



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

**DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES
POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) MODULE 2**

Applicant: **Homer City Generation, L.P.**

Project Site Name: **HCPP Pipeline**

PRE-DEVELOPMENT SITE CHARACTERIZATION	
1. Was a pre-development site characterization completed for this project?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If Yes, describe the activities undertaken.	
Test pits and infiltration tests were performed in areas proposed for permanent facility development requiring Post-Construction Stormwater Management (PCSM) Stormwater Control Measures (SCMs).	
2. No. Test Pits completed:	11
No. Boreholes completed:	0
3. Number of Infiltration Tests completed:	11
Method(s):	Double-Ring
4. Project Site Area:	5.78 acres
Area investigated for infiltration capabilities:	0.50 acres
5. DEP's Pre-Development Site Characterization Spreadsheet has been completed and is attached.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6. The infiltration potential of the site is:	<input type="checkbox"/> Limited <input type="checkbox"/> Marginal <input checked="" type="checkbox"/> Feasible <input type="checkbox"/> Not Recommended
7. If the infiltration potential of the site is limited or is otherwise not advised, explain the limitations.	
8. Is the project site located in an area with known karst features?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes, was a subsurface geotechnical investigation conducted and is a report attached?	
<input type="checkbox"/> Yes <input type="checkbox"/> No	
9. Are there natural stormwater features on-site that will be protected?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes, describe the features and any increase or decrease in stormwater runoff volume to the features.	

PCSM SCM INVENTORY					
5. List the critical stages for each SCM and identify the licensed professional and/or company that will sign SCM Construction Certification forms for the SCM.					
SCM ID	Critical Stages	LP Name	Company	LP Employed by Company	Contract
1	Outlet Structure/pipe, anti-seep collars, riprap apron	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Outlet Structure/pipe, anti-seep collars, riprap apron	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Outlet Structure/pipe, anti-seep collars, riprap apron	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Outlet Structure/pipe, anti-seep collars, level spreader	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1	Decompaction of subgrade	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Decompaction of subgrade	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Decompaction of subgrade	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1	Confirmation infiltration testing	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Confirmation infiltration testing	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Confirmation infiltration testing	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1	Placement of planting soils	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Placement of planting soils	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Placement of planting soils	Charles Kane, P.E.	CEC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: Stream 4 **POA(s):** 1

1. The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.
2. The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.
3. An alternative design standard is being used.
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: 2.53 inches Source of precipitation data: NOAA
6. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Pre-Construction: 6,191 CF
7. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Post-Construction: 8,955 CF
8. Net Change (Post-Construction – Pre-Construction Volumes): 2,764 CF
9. Identify all selected structural PCSM SCMs and provide the information requested. Calculations attached

SCM ID	Series	MRC	Vol. Routed to SCM (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
1		<input type="checkbox"/>	5,234	1,667	6.69	72	<input checked="" type="checkbox"/>	1.5	2,827	5,234	0
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				

Total Infiltration & ET Credits (CF): 5,234

Other Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Spreadsheet):

Volume Required to Manage (CF): 2,764

Total Credits (CF): 5,234

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: Stream 4 **POA(s):** 1

1. The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.
 2. The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.
 3. An alternative design standard is being used.
 4. DEP's PCSM Spreadsheet – Rate Worksheet was used for peak rate calculations and is attached.
 5. Alternative rate calculations are attached.
 6. Identify precipitation amounts. Source of precipitation data: NOAA
- | | | | |
|------------------------|------|------------------------|------|
| 2-Year/24-Hour Storm: | 2.53 | 10-Year/24-Hour Storm | 3.57 |
| 50-Year/24-Hour Storm: | 4.78 | 100-Year/24-Hour Storm | 5.35 |

7. Identify all SCMs used to mitigate peak rate differences and provide the requested information.

SCM ID	Inflow to SCM (cfs)				Outflow from SCM (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1	2.27	3.63	5.30	6.69	0.13	0.54	0.79	0.88

8. Report peak rates for pre-construction and post-construction with SCMs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with SCMs) (cfs)	Difference (cfs)
2-Year/24-Hour	3.14	2.64	-0.50
10-Year/24-Hour	6.38	5.79	-0.59
50-Year/24-Hour	10.60	9.45	-1.15
100-Year/24-Hour	12.68	11.21	-1.47

STORMWATER ANALYSIS – WATER QUALITY					
<input checked="" type="checkbox"/> A printout of DEP’s PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.					
OTHER INFORMATION					
1. <input checked="" type="checkbox"/> A long-term operation and maintenance (O&M) plan has been prepared for each SCM.					
2. <input checked="" type="checkbox"/> A long-term O&M plan will be recorded with a legal instrument for each property containing an SCM.					
3. <input checked="" type="checkbox"/> PCSM Plan Drawings have been developed for the project and are attached to the NOI/application.					
4. <input checked="" type="checkbox"/> The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.					
5. <input checked="" type="checkbox"/> Recycling and proper disposal of materials associated with PCSM SCMs are addressed as part of long-term operation and maintenance of the PCSM SCMs.					
6. <input type="checkbox"/> There are pre-construction stormwater discharges to wetlands from the project site.					
	Pre-Construction		Post-Construction		
Wetland ID	Drainage Area (ac)	Volume (CF)	Drainage Area (ac)	Volume (CF)	Ponding Depth Increase or Decrease (±%)
7. Describe the sequence of PCSM SCM implementation in relation to earth disturbance activities. See Section 7.0 of the PCSM/SR Narrative					
8. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM SCMs are operational and the applicant’s plan to avoid or minimize potential pollution and its impacts. See Individual NPDES Application Section 12: Naturally Occurring Geologic Condition Assessment Report					
9. Thermal Impacts: check the appropriate box(es) if any of the following (a. – c.) are true:					
<input checked="" type="checkbox"/> a. One or more peak rate control SCMs are proposed that will receive stormwater from a drainage area containing more than 25% impervious surface.					
i. Drainage Area of SCM: 0.99 acres					
ii. Drainage Area of Surface Water at DP of SCM: 9.95 acres					
iii. Ratio of SCM Drainage Area : Surface Water Drainage Area: 9.95 %					
<i>If the value reported for a.iii. exceeds 10%, attach a quantitative thermal impact analysis.</i>					
<input type="checkbox"/> b. A Wet Basin or Engineered Stormwater Treatment Wetland is proposed that does not include shading and/or a reversed slope outlet pipe (if true, attach a quantitative thermal impact analysis).					

