

**Federal Energy Regulatory Commission
Office of Energy Projects**

April 2024

Northern Border Pipeline Company

Docket No. CP23-544-000

BISON XPRESS PROJECT

Environmental Assessment

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas 5
Bison XPress Project
Docket No. CP23-544-000

TO THE INTERESTED PARTY:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the Bison XPress Project proposed by Northern Border Pipeline Company (Northern Border) in the above-referenced docket. Northern Border requests authorization to replace and expand compression facilities at Northern Border's existing Arnegard, Manning, and Glen Ullin Compressor Stations in McKenzie, Dunn, and Morton Counties, North Dakota, respectively. The project purpose is to improve system reliability and provide 300,000 dekatherms per day of incremental capacity, which Northern Border would lease to Wyoming Interstate Company, LLC.

The EA assesses the potential environmental effects of the construction and operation of Northern Border's Bison XPress Project in accordance with the requirements of the National Environmental Policy Act. The FERC staff concludes that approval of the proposed project would not constitute a major federal action significantly affecting the quality of the human environment.

The Bison XPress Project includes the following components:

- (a) abandoning by removal the existing 20,000 HP Rolls Royce Avon gas-fired, turbine compressor, installing two new 23,470 HP Solar Turbine Titan 130 gas-fired, turbine compressors, and installing associated piping, six new gas cooling bays and appurtenances at the existing Arnegard (No. 4) Compressor Station;
- (b) placing the existing 38,000 HP Rolls Royce RB211 gas-fired, turbine compressor on standby for planned and unplanned outages up to 500 hours annually, installing two new 31,900 HP Solar Turbine Titan 250 gas-fired, turbine compressors, and installing associated piping and appurtenances at the existing Manning (No. 5) Compressor Station; and
- (c) placing the existing 38,000 HP Rolls Royce RB211 gas-fired, turbine compressor on standby for planned and unplanned outages up to 500 hours annually, installing two new 31,900 HP Solar Turbine Titan 250 gas-fired,

turbine compressors, and installing associated piping, four new gas cooling bays and appurtenances at the existing Glen Ullin (No. 6) Compressor Station.

The Commission mailed a copy of the *Notice of Availability* of the EA to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American Tribes; potentially affected landowners and other interested individuals and groups; and newspapers and libraries in the Project area. The EA is only available in electronic format. It may be viewed and downloaded from the FERC's website (www.ferc.gov), on the natural gas environmental documents page (<https://www.ferc.gov/industries-data/natural-gas/environment/environmental-documents>). In addition, the EA may be accessed by using the eLibrary link on the FERC's website. Click on the eLibrary link (<https://elibrary.ferc.gov/eLibrary/search>), select "General Search" and enter the docket number in the "Docket Number" field (i.e. CP23-544-000). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659.

The EA is not a decision document. It presents Commission staff's independent analysis of the environmental issues for the Commission to consider when addressing the merits of all issues in this proceeding. Any person wishing to comment on the EA may do so. Your comments should focus on the EA's disclosure and discussion of potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that the Commission has the opportunity to consider your comments prior to making its decision on this project, it is important that we receive your comments in Washington, DC **on or before 5:00pm Eastern Time on May 8, 2024.**

For your convenience, there are three methods you can use to file your comments to the Commission. The Commission encourages electronic filing of comments and has staff available to assist you at (866) 208-3676 or FercOnlineSupport@ferc.gov. Please carefully follow these instructions so that your comments are properly recorded.

- You can file your comments electronically using the [eComment](#) feature on the Commission's website (www.ferc.gov) under the link to [FERC Online](#). This is an easy method for submitting brief, text-only comments on a project;
- You can also file your comments electronically using the [eFiling](#) feature on the Commission's website (www.ferc.gov) under the link to [FERC Online](#). With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "[eRegister](#)." You must select the type of

filing you are making. If you are filing a comment on a particular project, please select “Comment on a Filing”; or

- You can file a paper copy of your comments by mailing them to the Commission. Be sure to reference the project docket number (CP23-544-000) on your letter. Submissions sent via the U.S. Postal Service must be addressed to: Debbie-Anne A. Reese, Acting Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852.

Filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered. Only intervenors have the right to seek rehearing or judicial review of the Commission’s decision. At this point in this proceeding, the timeframe for filing timely intervention requests has expired. Any person seeking to become a party to the proceeding must file a motion to intervene out-of-time pursuant to Rule 214(b)(3) and (d) of the Commission’s Rules of Practice and Procedures (18 CFR 385.214(b)(3) and (d)) and show good cause why the time limitation should be waived. Motions to intervene are more fully described at <https://www.ferc.gov/how-intervene>.

Additional information about the project is available from the Commission’s Office of External Affairs, at (866) 208-FERC, or on the FERC website (www.ferc.gov) using the [eLibrary](#) link. The eLibrary link also provides access to the texts of all formal documents issued by the Commission, such as orders, notices, and rulemakings.

The Commission’s Office of Public Participation (OPP) supports meaningful public engagement and participation in Commission proceedings. OPP can help members of the public, including landowners, environmental justice communities, Tribal members and others, access publicly available information and navigate Commission processes. For public inquiries and assistance with making filings such as interventions, comments, or requests for rehearing, the public is encouraged to contact OPP at (202) 502-6595 or OPP@ferc.gov.

In addition, the Commission offers a free service called eSubscription which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to <https://www.ferc.gov/ferc-online/overview> to register for eSubscription.

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TECHNICAL ACRONYMS AND ABBREVIATIONS

APE	Area of Potential Effects
AQCR	Air Quality Control Region
Bakken XPress	Bakken XPress Project
BCC	Birds of Conservation Concern
BMP	Best Management Practice
Bison	Bison Pipeline Company
Bison XPress	Bison XPress Project
BLM	Bureau of Land Management
Btu/scf	British Thermal Unit Per Standard Cubic Foot
CAA	Clean Air Act
CAPP	Canadian Association of Petroleum Producers
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH ₄	Methane
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalents
CS	Compressor Station
dBA	A-Weighted Decibels
EA	Environmental Assessment
ECD	Erosion Control Device
EI	Environmental Inspector
EIS	Environmental Impact Statement
EJScreen	Environmental Justice Screening and Mapping Tool
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FERC or Commission	Federal Energy Regulatory Commission
FUGG	Fort Union Gas Gathering, L.L.C.
GHG	Greenhouse Gas
GIS	Geographic Information Systems
GWP	Global Warming Potential
HAPs	Hazardous Air Pollutants
HP	Horsepower
HUC	Hydrologic Unit Code
HV	Heat Value
ISO	International Organization Standard
IWG	Interagency Working Group on the Social Cost of Greenhouse Gases
Leq	24-Hour Equivalent Sound Level
L _{dn}	Day-Night Sound Level
MAOP	Maximum Allowable Operating Pressure

MBTA	Migratory Bird Treaty Act
Mph	Miles Per Hour
MMBtu/h	Million International British Thermal Units per Hour
N ₂ O	Nitrous Oxide
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants for Source Categories
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NDDEQ	North Dakota Department of Environmental Quality
NBPL	Northern Border Pipeline Company
NDGFD	North Dakota Game and Fish Department
NDGS	North Dakota Geological Survey
NO _x	Nitrogen Oxides
N ₂ O	Nitrous Oxide
NO ₂	Nitrogen Dioxide
NOS	Notice of Scoping
NPS	National Park Service
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NSA	Noise Sensitive Area
NSPS	New Source Performance Standards
NSR	New Source Review
OEP	Office of Energy Projects
OPP	Office of Public Participation
Ppmvd	Parts Per Million by Volume, Dry Basis
Pb	Lead
PGA	Peak Ground Acceleration
PTC	Permit to Construct
PM ₁₀	Particles 10 Micrometers in Diameter and Smaller
PM _{2.5}	Particles 2.5 Micrometers in Diameter and Smaller
Promising Practices	<i>Promising Practices for EJ Methodologies in NEPA Reviews</i>
SCC	Social Cost of Carbon
SC-GHG	Social Cost of GHG
SHPO	State Historic Preservation Office
SO ₂	Sulfur Dioxide
SSA	Sole Source Aquifers
tpy	Tons Per Year
UDCM	Unanticipated Discovery Plan for Contaminated Media
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGCP	U.S. Global Change Research Program
USGS	U.S. Geologic Survey
VOC	Volatile Organic Compounds

WHPA
WIC

Wellhead Protection Area
Wyoming Interstate Company, LLC

A. PROPOSED ACTION

1.0 INTRODUCTION

The Federal Energy Regulatory Commission (Commission or FERC) is an independent regulatory agency and conducts a complete independent review of project proposals, including an environmental review of proposed facilities. Under Section 7(c) of the Natural Gas Act (NGA), the Commission determines whether interstate natural gas facilities are in the public convenience and necessity and, if so, grants a Certificate of Public Convenience and Necessity (Certificate) to construct and operate them. The assessment of environmental impacts is an integral part of the Commission's decision on whether to issue Northern Border Pipeline Company (Northern Border) a Certificate to construct and operate the proposed facilities. Approval would be granted if, after consideration of both environmental and non-environmental issues, the Commission finds that the Project is in the public interest.

The staff of the Commission prepared this environmental assessment (EA) to assess the environmental impacts of the Bison XPress Project proposed by Northern Border. On September 15, 2023, Northern Border, filed an application, in Docket No. CP23-544-000, under sections 7(b) and 7(c) of the NGA and Part 157 of the Commission's regulations. Northern Border's proposed Bison XPress Project consists of the replacement and expansion of compression facilities at Northern Border's existing Arnegard (No. 4), Manning (No. 5), and Glen Ullin (No. 6) Compressor Stations in McKenzie, Dunn, and Morton Counties, North Dakota. Northern Border states the Project would improve system reliability and provide 300,000 Dth/day of incremental capacity, which Northern Border would lease to Wyoming Interstate Company, LLC (WIC).

The EA is not a decision-making document. The purpose of our environmental review is to evaluate and disclose the environmental impacts of Northern Border's Bison XPress Project, identify and assess reasonable alternatives, facilitate public involvement under NEPA, and identify and recommend specific mitigation measures to the Commission to avoid or minimize environmental impacts. This EA will aid the Commission in its decision-making process. The Commission will consider the findings of the EA, as well as non-environmental issues, in its review of the Bison XPress Project.

Applications by Bison Pipeline LLC (Bison) (Docket No. CP23-543-000)¹ and WIC and FUGG (Docket No. CP23-545)² are associated projects being evaluated under the applicable

¹ On September 15, 2023, Bison filed an application in Docket No. CP23-543-000, under section 7(b) of the NGA and Part 157 of the Commission's regulations requesting authorization to abandon 300,000 Dth/day of existing unsubscribed natural gas capacity by lease to WIC pursuant to the terms of a capacity lease agreement between Bison and WIC.

² On September 18, 2023, WIC, and Fort Union Gas Gathering, LLC (FUGG), filed a joint application, in Docket No. CP23-545-000, under section 7(c) of the NGA and Part 157 of the Commission's regulations requesting authorization for WIC to lease 300,000 Dth/day of capacity on the Northern Border, Bison, and FUGG pipeline systems. Additionally, FUGG requested a limited jurisdiction certificate under 18 CFR 284 authorizing it to allow

Commission regulations. These projects are related to the proposed action as they outline the abandonment by Bison and lease by WIC of the capacity generated by the facility upgrades detailed in this EA. Additional information on these facilities is found in section A.8 of this EA.

We³ prepared this EA in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality's (CEQ) regulations for implementing NEPA (Title 40 of the Code of Federal Regulations [CFR], Parts 1500-1508 [40 CFR 1500-1508])⁴, and the Commission's regulations for implementing NEPA (18 CFR 380).

The assessment of environmental impacts is an integral part of the Commission's decision-making process to determine whether to authorize Northern Border's proposal. Our principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that would result from the implementation of the proposed action;
- identify and recommend reasonable alternatives to avoid or minimize adverse environmental impacts;
- identify and recommend mitigation measures, as necessary, to minimize environmental impacts; and
- facilitate public involvement in the environmental review process.

2.0 PURPOSE AND NEED

The Project would replace and upgrade existing compression facilities, improve Northern Border's system reliability, and provide 300,000 Dth/d of incremental capacity, which Northern Border would lease to WIC. This extra capacity would be utilized by WIC to meet market demand for firm take-away capacity from Northern Border's Bakken receipts and provide a seamless transportation path for natural gas production in the Bakken region located in North Dakota to a liquid market hub in Weld County, Colorado (Cheyenne Hub), which has the ability to serve demand markets throughout the country via existing interstate pipeline interconnects with WIC.

3.0 PUBLIC PARTICIPATION AND COMMENT

On October 30, 2023, the Commission issued a *Notice of Scoping Period Requesting Comments on Environmental Issues for the Proposed Project and Notice of Scoping* (NOS). The

WIC to transport interstate natural gas on FUGG's gathering system without subjecting FUGG's gathering operations to the Commission's NGA jurisdiction.

³ "We," "us," and "our" refer to the environmental and engineering staff of the Office of Energy Projects.

⁴ The EA was prepared consistent with the CEQ's April 20, 2022 final rule, National Environmental Policy Act Implementing Regulations Revisions (Final Rule, 87 FR 23453), that was effective as of May 20, 2022.

NOS was published in the Federal Register and was mailed to federal, state, and local officials; agency representatives; affected landowners (as defined by the Commission's regulations); environmental and public interest groups; Native American Tribes; and local libraries and newspapers. This notice opened the scoping period for 30 days. The Commission received 40 comments from individuals and environmental organizations, two Dunn County representatives, multiple North Dakota State Senators, the North Dakota Petroleum Council, the North Dakota Chamber of Commerce, the Williston Area Chamber of Commerce, the City of Watford, the State Historical Society of North Dakota, the Bureau of Land Management (BLM), North Dakota Board of Commissioners for Mackenzie, McKenzie County Job Development Authority, Morton, and Dunn Counties, North Dakota Industrial Commission, the Western Dakota Energy Association, community organizations, local business owners, a healthcare center, the Northern Border Shipper Group (collectively, Tenaska Marketing Ventures and Twin Eagle Resource Management, LLC), the Indicated Shippers (collectively, bp Energy Company, ConocoPhillips Company, and Shell Energy North America, L.P), and the Canadian Association of Petroleum Producers (CAPP).

The majority of comments (37) were in support of the Project. The primary issues filed by the Indicated Shippers, the Northern Border Shipper Group, and CAPP raised concerns with the treatment of the rates, costs, and proposed capacity leases associated with the Project and the related applications filed by Bison (Docket No. CP23-543-000) and WIC and FUGG (Docket No. CP23-545-000). The Bureau of Land Management (BLM) stated that they had no comments on the Project. The State Historical Society of North Dakota's filed an acknowledgement of the Project, and reminder to send them the area of potential affect and letter of determination from FERC. All substantive environmental comments are addressed in the EA.

4.0 SCOPE OF THIS ENVIRONMENTAL ASSESSMENT

As the lead federal agency for the Project, FERC is required to comply with section 7 of the Endangered Species Act (ESA) and section 106 of the National Historic Preservation Act (NHPA). These statutes have been considered in the preparation of this EA. FERC will use this document to consider the environmental impacts that could result if it authorizes the Project. In addition to FERC, other federal, state, and local agencies may use this EA in approving or issuing permits for all or part of the proposed Project. Permits, approvals, and consultations for the Project are discussed in section A.9.

The topics addressed in this EA include geology, soils, water resources and wetlands, wildlife, vegetation, species of special concern, cultural resources, air quality, noise, land use, visual resources, reliability and safety, environmental justice, greenhouse gas (GHG) emissions, and climate change. This EA describes the affected environment as it currently exists and the environmental consequences of the Project and compares the Project's potential impact with that of various alternatives. This EA also presents our conclusions and recommended mitigation measures.

5.0 PROPOSED FACILITIES

The Project facilities, summarized in table A-1 and displayed on figure 1 below would include the replacement and expansion of compression facilities at Northern Border's existing

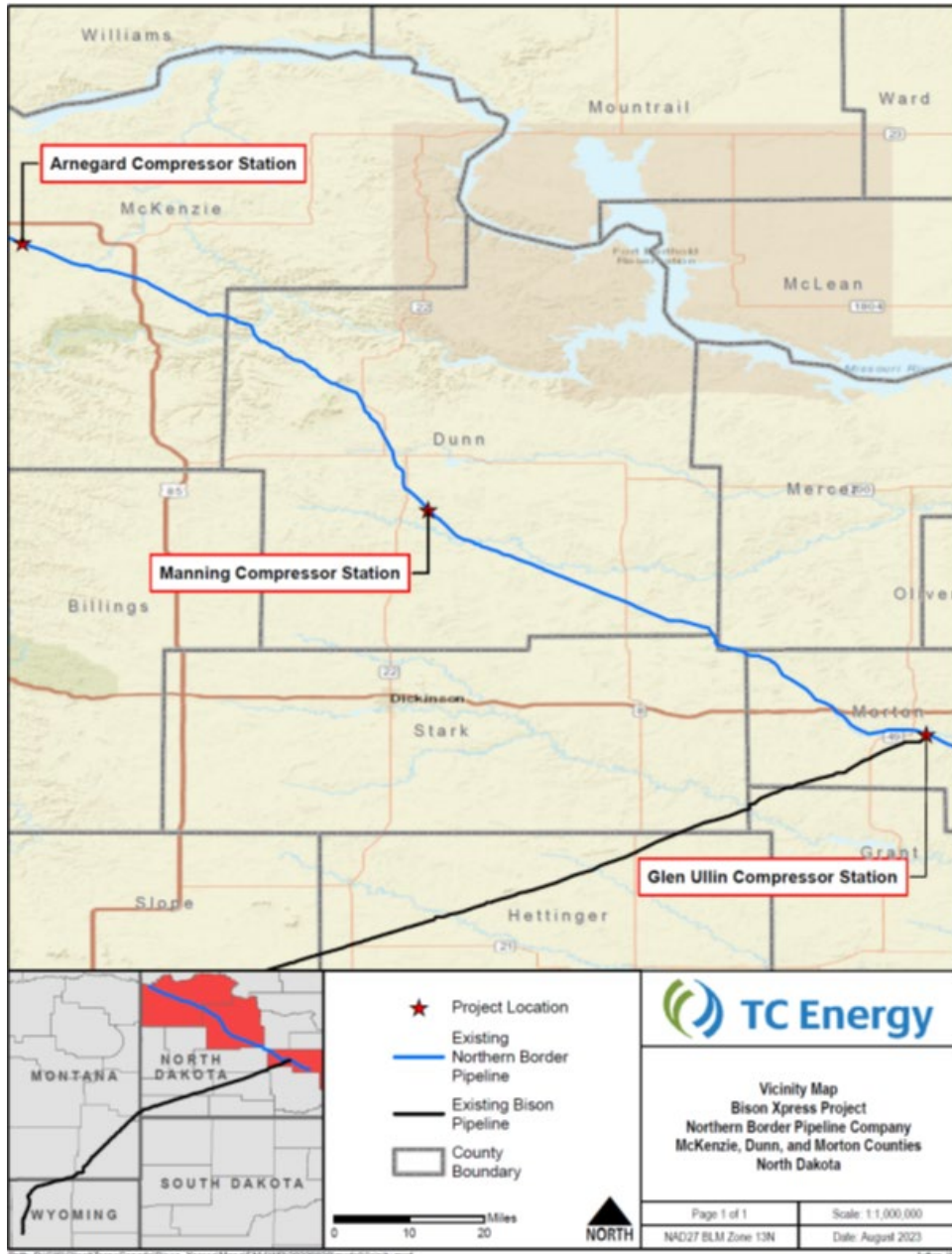
Arnegard (No. 4), Manning (No. 5), and Glen Ullin (No. 6) Compressor Stations. Upon completion, the Project would:

- replace and expand existing compressor facilities with more efficient compression facilities;
- create 300,000 Dth/d of incremental mainline capacity from receipt points between Northern Border’s Culbertson (No. 3) Compressor Station and Glen Ullin (No. 6) Compressor Station (“Bakken Receipt Points”) to its interconnection with Bison in Morton County, North Dakota (Kurtz Delivery Point); and
- introduce standby horsepower on Northern Border’s system.

Northern Border plans to abandon the capacity by lease to WIC, as part of WIC’s Bakken XPress Project, under which WIC would lease one hundred percent (100%) of the Project capacity, a total of 300,000 Dth/d.

Table A-1 Summary of the Bison XPress Project Facilities		
Facility	County	Description
Arnegard (No. 4) Compressor Station	McKenzie	Increase the total certificated HP from 20,000 HP to 42,964 HP at the existing Arnegard Compressor Station. The modifications would include abandoning by removal the existing 20,000 HP Rolls Royce Avon gas-fired, turbine compressor, installing two new 23,470 HP Solar Turbine Titan 130 gas-fired, turbine compressors, and installing related facilities, including associated piping, six new gas cooling bays and appurtenances.
Manning (No. 5) Compressor Station	Dunn	Increase the total certificated HP from 38,000 HP to 59,978 HP at the existing Manning Compressor Station. The modifications would include placing the existing 38,000 HP Rolls Royce RB211 gas-fired, turbine compressor on standby, installing two new 31,900 HP Solar Turbine Titan 250 gas-fired, turbine compressors, and installing related facilities, including associated piping and appurtenances.
Glen Ullin (No. 6) Compressor Station	Morton	Increase the total certificated HP from 38,000 HP to 60,684 HP at the existing Glen Ullin Compressor Station. The modifications would include placing the existing 38,000 HP Rolls Royce RB211 gas-fired, turbine compressor on standby, installing two new 31,900 HP Solar Turbine Titan 250 gas-fired, turbine compressors, and installing related facilities, including associated piping, four new gas cooling bays and appurtenances.
<p>Notes: excess HP that can be generated by the new units but exceeds the certificated HP at the station would be placed on standby.</p> <p>Piping modifications would be required to connect the new compressor units and to route the gas to and from the existing gas coolers.</p>		

Figure 1: Project Location Map



6.0 LAND REQUIREMENTS

Table A-2 summarizes the land requirements associated with the Project. The Project would require a total of 102.7 acres of land during construction, including 26.86 acres at the Arnegard Compressor Station, 33.15 acres at the Manning Compressor Station, and 42.69 acres at the Glen Ullin Compressor Station. Permanent impacts (a total of 6.46 acres) would only occur at the Manning Compressor Station and would be associated with the expansion of the existing facility fence line and grading to level the land surface. All permanent impacts would occur on land owned by Northern Border. Construction activities at all three of the Project compressor stations would require temporary workspace both within and directly adjacent to the existing facility fence lines. Temporary workspace outside of the existing facility fence lines at the Project compressor stations would be used primarily for the staging, parking, and storage of construction equipment and materials. Temporary workspace at all three compressor stations that extends beyond Northern Border's property would be leased from the respective landowners during Project construction. Following the completion of construction, temporary workspace outside of the existing facilities would be restored to pre-construction contours, to the extent practicable, and revegetated.

