



Transcontinental Gas Pipe Line Company, LLC

Section 1-1 – Erosion and Sediment Control Permit Application
Attachment 1-1.1 - Supporting Information
Attachment 1-1.2 – Discharge Point Summary Tables
Attachment 1-1.3 – Permit Modules

Regional Energy Access Expansion Project

April 2021
(Revised July 2021)

EROSION AND SEDIMENT CONTROL PERMIT FOR DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES APPLICATION

Before completing this form, read the step-by-step instructions provided in the individual permit package.

DEP / CCD USE ONLY

Date Received: _____	Permit ID: _____
<input type="checkbox"/> Application Complete	Date of: <input type="checkbox"/> Return <input type="checkbox"/> Withdrawal <input type="checkbox"/> Denial
Date Determined Complete: _____	_____
Issuance Date: _____	Date Resubmission Received: _____
Effective Date: _____	Expiration Date: _____

GENERAL INFORMATION

1.	Applicant Name(s):	Transcontinental Gas Pipe Line Company, LLC
2.	Appl. Type:	<input checked="" type="checkbox"/> New <input type="checkbox"/> Renewal <input type="checkbox"/> Major Amendment <input type="checkbox"/> Minor Amendment Permit No. PA <u>ESG830021002-00</u>
3.	Project Description:	<p>Transco, indirectly owned by The Williams Companies, Inc. (Williams), is seeking authorization from the Federal Energy Regulatory Commission (FERC or Commission) under Section 7(c) of the Natural Gas Act and Part 157 of the Commission's regulations, to construct, own, operate, and maintain the proposed Project facilities</p> <p>The Project is an expansion of Transco's existing natural gas transmission system that will enable Transco to provide an incremental 829,400 dekatherms per day (Dth/d) of year-round firm transportation capacity from the Marcellus Shale production area in northeastern Pennsylvania (PA) to multiple delivery points along Transco's Leidy Line in PA, Transco's mainline at the Station 210 Zone 6 Pooling Point in Mercer County, New Jersey (NJ) and multiple delivery points in Transco's Zone 6 in NJ, PA, and Maryland (MD). The Project will consist of the following components:</p> <ul style="list-style-type: none"> • Approximately 22.3 miles of 30-inch-diameter pipeline partially collocated with Transco's Leidy Line A from milepost (MP) 0.00 to MP 22.32 in Luzerne County, PA (Regional Energy Lateral); • Approximately 13.8 miles of 42-inch-diameter pipeline collocated with Transco's Leidy Line System from MP 43.72 to MP 57.50 in Monroe County, PA (Effort Loop); • New gas-fired turbine driven compressor station identified as Compressor Station 201 with 11,107 nominal horsepower (HP) at International Organization of Standardization (ISO) conditions in Gloucester County, NJ; • Addition of two gas-fired turbine driven compressor units with 31,800 nominal HP at ISO conditions at existing Compressor Station 505 in Somerset County, NJ, to accommodate the abandonment and replacement of approximately 16,000 HP from eight existing internal combustion engine-driven compressor units and increase the certificated station compression by 15,800 HP; • Addition of two gas-fired turbine driven compressor units with 63,742 nominal HP at ISO conditions and modification of three existing compressors at existing Compressor Station 515 in Luzerne County, PA to support the Project and to accommodate the abandonment and replacement of approximately 17,000 HP from five existing gas-fired reciprocating engine driven compressors and increase the certificated station compression by 46,742 HP; • Upgrade and rewheel two existing electric motor-driven compressor units at existing Compressor Station 195 in York County, PA to increase the certificated station compression by 5,000 HP and accommodate the abandonment of two existing gas-fired reciprocating

engine driven compressors which total approximately 8,000 HP of compression;

- Modifications at existing Compressor Station 200 in Chester County, PA;
- Uprate one existing electric motor-driven compressor unit at Compressor Station 207 in Middlesex County, NJ

to increase the certificated station compression by 4,100 HP;

- Modifications to three (3) existing pipeline tie-ins in PA (Hildebrandt Tie-in, Lower Demunds REL Tie-in, and Carverton Tie-in);
- Addition of regulation controls at an existing valve setting on Transco’s Mainline “A” in Bucks County, PA
(Mainline A Regulator);
- Modifications at the existing Delaware River Regulator in Northampton County, PA;
- Modifications at the existing Centerville Regulator in Somerset County, NJ;
- Modifications to the existing valves and piping at the Princeton Junction (Station 210 Pooling Point) in Mercer County, NJ;
- Modifications to three (3) existing delivery meter stations in NJ (Camden M&R Station, Lawnside M&R Station, and Mt. Laurel M&R Station);
- Modifications to one (1) existing delivery meter station in MD (Beaver Dam M&R Station);
- Contractual changes (no modifications) at ten (10) existing delivery meter stations in PA and NJ
(Algonquin-Centerville Meter Station, Post Road Meter Station, New Village Meter Station, Spruce Run Meter Station, Marcus Hook Meter Station, Ivyland Meter Station, Repaupo Meter Station, Morgan Meter Station, Lower Mud Run Meter Station, and Chesterfield Meter Station);
- Additional ancillary facilities, such as mainline valves (MLVs), cathodic protection, communication facilities, and internal inspection device (e.g., pig) launchers and receivers in PA; and
- Existing, improved, and new access roads and contractor yards/staging areas in PA, NJ, and MD

4. Project Activity: Road Maintenance Timber Harvesting Oil and Gas Other:

5. Site Restoration Project 6. Discharges to Special Protection Waters (Module 3 Attached)

7. Project Site Within 150 Feet of Special Protection Waters (Module 4 Attached)

8. Phased Project No. phases: No. phases complete:

PROJECT SITE INFORMATION

1. Project Site Name: Regional Energy Access Expansion Project

2. Total Project Site Area: 1,346 acres

3. Project Site Impervious Area – Pre-Construction: acres Percent of Total: %
 *See Attachment 4 – DEP PCSM Worksheet within each PCSM narrative (Section 3-1 to 3-4)

4. Project Site Impervious Area – Post-Construction: acres Percent of Total: %
 *See Attachment 4 – DEP PCSM Worksheet within each PCSM narrative (Section 3-1 to 3-4)

5. Hydric soils or other wetland features are present within the Project Site. Yes No
 If Yes, the wetland determination is attached to the application.

6. County Name	Municipality Name	City	Boro	Twp	State
Luzerne, Northampton, Bucks, Chester, and Monroe	Buck, Bear Creek, Plains, Jenkins, Kingston, Lower Mt. Bethel, Ross, Chestnuthill, Tunkhannock, Lower Makefield, East Whiteland and Dallas Townships Wyoming, West Wyoming, and Laffin Borough	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PA

7. County Name	Municipality Name	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PA
8. Site Location Address	See Attachment 1-1.1				
9. Site Location City	State	ZIP+4			
See Attachment 1-1.1					

OPERATOR INFORMATION			
1. Operator Name: <u>To Be Determined</u>	2. Contact Name: _____		
3. Operator Address: _____	4. Operator Phone: _____		
5. Operator City, State, ZIP: _____			
6. Operator's Role in Project: <input type="checkbox"/> General Contractor <input type="checkbox"/> Consultant <input type="checkbox"/> Excavation Contractor <input type="checkbox"/> Other			
7. Operator's Responsibilities: _____			

1. Operator Name: _____	2. Contact Name: _____
3. Operator Address: _____	4. Operator Phone: _____
5. Operator City, State, ZIP: _____	
6. Operator's Role in Project: <input type="checkbox"/> General Contractor <input type="checkbox"/> Consultant <input type="checkbox"/> Excavation Contractor <input type="checkbox"/> Other	
7. Operator's Responsibilities: _____	

EARTH DISTURBANCE INFORMATION			
1. Total Earth Disturbance Area	<u>689.8</u> acres	<u>30,052,044</u> sf	
2. Pre-Construction Impervious Area:	sf		
*See Attachment 4 – DEP PCSM Worksheet within each PCSM narrative (Section 3-1 to 3-4)			
3. Post-Construction Impervious Area:	sf		
*See Attachment 4 – DEP PCSM Worksheet within each PCSM narrative (Section 3-1 to 3-4)			
4. Pre-Construction/Present Land Use(s):		5. Post-Construction Land Use(s):	
Agricultural Land	12 %	Agricultural Land	12 %
Industrial/Commercial Land	9 %	Industrial/Commercial Land	9 %
Open Land	29 %	Open Land	68 %
Residential Land	2 %	Residential Land	2 %
Transportation Land	4 %	Transportation Land	4 %
Upland Forest/Woodland	41 %	Upland Forest/Woodland	2 %
Wetlands/Open water	3 %	Wetlands/Open Water	3 %
6. <input checked="" type="checkbox"/> A map/drawing showing the site, LOD, surface waters, discharge points, BMPs and drainage is attached.			
7. Report latitude and longitude at the center of the proposed disturbed area. Latitude: _____ Longitude: <u>See Attachment 1-1.1</u>			
8. Horizontal Reference Datum: <input type="checkbox"/> NAD of 1927 <input checked="" type="checkbox"/> NAD of 1983 <input type="checkbox"/> WGS of 1984 <input type="checkbox"/> Unknown			
9. There will be off-site construction support activities. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
10. If Yes, identify the nature of known off-site support activities whose disturbance is included in #1, above:			

Description of Off-Site Support Activity	Distance from Site	Disturbance Area
CS 515 Contractor Yard	1.03 mi	3.6 acres
Delaware River Regulator Contractor Yard	0.15 mi	2.41 acres

11. Identify any other off-site support activities whose disturbance is not included in #1, above (see instructions).

Description of Off-Site Support Activity	Distance from Site	Disturbance Area
	mi	acres
	mi	acres

12. Check the appropriate box concerning fill material (see instructions):

- No fill material is expected to be imported to the project site.
- It is expected that fill will be needed for this project. The source of fill has not yet been determined but will undergo environmental due diligence when identified.
- It is expected that fill will be exported from the project. The applicant has identified the source of the fill and has determined the material to be clean fill. DEP's online Certification of Clean Fill form has been submitted.

EARTH DISTURBANCE INFORMATION (CONTINUED)

- It is expected that fill will be needed for this project, which is located on a site that is being remediated to Act 2 standards and will be utilized in accordance with DEP standards under that program.
 - It is expected that fill will be needed for this project. The applicant has identified the source of the fill and has determined it to be regulated fill. The regulated fill is authorized on the project site under a Waste Management General Permit No. WMGR096 authorization dated: _____.
 - It is expected that fill will be needed for this project, which is not on an Act 2 site. The applicant has identified the fill and has determined that it does not meet criteria for clean fill. The applicant is seeking authorization to use the regulated fill from DEP's Waste Management Program.
13. The site is enrolled in DEP's Act 2 Program. Yes No
14. The site was previously enrolled in DEP's Act 2 Program and cleanup standards have been met. Yes No
15. Is Act 537 sewage planning approval needed for this project? Yes No
 The Act 537 approval letter is attached to the NOI. Yes No (will be submitted prior to approval) N/A
16. A Chapter 105 permit or authorization is required. Yes No
17. If Yes, identify the necessary authorization. Joint Permit General Permit Waiver
18. Other DEP/CCD permits or authorizations are required. Yes No
19. If Yes, identify the necessary authorizations. 401 Water Quality Certification, Individual Permit for Hydrostatic Discharge, Air Quality Plan Approval

EXISTING PERMITS

Identify all environmental permits issued by DEP/CCD/EPA or are pending for this facility/project site within the past 5 years.

