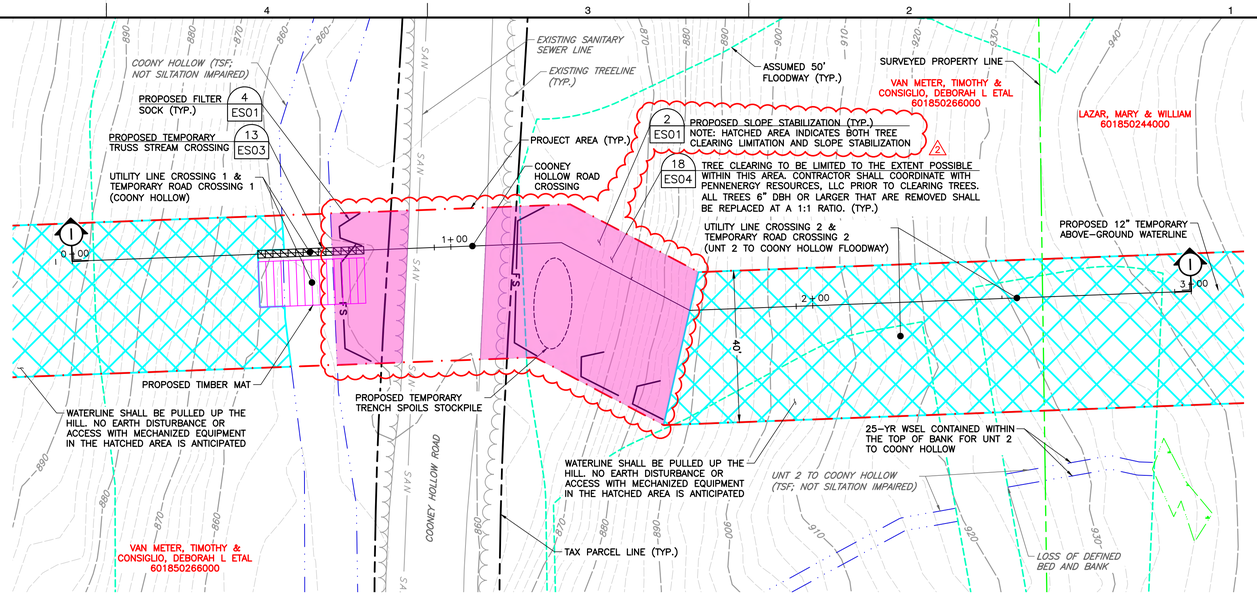
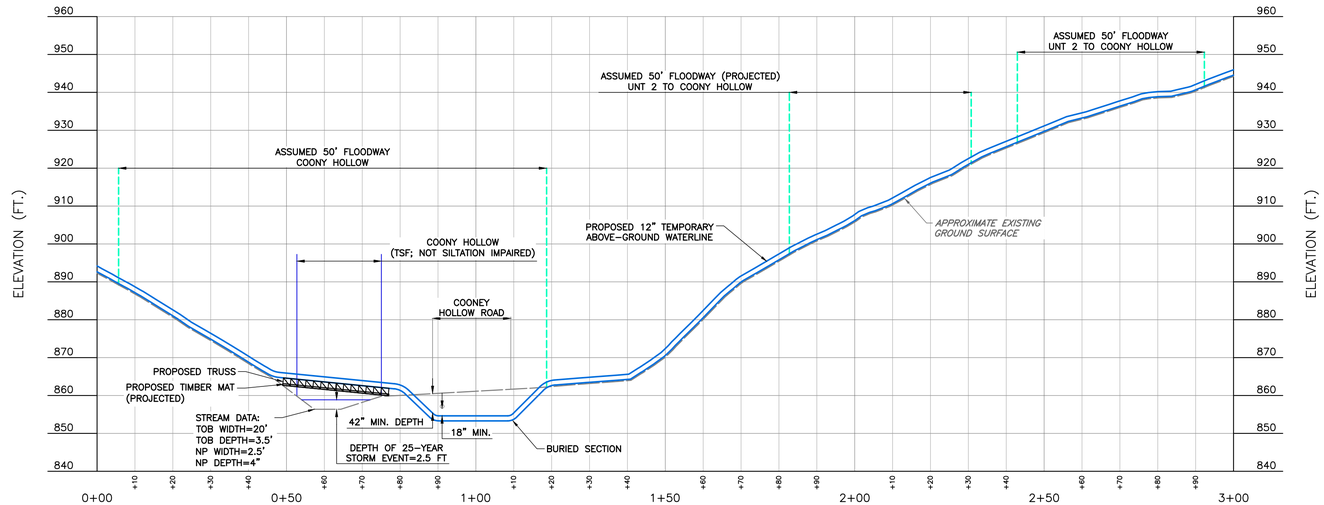
NOTE:
IF GRAVEL IS PLACED IN TEMPORARY WORKSPACES, IT MUST BE REMOVED AS SOON AS IT IS NO LONGER NEEDED OR WITHIN 12 MONTHS FOLLOWING INITIAL INSTALLATION, WHICHEVER IS LESS. THE EXISTING SOIL SHOULD BE SCARIFIED AND RELIEVED OF COMPACTION PRIOR TO SEEDING. ALL TEMPORARY WORKSPACES, WHETHER GRAVEL OF NOT, SHALL BE SEEDED, STABILIZED, AND RESTORED TO MEADOW IN GOOD CONDITION UPON COMPLETION OF THE PROJECT.





