WBI ENERGY TRANSMISSION, INC.

Line Section 7 Expansion Project

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RESOURCE REPORT 1

1.0 GENERAL PROJECT DESCRIPTION

WBI Energy Transmission, Inc. (WBI Energy) owns and operates a natural gas transmission pipeline system and associated aboveground facilities throughout the states of North Dakota, South Dakota, Montana, Wyoming, and Minnesota. WBI Energy is filing an application with the Federal Energy Regulatory Commission (FERC or Commission) pursuant to Title 18 Code of Federal Regulations (CFR) Sections 157.205, 157.208(b), and 157.211(a)(1) of the Commission's regulations, requesting approval for the construction and operation of natural gas transportation facilities and delivery points described below for the Line Section 7 Expansion Project (Project). This Environmental Report (ER) provides general information regarding the Project, including a complete description of Project activities, Project mapping, and permitting requirements.

1.1 PROPOSED FACILITIES

1.1.1 Purpose

WBI Energy is proposing to install approximately 9.6 miles of 8-inch lateral natural gas pipeline from its existing Line Section 7 main line to a new delivery station at Blue Flint Ethanol LLC's (Blue Flint) ethanol plant in McLean County, North Dakota. In addition to installation of the lateral and new delivery station, a new take off valve setting, and three farm taps are proposed to be installed along the proposed route, along with upgrades to WBI Energy's existing receipt facilities within the Glen Ullin Compressor Station to accommodate the increased natural gas capacity resulting from the Project.

The purpose of the Project is to provide incremental firm transportation service to Blue Flint so that it can ensure a long-term reliable source of energy for its ethanol manufacturing needs. WBI Energy has contracted for a maximum daily delivery quantity of 6,700 equivalent dekatherms (dkt) per day with Blue Flint. WBI Energy is also proposing to construct and operate three farm taps along the new 9.6-mile lateral pipeline for a local distribution company, Montana-Dakota Utilities Co. (MDU), to provide interruptible service along the proposed route.

1.1.2 Pipeline Facilities

In order to facilitate natural gas delivery from WBI Energy's existing system to the ethanol plant, WBI Energy is proposing to install approximately 9.6 miles of 8-inch diameter steel natural gas lateral pipeline from its existing Line Section 7 main line to Blue Flint's Ethanol Plant in McLean County, North Dakota. Pig launchers/receivers will be installed at either end of the proposed lateral. Following successful installation of the proposed pipeline, hydrostatic testing

will be completed to confirm the integrity of the pipeline. Aerial and topographic location exhibits depicting the proposed pipeline route are included in Appendices II-B and II-C. Aerial construction alignment sheets are included in Appendix II-D.

1.1.3 Aboveground Facilities

Proposed aboveground facilities will include a new take off valve setting, a new delivery station, and three farm taps. WBI Energy will also need to upgrade existing receipt facilities at the Glen Ullin Compressor Station to accommodate the increased natural gas capacity resulting from the Project. Table 1.1.3-1 provides the locations of the aboveground facilities to be installed or modified for the Project.

TABLE 1.1.3-1
Aboveground Facilities

Facility	Approximate Location	County, State
Blue Flint Delivery Station	Section 17, T145N, R082W	McLean County, ND
Blue Flint Take Off Valve Setting	Section 23, T145N, R081W	McLean County, ND
Farm Taps	Section 22, T145N, R081W Section 19, T145N, R081W Section 23, T145N, R082W	McLean County, ND
Glen Ullin Receipt Facilities	Section 21, T139N, R088W	Morton County, ND

Blue Flint Delivery Station

WBI Energy will construct a new delivery station within the boundaries of Blue Flint's Ethanol Plant to provide natural gas supply to the facility. The Blue Flint Delivery Station will measure approximately 200' x 200' and will consist of one Remote Terminal Unit (RTU) and communications building, a meter building that will house a 6-inch meter skid with a 3-inch Coriolis meter, a pig launcher/receiver, aboveground piping and valves, and a dry gas filter. Gravel will be placed around the facility following construction. A plot plan depicting the Blue Flint Delivery Station is included in Appendix II-E.

Blue Flint Take Off Valve Setting

A new take off valve setting will be installed on the existing Line Section 7 mainline at the east end of the proposed lateral. The take off valve setting will consist of a 12-inch block valve with 8-inch Siamese valves and a 4-inch bypass/blowdown loop. In addition, a pig launcher/receiver will be installed and maintained as part of the permanent facility. Approximately 25 feet of WBI Energy's existing Line Section 7 12-inch natural gas pipeline will be removed to install the new take off valve setting. Gravel will be placed around the new facility, a fence will be installed around the perimeter, and a new all-weather access road will be constructed for access to the facility. Permanent facility boundaries will measure approximately 75' x 75'. A plot plan depicting the take off valve setting is included in Appendix II-E.

Receipt Facility Upgrades within the Glen Ullin Compressor Station

Minor upgrades of WBI Energy's existing receipt facilities at the Glen Ullin Compressor Station will consist of the installation of an additional regulator to meet the required flow, relief valves for overpressure protection, a larger odorization tank and pump, associated aboveground and belowground piping, along with new tubing and fittings. Modifications or additions to existing concrete pads may be needed to accommodate new equipment. All upgrades will take place within the existing compressor station fenced boundaries. A plot plan depicting the upgrades to the receipt facilities at the Glen Ullin Compressor Station is included in Appendix II-E.

Farm Taps

WBI Energy is proposing to install three two-inch farm taps along the proposed lateral for MDU to serve adjacent landowners. The farm taps will consist of the tap, riser, valve, and a telemetry device that will be tied into a non-jurisdictional meter. Landowners along the lateral plan to use the supplied gas for grain drying, and home and shop heating applications. An exhibit depicting a typical farm tap configuration is included in Appendix II-F.

1.2 MAPPING AND AERIAL PHOTOGRAPHY

The proposed pipeline and aboveground facilities will be located in McLean County, North Dakota. The Glen Ullin Compressor Station is located in Morton County, North Dakota. Table 1.2-1 below lists exhibits referenced within this resource report and identifies the associated Appendix.

Table 1.2-1

Resource Report 1 Associated Exhibits

Exhibit Description	Appendix
System map showing location of pipeline and aboveground facilities in relation to WBI Energy's existing system	Appendix II-A
General aerial location exhibit of the proposed pipeline and aboveground facilities	Appendix II-B
General topographic location exhibit of the proposed pipeline and aboveground facilities	Appendix II-C
Aerial construction alignment sheets	Appendix II-D
Plot plans for the Blue Flint Delivery Station, Blue Flint Take Off Valve Setting, and Glen Ullin Receipt Facilities	Appendix II-E

Construction typical drawings	Appendix II-F

1.3 LAND REQUIREMENTS

Construction of the Project will affect approximately 158.57 acres of land. Following construction, approximately 99.02 acres will revert to pre-construction conditions and uses. The remaining approximately 59.55 acres, including the permanent pipeline easement and aboveground facility sites, will be retained for permanent operation of the Project.

Table 1.3-1

Summary of Land Requirements

Facility	County, State	Land Affected During Construction (acres)	Land Affected During Operation (acres)
Pipeline Facilities			
Pipeline[1]	McLean Co., ND	113.49	58.35
Subtotal		**113.49**	**58.35**
Aboveground Facilities			
Blue Flint Delivery Station	McLean Co., ND	1.35	0.92
Blue Flint Take Off Valve Setting	McLean Co., ND	3.54	0.13
Glen Ullin Receipt Facilities	Morton Co., ND	0.1	0
Subtotal		**4.99**	**1.05**
Staging Areas			
Storage Yards	McLean Co., ND	20.96	0
Subtotal		**20.96**	**0**
Access Roads			
Existing Access Roads[2]	McLean Co. & Morton Co., ND	18.22 acres (McLean Co.) 0.68 acres (Morton Co.)	0
New Access Roads[3]	McLean Co., ND	0.23	0.15
Subtotal		**19.13**	**0.15**
Project Total		**158.57**	**59.55**

[1]Pipeline land affected during construction includes all extra workspace areas.
[2]Existing access roads include both pipeline and aboveground facility locations and have a width of 20 feet.
[3]New access roads include the proposed Blue Flint Delivery Station access road and the proposed Blue Flint Take Off Valve Setting access road.

1.1.3 Pipeline Facilities

Construction of the pipeline will require land for construction and operation and will include the permanent right-of-way (R/W), temporary workspace (TWS) for pipeline construction activities,

and additional temporary workspace (ATWS) for specialized construction procedures. The permanent R/W width will be 50 feet centered on the constructed pipeline section. A 75-foot temporary construction R/W width will be used for the Project. A typical 75-foot construction R/W configuration and other typical drawings that will be implemented for the proposed Project are included in Appendix II-F.

Specialized construction procedures such as guided bore activities will require ATWS at each bore crossing to facilitate boring equipment, materials, temporary drilling mud reserve pits, and to provide adequate space for pipe stringing, welding, and pullback operations. Typical guided bore entry and exit site plans are included in Appendix II-F. ATWS areas will also be needed to allow for adequate space to bend and position the 8-inch pipe at point of intersect (P.I.) locations, where the direction of the pipeline changes.

Two storage yards will be temporarily utilized to store pipe, materials, and equipment. Portions of the storage yards may be cleared and graded to provide a level surface to store equipment and materials. All disturbed areas will be restored to original condition and function following construction.

Access to the pipeline construction right-of-way and storage yards will be provided by existing public and private roads. No road modifications are anticipated for the Project; however, improvements may be needed to facilitate equipment and vehicular traffic during construction. If existing roads are damaged, WBI Energy will restore roads to pre-existing conditions or better.

1.1.4 Aboveground Facilities

Aboveground facility construction activities will require land for modification of existing facilities and installation of new facilities. Modifications to the existing receipt facilities within the Glen Ullin Compressor Station will take place within existing fenced facility boundary. The proposed Blue Flint Delivery Station will be located within the existing Blue Flint's boundary. Proposed farm taps will be located along the proposed permanent pipeline R/W. The proposed Blue Flint Take Off Valve Setting will be located at the east end of the proposed lateral, and a new approximate 75' x 75' graveled/fenced tract will be obtained for operation of the facility. Approximately 4.99 acres of land will be affected to complete aboveground facility construction, with 1.05 acres maintained for operation of the aboveground facilities.

Access to aboveground facilities will generally be provided by existing public and private roads. Modifications to existing roads are not anticipated for the Project; however, improvements may be needed to facilitate equipment and vehicular traffic during construction activities. If existing roads are damaged, WBI Energy will restore roads to pre-existing conditions or better. Two new access roads are proposed to be constructed for access to the Blue Flint Delivery Station and Blue Flint Take Off Valve Setting. New access road construction will impact approximately 0.23 acres, with 0.15 acres maintained as permanent access roads to these facilities.

1.4 CONSTRUCTION PROCEDURES

WBI Energy will adopt and implement the FERC's May 2013 versions of the *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures). Relevant portions of the Plan and Procedures will be included in any agreements executed with independent contractors, if applicable. Additionally, WBI Energy will implement supplemental construction, restoration, and mitigation plans it has prepared for the Project. These include the following plans:

- *Spill Prevention Control and Countermeasure Plan* (Appendix II-G)
- *Guided Bore Fluid Monitoring and Operations Plan* (Appendix II-H)
- *Plan for Unanticipated Discovery of Historic Properties or Human Remains* (Appendix II-I)
- *Plan for Unanticipated Discovery of Paleontological Resources During Construction* (Appendix II-J)
- *Plan for Unanticipated Discovery of Contaminated Environmental Media* (Appendix II-K)
- *Fugitive Dust Control Plan* (Appendix II-L)

WBI Energy will contract a third-party Environmental Inspector (EI) for the Project. In this capacity, the EI will have the authority to start and stop any work activity, oversee proper installation of erosion control and pollution prevention measures, evaluate their effectiveness, and ensure all applicable environmental conditions are satisfied. The EI will be present onsite throughout all phases of construction. WBI Energy will submit weekly progress reports to the FERC detailing task completion status, current and upcoming Project activities, and associated photographs. Construction activities will comply with applicable Occupational Safety and Health Administration standards.

1.4.1 Construction Schedule and Workforce

Construction activities are planned to commence in early April of 2022, with completion anticipated in mid-July of 2022. In general, all construction activities will occur between the hours of 7 A.M. and 7 P.M. However, guided bore and hydrostatic test operations may extend outside this specific timeframe. WBI Energy estimates the duration of construction for the proposed pipeline and aboveground facilities will be approximately 90 days. The pipeline construction will occur as a single spread, with one contractor crew completing installation of the proposed pipeline. Separate workgroups will conduct aboveground facility work at the Glen Ullin Compressor Station, Blue Flint Delivery Station, Blue Flint Take Off Valve Setting, and farm tap locations. Restoration activities will begin as soon as possible following the completion

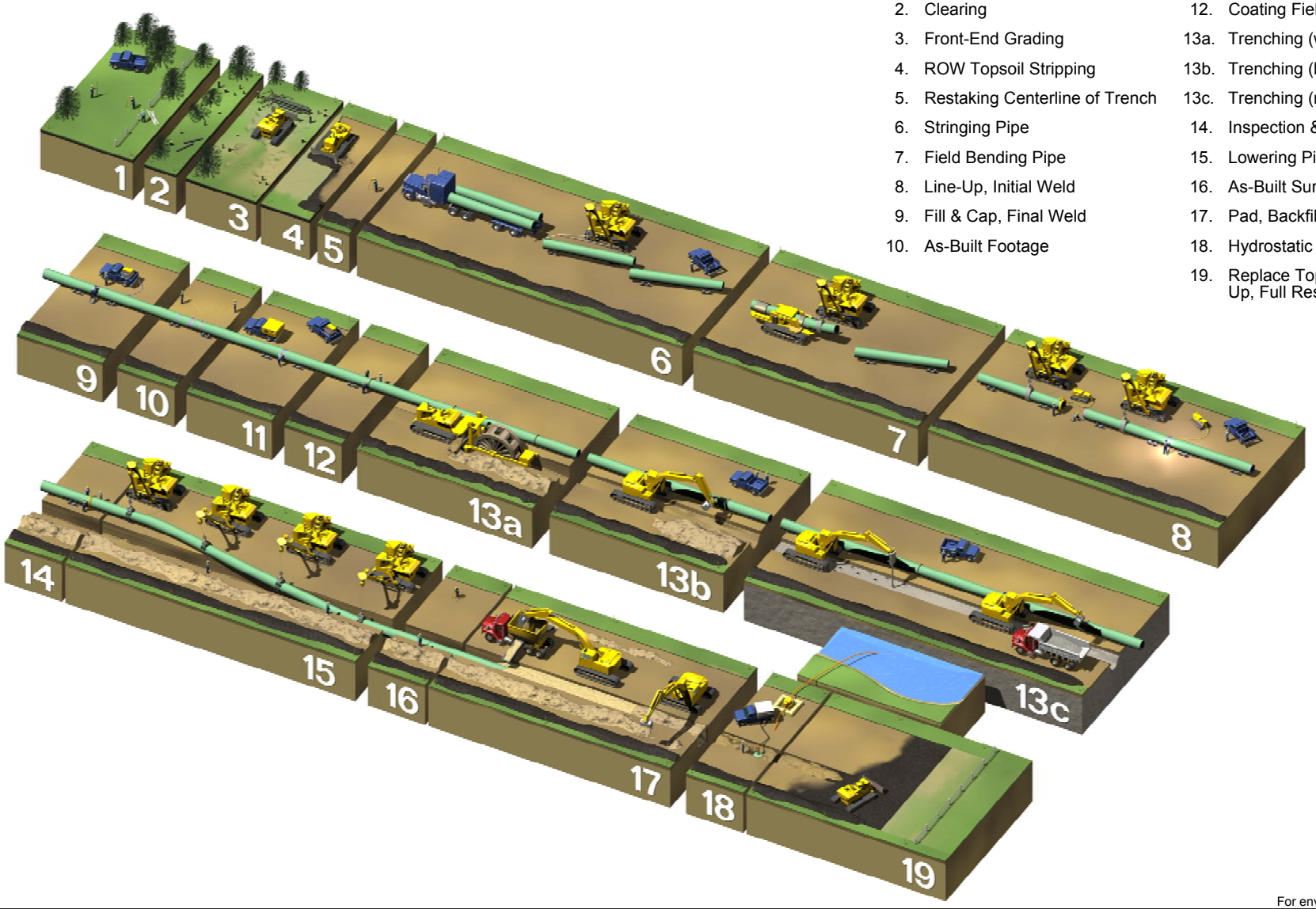
of construction. If construction activities are completed outside the recommended fall seeding window, the Project area will be stabilized and monitored until seeding can occur within recommended timeframes. Temporary erosion control measures will remain in place until final stabilization has been achieved.

1.4.2 Training, Inspection, and Environmental Compliance

WBI Energy is committed to constructing and operating the Project in a manner that will minimize environmental impacts and comply with applicable permits and approvals. Crews working onsite will be trained in relevant portions of the FERC Plan and Procedures, permit conditions, as well as WBI Energy's Project specific construction, restoration, and mitigation plans that are applicable to the Project. An EI will be present throughout all phases of construction and will serve as the onsite lead on environmental compliance.

1.4.3 General Pipeline Construction Procedures

Conventional open-ditch construction methods will be used to install most of the proposed pipeline. Construction will occur in linear fashion and include the activities described in the following sections and in Figure 1.4.3-1.



1. Survey and Staking
2. Clearing
3. Front-End Grading
4. ROW Topsoil Stripping
5. Restaking Centerline of Trench
6. Stringing Pipe
7. Field Bending Pipe
8. Line-Up, Initial Weld
9. Fill & Cap, Final Weld
10. As-Built Footage
11. X-Ray Inspection, Weld Repair
12. Coating Field Welds

13a. Trenching (wheel ditcher)
13b. Trenching (backhoe)
13c. Trenching (rock)

14. Inspection & Repair of Coating
15. Lowering Pipe into Trench
16. As-Built Survey
17. Pad, Backfill, Rough Grade
18. Hydrostatic Testing, Final Tie-in
19. Replace Topsoil, Final Clean-Up, Full Restoration

For environmental review purposes only.

WBI ENERGY TRANSMISSION
An MDU Resources Group company

Line Section 7 Expansion Project

Figure 1.4.3-1: Typical Pipeline Construction Sequence

1.4.3.1 Surveying and Staking

Following landowner notification and prior to construction, WBI Energy's contractor will survey the pipeline corridor and place stakes along the centerline and outer limits of the TWS and ATWS areas. Signs or markers will be placed at wetland, waterbody, and road crossings, sensitive environmental areas, and access roads. Roads that are travel-prohibited will also be clearly marked with no-access signs. WBI Energy's contractor will have existing utility lines (e.g., cables, conduits, and pipelines) located and marked with flags or stakes to prevent accidental damage during construction.

1.4.3.2 Clearing and Grading

After surveying and staking activities have been completed, the proposed pipeline R/W, TWS, and ATWS will be cleared and graded to remove vegetation cover and provide a level, safe construction workspace. Topsoil will be clearly segregated and stored in accordance with the FERC Plan. In areas disturbed by grading, and as required by the FERC Plan and Procedures, temporary erosion and sediment controls will be installed within the R/W to minimize erosion. The erosion and sediment controls will be inspected and maintained throughout the construction and restoration phases of the Project, as appropriate, and as required by the Plan and Procedures. During this phase of construction, fences will be altered, and temporary gates installed as necessary.

