Pennsylvania Department of Environmental Protection

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES EROSION AND SEDIMENT CONTROL (E&S) MODULE 1

Applicant: **Homer City Generation, L.P.** Project Site Name: **HCPP Pipeline**

E&S PLAN INFORMATION

1. Describe the existing topographic features of the project site and the immediate surrounding area.

   The past and present land uses of this project were determined using aerial mapping. Land uses include woodland, meadow, natural gas infrastructure, farmland, and utility and road rights-of-way (ROW). The existing topography consists of rolling hills with elevations ranging from Elevation (El.) 920 to El. 1266 based on a combination of conventional survey methods performed by CEC and LiDAR (Light Detection and Ranging) elevation points.

2. a. Complete the following table for soils present at the project site or attach a separate table.

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Site-Specific Limitation	Hydric
	See attached Soils Report				☐	☐
					☐	☐
					☐	☐
					☐	☐

   b. If there are any site-specific soil limitations identified in the table above, discuss how the E&S Plan was designed to address those limitations.

   Refer to Section 2.0 of the Erosion and Sediment Control (E&S) Narrative.

   c. If hydric soils are present, is a wetland determination attached to this module? ☒ Yes ☐ No ☐ N/A

   If No, explain: _____

   d. If wetlands are found to be present, are a wetland delineation report and plan drawings showing the wetland boundary attached to this module? ☒ Yes ☐ No ☐ N/A

   e. Was environmental due diligence conducted for on-site soils to be disturbed? ☒ Yes ☐ No

   f. If on-site soils are known to be contaminated, 1) identify the pollutants exceeding Act 2 standards, 2) identify the extent of soil contamination on an E&S Plan Drawing that is attached to this module, and 3) describe the methods that will be used to avoid or minimize disturbance of the contaminated soils in the space provided below or separate sheet.

   On-site soils have been tested for Total Sulfur content in areas previously strip-mined within the project area to identify potential Acid Producing Rock (APR). Soil sample test results in areas of excavation that exceeded the 0.5% Total Sulfur threshold to be classified as potential APR per the PADEP Fact Sheet were limited to approximate Stations 141+00 through 147+00, as shown on E&S Drawings C912 and C913. Materials excavated in this area of the project are to be handled, managed, and treated with the addition of a neutralizing agent in accordance with the provided APR Management Plan.

3. Describe the characteristics of the earth disturbance activity, including the past (at least 50 years ago), present (within the past five (5) years) and proposed land uses and the proposed alteration to the project site.

   See Section 3.0 of the E&S Narrative.

4. Describe the volume and rate of runoff from the project site and its upstream watershed area.

   See Section 4.0 of the E&S Narrative.

5. Check boxes to indicate all BMPs that will be installed or implemented, indicate the number of BMPs on the project site, and describe any deviations from the E&S Manual.

E&S BMPs	No. BMPs	Deviation(s) from E&S Manual
☒ Rock Construction Entrance	**26**	**Approved Alternative: 100-ft long for Siltation-Impaired Watersheds**
☐ Rock Construction Entrance with Wash Rack		
☒ Rumble Pad	**1**	**FODS Trackout System (not a deviation)**
☐ Wheel Wash		
☒ Temporary/Permanent Access Roads	**9**	
☒ Waterbar	**42**	
☒ Broad-based Dip	**1**	
☐ Open-top Culvert		
☒ Water Deflector	**9**	
☐ Roadside Ditch		
☐ Ditch Relief Culvert		
☐ Turnout		
☐ Compost Sock Sediment Trap		
☒ Temporary/Permanent Stream Crossing	**21**	
☒ Temporary/Permanent Wetland Crossing	**6**	
☐ Turbidity Barrier (Silt Curtain)		
☐ Dewatering Work Areas		
☒ Pumped Water Filter Bag	**N/A**	
☐ Sump Pit		
☐ Concrete Washout		
☒ Compost Filter Sock	**42**	
☐ Compost Filter Berm		
☐ Weighted Sediment Filter Tube		
☐ Silt Fence (Filter Fabric Fence)		
☐ Reinforced Silt Fence		
☐ Super Silt Fence		

E&S BMPs	No. BMPs	Deviation(s) from E&S Manual
☐ Sediment Filter Log (Fiber Log)		
☐ Wood Chip Filter Berm		
☐ Straw Bale Barrier		
☐ Rock Filter		
☐ Vegetative Filter Strip		
☐ Inlet Filter Bag		
☐ Stone Inlet Protection		
☒ Runoff Conveyance (Channel)	**4**	
☐ Bench		
☐ Top-of-Slope Berm		
☐ Temporary Slope Pipe		
☐ Sediment Basin		
☐ Sediment Trap		
☒ Riprap Apron	**2**	
☐ Flow Transition Mat		
☐ Stilling Basin (Plunge Pool)		
☐ Stilling Well		
☐ Energy Dissipater		
☐ Drop Structure		
☐ Earthen Level Spreader		
☐ Structural Level Spreader		
☐ Surface Roughening		
☒ Vegetative Stabilization	**N/A**	
☒ Erosion Control Blanket	**N/A**	
☐ Soil Binders		
☐ Sodding		
☐ Cellular Confinement Systems		
☒ Alternative: **Multi-Layer Geotextile Filter Fence (Siltron or approved Alternative)**	**1169**	
☐ Alternative:		

6.	☒	E&S Plan Drawings have been developed for the project and are attached to the NOI/application.
7.	☒	All applicable Standard E&S Worksheets from Appendix B of the E&S Manual, or other calculations equivalent to Appendix B Worksheets, have been completed and are attached to the NOI/application.
8.	☒	Supporting E&S BMP calculations are attached to the NOI/application.
9.	☒	A complete sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior to, during and after earth disturbance activities, that ensures the proper functioning of all BMPs is provided on the E&S Plan Drawings.
10.	☒	A cut/fill balance sheet with soil volumes identified is attached.
11.	☒	BMPs will be inspected on a weekly basis and after measurable storm events (i.e., at least 0.25 inch).
12.	☒	The following information relating to <u>temporary stabilization</u> measures is identified on the E&S Plan Drawings: 1) vegetative species, 2) % pure live seed, 3) seed application rate, 4) fertilizer type, 5) fertilizer application rate, 6) mulch type, 7) mulching rate, and 8) liming rate.
13.	☒	The following information relating to <u>permanent stabilization</u> measures is identified on the E&S Plan Drawings: 1) vegetative species, 2) % pure live seed, 3) seed application rate, 4) fertilizer type, 5) fertilizer application rate, 6) mulch type, 7) mulching rate, 8) liming rate, 9) anchor material, 10) anchoring method, 11) rate of anchor material application, 12) topsoil placement depth, and 13) seeding season dates.
14.	☒	The procedures that will be taken to ensure that recycling or disposal of materials associated with or from the project site will be conducted properly is described on the E&S Plan Drawings.
15.	☒	The E&S Plan has been planned, designed, and will be implemented to be consistent with the PCSM Plan.
16.	☐	The project includes existing and/or proposed riparian forest buffers as shown on the E&S / PCSM Plan Drawings.
17.	☒	Construction dewatering is expected and BMPs for treating this water are shown on E&S Plan Drawings.

18. Identify the presence of any naturally occurring geologic formations or soil conditions that may have the potential to cause pollution during earth disturbance activities below. If such formations or conditions exist, identify BMPs on the E&S Plan Drawings that will be implemented to avoid or minimize potential pollution. (Enter “N/A” if not applicable).

    See Section 9.0 of the E&S Narrative.

19. Identify whether the potential exists for thermal impacts to surface waters from the earth disturbance activity below. If such potential exists, identify BMPs on the E&S Plan Drawings that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

    See Section 10.0 of the E&S Narrative.

E&S PLAN DEVELOPER

☒ I am trained and experienced in E&S control methods.

No. years of experience preparing E&S Plans: **21**

☒ I am a licensed professional.

☐ I am a certified E&S professional.