Table A-2 Summary of Land Requirements Associated with the Bison XPress Project		
Facility	Land Affected During Construction (acres) ^a	Land Affected During Operation (acres) ^b
Project Facilities		
Arnegard Compressor Station	26.86	0.00
Manning Compressor Station	33.15	6.46
Glen Ullin Compressor Station	42.69	0.00
Project Total	102.70	6.46
^a Land affected during construction is inclusive of operation impacts (permanent). ^b Land affected during operation consists only of new permanent impacts.		

Construction Schedule

Northern Border anticipates mobilization and construction of the Project to begin by May 2025 in order to meet its in-service date of March 1, 2026. Throughout the duration of construction, the peak number of workers would total approximately 300 workers. Construction of the proposed Project would occur in stages, from initial surveying and staking to testing and restoration. The majority of Project construction activities at the Project compressor stations would be conducted between the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday; however, due to weather conditions, site conditions, certain construction techniques (including but not limited to hydrostatic testing, blowdowns, tie-ins, etc.), emergencies, or other atypical circumstances Northern Border may extend construction to nighttime hours, Sundays, and holidays.

7.0 BISON XPRESS NON-JURISDICTIONAL FACILITIES

Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the Commission. These non-jurisdictional facilities may be integral to the need for the proposed facilities (e.g., a gas-fueled power plant at the end of a jurisdictional pipeline) or they may be minor, non-integral components of the jurisdictional facilities that would be constructed and operated as a result of the proposed facilities. Under Section 7 of the NGA, the Commission is required to consider, as part of its decision to authorize jurisdictional facilities, all factors bearing on the public convenience and necessity. Consequently, this EA discloses available information for these facilities to inform stakeholders and decision makers.

Non-jurisdictional facilities necessary to operate the Project are anticipated to include electrical power upgrades at all three of the Project's compressor stations and a septic treatment system relocation at the Glen Ullin Compressor Station. The majority of the non-jurisdictional facility impacts overlap with the Bison XPress Project, and therefore are included in our environmental impacts analysis. Additionally, the non-jurisdictional facility project work will impact approximately 24 acres (0.72 acre of developed land, 3.54 acres of agricultural land, 19.53 acres of open land, and 0.16 acre of wetlands) outside of the Bison XPress Project workspace.

Arnegard Compressor Station

Project work at the Arnegard Compressor Station includes upgrading the existing onsite pad mounted transformer within the existing fence line at the compressor station. Northern Border would install a ground sleeve and cement pad on which the upgraded transformer would be installed by McKenzie Electric Cooperative, which would occur over one to two days concurrent with Project construction. The new transformer will be permitted and operated by McKenzie Electric Cooperative. Once the new transformer is installed, the existing transformer would be removed. The upgraded transformer will be adjacent to the existing transformer within the proposed workspace for the Arnegard Compressor Station.

Manning Compressor Station

The electrical power upgrades at the Manning Compressor Station will require upgrades to an existing substation located approximately two miles west of the Manning Compressor Station, and the installation of 2.3 miles of underground power transmission/distribution cables. The new underground cables will replace existing underground and overhead power lines, of which 1.3 miles will be installed in situ. The remaining one mile of new underground cables will be installed along a similar alignment to the existing lines. The incoming power will be connected to an upgraded transformer within the proposed workspace for the compressor station. Assuming a 50-foot corridor will be required to install the upgraded power transmission/distribution cables, the total land requirements outside of the proposed Project workspace is approximately 14 acres. The anticipated route and land requirements for installation are preliminary and subject to change during easement acquisition. The upgraded pad mounted transformer and underground power cables will be wholly permitted, constructed,

and operated by Roughrider Electric Cooperative and will occur over a few weeks, concurrent with Project construction.

A new utility line will be required at the Manning Compressor Station for the purpose of stormwater conveyance (outfall) during Project operation. The new utility line will terminate at the edge of SP6005. All ground disturbance associated with the new utility line will occur within the proposed workspace for the Manning Compressor Station, concurrent with Project construction. Installation of the stormwater utility line qualifies for coverage under a Nationwide Permit 58 without Pre-construction Notification in accordance with Section 404 of the Clean Water Act. The activities are automatically issued a water quality certification under Section 401 of Clean Water Act along with the Section 404 Permit. The new stormwater utility line will be wholly installed, permitted, and operated by TC Energy Corporation.

Glen Ullin Compressor Station

The electrical power upgrades at the Glen Ullin Compressor Station will require the installation of a total of four miles of underground power transmission/distribution cable. The new underground cable will replace an existing overhead power line and will be installed along a similar alignment to the existing line. The upgraded underground cable will terminate at a substation approximately one mile west of the Glen Ullin Compressor Station. The incoming power will be connected to an upgraded pad mounted transformer within the existing facility fence line at the compressor station. Assuming a 50-foot corridor will be required to install the upgraded power transmission/distribution cable, the total land requirements outside of the proposed Project workspace is approximately 24 acres. The anticipated route and land requirements for installation are preliminary and subject to change during easement acquisition. The upgraded pad mounted transformer and underground power cable will be wholly permitted, constructed, and operated by Mor-Gran-Sou Electric Cooperative and will occur over a few weeks, concurrent with Project construction. In addition, the existing septic system at the Glen Ullin Compressor Station will be relocated within the existing facility fence line.

8.0 BLANKET CERTIFICATE PROJECTS

8.1 WIC Lease Capacity

Because we consider the blanket certificate projects related to the proposed Project, we include a discussion of the environmental impacts of the blanket certificate projects in order to inform stakeholders and decision makers. Under a blanket certificate issued pursuant to Section 7(c) of the NGA, a natural gas company may conduct routine activities and construct, modify, acquire, operate, and abandon a limited set of natural gas facilities provided each activity complies with cost restrictions and environmental impacts set forth by Part 157, Subpart F of the Commission's regulations.

As noted in its application, WIC does not require the construction of any new facilities to provide the requested leased capacity arrangement. WIC would use existing facilities on its system to facilitate the lease arrangement. Bison would make minor facility modifications pursuant to Bison's blanket certificate issued in Docket No. CP09-161-000 and 18 CFR 2.55 of the Commission's regulations to accommodate the southward flow of volumes transported via

the lease agreement. No ground disturbance or changes to operational air and noise emissions are associated with WIC's requested authorizations.

Our review indicates that due to the minimal impacts associated with the Blanket Certificate project, inclusion of these projects in the analysis and scope of the proposed Project would not change any of our conclusions of impact significance described in this EA or necessitate elevation of this EA to an Environmental Impact Statement.

8.2 FUGG Facilities

Facility modifications would be undertaken by FUGG at the FUGG Bison Compressor Station in Campbell County, Wyoming, approximately 300 miles south of the Bison Project facilities located in McKenzie, Dunn and Morton Counties, North Dakota. FUGG is seeking a limited jurisdiction certificate under 18 CFR 284 to allow for the transportation of interstate natural gas through its respective system, while leaving FUGG's natural gas gathering operations exempt from the Commission's NGA jurisdiction. The facilities are not subject to the NGA because the facilities are used solely for transportation of natural gas authorized by section 311 of the Natural Gas Policy Act.⁵ These facilities include a compressor station with approximately 10,000 horsepower (HP), one 24-inch-diameter meter site, and associated facility piping in Section 2, Township 48 North, Range 75 West in Campbell County, Wyoming, at the existing FUGG Bison Compressor Station to move gas from TC Energy Corporation's Bison Pipeline to FUGG's Ft Union P1, P2, and P3 pipelines.

Additionally, FUGG will install one compressor station, one meter site, and facility piping from TC Energy Corporation's Bison Pipeline to FUGG's Ft Union P1, P2, and P3 pipelines. The approximate length of those lines would be 400 feet each. All construction activities would be done in accordance with applicable federal, state, and local environmental requirements during the planning, construction, and operation of the proposed project. Construction activities are expected to occur in 2025, depending on weather/site conditions. The construction right-of-way width for the new pipeline connecting the new compressor station to FUGG's Ft Union P1, P2, P3 pipelines would be approximately 75 feet. The approximate acreage of disturbance during construction would be approximately 0.54 acre.

FUGG has provided the information in its application under Docket No. CP23-545-000 in compliance with 18 CFR 284.11 (environmental compliance).

⁵ Section 311 of the Natural Gas Policy Act (NGPA) authorizes intrastate natural gas pipelines to transport natural gas "on behalf of" interstate pipelines or local distribution companies served by interstate pipelines. This allows intrastate pipelines to perform interstate service without becoming subject to the Commission's NGA jurisdiction. However, an intrastate pipeline that sells or transports gas to an NGA pipeline, or to a local distribution company that itself takes service from an NGA pipeline, becomes subject to NGPA section 311 (a) (2) and must file with the Commission. The provisions of the Natural Gas Act and the jurisdiction of the Commission under such Act shall not apply to any transportation or sale in interstate commerce of natural gas if such a transaction is authorized pursuant to section 311 or 312 of the NGPA.

9.0 PERMITS, APPROVALS, AND REGULATORY CONSULTATIONS

Table A-3 provides a list of known federal, state, and local permits for the Project. Northern Border would be responsible for obtaining all permits and approvals required for the Project.

Table A-3 Applicable Major Permits, Licenses, Authorizations, and Clearances for the Bison XPress Project			
Agency	Permit / Clearance / Approval	Submittal Date	Receipt Date (anticipated)
Federal			
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity	September 15, 2023	Pending
U.S. Army Corps of Engineers – Omaha District	Section 404 of the <i>Clean Water Act</i> , Nationwide Permit 58	Automatically authorized without submittal of a Pre-construction Notification	--
U.S. Fish and Wildlife Service – North Dakota Ecological Services Field Office	<i>Endangered Species Act</i> , Section 7 Consultation; <i>Bald and Golden Eagle Protection Act</i> , <i>Migratory Bird Treaty Act</i>	September 15, 2023	October 10, 2023
State			
North Dakota Department of Environmental Quality	North Dakota Pollutant Discharge Elimination System (NDPDES) General Permit for Stormwater Discharges from Construction Activities (NDR11-0000)	First Quarter 2024	Pending
	Section 401 of the <i>Clean Water Act</i> , Water Quality Certification	Automatically authorized with Nationwide Permit	--
	Title V Operating Permit Modification (Arnegard Compressor Station)	August 22, 2023	Pending
	Title V Operating Permit Modification (Manning Compressor Station)	August 22, 2023	Pending
	Title V Operating Permit Modification (Glen Ullin Compressor Station)	August 22, 2023	Pending
State Historical Society of North Dakota	<i>National Historic Preservation Act</i> Section 106 Consultation	September 15, 2023	November 28, 2023
North Dakota Game and Fish Department	Threatened and Endangered Species Consultation/Clearance	September 15, 2023	October 10, 2023

B. ENVIRONMENTAL ANALYSIS

Baseline Environmental Trends and Planned Activities

The Project includes uprating and modifying existing compressor stations at Northern Border's existing Arnegard (No. 4), Manning (No. 5), and Glen Ullin (No. 6) Compressor Stations located in McKenzie County, Dunn County, and Morton County, North Dakota. The area surrounding each of the Project compressor stations is rural with limited residences and consists primarily of agricultural fields. North Dakota's climate is continental, characterized by large variances in temperature, both on a seasonal and daily basis. Precipitation ranges from low to moderate, and air flow through the region creates windy conditions. Extreme weather events in the region include occasional severe thunderstorms and tornadoes, and heavy snow and blizzards. The average maximum daily temperature is 55.2 degrees Fahrenheit, and the average minimum daily temperature is 31.2 degrees Fahrenheit. The average annual rain precipitation is 19.1 inches, and the average annual snow precipitation is 50.5 inches. The average annual wind speed is ten miles per hour (mph) (National Climatic Data Center, 2023).

The following sections discuss the Bison XPress Project's potential direct and indirect impacts on environmental resources. An impact would be considered significant if it would result in a substantial adverse change in the physical environment.

1.0 GEOLOGY

The Project is within the Missouri Plateau Sections of the Great Plains physiographic province (U.S. Geological Survey [USGS], 2021a, 2008). The Missouri Plateau, southwest of the Missouri River, generally consists of broad valleys and hills of sandstone, siltstone, claystone, and lignite that resulted from the erosion of flat-lying beds (North Dakota Geological Survey [NDGS], 2023a). The Glen Ullin Compressor Station and the Manning Compressor Station are within the Missouri Plateau, Unglaciated Section, and the Arnegard Compressor Station is within the Missouri Plateau, Glaciated Section. The topography of the Project areas is nearly level, with elevations varying approximately 20 feet within the Project workspaces. The underlying geology is generally categorized by yellowish-brown silt, sand, clay, sandstone, and lignite along with river, lake, and swamp sediment. The primary lithology of the formations consists of poorly consolidated claystone, siltstone, and sandstone.

Project construction and excavation activities would occur in previously graded and developed areas. No blasting is anticipated to be required for the Project. Northern Border plans to break apart large stones or bedrock using mechanical rock trenching methods such as excavation with a backhoe, rock hammering, or ripping. If blasting becomes necessary, Northern Border would coordinate with local authorities, conduct appropriate blasting surveys, develop a Project-specific blasting plan in accordance with local, state, and federal regulations, notify all appropriate entities, and obtain any required permits prior to blasting. As blasting is not anticipated, and Northern Border would coordinate with the appropriate entities if blasting were determined to be necessary, we conclude that the Project area would not be significantly impacted by blasting.

1.1 MINERAL AND PALEONTOLOGICAL RESOURCES

North Dakota's primary non-fuel mineral resources are lime, construction and industrial sand and gravel, and crushed stone. There are no active mines, active or historic quarries, or mine spoil areas located within one mile of the Project area (EIA, 2021; USGS, 2023a, 2023b, 2003). The Arnegard Compressor Station is located within the Arnegard oil field, and the Manning Compressor Station is located within the Murphy Creek oil field. However, no wells associated with oil and gas activities are located within 0.25 mile of the Project area (North Dakota Oil and Gas Division, 2023). If an oil or gas well is encountered during construction of the Project, Northern Border would determine an appropriate buffer and construction procedure around the well based on site-specific conditions and coordination with the owner of the well. If an oil or gas well is unexpectedly impacted during construction, Northern Border would stop work immediately, contain any spilled product per their *Spill Prevention, Containment, and Control Plan* (SPCC) Plan, and notify FERC as well as the appropriate state and/or local agency. We have reviewed Northern Border's SPCC Plan and find it acceptable.

All Project activities would occur within areas previously disturbed by agriculture and industrial activities. Therefore, no paleontological resources are expected to be impacted by the proposed Project. In the unlikely event that paleontological resources are discovered during construction of the Project, Northern Border would temporarily cease excavation in the area and would notify the NDGS as well as FERC, so that all finds may be properly documented. We conclude paleontological resources would not be significantly impacted by the Project.

1.2 GEOLOGIC HAZARDS

Geologic hazards are natural, physical conditions that can result in damage to land and structures or injury to people. Such hazards typically are seismic-related, including earthquakes, surface faulting, and soil liquefaction. Geologic hazards discussed below also include landslides.

Seismicity, Surficial Faults, and Soil Liquefaction

Seismic hazards include earthquakes, surface faulting, and soil liquefaction. According to the USGS Seismic Hazards maps for the U.S., the Project is situated in areas of very low seismic probability. Based on historical seismic activity in the area, the USGS estimates that the 500-year earthquake (an earthquake with a ten percent probability of occurring within any 50-year interval) would result in peak ground accelerations (PGA) of less than one percent gravity in the vicinity of the Manning Compressor Station and Glen Ullin Compressor Station and would result in peak ground accelerations between one to two percent gravity within the vicinity of the Arnegard Compressor Station. Additionally, the USGS estimates that the peak ground acceleration with a two percent probability of exceedance in 50 years would be two to four percent gravity (USGS, 2015). PGA between zero and four percent gravity are associated with the lightest ground motions with no potential for damage. If an earthquake were to occur in the Project area, the likelihood that it would result in significant damage to the Project facilities is anticipated to be low given the PGA for the Project area. The closest earthquake to the Project area was located approximately 17 miles northeast of the Arnegard Compressor Station. This

earthquake occurred on September 28, 2012, and had a magnitude of 3.3 (USGS, 2023c; Anderson, 2016).

The USGS compiled data to identify and determine the potential hazard of induced earthquakes, which are those that result from the disposal of wastewater from oil and gas production through its injection in deep underground wells. The closest incidence of induced seismicity occurred approximately 27 miles northwest of the Arnegard Compressor Station in 2010 with a magnitude of 2.5 (Wilson et al., 2017). Therefore, due to the distance and low magnitude of the nearest recorded event from the Project area, induced seismicity is not anticipated to impact the Project facilities.

The Project is within the Trans-Hudson Province of North Dakota, which is categorized as Precambrian basement rocks that are approximately 1.7 billion years old and consist of metamorphosed sedimentary and volcanic rocks. Approximately ten faults are present within the Precambrian basement rocks of the entirety of North Dakota, eight of which occur in the northwestern portion of the state. The closest fault to the Project areas is the Heart River Fault, which is approximately 18 miles south of the Manning Compressor Station. Additionally, one possible fault that has not been fully categorized may be present approximately 18 miles north of the Arnegard Compressor Station (Anderson, 2016). Given the low probability for ground shaking and the lack of Holocene-age faults in the Project area, we conclude the risk of damage to the proposed Project facilities resulting from an earthquake or seismic ground faulting is low.

Soil liquefaction is a phenomenon often associated with seismic activity in which saturated, non-cohesive soils temporarily lose their shear strength (i.e., behave like viscous liquid) when subjected to ground shaking. Non-cohesive soils (e.g., sand), near-surface saturation, and seismicity are necessary for soil liquefaction to occur. Given the low risk of earthquake-induced ground movement in the Project area, we conclude that the risk of impacts on the Project facilities from soil liquefaction is low.

Landslides

Based on NDGS Landslide Maps, the Project area is not located within landslide prone area (Anderson, et. al., 2023; NDGS, 2023a, 2020a, 2020b, 2018). However, according to the USGS Landslide Susceptibility Map of the U.S., the Project area is located in an area with a moderate susceptibility to land sliding (USGS, 1982). The closest landslide instance occurred approximately ten miles east of the Arnegard Compressor Station on August 9, 2011, within the Theodore Roosevelt National Park. The suspected trigger was rain and overly wet soil conditions. The landslide size is listed as medium and the USGS categorized the landslide confidence rating as probable (National Aeronautics and Space Administration, 2023). As discussed previously, the Project areas mainly occur within previously graded and developed areas (compressor stations) and topography in the Project construction areas are generally flat. Additionally, no landslide issues have been identified to date since operation of the existing Project facilities. Given these data we do not anticipate that landslides would impact the Project facilities.

2.0 SOILS

Soil units impacted by the Project were identified and assessed using the Natural Resource Conservation Service (NRCS) Web Soil Survey (NRCS, 2023). In addition, general information regarding soils was obtained from Official Soil Series Descriptions contained within the NRCS Soil Surveys of Dunn, McKenzie, and Morton Counties.

The Project is located within McKenzie, Dunn, and Morton Counties, North Dakota and covers 20 soil map units (NRCS, 2023). Soil limitations of each soil map unit within the Project area, such as prime farmland, hydric soils, compaction potential, erosion potential, steep slopes, shallow bedrock, shrink-swell and revegetation potential, as well as the acres impacted by construction and operation of the Project are discussed below.

Soil Characteristics

Based on the NRCS Web Soil Survey, the Project work area soils are comprised of silty and sandy loams. Some of the mapped soils within the Project area are described as having characteristics that limit suitability for development. None of the soils in the Project area are characterized as hydric or as stony/rocky soils and all soils are characterized as having moderate compaction potential. Two soil map units in the Project area, one at the Manning Compressor Station and one at the Arnegard Compressor Station, have a high erodibility due to wind. Additionally, two soil map units have high erodibility due to water, both of which are at the Manning Compressor Station. Soils with low revegetation potential encompass 0.93 acre and 3.44 acres of the project area at the Arnegard and Manning Compressor Stations, respectively. Soils with shallow bedrock encompass 1.71 acres and 24.00 acres at the Arnegard and Manning Compressor Stations, respectively. One soil map unit, which is at the Arnegard Compressor Station, is rated as high shrink-swell potential.

Prime Farmland

A total of 54.34 acres (20.01 acres at the Manning Compressor Station and 34.33 acres at the Glen Ullin Compressor Station) of the soils that would be impacted by the total Project area are characterized as prime farmland or farmland of statewide importance. None of the soil map units at the Arnegard Compressor Station are classified as prime farmland or farmland of statewide importance. The majority is within Northern Border's existing fenced facilities and not currently utilized as farmland. Of the 54.34 acres, only 3.23 acres would be permanently impacted by the facility fence line expansion and grading at the Manning Compressor Station. Northern Border would minimize adverse impacts on prime farmland and farmland of statewide importance by implementing the best management practices (BMPs) identified in the FERC Upland Erosion Control, Revegetation and Maintenance Plan (FERC Plan). Northern Border would coordinate with the applicable agencies and landowners in these areas to ensure the proper restoration of any impacted agricultural areas, including replacement of segregated topsoil, debris removal, and compliance with reseeding recommendations. During construction activities, the topsoil from actively cultivated and rotated cropland and improved pasture would be stripped and segregated from the subsoil in accordance with the FERC Plan. Segregated topsoil would be returned following backfilling of the subsoil, ensuring preservation of topsoil within the construction area. Following the completion of construction, agricultural areas

temporarily disturbed by construction of the Project would be allowed to return to pre-construction uses. Therefore, construction activities in these areas would not adversely impact prime farmland or farmland of statewide importance.

Soil Contamination

Northern Border conducted a review of the North Dakota Department of Environmental Quality (NDDEQ) and the U.S. Environmental Protection Agency's (USEPA) online databases to identify recent or historic sources of contamination such as spills, landfills, and leaking storage tanks within 0.50 mile of the Project areas (USEPA, 2023a, 2023b, 2023c; NDDEQ, 2023). Based on this review, there are no recent or historic sources of contamination within 0.50 mile of any of the Project facilities; therefore, the Project is not expected to impact or be impacted by any existing contaminated soils.

Soil Impacts and Mitigation

Construction activities that have the potential to adversely impact soils and revegetation potential within the Project area include clearing, grading, excavations, backfilling, leveling, and compacting the soils for the construction of building foundations. Potential soil impacts include loss of soil due to water or wind erosion; reduction of soil quality by mixing topsoil with subsoil or by bringing excess rocks to the surface; soil compaction due to traffic by heavy equipment; and disruption of surface and subsurface drainage systems. In addition, the presence of certain soil conditions may result in poor revegetation of disturbed areas.

