Transcontinental Gas Pipe Line Company, LLC

Section 1-10 – Preparedness, Prevention and Contingency Plan

Regional Energy Access Expansion Project

April 2021

Construction Spill Prevention and Response Procedures for Oil and Hazardous Materials

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Construction Spill Prevention and Response Procedures for Oil and Hazardous Materials

REGIONAL ENERGY ACCESS EXPANSION PROJECT

March 2021

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Abbreviations and Acronyms

CI	Chief Inspector
OM	Operations Manager
dt/day	Dekatherms per day
EC	Emergency Coordinator
LEPC	Local Emergency Planning Committee
Mdt/d	Thousand dekatherms per day
MLV	Mainline valve
MP	Milepost
OD	Outside diameter
PPE	Personal protective equipment
Project	Project Name
SOC	Security Operations Center
SPCC	Spill Prevention Control and Countermeasure
TBD	To be determined

SECTION 1 - GENERAL INFORMATION

1.1. Project Location and Description

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.

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[1] 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:

- 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

[1] A pooling point defines the aggregation of gas from multiple physical and/or virtual receipt points to a single physical or virtual point, and the disaggregation of gas from a single physical or virtual point to multiple physical and/or virtual delivery points.

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;

- Uprate 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;
- 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.

Subject to FERC's certification of the Project and receipt of the necessary permits and authorizations, Transco anticipates construction of the Project would commence in third quarter 2022 to meet a proposed in-service date of December 1, 2023.

1.2. Definitions:

Oil is defined in the SPCC regulations as oil of any kind or in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil and oily mixtures.

Hazardous Material as defined by the DOT includes:

- Hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in part 173 of subchapter C of this chapter. Hazardous Materials typically found on construction projects include, but are not limited to, petroleum oils, hydraulic fluids, engine coolants (ethylene glycol), x-ray film developer, chemical additives, pipe coatings, used abrasive blasting media, etc. Hazardous Substance is defined in DOT 49 CFR 171.8 and EPA 40 CFR 302.4 and OSHA 29 CFR 1910.120.

Hazardous Materials as specified in contracts means:

- Any substance, materials, and chemicals defined or included in the definition of "hazardous substances," hazardous materials," "toxic substances," "solid wastes," "pollutants," "contaminants," or similar identification, under any Environmental Law.
- Any other chemical, material, or substance, exposure to which is prohibited, limited or regulated by any governmental Authority; or 3) any regulated constituents or substances in concentrations or levels that exceed numeric or risk-based standards established under Environmental Laws.

Hazardous Substance as defined in 49 CFR 171.8 is material, including its mixtures and solutions, that:

- Is listed in the appendix A to §172.101
- Is in a quantity, in one package, which equals or exceeds the reportable quantity (RQ) listed in the appendix A to §172.101 of this subchapter; and
- When in a mixture or solution is in a concentration by weight which equals or exceeds the concentration corresponding to the RQ of the material (except for radionuclides, Under 40 CFR 302.4 (CERCLA), hazardous substances are designated as:

- Listed hazardous substances. The elements and compounds and hazardous wastes appearing in table 302.4 are designated as hazardous substances under section 102(a) of the Act.

- Unlisted hazardous substances. A solid waste, as defined in 40 CFR 261.2, which is not excluded from regulation as a hazardous waste under 40 CFR 261.4(b), is a hazardous substance under section 101(14) of the Act if it exhibits any of the characteristics identified in 40 CFR 261.20 through 261.24.

  Under 29 CFR 1910.120, the term "hazardous substance" encompasses those substances defined as hazardous by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Transportation (DOT).

1.3. Contractor Responsibility:

The Contractor shall be familiar with this Construction Spill Plan and its contents prior to commencing any construction-related activities. The Plan will be followed to prevent any spills that may occur during the project and to mitigate any spills that do occur.

Company representatives assigned to this project include:

Operations Manager (OM):	*Insert name here*
Chief Inspector (CI):	*Insert name here*
Environmental Specialist (Permitting):	*Insert name here*
Environmental Specialist (Compliance):	*Insert name here*

SECTION 2 - SPILL PLAN REQUIREMENTS

Contractor shall determine the approximate quantities of oil or oil-like substances (including fuels) and any hazardous materials or substances that will be present or stored at the work site(s) to assist Company's Environmental Inspector in identifying the appropriate spill plan that shall be applicable for the Work. For Section 2.2 and 2.3 the quantities carried by fuel trucks that are on site temporarily to refuel equipment shall not be included in Contractor's calculation of the amount of oil or oil-like substances stored at any facility/site.

2.1. Company Construction Spill Plan for Oil and Hazardous Materials

If during the course of Work, any amount of oil or oil-like substances or hazardous materials will be present or stored at any facility/site, or any disturbance of a wetlands or waterbody, Contractor shall comply with and complete the remaining sections and requirements of this document (i.e., Construction Spill Plan). Contractor's field personnel shall be familiar with this plan before initiating any onsite activities and shall follow all requirements and responsibilities of this plan as they are listed for Contractor. Contractor shall provide, prior to start of the Work but no later than the pre-job meeting, all of the initial information required by the applicable/designated plan. Contractor shall provide Company with additional information to keep the plan current.

2.2. U.S. Environmental Protection Agency Tier I Qualified Facility Spill Prevention, Control, and Countermeasure (SPCC) Plan

If during the course of Work, greater than 1,320 gallons of oil or oil-like substances but less than 10,000 gallons with no containers greater than 5,000 gallons in capacity will be present or stored at any facility/site, Contractor shall comply with 2.1 above and complete the remaining sections

and requirements of this document PLUS comply with and complete the requirements of the "U.S. Environmental Protection Agency Tier I Qualified Facility SPCC Plan," attached to this section, or develop a full SPCC Plan. Contractor's field personnel shall be familiar with this plan before initiating any onsite activities and shall follow all requirements and responsibilities of this plan as they are listed for Contractor. Contractor shall provide, prior to start of the Work but no later than the pre-job meeting, all of the initial information required by the plan. Contractor shall provide Company with additional information to keep the plan current.

2.3. U.S. Environmental Protection Agency Full SPCC Plan

If during the course of Work, 5,000 gallons or more of oil or oil-like substances contained in a single container, or a total of 10,000 gallons or more, will be present or stored at any facility/site, Contractor shall comply with 2.1 above and complete the remaining section of this document PLUS comply with and complete the requirements of a full U.S. Environmental Protection Agency SPCC Plan, which must be reviewed and approved by a professional engineer. Contractor's field personnel shall be familiar with this plan before initiating any onsite activities and shall follow all requirements and responsibilities of this plan as they are listed for Contractor. Contractor shall provide, prior to start of the Work but no later than the pre-job meeting, all of the initial information required by the plan. Contractor shall provide Company with additional information to keep the plan current.

SECTION 3 - DRAINAGE PATTERNS AND SPILL PREVENTION PRACTICES

3.1. Drainage Patterns

Drainage patterns across the Project are dendritic or tree shaped. This pattern develops in a variety of structural and lithological environments such as in the mountainous and hilly areas. The evolution of dendritic pattern is guided by the lithological characteristics mainly the permeability of underlying rocks, the amount and regime of rainfall and resultant surface runoff and the time factor. Typically, surface runoff will sheet flow across level surfaces and will infiltrate into soil and to some degree underlying rocks until permeability and lithological characteristics prevent such infiltration at which point surface to groundwater will discharge downslope in the form of seeps or provide base flow to streams. Surface runoff will channelize as slopes increase or topography funnels flow paths at which time energy will increase and accelerated erosion will begin to form dendritic patterns.

Responsibility: Chief Inspector

Construction and Operations personnel will be familiar with drainage patterns for the project and be prepared to implement measures to control any release.

3.2. Spill Prevention Practices

The Contractor shall take the following precautions to ensure that an oil or hazardous materials spill does not occur:

A. Containers/Pumps/Concrete Coating

1. All containers shall be stored on level ground at least 100 feet from any waterway, wetland, or designated municipal watershed area or as prescribed by a project specific permit. All containers should be located within temporary containment.