Name:	Charles R. Kane, P.E.	Title:	Principal
Company:	Civil & Environmental Consultants, Inc.	Phone No.:	724-327-5200
Address:	4350 Northern Pike, Suite 141	Email:	ckane@cecinc.com
City, State, ZIP:	Monroeville, PA 15146	License No.:	PE077549
License Type:	Professional Engineer	Cert. No.:	
Cert. Type:		Exp. Date:	9/30/2027

E&S Plan Developer Signature

09/24/2025

Date

EROSION AND SEDIMENTATION CONTROL REPORT

HCPP PIPELINE
BURRELL, BLACK LICK, AND CENTER TOWNSHIPS
INDIANA COUNTY, PENNSYLVANIA

Prepared For:

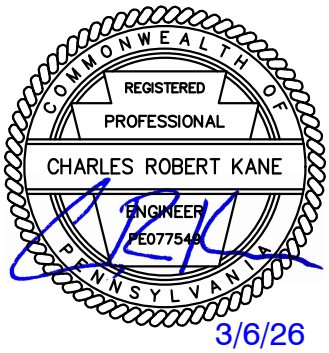
HOMER CITY GENERATION, L.P.
HOMER CITY, PENNSYLVANIA

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
MONROEVILLE, PENNSYLVANIA 15146

CEC Project 354-010

September 2025
Revised March 2026



Certification of Plan Preparer:

I do hereby certify to the best of my knowledge, information, and belief, that the Erosion and Sediment Control Plan and the Site Restoration Plan are true and correct, represent actual field conditions and are in accordance with the 25 Pa. Code Chapters 78 and 102 of the Department's rules and regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

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APPENDICES

1.0 INTRODUCTION

On behalf of Homer City Generation, L.P. (HCG), Civil & Environmental Consultants, Inc. (CEC) presents this Erosion and Sedimentation Control (E&S) Report for the HCPP Pipeline project located in Burrell, Black Lick, and Center Townships, Indiana County, Pennsylvania. The E&S Report was prepared specifically to address the requirements of the Individual National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Stormwater Associated with Construction Activities Application. The E&S Report is part of the Individual NPDES Permit Application Package and accompanies, and is consistent with, the application form and the Post-Construction Stormwater Management/Site Restoration (PCSM/SR) Report.

Project Description and Location: HCG proposes to construct approximately 5.8 miles of one (1) 30-inch steel gas distribution pipeline and approximately 0.4 mile of one (1) overhead power line within a 70-foot to 125-foot wide limit of disturbance (LOD), as well as temporary workspace areas to support construction. This project will also consist of the construction of an approximately 0.9-acre permanent gravel Metering and Regulation (M&R) and Interconnect Facility with associated permanent gravel access roads, a 900 square foot (sf) gravel pad and associated access road for an electric tap and PCSM Stormwater Control Measures (SCMs).

The proposed project begins in Burrell Township, Indiana County approximately 1.6 miles northwest of the intersection of State Route (S.R.) 119 and S.R. 22 at the proposed M&R and Interconnect Facility. The M&R and Interconnect Facility is located off an existing third-party gravel access road that connects to Campbells Mill Road (S.R. 3011) in Burrell Township, Indiana County, Pennsylvania. From the M&R and Interconnect Facility, one (1) 30-inch steel gas distribution pipeline will traverse in a northerly direction for approximately 5.8 miles, ending at the proposed redeveloped Homer City Generating Station located in Center Township, Indiana County, Pennsylvania. The pipeline will cross Falling Run Road (Twp 449), McConnell Road (Twp 592), Blacklick Road (S.R. 3013), Dickey Road (Twp 455), and Power Plant Road (Twp 680). The electric power tap site is located off of Country Lane Road (Twp 442). From the electric power tap, an overhead electric line will traverse in a northerly direction for approximately 0.4 mile, ending at the M&R and Interconnect Facility.

Approximately nine (9) existing access roads are proposed for construction access to the project. The existing access roads will be temporarily improved, if needed, to support construction activities. Following construction, the temporary access road improvements, temporary construction workspaces and the pipeline right-of-way (ROW) will generally be restored to existing conditions or meadow-good condition in accordance with 25 Pa. Code Chapter 102.8(n).

A technical revision has been made to add an access route to the project LOD for use in monitoring the proposed Horizontal Direction Drilling (HDD) Bore underneath Blacklick Creek. In addition, the Pennsylvania Game Commission (PGC) has requested a specific seed mix be used during site restoration within state game lands. The additional seed mix has been added to the vegetative stabilization detail on the E&S drawings.

Post-construction stormwater associated with the proposed permanent gravel M&R and Interconnect Facility and electric power tap site will be managed by stormwater conveyance structures, Rain Garden and Dry Extended Detention Basin SCMs, and riprap apron outlet protection devices to meet the volume management, rate control, and water quality requirements in accordance with 25 Pa. Code Chapter 102.8(g).

The following North American Datum 1983 coordinates may be used to locate the approximate beginning and end of the pipeline:

Proposed Beginning of Pipeline:	40.4560°N, 79.2457°W
Proposed End of Pipeline:	40.5200°N, 79.2054°W
Proposed Beginning of Powerline:	40.4516°N, 79.2437°W
Proposed End of Powerline:	40.4565°N, 79.2450°W

Wetlands and other potential natural resources conservation areas were considered during the planning stage of this project. Wetlands and streams were delineated in the vicinity of the project area by CEC on various days from February 2025 thru April 2025. Consideration was given during the preparation of the E&S Plans to minimize impacts to these sensitive areas. Six (6) wetlands

and 31 streams will be temporarily impacted and by earth disturbance activities as a result of this project. A copy of the Wetland Delineation Report prepared by CEC is included in Section 14 of the Individual NPDES Permit Application package.

Calculations for proposed E&S Best Management Practices (BMPs) are provided in Appendix A.

2.0 SOILS INFORMATION

The Soils Map, which is provided in the Individual NPDES Permit package, illustrates the soil types and their respective boundaries. The following table presents the soils and their respective characteristics and limitations that will be encountered during construction of this project. The soils information in the following table was obtained from the United States Department of Agriculture (USDA) Custom Soil Resource Report.

SYMBOL	SOIL TYPE	SLOPE (%)
AhA	Allegheny silt loam	0-3
AhB	Allegheny silt loam	3-8
AhC	Allegheny silt loam	8-15
BkA	Brinkerton silt loam	0-3
BkB	Brinkerton silt loam	3-8
CaA	Cavode silt loam	0-3
CaB	Cavode silt loam	3-8
CaC	Cavode silt loam	8-15
CtA	Cotaco silt loam	0-3
CuB	Culleoka channery silt loam	3-8
CuC	Culleoka channery silt loam	8-15
DoC	Dormont silt loam	8-15
DrD	Dormont-Culleoka complex	15-25
ErB	Ernest silt loam	3-8
ErC	Ernest silt loam	8-15
GcA	Gilpin channery silt loam	0-3
GcB	Gilpin channery silt loam	3-8
GcC	Gilpin channery silt loam	8-15
GcD	Gilpin channery silt loam	15-25
GcF	Gilpin channery silt loam	25-60
GwC	Gilpin-Weikert channery silt loam	8-15
GwD	Gilpin-Weikert channery silt loam	15-25
GyB	Guernsey silt loam	3-8
GyC	Guernsey silt loam	8-15
HoA	Holly silt loam	0-2
LoA	Lobdell silt loam	0-3
MoB	Monongahela silt loam	3-8
PmA	Pope fine sandy loam	0-2
RnC	Rayne-Gilpin channery silt loams	8-15
UdB	Udorthents	0-8
WhA	Wharton silt loam	0-3
WhB	Wharton silt loam	3-8
WhC	Wharton silt loam	8-15

MAP SYMBOL	SOIL NAME	CORROSIVE TO CONCRETE OR STEEL	DEPTH TO SATURATED ZONE	DEPTH TO HARD BEDROCK	SLOPE	FLOODING	FROST ACTION	LOW STRENGTH	UNSTABLE FILL	CUT BANKS CAVE	POTENTIALLY HYDRIC	SHRINK/SWELL	PIPING
AhA	Allegheny silt loam	C						X	X	X		X	X
AhB	Allegheny silt loam	C			X		X			X		X	X
AhC	Allegheny silt loam	C			X		X			X		X	X
BkA	Brinkerton silt loam	C/S	X				X	X	X	X	X	X	X
BkB	Brinkerton silt loam	C/S	X		X		X	X	X	X	X	X	X
CaA	Cavode silt loam	C/S	X	X			X	X	X	X	X	X	X
CaB	Cavode silt loam	C/S	X	X	X		X	X	X	X	X	X	X
CaC	Cavode silt loam	C/S	X	X	X		X	X	X	X	X	X	X
CtA	Cotaco silt loam												
CuB	Culleoka channery silt loam	C		X	X		X	X	X	X		X	X
CuC	Culleoka channery silt loam	C		X	X		X	X	X	X		X	X
DoC	Dormont silt loam	C/S	X		X		X	X	X	X		X	X
DrD	Dormont-Culleoka complex	C/S	X		X		X	X	X	X	X	X	X
ErB	Ernest silt loam	C/S	X		X		X	X	X	X	X	X	X
ErC	Ernest silt loam	C/S	X		X		X	X	X	X	X	X	X
GcA	Gilpin channery silt loam	C/S		X			X		X	X		X	X
GcB	Gilpin channery silt loam	C/S		X	X		X	X	X	X		X	X
GcC	Gilpin channery silt loam	C/S		X	X		X	X	X	X		X	X
GcD	Gilpin channery silt loam	C/S		X	X		X	X	X	X		X	X
GcF	Gilpin channery silt loam	C/S		X	X		X		X	X		X	X

