U.S. DEPARTMENT OF TRANSPORTATION

PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION

FINAL ENVIRONMENTAL ASSESSMENT and FINDING OF NO SIGNIFICANT IMPACT

Special Permit Information:

Docket Number:	PHMSA-2006-24058
Requested By:	Portland Natural Gas Transmission System
Operator ID#:	31145
Original Issuance Date:	December 17, 2007
Renewal Issuance Date:	May 22, 2023
Code Sections:	49 CFR 192.611(a) and (d) and 192.619(a)

I. Background

The National Environmental Policy Act (NEPA), 42 United States Code (USC) 4321 – 4375 et seq., Council on Environmental Quality Regulations, 40 Code of Federal Regulation (CFR) 1500-1508, and U.S. Department of Transportation (DOT) Order No. 5610.1C, requires the Pipeline and Hazardous Materials Safety Administration (PHMSA) Office of Pipeline Safety (OPS)[1] to analyze a proposed action to determine whether the action would have a significant impact on the human environment. PHMSA analyzes special permit requests for potential risks to public safety and the environment that could result from our decision to grant, grant with additional conditions, or deny the request. As part of this analysis, PHMSA evaluates whether a special permit would impact the likelihood or consequence of a pipeline failure as compared to the operation of the pipeline in full compliance with the Federal pipeline safety regulations.

[1] References to PHMSA in this document means PHMSA OPS.

PHMSA's environmental review associated with the special permit application is limited to impacts that would result from granting or denying the special permit. PHMSA developed this assessment to determine what effects, if any, our decision would have on the environment.

Pursuant to 49 USC 60118(c) and 49 CFR 190.341, PHMSA may only grant special permit requests that are not inconsistent with pipeline safety. PHMSA will impose conditions in the special permit if it is concluded that they are necessary for safety, environmental protection, or are otherwise in the public interest. If PHMSA determines that a special permit would be inconsistent with pipeline safety or is not justified, the application will be denied.

The purpose of this final environmental assessment (FEA) is to comply with the National Environmental Policy Act (NEPA) for the Portland Natural Gas Transmission System (PNGTS)[2] application for a special permit request to grant renewal of special permit PHMSA-2006-24058 waiving compliance with the requirements of 49 CFR 192.611(a) "Change in class location: Confirmation or revision of maximum allowable operating pressure" for approximately 1.454 miles of 24-inch diameter gas transmission pipelines located in Maine (***special permit segments 1 and 2***), and an additional approximately 0.422 miles of 24-inch diameter gas transmission pipeline located in New Hampshire (***special permit segments 3 and 4***). The four (4) ***special permit segments*** are located within an expanded ***special permit inspection area***[3] consisting of approximately 143.84 miles of 24-inch diameter pipeline extending from the U.S./Canada border[4] at survey station (SS) -0+30 to the receiver at SS 7594+67. This FEA and finding of no significant impact (FONSI) are prepared by PHMSA to assess the pipeline special permit request, in accordance with 49 CFR 190.341, and is intended to specifically analyze any environmental impact associated with the waiver of 49 CFR 192.611(a) and (d) and 192.619(a).

II. Introduction

Pursuant to 49 USC 60118(b) and 49 CFR 190.341, PNGTS submitted an application for a special permit to PHMSA on November 30, 2022, requesting that PHMSA grant the renewal of waiving the

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[2] TC Energy owns 61.7 percent of PNGTS. The remaining 38.3% is owned by Northern New England Investment Company. TC Energy operates the PNGTS system.

[3] The ***special permit inspection area*** specified in approved (original) special permit PHMSA-2006-24058 consists of approximately 38.0 miles of pipe, from SS 5590+19 to SS 7594+66. The original ***special permit inspection area*** did not extend from the U.S./Canada border to the receiver.

[4] The launcher for the ***special permit inspection area*** is in Canada.

requirements of 49 CFR 192.611(a) to permit PNGTS to maintain the maximum allowable operating pressure (MAOP) for two (2) ***special permit segments*** located in Cumberland County, Maine and another two (2) ***special permit segments*** located in Coos County, New Hampshire, for which the class location has changed from Class 1 to Class 3 due to population density increase. Without the special permit, 49 CFR 192.611(a) would require PNGTS to replace the four (4) ***special permit segments*** or reduce pipeline MAOP.

PHMSA is granting a special permit to waive certain regulatory requirements where it is consistent with pipeline safety and which is contingent on the performance of additional measures beyond minimum PHMSA pipeline safety regulations, in accordance with 49 CFR 190.341.

III. Regulatory Background

PHMSA regulations at 49 CFR 192.611(a) require that an operator confirm or revise the MAOP of a pipe segment that is in satisfactory condition when the hoop stress of the segment is no longer commensurate with class location, due to population increase. Under 49 CFR 192.611(a), an operator may be required to reduce the operating pressure of a pipe segment, or alternatively, may have to replace the pipe in order to maintain the MAOP. Below is the relevant text of 49 CFR 192.611(a) and (d) and 192.619(a):

49 CFR 192.611 Change in class location: Confirmation or revision of maximum allowable operating pressure.

(a) If the hoop stress corresponding to the established maximum allowable operating pressure of a segment of pipeline is not commensurate with the present class location, and the segment is in satisfactory physical condition, the maximum allowable operating pressure of that segment of pipeline must be confirmed or revised according to one of the following requirements:

(1) If the segment involved has been previously tested in place for a period of not less than 8 hours:

(i) The maximum allowable operating pressure is 0.8 times the test pressure in Class 2 locations, 0.667 times the test pressure in Class 3 locations, or 0.555 times the test pressure in Class 4 locations. The corresponding hoop stress may not exceed 72 percent of the SMYS of the pipe in Class 2 locations, 60 percent of SMYS in Class 3 locations, or 50 percent of SMYS in Class 4 locations.

(ii) The alternative maximum allowable operating pressure is 0.8 times the test pressure in Class 2 locations and 0.667 times the test pressure in Class 3 locations. For pipelines operating at alternative maximum allowable pressure per §192.620, the corresponding hoop stress may not exceed 80 percent of the SMYS of the pipe in Class 2 locations and 67 percent of SMYS in Class 3 locations.

(2) The maximum allowable operating pressure of the segment involved must be reduced so that the corresponding hoop stress is not more than that allowed by this part for new segments of pipelines in the existing class location.

3) The segment involved must be tested in accordance with the applicable requirements of subpart J of this part, and its maximum allowable operating pressure must then be established according to the following criteria:

(i) The maximum allowable operating pressure after the requalification test is 0.8 times the test pressure for Class 2 locations, 0.667 times the test pressure for Class 3 locations, and 0.555 times the test pressure for Class 4 locations.

(ii) The corresponding hoop stress may not exceed 72 percent of the SMYS of the pipe in Class 2 locations, 60 percent of SMYS in Class 3 locations, or 50 percent of SMYS in Class 4 locations.

(iii) For pipeline operating at an alternative maximum allowable operating pressure per §192.620, the alternative maximum allowable operating pressure after the requalification test is 0.8 times the test pressure for Class 2 locations and 0.667 times the test pressure for Class 3 locations. The corresponding hoop stress may not exceed 80 percent of the SMYS of the pipe in Class 2 locations and 67 percent of SMYS in Class 3 locations.

(d) Confirmation or revision of the maximum allowable operating pressure that is required as a result of a study under §192.609 must be completed within 24 months of the change in class location. Pressure reduction under paragraph (a) (1) or (2) of this section within the 24-month period does not preclude establishing a maximum allowable operating pressure under paragraph (a)(3) of this section at a later date.