2. Temporary containment will include, but not be limited to, temporary hay bale berms with plastic sheets underlining the entire contained area. and it is recommended that these areas be inspected daily or after any significant precipitation event.
3. Containment areas shall be capable of containing 110% of the volume of the single largest container of hazardous material being stored plus sufficient freeboard to hold the 25 year/24 hour storm.
4. All container storage areas shall be routinely inspected for integrity purposes. If hazardous wastes are being stored a weekly inspection must be documented.
5. Leaking and/or deteriorated containers shall be replaced as soon as the condition is first detected with clean-up measures immediately taking place.
6. No incompatible materials shall be stored in the same containment area.
7. No container storage areas shall be left unsecured during non-work hours.
8. Accumulated rainwater in the containment areas must be inspected prior to release to the ground; it must be free of sheens or other hazardous materials.
9. Pumps operating within 100 feet of a waterbody or wetland boundary shall utilize the appropriate agricultural or industrial grade containers/materials as a secondary containment system to prevent spills.
10. Concrete coating operations shall not be performed within 100 feet of a wetland or waterbody unless the location is an existing industrial site designated for such use. If no reasonable alternatives exist, consult with the EI and Company Environmental Lead for other options.

B. Tanks

1. The Contractor shall operate only those tanks that meet the requirements and specifications of applicable regulations and that are surrounded with temporary containment as described above.
2. Self-supporting tanks shall be constructed of materials compatible with its contents.
3. All tanks shall be routinely inspected for integrity purposes.
4. Vehicle mounted tanks shall be equipped with flame/spark arrestors on vents to ensure that self-ignition does not occur.
5. Tanks will not be used to store incompatible materials in sequence unless first thoroughly decontaminated.
6. Any tank utilized for storing different products between construction locations will be thoroughly decontaminated prior to refilling.

C. Unloading/Loading Areas

1. If it is necessary during the project, re-fueling and transferring of liquids shall only occur in pre-designated locations that are on level ground and at least 100 feet from any waterway. Where conditions require construction equipment (e.g., Bobcat/front-end loader/excavator) to be re-fueled within 100 feet of any waterway, or as prescribed by a project specific permit, the above requirements shall also apply and will be strictly enforced. This activity must be continuously manned (minimum of two attendants plus a Company Inspector) to ensure that overfilling, leaks, or spills do not occur. In addition, all this equipment must be surrounded by temporary containment as described above.
2. All service vehicles used to transport fuel must travel only on approved access roads and workspace and be equipped with an appropriate number of fire extinguishers and an oil spill response kit as identified in Table 2 of Appendix A.

D. Inadvertent Return Contingency Plan

1. See Appendix C

SECTION 4 - EMERGENCY RESPONSE PROCEDURES

This section provides a generic description of emergency response procedures to be performed to address oil and hazardous materials spills at the job site. Each response will vary depending upon the nature and extent of the incident. However, the general procedures outlined below will be followed.

4.1. Contractor Responsibilities

1. The Contractor must designate both an Emergency Coordinator (EC) and an Alternate EC for the project.
2. The Contractor is responsible for appropriately addressing all spills that occur directly as a result of construction-related activities.
3. For all spills the internal notification requirements of this Plan as well as WIMS 11.05.00.01 – Incident Notification and Reporting need to be followed. For spills (spills that take less than a shovel-full of dirt to clean-up), no internal notification requirements of this Plan need to be followed. However, this does not relieve the Contractor from appropriately remediating the area and reporting the spill in the daily report.
4. The Contractor shall supply the necessary manpower, PPE, and spill response equipment to appropriately address all spills that directly occur as a result of construction-related activities.
5. Ensure that all emergency spill response equipment and PPE is well-stocked and in good condition. Replace used materials when necessary.
6. If the situation warrants it, the Contractor, in consultation with the CI, shall immediately notify any local emergency spill response contractors for assistance.
7. The Contractor shall be responsible for hiring a Company approved emergency spill response contractor if the nature of the incident requires it.
8. The Contractor is responsible for immediately notifying the CI, EI or Operations Manager of any spills. The Contractor is responsible immediately reporting all spills to the CI (or OM) who will immediately contact Security Operations Center (SOC) at **855-945-5762** per 11.05.00.01 – Incident Notification and Reporting. Table 2 (of Appendix A) includes a list of emergency contacts.

4.2. Company Responsibilities

1. The Company shall be responsible for ensuring that the Contractor adequately follows the procedures outlined in this Plan at all times.
2. The Company shall be responsible for all verbal and written external notifications made to any regulatory agency or any local emergency responders.

4.3. Emergency Contacts

Table 1 (Appendix A) provides a list of Company and Contractor emergency contacts.

4.4. Duties of Chief Inspector or Operations Manager

The duties of the CI, EI or OM for reportable spills include the following:

1. Determine the source, character, amount, and extent of the spill.
2. Assess the potential hazards to the job site, environment, and surrounding community and contact the Construction Employee Safety Representative if any hazards are detected.
3. Evacuate the area if necessary.
4. Report the spill in accordance with the internal notification procedures outlined in Section 5.1 and the external notification procedures outlined in Section 5.2.
5. Commit manpower and equipment for minor incidents that can be reasonably remediated by the Contractor.
6. Oversee Contractor's spill response efforts to contain and control all spills to ensure they adequately follow the procedures outlined in this Plan.
7. Document the Contractor's response effort, including taking photographs wherever possible.
8. Generate a Concern Report, or request that the SOC generate a Concern Report.

SECTION 5 - EMERGENCY SPILL RESPONSE AND PERSONAL PROTECTIVE EQUIPMENT

Table 2 (Appendix A) provides a list of the minimally required Emergency Spill Response Equipment and Personal Protective Equipment (PPE) for this project.

SECTION 6 - SPILL NOTIFICATION PROCEDURES

6.1. Internal Notifications

1. All spills are to be immediately reported to the CI, EI or OM who will immediately contact SOC per 11.05.00.01 – Incident Notification and Reporting. Table I (Appendix A) includes a list of emergency contacts.
2. The person reporting the spill/release should review Appendix B for a list of minimum information requirements needed for reporting to the SOC.
3. The SOC is responsible for generating a Concern Report and notifying the appropriate Environmental Specialist.
4. The Environmental Specialist will review the Concern Report and "escalate" or "close" the concern as appropriate.
5. The SOC is responsible for notifying Manager, Environmental Services, as specified in 11.05.00.01 – Incident Notification and Reporting. Included as Appendix A is Table 1, which is a list of Company and Contractor emergency contact numbers.

6.2. External Notifications

1. The SOC is responsible for immediately notifying the National Response Center (NRC), and other regulatory agencies, as specified in 11.05.00.01 – Incident Notification and Reporting.
2. The CI, EI and or OM will consult with the appropriate Company Lead Environmental Specialist and determine who will be responsible for any necessary first-response notifications to an emergency spill response team to help contain the spill. If the spill occurs offshore, refer to the Offshore Spill Response Plan (OSRP). The CI (or OM) is responsible

for any necessary first-response notifications to an emergency spill response team for assistance containing the spill. If the spill occurs offshore, refer to the Offshore Spill Response Spill (OSRP).

3. After all required immediate notifications are made by the SOC, Manager, Environmental Services will make any necessary subsequent verbal and written notifications to regulatory agencies.
4. If a spill poses a threat to human health or the environment, the SOC, shall coordinate with the EH&S Representative for the affected area to immediately contact the Local Emergency Planning Committee (LEPC). When determining if the LEPC should be contacted or not, any gas release to the atmosphere must be taken into consideration. Note: Linear Projects may extend through multiple LEPC jurisdictions. As a result, all jurisdictions must be listed below.

The appropriate LEPC is:

Name:	*Enter*
Organization:	*Enter*
Phone Number:	*Enter*

6.3. Emergency Spill Response Contractors

The Company has arrangements with several emergency spill response contractors to address emergency responses beyond the capabilities of the Contractor.

