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-2021-0042
Requested By:	National Fuel Gas Supply Corporation
Operator ID#:	13063
Original Date Requested:	March 15, 2021
Original Issuance Date:	October 15, 2021
Effective Dates:	October 15, 2021 to October 15, 2031
Code Sections:	49 CFR 192.53, 192.55, 192.105, 192.107, 192.109, 192.111, 192.113, 192.144, 192.149, 192.150, 192.327, 192.463, and 192.619

I. Background

The National Environmental Policy Act (NEPA), 42 United States Code (USC) 4321 – 4375, Council on Environmental Quality regulations, 40 Code of Federal Regulations (CFR) 1500-1508, and U.S. Department of Transportation (DOT) Order 5610.1C, requires the Pipeline and Hazardous Materials Safety Administration (PHMSA)[1] to analyze a selected action to determine whether the action will 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

[1] Throughout this Final Environmental Assessment ("FEA"), the usage of "PHMSA" or "PHMSA OPS" means the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration Office of Pipeline Safety.

consequence of a pipeline failure as compared to the operation of the pipeline in full compliance with the Pipeline Safety Regulations. PHMSA developed this assessment to determine what effects, if any, our decision would have on the environment.

Pursuant to 49 U.S.C. 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 we conclude 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 National Fuel Gas Supply Corporation (NFG) application for a special permit to waive requirements of 49 CFR 192.53, 192.55, 192.105, 192.107, 192.109, 192.111, 192.113, 192.144, 192.149, 192.150, 192.327, 192.463, and 192.619. PHMSA does not have pipeline siting or construction approval authority, but the Federal Pipeline Safety Regulations impose certain safety requirements that will apply to the use of FlexSteel pipe that will be inserted into the existing 12-inch diameter,[2] 1950's vintage steel natural gas pipeline. The requirements for special permit applications to PHMSA to request waiver from one or more safety regulations are described at 49 CFR 190.341.

II. Introduction

Pursuant to 49 U.S.C. 60118(b) and 49 CFR 190.341, NFG submitted a special permit petition to PHMSA on March 17, 2021, requesting that it waive the requirements of 49 CFR 192.53, 192.55, 192.105, 192.107, 192.109, 192.111, 192.113, 192.144, 192.149, 192.150, 192.327, 192.463, and 192.619. The ***special permit segment*** includes 12.58 miles of 6-inch diameter FlexSteel pipe and components located in Class 1 location by implementing certain Operations and Maintenance (O&M) procedures and preventive and mitigative measures. The ***special permit segment*** is on the FM120 Pipeline located in McKean, Elk, and Cameron Counties, Pennsylvania, from Mile Post 0.0 to Mile Post 12.58.

[2] 12-inch diameter pipe has an outside diameter of 12.75 inches.

III. Regulatory Background

This special permit application request seeks a special permit (waiver) to use flexible pipe in a gas transmission pipeline that operates at an MAOP of 720 pounds per square inch gauge (psig). NFG has requested a special permit (waiver) of the following 49 CFR Part 192 sections:

Table 1
Federal Pipeline Safety Regulations Where Special Permit Would Be Applicable

Section	Section Title	Discussion / Rationale
192.53	General	Sub-paragraph (c) does not recognize flexible steel pipe in meeting the requirements of the Subpart.
192.55	Steel Pipe	(a)(1) There is no listed specification for flexible steel pipe. (a)(2) Qualification requirements are specific to rigid steel pipe and do not apply to flexible steel.
192.105	Design formula for steel pipe	This section does not provide a design formula for flexible steel pipe.
192.107	Yield strength (S) for steel pipe	This section does not provide a design formula for flexible steel pipe and fittings.
192.109	Nominal wall thickness (t) for steel pipe	This section does not address the steel strip reinforcement used in flexible steel pipe.
192.111	Design factor (F) for steel pipe	This section does not provide design factors for flexible steel pipe.
192.113	Longitudinal joint factor (E) for steel pipe	This section does not apply to flexible steel pipe.
192.144	Qualifying metallic components	There is no listed specification for the swaged steel connectors to use with the FlexSteel pipe system.
192.149	Standard fittings	There is no listed specification for the FlexSteel connectors.
192.150	Passage of internal inspection devices	There is no need or value in running an ILI tool since the internal wall of the FlexSteel pipe is thermoplastic.
192.327	Cover	The existing 12-inch diameter steel pipeline will be used as a casing for the new 6-inch FlexSteel line. Given that the existing line was installed in the mid-1950's, there are some areas with less than 30-inches to 36-inches of cover. However, the existing steel pipe will serve as a casing for the FlexSteel line, thereby affording it an additional level of protection from 3rd party damage and from anticipated wheel loads.
192.463	External corrosion control: Cathodic Protection	This section envisions externally high-density polyethylene (HDPE) lined steel materials. NFG will insert FlexSteel pipe into the steel coated or bare pipe and does not contemplate existing 12-inch diameter pipeline, which will be cleaned prior to insertion (See section VIII.5.a.v for pipeline cleaning procedure). NFG will direct bury and install a cathodic protection test station and anode in soil at every FlexSteel fitting outside the 12-inch diameter casing.
192.619	What is the maximum allowable operating pressure for steel or plastic pipelines	This section does not provide a design formula for flexible steel pipe.

The Federal Pipeline Safety Regulations in the above **Table 1** can be reviewed at the Electronic Code of Federal Regulations.[3]

IV. Purpose and Need

This special permit is part of a modernization project that will allow NFG to use FlexSteel pipe to replace a 12-inch diameter, 1950's vintage bare steel pipeline, known as the FM120 Pipeline. The new 6-inch diameter FlexSteel will be inserted through the existing 12-inch diameter pipeline, which would require significant maintenance and repair to return to pressurized natural gas service. Use of FlexSteel will significantly reduce excavation, earth disturbance, and other activities associated with removal of the existing 12-inch steel pipeline and installation of a new steel pipeline into the right of way.

This special permit with conditions implemented by NFG will allow the use of FlexSteel pipe for this modernization project. This special permit will benefit NFG by allowing the replacement of approximately 12.58 miles of FM120 Pipeline (1950s vintage 12-inch diameter bare steel natural gas pipeline) through insertion of 6-inch FlexSteel into the existing 12.58 miles of FM120 bare steel pipeline.[4] NFG states that replacement will enhance the reliability and safety of NFG's FM120 Pipeline for the public, its shipper's distribution markets, storage and local production, and users of the state forest where the pipeline runs. Upon completion, NFG will continue to provide the transportation services performed previously by the existing facilities, offering reliability for storage and transportation services. Furthermore, this special permit will benefit the public since much of the land is public land (Elk State Forest and State Game Lands), the insertion process will greatly reduce the earth disturbance and amount of time required to complete the project as compared to the standard direct bury, or open trench type of construction.

FlexSteel is a type of flexible composite plastic and steel pipe which is not currently in use in PHMSA-regulated interstate gas transmission pipelines without the approval of a Special Permit.

---

[3] https://www.ecfr.gov/cgi-bin/text-idx?SID=e7d34bf31890c353e65b2428cf6b8d57&mc=true&node=pt49.3.192&rgn=div5.

[4] The ***special permit segment*** is defined as 12.58 miles of the FM120 Pipeline which is being replaced with a 6-inch diameter FlexSteel pipe inserted into an existing 12-inch diameter pipeline. The ***special permit segment*** is in McKean, Elk, and Cameron Counties, Pennsylvania. The ***special permit segment*** MAOP will be 720 psig.

V. Site Description

The new pipeline is in McKean, Elk, and, Cameron Counties in Northwest Pennsylvania, which is dominated by woodlots and oil and natural gas facilities. As seen in **Attachment 1A** through **1-D** – **FM120 Special Permit Segment Map**, the approximately 66,406-foot (12.58 miles) special permit area has scattered seasonal hunting camps and residences adjacent to the existing pipeline right-of-way (ROW). The ***special permit segment*** (Project) crosses the Elk State Forest, State Game Lands, and private lands. The ***special permit segment*** will continue to serve one local production interconnect (SHC4272) and the City of St. Marys and the Borough of Emporium through NFG Station SHC1177.

The ***special permit segment*** will be constructed of 6-inch diameter FlexSteel pipe, which is flexible pipe with a steel core. The majority of the new FlexSteel pipe will be inserted into an existing 12-inch diameter, 1950's vintage bare steel pipeline, known as FM120 Pipeline. This 12.58-mile pipeline will continue to be used to transport dry transmission quality natural gas located in McKean, Elk, and Cameron Counties, Pennsylvania, as is the current steel pipeline. The ***special permit segment*** area is sparsely populated, Class 1 location, with 6 buildings intended for human occupancy within the 12.58-mile Class location area with the closest building intended for human occupancy located one hundred and seventy (170) feet away. The ***special permit segment*** area does not have nearby places of public assembly. This pipeline segment does not have any 49 CFR Part 192, subpart O, high consequence areas (HCAs) or modeate consequence areas (MCAs) within its potential impact radius (PIR). The 6-inch pipeline will have a maximum allowable operating pressure (MAOP) of 720 pounds per square inch gauge (psig). The 6-inch diameter pipeline PIR is approximately 130.5 feet.

VI. Special Permit Segment

On condition that NFG complies with the terms and conditions set forth below, the permit will waive compliance from 49 CFR 192.53, 192.55, 192.105, 192.107, 192.109, 192.111, 192.113, 192.144, 192.149, 192.150, 192.327, 192.463, and 192.619 for the ***special permit segment***. The ***special permit segment*** is defined as NFG's FM120 Pipeline from Survey Station 0+00 to 664+04 (12.58 miles) located in McKean, Elk, and Cameron Counties, Pennsylvania. The

special permit segment will include 6-inch diameter FlexSteel pipe of which the majority will be installed within an existing 12-inch diameter bare steel pipeline.

The special permit will allow NFG to operate the 6-inch diameter FlexSteel pipe at an MAOP of 720 psig for the FM120 Pipeline. The special permit will not allow the ***special permit segment*** to extend into any Class 2 or 3 locations, or HCAs, or moderate consequence area (MCAs).

PHMSA grants this special permit based on the findings set forth in this document with NFG implementing the special permit, which can be read in its entirety in Docket No. PHMSA-2021-0042 in the Federal Docket Management System (FDMS) located on the internet at www.regulations.gov.

VII. Alternatives

- **Alternative 1: "Do Nothing/No Action" Alternative**

If this special permit application were denied and the No Action Alternative were selected, NFG would need to comply fully with 49 CFR Part 192. NFG indicates that in the event that its special permit application was denied, it would perform a direct bury of a new 6-inch steel line, which would be required to fully comply with 49 CFR Part 192 unless it submitted a separate special permit application that was granted. The open-cut direct bury method for construction would involve grading a 40 to 50-foot-wide right of way and excavation of soil material along the entire route of FM120 Pipeline, including fifty (50) wetlands, twelve (12) streams, and other sensitive habitat. This method would increase potential for compaction, erosion, and revegetation concerns. In contrast, the insertion method would be significantly less invasive than the conventional open-cut method and require less soil disturbances. The insertion method would require an anticipated total earth disturbance acreage of 52.8 acres whereas the conventional open-cut method would require 87.0 acres.

- **Alternative 2: Selected Alternative**

PHMSA grants NFG a special permit to use a composite and flexible steel pipeline product known as FlexSteel, which has a high-density polyethylene (HDPE) inner and outer layer with a helically wound steel core. FlexSteel pipe can be spooled and is less costly to manufacture, transport, install, and operate than traditional steel pipelines.

Flexible steel pipelines are not contemplated by the regulations in 49 CFR Part 192. In considering this special permit application, PHMSA had to analyze the design, materials, installation, and maintenance of FlexSteel pipe.

VIII. Overview of the Special Permit Conditions:

To ensure an equivalent level of safety as full compliance with Part 192, PHMSA will grant the following summarized special permit conditions (**Conditions 1 through 13 and Limitations** below) that NFG must implement:

1) **NFG must design, operate, and maintain the pipeline in accordance with the following**:
    a) For purposes of the special permit, the *"**special permit segment**,"* i.e., the "Project," is defined as the FlexSteel pipe, fittings, monitoring devices, and related facilities to be installed within the 12.58-mile section of FM120 Pipeline. Other "new construction" will consist of those installations outside of the 12.58 miles of the ***special permit segment*** and is not included in this special permit.
    b) The pipeline must operate at or below a MAOP of 720 psig. This MAOP has been established based on the pipeline facilities that connect to the ***special permit segment***, which is NFG's Line K, an interstate pipeline that spans between northern Pennsylvania and the Buffalo, New York areas, and Line KL, a pipeline that spans between Line K and the FM120 Pipeline.
    c) The pipeline must operate at or below a design factor of 0.24 of the stated product burst rating of 3,000 psig, which is 48% of the product's 1,500 psig manufacturer pressure rating, for all Class locations, and road crossings within the ***special permit segment***.
        i) Due to the nature of the installation method, all road crossings must be cased with steel pipe. Any future road crossings using FlexSteel pipe must have a minimum of 36-inches cover and must be cased or 49 CFR Part 192 compliant steel pipe must be installed.
        ii) Due to the composite design of FlexSteel pipe, Barlow's formula in 49 CFR 192.105 cannot be used to determine the pressure rating of this material. Per API 15S, Second Edition, Section 5.2.5, the maximum pressure rating for a product is equal to the product's calculated minimum burst pressure multiplied

by a maximum design factor of 0.5. In this case, the 6-inch diameter FlexSteel pipe has a minimum burst pressure of 3,000 psig, which results in a maximum pressure rating of 1,500 psig.[5]

d) NFG must conduct quarterly patrols and instrumented leakage surveys at a maximum of 4-½ months, but at least four (4) times each calendar year in accordance with the requirements in 49 CFR 192.705, 192.706, and 192.935(d)(3) on the ***special permit segment***.

e) Should a Class location increase or expand in length in the ***special permit segment***, NFG must notify PHMSA of the Class location changes, a new high consequence area (HCA), or a new medium consequence area (MCA).

   i) This special permit is not applicable for Class 3 and 4 locations, HCAs, MCAs, or for a Class 2 to 3 Class location bump as described in 49 CFR 192.611.

   ii) The special permit conditions must be reviewed for Class location modifications (49 CFR 192.609) to ensure Code compliance and safety are maintained. If a new building intended for human occupancy is identified within 197 feet (1.5 times PIR) of the ***special permit segment*** and that building causes the Class 1 location to become a Class 2 location, NFG will be required to remove and replace that portion of FlexSteel pipe with 49 CFR Part 192-compliant steel line pipe.

f) NFG must treat the ***special permit segment*** as if the entire segment is a covered segment in an HCA and must develop and follow an integrity management program in accordance with the requirements of 49 CFR Part 192, Subpart O (except as waived or modified herein) applicable to plastic transmission pipelines including the following sections: 49 CFR 192.901, 192.917(b) through (e), 192.921(a)(2) or (a)(4), 192.935, 192.937(c)(2) or (c)(4), and 192.939(b). This includes, but not limited to, risk assessments, regular patrolling, participation in the national one-call system, installation of remote controlled valves, and a pressure test re-assessment every seven

[5] The 6-inch diameter FlexSteel pipe will be 5.60-inch inside diameter and 7.05-inch outside diameter with a rating of 1,500 psig, empty weight of 12.9 pounds per foot, maximum pipe operating temperature of 150 degrees Fahrenheit (°F), and maximum installation tension of 30,000 pounds.

(7) years or less, not to exceed 90 months, at a minimum pressure of 1.5 times MAOP for 24 continuous hours.

g) NFG must ensure that both its Integrity Management (IM) Procedures and its Operations & Maintenance (O&M) Procedures are modified to incorporate the conditions required by this special permit for the ***special permit segment***. NFG must make these portions of its IM Procedures and O&M Procedures available to PHMSA upon request.

2) General and Design Requirements

a) Branches: NFG must not tap, branch, or split the ***special permit segment*** FlexSteel pipe without the use of the appropriate FlexSteel manufactured fittings for the specified application.