49 CFR 192.619 What is the maximum allowable operating pressure for steel or plastic pipelines?

(a)(2)(ii) For steel pipe operated at 100 p.s.i. (689 kPa) gage or more, the test pressure is divided by a factor determined in accordance with the following table:

Table 1 to Paragraph (a)(2)(ii)

Class location	Factors, [1] segment - Installed before (Nov. 12, 1970)	Installed after (Nov. 11, 1970) and before July 1, 2020	Installed on or after July 1, 2020	Converted under § 192.14
1	1.1	1.1	1.25	1.25
2	1.25	1.25	1.25	1.25
3	1.4	1.5	1.5	1.5
4	1.4	1.5	1.5	1.5

[1] For offshore pipeline segments installed, uprated or converted after July 31, 1977, that are not located on an offshore platform, the factor is 1.25. For pipeline segments installed, uprated or converted after July 31, 1977, that are located on an offshore platform or on a platform in inland navigable waters, including a pipe riser, the factor is 1.5.

(3) The highest actual operating pressure to which the segment was subjected during the 5 years preceding the applicable date in the second column. This pressure restriction applies unless the segment was tested according to the requirements in paragraph (a)(2) of this section after the applicable date in the third column or the segment was uprated according to the requirements in subpart K of this part:

- Section 192.619(a) requires Class 3 location pipe to be pressure tested to 1.5 times MAOP.

IV. Purpose and Need

PNGTS requested a renewal of existing special permit PHMSA-2006-24058 and the addition of two (2) new ***special permit segments*** as an alternative to replacing approximately 1.876 miles (9,905 feet) of four (4) ***special permit segments*** located in PNGTS's Mainline in the PNGTS system. The special permit will enable PNGTS to avoid the cost of pipe replacement and methane emissions associated with blowdown of the pipeline, along with the interruption of service to PNGTS' customers.

As PHMSA recognized in its June 29, 2004, Criteria for Class Location Change Waivers, implementing additional preventative and mitigative measures enables a pipeline operator to improve its knowledge and understanding of the pipeline's integrity, accelerate the identification and repair of actionable anomalies, and better manage and mitigate threats to the public and environment. Implementing enhanced inspection and assessment practices throughout the ***special permit segments*** and ***special permit inspection area***, in lieu of replacing a small segment of pipe experiencing the class location change, extends pipeline safety benefits to a much greater area along the pipeline. In addition, avoiding pipe excavation and replacement will avoid delivery interruptions and supply shortages, and construction-related environmental disruption, including the release of methane, a known greenhouse gas. All these benefits will be realized under PNGTS' requested special permit renewal.

PNGTS requested a renewal of approved special permit PHMSA-2006-24058 to provide relief from the requirements for pressure reduction or pipe replacement specified in 49 CFR 192.611(a) for the two (2) existing ***special permit segments*** and two (2) new Class 3 change ***special permit segments***. PHMSA approved special permit PHMSA-2006-24058 for two (2) ***special permit segments*** on December 17, 2007.

The special permit that PHMSA is granting will allow PNGTS to maintain the current MAOP for the ***special permit segments*** for which the class location has changed from Class 1 to Class 3 due to population density increase. Without the special permit, 49 CFR 192.611(a) would require PNGTS to replace the ***special permit segments*** or reduce pipeline MAOP. **Attachments A** and **B** are general maps that includes the pipeline route showing the ***special permit segments*** and ***special permit inspection area***.

PHMSA is granting the special permit renewal, which includes conditions, for approximately 1.876 miles of four (4) ***special permit segments*** and the 143.84 miles of ***special permit inspection area***. In the event of future class location changes, upon review and approval by PHMSA, the special permit allows PNGTS to extend a ***special permit segment*** with contiguous pipeline footage contained within the ***special permit inspection area***.

V. Site Description

On the condition that PNGTS complies with the terms and conditions set forth below, the special permit waives compliance from 49 CFR 192.611(a) and (d) and 192.619(a)(2) for approximately 1.876 miles of gas transmission pipelines on the 24-inch diameter PNGTS Mainline where the class location has changed from Class 1 to Class 3 location in Cumberland County, Maine and Coos County, New Hampshire.

This special permit allows PNGTS to maintain the current MAOP as shown in **Table 1 – Special Permit Segments**.

VI. Special Permit Segments and Special Permit Inspection Area

This special permit pertains to the specified ***special permit segments*** and corresponding ***special permit inspection area*** defined in this section.

Special Permit Segments:

This special permit applies to the ***special permit segments*** in **Table 1 – Special Permit Segments** and are identified using the PNGTS survey station (SS) references. Maps of the special permit segments are provided in **Attachments B-1 through B-3**.

Table 1 – Special Permit Segments										
Special Permit Segment Number[5]	Outside Diameter (inches)	Line Name	Length (feet)	Start Survey Station (SS)	End Survey Station (SS)	County or Parish, State	No. Dwellings	Year Installed	Seam Type	MAOP (psig)
1	24	PNGTS Mainline	2,913	6980+10	7009+23	Cumberland, ME	11	1998	ERW	1,440
2	24	PNGTS Mainline	4,766	6910+19	6957+85	Cumberland, ME	59	1998	ERW	1,440
3	24	PNGTS Mainline	960	213+00	222+60	Coos, NH	2	1998	ERW	1,440
4	24	PNGTS Mainline	1,266	3164+00	3176+66	Coos, NH	6	1998	ERW	1,440

Note: ERW is a high frequency electric resistance welded pipe longitudinal seam.

Special Permit Inspection Area:

The ***special permit inspection area*** is defined as the area that extends 220 yards on each side of the centerline as listed in **Table 2 – Special Permit Inspection Area**. A map of the ***special permit inspection area*** is provided in Attachment A.

Table 2 – Special Permit Inspection Area						
Special Permit Inspection Area Number	Special Permit Segment(s) Included	Outside Diameter (inches)	Line Name	Start Survey Station (SS)	End Survey Station (SS)	Length (miles)
1	1, 2, 3, 4	24	PNGTS Mainline	-0+30	7594+67	143.84

Extended Special Permit Segments:

The ***extended special permit segment*** is defined as the ***special permit segment*** and the five (5) contiguous miles past each endpoint.

High Consequence Areas:

HCAs located in the ***special permit inspection areas*** are shown in **Table 3 – High Consequence Areas**.

[5] ***Special permit segments 1*** and ***2*** are the original, approved ***special permit segments***. The two (2) new Class 3 locations are designated as ***special permit segments 3*** and ***4***.