MAP SYMBOL	SOIL NAME	CORROSIVE TO CONCRETE OR STEEL	DEPTH TO SATURATED ZONE	DEPTH TO HARD BEDROCK	SLOPE	FLOODING	FROST ACTION	LOW STRENGTH	UNSTABLE FILL	CUT BANKS CAVE	POTENTIALLY HYDRIC	SHRINK/SWELL	PIPING
GwC	Gilpin-Weikert channery silt loam	C/S		X	X		X	X	X	X		X	X
GwD	Gilpin-Weikert channery silt loam	C/S		X	X		X	X	X	X		X	
GyB	Guernsey silt loam	C/S	X	X	X		X	X	X	X		X	
GyC	Guernsey silt loam	C/S	X	X	X		X	X	X	X		X	
HoA	Holly silt loam	S	X			X	X		X	X	X		X
LoA	Lobdell silt loam	S	X			X	X			X	X	X	X
MoB	Monongahela silt loam	C/S	X		X		X	X	X	X	X	X	
PmA	Pope fine sandy loam												
RnC	Rayne-Gilpin channery silt loam	C/S		X	X		X			X		X	X
UdB	Udorthents	C					X			X			X
WhA	Wharton silt loam	C/S	X	X			X	X	X	X	X	X	X
WhB	Wharton silt loam	C/S	X	X	X		X	X	X	X	X	X	X
WhC	Wharton silt loam	C/S	X	X	X		X	X	X	X		X	X

Soil Limitations and Resolutions

LIMITATION	RESOLUTION
Corrosion to Concrete/Steel	Concrete and steel construction materials shall be coated with corrosion resistant material.
Depth to Saturated Zone	Pumps and pumped water filter bags shall be utilized if groundwater is encountered
Depth to Hard Bedrock	Excavations shall be as shallow as practicable. Site earthwork operations shall be performed in accordance with the geotechnical recommendations by CEC.
Slope	The site shall be regraded to suitable slopes for desired function.

LIMITATION	RESOLUTION
Flooding	No floodplains will be disturbed during the construction of this project.
Frost Action	Ensure proper protection from damage, especially to roadways.
Low Strength	Proper construction techniques shall be employed during earthmoving activities in order to avoid slope failures.
Unstable Fill	A project specific geohazard mitigation report was prepared to address steep slope and unstable fill construction. Refer the geohazard mitigation report for construction recommendations.
Cut Banks Cave	Trenches and cut slopes shall be excavated with appropriate layback banks to prevent cave-ins. Stockpiles shall be located at a sufficient distance away from the trenches and cut slopes. Applicable Occupational Safety and Health Administration (OSHA) standards and regulations should be implemented.
Hydric/Hydric Inclusions	A wetland study was performed by CEC. Streams and wetlands are shown on the E&S Plans and in the Wetland Delineation Report included in the NPDES Permit application.
Shrink/Swell	Replace pre-existing expansive soils with a non-expansive soil or maintain constant soil moisture.
Piping	Anti-seep collars will be utilized. Trench plugs shall be utilized in accordance with the Pennsylvania Department of Environmental Protection (PADEP) standard detail to minimize water movement via pipe bedding on slopes. Water shall be diverted away from open trenches.

3.0 PAST, PRESENT, AND PROPOSED LAND USES

The past and present land uses of this project site were determined using aerial mapping. Land uses include woodland, meadow, natural gas infrastructure, agricultural, utility and road ROW, and industrial (Homer City Generating Station). The existing topography consists of rolling hills with elevations ranging from Elevation (El.) 920 to El. 1266 based on a combination of conventional survey methods performed by CEC and LiDAR (Light Detection and Ranging) elevation points. The proposed land use will generally consist of utility and road ROW, the restored pipeline ROW, and the permanent gravel M&R and Interconnect Facility and electric power tap site. Disturbed areas associated with the project other than the proposed permanent facilities will be restored to existing condition or meadow-good condition.

4.0 PROJECT SITE RUNOFF DISCUSSION

E&S BMPs are proposed to control sediment-laden runoff from the project area during construction. The maximum drainage area to each BMP was analyzed as part of the BMP design, which was then used to determine the required capacity and each BMP was designed accordingly. The proposed permanent facilities have been designed with PCSM SCMs to manage runoff from the facilities. Disturbed areas associated with the project other than existing and proposed permanent facilities will be restored to existing condition or meadow-good condition.

The volume and rate of runoff from the project site were also analyzed for post-construction conditions, which are discussed in the PCSM/SR Narrative.

5.0 RECEIVING WATERS

Stormwater runoff from this project will drain to the receiving waters listed in the following table. Receiving waters, as with all streams in Pennsylvania, are classified based upon their designated and existing uses and water quality criteria. Designated uses for waters of the Commonwealth are found in 25 PA Code §93.9a-z at: http://www.pacode.com/secure/data/025/chapter93/chap93toc.html. Existing uses of waters of the Commonwealth are found at the PADEP website: http://www.depgis.state.pa.us/wave/. The receiving waters for this project and designated/existing uses are listed below.

STREAM NAME	WATERSHED	DESIGNATED/ EXISTING USE	SILTATION IMPAIRMENTS
Stream 2	Blacklick Creek	CWF/CWF	Yes
Stream 3	Blacklick Creek	CWF/CWF	Yes
Stream 4	Blacklick Creek	CWF/CWF	Yes
Stream 5	Blacklick Creek	CWF/CWF	Yes
Stream 6	Blacklick Creek	CWF/CWF	Yes
Stream 7	Blacklick Creek	CWF/CWF	Yes
Stream 8	Blacklick Creek	CWF/CWF	Yes
Stream 9	Blacklick Creek	CWF/CWF	Yes
Stream 10	Blacklick Creek	CWF/CWF	Yes
Stream 14	Blacklick Creek	CWF/CWF	Yes
Stream 18 (Blacklick Creek)	Blacklick Creek	TSF/TSF	Yes
Stream 20	Blacklick Creek	CWF/CWF	Yes
Stream 21	Blacklick Creek	CWF/CWF	Yes
Stream 22 (Muddy Run)	Blacklick Creek	CWF/CWF	Yes
Stream 25	Blacklick Creek	CWF/CWF	Yes
Stream 28	Blacklick Creek	CWF/CWF	Yes
Stream 41	Blacklick Creek	CWF/CWF	Yes
Stream 42	Blacklick Creek	CWF/CWF	Yes
Stream 44	Blacklick Creek	CWF/CWF	Yes
Stream 46	Blacklick Creek	CWF/CWF	Yes
Stream 48	Blacklick Creek	CWF/CWF	Yes
Stream 49	Blacklick Creek	CWF/CWF	Yes

STREAM NAME	WATERSHED	DESIGNATED/ EXISTING USE	SILTATION IMPAIRMENTS
Stream 50	Blacklick Creek	CWF/CWF	Yes
Stream 51	Blacklick Creek	CWF/CWF	Yes
Stream 52	Blacklick Creek	CWF/CWF	Yes
Stream 54	Blacklick Creek	CWF/CWF	Yes
Stream 56	Blacklick Creek	CWF/CWF	Yes
Stream 59	Blacklick Creek	CWF/CWF	Yes
Stream 60	Blacklick Creek	CWF/CWF	Yes
Stream 61	Blacklick Creek	CWF/CWF	Yes
Stream 62	Blacklick Creek	CWF/CWF	Yes
Stream 63	Blacklick Creek	CWF/CWF	Yes
Stream 64	Blacklick Creek	CWF/CWF	Yes
Stream 65	Blacklick Creek	CWF/CWF	Yes
Stream 66	Blacklick Creek	CWF/CWF	Yes
Stream 67	Blacklick Creek	CWF/CWF	Yes
Stream 68	Blacklick Creek	CWF/CWF	Yes
Stream 69	Blacklick Creek	CWF/CWF	Yes
Stream 70	Blacklick Creek	CWF/CWF	Yes
Stream 71	Blacklick Creek	CWF/CWF	Yes
Stream 72	Blacklick Creek	CWF/CWF	Yes
Stream 73	Blacklick Creek	CWF/CWF	Yes

6.0 EROSION CONTROL AND STORMWATER BEST MANAGEMENT PRACTICES

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 as shown on the approved E&S Plans prior to earth disturbance (including clearing and grubbing) within the tributary area of each BMP. Each BMP shall be kept functional until all earth disturbing activities within the tributary area are completed and a uniform 70 percent perennial vegetated cover is achieved over the entire disturbed area or other suitable permanent erosion protection has been installed.

