U. S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

Natural Gas Distribution Infrastructure Safety and Modernization Grant Program
Welch Gas Cooperative Association
Welch, West Virginia
Finding of No Significant Impact
NGDISM-FY22-EA-2023-28

PHMSA Approval:

SHELBY MATTHEW FULLER

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I. Introduction

This document serves as the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Finding of No Significant Impact (FONSI) and provides final agency determinations and approvals for the federal actions to comply with the requirements of the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.) and CEQ regulations (40 CFR parts 1500-1508). This FONSI is based on the information and analysis contained in the Tier 1 Nationwide Environmental Assessment for the Natural Gas Distribution Infrastructure Safety and Modernization Grant Program[1] (Tier 1 EA) and the site-specific Tier 2 Environmental Assessment (Tier 2 EA), approved March 27, 2024, incorporated herein by reference.

II. Public Involvement

On November 9, 2022, PHMSA published a Federal Register notice (87 FR 67748) with a 30-day comment period soliciting comments on the "Tier 1 Nationwide Environmental Assessment for the Natural Gas Distribution Infrastructure Safety and Modernization Grant Program". During the 30-day comment period, PHMSA received one comment letter dated December 9, 2022, from the American Public Gas Association (APGA) on various aspects of the program and air quality related analysis identified in the EA. The APGA noted that the majority of projects would conduct pipe replacements by open trenching construction methods and that it is standard industry practice to seal and abandon legacy pipes rather than removing old pipeline for replacement. The APGA also provided perspectives on three areas relating to the environmental reviews of pipeline projects and include (1) the use of the specific studies (e.g., Lamb (2015)[2] and Weller et al. (2020)[3] for quantifying greenhouse gas emissions, (2) utilization of the Social Cost of Greenhouse Gasses (SC-GHG) and (3) the U.S. Army Corps of Engineer's Nationwide Permit (NWP) program. This APGA letter is available for public review at www.regulations.gov at the Docket No: PHMSA-2022-0123.

PHMSA reviewed the comment letter provided by APGA. PHMSA notes that project-specific construction methods are analyzed in the project specific Tier 2 EAs and that Tier 2 EAs include information on whether the work would include removal of old pipeline or abandonment. Regarding the suggested Lamb (2015) study for methane leak calculations, it is noted that PHMSA only utilized the pipeline material distribution reported by Weller et al. (2020) in order to quantify the leakage of methane from existing pipelines. The emission factors listed in the Tier 1 EA were calculated using data from Lamb (2015) and GRI/EPA (1996)[4], not Weller et al. (2020). Table 1 of the Tier 1 EA lists the EPA methane emission factors, which were adopted from Lamb (2015). Regarding the SC-GHG, PHMSA analyzed the SC-GHG in accordance with the Council on Environmental Quality (CEQ) interim guidance to assist agencies in analyzing greenhouse gas (GHG) and climate change effects of their proposed actions under the National Environmental Policy Act (NEPA).[5] CEQ recommends that agencies provide additional context for GHG emissions, including through the use of the best available social cost of GHG (SC-GHG) estimates, to translate climate impacts into the more accessible metric of dollars, allow decision makers and the public to make comparisons, help evaluate the significance of an action's climate change effects,

[1] https://www.federalregister.gov/documents/2022/11/09/2022-24378/pipeline-safety-notice-of-availability-of-the-tier-1-nationwide-environmental-assessment-for-the

[2] Lamb, B. K., Edburg, S. L., Ferrara, T. W., Howard, T., Harrison, M. R., Kolb, C. E., ... & Whetstone, J. R. (2015). Direct measurements show decreasing methane emissions from natural gas local distribution systems in the United States. Environmental Science & Technology, 49(8), 5161-5169.

[3] Weller, Z. D., Hamburg, S. P., & von Fischer, J. C. (2020). A national estimate of methane leakage from pipeline mains in natural gas local distribution systems. Environmental science & technology, 54(14), 8958-8967

[4] GRI/EPA 1996. Methane Emissions from the Natural Gas Industry. EPA-600/R-96-080. June 1996.

[5] https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate

and better understand the tradeoffs associated with an action and its alternatives. PHMSA also supports the Army Corps of Engineer's NWP program. Based on a review and assessment of the APGA's comments, PHMSA has determined that no further analysis is warranted.