3) Material and Testing Requirements

a) Pipe Layers: NFG must install line pipe in the ***special permit segment*** that is comprised of high density polyethylene (HDPE) PE4710 inner and outer layers made from natural gas pipe grade material, which meet the material requirements of API 15S, Second Edition. All FlexSteel components must be manufactured and tested in accordance with API 15S, Second Edition.

b) Regrind and Rework of Polymeric Materials: Materials used in the manufacture of the pipe installed within the ***special permit segment***, during construction or in future repairs or replacement, may not contain any regrind or rework material.

c) Outdoor Pipe Storage: NFG must comply with API 15S, Second Edition requirements for outdoor storage and ultraviolet radiation exposure of polyethylene (PE) pipe for all FlexSteel pipe materials used in the ***special permit segment***. NFG must document compliance with API 15S, Second Edition in its Material Specifications and O&M Procedures. NFG must obtain mechanical and chemical properties test reports that certify the steel by heat used in manufacturing the FlexSteel pipe.

d) Factory Pressure Testing: All pipe used in the ***special permit segment*** must be factory pressure tested to a minimum of 1.3 times MAOP for a minimum of one (1) hour. NFG must make available pressure test records demonstrating that all ***special permit segment*** pipe was factory pressure tested. Such records must be traceable to all line pipe repair pipe or replacement pipe used within the ***special permit segment*** and must include:

Pressure test reports, pressure testing parameters (pressure, time, procedure and/or standard number, date, etc. and test acceptance parameters), and pressure testing recorders with current calibration records for pressure test recoding equipment. NFG must provide a certification from the pipe manufacturer that the tests were completed and that all pipe was visually checked during the pressure tests for leaks. NFG must make available all pressure test records to the Director, PHMSA Eastern Region, prior to operation of the ***special permit segment*** upon request.

e) Testing of Steel: Two (2) pipe samples per unique steel heat used in the construction of FlexSteel pipe's inner steel core placed into service must be obtained from the FlexSteel pipe inventory to be used in the actual construction project. For each sample, the following testing must be performed
   i) Conduct burst testing at ambient temperature per the requirements of American Petroleum In statute, API 15S, Second Edition, Section 5.2.3.5;
   ii) The inner steel core must be destructively tested per American Society for Testing and Materials (ASTM), ASTM A370 for yield strength ultimate strength and elongation. The results of the mechanical properties testing must be compared to the manufacturer's requirements for as-received steel strip materials; and
   iii) The inner core chemical composition must be tested per ASTM A751. The results of the chemical composition must be compared to the manufacturer's material specifications.
   iv) The high-density polyethylene (HDPE) material must be tested for chemical composition and compared to the manufacturer's material specifications.
f) Elevated Temperature Testing: One (1) sample obtained from FlexSteel pipe inventory, to be used in the actual construction project, must be subjected to elevated temperature testing per the requirements of API 15S, Second Edition, Section 5.4.3.2.
g) Long-Term Integrity: In designing the pipeline, NFG must consider and plan for all pipeline integrity risk factors, including, but not limited to: Pressure and temperature cycling; performance of multilayer composite pipe in subzero temperatures, and repairs under a range of ambient conditions; long term performance of composite material and mechanical fittings; cathodic protection of metallic appurtenances; coating

performance; long term performance of pipe; risk migration through damage to the inner or outer pipe wall; and methods for assessment of buried or excavated pipe.

i) NFG must schedule and perform five (5) inspections during which non-destructive and destructive testing must be performed on the pipe material after installation. Nondestructive testing must focus on the composition and degradation of the pipe material and destructive testing must include a hydrotest to burst pressure. NFG must perform these inspections and tests at a maximum of 1, 2.5, 5, 7.5, and 10-year intervals (not to exceed this timing by 90-days) after installation.

ii) A section of pipe no less than 200 feet must be installed in such a way that simulates the condition of the ***special permit segment*** (i.e. cased) in the immediate vicinity of the operating pipeline at Milepost 0 on or near NFG's property, see **Attachment 2- FM120 Pipeline Overview Map**. This FlexSteel pipe segment must have 20 feet removed during the intervals defined in **Condition 3(g)(i)** above to be evaluated, including destructive testing. The test results must be made sent to the Director, PHMSA Eastern Region, and posted on the docket at www.regulations.gov.

(1) Each removed segment must be disassembled, visually, and non-destructively inspected, as appropriate, for any indications of corrosion.

(2) FlexSteel's internal and external HDPE layers must be destructively tested per ASTM D638-03 (Standard Test Method for Tensile Properties of Plastics) 2003 edition for yield strength, ultimate strength, and elongation. These properties must be evaluated based on the requirements of ASTM D2513-12ae1 (Standard Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings) April 1, 2012 edition, Section 5.12.2.1 (Elongation) Table 1, and ASTM D3550-12e1 (Standard Specification for Polyethylene Plastics Pipe and Fittings Materials) April 1, 2012 edition, Table 1 (Yield Strength).

(3) Flex Steel's inner core must be destructively tested per ASTM A370-18 December 1, 2018 edition for yield strength, ultimate strength, and elongation and per ASTM A751-14a October 1, 2014 edition for chemical

composition. These results must be evaluated based on the requirements of ASTM A109-16 (Standard Specification for Steel, Strip, Carbon (0.25 Maximum Percent), Cold Rolled) 2016 Edition Table 2 (Chemical Properties). The results of the mechanical properties testing must be per the manufacturer's requirement for as-received steel strip materials. These mechanical property values must exceed the values listed in ASTM A109-16. Acceptance criteria is available for review upon request, but for trade secret reasons, it is requested that the criteria not be listed in the docket folder.

(4) A section of FlexSteel pipe must be burst tested per the requirements of API 15S, Second Edition, Section 5.2.3.5.

iii) Perform removal, replacement, and installation of pipe and fittings, and other actions related to the removal of test segments, in accordance with the requirements of this special permit.

iv) NFG must report the results of the inspections and tests to the Director, PHMSA Eastern Region, within 60 days of completion of testing.

v) In lieu of performing the testing requirements described in **Conditions 3(g)(i), 3(g)(ii), 3(g)(iii), and 3(g)(iv)** of this special permit, and since the special permit segment will be connected to the special permit segment installed under Docket No. PHMSA-2017-0090, National Fuel may use the results of the destructive and non-destructive testing as required in **Condition 3(e)** of Docket No. PHMSA-2017-0090 to determine the long-term integrity of the pipeline. Any results from the analysis of these tests that require corrective action(s) shall be applied to the special permit segment.

4) Construction Operator Qualifications

a) If the performance of a construction task associated with construction or repair of the ***special permit segment*** could affect the integrity of the segment, NFG must treat that task as a "covered task" notwithstanding the definition in 49 CFR 192.801(b), and must implement the requirements of 49 CFR Part 192, Subpart N. NFG's construction operator qualification (COQ) procedures, training program, and qualification tests must include detailed information on all construction-related tasks as a covered task.

b) NFG must develop and implement a COQ plan that specifically relates to construction activities for the ***special permit segment***. The purpose of the plan must be to ensure construction personnel and operations personnel are trained. The COQ plan must be followed throughout the construction phase with respect to the following: Pipe inspection, hauling and stringing, appurtenance inspection, field jointing methods, installation of appurtenances, pull through of the pipeline, padding and backfilling as required, hydrostatic testing, pipe repairs made from hydrostatic testing, dewatering and purging, and inspection of work (i.e. trenching, excavating, etc.). These tasks can affect the integrity of the ***special permit segment*** and must be treated as "covered tasks." The individuals driving the pipe trucks to the pipeline right-of-way will not need to be COQ qualified, unless they are responsible for the pipe unloading.

c) NFG must also treat in the following ***special permit segment*** tasks as covered COQ "covered tasks", such tasks include: Right-of-way soil stability determination, surveying, locating foreign lines, one call notifications, ditching or excavation, cathodic protection (CP) system surveys, mitigation, and installation, anomaly evaluations and repairs, right of way clean up (including installation of line markers), SCADA control point installation and verification, gas quality monitoring, and quality assurance monitoring.

d) NFG must have FlexSteel personnel on-site when initial pipeline installation is conducted.

   i) NFG must have FlexSteel certified joining personnel onsite installing all FlexSteel couplings.

e) NFG must develop and make available its COQ plan to the Director, PHMSA Eastern Region, 30-days prior to beginning construction.

5) Excavation, Pipe Cover, and Damage Prevention

a) Pipe - Inspection for Damage:

i) NFG must develop and implement an inspection training and qualification plan and must send the plan to the Director, PHMSA Eastern Region, 30 days prior to the start of construction. This plan must define the requirements and training necessary to inspect and evaluate damage to FlexSteel pipe and fittings. In addition, NFG must have FlexSteel employees on site during any insertion activities to not only to advise on any construction related activities but to assist in inspection, evaluation, and repair of any damage indications, should they be encountered.

ii) NFG must inspect the pipeline during offloading at the storage yard, offloading on location, during uncoiling, placement into the ditch, backfill, right-of-way grading, and clean up.

iii) NFG must certify and document all inspections with date, time, pipeline station, and pipe spool number.

iv) NFG must inspect the leading 25 feet of pull-through pipe for damage, replacing damaged pipe. All indications of pipe damage must be evaluated and replaced or repaired as follows:

(1) Option 1 - Minimal Damage to the Pipe Shield: Gouges or scrapes that exceed 0.1181 inches or 3 millimeters (mm) in depth must be repaired in accordance with Option 2 or 3 below or replaced with new pipe.

(2) Option 2 - Moderate Damage to the Pipe Shield with No Steel Strip Exposed: Gouges more than the depth specifications listed above must be repaired with either a pipe clamp or a pipe repair system consisting of polyethylene/butyl rubber pipeline tape, heat-activated wrap, or replaced with new pipe. Prior to applying the clamp or wrap, gouges must be smoothed and blended with an appropriate grit sandpaper or equivalent material. For this repair option to be used, the pipe must contain: No visible evidence of exposed steel layers, outer sheath damage must be less than six (6) square inches, and the outer sheath damage cannot be more than halfway around the pipe.

(3) Option 3 - Extensive Damage to the Pipe Shield: When the steel layer has become exposed or the degree of outer sheath damage exceeds the parameters specified in Option 2 above, the damaged section of the pipe must be cut out and a midline connection installed.

v) During the pre-installation, the operator must develop procedures for internally cleaning the existing 12.75-inch diameter pipe (future casing pipe) to remove liquids and debris and to inspect the casing pipe for any hazards that could damage the FlexSteel pipe during the casing pull through.

vi) Prior to insertion, each insertion section of the ***special permit segment*** must be pigged with a cleaning pig to verify the cleanness of the section. If any liquids are found as a result of this cleaning pig run, additional cleaning pig runs must be performed until no visible liquids are found.

vii) During the insertion process, the tensile force on the FlexSteel pipe shall be monitored by use of a calibrated dynamometer, calibrated within six (6) months of use. This tensile force shall be limited to 24,000 pounds which is 80% of FlexSteel's rating of 30,000 pounds.

b) NFG must develop and implement O&M Procedures and/or Construction Specifications to remove and replace any FlexSteel pipe with the following conditions:

i) Cuts, scrapes, abrasions, or gouges that at any place exceeds the criteria for wall damage defined in **Condition 5(a)**.

1) Discolorations of the outer HDPE layer that may indicate material degradation or lack of homogeneity.

2) All FlexSteel pipe must be newly produced after the grant of this special permit and not obtained from inventory. The outside HDPE layer is PE 4710 with 2% carbon black content, which has a 50-year UV resistance per ASTM D3350.[6]

3) Any section of FlexSteel pipe that appears to contain cracking or crazing (may require laboratory testing to determine any widespread materials issue with the pipe); and in the event, that crazing is identified, crazing less than

[6] NFG and FlexSteel do not believe discolorations will be an issue for this application.

0.07874-inches (2 mm) in depth will have no adverse effects on the pipe. Any damage exceeding 0.07874-inches (2 mm) in depth will require a more detailed assessment to determine the appropriate mitigative measures, up to and including replacement.[7]

4) NFG must not install any FlexSteel pipe above grade (ground).

c) Other possible signs of material damage or unsoundness must be reviewed by qualified personnel, and if the integrity of the FlexSteel pipe is negatively affected, NFG must remove and replace such pipe.

d) NFG must document its repair and replacement procedures and standards within the comprehensive written specifications or standards required under 49 CFR 192.303 and the O&M Procedures required in 49 CFR 192.605.

e) NFG must develop O&M Procedures based upon safe operating conditions, but must hand dig for initial location of the ***special permit segment*** pipeline and associated monitoring devices' communication lines. NFG must hand or shovel dig whenever excavation operations are within two (2) feet of the pipeline and associated monitoring devices' communication lines.

f) NFG must prepare and follow a damage prevention program in accordance with 49 CFR 192.614. NFG must make this program part of its O&M Procedures prior to placing the ***special permit segment*** in natural gas service.

g) NFG must ensure that the ***special permit segment*** will comply with the requirements in 49 CFR Part 192, except as waived or modified herein as listed in Section II – Regulatory Background.

6) Corrosion Control

a) NFG must apply cathodic protection (CP) on all buried FlexSteel pipe components, and joints within the ***special permit segment*** in accordance with 49 CFR Part 192 (except as waived or modified herein). Electrical conductivity of swaged joints to inner pipe layer must be tested.

i) Each FlexSteel fitting must be installed with an anode and CP test station. These fittings are electrically conductive with the FlexSteel pipe inner steel core.

[7] NFG and FlexSteel believe crazing and cracking will be unlikely for this project.

b) NFG must install CP test stations at each metallic connector.

c) NFG must perform external corrosion control monitoring on each buried metallic fitting in accordance with 49 CFR 192.465. NFG must perform CP monitoring at least once each calendar year, not exceeding 15 months. Corrosion control monitoring of the buried metallic fittings by a sampling basis is not permitted.

   i) Each stainless steel and carbon steel FlexSteel fitting must be installed with a test station and anode, coated and direct buried.

d) NFG must determine the native structure-to-electrolyte potential for each buried metallic fitting prior to energizing the CP system.

e) NFG must seal the 12.75-inch casing ends to prevent water and other debris from entering the casing annulus.

f) NFG must ensure that no 12.75-inch casing end, where natural gas can leak or migrate to the soil surface, is within the 6-inch FlexSteel pipe PIR (minimum of 131 feet) of a dwelling for human occupancy for the life of the special permit.

g) NFG must develop and implement Construction and O&M Procedures to identify non-isolation areas and maintain electrical isolation of the FlexSteel pipe inner steel core from contact with the steel casing pipe and from water entering the inner steel core.

7) Pressure and Temperature Control and Monitoring

a) NFG must install an annulus monitoring system (**Condition 7(d)** below) that will provide continuous integrity monitoring of the external HDPE layer. If a holiday is present on the external layer, this system will detect this defect.

b) Over-pressure Protection: NFG must install over-pressure protection equipment necessary to keep the pipeline pressure from exceeding 720 psig plus allowable build-up at any time. Allowable build ups are those conditions which occur due to anomalous conditions outside of the ***special permit segment***. Occurrences resulting in pressures exceeding 720 psig plus allowable build-up of MAOP plus 4%, must be reported to the Director, PHMSA Eastern Region, within 24 hours or the next business day of the occurrence for their review.

c) Pressure Monitoring: NFG must monitor operating pressures by the installation of pressure transmitters and switches in the piping system that report to the facility's SCADA system. NFG must monitor the ***special permit segment*** with continuous and

redundant pressure transmitters and switches. NFG must provide a means to inform operator personnel performing work on the pipeline of the pressure on the line.

d) Annulus Monitoring: NFG must install an annulus monitoring system that will provide continuous integrity monitoring of the external HDPE layer. If a holiday is present on the external layer, this system will detect this defect.

   i) NFG must continuously monitor through SCADA the pressure of the annulus space between the FlexSteel pipe HDPE layers along the "entire ***special permit segment***." These pressure monitoring transmitters and pressure vents must be located at valve settings at Mile Post 9.4 and Mile Post 12.58, see **Attachment 1A** through **1D - FM120 Pipeline - Special Permit Segment Maps**.

   ii) The annulus between inside liner and outer jacket HDPE materials is used to monitor pipe integrity. This annulus is a pressure containing capable structure that is designed to contain pressure up to 30 psig. 1/8-inch female (national pipe thread) NPT outlets on the end fittings will be outfitted with the necessary tubing to attach pressure transmitters that must be incorporated into SCADA monitoring. With permeated gasses permitted to build to a predetermined level (15 to 20 psig), transmitters will be configured to alarm on indications of high or low pressure outside of the established acceptable range. Continuous pressure readings within acceptable ranges provide real time indication that several key integrity features are functioning as designed. Positive pressure indicates the outer jacket material is intact (holiday free), demonstrating a "perfect coating", thus external corrosion cannot occur. It indicates that the HDPE liner material is intact and containing bore gas pressure as intended. Any breach of the liner will expose the outer jacket to bore pressure, resulting in a loss in pressure indicated by the "real time" annulus monitoring. This monitoring will alert NFG that third party damage or liner failure may have occurred, allowing prompt response for further investigation. NFG will use this monitoring capability and monitor this annular pressure with a SCADA system on a continuous 24-hour basis.

   iii) The FlexSteel fittings must be designed to allow the annulus of each segment of pipe to be common with each other, so that monitoring of the annular space can be conducted at one end of the system.

iv) A pressure relief valve with an 18 psig set point must be installed with annulus monitoring equipment to maintain the 15 to 20 psig pressure range. This relief and the associated annulus monitoring equipment must be located within fenced in locations at Mile Post 12.58.

e) Gas Temperature: NFG must continuously monitor natural gas temperature at the discharge of NFG's Wellendorf Compressor Station, see **Attachment 1-A** through **1D – FM120 Pipeline - Special Permit Segment Maps,** in order that the pipeline is not exposed to temperatures exceeding 150 degrees Fahrenheit (°F). If the FlexSteel pipe is exposed to temperatures exceeding 150 °F, the ***special permit segment*** pipeline must be shut down, pressure reduced to a maximum of 20% below the current operating pressure, and the Director, PHMSA Eastern Region, must be contacted within two (2) working days of the detection for their review.

f) SCADA and Shut-In:

i) NFG must continuously monitor the ***special permit segment*** with a SCADA system. Remote controlled valves must be installed within the vicinity of Milepost 12.58.