1.4.3.3 Stringing/Bending/Welding of Pipe

Steel pipe joints will be placed end-to-end along the working side of the R/W. Bending will be performed with hydraulic bending machines as necessary to allow for uniform fit with the contours at the bottom of the trench and horizontal points of inflection. Pipe joints will then be placed on temporary supports, aligned, and welded together. Welding will be conducted in compliance with 49 CFR 192 and American Petroleum Institute Standard 1104 *Welding of Pipelines and Related Facilities*. Completed welds will be visually and non-destructively inspected and coated in accordance with required specifications. The coating will be inspected for defects, and repaired, if necessary, prior to lowering the pipe into the trench.

1.4.3.4 Trenching

A track-mounted excavator or similar equipment will be utilized to excavate the pipeline trench. Trench dimensions will measure approximately 6 feet deep and 3 feet wide to accommodate the 8-inch pipe and allow for a minimum cover depth of 48 inches. Excavated subsoil will be stockpiled on the spoil storage side of the R/W. Segregation of topsoil and subsoil stockpiles will be maintained throughout all phases of construction.

1.4.3.5 Lowering-in and Backfilling

Side-boom tractors or similar equipment will lift and lower welded and coated sections of pipe into the trench, and trench breakers will be installed around the pipe as necessary. Crossing locations may require pipe to be lowered into the trench in segments. In these cases, pipe joints will be welded together as part of the pipe string after they are placed into the trench. In high groundwater areas, trench dewatering may be required prior to lowering activities. In these circumstances, erosion control devices such as filter bags will be utilized to minimize erosion or other impacts to the surrounding area. All discharges will take place in accordance with the Plan and Procedures, and applicable permit requirements. After the pipe string has been successfully lowered-in, excavators or similar equipment will backfill the trench with subsoil materials. Special care will be taken to avoid mixing of topsoil and subsoil.

1.4.3.6 Hydrostatic Testing

Hydrostatic testing activities will occur after the pipeline is constructed and prior to final tie-ins. Water for hydrostatic testing will be obtained from a nearby surface water or a municipal source and transported by truck to the site. The total volume of water required for final hydrostatic testing activities is anticipated to be approximately 142,214 gallons. After the test is complete, the water will be discharged into an approved upland area or returned to the designated surface water in accordance with applicable National Pollutant Discharge Elimination System permit requirements.

1.4.3.7 Final Tie-In and Commissioning

After hydrostatic testing, the final pipeline tie-in will be completed, and commissioning of the pipeline and aboveground facilities will commence. The pipeline will be cleaned, dried, and inspected. Further commissioning activities will include purging the line of air and loading the pipeline with natural gas.

1.4.3.8 Cleanup and Restoration

After the pipeline has been successfully tied-in, clean-up and restoration activities will be completed. Trash and debris remaining onsite will be removed and appropriately disposed. Final grading activities will restore surface contours to original conditions. Permanent erosion controls will be installed as necessary, in accordance with the Project Storm Water Pollution Prevention Plan (SWPPP) and the FERC Plan and Procedures. Rangeland areas will be seeded with a native seed mix approved by the local soil conservation service and landowners, and completed using recommended methods and rates, within appropriate time frames. Agricultural land (cropland) will be revegetated per landowner request. WBI Energy will monitor reclamation success in disturbed areas until successful final stabilization has been achieved.

1.4.4 Specialized Pipeline Construction Procedures

WBI Energy will implement specialized pipeline construction techniques when warranted by site-specific conditions. Specialized pipeline construction procedures are described in the following subsections.

1.4.4.1 Wetland Crossings

Thirteen wetlands will be impacted as a result of proposed Project activities. Where wetlands are crossed, WBI Energy will complete crossings in accordance with the Plan, Procedures, and applicable permit conditions. The TWS width will be limited to 75 feet or less through wetlands. The Procedures require extra workspaces to be set back a minimum of 50 feet from wetland boundaries, except where the adjacent uplands consist of cultivated or rotated cropland or other disturbed land. Several extra workspace areas within 50 feet of wetland and waterbody boundaries are proposed for the Project. These areas are listed and further described in Table 2.3.3-1 of Resource Report 2. WBI Energy is requesting a variance from the FERC Procedures for these areas.

Refueling of equipment and storage of hazardous materials will occur at least 100 feet from all wetlands unless approved by the Environmental Inspector. Erosion and sediment control devices will be installed in accordance with the Project SWPPP to minimize runoff or other impacts into wetland and waterbody areas. Equipment bridges and equipment mats may be installed to facilitate travel lanes for equipment and materials across wetland areas.

Conventional open-ditch or guided bore construction methods will be implemented for wetland crossings, depending on conditions at the time of crossing. Guided bore methods may be implemented as an alternative to open-ditch methods if higher water levels exist at the time of crossing. Open-ditch methods may be implemented as an alternative to guided bore methods if water levels are low at the time of crossing. For open-ditch crossings, pipeline installation will be completed as described above for general pipeline construction. The guided bore method is further described in Section 1.4.4.2 below. All wetland crossings will be restored to original condition and function following construction. Wetland crossing locations are detailed in Table 1.4.4.1-1 below:

Table 1.4.4.1-1

Wetland Crossing Locations

Wetland Name	Approximate Stationing Location	Crossing Method	Alternative Crossing Method
Wetland 2	432+00 – 434+00	Open-Ditch	Guided Bore

Table 1.4.4.1-1

Wetland Crossing Locations

Wetland Name	Approximate Stationing Location	Crossing Method	Alternative Crossing Method
Wetland 4	380+00 – 386+00	Open-Ditch	Guided Bore
Wetland 6	264+00 – 266+00	Open-Ditch	Guided Bore
Wetland 7	256+00 – 258+00	Open-Ditch	Guided Bore
Wetland 8	233+00 – 237+00	Open-Ditch	Guided Bore
Wetland 9	176+00 – 178+00	Open-Ditch	Guided Bore
Wetland 10	148+00 – 150+00	Guided Bore	Open-Ditch
Wetland 11C	140+00 – 141+00	Guided Bore	Open-Ditch
Wetland 11D	138+00 – 140+00	Guided Bore	Open-Ditch
Wetland 13A	123+00 – 128+00	Guided Bore	Open-Ditch
Wetland 13B	109+00 – 121+00	Open Ditch	Guided Bore
Wetland 13C	97+00 – 105+00	Guided Bore	Open-Ditch
Wetland 14	59+00 - 61+00	Open-Ditch	Guided Bore

1.4.4.2 Guided Bore Crossing Method

To minimize disturbance to sensitive areas and disruption of traffic flow within the Project area, the guided bore method will be implemented at road, railroad, and wetland crossings to install the pipeline. Site conditions at the time of crossing may justify an alternative crossing method at wetland crossings, as shown in Table 1.4.4.1. The guided bore method will allow for trenchless construction by drilling a hole beneath the crossing and pulling a prefabricated section of pipe through the bore hole. The prefabricated bore string will then be tied into the pipeline at either end of the bore. A boring contractor will be hired to complete seven guided bore crossings, listed in Table 1.4.4.2-1 below. Water for mixing drilling mud will be obtained from nearby surface waters or hauled in from a municipal source. Drilling mud will be contained in a pit at either end of the bore crossing. The used drilling mud will either be integrated with the subsoil and returned to the trench during backfilling operations and/or disposed of at an approved disposal facility by the contractor.

Table 1.4.4.2-1

Guided Bore Crossing Locations

Road/Waterbody Crossing Name	Approximate Stationing Location	Approximate Bore Length (feet)
3rd Street SW	5+00 – 10+00	537

Table 1.4.4.2-1

Guided Bore Crossing Locations

Road/Waterbody Crossing Name	Approximate Stationing Location	Approximate Bore Length (feet)
Wetland 13C/Eagle Nest	85+00 – 105+00	1,993
Wetland 13A	122+00 – 127+00	514
26th Ave. SW/Wetland 11C/Wetland 11D	138+00 – 142+00	341
Highway 83/Dakota Missouri Valley Western Railroad/Wetland 10	147+00 – 158+00	969
Highway 200	299+00 – 303+00	364
21st Ave. SW	405+00 – 409+00	317

After the pipe is welded and prior to pull back, a pre-installation hydrostatic test will be conducted. Water for this test will be obtained from the same sources outlined in Section 1.4.3.6 of this report. All necessary permits for water uptake and discharge will be acquired for Project activities.

1.4.4.3 Agricultural Areas

Construction through agricultural areas will be conducted in accordance with the Plan. To preserve soil productivity in these areas, WBI Energy will ensure that the entire topsoil layer (up to 12 inches) is stripped during clearing activities and take extra care to maintain separation of topsoil and subsoil stockpiles throughout construction. No known drain tiles are present within the Project area. However, if drain tiles are encountered, WBI Energy will take precautions to maintain flow during construction and avoid ponding in nearby areas. If any drain tiles are disturbed during construction, WBI Energy will restore them to pre-construction conditions. All disturbed areas outside permanent facilities will be restored to pre-disturbance conditions and use following construction.

1.4.5 General Aboveground Facility Construction Procedures

Project activities will involve upgrades to receipt facilities at the existing WBI Energy Glen Ullin Compressor Station, and installation of a new delivery station, take off valve setting, and farm taps along the proposed route. Upgrades to receipt facilities within the Glen Ullin Compressor Station and construction of the proposed Blue Flint Delivery Station will occur within existing facility boundaries on land that has previously been disturbed; Project activities at these locations are expected to require minimal disturbance and take place within the current facility footprints. Construction of the proposed take off valve and farm taps will require the conversion of undisturbed land to land required for permanent operation of these facilities. Initial site

preparation work may involve clearing and leveling the ground surface, with subsequent construction activities consisting of preparing foundations, installing belowground and aboveground piping, installing equipment, testing the piping/control equipment, graveling, and fencing aboveground facilities.

1.4.6 Other Considerations

Reclamation activities will proceed in accordance with the FERC's Plan and in accordance with applicable permit conditions. Any surplus material, equipment, trash, litter and miscellaneous debris resulting from construction activities will be removed and properly disposed.

1.5 OPERATION AND MAINTENANCE

The proposed pipeline and aboveground facilities will be designed, constructed, tested, operated and maintained in accordance with the requirements of 49 CFR Part 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*, and with all other applicable local, state, and federal regulations and codes. The pipeline will be inspected periodically on foot as required by applicable regulatory requirements to identify potential concerns that may affect the safety and operation of the pipeline. Pipeline markers and signs will be installed, inspected, and maintained or replaced as necessary to ensure that pipeline locations are clearly identified. Field personnel will advise the appropriate operations personnel of new construction along or near the pipeline system. If pipeline patrols or vegetation maintenance identify areas on the R/W where erosion is occurring, WBI Energy will repair existing erosion control devices or install additional devices as necessary to stabilize the area and prevent future erosion.

Inspections of Project construction workspaces will be conducted in accordance with the Project SWPPP and the FERC Plan until successful reclamation of disturbed areas has been completed. The 50-foot permanent R/W will be maintained in a herbaceous state, and revegetation success will be monitored during onsite visits. Weed control herbicide treatments will be implemented as necessary.

In addition to the pipeline, WBI Energy personnel will also perform regular operation and maintenance activities on equipment at the Glen Ullin Compressor Station, Blue Flint Delivery Station, Blue Flint Take Off Valve Setting, and farm tap locations. These activities may include calibration, inspection, or scheduled and routine maintenance. Operational testing will be performed on safety equipment to ensure proper functioning condition, and any problems will be corrected.

1.6 FUTURE PLANS AND ABANDONMENT

WBI Energy has no future construction or abandonment plans at this time.

1.7 PERMITS AND APPROVALS

Table 1.7-1 below lists the environmental permits and approvals required for the Project, along with the status of each permit or approval.

The FERC requires that WBI Energy, as Project sponsor, document compliance with the Endangered Species Act and the National Historic Preservation Act. Informal consultations with the U.S. Fish and Wildlife Service (USFWS) (Appendix II-M) and the North Dakota State Historic Preservation Office (Appendix II-N) have been completed to satisfy these requirements.

Table 1.7-1

Permits and Approvals Applicable to the Project

Permit/Approval	Administering Agency	Status
Federal		
Endangered Species Act Section 7 consultation	USFWS	Consultation submitted on August 16, 2021. Concurrence received October 1, 2021.
Clean Water Act Section 404 Permit – Coverage under Nationwide Permit 12	U.S. Army Corps of Engineers Omaha District	Anticipated submittal November 2021.
State of North Dakota		
National Historic Preservation Act	ND SHPO	Consultation submitted on August 11, 2021. Concurrence received August 17, 2021.
Clean Water Action Section 401 Certification	ND Department of Environmental Quality	N/A – NDDEQ has conditionally certified Nationwide Permit 12.
National Pollutant Discharge Elimination System (NPDES) – General Permit for Stormwater Discharges from Construction Activities General Permit for Temporary Discharge Activities (i.e., construction dewatering and discharges of hydrostatic test water)	ND Department of Environmental Quality	Anticipated submittal November 2021.
Conditional Water Permit (water appropriation associated with	State Water Commission	Anticipated submittal November 2021.

Table 1.7-1

Permits and Approvals Applicable to the Project

Permit/Approval	Administering Agency	Status
drilling mud and hydrostatic test water)		

1.8 AFFECTED LANDOWNERS

The names and addresses of landowners affected by the Project can be found in Appendix IV-B. WBI Energy certifies that all affected landowners have been or will be notified as required by Section 157.203(d)(2) of FERC's regulations.

1.9 NON-JURISDICTIONAL FACILITIES

Telecommunications and electrical equipment will be installed at the proposed Blue Flint Delivery Station by local providers.

MDU will be installing measurement equipment at proposed farm tap locations post-construction, as well as constructing access roads to the farm tap locations. MDU will meter at the take off valve of each farm tap and supply power to the facility. Distribution facilities will connect end users to the farm taps.

1.10 REFERENCES

Federal Energy Regulatory Commission (FERC). 2013a. *Upland Erosion Control, Revegetation, and Maintenance Plan*. Available online at: https://www.ferc.gov/industries/gas/enviro/plan.pdf. Accessed October 2017.

FERC. 2013b. *Wetland and Waterbody Construction and Mitigation Procedures*. Available online at: https://www.ferc.gov/industries/gas/enviro/procedures.pdf. Accessed October 2017.

RESOURCE REPORT 2

2.0 WATER USE AND QUALITY

Resource Report 2 describes ground water resources (Section 2.1), surface water resources (Section 2.2), and wetland resources (Section 2.3) that are present within the Project area. Potential impacts of the Project on water use and quality and measures taken to mitigate, enhance, or protect water resources are also evaluated within this report. Please refer to Resource Report 1 for a detailed Project description.

2.1 GROUND WATER RESOURCES

Ground water resources in North Dakota occur in two principal aquifer types: (1) unconsolidated glacial deposits and (2) sedimentary bedrock. Irrigation is the largest use of ground water. Permitted ground water use averages approximately 109 billion gallons per year. Half of North Dakota's population relies on ground water for drinking water supplies. In addition, ground water is essentially the only source of water supply for farm families and their livestock, and residents of small communities that are not served by public water systems (DEQ 2018a).

2.1.1 Regional Aquifers

Ground water in McLean County is obtained mainly from sandstone and lignite aquifers in the preglacial rocks and from sand and gravel aquifers in glacial deposits. Aquifers with greatest potential for development are those located in glacial deposits associated with buried valleys and melt-water channels (Klausing 1974). Ground water in Morton County is available from aquifers in bedrock formations of Late Cretaceous and Tertiary age and from glacial drift and alluvium of Quaternary age (Ackerman 1980).

Ground water contains dissolved mineral matter in varying degrees. The amount and kind of dissolved mineral matter depends upon the solubility and types of rocks encountered, length of time water is in contact with the rocks, and the amount of carbon dioxide and soil acids in the water. The suitability of water for various uses is determined largely by the kind and amount of dissolved matter. Water from shallow zones in glacial drift aquifers is commonly hard and of a calcium bicarbonate type. Water from bedrock aquifers is commonly soft and of a sodium bicarbonate type. Water from glacial drift aquifers is generally harder but less saline and of better quality than water from bedrock aquifers (Klausing 1974) (Ackerman 1980).

2.1.1.1 Glacial Drift Aquifers

McLean County

McLean County is almost entirely covered with glacial drift that may be more than 400 feet thick in areas where buried valleys occur. Glacial drift is subdivided into two distinct types-till and glaciofluvial deposits. Till consists of a non-sorted mixture of clay, silt, gravel, cobbles, and boulders. Till was deposited by active glaciers and has a low hydraulic conductivity, normally yielding only small quantities

of ground water. Glaciofluvial deposits, the less common type of drift, are stratified deposits of sand and gravel sorted according to grain size. These materials, deposited by moving water, normally have a high hydraulic conductivity, and are the principal aquifers in McLean County. Major glacial drift aquifers generally will yield more than 50 gallons per minute (gpm) to individual wells and in places will yield more than 1,000 gpm.

In many parts of McLean County, aquifers occupy narrow and sinuous valleys, but in some areas the aquifers underlie widespread outwash plains. Aquifers are exposed at the surface in some locations but are deeply buried by till in others (Klausing 1974).

Morton County

Aquifers in the undifferentiated glacial drift and alluvium have the greatest potential for development of large yields of ground water in Morton County. The aquifers occur as sand and gravel deposits, both in buried ancestral valleys and in valleys of present-day rivers and underlie approximately 10 percent of the county. Aquifers in the glacial drift and alluvium can yield as much as 1,700 gpm (Ackerman 1980).

2.1.1.2 Bedrock Aquifers

McLean County

The preglacial sedimentary rocks underlying McLean County were deposited in a large, sporadically subsiding basin now known as the Williston Basin. The most productive bedrock aquifers consist of sandstone and lignite beds. Wells tapping into these aquifers generally yield less than 100 gpm. Three bedrock units - the Fort Union Formation, Hell Creek Formation, and Fox Hills Sandstone - supply water wells in McLean County, and are further detailed below (Klausing 1974):

- The Fort Union Group of Paleocene age underlies the entire county and consists of interbedded silt, siltstone, clay, shale, sandstone, and lignite. The sandstone beds range in thickness from a few feet to a maximum known thickness of 225 feet. Locally, lignite beds serve as a source of water for domestic and livestock wells. The depth in most wells is less than 100 feet, and in some low-lying areas wells completed in the Fort Union Group flow. Well yields range from 5-75 gpm, but wells developed in thick sandstone may yield up to 200 gpm.

- The Hell Creek Formation of Late Cretaceous age (which underlies the Fort Union Formation) consists of interbedded silty shale and sandstone. It conformably overlies the underlying Fox Hills Sandstone of Late Cretaceous age. In the eastern part of the county the Formation had a total thickness of 223 feet. Wells tapping into these aquifers range from 150-1,310 feet in depth and yield approximately 50 gpm.

- The Fox Hills Formation underlies the entire county and consists of interbedded sandstone, shale, and siltstone, ranging in thickness from 233-450 feet. Wells tapping into these aquifers range from 150-1,310 feet in depth and yield approximately 10 gpm.