Table 3 – High Consequence Areas				
Special Permit Inspection Area Number	HCA ID	Start Station (SS)	End Station (SS)	Length (miles)
1	PNGTS-276	59+92	87+79	0.53
1	PNGTS-152	171+76	202+78	0.59
1	PNGTS-163	484+91	509+98	0.47
1	PNGTS-106	525+51	629+87	1.98
1	PNGTS-6	670+16	689+82	0.37
1	PNGTS-8	1026+13	1049+47	0.44
1	PNGTS-109	1283+18	1305+83	0.43
1	PNGTS-155	1515+72	1549+05	0.63
1	PNGTS-110	1594+74	1626+40	0.60
1	PNGTS-145	1842+59	1933+56	1.72
1	PNGTS-12	3170+44	3199+20	0.54
1	PNGTS-113	3235+50	3267+36	0.60
1	PNGTS-13	327443	3297+24	0.43
1	PNGTS-114	3479+88	3508+27	0.54
1	PNGTS-116	3703+20	3786+24	1.57
1	PNGTS-119	3802+61	3833+03	0.58
1	PNGTS-17	3862+92	3886+75	0.45
1	PNGTS-18	3969+04	4006+75	0.71
1	PNGTS-123	4088+66	4116+63	0.53
1	PNGTS-278	6425+72	6452+09	0.50
1	PNGTS-23	6707+12	6734+86	0.53
1	PNGTS-128	6805+20	6868+89	1.21
1	PNGTS-33	6897+22	6924+09	0.51
1	PNGTS-25	6983+21	7065+24	1.55
1	PNGTS-133	7069+03	7101+30	0.61
1	PNGTS-27	7189+89	7239+70	0.94

VII. Alternatives

1) **Alternative 1: "No Action" Alternative**

Denial of PNGTS' special permit renewal request would require PNGTS to fully comply with 49 CFR 192.611. To maintain the existing MAOP, PNGTS would be required to replace the approximately 1.876 miles of pipe in the ***special permit segments***, or alternatively, reduce pressure on the segments. PNGTS stated that it would choose to replace the segments to maintain MAOP because a pressure reduction would prevent it from meeting its contractual obligations to deliver natural gas to its customers.

2) **Alternative 2: "Selected" Alternative**

PHMSA is issuing the special permit renewal for the original two (2) ***special permit segments*** and two (2) new ***special permit segments***. PNGTS may continue to operate at the current 1,440 psig (pounds per square inch gauge) MAOP in the Class 3 location without replacing pipe while complying with the special permit conditions, as described below.

VIII. Overview of Special Permit Conditions

This special permit includes additional operations and maintenance requirements (conditions) which are intended to decrease the likelihood of a release of gas. These additional preventative measures would help prevent leaks and ruptures, demonstrating that the special permit is not inconsistent with pipeline safety.

PNGTS specific technical requirements and the special permit conditions can be read in their entirety in the FDMS at Docket No. PHMSA-2006-24058 located on the internet at www.regulations.gov or on the PHMSA website for special permits issued at https://www.phmsa.dot.gov/pipeline/special-permits-state-waivers/special-permits-issued.

1) **Current Status of Pipe in the Ground**

To ensure that key characteristics of the pipe currently installed in each ***special permit segment*** are known, PHMSA requires records that confirm pipe specifications, successful pressure tests, and girth weld non-destructive tests. Should records be unavailable or unacceptable, PNGTS must complete additional activities as detailed in the special permit. If these additional activities are not completed or should pipe be discovered that does not meet specific requirements of eligibility, the ***special permit segment*** must be replaced.

2) **Operating Conditions**

If allowed by the special permit, each ***special permit inspection area*** must continue to be operated at or below the existing MAOP until a restoration or uprating plan has been approved. To ensure compliance with special permit conditions, PNGTS' operations and maintenance manual (O&M), integrity management (IM) program, and damage prevention (DP) program must be modified to implement the special permit conditions. In addition, PHMSA must approve any long-term flow reversals that would impact each ***special permit segment***.

3) **Threat Management**

Threats are factors that can lead to the failure of a pipeline. Activities are required to identify, assess, remediate, and monitor threats to the pipeline.

a) **General activities.** PNGTS must perform annual data integration and identification of threats to which each ***special permit inspection area*** is susceptible. These activities must include integrity assessments with specific inline inspection (ILI) tools, strict anomaly repair criteria, and appropriate environmental assessment and permitting. Additional integrity assessment methodologies may be used if allowed by the special permit. Integrity assessments must then be conducted periodically at an interval determined in the special permit for each threat identified.

b) **External corrosion control requirements.** The special permit requires additional activities to monitor and mitigate external corrosion. These activities include installation and annual monitoring of cathodic protection (CP) test stations, periodic close interval surveys (CIS), and clearing or remediating shorted casings that may impede CP effectiveness. These activities ensure the appropriate level of CP is reaching the pipeline in areas where coating loss or damage has occurred in order to prevent or mitigate external corrosion. In addition, PNGTS would be required to develop and implement a plan that identifies and remediates interference from alternating or direct current (AC/DC) sources (such as high-voltage powerlines) that could adversely impact the effectiveness of CP.

c) **Internal corrosion control requirements.** The special permit includes gas quality specifications to mitigate internal corrosion because internal corrosion is highly dependent on the quality of the gas transported within the pipeline.

d) **Stress corrosion cracking requirements.** To ensure that stress cracking corrosion (SCC) is discovered and remediated, any time a pipe segment is exposed during an excavation, PNGTS must examine coating to determine type and condition. If the coating is in poor condition, PNGTS must conduct additional SCC analysis. If SCC is confirmed, PNGTS must implement additional special permit defined remediation and mitigation.

e) **Pipe seam requirements.** PNGTS must perform an engineering integrity analysis to determine susceptibility to seam threats. PNGTS must re-pressure test any ***special permit segment*** with an identified seam to ensure the issue is not systemic in nature.

f) **External pipe stress requirements.** Upon identification of any source of external stress on the pipeline (such as soil movement), PNGTS must develop procedures to evaluate and periodically monitor these stresses.

g) **Third-party specific requirements.** To assist in identifying the pipeline location and minimizing the chance of accidental pipeline strikes, PNGTS must install and maintain line-of-site markers for the pipeline. PNGTS must perform mitigation activities for any location where a depth-of-cover survey shows insufficient soil cover.

4) **Consequence Mitigation**

To ensure quick response and decreased adverse outcome in the event of a failure, each side (upstream and downstream) of the ***special permit segments*** must have and maintain operable automatic shutdown valves (ASV) or remote-controlled valves (RCV). PNGTS must monitor valves through a control room with a supervisory control and data acquisition (SCADA) system. In addition to the mainline valves, should a crossover or lateral connect between the valve locations, additional isolation valves may be required. To ensure a leak is discovered promptly, leakage surveys are required twice a year.

5) **Gas Leakage Surveys and Remediation**

The ***special permit segments*** and ***special permit inspection area*** have requirements in the special permit to conduct leakage surveys more frequently than is presently required in 49 CFR 192.706. Gas leakage surveys using instrumented gas leakage detection equipment must be conducted along each ***special permit segment*** and at all valves, flanges, pipeline tie-ins with valves and flanges, and ILI launcher and receiver facilities in each ***special permit inspection area*** at least twice each calendar year, not to exceed 7½ months. The type of leak detection equipment used, survey findings, and remediation of all instrumented gas leakage surveys must be documented by PNGTS. The special permit would require a three-step grading process with a time interval for remediation based upon the type of leak.

6) **Post Leak or Failure**

Should an in-service leak occur, the leak must be graded and remediated as required in the permit. In addition, for all in-service or pressure test leak/failure(s), PNGTS must conduct a root cause analysis to determine the cause. If the cause is determined to be systemic in nature, PNGTS must implement

a remediation plan or the ***special permit segments*** must be replaced, as determined by the special permit specific conditions.

7) **Class Location Study and Potential Extension of Special Permit Segment**

PNGTS must conduct a class location study at an interval specified in the special permit. This allows PNGTS to quickly identify extended locations that must comply with the ***special permit segment*** requirements. PNGTS may extend a ***special permit segment*** with proper notification, update of the Final Environmental Assessment (FEA), and implementation of all requirements in the special permit.

8) **PHMSA Oversite and Management**

PHMSA maintains oversight and management of each special permit. This includes annual meetings with executive level officers on special permit implementation status, written certification of the special permit, special permit required notification of planned activities, notification of root cause analysis results, and notification prior to certain excavation activities so that PHMSA may observe.