During construction, contamination from accidental spills or leaks of fuels, lubricants, and coolant from construction equipment could adversely impact soils. The effects of contamination are typically minor because of the low frequency and volumes of spills and leaks. Northern Border would implement its SPCC Plan that specifies cleanup procedures in the event of soil contamination from spills or leaks of fuel, lubricants, coolants, or solvents. It is also possible that localized pre-existing evidence of contamination may be encountered during construction of the Project. As such, Northern Border would adhere to its Project-specific *Plan for the Unanticipated Discovery of Contaminated Environmental Media* (UDCM). This plan identifies the steps to be followed in the event that contaminated sediments or soils, as identified by evidence of subsoil discoloration, odor, sheen, or other such indicators, are encountered during construction.

Temporary erosion control devices (ECDs), such as interceptor diversions and sediment filter devices (e.g., filter socks and silt fence) would be installed following initial ground disturbance in order to minimize the potential for erosion. Northern Border may install permanent ECDs, such as riprap, rock outlet protection, trench breakers (for the new suction/discharge lines), or French drains. All areas within the Project footprint that are not covered with gravel or rock would be revegetated in accordance with our Plan and Procedures. Given Northern Borders's proposed mitigation measures, we conclude impacts on soils would be short-term and not significant.

3.0 WATER RESOURCES

3.1 GROUNDWATER RESOURCES

The USEPA defines a sole source aquifer as one that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer where there are no reasonably available alternative drinking water sources, should the aquifer become contaminated. No sole source aquifers are in the Project area (USEPA, 2023d). Based on Northern Border's field surveys conducted for the Project area in July 2020 and May 2023, discussions with landowners, and/or a review of the USGS National Water Information System tool (USGS, 2019), there are no springs located within one mile of the Project area.

The primary freshwater-bearing aquifer in the Project vicinity is the Lower Tertiary aquifers. The Lower Tertiary aquifers are composed of a series of water yielding sandstone interbedded with lignite. The Lower Tertiary aquifers underlying the Project areas are present at depths of approximately 140 feet or 500 feet (USGS, 2021b). Additionally, the Manning Compressor Station is underlain by unconsolidated glacial drift. The glacial drift aquifer is primarily composed of fine to medium sand with coarse gravel near the base of the aquifer (USGS, 1979). Water levels in the wells drilled closest to the Project areas are 264 feet, 53 feet, and 36 feet at Arnegard, Manning, and Glen Ullin Compressor Stations, respectively (North Dakota Department of Water Resources, 2023).

Public and Private Water Supply Wells and Wellhead Protection Areas

Northern Border conducted a review and field survey for private and public water supply wells in the Project area. Based on this review, one active water well is within the Arnegard Compressor Station and one inactive water well is within the Glen Ullin Compressor Station, both owned by Northern Border. Two plugged and abandoned water wells, owned by Northern Border, are within 150 feet of the Project areas at the Manning Compressor Station and the Arnegard Compressor Station, respectively.

Additionally, a review of NDDEQ map of source water protection areas identified three active wellhead protection areas (WHPA) within three miles of the Project area. The three WHPAs are 2.11 miles north, 2.45 miles northwest, and 2.62 miles northwest of the Project area at the Arnegard Compressor Station (NDDEQ, 2023b). Construction of the Project is not expected to impact the groundwater table due to shallow depths of excavation (seven to ten feet); therefore, the WHPAs would not be impacted by the Project.

Groundwater Contamination

As discussed above in section B.2, Northern Border conducted a review of publicly available resources for known sources of contamination. Based on this review no groundwater contamination sources were identified within 0.5 mile of the Project.

Groundwater Impacts and Mitigation

Groundwater impacts due to construction and/or operation of the planned facilities are not anticipated. Neither blasting nor trench dewatering is anticipated. Any soils compacted by construction activities, excluding permanent aboveground facility foundations or newly graveled or rockered areas, would be de-compacted prior to Project completion; therefore, significant impacts on surrounding groundwater resources or groundwater quality due to soil mixing and compaction are not anticipated.

Accidental spills of fuel or hazardous material during refueling or maintenance of construction equipment could affect groundwater if not cleaned up properly. Northern Border would prohibit fuel storage and refueling activities within 200 feet of private wells and 400 feet of community or municipal wells. Spill-related impacts would be minimized by implementation of the measures included in the Project-specific SPCC Plan. Some of the measures to be implemented include training personnel on the proper handling of fuels and other hazardous materials, instituting appropriate spill cleanup and notification procedure, ensuring equipment is in good operating condition and regularly inspecting equipment. In the event of a spill, Northern Border would implement our Plan and Procedures and its SPCC Plan. By following these measures, the potential impacts on groundwater and water wells due to spills or leaks would be minimized.

Northern Border would offer pre- and post-construction monitoring for well yield and water quality for any public or private wells within 150 feet of the construction workspaces, with landowner permission. However, should any landowners outside of the 150 feet range request testing, Northern Border would provide this service on an individual basis. If the Project does affect private or public well quality or yield, Northern Border would provide alternative water sources or offer compensation to the well owner. If the Project adversely affects a groundwater supply, Northern Border would work with the landowner to resolve the damaged supply through compensation, repair, or replacement.

Given Northern Border's mitigation measures, including implementation of its SPCC Plan, we conclude that impacts from Project construction and operation on groundwater resources would not be significant.

3.2 WATER USE

Northern Border anticipates using 295,000 gallons of water for hydrostatic testing (approximately 75,000 gallons; 100,000 gallons; and 120,000 gallons of water would be used for hydrostatic testing at the Arnegard, Manning, and Glen Ullin Compressor Stations, respectively) and a maximum of 10,000 gallons of water per day would be used for dust suppression. Water would be sourced from a local municipal source. The water used for hydrostatic testing would be discharged into a well-vegetated upland area through water dissipation devices. Northern Border would use BMPs such as, sediment filter bags, to reduce potential for scouring or other impacts.

Given that Northern Border would adhere to best management practices and the FERC Procedures, we conclude that water used during Project activities would not result in significant impacts to water use.

3.3 SURFACE WATER

The Project areas at the Arnegard Compressor Station, Manning Compressor Station, and Glen Ullin Compressor Station are located within three unique watersheds (Hydrologic Unit Code [HUC] 8). These watersheds are listed in table B-1.

Table B-1 Watersheds Located Within the Bison XPress Project Area			
Project Facility	County	Watershed	Hydrologic Unit Code 8
Arnegard Compressor Station	McKenzie	Lake Sakakaea	10110101
Manning Compressor Station	Dunn	Knife	10130201
Glen Ullin Compressor Station	Morton	Lower Heart	10130203

There are no surface water intakes for public water systems within three miles of the Project area (NDDEQ, 2023). Therefore, the Project is not expected to impact any public water supplies associated with surface water resources. Waterbodies were identified through field delineations conducted by Northern Border for the Project area in July 2020 and May 2023. Ten minor waterbodies (waterbodies less than 10 feet wide) were identified within the Project area during field surveys (table B-2). If water is present at the time of crossing in waterbodies without an existing culvert, timber mats would be utilized for equipment to cross waterbodies, if needed during Project construction. Upon completion of Project construction activities, timber mats would be removed and all impacted areas would be restored to pre-construction conditions. No impacts to waterbodies with existing permanent culverts that would not require modification or improvement are anticipated.

Open cut impacts on SP6005 include excavation below the ordinary high watermark to facilitate the installation of a non-jurisdictional utility line for the purpose of stormwater conveyance during non-jurisdictional project activities. The new utility line would terminate at the edge of SP6005, which would be restored to preconstruction conditions following the completion of construction.

**Table B-2
Waterbodies within the Bison XPress Project Area**

ID	Waterbody Name	Approx. Waterbody Width (feet) (a)	Project Facilities	Equipment Crossing Method
SP6008	Unnamed Tributary of Timber Creek	3	Arnegard CS	Timber mat
SP6009	Unnamed Tributary of Timber Creek	2	Arnegard CS	Existing Culvert, Timber mat
SP6010	Unnamed Tributary of Timber Creek	2	Arnegard CS	Existing Culvert, Timber mat
SP6004	Unnamed Tributary of Stray Creek	3	Manning CS	Existing Culvert, Timber mat
SP6005	Unnamed Tributary of Stray Creek	4	Manning CS	Open cut, Timber mat
SP6006	Roadside Ditch	2	Manning CS	Timber mat
SP6007	Roadside Ditch	1	Manning CS	Timber mat
SP6001	Roadside Ditch	3	Glen Ullin CS	Existing Culvert, Timber mat
SP6002	Unnamed Tributary of Big Muddy Creek	3	Glen Ullin CS	Existing Culvert, Timber mat
SP6003	Unnamed Tributary of Big Muddy Creek	4	Glen Ullin CS	Existing Culvert, Timber mat

a Approximate waterbody width is based on the ordinary high watermark, as verified by field survey.

***Note:** For all waterbodies, State Water Quality Class = Class III Streams, Fisheries Classification = N/A, FERC Class = Minor, Flow = Ephemeral.

State Water Quality Classification and Fisheries Classification were obtained from the North Dakota Water Quality Standards (NDDEQ, 2023).

Six of the waterbodies located within the Project workspaces are located at existing facility access/driveways and anticipated be crossed via existing culverts, which would not require any improvements or modifications. In the event an ephemeral waterbody must be crossed Northern Border would cross the waterbody via an alternative method (e.g., timber mat) during construction, and BMPs would be employed (as necessary).

Construction activities and the operation, storage, or refueling of heavy machinery could result in impacts on surface water resources. Potential impacts on surface water resources include modification of aquatic habitat, increased sedimentation and turbidity, decreased dissolved oxygen concentrations, inadvertent release of chemical and nutrient pollutants from sediments, and introduction of chemical contaminants such as fuels or lubricants. Whenever possible, construction activities at waterbodies would be conducted during low-flow periods to minimize sedimentation and turbidity, and stream bank disturbances. Erosion and sedimentation barriers would be properly installed and maintained throughout construction to prevent disturbed soils and sediment from migrating into waterbodies located outside of the Project area. All waterbody construction activities would be conducted in accordance with the FERC Procedures, and Northern Border would implement BMPs and ECDs in accordance with applicable federal and state regulations to minimize potential adverse impacts.

According to Federal Emergency Management Agency (FEMA), the Project facilities and associated workspaces at the Arnegard Compressor Station and the Glen Ullin Compressor Station are recorded within Zone X, which is defined as an area of minimal flood hazard outside of the 100-year floodplain and the 500-year floodplain. No digital data or Flood Insurance Rate Map panels are available for the Manning Compressor Station. Project facilities would be designed to meet or exceed all federal, state, and local standards. Northern Border is not aware of any instances of flooding occurring at or impacting the Project's three compressor stations. Therefore, we do not anticipate that flooding would impact the Project or that the function of the surrounding floodplain would be impacted by the Project.

Sensitive surface waters include those listed as National Wild or Scenic Rivers, North Dakota designated Scenic Rivers, Section 10 Navigable Waters, and those listed on the National Park Service's (NPS) Nationwide Rivers Inventory. No sensitive surface waters are located within 0.50 mile of the Project or would be otherwise impacted by the Project. Additionally, no waterbodies crossed by the Project are listed as 303(d) impaired waters (North Dakota Department of Health, 2023).

Northern Border does not anticipate that the project construction activities would alter current drainage patterns, and surface water flow. Given that all waterbody construction activities would be conducted in accordance with the FERC Procedures, and Northern Border would implement BMPs and ECDs in accordance with applicable federal and state regulations to minimize potential adverse impacts, we conclude that impacts on the ten minor water bodies in the Project area would be temporary, and not significant.

3.4 WETLANDS

Northern Border conducted wetland delineations in the Project area in July 2020 and May 2023 in accordance with the *Regional Supplement to the Corps of Engineers Wetland*

Delineation Manual: Great Plains Region (Version 2.0) (USACE, 2010). Based on field surveys conducted by Northern Border in July 2020 and May 2023 and review of desktop resources, including National Wetland Inventory (NWI) maps, no wetlands were identified within the Project survey area. NWI mapped wetlands closest to the Project consist of PEM wetlands located 0.21 mile southwest of the Arnegard Compressor Station, 0.46 mile east of the Manning Compressor Station, 0.17-mile northeast of the Project area at the Glen Ullin Compressor Station (U.S. Fish and Wildlife Service [USFWS], 2023).

4.0 FISHERIES, VEGETATION AND WILDLIFE

4.1 FISHERIES AND AQUATIC RESOURCES

The ten waterbodies that were identified within the Project area are ephemeral and do not have the potential to support fish populations or aquatic invertebrates. Therefore, we conclude that the Project would not have any direct impacts on fisheries.

4.2 VEGETATION

The Project would impact 102.70 acres of land, including 6.46 acres of new permanent impacts associated with the expansion of the existing facility fence line and grading to the level of land surface at the Manning Compressor Station. Most of the Project workspace would be within developed land (59.1 acres). The developed land at the Project compressor stations is characterized by vegetation that is routinely maintained during operation or lacking vegetation due to the presence of impervious or semi-permeable surfaces such as pavement, gravel, or bare compacted land.

The Project would also impact agricultural land (39.76 acres) and open land (7.92 acres). Agricultural lands are defined as areas of active or recent use of land for the cultivation of crops and are generally entirely herbaceous. Agricultural vegetation in the Project area includes alfalfa and common wheat. Agricultural impacts and mitigation are discussed further in section 2.0. Open land is comprised of non-forested areas that are typically characterized as open areas with mixed herbaceous vegetation interspersed with scrub-shrub vegetation. Vegetation observed within open land in the Project area during surveys consisted of Kentucky bluegrass, black-bindweed, common dandelion, smooth brome, and yellow bedstraw at the Arnegard Compressor Station; smooth brome, alfalfa, Kentucky bluegrass at the Manning Compressor Station; and smooth brome, Kentucky bluegrass, alfalfa, large beardtongue, common yarrow, and prairie rose at the Glen Ullin Compressor Station.

During construction activities, vegetation may be cleared or trampled. Vegetation that is disturbed could be temporarily lost and as a result associated benefits; soil stability and structure, evapotranspiration, and habitat functions could be precluded. However, these impacts would likely be short-term as affected lands would be stabilized and seeded to improve restoration success.

In addition, the use of construction equipment and soil disturbance would increase the potential for the introduction and/or spread of noxious weeds and invasive plant species. However, to reduce the potential for introduction and/or spread of undesirable plant species,

Northern Border would implement several management strategies within the Project area where soil disturbance and/or removal of native vegetation may occur. The management and control measures that would be used includes ensuring the minimization of soil movement, minimizing the time that bare soil is exposed, controlling non-native invasive species within the Project area using mechanical removal, and monitoring disturbed areas following construction to verify revegetation has been successful and that invasive species have not become widely established.

Overall, the Project would have minimal impacts on vegetation as most of the Project workspace is located within the existing compressor station boundaries which does not currently support diverse vegetation. Additionally, the Project would not involve any tree clearing. Based on the lack of trees in the Project area, the limited area of vegetation disturbance, Northern Border's adherence to the FERC Plan, and Northern Border's proposed measures to restore vegetated areas post-construction, we conclude that the Project would have short-term and not significant impacts on vegetation resources.

4.3 WILDLIFE AND MIGRATORY BIRDS

Minimal impacts on wildlife are anticipated as the Project workspace is located within and directly adjacent to the existing compressor station facility. However, wildlife species that are common to the region in which the Project is located includes the ferruginous hawk, golden eagle, sharp-tailed grouse, sage grouse, gray partridge, black-billed magpie, dapping duck, eastern kingbird, yellow warbler, white-tailed deer, mule deer, pronghorn, bobcat, white-tailed jackrabbit, white-tailed prairie dog, black-tailed prairie dog, snapping turtle, spiny softshell turtle, smooth green snake, and the prairie rattlesnake.

Individuals of some wildlife species could be affected by construction activity such as clearing and grading. Direct mortality to smaller mammals that are less mobile, or which take refuge underground in the work area, could also occur during the construction activities; however, similar habitats are present in the surrounding area. Wildlife in the area may also be adversely affected by increased noise levels and lighting during construction. However, the Project involves modifications to existing compressor stations where noise and light pollution are currently present. Northern Border would minimize the impacts of light pollution using diffusers, lenses, and shields to reduce glare and increase the efficiency of lighting. Overall, given the abundant available habitat within the Project facility areas, impacts on wildlife as a result of increased noise, light, and human activity are anticipated to be short-term, localized, and minor. No significant impact on the local wildlife population or habitats is anticipated as a result of the Project.

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) (16 U.S. Code [U.S.C.] 703-711). Executive Order (EO) 13186 (66 FR 3853) directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and to avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the U.S. Fish and Wildlife Service (USFWS). EO 13186 was issued, in part, to ensure that environmental analyses of federal actions assess the impacts of these actions/plans on migratory birds. It also states that emphasis should be placed on species of concern, priority

habitats, and key risk factors, and it prohibits the take of any migratory bird without authorization from the USFWS.

Birds of Management Concern are a subset of all birds protected under the MBTA that pose difficult management challenges such as low population numbers and conflicts with human interests. According to the USFWS, Birds of Conservation Concern (BCCs) are a subset of Birds of Management Concern and include all species, subspecies, and populations of migratory nongame birds that are likely to become candidates for listing under the Endangered Species Act without additional conservation action. BCCs that could potentially occur in this region are listed in table B-3 below.

Except for the lesser yellowlegs, the Project would not impact suitable breeding habitat for the six BCCs that have breeding ranges that overlap the Project areas as suitable breeding habitat is not present in the Project area. As for the lesser yellowlegs, suitable migration habitat is not present in the Project area.

Bald and golden eagles are protected by both the MBTA and the Bald and Golden Eagle Protection Act. Northern Border indicated that suitable nesting habitat for bald and golden eagles is potentially present within the Project area. However, Northern Border did not document any bald or golden eagle nests during field surveys conducted in July 2020 and May 2023. In the event a bald or golden eagle or nest is observed prior to or during construction, Northern Border would coordinate with the North Dakota Game and Fish Department and USFWS and adhere to USFWS's National Bald Eagle Management Guidelines.

The primary concern for impacts on migratory birds, including bald eagles, is mortality of eggs and/or young, since immature birds could not avoid active construction. Ground disturbing activities could cause disturbance during critical breeding and nesting periods, potentially resulting in the loss of nests, eggs, or young. As there would be no tree clearing required for the Project and due to the existing nature of the compressor station, bird habituation to them, and the proposed modifications and resulting minor impacts on the environment including noise and ground (habitat) disturbance, we have determined that the Project would not result in population-level impacts on migratory birds or significant measurable negative impacts on their habitat.

Table B-3 Birds of Conservation Concern with Potential to Occur in the Project Vicinity	
Common Name	Scientific Name
Chestnut-collard Longspur	<i>Calcarius ornatus</i>
Lesser Yellowlegs	<i>Tringa flavipes</i>
Willet	<i>Tringa semipalmata</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Franklin's Gull	<i>Leucophaeus pipixcan</i>
Prairie Falcon	<i>Falco mexicanus</i>
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>

4.4 THREATENED AND ENDANGERED SPECIES

Using the USFWS Information for Planning and Consultation system, Northern Border identified four federally listed species and one candidate species (listed in table B-4 below) with potential to occur in the Project areas: threatened red knot (*Calidris canatus*), threatened piping plover (*Charadrius melodus*), endangered whooping crane (*Grus americana*), threatened Dakota skipper (*Hesperia dacotae*), and candidate monarch butterfly (*Danaus plexippus*).

Table B-4 USFWS Federal and State Listed Species Potentially Present in the Project Area			
Scientific Name	Common Name	Status	Determination
<i>Calidris canatus</i>	Red knot	Threatened	No effect
<i>Charadrius melodus</i>	Piping plover	Threatened	No effect
<i>Grus americana</i>	Whooping crane	Endangered	Not likely to adversely affect
<i>Hesperia dacotae</i>	Dakota skipper	Threatened	No effect
<i>Danaus plexippus</i>	Monarch butterfly	Candidate	Not likely to jeopardize the continued existence

A *no effect* determination was made for the red knot, piping plover, and the Dakota skipper. As no wetlands were delineated during field surveys and there are no lakes, sandbars, or rivers in the vicinity of the Project, Northern Border determined that the Project would have *no effect* on the red knot and piping plover due to an absence of suitable habitat. Suitable habitat for the Dakota skipper is also not present within the Project area as no vegetation known to support the species was identified during field surveys. Therefore, Northern Border determined that the Project would have *no effect* on the species. We agree with the *no effect* determination for these species and no further concurrence from USFWS is required.

Although no wetlands were delineated during Northern Border's field surveys, the Project areas are within the whooping crane migration corridor. The whooping crane could potentially be present sporadically within the Project area during the migration timeframe. Given that the species is highly mobile and would likely avoid the construction area, the *Project may affect but not likely to adversely affect* the species. Northern Border asked for concurrence with USFWS on September 15, 2023, and received a response on October 10, 2023 from USFWS concurring with the *may affect but not likely to adversely affect* determination for the whooping crane.

The monarch butterfly migrates from Canada to Mexico in the fall and then returns to Canada in the spring. Suitable habitat may be present in the Project area however, milkweed, the only host plant for monarch caterpillars, was not identified within the Project area during environmental surveys. Given the absence of milkweed at the Project site, we anticipate that the *Project would not likely to jeopardize the continued existence* of the monarch butterfly. If the species becomes listed, FERC would consult with the USFWS under Section 7 of the ESA regarding the Project's impacts.

5.0 LAND USE, RECREATION, AND VISUAL RESOURCES

The Project consists of the replacement and expansion of three existing compressor stations, including expansion of the existing facility fence line, and grading to level the land at the Manning Compressor Station. Land use at the Project sites consist of industrial, agricultural, and open land.

Project activities would temporarily impact 102.7 acres including 59.1 acres of industrial land, 36.1 acres of agricultural land, and 7.5 acres of open land. Permanent operational impacts associated with the Project would only occur at the Manning Compressor Station, on land owned by Northern Border, including 5.95 acres of agricultural land, 0.05 acre of industrial land, and 0.46 acre of open land. Agricultural land consists of alfalfa and common wheat. With the exception of permanent workspaces, all agricultural land impacted by the Project would either be restored to pre-construction contours, to the extent practicable, or restored in accordance with landowner recommendations. Northern Border would negotiate with and reimburse landowners for any damages and/or temporary or permanent loss of production as a result of Project construction and operation⁶. The reimbursement to these landowners would be based on the market prices for the specific products at the time of negotiations with each affected landowner. Although not anticipated, if irrigation systems or drain tiles are damaged by construction of the Project, Northern Border would work with the landowner to repair or replace damaged sections. Should construction result in any new drainage or ponding issues, Northern Border would work with the landowner to resolve the problem. Following the completion of construction activities, all areas characterized as open land would be revegetated in accordance with the FERC Plan.

⁶ Landowners would be compensated for crop losses in accordance with the terms of individual landowner agreements. We note the Commission is not a party in easement negotiations or eminent domain proceedings and does not adjudicate disputes regarding compensation for damages, which are outside the authority of the Commission.

There are no aboveground structures or residences located within 100 feet of Project workspaces. The closest residential structures are located 0.23 mile north of the Arnegard Compressor Station, one mile south of the Manning Compressor Station, and 0.44 mile west of the Glen Ullin Compressor Station.