Morton County

Ground water in Morton County is available from aquifers in bedrock formations of Late Cretaceous and Tertiary age. Major bedrock aquifers occur in the Fox Hills, Hell Creek, Cannonball and Ludlow, and Tongue River Formations, detailed below (Ackerman 1980):

- The Fox Hills Formation underlies all of Morton County, making up the largest and most continuous bedrock aquifer in the county. Thickness of sandstone in the Fox Hills Formation ranged from 43-200 feet and wells tapping into the aquifer yield approximately 1-80 gpm. The Fox Hills Aquifer may be in hydraulic connection with the overlying lower Hell Creek aquifers.

- The Hell Creek Formation underlies almost all of Morton County. The contact with the underlying Fox Hills Formation is gradational and interfingering, whereas the contact with the overlying Cannonball and Ludlow Formations, undifferentiated, is conformable. The thickness of the sandstone beds ranges from 46-184 feet. Wells tapping into these aquifers yield approximately 1-80gpm.

- The Cannonball and Ludlow Formations contain aquifers within sandstone. The thickness of the sandstone ranges from 5-129 feet and wells yield approximately 1 to 50 gpm. The aquifers of the Cannonball and Ludlow Formations may be in hydraulic connection with adjacent glacial drift aquifers.

- The Tongue River Formation is composed of terrestrial sandstones, siltstones, shales, and lignite. Lignite beds and sandstone form aquifers within the Tongue River Formation. The thickness of the Tongue River Formation ranges from 5-180 feet. Wells tapping into these aquifers yield approximately 1 to 100 gpm. Aquifers in the Tongue River Formation are in hydraulic connection with adjacent glacial drift aquifers.

2.1.2 Sole Source Aquifers

Sole source aquifers are defined by the Environmental Protection Agency (EPA) as aquifers that supply at least 50 percent of the drinking water consumed in the area overlying the aquifer and is limited to areas that have no alternative drinking water source (EPA 2017). The Sole Source Aquifer (SSA) Program enables EPA to designate an aquifer as a sole source of drinking water and establish a review area. According to the EPA's SSA interactive mapping program, the nearest sole source aquifer is the Mille Lacs Sole Source Aquifer, located approximately 340 miles east of the Project area (EPA 2021). No impacts to sole source aquifers are anticipated.

2.1.3 Source Water Protection

The North Dakota Source Water Protection Program was developed in response to the 1996 Safe Drinking Water Act amendments that require all states to define and assess the source waters of public water systems. All public water systems that have wells or intakes are participants in the Source Water Protection Program (DEQ 2021c). The Source Water Protection Program strives to meet several goals:

1. Prevent contamination of public water supplies,
2. Encourage the placement of certain activities in areas less likely to contaminate public water supplies, and
3. Raise public awareness of water resources used for public water supplies.

North Dakota currently includes 190 independent ground water Public Water Systems (PWSs) in the Source Water Protection Program. Of these systems, 108 are community PWSs with 22 being rural

water systems, and 82 are non-community systems, with 32 on seasonal status. An additional 17 systems are classified as nonpublic (DEQ 2018b).

Source water protection areas were assessed using the Wellhead Protection and Source Point Protection Areas online mapper. The nearest Source Water Protection Area (SWPA) is the City of Washburn SWPA, located approximately one mile south of the Project area (DEQ 2021f). No known water distribution lines are crossed by the proposed Project. No impacts to public water supply are anticipated.

2.1.4 Water Wells and Springs

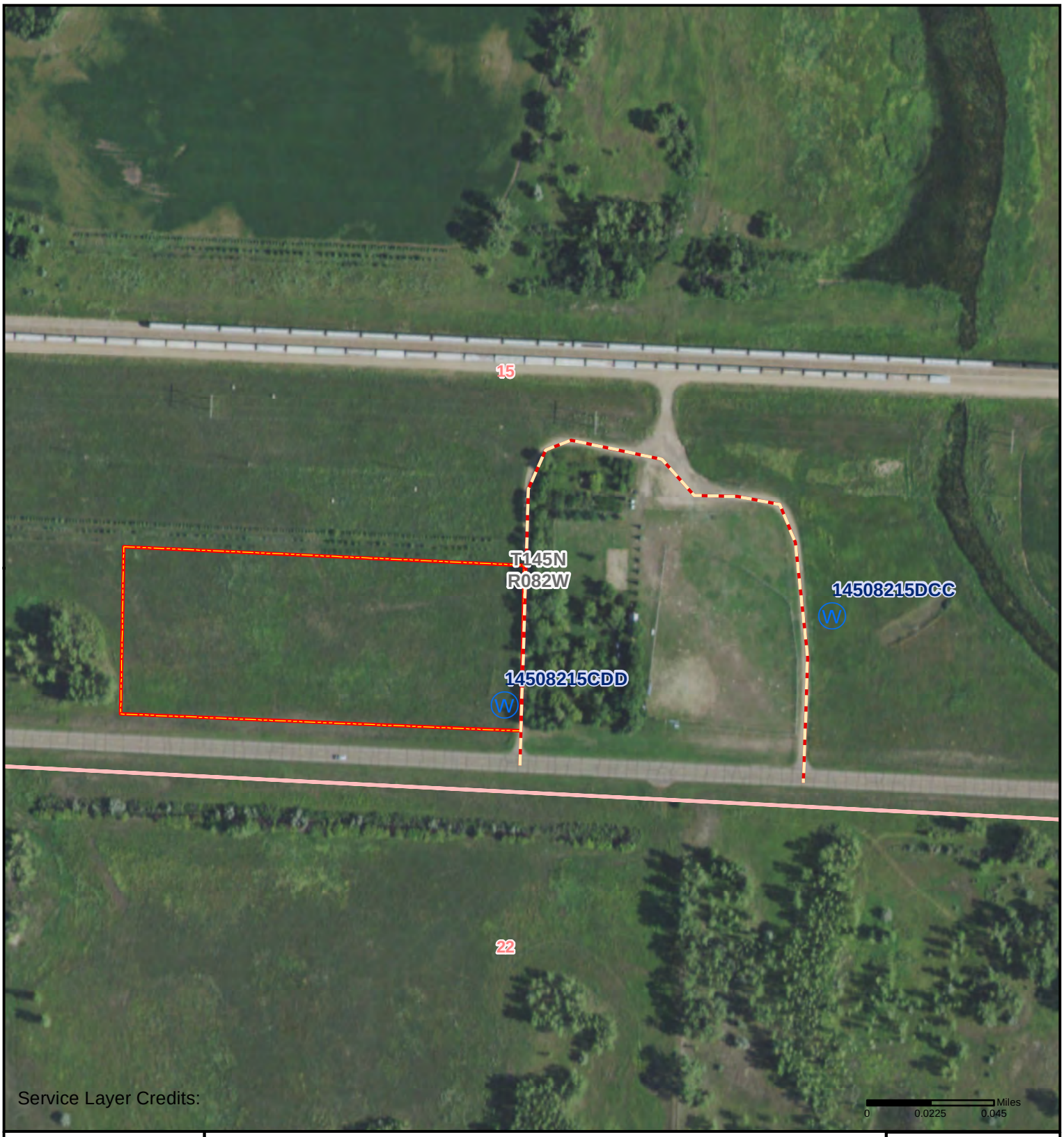
Water wells within 150 feet of the Project area were assessed using the North Dakota Department of Water Resources Map Service (DWR 2021). There are three water wells (14508215CDD, 14508215DCC, and 13908821AAA) located within 150 feet of the Project area, shown in Table 2.1.4-1 and Figure 2.1.4-1 below. Of the three wells identified, two are monitoring wells and not used as water supply wells. The third is WBI Energy's own water supply well for the Glen Ullin Compressor Station. Water wells will be marked and completely avoided during construction. There are no known existing underground springs located within the Project area. No impacts to water wells or springs are anticipated.

Table 2.1.4-1

Water Wells Located within 150' of the Project Area

Water Well Name	Type	Latitude/Longitude	Approximate Depth (feet)	Offset Distance	Date Completed
14508215CDD	Monitoring	47.3718, -101.1117	26	0' (Located in SE corner of storage yard)	11/2/2020
14508215DCC	Monitoring	47.372318, -101.109115	16	~75' from storage yard access road	7/17/2015
13908821AAA	Domestic	46.847129, -101.782544	276	0' (WBI Glen Ullin Compressor Station)	5/7/1991

Source: DWR 2021 (https://mapservice.dwr.nd.gov/index.phtml?active=Drillers)



Line Section 7 Expansion Project

Figure 2.1.4-1 Water Wells Overview

WBI ENERGY TRANSMISSION

N

1 in = 250 feet

Legend

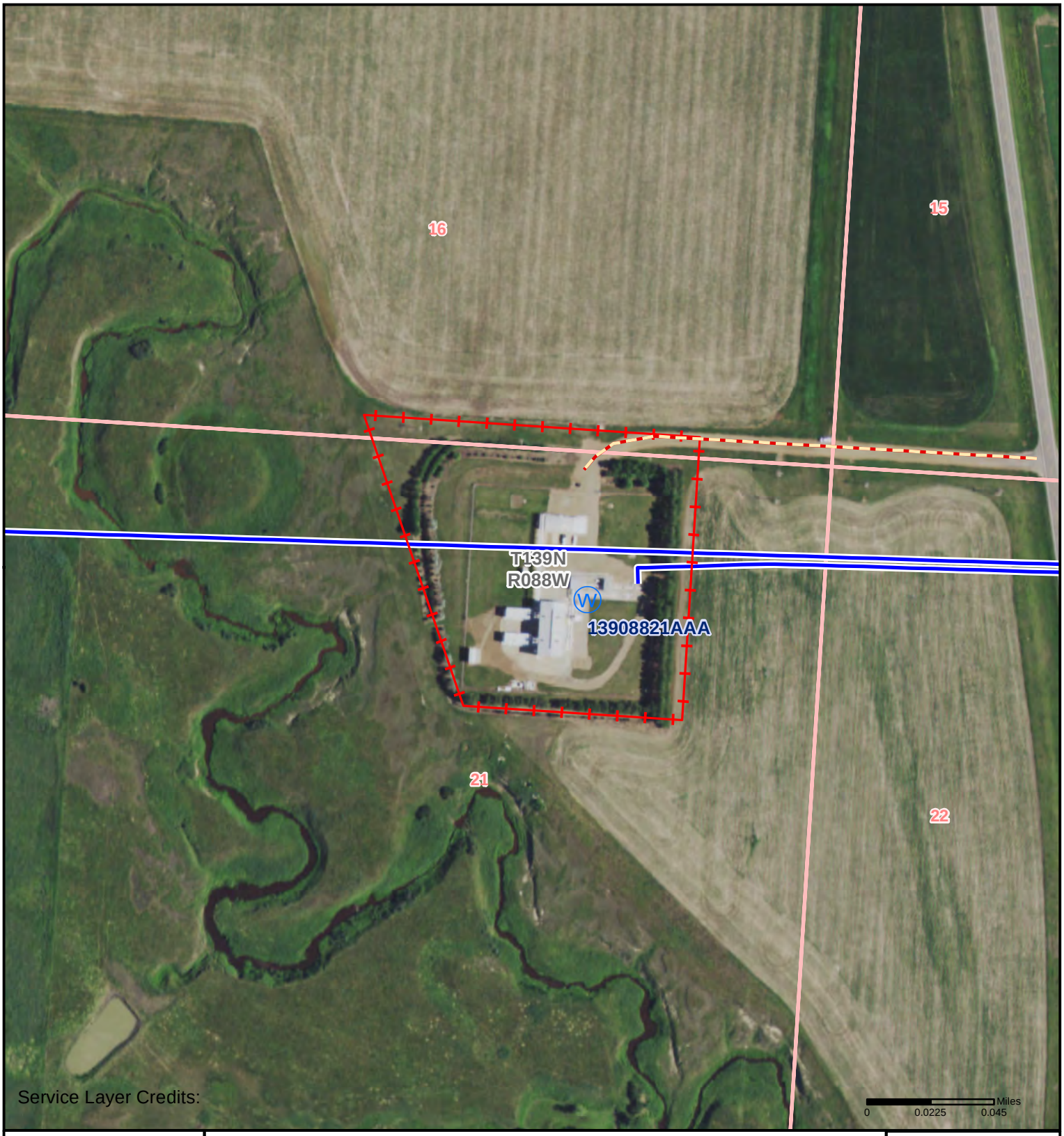
- Water Wells
- Access Roads
- Storage Location
- Townships
- Sections

Mclean County, ND

Source: ND DWR

PROJECT AREA OVERVIEW

By: AB Date: 9/7/2021 1:3,000 - when Printed on 8X11 Revision Date: 9/10/2021



Line Section 7 Expansion Project

Figure 2.1.4-1 Water Wells Overview

WBI ENERGY TRANSMISSION

N

1 in = 250 feet

Legend

- Access Roads
- Existing WBI Pipeline Centerline
- Water Wells
- Glen Ullin Tract
- Townships
- Sections

Morton County, ND

Source: ND DWR

PROJECT AREA OVERVIEW

By: AB Date: 9/7/2021 1:3,000 - when Printed on 8X11 Revision Date: 9/22/2021

2.1.5 Potential Sources of Ground Water Contamination

Potential sources of groundwater contamination in North Dakota are associated with domestic, municipal, agricultural, surface mining, oil and gas extraction, and industrial sectors within the state. Table 2.1.5-1 below lists major sources of water quality contamination in North Dakota:

Table 2.1.5-1

Major Sources of Water Quality Contamination in North Dakota

Contaminant Source	**Type of Contaminants**
Agricultural chemical facilities	• Pesticides • Nitrates • Ammonia
Animal feedlots	• Nitrate/Ammonia • Sulfate • Bacteria • Chloride • phosphorus
On-farm agricultural mixing and loading procedures	• Pesticides • Nitrate
Storage tanks (aboveground & belowground)	• Petroleum Compounds • Salinity/Brine • Nitrate/Ammonia • Halogenated Solvents
Surface impoundments	• Nitrate • Sulfate • Total Dissolved Solids • Chlorine • Nutrients
Large industrial facilities	• Petroleum Compounds • Nitrate • Sulfate • Total Dissolved Solids • Chloride
Accidental spills	• Pesticides • Petroleum Compounds • Nitrate • Salinity/Brine
Urban runoff/storm sewers	• Petroleum Compounds • Metals/Mercury • Total Dissolved Solids • Salinity

Agricultural field runoff	• Total Dissolved Solids • Nutrient Loading • Bacteria
Industrial/municipal discharges	• Nutrient Loading • Bacteria
Source: DEQ 2018b	

The highest risk of potential ground water contamination within the Project area is associated with the ethanol plant, agricultural activities, guided bore operations, and accidental spills from construction equipment.

WBI Energy is not aware of any historic contamination or ongoing remediation activities at the ethanol plant or surrounding facilities. Drilling fluid from guided bore operations has the potential to impact ground water resources through the chemical composition of drilling fluid additives and inadvertent returns (inadvertent returns are unintended releases of bore drilling mud to the surface during guided bore operations by way of natural fractures or fissures). Accidental spills or leaks of hazardous materials could cause ground water contamination. Agricultural activities could also result in contamination to ground water from leaching of pesticides, herbicides, and fertilizers into underlying aquifers. No areas containing ground water or hazardous waste sites have been identified within the Project area.

2.1.6 Ground Water Impacts and Mitigation Measures

Impervious surfaces resulting from compacted soil or installation of structures at aboveground facility sites could decrease infiltration, which in turn will impact ground water recharge rates. The proposed Blue Flint Delivery Station and Blue Flint Take Off Valve facilities will have buildings that will reduce the area of direct infiltration and recharge below the structure, but runoff will still eventually be conveyed to pervious surfaces that will provide ground water recharge. Upgrades to WBI Energy's receipt facilities within the Glen Ullin Compressor Station will take place within existing graveled boundaries of the facility, and farm tap locations will be limited to a 2-inch riser within a 3' x 3' fenced area, with no impacts to infiltration rates or ground water recharge anticipated. The overall effect to ground water recharge will not be significant due to the relatively small footprint of impervious surfaces in relation to the total potential recharge area.

Soil compaction from construction has the potential to affect ground water recharge. WBI Energy will implement measures documented in FERC's Plan and the Project-specific construction plans to minimize compaction during construction, and to identify and mitigate areas that may have been compacted. Measures that may be taken to minimize soil compaction include the use of timber mats for heavy equipment and soil ripping to increase porosity in soils that are significantly compacted from construction.

Construction of the proposed pipeline lateral will require a trench excavation of approximately 6 feet. Dewatering of the pipeline trench will be necessary if shallow ground water is encountered within the excavation zone. Water pumped out of excavations will be discharged in accordance with the FERC Procedures and applicable permits. The potential impact of dewatering will be minimized by discharging the pumped water to well-vegetated areas or to temporary retention structures that promote infiltration and minimize runoff. Because trenching typically proceeds at a rapid rate and depression of the local water table around excavations is expected to recover quickly, it is anticipated that any impacts

associated with pipeline trenching will be temporary and that ground water will return to pre-disturbance conditions following construction.

Accidental spills and leaks of hazardous materials or guided bore drilling fluid additives/inadvertent returns could cause impacts on ground water resources through the introduction of contaminants. WBI Energy will implement the spill prevention and control measures identified in both its SPCC Plan and the FERC Procedures. Equipment will be inspected on a regular basis for leaks or spills to ensure that it is in good operating condition, and secondary containment will be placed around all hazardous materials. WBI Energy will implement the procedures outlined in its *Guided Bore Drilling Fluid Monitoring and Operations Plan* to mitigate potential impacts of drilling fluids from guided bore operations. In the event of an inadvertent return that releases drilling fluid to the surface, the guided bore contractor will cease drilling and notify the EI immediately. The EI will ensure containment and cleanup of the release. No areas containing contaminated ground water or hazardous waste sites have been identified within the Project area. If contaminated soils are encountered, WBI Energy will implement measures outlined in its *Plan for Unanticipated Discovery of Contaminated Environmental Media*.

WBI Energy identified three water wells within 150 feet of the proposed Project footprint. Two monitoring wells are located in the southeast corner of the proposed storage yard and along the storage yard access road. One water supply well is located in the WBI Energy Glen Ullin Compressor Station. Water wells will be marked and completely avoided during construction. WBI Energy will assess any damage to wells from construction activities and perform the necessary repairs and/or modifications to return the well to its former capacity or function. If an active water well is identified within construction workspaces and must be taken out of service, WBI Energy will provide an alternate water source or negotiate a mitigation plan with the landowner to offset any adverse impacts.

Although construction may temporarily impact ground water resources, ground water levels are expected to quickly re-establish, and original conditions will be restored.

2.2 SURFACE WATER RESOURCES

Surface water resources were evaluated through detailed wetland delineation field surveys conducted by Beaver Creek Environmental (Beaver Creek). This section describes existing surface water resources that may be impacted, and mitigation measures implemented to avoid or minimize these impacts.

2.2.1 Watersheds

The Project area crosses the Coal Lake Coulee-Missouri Watershed (1013010107) and the Haymarsh Creek Watershed (1013020303), detailed in Table 2.2.1-1 below. These watersheds are further divided into the Weller Slough-Coal Lake Coulee, Buffalo Creek, and Haymarsh Creek subwatersheds.