E&S BMPs shall be installed and maintained as specified in this plan. 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* as well as the *Oil and Gas Operator's Manua*l. BMP construction details are provided on the E&S Plans. Supporting calculations for each BMP, if applicable, are provided in Appendix A.

Rock Construction Entrance (100-foot Alternative): Rock Construction entrances within siltation impaired watersheds shall be extended an additional 50 feet for a total length of 100 feet of 8-inch thick AASHTO No. 1 rock. In addition to the entrance construction, the use of a vacuum truck sweeper with a catch bin attachment shall be utilized to clean the paved public roadways. Refer to Rock Construction Entrance detail specified in the E&S Plans. The construction entrances shall be maintained during the course of the project. Rock construction entrance thicknesses shall be constantly maintained to the specified dimensions by adding rock. A stockpile shall be maintained on-site for this purpose. Sediment deposited on paved roadways shall be removed and returned to the construction site immediately. If excessive amounts of sediment are being deposited on the roadway, extend the length of the rock construction entrance by 50-foot increments until the

condition is alleviated or install a wash rack. Washing the roadway or sweeping the deposits into roadway ditches, sewers, culverts, or other drainage courses is not acceptable.

Rock Construction Entrance (Option B Alternate): Rock Construction entrances located within stream floodways shall be installed per the requirements of Options A, B, or C, but installed via excavation, such that the construction entrance does not result in fill greater than 6 inches in depth being placed within the floodway.

Multi-Layer Geotextile Filter Fence (Silt Fence): Silt Fence shall be installed on or parallel to the contour at the edge of disturbed areas. Both ends of each fence section must be extended upslope at 45 degrees to the main silt fence alignment. Silt Fence shall be installed in accordance with the manufacturer's specifications. Traffic shall not be permitted to cross silt fence. Accumulated sediment shall be removed when it reaches one-half (1/2) of the aboveground height of the fence. Refer to the detail specified in the E&S Plans for material specifications and additional notes. Upon stabilization of the area tributary to the fence, stakes and silt fence shall be removed. Silt Fence shall be inspected at least weekly and after each runoff event. Damaged fence sections shall be repaired according to manufacturer's specification or replaced within 24 hours.

Waterbar: Waterbars were designed in accordance with the recommended spacing and will be placed in the pipeline ROW as indicated on the drawings. Waterbars are shown on the E&S Plans as general guidance as to the approximate location of installation. The waterbars shall be sloped at a maximum of 2 percent downgrade. Waterbars shall be oriented to discharge runoff downslope of the ROW to prevent it from re-entering the ROW. Sumps may be installed at the waterbar outlets based on conditions encountered during construction, as necessary, to minimize accelerated erosion from the site. Installation of waterbar sumps should be limited to warm season construction (April through October). Accumulated sediment shall be removed when it reaches three quarters (3/4) of the waterbar sump depth. Waterbars located within a special protection watershed or within 150 feet of an existing stream, wetland, or stormwater drainage feature shall be installed with 12-inch compost filter socks at the outlet points. Temporary waterbars shall be removed once the tributary area is stabilized. Waterbars and waterbar sumps shall be inspected weekly and after each runoff event. Damaged or eroded waterbars shall be restored to original dimensions

immediately upon inspection. During final restoration of the pipeline ROW, waterbar sumps shall be removed by backfilling with suitable fill material. Maintenance of waterbars shall be provided until ROW has achieved permanent stabilization.

Trench Plugs: A trench plug is a flow obstruction, constructed from clay, bentonite, or concrete fill sack, that is placed in a trench to prevent flow along the waterline either prior to or after backfilling of the trench. Impervious trench plugs are required for all stream, river, wetland, or other surface water crossings regardless of trench slope. Trench plugs not located at surface water crossings may be fitted with a controlled drainage outlet, if deemed necessary for geohazard prevention and mitigation. The approximate locations of trench plug installation are shown on the E&S drawings.

Slope Stabilization: Slope stabilization shall be installed in disturbed areas for all slopes 3 horizontal to 1 vertical (3H:1V) or steeper, within 50 feet of a surface water, or where soil conditions indicate blanketing is needed to achieve adequate vegetative cover. Refer to the detail specified in the E&S Plans for anchoring and stapling requirements. Manufacturer's recommendations should be followed for installation and maintenance requirements.

Pumped Water Filter Bag: Filter bags shall be made from nonwoven geotextile material sewn with high strength, double stitched "J" type seams and shall trap particles larger than 150 microns. Pumping rates shall be no greater than 750 gallons per minute or one-half (1/2) the maximum specified by the manufacturer, whichever is less. Filter bags shall be replaced when they become one-half (1/2) full. A suitable means of accessing the bag with machinery required for disposal purposes must be provided. Spare bags shall be kept available for replacement of those that have failed or are filled. Bags shall be located in well-vegetated (grassy) areas and discharge onto stable, erosion resistant areas. Where this is not possible, a geotextile flow path shall be provided. Bags shall not be placed on slopes greater than 5 percent. Bags shall be placed on straps to facilitate removal unless bags come with lifting straps already attached.

Wood Mats: Wood mats (also called timber mats) shall be installed in the locations shown on the plans and in accordance with the "Wood Mat for Wetland Crossing" standard detail provided. A

layer of geotextile shall be placed between the wood mats and wetland. Inspect wood mats routinely to provide proper protection and stability. Replace geotextile in any locations where tears are found.

Channels: Channels shall be installed at the locations shown on the plans and in accordance with the vegetated channel detail. Channels shall be inspected weekly and after each runoff event (0.25-inch of runoff or greater in a 24-hour period). Channels should be maintained to ensure that the specified dimensions and protective lining are available. A channel should be cleaned whenever total channel depth is reduced by 25 percent at any location. Damaged channel linings should be promptly replaced.

Culverts: The proposed culverts shall be installed as soon as grading operations for the permanent access road allow for its installation. A minimum of 1-foot of cover shall be maintained over the culverts at all times. Culverts shall be inspected weekly during construction and after any large rainfall event (0.25-inch of runoff or greater in 24 hours). Any accumulated sediment and debris shall be removed immediately. Upon completion of construction activity, culverts shall be inspected at least bi-annually.

Piped Level Spreader: Piped level spreaders will be used to distribute stormwater runoff from clean water diversions. The perforated pipe shall be installed along a contour with care taken to ensure a flat bottom. The pipe shall be covered by AASHTO No. 1 stone as shown on the plans. Piped level spreaders shall be inspected at least weekly and after each runoff event. Remove any flow obstructions and make any necessary repairs immediately. The area below the level spreader should be inspected for clogging, density of vegetation, or any damage caused by vehicle or foot traffic. Inspect for signs of flow channelization and restore to level gradient immediately if deficiencies are observed. Piped level spreaders shall be removed upon completion of construction activities and after all clean water diversions draining to them have been removed.

Temporary Stabilization: Temporary stabilization will be applied upon temporary cessation of earth disturbance activity or any stage of an activity exceeding four (4) days; the site shall immediately be seeded, mulched, or otherwise protected from accelerated erosion pending future

earth disturbance activities. For an earth disturbance activity or any stage of an activity to be considered temporarily stabilized, the disturbed areas shall be covered with one (1) of the following: a minimum uniform coverage of mulch and seed with a density capable of resisting accelerated erosion or an acceptable BMP that temporarily minimizes accelerated erosion. Temporary stabilization will not occur on active vehicular travel ways within the project LOD. The on-site environmental inspector will log daily activity within the project LOD and notify HCG of areas requiring temporary stabilization [i.e., areas where work has ceased for at least four (4) days]. These areas will be temporarily stabilized in accordance with the plan drawings and specifications.