Overall construction of the Project facilities could result in short-term impacts on nearby residential areas, including increased construction related traffic on local roads as well as dust and noise generated during construction. Northern Border would minimize impacts on nearby residences through implementation of the following measures to reduce dust and noise during construction activities:

- implementing a Fugitive Dust Control Plan;
- limiting construction activities to daytime hours whenever feasible;
- implementing all measures necessary to avoid utility disruption during construction, and providing as much notice as possible if a disruption is unavoidable;
- notifying landowners prior to the start of construction;
- maintaining traffic flow and emergency vehicle access on residential roadways, and using traffic detail personnel and/or detour signs, where appropriate; and
- inspecting road surfaces periodically and, if necessary, cleaning any soil and debris.

The Project is not located within the vicinity of any federal, state, or locally designated scenic areas, such as National Wild and Scenic Rivers. Impacts on visual and/or aesthetic resources would occur during construction and operation of the Arnegard, Manning, and Glen Ullin Compressor Stations due to the presence of construction equipment and installation of the new aboveground structures. The residences closest to the Arnegard and Manning Compressor Stations are 1,800 feet and 6,400 feet away, respectively, and have tree cover that minimizes the view of the facilities. The residence closest to the Glen Ullin Compressor Station is 2,800 feet away, with no tree cover. The majority of impacts to visual resources would be temporary and the proposed equipment and buildings are similar in appearance to the existing facilities. Therefore, visual impacts from construction and operation of the Project would be minimal and consistent with surrounding facilities and the historic usage of the properties. The operational noise attributable to the modified compressor stations would be mitigated to stay below 55 decibels on the A-weighted scale (dBA) day-night average sound level (L_{dn}) at the closest noise-sensitive areas (NSA).

The Project would not be within 0.25 mile of any public or conservation land, or within 0.25 mile of any natural, recreational, or scenic areas designated by state or federal agencies. No USEPA or NDDEQ designated contaminated sites are located within 0.5 mile of the Project, therefore, the Project is not expected to impact or be impacted by any existing or potential sources of hazardous materials or contamination. In the event that contaminated media is encountered, Northern Border would implement the procedures described in their UDCM. We conclude that impacts on land use and visual resources would be short-term and not significant.

6.0 CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act, as amended, requires the FERC to consider the effects of its undertakings on properties on or eligible for listing on the National Register of Historic Places (NRHP) and to afford the Advisory Council on Historic Preservation an opportunity to comment. Northern Border, as a non-federal party, is assisting us in meeting our obligations under Section 106 and the implementing regulations at 36 CFR Part 800.

Northern Border contacted the following Native American tribes, providing a Project description and mapping: Three Affiliated Tribes of the Fort Berthold Reservation (North Dakota), Apache Tribe of Oklahoma, Cheyenne River Sioux Tribe of the Cheyenne River Reservation (South Dakota), Crow Creek Sioux Tribe of the Crow Creek Reservation (South Dakota), Crow Tribe of Montana, Fort Belknap Indian Community of the Fort Belknap Reservation of Montana, Lower Brule Sioux Tribe of the Lower Brule Reservation (South Dakota), Oglala Sioux, Rosebud Sioux Tribe of the Rosebud Indian Reservation (South Dakota), Santee Sioux Nation (Nebraska), and Standing Rock Sioux Tribe of North and South Dakota. No comments have been received. We sent our NOS to these same tribes. No responses to our NOS have been received from the tribes.

Northern Border completed cultural resources surveys for the project and provided a Class III Cultural Resources Survey Report to the FERC and the North Dakota State Historic Preservation Office (SHPO). The Project area of potential effects (APE) totals 102.7 acres between three existing compressor stations (Arnegard [No. 4], Manning [No. 5], and Glen Ullin [No. 6]). A review of environmental and background information revealed two previously documented archaeological sites (32DU0055 and 32MO1096) within the Project APE.

Archaeological field surveys were conducted between May 31, 2023 and June 2, 2023. The reported locations of sites 32DU0055 and 32MO1096 were revisited within the Project APE. No evidence of either site was encountered within the Project APE and the sites were recommended not eligible for the NRHP. No further archaeological resources were identified within the Project APE.

In a letter dated November 28, 2023, the North Dakota SHPO concurred with the report findings and the recommendation that the proposed Project would have no effect on historic properties. We agree.

Northern Border provided an *Unanticipated Discovery Plan* to address the unanticipated discovery of historic properties and human remains during construction. We find the plan acceptable.

7.0 ENVIRONMENTAL JUSTICE

In conducting NEPA reviews of proposed natural gas projects, the Commission follows Executive Order 12898 and Executive Order 14096, which direct federal agencies to identify and address disproportionate and adverse human health or environmental effects of their actions

on minority and low-income populations (i.e., environmental justice communities).⁷ Executive Order 14008 also directs agencies to develop “programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate- related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.”⁸ Environmental justice is “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”⁹ The term “environmental justice community” includes disadvantaged communities that have been historically marginalized and overburdened by pollution.¹⁰

Commission staff used *Promising Practices for EJ Methodologies in NEPA Reviews (Promising Practices)*¹¹ which provides methodologies for conducting environmental justice analyses throughout the NEPA process for this Project. Additionally, consistent with USEPA recommendations, Commission staff used USEPA’s Environmental Justice Screening and Mapping Tool (EJScreen) as an initial screening tool to better understand locations that require further review or additional information; environmental and demographic indicators; and other important factors.¹²

7.1 MEANINGFUL ENGAGEMENT AND PUBLIC INVOLVEMENT

The Council on Environmental Quality’s (CEQ) *Environmental Justice Guidance Under the National Environmental Policy Act (CEQ Environmental Justice Guidance)*¹³ and *Promising Practices* recommend that federal agencies provide opportunities for effective community participation in the NEPA decision-making process, including: identifying

⁷ Exec. Order No. 12,898, 59 Fed. Reg. 7629, at 7629, 7632 (Feb. 11, 1994); Exec. Order No. 14,096, 88, Fed. Reg. 25251 (Apr. 21, 2023).

⁸ Exec. Order No. 14,008, 86 Fed. Reg. 7619, at 7629 (Jan. 27, 2021).

⁹ USEPA, *Learn About Environmental Justice*, <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice> (Sep. 6, 2022).

¹⁰ Environmental justice communities include, but may not be limited to minority populations, low-income populations, or indigenous peoples. See USEPA, *EJ 2020 Glossary* (Aug. 18, 2022), <https://www.epa.gov/environmentaljustice/ej-2020-glossary>.

¹¹ Federal Interagency Working Group on Environmental Justice & NEPA Committee, *Promising Practices for EJ Methodologies in NEPA Reviews* (Mar. 2016) (*Promising Practices*), https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf.

¹² The EPA recommends that screening tools, such as EJScreen, be used for a “screening-level” look and a useful first step in understanding or highlighting locations that may require further review.

¹³ CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act 4* (Dec. 1997) (CEQ’s *Environmental Justice Guidance*), <https://ceq.doe.gov/docs/ceq-regulations-and-guidance/regs/ej/justice.pdf>.

potential effects and mitigation measures in consultation with affected communities; improving accessibility of public meetings, crucial documents, and notices; and use adaptive approaches to overcome potential barriers to effective participation. In addition, Executive Order 13985 and Executive Order 14096 strongly encourage independent agencies to “consult with members of communities that have been historically underrepresented in the Federal Government and underserved by, or subject to discrimination in, federal policies and programs,”¹⁴ and “provide opportunities for the meaningful engagement of persons and communities with environmental justice concerns who are potentially affected by Federal activities.”¹⁵

There have been opportunities for public involvement during the Commission’s environmental review processes. FERC issued a Notice of Application, and a NOS, which were published in the Federal Register on October 2, 2023, and October 30, 2023, respectively. The NOS was mailed to the parties on FERC’s environmental mailing list, which included federal and state resource agencies, elected officials, environmental groups, religious, and non-governmental organizations, environmental justice stakeholders, Native American Tribes, potentially affected landowners, local libraries and newspapers, and other stakeholders who had indicated an interest in the Project. Issuance of the notices opened separate 21-day and 30-day formal scoping periods that expired on October 23, 2023, and November 29, 2023, respectively.

Direct outreach began in July 2023 and has been conducted to share Project information directly with communities near the Project area. The Applicant’s outreach team has gone door-to-door to local businesses to discuss the Project directly with stakeholders. During these conversations stakeholders were provided with a copy of a fact sheet which includes direct contact information for Norther Border’s Project staff. To date, the Applicant has made 42 direct outreach attempts to businesses near the Project area with additional efforts planned. Approximately 35 initial meetings and three open houses were held with community leaders and elected officials between July and October 2023 to share initial information about the Project. Open houses were advertised broadly utilizing local radio announcements, newspaper advertisements, direct outreach, bulk mailing, posting public signage, and digital advertising.

We recognize that not everyone has internet access or is able to file electronic comments. Each notice was physically mailed to all parties on the environmental mailing list and made available at Killdeer Public Library, McKenzie County Public Library, and Morton Mandan Public Library. All documents that form the administrative record for these proceedings are available to the public electronically through the internet on the FERC’s website (www.ferc.gov). Anyone may comment to FERC about the Project, either in writing

¹⁴ Exec. Order No. 13985, 86 Fed. Reg. at 7011 (Jan. 20, 2021).

¹⁵ Exec. Order No. 14,096, 88, Fed. Reg. 25254 (Apr. 21, 2023).

or electronically.¹⁶ To date, no comments regarding environmental justice communities have been received.

7.2 IDENTIFICATION OF ENVIRONMENTAL JUSTICE COMMUNITIES

According to the CEQ's *Environmental Justice Guidance and Promising Practices*, minority populations are those groups that include: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. Following the recommendations set forth in *Promising Practices*, FERC uses the **50 percent** and the **meaningfully greater analysis** methods to identify minority populations. Using this methodology, minority populations are defined in this EA where either: (a) the aggregate minority population of the block groups in the affected area exceeds 50 percent; or (b) the aggregate minority population in the block group affected is ten percent higher than the aggregate minority population percentage in the county or parish. The guidance also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. Using *Promising Practices*' **low-income threshold criteria** method, low-income populations are identified as block groups where the percent of low-income population in the identified block group is equal to or greater than that of the county. Here the Commission staff selected Dunn County, Grant County, McKenzie County, Mercer County, Morton County, and Oliver County, North Dakota as the comparable reference communities to ensure that affected environmental justice communities are properly identified. A reference community may vary according to the characteristics of the particular project and the surrounding communities.

Table B-5 below identifies the minority populations (by race and ethnicity) and low-income populations within 25-kilometers¹⁷ of the proposed modifications to the Arnegard Compressor Station, and 20-kilometers of the Manning and Glen Ullin Compressor Stations. For the purposes of analyzing impacts of the proposed modifications on environmental justice communities, this EA considers the specified¹⁸ area around the existing compressor stations as the appropriate unit of geographic analysis. We believe this radius is sufficiently broad considering the likely concentration of air emissions, noise, and traffic impacts proximal to the compressor stations. To ensure we are using the most recent available data, we use the U.S.

¹⁶ The Office of Public Participation (OPP) provides members of the public, including environmental justice communities, landowners, Tribal citizens, and consumer advocates, with assistance in FERC proceedings—including navigating Commission processes and activities relating to the Project. For assistance with interventions, comments, requests for rehearing, or other filings, and for information about any applicable deadlines for such filings, members of the public are encouraged to contact OPP directly at 202-502-6595 or OPP@ferc.gov for further information.

¹⁷ A 25-kilometer radius was used for the Arnegard Compressor Station due to the radius of impact in Resource Report 9 of the Environmental Report for one-hour NO₂ being 24.47 kilometers.

¹⁸ 25-kilometers for Arnegard Compressor Station and 20-kilometers for Manning and Glen Ullin Compressor Stations.

Census American Community Survey¹⁹ as the source for race and ethnicity data and poverty data at the census block group level.

As presented in figures 2 and 3, there are minority and low-income communities within the Project area. While the Arnegard and Manning Compressor Stations are not located within environmental justice communities, the Glen Ullin Compressor Station is located in a block group that is an environmental justice community (Census Tract 205, Block Group 4) based on the low-income threshold.

¹⁹ U.S. Census Bureau, American Community Survey 2022 ACS 5-Year Estimates Detailed Tables, File# B17017, *Poverty Status in the Past 12 Months by Household Type by Age of Householder*, <https://data.census.gov/cedsci/table?q=B17017>; File #B03002 *Hispanic or Latino Origin By Race*, <https://data.census.gov/cedsci/table?q=b03002>.

Table B-5 - Minority Populations by Races and Ethnicity and Low-Income Populations in the Project Area

RACE AND ETHNICITY COLUMNS												LOW-INCOME COLUMN
State/ Parish/Census Tract/ Block Group	Total Population	White Alone Not Hispanic (%)	African American (%)	Native American/ Alaska Native (%)	Asian (%)	Native Hawaiian & Other Pacific Islander (%)	Some Other Race (%)	Two or More Races (%)	Hispanic or Latino (%)	Total Minority ^{a/} (%)		Below Poverty Level ^{b/} (%)
North Dakota	749,693	83.1	3.1	4.8	1.6	0.15	0.2	2.9	4.1	16.9		11.3
Arnegard Compressor Station												
McKenzie County	13,569	75.3	1.9	9.3	0.4	0	0	3.2	9.9	24.7		9.6
Census Tract 9623.01, Block Group 1	1,830	84.4	2.8	6.6	0	0	0	4.2	2.1	15.6		4.6
Census Tract 9623.01, Block Group 2	2,156	75.3	0.9	1.9	0	0	0	0.5	21.3	24.7		6
Census Tract 9623.02, Block Group 1	200	81.5	18.5	0	0	0	0	0	0	18.5		30.7
Census Tract 9623.02, Block Group 2 ^c	641	87	0	0.6	4.4	0	0	8.1	0	13.1		8.2
Census Tract 9623.02, Block Group 3	451	100	0	0	0	0	0	0	0	0		7.4

Census Tract 9624, Block Group 1	1,925	71.4	0	11.3	1.2	0	0	3.4	12.8	28.6	13.2
Census Tract 9624, Block Group 2	949	77.9	0.2	0.1	0	0	0	5.8	16.1	22.2	17.8
Census Tract 9624, Block Group 3	2,011	83.4	2.1	3.1	0	0	3.1	0	8.3	16.6	0
Census Tract 9625, Block Group 1	955	90.7	0.5	0.7	0.2	0	0	3.5	4.4	9.3	6.4
Census Tract 9625, Block Group 3	817	75	12.6	8.1	0.4	0	0	3.1	1.2	25.3	9.4
Glen Ullin Compressor Station											
Mercer County	8,190	90.6	0.2	4	0.8	0	1.3	0.3	2.7	9.4	8.8
Census Tract 9618, Block Group 1	1,303	87.4	0	0	0	0	0	0.2	0.9	12.6	13.5
Oliver County	1,850	91.8	0	0.6	0.3	0.3	0	4.1	3	8.2	7.1
Census Tract 9612, Block Group 1	902	94	0	1.2	0.3	0	0	1.3	3.1	6	6.1
Morton County	32,314	88.3	1.2	3.5	0.8	0.1	0.2	1.9	3.9	11.7	7.8
Census Tract 205, Block Group 1	780	97.6	0	0.4	0	0	0	0.5	1.5	2.4	9.8
Census Tract 205, Block Group 3	1,074	96	0	0.4	0	0	0	3	0.5	3.9	13

Census Tract 205, Block Group 4 ^d	542	98.9	0	0	0	0	0	0.4	0.7	1.1		10.8
Grant County	2,311	94	0.1	1	1.7	0.1	0.3	1.7	1.2	6		12.5
Census Tract 9659, Block Group 2	1,288	93.2	0	1.4	2.5	0	0	1.8	1.1	6.9		15.2
Manning Compressor Station												
Dunn County	4,001	78.5	0.7	12.2	1.4	0.1	0.1	1.6	5.5	21.5		5.3
Census Tract 9622, Block Group 1	1,283	82.5	1.5	5.1	1.1	0.2	0	2	7.6	17.5		5.7
Census Tract 9622, Block Group 2	1,562	69.2	0.7	25.9	2.3	0	0.3	1.4	0.3	30.8		8.3
Census Tract 9622, Block Group 3 ^e	1,156	86.9	0	1	0.5	0	0	1.3	10.4	13.2		2.2

Source: American Community Survey, 2021, File # B17017 and File # B03002.

a "Minority" refers to people who reported their ethnicity and race as something other than non-Hispanic White.

b Low-income or minority populations exceeding the established thresholds are indicated in red, bold, type and blue shading.

c Arnegard Compressor Station facilities are located in this block group.

d Glen Ullin Compressor Station facilities are located in this block group.

e Manning Compressor Station facilities are located in this block group.

Figure 2
Low-Income Communities within 25-Kilometers of Arnegard Compressor Station and 20-Kilometers of Manning and Glen Ullin Compressor Stations

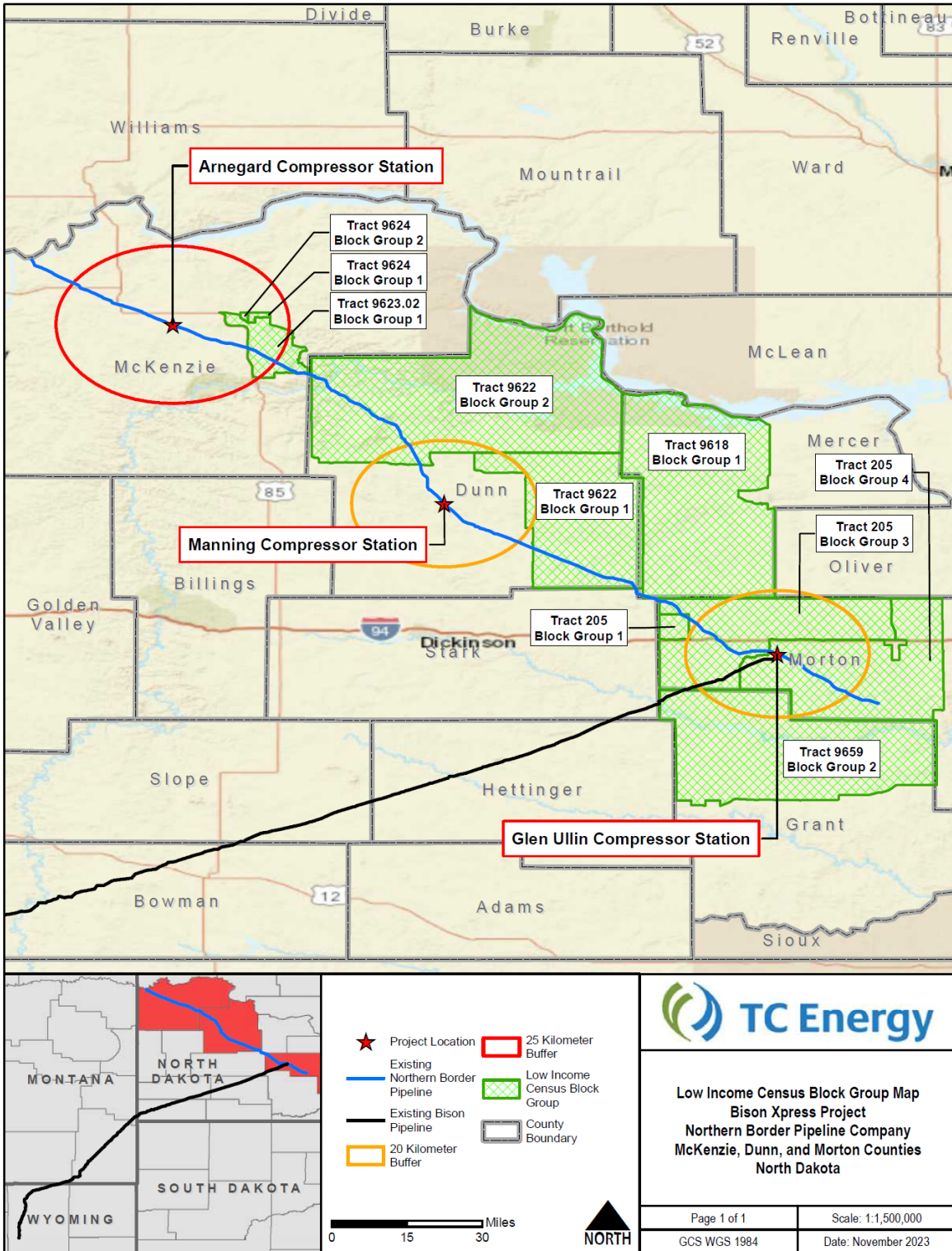
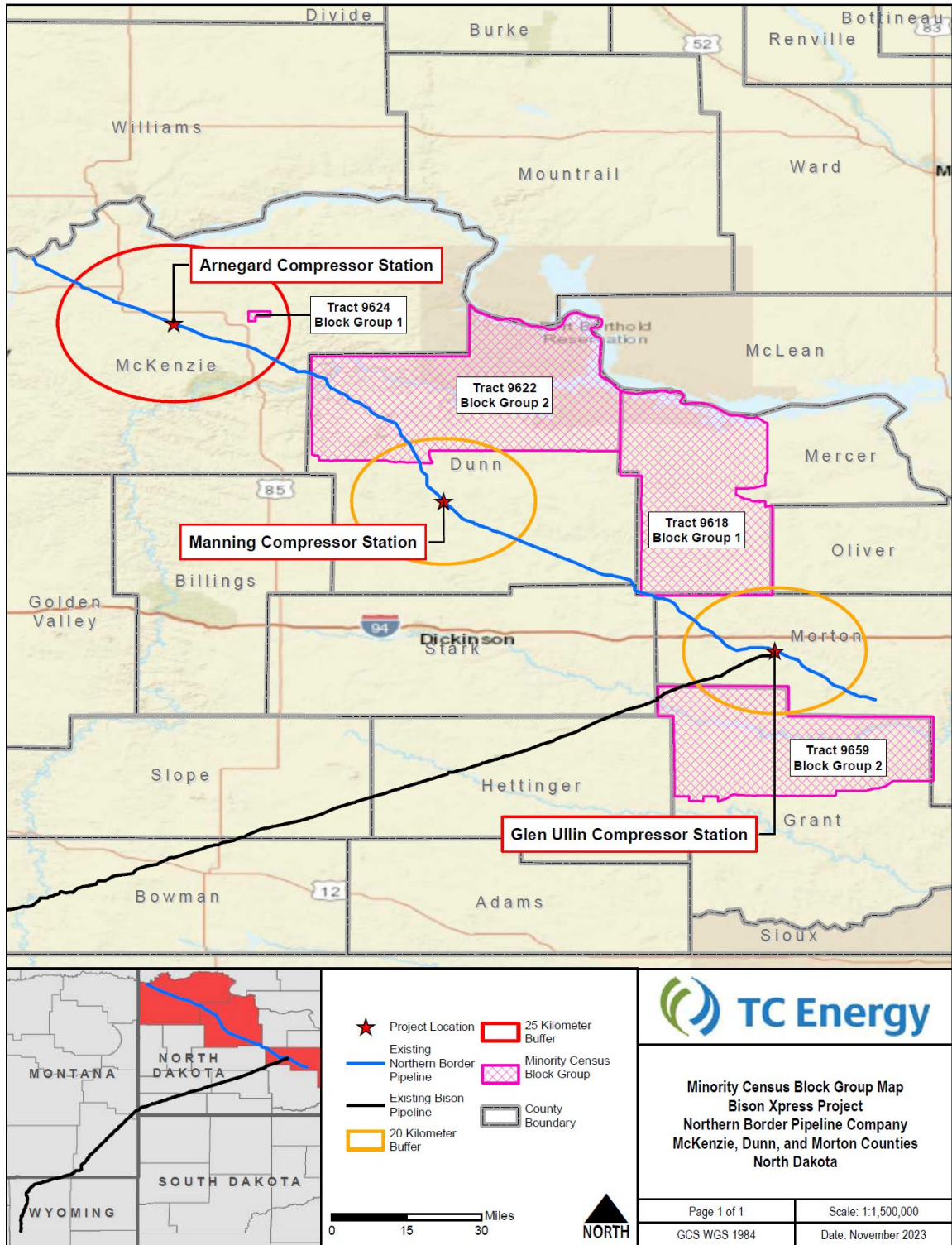


Figure 3
Minority Communities within 25-Kilometers of Arnegard Compressor Station and 20-Kilometers of Manning and Glen Ullin Compressor Stations



7.3 IMPACTS ON ENVIRONMENTAL JUSTICE COMMUNITIES

Promising Practices provides methodologies for evaluating environmental justice impacts related to human health or environmental hazards; the natural physical environment; and associated social, economic, and cultural factors. Consistent with *Promising Practices*, EO 12898, and EO 14096, we reviewed the Project to determine if its resulting impacts would be disproportionate and adverse on minority and low-income populations and also whether impacts would be significant.²⁰ *Promising Practices* provides that agencies can consider any of a number of conditions in this determination and the presence of any of these factors could indicate a potential disproportionate and adverse impact. For this Project, a disproportionate and adverse effect on an environmental justice community means the adverse effect is predominantly borne by such population. Relevant considerations include the location of Project facilities and the Project's human health and environmental impacts on identified environmental justice communities, including direct, indirect and cumulative impacts.