The Coal Lake Coulee-Missouri and Haymarsh Creek Watersheds are surface-fed water systems tied to the Missouri River (DEQ 2021d). The Project area will cross water features that may have a hydrologic connection to the Missouri River. According to water permits on file with the North Dakota State Water Commission, there are no known surface water intakes within the Project area. In McLean County, the nearest active surface water intake is from Turtle Creek (Permit No. 3705), located approximately three miles southeast of the project area. This water permit is approved for industrial gravel washing and is the only downstream active surface water permit up to the Missouri River. In Morton County, the nearest known active surface water intake downstream of the Project area is from Big Muddy Creek (Permit No. 1150), located approximately twelve miles southeast of WBI Energy's Glen Ullin Compressor

Station. This water permit is approved for irrigation use (NDSWC 2021). No impacts to municipal watershed areas or surface water protection areas are anticipated.

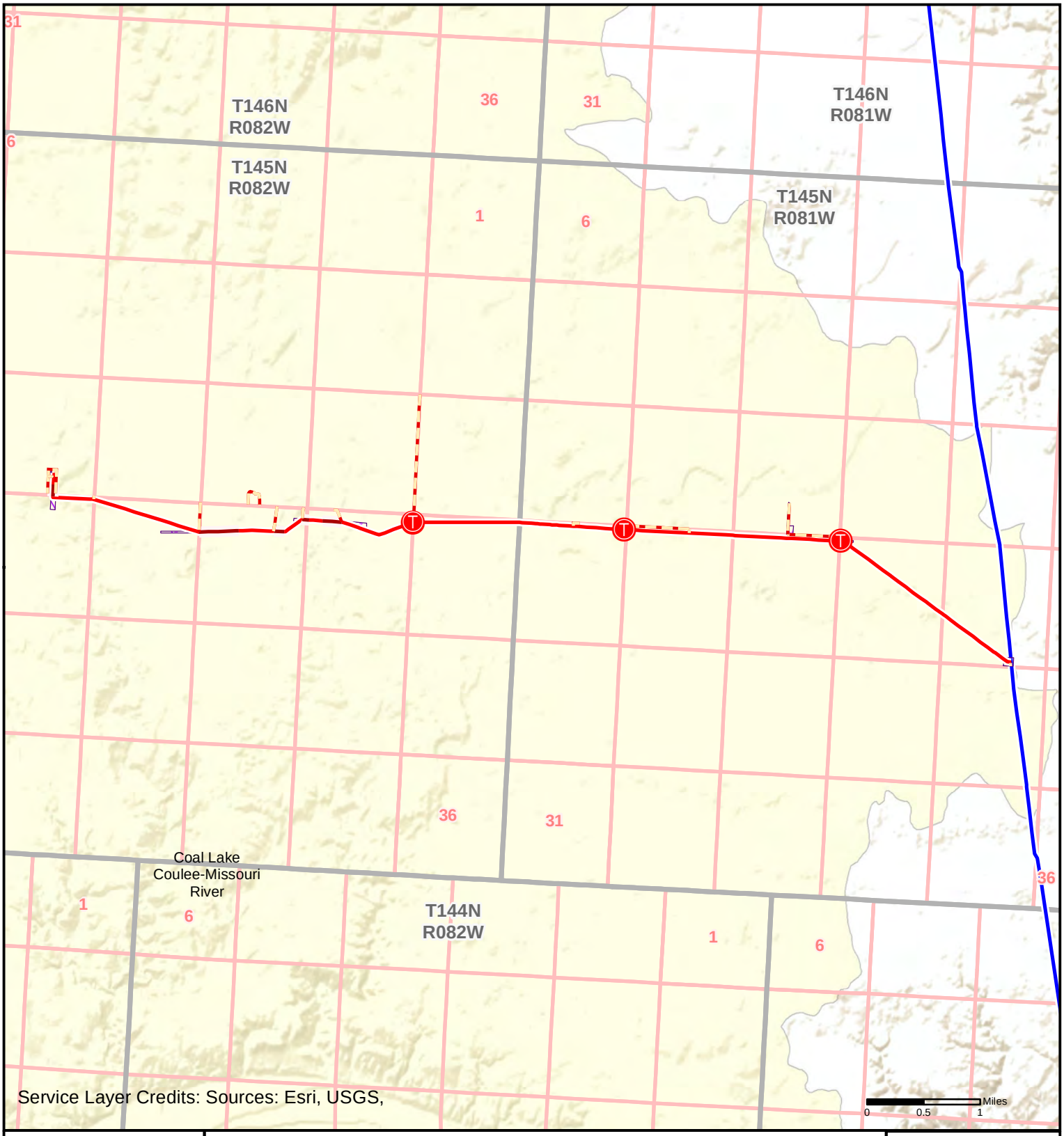
Table 2.2.1-1

Hydrologic Units Impacted

Subwatershed (HUC 12)	**Watershed (HUC 10)**	**Subbasin (HUC 8)**	**Basin (HUC 6)**	**Subregion (HUC 4)**	**Region (HUC 2)**	**County**
Weller Slough-Coal Lake Coulee (101301010701)	Coal Lake Coulee-Missouri (1013010107)	Painted Woods Square Butte (10130101)	Lake Oahe (101301)	Missouri-Oahe (1013)	Missouri Region (10)	McLean Co., North Dakota
Buffalo Creek (101301010703)	Coal Lake Coulee-Missouri (1013010107)	Painted Woods Square Butte (10130101)	Lake Oahe (101301)	Missouri-Oahe (1013)	Missouri Region (10)	McLean Co., North Dakota
Haymarsh Creek (101302030302)	Haymarsh Creek (1013020303)	Lower Heart (10130203)	Cannonball-Herat-Knife (101302)	Missouri-Oahe (1013)	Missouri Region (10)	Morton Co., North Dakota

Source: DEQ 2021d

(https://deq-ndgov.maps.arcgis.com/home/webmap/viewer.html?webmap=31c6acddb4194d34923fc9d697ad6068)



Line Section 7 Expansion Project

Figure 2.2.1-1 Watershed Overview

WBI ENERGY TRANSMISSION

N

1 in = 6,250 feet

Legend

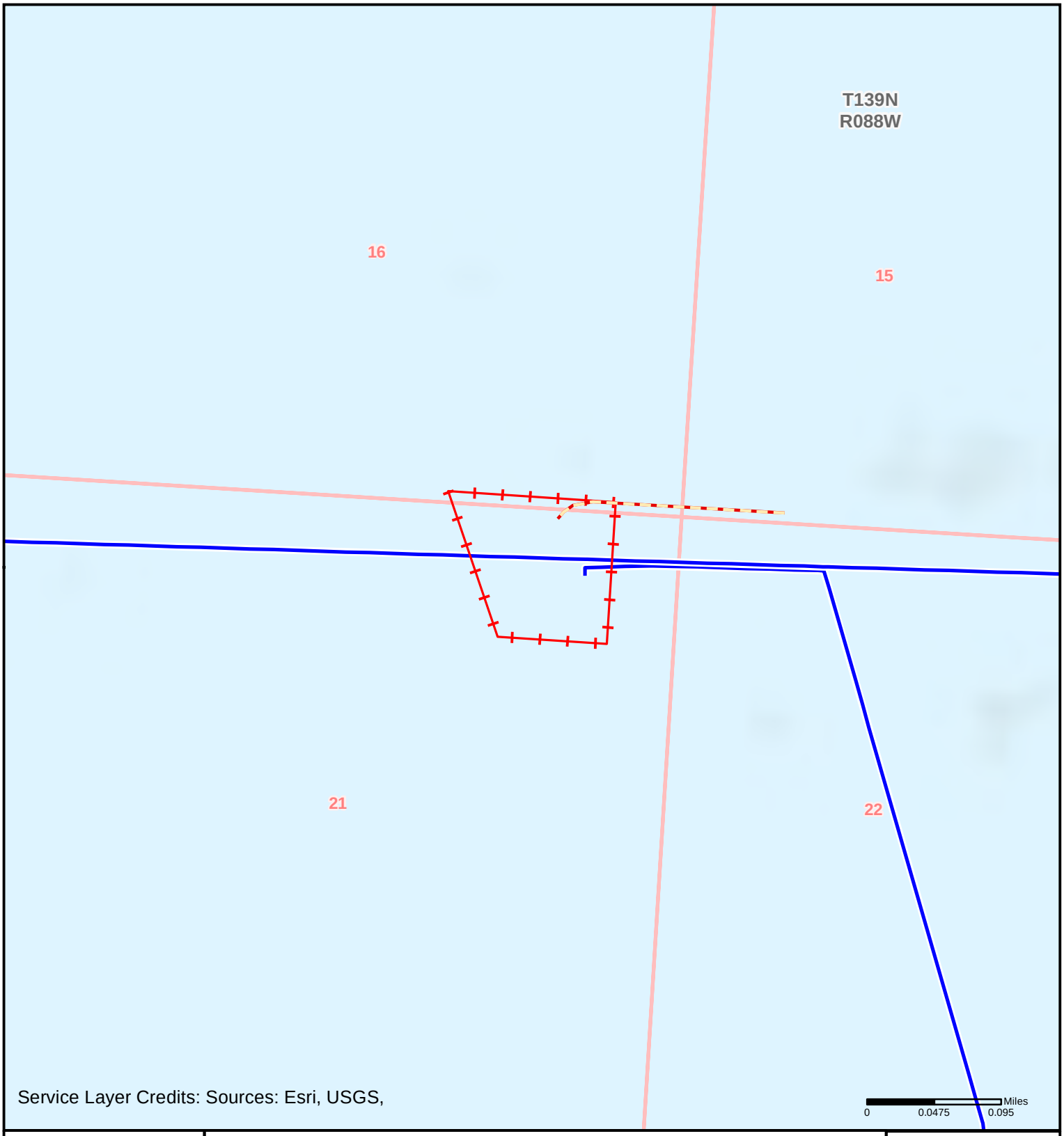
- Farm Taps
- Access Roads
- Proposed Bore
- Proposed Pipeline
- Existing WBI Pipeline Centerline
- ATWS
- Townships
- Sections
- Coal Lake Coulee-Missouri River

Mclean County, ND

Source: USGS 2021

PROJECT AREA OVERVIEW

By: AB Date: 9/7/2021 1:75,000 - when Printed on 8X11 Revision Date: 9/22/2021



Line Section 7 Expansion Project

Figure 2.2.1-1 Watershed Overview

WBI ENERGY TRANSMISSION

N

1 in = 500 feet

Legend

- Access Roads
- Existing WBI Pipeline Centerline
- Glen Ullin Tract
- Townships
- Sections
- Haymarsh Creek

Morton County, ND

Source: USGS 2021

PROJECT AREA OVERVIEW

By: AB Date: 9/7/2021 1:6,000 - when Printed on 8X11 Revision Date: 9/23/2021

2.2.2 Waterbodies Crossed

FERC Procedures define a waterbody as "any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes." Waterbodies are classified as minor (less than or equal to 10 feet wide), intermediate (greater than 10 feet wide but less than 100 feet wide), or major (greater than 100 feet wide) (FERC 2013b). Waterbodies were differentiated from wetland areas by having defined channels and perceptible flow at the time of crossing. Based on field survey data collected by Beaver Creek, no waterbodies are crossed by the proposed Project. WBI Energy is proposing to appropriate water from an open water lake, delineated as Wetland 5 during aquatic resource delineation field surveys. Water from this open water lake may be utilized for hydrostatic testing, dust suppression, or to incorporate with drilling mud during guided bore operations, as detailed in Section 2.2.6.

2.2.3 Sensitive Surface Waters

2.2.3.1 Impaired or Contaminated Waters

The Clean Water Act (CWA) contains several sections which require states to report on the quality of their waters. Section 305(b) (State Water Quality Assessment Report) requires a comprehensive biennial report, and Section 303(d) requires a list of a state's water quality-limited waters needing total maximum daily loads (TMDLs). TMDL is the amount of a particular pollutant that a particular stream, lake, estuary, or waterbody can handle without violating state water quality standards. Once a TMDL is established, responsibility for reducing pollution among both point sources (pipes) and diffuse sources is assigned. Diffuse sources may include, but are not limited to run-off (urban, agricultural, forestry, etc.), leaking underground storage tanks, unconfined aquifers, septic systems, stream channel alteration and damage to riparian areas (DEQ 2021e).

Based on the *North Dakota 2018 Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Waters Needing Total Maximum Daily Loads* there are no impaired waters located within the Project area. The nearest impaired waters are Painted Woods Creek (from its confluence with the New Johns Lake diversion downstream to Painted Woods Lake), located approximately 7 miles South of the Project area and Turtle Creek (from Turtle Lake to Lake Ordway), located approximately 9 miles North of the Project area (DEQ 2018a). These impaired waters are detailed in Table 2.2.3.1-1 below.

Table 2.2.3.1-1

Nearest 303(d) Impaired Waters

Assessment Unit ID	AU Description	Impairment

ND-10130101-001-S_00	Painted Woods Creek from its confluence with the New Johns Lake diversion downstream to Painted Woods Lake. Located in Burleigh and McLean Counties	Escherichia coli
ND-10130101-035-S_00	Turtle Creek from Turtle Lake to Lake Ordway. Located in McLean County.	Escherichia coli
Source: DEQ 2018a		

2.2.3.2 National Wild and Scenic Rivers

The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. North Dakota has approximately 54,373 miles of river, but there are no designated wild and scenic rivers in North Dakota (WSR 2021). No Wild and Scenic Rivers will be impacted as part of the proposed Project.

2.2.3.3 State and Federal Threatened and Endangered Species Habitat

The Northern long-eared bat, piping plover, red knot, whooping crane, Dakota skipper, Monarch butterfly, and pallid sturgeon have the potential to occur in McLean County. The Northern long-eared bat, piping plover, red knot, whooping crane, Dakota skipper, and Monarch butterfly have the potential to occur in Morton County (USFWS 2021). The endangered whooping crane (*Grus americana*), threatened Dakota skipper (*Hesperia dacotae*), and threatened Northern long-eared bat (*Myotis septentrionalis*) have the potential to occur within the Project area (Beaver Creek 2021b). Of these, the whooping crane may use surface waters in the project area as stopover habitat during migration; however, due to amount of human activity in the project area, the whooping crane is likely to avoid these areas. Further discussions on threatened and endangered species are included in Section 3.4 of Resource Report 3.

2.2.4 Floodplains

The North Dakota State Water Commission coordinates the National Flood Insurance Program in North Dakota. The Federal Emergency Management Agency (FEMA) prepares Flood Insurance Rate Maps (FIRMs) to show areas that are at high risk of flooding due to storm or snow melt. The FEMA works with the North Dakota State Water Commission and communities to conduct flood studies and prepare FIMRs. According to the McLean County Multi-Hazard Mitigation Plan, the overall flood risk in nearby communities of Underwood and Washburn, North Dakota is low (McLean County 2015).

The Project area crosses Zone X within the 38055C1400B, 38055C1425B, and 38055C1450B flood panels in McLean County, and Zone A and Zone X of the 38059C0310D flood panel in Morton County (FEMA 2021).

Zone X is an area of minimal flood hazard outside of the Special Flood Hazard Area (a permit is required before construction begins within any Special Flood Hazard Area). Zone A is located within a flood

hazard area; however, construction activities within Zone A will be limited to receipt facility upgrades within WBI Energy's Glen Ullin Compressor Station, and all disturbances will take place within the existing fenced facility boundaries. No impacts to floodplains are anticipated. Flood hazard areas are further discussed in Section 6.1.6 of Resource Report 6.

2.2.5 U.S. Army Corps of Engineers Section 10 Waters

The U.S. Army Corps of Engineers (Corps) broadly defines "navigable waters of the United States" under Section 10 of the Rivers and Harbors Act. Navigable waters are defined by 33 CFR Part 329 as waters that are subject to the ebb and flow of the tide and/or are presently used, have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. There are no Section 10 waters crossed by the Project area (Corps 2021b). The nearest known Section 10 water is the Missouri River, located approximately 4.8 miles South of the Project area.

2.2.6 Water for Hydrostatic Testing, Guided Bores, and Dust Suppression

Water used for hydrostatic testing will be obtained either from a Municipal source or a nearby surface water, as described in Section 1.4.3.6 of Resource Report 1. The proposed nearby surface water was delineated during aquatic resource delineation field surveys as Wetland 5, an open water lake located on the northern edge of the Project area. Approximately 142,214 gallons of water will be required to conduct final hydrostatic testing of the new pipeline. In addition, approximately 15,073 gallons of water will be required to conduct hydrostatic testing at each guided bore crossing. Total volume of water to conduct hydrostatic testing activities will require approximately 157,287 gallons. Water from hydrostatic testing activities will be discharged into approved upland discharge locations or returned to the surface water feature it is obtained in accordance with the North Dakota Temporary Discharges General Permit (NDG070000). Filter bags and energy dissipation devices will be used during discharges to minimize impacts to the surrounding area. All appropriate permits will be obtained prior to discharge.

Additional project water needs include water used for drilling mud during guided bore operations and water for dust control purposes. In both cases, water will be obtained either from a Municipal source or Wetland 5. WBI Energy estimates up to 178,000 gallons of water will be required for drill mud/boring operations. Water trucks will be provided onsite by the contractor and implemented whenever needed for dust suppression. These water trucks will hold approximately 2,000 gallons/truck to be utilized for dust control as necessary. WBI Energy will comply with conditions set forth in the Project *Fugitive Dust Control Plan*, included in Appendix II-L.

2.2.7 Surface Water Impacts and Mitigation Measures

No waterbodies will be crossed by the Project area. Surface waters utilized for water appropriation are large enough to provide volumes required for Project activities and water appropriations will be conducted in accordance with applicable permit requirements. WBI Energy will comply with local floodplain ordinances and obtain/comply with conditions set forth in all other applicable permits (Corps, DEQ, etc.), as well as comply with the FERC Plan and Procedures. BMPs will be installed to minimize impacts to sensitive areas. No impacts to surface water resources are anticipated.

2.3 WETLANDS

Wetland resources within the Project area were identified through wetland delineation field surveys conducted by Beaver Creek. According to FERC Procedures, a wetland includes "any area that is not in actively cultivated or rotated cropland and that satisfies the requirements of the current federal methodology for identifying and delineating a wetland" (FERC 2013b).

2.3.1 Existing Resources

Beaver Creek biologists used the on and off-site methodology set forth in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual and the 2012 U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region to delineate wetlands within the survey corridor. Thirteen wetlands are within the Project area and will be directly impacted during construction. Wetlands are further detailed in Table 2.3.1-1 below and within Beaver Creek's *Blue Flint Ethanol Plant Lateral Aquatic Resource Delineation Report* (Appendix II-O).