Type of Permit	Permit No.	Date Issued	Issued By

COMPLIANCE HISTORY

Was/Is the facility owner or operator in violation of any DEP regulation, permit, order or schedule of compliance at this or any other facility or project site within the past 5 years? Yes No

If "Yes," list each permit, order or schedule of compliance and provide current compliance status. Use additional sheets to provide information on all permits.

Permit Program: Chapter 102, Chapter 105, PAG-10

Permit No.: ESG03000150001,
ESG00350150001,
ESG00081150001
E41-649
E19-311, E36-947, E-
38-195, E40-769, E49-
336, E54-360, E58-
315, E66-160, E41-
667, E18-495,
PAG109632

Brief Description of Non-Compliance: Consent Assessment of Civil Penalty, Reports past due.

Steps Taken to Achieve Compliance	Date(s) Compliance Achieved
1. Consent Assessment of Civil Penalty	1. 9/20/2020
2. Consent Assessment of Civil Penalty. Permits being obtained to complete channel restoration	2. 8/9/2020
3. Consent Assessment of Civil Penalty	3. 9/20/2020
4. All past due reports were provided to PADEP	4. 12/14/2017

Current Compliance Status: In Compliance In Non-Compliance

STORMWATER DISCHARGE INFORMATION

1. List all stormwater discharge points **during construction** and provide the information requested below (see instructions). Not Applicable

Discharge Point No.	LATITUDE	LONGITUDE	RECEIVING WATERS					
	Degrees	Degrees	Name of Receiving Waters	Ches. Bay?	Non-Surface Waters	Ch. 93 Class.	Impaired?	TMDL?
				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
See Attachment 1-1.2 for During Construction Stormwater Discharge Information				<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"/>

2. List all stormwater discharge points **after construction and stabilization are complete** and provide the information requested below. Not Applicable

Discharge Point No.	LATITUDE	LONGITUDE	RECEIVING WATERS					
	Degrees	Degrees	Name of Receiving Waters	Ches. Bay?	Non-Surface Waters	Ch. 93 Class.	Impaired?	TMDL?
				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
See Attachment 1-1.2 for After Construction Stormwater Discharge Information				<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"/>

3. Will any of the points identified above discharge to a storm sewer system? Yes No Is the storm sewer an MS4 or CSS? Yes No
 Name of storm sewer owner/operator: _____ Discharge points discharging to storm sewer: _____

4. Identify and describe all non-stormwater discharges that are expected to occur during permit coverage. Describe the frequency and volume of all such discharges.
 Pipeline Hydrostatic testing is proposed. Two discharges are potentially proposed, associated with the Regional Energy Lateral in Luzerne County. The discharge volume is 2.5 million and 2 million gallons of water respectively. The water is sourced from the Susquehanna River.
 No non-stormwater discharges are anticipated.

5. Will there be any new or increased discharge to non-surface waters prior to reaching surface waters? Yes No
 If Yes, the applicant is expected to 1) secure legal authority for the non-surface water discharge if the discharge will be to property not owned by the applicant, and 2) provide for adequate controls during and after earth disturbance activities to prevent accelerated erosion.

DISCHARGES TO IMPAIRED WATERS

- 1. Are stormwater discharges anticipated to impaired waters during or following construction activities? Yes No
- 2. If Yes to #1, is Antidegradation Module 3 attached to the application? Yes No
- 3. Is there an EPA-approved TMDL for the impaired waters? Yes No
- 4. If Yes to #3, is there a WLA(s) in the TMDL that would apply to the applicant's discharges? Yes No
- 5. If Yes to #4, explain in the space provided or in a separate attachment how the discharges will comply with the WLA(s).

CERTIFICATION FOR APPLICANTS

I certify under penalty of law and subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities) that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I will abide by the terms and conditions of the permit until the Notice of Termination (NOT) is submitted. I will not commence in construction resulting in earth disturbance until all criteria specified in the permit are met for commencing construction. I will ensure that a licensed professional or a designee is present on-site and be responsible during critical stages of implementation of the PCSM Plan, as applicable. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Joseph Dean

Applicant Name (type or print legibly)



Applicant Signature

Manager - Permitting

Official Title

07/19/2021

Date Signed

CERTIFICATION FOR OPERATORS

I understand that I am assuming joint and severable responsibility, coverage, and liability under the permit for all duties, responsibilities, and non-compliance with the Chapter 102 permit, as a co-permittee of this permit coverage. I certify that I will implement the requirements of the permit and the approved design plans and will notify the permittee and the agency that issued permit coverage prior to implementing changes to the plans.

Operator Name (type or print legibly)

Official Title

Operator Signature

Date Signed

Operator Name (type or print legibly)

Official Title

Operator Signature

Date Signed

ATTACHMENT 1-1.1
SUPPORTING INFORMATION

Section 1-1.1 Supporting Information

Project Component	Site	Site Location City	ZIP Code	County	Municipality	Total Project Area/Project Site (Acre)	Total Disturbed Area (Acre)	Latitude / Longitude	U.S.G.S. 7.5 min. Topographic Quadrangle	Receiving Waters	Chapter 93, Designated Use Stream Classification	Chapter 93, Existing Use Stream Classification	Siltation Impaired
Regional Energy Lateral	Pipeline	-	-	Luzerne	Buck, Bear Creek, Plains, Jenkins, Kingston, Dallas, Wyoming, West Wyoming, Laflin	952.63	420.67 (includes CS 515 and sites below)	41.173337, -75.671706 (eastern terminus) 41.346917, -75.946263 (western terminus)	Kingston, Pittston, Avoca, Wilkes-Barre East, Pleasant View Summit	Stony Run, Shades Creek, Little Shades Creek, Snider Run, Meadow Run, Bear Creek, Little Bear Creek, Mill Creek, Gardner Creek, Susquehanna River, Abrahams Creek, Toby Creek, Trout Brook	MF, HQ-CWF, WWF, CWF	-	No
	CY-LU-001	Wyoming	18644	Luzerne	Wyoming		16.3 (Included within above total)	41.31016, -75.84636		Abrahams Creek	CWF, MF	-	No
	CY-LU-002	Wilkes-Barre	18702	Luzerne	Laflin		11.4 (Included within above total)	41.28491, -75.79026		Gardner Creek	CWF, MF	-	No
	MLV-515RA20	Wilkes-Barre	18702	Luzerne	Bear Creek Township		0.46 (Included within above total)	41.25279, -75.75856		Mill Creek	CWF, MF	HQ-CWF, MF	No
	MLV-515RA30	Wyoming	18644	Luzerne	Wyoming Borough		0.91 (Included within above total)	41.30411, -75.84662		Susquehanna River	WWF	-	No
	Carverton Tie-in	Wyoming	18644	Luzerne	West Wyoming Borough		0.83 (Included within above total)	41.32053, -75.87270		Abrahams Creek	CWF, MF	-	No
	Lower Demunds REL Tie-in	Dallas	18612	Luzerne	Dallas Township		0.17 (Included within above total)	41.34652, -75.94551		Trout Brook	CWF, MF	-	No
	Hildebrandt Tie-in/MLV-515RA40	Dallas	18612	Luzerne	Dallas Township		0.31 (Included within above total)	41.34692, -75.94629		Toby Creek, Trout Brook	CWF, MF	-	No
	Laflin Borough Stream Stabilization	Wilkes-Barre	18702	Luzerne	Laflin Borough		0.94 (Included within above total)	41.28925, -75.80209		Gardner Creek	CWF, MF	-	No

Regional Energy Access Expansion Project
 ESCP Permit Application
 Transcontinental Gas Pipe Line Company, LLC
 Section 1-1.1 Supporting Information

Project Component	Site	Site Location City	ZIP Code	County	Municipality	Total Project Area/Project Site (Acre)	Total Disturbed Area (Acre)	Latitude / Longitude	U.S.G.S. 7.5 min. Topographic Quadrangle	Receiving Waters	Chapter 93, Designated Use Stream Classification	Chapter 93, Existing Use Stream Classification	Siltation Impaired
Effort Loop	Pipeline	-	-	Monroe	Ross, Chestnuthill, Tunkhannock	360.63	262.18	40.896796, -75.370606 (Southeast Terminus) 41.053413, -75.526178 (Northwest Terminus)	Blakeslee, Pocono Pines, Brodheads ville, Saylorsburg	Lake Creek, Princess Run, Weir Creek, McMichael Creek, Pohopoco Creek, Sugar Hollow Creek, Poplar Creek, Mud Run, Mud Pond Run, Tunkhannock Creek	EV, MF, HQ-CWF, CWF	EV, MF	No
	MLV-505LD86 Sugar Hollow Valve Yard	Effort	18330	Monroe	Chestnut Hill Township		8.64 (Included within above total)	40.96775, -75.42980		Sugar Hollow Creek	CWF, MF	HQ-CWF, MF	No
	CY-MO-001	Saylorsburg	18353	Monroe	Ross Township		50.1 (Included within above total)	40.89803, -75.36784		Lake Creek, Princess Run	HQ-CWF, MF, CWF	-	No
Delaware River Regulator	-	Easton	18040	Northampton	Lower Mt. Bethel	11.28	3.25	40.76220 -75.19653	Bangor, PA	Mud Run	CWF, MF	-	No
Mainline "A" Regulator	-	Washington Crossing	18977	Bucks	Lower Makefield	0.94	0.53	40.26807, -74.85712	Pennington, NJ-PA	Dyers Creek, Delaware River	MF, WWF	-	No
Compressor Station 200	-	Frazer	19335	Chester	East Whiteland	20.28	3.16	40.04998, -75.58589	Malvern, PA	Valley Creek	EV, MF, CWF	-	Yes
Compressor Station 515	-	White Haven	18661	Luzerne	Buck	952.63 (Included with Regional Energy Lateral)	24.83 (Included with Regional Energy Lateral)	41.17380, -75.67118	Pleasant View Summit, PA	Shades Creek, Stony Run	HQ-CWF, MF	-	No