No project facilities associated with the Manning and Arnegard Compressor Stations are located within environmental justice communities; however, there are environmental justice communities within the geographic scope of the project facilities. The Glen Ullin Compressor Station is located in a block group that is an environmental justice community (Census Tract 205, Block Group 4) based on the low-income threshold. Proposed activities within this environmental justice community includes an increased work force to complete modifications to the existing compressor station by increasing the horsepower and installing related facilities. Impacts on the natural and human environment from construction and operation of Project facilities are identified and discussed throughout this document. Factors that could affect environmental justice communities within 20 kilometers of the Glen Ullin and Manning Compressor Stations, and within 25 kilometers of the Arnegard Compressor Station include, socioeconomic impacts, including traffic impacts, increased demand for temporary housing and public services, visual impacts, and air and noise impacts from construction and operation.

Potentially adverse environmental effects on surrounding communities associated with the Project, including environmental justice communities, would be minimized and/or mitigated. In general, the magnitude and intensity of the aforementioned impacts would be greater for individuals and residences closest to the Project's facilities and would diminish

²⁰ See *Promising Practices* at 33 (stating that "an agency may determine that impacts are disproportionately high and adverse, but not significant within the meaning of NEPA" and in other circumstances "an agency may determine that an impact is both disproportionately high and adverse and significant within the meaning of NEPA"); see also *Promising Practices* at 45-46 (explaining that there are various approaches to determining whether an impact will cause a disproportionately high and adverse impact). We recognize that CEQ and USEPA are in the process of updating their guidance regarding environmental justice and we will review and incorporate that anticipated guidance in our future analysis, as appropriate.

with distance. These impacts are addressed in greater detail in the associated sections of this EA.

Socioeconomics and Traffic

Northern Border anticipates mobilization and construction of the Project to begin in May 2025 and take approximately 12 months. The peak number of workers throughout the duration of construction across all three compressor stations would total 300 non-local workers (approximately 100 workers at each compressor station site). The majority of work would occur between 7:00 a.m. to 7:00 p.m., Monday through Saturday. The Project area is very rural and experiences very little traffic congestion. Traffic impacts due to the Project would be minimal and temporary. Northern Border would mitigate traffic impacts by using traffic control measures such as flagmen and signage. Heavy Project related traffic would be minimized during peak travel times of the day to decrease traffic congestion. Based on the temporary and intermittent nature of the Project, the distance between facilities, and the mitigation measures proposed, traffic impacts on environmental justice communities during construction would be less than significant. Operation of the Project facilities would not contribute to traffic congestion, as no new permanent employees would be necessary.

Visual Resources

Temporary visual impacts would occur during construction of the proposed Project including vehicle and equipment movement, temporary vegetation clearing and grading, as well as equipment storage. The existing Glen Ullin Compressor Station is located within an environmental justice community (Tract 205, Block Group 4) with the closest residence within an environmental justice community located 0.44 mile west. The surrounding area is primarily rural agricultural land, with minimal visual screening, making the modifications at the Glen Ullin Compressor Station visible from the environmental justice community residence located 0.44 mile west. The installation of the proposed equipment at the Glen Ullin Compressor Station would create some permanent impacts; however, impacts would not significantly impact visual or aesthetic resources in the area, as the new equipment is similar in appearance and location to the existing facilities at the compressor station, which would result in very little visual change from the previous configuration. There are no environmental justice community residences within one mile of the Arnegard and Manning Compressor Stations; therefore, it is unlikely that the facility upgrades would be visible from these residences. We conclude that potential impacts on visual resources for environmental justice communities would be less than significant.

Air Quality

The EPA has promulgated the National Ambient Air Quality Standards (NAAQS) to protect human health and welfare. The NAAQS include primary standards, which are designed to protect human health, including the health of sensitive subpopulations such as children and those with chronic respiratory problems. The NAAQS also include secondary standards designed to protect public welfare, including economic interests, visibility, vegetation, animal species, and other concerns not related to human health. Attainment areas are those meeting the NAAQS, and non-attainment areas are those not meeting the NAAQS. Areas that have

insufficient data to make a determination of attainment or nonattainment are unclassified or are not designated but are treated as being attainment areas for permitting purposes. The attainment designation of an area is determined on a pollutant-by-pollutant basis and for each established primary standard. The Project facilities would be in McKenzie, Dunn, and Morton Counties, North Dakota. As discussed further in section 8.1, all three of these counties are designated as attainment for all criteria pollutants.

Construction emissions would occur over the duration of construction activity. This would result in minor short-term increases of some air pollutants due to the use of equipment powered by diesel fuel or gasoline engines and the generation of fugitive dust due to the disturbance of soil and other dust generating activities. Exhaust emissions would be minimized by limiting idling time of equipment and the use of ultra-low sulfur fuel in on-road vehicles. To mitigate dust emissions during construction, Northern Border would implement a Fugitive Dust Control Plan during construction, including watering exposed soil surfaces as needed, limiting vehicle speed at the construction sites, stabilizing spoil and topsoil piles (e.g., via mulch application), and use of crushed stone to stabilize road surfaces.

Northern Border conducted dispersion modeling analyses for the Project facilities, of which only Glen Ullin Compressor Station is within an environmental justice community, to assess air quality impacts and show compliance with the applicable NAAQS. Based on the results there would not be significant impacts on air quality from the operation of the Project facilities associated with the Arnegard, Manning and Glen Ullin Compressor Stations. The Project would result in a minor increase of operational emissions at the Arnegard Compressor Station and a decrease in operational emissions at the Manning and Glen Ullin Compressor Stations, providing a benefit to the surrounding community. These results showed that the facilities would not cause or contribute to an exceedance of the NAAQS.

Based on the temporary nature of construction emissions and the less than significant impacts from operational emissions, we conclude that construction and operation of the Project would not have significant adverse air quality impacts on local residents and the surrounding communities, including the environmental justice communities. Air quality impacts are discussed in more detail within section 8.0 of this EA.

Noise

Noise impacts are primarily associated with heavy equipment usage during construction activities. Construction activities would be performed with standard heavy equipment such as a track excavator, backhoe, dump truck(s), concrete trucks and bulldozer. Many construction machines operate intermittently and the types of machines in use at a construction site changes with the construction phase. Some nighttime work could occur depending on need; however, it would be temporary in nature and would not occur for the duration of construction. Project related noise would not be perceptible at the nearest environmental justice community residences at the Arnegard and Manning Compressor Stations, as the nearest environmental justice communities are over 5 miles away from both Compressor Stations. The nearest environmental justice NSA from the Glen Ullin Compressor Station is approximately 2,800 feet west of the Project boundaries. The existing ambient L_{dn} at the nearest NSAs to the Glen Ullin Compressor Station is 58.3 dBA.

While the noise attributable to the modified Glen Ullin Compressor Station would be below an L_{dn} of 55 dBA, the potential noise increase would be 0.4 dB at the environmental justice community residence during operation of the modified facilities. The potential noise increase would be below the 3-dB level of perceptible noise. Operational noise impacts would be mitigated by implementing the following measures:

- acoustically designed compressor buildings;
- locating high pressure gas piping below grade where possible;
- acoustical pipe lagging for aboveground piping where required; and
- following noise requirements for turbine exhaust and air inlet systems, turbine lube oil coolers, station gas aftercoolers, control valves, and unit blowdown silencers.

Per Northern Border, nighttime construction noise levels would not exceed the FERC required 55 dBA L_{dn} at nearby environmental justice NSAs. However, we have determined that Northern Border has not provided sufficiently detailed information regarding the specific weather, site, emergency, or atypical conditions that would necessitate nighttime work hours near environmental justice community residences. Due to this lack of detailed information, and because the nearest environmental justice NSAs are less than 0.5 mile from the Glen Ullin Compressor Station, we recommend condition 12 in section D of this EA.

We conclude that if our proposed conditions are followed, the operational noise mitigation measures proposed by Northern Border are implemented, and nighttime construction noise at the Glen Ullin Compressor Station stays below the FERC required 55 dBA L_{dn} , the proposed Project would not significantly impact noise in the surrounding environmental justice communities. Mitigation measures can be found in each individual resource section of this EA.

7.4 DETERMINATION OF DISPROPORTIONATE AND ADVERSE IMPACTS ON ENVIRONMENTAL JUSTICE COMMUNITIES

As described throughout this EA, the proposed Project would have a range of impacts on the environment and on individuals living in the vicinity of the Project, including environmental justice populations. As highlighted in Table B-5, the Glen Ullin Project facilities are located within an environmental justice community, and environmental justice communities are located within 25-kilometers and 20-kilometers of the Arnegard and Manning Compressor Stations, respectively. Based on the foregoing analysis, impacts associated with the Glen Ullin Compressor Station on environmental justice communities would be disproportionate and adverse as they would be predominately borne by environmental justice communities. Impacts associated with facility modifications at Arnegard and Manning Compressor Stations would not be disproportionate and adverse as they are not located within environmental justice communities and a majority of project related impacts would not affect environmental justice communities. Due to mitigation measures by Northern Border, the nature of the work, and the distance to residential areas,

project impacts associated with increased workforce, traffic, visual, noise and air quality would be less than significant.

8.0 AIR QUALITY

This section summarizes federal and state air quality regulations that are applicable to the proposed facilities. The term air quality refers to relative concentrations of pollutants in the ambient air. Air quality would be affected by construction and operation of the Project. During construction, short-term emissions would be generated from the usage of equipment, land disturbance, and increased traffic from worker and delivery vehicles for all locations. Once completed, the Project would transition to operational phase emissions produced from the equipment listed in tables B-6, B-7, and B-8 below.

Table B-6 Sources of Operational Air Emissions for the Arnegard Compressor Station			
Equipment Type	Equipment Status	HP^a/Capacity	Fuel
Emergency Generator	Proposed	1,468	Natural Gas
Turbines	Proposed	45,440 (combined)	Natural Gas
Heater	Proposed	1.33 MMBtu per hour	Natural Gas
Boiler	Proposed	4.8 MMBtu per hour	Natural Gas
Turbine	To be removed	211 MMBtu per hour	Natural Gas
Emergency Generator	To be removed	500	Natural Gas
Heater	To be removed	2.00 MMBtu per hour	Natural Gas
Heater	To be removed	1.00 MMBtu per hour	Natural Gas

^a The operating HP is presented herein versus the ISO HP.

HP= horsepower; MMBtu = million British thermal units NA = not available

Table B-7 Sources of Operational Air Emissions for the Manning Compressor Station			
Equipment Type	Equipment Status	HP^a/Capacity	Fuel
Emergency Generator	Proposed	1,468	Natural Gas
Turbines	Proposed	60,728 (combined)	Natural Gas
Heater	Proposed	1.58 MMBtu per hour	Natural Gas
Boiler	Proposed	4.8 MMBtu per hour	Natural Gas
Storage Tanks	Proposed	6,000 gal	N/A
Turbine	Modify existing (500 hours per year standby)	314 MMBtu per hour	Natural Gas
Emergency Generator	To be removed	328	Natural Gas

^a The operating HP is presented herein versus the ISO HP.

HP=horsepower; MMBtu = million British thermal units; N/A = not applicable; TBD= to be determined

Table B-8 Sources of Operational Air Emissions for the Glen Ullin Compressor Station			
Equipment Type	Equipment Status	HP^a /Capacity	Fuel
Emergency Generator	Proposed	1,828	Natural Gas
Turbines	Proposed	61,440 (combined)	Natural Gas
Heater	Proposed	1.7 MMBtu per hour	Natural Gas
Boiler	Proposed	4.8 MMBtu per hour	Natural Gas
Turbine	Modify existing (500 hours per year standby)	317 MMbtu per hour	Natural Gas
Emergency Generator	To be removed	600	Natural Gas
^a The operating HP is presented herein versus the ISO HP. HP=horsepower; MMbtu = million British thermal units			

8.1 EXISTING AIR QUALITY

Ambient air quality is protected by federal and state regulations. Under the Clean Air Act (CAA) and its amendments, the USEPA has established the NAAQS²¹ for criteria pollutants, including carbon monoxide (CO), lead (Pb), nitrogen dioxide, (NO₂), ozone, particles 10 micrometers in diameter and smaller (PM₁₀), particles 2.5 micrometers in diameter and smaller (PM_{2.5}), and sulfur dioxide (SO₂). The NAAQS include primary standards, which are designed to protect human health, including the health of sensitive subpopulations such as children and those with chronic respiratory problems. The NAAQS also include secondary standards designed to protect public welfare, including economic interests, visibility, vegetation, animal species, and other concerns not related to human health. The NAAQS are given in table B-9 below.

²¹ The current NAAQS are listed on USEPA's website at <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

Table B-9 National Ambient Air Quality Standards				
Criteria Pollutant	Primary/Secondary	Averaging Time	Level	Form
CO	Primary	8-Hour 1-Hour	9 ppm 35 ppm	Not to be exceeded more than once per year
Pb	Primary and Secondary	Rolling 3-Month Average	0.15 µg/m ³ ^a	Not to be exceeded
NO ₂	Primary	1-Hour	100 ppb	98th percentile of 1-hour daily maximum concentrations in a calendar year, averaged over 3 years
	Primary and Secondary	Annual	53 ppb ^b	Annual mean
O ₃	Primary and Secondary	8-Hour	0.070 ppm ^c	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
PM ₁₀	Primary and Secondary	24-Hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
PM _{2.5}	Primary	Annual	9 µg/m ³ ^d	Annual mean, averaged over 3 years
	Secondary	Annual	15 µg/m ³	Annual mean, averaged over 3 years
	Primary and Secondary	24-Hour	35 µg/m ³	98th percentile of annual 24-hour concentrations in a calendar year, averaged over 3 years
SO ₂	Primary	1-Hour	75 ppb	99th percentile of 1-hour daily maximum concentrations in a calendar year, averaged over 3 years
	Secondary	3-Hour	0.5 ppm	Not to be exceeded more than once per calendar year

^a Final rule signed October 15, 2008. The 1978 Pb standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the Final rule signed October 15, 2008.

^b The official level of the annual NO₂ standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

^c Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O₃ standards additionally remain in effect in some areas. Revocation of the previous (2008) O₃ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

^d On March 6, 2024, the EPA issued a final rule revising the primary annual PM_{2.5} standard by lowering the level from 12.0 µg/m³ to 9.0 µg/m³. This final rule is effective May 6, 2024.

ppm = parts per million; µg/m³ = micrograms per cubic meter; ppb = parts per billion Source: <https://www.epa.gov/criteria-air-pollutants/naaqs-table>

Volatile organic compounds (VOC) are also regulated by the USEPA to prevent the formation of ozone, a constituent of photochemical smog. Many VOCs form ground level ozone by reacting with sources of oxygen molecules such as Nitrous Oxides (NO_x) in the atmosphere in the presence of sunlight. NO_x and VOCs are referred to as ozone precursors. Hazardous air pollutants (HAP) are also emitted during fossil fuel combustion. Hazardous Air Pollutants (HAPs) are chemicals known to cause human health and environmental impacts.

Greenhouse gases (GHG) produced by fossil-fuel combustion are carbon dioxide (CO₂), methane, and nitrous oxide (N₂O). GHGs status as a pollutant is not related to toxicity; GHGs are non-toxic and non-hazardous at normal ambient concentrations, and there are no applicable ambient standards or emission limits for GHGs under the CAA. During construction activities, GHGs would be emitted from construction equipment. Emissions of GHGs are typically expressed

in terms of CO₂ equivalents (CO₂e).²² The CO₂e unit of measure takes into account the global warming potential (GWP) of each GHG over a specified timeframe. The GWP is a ratio relative to CO₂ that is based on the particular greenhouse gas's ability to absorb solar radiation as well its residence time in the atmosphere.²³ Thus, CO₂ has a GWP of one, methane has a GWP of 25, and N₂O has a GWP of 298 on a 100-year timescale.

Air quality control regions (AQCRs) are areas established by the USEPA and local agencies for air quality planning purposes, in which State Implementation Plans describe how the NAAQS would be achieved and maintained. The AQCRs are intra- and interstate regions such as large metropolitan areas where improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or smaller portion within an AQCR (such as a county), is designated, based on compliance with the NAAQS, as attainment, unclassifiable, maintenance, or nonattainment, on a pollutant by-pollutant basis. Areas in compliance or below the NAAQS are designated as attainment, while areas not in compliance or above the NAAQS are designated as nonattainment. The following counties are associated with the Project: McKenzie, Morton, and Dunn. The areas in which the Project would take place are all considered to be in attainment or unclassified for all criteria pollutants.

8.2 PERMITTING REGULATORY REQUIREMENTS

The CAA is the basic federal statute governing air pollution in the United States. The provisions of the CAA that are potentially relevant to the Project are discussed below.

8.2.1 PREVENTION OF SIGNIFICANT DETERIORATION AND NEW SOURCE REVIEW

Proposed new or modified air pollutant emission sources must undergo a New Source Review (NSR) prior to construction or operation. The NSR air permit programs are designed to protect air quality when air pollutant emissions are increased either through the construction of new major stationary sources or major modifications to existing stationary sources. There are three types of NSR permitting requirements, of which a source may have to meet one or more of the requirements:

- **PSD** permits are required for new major sources or an existing source making a major modification in an attainment area. In areas with good air quality (attainment areas), the PSD program ensures that the new emissions do not degrade the air quality.
- **Nonattainment NSR** permits are required for new major sources or an existing source making a major modification in a nonattainment area.

²² Other GHG gases are converted to CO₂e by means of the global warming potential of each gas.

²³ To obtain the CO₂e quantity, the mass of the particular compound is multiplied by the corresponding GWP, the product of which is the CO₂e for that compound. The CO₂e value for each of the GHG compounds is summed to obtain the total CO₂e GHG emissions.

- **Minor NSR** permits are required for new minor sources or an existing source making a minor modification. This is the minor source permitting process for the state or local jurisdictional agency.

The proposed Project modifications at the Arnegard, Glen Ullin, and Manning Compressor Stations would not trigger any requirements under PSD. The Arnegard Compressor Station is currently a major-PSD source for NO_x at 296.76 tons per year (tpy). After the modifications to the facility, the Arnegard Compressor Station would no longer be subject to PSD; the highest pollutant would be CO at 131.32 tpy. The Glen Ullin Compressor Station was not PSD prior to this modification and would remain below PSD levels after the modification; the highest pollutant would be CO at 123.32 tpy. The Manning Compressor Station was not PSD prior to this modification and would remain below PSD levels after the modification; the highest pollutant would be NO_x at 121.24 tpy.

8.2.2 STATE AND TITLE V OPERATING PERMIT PROGRAM

Title V of the CAA requires major sources of air pollutants to obtain, and operate in compliance with, a federally enforceable operating permit. Sources subject to the Title V operating permit program are required to certify compliance with the applicable requirements of their permits at least annually. The threshold levels for determining the applicability for a Title V operating permit in an area of attainment are:

- 100 tpy for any criteria air pollutant,
- 10 tpy for any individual HAP, or
- 25 tpy for any combination of HAPs.

The Arnegard Compressor Station currently operates under Title V Permit Number AOP-28427 v6.0 issued on June 14, 2022. The station is currently a major-PSD source for NO_x at 296.81 tpy. Additionally, the station is Title V major for NO_x and CO. After the modifications associated with Northern Border's Permit to Construct (PTC) application, the Arnegard Compressor Station would no longer be a major-PSD source, but would remain subject to Title V.

The Manning Compressor Station currently operates under Title V Permit Number T5-099002 issued on June 6, 2019. The station is Title V major for NO_x. After the modifications associated with Northern Border's PTC application, the Manning Compressor Station would remain subject to Title V for NO_x and CO.

The Glen Ullin Compressor Station currently operates under Title V Permit Number AOP-28435 v6.0 issued on June 14, 2022. The station is Title V major for NO_x and CO. After the modifications associated with Northern Border's PTC application, the Glen Ullin Compressor Station would remain subject to Title V. Based on the proposed operational emissions, the Project is not expected to affect the Title V permitting status of the facility and only administrative amendment procedures would be required to incorporate the construction permitting requirements into the facility's existing Title V permit following commencement of operation.

8.2.3 NEW SOURCE PERFORMANCE STANDARDS

The USEPA promulgates New Source Performance Standards (NSPS) for new, modified, or reconstructed stationary sources to control emissions to the level achievable by the best-demonstrated technology for stationary source types or categories as specified in the applicable provisions. The NSPS also establish fuel, monitoring, notification, reporting, and recordkeeping requirements.