(1) **Attachment 2 – FM120 Pipeline Overall Map**, NFG has an existing remote control valve (RCV) installed at Mile Post 1.2 of ***special permit segment*** described in Docket# PHMSA-2017-0090 and must install an additional RCV at Mile Post 12.58 which will protect approximately 17.1 miles of Class 1 location and all of the ***special permit segment***.

ii) If communication is lost for over three (3) hours, NFG must have personnel onsite to continue operations and monitoring of the ***special permit segment***.

iii) NFG must document SCADA operating procedures and Control Room Management Procedures (49 CFR 192.631), within the O&M Procedures for the ***special permit segment***.

8) Construction and Operations

a) Tools and Equipment: NFG must have tools and fittings available either by stocking such or from a local vendor such that it can respond within a reasonable time to operational maintenance and emergency repairs (the number and types must be detailed in the O&M Procedures):

i) An inventory of tools and materials must be indicated in the O&M Procedures for maintenance and emergency repairs.

ii) NFG must have available either by stocking such or from a local vendor appropriate tools and fittings to repair and replace appurtenances and piping within the ***special permit segment***.

iii) NFG must maintain a supply of FlexSteel pipe at NFG's project and/or operational maintenance yards for the ***special permit segment***.

iv) Construction Specifications: NFG must develop construction specifications for all construction phases of the ***special permit segment***. These construction specifications must be made available to the Director, PHMSA Eastern Region, 30-days prior to beginning construction of the ***special permit segment*** pipeline.

b) Inspection criteria: NFG must develop inspection criteria for construction procedures and document them within the O&M Procedures. The inspection criteria must meet the requirements of these special permit conditions and 49 CFR Part 192 (except as waived or modified herein). These inspection criteria must be made available to the Director, PHMSA Eastern Region, 30-days prior to beginning construction of the ***special permit segment*** pipeline.

c) Repair criteria: NFG must develop pipe repair criteria and document them within the O&M Procedures. Repair criteria must be submitted to the Director, PHMSA Eastern Region, 30-days prior to beginning construction of the ***special permit segment*** pipeline.

d) Hydrostatic test: Prior to NFG putting the pipe in service, the pipe, connections, and appurtenances must be field hydrostatically tested at a pressure of 1.5 times the MAOP of 720 psig (minimum test pressure of 1080 psig) for a minimum of 24 hours with recording charts (pressure chart, temperature chart, dead weights and log, and calibration records of equipment, calibrated within 30 days of test), the results of which must be made available to the Director, PHMSA Eastern Region, for review, including determination parameters of an acceptable test. NFG must compensate for temperature and elevation variations and such compensation must be documented on test records.

e) Leakage detection surveys: NFG must conduct leakage detection surveys of the entire ***special permit segment*** four (4) times per calendar year at a minimum, not to exceed 4-½ months between surveys, utilizing instrumented leak detection equipment capable of

parts per million (ppm) detection. NFG must repair all leaks as they are found, and notify the Director, PHMSA Eastern Region, of any leaks found within two (2) business days. Leak testing procedures, equipment, and scheduling must be documented within the O&M Procedures. The first survey must be performed within 48 hours of commencement of pipeline operations with natural gas.

f) As defined in **Condition 1**, any new construction outside the ***special permit segment*** must conform to 49 CFR 192.327 - Cover.

   i) NFG must conform to the depth of cover requirements in 49 CFR 192.327 for any new construction outside of the ***special permit segment***.[8]

   ii) Based upon available depth of cover information, the depth of cover of the existing pipeline may not meet 49 CFR 192.327 requirements depending on soil conditions (i.e. Class 1 locations in consolidated rock may be installed at a depth of cover of 18-inches per 49 CFR 192.327 as opposed to an installation depth of cover of 30-inches in normal soil). All pipe locations with cover less than 24-inches must have additional preventive and mitigative measures such as additional pipeline markers, lowering the pipe, adding cover, or installing subsurface concrete safety barriers.[9]

   iii) Due to the insertion method, periodic bell holes will be dug, and sections of the existing pipeline will be removed to facilitate the installation process. In these areas, the FlexSteel coupler fittings will be direct buried, along with the adjacent FlexSteel pipe. To minimize environmental impacts, the bell holes will be kept to a minimum length that will allow for the safe installation of the FlexSteel pipe. The expected length of the bell holes is anticipated to be approximately 100 feet long. NFG's must install the FlexSteel coupler fittings to a depth that satisfies 49 CFR 192.327, where practicable. To mitigate any potential impingement of the

[8] A primary objective of NFG's special permit request was to capitalize on the opportunity to perform the construction via the insertion method to avoid the significantly higher level of environmental impact that will be necessitated by using the open trench construction method. Inherent in this request was utilization of the existing 12.75-inch diameter pipeline as a casing or host pipe into which the FlexSteel pipe will be inserted. This pipe is a pre-1970's vintage pipeline. Its installation was before Part 192 was developed, and there are locations that do not meet depth of cover requirements.

[9] NFG must submit to the Director, PHMSA Eastern Region, and must receive a "no objection" letter for the type of preventive and mitigative measures are being used on all pipe and casing segments with cover less than 24-inches.

outer FlexSteel liner or damage to the casing Link-seal, NFG may need to bury the FlexSteel pipe and fittings up to the depth of cover of the existing line.

iv) These areas must have line markers and/or test stations installed to designate the location of the line. Warning tape must also be installed approximately one (1) foot above the pipe.

v) At locations where it is possible to lower the FlexSteel pipe without the potential of impingement of the outer liner, NFG must install the pipe at a depth per the requirements of 49 CFR 192.327.

vi) NFG must perform patrolling of this line four (4) times per calendar year at a minimum, not to exceed 4-½ months between surveys. The patrols must include observations of any locations that may have become exposed. These exposures must be reviewed and prioritized for remediation per NFG's O&M Procedures, not to exceed 12-months.

9) Communication and Records

a) Communication and contact of personnel: NFG must maintain a log of all material suppliers and vendors, consultants, subcontractors, NFG employees, and all other parties involved in the material supply, design, construction, and O&M of this ***special permit segment*** with name, address, phone number, mobile phone number, e-mail, and other pertinent information, including COQ and operator qualification (OQ) training data.

b) Photos and Videos: NFG must develop documentation that is representative of the following phases of the ***special permit segment*** construction utilizing FlexSteel pipe and fittings: Offloading, stringing/uncoiling, inserting, pulling-through, joining/swaging, coating of fittings, cathodic protection installation and backfilling. The representative operations must be documented with photographs, videos, or other appropriate forms of documentation, which must be made available to the Director, PHMSA Eastern Region, within 90 days of the ***special permit segment*** in-service date.

c) Design and Material Review: Before operating the pipeline with natural gas, NFG must make available the following information, to the Director, PHMSA Eastern Region:

i) Specific materials used in the FlexSteel line pipe used in the ***special permit segment***, with detailed schematic of the layers, layer thickness, outside diameter, and inside diameter;

ii) Pipe manufacturing quality assurance processes and programs including, but not limited to, procedures, pipe and material test results, standards followed, certifications, manufacturing personnel qualifications, and any other items regarding quality assurance;

iii) Design criteria - for each Class location, road crossings, and stream crossings, if applicable, see **Conditions 1(b) and (c)** above;

iv) Calculations of maximum loads that the FlexSteel pipe can tolerate and will be subject to in service;

(1) Due to the nature of the insertion installation method, most the installed FlexSteel pipe must be cased, which includes all road crossings.[10]

(2) NFG must require any planned third-party heavy equipment crossings of the ***special permit segment*** to be approved through an encroachment agreement. All heavy equipment crossings of the ***special permit segment*** must include the requirement for the crossing to have construction hardwood mats, steel plates, air bridges, or concrete pads over the segment installed prior to traversing the pipeline. NFG must require a crossing to ensure that excessive live loads are not transmitted into the Flex Steel pipe by following industry accepted standard API 1102 (latest edition) for calculating the anticipated stresses on the pipe to not exceed a 30% of burst pressure and evaluated by a NFG subject matter expert.

v) Process and calculations used to establish MAOP, consistent with this special permit and 49 CFR Part 192 (except as waived or modified herein); and

vi) Detailed comparison and correlation of the established MAOP with the Hydrostatic Design Basis (HDB) of the FlexSteel pipe.

[10] There will be some short locations of direct burial located at transitions to above grade valve settings as well as locations where the midline couplings will be direct buried approximately every 1,200 feet. NFG anticipates the largest load that the FlexSteel pipe would experience will be from a mowing tractor.

d) Construction Start: At least 14 days before beginning construction, NFG must notify the Director, PHMSA Eastern Region, of the date, time, and location of pipeline installation and provide opportunity for the Director, PHMSA Eastern Region, to witness the installation.

e) Material Records: NFG must provide records showing manufacturer personnel and a Quality Assurance (QA)/Quality Control (QC) inspector were onsite conducting inspections during installation of all connections, flanges, and the laying of pipe to ensure that proper technical evaluation of installation procedures was conducted. Mechanical and chemical property test reports of all pipe must be maintained by NFG for the operational life of the pipeline.

f) Pipe Installation Records: NFG must provide an installation report detailing any Construction or QA/QC issues that arose during installation that may have compromised the integrity of the pipe and document how such issues were addressed to maintain the FlexSteel pipe integrity, including but not limited to:

    i) Material Damage - material loss or damage that will result in repair or replacement, both internal and external;

    ii) Pipe dents - maximum dent percentage that pipe can sustain, and repair methods;

        (1) Dents greater than 6% of outside pipe diameter must be removed and replaced.

    iii) Any scratch or gouge:

        (1) 0.11811-inches (3 millimeters (mm)) in depth or less must be considered acceptable;

        (2) 0.11811-inches (3 mm) or more in depth but does not expose the inner steel core and is less than six (6) square inches in area can be repaired;

        (3) 0.11811-inches (3 mm) or more in depth but does not expose the inner steel core and is more than six (6) square inches in area must be cut out and replaced; or

        (4) That exposes the inner steel core must be cut out and replaced.

    iv) Bending - maximum pipe bending radius during installation; and

    v) Environmental Effects - temperature, moisture, freezing, or soil.

g) If at any time NFG becomes aware of a threat to the integrity of the ***special permit segment*** pipe that poses a risk to the public, or a failure risk, NFG must notify the Director, PHMSA Eastern Region, immediately. Concurrent with such notification, NFG must outline the potential mitigative and integrity measures that could be used to address the threat or risk, including replacement with steel line pipe currently approved by 49 CFR Part 192.

h) NFG must notify the Director, PHMSA Eastern Region, within five (5) days if:
    i) Repairs and modifications are required or made to the FlexSteel pipe, including fittings;
    ii) The ***special permit segment*** is at any time damaged or hit; or
    iii) The pipe or fitting manufacturer issues a product recall, or materially modifies the product defect specification in response to safety concerns. In the event of a product recall or material defect pertaining to the FlexSteel products used in the ***special permit segment***, NFG will notify the Director, PHMSA Eastern Region, within five (5) days of becoming aware of the recall or material defect.

i) Manuals - Design, Construction, Operating, Maintenance, and Emergency Response: NFG must submit those manuals, procedures, specifications, or other documents pertaining to the Design, Construction, O&M, and Emergency Response related to the ***special permit segment*** for review by the Director, PHMSA Eastern Region, at least 30 days prior to operation of the ***special permit segment*** pipeline, unless otherwise indicated in writing by the Director, PHMSA Eastern Region.

j) Post-Construction review with PHMSA:
    i) NFG must conduct a post-construction special permit review with the Director, PHMSA Eastern Region. The purpose of such review is to review the documentation of NFG's compliance with all construction-related special permit conditions and have been incorporated into their O&M Procedures. NFG must contact the Director, PHMSA Eastern Region, within 14 days before completion of construction of the pipeline. The review must take place after construction has been completed but before operation commences, unless otherwise approved by the Director, PHMSA Eastern Region.

ii) NFG must complete this review prior to submitting to PHMSA the certification required in **Condition 13** below.

k) Annual Review with PHMSA: NFG must conduct a one (1) year O&M review with PHMSA and annually thereafter, not to exceed 15 months. The review must be scheduled each calendar year by NFG with the Director, PHMSA Eastern Region, after pipeline operations (in-service) begin in the ***special permit segment***.

10) Gas Quality

a) NFG must develop and implement a program to monitor and mitigate the presence of deleterious gas stream constituents through the usage of continuous monitoring equipment, such as chromatographs, for gas sampling.

b) NFG's Supply Transmission System must maintain a tariff with gas quality requirements for shippers to meet through the ***special permit segment***. These requirements are as follows.[11]

i) All gas must contain no more than twenty (20) grains of total sulfur (S), nor more than three-tenths (0.3) grain of hydrogen sulfide (H^2S) per one hundred (100) cubic feet;

ii) All gas must contain no more than two-tenths of one percent (0.2 of 1%) by volume of oxygen (O^2);

iii) All gas must contain no more than four percent (4%) by volume of a combined total of carbon dioxide (CO^2) and nitrogen (N^2) components; provided, however, that the total carbon dioxide (CO^2) content must not exceed two percent (2%) by volume;

iv) All gas must have a temperature of not more than one hundred twenty degrees Fahrenheit; and

v) All gas must have been dehydrated by NFG for removal of water in a vapor state, and in no event, contain more than seven (7) pounds of water vapor (H^2O) per million cubic feet.

[11] NFG's Supply Transmission System is a Federal Energy Regulatory Commission (FERC) regulated pipeline system. NFG is required to maintain a tariff with gas quality requirements for shippers to meet.

c) This gas composition requirement must be within the specification for the FlexSteel material being used for the ***special permit segment***.

d) NFG must actively monitor the gas entering its system to ensure the product being transported meets this gas quality standard. NFG must monitor the gas quality passing through this ***special permit segment*** and the gas composition must be analyzed on a semi-annual basis.

e) If the gas composition has been found to be out of specification the gas supply must be shut off per NFG O&M Procedures.

f) If it is determined that the commodity transported in this pipeline ***special permit segment*** is not compatible with, and proves detrimental to, the pipe material, PHMSA reserves the right, as a condition of this waiver, to curtail or discontinue the use of this pipe material.

11) Right-of-Way Management Program

a) NFG must incorporate the applicable best practices of the Common Ground Alliance (CGA) into its damage prevention program within the ***special permit segment***.

b) NFG must install and maintain line-of-sight markings on the pipeline in the ***special permit segment*** except in agricultural areas or large water crossings such as lakes where line-of-sight signage is not practical.

12) Annual Reporting

Annually, following the grant of this special permit, NFG must make available the following to the Director, PHMSA Eastern Region:

a) The number of new residences, other structures intended for human occupancy and public gathering areas built within 220 yards of the pipeline centerline and along the ***special permit segment***.

b) Any new integrity threats identified during the previous year and the results of any excavations or other integrity assessments performed during the previous year in the ***special permit segment*** including any encroachments from right-of-way patrols, gas leakage patrols, or other call-outs, and any gas leakage from these activities or from SCADA monitoring or annulus monitoring pressures greater than 20 psig.

c) Any reportable incident, any leak normally indicated on the DOT Annual Report, and all repairs on the pipeline that occurred during the previous year in the ***special permit segment***.

d) Any on-going damage prevention initiatives affecting the ***special permit segment*** and a discussion of the success of the initiatives.

e) Any mergers, acquisitions, transfer of assets, or other events affecting the regulatory responsibility of the company operating the pipeline.

f) NFG must identify and document any potential threats, and how they will be mitigated. If a threat was identified in a past annual report, how the threat was mitigated must be documented.

g) Annual reports must be received by PHMSA by the last day of the month in which the special permit is dated. For example, the annual report for a special permit dated September 15, 2021, must be received by PHMSA no later than September 30, each year beginning in 2022. Annual reports must be placed on the special permit docket in www.regulations.gov.