ATTACHMENT 1-1.2
DISCHARGE POINT SUMMARY TABLES

Table 1 - During Construction Stormwater Discharge Information

Component	Discharge Point No.	Latitude (Degrees)	Longitude (Degrees)	Receiving Waters					
				Name of Receiving Waters	Ches. Bay?	Non-surface Waters	Ch. 93 Class	Impaired?	TMDL?
Effort Loop - CY-MO-001	POI-CFS-001	40.8962	-75.3697	Lake Creek		X	HQ-CWF, MF	N	N
	POI-CFS-002	40.8961	-75.3693	Lake Creek		X	HQ-CWF, MF	N	N
	POI-CFS-003	40.8961	-75.3688	Lake Creek		X	HQ-CWF, MF	N	N
	POI-CFS-004	40.896	-75.3684	Lake Creek		X	HQ-CWF, MF	N	N
	POI-CFS-005	40.8961	-75.3683	Lake Creek		X	HQ-CWF, MF	N	N
	POI-CFS-006	40.8960	-75.3682	Lake Creek		X	HQ-CWF, MF	N	N
	POI-CFS-007	40.8960	-75.3679	Lake Creek		X	HQ-CWF, MF	N	N
	POI-CFS-008	40.8959	-75.3676	Lake Creek		X	HQ-CWF, MF	N	N
	POI-CFS-009	40.8978	-75.3658	Lake Creek		X	HQ-CWF, MF	N	N
	POI-CFS-010	40.8981	-75.3660	Lake Creek		X	HQ-CWF, MF	N	N
	POI-CFS-011	40.8984	-75.3662	Lake Creek		X	HQ-CWF, MF	N	N
Effort Loop - MLV505LD86	POI-LS-001	40.9692	-75.4296	Sugar Hollow Creek		X	HQ-CWF, MF	N	N

Table 2 - After Construction Stormwater Discharge Information

Component	Discharge Point No.	Latitude (Degrees)	Longitude (Degrees)	Receiving Waters					
				Name of Receiving Waters	Ches. Bay?	Non-surface Waters	Ch. 93 Class	Impaired?	TMDL?
MLV-515RA20	001	41.2532	-75.7589	Mill Creek	X	X	HQ-CWF, MF	N	N
MLV-515RA30	001	41.3042	-75.8460	Susquehanna River	X	X	WWF, MF	N	N
Carverton Tie-in	001	41.3208	-75.8722	Trib. 28363 to Abrahams Creek	X	X	CWF, MF	N	N
Lower Demunds REL Tie-in	001	41.3464	-75.9451	Trout Brook	X	X	CWF, MF	N	N
Hildebrandt Tie-in/MLV-515RA40	001	41.3472	-75.9466	Trib. 63042 to Toby Creek	X	X	CWF, MF	N	N
MLV-505LD86	001	40.9681	-75.4277	Sugar Hollow Creek		X	HQ-CWF, MF	N	N
	002	40.9663	-75.4281	Sugar Hollow Creek		X	HQ-CWF, MF	N	N
Compressor Station 200	001	40.0501	-75.5858	Valley Creek		X	EV, MF	N	N
Compressor Station 515	001	41.1747	-75.6724	Trib. 04285 to Shades Creek		X	HQ-CWF, MF	N	N

ATTACHMENT 1-1.3
PERMIT MODULES

MODULE 1 – EROSION AND SEDIMENT CONTROL



**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES
EROSION AND SEDIMENT CONTROL (E&S) MODULE 1**

Applicant: **Transcontinental Gas Pipe Line Company, LLC**

Project Site Name: **Regional Energy Access Expansion Project**

Surface Water Name(s): **See Attachment 1.1-1**

Surface Water Use(s): **See Attachment 1.1-1**

E&S PLAN INFORMATION

1. Describe the existing topographic features of the project site and the immediate surrounding area.
Project Location Maps for project components are included in Attachment 1 of the E&SC/SR Plan Narratives. These maps shows the topographical features of the general site vicinity and based on the USGS 7.5 Minute quadrangles.

2. Complete the following table for soils present at the project site. **See Section 4.0 of the E&SC/SR Plan Narratives**

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

Discuss any soil limitations and how the E&S Plan was designed to address those limitations.
See Section 4.1 of the E&SC/SR Plan Narratives for specific information pertaining to each project component.

If Hydric soils are present, is a wetland determination attached to this module? Yes No N/A

If soils are known to be contaminated, 1) identify the pollutants exceeding Act 2 standards in the space provided below, 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.

N/A

3. Describe the characteristics of the earth disturbance activity, including the past, present and proposed land uses and the proposed alteration to the project site.

See Section 5.0 of the E&SC/SR Plan Narratives for specific information pertaining to each project component

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

See Section 11.0 of the E&SC/SR Plan Narratives for specific information pertaining to each project component

5. Check boxes to indicate all BMPs that will be installed or implemented, identify plan numbers for the BMPs, and describe any deviations from the E&S Manual.

E&S BMPs	Plan No(s). Identified	Plan No(s). for O&M	Deviation(s) from E&S Manual
<input checked="" type="checkbox"/> Rock Construction Entrance	See E&S Plans - Site Plans	See E&S Plans - Notes	
<input checked="" type="checkbox"/> Rock Construction Entrance with Wash Rack	"	"	
<input type="checkbox"/> Rumble Pad			
<input type="checkbox"/> Wheel Wash			
<input checked="" type="checkbox"/> Temporary and Permanent Access Roads			
<input checked="" type="checkbox"/> Waterbar			
<input checked="" type="checkbox"/> Broad-based Dip			
<input type="checkbox"/> Open-top Culvert			
<input type="checkbox"/> Water Deflector			
<input checked="" type="checkbox"/> Roadside Ditch			
<input type="checkbox"/> Ditch Relief Culvert			
<input type="checkbox"/> Turnout			
<input checked="" type="checkbox"/> Compost Sock Sediment Trap			
<input checked="" type="checkbox"/> Temporary Stream Crossing			
<input checked="" type="checkbox"/> Temporary Wetland Crossing			
<input type="checkbox"/> Turbidity Barrier (Silt Curtain)			
<input checked="" type="checkbox"/> Dewatering Work Areas			
<input checked="" type="checkbox"/> Pumped Water Filter Bag			
<input checked="" type="checkbox"/> Sump Pit			
<input type="checkbox"/> Waste Management			
<input checked="" type="checkbox"/> Concrete Washout			
<input checked="" type="checkbox"/> Compost Filter Sock			
<input type="checkbox"/> Compost Filter Berm			
<input type="checkbox"/> Weighted Sediment Filter Tube			
<input type="checkbox"/> Rock Filter Outlet			
<input checked="" type="checkbox"/> Silt Fence (Filter Fabric Fence)			
<input checked="" type="checkbox"/> Reinforced Silt Fence			
<input checked="" type="checkbox"/> Super Silt Fence (Super Filter Fabric Fence)			

E&S BMPs	Plan No(s). Identified	Plan No(s). for O&M	Deviation(s) from E&S Manual
<input type="checkbox"/> Sediment Filter Log (Fiber Log)	"	"	
<input type="checkbox"/> Wood Chip Filter Berm			
<input type="checkbox"/> Straw Bale Barrier			
<input type="checkbox"/> Rock Filter			
<input type="checkbox"/> Vegetative Filter Strip			
<input type="checkbox"/> Inlet Filter Bag			
<input type="checkbox"/> Stone Inlet Protection			
<input checked="" type="checkbox"/> Runoff Conveyance (Channel)			
<input type="checkbox"/> Bench			
<input type="checkbox"/> Top-of-Slope Berm			
<input checked="" type="checkbox"/> Temporary Slope Pipe			
<input type="checkbox"/> Sediment Basin			
<input type="checkbox"/> Sediment Trap			
<input type="checkbox"/> Riprap Apron			
<input type="checkbox"/> Flow Transition Mat			
<input type="checkbox"/> Stilling Basin (Plunge Pool)			
<input type="checkbox"/> Stilling Well			
<input type="checkbox"/> Energy Dissipater			
<input type="checkbox"/> Drop Structure			
<input type="checkbox"/> Earthen Level Spreader			
<input checked="" type="checkbox"/> Structural Level Spreader			
<input type="checkbox"/> Surface Roughening			
<input checked="" type="checkbox"/> Vegetative Stabilization			
<input checked="" type="checkbox"/> Erosion Control Blanket			
<input type="checkbox"/> Soil Binders			
<input type="checkbox"/> Sodding			
<input type="checkbox"/> Cellular Confinement Systems			
<input type="checkbox"/> Alternative:			
<input type="checkbox"/> Alternative:			

Table 1 – For PAG-01 applicants, complete the requested information for each selected E&S BMP, where applicable.

Site Access BMPs									
BMP Name	No.	Length (ft)	Width (ft)	% Slope	Spacing (ft)	Length of Upslope Drainage (ft)	Culvert Diameter (in)	Soil Type in Ditch	E&S Manual Figure/Detail No.
Rock Construction Entrance (RCE)									
RCE with Wash Rack									
Temporary and Permanent Access Roads – Crowned Roadway									
Temporary and Permanent Access Roads – Insloped Roadway									
Waterbar									
Broad-based Dip									
Open-top Culvert									
Water Deflector									
Roadside Ditch									
Ditch Relief Culvert									
Sediment Barriers / Filters									
BMP Name	DA (ac)	Diameter (in)	Storage Capacity (cf)	Trap Height (in)	% Slope	Slope Length Above Barrier (ft)	Barrier Height (in)	E&S Manual Figure/Detail No.	
Compost Sock Sediment Trap									
Compost Filter Sock									
Compost Filter Berm									
Silt Fence (Filter Fabric Fence)									
Super Silt Fence									
Sediment Filter Log									
Weighted Sediment Filter Tube									
Straw Bale Barrier									
Wood Chip Filter Berm									
Toe-of-Slope Berm									

Table 1 – For PAG-01 applicants, complete the requested information for each selected E&S BMP, where applicable.

Runoff Conveyance BMPs													
BMP Name	Temporary	Design Storm	DA (ac)	Multiplier	Qr (cfs)	Q (cfs)	Manning's n	Va (fps)	V (fps)	D (ft)	d (ft)	Flow Depth Ratio	E&S Manual Figure/Detail No.
Vegetated Channel	<input type="checkbox"/>												
Sodded Channel	<input type="checkbox"/>												
Riprap Channel	<input type="checkbox"/>												
Energy Reduction BMPs													
BMP Name	Downstream Distance to Drainage Course (ft)		Downstream % Slope	DA (ac)	Discharge (cfs)	Manhole Depth (ft)	Inflow Pipe Diameter (in)	Outlet Pipe Diameter (in)	E&S Manual Figure/Detail No.				
Level Spreader													
Drop Structure													
Stilling Basins / Wells													
BMP Name	Pipe Diameter (in)	Discharge (cfs)	Well Diameter (in)	Depth of Well Below Invert (ft)	Basin Depth (ft)	Median Riprap Size (in)	Distance from Discharge Pipe to Basin Center (ft)	E&S Manual Figure/Detail No.					
Stilling Basin													
Stilling Well													
Other BMPs													
BMP Name	DA (ac)	Pipe Diameter (in)	Berm Height (in)	Length (ft)	% Slope	Vertical Spacing (ft)	Channel Depth (ft)	Riprap Size	Riprap Thickness (in)	Initial Width (ft)	Terminal Width (ft)	E&S Manual Figure/Detail No.	
Temporary Slope Pipe													
Bench													
Rock Filter													
Riprap Apron													

For selected BMPs not identified in Table 1, report the name of the BMP and the Figure or Detail No. from the E&S Manual that will be used for design and implementation (PAG-01 only).