9) **Documentation**

PNGTS must maintain documentation that supports compliance with special permit conditions for the life of the pipeline.

IX. Affected Resources and Environmental Consequences

Potential risks from the regulatory waiver to pipeline integrity will be analyzed for each ***special permit segment*** to evaluate the potential for impacts or increased risk to safety or environmental resources. The applicant must consider any direct, indirect, or cumulative impacts.

1) **Safety:** The Federal pipeline safety regulations require pressure reduction, pressure testing, or replacement of Class 1 location pipe in the event of certain population growth to a Class 3 location. The intent of the regulations is to better protect the higher populations located along the pipeline by reducing the probability of pipeline failure. The special permit will waive the requirement to reduce pressure or replace the existing pipe with stronger pipe in the ***special permit segments***. There are approximately 78 dwellings around the ***special permit segments*** located in Cumberland County, Maine and Coos County, New Hampshire which would benefit from increased safety associated with pipe replacement.

The special permit waives the requirement to reduce pressure, conduct new pressure testing, or replace the existing pipe with a stronger pipe in the ***special permit segments***. The special permit includes conditions intended to improve safety and environmental protection equal to or exceed that provided by the measures required under 49 CFR 192.611(a) in the ***special permit segments*** and the ***special permit inspection area***. The special permit conditions include coating surveys and remediation, corrosion surveys and remediation, damage prevention activities, line of sight markers, inline-tool inspections for applicable threats (corrosion, third party damage, and cracking – pipe body, seam, and girth welds), remediation of pipe threats based upon design factor for class location, reassessments based upon integrity management program, procedures, and documentation.

Monthly patrols, weather permitting, are used to observe surface conditions on and adjacent to the pipeline right-of-way for indications of leaks, third party construction activity, exposed pipe, erosion, or other factors that affect the safety and operation of the pipeline. Close interval surveys will be performed on the pipe within the ***special permit segments*** to ensure cathodic protection (CP) is acceptable. Areas of low CP potentials have been or will be remediated according to the special permit conditions if the special permit is granted. PNGTS will continue to perform Damage Prevention measures as described in the best practices of the Common Ground Alliance (CGA) within the ***special permit inspection area***.

ILI tool inspections will be performed using high-resolution inspection tools at intervals specified by the special permit conditions. Any anomalies detected during in-line inspections will be remediated in accordance with 49 CFR Part 192, Subpart O, and the conditions of the special permit. These activities provide safety and environmental protection around the ***special permit segments*** and the ***special permit inspection area.***

The above-described monitoring conditions associated with the special permit would not be applicable if PHMSA denied the special permit request, because the safety requirements in 49 CFR Part 192, Subpart O only apply to 19.6 miles of HCAs within the ***special permit inspection area***.

The pipeline integrity attributes (such as pipe diameter, wall thickness, grade, pipe seam type, pressure test, maximum allowable operating pressure, and anomaly findings) for the special permit segment can be reviewed in the Federal Dockets Management System (FDMS) located at www.regulations.gov under the document titled "**2006-24058 - Attachment A –Pipeline Segment Integrity Information**." Details about the pipeline's integrity and compliance history are provided

in the **Special Permit Analysis and Findings (SPAF)** document, which is available in the docket (PHMSA-2006-24058) in the FDMS at www.regulations.gov. The SPAF does not describe any integrity issues (such as pipe body, seam or girth weld, operational or environmental) that would affect the approval of the special permit with implementation by PNGTS of conditions to maintain safety. PHMSA has determined that the pipeline and ***special permit segments*** are in satisfactory condition for the issuance of the special permit.

These monitoring conditions are intended to provide more information about the condition of the pipe so that any integrity issues can be remediated to minimize risk.

a) Would operation under a special permit change the risk of rupture or failure?

Since the safety risk with respect to the special permit focuses on the integrity of the pipeline and its effect on the increased population in the event of a catastrophic failure of this pipeline, the special permit contains conditions to ensure the safety level meets the requirement of 49 CFR Part 192 in the ***special permit inspection area***. A number of pipeline safety measures that exceed the requirements of 49 CFR Part 192 have already been implemented in the ***special permit inspection area***. The measures include conducting in-line inspection at least once in the last seven (7) years, conservatively repairing conditions that do not present a near-term risk to pipeline integrity to help ensure the integrity and safety of the pipeline, patrolling frequencies that exceed the requirements of 49 CFR 192.705 and performing annual system-wide risk assessment to identify the risk levels associated with pipeline segments both in HCAs and non-HCAs. In addition, PNGTS has determined the required preventive and mitigative measures to ensure an adequate safety level for the ***special permit segments*** and the ***special permit inspection area***. These measures include, but are not limited to, performing a depth of cover survey during the CIS survey to confirm the presence of adequate cover in all the ***special permit segments*** and remediate appropriately, reviewing the existing pipeline markers and signage to ensure that the presence of a buried pipeline is visible in the ***special permit segments***, continuing to investigate and remediate any identified soil instability sites within the ***special permit segments***. The special permit will allow operation at the current pressure (MAOP), creating no additional risk. Additional inspections would lower the risk of rupture or failure.

b) How would the special permit conditions mitigate or account for this risk so that the overall level of safety of the pipeline is unchanged or improved?

The special permit waives the requirement to reduce pressure, conduct new pressure testing, or replace the existing pipe with a stronger pipe in the ***special permit segments***. However, the special permit includes conditions intended to improve safety and environmental protection equal to or exceeding that provided by the measures required under 49 CFR 192.611(a) in the ***special permit segments*** and the ***special permit inspection area***. The special permit conditions include coating surveys and remediation, corrosion surveys and remediation, damage prevention activities, line of sight markers, inline-tool inspections for threats (corrosion, third party damage, and cracking – pipe body, seam, and girth welds), remediation of pipe threats based upon design factor for class location, reassessments based upon integrity management program, procedures, and documentation. An overview of the special permit conditions is provided in Section VIII.

c) If a failure occurred under the proposed special permit, would impacts and spill or release volumes differ from full compliance with Part 192?

PHMSA finds that granting the special permit will not increase the risk of failure with implementation of the special permit conditions. The implementation of these practices, in conjunction with increased mitigative measures that are required as per the special permit would meet or exceed safety and reliability standards of 49 CFR 192.611(a) in the requested ***special permit segments*** and ***special permit inspection area***.

However, if PHMSA denied the special permit and PNGTS opted to reduce pressure instead of replacing the pipe, a failure on a reduced-pressure pipeline could result in a smaller volume of natural gas released. PNGTS contends that it will not opt to reduce pressure due to ongoing contractual obligations, and PHMSA has no means to direct PNGTS as to which method of compliance it would employ. Therefore, assuming PNGTS would opt to replace the pipeline segments in the event of denial, the ***special permit segments*** would be operating at the same pressure under the "Selected" Action and the No Action Alternative. The consequences and release volumes would be identical under both alternatives.

The special permit conditions include requirements for mainline valve monitoring and remote-control valves or automated shutdown valves that would decrease the amount of time needed to

isolate the pipeline in case of a failure. Shorter isolation times can reduce the volume of gas released and can reduce the potential consequences of a failure.

d) For 49 CFR Part 192 special permit request, would the Potential Impact Radius (PIR) of a rupture change under the special permit? Please calculate and provide the PIR data, if applicable. Would more people be affected by a failure if PHMSA granted the permit?