Permanent Stabilization: Permanent stabilization shall occur at the conclusion of the construction phase. Upon completion or temporary cessation of the earth disturbance activity in a special protection watershed, that portion of the project site tributary to the special protection waters must be immediately stabilized. Disturbed areas shall be seeded and mulched in accordance with the specification presented herein. Soil amendments shall be applied before seeding. It is recommended that soil tests be completed by a qualified professional to determine proper soil amendment application rates for the proposed site conditions and seed mixtures.

7.0 BEST MANAGEMENT PRACTICE INSTALLATION SEQUENCE

The HCPP Pipeline project will consist of the construction and maintenance of one (1) 30-inch steel gas distribution line, one (1) overhead electric line, an M&R and Interconnect Facility, an electric power tap site, and E&S BMPs. E&S BMPs shall be installed in accordance with the approved E&S Plan and the PADEP *Erosion and Sediment Pollution Control Program Manual* dated March 2012. Refer to the E&S Plans for the location of the proposed work and the associated BMPs.

A generalized construction sequence is provided below. The construction sequence is intended to provide a general course of action in order to conform to the applicable regulatory agency requirements for temporary and permanent soil E&S. Necessary parts for proper and complete execution of work pertaining to this plan, whether specifically mentioned or not, are to be performed by the contractor. It is not intended the drawings and this report show every detailed piece of material or equipment. The contractor shall comply with all requirements listed in this section. The contractor may be required to alter controls based on effectiveness of controls or differing conditions encountered in the field.

A pre-construction meeting is required prior to the start of any construction activity. PADEP must be invited to this meeting at least seven (7) days in advance. Also, at least three (3) days before starting earth disturbance activities, contractors involved in those activities shall notify the Pennsylvania One-Call System Incorporated at 1-800-242-1776 to locate buried utilities.

Pipeline construction is expected to be performed in a segmental fashion to progress along the project route. As such, different segments of the pipeline may be at different stages in the construction sequence during the life of the project. For each segment of pipeline, the contractor should generally follow steps below and repeat for each new segment of pipeline construction. Upon completion of an earth disturbance activity or any stage or phase of an activity, the site shall be immediately stabilized or otherwise protected from accelerated erosion and discharge of sediment.

All BMPs shall be installed in accordance with the E&S Plan standard details, specifications defined in the PADEP E&S BMP Manual or Alternative BMP list and, where applicable, the product manufacturer's recommendations. A copy of the approved drawings (stamped, signed, and dated) must be available at the project site at all times.

1. Layout the limits of the project, including survey staking the LOD, establish benchmarks, reference points, and sensitive areas, which are to be preserved or avoided during construction. Install orange construction safety fence in the locations identified on the E&S Plans to protect sensitive areas.

2. Locate access points, including construction entrances and staging areas. Install sediment barriers as shown on the E&S Plans downslope of these areas.

3. Install rock construction entrances (RCE) at the locations shown on the E&S Plans and in accordance with the standard details. RCE locations may be adjusted within the LOD at the locations shown on the E&S Plans to account for prevailing site conditions. RCE maintenance stockpiles may be relocated within the LOD from locations shown on the E&S Plans to allow for efficient flow of construction traffic.

4. Minimize total area of disturbance. Remove trees and brush to effectively install perimeter controls. Level side cuts to grant access for vehicles and workers to safely perform the installation of sediment barriers as shown on the E&S Plans. Installation, BMP sizing, and spacing must conform to the details and specifications provided on the E&S Plans.

5. Clear and grub only within the LOD defined on the E&S Plans. No grubbing or earth disturbance shall occur until BMPs are installed downslope of tributary areas.

6. During clearing along the ROW, install temporary equipment crossings at wetlands and streams as shown on the E&S Plans. Crossings must be installed in accordance with the requirements of the approved Chapter 105 General Permit documents associated with each individual crossing location.

Pipeline Construction

7. Begin pipeline construction. Segregation of topsoil and subsoil shall take place throughout the ROW. Soil stockpile locations shall be adjusted, as necessary, during construction to allow for efficient flow of construction or to accommodate prevailing site conditions. The ROW shall be used as the work area for excavation, equipment movement, and material stockpiles. Equipment, stockpiles, and other materials must remain upslope of BMPs during construction activity.

8. For the duration of construction, pooling water encountered within the construction area shall be dewatered by using pumps, hoses, and pumped water filter bags that discharge into well vegetated areas.

9. Coal or other potential acid producing rock (APR) material shall be handled in accordance with the approved APR Management Plan.

10. Apply soil supplements and temporarily seed and mulch topsoil stockpiles on disturbed areas that will receive no construction activity within four (4) days.

11. Proceed with gas pipeline installation.

12. Install trench plugs and geological hazard mitigation plan (GHMP) BMPs at the locations identified on the E&S Plans. GHMP BMP locations may be adjusted, relocated, or added per prevailing site conditions and at the discretion of a qualified professional under direct supervision of the appropriate licensed professional.

13. Upon completion of pipeline installation, backfill the trench with suitable material.

Permanent Facility Construction

14. Concurrent with pipeline construction, begin bulk earthwork for the proposed M&R and Interconnect Facility and electric power tap site as well as associated access roads. Earthwork operations shall be performed in concurrence with the geotechnical recommendations for the project, as applicable.

15. As facility access road earthwork progresses, cut/grade in channels for access road drainage working upslope as grading operations for the access road continue. Install cross-drain culverts and riprap aprons at the locations shown on the plans and in accordance with the standard details. Stabilize channels immediately with riprap as specified on the detail sheets. Stabilize the access road with gravel once final subgrade is reached.

16. Complete clearing and grubbing activities and strip topsoil from the site for the proposed facility pads. Stockpile topsoil and subsoils at the temporary and permanent locations shown on the plans. Limit clearing, grubbing, and disturbance to only what can be completed in one (1) work day. Topsoil shall be stripped as construction progresses and placed in topsoil stockpiles. Stabilize permanent and temporary soil stockpiles as fill progresses and reaches final grades shown.

17. Concurrent with facility pad construction, commence construction of PCSM SCMs. During and following construction of the SCMs, the contractor shall take measures to prevent sediment-laden water from entering the SCMs, to the extent practicable. While constructing the SCM embankments, install permanent outlet structures, outlet pipes, and anti-seep collars for all SCMs, riprap apron outlet protection for SCM-1, SCM-2 and SCM-3, level spreader for SCM-4, and emergency spillway for SCM-2. Embankment construction, including the construction of outlet structures and associated outlet pipes, anti-seep collars, and outlet protection/level spreader devices is a critical stage of construction requiring oversight by a licensed professional or their designee.

Contractor shall take measures to minimize compaction within the Rain Garden (SCM-1, SCM-3, and SCM-4) subgrade footprints, to the extent practicable. Upon reaching subgrade elevation in the Rain Gardens, the contractor shall perform decompaction via scarifying or tilling the exposed soil layer using lightweight equipment and notify the engineer for confirmation of decompaction. Following confirmation of decompaction, confirmation infiltration testing shall be performed. Upon completion of confirmation infiltration testing, planting soils may be placed. Confirmation of subgrade decompaction, confirmation infiltration testing, and placement of planting soil are critical stages of construction requiring oversight by a licensed professional or their designee.

18. Construction waste materials shall be disposed of at a PADEP-approved waste site and in accordance with local and state codes and permit requirements (verification of permits to be provided by the contractor).

19. As grading of the facility pads progresses, new fill placed during the workday should be back-sloped compacted with a smooth-drum roller to reduce the impacts of precipitation and the potential erosion of finished slope faces.

20. Install any remaining channel sections and riprap aprons as indicated on plans. Install features starting on downstream end and work upstream.

21. Cut and fill operations shall continue until the sites are brought to approximate final subgrade. Place gravel on the facility pads to provide a stabilized surface.

22. Respread topsoil from the topsoil stockpiles, as necessary, to establish vegetation. Install slope stabilization on all slopes 3H:1V or greater immediately upon reaching final grade.

Right-of-Way Restoration

23. Apply soil supplements and permanent seed and mulch to disturbed areas that have achieved final grade and will no longer be subjected to construction activity. For slope

areas 3H:1V and steeper, the area shall be vertically tracked and erosion control blankets shall be installed once soil supplements, seed, and mulch have been applied. For slope areas 3H:1V and steeper, a steep slope seed mixture shall be used.