13) Certification

A senior executive officer of NFG, vice president or higher, must certify in writing the following:

a) NFG pipeline meets the conditions described in this special permit and 49 CFR Part 192 (except as waived or modified herein) for the ***special permit segment***.

b) NFG has maintained the following records for the ***special permit segment*** and included these requirements in NFG's O&M Procedures:

i) Documents (material test reports) certifying that the pipe in the ***special permit segment*** meets the requirements of API 15S, Second Edition and all related material standards in this special permit and 49 CFR Part 192 (except as waived or modified herein).

ii) Documentation of compliance with all conditions of this special permit must be retained for the applicable life of this special permit for the referenced ***special permit segment***.

c) That all procedures and specifications for the NFG pipeline have been updated to include all additional construction, and O&M requirements of this special permit and 49 CFR Part 192 (except as waived or modified herein) applicable sections; and
d) That NFG has reviewed and modified its damage prevention program relative to the NFG pipeline to include any additional conditions required by the special permit.
e) NFG must send the certifications required in Condition 13 (a) through (d) with completion date, compliance documentation summary, and the required senior executive signature and date of signature to the PHMSA Associate Administrator with copies to the Director, PHMSA Eastern Region; Director, PHMSA Standards and Regulations Division; and Director, PHMSA Engineering and Research Division, within 30 days prior to placing the ***special permit segment*** into natural gas service.

Limitations:

This special permit is subject to the limitations set forth in 49 CFR 190.341 as well as the following limitations:

1) PHMSA has the sole authority to make all determinations on whether NFG has complied with the specified conditions of this special permit. Failure to comply with any condition of this special permit may result in revocation of the permit and require NFG to comply with the regulatory requirements.
2) Any work plans and associated schedules for the FM120 Pipeline ***special permit segment*** are automatically incorporated into this special permit and are enforceable in the same manner.
3) Failure by NFG to submit the certifications required by **Condition 13 (Certification)** within the time frames specified may result in revocation of this special permit.
4) As provided in 49 CFR 190.341, PHMSA may issue an enforcement action for failure to comply with this special permit. The terms and conditions of any corrective action order, compliance order or other order applicable to a pipeline facility covered by this special permit will take precedence over the terms of this special permit.
5) If NFG sells, merges, transfers, or otherwise disposes of all or part of the assets known as the FM120 Pipeline in the ***special permit segment***, NFG must provide PHMSA with written notice of the change within 30 days of the consummation date. In the event of such transfer,

PHMSA reserves the right to revoke, suspend, or modify the special permit if the transfer constitutes a material change in conditions or circumstances underlying the permit.

6) PHMSA grants this special permit to limit it to a term of no more than 5 or 10 years from the date of issuance. If NFG elects to seek renewal of this special permit, NFG must submit its renewal request at least 180 days prior to expiration of the 5 or 10-year period to the PHMSA Associate Administrator for Pipeline Safety with copies to the Deputy Associate Administrator, PHMSA Field Operations; Deputy Associate Administrator, PHMSA Policy and Programs; Director, PHMSA Eastern Region; Director, PHMSA Standards and Rulemaking Division; and Director, PHMSA Engineering and Research Division. All requests for a renewal must include a summary report in accordance with the requirements in **Condition 12 (Annual Report)** above and must demonstrate that the special permit is still consistent with pipeline safety. PHMSA may seek additional information from NFG prior to granting any request for special permit renewal.

The granted special permit with conditions granted to NFG for Docket No. PHMSA-2021-0042 can be found in 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.

IX. Affected Resources and Comparative Environmental and Safety Consequences

The environmental resources and issues listed here are analyzed to evaluate the potential for environmental impact, in accordance with NEPA.

1. *Safety*:

Due to the design and composition of the FlexSteel pipe, many of regulations in 49 CFR Part 192 are not applicable because Part 192 dictates actions to ensure the quality and condition of steel pipe, along with steel components and appurtenances. Because FlexSteel contains an inner steel core surrounded on the top and bottom with high density polyethylene, PHMSA must contemplate the safety risks addressed by the regulations that are not applicable to a flexible steel pipeline in developing and proposing special permit

conditions. While the steel core will be surrounded by polyethylene, the steel is subject to corrosion like any other steel used to construct pipelines. PHMSA also considered that there are currently no in-line inspection tools available to monitor the interior of the pipeline. The conditions in this document will ensure an equivalent level of safety as full compliance with 49 CFR Part 192.

If a failure occurred, the released volumes of natural gas would be less if the special permit was granted, as shown in the following **Table 2: Volume Comparison**:

Table 2: Volume Comparison

Variables	**Existing 12-inch Steel**	**6-inch FlexSteel Pipe**
Outside Diameter – inches (in)	12.75	7.05
Inside Diameter - inches (in)	12.188	5.600
Area ($feet^2$)	0.810	0.171
Length (feet of ft)	66,406	66,406
Volume (ft^3)	53,789	11,389
MAOP (psig)	660	720
Temperature (°F)	60	60
Temperature (°K)	520	520
Standard Temperature (°F)	60	60
STD Temp (°K)	520	520
Volume – Million Standard Cubic Feet (MSCF)	**2,415**	**556**

The potential impact radius (PIR) for the FlexSteel pipeline will be 130.5 feet. This assumes an outside diameter of 7.05-inch for the FlexSteel material and a maximum operating pressure of 720 psig. If the special permit is not granted and a 6-inch steel

pipeline[12] would need to be installed, then the PIR would be 122.7 feet, a difference of 7.8 feet. Based on this relatively small increase in the PIR, it is unlikely that additional people would be affected by a failure if a special permit is granted, given the sparsely populated nature of the area adjacent to the right of way.

To better ensure that the FlexSteel pipe can safely accommodate the MAOP of 720 psig, PHMSA has added conditions to this special permit mandating additional testing on each FlexSteel pipe heats. As specified above, PHMSA is proposing to require that NFG conduct: 1) burst testing per API 15S, Second Edition, Section 5.2.3.5.; 2) destructive testing on the FlexSteel inner core per ASTM A370 for yield strength and elongation; and 3) inner core and HDPE chemical composition testing per ASTM A751 with the results compared to FlexSteel material specifications.

FlexSteel facilities accommodate foam and solid cast cleaning pigs. These pigs are used to clear obstructions, dewater, or clean a line to prevent or impede the development of corrosion. Unlike traditional steel pipelines, FlexSteel pipelines cannot accommodate inline inspection tools that provide information about the condition of the pipeline.

The special permit conditions described in Section VIII are designed and intended to reduce the likelihood of a failure of the FlexSteel pipe. These special permit conditions include measures related to the pipeline design, materials, construction, personnel qualification, operation, gas quality, maintenance, repair, record-keeping, right of way protection, depth of cover, and reporting requirements. Another measure of safety will be provided because the FlexSteel pipe will be inserted inside an existing 12-inch steel pipeline. While the outer pipeline will not protect against all pipeline integrity risks to the FlexSteel pipeline, the outer pipeline will likely provide protection against the threats associated with pipeline rupture, including flying shrapnel. The outer pipeline may also provide containment of natural gas in the unlikely event of the failure of the FlexSteel pipeline.

2. *Aesthetics*:

[12] A 6-inch steel pipeline would have a 6.625-inch outside diameter.

Neither alternative will change the visual character of the ***special permit segment***. The use of FlexSteel pipe will allow for less temporary land disturbance.

3. ***Agricultural Resources*:**

   There are no identified agricultural resources within the ***special permit segment***, therefore there will be no impact to agricultural resources.

4. ***Air Quality*:**

   Construction activities associated with the selected alternative will result in temporary increases in emissions of some pollutants due to the use of non-stationary equipment powered by diesel fuel or gasoline engines; the temporary generation of fugitive dust due to disturbance of the ground surface, vegetation clearing, and other dust generating actions; and indirect emissions attributable to activities associated with construction activities of the ***special permit segment*** (e.g., workers commuting to and from work sites during construction, etc.).

   Construction related emission estimates are based on a typical construction equipment list, hours of operation, and vehicle miles traveled by the construction equipment and supporting vehicles for the ***special permit segment***. The insertion method will require at most four (4) months to complete the replacement of the FM120 Pipeline. The no action alternative or conventional open-cut method would require approximately six (6) months. The additional time of construction for the conventional open-cut method would require more equipment, hours of operation, and vehicle miles traveled which would result in more emissions of pollutants, including green-house-gases (GHGs).

5. ***Biological Resources*:**

   Wildlife

   The ***special permit segment*** crosses a variety of habitat types commonly found in forested regions of northern PA. Vegetation that typifies major natural habitat types is described vegetation communities section. The ***special permit segment*** will cross these habitats which could be inhabited by the species provided below.

   Mammalian species likely to inhabit the ***special permit segment*** area include elk (Cervus

elaphus), American black bear (Ursus americanus), gray fox (Urocyon cinereoargenteus), coyote (Canis latrans), bobcat (Lynx rufus), eastern chipmunk (Tamias striatus), eastern cottontail (Sylvilagus floridanus), eastern gray squirrel (Sciurus carolinensis), northern raccoon (Procyon lotor), striped skunk (Mephitis mephitis), white-tailed deer (Peromyscus leucopus), woodchuck (Marmota monax), and several species of shrews and voles (PA Mammal Atlas, 2020).

Amphibians and reptile present in the ***special permit segment*** area may include the spotted salamander (Ambystoma maculatum), Allegheny mountain dusky salamander (Desmognathus ochrophaeus), Northern dusky salamander (Desmognathus fuscus), red-spotted newt (Notophthalmus viridescens), Eastern American toad (Anaxyrus americanus), spring peeper (Pseudacris crucifer), wood frog (Lithobates sylvaticus), green frog (Rana clamitans), snapping turtle (Chelydra serpentina), northern ring-necked snake (Diaophis punctatus), and Easter garter snake (Thamnophis sirtalis) (PA Amphibian and Reptile Society; 2020a, 2020b, 2020c).

Bird species likely to inhabit the ***special permit segment*** area include the black-throated green warbler (Setophaga virens), cedar waxwing (Bombycilla cedrorum), blue jay (Cyanocitta cristata), indigo bunting (Passerina cyanea), red-eyed vireo (Vireo olivaceus), hermit thrush (Catharus guttatus), common yellowthroat (Geothlypis trichas), chipping sparrow (Spizella passerina), dark-eyed junco (Junco hyemalis), red-winged blackbird (Agelaius phoeniceus), common grackle (Quiscalus quiscula), American robin (Turdus migratorius), and barn swallow (Hirundo rustica) (Cornell Lab of Ornithology, 2020a and 2020b).

As noted above, the selected action will take place in an existing right of way, in the existing steel pipeline. The right of way was previously disturbed during the construction and installation of the existing FM120 Pipeline, 1950s vintage, 12-inch diameter bare steel natural gas pipeline. The insertion of the FlexSteel pipeline as part of the FM120 Pipeline construction methodology involves minimal earth disturbance within the ROW and therefore will result in less disturbance to wildlife generally than replacement or extensive repair to the existing pipe with new steel pipe, as would be required under the no action alternative if full regulatory compliance were required.

Fisheries

Fisheries are surface waterbodies that provide habitat for fish. Fisheries are characterized according to water temperatures (warm water or cold water), types of fishing uses (commercial or recreational), and utilization by open water marine fishes that require freshwater upstream areas to spawn (i.e., anadromous). Significant fisheries resources are defined as waterbodies that either: 1) provide important habitat for foraging, rearing or spawning of fish species; 2) represent important commercial or recreational fishing areas; or 3) support large populations of commercially or recreationally valuable fish species or species listed for protection at the federal, state, or local level.

The fish species that are likely to occur within the ***special permit segment*** area are Brown Trout (Salmo trutta, cold water), Brook Trout (Salvelinus fontinalis, stocked in cold water), Lake Trout (Salvelinus namaycush, stocked in cold water), Tiger Muskellunge (Esox masquinongy, stocked in warm water), Walleye (Sander vitreus, stocked warm water), Smallmouth Bass (Micropterus dolomieu, warm water), and Rock Bass (Ambloplites rupestris, warm water) (PFBC, 2004 and 2005).

Fisheries of special concern are surface waters containing fisheries of exceptional recreational value, such as those that support CWF through natural reproduction, those that provide habitat for protected species, or those that are assigned special state fishery management regulations. Other special concern fisheries may include those where economic investments, such as stocking programs, have been implemented.

PA Clean Streams Law (35 P.S. §691.1 et seq.) and regulations at PA Code Title 25, including Chapters 91, 92, 93, 95, 96, 102, and 105 are also known as antidegradation rules. The basic concept of antidegradation is to promote the maintenance and protection of existing water quality for HQ and EV waters, and protection of existing uses for surface waters because it recognizes that existing water quality and uses have inherent value worthy of protection and preservation. Existing uses are protected when Pennsylvania Department of Environmental Protection (PaDEP) makes a final decision on any permit or approval for an activity that may affect a protected use (PaDEP, 2013). Existing water quality is also protected for HQ and EV waters through the antidegradation rules and there

are also additional requirements, such as antidegradation performance standards for erosion and sediment control.

All streams crossed by the ***special permit segment*** are considered to be sensitive surface waters due to them being listed by the PFBC as either a stream sections that supports the natural reproduction of trout or are an UNT that contributes to the water quality of the naturally reproducing stream (PFBC, 2021a). Additional sensitive surface waters were those considered as an approved trout water by the PFBC (PFBC, 2021b). Bull Run is crossed by the Project and has been added to the PFBC Class A wild trout streams listing as of February 1, 2021. No other streams crossed by the Project on the PFBC website are streams officially proposed for Class A designation or considered to be wilderness trout streams (PFBC, 2021c, 2021d and 2021e).

Although waters are classified as fisheries of special concern (EV and natural reproducing trout streams), no fish species were identified in the ***special permit segment*** as being threatened or endangered. The selected action using the insertion method of construction will result in less disturbance to these sensitive stream areas than the no action alternative which would entail a conventional open-cut technique if the line were replaced under the no action alternative in full compliance with 49 CFR Part 192.

Vegetative Communities

The vegetative communities within the Project area are composed of upland herbaceous, upland shrub, and mixed hardwood forest. A summary of typical communities within the Project area are defined below.

Upland herbaceous land is defined as land that is actively maintained in herbaceous vegetation and is mainly associated with existing ROWs, open pasture, developed land, roadways, and residential lands. Disturbed areas such as these are typically devoid of undisturbed vegetation or consist of impervious surfaces. Open land throughout the Project area included species such as Japanese stiltgrass (Microstegium vimineum), New York fern (Thelypteris noveboracensis), common velvetgrass (Holcus lanatus), birdsfoot trefoil (Lotus corniculatus), and deertongue (Dichanthelium clandestinum).

Upland Shrub land is defined as land that is actively maintained in scrub-shrub herbaceous

vegetation and is mainly associated with pasture. Upland shrub throughout the Project area included species such as multiflora rose (Rosa multiflora), glossy buckthorn (Frangula alnus), and pin cherry (Prunus pensylvanica).

Mixed Hardwood Forest includes forested areas having a predominance of trees that lose their leaves at the end of the frost-free season or at the beginning of a dry season. The Project area is located within the Laurentian Mixed Forest Province (United States Forest Service, 2015). The Laurentian Mixed Forest Province includes forests from early- to late-successional stage with some coniferous components along with a mosaic of pure deciduous forest in favorable habitats with good soils and pure coniferous forest in less favorable habitats with poor soils (United States Forest Service, 2015). Common deciduous species identified along the Project included sugar maple (Acer Saccharum), red maple (Acer rubrum), black cherry (Prunus serotina), American beech (Fagus grandifolia), sweet birch (Betula lenta), and eastern hemlock (Tsuga canadensis).

The insertion of the FlexSteel pipe into the existing pipeline will result in significantly less disturbances to vegetative communities than the open-cut direct bury method of construction. The FlexSteel insertion alternative would require at most the disturbance of natural vegetation for approximately 52.8 acres whereas, the open-cut direct bury method of construction would require 87.0 acres.

