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-2023-0001
Requested By:	Tennessee Gas Pipeline Company, LLC
Operator ID#:	19160
Original Date Requested:	December 29, 2022
Original Issuance Date:	July 31, 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. PHMSA's environmental review associated with the special permit application is limited to impacts that would result from granting or denying the special permit.

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

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 Tennessee Gas Pipeline Company, LLC (TGP)[2] application for a special permit request to waive compliance with the requirements of 49 CFR 192.611(a) and (d) "Change in class location: Confirmation or revision of maximum allowable operating pressure" for approximately 1.266 miles of 36-inch diameter gas transmission pipelines located in Dickson County, Tennessee. This FEA and finding of no significant impact (FONSI) is 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 certain Federal pipeline safety regulations found in 49 CFR 192.611(a) and (d) and 192.619(a). This special permit requires TGP to implement additional conditions regarding the operations, maintenance, and integrity management (IM) of the approximately 1.266 miles (***special permit segment***) and 18.26 miles (***special permit inspection area***) of the TGP natural gas transmission pipeline system located in Dickson County, Tennessee.

II. Introduction

Pursuant to 49 USC 60118(b) and 49 CFR 190.341, TGP submitted an application for a special permit to PHMSA on December 29, 2022, requesting that PHMSA waive the requirements of 49 CFR 192.611(a) and (d) and 192.619(a) to permit TGP to maintain the maximum allowable operating pressure (MAOP) for one (1) ***special permit segment*** located in Dickson County, Tennessee 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 TGP to replace the one (1) pipe segment 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 typically contingent on the performance of additional measures beyond

[2] TGP is a wholly owned subsidiary of Kinder Morgan, Inc.

minimum Federal pipeline safety regulations, in accordance with 49 CFR 190.341. PHMSA is granting this special permit based on this document and the "Special Permit Analysis and Findings" document, which can be read in its entirety in Docket No. PHMSA-2023-0001 in the Federal Docket Management System (FDMS) located on the internet at www.regulations.gov.

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. 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. Under 49 CFR 192.619(a)(2) the ***special permit segment*** would be required to be pressure tested to 1.5 times MAOP for eight (8) hours. Below are 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

TGP requested a special permit, and PHMSA has reviewed the special permit application for implementing increased IM activities in lieu of replacing pipe within the ***special permit segment*** located on TGP's 500-3 Pipeline located in Dickson County, Tennessee, where the class location changed from a Class 1 to a Class 3 location, and to include contiguous ***special permit segment extension*** that may experience further development and class change in the future.

This special permit consists of one (1) ***special permit segment*** and waives the requirements of 49 CFR 192.611(a) and (d) and 192.619(a) with implementation of the special permit conditions. The special permit will allow TGP to maintain the MAOP of one (1) ***special permit segment*** 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 TGP to replace the ***special permit segment*** or reduce pipeline MAOP. **Appendix A** contains maps that includes the pipeline route showing the ***special permit segment*** and ***special permit inspection area***.

PHMSA is granting the special permit, which includes conditions, for the 6,685.07 feet (approximately 1.266 miles) of ***special permit segment*** and the 18.26 miles of ***special permit inspection area***. The special permit also allows continued operation at the existing MAOP in the event of future class changes within the ***special permit inspection area*** (***special permit segment extensions***), if the ***special permit segment extension*** meet the special permit conditions applicable to the ***special permit segment***.

V. Site Description

The ***special permit segment*** consists of approximately 1.266 miles of 36-inch diameter gas transmission pipeline (500-3 Pipeline) located in Dickson County, Tennessee. The ***special permit inspection area*** extends approximately 18.26 miles of the pipeline.

VI. Special Permit Segment and Special Permit Inspection Area

This special permit pertains to the specified ***special permit segment*** and corresponding ***special permit inspection area*** defined in this section. This special permit allows TGP to maintain the current MAOP as shown in **Table 1 – Special Permit Segment**.

Special Permit Segment:

This special permit applies to the ***special permit segment*** in **Table 1 – Special Permit Segment** and is identified using the TGP mile post (MP) and survey station (SS) references.

Table 1 – Special Permit Segment

Special Permit Segment Number	Outside Diameter (inches)	Line Name	Length (feet)	Start Survey Station (MP - SS)	End Survey Station (MP - SS)	County, State	No. Dwellings	Year Installed	Seam Type	MAOP (psig)
726	36	500-3	6685.07	559-3A - 89542.28	559-3A - 96227.35	Dickson, TN	48	1973	DSAW	936

Note: **DSAW** is double submerged arc 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**.

Table 2 – Special Permit Inspection Area

Special Permit Inspection Area Number	Special Permit Segment(s) Included	Outside Diameter (inches)	Line Name	Master Segment	Start Survey Station (SS)	End Survey Station (SS)	Length (miles)
1	726	36	500-3	559-3 to 560-3	559-3A - 335.24	560-3 - 70.3	18.26

Extended Special Permit Segment:

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 area*** are shown in **Table 3 – High Consequence Areas**.

Table 3 – High Consequence Areas						
Special Permit Inspection Area Number	HCA ID	Start Measure	Begin Station (SS)	End Measure	End Station (SS)	Length (miles)
1	3974	88371.32	88706.56	90537.05	90872.29	0.41
	105427	62404.56	62739.8	64054.16	64389.4	0.31
	4446	91675.48	92010.72	96433.66	70.3	0.90
	2964	58112.85	58448.09	61320.2	61655.44	0.61

VII. Alternatives

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

Denial of the special permit would require the replacement and pressure testing of the pipeline segment associated with this special permit request, which includes approximately 1.266 miles of mainline pipe. If TGP opted not to replace the ***special permit segment***, 49 CFR 192.611 requires a reduction in the pipeline MAOP.[3]

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

PHMSA is granting the special permit with conditions, and TGP is allowed to continue to operate at the current MAOP of 936 pounds per square inch gauge (psig) for the 500-3 Pipeline in the Class 3 location without replacing pipe while complying with the special permit conditions, as described below.