24. Upon completion of construction activities, the site shall be restored in accordance with the PCSM/SR Plan. During restoration of the ROW, the contractor shall implement decompactive procedures (ripping, discing, tilling, etc.) through the upper 12 to 18 inches of subsoil to promote root growth. Topsoil will be respread above the decompacted soils. Apply soil supplements and permanent seed and mulch to all remaining disturbed areas. Existing third party access roads crossed by the pipeline shall be restored to their pre-construction condition.

25. Reseed, as necessary, any areas that become disturbed or where vegetation has not been established.

26. Remove all temporary BMPs once a uniform 70 percent perennial vegetative cover has established on all previously disturbed areas.

27. If future maintenance activities along the ROW are required, HCG and the contractor shall monitor equipment leaving the ROW to ensure sediment is not tracked onto the roadway. HCG shall obtain additional permits, if necessary, depending on the scope of the maintenance activities. Sediment deposited onto the roadway shall be removed and returned to the construction site by the end of each work day.

Minor modifications to the E&S and PCSM/SR Plans shall be noted on the plan that is available at the site and initialed by the appropriate PADEP staff. Minor changes to the plan may include adjustments to BMPs and locations within the permitted boundary to improve environmental performance, prevent potential pollution, change in ownership or address, typographical errors, on-site field adjustments such as the addition or deletion of BMPs, or alteration of earth disturbance activities to address unforeseen circumstances. Major modifications to the approved E&S Plans involving new or additional earth disturbance activities other than those described as minor

modifications above and/or the addition of a discharge will require prior approval by the reviewing entity and may require the submittal of a new plan.

8.0 MATERIAL RECYCLING AND DISPOSAL

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. The listed items shall be prevented from entering springs, streams, ponds, lakes, wetlands, or a water course or water body. Oils, fuels, lubricants, and coolants shall be placed in suitable containers and disposed of properly. All synthetic erosion control features (e.g., silt fencing, nettings, mats), which are intended for temporary use during construction, shall be completely removed and properly disposed of after their purpose has been served. Orange construction fence, and similar, shall be removed and properly disposed of immediately upon completion of its intended purpose. Only natural fiber materials which will "completely breakdown" within a reasonable timeframe, as to be indistinguishable from the natural environment, may be abandoned in place. Trash and garbage shall be collected and disposed of properly.

9.0 NATURALLY OCCURRING GEOLOGIC FORMATIONS, MINING, AND SOIL CONDITIONS

Refer to the Naturally Occurring Geologic Condition Assessment (Geohazard) Report provided in Section 12 of Individual NPDES Permit Application package.

10.0 POTENTIAL THERMAL IMPACTS

A majority of the project will not have significant changes in land cover, therefore, the principal source of thermal impacts is related to proposed temporary vegetation disturbance; however, gravel surfaces will be constructed for the M&R and Interconnect Facility and the electric power tap site. Thermal impacts from the temporary disturbance of the pipeline ROW will be minimized by allowing runoff to flow over vegetated surfaces prior to entering any surface waters. Additionally, the pipeline ROW and workspace areas, with the exception of areas previously permitted for a less pervious ground cover (i.e., existing access roads, well pads, etc.), will be restored as soon as practicable to meadow-good condition, which will allow runoff to flow over vegetated surfaces prior to discharging to surface waters thus reducing the effects of thermal impacts on the surface waters. Likewise, vegetation removal will be limited to the extent practicable. Further, maintaining existing tree canopies and riparian buffers will limit ground surface exposure to direct sunlight. Lastly, proposed PCSM SCMs will be installed to minimize thermal impacts due to the gravel cover at the permanent facility sites by allowing runoff to flow over vegetated surfaces and infiltrate prior to discharge to surface waters.

11.0 RIPARIAN FOREST BUFFERS

The PADEP requires a 150-foot riparian forest buffer for projects located within a High Quality (HQ) or special protection watershed. The site is located within the Black Lick Creek, watershed which is not HQ; therefore, the 150-foot riparian buffer requirement is not applicable to this project.

12.0 ANTI-DEGRADATION ANALYSIS

Chapter 93 of the PA Code was used to determine if the receiving waters for the project are classified as special protection or siltation impaired. The Blacklick Creek watershed is classified as siltation impaired and Cold Water Fishes (CWF); therefore an antidegradation analysis is required for this project. Antidegradation Best Available Combination of Technologies (ABACT) approved E&S BMPs were utilized throughout the project to prevent degrading discharge. Below is a narrative of the "Non-Discharge" BMPs utilized on this project.

Limited Disturbed Area – The amount of land disturbed within the LODs will be minimized to the extent practicable at all times. Land will only be disturbed at the rate necessary to progress installation of the proposed pipeline and associated facilities.

Immediate Stabilization – All disturbed areas will be restored to meadow–good condition, agricultural use, or a stable gravel cover as soon as practicable following construction.

Other - Revegetation – All disturbed areas will be restored to meadow-good condition as soon as practicable following construction, unless otherwise noted on the plan drawings.

ABACTs are proposed for this project and include the following:

- Preparedness, Prevention, and Contingency (PPC) Plan – A PPC Plan will be available on site to identify applicable pollution prevention practices while the site is in operation; and

- ABACT BMPs – Compost filter sock will be utilized upslope of special protection waters during construction to minimize the transport of sediment pollution to the special protection waters. Rock construction entrances upslope of special protection waters will be extended an additional 50 feet (100 feet total). Waterbars and pumped water filter bags within the special protection watersheds will include a compost filter sock at the discharge outlets. Disturbed areas will be immediately stabilized with vegetative stabilization, following reaching final grades.

Based on the above summary, ABACT BMPs have been utilized to satisfy the requirements of this antidegradation analysis.

13.0 OFF-SITE DISCHARGE ANALYSIS

The PADEP requires that proposed off-site discharges of stormwater from site restoration areas and PCSM BMPs to areas other than surface waters must demonstrate that the discharge will not cause erosion, damage, or a nuisance to off-site properties.

The proposed M&R and Interconnect Facility and electric power tap site utilize conveyance channels and storm pipes to convey runoff from the pads and access roads in a controlled manner. Conveyance channels and storm pipes (including proposed SCM outfalls) will outlet onto riprap aprons, which have been designed in accordance with the PADEP E&S Manual to reduce the velocity of runoff in order to minimize the potential for erosion. Moreover, the proposed PCSM SCMs will manage the stormwater runoff thereby reducing the overland offsite discharge from the project area. Lastly, the discharges drain to receiving waters located within the properties of the subject project.

14.0 REFERENCES

1. Commonwealth of Pennsylvania, Pennsylvania Code Title 25, Environmental Resources, Department of Environmental Protection, Chapter 93 Water Quality Standards, Harrisburg, PA 1994.

2. Commonwealth of Pennsylvania, Department of Environmental Protection, Office of Water Management, Erosion and Sediment Pollution Control Program Manual, Harrisburg, PA, March 2012.

3. U.S. Department of Agriculture, National Resources Conservation Service, Custom Soil Resource Report for Westmoreland County, Pennsylvania, prepared in July 2025 on the Web Soil Survey website. http://websoilsurvey.nrcs.usda.gov

4. Davies, W. E., and Pomeroy, J. S., 1979, Landslides and related features, Pennsylvania [Pittsburgh 1- by 2-degree sheet]: U.S. Geological Survey Open-File Map 79–1314, 128 maps. Via: "PA DCNR - Geology - Landslides Publications." *PA DCNR - Geology - Landslides Publications*. N.p., n.d. Web. July 2025.

5. "Pennsylvania Department of Environmental Protection eMapPA." *eMapPA*. N.p., n.d. Web. July 2025.