6. *Climate Change:*

The alternatives will not significantly contribute to global climate change. As noted below, the selected action will be faster than conventional steel pipeline construction under the no action alternative and will result in fewer emissions from the construction equipment. When looking at GHG and other emissions, there are two aspects to consider. First are the emissions that would occur during construction of the facilities. Since the FlexSteel installation utilizes the existing 12-inch line as a conduit or casing, this greatly minimizes both the disturbed area and the amount of necessary equipment needed for construction. NFG estimates that the FlexSteel installation will require a crew of 15 to 20 people and perhaps 6-8 pieces of equipment for four (4) months. By contrast, a conventional open cut installation employed for pipeline replacement would require an equipment spread of 50-60 people and 25 to 30 pieces of heavy equipment for approximately six (6) months. In

addition, FlexSteel has an approximate natural gas permeation rate of 1 scf/day/mile or 7 kg CH4/year/mile. This permeation rate is in the same magnitude as the estimated emission rate of leaks from transmission pipelines (10.92 kg CH4/year/mile – as utilized by the United States Environmental Protection Agency (EPA) in the annual GHG inventory report).[13] As per the design, the FlexSteel will be installed within the existing pipeline and NFG expects this installation will not exceed the EPA estimated emission rate of 10.92 kg CH4/year/mile. It should be noted the existing pipeline has an EPA estimated emission rate of 10.92 kg CH4/year/mile. Furthermore, the FlexSteel will be installed inside of the existing 12-inch steel pipeline, making it less susceptible to third-party damage.

7. *Cultural Resources*:

On May 21, 2020, NFG initiated consultation with the PA State Historic Preservation Office (SHPO) regarding cultural resources and to determine if construction activities associated with the ***special permit segment*** would have the potential to impact known historic and/or archaeological sites. In a letter dated June 9, 2020, the PA SHPO responded with a request for a Phase I archaeological survey to investigate areas that contain a high probability for archaeological resources that had not been previously studied during a Phase I investigation for National Fuel's YM28 and FM120 Modernization Project (ER# 2017-0242-042-B) in 2017. It was determined by the PA SHPO that the Project will have no effect on aboveground historic properties. A Phase I Archaeological Investigation was conducted between July 7 and August 10, 2020. On September 24, 2020, the PA SHPO concurred with the negative findings of the Phase I Archaeological Investigation Report and in their opinion no further archeological work is necessary unless Project scope changes. On December 22, 2020, an addendum Phase I Report was submitted to PA SHPO to include a previously disturbed existing access road added to the Project for use during construction. Given the nature of the access road, the amount of disturbance observed during a December 11, 2020 site visit, and previous archaeological studies conducted within the area of potential effect, it was recommended that no archeological resources would be affected, and that no further archaeological studies were necessary. PA SHPO

[13] *Inventory of U.S. Greenhouse Gas Emissions and Sinks, 1990-2018*, United States Environmental Protection Agency, EPA 430-R-20-002 (April 2020).

concurred with the recommendations of the addendum Phase I Report on January 4, 2021.

8. ***Environmental Justice*:**

Neither the open-cut direct bury method of construction nor the FlexSteel insertion method of construction will be situated in or disproportionately impact, any predominantly minority or non-English language population, or low-income population. Furthermore, as described below in Table 2, the ***special permit segment*** area is in a sparsely populated, Class 1 location, with a total population of 24 people within 0.5-mile of either side of the pipeline. Nonetheless, the extensive special permit conditions are designed to ensure the safety of people, property, or environmental resources in the vicinity of the pipeline.

An Environmental Justice Summary using the U.S. Environmental Protection Agency's (USEPA's) EJSCREEN for the ***special permit segment*** is included in **Table 3** below.

Table 3 - 2021 FM120 Insertion Project – Environmental Justice Summary

Special Permit Segment	State	County	Total Population (along Special Permit Segment)	Minority* /People of Color** Population (Percent)	Low Income Population (Percent)	Linguistically Isolated (Percent)
Segment 1	Pennsylvania	McKean, Elk and Cameron	24	6	28	0

Minority: The term minority is used in the currently active Department of Transportation 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 Environmental Protection Agency'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.*

9. ***Geology, Soils, and Mineral Resources*:**

Soils

Typical impacts to soils that may occur during pipeline construction include mixing of layers within the soil profile, introduction of rock fragments to the soil profile, compaction, rutting, erosion, and alteration of drainage characteristics through mixing. Based on the soils present in the area of the FlexSteel pipe installation method of insertion, and the clearing, erosion and sediment (E&S) control, excavating, backfilling, and restoration and

cleanup procedures that will be employed impacts are expected to be minimal. The primary soil limitations identified along the ***special permit segment*** route are erosion hazard, compaction prone, revegetation concerns, potential for introduction of stones and rocks into topsoil, shallow bedrock, prime farmland, or farmland of statewide importance and hydric soils (USDA-NRCS, 2020a). The FlexSteel insertion method would require at most a total of 52.8 acres of earth disturbance whereas the open-cut direct bury method of construction would require 87.0 acres. Both alternatives would result in impacts to and disturbance of soils, but the FlexSteel insertion method will have less impact than the open-cut direct bury method of construction.

Erosion Hazard

Soil erosion potential is affected by the soil lithology, including mineralogy, grain size, texture and organic content. Soil erosion potential is influenced by slope and exposure to erosion mechanisms. Soils with denser vegetation cover are less susceptible to erosion. Removal of vegetation associated with construction activities, whether by direct stripping or by other mechanical means, greatly increases erosion potential. The classification of a soil as highly erodible by the United States Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS) is directly related to the soil's susceptibility to erosion by water or wind (USDA-NRCS, 2020b).

Compaction Prone

Soils with a high potential for compaction will be affected during construction activities through the repeated movement of machinery across the soil surface as well as from the staging of materials. Soils with high shrink-swell potential and poor drainage characteristics tend to be susceptible to compaction, particularly when wet. This is due to certain types of clay being able to absorb vast quantities of water that cause the clay to shrink and swell.

Revegetation Concerns

Some soil components found within the ***special permit segment*** are described as having revegetation concerns. Those soil types with revegetation concerns are described as having the following soil characteristics: Coarse textured soils (sandy loams and coarser) that are

moderately well to excessively drained and soils with an average slope greater than or equal to nine percent. Typically, soils with low revegetation potential can also be attributed to high compaction and/or erosion potentials. Both alternatives would result in removal of vegetation, but the open-cut direct bury method of construction would result in greater impacts.

Farmland Soils

Prime farmland soil is a special classification of highly productive cropland that is recognized and described by the USDA-NRCS. Prime farmland soil is best suited for producing food, feed, forage, fiber and oilseed crops and can also be used as cropland, pastureland, rangeland, forest land or other land but not land that has been built up, or water. Additionally, farmland soils of statewide importance include those lands that are nearly prime farmland and that produce high yields of crops when managed according to acceptable farming methods (USDA NRCS, 2020c). Soil components crossed within the existing ROW by both methods of construction are considered prime farmland soil or farmland soils of statewide importance; however, there are no active or protected cropland along the Project, therefore no impact to is anticipated (USDA NRCS, 2020a).

Hydric Soils

At a minimum, NFG will implement the procedures outlined in the erosion and sediment control plan to minimize and mitigate impacts to hydric soils. Additionally, since the pipeline route was determined by the existing FM120 Pipeline location, the FlexSteel insertion method of construction would allow NFG to locate bell holes, push/pull points, and access locations which would further avoid and minimize impacts to wetlands. Bell holes and push/pull points are not proposed within wetlands. The FlexSteel insertion method of construction would cross 23 PEM wetlands with temporary impacts totaling 2.1 acres; whereas, the open-cut direct bury method of construction would cross a total of 50 PEM wetlands with temporary impacts totaling 6.1 acres. Timber mats will be used to minimize rutting and compaction in saturated wetlands crossed by construction equipment during construction.

NFG will abide by the Federal Energy Regulatory Commission's Upland Erosion Control,

Revegetation, and Maintenance Plan (Plan) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures) (2013) during construction. NFG will also utilize Best Management Practices (BMPs) in areas of earth disturbance according to a PaDEP-approved Erosion and Sediment Control Plan (E&SCP) to avoid or minimize potential impacts associated with construction activities in wet soil conditions, including:

Limiting certain types of construction or restoration work activities in the Project construction ROW if the soils are determined to be excessively wet. For example, during topsoil removal if the soil is too wet to safely and effectively work within the construction ROW the contractor will temporarily suspend activities in that area until soils are dry enough to work or move to a drier area.

Excess water will be removed to allow excavation inspection and to allow for drier soil conditions for restoration activities. Dewatering of the trench (e.g., to levels with the top of sandbags supporting the pipe) will be performed to minimize or avoid impacts associated with backfilling under wet conditions.

Use of BMPs for dewatering, including the use of floating pumps, filter bags, or sediment corrals to minimize potential impacts will be incorporated into the construction.

The open-cut direct bury method for construction of a new pipeline would involve grading an approximate 50-foot-wide ROW and excavation of soil material along the entire Project route, including within sensitive areas. This method would increase potential for compaction, erosion, and revegetation concerns. Both the open-cut direct bury method of construction or the FlexSteel insertion method would result in impacts to and disturbance of soils, but the FlexSteel insertion method is the less invasive alternative. The FlexSteel insertion alternative would require at most a total of 52.8 acres of earth disturbance whereas the open-cut direct bury method of construction would require 87.0 acres. Either method of construction would minimize impacts to soils through implementation of the FERC Plan and Procedures and the approved PaDEP E&SCP.

NFG will provide environmental construction, mitigation, and safety training for the personnel of the successful bidding contractors, as well as the contractor's environmental representative, and National Fuel's inspection staff and Project

management staff. Incorporated into this training will be compliance with applicable federal, state, county and municipal permit requirements. In the preparation of the contract bid(s), NFG will incorporate specific language from the approvals, permits, and regulatory agencies specific to the Project to communicate to bidding entities the proper procedures for construction, stabilization and restoration. NFG will assign or designate a minimum of one environmental inspector for the installation of the Project.

Physiological Location

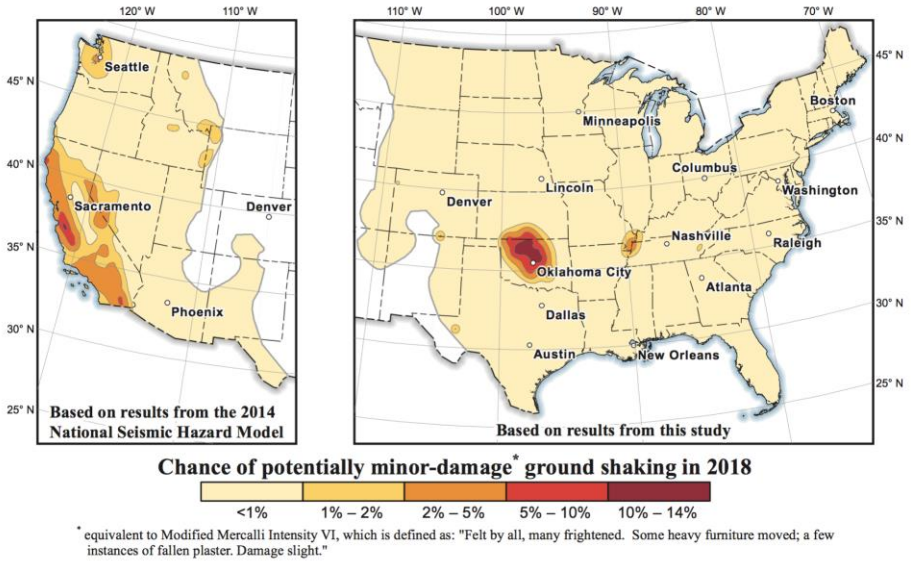
The Project is located in northern PA and part of the Appalachian Plateaus physiographic province. Further divided, nearly 30 percent of the northern most Project alignment is located within the High Plateau Section and nearly 70 percent of the southern Project alignment is located in the Deep Valleys Section (Pennsylvania Department of Conservation and Natural Resources (PADCNR), 2020b). The High Plateau section has a dominant topographic form characterized by broad, rounded to flat uplands having deep, angular valleys. The local relief is moderate to high (ranging from 300 to 1,000 feet). Approximate elevation ranges from 980 to 2,360 feet. The drainage pattern of this section is dendritic (PADCNR, 2020b). The Deep Valleys section has a dominant topographic form of very deep, angular valleys with some broad to narrow uplands. The local relief is moderate to very high (ranging from 300 to greater than 1,000 feet). Approximate elevation ranges from 560 to 2,560 feet. The drainage pattern of this section is angulate and rectangular (PADCNR, 2020b).

Seismic Activity

The seismic hazard for McKean, Elk, and Cameron Counties is between four and eight and is, therefore, generally regarded as low. This is based on a two percent probability of exceedance in 50 years of peak ground acceleration. The hazard rating system ranges from zero through 80+, where zero indicates the lowest hazard and 80+ indicates the highest hazard (USGS, 2014). Also, no known Quaternary faults (i.e., faults that are found at the Earth's surface and younger than 1.6 million years) have been found near the Project area (USGS, 2020a).

The Project is located within an area with a less than one percent chance of damage from natural and induced earthquakes. The PADCNR's Earthquake Hazard in PA map displays natural and artificial seismic events that have been recorded in PA over the past 200 years; there are no mapped earthquake epicenters within the Project area (PADCNR, 2007). Therefore, earthquakes are not anticipated to be a geologic hazard to the Project activities as shown on **Figure 1**.

Figure 1. USGS Forecast for Damage from Natural and Induced Earthquakes 2018



Notes:

1 Map displays the potential to experience damage from natural or human-induced earthquakes in 2018. Chances range from less than one percent to 12 percent. The Project area is located within the less than one percent range.

2 USGS. 2020b. Forecast for Damage from Natural and Induced Earthquakes in 2018. https://www.usgs.gov/media/files/usgs-forecast-damage-natural-and-induced-earthquakes-2018/. Accessed March 2020.

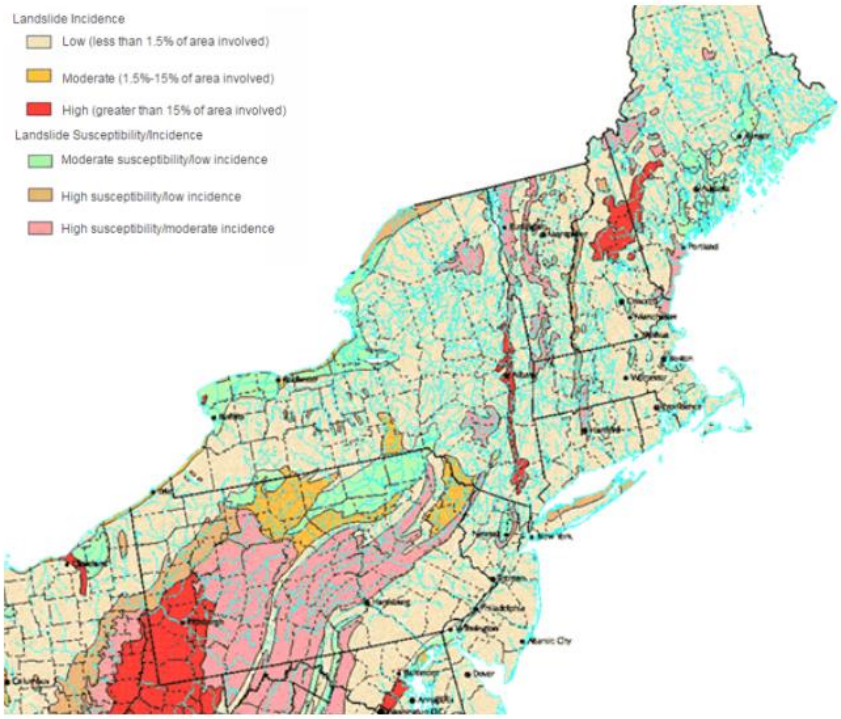
Landslides

The Project will cross areas with high landslide susceptibility, but the majority of the Project area contains low incidence as shown on **Figure 2** below. These designations are based primarily on degree of slope and soil type. Aerial and foot reconnaissance, as well as the 70+ years of operating history of existing pipelines have indicated that landslides are not and have not historically been an issue at the location of this Project.

NFG will be prepared to implement mitigation, in accordance with 49 CFR 192.317, during

construction in areas of high landslide potential, including areas that may contain liquefied soils, steep slopes, and/or high water tables on a site-specific basis by decreasing the spacing of trench and slope breakers and/or adding drain tiles, if appropriate. The FlexSteel insertion method would require 34.2 acres less of disturbance than the open-cut direct bury method of construction which would result in less likelihood for disturbing existing stable slopes and creating potential landslides because of construction activities.