The approved Tier 2 EA for the Welch Gas Cooperative Association (WGCA) was made available on PHMSA's website[6] for public review on March 26, 2024. A notice of availability for the Tier 2 EA was published in the *Bluefield Daily Telegraph* on April 3, 2024, with a public comment period closing date of May 3, 2024. In addition to the EA[7] being made available on PHMSA's website, a hard copy was available at the WGCA Office at 127 Wyoming Street, Welch, WV 24801.

PHMSA did not receive any comments on the Tier 2 EA. The Tier 1 EA described that most site-specific projects would utilize the insertion method of pipe replacement; however, it is noted that the WGCA would also use open trenching to replace the natural gas pipelines. These construction methods were disclosed and assessed in the Tier 2 EA.

III. Revisions to the Tier 2 EA

After publication of the Tier 2 EA, discrepancies in the methane emission calculations were identified. The approved Tier 2 EA stated that, based on the reduced pressure of 20 pounds per square inch (PSI) and the sizes of the existing pipe, 0.5 thousand cubic feet (MCF) or 15 kilograms (kg) of methane would be vented during construction. The methane calculations have been revised to estimate that 1.5 MCF, or 45 kg, of methane would be vented during construction. Therefore, based on the current leak rate of the existing pipe within the project area, this project is estimated to reduce overall emissions by 474 kg in the first year (when considering the methane that would be released from blowdown that would occur during construction) and would reduce 519 kg of methane per year thereafter. The total reduction in methane emissions resulting from the conversion to plastic pipeline would be approximately 10,332 kg over a 20-year span post construction. See Appendix B, Revised Methane Calculations (attached to this FONSI) for the methane reduction calculations. This revision did not change PHMSA's overall assessment that the proposed project would provide a net benefit to air quality from the overall reduction of greenhouse gas emissions and that no indirect or cumulative impacts would result from the Proposed Action.

IV. Selected Action Alternative

The Selected Action Alternative is identified as the "Proposed Action" in the Tier 2 EA and includes the following:

The Selected Action Alternative will replace 17,273 linear feet (LF) of aging and failing Aldyl-A plastic pipeline with 19,363 LF of polyethylene (PE) pipe. The WGCA's distribution system has an estimated 3.27 miles of Aldyl-A plastic pipelines, installed prior to 1973, that are vulnerable to leaks. The existing pipes include 2-inch and 4-inch Aldyl-A PE mains. In most cases the replacement pipe will be installed adjacent to the existing line within the existing right-of-way (ROW); however, new pipes may be offset 12-36 inches to either side of the existing line as necessary. Two segments, Segment 7 and Segment 15, of the proposed action include line relocations to previously disturbed and paved ROW owned and operated by the West Virginia Department of Transportation, Division of Highways (WVDOH). The construction

[6] https://www.phmsa.dot.gov/about-phmsa/working-phmsa/grants/pipeline/tier-2-site-specific-environmental-documents

[7] PHMSA-Tier-2-EA-Welch Gas-Cooperative-Association-approved.pdf (dot.gov)

methods include trenching and insertion. Trench widths will not exceed 18 inches and trench depths will not exceed 48 inches. No new ROW is required; however, a new utility easement within WVDOH ROW will be utilized to relocate 1,367 LF of the total 17,273 LF of pipeline.

The Selected Action Alternative has been organized into fifteen (15) segments as follows:

Segment 1, located on Maple Avenue, consists of replacing 1,396 LF of 4" Aldyl-A pipe utilizing trenching methods in the same location of the existing pipe.

Segment 2, located on Maple Terrace, consists of replacing 255 LF of 4" Aldyl-A pipe utilizing trenching methods in the same location of the existing pipe.

Segment 3, located along WV-16/Stewart Street but named Edmore Road, consists of replacing 49 LF of 2" Aldyl-A pipe utilizing trenching methods in the same location as the existing pipe.

Segment 4, named Fed Prison 2A, consists of removing 4,433 LF of 2" Aldyl-A pipe and existing taps and installing new taps on the 4" HDPE line. The existing 2" Aldyl-A will be purged, capped and abandoned in place. A previously disturbed graveled staging area is located adjacent to this segment.

Segment 5, located on Grandview Street, utilizes insertion methods to replace 315 LF of 2" Aldyl-A pipe with new 3/4" HDPE pipe, inserted into a the existing 2" Aldyl-A pipe.