If necessary, the following firms could be utilized for this project:

Company:	*Enter*
Name:	*Enter*
Location:	*Enter*
Phone Number:	*Enter*

Company:	*Enter*
Name:	*Enter*
Location:	*Enter*
Phone Number:	*Enter*

6.4. Local Emergency Responders

The Contractor or the CI (or OM) may call the following local emergency responders should their assistance be required:

Service	Telephone Number
Emergency Medical Services	*Enter*
Hospital	*Enter*
Fire	*Enter*
Police	*Enter*

Note: Linear Projects may extend through multiple Emergency Responder areas. Contractor must ensure all jurisdictions are listed. Use attachments as needed.

SECTION 7 – CLEAN-UP PROCEDURES

The following section outlines specific procedures to be followed when addressing spills:

7.1. Spills

1. Small spills and leaks must be remediated as soon as feasible. Use absorbent pads wherever possible.
2. Restrict spills to the containment area, if possible, by stopping or diverting flow.
3. If the spill exceeds the containment structure's capacity, immediately construct additional containment using sandbags or fill material. Every effort must be made to prevent the spills from entering a water body.
4. If a spill reaches a water body, immediately place oil booms downstream in order to contain the material. As soon as possible, remove the floating layer with absorbent pads.
5. After all recoverable oil has been collected and drummed, place all contaminated PPE, spill clean-up equipment, and any impacted soil into appropriate containers.
6. For significant quantities of impacted soils, construct temporary waste piles using plastic sheets. This material should subsequently be transferred into lined roll-off boxes as soon as feasible.
7. The Company Lead Environmental Specialist will coordinate all waste characterization, profiling, and disposal activities.

7.2. Equipment Cleaning/Storage

1. Upon completion of remedial activities, the Contractor shall be responsible for decontaminating the used emergency response equipment as well as the PPE.
2. The Contractor shall be responsible for replacing any spent emergency response equipment and PPE prior to resuming construction-related activities.
3. Decontamination rinse fluids shall be collected and containerized. The Environmental Specialist will coordinate waste characterization and disposal activities.
4. Reusable PPE shall be tested and inventoried prior to being placed back into service.

7.3. Waste Disposal

The Contractor may be responsible for waste management and waste disposal or any waste generated as the result of a spill (review contract language and project specifics). However, the Contractor's Environmental Representative will coordinate with the Williams Environmental Specialist for all waste characterization, profiling, and disposal activities. The Williams Environmental Specialist should refer to 03.00.00.03 – Waste Management, as needed.

Appendix A

Table 1: List of Emergency Contacts

Name	Job Description	Phone Number (24-hr)
Security Operations Center (SOC)	24-hour Call Center	855-945-5762
Chief Inspector	*Insert name here*	*Enter number*
Operations Manager	*Insert name here*	*Enter number*
Environmental Specialist	*Insert name here*	*Enter number*
Contractor	**Job Description**	**Phone Number**
Emergency Coordinator	*Insert name here*	*Enter number*
Alternate Emergency Coordinator	*Insert name here*	*Enter number*
Regulatory Agencies	**Name**	**Phone Number**
	National Response Center	800/424-8802
	State Emergency Response Commission (SERC)	*Enter number*
	Insert jurisdictional agency here (LEPC, FD, PD, Sheriff, etc.)	*Enter number*

Table 2: Emergency Spill Response and Personal Protective Equipment

*Modify this list as necessary for site conditions. Minimum requirements are shown with an *.*

Equipment	Quantity	Location
Chemical spill kit	1	adjacent to workspace
Oil spill kit	1	adjacent to workspace

SPILL RESPONSE EQUIPMENT:
1, 55-gallon open-head drum *
Blank drum labels *
2 shovels *
1 oil boom (10’ x 3”) * / 2 oil booms recommended
10 oil pillows (18” x 18”) *
10 oil socks (48” x 3”) *
25 oil mats/pads (24” x 24”) *
1 box garden-sized, 6-mil, disposal polyethylene bags (w/ ties) *
1 bag loose chemical pulp 3 chemical pillows (18” x 18”)
3 chemical socks (48” x 3”) 10 chemical mats/pads (24” x 24”)

PERSONAL PROTECTIVE EQUIPMENT: The inventory of PPE should include enough for at least 4 responders reacting to a significant leak/spill.
4 pairs of oil-proof gloves *
Splash goggles
half-face respirators (w/ cartridges for benzene)
Tyvek suits
waterproof/ chemical resistant hip-waders

Appendix B

Spill/Release Reporting Checklist

Call SOC for any Spill. Gather the following information when reporting spills/releases to the SOC:		Notes
Name, title, company and phone number of person reporting incident		
Spill/release location, project, facility, right-of-way (state, county, city, township, range, address, coordinates, nearest crossroads)		
Date of spill/release		
Time of spill/release		
Was material released as a liquid, solid, or gas?		
Description of material released (oil, hydraulic fluid, glycol, condensate, etc.)		
Estimated amount (volume or weight) of material spilled/released (Specify Unit – gal, ft^3, lbs., etc.)		
Has spill/release been stopped?		
Duration of spill/release (date and time release was stopped)		
Affected media (land, water, air, secondary containment, building, etc.)		
Has affected area of spill/release been cleaned up?		
Duration of spill/release cleanup activities		
Estimated volume and/or weight of cleaned up material. Specify type of material removed such as soil, concrete, pads, and unit of measure (gal, ft^3, lbs., etc.)		
Containment of cleaned up material (drum, tank, roll off) and location (spill site, contractor yard, station)		
Brief description of cause of spill/release		
Complete Environmental Concern Report – Contact SOC		
Contacts:	SOC (Required)	
	Supervisor	
	Pipeline Control	
	Environmental Specialist	
Additional Notes:		

Revision History

Rev Date	Rev #	Request #	Section #	Description
01/23/2020	00	N/A	N/A	New WIMS Operating Guideline attachment.
3/18/2021	01	N/A	N/A	Regional Energy Access Expansion Project

Attachment C

Direct Pipe® Monitoring, Inadvertent Return Response and Contingency Plan

Transcontinental Gas Pipe Line Company, LLC

Direct Pipe® Monitoring,

Inadvertent Return Response, and Contingency Plan

Regional Energy Access Expansion

March 2021

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List of Acronyms and Abbreviations

cfs	Cubic feet per second
CI	Chief Inspector
Commission	Federal Energy Regulatory Commission
Contractor	Direct Pipe® Contractor
DP	Direct Pipe®
Dth/d	Dekatherms per day
EI	Environmental Inspector
FERC or Commission	Federal Energy Regulatory Commission
HDD	Horizontal Directional Drill
Plan	Direct Pipe® Monitoring, Inadvertent Return Response, and Contingency Plan
HP	Horsepower
IR	Inadvertent Return
ISO	International Organization for Standardization
Mdt/d	Thousand Dekatherms Per Day
MLV	Mainline Valve
MP	Milepost
M&R	Meter and Regulating
NSF/ANSI	NSF/American National Standards Institute
NTU	Nephelometric Turbidity Units
OD	Outside Diameter
Project	Regional Energy Access Expansion
Protocol	Drilling Fluids Management Protocol
ROW	Right-of-Way
SDS	Safety Data Sheets
State Agency	State Agency
Transco	Transcontinental Gas Pipe Line Company, LLC
Williams	The Williams Companies, Inc.

1 INTRODUCTION

1.1 PROJECT BACKGROUND

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.

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[1] 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:

- 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

[1] A pooling point defines the aggregation of gas from multiple physical and/or virtual receipt points to a single physical or virtual point, and the disaggregation of gas from a single physical or virtual point to multiple physical and/or virtual delivery points.

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;

- Uprate 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;
- 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.

Transco is proposing to use the Direct Pipe® (DP) construction method to cross the Susquehanna River as part of the Project. As part of the FERC's *Guidance for Horizontal Directional Drill Monitoring, Inadvertent Return Response, and Contingency Plans,* FERC defines an HDD as any type of trenchless construction method, including horizontal directional drilling and proprietary technologies, that utilizes drilling fluids under pressure. Although Transco is not proposing an HDD, Direct Pipe® technology would fit under this definition because it is a trenchless method that utilizes drilling fluid under pressure.