All of the special permit conditions are attributes of a robust IM program. These special permit conditions include conducting periodic: Close interval surveys, cathodic protection (CP) reliability improvements, stress corrosion cracking assessment, running inline inspection (ILI) assessments (smart pigs), interference current control surveys, remediating ILI findings through anomaly evaluation and repairs, pipe seam evaluations, pipe properties records review and documentation, and maintaining line-of-sight markers. Many of these integrity activities are currently required in 49 CFR Part 192, Subpart O, an IM program to manage HCAs at specified reassessment intervals. The assessment and reassessment intervals, the level of remediation and the maintenance activities required in a special

[3] These regulatory options are specified in 49 CFR 192.611 Change in class location: Confirmation or revision of maximum allowable operating pressure.

permit are more stringent to maintain pipe integrity and protect both the public and the environment for the class location units in which the ***special permit segment*** is located.

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

VIII. Overview of Special Permit Conditions

To provide an equivalent level of safety in the absence of either lowering the pipeline operating pressure or upgrading the pipe, this special permit has additional operations and maintenance requirements (conditions) which are intended to decrease the likelihood of a release of gas. These additional preventative measures are designed to prevent leaks and ruptures, demonstrating that the special permit is not inconsistent with pipeline safety. This section provides an overview of the special permit conditions. For TGP specific technical requirements, the special permit with conditions granted to TGP for Docket No. PHMSA-2023-0001 can be found the Federal Dockets 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.

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

   To ensure that key characteristics of the pipe currently installed in the ***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, TGP 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, the ***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, TGP's operations and maintenance manual (O&M), 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 the ***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.** TGP must perform annual data integration and identification of threats to which the ***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 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, TGP 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, TGP must examine coating to determine type and condition. If the coating is in poor condition, TGP must conduct additional SCC analysis. If SCC is confirmed, TGP must implement additional special permit defined remediation and mitigation.

e) **Pipe seam requirements.** TGP must perform an engineering integrity analysis to determine susceptibility to seam threats. TGP 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), TGP 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, TGP must install and maintain line-of-site markers for the pipeline. TGP 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 segment*** must have and maintain operable automatic shutdown valves (ASV) or remote-controlled valves (RCV). TGP 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 segment*** 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 the ***special permit segment*** and at all valves, flanges, pipeline tie-ins with valves and flanges, and ILI launcher and receiver facilities in the ***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 TGP. 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**

If an in-service leak should 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), TGP must conduct a root cause analysis to determine the cause. If the cause is determined to be systemic in nature, TGP must implement a remediation plan or the ***special permit segment*** must be replaced, as determined by the special permit specific conditions.

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

TGP must conduct a class location study at an interval specified in the special permit. This allows TGP to quickly identify extended locations that must comply with the ***special permit segment*** requirements. TGP 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**

TGP 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 the ***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:** Class locations are based upon the population (dwellings for human occupancy) within a "class location unit" which is defined as an onshore area that extends 220 yards on either side of the centerline of any continuous 1-mile of pipeline. These locations are determined by surveying the pipeline for population growth. The more conservative safety factors are required as dwellings for

human occupancy (population growth) increases near the pipeline. Pipeline operators must conduct surveys and document population growth within 220 yards on either side of the pipeline. A higher population along the pipeline may trigger any of the following for the pipeline segment with the higher population: a reduced MAOP, a new pressure test at a higher pressure, or installation new pipe with either or both heavier walled or higher-grade pipe with new, modem coating to protect against integrity risks to occupants along the pipeline segment. If the special permit were denied, TGP would replace the existing ***special permit segment*** that underwent class location change with new pipe that meets a higher safety factor and has new pipeline coating. This pipeline replacement would result in pipeline safety benefits.

The special permit conditions are designed to identify and mitigate integrity issues along the ***special permit inspection area*** that could threaten the pipeline segment and cause failure. Compliance the monitoring and maintenance requirements in the special permit will ensure the integrity of the pipe and protection of the population living near the ***special permit segment*** to a similar degree of a lower MAOP, new pressure test, or a thicker walled or higher-grade pipe without the enhanced IM protections. Populations living near the ***special permit inspection area*** will benefit from a higher level of safety. The safety risk with respect to this request for a special permit focuses on maintaining the integrity of the pipeline and on the risk it poses to the increased population to mitigate a failure of this pipeline. Granting this special permit does not increase the potential impact radius (PIR (the radius of a circle within which the potential failure of a pipeline could have significant impact on people or property)) of the pipeline. However, the risk from the increased human population around the pipeline would be mitigated through IM procedures. 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 "**2023-0001 - Attachment A – TGP – Class 1 to 3 SP – 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-2023-0001) 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 TGP of conditions to maintain

safety. PHMSA has determined that the pipeline and ***special permit segment*** are in satisfactory condition for the issuance of the special permit.

The special permit conditions require increased IM inspections for pipeline segments adjacent to the ***special permit segment***, which will lower the risk in areas beyond the ***special permit segment***. The special permit requires that TGP conduct the IM type procedures required by the special permit conditions in ***special permit segment*** and ***special permit inspection area*** for the duration of the special permit. Full implementation, of the special permit conditions by TGP will provide an equivalent or greater level of safety for the public and environment.