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: Stream 2

POA(s): 2

1. The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.
2. The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.
3. An alternative design standard is being used.
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: 2.53 inches Source of precipitation data: NOAA
6. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Pre-Construction: 3,944 CF
7. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Post-Construction: 7,574 CF
8. Net Change (Post-Construction – Pre-Construction Volumes): 3,631 CF
9. Identify all selected structural PCSM SCMs and provide the information requested. Calculations attached

SCM ID	Series	MRC	Vol. Routed to SCM (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
2		<input type="checkbox"/>	4,319	1,667	0.00	72	<input checked="" type="checkbox"/>	0	0	0	0
3		<input type="checkbox"/>	5,804	1,995	1.46	72	<input checked="" type="checkbox"/>	1.5	1,920	4,541	835
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				

Total Infiltration & ET Credits (CF): 5,376

Other Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Spreadsheet):

Volume Required to Manage (CF): 3,631

Total Credits (CF): 5,376

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: Stream 2 **POA(s):** 2

1. The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.
 2. The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.
 3. An alternative design standard is being used.
 4. DEP's PCSM Spreadsheet – Rate Worksheet was used for peak rate calculations and is attached.
 5. Alternative rate calculations are attached.
 6. Identify precipitation amounts. Source of precipitation data: NOAA
- | | | | |
|------------------------|------|------------------------|------|
| 2-Year/24-Hour Storm: | 2.53 | 10-Year/24-Hour Storm | 3.57 |
| 50-Year/24-Hour Storm: | 4.78 | 100-Year/24-Hour Storm | 5.35 |

7. Identify all SCMs used to mitigate peak rate differences and provide the requested information.

SCM ID	Inflow to SCM (cfs)				Outflow from SCM (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
2	1.81	2.77	3.92	4.48	0.41	0.50	0.71	1.55
3	1.01	1.63	2.39	2.74	0.38	0.57	0.80	0.96

8. Report peak rates for pre-construction and post-construction with SCMs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with SCMs) (cfs)	Difference (cfs)
2-Year/24-Hour	1.73	1.17	-0.56
10-Year/24-Hour	3.85	3.01	-0.84
50-Year/24-Hour	6.69	5.03	-1.66
100-Year/24-Hour	8.12	6.03	-2.09

STORMWATER ANALYSIS – WATER QUALITY					
<input checked="" type="checkbox"/> A printout of DEP’s PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.					
OTHER INFORMATION					
1. <input checked="" type="checkbox"/> A long-term operation and maintenance (O&M) plan has been prepared for each SCM.					
2. <input checked="" type="checkbox"/> A long-term O&M plan will be recorded with a legal instrument for each property containing an SCM.					
3. <input checked="" type="checkbox"/> PCSM Plan Drawings have been developed for the project and are attached to the NOI/application.					
4. <input checked="" type="checkbox"/> The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.					
5. <input checked="" type="checkbox"/> Recycling and proper disposal of materials associated with PCSM SCMs are addressed as part of long-term operation and maintenance of the PCSM SCMs.					
6. <input type="checkbox"/> There are pre-construction stormwater discharges to wetlands from the project site.					
	Pre-Construction		Post-Construction		
Wetland ID	Drainage Area (ac)	Volume (CF)	Drainage Area (ac)	Volume (CF)	Ponding Depth Increase or Decrease (±%)
7. Describe the sequence of PCSM SCM implementation in relation to earth disturbance activities. See Section 7.0 of the PCSM/SR Narrative					
8. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM SCMs are operational and the applicant’s plan to avoid or minimize potential pollution and its impacts. See Individual NPDES Application Section 12: Naturally Occurring Geologic Condition Assessment Report					
9. Thermal Impacts: check the appropriate box(es) if any of the following (a. – c.) are true:					
<input checked="" type="checkbox"/> a. One or more peak rate control SCMs are proposed that will receive stormwater from a drainage area containing more than 25% impervious surface.					
i. Drainage Area of SCM: 1.14 acres					
ii. Drainage Area of Surface Water at DP of SCM: 59.99 acres					
iii. Ratio of SCM Drainage Area : Surface Water Drainage Area: 1.90 %					
<i>If the value reported for a.iii. exceeds 10%, attach a quantitative thermal impact analysis.</i>					
<input type="checkbox"/> b. A Wet Basin or Engineered Stormwater Treatment Wetland is proposed that does not include shading and/or a reversed slope outlet pipe (if true, attach a quantitative thermal impact analysis).					