Table 2.3.1-1

Wetlands Crossed by the Project Area

Wetland Name	Approximate Stationing Location	Acreage Impacted	Classification/Type	Primary Crossing Method
Wetland 2	432+00 – 434+00	0.16	PEM1C/Prairie pothole wetland	Open-Ditch
Wetland 4	380+00 – 386+00	2.93	PEM1C/Prairie pothole wetland	Open-Ditch
Wetland 6	264+00 – 266+00	0.15	PEM1C/Vegetated emergent wetland drainageway	Open-Ditch
Wetland 7	256+00 – 258+00	0.10	PEM1C/Vegetated emergent wetland drainageway	Open-Ditch
Wetland 8	233+00 – 237+00	0.27	PEM1A/Prairie pothole wetland	Open-Ditch
Wetland 9	176+00 – 178+00	0.08	PEM1A/Unvegetated wetland drainageway	Open-Ditch

Table 2.3.1-1

Wetlands Crossed by the Project Area

Wetland Name	Approximate Stationing Location	Acreage Impacted	Classification/Type	Primary Crossing Method
Wetland 10	148+00 – 150+00	0.01	PEM1A/Isolated ditch wetland	Guided Bore
Wetland 11C	140+00 – 141+00	0.01	PEM1A/Vegetated emergent wetland depression	Guided Bore
Wetland 11D	138+00 – 140+00	0.12	PEM1A/Vegetated emergent wetland depression	Guided Bore
Wetland 13A	123+00 – 128+00	0.54	PEM1C/Vegetated emergent wetland depression	Guided Bore
Wetland 13B	109+00 – 121+00	1.72	PEM1C/Vegetated emergent wetland depression	Open-Ditch
Wetland 13C	97+00 – 105+00	1.13	PEM1C/Vegetated emergent wetland depression	Guided Bore
Wetland 14	59+00 - 61+00	0.16	PEM1C/Prairie pothole wetland	Open-Ditch

2.3.2 Wetland Crossing Methods

Wetlands in the project area will be crossed using either the Guided Bore Crossing Method or the Open Ditch Crossing Method. These crossing methods are discussed further below.

Guided Bore Crossing Methods

Wetlands 6, 7, 11C, 11D, and 13A are proposed to be crossed using guided bore methods. Guided bore methods will allow for trenchless construction by drilling a hole beneath the crossing and pulling a prefabricated section of pipe through the hole, minimizing overall impacts to the wetland. Crossings will be completed in accordance with FERC Procedures and federal, state, and local permits. A description of construction procedures for bored crossings is provided in Section 1.4.4.2 of Resource Report 1.

Bored wetland crossings will require additional temporary workspace (ATWS) to position the drill rig and associated equipment and materials. Equipment mats may be installed across wetlands to transport equipment and materials. FERC's Procedures will be followed, and all appropriate permits obtained prior to placement of temporary fill material within the wetland. Typical guided bore entry and exit site plans are included in Appendix II-F.

Open Ditch Crossing Methods

Wetlands 2, 4, 8, 9, 10, 13B, 13C, and 14 are proposed to be crossed using conventional open-ditch techniques. Detailed general pipeline construction procedures are described in Section 1.4.3 of Resource Report 1. A typical open-ditch wetland crossing drawing is included in Appendix II-F.

2.3.3 FERC PROCEDURE VARIANCE REQUEST

WBI Energy is requesting variances from one provision in the Procedures as further described in this section.

- *FERC Procedures Section VI.B.1.a – Locate All Extra Work Areas At Least 50 From Wetland Boundaries*

FERC Procedures require all extra workspace (outside the typical 75-foot-wide ROW) to be at least 50 feet away from wetland boundaries, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. Eleven wetlands are located within 50 feet of extra workspace. This closer setback distance is required to accommodate bore equipment and materials to perform guided bore operations and to allow adequate space at pipeline Point of Intersection (PI) locations. Justification for closer setback distances is further detailed in Table 2.3.3-1 and Figures 1-3 below.

Table 2.3.3-1

FERC Procedures Variance Request: Extra Workspace with a Closer than 50-foot Setback Distance from Wetlands

Wetland Name	Approximate Stationing Location	Setback Distance	FERC Variance Justification	Measures Implemented to Provide ≥ Protection than 50' Setback
Wetland 6	264+00 – 266+00	0'	Extra workspace is required to accommodate boring equipment and excavate bore pits at either end of the bore path. WBI Energy plans to open-ditch through Wetland 6, but if high water levels are encountered at the time of crossing, extra	BMPs will be installed between the workspace and the wetland to minimize potential impacts. Equipment will be maintained in good condition and regularly inspected. Secondary containment will be placed around all hazardous materials. An EI will be present onsite to

Table 2.3.3-1

FERC Procedures Variance Request: Extra Workspace with a Closer than 50-foot Setback Distance from Wetlands

Wetland Name	Approximate Stationing Location	Setback Distance	FERC Variance Justification	Measures Implemented to Provide ≥ Protection than 50' Setback
			workspace will be required for a guided bore crossing.	ensure environmental compliance.
Wetland 7	256+00 – 258+00	9'	Extra workspace is required to accommodate boring equipment and excavate bore pits at either end of the bore path. WBI Energy plans to open-ditch through Wetland 7, but if high water levels are encountered at the time of crossing, extra workspace will be required for a guided bore crossing.	BMPs will be installed between the workspace and the wetland to minimize potential impacts. Equipment will be maintained in good condition and regularly inspected. Secondary containment will be placed around all hazardous materials. An EI will be present onsite to ensure environmental compliance.
Wetland 11B	141+00 – 143+00	21'	Extra workspace is required to accommodate boring equipment and excavate bore pits at either end of the bore path.	BMPs will be installed between the workspace and the wetland to minimize potential impacts. Equipment will be maintained in good condition and regularly inspected. Secondary containment will be placed around all hazardous materials. An EI will be present onsite to ensure environmental compliance.
Wetland 11C	140+00 – 141+00	4'	Extra workspace is required to accommodate boring equipment and excavate bore pits at either end of the bore path.	BMPs will be installed between the workspace and the wetland to minimize potential impacts. Equipment will be maintained in good condition and regularly inspected. Secondary containment will be placed around all hazardous materials. An EI will be present onsite to

Table 2.3.3-1

FERC Procedures Variance Request: Extra Workspace with a Closer than 50-foot Setback Distance from Wetlands

Wetland Name	Approximate Stationing Location	Setback Distance	FERC Variance Justification	Measures Implemented to Provide ≥ Protection than 50' Setback
				ensure environmental compliance.
Wetland 11D	138+00 – 140+00	10'	Extra workspace is required to accommodate boring equipment and excavate bore pits at either end of the bore path.	BMPs will be installed between the workspace and the wetland to minimize potential impacts. Equipment will be maintained in good condition and regularly inspected. Secondary containment will be placed around all hazardous materials. An EI will be present onsite to ensure environmental compliance.
Wetland 13A	123+00 – 128+00	0'	Extra workspace is required to accommodate boring equipment and excavate bore pits at either end of the bore path.	BMPs will be installed between the workspace and the wetland to minimize potential impacts. Equipment will be maintained in good condition and regularly inspected. Secondary containment will be placed around all hazardous materials. An EI will be present onsite to ensure environmental compliance.
Wetland 13B	109+00 – 121+00	0'	Extra workspace is required to accommodate boring equipment and excavate bore pits at either end of the bore path.	BMPs will be installed between the workspace and the wetland to minimize potential impacts. Equipment will be maintained in good condition and regularly inspected. Secondary containment will be placed around all hazardous materials. An EI will be present onsite to ensure environmental compliance.

Table 2.3.3-1

FERC Procedures Variance Request: Extra Workspace with a Closer than 50-foot Setback Distance from Wetlands

Wetland Name	Approximate Stationing Location	Setback Distance	FERC Variance Justification	Measures Implemented to Provide ≥ Protection than 50' Setback
Wetland 13C	97+00 – 105+00	1'	Extra workspace is required to accommodate boring equipment and excavate bore pits at either end of the bore path.	BMPs will be installed between the workspace and the wetland to minimize potential impacts. Equipment will be maintained in good condition and regularly inspected. Secondary containment will be placed around all hazardous materials. An EI will be present onsite to ensure environmental compliance.

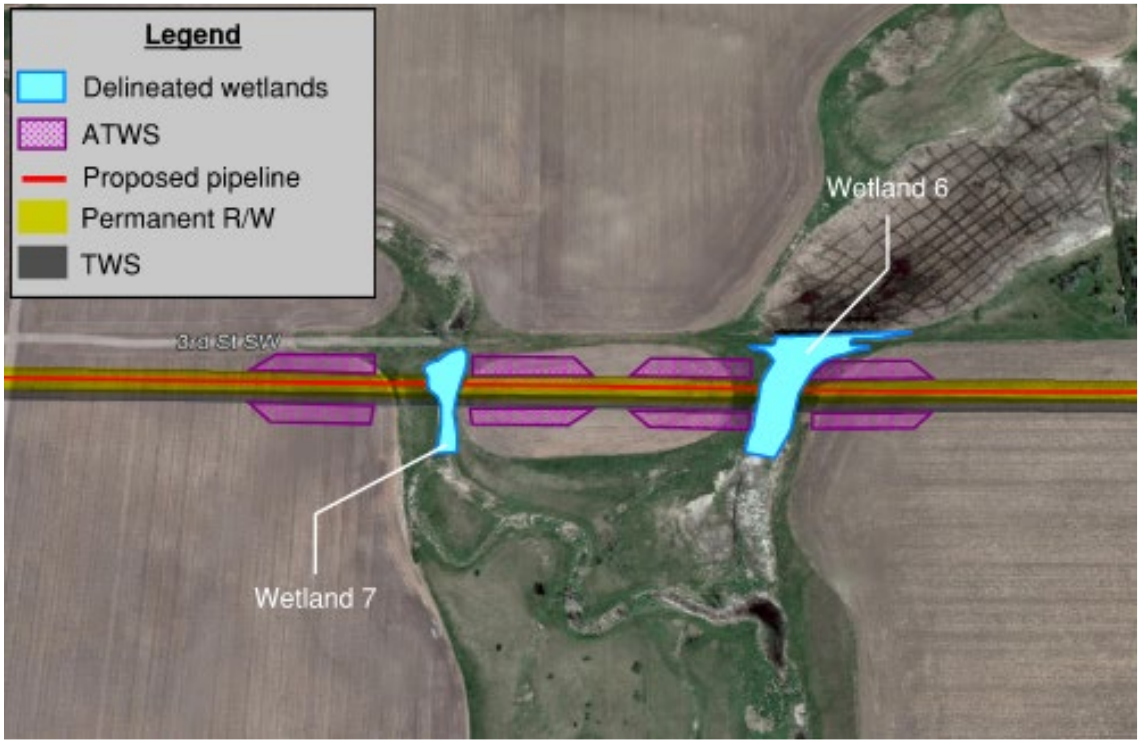


Figure 1: Extra workspace within 50' of Wetland 6 and Wetland 7

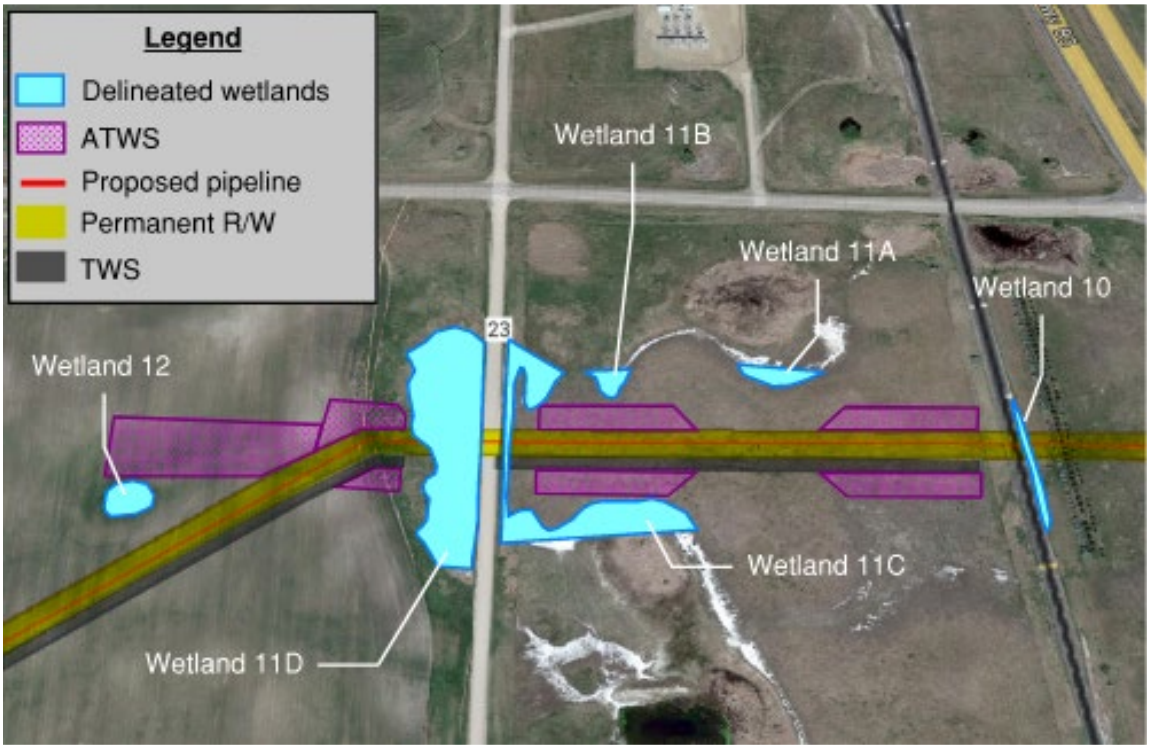


Figure 2: Extra workspace within 50' of Wetlands 11B, 11C, & 11D

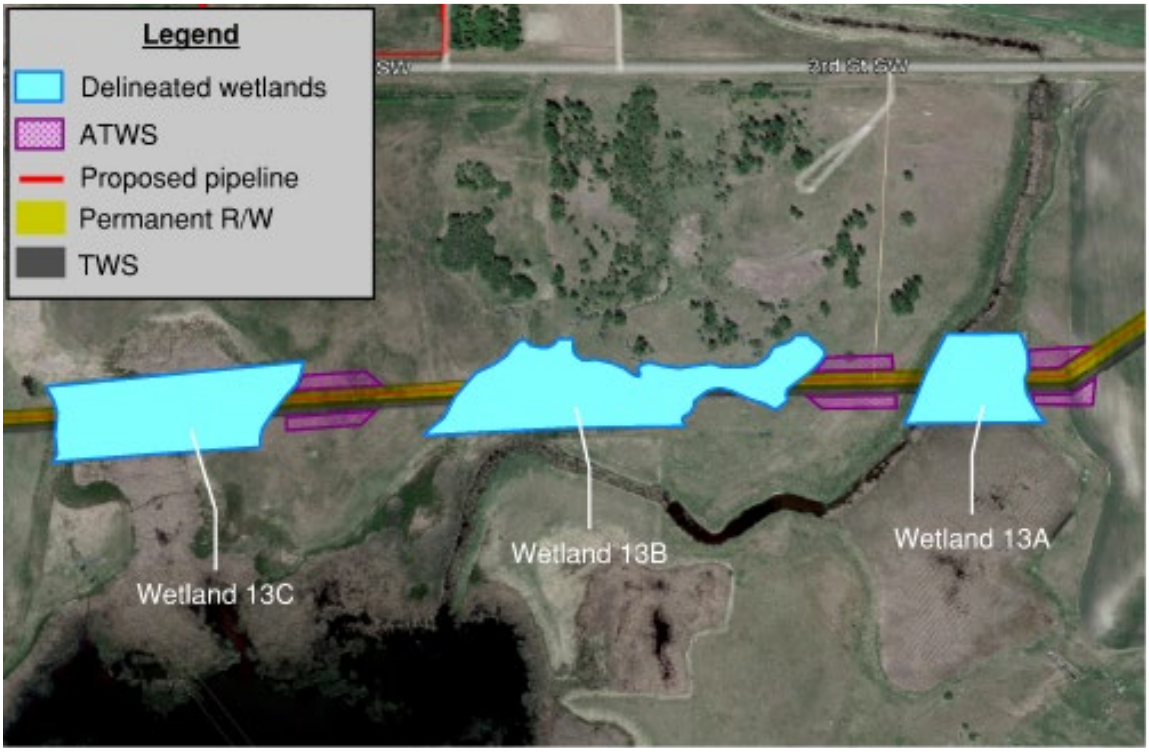


Figure 3: Extra workspace within 50' of Wetlands 13A, 13B, and 13C

2.3.4 Wetland Impacts and Mitigation Measures

Although construction workspaces in wetland areas have been minimized to the extent possible, impacts to wetlands may occur as a result of construction activities. Impacts will be minimized through installation of BMPs and compliance with Project-specific plans and the FERC Procedures. Equipment will be inspected on a routine basis for leaks or spills to ensure that it is in good operating condition. An EI will be present onsite throughout all phases of construction to clearly identify delineated wetlands and ensure compliance.

The open-ditch wetland crossings method will entail excavation of a trench approximately 6 feet deep (or deeper at crossings of some roads, utilities, foreign pipelines, and wetlands). Dewatering of the pipeline trench will be necessary if shallow ground water is encountered within the excavation zone. Water pumped out of the trench will be discharged in accordance with the FERC Procedures and applicable permits. The potential impact of dewatering will be minimized by discharging pumped water to well-vegetated areas or temporary retention structures that will promote infiltration and minimize runoff. Sediment laden water will not be discharged into wetlands.

Boring of wetland features could potentially result in an inadvertent return of drilling fluid into the wetland. WBI Energy has developed a *Guided Bore Fluid Monitoring and Operations Plan* that details how drilling operations will be monitored for the inadvertent releases of drilling mud and what actions will be taken in the event of an inadvertent release. This Plan also outlines how an abandoned drill hole will be sealed, if necessary. A copy of the Guided Bore Fluid Monitoring and Operations Plan is included in Appendix II-H.

To avoid rutting and mixing of wetland topsoil and subsoil, placement of equipment mats may be used when equipment must cross wetland areas. Construction equipment operation within delineated wetland boundaries may also compact wetland soils. WBI Energy will implement measures documented in the FERC's Procedures and Project-specific construction plans to minimize compaction during construction. All wetlands will be restored to pre-disturbance conditions following construction.

Wetland boundaries will be clearly marked during construction. Topsoil and spoil piles will be placed a minimum of 10 feet from the wetland edge to prevent mixing. Appropriate erosion and sediment control devices, as outlined in the project Storm Water Pollution Prevention Plan will be installed to prevent discharges of stormwater runoff from construction areas into wetlands. All appropriate permits will be obtained prior to excavating the trench through a wetland and prior to placement of any temporary fill material within the wetland. All construction activities will be performed in accordance with the Project SPCC Plan and FERC Plan and Procedures.

Accidental spills and leaks of hazardous materials could impact wetlands through the introduction of contaminants. WBI Energy will implement the spill prevention and control measures identified in the SPCC Plan and in the FERC Procedures. No areas containing contaminated soil or hazardous waste sites have been identified within the Project area. If contaminated soils are encountered, WBI Energy will implement measures outlined in its *Plan for Unanticipated Discover of Contaminated Media*.

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RESOURCE REPORT 3

3.0 FISH, WILDLIFE AND VEGETATION

Resource Report 3 provides information regarding fisheries, wildlife, and vegetation that may exist within the proposed Project area. This information was gathered through literature review, desktop analysis, field surveys, and consultations with agency personnel. This report discusses existing fish, wildlife, and vegetation resources, expected Project impacts on these resources, and mitigation measures to avoid or minimize these impacts. Please refer to Resource Report 1 for a detailed Project description.

3.1 FISHERY RESOURCES

There are no waterbodies crossed by Project facilities. Water may be obtained from an open water lake adjacent to projects workspaces to support guided bore, dust control, and hydrostatic testing activities. The Project area crosses several wetlands that do not support fish species. The nearest known waterbody that supports fishery resources is the Missouri River (located approximately five miles South) and Coal Lake (located approximately five miles North). The Missouri River is primarily stocked with walleye, brown trout, rainbow trout, salmon, and catfish species. Coal Lake is primarily stocked with walleye species (NDGFD 2021a). No impacts to fishery resources are anticipated.