The special permit also includes a number of conditions that address potential safety risks. Among these are incorporation of these segments into the Kinder Morgan Integrity Management Program, additional close interval corrosion surveys, implementation of a cathodic protection reliability improvement plan, a more comprehensive stress corrosion cracking direct assessment program, an inline inspection (ILI) program with intervals not to exceed seven years, anomaly evaluation and repair meeting more stringent criteria, additional testing and remediation of interference currents caused by induced alternating current sources, pipe seam evaluations, criteria for the identification of pipe properties, installation of line-of-sight markers and the integration of all inspection and remediation data. This comprehensive list of additional risk related special permit conditions is intended to provide for a significant added level of safety for the existing pipeline segment because it maintains safety in the areas surrounding the ***special permit segment*** and improves safety in the ***special permit inspection area***.

(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, repairing conditions that do not present a near-term risk to pipeline integrity in order 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, the special permit will require preventive and mitigative measures to ensure an adequate safety level for the ***special permit segment*** 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 the ***special permit segment*** 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 segment***, continuing to investigate and remediate any identified soil instability sites within the ***special permit segment***.

(b) If a failure occurred, would consequences and spill or release volumes be different if PHMSA granted the permit? Would granting this permit increase, decrease, or have no change on the risk of failure?

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 meet safety and reliability standards of 49 CFR 192.611(a) in the requested ***special permit segment*** and ***special permit inspection area***.

However, if PHMSA denies the special permit and TGP opted to operate at the current pressure instead of replacing the pipeline, a failure on the pipeline with the current pressure could result in a smaller volume of natural gas released.

(c) Would the Potential Impact Radius 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 Potential Impact Radius (PIR) as calculated in accordance with 49 CFR 192.903 will not change under the special permit since maximum operating pressure and pipe diameter will not change, thus there will be no additional impact on the public. The PIR for the ***special permit segment*** is calculated below.

$$PIR = 0.69 * (MAOP * NOMINAL\ DIAMETER^2)^{0.5}$$

For ***special permit segment 726***, calculated PIR $= 0.69 * (936 * 36^2)^{0.5} = 760$ feet

(d) Would operation under the Special Permit have any effect on 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*** will not have an effect on the pipeline longevity and reliability or cause any life cycle or maintenance issues.

2) **Climate Change and Air Quality:** If the permit is not granted, pipe replacement would be required, which would necessitate blowing down the pipeline releasing unburned natural gas, a greenhouse gas more potent than carbon dioxide. Pipeline replacement would also result in increased emissions from manufacture of new pipe, transportation of materials, and construction activities related to pipeline replacement. If PHMSA grants the special permit, there will be increased pipeline maintenance activities that could result in increased emissions from equipment and transportation utilized to perform those actions, but these emissions are likely substantially less than what would result from pipeline removal, manufacture, transportation, and replacement. The scope and duration of any activities associated with the special permit will have an insignificant impact on climate change.

3) **Noise:** The "Selected" Alternative will not negatively alter the noise levels in the vicinity of the ***special permit segment***. Granting the permit will increase the monitoring, maintenance, and repair requirements and could increase the frequency of use of equipment, including heavy machinery for conducting excavations and repairs throughout the life of the pipeline's operation under this special permit. These activities will result in short term, isolated, and sporadic noise impacts in the ***special permit inspection area***. Replacement of the pipeline segment under the "No Action" Alternative will generate comparatively more noise from operation of construction equipment in the ***special permit segment***, but these impacts will end with completion of the replacement. Construction will progress along the route such that impacts at any location will be of a short duration. Nonetheless, noise impacts resulting from both the "Selected" Alternative and the "No Action" Alternative will be localized, minor, and temporary.

4) **Environmental Justice:** The ***special permit segment*** is not situated in a disproportionately minority or non-English language populations, see **Table 4 - Demographic Information for Special Permit Segment – Using EPA EJScreen** on the next page. None of the applications submitted contain a

special permit segment that has a population over 36% low income. In any event, the activities of the special permit are intended to maintain safety along the ***special permit segment***, reduce environmental impacts, and increase the level of the safety along the 18.26 miles of ***special permit inspection area***.

The "Selected" Alternative is intended to maintain or increase safety with the implementation of safety conditions in the ***special permit segment***. Many special permit conditions also apply to the ***special permit inspection area*** and will not have a disparate impact on any minority, low income, or limited English proficiency populations. This special permit will also reduce climate change impacts, which are understood to disproportionately affect low-income and minority communities. Therefore, consistent with DOT Order 5610.2C ("Department of Transportation Actions to Address Environmental Justice in Minority Populations and Low-Income Populations") and Executive Orders 12898 ("Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations"), 13985 ("Advancing Racial Equity and Support for Underserved Communities Through the Federal Government"), 13990 ("Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis"), 14008 ("Tackling the Climate Crisis at Home and Abroad"), 12898 and DOT Order 5610.2(a), and Department of Transportation Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, PHMSA does not anticipate that the special permit will result in disproportionately high and adverse effects on minority or low-income populations.

Table 4 - Demographic Information for Special Permit Segment – 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
726	TN	Dickson	617	10%	20%	0%

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

TGP is cognizant of potential impacts to environmental resource and human health/safety that could occur due to a pipeline failure and have emergency procedures in place should a pipeline failure occur.

The "Selected" Alternative will require that TGP implement increased integrity management (IM) activities which could potentially decrease the risk of pipeline failure in comparison to the no action alternative. Compliance monitoring and maintenance requirements in the special permit will ensure the integrity of the pipe and protection of the population living near the ***special permit segment*** to a similar degree of a lower MAOP, new pressure test, or a thicker walled or higher-grade pipe without the enhanced integrity IM protections.