Figure 2. Landslide Overview Map of the Conterminious United States - Northeast[1]



Note:

1 USGS. 1982. Landslide Overview Map of the Conterminous United States: Northeast http://landslides.usgs.gov/hazards/nationalmap/index.php Accessed February 2021.

Subsidence/Karst

Subsidence involves the downslope movement of earth materials under a force of gravity due to natural or manmade causes. Risk of land subsidence is based on a variety of factors, including past mining operations, karst formations, evaporate rock formations, and

expansive soils.

Karst features such as sinkholes, caves, and caverns can form as a result of the long-term action of groundwater on soluble carbonate rocks (e.g., limestone and dolostone). The Project is not located in an area with karst formations such as sinkholes or surface depressions (Kochanov, 2015; PADCNR, 2020c).

NFG routinely inspects the pipeline ROW and pipeline integrity, which will provide monitoring in the event karst features or subsidence develops under the pipelines. If observations indicating subsidence are found, NFG will take the appropriate corrective measures to maintain the integrity of the pipelines. These measures include determining the allowable stresses on unsupported pipe spans, importing fill for pipe support, and evaluating whether recurrence is likely. If it is determined that recurrence is likely, NFG would evaluate the potential of relocating the pipeline.

10. *Indian Trust Assets*:

Native American Consultation

To comply with the Federal Energy Regulatory Commission's regulations under 18 CFR 380.12(f)(1)(i) and (v), and in compliance with Section 106 regulations at 36 CFR 800.2(c)(2), GAI Consultants, Inc., on behalf of NFG, identified Native American tribes with a potential interest in the ***special permit segment***. The ***special permit segment*** does not occur within properties defined as Native American reservation or tribal lands; however, per the Federal Energy Regulatory Commission's Guidelines for Reporting on Cultural Resources Investigations for Natural Gas Projects (July 2017), the tribes listed below may currently or historically have occupied or used the area, regardless of where they currently reside, or are known to attach religious or cultural significance to historic properties that may be affected by the Project. On September 4, 2020, NFG sent a letter providing information on the ***special permit segment*** to the following tribes:

- Absentee-Shawnee Tribe of Indians of Oklahoma;
- Delaware Nation;
- Delaware Tribe of Indians;
- Eastern Shawnee Tribe of Oklahoma;

- Seneca Nation of Indians;
- Seneca-Cayuga Tribe of Oklahoma;
- Shawnee Tribe;
- Saint Regis Mohawk; and
- Tonawanda Band of Seneca Indians.

A response was received from the Eastern Shawnee Tribe on September 4, 2020, indicating the ***special permit segment*** proposes no adverse effect or endangerment to known sites of interest to the Eastern Shawnee Tribe and the Project may continue as planned. The Eastern Shawnee Tribe requested they be contacted should the Project inadvertently discover an archeological site or object(s). No additional correspondence with any tribe listed above has been received to date.

11. *Land Use*:

The existing land use within the Project is primarily dominated by forested woodlots, oil and natural gas ROW and facilities, with limited rural development (seasonal camps and residences) adjacent to the existing pipeline ROW. The topography throughout most of the Project area consists of broad rolling uplands punctuated with some moderate slopes, as well as more limited low terrace and floodplain settings along second and third order streams.

The FlexSteel insertion method would require at most a 52.8-acre limit of disturbance (LOD) whereas the open-cut direct bury method of construction would require an 87.0-acre LOD. The land use will not be changed as result of either construction method, open-cut direct bury method or FlexSteel insertion method, since the FM120 route is located within the existing pipeline ROW. However, the FlexSteel insertion method would require approximately 34.2 acres less of temporary disturbances to the existing land use than the open-cut direct bury method of construction.

Planned Residential and Commercial Areas

Neither options of construction, open-cut direct bury nor the FlexSteel insertion method, would have a significant effect on residential, or commercial/industrial developments due to the remote location of the ***special permit segment*** work, primarily dominated by forested

woodlots, oil and natural gas ROW and facilities, with limited rural development adjacent to the existing pipeline ROW.

Existing Residences and Building

The Project area can be generally classified as very rural and sparsely populated with six identified structures that are intended for occupancy and two unoccupied structures (barns) within 660 feet of the pipeline. The closest structure intended for occupancy is 160 feet from the pipeline. Construction within 50 feet or less of an occupied residence is not anticipated; however, if applicable, construction within 50 feet or less of an occupied residence would be accomplished using additional construction restrictions and/or mitigation measures. Construction along the pipeline is primarily located in or adjacent to existing ROW and within forested areas. NFG will implement the following mitigation for residences within 50 feet of the construction work area, if applicable:

- Construction activities will generally occur during daytime hours wherever feasible;
- Mature trees and landscaping should not be removed from within the construction work area unless necessary for the safe operation of construction equipment;
- Immediately after backfilling, all lawn areas and landscaping within the construction work area should be restored consistent with the requirements of the Federal Energy Regulatory Commission's Upland Erosion Control, Revegetation, and Maintenance Plan https://www.ferc.gov/industries/gas/enviro/guidelines.asp?csrt=13858989306843499924;
- The edge of the construction work area adjacent to the residence will be fenced for a distance of 100 feet on either side of the residence to ensure that construction equipment and materials, including the spoil pile, remain within the construction work area; and
- Fencing will be maintained, at a minimum, throughout the open trench phases of pipe installation.

Landowners affected by construction activities will be notified prior to construction by NFG representative land agents. There are no displacements of homes or business expected to occur as a result of either construction activities. The FlexSteel insertion

method nor the open-cut direct bury method of construction is not anticipated to require earth disturbance activities near residential structures; however, the open-cut direct bury method of construction would cause extended noise, aesthetics, and traffic disturbance at nearby residential properties given that the open-cut method would require a longer construction duration.

Public or Conservation Land

The existing FM120 Pipeline crosses Elk State Forest in McKean and Elk Counties, Pennsylvania, and crosses State Game Lands No. 293 and 14 within Elk and Cameron Counties, Pennsylvania. The Project will not impact any national wildlife refuges, Native American reservations, nature preserves, national parks, national trails, national historic landmarks, national natural landmarks, or levee crossings (United States Fish and Wildlife Service, 2020; Wilderness.net, 2020; National Park Service, 2020a; Natural Land Trust, 2020; National Park Service, 2020b; North County Trail Association, Undated; National Park Service, 2020c; National Park Service, 2020d; and United States Army Corps of Engineers, 2020). The Project does not cross local parks [PA Department of Conservation and Natural Resources (PADCNR), undated a; and PADCNR, undated b].

NFG has ongoing coordination with PADCNR Bureau of Forestry (BOF) and the PA Game Commission (PGC) for construction and access within Elk State Forest and PA Game Lands. Within the Elk State Forest, the Flexsteel insertion method would require approximately 10.4 acres of land disturbance for construction, whereas the open-cut direct bury method of construction would require 25.0 acres. The Flexsteel insertion method within PA Game Lands would require approximately 20.6 acres of land disturbances whereas the open-cut direct bury method would require 29.0 acres. Construction of FM120 pipeline within the Elk State Forest and PA Game Lands would result in less disturbances to the natural environment as well as less interference with recreational use by utilizing the FlexSteel insertion method.

12. ***Noise*:** Noise levels associated with operation of the pipeline/FlexSteel facilities will not change as part of this special permit. Noise levels associated with construction of the facilities will be much lower in the case of a FlexSteel insertion as compared to an open cut

installation due to the greater construction activity associated with the latter process, as described in greater detail above.

13. *Recreation*:

Natural, Recreational, or Scenic Areas

The ***special permit segment*** does not cross any National Wild and Scenic Rivers (National Wild and Scenic Rivers System, 2020). The Project does not cross natural, recreational, scenic areas or registered natural landmarks identified by the Nationwide Rivers Inventory river segments (National Park Service, 2017).

As described above, the ***special permit segment*** crosses State Game Lands No. 293 and 14, which are utilized for recreation activities (e.g. hunting, hiking). The Elk State Forest is considered a "working forest," utilized for habitat conservation, watershed protection, and sustainable timber and natural gas extraction (PADCNR, 2020d).

14. *Socioeconomics*:

Based on U.S. Census Bureau data, the table below shows the Economic Characteristics for 2019 American Community Survey 5-Year Estimates for the ***special permit segment*** townships. As seen in **Table 4**, ***special permit segment*** townships have a range of economic levels and does not have a clear majority in any of the defined brackets. Median income estimates across the ***special permit segment*** townships ranges from $48,919 to $55,990.

Table 4
Income in the Past 12 Months (In 2019 Inflation-Adjusted Dollars)

Location/ Label	Estimate	Margin of Error (±)
Sergeant Township, McKean County, PA		
Total Households	45	15
Less than $10,000	2.2	6.8
$10,000 to $14,999	6.7	8.2
$15,000 to $24,999	13.3	15.7
$25,000 to $34,999	11.1	10.2
$35,000 to $49,999	15.6	12.8
$50,000 to $74,999	26.7	17.2
$75,000 to $99,999	8.9	8.6
$100,000 to $149,999	13.3	10.4
$150,000 to $199,999	2.2	4.4
$200,000 or more	0	38.8

Median income (dollars)	51,250	21,246
Mean income (dollars)	56,671	14,769
Jones Township, Elk County, PA		
Total Households	689	53
Less than $10,000	4.1	2.2
$10,000 to $14,999	7	3.7
$15,000 to $24,999	8.6	3.1
$25,000 to $34,999	11.5	4.5
$35,000 to $49,999	14.1	4.6
$50,000 to $74,999	19.3	4.4
$75,000 to $99,999	13.8	4.1
$100,000 to $149,999	15.8	4.4
$150,000 to $199,999	4.6	2.5
$200,000 or more	1.3	±.1
Median income (dollars)	55,990	4,505
Mean income (dollars)	65,764	5,084
St. Marys City, Elk County, PA		
Total Households	5,768	180
Less than $10,000	3.7	2
$10,000 to $14,999	3.5	1.5
$15,000 to $24,999	12.3	3.1
$25,000 to $34,999	10.9	2.9
$35,000 to $49,999	16.2	2.7
$50,000 to $74,999	16.4	3.7
$75,000 to $99,999	14.4	2.9
$100,000 to $149,999	13.4	2.9
$150,000 to $199,999	6	2.1
$200,000 or more	3.2	1.2
Median income (dollars)	53,516	5,662
Mean income (dollars)	70,662	4,571
Shippen Township, Cameron County, PA		
Total Households	884	72
Less than $10,000	3.4	2.4
$10,000 to $14,999	4.3	2.6
$15,000 to $24,999	10.3	4.9
$25,000 to $34,999	12.2	3.8
$35,000 to $49,999	21.6	5.4
$50,000 to $74,999	17.2	4.4
$75,000 to $99,999	10.0	3.8
$100,000 to $149,999	16.2	4.8
$150,000 to $199,999	3.8	3.1
$200,000 or more	1.0	1.3
Median income (dollars)	48,919	5,384
Mean income (dollars)	63,076	5,534

The Project is not considered a major aboveground facility or a major pipeline project and does not have a major impact on permanent employment, housing, local government services, local tax revenues, transportation, or other related socioeconomic conditions.

15. *Topography*:

The topography throughout most of the Project vicinity consists of broad rolling uplands punctuated with moderate slopes, as well as more limited low terrace and floodplain settings along second and third order streams. As discussed above, there will be limited amount of ground disturbance associated with the insertion method as compared to open-cut methods. Under both the selected action and the no action alternative, any disturbed areas will be finished and restored to original grade/ contour and vegetative state.

16. *Transportation*:

This Project will be accessed via existing permeant access roads and will not require any additional roads to be constructed nor additional maintenance.

17. *Water Resources*:

Wetlands

The pipeline route was determined by the existing FM120 Pipeline location therefore the crossing of wetlands is necessary; however, the FlexSteel insertion method of construction would allow NFG to locate bell holes, push/pull points, and access locations to further avoid and minimize impacts to wetlands. Bell holes and push/pull points are not proposed within wetlands. The FlexSteel insertion method would cross a total of 23 Palustrine Emergent (PEM) wetlands with temporary impacts totaling 2.1 acres. Whereas, open-cut direct bury method of construction would cross a total of 50 PEM wetlands requiring temporary impacts of 6.1 acres. Both methods of construction would result in temporary impacts to wetlands that would be allowed to restore to pre-construction conditions; however, the FlexSteel insertion method would affect less wetlands and impact less wetland acreage.

Additionally, some of the wetlands within the Project area are considered Exceptional Value (EV) status as per PA Code Title 25 § 105.17 (iii). A total of 10 of the 50 PEM wetlands crossed by open-cut direct bury method of construction are considered to have EV status. The FlexSteel insertion method would cross only 4 PEM wetlands considered as EV protection status.

As described above, the FlexSteel insertion method would impact less wetlands and wetland acreage, impacts would be temporary in nature, and would cross less wetlands

considered as EV than the open-cut direct bury method of construction.

Waterbodies

Waterbodies within the Project area are located following delineated watershed basins: East Branch Clarion River - East Branch Lake Dam [United States Geological Survey (USGS) Hydrologic Unit Code (HUC) 12: 050100050101], Elk Fork-Driftwood Branch Sinnemahoning Creek (HUC 12: 020502020201), Clear Creek (HUC 12: 020502020202), West Creek (HUC 12: 020502020204), and Hicks Run (HUC 12: 020502020310) [PaDEP, 2020].

The EPA's National Sediment Inventory was examined to generally characterize potential contamination of aquatic bed sediment found throughout the Project area. According to National Sediment Quality Survey (NSQS) reports, the Project is not located within USEPA-designated Areas of Probable Concern (USEPA, 2004).

PA Title 25 Chapter 93 sets forth water quality standards for surface waters. The provisions of PA Title 25 Chapter 93 are issued under Sections 5 and 402 of the Clean Streams Law. Waterbodies in PA are assigned one of the following aquatic life water quality classifications based upon PA Title 25 Chapter 93: Cold Water Fishes (CWF), Warm Water Fishes (WWF), Migratory Fishes, and Trout Stocked Fishery. Waterbodies in PA may also be assigned one of the following special protection water quality classifications based upon PA Title 25 Chapter 93: High Quality (HQ) or EV waters. Waterbodies in PA may also be assigned a water quality classification that combines aquatic life and special protection (i.e., HQ WWF or HQ CWF).

PA Clean Streams Law (35 P.S. §691.1 et seq.) and regulations at PA Code Title 25, including Chapters 91, 92, 93, 95, 96, 102, and 105 are also known as antidegradation rules. The basic concept of antidegradation is to promote the maintenance and protection of existing water quality for HQ and EV waters, and protection of existing uses for surface waters because it recognizes that existing water quality and uses have inherent value worthy of protection and preservation. Existing uses are protected when PaDEP makes a final decision on any permit or approval for an activity that may affect a protected use (PaDEP, 2013). Existing water quality is also protected for HQ and EV waters through the

antidegradation rules and there are also additional requirements, such as antidegradation performance standards for erosion and sediment control. Sensitive surface waters with an existing use classification of EV within the Project area include Straight Creek and North Fork Straight Creek. Please see the section on Wildlife Habitats and Fisheries for the PA Fish and Boat Commission (PFBC) trout classifications.

A total of 12 streams (5 perennial, 5 intermittent and 2 ephemeral) will be crossed by the open-cut direct bury method of construction and would cross streams designated as HQ CWF, as well as existing use classifications of EV. These streams would be crossed via damp and pump/flume; if at the time of construction, no flow is present the streams will be crossed via open cut. The FlexSteel insertion method would cross a total of 4 streams (3 perennial and 1 ephemeral) to access the bell holes and push/pull points. Bell holes and push/pull points are not proposed within streams. The open-cut direct bury method of construction would not only cross more streams but would require in-stream disturbance during construction.

Groundwater Resources

Aquifers in consolidated sedimentary rocks of the Appalachian Plateaus Province and within the Project area are divided into Pennsylvanian and Mississippian aquifers. Pennsylvanian rocks are the principal coal bearing formations and consist of cyclical sequences of sandstone, shale, conglomerate, clay, coal, and minor limestone. Mississippian rocks consist mostly of shale, sandstone, and siltstone with minor conglomerate and limestone (USGS, 1997). Sandstone and shale aquifers typically yield groundwater from wells at depths within 80 to 200 feet of the surface (PA State University, 2016). The sandstones are the most productive aquifers, although coal beds and limestones also yield water. Yields of wells completed in Pennsylvanian rocks range from 20 to 430 gallons per minute (GPM), while yields of wells completed in Mississippian strata only range from 20 to 180 GPM (USGS, 1997).