Transco has conducted geotechnical studies at the proposed DP crossing to evaluate the risks inherent in using the DP crossing method and has determined that the proposed crossing is feasible with a high likelihood of success. Transco has developed this DP Monitoring, Inadvertent Return Response, and Contingency Plan (Plan) to establish procedures for monitoring and managing risks throughout the installation, and to allow for a quick and organized response in the event of an inadvertent release during the DP process. The specific objectives of this Plan include:

- Defining the DP process and how to identify when it has failed and should be abandoned;
- Identifying the procedures that will be followed if a DP must be abandoned;
- Minimizing the potential for an inadvertent release of drilling fluids;
- Identifying the timely detection of an inadvertent release of drilling fluids;
- Providing for environmental protection of waterbodies and associated habitats, in the event an inadvertent release occurs;
- Establishing response procedures to address containment and clean-up of an inadvertent release of fluids; and
- Providing for notifying the appropriate parties and regulatory agencies in the event of an inadvertent release of fluids.

Transco will ensure that the DP Contractor(s) (Contractor) complies with the methods outlined herein during construction, restoration, and operation of the Project. Contractor

personnel will be trained on the requirements of this Plan during mandatory pre-construction environmental training. Compliance will be documented in the field by Environmental Inspectors (EI) in weekly construction inspection reports, which will be submitted to FERC for review and comment. This Plan is subject to revision based on new data or on agency recommendations.

Preparing for a successful DP crossing, one that minimizes impacts to sensitive resources and the surrounding communities, means that the Project team has:

- Identified the appropriate resources to oversee the installation and provided clear direction on roles and responsibilities.
- Trained its personnel on how to properly monitor conditions of the installation so that they may recognize both normal and abnormal operating conditions.
- Trained its employees on how to respond to abnormal operating conditions, to take corrective or mitigating actions before a warning sign escalates into something more concerning.
- Trained its employees on how to respond to an inadvertent return, so they may understand direct actions that need to be taken in the field to mitigate the impact, and so they may know how to report such an incident.

1.2 DIRECT PIPE® PROCESS

The DP installation method is a single-pass trenchless pipe installation method that is a registered trademark of the trenchless technology system developed by Herrenknecht AG, Germany. It combines the benefits of microtunneling and HDD techniques. Relative to a traditional HDD installation, this technology minimizes the likelihood of hydraulic fracture and inadvertent release of drilling fluids because lower annular fluid pressures are required. This method uses simultaneous borehole excavation and pipe installation in a single pass process which reduces the risk of hole collapse.

DP is a remotely-controlled, guided, steerable, pipe installation process that provides continuous support to the excavation face. The process involves pushing pipe (casing or product pipe), behind a micro-tunneling boring machine (MTBM) from a pipe thruster positioned in a launch pit. A key element of DP is the ability to continuously support and control the tunnel face by applying mechanical force from the pipe thruster as well as slurry fluid pressure to the tunnel face that balances soil and groundwater pressures. A cutter wheel at the leading end of the MTBM excavates material as a pressurized slurry system removes the cuttings through a dedicated discharge line located inside of the pipe. Since the slurry returns through dedicated discharge

lines inside the pipe, the risk of inadvertent returns is reduced. The DP process does not require routine personnel entry into the tunnel; however, entry may be required for survey verification or repair/maintenance activities.

1.3 DIRECT PIPE® CROSSING INFORMATION

The following tables summarize basic information for the DP location associated with the project. Please note there is not a Wetland Crossings table as there are no wetlands being crossed with the DP.

- **Table 1:** Provides information pertaining to the proposed **DP crossing** location including the crossing name, pipeline diameter, location (DP launching and receiving milepost), total length; and subsurface material.
- **Table 2:** Provides information pertaining to the proposed **waterbody crossings** including a unique feature identification, stream flow rate, DP launching and receiving stationing, elevation difference, depth of cover, and horizontal setback from the DP launching and receiving exit locations.
- **Table 3:** As recommended by the FERC Guidance, this table contains an abbreviated list of **potential unique conditions** or features that may increase the risk of DP failure or potential resource impacts. Subsurface mines were the only example of unique conditions that was encountered at this DP site. The subsurface mines were anticipated to cause significant problems for the HDD construction method, but this DP has been designed with safe separation above any potential mining activity.

Table 1
Proposed DP Locations

Crossing Name	Pipeline Diameter (inches)	Approx. Entry Milepost	Approx. Exit Milepost	Total Length (feet)	Subsurface Material
Project Component Name					
Susquehanna River	30	13.72	13.47	1,297	Clay, Sand, Silt, and Gravel

Table 2
DP Waterbody Crossings

Waterbody ID (Name)	Estimated Range of Stream Flow During Crossing (cfs)	Entry Station[1]	Exit Station[a]	Entry/Exit Elevation Difference (feet)	Depth of Cover[b] (feet)	Horizontal Setback Distance (Entry/Exit, feet) [c]
DP ID						
Susquehanna River	855 to 8,846	0+00	12+97	6.7 feet	~25 – 45 feet	Entry - ~270 feet Exit - ~273 feet

[a] Stationing as shown on Direct Pipe® Design Drawing. E&S stationing has not yet been developed.
[b] Vertical separation between the bed of the waterbody and the DP profile
[c] Distance from the closest edge of the sensitive resource being crossed to the DP entry and exit locations

Table 3
Unique Conditions or Features within Proximity to DP

Unique Condition	Description and Mitigation
DP ID: Susquehanna River	
Subsurface mines	Subsurface coal mining was observed in the desktop geology review, with coal seams identified in some of the geotechnical borings completed. These mines were considered problematic for the HDD method at this site. This DP has been designed within the alluvial soils overlying the bedrock with safe clearance above the potential coal seams/voids.

2 PERSONNEL AND RESPONSIBILITIES

2.1 GENERAL / SHARED RESPONSIBILITIES

Transco and the Contractor will employ qualified personnel prior to the start of DP operations that have responsibilities in their field. The project team have overall responsibility for implementing this Plan and ensuring compliance. Additionally, compliance with this Plan and all Project permits as noted in Resource Report 1, is the responsibility of all personnel on this Project, including the Contractor.

Shared responsibilities include:

- Verify that a copy of this Plan is available on-site and accessible to all construction personnel.
- Verify that all workers are properly trained and familiar with all aspects of the DP activity and with the implementation of the Plan, prior to and during tunneling operations.
- Verify that all DP equipment is in working order, including annular pressure monitoring equipment.
- Monitoring the DP alignment for IRs and other signs of environmental impact.
- Maintain constant communication with project team leadership and Contractor personnel if an IR is suspected.
- In the event of an IR, coordinate corrective actions and the cleanup response and notify regulatory agencies timely. Verify all waste materials are properly containerized, labelled, and removed from the site to an approved facility.
- Confirm that drilling mud/spoils/cuttings associated with the crossings are managed and disposed of at an approved facility if contaminated soil is encountered.
- Recognize that all personnel on site have the authority to stop work. Stop work may be utilized as response protocols require, or it may be utilized in the event this Plan is not being followed.

2.2 SPECIFIC OVERALL ROLES AND RESPONSIBILITIES

The Contractor will be responsible for conducting all DP operations in accordance with all Project permits, the engineering/geotechnical design, best management practices, industry standards, and this plan. Transco's project team will monitor and record DP operations and

ensure compliance with all applicable permit conditions. Specific overall roles and responsibilities for personnel are:

Project Manager (PM) – The Project Manager is the leader of the project team and has the accountability for all aspects of the Project.

Trenchless Engineer – Transco will designate an engineer responsible for the trenchless design and engineering review of the DP throughout the entire project life cycle.

Construction Manager (CM) – Individual who has direct oversight over the inspection workforce, contractor, and all construction activities associated with the Project.

Spread Chief Inspector (CI) – Transco will designate a CI for the Regional Energy Lateral project scope item. The CI will have overall authority for construction activities that occur on the Regional Energy Lateral, including the DP installation.

Trenchless Inspector – The Trenchless Inspector's primary responsibility is to observe and document all DP site activities occurring during each shift. The Trenchless Inspector will be familiar with this Plan, the Contractor's drill plan, the Project specifications, and all permit conditions. The Trenchless Inspector shall ensure the Contractor follows all items as described in this plan. Should the Trenchless Inspector observe a deviation or out of compliance condition, the CI, CM, and EI shall be notified immediately.