In any event, the activities of the special permit are intended to maintain safety along the ***special permit segment*** and increase the level of the safety along the 18.26-mile ***special permit inspection area***.

5) **Aesthetics:** The visual character of the ***special permit segment*** and the ***special permit inspection area*** will not be changed by the "Selected" Alternative. The objective of the special permit is to avoid construction or ground disturbances in the pipeline right-of-way (ROW) that would be necessitated if the special permit was not granted. Therefore, the issuance of the requested special permit will result sporadic and temporary aesthetic impacts due to increased monitoring, maintenance, and repair activities along the affected ***special permit segment*** or ***special permit inspection area***.

   Denial of the special permit request, the "No Action" Alternative, would require the replacement or pressure testing of all the pipeline segments associated with this special permit request. Pipe replacement would require removal of the existing pipe and installation of a new pipe. This would result in the use of heavy equipment and ground disturbance. Furthermore, pressure testing would also require disturbances along the pipeline ROW.

6) **Agricultural Resources:** The area surrounding the ***special permit segment*** contain cultivated crops. The issuance of the special permit, "Selected" Alternative, will reduce impact to agricultural resources in the ***special permit segment***. Increased monitoring and maintenance requirements imposed by the special permit conditions could increase these activities causing temporary and isolated impacts to the ***special permit inspection area***. The aim of the special permit is to avoid the higher impact construction activities associated with pipeline replacement in the ROW along the ***special permit segment***.

7) **Biological Resources:** The area around ***special permit segment 726*** consist of forested habitat on both sides of the cleared and maintained right-of-way. There are four federally listed threatened and

endangered species listed by United States Fish and Wildlife Service (USFWS) as having the potential to occur within the project vicinity. There is no critical habitat identified by USFWS within the project vicinity.

Table 4 - Federally Listed Threatened and Endangered Species with the Potential to Occur along the *Special Permit Segment* and Preliminary Effect Determination for the Selected Alternative.

Special Permit Segment(s)	Common Name	Scientific Name	Federal	Habitat Description	Occurrence	Effect
726	**Flowering Plants**					
	Short's Bladderpod	*Phsaria globosa*	E	This species typically grows on steep, rocky, wooded slopes and talus slopes and along tops, bases, and ledges of bluffs - often near rivers or streams and on south- to west-facing slopes (USFWS 2021).	Not likely to occur.	No effect
	Mammals					
	Gray Bat	*Myotis grisescens*	E	This species, with rare exceptions, live in caves year-round. During the winter gray bats hibernate in deep, vertical caves. In the summer, they roost in caves which are scattered along rivers. These caves are in limestone karst areas of the southeastern United States. They do not use houses or barns (USFWS 2021).	Not likely to occur.	No effect
	Indiana Bat	*Myotis sodalis*	E	Summer habitat for this species includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. During the winter, this species uses caves and mines as hibernacula (USFWS 2021).	Not likely to occur	No effect
	Northern Long-eared Bat	*Myotis septentrionalis*	T	This species hibernates in caves and mines - swarming in surrounding wooded areas in autumn. During late spring and summer, they roost and forage in upland forest. (USFWS 2021).	Not likely to occur	No effect
	T: Threatened E: Endangered					

8) **<u>Cultural Resources</u>:** There are no cultural, archaeological, or paleontological resources that will be impacted by this special permit, "Selected" Alternative, because the ROW was disturbed during initial construction of the pipeline. A cultural resource survey completed in 2020 determined no National Register of Historical Places (NRHP) listed building is located within 1 mile of the ***special permit segment***.

9) **<u>Geology, Soils, and Mineral Resources</u>:** ***Special permit segment 726*** The project area is located within the St. Louis Limestone and Warsaw Limestone and Fort Payne Formation and Chattanooga Shale Formations. The St. Louis Limestone Formation St. Louis Limestone - Fine-grained, brownish-gray limestone, dolomitic and cherty is characterized by bedded chert; calcareous and

dolomitic silicastone; minor limestone and shale; scattered lenses of crinoidal limestone. The Warsaw Limestone Formation is characterized by coarse-grained, gray, crossbedded limestone; somewhat shaly in the northeast. The dominate soils consist of Sengtown gravelly silt loam. Soils in this group are very deep, well drained, moderately permeable soils on uplands and are not considered farmland of local importance.

10) **Indian Trust Assets:** According to the U.S. Department of Interior, Bureau of Indian Affairs (2016), there are no federally recognized Indian tribes or tribal reservations in the counties with the ***special permit segment***. The scope and duration of any compliance work resulting from the special permit will have little to no effect or impact on the socioeconomics in the surrounding area.

11) **Land Use:** Minimal ground disturbance or modifications to TGP system along the ***special permit segment*** and ***special permit inspection area*** will occur as part of the special permit, "Selected" Alternative, from increased maintenance activities. The special permit will not impact land use or planning and does not require permits from local governments.

12) **Recreation:** The "Selected" Alternative will have minimal impacts on recreational resources in the ***special permit segment*** and ***special permit inspection area*** due to compliance with increased maintenance, monitoring, and repair activities required for compliance with the special permits. The impacts would be temporary and sporadic throughout the applicability of the special permit.

    A denial of the special permit or 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 area surrounding the requested ***special permit segment*** is flat open and forested land. The aim of the special permit is to avoid construction and other ground disturbing activities in the right-of-way. No construction-related activities would occur if the special permit is granted; therefore, the topography in the area will not be affected. A denial of the special permit or the "No Action" alternative would result in temporary increases in disturbances to topography during the replacement of the existing pipe.