3.1.1 Fisheries of Special Concern

North Dakota's Wildlife Action Plan focuses on species that are considered Species of Conservation Priority. Fish Species of Conservation Priority are categorized into three levels according to their conservation need in North Dakota.

- Level I: These species are in decline and receive little or no monetary support or conservation efforts. Level I species have a high level of conservation priority because of declining status across their range.

- Level II: These species have a moderate level of conservation priority or have a high level of conservation priority but a substantial level of non-State Wildlife Grant (SWG) funding available to them.

- Level III: These species have a moderate level of conservation priority but are believed to be peripheral or non-breeding in North Dakota.

No fisheries of special concern are located within the Project area, and no impacts are anticipated. Fish Species of Conservation Priority in North Dakota are listed in Table 3.1.1-1 below:

Table 3.1.1-1
North Dakota Fish Species of Conservation Priority

Species Name	Category	Scientific Name
Sturgeon chub	Level I	*Marcrhybopsis gelida*
Sicklefin chub	Level I	*Marcrhybopsis meeki*
Northern pearl dace	Level I	*Margariscus nachtriebi*
Blue sucker	Level I	*Cycleptus elongatus*
Paddlefish	Level II	*Polyodon spathula*
Pallid sturgeon	Level II	*Scaphirhynchus albus*
Burbot	Level II	*Lota lota*
Northern redbelly dace	Level II	*Chrosomus eos*
Silver chub	Level II	*Marcrhybopsis storeriana*
Flathead chub	Level II	*Platygobio gracilis*
Trout-perch	Level II	*Percopsis omiscomaycus*
Chestnut lamprey	Level III	*Ichthyomyzon castaneus*
Silver lamprey	Level III	*Ichthyomyzon unicuspis*
Largescale stoneroller	Level III	*Campostoma oligolepis*
Horneyhead chub	Level III	*Nocomis biguttatus*
Pugnose shiner	Level III	*Notropis anogenus*
Blacknose shiner	Level III	*Notropis heterolepis*
Carmine shiner	Level III	*Notropis percobromis*
Finescale dace	Level III	*Phoxinus neogaeus*
Yellow bullhead	Level III	*Ameiurus natalis*
Logperch	Level III	*Percina caprodes*
River darter	Level III	*Percina shumardi*

(Source: NDGFD 2021b) (https://gf.nd.gov/wildlife/scp.)

3.1.2 Impacts and Mitigation

Several vegetated emergent wetland depressions and wetland drainageways occur adjacent to the project area. These water resources are somewhat isolated and shallow but may support limited fish species. WBI Energy may obtain water from a nearby open water lake to support guided bore, fugitive dust control and hydrostatic testing activities. In order to minimize impact to potential fish species, hoses used for uptake will be screened or netted to keep fish out of the pumping assembly. Pumps will be kept in good operating condition and will be placed in secondary containment while in operation.

No waterbodies are crossed by the Project area and no permanent impacts to waterbodies are anticipated. Equipment will be inspected regularly for leaks and spills. Construction activities will be conducted in accordance with the FERC Procedures and the Project SPCC Plan. Contractors and employees will be trained on applicable FERC Procedures, spill response methods, or any other applicable regulatory requirements, and spill kits will be readily available. Potential impacts and mitigation measures to water resources are further discussed in Resource Report 2.

3.2 WILDLIFE RESOURCES

Wildlife habitat characterizations were obtained from available literature, agency websites, review of aerial photographs of the Project area, and field surveys. The suitability of an area as habitat is closely related to the surrounding vegetation. A description of vegetation within the Project area is provided in Section 3.3.2 below. Endangered and threatened species are discussed in Section 3.4 below.

3.2.1 Existing Wildlife Resources

The Project area will cross three broad vegetation classes consisting of agricultural land, open land, and developed land. Agricultural land is the dominant vegetation type present within the Project area.

- Agricultural land (cultivated crops, hayfields, and pastureland)
- Open land (grassland and non-forested wetlands)
- Developed land (roads, railroads, and utility corridors)

These vegetation classes provide food, protective cover, and young-rearing habitat for wildlife. Many game and non-game wildlife species inhabit the grassy and wooded edges of cropland and adjacent wetland habitat. Croplands may also provide a food source for opportunistic species such as deer, ring-necked pheasant, and migrating waterfowl.

Table 3.2.1-1 lists the characteristic wildlife species present within the Project area that are not classified as Species of Conservation Concern.

TABLE 3.2.1-1
Representative Wildlife Species in the Project Area

Species	Agricultural Lands	Open Lands	Developed Lands
Mammals			
American Badger (*Taxidea taxus*)		X	
American beaver (*Castor canadensis*)		X	
American mink (*Neovision vision*)		X	
Common muskrat (*Ondatra zibethicus*)		X	
Coyote (*Canis latrans*)	X	X	X
Deer mouse (*Peromyscus maniculatus*)		X	
Eastern cottontail (*Sylvilagus floridanus*)		X	
Eastern fox squirrel (*Sciurus niger*)		X	X
Elk (*Cervus elaphus*)		X	
Long-tailed weasel (*Mustela frenata*)		X	
Meadow vole (*Microtus pennsylvanicus*)		X	
Mule deer (*Odocoileus hemionus*)	X	X	
Pronghorn (*Antilocaptra americana*)	X	X	
Raccoon (*Procyon lotor*)	X	X	X
Red fox (*Vulpes vulpes*)		X	
Striped skunk (*Mephitis mephitis*)	X	X	
White-footed mouse (*Peromyscus leucopus*)		X	
White-tailed deer (*Odocoileus virginianus*)	X	X	X
White-tailed jackrabbit (*Lepus townsendii*)	X	X	
Birds			
American wigeon (*Anas americana*)		X	
Blue-winged teal (*Anas discors*)		X	
Canada goose (*Branta canadensis*)	X	X	
Clay-colored sparrow (*Spizella pallida*)		X	
Gadwall (*Anas strepera*)		X	
Greater white-fronted goose (*Anser albifrons*)	X	X	
Gray Partridge (*Perdix perdix*)	X	X	
Least flycatcher (*Empidonax minimus*)		X	
Magpie (*Pica hudsonia*)	X	X	
Mallard (*Anas platyrhynchos*)	X	X	
Mourning dove (*Zenaida macroura*)	X	X	X
Northern harrier (*Circus cyaneus*)	X	X	
Northern shoveler (*Anas clypeata*)		X	
Prairie falcon (*Falco mexicanus*)	X	X	
Red-eyed vireo (*Vireo olivaceus*)		X	

TABLE 3.2.1-1
Representative Wildlife Species in the Project Area

Species	Agricultural Lands	Open Lands	Developed Lands
Redhead (*Aythya americana*)		X	
Red-tailed hawk (*Buteo jamaicensis*)	X	X	
Ring-necked pheasant (*Phasianus colchicus*)	X	X	
Sandhill crane (*Grus canadensis*)	X	X	
Sedge wren (*Cistothorus platensis*)		X	
Sharp-tailed grouse (*Tympanuchus phasianellus*)		X	
Snow goose (*Chen caerulescens*)	X	X	
Western kingbird (*Tyrannus verticalis*)		X	
Yellow warbler (*Dendroica petechial*)		X	
Reptiles and Amphibians			
Boreal chorus frog (*Pseudacris maculate*)	X	X	X
Bullsnake (*Pituophis catenifer*)		X	
Common gartersnake (*Thamnophis sirtalis*)		X	
Eastern yellow-bellied racer (*Coluber constrictor*)		X	
Great Plains toad (*Bufo cognatus*)		X	
Northern leopard frog (*Rana pipiens*)		X	
Plains gartersnake (*Thamnophis radix*)		X	
Plains spadefoot toad (*Spea bombifrons*)	X	X	
Prairie rattlesnake (*Crotalus viridis*)		X	
Short-horned lizard (*Phrynosoma douglassi*)		X	
Tiger salamander (*Ambystoma tigrinum*)		X	
Western painted turtle (*Chrysemys picta*)		X	
Woodhouse's toad (*Anaxyrus woodhousii*)		X	X

Sources: NDGFD 2015a, 2015b, 2016, 2019b

3.2.2 Unique and Sensitive Wildlife and Habitat

3.2.2.1 Significant and Sensitive Habitat

There are no National Park Service Wilderness Areas, National Wild and Scenic Rivers, National Forests, or conservation easements/management areas crossed by the Project area. The closest known significant and sensitive habitat consists of National Wildlife Refuge (NWR) easement areas associated with the Audubon Wetland Management District. The closest NWR

easement area is a waterfowl production area, located approximately 0.14 miles north of the Project area (USFWS 2016). No impacts to significant or sensitive habitat are anticipated. Threatened and endangered species and their critical habitat are discussed further in Section 3.4 of this report.

3.2.2.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 prohibits the take (including killing, capturing, selling, trading and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (USFWS). The MBTA applies to migratory birds that are identified in 50 CFR 10.13. (USFWS 2020).

According to the USFWS Information for Planning and Consultation system, 22 migratory bird species may occur within McLean and Morton Counties, North Dakota. Table 3.2.2.2-1 below lists these species (USFWS 2021) (Ebird 2021).

Table 3.2.2.2-1
Migratory Bird Species that Potentially Occur within the Project Area

Species Name	Scientific Name
American golden plover	*Pluvialis dominica*
Bald eagle	*Haliaeetus leucocephalus*
Black tern	*Chlidonias niger*
Black-billed cuckoo	*Coccyzus erythropthalmus*
Bobolink	*Dolichonyx oryzivorus*
Chestnut-collared longspur	*Calcarius ornatus*
Clark's grebe	*Aechmophorus clarkii*
Ferruginous hawk	*Buteo regalis*
Franklin's gull	*Leucophaeus pipixcan*
Golden eagle	*Aquila chrysaetos*
Lark bunting	*Calamospiza melanocorys*
Lesser yellowlegs	*Tringa flavipes*
Marbled godwit	*Limosa fedoa*
Red-headed woodpecker	*Melanerpes erythrocephalus*
Ruddy Turnstone	*Arenaria interpres morinella*
Short-billed dowitcher	*Limnodromus griseus*
Sprague's pipit	*Anthus spragueli*
Willet	*Tringa semipalmata*
Baird's sparrow	*Ammodramus bairdii*
Hudsonian godwit	*Limosa haemastica*
Lewis's woodpecker	*Melanerpes lewis*
Long-eared owl	*Asio otus*

Source: (USFWS 2021) (Ebird 2021)

3.2.2.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) prohibits the taking of bald and golden eagles, including their parts, nests, or eggs. This Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb" (USFWS 2018).

Beaver Creek conducted on-the-ground eagle nest surveys within one mile of the proposed Project area. One active bald eagle nest was present within the survey corridor in Section 22, T145N, R82W. The nest was positioned in a tall cottonwood tree approximately 244 feet north of the Project area and about 500 feet east of an access road. Since construction is planned for early 2022, there is potential for construction to coincide with the bald eagle nesting season.

3.2.3 Impacts and Mitigation

The anticipated Project schedule corresponds with bird migration periods. Migratory birds could use habitat present within the Project area for stopover habitat during migration or as potential nesting habitat. To minimize impacts, WBI Energy will mow the construction right of way prior to bird migration to deter birds from nesting in the project area. If mowing cannot be completed prior to bird migration, WBI Energy will conduct nesting surveys prior to clearing the right-of-way. If nests are identified during surveys, depending on local topography and vegetative buffers, work will stop up to 0.1 miles from the active nest. The nest will be monitored, and construction activities will resume once chicks have fledged or the nest has failed.

Impacts on wildlife habitat include disturbance of soils and vegetation during construction. Direct impacts to wildlife may also include the potential mortality or injury during construction from destruction of ground nests or vehicle collisions. Indirect impacts to wildlife may include increased noise from construction equipment and increased human activity, which may lead to displacement and avoidance of workspace areas. WBI Energy will utilize existing access roads, stay within approved workspace boundaries, and limit construction to daylight hours. Open excavations and idle equipment will be routinely checked for wildlife before initiating construction activities each day. Any wildlife that has entered the work area will be allowed to exit the work area.

WBI Energy will avoid impacts to the active bald eagle nest by implementing the following actions:

- Avoiding construction during the breeding season.
- If construction occurs during the breeding season, and if the nest is active during construction, WBI Energy will avoid construction and all construction-related activities within a 660-foot radius of the nest. This will be done by setting up a bore 660 feet west of the nest and boring the pipeline, remerging a minimum of 660 feet on the east side of the nest.

All disturbed areas will be restored to original condition following construction in accordance with the FERC Plan and Procedures. Cropland will be restored to active agricultural production, and other areas will be revegetated to pre-disturbance conditions. No substantial changes in wildlife habitat availability or suitability are anticipated as a result of the Project.

3.3 VEGETATION RESOURCES

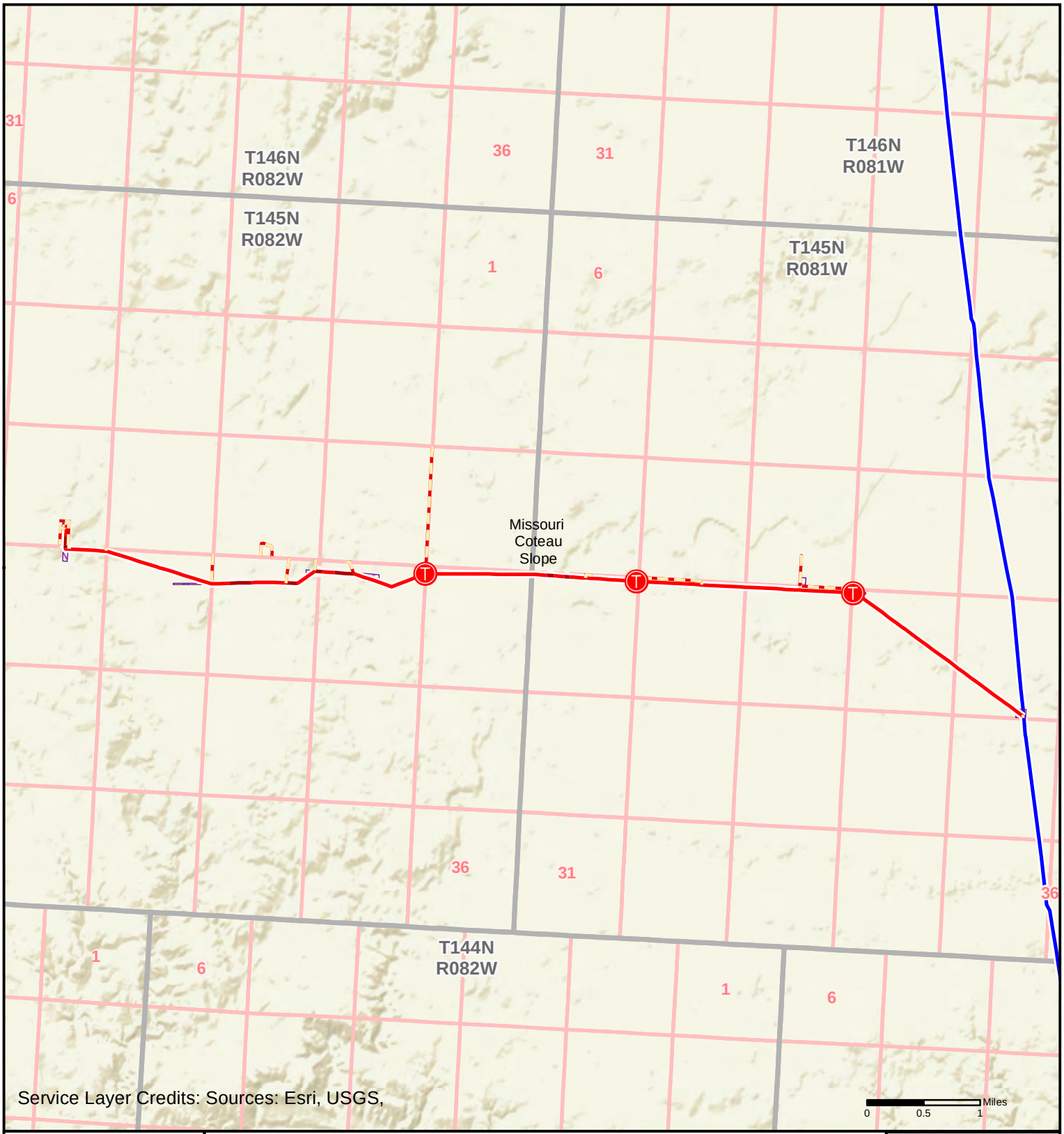
This section describes the existing vegetation resources that occur within the Project area, as well as potential impacts from construction activities. Vegetation locations of special concern and noxious and invasive species are also discussed. Information on existing vegetation was obtained from biological field surveys and review of aerial photography and available literature.

3.3.1 Ecoregions within the Project Area

Ecoregions are determined based on general similarity of geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology. The Environmental Protection Agency (EPA) classification scheme divides North Dakota into four level III ecoregions: The Lake Agassiz Plain, the Northern Glaciated Plains, the Northwestern Glaciated Plains, and the Northwestern Great Plains (NDGFD 2015a).

Most of the Project area is located within the Northwestern Glaciated Plains (42) Level III ecoregion and the Missouri Coteau Slope (42c) Level IV ecoregion in McLean County, North Dakota. The Northwestern Glaciated Plains ecoregion marks the westernmost extent of continental glaciation. The youthful morainal landscape has significant surface irregularity and high concentrations of wetlands. The Northwestern Glaciated Plains ecoregion is further divided into the Missouri Coteau Slope Level IV ecoregion. This ecoregion declines in elevation from the Missouri Coteau (42a) to the Missouri River. Unlike the Missouri Couteau where there is a paucity of streams, the Missouri Coteau Slope has a simple drainage pattern and fewer wetland depressions. Due to the level of gently rolling topography, there is more cropland than on the Missouri Coteau (EPA 2021).

WBI Energy's Glen Ullin Compressor Station is located within the Northwestern Great Plains (43) Level III ecoregion and the Missouri Plateau (43a) Level IV ecoregion in Morton County, North Dakota. The Northwestern Great Plains ecoregion is a semiarid rolling plain of shale, siltstone, and sandstone punctured by occasional buttes and badlands. The Northwestern Great Plains ecoregion is further divided into the Missouri Plateau Level IV ecoregion. The topography of this ecoregion was largely unaffected by glaciation and retains its original soils and complex stream drainage pattern. A mosaic of spring wheat, alfalfa, and grazing land covers the shortgrass prairie where herds of bison, antelope, and elk once grazed (EPA 2021).