CROSS SECTION I-I
SCALE H:1"=10'; V:1"=10'

DETAIL 2
UTILITY LINE CROSSING 1 AND TEMPORARY ROAD CROSSING 1 (COONEY HOLLOW)

UTILITY LINE CROSSING 2 AND TEMPORARY ROAD CROSSING 2 (UNT 2 TO COONEY HOLLOW FLOODWAY)

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- TAX PARCEL LINE
- PROPERTY LINE BASED ON FIELD EVIDENCE
- STREAM/WETLAND DELINEATION BOUNDARY
- EXISTING WETLAND
- EXISTING STREAM
- ASSUMED 50' FLOODWAY
- FEMA FLOODWAY
- EXISTING OVERHEAD WIRE/UTILITY POLE
- EXISTING FENCE
- EXISTING GAS PIPELINE/MARKER
- EXISTING TREELINE
- EXISTING SANITARY SEWER/MANHOLE
- EXISTING SIGN
- EXISTING WATERLINE
- EXISTING CHANNEL
- EXISTING RIPRAP
- EXISTING CULVERT/STORM PIPE/INLET
- PROPOSED TEMPORARY ABOVE GROUND WATERLINE
- AREA NOT TO BE DISTURBED
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED TIMBER MAT
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED ROCK STOCKPILE
- PROPOSED PERMANENT WATERBAR
- PROPOSED TEMPORARY WATERBAR
- PROPOSED RIPRAP APRON
- PROPOSED SLOPE STABILIZATION
- GRAVEL TO BE REMOVED
- LIMITED TREE CLEARING/TREE REPLACEMENT AREA

REVISION RECORD

NO	DATE	DESCRIPTION
1	02/28/2023	REVISED IN ACCORDANCE WITH THE 12/23/2022 PADEP CORRECTION NOTICE
2	04/24/2023	REVISED PER ESCGP-3 (4/6/23), JPA (4/19/23), AND WMP (4/19/23) COMMENTS

PENNENERGY RESOURCES

Civil & Environmental Consultants, Inc.
700 Cherrington Parkway · Moon Township, PA 15108
412-429-2324 · 800-365-2324
www.cecinc.com

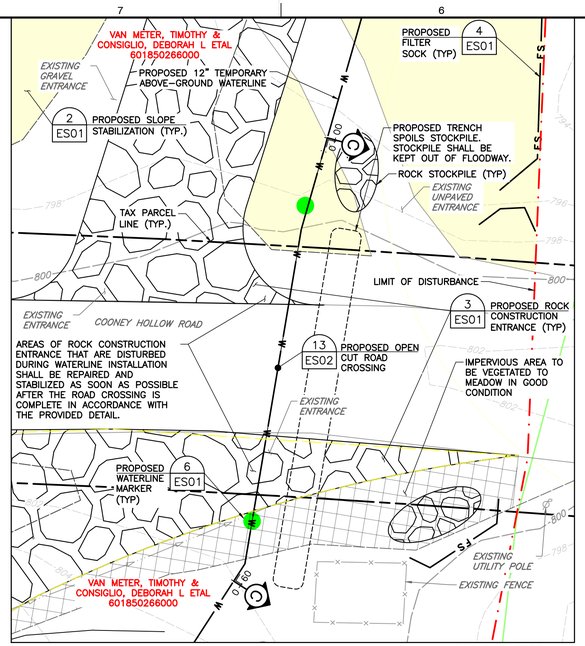
PENNENERGY RESOURCES, LLC
B50 TEMPORARY
ABOVE-GROUND WATERLINE
ECONOMY BOROUGH
BEAVER COUNTY, PA