The chemical quality of water in the freshwater parts of the aquifers of the Appalachian Plateaus Province is variable but generally is satisfactory for municipal use and other purposes. Most of the water in the upper aquifer is not greatly mineralized and is suitable,

or can be treated and made suitable, for most uses. Saline water is commonly in the aquifers at depths of only a few hundred feet below the land surface with only a thin transition zone between the freshwater and saltwater (USGS, 1997).

Total freshwater withdrawals from consolidated sedimentary-rock aquifers in the Appalachian Plateaus and the Central Lowland Provinces were estimated to be 282 million gallons per day (GPD) during 1985. About 47 percent of this amount, or about 133 million GPD, was withdrawn for domestic and commercial supplies. About 116 million GPD, or about 41 percent of the total withdrawals, were pumped for industrial, mining, and thermoelectric power purposes; most of this water was used in coal mining operations (USGS, 1997).

A review of available aquifer information indicates no state designated primary aquifers or designated Sole Source Aquifers to the EPA are located in the Project area (EPA, 2020a).

Water Supply Wells

The PA Groundwater Information System (GWIS), provided by the PA Topographic and Geologic Survey (PADCNR, 2020a), documentation was reviewed for the presence of private, community, irrigation, livestock, and municipal/public wells and springs within 150 feet of the ***special permit segment*** construction. The PAGWIS wells and springs database returned no private, community, irrigation, livestock and municipal/public wells and springs within 150 feet of the Project.

The PaDEP's web-based mapping application (eMapPA) was reviewed to determine the coverage of public water service. Public water service does not extend into the Project area (PaDEP, 2020). Through a review of PaDEP's Well Head Protection Program (PaDEP, 2000) it was determined that the Project does not cross any local public water services that participate in the program. According to USEPA's Safe Drinking Water Information System database (2020b) in combination with a review PaDEP's eMapPA, public drinking water surface water intakes are not located within three miles downstream of the Project waterbody crossings.

X. Consultation and Coordination

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

NFG Personnel:

- Jeff Kittka, Vice President, National Fuel Gas Supply Corporation
- Mike Barber, Assistant Vice President, National Fuel Gas Supply Corporation
- Steve Glass, General Manager, National Fuel Gas Supply Corporation
- Josh Sabo, Engineer III, National Fuel Gas Supply Corporation
- Dan Young, Senior Environmental Analyst, National Fuel Gas Supply Corporation
- Meghan Corcoran, Assistant General Counsel, National Fuel Gas Supply Corporation
- Angela Lundy, Environmental Manager, GAI Consultants

PHMSA Personnel:

- Amelia Samaras, PHMSA, Attorney
- Steve Nanney, PHMSA, Engineer
- Joshua Johnson, PHMSA, Engineer

XI. Response to Public Comments Placed on Docket

PHMSA published a Notice of Availability in the Federal Register (FR) for a special permit request from NFG to use approximately 12.58 miles of FlexSteel pipe (a high-density polyethylene (HDPE) inner and outer layer with a helically wound steel core) instead of steel pipe. PHMSA requested public comments on the draft special permit conditions and the draft environmental assessment. The FR notice was published at 86 FR 28187 on May 25, 2021. The public notice comment period ended on June 24, 2021, with no comments received.

XII. Finding of No Significant Impact

In consideration of the safety conditions explained above, PHMSA finds that no significant negative safety or environmental impact will result from the issuance and full implementation by NFG of the above-described special permit to waive the requirements of 49 CFR 192.53, 192.55, 192.105, 192.107, 192.109, 192.111, 192.113, 192.144, 192.149, 192.150, 192.327, 192.463, and

192.619 for the ***special permit segment***, which consists of 12.58 miles of the 6-inch diameter FM120 Pipeline located in McKean, Elk, and Cameron Counties, Pennsylvania. This permit will require NFG to implement additional conditions on the operations, maintenance, and integrity management of the ***special permit segment***.

XIII. Bibliography

References

Cornell Lab of Ornithology. 2020a. Elk State Forest- Straight Creek Area. http://ebird.org/ebird/hotspot/L3801448. Accessed March 2020.

Cornell Lab of Ornithology. 2020b. West Creek Wetland Learning Center. https://ebird.org/hotspot/L3863098. Accessed March 2020.

Kochanov, W. E. 2015. Sinkholes in Pennsylvania (2nd ed.). Pennsylvania Geological Survey, 4th ser., Educational Series 11, 30 p. http://dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_014591.pdf

National Park Service, United States Department of the Interior. 2020a. Indian Reservations in the Continental United States. https://www.nrc.gov/docs/ML1034/ML103430075.pdf. Accessed March 2020.

National Park Service, United States Department of the Interior. 2020b. Find A Park - Pennsylvania. https://www.nps.gov/state/pa/index.htm. Accessed March 2020.

National Park Service. 2020c. National Historic Landmarks by state. https://www.nps.gov/subjects/nationalhistoriclandmarks/list-of-nhls-by-state.htm. Accessed March 2020.

National Park Service. 2020d. National Natural Landmarks by state. https://www.nps.gov/subjects/nnlandmarks/state.htm?State=PA. Accessed March 2020.

National Park Service. 2017. Nationwide Rivers Inventory: Pennsylvania Segments. https://www.nps.gov/ncrc/programs/rtca/nri/states/pa.html. Accessed March 2020.

National Wild and Scenic Rivers System. 2020. Story Map. https://www.rivers.gov/. Accessed March 2020.

Natural Lands Trust. 2020. Preserves to Visit. https://natlands.org/visit/. Accessed March 2020.

North County Trail Association. Undated. Maps and Trail Data Interactive Web Map. https://northcountrytrail.org/trail/maps/. Accessed March 2020.

Pennsylvanian Amphibian and Reptile Society. 2020a. McKean County. http://paherpsurvey.org/county.php?r_county=800. Accessed March 2020.

Pennsylvanian Amphibian and Reptile Society. 2020b. Elk County. http://paherpsurvey.org/county.php?r_county=867. Accessed March 2020.

Pennsylvanian Amphibian and Reptile Society. 2020c https://paherpsurvey.org/search.php?r_owner=&r_collection=&r_county%5B%5D=872&r_group=&r_genus=&r_species=&r_subspecies=&r_age=&r_sex=&startdate=&enddate=&sort=r_time&order=desc. Accessed March 2020.

Pennsylvania Department of Conservation and Natural Resources. 2020a. Pennsylvania Groundwater Information System. http://www.dcnr.state.pa.us/topogeo/groundwater/pagwis/index.htm. Accessed March 2020.

Pennsylvania Department of Conservation and Natural Resources. 2020b. Landforms of Pennsylvania from Map 13 - Physiographic Provinces of Pennsylvania. http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_016202.pdf. Accessed March 2020.

Pennsylvania Department of Conservation and Natural Resources. 2020c. PADCNR Interactive Map, Karst Features. http://www.gis.dcnr.state.pa.us/maps/index.html?geology=true. Accessed March 2020.

Pennsylvania Department of Conservation and Natural Resources. 2007. Earthquake Hazard In Pennsylvania. Accessed April 2020 from http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_20029471.pdf

Pennsylvania Department of Conservation and Natural Resources. Undated a. PA DCNR Map Viewer Interactive Map. http://www.gis.dcnr.state.pa.us/maps/index.html. Accessed March 2020.

Pennsylvania Department of Conservation and Natural Resources. Undated b. Explore PA Local Parks. http://maps.dcnr.pa.gov/localparks/. Accessed March 2020.

Pennsylvania Department of Conservation and Natural Resources. 2020d. Elk State Forest https://www.dcnr.pa.gov/StateForests/FindAForest/Elk/Pages/default.aspx. Accessed March 2020.

Pennsylvania Department of Environmental Protection. 2020. eMapPA. http://www.emappa.dep.state.pa.us/emappa/viewer.htm. Accessed March 2020.

Pennsylvania Department of Environmental Protection. 2013. Chapter 93 Water Quality Standards - Pennsylvania Code. http://www.pacodeandbulletin.gov/Display/pacode?file=/secure/pacode/data/025/chapter93/chap93toc.html&d=. Accessed March 2020.

Pennsylvania Department of Environmental Protection. 2000. Pennsylvania Wellhead Protection Program.

https://www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/srceprot/source/Final_WHPP_AppB.htm. Accessed March 2020.

Pennsylvania Fish and Boat Commission. 2021a. Streams Sections that Support Natural Reproduction of Trout. http://www.fishandboat.com/Fish/PennsylvaniaFishes/Trout/Documents/trout_repro.pdf. Accessed February 2021.

Pennsylvania Fish and Boat Commission. 2021b. Approved Trout Waters, February 2021. Accessed February 2021.

Pennsylvania Fish and Boat Commission. 2021c. Class A Wild Trout Waters, February 1, 2021. http://www.fishandboat.com/Fish/PennsylvaniaFishes/Trout/Documents/classa.pdf. Accessed February 2021.Pennsylvania Fish and Boat Commission. 2021d. Wilderness Trout Streams. https://www.fishandboat.com/Fish/PennsylvaniaFishes/Trout/Documents/PAwildernessTroutStreams.pdf. Accessed February 2021.

Pennsylvania Fish and Boat Commission. 2020e. Streams Officially Proposed for Wild Trout Designation. https://www.fishandboat.com/Fish/PennsylvaniaFishes/Trout/Pages/WildTroutStreamsOfficiallyProposed.aspx. Accessed February 2021.

Pennsylvania Fish and Boat Commission. 2005. Biologist Report. East Branch Tunungwant Creek. https://pfbc.pa.gov/images/fisheries/afm/2005/2x09_09tunu.htm. Accessed March 2020.

Pennsylvania Fish and Boat Commission. 2004. Biologist Report. East Branch Clarion River Lake. https://pfbc.pa.gov/images/fisheries/afm/2004/2_06-09clarion.htm. Accessed March 2020.

Pennsylvania Mammal Atlas. 2020. Mammal Observations. http://www.pamammalatlas.com/mammals/mammal-spottings. Accessed March 2020.

Pennsylvania State University. 2016. A Quick Guide to Groundwater in Pennsylvania. http://extension.psu.edu/natural-resources/water/drinking-water/best-practices/a-quick-guide-to-groundwater-in-pennsylvania. Accessed March 2020.

United States Army Corps of Engineers. 2020. National Levee Database - Interactive Map. https://levees.sec.usace.army.mil/#/. Accessed March 2020.

United States Department of Agriculture Natural Resource Conservation Service Web Soil Survey. 2020a. Erosion Hazard. http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed March 2020.

United States Department of Agriculture, Natural Resources Conservation Service. 2020b. National Survey Soil Handbook.

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054242. Accessed March 2020.

United States Department of Agriculture, Natural Resources Conservation Service. 2020c. Prime and Important Farmlands. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1338623.html. Accessed March 2020.

United States Environmental Protection Agency. 2020a. Interactive Map of Sole Source Aquifers. https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b. Accessed March 2020.

United States Environmental Protection Agency. 2020b. Safe Drinking Water Search for the State of Pennsylvania. https://enviro.epa.gov/enviro/sdw_form_v3.create_page?state_abbr=PA. Accessed March 2020.

United States Environmental Protection Agency. 2021. EJSCREEN, EPA's Environmental Justice Screening and Mapping Tool (Version 2020). Accessed February 2020 from https://ejscreen.epa.gov/mapper/.

United States Environmental Protection Agency. 2004. The Incidence and Severity of Sediment Contamination in Surface Waters of the United States, Second Edition: National Sediment Quality Survey, EPA-823-R-04-007. Washington, D.C. https://nepis.epa.gov/Adobe/PDF/901U0O00.pdf. Accessed March 2020.

United States Fish and Wildlife Service. 2020. National Wildlife Refuge System. https://www.fws.gov/refuges/maps/index.html. Accessed March 2020.

United States Forest Service. Ecosystem Provinces. 2015. https://www.fs.fed.us/land/ecosysmgmt/colorimagemap/ecoreg1_provinces.html. Accessed March 2020.

United States Geological Survey. 2020a. Interactive Fault Map, from USGS web site: http://earthquake.usgs.gov/hazards/qfaults/. Accessed March 2020.

United States Geological Survey. 2020b. USGS Forecast for Damage from Natural and Induced Earthquakes in 2016. Available from https://www.usgs.gov/media/files/usgs-forecast-damage-natural-and-induced-earthquakes-2018. Accessed March 2020.

United States Geological Survey. 2014. Pennsylvania Seismic Hazard Map. https://www.usgs.gov/media/images/2014-seismic-hazard-map-pennsylvania. Accessed March 2020.

United States Geological Survey (Trapp, Jr., Henry, and Marilee A. Horn). 1997. Groundwater Atlas of the United States: Delaware, Maryland, New Jersey, North Carolina, Pennsylvania,

Virginia, West Virginia (United States Geological Survey Publication HA 730-L). https://pubs.usgs.gov/ha/ha730/ch_l/. Accessed March 2020.

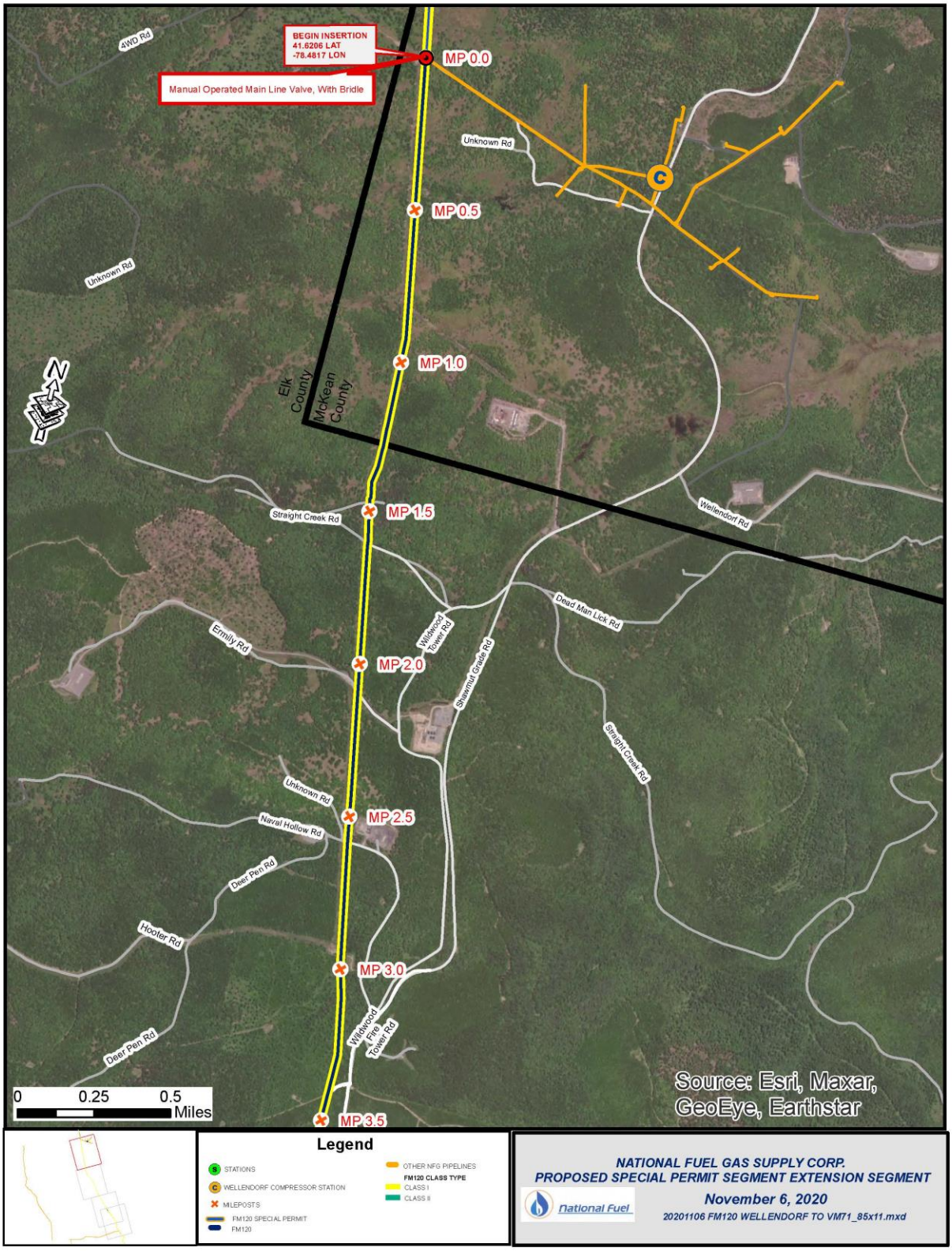
United States Geological Survey. 1982. Landslide Overview Map of the Conterminous United States: Northeast. http://landslides.usgs.gov/hazards/nationalmap/index.php. Accessed March 2020.