Environmental Inspector (EI) – One EI will be assigned during active construction. The EI will have peer status with all other activity inspectors and will report directly to the Transco CI who has overall authority on the Construction Right-of-Way (ROW). Some larger projects will have a Lead EI. In this case, the Lead EI will report directly to the CI. The EI will have the authority to stop activities that violate the environmental conditions of the FERC Certificate (as applicable), other federal and state permits, or landowner requirements and to order corrective action.

Environmental Compliance Manager (ECM) – The ECM works closely with the Environmental Project Lead to provide guidance to and ensure consistency from the EIs. The ECM also coordinates with EIs on the documentation of field conditions or concerns and pushes that information to the Environmental Project Lead.

Environmental Project Lead – The Environmental Project Lead is the project lead for permitting and environmental compliance efforts. This person is typically the point of contact between the Company and regulatory agencies.

General Contractor Superintendent – The General Contractor Superintendent will be the senior field representative of the Contractor. This Superintendent has responsibility for the entire construction spread, including the DP installation.

DP Superintendent – The DP Superintendent will be the senior on-site representative of the Contractor and will have the overall responsibility for implementing this Plan on behalf of the Contractor. The DP Superintendent will report directly to the General Contractor Superintendent. The DP Superintendent will be familiar with all aspects of the DP activities, the contents of the Plan, and the conditions of approval under which the activity is permitted to take place. The DP Superintendent will make a copy of this Plan available at the drill site and will distribute it to the appropriate construction personnel. The DP Superintendent will ensure that workers are properly trained and familiar with the necessary procedures for response to an IR.

DP Operator – The DP Operator will be responsible for operating the DP equipment and pumps, monitoring circulation back to the DP launching location and monitoring annular pressures during tunneling. In the event of loss of circulation or abnormal annular pressure readings, the DP Operator must communicate the event to the DP Foreman, Superintendent, and Contractor field crews, as well as the onsite Trenchless Inspector and EI. The DP Operator is responsible for stoppage or changes to the DP program in the event of observed or anticipated IR.

DP Contractor Personnel – During DP installation, field crews will be responsible for monitoring the DP alignment along with the Transco field representatives. Field crews, in coordination with the EI, will be responsible for timely notifications and responses to observed releases in accordance with this Plan.

3 PRE-CONSTRUCTION ACTIVITIES

3.1 TRAINING

Prior to DP site set-up, and consistent with the FERC guidelines, site-specific implementation, environmental, and safety training will be conducted for all Transco and Contractor personnel. This training will address all applicable environmental impact avoidance and minimization measures that will be implemented during tunneling. Each person involved in DP operations will be familiar with the locations of IR containment equipment and materials, and the specific procedures for handling IRs. Training will be conducted for any new personnel added to the Project after DP activities have commenced. Documentation of those who received training will be maintained as described in Section 4. The site-specific training will include, but not be limited to:

- safety and environmental training specific to the DP installation;
- site-specific geotechnical and design conditions;
- the locations of sensitive environmental resources;
- the location, operation, inventory, and condition of IR response equipment and materials;
- provisions of this Plan and site-specific permit and monitoring requirements;
- site-specific IR monitoring requirements;
- DP procedures for IR prevention;
- protocols for detecting, communicating, and reporting IRs or related conditions; and
- IR response procedures for mitigating impacts and recovery operations.

3.2 SITE INSPECTION

Transco will inspect each DP path prior to the start of DP activities. The DP path as it crosses underneath the river will be monitored from the river banks. If site-specific conditions impede the ability to conduct visual inspection along the DP alignment, modifications to the proposed inspection routine will be developed and communicated to the Contractor, project team and EI. If previously unidentified conditions or features are discovered that necessitate a modification to the approved Plan, Transco will coordinate with FERC to obtain the necessary variances prior to implementation.

3.3 LANDOWNER NOTIFICATION PROCEDURES

Transco has developed communication procedures to ensure proper coordination with affected landowners and abutters. Day to day communication management will be conducted by the Land Department's Right of Way Agents. The Land Department will work with the project team to ensure accurate up-to-date information is available for distribution to the appropriate recipients. The specific landowner notification procedures include, but are not limited to:

- Transco will notify affected landowners in writing prior to the start of DP activities. This notice will include:
  - A description of the proposed work, including any nighttime work needed;
  - The name and phone number of Transco Representatives that the landowner can contact if there are any questions or concerns regarding the proposed work;
  - A toll-free phone number to contact Transco that can be used as an alternative to contacting the Right of Way Agents; and
  - A toll-free phone number to contact FERC if the landowner believes that Transco has not resolved their concerns.
- In the event of IR during the DP activities – Transco will reach out to affected landowners to discuss the IR event and any necessary remediation activities on their property.
- Transco will provide appropriate updates to landowners throughout the DP activities, and will provide notifications upon DP completion.

3.4 AGENCY NOTIFICATION PROCEDURES

Transco will notify FERC and applicable state agencies of the proposed construction start date prior to commencing DP operations. All correspondence relating to the commencement of drilling operations, during installation procedures, and completion of activity will be retained for Project record and will be provided to the project team.

Additionally, notifications related to IR events will be made as detailed in Section 7 herein.

4 DOCUMENTATION

A copy of this Plan will be available and accessible to all construction personnel. Documentation detailed in Table 4 below will be maintained by parties noted in the right-most column. If requested, this information will be provided to FERC and other federal and state agencies with applicable regulatory jurisdiction.

Table 4
Documentation Maintained

Procedure	Documentation	Personnel Responsible for Maintaining Documentation
Employee Training	• All personnel on this Project will be trained for environmental compliance, including IR management. • Record of employee training detailing when training was conducted, material covered, and employees in attendance.	• ECM • CM
DP Visual and Pedestrian Monitoring	• Environmental and Construction Inspectors will document within daily reports IR monitoring and the finding of these inspections. • An IR Tracking Log will be maintained.	• DP Contractor • EI • Trenchless Inspector
DP Instrument Logs	• Tunneling progression • MTBM performance information and thrusting loads • Slurry fluid discharge rate, pressure, and volume. • Lubrication fluid volumes. • Down-hole annular pressure monitoring. • Navigation/guidance system survey information	• DP Contractor
Slurry Fluid and Lubrication Fluid Composition	• Use of drilling fluid additives, including the quantity, timing, and location of use. • Monitoring logs of slurry fluid and lubrication fluid physical properties throughout tunneling activities. • Laboratory results of sampled drilling fluid/source water for any inorganic and organic environmental contaminants.	• DP Contractor
Public and Agency Inquiries/Comments	• A record of communication with the public and agencies that has occurred during DP activities. • This record will include inquiries and comments, as well as response actions.	• ECM • Land Representatives • CM (support as necessary)

A summary of DP-specific information will be included in the applicable construction status reports provided to FERC. This information may include overall status, a summary of visual and

pedestrian monitoring activities, issues encountered (including any IRs) and response actions, and complaints and how they were addressed.

4.1 PROJECT ORGANIZATIONAL CHARTS

Project specific organizational charts that include contact information are found in Appendix A.

5 DRILLING FLUID MANAGEMENT

The DP process utilizes drilling fluids to facilitate the associated operations. There are two separate drilling fluid systems in this operation - the engineered drilling fluid (or slurry fluid) and the lubrication fluid. Both the slurry fluid and the lubrication fluid can be comprised of water and bentonite clay. Bentonite clay is an absorbent aluminum phyllosilicate clay consisting mostly of sodium montmorillonite. It is a naturally occurring clay, extremely hydrophilic, and expands when wet absorbing several times its dry mass in water. Exact mixtures of fluids and additives for the slurry fluid and the lubrication fluid will be included within the Drilling Fluids Management Plan which will be developed by the Contractor and their Mud Engineer and evaluated by Transco. This section describes how the drilling fluid will be managed throughout the installation process including proper disposal techniques of excess drilling fluids and associated materials.