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: Stream 46 **POA(s):** 3

1. The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.
2. The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.
3. An alternative design standard is being used.
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: 2.53 inches Source of precipitation data: NOAA
6. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Pre-Construction: 786 CF
7. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Post-Construction: 921 CF
8. Net Change (Post-Construction – Pre-Construction Volumes): 136 CF
9. Identify all selected structural PCSM SCMs and provide the information requested. Calculations attached

SCM ID	Series	MRC	Vol. Routed to SCM (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
4		<input type="checkbox"/>	853	250	0.11	72	<input checked="" type="checkbox"/>	1.5	250	149	105
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				
		<input type="checkbox"/>					<input type="checkbox"/>				

Total Infiltration & ET Credits (CF): 253

Other Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Spreadsheet):

Volume Required to Manage (CF): 136

Total Credits (CF): 253

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: Stream 46 **POA(s):** 3

1. The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.
 2. The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.
 3. An alternative design standard is being used.
 4. DEP's PCSM Spreadsheet – Rate Worksheet was used for peak rate calculations and is attached.
 5. Alternative rate calculations are attached.
 6. Identify precipitation amounts. Source of precipitation data: NOAA
- | | | | |
|------------------------|------|------------------------|------|
| 2-Year/24-Hour Storm: | 2.53 | 10-Year/24-Hour Storm | 3.57 |
| 50-Year/24-Hour Storm: | 4.78 | 100-Year/24-Hour Storm | 5.35 |

7. Identify all SCMs used to mitigate peak rate differences and provide the requested information.

SCM ID	Inflow to SCM (cfs)				Outflow from SCM (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
2	0.40	0.73	1.14	1.34	0.10	0.46	0.83	0.95

8. Report peak rates for pre-construction and post-construction with SCMs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with SCMs) (cfs)	Difference (cfs)
2-Year/24-Hour	0.51	0.22	-0.29
10-Year/24-Hour	1.00	0.82	-0.18
50-Year/24-Hour	1.63	1.46	-0.17
100-Year/24-Hour	1.94	1.71	-0.23

STORMWATER ANALYSIS – WATER QUALITY					
<input checked="" type="checkbox"/> A printout of DEP’s PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.					
OTHER INFORMATION					
1. <input checked="" type="checkbox"/> A long-term operation and maintenance (O&M) plan has been prepared for each SCM.					
2. <input checked="" type="checkbox"/> A long-term O&M plan will be recorded with a legal instrument for each property containing an SCM.					
3. <input checked="" type="checkbox"/> PCSM Plan Drawings have been developed for the project and are attached to the NOI/application.					
4. <input checked="" type="checkbox"/> The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.					
5. <input checked="" type="checkbox"/> Recycling and proper disposal of materials associated with PCSM SCMs are addressed as part of long-term operation and maintenance of the PCSM SCMs.					
6. <input type="checkbox"/> There are pre-construction stormwater discharges to wetlands from the project site.					
	Pre-Construction		Post-Construction		
Wetland ID	Drainage Area (ac)	Volume (CF)	Drainage Area (ac)	Volume (CF)	Ponding Depth Increase or Decrease (±%)
7. Describe the sequence of PCSM SCM implementation in relation to earth disturbance activities. See Section 7.0 of the PCSM/SR Narrative					
8. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM SCMs are operational and the applicant’s plan to avoid or minimize potential pollution and its impacts. See Individual NPDES Application Section 12: Naturally Occurring Geologic Condition Assessment Report					
9. Thermal Impacts: check the appropriate box(es) if any of the following (a. – c.) are true:					
<input checked="" type="checkbox"/> a. One or more peak rate control SCMs are proposed that will receive stormwater from a drainage area containing more than 25% impervious surface.					
i. Drainage Area of SCM: .25 acres					
ii. Drainage Area of Surface Water at DP of SCM: 4.40 acres					
iii. Ratio of SCM Drainage Area : Surface Water Drainage Area: 5.68 %					
<i>If the value reported for a.iii. exceeds 10%, attach a quantitative thermal impact analysis.</i>					
<input type="checkbox"/> b. A Wet Basin or Engineered Stormwater Treatment Wetland is proposed that does not include shading and/or a reversed slope outlet pipe (if true, attach a quantitative thermal impact analysis).					

<input type="checkbox"/>	c. There will be post-construction undetained areas, within the limit of disturbance, that contain impervious surface.
	i. Undetained Impervious Area: acres
	ii. Drainage Area of Surface Water Receiving Stormwater from Undetained Impervious: acres
	iii. Ratio of Undetained Impervious : Surface Water Drainage Area: %
	<i>If the value reported for c.iii. exceeds 10%, attach a quantitative thermal impact analysis.</i>
<input checked="" type="checkbox"/>	d. A quantitative thermal impact analysis is not required.

PCSM PLAN PREPARER

I am trained and experienced in PCSM methods.

I am a licensed professional.

No. years of experience preparing PCSM Plans: 21

Name: Charles 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

Exp. Date 9/30/2027



9/24/2025

PCSM Plan Preparer Signature

Date

Identify those who assisted the individual identified above in preparing the PCSM Plan:

Name	Company	Field	LP?	License Type
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	

**POST-CONSTRUCTION STORMWATER MANAGEMENT/
SITE RESTORATION REPORT**

**HCPP PIPELINE
BURRELL, BLACKLICK, AND CENTER TOWNSHIPS
INDIANA COUNTY, PENNSYLVANIA**

Prepared For:

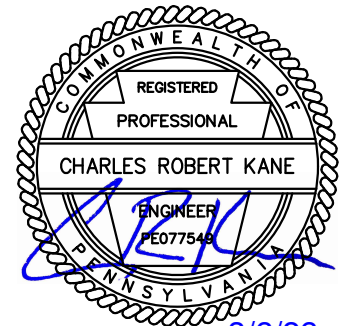
**HOMER CITY GENERATION, L.P.
HOMER CITY, PENNSYLVANIA**

Prepared By:

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
MONROEVILLE, PENNSYLVANIA**

CEC Project 354-010

**September 2025
Revised March 2026**



3/6/26

Certification of Plan Preparer:

I do hereby certify to the best of my knowledge, information, and belief, that the Erosion and Sediment Control and Post-Construction Stormwater Management and Site Restoration Plans 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.