Wilderness.net. 2020. Wilderness Areas in Pennsylvania. http://www.wilderness.net/map.cfm?xmin=-8843948.4524&ymin=5088758.0044&xmax=-8823780.0688&ymax=5134777.2532. Accessed March 2020.

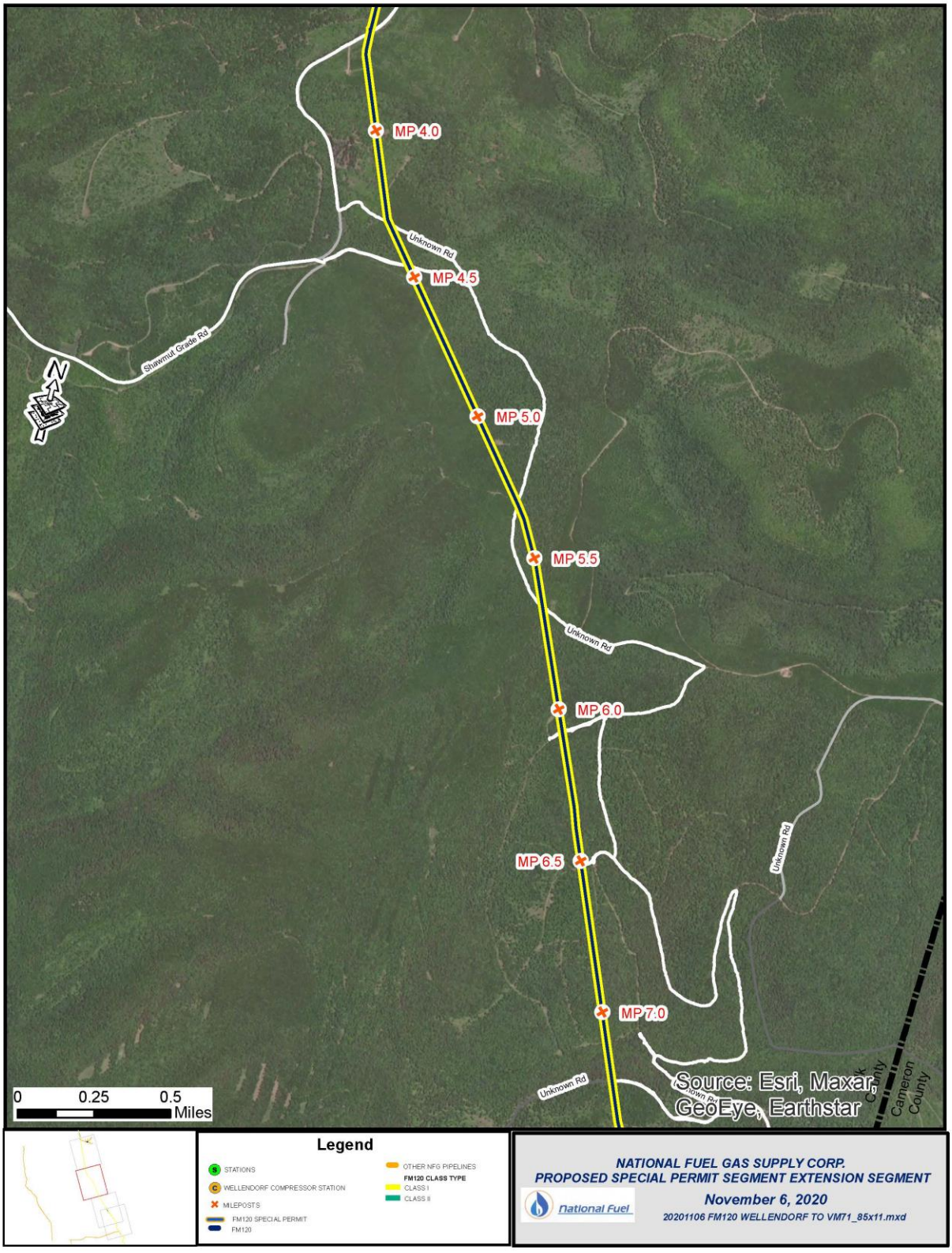
United States Census Bureau. American Community Survey, Income and Poverty, 2019: ACS 5-Year Estimates, Sergeant Township, McKean County; Jones Township, Elk County; St. Marys City, Elk County; and Shippen Township, Cameron County PA. Accessed February 2021. https://data.census.gov/cedsci/table?q=income in the past 12 month&g=0600000US420230336,4204738368,4204767344,4208369304&tid=ACSST5Y2019.S1901&hidePreview=true.

Completed by PHMSA in Washington, DC on: October 15, 2021

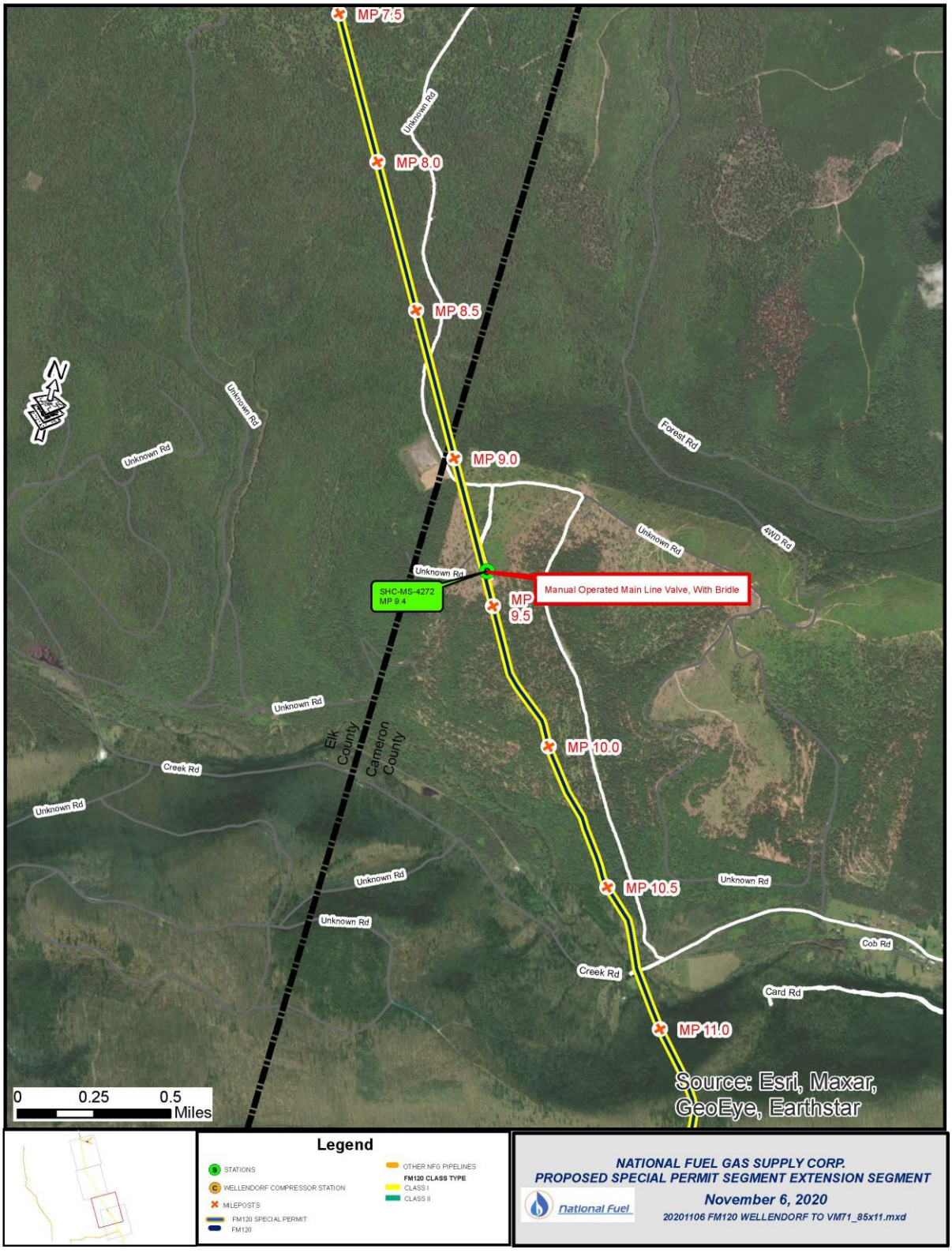
Attachment 1-A – FM120 Pipeline – Special Permit Segment Map



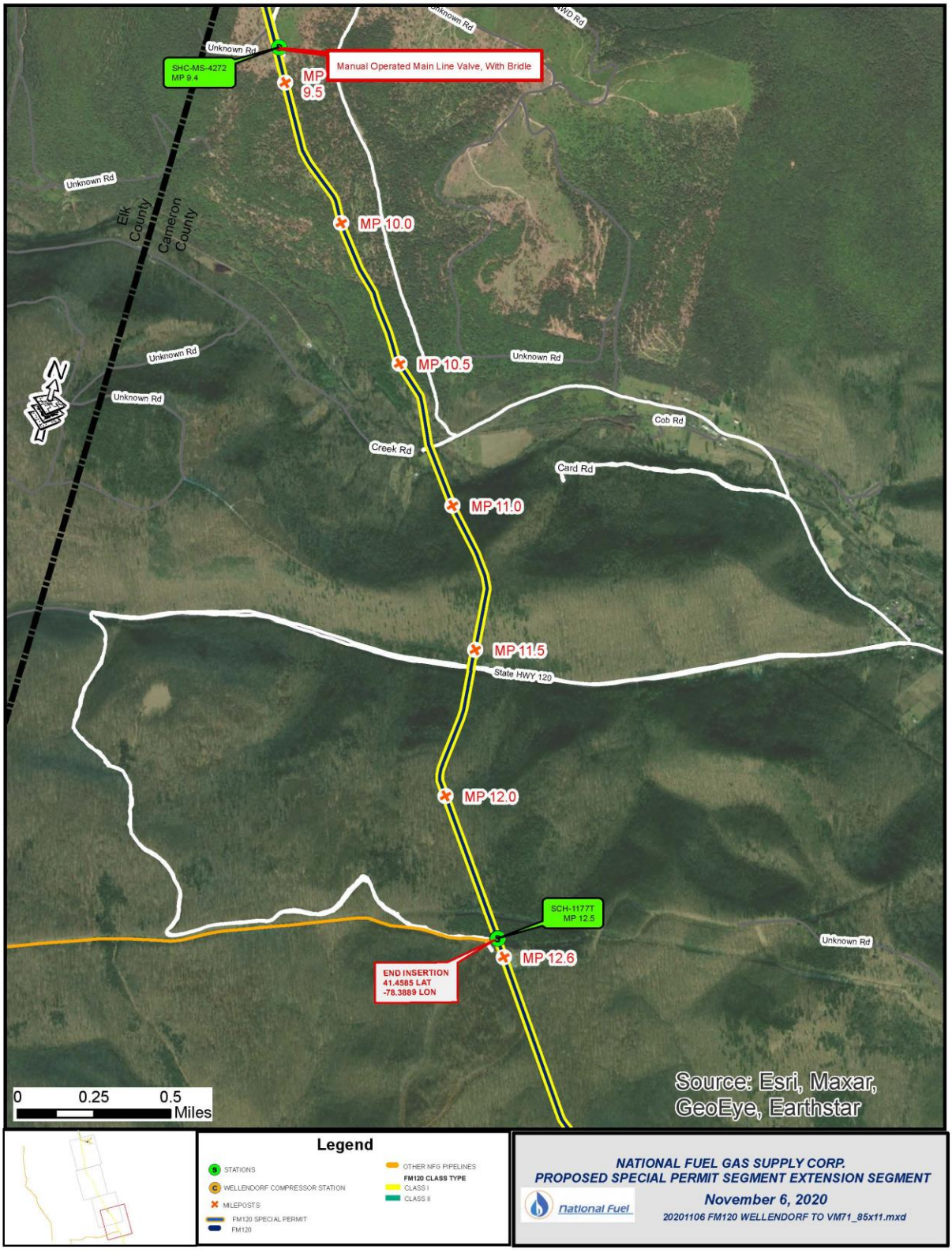
Attachment 1-B – FM120 Pipeline - Special Permit Segment Map



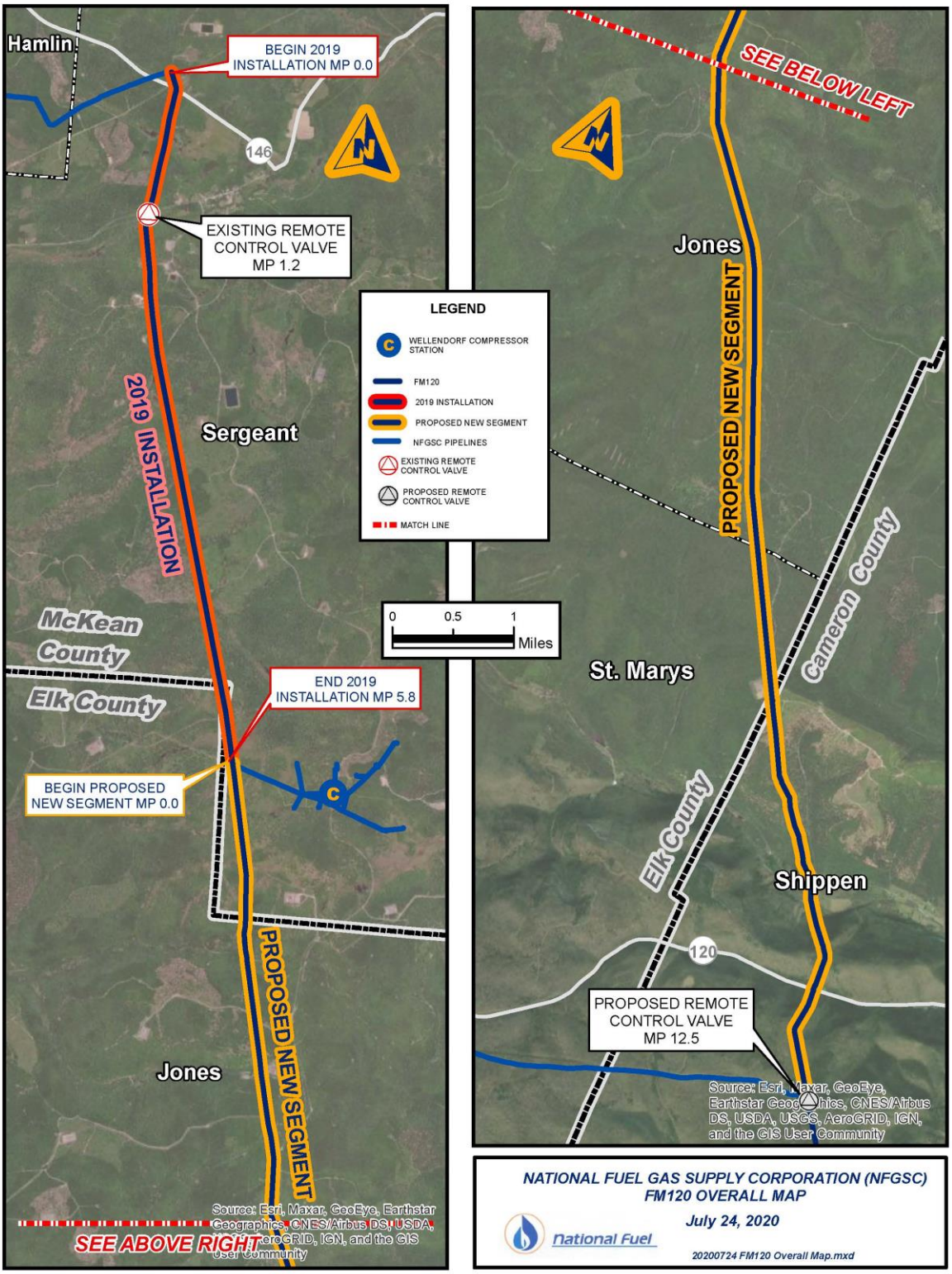
Attachment 1-C – FM120 Pipeline - Special Permit Segment Map



Attachment 1-D – FM120 Pipeline - Special Permit Segment Map



Attachment 2 – FM120 Pipeline - Overall Map



Last Page of the FEA and FONSI for PHMSA-2021-0042