14) **Transportation**: The ***special permit segment*** will be accessed by existing roads and right-of-way crossings. No construction-related activities will occur as part of the "Selected" Alternative; therefore, traffic will not increase, and construction of additional roads will not be required.

No increase in traffic will occur under the special permit; therefore, the transportation in the area will not be affected. A denial of the special permit or the "No Action" alternative would result in temporary increases in disturbances to transportation during the replacement of the existing pipe.

15) **Water Resources:** The ***special permit segment*** crosses one unnamed tributary to Nails Creek which are the nearest natural water. The project area is located within the Beaverdam Creek watershed.

X. Consultation and Coordination

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

Personnel from TGP:

Jaime Hernandez – Director, Codes and Standards
Shelly Dietz – Manager, Codes and Standards
Charlie Childs – Manager, IC Pipeline Integrity
Justin Durham - Manager, Engineering
Gary Taylor- Manager, Pipeline Compliance Systems
Samuel Johnson – Project Management Specialist Compliance systems
Shannon Cass - Specialist, Project Permitting – Minor Projects
Ronald Barnes – Engineer Codes and Standards

Personnel from PHMSA:

Amelia Samaras, Attorney, PHMSA, US DOT
Steve Nanney, Engineer, PHMSA, US DOT

XI. Response to Public Comments Placed on Docket PHMSA-2023-0001

PHMSA published the special permit request in the Federal Register (88 FR 4290) for a 30-day public comment period from January 24, 2023 through February 23, 2023, and considered all comments received through February 23, 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 TGP, and draft special permit conditions were available in Docket No. PHMSA-2023-0001 at: www.regulations.gov for public review.

PHMSA received two (2) public comments concerning this special permit request through February 26, 2023. PHMSA received comments from the Pipeline Safety Trust (PST) and a private citizen which asked PHMSA to examine several topics:

(1) **PST Comment**: PST commented that Kinder Morgan, Inc.[4] was issued a Notice of Proposed Safety Order (CPF No. 5-2021-056-NOPSO) in October of 2021, which identified extensive concerns regarding Kinder Morgan's integrity management program and identified several thousand unremediated anomalies in multiple States through their hazardous liquids pipeline system. PST comments that the operator's enforcement history presents a concern regarding whether the operator can be relied upon to comply with the conditions imposed under a new special permit.

- **PHMSA Response**: PHMSA has reviewed this enforcement action and is granting the special permit request based upon the findings detailed in the SPAF posted to the special permit Docket Number: PHMSA-2023-0001. PHMSA has designed a robust set of conditions that TGP must abide by in lieu of compliance with 49 CFR §§ 192.611(a) and (d) and 192.619(a) in the ***special permit segments***. The special permit conditions require assessment and remediation of integrity threats to the pipeline. To ensure TGP properly implements the special permit conditions, TGP is required to give PHMSA an annual review of their compliance with the special permit. If TGP fails to comply with any material term or condition of the special permit, PHMSA may revoke, suspend, or modify the special permit per 49 CFR 190.341(j). PHMSA also has the authority to utilize its various enforcement tools if violations of the permit are discovered.

(2) **PST Comment**: PST is concerned that the duration of the special permit may be up to 10 years (five (5) to 10 years) and strongly encourages PHMSA to limit the term to five (5) years. This concern is due to this special permit request allowing the use of alternative technology for a pilot project.

- **PHMSA Response**: PHMSA has reviewed this comment and clarifies that this special permit is for a Class location change from Class 1 to Class 3 and does not include implementation of alternative technology. The duration of the special permit is determined based on the request for a Class 1 to Class 3 special permit. For Class 1 to Class 3 special permit requests, PHMSA either denies or grants the special permit for a five (5) to 10-year interval based upon the integrity of the ***special permit segment***, surrounding ***special permit inspection area***, and the ability of the conditions to maintain public safety and protect the environment.

[4] Kinder Morgan, Inc. is the operator of the TGP pipelines.

(3) **PST Comment**: PST has concerns regarding the valve spacing of the ***special permit segment***. PST believes that these conditions are not sufficient to ensure the safety of residents near the ***special permit segment*** included in this request due to potential duration and release volume of gas in the event of a failure. Although PST recognizes that the special permit conditions indicate that the ***special permit segment*** "'must have upstream and downstream remote-controlled valves (RCVs) so that the distance between the valves is no greater than 20 miles', we feel that this requirement is not in line with the new valve rule spacing requirements of 4-mile intervals for Class 3 locations. Within the valve rule, PHMSA's discussion regarding spacing requirements does mention 1-class bumps in which the operator may use the maximum valve spacing of a class below the class location of the replacement project, but there is no discussion regarding a 2-class bump from Class 1 to Class 3 locations. PST urges PHMSA to reconsider this condition within the special permit to require a distance of no more than four (4) miles from the ***special permit segment*** to an upstream and downstream valve. We feel that this requirement would significantly increase the safety of residents living near the ***special permit segment*** included in this request."

- **PHMSA Response**: Section 192.634(b)(2) allows up to 15 miles of spacing between valves for Class location changes to a Class 3 location (class bump) when pipe is replaced. The special permit does not require pipe replacement. TGP's valves are 8.34 miles apart. This valve spacing in conjunction with the implementation of the special permit conditions, including the automatic shutoff valve requirements[5], pipe assessment intervals, and anomaly remediation criteria, is consistent with pipeline safety.