Line Section 7 Expasnion Project

Figure 3.3.1 Ecoregion Overview

Legend

- Farm Taps
- Access Roads
- Proposed Bore
- Proposed Pipeline
- Existing WBI Pipeline Centerline
- ATWS
- Townships
- Sections
- Miissouri Coteau Slope

WBI ENERGY TRANSMISSION

N

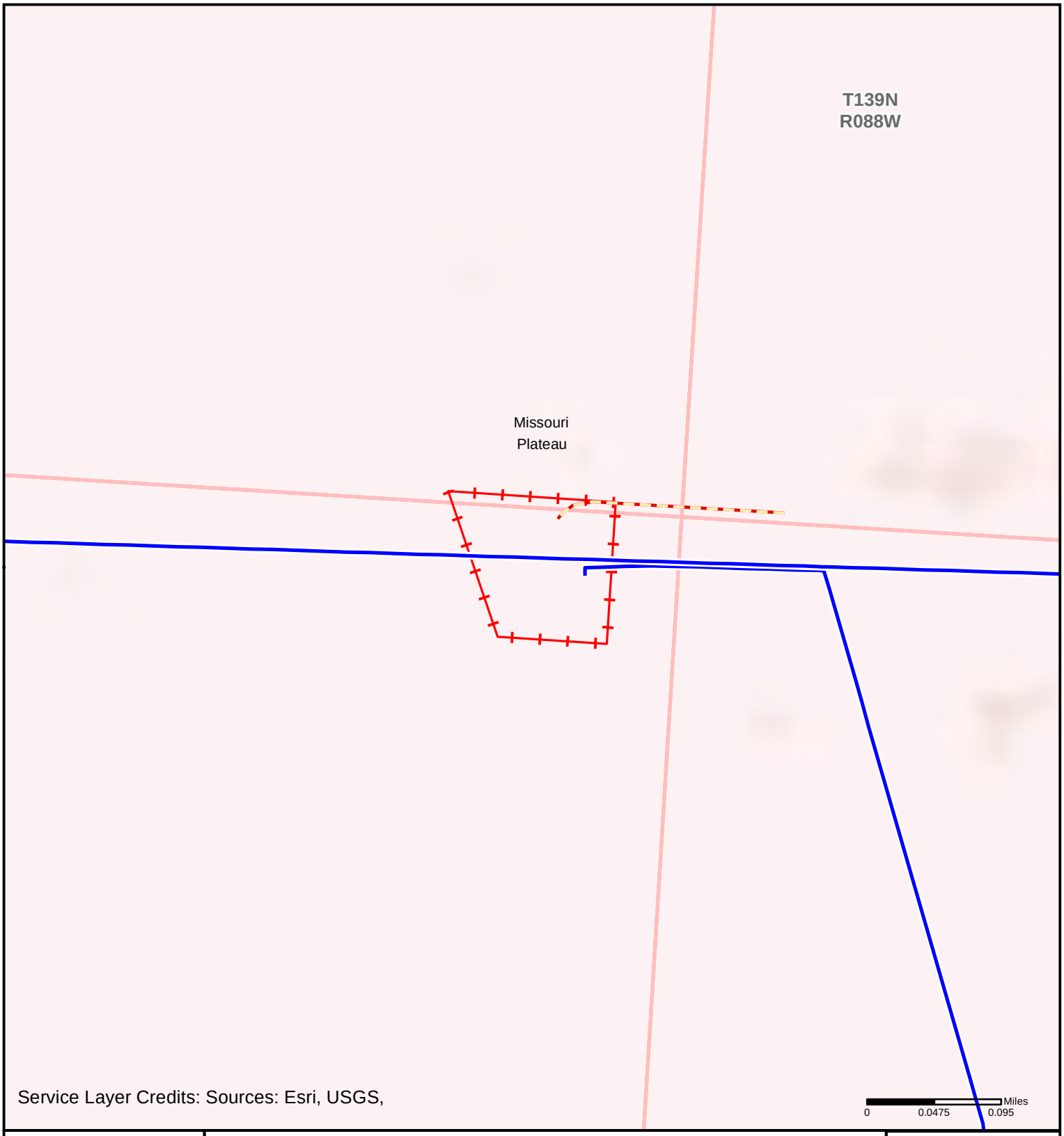
1 in = 6,250 feet

Mclean County, ND

Source: EPA 2012

PROJECT AREA OVERVIEW

By: AB Date: 9/7/2021 1:75,000 - when Printed on 8X11 Revision Date: 9/22/2021



Line Section 7 Expansion Project

Figure 3.3.1 Ecoregion Overview

Legend

- Access Roads
- Existing WBI Pipeline Centerline
- Glen Ullin Tract
- Townships
- Sections
- Missouri Plateau

N

1 in = 500 feet

Morton County, ND

Source: EPA 2012

PROJECT AREA OVERVIEW

By: AB Date: 9/7/2021 1:6,000 - when Printed on 8X11 Revision Date: 9/22/2021

3.3.2 Existing Vegetation Resources

Existing vegetation resources were assessed through detailed on-the-ground surveys and the Natural Resource Conservation Service (NRCS) Web Soil Survey ecological site description data. The majority of the Project area lies in the 53B-Central Dark Brown Glaciated Plains Major Land Resource Area (MLRA), within the R053BY011ND - Loamy ecological site (NRCS 2010) (NRCS 2021b). The Historic Climax Plant Community (HCPC) of this ecological site was dominated by green needlegrass and western wheatgrass. Vegetation was typically about 85% grasses or grass-like plants, 10% forbs, and 5% shrubs. Other grasses and grass-like plants consisted of needle-and-thread, blue grama, porcupine grass, bearded wheatgrass, and sedges. Significant forbs included American vetch, green sagewort, silverleaf scurfpea, and Missouri goldenrod. Western snowberry was the principal shrub in many areas, with other shrubs consisting of prairie rose, winterfat, and fringed sagewort (NRCS 2021a).

Beaver Creek assessed current vegetative composition during detailed field surveys conducted on May 5-6th and August 6th, 2021, detailed in the Biological Assessment Report (Appendix II-P). The majority of the Project area is dominated by agricultural cropland. Introduced grassland consisting primarily of smooth brome (*Bromus inermis*), Kentucky bluegrass (*Poa pratensis*), and quackgrass (*Elymus repens*) is present along field margins, road ditches, and drainage ditches. Crop fields occasionally contain unvegetated or cropped wetland depressions. Native habitat is present in Section 22 and Section 23, T145N, R82W. This area contains a combination of upland habitats dominated by quackgrass and western wheatgrass (*Pascopyrum smithii*). Occasional green ash (*Fraxinus pennsylvanica*), cottonwoods (*Populus deltoides*), and Russian olive (*Elaeagnus angustifolia*) is present within the vicinity of the Project area. Emergent wetlands are dominated by cattails (*Typha sp*.) and prairie cordgrass (*Spartina pectinata*) (Beaver Creek 2021).

3.3.3 Unique, Sensitive, and Protected Vegetation Communities

3.3.3.1 Conservation Reserve Program

The Conservation Reserve Program (CRP) is a land conservation program administered by the Farm Service Agency. In exchange for a yearly rental payment, farmers enrolled in the program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. The long-term goal of the program is to re-establish valuable land cover to help improve water quality, reduce soil erosion, and reduce loss of wildlife habitat (FSA 2021). There is no known CRP land within the Project area. No impacts to CRP land are anticipated.

3.3.4 Noxious Weeds and Other Invasive Species

According to North Dakota Century Code [NDCC] 4.1-47-01, noxious weeds are defined as any "plant propagated by either seed or vegetative parts and determined to be injurious to public health, crops, livestock, land, or other property" as determined by NDCC Sections 4.1-47-05, 4.1-47-10, or 4.1-47-21. The North Dakota Department of Agriculture (NDDA) has established and implemented a statewide network to manage noxious weeds. Under these regulations (NDCC 4.1-47-02), "each person shall do all things necessary and proper to control the spread of noxious weeds and no person may distribute, sell, or offer for sale" noxious weeds (NDDA 2015).

Noxious and invasive plant species include non-native, undesirable native, or introduced species that are able to exclude and/or out-compete desired native vegetation, thereby decreasing overall species diversity. The NDDA noxious weed list is recognized and regulated by all cities and counties in North Dakota and detailed in Table 3.3.4-1 below. Cities and counties also have the option to add additional weeds onto a list for enforcement in their jurisdictions. There are no additional county or city noxious weeds species in Morton or McLean Counties.

Table 3.3.4-1

Noxious Weeds in North Dakota

Species Name	**Scientific Name**
Absinth wormwood	*Artemisia absinthium L.*
Canada thistle	*Cirsium arvense (L.) Scop.*
Dalmation toadflax	*Linaria genistifolia spp. dalmatica*
Diffuse knapweed	*Centaurea diffusa Lam.*
Houndstongue	*Cynoglossum officinale L.*
Leafy spurge	*Euphorbia esula L.*
Musk thistle	*Carduus nutans L.*
Palmer amaranth	*Amaranthus palmeri*
Purple loosestrife	*Lythrum salicaria L., Lythrum virgatum L., and all cultivars*
Russian knapweed	*Centaurea repens L.*
Saltcedar	*Tamarisk spp.*
Spotted knapweed	*Centaurea maculosa Lam.*
Yellow toadflax	*Linaria vulgaris*

Table 3.3.4-1 **Noxious Weeds in North Dakota**	
Species Name	**Scientific Name**
Source: NDDA 2017	

3.3.5 Impacts and Mitigation

Major impacts on vegetation resources will include temporary ground disturbance to complete construction activities. Vegetation removal and soil disturbance during construction of the pipeline facilities could create optimal conditions for the establishment of invasive, non-native plant and noxious weed species. Construction equipment traveling from weed-infested areas into weed-free areas could disperse invasive and noxious species, resulting in the establishment of undesirable vegetation. Potential impacts will be minimized by restricting construction activities to only approved access roads and workspaces and completing Project activities in accordance with the FERC Plan and Procedures. Extra care will be taken to preserve the entire topsoil layer and maintain topsoil and subsoil segregation. Equipment will be cleaned prior to coming onsite to reduce potential weed infestation or other contaminants.

Following construction, all disturbed areas will be seeded with an approved seed mix representative of surrounding vegetation and historic native plant communities. WBI Energy will consult with the local soil conservation service and landowners, and adhere to seed mix, method, rate, and time frame recommendations. Agricultural lands will revert to pre-disturbance uses, and WBI Energy will communicate with landowners to ensure that agricultural lands are managed appropriately during and following construction. Vegetation establishment will be continually monitored during onsite inspections until final stabilization is achieved. If noxious weed species become established on the R/W, WBI Energy will make efforts to control weeds and work with adjacent landowners to prevent the spread of noxious weed species. WBI Energy will control noxious weed species at WBI Energy-managed aboveground facility sites to prevent the spread of weeds onto adjacent properties. Invasive and noxious weed species will be routinely monitored, and mechanical or chemical control methods implemented when necessary in accordance with state regulations.

3.4 ENDANGERED AND THREATENED SPECIES

WBI Energy contracted qualified biologists at Beaver Creek to conduct natural resource surveys of the Project area and to assess the potential effects to federally listed threatened, endangered, and proposed species and their critical habitat. The findings of these surveys and assessments are found in the Biological Assessment Report (BA) included as Appendix II-P and summarized in the following sections.

3.4.1 Federally Listed Species

The Northern long-eared bat, piping plover, red knot, whooping crane, and Dakota skipper are listed as endangered or threatened species in Morton County. The Northern long-eared bat, piping plover, red knot, whooping crane, Dakota skipper, and pallid sturgeon are listed as endangered or threatened species in McLean County (USFWS 2021). Of these species, three species have the potential to occur within the Project area: the endangered whooping crane (*Grus americana*), threatened Dakota skipper (*Hesperia dacotae*), and threatened Northern long-eared bat (*Myotis septentrionalis*). These species are detailed in Table 3.4.1-1 (Beaver Creek 2021).

Table 3.4.1-1
Federally Listed, Proposed, and Candidate Resources within the Project Area

Taxa	Common Name	Scientific Name	Status
Bird	Whooping crane	*Grus americana*	Endangered
Insect	Dakota skipper	*Hesperia dacotae*	Threatened
Mammal	Northern long-eared bat	*Myotis septentrionalis*	Threatened

(Source: Beaver Creek 2021)

Beaver Creek determined that proposed Project activities will have No Effect on the whooping crane, Dakota skipper, and Northern long-eared bat, as summarized in the paragraphs below:

- Whooping crane:

  The whooping crane breeds in wetland habitat associated with Wood Buffalo National Park in Alberta and the Northwest Territories of northern Canada and overwinters on the Texas coast. The migration corridor for the Aransas-Wood Buffalo Population of whooping cranes follows an approximate straight path, with the cranes traveling through Alberta, Saskatchewan, extreme eastern Montana, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas. During migration, whooping cranes may use wetland and agricultural cropland stopover habitat located within the Project area.

  The Project area is located within the migration corridor where 95% of confirmed whooping crane sightings have been made. Since the Project is within the whooping crane migratory corridor, whooping cranes may occur in the vicinity of the Project during the April 1-May 15 and/or September 10-October 31 migration periods. Beaver Creek determined that the Project would have no effect on the whooping crane, as detailed in the Biological Assessment Report (Beaver Creek 2021).

- Dakota skipper

The Dakota skipper is a small butterfly found in the tallgrass and mixed grass prairies of the Northern Great Plains. Dakota skippers have a single flight per year occurring from the middle of June through the end of July. Dakota skipper habitat has been categorized into two main types: "Type A" habitat is low, wet-mesic prairie on near-shore glacial lake deposits dominated by bluestem grasses, and "Type B" habitat occurs on rolling terrain over gravelly glacial moraine deposits and is dominated by bluestems and needle grasses (*Hesperostipa sp.)*.

Suitable native prairie habitat is not present within the Project area. The majority of the Project area consists of agricultural cropland. Since Dakota skippers have limited dispersal capabilities, and since suitable habitat is not present, Dakota skippers would be unlikely to disperse within the Project area. Beaver Creek determined that the Project would have no effect on the Dakota skipper, as detailed in the Biological Assessment Report (Beaver Creek 2021).

- Northern long-eared bat

  The Northern long-eared bat is an insectivorous bat that uses different roost sites in different seasons. In winter, Northern long-eared bats hibernate in caves or mines with high humidity and stable temperatures. Suitable summer habitat consists of a wide variety of forested/wooded habitats where the bats roost, forage, and travel.
  No trees are crossed by the defined workspace areas. It is unlikely that temporary increased noise levels and human activity during construction would be discernible to Northern long-eared bats using adjacent habitat, compared to the existing traffic and noise regime, such that the Project would cause displacement. Beaver Creek determined that the Project would have no effect on the Northern long-eared bat, as detailed in the Biological Assessment Report (Beaver Creek 2021).

As required by Section 7(a)(2) of the Endangered Species Act (ESA) and in accordance with FERC guidelines, WBI Energy initiated informal consultation with the USFWS regarding federally listed species that may occur or potentially be affected by construction activities on August 16, 2021, receiving acknowledgement that the proposed Project will have no effect on listed species in a letter dated September 20, 2021. The FWS provided no comments regarding impacts to threatened or endangered species.

3.4.2 Impacts and Mitigation

The Project is expected to have no effect on the whooping crane, Dakota skipper, and Northern long-eared bat. Due to the lack of habitat in the Project area and continuous human disturbances associated with agricultural activities, the likelihood of species occurring in the Project area is low. Potential impacts will be minimized by conducting construction activities in accordance

with the FERC Plan and Procedures and restoring all disturbed areas to original conditions following construction. If a whooping crane is observed, construction will be stopped, the USFWS will be notified, and construction will not proceed until after whooping cranes have left the area and permission to proceed has been granted by the USFWS.

3.5 REFERENCES

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RESOURCE REPORT 4

4.0 CULTURAL RESOURCES

Resource Report 4 describes the nature and significance of cultural resources or historic properties that may be affected within the Project area. WBI Energy contracted Beaver Creek Archaeology (BCA) to conduct the Class I and Class III archaeological investigations for the Project and assess impacts to cultural resources. Please refer to Resource Report 1 for a detailed Project description.

4.1 AGENCY CONSULTATIONS

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, requires federal agencies to analyze the effects of their undertakings on cultural resource sites that are listed or eligible for listing on the National Register of Historic Places (NRHP). WBI Energy is assisting the FERC in fulfilling its obligations under the NHPA by providing consultations with the North Dakota State Historic Preservation Office (SHPO) and conducting a detailed Class I and Class III cultural resource inventory of the Project area. BCA was contracted to complete a Class III cultural resource inventory of the Area of Potential Effect. The Class III cultural resource inventory report is filed as a privileged and confidential document in Appendix III-A.

On August 11, 2021 WBI Energy initiated consultation with the SHPO regarding the proposed Project and provided the associated Class III cultural resource inventory report. The SHPO found the Class III cultural resources inventory report acceptable and concurred with a "*No Historic Properties Affected*" determination on August 17, 2021. SHPO consultation documents regarding the proposed Project are included in Appendix II-N.

4.2 AREA OF POTENTIAL EFFECT

The Area of Potential Effect (APE) is defined as the "geographic area or areas within which an undertaking may directly or indirectly cause changes in the character of, or use of historic properties, if any such properties exist" (36CFR Part 800.16[d]). The APE is located on rolling hills in the Southern Missouri River Study Unit and within the Painted Woods Creek drainage system. The survey area is presently used for livestock grazing, agricultural fields, wildlife habitat, and ethanol production. Previous disturbances included plowing, overhead and underground utilities, roads, railroad tracks, tree rows, fence lines, and the Blue Flint Ethanol Plant. The Project area is located approximately 5 miles north of the City of Washburn, on private property in McLean County, North Dakota.

The total APE encompasses approximately 129 acres and includes all construction areas, including pipeline and aboveground facility workspaces, staging areas, and access roads. Exhibits of the APE survey corridor are included within the Class III cultural resource inventory report.

4.3 CULTURAL RESOURCE INVESTIGATIONS

Prior to field surveys, BCA conducted a file search of SHPO records to identify previously recorded cultural resources within the APE. BCA archaeologists conducted an on-the-ground inventory between May 3, 2021 and May 25, 2021. After the completion of the original survey, additional surveys were completed on July 16, 2021 and August 3, 2021 to cover additional workspace areas. The inventory consisted of pedestrian survey transects spaced no more than 15 meters apart based upon terrain and probability of cultural resources. When cultural resources were encountered, the location was marked with pin-flags and the surrounding area assessed to determine the nature and extent of the resource. The resource was then plotted on a USGS 7.5' Quad. Map utilizing a Trimble GPS unit.

4.3.1 Overview Results

File searches conducted by the SHPO on March 3, 2021 revealed 10 projects that had been conducted within the sections where the survey area for the proposed Project is located. None of the previously recorded cultural resources are within or near the survey area for the Project. File search results are detailed in the Class III cultural resource inventory report.

The Class III cultural resource inventory resulted in three new cultural resources (Site 32ML1408, Isolated Find 32MLx832, and 32MLx833) identified. A brief description of each newly recorded cultural resource is provided below:

- **Site 32ML1408:** consists of a historic cultural material (CM) scatter. Cultural material observed on the surface at the site includes faunal bones, ceramics, glass, metal, a button, a bead, marbles, charcoal, and slag. In addition, a copper Norwegian coin was found at the NE corner of the site. Following the discovery of the site, BCA consulted with the North Dakota SHPO to determine a subsurface testing strategy. Shovel test probes (STPs) were planned throughout the entirety of the site to confirm the extent, and test units (TUs) were excavated. The TU terminated upon reaching two negative levels. Intact subsurface deposits were not observed during the testing. The site is recommended as ineligible for nomination to the NRHP as it does not meet any of the eligibility criteria. No avoidance measures are recommended.

- **Isolated Find 32MLx832:** consists of one Knife River flint (KRF) biface fragment. All STPs were negative for CM and there is no potential for intact buried deposits. The isolated find has been recommended as ineligible for nomination to the NRHP and no avoidance measures are recommended.