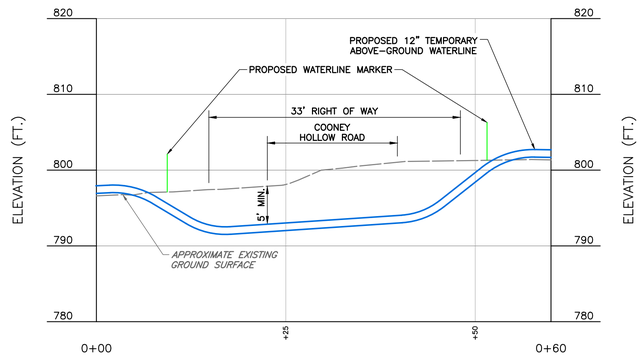
COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — VINCENT JOSEPH SCUCHITANO — PE 082054E
04/24/2023

STREAM AND FLOODWAY CROSSING DETAILS

DATE:	MARCH 2022	DRAWN BY:	JTD
DWG SCALE:	1"= 20'	CHECKED BY:	VJS
PROJECT NO:			317-457
APPROVED BY:			DRAFT

DRAWING NO.: JP02



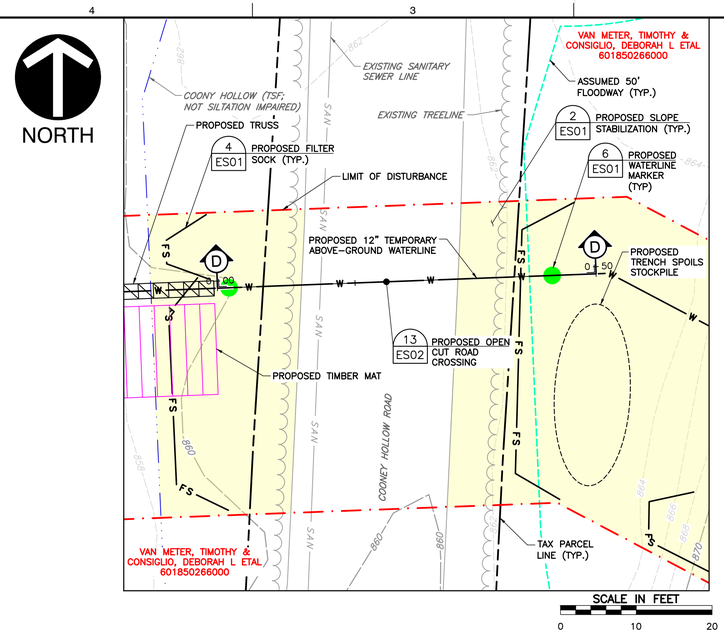


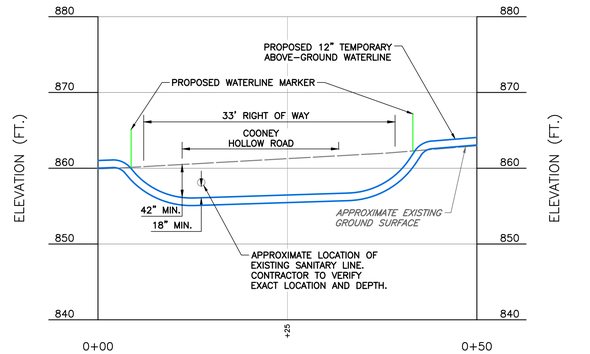
CROSS SECTION C-C

SCALE H:1"=10'; V:1"=10'

SCALE IN FEET
0 10 20

DETAIL 1
COONEY HOLLOW ROAD CROSSING





CROSS SECTION D-D

SCALE H:1"=10'; V:1"=10'

SCALE IN FEET
0 10 20

DETAIL 2
COONEY HOLLOW ROAD CROSSING

NOTE:

FOR THE AREA ASSOCIATED WITH DETAIL 1 ON THIS DRAWING, THE CONTRACTOR SHALL LIMIT VEHICLE ENTRY AND EXIT TO THE PROPOSED ROCK CONSTRUCTION ENTRANCES AND TAKE PRECAUTIONS TO AVOID TRACKING SEDIMENT ONTO THE PUBLIC ROADWAY FROM WORK AREAS OTHER THAN THE ACTUAL OPEN CUT CROSSING OF COONEY HOLLOW ROAD.