(4) **PST Comment**: PST states that TGP claims the permit will provide environmental and safety benefits by eliminating methane emissions that would occur from blowdowns in anticipation of hydrotesting and/or replacement. PST comments that non-emergency blowdowns should not be considered a sufficient reason to avoid strength testing and replacement of pipe segments where necessary to comply with the Federal pipeline safety regulations.

- **PHMSA Response**: PHMSA uses strict criteria when determining whether a class location special permit will provide an equivalent level of safety to people and the environment as the Federal

[5] **Table 4 – Valves and Lateral Locations with Isolations Methods** in the special permit conditions has isolation times for the ***special permit segment***.

pipeline safety regulations. While avoiding the release of unburned methane is beneficial, the special permit criteria focus is on the safety of communities that are in proximity to the ***special permit segments***. Please see the Federal Register Notice, "Pipeline Safety: Development of Class Location Change Waiver Criteria," (69 FR 38948, June 29, 2004) for a detailed description of the criteria that PHMSA evaluates when determining if granting a special permit is consistent with pipeline safety. Furthermore, PHMSA imposes special permit conditions that require minimization of gas loss during blowdowns and leakage surveys along the pipeline.

(5) **PST Comment**: PST commented that TGP's application does not contain adequate justification for the need of the special permit.

- **PHMSA Response**: Section 190.341(c)(4) requires operators to provide, "an explanation of the unique circumstances that the applicant believes make the applicability of that regulation or standard (or portion thereof) unnecessary or inappropriate for its facility" with their special permit application. The Federal Register Notice, "Pipeline Safety: Development of Class Location Change Waiver Criteria," (69 FR 38948, June 29, 2004), describes the specific circumstances in which PHMSA will consider special permit applications for class location changes. The Federal Register Notice includes the criteria that PHMSA evaluates to determine the suitability of granting a permit, in addition to consideration of the justification for the waiver. PHMSA finds that implementation of enhanced integrity management with enhanced monitoring and maintenance requirements are consistent with pipeline safety to protect the population living near the pipeline segment to a similar degree as replacing with heavier walled or higher-grade pipe without the enhanced integrity management activities (see **Attachment A – Segment Integrity Information**).

(6) **Public Comment**: The commenter recommends no permit be issued. The commenter states that it is time to transition to green electricity to protect the environment and human health, as recent pipeline incidents show new technology in pipeline safety is not reliable.

- **PHMSA Response**: PHMSA has reviewed this public comment recommending a denial of the special permit request. The commenter did not give specific reasons why the permit should not be issued from a safety standpoint and within the scope of PHMSA's jurisdictional and regulatory authority. PHMSA finds that implementation of integrity management with enhanced monitoring

and maintenance requirements in the special permit conditions are consistent with pipeline safety. PHMSA appreciates the commenter's concern with the environment and public safety.

XII. Finding of No Significant Impact

In consideration of the FEA , the special permit conditions explained above, the SPAF and other documents included as part of this action, PHMSA finds that no significant negative impact to human health of 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 one (1) ***special permit segment***, which consist of 6,684.07 feet (approximately 1.266 miles) of the 36-inch diameter 500-3 Line located in Dickson County, Tennessee. This special permit will require TGP to implement additional conditions on the operations, maintenance, and IM on the ***special permit segment*** and approximately 18.26 miles of ***special permit inspection area***.

The granted special permit conditions are available in the FDMS Docket No. PHMSA-2023-0001 at: www.regulations.gov for public review.

XIII. Bibliography

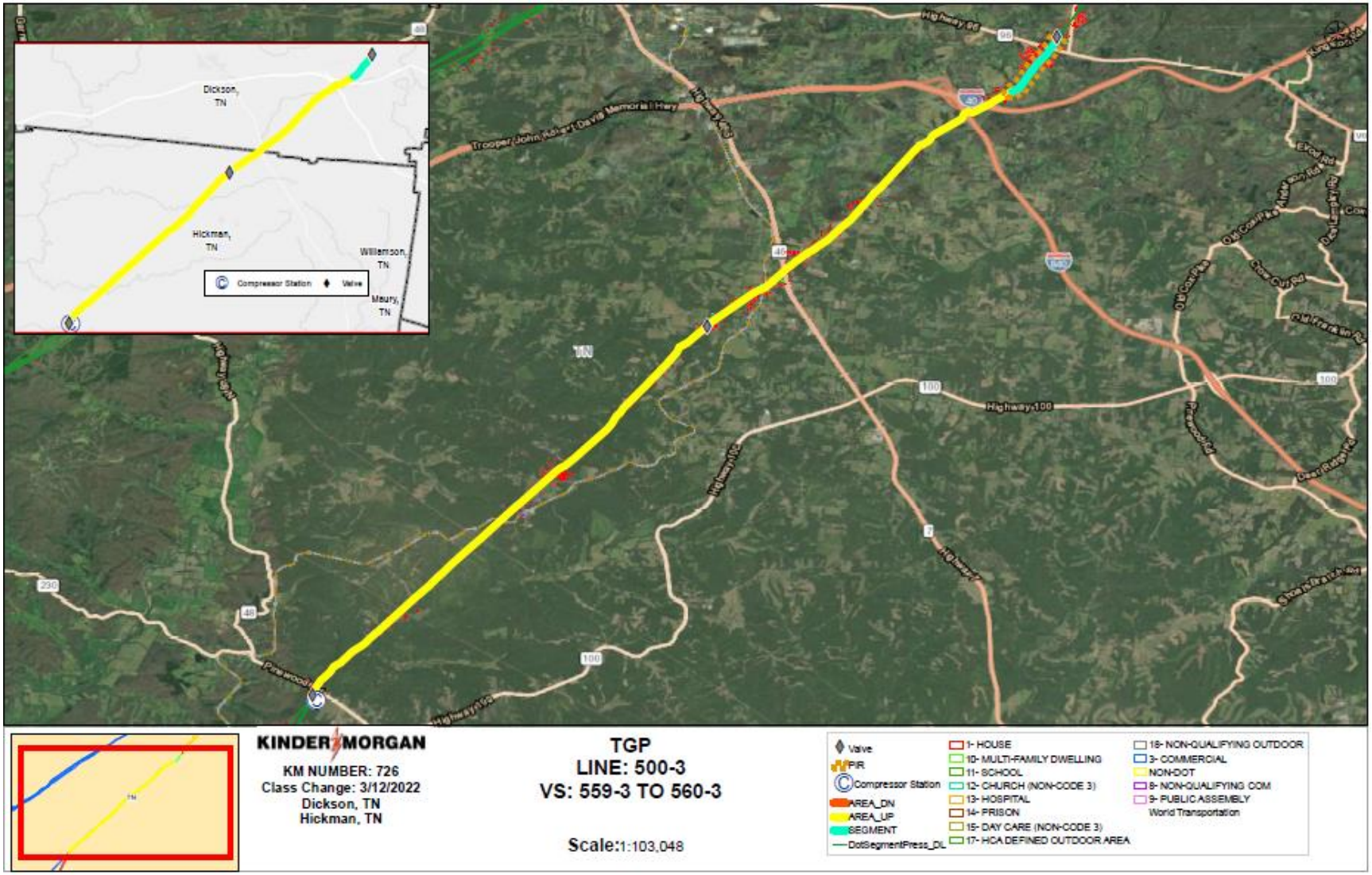
No other agencies were consulted, but PHMSA considered environmental information, special permit conditions, and documents submitted by TGP.