Civil & Environmental Consultants, Inc.

TABLE OF CONTENTS

	<u>Page</u>
1.0 Introduction.....	1
1.1 Past, Present, and Proposed Land Uses	2
2.0 Hydrologic Methodology.....	3
3.0 Rainfall.....	4
4.0 Soil Types	5
5.0 Receiving Waters	6
6.0 Project Site Runoff.....	8
6.1 Pre-Development Hydrology	8
6.2 Post-Development Hydrology	9
6.3 Summary	12
7.0 SCM Installation Sequence and Schedule of Inspection for Critical Stages of PCSM SCM Installation	13
8.0 Long-Term Operation and Maintenance Schedule	16
9.0 Naturally Occurring Geologic Formations	18
10.0 Off-site Discharge Analysis.....	19
11.0 Potential Thermal Impacts	20
12.0 Riparian Forest Buffers.....	21
13.0 Material Recycling and Disposal.....	22
14.0 Anti-degradation Analysis	23
15.0 References.....	25

APPENDICES

Appendix A – NOAA Point Precipitation Frequency Data

Appendix B – Pre-Development Hydrology Calculations and Drainage Area Map

Appendix C – Post-Development Hydrology Calculations and Drainage Area Map

Appendix D – Stormwater Conveyance Feature Calculations

Appendix E – Infiltration Testing Results

Appendix F – Post-Construction Stormwater Management Spreadsheets

1.0 INTRODUCTION

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

1.1 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.

2.0 HYDROLOGIC METHODOLOGY

The hydrologic calculations for the proposed project were completed to address the requirements set forth in 25 PA Code Chapter 102 and the PA Stormwater BMP Manual. This document requires that the volume of runoff from a project site be managed such that the post-development quantity is equal to or less than the pre-development quantity for the 2-year/24-hour design storm event. In addition, 25 PA Code Chapter 102 requires a demonstration that the net change in the peak rate of runoff from the 2-, 10-, 50-, and 100-year/24-hour storm events has been managed such that the preconstruction rates are not exceeded.

The Natural Resources Conservation Service (NRCS) Technical Release No. 20 (TR-20) methodology within the HydroCAD computer program was used to determine the pre- and post-development stormwater peak rates of runoff. The rate of runoff is based on the relationships between the amount of rainfall, soil type, infiltration, land cover, travel time, and the size of the watershed area. The Soil Conservation Service (SCS) Type II storm was utilized in the runoff model for precipitation in accordance with the direction provided by NRCS for this region. The Pennsylvania Department of Environmental Protection (PADEP) PCSM Spreadsheet was used to determine the pre- and post-development stormwater volume of runoff.

3.0 RAINFALL

The rainfall data used to calculate the pre-development and post-development discharge rates for the proposed project was obtained from the National Oceanic and Atmospheric Association (NOAA) Atlas 14 Point Precipitation Frequency Estimates. The rainfall data is summarized in Table 1 below.

**TABLE 1
RAINFALL DATA FOR BURRELL TOWNSHIP, WESTMORELAND COUNTY,
PENNSYLVANIA**

Storm Event (year)	24-Hour Rainfall Depth (inches)
2	2.53
10	3.57
50	4.78
100	5.35

4.0 SOIL TYPES

To estimate runoff from storm rainfall, TR-20 uses the Runoff Curve Number (CN) Method. Determination of a CN is based on the watershed’s soil and land cover conditions, which TR-20 models as a hydrologic soil group (HSG), land cover type, and slope. With regard to the proposed project area, the CNs were obtained by analyzing soil types delineated in the *Soil Survey of Westmoreland County, Pennsylvania*. The land cover types for pre-development conditions were determined based on available aerial mapping, and post-development conditions were determined based on anticipated ground cover.

The Soils Map illustrates the soil types and their respective boundaries and is provided as Figure 2 in the Individual E&S Permit application package. The soil types and classifications located in the portion of the proposed development area that requires PCSM are summarized below in Table 2:

**TABLE 2
SOIL CLASSIFICATION SUMMARY**

SOILS LEGEND		HSG FOR STORMWATER MANAGEMENT AREAS
SYMBOL	NAME	
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	D
CaB	Cavode silt loam, 3 to 8 percent slopes	C/D
CaC	Cavode silt loam, 8 to 15 percent slopes	C/D
ClB	Clarksburg silt loam, 3 to 8 percent slopes	C/D
ErB	Ernest silt loam, 3 to 8 percent slopes	C/D
ErC	Ernest silt loam, 8 to 15 percent slopes	C/D
FaB	Fairpoint very channery silt loam, 0 to 8 percent slopes	C
FaC	Fairpoint very channery silt loam, 8 to 15 percent slopes	C
FaD	Fairpoint very channery silt loam, 15 to 25 percent slopes	C
FaF	Fairpoint very channery silt loam, 25 to 70 percent slopes	D
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	C