BMP Name	E&S Manual Figure/Detail No.	BMP Name	E&S Manual Figure/Detail No.

6. All applicable Standard E&S Worksheets from Appendix B of the E&S Manual have been completed and are attached.
7. Other worksheets or calculations equivalent to Appendix B of the E&S Manual have been completed and are attached.
8. Identify the E&S Plan Drawing number(s) that describes the sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior to, during and after earth disturbance activities that ensure the proper functioning of all BMPs.
- Regional Energy Lateral - Sheet 68 of 91**
Effort Loop - Sheet 36 of 53
Compressor Station 200 - Sheet 4 of 7
Compressor Station 515 - Sheet 6 of 10
Delaware River Regulator - Sheet 4 of 6
Mainline A Regulator - Sheet 4 of 6
9. Supporting E&S calculations have been completed and are available upon request (PAG-01 only).
10. Supporting E&S calculations are attached to the NOI/application.
11. Plan drawings consist of standard Figures/Construction Details in E&S Manual (PAG-01 only).
12. Plan drawings have been developed for the project and are attached to the NOI/application.
13. BMPs will be inspected on a weekly basis and after measurable storm events (i.e., at least 0.25 inch).
14. Identify the following information relating to temporary stabilization measures on an E&S Plan Drawing and identify the Drawing No. below: 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.
- E&S Plan Drawing No(s): **Regional Energy Lateral - Sheet 70 of 91**
Effort Loop - Sheet 38 of 53
Compressor Station 200 - Sheet 5 of 7
Compressor Station 515 - Sheet 7 of 10
Delaware River Regulator - Sheet 5 of 6
Mainline A Regulator - Sheet 5 of 6
15. Identify the following information relating to permanent stabilization measures on an E&S Plan Drawing and identify the Drawing No. below: 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.
- E&S Plan Drawing No(s): **Regional Energy Lateral - Sheet 70 of 91**
Effort Loop - Sheet 38 of 53
Compressor Station 200 - Sheet 5 of 7
Compressor Station 515 - Sheet 7 of 10
Delaware River Regulator - Sheet 5 of 6
Mainline A Regulator - Sheet 5 of 6
16. Describe 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.

The restoration of the pipeline right-of-way will require the removal of the temporary materials. The temporary materials include, but may not be limited to, stone surfaces and associated geotextiles. The contractors are required to dispose of the materials at suitable disposal or recycling sites and in compliance with local, state and federal regulations.

Contractors are required to inventory and manage their construction site materials. The goal is to be aware of the materials on-site, ensure they are properly maintained, used, and disposed of, and to make sure the materials are not exposed to stormwater. The following materials or substances are expected to be present on-site during construction (Note: this list is not an all-inclusive list and the materials management plan can be modified to address additional materials used on-site):

- Acids
- Detergents
- Fertilizers (nitrogen/phosphorus)
- Hydroseeding mixtures
- Petroleum based products
- Sanitary wastes
- Soil stabilization additives
- Solder
- Solvents

These materials must be stored as appropriate and shall not contact storm or non-stormwater discharges. Contractor shall provide a weatherproof container to store chemicals or erodible substances that must be kept on the site. Contractor is responsible for reading, maintaining, and making employees and subcontractors aware of Safety Data Sheets (SDSs).

17. Identify the presence of any naturally occurring geologic formations or soil conditions that may have the potential to cause pollution during earth disturbance activities. If such formations or conditions exist, identify BMPs that will be implemented to avoid or minimize potential pollution.

See Section 4.2 of the E&SC/SR Plan Narratives for specific information pertaining to each project component.

18. Identify whether the potential exists for thermal impacts to surface waters from the earth disturbance activity. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

See Section 8.0 of the E&SC/SR Plan Narratives for specific information pertaining to each project component.

19. The E&S Plan has been planned, designed, and will be implemented to be consistent with the PCSM Plan.

20. If applicable, identify existing and proposed riparian forest buffers on E&S and PCSM Plan Drawings and identify the Drawing No(s) below (select N/A if not applicable).

E&S Plan Drawing No(s): **See E&S Plans - Site Plans** N/A

PCSM Plan Drawing No(s): **See PCSM Plans - Site Plan**

E&S PLAN DEVELOPER

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

I am a licensed professional.

Name: **Kevin C. Clark**

Title: **Senior Project Engineer**

Company: **BAI Group, LLC**

Phone No.: **(814) 238-2060**

Address: **2525 Green Tech Drive, Suite D**

Email: **kclark@baigroupllc.com**

City, State, ZIP: **State College, PA-16803**

License No.: **041211-E**

License Type: **Professional Engineer**

Exp. Date: **09/30/2021**



E&S Plan Developer Signature

07/23/2021

Date

**MODULE 2 – POST CONSTRUCTION
STORMWATER MANAGEMENT SITES**



**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
 DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES
 POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) MODULE 2**

Applicant: Transcontinental Gas Pipe Line Company, LLC

Project Site Name: Regional Energy Access Expansion Project - MLV-515RA20

Surface Water Name(s): Mill Creek

Surface Water Use(s): HQ-CWF, MF – Existing
 CWF, MF - Designated

PCSM PLAN INFORMATION

1. Identify all structural and non-structural PCSM BMPs that have been selected and provide the information requested.

Discharge Point(s)	BMP ID	BMP Name	BMP Manual	Latitude	Longitude	DA Treated (ac)
001	1	Infiltration Berm & Retentive Grading	BMP 6.4.10	N41° 15' 11.16"	W75° 45' 31.68"	0.38

Undetained Areas: 0.18 acre(s)

The Project Qualifies as a Site Restoration Project (25 Pa. Code §102.8(n))

2. Describe the sequence of PCSM BMP implementation in relation to earth disturbance activities and a schedule of inspections for the critical stages of PCSM BMP installation.

See Section 6.1 of the PCSM Plan Narratives for specific sequences and critical stage inspections for each PCSM BMP area.

3. Plan drawings have been developed for the project and will be available on-site.

4. Plan drawings have been developed for the project and are attached to the NOI/application.

5. Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs.

6. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts.

See Section 4.0 of the PCSM Plan Narrative.

7. Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

Thermal impacts to surface waters are not anticipated. Most of the stormwater will be routed through the stormwater BMP designed to retain and infiltrate the first surge of water from the site. The first surge of water will be the warmest water for the duration of the storm event and will quickly cool as the storm event progresses. The BMPs are designed to capture and infiltrate this warmest surge of stormwater. Based on routing calculations, stormwater is retained in the BMPs for a period of 12 hours before being discharged during a 100-year/24-hour storm event. This retention period is longer for less intense storms. Therefore, as a result of these measures, no significant thermal impact to the receiving waters is anticipated.

8. The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.

9. A pre-development site characterization has been performed.

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: **Mill Creek, Trib 63014 & 63015 to Mill Creek**

Discharge Point(s): **001**

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: **2.95** inches Source of precipitation data: **NOAA**
6. Stormwater Runoff Volume, Pre-Construction Conditions: **2,151** CF Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: **2,763** CF Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): **612** CF
9. Identify all selected structural PCSM BMPs and provide the information requested. Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
001	1	-	1,882	2,933	0.30	70	<input checked="" type="checkbox"/>	0.5	1,882	1,882	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"/>				

Total Infiltration & ET Credits (CF): 1,882

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF): 612

Total Credits (CF): 1,882

See Attachment 3 of PCSM Plan Narrative for Infiltration Information

INFILTRATION INFORMATION	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration rate used for design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: Mill Creek

Discharge Point(s): 001

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.
5. Alternative rate calculations are attached.
6. Identify precipitation amounts. Source of precipitation data: NOAA

2-Year/24-Hour Storm:	2.95	10-Year/24-Hour Storm	4.30
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50-Year/24-Hour Storm:	6.26	100-Year/24-Hour Storm	7.39
------------------------	------	------------------------	------

7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour	0.84	1.14	0.30
10-Year/24-Hour	1.70	2.09	0.39
50-Year/24-Hour	3.04	3.52	0.48
100-Year/24-Hour	3.84	4.35	0.51

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1	0.92	1.63	2.71	3.34	0.02	0.07	0.17	1.52

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour	0.84	0.30	-0.54
10-Year/24-Hour	1.70	0.61	-1.09
50-Year/24-Hour	3.04	1.16	-1.88
100-Year/24-Hour	3.84	2.06	-1.78

STORMWATER ANALYSIS – WATER QUALITY

A printout of DEP's PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.

LONG-TERM O&M

Describe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.

BMP ID	O&M Requirements
	See Section 9.0 of the PCSM Plan Narrative for O&M requirements.

PCSM PLAN DEVELOPER

I am trained and experienced in PCSM methods.

I am a licensed professional.

Name: Kevin C. Clark
 Company: BAI Group, LLC
 Address: 2525 Green Tech Drive, Suite D
 City, State, ZIP: State College, PA-16803
 License Type: Professional Engineer

Title: Senior Project Engineer
 Phone No.: (814) 238-2060
 Email: kclark@baigroupllc.com
 License No.: 041211-E
 Exp. Date: 09/30/2021



PCSM Plan Developer Signature

07/23/2021

Date



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) MODULE 2

Applicant: Transcontinental Gas Pipe Line Company, LLC

Project Site Name: Regional Energy Access Expansion Project - MLV-515RA30

Surface Water Name(s): Susquehanna River

Surface Water Use(s): WWF, MF

PCSM PLAN INFORMATION

1. Identify all structural and non-structural PCSM BMPs that have been selected and provide the information requested.

Discharge Point(s)	BMP ID	BMP Name	BMP Manual	Latitude	Longitude	DA Treated (ac)
001	1	Infiltration Bed	BMP 6.4.3	N41° 18' 14.76"	W75° 50' 47.76"	0.21
001	2	Vegetated Swale	BMP 6.4.8	N41° 18' 15.48"	W75° 50' 47.04"	0.28

Undetained Areas: 0.42 acre(s)

The Project Qualifies as a Site Restoration Project (25 Pa. Code §102.8(n))

2. Describe the sequence of PCSM BMP implementation in relation to earth disturbance activities and a schedule of inspections for the critical stages of PCSM BMP installation.

See Section 6.2 of the PCSM Plan Narratives for specific sequences and critical stage inspections for each PCSM BMP area.