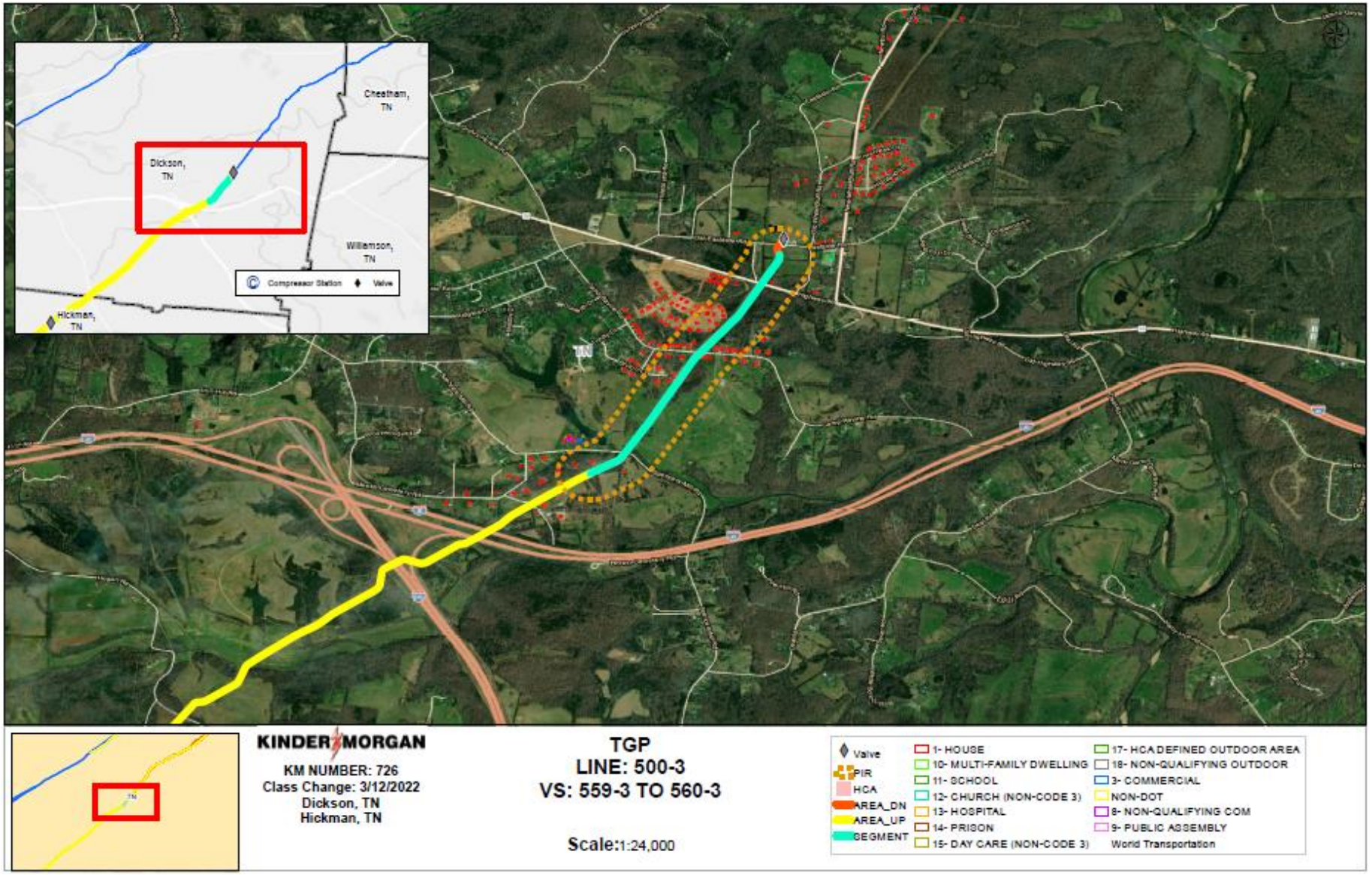
The special permit with conditions granted to TGP, SPAF, and **Attachment A – Segment Integrity Information** for Docket No. PHMSA-2023-0001 can be found the Federal Dockets Management System located on the internet at www.regulations.gov or on the PHMSA website for special permits issued at https://www.phmsa.dot.gov/pipeline/special-permits-state-waivers/special-permits-issued.