5.0 RECEIVING WATERS

Stormwater runoff from this project drains to the following receiving waters. The 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 this Commonwealth are found at the PADEP website: <http://www.dep.state.pa.us/wave/>. The receiving waters were reviewed for siltation impairments via PADEP emap program and Table 3 designates the siltation impairments. The receiving waters, watershed, and designated/existing uses for this project include the following:

**TABLE 3
RECEIVING WATERS**

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 NAME	WATERSHED	DESIGNATED/ EXISTING USE	SILTATION IMPAIRMENTS
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 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 PROJECT SITE RUNOFF

This project contains portions of the site which qualify as SR and portions which require PCSM. Portions of the site qualifying for SR will be restored in accordance with 25 Pa. Code Chapter 102.8(n) and portions of the site requiring PCSM have been designed to meet the standard design criteria from 25 Pa. Code Chapter 102.8(g)(2) and (3).

The portion of the project that requires storm runoff calculations are the proposed M&R and Interconnect Facility and the electric power tap site. These areas were analyzed to determine the change in the volume of runoff from the pre-development to post-development conditions for the 2-year/24-hour storm event. The change in peak runoff rate for pre- versus post-development conditions for the facilities were analyzed for the 2-, 10-, 50-, and 100-year/24-hour storm events in accordance with Chapter 102. The remainder of the site will require site restoration. Calculations are not required for portions of the project requiring site restoration.

6.1 PRE-DEVELOPMENT HYDROLOGY

The pre-development hydrology consists of three (3) drainage areas that drain to three (3) points-of-analysis (POAs). The drainage areas to each POA are exhibited on the pre-development drainage maps (HYD-1 and HYD-2) included in Appendix B. Below is a summary of each drainage area which drains to its respective POA.

Drainage Area 1 (DA-1) primarily consists of the portion of the proposed project site draining towards Stream 4 to the southwest of the proposed M&R site and consisting primarily of woodland, open meadow, and an existing access road. DA-1 has an area of 4.04 acres, 3.03 acres of which are within the LOD, and drains toward POA-1.

Drainage Area 2 (DA-2) primarily consists of the portion of the proposed project site draining towards Stream 2 to the southeast of the proposed M&R site and consisting primarily of woodland, open meadow, and an existing access road. DA-2 has an area of 2.79 acres, 2.24 acres of which are within the LOD, and drains toward POA-2.

Drainage Area 3 (DA-3) primarily consists of the portion of the proposed project site draining towards Stream 46 to the north of the proposed electric power tap site and consisting primarily of open meadow. DA-3 has an area of 0.41 acre, 0.27 acre of which are within the LOD, and drains toward POA-3.

The PADEP PCSM Spreadsheets for each POA are provided in Appendix F. The proposed project’s limit of disturbance was used as the study area for the 2-year stormwater volume calculations within the spreadsheets. The pre-development hydrology is summarized in Tables 4 and 5.

**TABLE 4
PRE-DEVELOPMENT RUNOFF SUMMARY**

Design Storm (yr)	Peak Discharge (cfs) POA- 1	Peak Discharge (cfs) POA-2	Peak Discharge (cfs) POA-3
2	3.14	1.73	0.51
10	6.38	3.85	1.00
50	10.60	6.69	1.63
100	12.68	8.12	1.94

**TABLE 5
PRE-DEVELOPMENT VOLUME SUMMARY**

Design Storm (yr)	Volume (cf)	Volume (cf)	Volume (cf)
	POI-1	POI-2	POI-3
2	6,191	3,944	786

6.2 POST-DEVELOPMENT HYDROLOGY

The post-development site drains to the three (3) POAs identified as per pre-development conditions. The drainage areas to each POA are exhibited on the post-development drainage

maps (HYD-3 and HYD-4) included in Appendix C. Below is a summary of the post-developed drainage areas.

DA-1 is split into one (1) detained and one (1) undetained subareas. The 0.99-acre detained subarea generally consists of the western portion of the M&R site and the eastern portion of the topsoil stockpile, which drain to Rain Garden SCM No. 1. The 3.05-acre undetained subarea generally consists of undisturbed or restoration areas and fill slopes to be restored to meadow-good condition. The combined subareas of DA-1 ultimately discharge to POA-1.

DA-2 is split into two (2) detained and one (1) undetained subareas. A 0.71-acre detained subarea generally consists of the eastern portion of the M&R site, which drain to Dry Extended Detention Basin SCM No. 2 then on to Rain Garden SCM No. 3. A 0.43-acre detained subarea generally consists of the M&R access road and adjacent meadow area which drain directly to Rain Garden SCM No. 3. The 1.65-acre undetained subarea generally consists of undisturbed or restoration areas to be restored to meadow-good condition. The combined subareas of DA-2 ultimately discharge to POA-2.

DA-3 is split into one (1) detained and one (1) undetained subareas. The 0.25-acre detained subarea generally consists of the electric power tap site, access road, and adjacent meadow area, which drain to Rain Garden SCM No. 4. The 0.16-acre undetained subarea generally consists of undisturbed or restoration areas and fill slopes to be restored to meadow-good condition. The combined subareas of DA-3 ultimately discharge to POA-3.

The PADEP PCSM Spreadsheets for each POA are provided in Appendix F. The proposed project's LOD was used as the study area for the 2-year stormwater volume calculations within the spreadsheets. The post-development hydrology is summarized in Tables 6 through 10 below.