3. Plan drawings have been developed for the project and will be available on-site.

4. Plan drawings have been developed for the project and are attached to the NOI/application.

5. Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs.

6. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts.

See Section 4.0 of the PCSM Plan Narrative.

7. Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

Thermal impacts to surface waters are not anticipated. Most of the stormwater will be routed through the stormwater BMP designed to retain and infiltrate the first surge of water from the site. The first surge of water will be the warmest water for the duration of the storm event and will quickly cool as the storm event progresses. The BMPs are designed to capture and infiltrate this warmest surge of stormwater. Based on routing calculations, stormwater is retained in the BMPs for a period of 12 hours before being discharged during a 100-year/24-hour storm event. This retention period is longer for less intense storms. Therefore, as a result of these measures, no significant thermal impact to the receiving waters is anticipated.

8. The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.

9. A pre-development site characterization has been performed.

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: **Susquehanna River**

Discharge Point(s): **001**

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: **2.57** inches Source of precipitation data: **NOAA**
6. Stormwater Runoff Volume, Pre-Construction Conditions: **1,150** CF Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: **2,560** CF Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): **1,410** CF
9. Identify all selected structural PCSM BMPs and provide the information requested. Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
001	1	-	451	4,546	0.25	72	<input type="checkbox"/>	2.0	451	451	-
001	2	1	1,009	456	1.50	72	<input checked="" type="checkbox"/>	2.0	434	1,009	21
							<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): 1,460

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF): 1,410

Total Credits (CF): 1,460

See Attachment 3 of PCSM Plan Narrative for Infiltration Information

INFILTRATION INFORMATION	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration rate used for design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: Susquehanna River **Discharge Point(s):** 001

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.
5. Alternative rate calculations are attached.

6. Identify precipitation amounts. Source of precipitation data: NOAA

2-Year/24-Hour Storm:	2.57	10-Year/24-Hour Storm	3.73
50-Year/24-Hour Storm:	5.39	100-Year/24-Hour Storm	6.34

7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour	0.22	0.89	0.67
10-Year/24-Hour	0.69	1.62	0.93
50-Year/24-Hour	1.53	2.70	1.17
100-Year/24-Hour	2.07	3.32	1.25

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1	0.41	0.85	1.53	1.93	0.0	0.0	0.0	0.03
2	0.60	1.38	2.65	3.41	0.03	0.06	0.13	0.35

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour	0.22	0.02	-0.20
10-Year/24-Hour	0.69	0.03	-0.66
50-Year/24-Hour	1.53	0.06	-1.47
100-Year/24-Hour	2.07	0.26	-1.81

STORMWATER ANALYSIS – WATER QUALITY

A printout of DEP's PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.

LONG-TERM O&M

Describe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.

BMP ID	O&M Requirements
	See Section 9.0 of the PCSM Plan Narrative for O&M requirements.

PCSM PLAN DEVELOPER

I am trained and experienced in PCSM methods.

I am a licensed professional.

Name: Kevin C. Clark
 Company: BAI Group, LLC
 Address: 2525 Green Tech Drive, Suite D
 City, State, ZIP: State College, PA-16803
 License Type: Professional Engineer

Title: Senior Project Engineer
 Phone No.: (814) 238-2060
 Email: kclark@baigroupllc.com
 License No.: 041211-E
 Exp. Date: 09/30/2021



PCSM Plan Developer Signature

07/23/2021

Date



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) MODULE 2

Applicant: Transcontinental Gas Pipe Line Company, LLC

Project Site Name: Regional Energy Access Expansion Project - Carverton Tie-in

Surface Water Name(s): Trib 28363 to Abrahams Creek

Surface Water Use(s): CWF, MF

PCSM PLAN INFORMATION

1. Identify all structural and non-structural PCSM BMPs that have been selected and provide the information requested.

Discharge Point(s)	BMP ID	BMP Name	BMP Manual	Latitude	Longitude	DA Treated (ac)
001	1	Infiltration Berm & Retentive Grading	6.4.10	N41° 19' 14.52"	W75° 52' 20.28"	0.34

Undetained Areas: 0.49 acre(s)

The Project Qualifies as a Site Restoration Project (25 Pa. Code §102.8(n))

2. Describe the sequence of PCSM BMP implementation in relation to earth disturbance activities and a schedule of inspections for the critical stages of PCSM BMP installation.

See Section 6.0 of the PCSM Plan Narratives for specific sequences and critical stage inspections for each PCSM BMP area.

3. Plan drawings have been developed for the project and will be available on-site.

4. Plan drawings have been developed for the project and are attached to the NOI/application.

5. Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs.

6. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts.

See Section 4.0 of the PCSM Plan Narrative.

7. Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

Thermal impacts to surface waters are not anticipated. Most of the stormwater will be routed through the stormwater BMP designed to retain and infiltrate the first surge of water from the site. The first surge of water will be the warmest water for the duration of the storm event and will quickly cool as the storm event progresses. The BMPs are designed to capture and infiltrate this warmest surge of stormwater. Based on routing calculations, stormwater is retained in the BMPs for a period of 12 hours before being discharged during a 100-year/24-hour storm event. This retention period is longer for less intense storms. Therefore, as a result of these measures, no significant thermal impact to the receiving waters is anticipated.

8. The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.

9. A pre-development site characterization has been performed.

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: Trib 28363 to Abrahams Creek

Discharge Point(s): 001

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. ***Act 167 Plan is greater than 5 years old.
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: **2.61** inches Source of precipitation data: **NOAA**
6. Stormwater Runoff Volume, Pre-Construction Conditions: **1,357** CF Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: **1,933** CF Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): **576** CF
9. Identify all selected structural PCSM BMPs and provide the information requested. Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
001	1	-	1,763	2,595	10.0	4	<input checked="" type="checkbox"/>	0.5	1,763	1,763	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"/>				

Total Infiltration & ET Credits (CF): 1,763

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF): 576

Total Credits (CF): 1,763

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: Trib 28363 to Abrahams Creek **Discharge Point(s):** 001

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. ***Act 167 Plan is greater than 5 years old.
4. A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.
5. Alternative rate calculations are attached.

6. Identify precipitation amounts. Source of precipitation data: NOAA

2-Year/24-Hour Storm:	2.61	10-Year/24-Hour Storm	3.79
50-Year/24-Hour Storm:	5.48	100-Year/24-Hour Storm	6.44

7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour	0.67	0.97	0.30
10-Year/24-Hour	1.24	1.61	0.37
50-Year/24-Hour	2.13	2.51	0.38
100-Year/24-Hour	2.64	3.02	0.38

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1	0.97	1.61	2.51	3.02	0.24	0.37	0.51	0.60

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour	0.67	0.24	-0.43
10-Year/24-Hour	1.24	0.37	-0.87
50-Year/24-Hour	2.13	0.51	-1.62
100-Year/24-Hour	2.64	0.60	-2.04

STORMWATER ANALYSIS – WATER QUALITY

A printout of DEP's PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.

LONG-TERM O&M

Describe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.

BMP ID	O&M Requirements
	See Section 9.0 of the PCSM Plan Narrative for O&M requirements.

PCSM PLAN DEVELOPER

I am trained and experienced in PCSM methods.

I am a licensed professional.

Name: Kevin C. Clark
 Company: BAI Group, LLC
 Address: 2525 Green Tech Drive, Suite D
 City, State, ZIP: State College, PA-16803
 License Type: Professional Engineer

Title: Senior Project Engineer
 Phone No.: (814) 238-2060
 Email: kclark@baigroupllc.com
 License No.: 041211-E
 Exp. Date: 09/30/2021



PCSM Plan Developer Signature

07/23/2021

Date

- | |
|--|
| 3. <input checked="" type="checkbox"/> Plan drawings have been developed for the project and will be available on-site. |
| 4. <input checked="" type="checkbox"/> Plan drawings have been developed for the project and are attached to the NOI/application. |
| 5. <input checked="" type="checkbox"/> Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs. |
| 6. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts.

See Section 4.0 of the PCSM Plan Narrative. |
| 7. Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

Thermal impacts to surface waters are not anticipated. Most of the stormwater will be routed through the stormwater BMP designed to retain and infiltrate the first surge of water from the site. The first surge of water will be the warmest water for the duration of the storm event and will quickly cool as the storm event progresses. The BMPs are designed to capture and infiltrate this warmest surge of stormwater. Based on routing calculations, stormwater is retained in the BMPs for a period of 12 hours before being discharged during a 100-year/24-hour storm event. This retention period is longer for less intense storms. Therefore, as a result of these measures, no significant thermal impact to the receiving waters is anticipated. |
| 8. <input checked="" type="checkbox"/> The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan. |
| 9. <input checked="" type="checkbox"/> A pre-development site characterization has been performed. |

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: **Trout Brook**

Discharge Point(s): **001**

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: **3.4** inches Source of precipitation data: **NOAA**
6. Stormwater Runoff Volume, Pre-Construction Conditions: **664** CF Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: **1,494** CF Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): **830** CF
9. Identify all selected structural PCSM BMPs and provide the information requested. Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
001	1	-	1,394	544	0.50	72	<input type="checkbox"/>	0.5	1,394	1,394	-
							<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): **1,394**

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF): **830**

Total Credits (CF): **1,394**

See Attachment 3 of PCSM Plan Narrative for Infiltration Information

INFILTRATION INFORMATION	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration rate used for design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: Trout Brook **Discharge Point(s):** 001

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.
5. Alternative rate calculations are attached.

6. Identify precipitation amounts. Source of precipitation data: NOAA	
2-Year/24-Hour Storm: 3.40	10-Year/24-Hour Storm 5.00
50-Year/24-Hour Storm: 7.33	100-Year/24-Hour Storm 8.67

7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour	0.20	0.64	0.44
10-Year/24-Hour	0.39	0.95	0.56
50-Year/24-Hour	0.70	1.40	0.7
100-Year/24-Hour	0.87	1.65	0.78

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1	0.52	0.77	1.14	1.35	0.04	0.05	0.05	0.16

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour	0.20	0.11	-0.09
10-Year/24-Hour	0.39	0.16	-0.23
50-Year/24-Hour	0.70	0.24	-0.46
100-Year/24-Hour	0.87	0.28	-0.59

STORMWATER ANALYSIS – WATER QUALITY

A printout of DEP’s PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.

LONG-TERM O&M

Describe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.

BMP ID	O&M Requirements
	See Section 9.0 of the PCSM Plan Narrative for O&M requirements.

PCSM PLAN DEVELOPER

I am trained and experienced in PCSM methods.

I am a licensed professional.

Name: Kevin C. Clark
 Company: BAI Group, LLC
 Address: 2525 Green Tech Drive, Suite D
 City, State, ZIP: State College, PA-16803
 License Type: Professional Engineer

Title: Senior Project Engineer
 Phone No.: (814) 238-2060
 Email: kclark@baigroupllc.com
 License No.: 041211-E
 Exp. Date: 09/30/2021



PCSM Plan Developer Signature

07/23/2021

Date

See Section 6.5 of the PCSM Plan Narratives for specific sequences and critical stage inspections for each PCSM BMP area.