Segment 6, located on Beech Street, consists of replacing 424 LF of 2" Aldyl-A pipe utilizing trenching methods in the existing location. The 2" Aldyl-A pipe will be replaced with a new 2" HDPE pipe.

Segment 7, named Park Avenue but located on Riverside Drive, consists of purging, capping, and abandoning 2,233 LF of 2" Aldyl-A pipe, and using trenching methods to install 2,423 LF new 2" HDPE pipe to be relocated from the existing location to the easement within WVDOH ROW.

Segment 8, named Roger Street but is located on Cornell Avenue, consists of replacing 402 LF of 2" Aldyl-A pipe with 402 LF of new 2" HDPE pipe utilizing trenching methods.

Segment 9, located on Spruce Street, which consists of replacing 87 LF of 2" Aldyl-A pipe with 87 LF of new 2" HDPE pipe utilizing trenching methods.

Segment 10, located near Welch Hospital perpendicular to Grandview Street, consists of replacing 295 LF of 2" Aldyl-A pipe with 295 LF of new 2" HDEP pipe utilizing trenching methods.

Segment 11, named Riverside Drive, consists of replacing 1,042 LF of 2" & 4" Aldyl-A pipe with 1,042 LF of new 4" HDPE pipe utilizing trenching construction methods. The existing pipe will be abandoned in place.

Segment 12, located on Mercer Street, consists of replacing 824 LF of 4" Aldyl-A pipe with 824 LF of new 4" HDPE pipe utilizing trenching construction methods.

Segment 13, labeled Tug Street, utilizes insertion construction methods to replace 1,886 LF of 4" Aldyl-A pipe with new 2" HDPE pipe inserted into a the existing 4" Aldyl-A pipe.

Segment 14, named Central Avenue #1, consists of replacing 2,265 LF of 2" Aldyl-A pipe with 2,265 LF of new 2" HDPE pipe utilizing trenching methods. A previously disturbed gravel staging area, to be utilized to store materials, will be located approximately 2.8 miles north of Segment 14 on Route 16.

Segment 15, named Central Avenue #2, consists of purging, capping, and abandoning 1,367 LF of 2" Aldyl-A pipe, and using trenching methods to install 3,267 LF of new 4" HDPE pipe to be relocated from the existing location to the easement within WVDOH ROW.

Most portions of the existing pipeline will be removed, but a few segments of existing pipeline will be abandoned in place. Abandonment of the existing pipeline (versus excavation and removal) will minimize ground disturbance and facilitate the replacement process in a more efficient manner.

The Selected Action alternative was chosen as it best meets the project's purpose and need to: (1) improve upon the safe delivery of energy by reducing the likelihood of incidents, as well as methane leaks; (2) avoid economic losses caused by pipeline failures; and (3) protect the environment and reduce climate impacts by remediating aged and failing pipelines and pipes prone to leakage.

V. Minimization and Mitigation

- The Welch Gas Cooperative Association in the City of Welch shall implement the following mitigation measures:

    - Efficient use of on-road and non-road vehicles, by minimizing speeds and vehicles;
    - Minimizing excavation to the greatest extent practical;
    - Use of cleaner, newer, non-road equipment as practicable;
    - Minimizing all vehicle idling and at minimum, conforming with local idling regulations;
    - Ensuring that all vehicles and equipment are in proper operating condition;
    - On-road and non-road engines must meet EPA exhaust emission standards (40 CFR Parts 85, 86, and 89);
    - Covering open-bodied trucks while transporting materials;
    - Watering, or use of other approved dust suppressants, at construction sites and on unpaved roadways, as necessary; and
    - Minimizing/eliminating idling of equipment.

- The Welch Gas Cooperative Association of the City of Welch shall avoid staging in wetlands or floodplains and all preconstruction contours shall be restored and natural areas shall be reseeded, as soon as practical. Best Management Practices (BMPs) shall be used during construction to control sediment and erosion and prevent pollutants from entering waterways.
- The Welch Gas Cooperative Association of the City of Welch shall coordinate with the local floodplain administrator to obtain any necessary permits for conducting work in special flood hazard areas, prior to the commencement of work.
- The Welch Gas Cooperative Association of the City of Welch shall obtain a Clean Water Act, Section 402 stormwater permit, and develop a stormwater pollution prevention plan, prior to the commencement of work, if necessary.
- In the event of a release of hazardous materials/waste into the environment during construction, the Welch Gas Cooperative Association of the City of Welch shall notify the appropriate emergency response agencies, potentially impacted residents, and regulatory agencies of the release or exposure.
- The Welch Gas Cooperative Association of the City of Welch shall implement a Stormwater Pollution Prevention Plan which would identify appropriate construction and restoration activities to minimize the potential impacts to groundwater. All impacted areas would be

restored to pre-construction conditions.