Subpart A—General Provisions

The general provisions listed in Subpart A include broad definitions of applicability and various methods for maintaining compliance with requirements listed in subsequent subparts. Equipment located at the Arnegard, Manning, and Glen Ullin Compressor Stations that are subject to any of the NSPS subparts would also be subject to Subpart A.

Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (Subpart JJJJ) applies to stationary spark ignition engine manufacturers and owners/operators.

For natural gas-fired emergency engines manufactured after January 1, 2009, the applicable emission limits for engines greater than 130 HP rated capacity are specified in Subpart JJJJ as follows:

- for NO_x, the limit is two grams per HP-hour or 160 parts per million by volume (ppmv) on a dry basis at 15 percent oxygen (O₂);
- for CO, the limit is four grams per HP-hour or 540 ppmv at 15 percent O₂; and
- for VOCs, the limit is one gram per HP-hour or 86 ppmv at 15 percent O₂.

Subpart JJJJ would apply to the new non-emergency and emergency engines being installed. As listed above, a 1,468-HP Caterpillar G3512 emergency reciprocating internal combustion engines would be installed at the Arnegard and Manning Compressor Stations and comply with the emissions standards listed above. These facilities would also maintain compliance with requirements for performance testing, work practices, monitoring, recordkeeping, and reporting.

Subpart KKKK—Standards of Performance for Stationary Combustion Turbines

This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 million British thermal units) per hour (MMBtu/hr), based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005.

The two proposed Solar Titan 130 turbines at Arnegard Compressor Station have a heat input of 163.67 MMBtu/hr each (based upon a Heat Value [HV] of 1,100 British Thermal Unit per

standard cubic foot [Btu/scf] and 22,720 HP). The two proposed Solar Titan 250 turbines at Manning Compressor Station have a heat input of 199.10 MMBtu/hr each (based upon a HV of 1,100 Btu/scf and 30,364 HP). The two proposed Solar Titan 250 turbines at Glen Ullin Compressor Station have a heat input of 201.37 MMBtu/hr each (based upon a HV of 1,100 Btu/scf and 30,720 HP). Therefore, all of these proposed units are subject to this rule. Section 60.4320 requires the turbines to meet the NO_x requirement in table 1 of this rule. Since the turbines are new, natural gas fired turbines between 50 and 850 MMBtu/hr, table 1 requires the turbines to meet a NO_x limit of 25 ppm at 15 percent O₂ or 150 nanograms per joule of useful output. To demonstrate compliance with this limit, Section 60.4400(a) requires both an initial (within 180 days of startup or 60 days of achieving full load operation) and annual (not to exceed 14 months from previous test) performance test.

The regulation also limits SO₂ emissions from turbines. Section 60.4330(a)(2) allows the facility to meet this limit by burning fuel with a total potential SO₂ emission of less than 0.06 lb/MMBtu.

Additionally, Section 60.4365(a) exempts the permittee from monitoring fuel sulfur content if the source burns only natural gas that is covered by a purchase or transportation contract that limits sulfur to no more than 20 grains per 100 standard cubic feet. The permittee's tariff limits the sulfur content to no more than two grains per 100 standard cubic feet.

Subpart OOOOa—Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced After September 18, 2015

Currently, 40 CFR 60 Subpart OOOOa establishes emission standards and compliance schedules for the control of VOC emissions from affected facilities in the crude oil and natural gas production source category that commence construction, modification, or reconstruction after September 18, 2015.

On November 15, 2021, the USEPA published a proposed rulemaking that included a NSPS (40 CFR 60 Subpart OOOOb) and Emission Guidelines (40 CFR 60 Subpart OOOOc) to mitigate climate-destabilizing pollution and to protect human health by reducing GHG and VOC emissions from the Oil and Natural Gas Industry, specifically the Crude Oil and Natural Gas source category. On December 6, 2022, the USEPA published a supplemental proposal to provide additions and clarifications to the 2021 proposal.

Based upon the proposed applicability dates, it is expected that the compressor stations would be subject to 40 CFR 60 OOOOb when this rule becomes final, as the applicability date for this subpart includes new, modified, or reconstructed sources after December 6, 2022.

40 CFR 60 OOOOb would require monthly audible, visual, and olfactory surveys with the first attempt at repair within 15 days after detecting fugitive emissions; and final repair within 15 days after first attempt. It would also require Quarterly Optical Gas Imaging monitoring or optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak with first attempt at repair within 30 days after detecting fugitive emissions and final repair within 30 days after first attempt.

8.2.4 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The 1990 CAA Amendments established a list of 189 HAPs, resulting in the promulgation of National Emission Standards for Hazardous Air Pollutants (NESHAP). The NESHAP regulate HAP emissions from specific source types at major or non-major sources (area sources) of HAPs by setting emission limits, monitoring, testing, record keeping, and notification requirements. Major source thresholds for NESHAP are ten tpy of any single HAP or 25 tpy of total HAPs.

Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

40 CFR Part 63 Subpart ZZZZ establishes national emission limitations and operating limitations for HAPs emitted from stationary reciprocating internal combustion engines located at major and area (minor) sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

Subpart ZZZZ applies to the emergency natural gas fired engines associated with each of the three compressor stations. Northern Border states that the engines would comply with the requirements of Subpart ZZZZ by meeting the requirements of NSPS Subpart JJJJ.

Subpart YYYYY - National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines

This subpart establishes national emission limitations and operating limitations for HAPs from stationary combustion turbines located at major sources of HAP emissions, and requirements to demonstrate initial and continuous compliance with the emission and operating limitation. All three compressor stations would be reclassified as minor sources of HAP emissions and are not subject to this regulation.

Subpart DDDDD - National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

This subpart establishes national emission limitations and work practice standards for HAPs emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and work practice standards. All three compressor stations would be reclassified as minor sources of HAP emissions and are not subject to this regulation.

8.2.5 GENERAL CONFORMITY

The General Conformity Rule is codified in 40 CFR 93, Subpart B, and was developed to ensure that federal actions in nonattainment and maintenance areas do not impede states' attainment of the NAAQS. A conformity determination must be conducted by the lead federal agency if a federal action's construction and operation activities are likely to result in generating direct and indirect emissions that would exceed the conformity applicability threshold level of the

pollutant(s) for which a county is designated as nonattainment or maintenance. Conforming activities or actions should not, through additional air pollutant emissions:

- cause or contribute to new violations of the NAAQS in any area;
- increase the frequency or severity of any existing violation of any NAAQS; or
- delay timely attainment of any NAAQS or interim emission reductions.

General Conformity applies in designated nonattainment or maintenance areas on a pollutant-by-pollutant basis. The entire Project area is classified as being in attainment or unclassified for all criteria pollutant standards, therefore a General Conformity analysis is not necessary for the Project.

8.2.6 GREENHOUSE GAS REPORTING

The USEPA has promulgated rules requiring monitoring, reporting, and recordkeeping for GHGs beginning with calendar year 2010. The final mandatory reporting rule was published in the Federal Register, Volume 74, No. 209, October 30, 2009. Owners or operators of a compressor station must report their GHG emissions if total emissions from 40 CFR 63 Subpart C (stationary fuel combustion) and all applicable subparts (40 CFR 63 Subpart W – Petroleum and Natural Gas Systems) are more than 25,000 metric tpy of CO₂e on an annual basis.

Per 40 CFR Part 98, Arnegard, Manning, and Glen Ullin Compressor Stations are currently subject to GHG reporting. These stations would continue to report after the completion of the Project so long as the actual GHG emissions exceed 25,000 metric tons of CO₂e per year at each of the compressor stations.

8.3 CONSTRUCTION EMISSIONS

The Project would result in air quality impacts associated with construction, including emissions from fossil-fueled construction equipment and fugitive dust. The emissions would be temporary in nature and would not significantly affect regional air quality. Emissions from construction equipment would depend on the duration, number, and type of vehicles/equipment. Potential emissions include combustion-related air pollutants (NO_x, CO, VOC, SO₂, PM₁₀, PM_{2.5}, CO₂e, and HAPs) as well as fugitive dust. Emissions from equipment would be short-term and localized at each of the Project work areas. Some temporary indirect emissions, attributable to construction workers commuting to and from work sites during construction and from on-road and off-road construction vehicle traffic, could also occur.

Fugitive dust control measures are included in Northern Border's Fugitive Dust Control Plan. Northern Border would implement the following measures as needed to control dust during construction:

- minimize soil disturbance;
- use water for control of dust during construction operations, road grading or land clearing;
- use crushed stone or gravel to stabilize road surfaces;

- use spray-on adhesives to stabilize mineral soils in heavily trafficked areas;
- apply mulch combined with tackifiers in low traffic areas to stabilize disturbed soils;
- establish vegetative cover to stabilize disturbed soils; and
- 10-15 mph speed limit for right-of-way and non-public access roads.

Construction related emission estimates were based on a typical construction equipment list, hours of operation, and vehicle miles traveled by the construction equipment and supporting vehicles for the Project. Construction emissions for the Project are presented in table B-10.

Table B-10								
Construction-Related Emissions for the Project by County								
Construction Activity	Emissions (tpy)							
	CO	NO_x	VOC	PM₁₀	PM_{2.5}	SO₂	HAP	CO_{2e}
McKenzie County Arnegard Compressor Station Emissions								
Diesel non-road equipment	39.00	8.33	8.00	1.71	1.60	0.01	2.73	1,519.34
Diesel and gas on-road equipment	2.49	0.25	0.02	0.01	0.00	0.00	0.01	676.72
Construction activity fugitive dust	N/A	N/A	N/A	2.26	0.33	N/A	N/A	N/A
Roadway fugitive dust	N/A	N/A	N/A	0.10	0.05	N/A	N/A	N/A
Fugitive Components	N/A	N/A	NA	N/A	N/A	N/A	N/A	NA
Venting Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	41.50	8.58	8.02	4.07	1.98	0.01	2.74	2,196.06
Dunn County Manning Compressor Station Emissions								
Diesel non-road equipment	39.00	8.33	8.00	1.71	1.60	0.01	2.73	1,519.34
Diesel and gas on-road equipment	2.47	0.25	0.02	0.01	0.00	0.00	0.01	676.72
Construction activity fugitive dust	N/A	N/A	N/A	1.97	0.29	N/A	N/A	N/A
Roadway fugitive dust	N/A	N/A	N/A	0.10	0.05	N/A	N/A	N/A
Fugitive Components	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Venting Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	41.47	8.58	8.02	3.78	1.94	0.01	2.74	2,196.06
Morton County Glen Ullin Compressor Station								
Diesel non-road equipment	39.00	8.33	8.00	1.71	1.60	0.01	2.73	1,519.34
Diesel and gas on-road equipment	2.50	0.25	0.02	0.01	0.00	0.000	0.01	676.72
Construction activity fugitive dust	N/A	N/A	N/A	2.05	0.30	N/A	N/A	N/A
Roadway fugitive dust	N/A	N/A	N/A	0.10	0.05	N/A	N/A	N/A
Fugitive Components	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Venting Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	41.50	8.58	8.02	3.86	1.95	0.01	2.74	2,196.06
Project Total	124.47	25.74	24.06	11.71	5.87	0.04	8.22	6,588.18
N/A = not applicable; tpy = tons per year								

Given the temporary and localized nature of construction emissions at each compressor station, we find that construction of the Project would not cause or significantly contribute to a violation of any applicable ambient air quality standard, or significantly affect local or regional air quality.

8.4 OPERATIONAL EMISSIONS

Tables B-11, B-12, and B-13 below show the expected emissions from each compressor station associated with the Project. Table B-14 shows potential fugitive methane leak emissions.

Table B-11 Arnegard Compressor Station Emission Calculation Results							
Facility/Emission Unit	NO_x (tpy)	CO (tpy)	VOC (tpy)	PM₁₀/ PM_{2.5} (tpy)	SO₂ (tpy)	CO_{2e} (tpy)	Total HAPs (tpy)
Current Facility Emissions							
Facility Total	296.76	136.86	4.50	6.26	6.09	121,804.44	1.24
Post Project Emissions							
Solar Titan 130 Turbines (2) (new)	97.44	128.27	17.50	9.46	9.43	167,768.80	1.47
Cat G3512 Emergency Generator (EG1) (new)	0.81	1.62	0.86	0.03	0.07	303.11	0.20
Heater (HE3) (new)	0.95	0.88	0.53	0.07	<0.01	1,206.83	0.02
Boiler (BLR1) (new)	0.43	0.14	0.03	0.11	0.01	2,461.87	0.04
Forced Air Heaters (CH) (existing)	0.58	0.49	0.03	0.04	<0.01	745.15	0.01
Pigging (existing)	NA	NA	1.17	NA	NA	2,360.35	<0.01
Pneumatic Devices (existing)	NA	NA	0.08	NA	NA	154.98	<0.01
Venting/blowdowns (existing)	NA	NA	1.17	NA	NA	6,626.10	<0.01
Condensate Drip Tank (existing)	NA	NA	0.01	NA	NA	13.24	<0.01
Post Project Total ^a	100.20	131.38	21.38	9.72	9.53	181,640.42	1.74
PTE Change	-196.56	-5.47	16.87	3.45	3.43	59,835.98	0.50
<i>Title V Threshold</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>NA</i>	<i>25</i>
<i>PSD Major Source Threshold ^e</i>	<i>250</i>	<i>250</i>	<i>250</i>	<i>250</i>	<i>250</i>	<i>100,000</i>	<i>NA</i>
^a PSD for CO _{2e} would only be triggered if the compressor station was an "anyway source" which means triggering PSD for one of the other regulated PSD pollutants. Even though the compressor station is above the PSD threshold for CO _{2e} , PSD is not triggered because none of the other pollutants exceed the PSD threshold.							
NA = not available; tpy = tons per year							

Table B-12 Manning Compressor Station Emission Calculation Results							
Facility/Emission Unit	NO _x (tpy)	CO (tpy)	VOC (tpy)	PM ₁₀ / PM _{2.5} (tpy)	SO ₂ (tpy)	CO _{2e} (tpy)	Total HAPs (tpy) ^b
Current Facility Emissions							
Facility Total	235.73	99.07	19.81	9.15	9.06	172,538.94	1.98
Post Project Emissions							
Solar Titan 250 Turbines (2) (new)	104.93	112.72	12.62	11.51	11.48	204,076.66	1.79
Cat G3512 Emergency Generator (new)	0.81	1.62	0.86	0.03	0.07	413.78	0.20
Fuel Gas Heater – OGI TERI (new)	1.19	1.08	0.66	0.09	<0.01	1,508.41	0.02
Cleaver Brooks Boiler (new)	0.43	0.14	0.03	0.11	0.01	2,461.87	0.04
Storage Tank (new)	NA	NA	0.09	NA	NA	62.20	<0.01
Turbine (EU1) (modified)	13.29	5.15	0.69	0.48	0.48	9,192.39	0.09
Boiler (EU3) (existing)	0.72	0.60	0.04	0.05	<0.01	856.54	0.01
Catalytic Heaters (existing)	<0.01	<0.01	<0.01	<0.01	<0.01	12.31	<0.01
Hot Water Heater (existing)	0.02	0.01	<0.01	<0.01	<0.01	20.52	<0.01
HVAC (existing)	0.14	0.12	<0.01	0.01	<0.01	184.64	<0.01
Storage Tank (existing)	NA	NA	0.02	NA	NA	12.44	<0.01
Pigging (existing)	NA	NA	3.70	NA	NA	2,586.15	<0.01
Pneumatic Devices (existing)	NA	NA	0.09	NA	NA	124.27	<0.01
Venting/blowdowns (existing)	NA	NA	2.73	NA	NA	6,337.27	0.08
Post Project Total ^a	121.52	121.45	21.53	12.28	12.05	227,849.45	2.31
PTE Change	-114.21	22.39	1.72	3.13	2.99	55,310.51	0.33
<i>Title V Threshold</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>NA</i>	<i>25</i>
<i>PSD Major Source Threshold</i>	<i>250</i>	<i>250</i>	<i>250</i>	<i>250</i>	<i>250</i>	<i>100,000</i>	<i>NA</i>
^a PSD for CO _{2e} would only be triggered if the compressor station was an “anyway source” which means triggering PSD for one of the other regulated PSD pollutants. Even though the compressor station is above the PSD threshold for CO _{2e} , PSD is not triggered because none of the other pollutants exceed the PSD threshold. ^b Total Existing and Post Project HAPs includes 0.09 tpy of fugitives.							
NA = not available; tpy = tons per year							

**Table B-13
Glen Ullin Compressor Station Emission Calculation
Results**

Facility/Emission Unit	NO _x (tpy)	CO (tpy)	VOC (tpy)	PM ₁₀ / PM _{2.5} (tpy)	SO ₂ (tpy)	CO _{2e} (tpy)	Total HAPs (tpy) ^b
Current Facility Emissions							
Facility Total	238.09	103.91	19.96	9.26	9.14	175,461.93	1.95
Post Project Emissions							
Solar Titan 250 Turbines (2) (new)	106.11	113.94	12.76	11.64	11.61	206,406.36	1.81
Cat G3512 Emergency Generator (new)	1.01	2.02	0.91	0.03	0.07	517.24	0.36
Fuel Gas Heater – OGI TERI (new)	1.19	1.08	0.66	0.09	<0.01	1,508.41	0.02
Cleaver Brooks Boiler (new)	0.41	0.14	0.03	0.11	0.01	2,461.87	0.04
Turbine (CE1) (modified)	13.41	5.60	0.75	0.52	0.52	9,280.22	0.10
Heater (HE2) (existing)	0.57	0.48	0.03	0.04	<0.01	685.24	<0.01
Catalytic Heaters (existing)	0.04	0.03	<0.01	<0.01	<0.01	49.24	<0.01
Forced Air Heaters (existing)	0.20	0.17	0.01	0.02	<0.01	259.01	<0.01
Hot Water Heater (existing)	0.01	0.01	<0.01	<0.01	<0.01	16.93	<0.01
HVAC (existing)	0.09	0.07	<0.01	<0.01	<0.01	112.84	<0.01
Pigging (existing)	NA	NA	3.69	NA	NA	2,472.93	<0.01
Pneumatic Devices (existing)	NA	NA	0.16	NA	NA	108.26	<0.01
Venting/blowdowns (existing)	NA	NA	2.79	NA	NA	6,337.27	0.09
Condensate Drip Tanks (existing)	NA	NA	0.08	NA	NA	55.98	<0.01
Post Project Total ^a	123.03	123.54	21.88	12.47	12.22	230,271.79	2.52
PTE Change	-115.05	19.63	1.93	3.21	3.08	54,809.86	0.57
<i>Title V Threshold</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>NA</i>	<i>25</i>
<i>PSD Major Source Threshold</i>	<i>250</i>	<i>250</i>	<i>250</i>	<i>250</i>	<i>250</i>	<i>100,000</i>	<i>NA</i>
^a PSD for CO _{2e} would only be triggered if the compressor station was an “anyway source” which means triggering PSD for one of the other regulated PSD pollutants. Even though the compressor station is above the PSD threshold for CO _{2e} , PSD is not triggered because none of the other pollutants exceed the PSD threshold. ^b Total Existing and Post Project HAPs includes 0.09 tpy of fugitives.							
NA = not available; tpy = tons per year							

Table B-14 Fugitive Leaks Methane Emissions		
Station	CH₄ (tons)	CH₄ (metric tons)
Arnegard Compressor Station	50.47	45.79
Manning Compressor Station	49.83	45.20
Glen Ullin Compressor Station	45.13	40.94
Total	145.43	131.93
Note: The total equals 3,298 metric tons per year of CO _{2e}		

8.5 AIR DISPERSION MODELING

Air dispersion modeling was performed for the Arnegard, Manning, and Glen Ullin Compressor Stations using version 22112 of AERMOD, the most advanced sequential Gaussian plume model sanctioned by the USEPA. The meteorological data was processed through the AERMOD meteorological preprocessor AERMET (version 22112), whose purpose is to compute boundary layer parameters used to estimate profiles of wind, turbulence, and temperature. In addition, AERMINUTE (version 15272) was used to process the meteorological data used with AERMOD for each compressor station. AERSURFACE (version 20060) was used to obtain surface characteristics used in the meteorological data processing.

The air dispersion modeling results included the total emissions from the proposed modified compressor stations and are summarized in tables B-15, B-16, and B-17 below.

Table B-15 Arnegard Compressor Station NAAQS Modeling Results					
Pollutant	Averaging Period	Project Impact ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	Total ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)
NO ₂	1-hour	144.92	16.93	161.85	188
	Annual	11.69	1.88	13.57	100
PM ₁₀	24-hour	7.74	37.0	44.74	150
PM _{2.5}	24-hour	5.99	22.00	27.99	35
	Annual	1.14	5.40	6.54	9 ^a
CO	1-hour	558.8	1,610	2,168.78	40,000
	8-hour	202.5	920	1,122.46	10,000
SO ₂	1-hour	29.18	10.47	39.65	196
	3-hour	20.62	6.54	27.16	1309
	24-hour	8.31	3.40	11.71	365
	Annual	1.27	1.62	2.89	80
$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; N/A = not applicable					
a: Effective May 6 th , 2024, the NAAQS Standards Annual PM _{2.5} changed from 12 $\mu\text{g}/\text{m}^3$ to 9 $\mu\text{g}/\text{m}^3$					

Table B-16 Manning Compressor Station NAAQS Modeling Results						
Pollutant	Averaging Period	Project Impact (µg/m³)	Scenario with Maximum Impact	Background (µg/m³)	Total (µg/m³)	NAAQS (µg/m³)
NO ₂	1-hour	22.92	1a	22.58	45.50	188
	Annual	2.10	N/A	3.76	5.86	100
PM ₁₀	24-hour	1.54	1b	91.00	92.54	150
PM _{2.5}	24-hour	1.11	1b	22.00	23.11	35
	Annual	0.16	N/A	5.80	5.96	9 ^a
CO	1-hour	175.10	1b	1610	1,785.1	40,000
	8-hour	133.53	1b	920	1,053.53	10,000
SO ₂	1-hour	1.35	3a	15.70	17.05	196
	3-hour	0.25	1a	14.40	14.65	1309
	24-hour	0.13	1a	6.28	6.41	365
	Annual	0.04	N/A	2.80	2.84	80

µg/m³ = micrograms per cubic meter; N/A = not applicable
a: Effective May 6th, 2024, the NAAQS Standards Annual PM_{2.5} changed from 12µg/m³ to 9µg/m³

Table B-17 Glen Ullin Compressor Station NAAQS Modeling Results						
Pollutant	Averaging Period	Project Impact (µg/m³)	Scenario with Maximum Impact	Background (µg/m³)	Total (µg/m³)	NAAQS (µg/m³)
NO ₂	1-hour	32.23	2a	20.69	52.92	188
	Annual	2.47	N/A	3.76	6.23	100
PM ₁₀	24-hour	2.45	3b	61.00	63.45	150
PM _{2.5}	24-hour	2.33	3b	26.00	28.33	35
	Annual	0.26	N/A	7.20	7.46	9 ^a
CO	1-hour	172.39	2b	1610	1,782.39	40,000
	8-hour	98.91	2b	920	1,018.91	10,000
SO ₂	1-hour	1.35	1a	28.79	30.14	196
	3-hour	1.00	1b	16.23	17.23	1309
	24-hour	0.25	3b	7.07	7.32	365
	Annual	0.03	N/A	3.30	3.33	80

µg/m³ = micrograms per cubic meter; N/A = not applicable
a: Effective May 6th, 2024, the NAAQS Standards Annual PM_{2.5} changed from 12µg/m³ to 9µg/m³

Based on the dispersion modeling results, operation of the proposed compressor station modifications would not violate the NAAQS. In addition, the proposed modifications at the Arnegard Compressor Station would result in an overall decrease in NO_x and CO emissions for the facility. Similarly, facility-wide NO_x emissions would decrease at the Manning and Glen Ullin

Compressor Stations as a result of the proposed modifications. We conclude operation of the Project would not significantly impact air quality in the area.