TABLE 6
STORMWATER MANAGEMENT POST-DEVELOPMENT
PEAK FLOW RATE SUMMARY – POA-1

Design Storm (yr)	Pre-Development Peak Discharge (cfs)	Post-Development Peak Discharge with Proposed PCSM SCMs (cfs)	Difference (cfs)
2	3.14	2.64	-0.50
10	6.38	5.79	-0.59
50	10.60	9.45	-1.15
100	12.68	11.21	-1.47

TABLE 7
STORMWATER MANAGEMENT POST-DEVELOPMENT
PEAK FLOW RATE SUMMARY – POA-2

Design Storm (yr)	Pre-Development Peak Discharge (cfs)	Post-Development Peak Discharge with Proposed PCSM SCMs (cfs)	Difference (cfs)
2	1.73	1.17	-0.56
10	3.85	3.01	-0.84
50	6.69	5.03	-1.66
100	8.12	6.03	-2.09

TABLE 8
STORMWATER MANAGEMENT POST-DEVELOPMENT
PEAK FLOW RATE SUMMARY – POA-3

Design Storm (yr)	Pre-Development Peak Discharge (cfs)	Post-Development Peak Discharge with Proposed PCSM SCMs (cfs)	Difference (cfs)
2	0.51	0.22	-0.29
10	1.00	0.82	-0.18
50	1.63	1.46	-0.17
100	1.94	1.71	-0.23

TABLE 9
2-YEAR VOLUME SUMMARY

2-Year Storm			
POA	Total Pre-Dev Volume (cf)	Total Post-Dev Volume with SCMs (cf)	Difference (cf)
1	6,191	3,721	-2,470
2	3,944	2,198	-1,746
3	786	668	-118

6.3 SUMMARY

Pre- and post-development conditions were analyzed to determine the peak flow rates and discharge volumes for the project. Based on the runoff summaries provided herein, the total post-development peak discharges for the 2-, 10-, 50-, and 100-year/24-hour storm events and stormwater volume for the 2-year storm event for POAs 1 through 3 are less than or equal to the pre-development values. In addition to meeting the peak rate and volume requirements, the PADEP PCSM Spreadsheets provided in Appendix F demonstrate the proposed SCMs satisfy water quality requirements as well.

7.0 SCM INSTALLATION SEQUENCE AND SCHEDULE OF INSPECTION FOR CRITICAL STAGES OF PCSM SCM INSTALLATION

The PADEP requires that critical stages of the PCSM Plan implementation be observed for compliance with the permit documents by a licensed professional or his/her designee. Construction of the Rain Garden SCMs and the Dry Extended Detention Basin SCM will occur during the site restoration phase of the project. Final restoration of the site will consist of respreading topsoil, as needed, to establish vegetation and removal of all temporary E&S SCMs.

PCSM SCM Installation Sequence: The following is a generalized construction sequence specific to the site restoration stage of the project. 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.

1. Contractor shall inspect channels and storm pipes for signs of sedimentation. Sediment shall be removed, as necessary, and respread on-site.
2. 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.
3. 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.

4. Following confirmation of decompaction, confirmation infiltration testing shall be performed. Upon completion of confirmation infiltration testing, planting soils may be placed.
5. Once all disturbed areas have been stabilized and a uniform 70 percent vegetative cover has been established, the E&S SCMs shall be removed. Any areas disturbed during the removal shall be immediately stabilized and seeded.

Critical Construction Stages: A licensed professional engineer, or their designee, shall be present on-site during critical stages of implementation of the PCSM Plan, which includes specific stages of construction for the Rain Gardens and Dry Extended Detention Basin SCMs. Inspections by the licensed professional engineer or their designee will be required during construction, specifically during embankment construction, including the construction of outlet structures, outlet pipes, and anti-seep collars for all SCMs, riprap apron outlet protection for SCM-1, SCM-2 and SCM-3, and level spreader for SCM-4, as well as decompaction of the subgrade, confirmation infiltration testing, and placement of planting soils within Rain Garden SCMs.

Rain Garden

Rain Garden SCM Nos. 1, 3, and 4 shall be installed during the site restoration phase of the project. The upgradient drainage area to each SCM shall be stabilized as soon as and to the maximum extent practicable prior to SCM construction in order to prevent undue sediment from settling within the rain garden SCMs.

Maintenance: The rain garden SCMs shall be inspected weekly during construction and after any large rainfall event [0.25-inch (E&S) and 1-inch (PCSM) of runoff or greater in 24 hours]. Any accumulated sediment or debris shall be removed immediately to maintain proper infiltration. Upon completion of construction activity, the rain garden SCMs shall be inspected at least bi-annually to ensure proper function. Remove and replace dead or diseased plants upon inspection and remove invasive plant species as necessary.

Dry Extended Detention Basin

Dry Extended Detention Basin SCM No. 2 shall be installed during the site restoration phase of the project. The upgradient drainage area to the SCM shall be stabilized as soon as and to the maximum extent practicable prior to SCM construction in order to prevent undue sediment from settling within the rain garden SCMs.

Maintenance: The Dry Extended Detention Basin SCM shall be inspected weekly during construction and after any large rainfall event [0.25-inch (E&S) and 1-inch (PCSM) of runoff or greater in 24 hours]. Any accumulated sediment or debris shall be removed immediately to maintain proper infiltration. Upon completion of construction activity, the Dry Extended Detention Basin SCMs shall be inspected at least bi-annually to ensure proper function. Remove invasive plant species as necessary.

Permanent Stabilization

Permanent stabilization shall occur at the conclusion of the construction phase. Disturbed areas shall be seeded and mulched in accordance with the specification presented herein.