FOR THE AREA ASSOCIATED WITH DETAIL 2 ON THIS DRAWING, THE CONTRACTOR SHOULD LIMIT VEHICLE MOVEMENTS ON AND OFF THE PUBLIC ROADWAY DURING INSTALLATION AND SUBSEQUENT REMOVAL OF THE STREAM CROSSING AND TEMPORARY WATERLINE ADJACENT TO COONEY HOLLOW ROAD TO LIMIT THE POTENTIAL FOR DISTURBANCE AND SEDIMENT DEPOSITION ON THE PUBLIC ROADWAY. SEDIMENT SHOULD BE MANUALLY REMOVED FROM VEHICLE TIRES OR TRACKS AS NEEDED PRIOR TO EXITING THE WORK AREA ONTO THE PUBLIC ROADWAY. IF SEDIMENT IS DEPOSITED ON THE ROADWAY DURING ACTIVITIES OTHER THAN THE ACTUAL OPEN CUT CROSSING OF COONEY HOLLOW ROAD, IT SHOULD BE REMOVED FROM THE ROADWAY IMMEDIATELY AND REPLACED WITHIN THE DISTURBED AREA, AND STABILIZED IN AN APPROPRIATE MANNER.

ANY SEDIMENT DEPOSITED ON COONEY HOLLOW ROAD AS A RESULT OF THE OPEN CUT ROAD CROSSING SHOULD BE CLEANED IMMEDIATELY FOLLOWING COMPLETION OF THE OPEN CUT OR AT THE END OF EACH WORK DAY IF WORK IS NOT COMPLETED IN ONE DAY.

2

REFERENCES

1. EXISTING TOPOGRAPHY OF BIG SEWICKLEY CREEK, IN THE VICINITY OF THE WITHDRAWAL LOCATION, OBTAINED FROM FIELD SURVEY PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. (CEC) IN JANUARY 2023. AS-BUILT TOPOGRAPHY FOR THE PER B50 WELL PAD SURVEYED BY CEC IN FEBRUARY 2020. EXISTING CONTOURS OUTSIDE OF THESE AREAS DERIVED FROM THE PAMAP PROGRAM 3.2 FT DIGITAL ELEVATION MODEL OF PENNSYLVANIA; DEVELOPED BY PAMAP PROGRAM, PA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY; DATED MAY 2006.
2. AERIAL PHOTOGRAPHY TAKEN FROM GOOGLE EARTH PRO; IMAGERY DATED OCTOBER 8, 2020.
3. STREAM AND WETLAND DELINEATION COMPLETED BY CEC, INC. IN AUGUST 2020 AND MAY/JUNE 2021.
4. PROPERTY LINES DERIVED FROM BEAVER COUNTY TAX PARCEL DATA AND SUPPLEMENTED BY FIELD SURVEY PERFORMED BY CEC, INC. IN NOVEMBER & DECEMBER 2020 AND JUNE 2021.
5. SOURCES, INCLUDING THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION TYPE 5B MAPS FOR ECONOMY BOROUGH AND BELL ACRES BOROUGH, INDICATE THAT THE MUNICIPAL BOUNDARY FOLLOWS THE CENTERLINE OF BIG SEWICKLEY CREEK. THE MUNICIPAL BOUNDARY SHOWN ON THE PLANS WAS DIGITIZED BASED ON THE EXISTING STREAM LOCATION.

LEGEND

- 1200 — EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- TAX PARCEL LINE
- PROPERTY LINE BASED ON FIELD EVIDENCE
- STREAM/WETLAND DELINEATION BOUNDARY
- EXISTING WETLAND
- EXISTING STREAM
- ASSUMED 50' FLOODWAY
- FEMA FLOODWAY
- OH-W — EXISTING OVERHEAD WIRE/UTILITY POLE
- EXISTING FENCE
- G — EXISTING GAS PIPELINE/MARKER
- EXISTING TREELINE
- SAN — S — EXISTING SANITARY SEWER/MANHOLE
- EXISTING SIGN
- W — EXISTING WATERLINE
- EXISTING CHANNEL
- EXISTING RIPRAP
- ST — EXISTING CULVERT/STORM PIPE/INLET
- W — PROPOSED TEMPORARY ABOVE GROUND WATERLINE
- PROPOSED LIMIT OF DISTURBANCE
- FS — PROPOSED FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED TIMBER MAT
- PROPOSED ROCK CONSTRUCTION ENTRANCE
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- PROPOSED SLOPE STABILIZATION

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ROAD CROSSING DETAILS

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PROJECT NO:			317-457
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DRAWING NO.: **RC01**