3. Plan drawings have been developed for the project and will be available on-site.

4. Plan drawings have been developed for the project and are attached to the NOI/application.

5. Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs.

6. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts.

See Section 4.0 of the PCSM Plan Narrative.

7. Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

Thermal impacts to surface waters are not anticipated. Most of the stormwater will be routed through the stormwater BMP designed to retain and infiltrate the first surge of water from the site. The first surge of water will be the warmest water for the duration of the storm event and will quickly cool as the storm event progresses. The BMPs are designed to capture and infiltrate this warmest surge of stormwater. Based on routing calculations, stormwater is retained in the BMPs for a period of 12 hours before being discharged during a 100-year/24-hour storm event. This retention period is longer for less intense storms. Therefore, as a result of these measures, no significant thermal impact to the receiving waters is anticipated.

8. The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.

9. A pre-development site characterization has been performed.

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: Trib 63042 to Toby Creek

Discharge Point(s): 001

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: **3.4** inches Source of precipitation data: **NOAA**
6. Stormwater Runoff Volume, Pre-Construction Conditions: **1,563** CF Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: **3,266** CF Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): **1,703** CF
9. Identify all selected structural PCSM BMPs and provide the information requested. Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
001	1	-	2,329	4,062	0.16	72	<input type="checkbox"/>	0.5	2,329	2,329	-
							<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): **2,329**

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF): **1,703**

Total Credits (CF): **2,329**

See Attachment 3 of PCSM Plan Narrative for Infiltration Information

INFILTRATION INFORMATION	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration rate used for design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: Trib 63042 to Toby Creek

Discharge Point(s): 001

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.
5. Alternative rate calculations are attached.
6. Identify precipitation amounts. Source of precipitation data: NOAA

2-Year/24-Hour Storm:	3.40	10-Year/24-Hour Storm	5.00
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50-Year/24-Hour Storm:	7.33	100-Year/24-Hour Storm	8.67
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7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour	0.38	1.15	0.77
10-Year/24-Hour	0.74	1.77	1.03
50-Year/24-Hour	1.31	2.67	1.36
100-Year/24-Hour	1.64	3.19	1.55

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1	0.98	1.44	2.12	2.51	0.03	0.04	0.24	0.50

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour	0.38	0.18	-0.20
10-Year/24-Hour	0.74	0.33	-0.41
50-Year/24-Hour	1.31	0.55	-0.76
100-Year/24-Hour	1.64	0.69	-0.95

STORMWATER ANALYSIS – WATER QUALITY

A printout of DEP’s PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.

LONG-TERM O&M

Describe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.

BMP ID	O&M Requirements
	See Section 9.0 of the PCSM Plan Narrative for O&M requirements.

PCSM PLAN DEVELOPER

I am trained and experienced in PCSM methods.

I am a licensed professional.

Name: Kevin C. Clark
 Company: BAI Group, LLC
 Address: 2525 Green Tech Drive, Suite D
 City, State, ZIP: State College, PA-16803
 License Type: Professional Engineer

Title: Senior Project Engineer
 Phone No.: (814) 238-2060
 Email: kclark@baigroupllc.com
 License No.: 041211-E
 Exp. Date: 09/30/2021



PCSM Plan Developer Signature

07/23/2021

Date



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) MODULE 2

Applicant: Transcontinental Gas Pipe Line Company, LLC

Project Site Name: Regional Energy Access Expansion Project - MLV-505LD86

Surface Water Name(s): Sugar Hollow Creek

Surface Water Use(s): HQ-CWF, MF - Existing
CWF, MF - Designated

PCSM PLAN INFORMATION

1. Identify all structural and non-structural PCSM BMPs that have been selected and provide the information requested.

Discharge Point(s)	BMP ID	BMP Name	BMP Manual	Latitude	Longitude	DA Treated (ac)
001	1	Infiltration Basin	BMP 6.4.2	N40° 58' 8.04"	W75° 25' 40.08"	2.85
001	2	Infiltration Berm & Retentive Grading	BMP 6.4.10	N40° 58' 6.24"	W75° 25' 39.72"	0.32
002	3	Infiltration Berm & Retentive Grading	BMP 6.4.10	N40° 58' 2.64"	W75° 25' 42.60"	1.22

Undetained Areas: 4.37 acre(s)

The Project Qualifies as a Site Restoration Project (25 Pa. Code §102.8(n))

2. Describe the sequence of PCSM BMP implementation in relation to earth disturbance activities and a schedule of inspections for the critical stages of PCSM BMP installation.

See Section 6.2 of the PCSM Plan Narratives for specific sequences and critical stage inspections for each PCSM BMP area.

3. Plan drawings have been developed for the project and will be available on-site.

4. Plan drawings have been developed for the project and are attached to the NOI/application.

5. Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs.

6. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts.

See Section 4.0 of the PCSM Plan Narrative.

7. Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

Thermal impacts to surface waters are not anticipated. Most of the stormwater will be routed through the stormwater BMP designed to retain and infiltrate the first surge of water from the site. The first surge of water will be the warmest water for the duration of the storm event and will quickly cool as the storm event progresses. The BMPs are designed to capture and infiltrate this warmest surge of stormwater. Based on routing calculations, stormwater is retained in the BMPs for a period of 12 hours before being discharged during a 100-year/24-hour storm event. This retention period is longer for less intense storms. Therefore, as a result of these measures, no significant thermal impact to the receiving waters is anticipated.

8. The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.

9. A pre-development site characterization has been performed.

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: Sugar Hollow Creek **Discharge Point(s):** 001, 002

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: **3.26** inches Source of precipitation data: **NOAA**
6. Stormwater Runoff Volume, Pre-Construction Conditions: **15,039** CF Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: **19,167** CF Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): **4,128** CF
9. Identify all selected structural PCSM BMPs and provide the information requested. Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
001	1	-	1,123	5,278	3.0	14	<input checked="" type="checkbox"/>	1.0	1,123	1,123	0
001	2	-	1,394	977	3.0	8	<input checked="" type="checkbox"/>	1.0	1,270	1,394	0
002	3	-	4,521	2,044	3.0	8	<input checked="" type="checkbox"/>	1.0	2,044	3,679	628
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				

Total Infiltration & ET Credits (CF): 6,824

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF): 4,128

Total Credits (CF): 6,824

See Attachment 3 of PCSM Plan Narrative for Infiltration Information

INFILTRATION INFORMATION	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration rate used for design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: Sugar Hollow Creek **Discharge Point(s):** 001

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.
5. Alternative rate calculations are attached.

6. Identify precipitation amounts. Source of precipitation data: NOAA

2-Year/24-Hour Storm:	3.26	10-Year/24-Hour Storm	4.74
50-Year/24-Hour Storm:	6.87	100-Year/24-Hour Storm	8.09

7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour	0.01	0.04	0.03
10-Year/24-Hour	0.37	1.27	0.90
50-Year/24-Hour	5.89	10.24	4.35
100-Year/24-Hour	11.47	17.97	6.50

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1	0.08	1.79	6.42	9.70	0.07	0.24	0.38	1.04
2	0.63	1.20	2.08	2.59	0.05	0.29	1.98	2.55

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour	0.01	0.00	-0.01
10-Year/24-Hour	0.37	0.30	-0.07
50-Year/24-Hour	5.89	4.22	-1.67
100-Year/24-Hour	11.47	8.27	-3.20

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: Sugar Hollow Creek **Discharge Point(s):** 002

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.
5. Alternative rate calculations are attached.

6. Identify precipitation amounts. Source of precipitation data: NOAA

2-Year/24-Hour Storm:	3.26	10-Year/24-Hour Storm	4.74
50-Year/24-Hour Storm:	6.87	100-Year/24-Hour Storm	8.09

7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour	4.51	5.67	1.16
10-Year/24-Hour	12.49	13.13	0.64
50-Year/24-Hour	26.58	25.56	-1.02
100-Year/24-Hour	35.41	33.12	-2.29

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
3	2.01	4.04	7.22	9.10	0.31	3.89	7.13	8.99

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour	4.51	3.97	-0.54
10-Year/24-Hour	12.49	12.28	-0.21
50-Year/24-Hour	26.58	24.32	-2.26
100-Year/24-Hour	35.41	31.71	-3.70

STORMWATER ANALYSIS – WATER QUALITY

A printout of DEP’s PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.

LONG-TERM O&M

Describe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.

BMP ID	O&M Requirements
	See Section 9.0 of the PCSM Plan Narrative for O&M requirements.

PCSM PLAN DEVELOPER

I am trained and experienced in PCSM methods.

I am a licensed professional.

Name: Kevin C. Clark
 Company: BAI Group, LLC
 Address: 2525 Green Tech Drive, Suite D
 City, State, ZIP: State College, PA-16803
 License Type: Professional Engineer

Title: Senior Project Engineer
 Phone No.: (814) 238-2060
 Email: kclark@baigroupllc.com
 License No.: 041211-E
 Exp. Date: 09/30/2021



 PCSM Plan Developer Signature

07/23/2021

 Date

See Section 6.0 of the PCSM Plan Narratives for specific sequences and critical stage inspections for each PCSM BMP area.

3. Plan drawings have been developed for the project and will be available on-site.

4. Plan drawings have been developed for the project and are attached to the NOI/application.

5. Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs.

6. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts.

See Section 4.0 of the PCSM Plan Narrative.

7. Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

Thermal impacts to surface waters are not anticipated. Most of the stormwater will be routed through the stormwater BMP designed to retain and infiltrate the first surge of water from the site. The first surge of water will be the warmest water for the duration of the storm event and will quickly cool as the storm event progresses. The BMPs are designed to capture and infiltrate this warmest surge of stormwater. Based on routing calculations, stormwater is retained in the BMPs for a period of 11.50 hours before being discharged during a 100-year/24-hour storm event. This retention period is longer for less intense storms. Therefore, as a result of these measures, no significant thermal impact to the receiving waters is anticipated.

8. The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.

9. A pre-development site characterization has been performed.

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: **Valley Creek, Trib. 00279 to Valley Creek**

Discharge Point(s): **001**

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: **3.3** inches Source of precipitation data: **NOAA**
6. Stormwater Runoff Volume, Pre-Construction Conditions: **3,210** CF Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: **4,723** CF Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): **1,514** CF
9. Identify all selected structural PCSM BMPs and provide the information requested. Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
001	1	-	3,790	3,790	0.125	72	<input checked="" type="checkbox"/>	0.5	1,917	2,101	534
							<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): 2,635

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF): 1,514

Total Credits (CF): 2,635

See Attachment 3 of PCSM Plan Narrative for Infiltration Information

INFILTRATION INFORMATION	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration rate used for design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	

STORMWATER ANALYSIS – WATER QUALITY

A printout of DEP’s PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.