The PIR of a rupture will not change under the special permit. Consequently, no more people will be affected by a failure with the granted special permit. The calculated PIR of each ***special permit segment*** is approximately 0.13 miles (688.4 feet), as determined using the current MAOP. The PIR definition and how it is calculated are defined in 49 CFR 192.903.

e) Would operation under the special permit affect pipeline longevity or reliability? Would there be any life cycle or maintenance issues?

The implementation of increased pipeline assessment within the ***special permit inspection area***, as required in the special permit, will improve pipeline reliability and safety. Continued operation of the ***special permit segment*** would not be expected to influence the pipeline longevity and reliability or cause any life cycle or maintenance issues. The MAOP and other factors will not change under the special permit and will not impact the overall pipeline longevity or reliability and would not cause any life cycle or maintenance issues.

2) **Climate Change and Air Quality:** The EPA's Air Quality Index (AQI) is an indicator of overall air quality, taking into account all of the criteria air pollutants measured within a geographic area. The tables below summarize the AQI statistics for 2021 for the counties containing the ***special permit segments***.

AIR QUALITY INDEX DATA								
State	**County**	**Year**	**Days with AQI**	**Good Days AQI<50**	**Moderate Days AQI 51-100**	**Unhealthy for Sensitive Groups Days AQI 101-150**	**Unhealthy Days AQI 151-200**	**Very Unhealthy Days AQI>=201**
Maine	Cumberland	2021	305	278	24	3	0	0
New Hampshire	Coos	2021	181	161	20	0	0	0

AIR QUALITY INDEX DATA (CONTINUED)											
State	**County**	**Year**	**Max AQI**	**90th Percentile AQI**	**Median AQI**	**Days CO**	**Days NO2**	**Days Ozone**	**Days SO2**	**Days PM2.5**	**Days PM10**
Maine	Cumberland	2021	129	49	36	1	5	264	0	31	4
New Hampshire	Coos	2021	80	51	43	0	0	181	0	0	0

Under the "Selected" Action, there will be no interruption to pipeline operation. Blowdown of the ***special permit segments*** will not be necessary. Under the No Action Alternative, the ***special permit segments*** would be blown down for pipe removal and replacement. To minimize GHG emissions, methane capture or pressure reduction techniques would be used to remove most of the gas from the segment being blown down. The residual, low-pressure gas would be vented to atmosphere.

The "Selected" Action will have minimal impacts on air quality in the ***special permit inspection area*** due to the additional surveillance, assessment, and maintenance activities required by the special permit. The No Action Alternative would have a more substantial, though still minimal, effect on air quality and climate change, with additional emissions that are temporarily caused by equipment used during excavation, pipe removal, pipe replacement, and pipe installation.

3) **Noise:** Current noise levels in the ***special permit segments*** are low. In the ***special permit inspection area***, current noise levels vary depending on proximity to human activities and infrastructure.

   The No Action Alternative would result in temporary increases in noise during the replacement of the existing pipe. The "Selected" Action will not involve any construction activities. During normal operations, the scope and duration of the additional activities associated with the ***special permit segments*** and ***special permit inspection area*** will have little to no impact on noise levels in the vicinity of the pipeline. There are no known state or county noise ordinances applicable to the ***special permit inspection area***.

4) **Environmental Justice:** The ***special permit segments*** are located in areas with below 50% minority populations or low-income populations**, see Table 4 - Demographic Information for Special Permit Segment – Using EPA EJScreen**. In any event, the activities of the special permit are intended to maintain safety along all of the ***special permit segment***, reduce environmental impacts, and increase the level of the safety along the ***special permit inspection area***.

Table 4 - Demographic Information for Special Permit Segments – Using EPA EJScreen						
Special Permit Segment No.	State	County	Total Population (Along Special Permit Segment)	Minority*/ People of Color** Population	Low Income Population	Linguistically Isolated
1	ME	Cumberland	466	1%	13%	1%
2	ME	Cumberland	425	0%	17%	0%
3	NH	Coos	341	4%	36%	1%
4	NH	Coos	150	5%	11%	3%

Minority*: The term minority is used in the currently active DOT Environmental Justice Order 5610.2(a), available at: https://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/orders/order_56102a/index.cfm

People of Color**: The term people of color is used in the EPA's Environmental Justice Screening and mapping tool (EJSCREEN). An overview of demographic indicators through EJSCREEN is available at: https://www.epa.gov/ejscreen/overview-demographic-indicators-ejscreen

A pipeline failure may take the form of a leak or a rupture. The consequences would be similar in both cases, but typically would be more serious in the event of a rupture. If a rupture occurs and the released gas ignites, the thermal radiation from the fire is a hazard to people outdoors and inside nearby structures, potentially causing serious injury or death depending on distance from the rupture.

An unignited release from a pipeline typically does not result in injury to people. Natural gas is not toxic but is an asphyxiant. However, an unignited release will have environmental consequences because natural gas (unburned) is a powerful greenhouse gas (GHG). In most cases, large releases from natural gas pipelines ignite prior to the stop of the flow of natural gas.

For the special permit, the pipeline in the ***special permit inspection area*** will receive additional inspection and monitoring to provide more information about the condition of the pipe so that any integrity issues can be remediated to avoid risk.

The No Action Alternative would require compliance with Federal regulation 49 CFR 192.611(a). This would require the replacement of the existing pipeline in the ***special permit segment*** with a thicker/stronger pipe that meets the requirements of 49 CFR Part 192 for new pipe. However, the additional inspection and monitoring conditions associated with the special permit would not be applicable if the special permit were denied because those conditions are not mandated by the regulations. Accordingly, both alternatives are expected to lead to a similar safety result. The special permit segments are not situated in areas with 50% or greater low-income residents.

5) **Aesthetics:** The only permanent visual impact of the "Selected" Action would be the installation of line-of-sight markers that are placed to reduce the risk of third-party damage. Increased maintenance activities, including some temporary excavations, could cause intermittent visual impacts. Maintenance activities and line of sight markers will have a minimal impact on the visual character of the ***special permit segments*** and of the ***special permit inspection area***.

   Pipe replacement under the No Action Alternative would require removal of the existing pipe, followed by installation and hydrotesting of a new pipe. This would involve heavier equipment and more ground disturbance than the "Selected" Action, however the aesthetic impact would be temporary.

6) **Agricultural Resources:** The special permit may result in increased maintenance activities due to more stringent maintenance requirements than would otherwise be required. These maintenance activities could cause occasional, minor, temporary interference with some agricultural activities but would have a significantly smaller footprint than would pipe removal and replacement.

7) **Biological Resources:** The primary wildlife habitat occurring either within or in the vicinity of the ***special permit segments*** and ***special permit inspection area*** is composed of various land cover types, including wetlands and other aquatic habitats, herbaceous, forest, agricultural fields, and low to medium-density residential development.

   The special permit may result in increased surveillance, assessment, and maintenance activities, but would not result in significant impact or permanent modification to vegetation or land cover. Existing conditions would remain undisturbed. Any activities related to the ***special permit segments*** would be conducted within the boundaries of the previously disturbed pipeline right-of-way. Pipe replacement in the ***special permit segments*** would result in increased disturbance to wildlife habitat, though that disturbance would also be temporary and limited in nature

   According to the Fish and Wildlife Service (FWS) Information for Planning and Conservation (IPaC) website, the following species are potentially affected by activities in the ***special permit segments*** and/or ***special permit inspection area***:

   - Northern Long-eared Bat (threatened)
   - Canada Lynx (threatened)
   - Monarch Butterfly (candidate species)
   - Small Whorled Pogonia (threatened)

Various birds of conservation concern may be found in the project areas. There are no designated critical habitats in the ***special permit segments***. There are no National Wildlife Refuge lands or fish hatcheries in the ***special permit segments***.