- The Welch Gas Cooperative Association in the City of Welch shall utilize best management practices, as appropriate, to control sediment and erosion during construction which may include silt fencing, compost filter socks, and promptly covering all bare areas with seeds or vegetation. All impacted areas to pre-construction conditions.
- The Welch Gas Cooperative Association in the City of Welch is responsible for abiding by all applicable federal, state, and local regulations.
- If, during project implementation, a previously undiscovered archaeological or cultural resource that is or could reasonably be a historic property is encountered or a previously known historic property will be affected in an unanticipated manner, all project activities in the vicinity of the discovery will cease and the Welch Gas Cooperative Association will immediately notify PHMSA. This may include discovery of cultural features (e.g., foundations, water wells, trash pits, etc.) and/or artifacts (e.g., pottery, stone tools and flakes, animal bones, etc.) or damage to a historic property that was not anticipated. PHMSA will notify the State Historic Preservation Office and participating federally recognized tribes and conduct consultation as appropriate in accordance with 36 CFR § 800.13. Construction in the area of the discovery must not resume until PHMSA provides further direction.
- In the event that unmarked human remains are encountered during permitted activities, all work shall halt and the Welch Gas Cooperative Association shall immediately contact PHMSA as well as the proper authorities in accordance with applicable state statutes to determine if the discovery is subject to a criminal investigation, of Native American origin, or associated with a potential archaeological resource. At all times human remains must be treated with the utmost dignity and respect. Human remains and associated artifacts will be left in place and not disturbed. No skeletal remains or materials associated with the remains will be photographed, collected, or removed until PHMSA has conducted the appropriate consultation and developed a plan of action. Project activities shall not resume until PHMSA provides further direction.
- All work, material, equipment, and staging to remain within the road's existing right-of-way or utility easement or other staging areas as identified in the environmental documentation. If the scope of work changes in any way that may alter the effects to historic properties as described herein, the grant recipient must notify PHMSA, and consultation may be reopened under Section 106.
- The Welch Gas Cooperative Association of the City of Welch shall utilize insertion methods to replace pipeline in all areas where the project intersects the Martha H. Moore Riverfront Park and Martha H. Moore Pathway.
- The Welch Gas Cooperative Association of the City of Welch shall ensure full public access to, and use of, the Martha H. Moore Riverfront Park, Martha H. Moore Pathway, and the community park located at the intersection of Central Avenue and Stewart Street, are maintained during construction.
- The Welch Gas Cooperative Association in the City of Welch shall implement the following mitigation measures:
    - All state, local and tribal noise regulations would be followed;
    - All construction activities would occur during normal, weekday business hours, when noise restrictions are not in place;
    - Proper maintenance of equipment mufflers;
    - Use of acoustical noise tent and/or enclosures surrounding hoe rams, jackhammers, or pavement breakers, to the extent practicable given space constraints a work sites.
    - All state, local and tribal noise regulations would be followed;

- All construction activities would occur during normal, weekday business hours;
- Ensure proper maintenance of equipment mufflers; and
- Use of acoustical noise tent and/or enclosures surrounding hoe rams, jackhammers, or pavement breakers, to the extent practicable given space constraints a work sites.

- The Welch Gas Cooperative Association of the City of Welch shall provide advanced notification of service disruptions and construction schedule to all affected parties including residents and businesses adjacent to the project area.
- The Welch Gas Cooperative Association of the City of Welch shall use standard construction safety methods and procedures; and conduct regular safety audits of crews performing work in the field and subsequent follow-up reporting and/or training, as required.
- The Welch Gas Cooperative Association of the City of Welch shall ensure their DIMP procedures are updated as necessary, the work is constructed in accordance with industry best practices and the project would comply with all local, state, and federal regulations, including those for safety.