LONG-TERM O&M

Describe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.

BMP ID	O&M Requirements
	See Section 9.0 of the PCSM Plan Narrative for O&M requirements.

PCSM PLAN DEVELOPER

I am trained and experienced in PCSM methods.

I am a licensed professional.

Name: Kevin C. Clark
 Company: BAI Group, LLC
 Address: 2525 Green Tech Drive, Suite D
 City, State, ZIP: State College, PA-16803
 License Type: Professional Engineer

Title: Senior Project Engineer
 Phone No.: (814) 238-2060
 Email: kclark@baigroupllc.com
 License No.: 041211-E
 Exp. Date: 09/30/2021



PCSM Plan Developer Signature

07/23/2021

Date



**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES
POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) MODULE 2**

Applicant: Transcontinental Gas Pipe Line Company, LLC

Project Site Name: Regional Energy Access Expansion Project - Compressor Station 515

Surface Water Name(s): Trib 04285 to Shades Creek, Stony Run

Surface Water Use(s): HQ-CWF, MF
HQ-CWF, MF

PCSM PLAN INFORMATION

1. Identify all structural and non-structural PCSM BMPs that have been selected and provide the information requested.

Discharge Point(s)	BMP ID	BMP Name	BMP Manual	Latitude	Longitude	DA Treated (ac)
001	1	Infiltration Berm & Retentive Grading	6.4.10	N41° 10' 29.28"	W75° 40' 19.20"	3.83

Undetained Areas: _____ acre(s)

The Project Qualifies as a Site Restoration Project (25 Pa. Code §102.8(n))

2. Describe the sequence of PCSM BMP implementation in relation to earth disturbance activities and a schedule of inspections for the critical stages of PCSM BMP installation.

See Section 6.0 of the PCSM Plan Narratives for specific sequences and critical stage inspections for each PCSM BMP area.

3. Plan drawings have been developed for the project and will be available on-site.

4. Plan drawings have been developed for the project and are attached to the NOI/application.

5. Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs.

6. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts.

See Section 4.0 of the PCSM Plan Narrative.

7. Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

Thermal impacts to surface waters are not anticipated. Most of the stormwater will be routed through the stormwater BMP designed to retain and infiltrate the first surge of water from the site. The first surge of water will be the warmest water for the duration of the storm event and will quickly cool as the storm event progresses. The BMPs are designed to capture and infiltrate this warmest surge of stormwater. Based on routing calculations, stormwater is retained in the BMPs for a period of 11 hours before being discharged during a 100-year/24-hour storm event. This retention period is longer for less intense storms. Therefore, as a result of these measures, no significant thermal impact to the receiving waters is anticipated.

8. The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.

9. A pre-development site characterization has been performed.

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: Trib 04285 to Shades Creek, Stony Run

Discharge Point(s): 001

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: **3.4** inches Source of precipitation data: **NOAA**
6. Stormwater Runoff Volume, Pre-Construction Conditions: **21,885** CF Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: **35,184** CF Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): **13,300** CF
9. Identify all selected structural PCSM BMPs and provide the information requested. Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
001	1	-	31,799	17,880	0.31	72	<input checked="" type="checkbox"/>	0.5	19,129	24,117	3,066
							<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): 27,184

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF): 13,300

Total Credits (CF): 27,184

See Attachment 3 of PCSM Plan Narrative for Infiltration Information

INFILTRATION INFORMATION	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration rate used for design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: Trib 04285 to Shades Creek, Stony Run **Discharge Point(s):** 001

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. ***Act 167 Plan Greater than 5 years old
4. A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.
5. Alternative rate calculations are attached.

6. Identify precipitation amounts. Source of precipitation data: NOAA

2-Year/24-Hour Storm:	3.40	10-Year/24-Hour Storm	5.00
50-Year/24-Hour Storm:	7.16	100-Year/24-Hour Storm	8.43

7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour	5.46	13.09	7.63
10-Year/24-Hour	10.19	20.67	10.48
50-Year/24-Hour	16.85	30.78	13.93
100-Year/24-Hour	20.81	36.67	15.86

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1	9.77	9.70	9.65	9.65	1.82	8.36	9.62	9.64

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour	5.46	1.76	-3.70
10-Year/24-Hour	10.19	8.30	-1.89
50-Year/24-Hour	16.85	9.55	-7.30
100-Year/24-Hour	20.81	9.58	-11.23

STORMWATER ANALYSIS – WATER QUALITY

A printout of DEP’s PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.

LONG-TERM O&M

Describe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.

BMP ID	O&M Requirements
	See Section 9.0 of the PCSM Plan Narrative for O&M requirements.

PCSM PLAN DEVELOPER

I am trained and experienced in PCSM methods.

I am a licensed professional.

Name: Kevin C. Clark
 Company: BAI Group, LLC
 Address: 2525 Green Tech Drive, Suite D
 City, State, ZIP: State College, PA-16803
 License Type: Professional Engineer

Title: Senior Project Engineer
 Phone No.: (814) 238-2060
 Email: kclark@baigroupllc.com
 License No.: 041211-E
 Exp. Date: 09/30/2021



PCSM Plan Developer Signature

07/23/2021

Date

MODULE 2 – POST CONSTRUCTION
STORMWATER MANAGEMENT –
SITE RESTORATION



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) MODULE 2

Applicant: **Transcontinental Gas Pipe Line Company, LLC**

Project Site Name: **Regional Energy Access Expansion Project - Regional Energy Lateral, Effort Loop, Delaware Regulator, Mainline A Regulator**

Surface Water Name(s): **See Attachment 1.1-1**

Surface Water Use(s): **See Attachment 1.1-1**

PCSM PLAN INFORMATION

1. Identify all structural and non-structural PCSM BMPs that have been selected and provide the information requested.

Discharge Point(s)	BMP ID	BMP Name	BMP Manual	Latitude	Longitude	DA Treated (ac)

Undetained Areas: acre(s)

The Project Qualifies as a Site Restoration Project (25 Pa. Code §102.8(n))

2. Describe the sequence of PCSM BMP implementation in relation to earth disturbance activities and a schedule of inspections for the critical stages of PCSM BMP installation.

N/A

- | |
|---|
| 3. <input checked="" type="checkbox"/> Plan drawings have been developed for the project and will be available on-site. |
| 4. <input checked="" type="checkbox"/> Plan drawings have been developed for the project and are attached to the NOI/application. |
| 5. <input checked="" type="checkbox"/> Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs. |
| 6. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts.

See Sections 4.0 and 13.0 of the E&SC/SR Plan Narratives for specific information pertaining to each project component. |
| 7. Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

See Sections 8.0 of the E&SC/SR Plan Narratives for specific information pertaining to each project component. |
| 8. <input checked="" type="checkbox"/> The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan. |
| 9. <input checked="" type="checkbox"/> A pre-development site characterization has been performed. |

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name:

Discharge Point(s):

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: _____ inches Source of precipitation data: _____
6. Stormwater Runoff Volume, Pre-Construction Conditions: _____ CF Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: _____ CF Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): _____ CF
9. Identify all selected structural PCSM BMPs and provide the information requested. Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
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							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				

Total Infiltration & ET Credits (CF):

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF):

Total Credits (CF):

INFILTRATION INFORMATION	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration rate used for design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name:

Discharge Point(s):

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. A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.
5. Alternative rate calculations are attached.

6. Identify precipitation amounts. Source of precipitation data:

2-Year/24-Hour Storm: 10-Year/24-Hour Storm

50-Year/24-Hour Storm: 100-Year/24-Hour Storm

7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour			
10-Year/24-Hour			
50-Year/24-Hour			
100-Year/24-Hour			

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour			
10-Year/24-Hour			
50-Year/24-Hour			
100-Year/24-Hour			

STORMWATER ANALYSIS – WATER QUALITY

A printout of DEP's PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.

LONG-TERM O&M

Describe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.

BMP ID	O&M Requirements

PCSM PLAN DEVELOPER

I am trained and experienced in PCSM methods. I am a licensed professional.

Name:	<u>Kevin C. Clark</u>	Title:	<u>Senior Project Engineer</u>
Company:	<u>BAI Group, LLC</u>	Phone No.:	<u>(814) 238-2060</u>
Address:	<u>2525 Green Tech Drive, Suite D</u>	Email:	<u>kclark@baigroupllc.com</u>
City, State, ZIP:	<u>State College, PA-16803</u>	License No.:	<u>041211-E</u>
License Type:	<u>Professional Engineer</u>	Exp. Date	<u>09/30/2021</u>



07/23/2021

PCSM Plan Developer Signature

Date

MODULE 3 – ANTIDEGRADATION ANALYSIS



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES ANTIDEGRADATION ANALYSIS MODULE 3

Applicant: Transcontinental Gas Pipe Line Company, LLC

Project Site Name: Regional Energy Access Expansion Project

Surface Water Name: See Attachment 1.1-1

Surface Water Use: See Attachment 1.1-1

ANTIDEGRADATION – EROSION AND SEDIMENT CONTROL (E&S) PLAN

A **Non-Discharge Alternative will be utilized** for the project that will either individually or collectively eliminate the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm during earth disturbance activities.

Identify the E&S BMP(s) that will be utilized to achieve the non-discharge alternative:

- | | |
|--|--|
| <input type="checkbox"/> Alternative Siting: Location | <input type="checkbox"/> Limiting Extent & Duration of Disturbance |
| <input type="checkbox"/> Alternative Siting: Configuration | <input type="checkbox"/> Riparian Buffer (150 ft min.) |
| <input type="checkbox"/> Alternative Siting: Location of Discharge | <input type="checkbox"/> Riparian Forest Buffer (150 ft min.) |
| <input type="checkbox"/> Other: _____ | <input checked="" type="checkbox"/> Limited Disturbed Area |

Explain how the E&S BMP(s) will individually or collectively eliminate the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm during earth disturbance activities.

See Section 11.0 of the E&SC/SR Plan Narratives for specific information pertaining to each project component.

If a **Non-Discharge Alternative will not be utilized**, explain the rationale for non-selection, including why none of the alternatives are considered environmentally sound and cost-effective.

Antidegradation Best Available Combination of Technologies (ABACT) BMP(s) will be utilized for the project that will either individually or collectively manage the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm during earth disturbance activities.