Maintenance: Water as necessary to establish and maintain vegetation. In mowed areas, mow to maintain grass height between 4 and 6 inches tall for first two (2) months of growth during the establishment year and to the desired height thereafter. If string trimmers are used, take measures to avoid damage to bark of trees and shrubs.

8.0 LONG-TERM OPERATION AND MAINTENANCE SCHEDULE

The PCSM SCMs proposed with this project are shown on the PCSM/SR Plan. The maintenance and inspection measures required for the proposed SCMs are indicated below:

Permanent Stabilization:

- Permanent stabilization shall be inspected on a weekly basis and after each runoff event until permit closeout. Seeding and mulching shall be repeated in areas that do not establish at least 70 percent initial vegetation by permit closeout. Once the ROW is stabilized, inspection of the ROW shall occur until permit closeout.

Rain Garden and Dry Extended Detention Basin:

- Stormwater conveyance facilities upgradient of the SCM should be inspected and cleaned at least two (2) times per year and after runoff events greater than 1-inch.
- The vegetation along the surface of the SCM (and contributing drainage area) should be maintained in good condition, and any bare spots revegetated as soon as possible.
- Care should be taken to avoid excessive compaction by mowers. Mow only as appropriate for vegetative species.
- Inspect at least two (2) times per year and after runoff events greater than 0.8-inch and make sure runoff drains down within 72 hours.
- At least two (2) times per year or more if historical maintenance records indicate it is necessary, inspect for accumulation of sediment, damage to outlet control structures, erosion, sign of water contamination/spills, and slope stability of the embankments. Leaf litter should be removed annually.
- As needed, remove accumulated sediment as required to maintain infiltration through the soil media and to maintain water quality functionality. Restore original cross-section. Properly dispose of sediment.

Channels/Vegetated Swales:

- Channels and vegetated swales shall be inspected at least weekly and after each runoff event [0.25-inch (E&S) and 1-inch (PCSM) of runoff or greater in 24 hours].
- Channels and vegetated swales should be maintained to ensure that the specified dimensions and protective lining, if applicable, are available at all times. Channels and vegetated swales should be cleaned whenever total depth is reduced by 25 percent. Damaged linings, bare areas, and erosional features should be promptly corrected.
- Vegetated swales shall be mowed/trimmed periodically to allow for proper swale operation.

9.0 NATURALLY OCCURRING GEOLOGIC FORMATIONS

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

10.0 OFF-SITE DISCHARGE ANALYSIS

The PADEP requires that proposed off-site discharges of stormwater from site restoration areas and PCSM SCMs 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, inlets and storm pipes to convey runoff from the pads and access roads in a controlled manner. Conveyance channels and storm pipes (including the 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.

11.0 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.

12.0 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.

13.0 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.

14.0 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 proposed to be disturbed is that deemed necessary to remediate the slope distress and implement associated E&S BMPs.

Immediate Stabilization – All disturbed area will be restored to meadow–good condition 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 socks 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 and additional 50 feet (100 feet total) where street sweeping will be conducted or extended to a total length of 150 feet with 50 feet of rolled PennDOT 2RC at the entrance, where street sweeping will not be conducted (i.e., along an existing access road). 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.

15.0 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 August 2022 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 D

STORMWATER CONVEYANCE FEATURE CALCULATIONS

CULVERT CALCULATIONS

Culvert Report

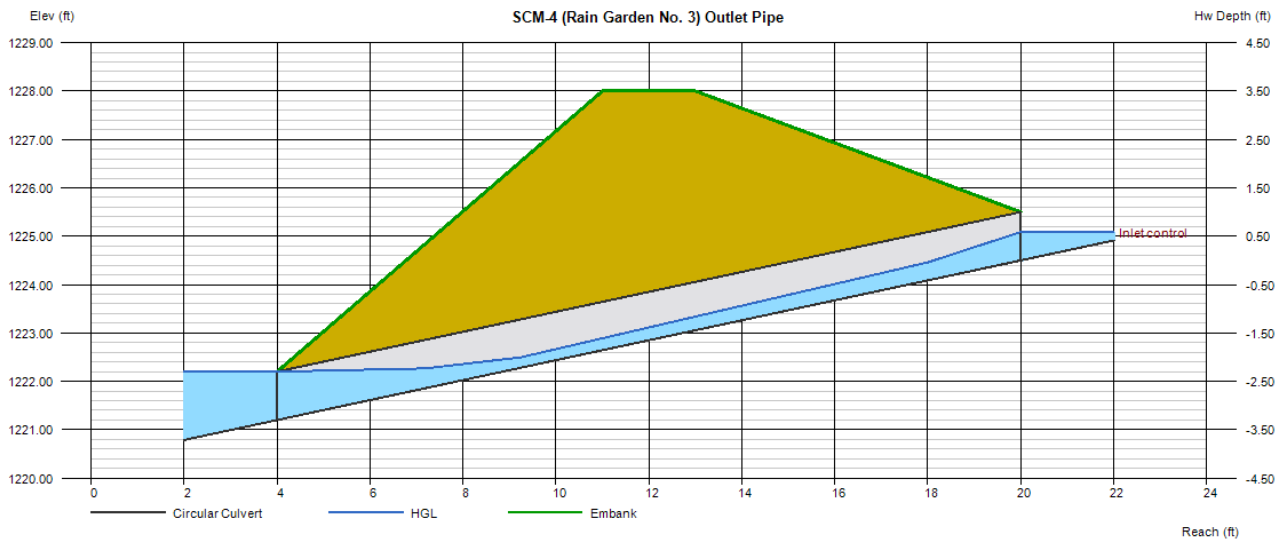
SCM-4 (Rain Garden No. 3) Outlet Pipe

Invert Elev Dn (ft)	=	1221.20
Pipe Length (ft)	=	16.00
Slope (%)	=	20.63
Invert Elev Up (ft)	=	1224.50
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Rough tapered inlet throat
Coeff. K,M,c,Y,k	=	0.519, 0.64, 0.021, 0.9, 0.5