9.0 NOISE

Construction and operation of the Project would affect the local noise environment in the Project area. The ambient sound level of a region, which is defined by the total noise generated within the specific environment, is usually composed of sounds emanating from both natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week, in part due to changing weather conditions and the impacts of seasonal vegetative cover.

In 1974, the USEPA published its Information on *Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Two measurements used to relate the time-varying quality of environmental noise to its known effects on people are the 24-hour equivalent sound level (L_{eq}) and the L_{dn} . The L_{eq} is an A-weighted sound level containing the same sound energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently depending on length of exposure and time of day. The L_{dn} takes into account the duration and time the noise is encountered. Specifically, in the calculation of the L_{dn} , late night to early morning (10:00 p.m. to 7:00 a.m.) noise exposures are penalized +10 decibels to account for people's greater sensitivity to sound during the nighttime hours. The USEPA has indicated that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impacts from the proposed Project on any NSAs, such as residences, schools, or hospitals. Also, in general, a person's threshold for a perceivable change in loudness on the A-weighted sound level is about 3 dBA, whereas a 5 dBA change is clearly noticeable, and a 10 dBA change is perceived as either twice or half as loud.

Due to the 10 dBA nighttime penalty added prior to the calculation of the L_{dn} , for a facility to meet the 55 dBA L_{dn} limit established by the USEPA to protect the public from indoor and outdoor activity interference, a facility must be designed such that the constant 24-hour noise level does not exceed an L_{eq} of 48.6 dBA at NSAs. The A-weighted scale is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. For an essentially steady sound source that operates continuously over a 24-hour period and controls the environmental sound level, the L_{dn} is approximately 6.4 decibels above the measured L_{eq} .

9.1 CONSTRUCTION NOISE

Noise would be generated during construction of the aboveground facility modifications for the Project. Noise levels would be highest in the immediate vicinity of construction activities and would diminish with distance from each work area. These impacts would be localized and temporary. Sound level changes would depend on the type of equipment used, the duration of use for each piece of equipment, the number of construction vehicles and machines used simultaneously, and the distance between the sound source and receptor. Construction activities associated with the Project would be performed with standard heavy equipment such as track-excavators, backhoes, cranes, bulldozers, and dump trucks. Noise would also be generated by trucks and other light vehicles traveling in and near areas under construction. Construction

equipment and worker vehicles generally operate intermittently and may change depending on project activity or phase. Northern Border estimated potential construction noise by using a noise simulation for both daytime and nighttime construction activities based upon typical utilization of construction equipment. The construction noise estimates are displayed in table B-18.

Table B-18 Estimated Construction Noise Levels					
Station	NSAs	Distance (feet) and Direction	Resulting Ldn Sound Level (dBA)	Daytime Sound Level (Ld) (dBA)	Nighttime Sound Level (Ln) (dBA)
Arnegard Compressor Station	NSA #1 (House)	1,800 N-NE	57.3	52.7	50.5
Manning Compressor Station	NSA #1 (House)	6,400 S	36.1	31.4	29.3
Glen Ullin Compressor Station	NSA #1 (House)	2,800 W	54.0	49.4	47.3

The above table shows that noise levels during construction would remain below 55 dBA for the Manning and Glen Ullin Compressor Stations.

The majority of Project construction activities at the Project compressor stations would be conducted between the hours of 7:00 a.m. to 7:00 p.m.; however, weather conditions, site conditions, certain construction techniques, emergencies, or other atypical circumstances may necessitate nighttime work or extended work on Sundays and holidays. Construction activities such as hydrostatic testing, blowdowns, and tie-ins are exceptions to daytime-only construction hours as these activities must continue to completion once commenced.

Northern Border stated in its response to our October 31, 2023 data request that it would implement noise monitoring to ensure that the sound levels from the proposed nighttime construction activities at the Arnegard Compressor Station do not exceed 55 dBA L_{dn} or 10 dB over background if ambient levels are above 55 dBA L_{dn} at NSAs. If the construction activity is found to exceed the noise level thresholds, Northern Border proposes to stop, relocate equipment, or implement additional noise mitigation, such as utilizing small temporary barriers around some of the loudest stationary equipment (generators, light plants, compressors, etc.). While Northern Border’s proposal could minimize nighttime construction noise impacts to some extent at the NSAs at the Arnegard Compressor Station, Northern Border has not provided sufficiently detailed information regarding the specific weather, site, emergency, or atypical conditions that would necessitate extended work hours or the construction techniques that Northern Border would employ, in order for staff to determine the extent of construction noise impacts at the nearest NSAs to the compressor stations. Therefore, due to this lack of detailed information, because the nearest NSAs are at or below 0.5 mile from the Arnegard and Glen Ullin Compressor Stations, and the Glen Ullin Compressor Station is located in a block group that is an environmental justice community, **we recommend that:**

- **During nighttime (7:00 PM to 7:00 AM) construction activities at the Arnegard and Glen Ullin Compressor Stations, Northern Border should monitor noise levels, document the noise levels in the construction status reports, and restrict the noise attributable to nighttime construction activities**

to no more than 48.6 dBA Leq (1-hour) at nearby NSAs. If noise exceeds 48.6 dBA Leq, Northern Border should immediately reduce construction activities and/or install and implement mitigation measures to reduce noise attributable to nighttime activities to 48.6 dBA Leq or less.

Based on the intermittent and temporary nature of construction activities as well as our recommendation, we conclude that Project construction noise would not have a significant impact on the environment.

9.2 OPERATIONAL NOISE

The Project modifications to the three compressor stations would result in changes in operational noise impacts. An acoustical analysis was conducted to characterize the existing noise environment and sound level impact around the proposed Project. The results of the analysis are compiled in table B-19 below.

Table B-19 Noise Quality Analysis for Project Facilities						
Station	NSAs	Distance and Direction from Proposed Compressor Units	Existing Ambient Ldn Sound Level (dBA)	Estimated Ldn Sound Level at Full Load Operation ^a (dBA)	Total Ldn Sound Level (Existing Ambient + Station) (dBA)	Potential Noise Increase (dB)
Arnegard Compressor Station	NSA #1 (House)	1,800 feet N- NE	51.7 ^b	50.4	54.1	2.4
Manning Compressor Station	NSA #1 (House)	6,400 feet S	58.0 ^c	39.0	58.0	<0.1
Glen Ullin Compressor Station	NSA #1 (House)	2,800 feet W	58.3 ^d	48.4	58.7	0.4

^a Proposed station site rated HP for Arnegard, Manning, and Glen Ullin Compressor Stations is 42,964 HP, 59,978 HP and 60,648 HP, respectively.
^b Audible sounds in the vicinity of the Arnegard Compressor Station included a grain dryer and wind in nearby trees.
^c Audible sounds in the vicinity of the Manning Compressor Station included wind and a pump jack.
^d Audible sounds in the vicinity of the Glen Ullin Compressor Station included wind in nearby trees.

Noise levels attributable to the compressor stations would be below the FERC criterion of 55 dBA L_{dn} at the nearby NSAs. Furthermore, the potential increased noise would not be perceptible at all NSAs.

To verify the accuracy of Northern Border’s noise estimates and ensure that noise levels due to operation of the modified Arnegard, Manning, and Glen Ullin Compressor Stations would not significantly impact nearby NSAs, **we recommend that:**

- **Northern Border should file noise surveys with the Secretary no later than 60 days after placing the modified Arnegard, Manning, and Glen Ullin Compressor Stations in service. If a full load condition noise survey for any one of the stations is not possible, Northern Border should provide an interim survey for that station at the maximum possible horsepower load and**

provide the full load survey within 6 months. If the noise attributable to the operation of the modified stations under interim or full horsepower load conditions exceeds an L_{dn} of 55 dBA at any nearby NSAs, Northern Border should file a report on what changes are needed and install additional noise controls to meet that level within 1 year of the in-service date. Northern Border should confirm compliance with this requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.

Based on the predicted Project operational noise levels, and our recommendations, we conclude that operation of the Project would not significantly impact noise in the surrounding area or contribute to a substantial increase in existing station noise.

10.0 RELIABILITY AND SAFETY

The pressurization of natural gas at a compressor station involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a leak, or rupture at the facility. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The compressor stations must be designed, constructed, operated, and maintained in accordance with the U.S. Department of Transportation Minimum Federal Safety Standards in 49 CFR Part 192. The regulations are intended to ensure adequate protection for the public and to prevent facility accidents and failures.

Part 192.163 – 192.173 of 49 CFR specifically addresses design criteria for compressor stations, including emergency shutdowns and safety equipment. Part 192 also requires a pipeline operator to establish a written emergency plan that includes procedures to minimize the hazards in an emergency.

Additionally, the operator must establish a continuing education program to enable the public, government officials, and others to recognize an emergency at the facility and report it to appropriate public officials. Northern Border would provide the appropriate training to local emergency service personnel before the facilities are placed in service.

The construction and operation of the Arnegard, Manning, and Glen Ullin Compressor Stations would represent a minimum increase in risk to the nearby public and we are confident that with implementation of the required design criteria for the design of the Arnegard, Manning, and Glen Ullin Compressor Stations that they would be constructed and operated safely.

Polychlorinated Biphenyls

As discussed in this EA, the Project would involve the removal of one existing gas-fired turbine compressor at the Arnegard Compressor Station. However, none of the existing facilities

associated with the proposed Project are known or anticipated to have polychlorinated biphenyls (PCBs) in excess of 50 parts per million in pipeline liquids. In the event PCB-contaminated liquid, soil, or pipeline facilities are encountered unexpectedly during construction, these materials would be managed in accordance with the USEPA *Toxic Substances Control Act* regulations found in 40 CFR Part 761, as well as any applicable state regulations. Additionally, Northern Border must adhere to all applicable federal, state, and local regulations related to management and disposal of PCBs encountered during Project construction.

11.0 CUMULATIVE IMPACTS

In accordance with NEPA, we considered the cumulative impacts of the Project and other projects or actions in the area. Cumulative impacts represent the incremental effects of the proposed action when added to other past, present, or reasonably foreseeable future actions.

The cumulative impact analysis generally follows the methodology set forth in relevant guidance from the CEQ and the USEPA and focuses on potential impacts from the proposed projects on resource areas or issues where incremental contributions would be potentially significant when added to potential impacts of other actions if they take place in the same general area over a given period of time. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over time. The CEQ guidance states that an adequate cumulative effects analysis may be conducted by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions (more than 5 years old) (CEQ, 1997). In this analysis, we consider the impacts of past projects within defined geographic scopes as part of the affected environment (environmental baseline) which were described and evaluated in the preceding environmental analysis. However, present effects of past actions that are relevant and useful are also considered. Table B-20 summarizes the resource-specific geographic scopes that were considered in this analysis.

Environmental Resource	Area of Impact
Soils and Geology	Construction workspaces
Groundwater, Vegetation, Wildlife	Hydrologic Unit Code (HUC) 12 Watershed
Surface Water Resources	HUC 12 Watershed. For direct in-water work (e.g. dredging) include potential overlapping impacts from sedimentation, turbidity, and water quality
Cultural Resources	Overlapping impacts within the Area of Potential Effects
Land Use, Recreation, and Visual Resources	1 mile radius
Noise - Operations	Other facilities that would impact any noise sensitive area (NSA) located within 1 mile of a noise emitting permanent aboveground facility
Noise - Construction	0.25 mile from pipeline or aboveground facilities. 0.5 mile from horizontal directional drill or direct pipe installation
Air Quality - Operations	25 kilometers (about 15.5 miles)
Air Quality – Construction	0.25 mile from pipeline or aboveground facilities
Environmental Justice	Affected environmental justice block groups

To avoid unnecessary discussions of insignificant impacts and to adequately address and accomplish the purpose of this analysis, an action must meet the following criteria to be included in the cumulative impacts analysis:

- impact a resource area potentially affected by the project;
- cause this impact within all, or part, of the project's geographic scope; and
- cause this impact within all, or part, of the time span for the potential impact of the project.

No past projects were identified that meet the three criteria above or fall within one or more geographic scopes identified in table B-20. One project was identified that could overlap with the Project's geographic scope, and time span. Planned modifications to the existing Kurtz Meter Station (owned by Bison Pipeline, LLC) would overlap with the work at the adjacent Glen Ullin Compressor Station workspace. The Kurtz Meter Station modifications would be completed pursuant to Northern Border's blanket certificate issued in Docket No. CP09-161-000, specifically pursuant to 18 CFR Section 157.208(a) of the FERC regulations. Planned modifications to the Kurtz Meter Station include:

- Installing approximately 800 feet of 24-inch-diameter pipeline between Northern Border's tie-in within the existing Glen Ullin Compressor Station fence line to the inlet located within the existing Kurtz Meter Station fence line;
- Installing a new filter-separator;
- Installing a new condensate tank;
- Installing over-pressure protection (to limit the maximum allowable operating pressure [MAOP] to 1,296 pounds per square inch, which is the current Bison Pipeline MAOP);
- Station piping modifications and tie-ins; and
- Extending the existing southern fence line of the Kurtz Meter Station south approximately 20 feet to accommodate the new filter-separator and associated piping.

Activities associated with the Project and work at the Kurtz Meter Station would be limited to within and directly adjacent to paved and graveled areas within the Glen Ullin Compressor Station and existing Kurtz Meter Station facilities.

Non-jurisdictional facility upgrades would occur at the same time as Project construction, which could potentially cause cumulative impacts for water resources, geology and soils, vegetation, environmental justice, air quality, and construction noise. The majority of impacts from construction of the non-jurisdictional facilities occur within the Bison XPress Project area. In addition, the non-jurisdictional facility project work would impact approximately 24 acres (0.72 acre of developed land, 3.54 acres of agricultural land, 19.53 acres of open land, and 0.16 acre of wetlands) outside of the Bison XPress Project workspace. Non-jurisdictional facility upgrades at Arnegard Compressor Station would occur over two days and include:

- upgrading the existing onsite pad mounted transformer within the existing fence line.

Non-jurisdictional facility upgrades at Manning Compressor Station would occur over a few weeks and include:

- upgrades to an existing substation located approximately two miles west of the Manning Compressor Station;
- installation of 2.3 miles of underground power transmission/distribution cables to replace existing underground and overhead power lines (1.3 miles would be installed in situ, one mile would be installed in alignment with existing lines); and
- construction of a new utility line for the purpose of stormwater conveyance (outfall).

Non-jurisdictional facility upgrades at the Glen Ullin Compressor Station would occur over a few weeks and include:

- the installation of a total of four miles of underground power transmission/distribution cable installed along a similar alignment to the existing cables;
- connection of incoming power to an upgraded pad mounted transformer within the existing facility fence line at the compressor station;
- relocation of the existing septic system to a location within the existing facility fence line.

One additional project, the Theodore Roosevelt Expressway, is located approximately ten miles east of the Arnegard Compressor Station in McKenzie County, North Dakota, and consists of building two new traffic lanes (ten miles long) adjacent to the existing lanes on U.S. Route 85. This work includes grading, culvert installation, and paving. Approximately 240 acres of ground would be disturbed for the project. The project was started in the Spring of 2023 and is scheduled to be completed in the fall of 2024. The Theodore Roosevelt Expressway project is within the geographic scope for environmental justice, occurring within Census Tract 9623.02, Block Group 1, however, this project is not scheduled to begin until May 2025, therefore, the Bison XPress Project and the Theodore Roosevelt Expressway project are not anticipated to overlap or cause cumulative impacts.

The FUGG Bison Compressor Station in Campbell County, Wyoming is approximately 300 miles south of the Bison XPress Project. Therefore, it is outside of the geographic scope for all resources and no cumulative impacts with the Bison XPress Project are anticipated.

Below we discuss the potential cumulative impacts of the Project and these other actions.

Water Resources

The geographic scope associated with groundwater and surface water affected by construction and operation of the Project includes the HUC 12 watersheds impacted by the Project (i.e., HUC 10110101 [Arnegard Compressor Station], HUC 10130201 [Manning

Compressor Station], and HUC 10130203 [Glen Ullin Compressor Station]). The work at Bison's Kurtz Meter Station would overlap with the Glen Ullin Compressor Station and the non-jurisdictional facility upgrades would overlap with Project construction at all three compressor stations. These projects would occur within the geographic scope for groundwater and surface water and were considered in the cumulative impacts analysis.

Project impacts discussed in section B.3 of this EA could contribute to a cumulative impact on water resources if conducted concurrently with construction or in-water activities of other projects considered. However, no permanent impacts to wetlands or waterbodies would occur as a result of the Project and BMPs would be implemented during construction to the extent practicable in accordance with the FERC Procedures. A stormwater outfall associated with the non-jurisdictional facility upgrades would require an open cut impact on stream SP6005, which would include excavation below the ordinary high watermark. The new utility line would terminate at the edge of SP6005, which would be restored to preconstruction conditions following the completion of project activities. Further, construction of the Project, and work at the Kurtz Meter Station and non-jurisdictional facilities, would occur in accordance with applicable federal and state regulations to minimize potential adverse impacts. Project components associated with Northern Border's blanket certificate would be constructed in accordance with our Plan and Procedures. Given the limited and temporary impacts on surface water resources associated with the Project combined with the other projects and implementation of BMPs by Northern Border and the other projects' erosion and sediment control plans, we conclude that the Project would not contribute cumulative impacts on surface water resources when considered with the other projects.

Similar to the proposed Project, other project proponents would also be required to adhere to regulations associated with the use and storage of hazardous materials to minimize impacts on groundwater resources. While the workspaces for the proposed Project would overlap with the other projects and within the same general timeframe, Northern Border's implementation of our Plan and Procedures and its SPCC Plan as well as the other project proponents' adherence to regulations associated with the use and storage of hazardous materials, would minimize cumulative impacts on groundwater resources.

Geology and Soils

Project impacts on geology and soils would be highly localized to the Project footprint during active construction and may extend for one to two years following construction until revegetation is successful. Therefore, the geographic scope for geology and soils is the Project footprint. Cumulative impacts on geology and soils would only occur if other geographically overlapping projects were constructed at the same time as the Project.

The Project's localized impact on geology and soils would result from shallow excavations within the Project work area. Work at Bison's Kurtz Meter Station overlaps with the Project workspace at Glen Ullin Compressor Station and the non-jurisdictional facility upgrades overlap with all three compressor stations. These projects are the only reasonably foreseeable actions that occur within the geographic scope for geological resources. These actions are also projected to overlap with the Project timeline. The majority of activities associated with the

Project, work at the Kurtz Meter Station, and non-jurisdictional facility upgrades would be limited to within and directly adjacent to the existing paved/graveled areas within the facilities. Additionally, the 6.3 miles of electric transmission lines would be installed adjacent to or within existing transmission line easements. Therefore, the impacts from these projects would be localized and minor. To further reduce impact potential, temporary erosion and sediment controls would be installed after initial disturbance, in accordance with the FERC Plan. We conclude that construction and operation of the Project would not significantly contribute to cumulative impacts on geology and soils when considered in conjunction with other past, present, and reasonably foreseeable projects in the geographic scope.

Vegetation

The geographic scope for cumulative impacts on vegetation affected by construction and operation of the Project is the HUC watershed. Most of the cumulative impacts on vegetation would result from temporary conversion of vegetation associated with the construction of the proposed Project, work at the Kurtz Meter Station, and non-jurisdictional facility upgrades. The permanent conversion of vegetation to gravel/rock or paved associated with the Project at the Glen Ullin Compressor Station would be within the existing fenced facility which does not support a diverse vegetative community. Installation of utility lines for the non-jurisdictional facility upgrades would generally follow the alignment of existing utility lines. Following construction, all temporarily disturbed vegetated areas would be restored unless requested by the landowner. Disturbed vegetated areas would be reseeded with the typical seed mixes used for maintenance and revegetation at the existing facilities to allow for consistency with the existing vegetation. Based on the proposed Project's minor impact on vegetation, the other projects' limited impact on vegetation in previously disturbed workspaces, we conclude that cumulative impacts on vegetation would not be significant.

Wildlife

Effects on wildlife resources are in response to removal of vegetation and resulting temporal duration on wildlife habitat. Removal of vegetation may induce temporary population fluctuations from increased predation, decreased breeding success, and loss of food sources. However, cumulative effects from the Project would not be significant as wildlife dispersal would have already occurred in tandem with vegetation clearing and the Project is within an agricultural landscape with an existing generalist wildlife community. Therefore, cumulative effects on wildlife resources would not be significant.

Environmental Justice

The geographic scope for cumulative impacts on environmental justice communities is the block groups affected by the Project. The Glen Ullin Compressor Station is the only facility that is located within an environmental justice block group (Census Tract 205, Block Group 4) based on the low-income threshold.

Project impacts associated with construction activities within the geographic scope for environmental justice would include temporary impacts associated with traffic, visual, air

quality, and construction noise. If work at Bison's Kurtz Meter Station and the non-jurisdictional facility upgrades are concurrent with the modifications at the Glen Ullin Compressor Station, cumulative traffic impacts could occur for several weeks. Due to the small scale of the Project, distance to residences, and proposed mitigation measures, no permanent impacts to environmental justice communities are anticipated and would therefore not contribute to overall permanent cumulative impacts. As Arnegard and Manning Compressor Stations are not located in an environmental justice community, no cumulative impacts at these sites are anticipated.

Land Use

The geographic scope for assessing cumulative impacts on land use, recreation, and visual resources affected by construction and operation of the Project includes areas within one mile of the Project area. Work at Bison's Kurtz Meter Station overlaps with the Glen Ullin Compressor Station, and the non-jurisdictional facility upgrades overlap with the Project workspace at all three compressor stations. These projects would occur within the geographic scope for cumulative impacts on land use, recreation, and visual resources. However, the Bison XPress Project, Kurtz Meter Station modifications, and non-jurisdictional facility work would not affect public land or recreation areas, would be similar in appearance and built adjacent to existing facilities, and would be consistent with the overall viewshed and historic usage of the property. Therefore, significant cumulative impacts on land use associated with the Project are not anticipated.