8) **Cultural Resources:** There are no known cultural, archaeological, or paleontological resources that will be impacted by this special permit. Furthermore, the pipeline is already operational, and all activities associated with the "Selected" Action will be carried out within the previously disturbed right of way.

9) **Geology, Soils, and Mineral Resources:** Soils are generally fertile overlying volcanic bedrock. Mineral resources are abundant and there is a long history of mining. For the "Selected" Action, no construction-related activities will occur; therefore, the geologic, soil, and mineral resources in the area will not be affected.

10) **Indian Trust Assets:** According to information from the U.S. Department of Interior, Bureau of Indian Affairs, there are no federally recognized Indian tribes or tribal reservations in the relevant counties. Therefore, activities associated with the ***special permit segments*** and ***special permit inspection area*** will have no impact on Indian Trust Assets or federally recognized Tribal Reservations or villages.

11) **Land Use:** The "Selected" Action will have no impact on the surrounding land use because the pipeline is already operational. The "Selected" Action will have no impact on land use or planning because the pipeline is already operational. The "Selected" Action will have no impact on any local government land use plan because the pipeline is already operational.

12) **Recreation:** The "Selected" Action will have no impact on any recreational resources because the pipeline is already operational. The scope and duration of any activities associated with the ***special permit segments*** and ***special permit inspection area*** will have little to no impact on recreation in the vicinity of the pipeline. The "no action" alternative would result in temporary increases in disturbances to recreational activities during the replacement of the existing pipe.

13) **Topography:** The topography of the special permit segments and special permit inspection area ranges from gently rolling to hilly. The "Selected" Action may involve ground disturbing activities for the purpose of performing the increased inspection and maintenance activities mandated by the

special permit. Pipe replacement under the No Action Alternative would require significantly more ground disturbance.

14) **Transportation:** The ***special permit segments*** will be accessed by existing roads and right-of-way crossings. The special permit conditions require increased surveillance, inspection, and maintenance activities. These activities would result in intermittent, minor increases in traffic. Construction of additional roads will not be required. Road maintenance requirements will not be significantly increased.

15) **Water Resources:** Wetlands, freshwater ponds, and riverine features are encountered in the vicinity of the ***special permit segments*** and/or the ***special permit inspection area***. No exceptional waters, outstanding waters or federally designated Wild Scenic Rivers have been identified in the vicinity of the ***special permit inspection area***. No water wells have been identified within the ***special permit inspection area***.

The ***special permit segments*** and ***special permit inspection area*** do not intersect any sole source aquifer (SSA). An SSA is defined as an aquifer that supplies at least 50 percent of the drinking water for its service area and there are no reasonably available alternative drinking water sources should the aquifer become contaminated. PNGTS does not anticipate any impact to any water resources since no construction-related activities would occur if the special permit is granted.

X. Consultation and Coordination

PNGTS and PHMSA personnel involved in preparation of this document include:

Personnel from PNGTS:

- Richard Rodrigues, Senior Integrity Engineer, TC Energy
- Andrew Miller, Integrity Engineer, TC Energy
- Peter Carr, Senior Risk Specialist, Everline
- Trent Ackhurst, Commercial Director, Everline
- Derrick Daniels, Integrity Specialist, Dynamic Risk
- Rick Kivela, Priority Services Consultant, Dynamic Risk

- **Personnel from PHMSA:**
- Amelia Samaras, Attorney, PHMSA, US DOT

- Steve Nanney, Sr. Technical Advisor, PHMSA, US DOT

PNGTS is not aware of specific persons or entities that will be impacted by the special permit. PNGTS has not engaged in stakeholder or public communication regarding this special permit request.

XI. Response to Public Comments Placed on Docket PHMSA-2006-24058

PHMSA published the special permit request in the Federal Register (87 FR 80258) for a 30-day public comment period from December 29, 2022, through January 30, 2023, and considered all comments received through January 30, 2023. PHMSA sought comments on any potential environmental impacts that could result from the selection of either alternative, including the special permit conditions. The special permit application from PNGTS, and draft special permit conditions were available in Docket No. PHMSA-2006-24058 at: www.regulations.gov for public review. PHMSA did not receive any comments regarding the special permit application.

XII. Finding of No Significant Impact

In consideration of the FEA and the special permit conditions explained above, PHMSA finds that no significant negative impact to human health, safety, or the environment will result from the issuance and full implementation of the above-described special permit to waive the requirements of 49 CFR 192.611(a) and (d), and 192.619(a) for the ***special permit segments***, approximately 1.876 miles of 24-inch diameter pipelines located in Cumberland County, Maine and Coos County, New Hampshire. This special permit renewal will require PNGTS to implement additional conditions on the operations, maintenance, and IM of the ***special permit segments*** and ***special permit inspection area***.

The granted special permit conditions are available in the FDMS Docket No. PHMSA-2006-24058 at: www.regulations.gov for public review.

XIII. Bibliography

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U.S. Geological Survey (USGS). Unified Hazard Tool. https://earthquake.usgs.gov/hazards/interactive/. Accessed July 2022.

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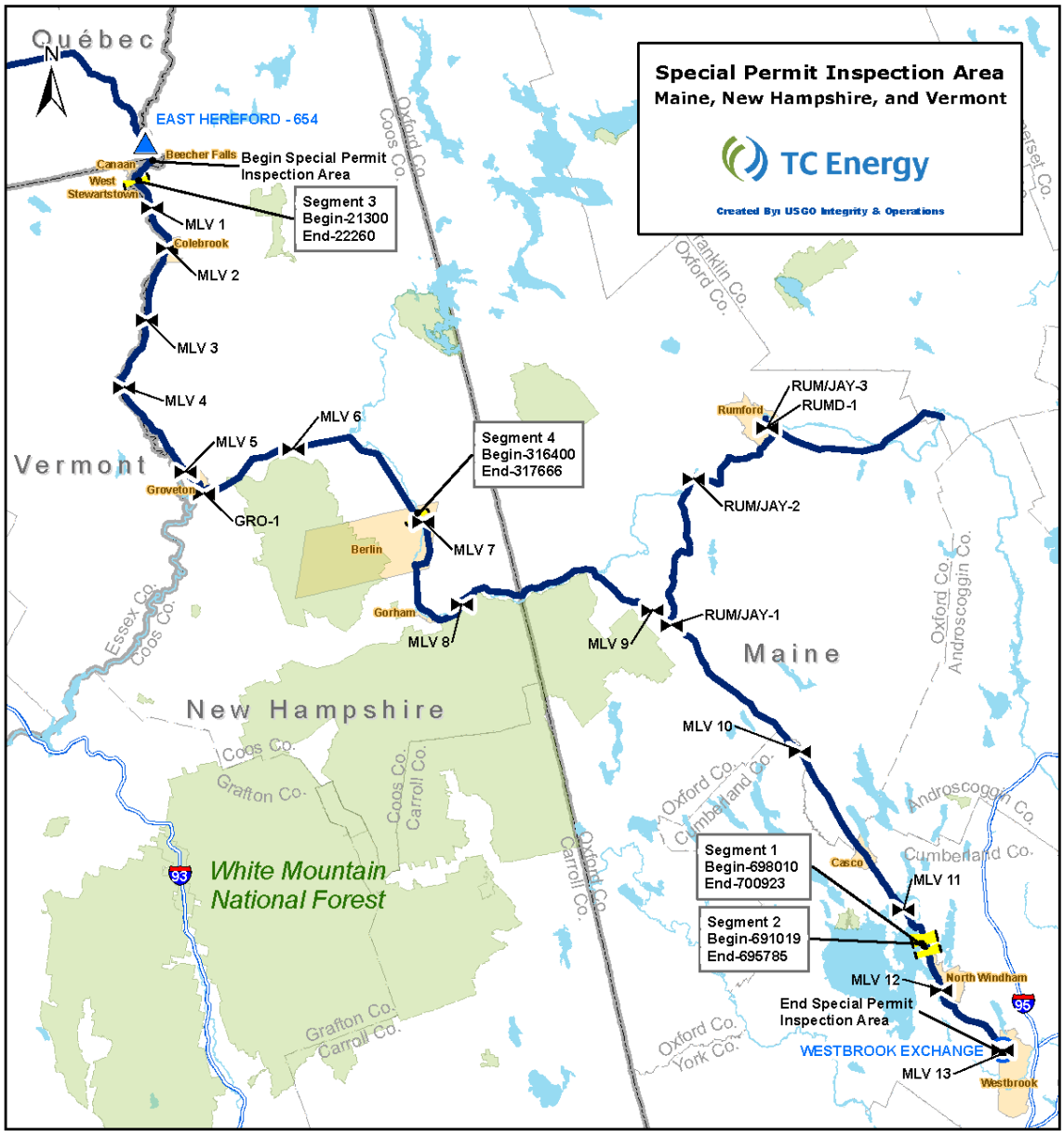
The special permit with conditions granted to PNGTS, SPAF, and **Attachment A – Segment Integrity Information** for Docket No. PHMSA-2006-24058 can be found the Federal Docket Management System located on the internet at www.regulations.gov or on the PHMSA website for special permits issued at https://www.phmsa.dot.gov/pipeline/special-permits-state-waivers/special-permits-issued.