APPENDIX A

SUPPORTING CALCULATIONS

SILT BARRIERS

SILT FENCE & COMPOST FILTER SOCK DESIGN

PROJECT NAME: HCPP Pipeline
PROJECT #: 354-010
PREPARED BY: VLP **CHECKED BY:** CRK
DATE: 12/15/2025 **DATE:** 1/22/2026

BARRIER FW

SILT FENCE OR COMPOST FILTER SOCK TYPE:	SILTRON 16

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 =	15	SLOPE LENGTH =	28	200	200	172	86%	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)	28

***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: HCPP Pipeline
PROJECT #: 354-010
PREPARED BY: VLP **CHECKED BY:** CRK
DATE: 12/15/2025 **DATE:** 1/22/2026

BARRIER FX

SILT FENCE OR COMPOST FILTER SOCK TYPE:	SILTRON 16

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 =	13	SLOPE LENGTH =	83	200	200	117	59%	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)	83

***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: HCPP Pipeline
PROJECT #: 354-010
PREPARED BY: VLP **CHECKED BY:** CRK
DATE: 12/15/2025 **DATE:** 1/22/2026

BARRIER FY

SILT FENCE OR COMPOST FILTER SOCK TYPE:	SILTRON 21

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 =	14	50	50	36	72%	OK
SEGMENT B	SLOPE =	28	SLOPE LENGTH =	47	100	72	25	25%	OK
SEGMENT C	SLOPE =	6	SLOPE LENGTH =	12	300	75	63	21%	OK
SEGMENT D	SLOPE =	28	SLOPE LENGTH =	13	100	21	8	8%	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)	86

***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: HCPP Pipeline
PROJECT #: 354-010
PREPARED BY: VLP **CHECKED BY:** CRK
DATE: 12/15/2025 **DATE:** 1/22/2026

BARRIER FZ

SILT FENCE OR COMPOST FILTER SOCK TYPE:	SILTRON 28

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 =	43	SLOPE LENGTH =	36	80	80	44	55%	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)	36

***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: HCPP Pipeline
PROJECT #: 354-010
PREPARED BY: VLP **CHECKED BY:** CRK
DATE: 12/15/2025 **DATE:** 1/22/2026

BARRIER GA

SILT FENCE OR COMPOST FILTER SOCK TYPE:	SILTRON 16

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 =	31	40	40	9	23%	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)	31

***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: HCPP Pipeline
PROJECT #: 354-010
PREPARED BY: VLP **CHECKED BY:** CRK
DATE: 12/15/2025 **DATE:** 1/22/2026

BARRIER GB

SILT FENCE OR COMPOST FILTER SOCK TYPE:	SILTRON 16

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 =	6	SLOPE LENGTH =	52	250	250	198	79%	OK
SEGMENT B	SLOPE =	7	SLOPE LENGTH =	140	250	198	58	23%	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)	192

***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: HCPP Pipeline
PROJECT #: 354-010
PREPARED BY: VLP **CHECKED BY:** CRK
DATE: 12/15/2025 **DATE:** 1/22/2026

BARRIER GC

SILT FENCE OR COMPOST FILTER SOCK TYPE:	SILTRON 16

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 =	6	SLOPE LENGTH =	96	250	250	154	62%	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)	96

***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: HCPP Pipeline
PROJECT #: 354-010
PREPARED BY: VLP **CHECKED BY:** CRK
DATE: 12/15/2025 **DATE:** 1/22/2026

BARRIER GD

SILT FENCE OR COMPOST FILTER SOCK TYPE:	SILTRON 16

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 =	46	250	250	204	82%	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)	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: HCPP Pipeline
PROJECT #: 354-010
PREPARED BY: VLP **CHECKED BY:** CRK
DATE: 12/15/2025 **DATE:** 1/22/2026

BARRIER GE

SILT FENCE OR COMPOST FILTER SOCK TYPE:	SILTRON 16

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 =	27	350	350	323	92%	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)	27

***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**
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***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: HCPP Pipeline
PROJECT #: 354-010
PREPARED BY: VLP **CHECKED BY:** CRK
DATE: 12/15/2025 **DATE:** 1/22/2026

BARRIER GF

SILT FENCE OR COMPOST FILTER SOCK TYPE:	SILTRON 28

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 =	15	60	60	45	75%	OK
SEGMENT B	SLOPE =	28	SLOPE LENGTH =	45	125	94	49	39%	OK
SEGMENT C	SLOPE =	6	SLOPE LENGTH =	12	400	156	144	36%	OK
SEGMENT D	SLOPE =	25	SLOPE LENGTH =	6	180	65	59	33%	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)	78

***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: HCPP Pipeline
PROJECT #: 354-010
PREPARED BY: VLP **CHECKED BY:** CRK
DATE: 12/15/2025 **DATE:** 1/22/2026

BARRIER GG

SILT FENCE OR COMPOST FILTER SOCK TYPE:	SILTRON 21

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 =	6	SLOPE LENGTH =	60	300	300	240	80%	OK
SEGMENT B	SLOPE =	12	SLOPE LENGTH =	32	250	200	168	67%	OK
SEGMENT C	SLOPE =	43	SLOPE LENGTH =	21	60	40	19	32%	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)	113

***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**

TEMPORARY LEVEL SPREADERS

Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Sunday, Mar 8 2026

Temporary Level Spreader No. 1

Invert Elev Dn (ft)	=	1092.50
Pipe Length (ft)	=	10.00
Slope (%)	=	5.00
Invert Elev Up (ft)	=	1093.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

Embankment

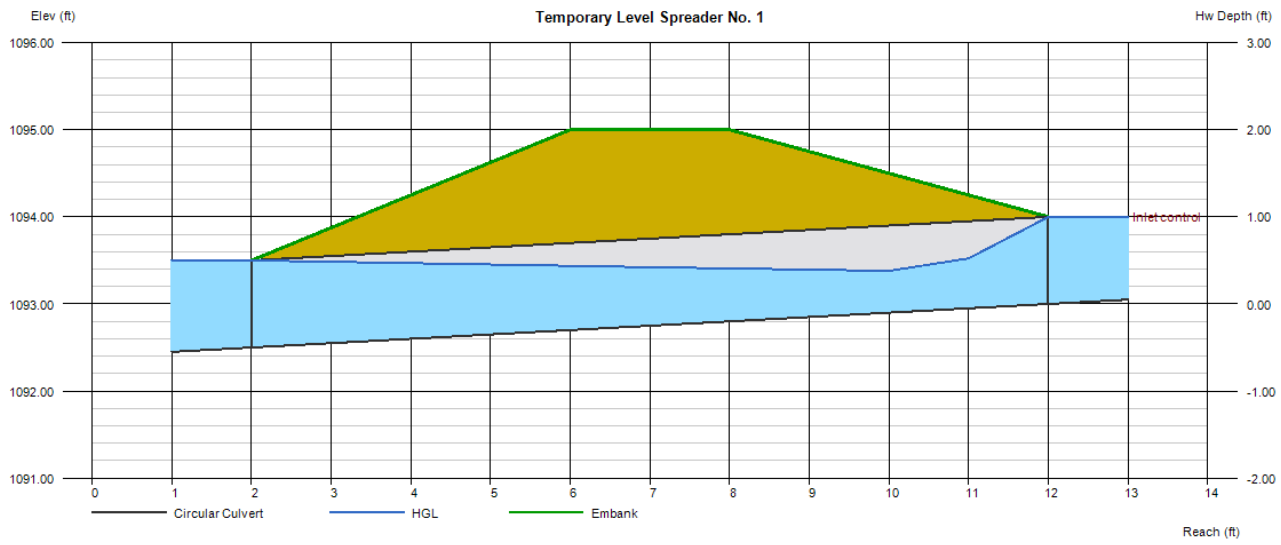
Top Elevation (ft)	=	1095.00
Top Width (ft)	=	2.00
Crest Width (ft)	=	10.00

Calculations

Qmin (cfs)	=	2.43
Qmax (cfs)	=	2.43
Tailwater Elev (ft)	=	Crown

Highlighted

Qtotal (cfs)	=	2.43
Qpipe (cfs)	=	2.43
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	3.09
Veloc Up (ft/s)	=	4.37
HGL Dn (ft)	=	1093.50
HGL Up (ft)	=	1093.67
Hw Elev (ft)	=	1094.00
Hw/D (ft)	=	1.00
Flow Regime	=	Inlet Control



TEMPORARY PIPE LEVEL SPREADER NO. 1 DIMENSION CALCULATIONS - CFS DIVERSION NO. 1

PREPARED BY: SCT CHECKED BY: CRK

DATE: 3/3/2026 DATE: 3/6/2026

INFLUENT PIPE DATA		PIPED LEVEL SPREADER CALCULATIONS				
Spreader No.	Q_2 (CFS)	A (sf)	Q_P (cfs)	Q_L (cfs)	$L_{REQUIRED}$ (ft)	**$L_{PROPOSED}$ (ft)**
1	2.43	0.046	2.43	0.252	9.63	**12.00**

Notes:

PERFORATED PIPE = 12" PERFORATED HDPE PIPE @ 0.00% SLOPE

Q_2 = 2 YEAR FLOW RATE

Q_P = PROPOSED DISCHARGE FLOW RATE = Q_2

Q_L = PIPE DISCHARGE CAPACITY PER LINEAR FOOT

$L_{REQUIRED}$ = LENGTH OF LEVEL SPREADER REQUIRED

Q2 = 2.43 CFS (REFER TO CHANNEL CALCULATIONS)

QP = Q2 = 2.43 CFS

$Q_L = C_D * A * (2GH)^{0.5}$, WHERE:

C_D = ORIFICE DISCHARGE COEFFICIENT = 0.60

A = PERFORATION CROSS SECTIONAL AREA PER FOOT = 6.60 IN^2 = 0.046 SF

G = ACCELERATION DUE TO GRAVITY = 32.22 FT/SEC^2

H = AVERAGE HEIGHT OF WATER ABOVE PERFORATION. WHEN PIPE IS FLOWING FULL, H = 1.5, 1.4, AND 1.13 FT

$Q_L = 0.6 * 0.046\ SF * (2 * 32.2\ FT/SEC^2 * 1.5\ FT)^{0.5} + 0.6 * 0.046\ SF * (2 * 32.2\ FT/SEC2 * 1.4\ FT)^{0.5} + 0.6 * 0.046\ SF * (2 * 32.2\ FT/SEC2 * 1.13\ FT)^{0.5}$

QL = 0.252 CFS / FT

LREQUIRED = QP / QL = 2.43 CFS / CFS / FT = 9.63 FT

Flow Depth Below Temporary Level Spreader No. 1

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.035
Channel Slope	0.060 ft/ft
Bottom Width	12.00 ft
Discharge	2.43 cfs

Results	
Normal Depth	0.09 ft
Flow Area	1.1 ft²
Wetted Perimeter	12.2 ft
Hydraulic Radius	0.09 ft
Top Width	12.00 ft
Critical Depth	0.11 ft
Critical Slope	0.038 ft/ft
Velocity	2.14 ft/s
Velocity Head	0.07 ft
Specific Energy	0.17 ft
Froude Number	1.225
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.09 ft
Critical Depth	0.11 ft
Channel Slope	0.060 ft/ft
Critical Slope	0.038 ft/ft

Culvert Report

Temporary Level Spreader No. 2

Invert Elev Dn (ft)	=	1088.00
Pipe Length (ft)	=	25.00
Slope (%)	=	12.00
Invert Elev Up (ft)	=	1091.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

Embankment

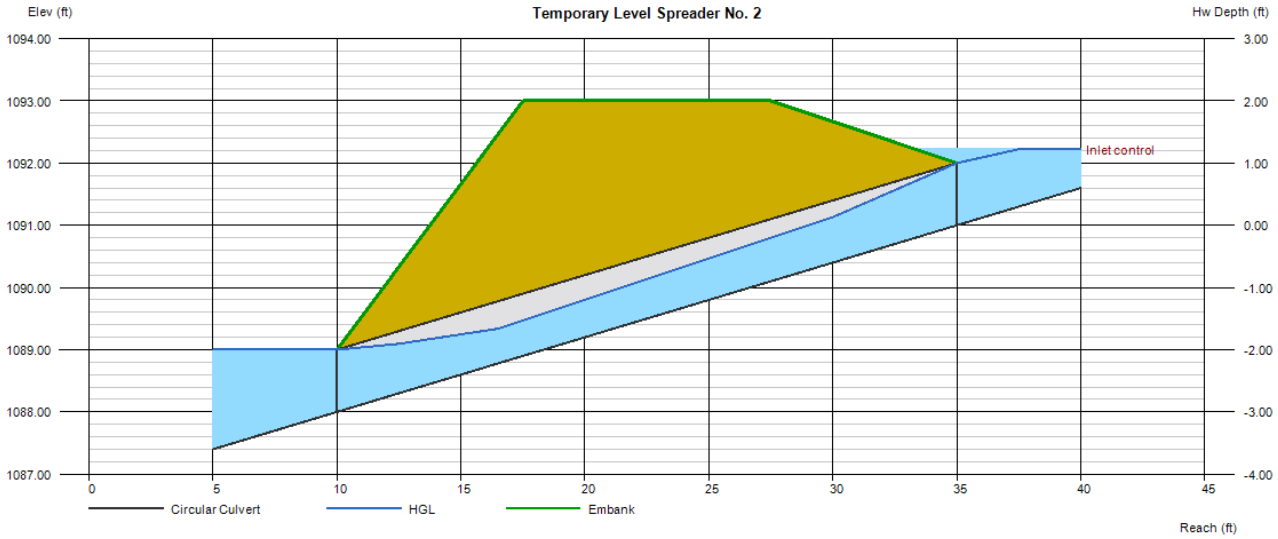
Top Elevation (ft)	=	1093.00
Top Width (ft)	=	10.00
Crest Width (ft)	=	10.00

Calculations

Qmin (cfs)	=	3.47
Qmax (cfs)	=	3.47
Tailwater Elev (ft)	=	Crown

Highlighted

Qtotal (cfs)	=	3.47
Qpipe (cfs)	=	3.47
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	4.42
Veloc Up (ft/s)	=	5.18
HGL Dn (ft)	=	1089.00
HGL Up (ft)	=	1091.80
Hw Elev (ft)	=	1092.22
Hw/D (ft)	=	1.22
Flow Regime	=	Inlet Control



TEMPORARY PIPE LEVEL SPREADER NO. 2 DIMENSION CALCULATIONS - CFS DIVERSION NO. 2

PREPARED BY: SCT CHECKED BY: CRK

DATE: 3/3/2026 DATE: 3/6/2026

INFLUENT PIPE DATA		PIPED LEVEL SPREADER CALCULATIONS				
Spreader No.	Q_2 (CFS)	A (sf)	Q_P (cfs)	Q_L (cfs)	$L_{REQUIRED}$ (ft)	**$L_{PROPOSED}$ (ft)**
2	3.47	0.046	3.47	0.252	13.75	**15.00**

Notes:

PERFORATED PIPE = 12" PERFORATED HDPE PIPE @ 0.00% SLOPE

Q_2 = 2 YEAR FLOW RATE

Q_P = PROPOSED DISCHARGE FLOW RATE = Q_2

Q_L = PIPE DISCHARGE CAPACITY PER LINEAR FOOT

$L_{REQUIRED}$ = LENGTH OF LEVEL SPREADER REQUIRED

Q2 = 3.47 CFS (REFER TO CHANNEL CALCULATIONS)

QP = Q2 = 3.47 CFS

$Q_L = C_D * A * (2GH)^{0.5}$, WHERE:

C_D = ORIFICE DISCHARGE COEFFICIENT = 0.60

A = PERFORATION CROSS SECTIONAL AREA PER FOOT = 6.60 IN^2 = 0.046 SF

G = ACCELERATION DUE TO GRAVITY = 32.22 FT/SEC^2

H = AVERAGE HEIGHT OF WATER ABOVE PERFORATION. WHEN PIPE IS FLOWING FULL, H = 1.5, 1.4, AND 1.13 FT

$Q_L = 0.6 * 0.046\ SF * (2 * 32.2\ FT/SEC^2 * 1.5\ FT)^{0.5} + 0.6 * 0.046\ SF * (2 * 32.2\ FT/SEC2 * 1.4\ FT)^{0.5} + 0.6 * 0.046\ SF * (2 * 32.2\ FT/SEC2 * 1.13\ FT)^{0.5}$

QL = 0.252 CFS / FT

LREQUIRED = QP / QL = 3.47 CFS / CFS / FT = 13.75 FT

Flow Depth Below Temporary Level Spreader No. 2

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.035
Channel Slope	0.180 ft/ft
Bottom Width	15.00 ft
Discharge	3.47 cfs

Results	
Normal Depth	0.07 ft
Flow Area	1.1 ft²
Wetted Perimeter	15.1 ft
Hydraulic Radius	0.07 ft
Top Width	15.00 ft
Critical Depth	0.12 ft
Critical Slope	0.037 ft/ft
Velocity	3.14 ft/s
Velocity Head	0.15 ft
Specific Energy	0.23 ft
Froude Number	2.039
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.07 ft
Critical Depth	0.12 ft
Channel Slope	0.180 ft/ft
Critical Slope	0.037 ft/ft