Embankment	
Top Elevation (ft)	= 1228.00
Top Width (ft)	= 2.00
Crest Width (ft)	= 20.00

Calculations	
Qmin (cfs)	= 0.95
Qmax (cfs)	= 0.95
Tailwater Elev (ft)	= Crown

Highlighted	
Qtotal (cfs)	= 0.95
Qpipe (cfs)	= 0.95
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 1.21
Veloc Up (ft/s)	= 3.15
HGL Dn (ft)	= 1222.20
HGL Up (ft)	= 1224.91
Hw Elev (ft)	= 1225.09
Hw/D (ft)	= 0.59
Flow Regime	= Inlet Control



ANTI-SEEP COLLAR CALCULATIONS

HCPP PIPELINE
CEC PROJECT NO. 354-010
ANTI-SEEP COLLAR CALCULATION
RAIN GARDEN NO. 3 OUTLET PIPE

MADE BY: SCT
DATE: 3/3/2026
CHECKED BY: CRK
DATE: 3/6/2026

From page 204 of the PADEP E&S Manual:

$$L_s = y (z + 4) \left[1 + \frac{\text{pipe slope (ft/ft)}}{0.25 - \text{pipe slope}} \right]$$

Where:

y = Distance from upstream invert of principal spillway riser to top of dewatering volume

$$= 1228.00 - 1224.50$$

$$= 3.5 \text{ ft}$$

z = Horizontal component of upstream embankment slope

$$= 2$$

p = Pipe slope

$$= 0.206 \text{ ft/ft}$$

$$L_s = 3.50 \text{ ft} (2 + 4) [1 + 0.206 / (0.25 - 0.206)]$$

$$= 119.3 \text{ ft}$$

Since the pipe length < L_s, use the pipe length

For a permanent basin, the increase in flow path is 15%

$$L_r = 16 \text{ ft} \times 1.15$$

$$= 18.4 \text{ ft}$$

Minimum collar projection (V_{min}) = flow path increase/twice the number of collars

Using 2 collars:

$$V_{\min} = (18.4 \text{ ft} - 16 \text{ ft}) / 2 (2)$$

$$= 0.60 \text{ ft}$$

Check the min. and max. spacing for collars:

$$\text{Min} = 5 \times 0.6 \text{ ft}$$

$$= 3.0 \text{ ft}$$

$$\text{Max} = 14 \times 0.6 \text{ ft}$$

$$= 8.4 \text{ ft}$$

Space collars evenly along length of pipe in phreatic zone

$$\text{Spacing} = L_s / (\text{No. of collars} + 1)$$

$$= 16 \text{ ft} / (2 + 1)$$

$$= 5 \text{ ft}$$

Use 2 - 2.25 ft by 2.25 ft collars, spaced at 5 ft starting at the pipe inlet

PERMANENT LEVEL SPREADER

PERMANENT PIPE LEVEL SPREADER NO. 1 DIMENSION CALCULATIONS - SCM-4 OUTFALL

PREPARED BY: SCT CHECKED BY: CRK
 DATE: 3/3/2026 DATE: 3/6/2026

INFLUENT PIPE DATA		PIPED LEVEL SPREADER CALCULATIONS				
Spreader No.	Q ₁₀ (CFS)	A (sf)	Q _p (cfs)	Q _L (cfs)	L _{REQUIRED} (ft)	L _{PROPOSED} (ft)
3	0.46	0.046	0.46	0.252	1.82	5.00

Notes:

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

Q₁₀ = 10 YEAR FLOW RATE

Q_p = PROPOSED DISCHARGE FLOW RATE = Q₁₀

Q_L = PIPE DISCHARGE CAPACITY PER LINEAR FOOT

L_{REQUIRED} = LENGTH OF LEVEL SPREADER REQUIRED

Q₁₀ = 0.46 CFS (REFER TO HYDROCAD CALCULATIONS)

Q_p = Q₂ = 0.46 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 IN² = 0.046 SF

G = ACCELERATION DUE TO GRAVITY = 32.22 FT/SEC²

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/SEC²*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}

Q_L = 0.252 CFS / FT

L_{REQUIRED} = Q_p / Q_L = 0.46 CFS / CFS / FT = 1.82 FT

Flow Depth Below Permanent Level Spreader No. 1

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.035
Channel Slope	0.250 ft/ft
Bottom Width	5.00 ft
Discharge	0.46 cfs
Results	
Normal Depth	0.04 ft
Flow Area	0.2 ft ²
Wetted Perimeter	5.1 ft
Hydraulic Radius	0.04 ft
Top Width	5.00 ft
Critical Depth	0.06 ft
Critical Slope	0.046 ft/ft
Velocity	2.39 ft/s
Velocity Head	0.09 ft
Specific Energy	0.13 ft
Froude Number	2.152
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	0.04 ft
Critical Depth	0.06 ft
Channel Slope	0.250 ft/ft
Critical Slope	0.046 ft/ft