Completed by PHMSA in Washington, DC on May 22, 2023

Attachment A – PNGTS 24-inch Mainline Route Map

Special Permit Segments and Inspection Area



Special Permit Inspection Area

1:724,571

0 5 10 20

Miles

NAD 1983 UTM Zone 16N
Projection: Transverse Mercator

DISCLAIMER: The datasets used to create this map have been gathered from various sources for a specific purpose. TC Energy provides no warranty, regarding the accuracy or completeness of the datasets. Unauthorized or improper use of this map, including supporting datasets is strictly prohibited. TC Energy accepts no liability whatsoever related to any loss or damages resulting from proper, improper, authorized, or unauthorized use of this map and associated datasets.

- Compressor Station
- Valve
- Meter Station
- Special Permit Segment - Pipeline PNGTS
- TC Energy Pipeline

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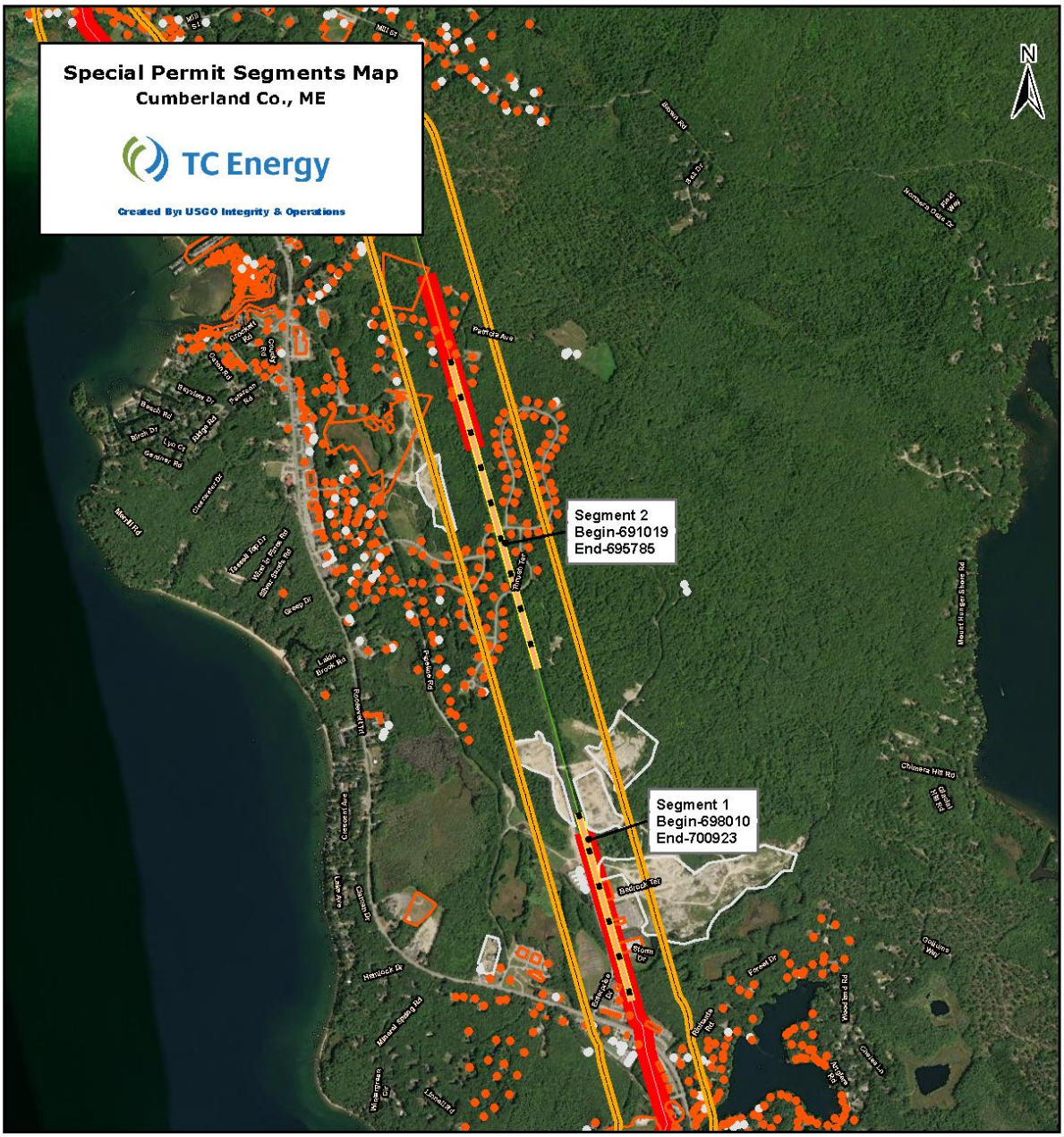
Attachment B-1 – PNGTS 24-inch Mainline Route Map

Special Permit Segments



Special Permit Segments Map 1

1:24,000

0 1,000 2,000 4,000

Feet

NAD 1983 UTM Zone 16N
Projection: Transverse Mercator

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Structure
- Structures
- Unoccupied

Populated Area
- Structures (Area)
- Unoccupied (Area)
- 660ft Boundary

Class Rating
Class Location
- Class 1
- Class 2
- Class 3
- Class 4
- HCA Locations