5.1 GENERAL

A Drilling Fluids Management Protocol (Protocol) will be developed by the Project team or Contractor well ahead of DP activities. The Plan shall include and consider the following criteria:

- an assessment of federal and state regulations that could apply to the generation and management of the DP fluids;
- identification of any additives that would be mixed with the drilling fluid (besides bentonite and water). Include Safety Data Sheets for these additives as an attachment;
- only pre-approved, non-petrochemical-based, non-hazardous additives that comply with permit requirements and environmental regulations should be utilized;
- proposed additives shall conform with NSF International/American National Standards Institute (NSF/ANSI) 60 Drinking Water Treatment Chemicals – Health Effects compliant;
- if drilling fluid is sourced from an off-site location (transported from another drill site) or if the water supply is a non-municipal source, the drilling fluid/water source should be tested for environmental contaminants prior to use, and documentation of consultation with local and state agencies regarding the results of such tests be provided. For this crossing, Transco plans to withdraw water from the Susquehanna River, and Transco is consulting with SRBC to acquire the necessary permits to do so;
- identify whether or not potential pollutants reside in the subsurface zone through

which the DP will pass (e.g., does soil and/or groundwater contamination exist). Based on Transco's site evaluation and subsurface explorations, there is no contamination expected;

- a process and description for how the DP fluids will be collected and stored (e.g., will it be placed into portable tanks, roll-off containers, a constructed berm/pit with liner, tankers, etc.). This will vary significantly based on volume, location, environmental conditions, space, etc.;
- a sampling plan for conducting any needed analytical for waste characterization or pre-construction sampling (ahead of excavation);
- a plan for any treatment or solidification of the slurry prior to disposal, if warranted;
- a plan for management and disposal of inadvertent returns, spills, or leaks; and
- an assessment and determination of the facility(ies) at which the material will ultimately be managed for disposal.

5.2 COMPOSITION

The composition of drillings fluids and its engineering properties will be formulated to be suitable for the given subsurface conditions encountered. There are two types of drilling fluid used during the DP process. The lubrication fluid and the engineered drilling fluid (or slurry fluid). They are described below.

Lubrication Fluid

- Stabilize the borehole against collapse, and counterbalance the earth and groundwater pressure along the length of the drive;
- Create a filter cake to prevent fluid loss to the formation;
- Reduce the friction between the pipe and the tunnel.

Slurry Fluid

- Support the excavation face;
- Lubricate, cool, and clean the cutter head;
- Mix with and transport spoils through the slurry return line to the separation plant at the ground surface for recycling or disposal.

5.3 ADDITIVES

A list of proposed drilling fluid additives will be provided in Appendix C with the Implementation Plan, after a contractor has been selected. These additives will include

information that describe Human Health Standards and are in compliance with NSF/ANSI Standard 60 (Drinking Water Treatment Chemicals – Health Effects). Transco will work with FERC and the applicable state agencies, should additional drilling fluid products be proposed.

5.4 HYDRAULIC FRACTURE ANALYSIS AND GEOTECHNICAL CONDITIONS

The hydraulic feature analyses are discussed in greater detail within the DP Design Report provided in Appendix B.

5.5 ANALYTICAL DATA

Instrument logs will be monitored to ensure function and progression with tunneling progression, drilling fluid discharge rate and pressure, and downhole annular pressure monitoring.

5.6 SAFETY DATA SHEETS (SDS)

A list of proposed drilling fluids SDS will be provided in Appendix C closer to construction when a contractor has been selected.

5.7 DISPOSAL

Drilling fluid and cuttings disposal will comply with the stipulations outlined in the Drilling Fluids Management Plan.

5.8 TRACKING LOGS

Daily Activity – Construction Inspectors will document daily the condition of the worksite which will include a visual check of all equipment that is a part of the drilling fluid management effort. This will be recorded on daily reports.

Disposal – The contractor will complete disposal in accordance with the Drilling Fluids Management Plan. All documentation relating to disposal will be kept on-site, tallied for accuracy, and later stored within the Plan, specifically Appendix D for Project record.

6 DIRECT PIPE® OPERATIONAL CONDITIONS AND RESPONSE ACTIONS

The DP construction method was chosen for this crossing because of the reduced risk of inadvertent returns. To further minimize the potential environmental impact associated with a loss or release of DP slurry or lubrication fluids, Transco and its Contractor will employ best efforts to maintain full circulation of fluids through the slurry lines and recycle the fluid to the extent practical. Transco and its Contractor will utilize real-time annular pressure monitoring with the use of a down-hole annular pressure tool throughout tunneling operations, to help prevent hydraulic fracture and IR. The annular pressure readings will be recorded and evaluated relative to calculated and expected annular drilling fluid pressure ranges. The Contractor will also measure slurry fluid circulation rates and pressures, will closely monitor the DP slurry returns to ensure that fluids are circulating to the return pits. Additionally, the lubrication fluid volume that is introduced at the launch seal and from the MTBM will be monitored relative to the tunneling rate.

Monitoring of the DP alignment for an IR is an integral component of this plan and the success of any DP. Monitoring frequency will vary depending upon a multitude of factors and characterized by the operating conditions listed below. For the purposes of this plan and the DP operations there are three operating conditions:

- Normal Tunneling (Full Slurry Fluid Circulation);
- Loss of Slurry Fluid Circulation or lubrication fluid; and
- Inadvertent Returns

The following sections describe drilling and monitoring procedures for each operational condition.

6.1 CONDITION 1: NORMAL TUNNELING (FULL DRILLING FLUID CIRCULATION)

When DP operations are in progress and full slurry fluid circulation is being maintained within the DP slurry lines with no loss of lubrication fluid, the following monitoring protocol shall be implemented:

- The presence of slurry fluid returns within the DP slurry lines will be periodically monitored and documented.
- Land-based areas along the alignment will be periodically walked and visually inspected for signs of inadvertent fluid returns as well as surface heaving and settlement.
- The river will be visually inspected from the banks for a visible fluid plume.

- Slurry and lubrication fluid products present at the jobsite shall be documented.
- Slurry and lubrication fluid properties will be tested, monitored, and recorded during drilling operations.
- Slurry and lubrication fluid pump rates and pump durations will be recorded.
- Monitor lubrication fluid tank levels.
- During tunneling operations, downhole annular pressures will be recorded and evaluated relative to calculated and anticipated annular drilling fluid pressure range.
- If the downhole annular pressure begins to deviate outside of the calculated and anticipated annular drilling fluid pressure range, the Contractor will evaluate tunneling conditions and take necessary and reasonable steps to bring the annular drilling fluid pressure back within the expected range.

6.2 CONDITION 2: LOSS OF SLURRY FLUID CIRCULATION OR LOSS OF LUBRICATION FLUID

When DP operations are in progress, some minor losses of fluid can be expected as part of the process during normal tunneling operations. When fluid circulation is lost or significantly diminished ("loss of circulation"), or if lubrication fluid volume is lost, all protocol identified in Condition 1 above will be followed, and additionally, the following monitoring protocol will be implemented:

- The EI will be notified of lost or significantly diminished slurry fluid returns or loss in lubrication fluid volume.
- The EI, Trenchless Inspector, and Contractor will then immediately perform a walkthrough inspection along the drill alignment looking for inadvertent returns. Visual inspection frequency will be increased along the alignment as well as other areas of high risk for inadvertent returns. Inspections will include attention to sensitive environmental resources.
- Pump rates and pump durations will be recorded to estimate the lost circulation volumes.
- The Contractor will take reasonable steps to restore circulation, and the Trenchless Inspector will document steps. The slurry and/or lubrication fluid properties will be evaluated and modified in consultation with the mud engineer/technician as it relates to the subsurface formation being encountered.

- If fluid loss is stopped, the EI, Trenchless Inspector, and Contractor will resume the monitoring protocol associated with Condition 1.
- If fluid loss continues, the EI will increase the frequency of visual inspection along the drilled path alignment as appropriate. Pump rates and pump durations will be recorded along with lubrication tank losses to estimate the lost fluid volumes. Site-specific parameters will be evaluated and additional reasonable steps to restore circulation will be taken.