Cultural Resources

The geographic scope for assessing cumulative impacts to cultural resources includes NRHP-eligible cultural resources within the APE. As reported in Northern Border's Class III Intensive Cultural Resource Inventory Report and following its concurrence from the North Dakota SHPO, the Project would not impact cultural resources or historic properties deemed eligible for listing on the NRHP. We conclude that the Project would not result in, or contribute to, cumulative impacts to cultural resources.

Air Quality

Air quality impacts associated with construction of the Project would be minimal due to the limited duration of Project activities. Concurrent construction of the Kurtz Meter Station modifications and non-jurisdictional facility upgrades would increase air quality impacts in the immediate vicinity of the Project; however, any cumulative impacts on air quality during construction of the three projects would be temporary and not significant.

There are no operational emissions associated with the other projects identified in the cumulative analysis. Emissions from the planned modifications to the existing Kurtz Meter Station and the non-jurisdictional facility upgrades at all three compressor stations would not be significant. As such, operation of the Project compressor stations would not contribute to cumulative air quality impacts when considered with operation of the Kurtz Meter Station and non-jurisdictional facilities.

Noise- Construction

Planned modifications to the existing Kurtz Meter Station would overlap with the work at the adjacent Glen Ullin Compressor Station workspace, and the non-jurisdictional facility upgrades would overlap with the workspace at all three compressor stations thereby potentially having a cumulative impact on the ambient noise at the nearest receptors to the facilities. Noise impacts from construction of the Glen Ullin Compressor Station in combination with modifications of the Kurtz Meter Station and non-jurisdictional facility upgrades could result in noise levels exceeding 55 dBA during nighttime construction activities.

Based on the intermittent and temporary nature of construction activities as well as our recommendations in section B.9 of this EA, we conclude that construction of the proposed Project would not contribute significantly to cumulative noise impacts on the nearest receptors when considered with construction of the Kurtz Meter Station and non-jurisdictional facilities.

Noise- Operational

There were no reasonably foreseeable projects within 1 mile of the proposed Project that would increase noise levels during operation. Therefore, we conclude that there would not be any cumulative noise impacts during operation of the proposed Project.

12.0 CLIMATE CHANGE

Climate change is the variation in the Earth's climate (including temperature, precipitation, humidity, wind, and other meteorological variables) over time. Climate change is driven by accumulation of GHG in the atmosphere due to the increased consumption of fossil fuels (e.g., coal, petroleum, and natural gas) since the early beginnings of the industrial age and accelerating in the mid- to late-20th century.²⁴ The GHG produced by fossil-fuel combustion are CO₂, CH₄, and N₂O.

In 2017 and 2018, the U.S. Global Change Research Program (USGCRP)²⁵ issued its Climate Science Special Report: Fourth National Climate Assessment, Volumes I and II.²⁶ This

²⁴ Intergovernmental Panel on Climate Change, United Nations, Summary for Policymakers of Climate Change 2021: The Physical Science Basis (Valerie Masson-Delmotte et al., eds.) (2021), https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf (IPCC Report) at SPM-5. Other forces contribute to climate change, such as agriculture, forest clearing, and other anthropogenically driven sources.

²⁵ The U.S. Global Change Research Program is the leading U.S. scientific body on climate change. It comprises representatives from 13 federal departments and agencies and issues reports every 4 years that describe the state of the science relating to climate change and the effects of climate change on different regions of the United States and on various societal and environmental sectors, such as water resources, agriculture, energy use, and human health.

²⁶ U.S. Global Change Research Program, Climate Science Special Report, Fourth National Climate Assessment | Volume I (Donald J. Wuebbles et al. eds) (2017),

report and the recently released report by the Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis*, states that climate change has resulted in a wide range of impacts across every region of the country and the globe. Those impacts extend beyond atmospheric climate change alone and include changes to water resources, agriculture, ecosystems, human health, and ocean systems.²⁷ According to the Fourth Assessment Report, the United States and the world are warming; global sea level is rising and oceans are acidifying; and certain weather events are becoming more frequent and more severe.²⁸ These impacts have accelerated throughout the end of the 20th and into the 21st century.²⁹

GHG emissions do not result in proportional local and immediate impacts; it is the combined concentration in the atmosphere that affects the global climate. These are fundamentally global impacts that feed back to local and regional climate change impacts. Thus, the geographic scope for cumulative analysis of GHG emissions is global rather than local or regional. For example, a project one mile away emitting one ton of GHG would contribute to climate change in a similar manner as a project 2,000 miles distant also emitting one ton of GHG.

Climate change is a global phenomenon; however, for this discussion, we will focus on the existing and potential climate change impacts in the general Project area. The USGCRP's Fourth Assessment Report notes the following observations of environmental impacts attributed to climate change in the Northern Great Plains region of the United States (USGCRP, 2017 and 2018):

- since the beginning of the 20th century, temperatures in the Project area have risen approximately 2.6 °F;
- increasing rainfall, with an increase in the frequency of 2-inch rainfall events;
- heavy rainfall events are leading to more flooding, erosion, and runoff into waterways;
- climate-driven changes in snowpack, spring snowmelt, and runoff have resulted in more rapid melting of winter snowpack and earlier peak runoff due to rapid springtime warming; and

https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf (USGCRP Report Volume I); U.S. Global Change Research Program, Fourth National Climate Assessment, Volume II Impacts, Risks, And Adaptation In The United States (David Reidmiller et al. eds.) (2018), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (USGCRP Report Volume II).

²⁷ IPCC Report at SPM-5 to SPM-10.

²⁸ USGCRP Report Volume II at 73-75.

²⁹ See, e.g., USGCRP Report Volume II at 99 (describing accelerating flooding rates in Atlantic and Gulf Coast cities).

- lower stream flows, especially in late summer, which combined with warmer air temperatures, have caused stream temperatures to rise.

The USGCRP's Fourth Assessment Report notes the following projections of climate change impacts in the Northern Great Plains Region with a high or very high level of confidence:³⁰

- annual average temperatures in the Northern Great Plains are projected to increase by 3.6 to 4.6 °F by the mid-21st century and by 5.4 to 9.4 °F by the late 21st century, compared to the average for 1976-2005;
- summer precipitation is expected to vary across the Northern Great Plains, ranging from no change under a lower scenario to between 10 and 20 percent reductions under a higher scenario; however, this is projected to occur with a higher frequency of heavy rain;
- the warmer and generally wetter conditions projected for some of the Northern Great Plains, coupled with elevated atmospheric CO₂ concentrations, are expected to challenge existing agricultural practices with changing soil moisture content, growing season length, increase crop pests, increase weed and invasive competition as well as other identified challenges;
- the probability for more very hot days (days with maximum temperatures above 90°F) is expected to increase, and cool days (days with minimum temperatures less than 28°F) are expected to decrease by 30 days or more per year by mid-century; and in the mountains of western Wyoming and western Montana, the fraction of total water in precipitation that falls as snow (from October 1 to March 31) is expected to decline by between 25 and 40 percent by 2100.

It should be noted that while the impacts described above taken individually may be manageable for certain communities, the impacts of compound events (such as simultaneous heat and drought, wildfires associated with hot and dry conditions, or flooding associated with high precipitation on top of saturated soils) can be greater than the sum of the parts.³¹

The GHG emissions associated with construction and operation of the Project were identified and quantified in section 8 of the EA. Emissions of GHG are typically expressed in terms of CO₂e.³² Construction CO₂e emissions from the Project are estimated to be 5,977 metric tons. Operational CO₂e emissions as a result of the Project would increase by 154,182 metric tpy (including fugitive emissions), compared to pre-Project levels. Although the Project would create 300,000 dth/day of lease capacity, this capacity (as described in Section A.2) would serve

³⁰ USGCRP Report Volume II.

³¹ USGCRP Report Volume II.

³² GHG gases are converted to CO₂e by means of the GWP; the measure of a particular GHG's ability to absorb solar radiation; and its residence time within the atmosphere, consistent with the USEPA's established method for reporting GHG emissions for air permitting requirements that allows a consistent comparison with federal regulatory requirements.

markets throughout the country via existing interstate pipeline interconnects with Wyoming Interstate Company, LLC.³³ Because no specific end use is identified, no downstream emissions are reasonably foreseeable. Construction and operation of Project facilities would increase the atmospheric concentration of GHG in combination with past, current, and future emissions from all other sources globally, and would contribute incrementally to future climate change impacts. To assess impacts on climate change associated with the Project, Commission staff considered whether it could identify discrete physical impacts resulting from the Project's GHG emissions or compare the Project's GHG emissions to established targets designed to combat climate change.

To date, Commission staff have not identified a methodology to attribute discrete, quantifiable, physical effects on the environment resulting from the Project's incremental contribution to GHGs. Without the ability to determine discrete resource impacts, Commission staff are unable to assess the Project's contribution to climate change through any objective analysis of physical impact attributable to the Project. Additionally, Commission staff have not been able to find an established threshold for determining the Project's significance when compared to established GHG reduction targets at the state or federal level. Ultimately, this EA is not characterizing the Project's GHG emissions as significant or insignificant.³⁴ However, as we have done in prior NEPA analyses, we disclose the Project's GHG emissions in comparison to national and state GHG emission inventories.

In order to provide context of the Project GHG emissions on a national level, we compare the Project GHG emissions to the total current GHG emissions inventory for the United States as a whole. At a national level, 5,586 million metric tons of CO₂e were emitted in 2021 (inclusive of CO₂e sources and sinks) (USEPA, 2023g). Construction emissions from the Project could potentially increase CO₂e emissions based on the national 2021 levels by 0.0001 percent. In subsequent years, Project operations could result in a potential increase in CO₂e emissions by 0.003 percent based on the national 2021 levels.

To provide context on a state level, we compare the Project's estimated GHG emissions to the state emission inventories. The Project's construction and operational emissions occur in North Dakota. At a state level, 83.3 million metric tons of CO₂ were emitted in North Dakota in 2021 (inclusive of CO₂ sources and sinks).³⁵ Project construction could potentially increase CO₂

³³ The proposed Project would provide a transportation path for natural gas production in the Bakken region located in North Dakota to a liquid market hub in Weld County, Colorado (Cheyenne Hub), which can serve demand markets throughout the country via existing interstate pipeline interconnects with Wyoming Interstate Company, LLC. At the Cheyenne Hub, Wyoming Interstate Company, LLC interconnects with Rockies Express Pipeline, Colorado Interstate Gas, Tallgrass Interstate Gas Transmission, Trailblazer Pipeline Company, Southern Star Central Gas Pipeline, and Cheyenne Plains Gas Pipeline Company (see page 4 of Northern Borders Abbreviated Application for Certificate of Public Convenience and Necessity filed to Docket No. CP23-544-000 on September 15, 2023).

³⁴ See e.g., *Driftwood Pipeline LLC*, 183 FERC ¶ 61,049, at P 63 (2023) (“...there currently are no accepted tools or methods for the Commission to use to determine significance, therefore the Commission is not herein characterizing these emissions as significant or insignificant.”).

³⁵ <https://www.epa.gov/ghgemissions/state-ghg-emissions-and-removals>. Accessed January 2023.

emissions based on statewide 2021 levels by 0.01 percent. In subsequent years, operational emissions from the Project in North Dakota could potentially increase CO₂ emissions based on statewide 2021 levels by 0.2 percent. We also typically compare a project's operational and downstream emissions in the context of state GHG reduction goals.³⁶ The state of North Dakota did not have established reduction targets at the time of analysis.

Below, we include a disclosure of the social cost of GHG (SC-GHG), also referred to as the social cost of carbon (SCC). Calculating the SC-GHGs does not enable the Commission to determine whether the reasonably foreseeable GHG emissions associated with the Project are significant or not significant in terms of their impact on global climate change.³⁷ In addition, there are no criteria to identify what monetized values are significant for NEPA purposes, and we are currently unable to identify any such appropriate criteria.³⁸

As both the USEPA and CEQ participate in the Interagency Working Group on the Social Cost of Greenhouse Gases (IWG), Commission staff used the methods and values contained in the IWG's current draft guidance but note that different values would result from the use of other methods.³⁹ Accordingly, Commission staff calculated the SC-GHG for CO₂, CH₄, and N₂O. For the calculation, staff assumed discount rates of 5 percent, 3 percent, and 2.5 percent.⁴⁰ Commission staff assumed the Project would begin service in 2025 and that the emissions would

³⁶ We reviewed the U.S. State Greenhouse Emission Targets site for individual state requirements at: <https://www.c2es.org/document/greenhouse-gas-emissions-targets/>.

³⁷ See *Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043 at P296, (2017), *aff'd sub nom.*, *Appalachian Voices v. FERC*, 2019 WL 847199 (D.C. Cir. 2019); *Del. Riverkeeper v. FERC*, 45 F.3d 104, 111 (D.C. Cir. 2022); and *Driftwood Pipeline LLC*, 183 FERC ¶ 61,049, at P 61 (2023). The Social Cost of GHGs tool merely converts GHG emissions estimates into a range of dollar-denominated figures; it does not, in itself, provide a mechanism or standard for judging "significance."

³⁸ *Tenn. Gas Pipeline Co., L.L.C.*, 181 FERC ¶ 61,051 at P 37; see also *Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043 at P 296, *order on reh'g*, 163 FERC ¶ 61,197, at PP 275-297 (2018), *aff'd*, *Appalachian Voices v. FERC*, No. 17-1271, 2019 WL 847199, at 2 (D.C. Cir. Feb. 19, 2019) (unpublished) ("[The Commission] gave several reasons why it believed petitioners' preferred metric, the Social Cost of Carbon tool, is not an appropriate measure of project-level climate change impacts and their significance under NEPA or the Natural Gas Act. That is all that is required for NEPA purposes."); *EarthReports*, 828 F.3d 949, 956 (D.C. Cir. 2016) (accepting the Commission's explanation why the social cost of carbon tool would not be appropriate or informative for project-specific review, including because "there are no established criteria identifying the monetized values that are to be considered significant for NEPA purposes"); *Tenn. Gas Pipeline Co., L.L.C.*, 180 FERC ¶ 61,205, at P 75 (2022); See, e.g., *LA Storage, LLC*, 182 FERC ¶ 61,026, at P 14 (2023); *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206, at P 91 (2022); and *Driftwood Pipeline LLC*, 183 FERC ¶ 61,049, at P 61 (2023).

³⁹ *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990*, Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, February 2021 (IWG Interim Estimates Technical Support Document).

⁴⁰ IWG Interim Estimates Technical Support Document at 24. To quantify the potential damages associated with estimated emissions, the IWG methodology applies consumption discount rates to estimated emissions costs. The IWG's discount rates are a function of the rate of economic growth where higher growth scenarios lead to higher discount rates. For example, IWG's method includes the 2.5 percent discount rate to address the concern that interest rates are highly uncertain over time; the 3 percent value to be consistent with the U.S. Office of

be at a constant rate throughout a 10-year period, based on the term of the precedent agreements for the Project. Noting these assumptions, the emissions from increased GHGs disclosed are calculated to result in a total SC-GHG equal to \$22,034,145, \$78,861,836, and \$117,664,952, respectively (all in 2020 dollars).⁴¹ Using the 95th percentile of the SCC using the 3 percent discount rate,⁴² the total SCC from the Project is calculated to be \$238,563,624 (in 2020 dollars).

C ALTERNATIVES

In accordance with NEPA and Commission policy, we identified and evaluated alternatives to the specific natural gas transmission facilities proposed by Northern Border. Alternatives were evaluated using a specific set of criteria. The evaluation criteria applied to each alternative include a determination whether the alternative:

- meets the objectives of the proposed Project;
- has technical and economic feasibility and practicality; and
- offers a significant environmental advantage over the proposed Project.

1. NO ACTION ALTERNATIVE

Under the No-Action Alternative, the environmental impacts associated with the Project and analyzed in this EA would not occur. Northern Border would not be able to provide 300,000 Dth/d of incremental capacity and would not be able to provide a transportation path for natural gas production in the Bakken region. Northern Border's existing system does not have adequate infrastructure to transport natural gas from Northern Borders Bakken receipts at the requested capacity. We have prepared this EA to inform the Commission and stakeholders about the expected impacts that would occur if the Project facilities were constructed. The Commission will ultimately determine the Project need and could choose the No-Action Alternative. Because the Commission will ultimately determine Project need, and because staff has not identified a significant impact associated with the proposed action, we do not recommend the No-Action Alternative.

2. SYSTEM ALTERNATIVES

System alternatives would use existing, modified, or proposed pipeline systems to meet the purpose and need of the Project. Although modifications or additions to existing or proposed pipeline systems may be required, implementation of a system alternative would deem it unnecessary

Management and Budget circular A-4 (2003) and the real rate of return on 10-year Treasury Securities from the prior 30 years (1973 through 2002); and the 5 percent discount rate to represent the possibility that climate related damages may be positively correlated with market returns. Thus, higher discount rates further discount future impacts based on estimated economic growth. Values based on lower discount rates are consistent with studies of discounting approaches relevant for intergenerational analysis. *Id.* at 18-19, 23-24.

⁴¹ The IWG draft guidance identifies costs in 2020 dollars. *Id.* at 5 (Table ES-1).

⁴² This value represents "higher-than-expected economic impacts from climate change further out in the tails of the [social cost of CO₂] distribution." *Id.* at 11. In other words, it represents a higher impact scenario with a lower probability of occurring.

to modify all or part of the Project (e.g., if adding pipeline on one part of the system could negate the need for new compression). Such modifications or additions could result in environmental impacts that are less than, similar to, or greater than those associated with construction and operation of the Project.

Based on our research, we did not identify any system alternatives that could accomplish the Project purpose without expansion of facilities, which would likely impose environmental impacts similar to or greater than those discussed in this EA. Therefore, system alternatives are not considered further.

3. SITE ALTERNATIVES

Northern Border is proposing modifications and increased compression to three existing compressor station sites. Construction of one or more new compressor station(s) and any related new pipeline to provide the additional compression and meet the demand for additional certificated transportation capacity needed to meet the Project's purpose and need would result in additional construction impacts (i.e., land use, construction emissions, construction noise, etc.), which would not provide a significant environmental advantage over the Project proposed. Further, no aboveground facility alternatives were reviewed because all Project facilities would be constructed within or adjacent to Northern Border's existing facilities. Therefore, we removed site alternatives from consideration and do not analyze them further.

For the reasons stated above, we conclude that the proposed Project is the preferred alternative to meet the Project's objectives.

D CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if Northern Border constructs and operates the Project in accordance with its application and supplements, approval would not constitute a major federal action significantly affecting the quality of the human environment. We recommend that the Order contain a finding of no significant impact and include the following mitigation measures listed below as conditions to any authorization the Commission may issue.

1. Northern Border shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Northern Border must:
 - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of the Office of Energy Projects (OEP), or the Director's designee, **before using that modification.**

2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the project. This authority shall allow:
 - a. the modification of conditions of the Order;
 - b. stop-work authority; and
 - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from project construction and operation.
3. **Prior to any construction**, Northern Border shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EIs), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.
4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, Northern Border shall file with the Secretary any revised detailed survey maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the order or site-specific clearances must be written and must specify locations designated on these alignment maps/sheets.

Northern Border's exercise of eminent domain authority granted under NGA section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Northern Border's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Northern Border shall file with the Secretary detailed maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all facility relocations, staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed that have not been previously identified in filings with the Secretary. Approval for use of each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps, or aerial photographs. Each area must be approved in writing by the Director of OEP, or the Director's designee, **before construction in or near that area**.

This requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan*. Examples of alterations requiring approval include all facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
- b. implementation of endangered, threatened, or special concern mitigation measures;
- c. recommendations by state regulatory authorities; and
- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **Within 60 days of the acceptance of the authorization and before construction begins**, Northern Border shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP, or the Director's designee. Northern Border must file revisions to the plan as schedules change. The plan shall identify:

- a. how Northern Border will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the order;
- b. how Northern Border will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
- c. the number of EIs assigned, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
- d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
- e. the location and dates of the environmental compliance training and instructions Northern Border will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change);
- f. the company personnel (if known) and specific portion of Northern Border's organization having responsibility for compliance;
- g. the procedures (including use of contract penalties) Northern Border will follow if noncompliance occurs; and
- h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
 - i. the completion of all required surveys and reports;
 - ii. the environmental compliance training of onsite personnel;
 - iii. the start of construction; and
 - iv. the start and completion of restoration.

7. Northern Border shall employ at least one EI during construction of the Project. The EI shall be:
 - a. responsible for monitoring and ensuring compliance with all mitigation measures required by the order and other grants, permits, certificates, or other authorizing documents;
 - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
 - c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
 - d. responsible for documenting compliance with the environmental conditions of the order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
 - e. responsible for maintaining status reports.

8. Beginning with the filing of its Implementation Plan, Northern Border shall file updated status reports with the Secretary on a **monthly** basis until all construction and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
 - a. an update on Northern Border's efforts to obtain the necessary federal authorizations;
 - b. the construction status of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;
 - c. a listing of all problems encountered and each instance of noncompliance observed by the EI during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
 - d. a description of the corrective actions implemented in response to all instances of noncompliance;
 - e. the effectiveness of all corrective actions implemented;
 - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
 - g. copies of any correspondence received by Northern Border from other federal, state, or local permitting agencies concerning instances of noncompliance, and Northern Border's response.

9. Northern Border must receive written authorization from the Director of OEP, or the Director's designee, **before commencing construction of any Project facilities**. To obtain such authorization, Northern Border must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
10. Northern Border must receive written authorization from the Director of OEP, or the Director's designee, **before placing the Project facilities into service**. Such authorization will only be granted following a determination that rehabilitation and restoration of areas affected by the Project are proceeding satisfactorily.
11. **Within 30 days of placing the authorized facilities in service**, Northern Border shall file an affirmative statement with the Secretary, certified by a senior company official:
 - a. that the facilities have been installed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
 - b. identifying which of the conditions in the Order Northern Border has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
12. **During nighttime (7:00 PM to 7:00 AM) construction activities** at the Arnegard and Glen Ullin Compressor Stations, Northern Border shall monitor noise levels, document the noise levels in the construction status reports, and restrict the noise attributable to nighttime construction activities to no more than 48.6 dBA Leq (1-hour) at nearby NSAs. If noise exceeds 48.6 dBA Leq, Northern Border shall immediately reduce construction activities and/or install and implement mitigation measures to reduce noise attributable to nighttime activities to 48.6 dBA Leq or less.
13. Northern Border shall file noise surveys with the Secretary **no later than 60 days** after placing the modified Arnegard, Manning, and Glen Ullin Compressor Stations in service. If a full load condition noise survey for any one of the stations is not possible, Northern Border shall provide an interim survey for that station at the maximum possible horsepower load and provide the full load survey **within 6 months**. If the noise attributable to the operation of the modified stations under interim or full horsepower load conditions exceeds an Ldn of 55 dBA at any nearby NSAs, Northern Border shall file a report on what changes are needed and install additional noise controls to meet that level **within 1 year** of the in-service date. Northern Border shall confirm compliance with this requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

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