VI. Findings and Determinations

Based on the analysis in this Tier 2 EA, PHMSA did not identify any significant adverse impacts on human health or the natural environment that would result from implementation of the Selected Action Alternative. The project will not require any additional right-of-way or easements.

PHMSA issued a Section 106 'No Adverse Effect' finding for the project and sent a letter on March 15, 2024, to the West Virginia Department of Arts, Culture, and History, acting in its capacity as the State Historic Preservation Office (SHPO), initiating Section 106 consultation and requesting concurrence on PHMSA's findings. The McDowell County WV Historical Society was copied on the letter and invited to participate as a consulting party. PHMSA also sent letters on March 15, 2024, to the following federally recognized tribes, inviting them to participate in consultation:

- Cherokee Nation
- Eastern Band of Cherokee Indians

The letter to the tribes initiated Section 106 consultation to determine if there were any historic properties of cultural or religious significance to the tribes, to determine of the tribes would like to be consulting parties, and to notify the tribes of PHMSA's intention to make a finding of No Adverse Effect'. Revised APE maps were sent to West Virginia Department of Arts, Culture, and History, the Cherokee Nation, the Eastern Band of Cherokee Indians and the McDowell County WV Historical Society on March 28, 2024.

The West Virginia Department of Arts, Culture, and History responded on April 16, 2024, concurring with PHMSA's findings and that no further consultation is necessary. No responses were received from the tribes, or consulting parties within 30 days of submitting the consultation letters and therefore, in accordance with 36 CFR § 800.5(c)(1), PHMSA may proceed with carrying out the undertaking.

The Cultural Resource mitigation measures are listed above in Section IV, Minimization and Mitigation. Should the project area or scope of work change, or if cultural materials are encountered during construction, PHMSA would re-open consultation with SHPO and the federally recognized tribes. In the

event of unanticipated discoveries, the grantee is required to stop work and notify PHMSA immediately. In turn, PHMSA would consult with SHPO and the federally recognized tribes. Attached to this FONSI is a document providing details on the protocol and requirements regarding unanticipated discoveries.

Consistent with the Tier 1 EA and the Tier 2 EA, PHMSA is making a FONSI determination, in accordance with 40 CFR 1501.6, for this project as it meets the following conditions:

- The Tier 2 Environmental Questionnaire for the selected action is complete and accurate.
- The types and extent of anticipated environmental impacts are as expected in the Tier 1 EA.
- Project proponent commits to compliance with applicable Federal and State environmental requirements.
- The project proponent commits to perform mitigation measures described in the Tier 2 Site Specific Environmental Assessment.
- PHMSA's review of the Tier 2 Environmental Questionnaire did not identify adverse and unanticipated types or levels of environmental impacts.

After careful and thorough consideration of the facts herein, the undersigned finds that the proposed Federal action, namely the Selected Action alternative, is consistent with existing environmental policies and objectives as set forth in NEPA and other applicable environmental requirements and is not a major federal action significantly affecting the quality of the human environment or otherwise, including any condition requiring consultation pursuant to Section 102(2)(c) of NEPA. Furthermore, PHMSA finds that the Tier 1 EA and Tier 2 EA satisfy the requirements of NEPA (42 U.S.C. 4321 et seq.) and CEQ regulations (40 CFR parts 1500-1508). As a result, PHMSA will not prepare an Environmental Impact Statement.

PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION (PHMSA)

UNANTICIPATED DISCOVERIES PROTOCOLS

A. Unexpected Discoveries, Previously Unidentified Properties, or Unexpected Effects:

In accordance with 36 CFR § 800.13, if a previously undiscovered archeological or cultural resource that is or could reasonably be a historic property is encountered or a previously known historic property will be affected in an unanticipated manner during construction, the Grant Recipient will implement the following procedures. This may include discovery of cultural features (e.g., foundations, water wells, trash pits, etc.) and/or artifacts (e.g., pottery, stone tools and flakes, animal bones, etc.) or damage to a historic property that was not anticipated. We advise construction personnel to cease construction and for the Grant Recipient to consult with PHMSA to address post-review concerns. Each step within these procedures will be completed within seven (7) days unless otherwise specified:

1. The person or persons encountering such properties or effects shall immediately stop construction in the area of the discovery and notify the Grant Recipient, who will contact PHMSA and the Section 106 point of contact (POC; contact information listed below). Upon notification by the Grant Recipient of a discovery, PHMSA shall immediately notify the State Historic Preservation Office (SHPO), participating Tribe(s)/Nation(s), and other consulting parties that may have an interest in the discovery, previously unidentified property or unexpected effects, and consult to evaluate the discovery for eligibility for listing in the National Register of Historic Places (National Register) and/or the effects of the undertaking on historic properties.
2. The Grant Recipient will take all reasonable measures to avoid or minimize harm to the property until PHMSA has completed consultation with the SHPO, participating Tribe(s)/Nation(s), and any other consulting parties. They will require the contractor to immediately cease all ground disturbing and/or construction activities within a 100-foot radius buffer zone of the discovery, which PHMSA may reduce or expand based on SHPO standards. For any discovered archeological resources, the Grant Recipient will also halt work in surrounding areas where additional subsurface remains are reasonably expected to be present.
3. The Grant Recipient will ensure that no excavation, operation of heavy machinery, or stockpiling occurs within the buffer zone. The Grant Recipient will secure the buffer zone through the installation of protective fencing. The Grant Recipient will not resume ground disturbing and/or construction activities within the buffer zone until the specified Section 106 process is complete. Work in all other Project areas may continue.
4. Following notification of an unanticipated discovery or effect, the Grant Recipient, in coordination with PHMSA, the Section 106 POC, and consultants as appropriate, will investigate the discovery site and evaluate the resource(s). The Grant Recipient or their consultant will prepare and submit a written document containing a proposed determination of National Register eligibility for the resource and/or, if relevant, an assessment of the Undertaking's effects on historic properties. PHMSA may elect to assume eligibility and/or adverse effects for expediency.
5. If the unanticipated discovery is determined to be eligible for listing in the National Register and/or adverse effects cannot be avoided, the Grant Recipient, in coordination with PHMSA, will propose in writing to SHPO and participating Tribe(s)/Nation(s) and consulting parties, treatment measures to resolve adverse effects.
6. If it is necessary to develop treatment measures, the Grant Recipient, in coordination with PHMSA, will implement the approved treatment measures. The Grant Recipient will ensure construction-related activities within the buffer zone do not proceed until consultation with SHPO, Tribe(s)/Nation(s) and other consulting parties concludes with: 1) a determination that the resource is not National Register-eligible or there are no new adverse effects; 2) the agreed upon treatment

measures have been implemented; or 3) it has been agreed that the treatment measures can be completed within a specified time period after construction-related activities have resumed.

B. Unanticipated Discovery of Human Remains

If the unanticipated discovery includes what is or suspected to be human remains, the Grant Recipient will implement the following procedures. At all times human remains must be treated with the utmost dignity and respect. Human remains or associated artifacts will be left in place and not disturbed. No skeletal remains or materials associated with the remains will be photographed, collected or removed until appropriate consultation has taken place and a plan of action has been developed. We advise construction personnel to cease construction and for the Grant Recipient to consult with the PHMSA to address post-review concerns. Each step within these procedures will be completed within seven (7) days unless otherwise specified:

1. If marked or unmarked graves, human skeletal remains, or skeletal remains believed to be human are encountered during development, all potential disturbance to the graves, skeletal remains, or associated items (e.g., artifacts, headstones, etc.) must cease and law enforcement be notified in accordance with applicable State statute(s) and to determine if the discovery is subject to a criminal investigation. The Grant Recipient will notify PHMSA and the Section 106 POC within twenty-four (24) hours of the initial discovery.
2. Work in the general area of the discovery will stop immediately and the Grant Recipient will immediately secure and protect the human remains and any associated artifacts in place in such a way that minimizes further exposure or damage from the elements, looting, and/or vandalism. The Grant Recipient will ensure a perimeter with a 100-foot radius buffer zone around the discovery is established where there will be no excavation, operation of heavy machinery, or stockpiling. PHMSA may reduce or expand this buffer zone based on SHPO standards. The Grant Recipient will secure the buffer zone through the installation of protective fencing at minimum. The Grant Recipient will not resume ground disturbing and/or construction activities within the buffer zone until the specified Section 106 process is complete. Work in all other Project areas may continue.
3. If a criminal investigation is not appropriate, the Grant Recipient will ensure compliance with any applicable State and local laws pertaining to human remains, funerary objects, and cemeteries. Discoveries of human remains on Federal or Tribal lands shall be subject to the Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC §3001-3013, 18 USC § 1170); and the Archaeological Resources Protection Act (ARPA) (14 USC § 470), as applicable. PHSMA, in coordination with the Grant Recipient, will consult with the appropriate Tribe(s)/Nation(s) and consulting parties.
4. In the event the human remains encountered are of Native American origin, PHMSA, in coordination with the Grant Recipient, will consult with the appropriate Tribe(s)/Nation(s) and SHPO to determine treatment measures for the avoidance, recovery or reburial of the remains and any associated artifacts. When applicable, PHMSA and the Grant Recipient will follow the principles within the ACHP's Policy Statement on Burial Sites, Human Remains, and Funerary Objects, dated March 1, 2023.
5. If the remains are not of Native American origin, the Grant Recipient, in coordination with PHMSA, will consult with the SHPO and participating consulting parties to determine if the discovery is a historic property, take into account the effects on the historic property, and resolve adverse effects, as appropriate.
6. If it is necessary to develop treatment measures, the Grant Recipient, in coordination with PHMSA, will implement the approved treatment measures. The Grant Recipient will ensure ground disturbing and construction-related activities within the buffer zone do not proceed until consultation with the SHPO, consulting Tribe(s)/Nation(s) and participating consulting parties

concludes with: 1) a finding that the resource is not National Register-eligible or there are no new adverse effects; 2) the agreed upon treatment measures have been implemented; or 3) it has been agreed that the treatment measures can be completed within a specified time period after construction-related activities have resumed.

7. The Grant Recipient, in coordination with PHMSA, will also ensure ground disturbing and construction-related activities within the buffer zone do not proceed until the Grant Recipient has complied with all applicable State or local cemetery or burials laws.

Points of contact are as follows:

- PHMSA: Matt Fuller - (217) 707-8169; Matt.Fuller@dot.gov
- Section 106 POC (Volpe): Kathering Giraldo – (857) 320-1359; PHMSA106@dot.gov

Appendix B

Revised Methane Calculations

Table 1 Average methane emission factors for natural gas pipelines (adapted from EPA GHG Inventory, Annex 3.6, Table 3.6-2)

Pipeline Material	Pre-1990 Installation (kg/mile)	1990-2020 Installation (kg/mile)	Average Rate (kg/mile/year)
Cast Iron	4,597.40	1,157.30	2,877.35
Unprotected steel	2,122.30	861.3	1,491.80
Protected steel	59.1	96.7	77.90
Plastic	190.9	28.8	109.85

Table 2 No Action Leak Rate

Pipeline Material Type	Pre-1990 Installation (kg/mile)	Miles	Current Methane Leak Rate (kg/year)
Cast Iron	4,597.40	0	0
Unprotected steel	2,122.30	0	0
Protected steel	59.1	0	0
Plastic	190.9	3.27	624
Total Annual Methane Leak Rate			624
20-year Methane Emissions			12,485

Table 3 Proposed Action Leak Rate

Pipeline Material Type	1990-2020 Installation (kg/mile)	Miles	New Methane Leak Rate (kg/year)
Plastic	28.8	3.66	105
Year 1 Methane Reduction			474
Annual Methane Reduction			519
20-year Methane Reduction			10,332

Equation 1 was used to estimate blowdown emissions in MCF, assuming a pipeline diameter (d) and pressure (P) described in Table 3.

$$E_{blowdown} = V \times \frac{P_{pipe} + P_{atm}}{P_{atm}} \qquad (1)$$

Where the pipeline volume (V) is calculated by multiplying the cross-sectional area of the pipe by the length of pipeline (L):

$$V = \pi \times \frac{d^2}{4} \times L \qquad (2)$$

Table 4 Proposed Action - Methane Blowdown

Equation Inputs	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15
Diameter (inches)	1.25	4	2	2	2	2	2	2	2	2	4	4	4	2	2
Blowdown Pressure	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Length of Blowdown (ft.)	1396	255	49	4433	315	424	2423	402	87	295	1042	824	1886	2265	1367
Blowdown (MCF)	0.03	0.05	0.00	0.23	0.02	0.02	0.12	0.02	0.00	0.02	0.21	0.17	0.39	0.12	0.07
Total MCF		**1.5**													
Total kg		**45**													