6.3 CONDITION 3: INADVERTENT RETURNS

During DP activities it is typical for drilling fluid to surface near the upland launching and receiving points, where there is less overburden to counteract the fluid pressures. Such returns are both normal and anticipated and are therefore not considered “inadvertent returns”. The DP entry and exit locations and the workspace have been designed to minimize the impact of such returns. At these locations, containment measures will be in place to prevent migration outside of the workspace and to protect adjacent resources.

If an inadvertent return of fluids is detected, Transco and the DP Contractor will respond as detailed in Section 7 below.

7 RESPONDING TO INADVERTENT RETURNS

7.1 MATERIALS AND EQUIPMENT

DP personnel will be required to have containment materials readily accessible and on site throughout the DP process. Since drilling fluid seepage can be easily controlled on land where it has the greatest potential of occurring, containment items will be stored within the drilling sites. The Contractor will also have heavy equipment such as tracked excavators, a rubber-tired excavator, or a skid steer that may be utilized to control and clean up drilling fluid seepage.

The following materials and equipment will be maintained at the DP site in sufficient quantities to contain any inadvertent releases of drilling fluid:

- Straw or hay bales;
- Wood stakes, t-post, or rebar to secure bales;
- Buckets, wheel barrows, and/or 55-gallon drums;
- Plastic sheeting or geotextile fabric;
- Silt fence;
- Sand bags;
- Sledge hammers;
- Shovels and push brooms;
- Storage tanks; and
- Leak-free hose(s) and portable pump(s).

The following materials and equipment will be maintained at a nearby location in sufficient quantities to contain any inadvertent releases of drilling fluid:

- Vacuum truck(s);
- Light tower(s) with appropriate secondary containments as applicable;
- Rubber-Tired/Tracked excavator or skid steer;
- A boat with appropriate personal safety equipment; and
- Floating turbidity curtain for use in large waterbodies.

7.2 RESPONSE PROTOCOL

Although the DP construction method has a low risk of inadvertent returns at the crossing location, Transco is prepared for the risk, and the actions taken to respond to an IR will be dependent on but not limited to the location of the IR, the site-specific geologic conditions, and

the volume of drilling fluid lost. The sections below describe the situational conditions that will regulate how cleanup or remedial activities should be executed. Note: Coordination with the Transco Land Department will be required for each instance of IR for notification purposes.

7.3 UPLAND

The limits of disturbance at the DP entry and exit locations have been designed to account for anticipated returns. If drilling fluid is identified in an upland area within the certificated workspace for the Project, then the following protocol will be followed:

- Notification will be made to the Trenchless Inspector, EI and ECM.
- Containment and cleanup will be executed by the Contractor who will work to ensure appropriate actions are taken to reduce, eliminate, or control the return. This work will be overseen by the Trenchless Inspector and the EI.
- Work stoppage will be determined by the project team through evaluation of the event. Items to consider include but are not limited to:
    - potential impacts to public health and safety;
    - potential impacts to sensitive resources; and
    - drilling complications resulting from the IR.
- If work stoppage is deemed necessary, Transco will proceed as detailed in Section 7.2.2 below.
- Drilling fluid may be recovered, recycled, and reused to the best extent practicable. All drilling fluid that cannot be reused will be disposed of in accordance with Section 6.0 Drilling Fluid Management.
- Transco will consult with applicable agencies and the landowner to determine if any final remediation or cleanup will be necessary.
- Documentation pertaining to the release will be kept in accordance with Section 5.0. Additional information including status updates will be provided by the project team, as necessary.

7.4 IN WETLANDS, WATERBODIES, OR OTHER SENSITIVE RESOURCES

If an IR is identified in a wetland, waterbody, or otherwise affects a sensitive resource, the following protocol will be followed:

- Notification will be made to the Trenchless Inspector, EI, Spread CI and ECM.
- DP operations will be shut down and the Trenchless Inspector and EI will:

- Oversee containment and cleanup efforts conducted by the Contractor.
- Assess possible impacts to public health and safety.
- Assess impacts to sensitive resources.
- Quantify the IR volumes.
- Consult with the contractor on conditions contributing to the IR.
- Consult with the contractor on drilling complications resulting from the IR.
- Consult with the contractor on corrective actions to limit the likelihood of a continued IR after a restart.

- The ECM or Environmental Project Lead will make notifications to the applicable agencies and relay details of the IR as well as containment measures and corrective actions.
- The IR area will continue to be monitored during the daily inspection performed by the Trenchless Inspector or EI.
- DP restart conditions must include but are not limited to:
  - The IR has been contained to the satisfaction of the EI and TI;
  - The ECM or Environmental Project Lead Prior has made notification to applicable agencies;
  - Implementation of corrective actions as discussed with applicable agencies.
- Upon completion of the tunneling operations, Transco will consult with applicable agencies to determine if any final remediation or cleanup will be necessary.
- Documentation pertaining to the release will be executed in accordance with Section 5.0. Additional information including status updates will be provided by the project team, as necessary.

7.5 OUTSIDE OF CERTIFICATED WORKSPACES

If there is an IR in an outside of certificated workspaces, all protocol identified in Section 7.2.1 or 7.2.2 above will be followed, as applicable to affected resources. Additionally, Transco will work to acquire access to areas outside of the certificated workspace as follows:

- A Transco land agent will consult with the landowner to gain access to the affected area for containment and cleanup efforts.
- Transco's Environmental Project Lead or ECM will seek approvals from agencies for additional workspace and will and submit a variance to FERC requesting workspace to allow for remediation of the IR.

- If fluid losses have an immediate threat to public health and safety or sensitive resources, and if Transco has received permission from the landowner to access off ROW areas, Transco will begin containment and cleanup efforts immediately to limit impacts while agency approvals may be pending.
- Timely receipt of landowner approval and variances will be critical to the success of containment efforts.

7.6 POTABLE WATER SUPPLY

Transco has not identified any wells or public water supplies within 1,000 ft of the proposed DP crossing, and therefore no impacts are expected. However, in the unlikely event that DP installation temporarily affects the water quality or yield of a private or public well/spring, Transco will provide alternative water sources or other compensation to the well owner(s). In the unlikely event that a well/spring is permanently affected due to construction activities, Transco will repair, replace, or provide alternative sources of potable water.

8 RESTORATION

Areas affected by IRs will be restored to pre-existing conditions and contours to the extent practicable in accordance with the FERC Plan and Procedures and applicable permits. Upland areas will be restored through typical right-of-way restoration procedures, such as grading, seeding, and temporary and permanent erosion control devices, as necessary. Similarly, wetlands and waterbodies will be restored to the extent practicable.

Transco will continue to monitor for post-construction restoration issues, track issues identified, and correct these issues during this post-construction phase of the Project.

9 CONTINGENCY PLANNING

9.1 DIRECT PIPE® COMPONENTS AND LIMITATIONS

The DP method is one pass trenchless pipe installation method consisting of two integral parts:

- Pipe Thruster
- Microtunneling Boring Machine (MTBM)

This section briefly describes the integral parts of the DP process and describes some potential causes of failure associated with the method.

9.1.1 Pipe Thruster

The pipe thruster is the structural component housing hydraulic cylinders used to grip and push the MTBM machine, product pipe or casing forward. The pipe thruster serves to distribute jacking loads to the installed pipe and reaction loads to the pipe thruster foundation system. The Pipe Thruster Structural foundation transfers and distributes the thrust loads from the Pipe Thruster to the surrounding soil and/or rock. The foundation may be incorporated into the launching pit design. The pipe thruster foundation shall be designed to withstand the anticipated jacking force and safely transmit the applied jacking forces to the soil and rock in the vicinity of the entry pit without excessive deflection or displacement.

9.1.2 Microtunneling Boring Machine (MTBM)

Remote-controlled, guided slurry shield that provides continuous support to the excavation face. The MTBM is operated from a control module located on the ground surface and the excavation process is achieved by a rotating cutter wheel. Excavated tunnel cuttings enter a slurry/crushing chamber where they are mixed with fluid (typically water mixed with bentonite or other additives) to form a slurry. Pumps transport the slurry to the surface where a separation plant removes the solids from the slurry. The recycled slurry is then returned to the tunnel face in a closed loop system of pumps and hoses.