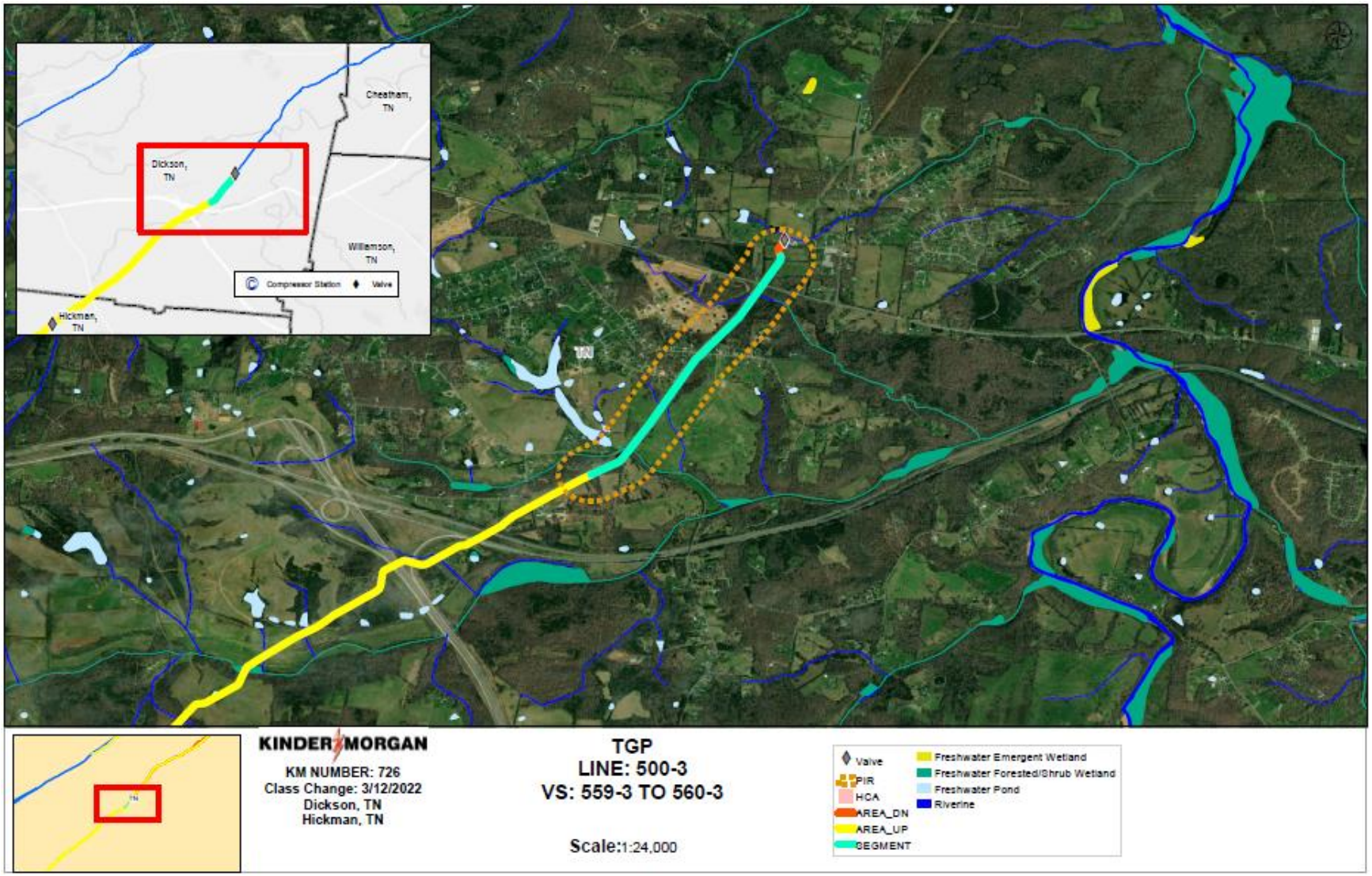
Completed by PHMSA in Washington, DC on: July 31, 2023

Appendix A – Special Permit Inspection Area and Special Permit Segment Maps

Special Permit Inspection Area – Segment 726




Cheatham, TN
Dickson, TN
Williamson, TN
Hickman, TN
Compressor Station
Valve
KINDER MORGAN
KM NUMBER: 726
Class Change: 3/12/2022
Dickson, TN
Hickman, TN
TGP
LINE: 500-3
VS: 559-3 TO 560-3
Scale:1:24,000
Valve
PIR
HCA
AREA_DN
AREA_UP
SEGMENT
1- HOUSE
10- MULTI-FAMILY DWELLING
11- SCHOOL
12- CHURCH (NON-CODE 3)
13- HOSPITAL
14- PRISON
15- DAY CARE (NON-CODE 3)
17- HCA DEFINED OUTDOOR AREA
18- NON-QUALIFYING OUTDOOR
3- COMMERCIAL
NON-DOT
8- NON-QUALIFYING COM
9- PUBLIC ASSEMBLY
World Transportation



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