Special Permit Segments
Pipeline
- PNGTS
- PNGTS 688ft

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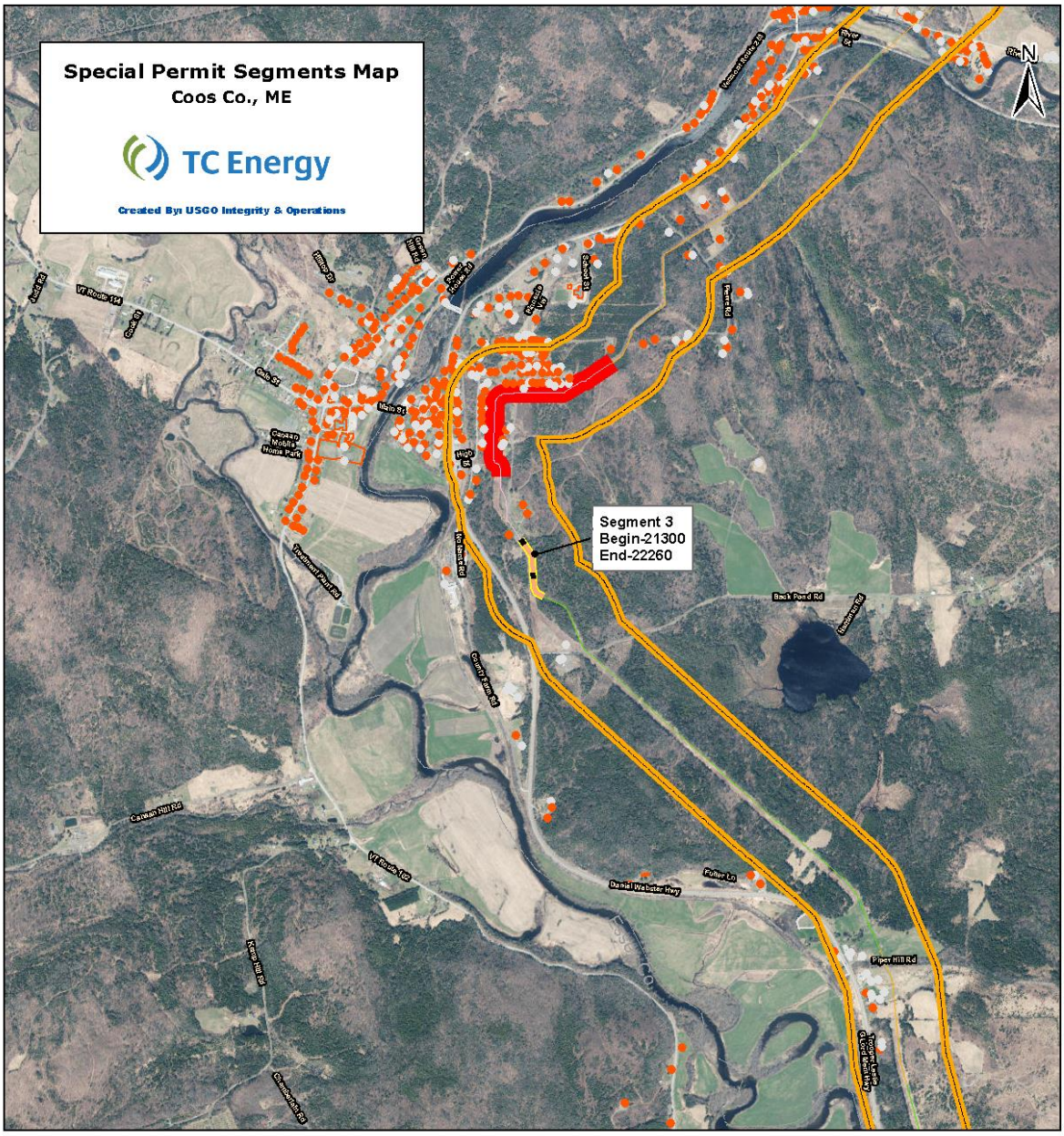
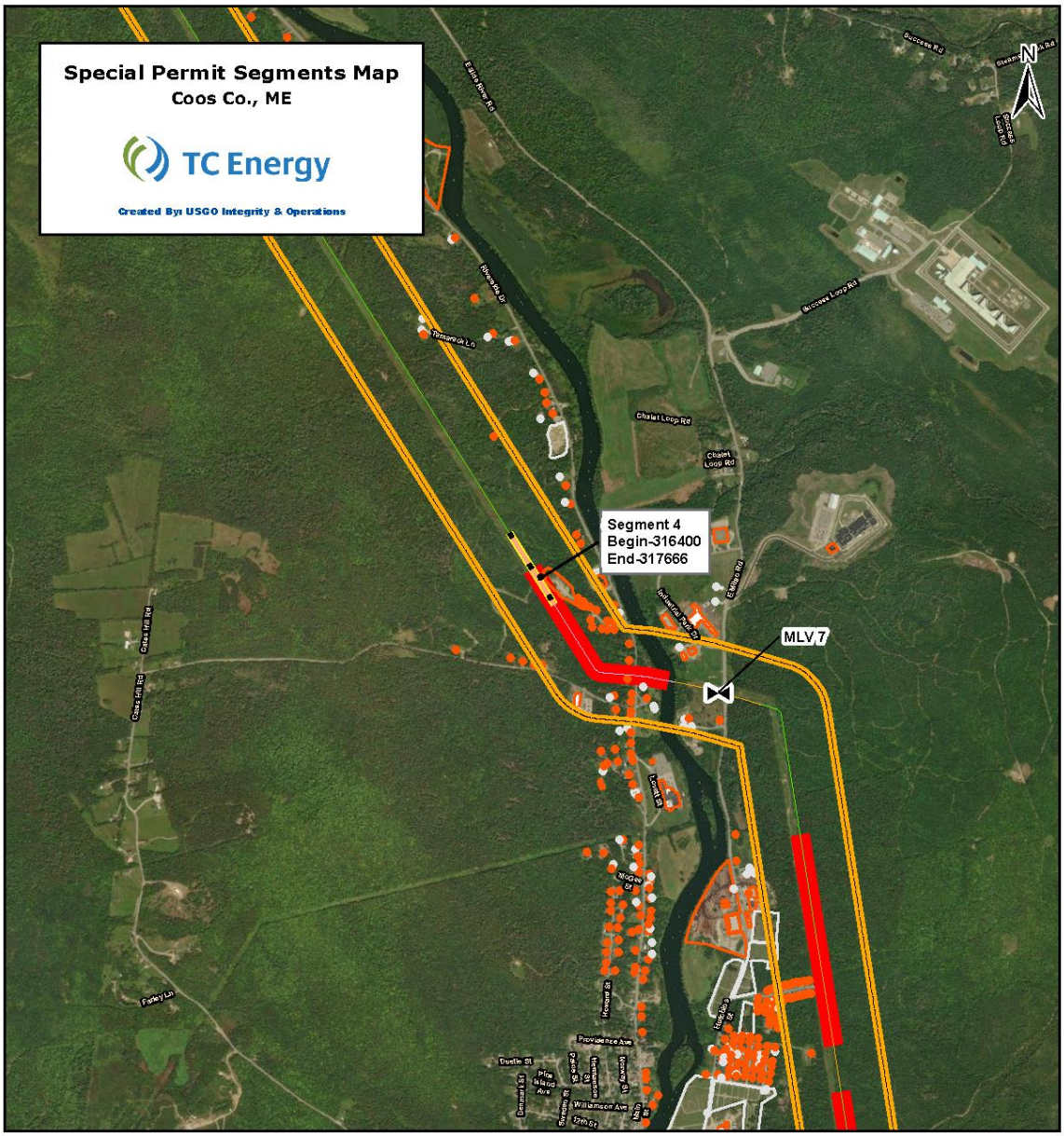
Attachment B-2 – PNGTS 24-inch Mainline Route Map

Special Permit Segments



Attachment B-3 – PNGTS 24-inch Mainline Route Map

Special Permit Segments



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