9.1.3 Direct Pipe® Limitations and Potential Causes of Failure

A mechanical failure occurs if there is a major mechanical breakdown of one or more pieces of equipment involved in the DP operation. If the tunneling process remains idle for an extended time, the material in the hole can seize the pipe string in place and prevent further movement such that the pipe may not continue to move in either direction. If this occurs, the

contractor will be required to change the alignment of the crossing to miss the abandoned hole and start the tunneling process from the beginning.

DP installation also may be considered a failure if after either repairing or replacing the broken equipment or vital piece of ancillary equipment, the pipeline cannot be thrusted or pulled.

Another potential failure is the buckling of the pipe during installation. This could happen if the thrust force applied to the pipe during tunneling operations yields the pipe. If this happens, an attempt will be made to extract the pipe. If that is not possible, the site will be evaluated to see if a rescue shaft would be possible to retrieve the MTBM.

Encountering of subsurface obstructions or voids is another potential cause of failure. If a large boulder or other subsurface obstruction is encountered, it could impede the progress of the DP leading to a potential failure. If the obstruction is shallow enough and beneath an accessible location, it may be possible to excavate the obstruction. But if it is inaccessible, the DP may need to be redesigned to avoid the obstruction. If a void is encountered, depending on the size, the MTBM could lose the ability to steer and if damaged, the pipe behind it could become damaged.

9.2 ALTERNATE CROSSING MEASURES

During the design phase of the Project, Transco conducted geotechnical studies at the proposed DP crossing to design a crossing that minimized risk exposure. Should the DP technology fail during construction as discussed in Section 9.1, Transco would consider shifting the alignment within the proposed workspace and attempt to re-perform the DP crossing. If alignment shifts do not yield a successful DP, an evaluation of the failed attempt will be performed to determine the appropriate contingency methods to complete the crossing.

Transco will contact the applicable permitting agencies to notify them of the status of the project and provide details of the evaluation of the failure that has occurred. Transco will then consult with the agency regarding the appropriate contingency method to complete the crossing, and obtain any permits required.

9.3 ABANDONMENT

If for any reason a DP hole must be abandoned, the Contractor will fill the entirety of the abandoned hole with a cement grout to completely seal it off. The top 5 feet of the abandoned hole will be filled with compacted soil to allow vegetation to reestablish.

The grout mixture used to abandon a borehole will consist of either a cement grout or cement/bentonite grout mixture that can be pumped downhole through the slurry lines used to

tunnel the hole. The grout mix (e.g., water/cement/bentonite ratios) will be designed generally for each DP location based on the geologic formation(s) along the abandoned portion of the hole. Additional modifiers, such as those used in structural concrete, may be used to modify the flowability and/or set time of the grout. To grout the abandoned hole, the Contractor will extract all tooling (i.e., MTBM, product/casing pipe) from the hole, while pumping the grout mixture as the MTBM is extracted from the hole. The rate at which the MTBM is extracted during grouting operations will be regulated to match the rate of grout placement.

10 REFERENCES

Federal Energy Regulatory Commission (FERC). 2019. Guidance for Horizontal Directional Drill Monitoring, Inadvertent Return Response, and Contingency Plans. October 2019. Available at: https://www.ferc.gov/natural-gas/environmental-overview/guidance-horizontal-directional-drill-monitoring-inadvertent-return-response-and-contingency-plans. Accessed October 2020.

Transcontinental Gas Pipe Line Company, LLC

Direct Pipe® Monitoring,

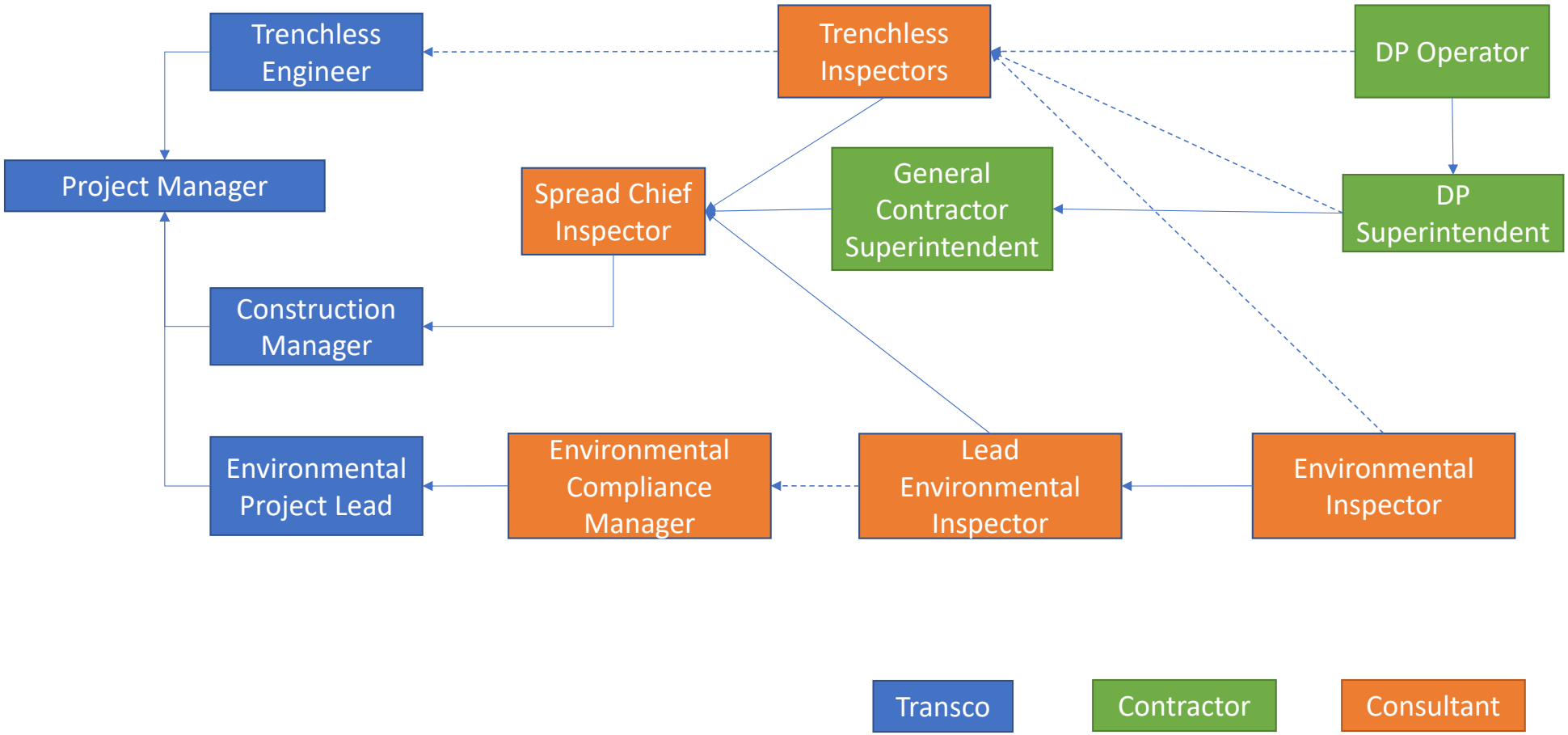
Inadvertent Return Response, and Contingency Plan

Appendix A Direct Pipe® Organizational Chart

Regional Energy Access Expansion

March 2021

Regional Energy Access Expansion
Direct Pipe Oversight Team



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Direct Pipe® Monitoring,

Inadvertent Return Response, and Contingency Plan

Appendix B Direct Pipe® Design Reports

Regional Energy Access Expansion

March 2021

The design reports have been redacted from the ESCGP-3 and will be included with the Joint Permit Application for the Regional Energy Lateral.

Transcontinental Gas Pipe Line Company, LLC

Direct Pipe® Monitoring,

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Appendix C Drilling Fluids List and SDS

Regional Energy Access Expansion

March 2021

The drilling fluids list and safety data sheets will be included with the plan once a contractor is selected.

Transcontinental Gas Pipe Line Company, LLC

Direct Pipe® Monitoring,

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Appendix D Disposal Tracking Log

Regional Energy Access Expansion

March 2021

The Disposal Tracking Log will be
managed and updated during construction.