Identify the ABACT E&S BMP(s) that will be utilized:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Rock Construction Entrance with Wash Rack | <input checked="" type="checkbox"/> Rock Construction Entrance with Street Sweeping |
| <input type="checkbox"/> Wheel Wash | <input checked="" type="checkbox"/> Pumped Water Filter Bag with Compost Sock Ring |
| <input type="checkbox"/> Pumped Water Filter Bag with Sump Pit | <input checked="" type="checkbox"/> Compost Filter Sock |
| <input type="checkbox"/> Compost Filter Berm (HQ Only) | <input type="checkbox"/> Weighted Sediment Filter Tube (HQ Only) |
| <input type="checkbox"/> Silt Fence with Vegetative Filter Strip | <input type="checkbox"/> Super Silt Fence with Vegetative Filter Strip |
| <input type="checkbox"/> Wood Chip Filter Berm (HQ Only) | <input type="checkbox"/> Vegetative Filter Strip (HQ Only) |
| <input type="checkbox"/> Sediment Basin with Perforated Riser (HQ Only) | <input type="checkbox"/> Sediment Basin with Skimmer |
| <input type="checkbox"/> Stone Inlet Protection with Compost Layer (HQ Only) | <input checked="" type="checkbox"/> Compost Filter Sock Sediment Trap |
| <input type="checkbox"/> Embankment Sediment Trap with Compost Layer (HQ Only) | <input type="checkbox"/> Embankment Sediment Trap with Compost Sock |
| <input type="checkbox"/> Sediment Trap with Perforated Riser (HQ Only) | <input type="checkbox"/> Sediment Trap with Skimmer |
| <input checked="" type="checkbox"/> Erosion Control Blankets within 50 ft of Surface Waters | <input checked="" type="checkbox"/> Immediate Stabilization |
| <input type="checkbox"/> Flocculant with PAMs | <input checked="" type="checkbox"/> Vegetative Conveyance |

Riparian Buffer (< 150 ft)

Riparian Forest Buffer (< 150 ft)

Approved Alternative: _____

Explain how the E&S BMP(s) will individually or collectively manage the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm during the earth disturbance activities.

ABACT BMP's are proposed and are cost effective.

ANTIDEGRADATION – POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN

A Non-Discharge Alternative will be utilized for the project that either individually or collectively eliminate the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm after earth disturbance activities.

Identify the PCSM BMPs that will be used to achieve the non-discharge alternative:

Alternative Siting: Location

Low Impact Development

Alternative Siting: Configuration

Riparian Buffer (150-ft. min.)

Alternative Siting: Location of Discharge

Riparian Forest Buffer (150-ft. min.)

Infiltration

Water Reuse

Other: _____

Explain how the PCSM BMP(s) will individually or collectively eliminate the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm after earth disturbance activities.

See Section 12.0 of the PCSM Plan Narratives for specific information pertaining to each project component.

If a **Non-Discharge Alternative will not be utilized**, explain the rationale for non-selection, including why none of the alternatives are considered environmentally sound and cost-effective.

ABACT BMP's are proposed and are cost effective.

Antidegradation Best Available Combination of Technologies (ABACT) has been selected for the project that will either individually or collectively manage the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm after earth disturbance activities.

Identify the ABACT PCSM BMPs that will be utilized:

Rain Garden (with Infiltration)

Disconnection of Impervious / Roof Area

Rain Garden (without Infiltration)

Pervious Pavement with Infiltration Bed

Constructed Filter

Infiltration Basin

Vegetated Swale

Infiltration Bed

Vegetated Filter Strip

Infiltration Trench

Constructed Wetland

Soil Amendment

Wet Pond

Dry Well / Seepage Pit

Dry Extended Detention Basin

Infiltration Berm / Retentive Grading

Water Quality Device

Protect Sensitive / Special Value Features

Spray / Drip Irrigation

Street Sweeping

Rain Barrel

Green Roof

Protect / Utilize Natural Flow Pathways (on-site)

Approved Alternative: _____

Explain how the PCSM BMP(s) will individually or collectively manage the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm after earth disturbance activities.

Along the pipeline Right-Of-Way, typical E&S BMPs such as waterbars and erosion control blanket will be left in place as part of site restoration. After construction activities are completed, temporary workspaces will be restored to meadow in good condition or better than existing conditions. For the aboveground facilities, PCSM BMPs such as infiltration basins, diversion channels and vegetated swales will be used and left in place as part of site restoration. Additional information regarding all the proposed BMPs are provided in the Post-Construction Stormwater Management Plans of respective project components (Section 3 of this ESCGP-3 Application).

CERTIFICATION

I certify under penalty of law and subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities) that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Joseph Dean

Applicant Name (type or print legibly)



Applicant Signature

Manager - Permitting

Official Title

07/23/2021

Date Signed

MODULE 4 – RIPARIAN BUFFER



**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES
RIPARIAN BUFFER MODULE 4**

Applicant: Transcontinental Gas Pipe Line Company, LLC

Project Site Name: Regional Energy Access Expansion Project

Surface Water Name(s): See Attachment 1.1-1

Surface Water Use(s): See Attachment 1.1-1

APPLICABILITY INFORMATION

Permit Type: Individual NPDES Permit Erosion and Sediment Control (E&S) Permit

Check the appropriate box if the project is characterized by any of the following exceptions in 25 Pa. Code § 102.14(d)(1):

- Road maintenance activities where any existing riparian buffer will be undisturbed to the extent practicable.
- Repair and maintenance of existing pipelines and utilities where any existing buffer will be undisturbed to the extent practicable.
- Oil and gas, timber harvesting, or mining activities for which site reclamation or restoration is part of the permit authorization in Chapters 78, 86-90 and 102 where any existing buffer will be undisturbed to the extent practicable.
- A single-family home that is not part of a larger common plan of development or sale and the parcel was acquired by the applicant prior to November 19, 2010.
- Activities authorized by a DEP permit under other regulations which contain setback requirements and the activity complies with those setback requirements.

Check the appropriate box if the project is characterized by any of the following allowed or allowable activities in 25 Pa. Code §§ 102.14(f)(2) and (3):

- Activities or practices used to maintain the riparian buffer including the disturbance of existing vegetation, and tree and shrub removal, as needed to allow for natural succession of native vegetation and protection of public health and safety.
- Timber harvesting activities in accordance with the riparian forest buffer management plan as part of the PCSM Plan.
- Passive or low impact recreational activities so long as the functioning of the riparian buffer is maintained.
- Emergency response and other similar activities.
- Research and data collection activities, which may include water quality monitoring and stream gauging.
- Construction or placement of roads, bridges, trails, storm drainage, utilities or other structures that has been or is expected to be authorized by DEP.
- Water obstructions or encroachments that have been or are expected to be authorized by DEP.
- Restoration projects that have been or are expected to be authorized by DEP.

RIPARIAN BUFFER OR RIPARIAN FOREST BUFFER INFORMATION

1. Will earth disturbance activities occur within 150 feet of a perennial or intermittent stream, creek, lake, pond or reservoir with a designated use of High Quality Waters (HQ) or Exceptional Value Waters (EV)?
 Yes No

If Yes to question #1, identify the option selected by the applicant to meet the requirements of 25 Pa. Code § 102.14(a)(1) or Act 162 of 2014:

- A 150-foot (min.) riparian buffer or riparian forest buffer will be implemented (*Individual NPDES Permits Only*).
- An equivalency demonstration will be conducted (*Individual NPDES Permits Only*).
- Applicant is seeking a waiver (*E&S Permits Only*).

2. Will the project site exist within 150 feet of a perennial or intermittent stream, creek, lake, pond or reservoir with a designated use of High Quality Waters (HQ) or Exceptional Value Waters (EV) where the use is not being attained (i.e., water is impaired)?

Yes No

If Yes to question #2, identify the option selected by the applicant to meet the requirements of 25 Pa. Code § 102.14(a)(2) or Act 162 of 2014:

- A 150-foot (min.) riparian forest buffer will be implemented (maintained, converted or established).
- An equivalency demonstration to a riparian forest buffer will be conducted (*Individual NPDES Permits Only*).
- Applicant is seeking a waiver (*E&S Permits Only*).

3. Species that will be planted: _____
4. Average minimum widths: Zone 1: _____ ft Zone 2: _____ ft
5. Buffer linear length: _____ ft
6. A riparian forest buffer management plan has been included in the PCSM Plan for the project.
7. The buffer will be protected in perpetuity by: Deed restriction Conservation easement
 Other: _____

EQUIVALENCY DEMONSTRATION

- Worksheets 12 and 13 from DEP's Pennsylvania Stormwater BMP Manual (363-0300-002) and Worksheets 14 and 15 from DEP's Riparian Buffer or Riparian Forest Buffer Equivalency Demonstration (310-2135-002) have been completed and are attached to this module and demonstrate that proposed PCSM BMPs will provide equivalent or better pollutant load reductions as a riparian buffer or riparian forest buffer.
- The Checklist for Functional Equivalency of Riparian Buffers and Riparian Forest Buffers as contained in DEP's Riparian Buffer or Riparian Forest Buffer Equivalency Demonstration (310-2135-002) is attached to this module.
- Will there be any earth disturbance within 100 feet of a surface water (as defined in 25 Pa. Code § 102.1)?
- Yes No
- If Yes, complete the Riparian Forest Buffer Offset Information section. If No, skip to the Certification section.*

RIPARIAN FOREST BUFFER OFFSET INFORMATION

1. Area that must be offset (show on PCSM Plan Drawing): **N/A** _____ acre(s)
2. Proposed offset area (show on PCSM Plan Drawing): _____ acre(s)
3. Ch. 93 Drainage List of Project Site Waters: _____
4. Ch. 93 Drainage List of Offset Site Waters: _____ Name of Offset Site Waters: _____
5. Offset Property Owner Name and Address: _____
- Authorization to implement a new riparian forest buffer at the offset site has been provided and is attached.
- A Plan showing the location of the offset site and the buffer extent and an implementation plan are attached.
6. Species that will be planted: _____
7. Average minimum widths: Zone 1: _____ ft Zone 2: _____ ft
8. Buffer linear length: _____ ft
9. A riparian forest buffer management plan has been included in the PCSM Plan for the project.
10. The buffer will be protected in perpetuity by: Deed restriction Conservation easement
 Other: _____

WAIVER INFORMATION

1. The project qualifies for the following waiver(s) under 25 Pa. Code § 102.14(d)(2):
 - The project is necessary to abate a substantial threat to public health or safety.
 - The project is a linear project including pipelines, public roadways, rail lines or utility lines.
 - The project is an abandoned mine reclamation activity that will be conducted under a DEP authorization or permit.
 - The project is a redevelopment project which may include brownfields or use of other vacant land and property within a developed area for further construction or development.
 - Compliance with 25 Pa. Code §§ 102.14(a) or (b) is not appropriate or feasible due to site characteristics or existing structures at the project site.
2. An alternatives analysis is attached. **Section 1.7 includes a discussion of routing and neckdown. A detailed discussion on alternatives is provided in Chapter 105 permit applications.**
3. Existing riparian buffers will be preserved to the extent practicable.

CERTIFICATION

I certify under penalty of law and subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities) that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Joseph Dean

Applicant Name (type or print legibly)



Applicant Signature

Manager- Permitting

Official Title

07/23/2021

Date Signed