- **Isolated Find 32MLx833:** consists of one KRF projectile point tip. All STPs were negative for CM and there is no potential for intact buried deposits. The isolated find has been recommended as ineligible for nomination to the NRHP and no avoidance measures are recommended.

BCA recommends a finding of *No Historic Properties Affected* for the proposed undertaking, and no further archaeological actions are recommended for the Project. The attached Class I and Class III cultural resource inventory report and associated exhibits are included in Appendix IV-A.

4.4 UNANTICIPATED DISCOVERIES PLAN

WBI Energy has prepared a Plan for Unanticipated Discovery of Historic Properties or Human Remains to prepare for the unforeseen discovery of cultural resources or human remains during construction. This Plan describes in detail the FERC and applicable state agency notification processes in the event that cultural resources or human remains are discovered. Copies will be on site during construction, and the field crews and environmental inspector will be trained and aware of its contents. The Plan for Unanticipated Discovery of Historic Properties or Human Remains is provided in Appendix II-I.

4.5 AVOIDANCE MEASURES

All sites encountered during the Class III cultural resource inventory were recommended *ineligible* for inclusion in the NRHP and no avoidance is recommended. Please see the Plan for Unanticipated Discovery of Historic Properties or Human Remains for procedures that will be implemented in the event that cultural resources or human remains are discovered during construction.

4.6 REFERENCES

Baker, Amanda & Lembo, Reilly. 2021. *A Class I and Class III Cultural Resource Inventory of the Blue Flint Ethanol Plant Lateral Natural Gas Pipeline, Delivery Station, and Access Roads in McLean County, North Dakota.*

RESOURCE REPORT 5

5.0 SOCIOECONOMICS

A resource report on Socioeconomics is only required for projects involving major facilities that would normally require an Environmental Impact Statement. The Line Section 7 Expansion Project involves minor to moderate lengths of pipeline, with minor modifications to WBI Energy's receipt facilities within the Glen Ullin Compressor Station and construction of a proposed delivery station, take off valve setting, and three farm taps. Proposed Project activities do not meet the reporting criteria for Resource Report 5, and therefore this report is not required.

RESOURCE REPORT 6

6.0 GEOLOGIC RESOURCES

Resource Report 6 describes the geologic resources crossed by the proposed Project. This report addresses potential impacts on geologic resources and geologic hazards, along with mitigation measures implemented to minimize these impacts. Information was obtained from desktop analysis and review of available literature. Please refer to Resource Report 1 for a detailed Project description.

6.1 GEOLOGIC SETTING

6.1.1 Physiography and Topography

The Project area is within McLean and Morton Counties, North Dakota, with the majority of construction occurring in McLean County. McLean County lies mostly within the Great Plains physiographic province, with drainage to the Gulf of Mexico by way of the Missouri River. The principal tributaries are Painted Woods Creek, Turtle Creek, Deep Water Creek, and Douglas Creek. Most of the county is internally drained, with numerous sloughs, prairie potholes, and lakes. The maximum relief in the county is about 680 feet, with the highest point 2,290 feet above sea level and the lowest point 1,610 feet above sea level. The topography of the county is primarily the result of glacial erosion and deposition, with most of the present landforms produced during the retreat and minor advances of the last ice sheet (Klausing 1974).

Morton County lies within the Missouri Plateau of the Great Plains physiographic province, in the southwestern part of North Dakota. Entrenched river valleys and isolated tablelands interrupt a landscape dominated by plains and low-lying hills. Surface altitudes generally increase in a westerly direction from about 1,620 feet above sea level along the Missouri River to more than 2,500 feet above sea level in the extreme western part of the county. The county is drained by the Missouri River and three principal tributaries, the Heart, Cannonball, and Knife Rivers (Ackerman 1980).

6.1.2 Surficial and Bedrock Geology

6.1.2.1 Surficial Geology

Surficial geology refers to landforms and the unconsolidated sediments that lie beneath them. These unconsolidated materials are close to or at the Earth's surface and made up of glacial and postglacial deposits, described in detail below:

Glacial Deposits

Glacial deposits of Pleistocene age, consisting of unconsolidated fragments of older rock eroded and transported by glaciers, cover most of the Project area and unconformably overlie sedimentary rocks of Paleocene age. The deposits range from 0-440 feet thick and are divided into four principal types: till, glaciofluvial deposits, ice-contact deposits, and lake deposits (Klausing 1974).

- *Till*: a non-sorted, non-stratified sediment consisting of a mixture of clay, silt, sand, and gravel. Till is deposited from glacial ice by dumping, pushing, lodging, and ablation.

- *Glaciofluvial Deposits*: consist largely of sand and gravel that has been sorted and stratified by glacial melt water. Glaciofluvial deposits occur as (1) sediments in preglacial and interglacial stream valleys buried by till, (2) sediments in melt-water channels, (3) surficial-outwash sediments, and (4) isolated pockets surrounded by clay or till.

- *Ice-Contact Deposits*: consist largely of gravel, sand, and clay that were deposited with melting glacial ice. These deposits are characterized by sharp changes in sorting and slumped or contorted bedding.

- *Lake Deposits*: consist of silt and clay deposited by glacial melt water and are generally only a few feet thick. In some places the silt and clay seem to be associated with buried valleys, suggesting that deposition was caused by temporary damming of an existing stream.

Postglacial Deposits

Postglacial deposits occur in many places throughout the state of North Dakota and are the result of the reworking, transporting, and deposition of soil and/or rock material occurring since the end of the last glaciation. Postglacial deposits within the Project area primarily consist of alluvium and eolian deposits (Klausing 1974).

- *Alluvium*: alluvium composed of clay, silt, and fine sand, is present in the postglacial floodplains of the Missouri River and its tributaries. Alluvium is also present in most of the melt-water channels, where it overlies sand and gravel deposits of glacial origin. Locally alluvium may be up to 20 feet thick.

- *Eolian Deposits*: eolian deposits consist of fine sand and are present locally on low hills and bluffs adjacent to the Missouri River southwest of the City of Underwood, North Dakota. These windblown deposits usually are thin, but in places form large dunes.

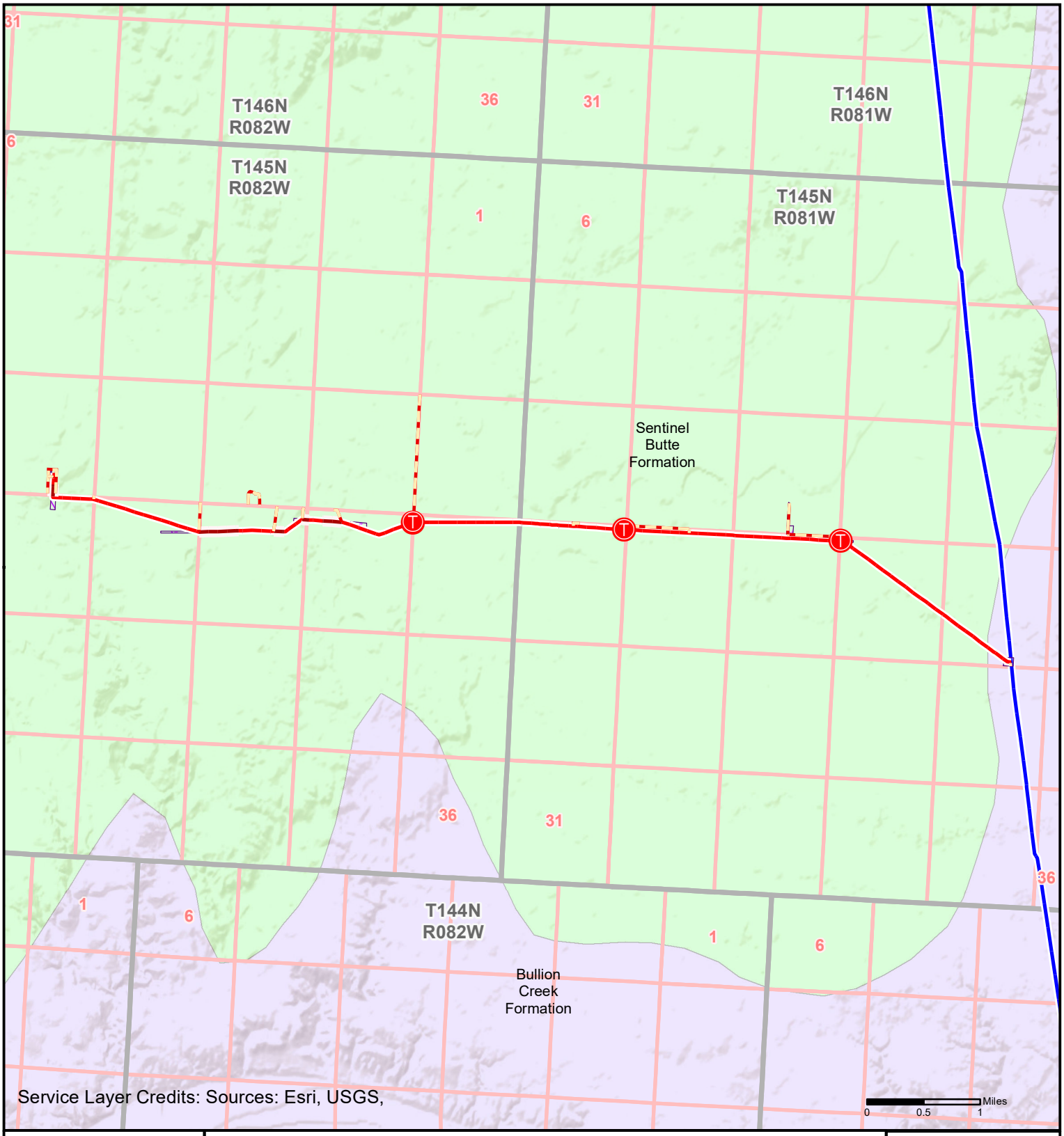
6.1.2.2

Bedrock Geology

Bedrock geology refers to the solid rock that underlies unconsolidated glacial deposits. The preglacial sedimentary rocks underlying most of the Project area were deposited in a large, sporadically subsiding basin known as the Williston Basin. During Paleozoic time a Precambrian structure located in Burleigh County was subject to intermittent uplift, resulting in thinning and nondeposition of rocks of Paleozoic age. Following a period of erosion, deposition was renewed at the beginning of Mesozoic time and continued into the Cenozoic Era. Sedimentary rocks deposited during Paleozoic time consist of limestone, dolomite, and lesser amounts of sandstone, shale, and evaporites. Sedimentary rocks deposited during Mesozoic time consist largely of shale. Sedimentary rocks of Paleocene age consist of interbedded shale, silt, sandstone, and lignite (Klausing 1974). The Project area is located within the Sentinel Butte and Bullion Creek formations of Paleocene age, which comprise the Fort Union Group, with the majority located within the Sentinel Butte Formation.

- *Sentinel Butte Formation*: The Sentinel Butte Formation of Paleocene age consists of grayish-brown silt, sand, clay, sandstone, and lignite. This Formation may be up to 600 feet thick.

- *Bullion Creek Formation*: The Bullion Creek Formation of Paleocene age consists of yellowish-brown silt, sand, clay, sandstone, and lignite. This formation may be up to 600 feet thick.



Line Section 7 Expasnion Project

Figure 6.1.2-1 Geologic Units Overview

WBI ENERGY TRANSMISSION
An MDU Resources Group company

N

1 in = 6,250 feet

Legend

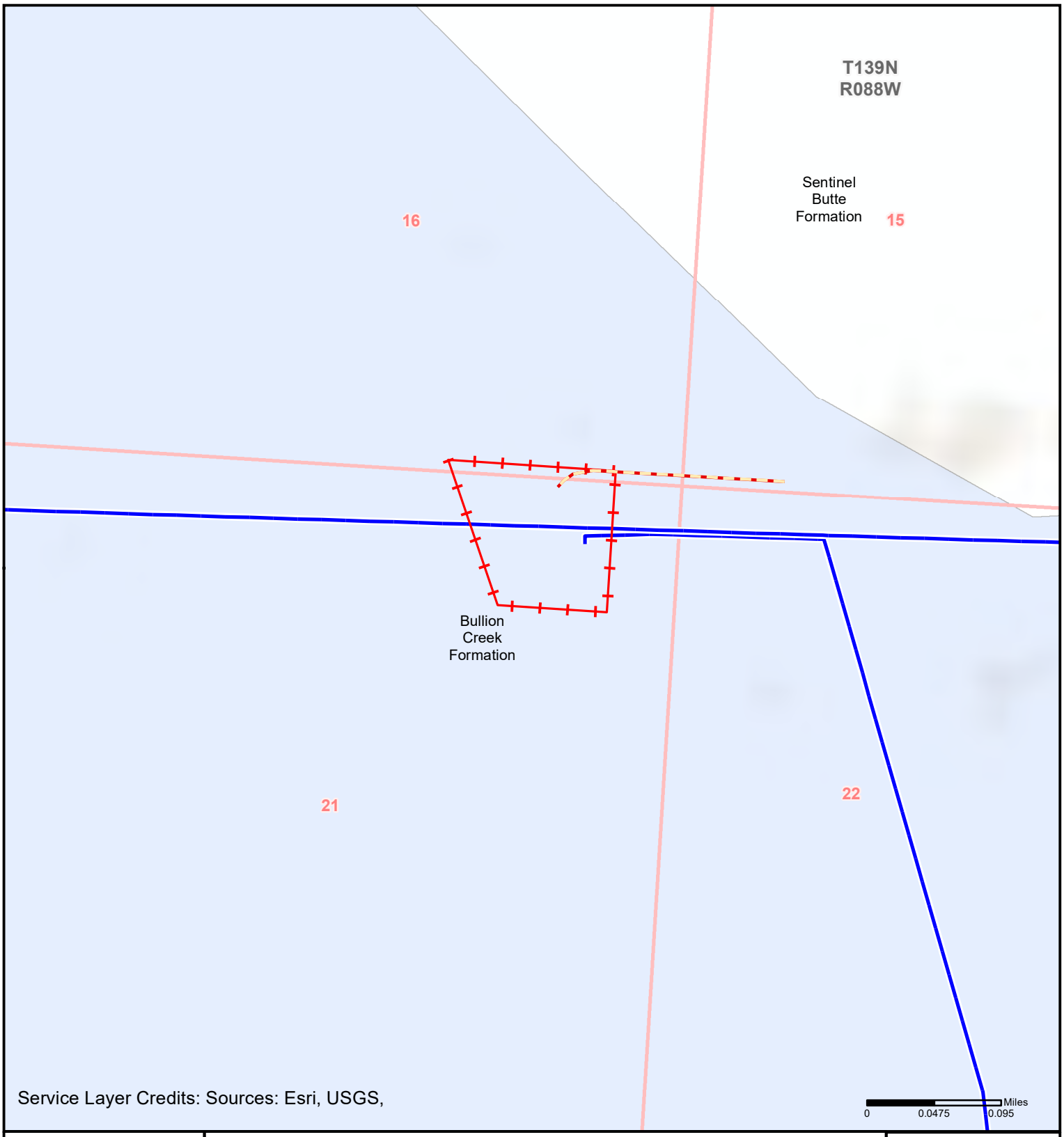
- Farm Taps
- Access Roads
- Proposed Bore
- Proposed Pipeline
- Existing WBI Pipeline Centerline
- ATWS
- Townships
- Sections
- Bullion Creek Formation
- Sentinel Butte Formation

Mclean County, ND

Source: NDGS 2020

PROJECT AREA OVERVIEW

By: AB Date: 9/7/2021 1:75,000 - when Printed on 8X11 Revision Date: 9/23/2021



Line Section 7 Expansion Project

Figure 6.1.2-1 GeologicUnitsOverview

WBI ENERGY TRANSMISSION
An MDU Resources Group company

N

1 in = 500 feet

Legend

- Access Roads
- Existing WBI Pipeline Centerline
- Glen Ullin Tract
- Townships
- Sections
- Bullion Creek Formation

Morton County, ND

Source: NDGS 2020

PROJECT AREA OVERVIEW

By: AB Date: 9/7/2021 1:6,000 - when Printed on 8X11 Revision Date: 9/23/2021

6.1.3 Mineral Resources

Due to the geologic history and structural features in the Williston Basin, the geologic units underlying the Project area host significant oil and gas resources. In addition, the area hosts exploitable deposits of coal/lignite. Glacial sediments cover much of North Dakota and contain sand and gravel that is mined for industrial and commercial purposes.

Coal Resources

Currently, there are six operations mining 32 million tons of coal annually in western North Dakota (Murphy 2019a). One active lignite coal mine is present within the vicinity of the Project area. The Falkirk Mine located near Underwood, North Dakota, was first incorporated in 1974, with initial construction starting in 1977 and coal production starting in 1978. The mine produced an average of 7.2 million tons of lignite coal during 2020 (Coal Age 2021) and has been the sole supplier of lignite coal to the Coal Creek Station power plant, located adjacent to the Blue Flint Ethanol Plant at the west end of the Project area. Coal produced at the mine is transported from the pit in bottom-dump haul trucks to the truck dump/crushing facility. From that location, the coal is conveyed on a 5,300-foot-long conveyor to the Coal Creek Station power plant, which is located approximately six miles south of Underwood, North Dakota (OSMRE 2018). The Falkirk Mine uses standard surface strip-mining procedures to mine private and federal coal resources. Coal is currently mined from multiple permit areas (OSMRE 2020). The Project area is located approximately 0.7 miles from the Falkirk Mine permit area boundary, on the western end of the proposed pipeline route near the Blue Flint Ethanol Plant (BLM 2016). No impacts to coal resources are anticipated.

Oil & Gas Production

McLean County ranks eleventh in the state for oil production, averaging approximately 55,100 barrels (BBLs) per month, and ranks tenth in the state for natural gas, producing 44,200 million cubic feet (MCF) (ShaleXP 2021). There are no oil or gas wells within 1,500 feet of the Project area. The closest oil or gas well (Wallace O. Gradin 1 Well) is located approximately 0.6 miles south of the Project area. This is a dry oil and gas well that was drilled 12/1/1969 (NDOGD 2021). No impacts to oil or gas wells are anticipated.

Sand and Gravel Resources

Three-fourths of North Dakota is covered by glacial sediments. These glacial deposits contain sand and gravel as either outwash or as isolated lenses of sand and gravel within till. Grain size and the quality of sand and gravel are limiting factors which determine whether a sand and gravel deposit is developed (Murphy 2019b). The U.S. Geological Survey (USGS) Mineral Resources Data System was queried to determine sand and gravel resources in the vicinity of the Project area. The closest sand and gravel resource to the Project area is Fishers Keen Pit, located approximately 0.1 miles North of the Project area. Fishers Keen Pit produces sand and gravel for construction purposes (USGS 2011b). Other sand and gravel pits within the vicinity of the Project area are listed in Table 6.1.3-1 below.

Table 6.1.3-1

Sand and Gravel Resources within the Vicinity of the Project Area

Pit Name	Production Type	Latitude/Longitude	Approximate Distance from Project Area
Fishers Keen Pit	Sand and Gravel, construction	47.36967, -101.11721	0.1 miles
Van Oosting Pit & Plant	Sand and Gravel, construction	47.26937, -101.09441	7 miles
Missouri River Sand & Gravel Co. Pit	Sand and Gravel, construction	47.41217, -101.33742	9 miles
Wilton Pit	Sand and Gravel, construction	47.23637, -100.8013	11 miles
Whites Underwood Pit	Sand and Gravel, construction	47.40137, -101.37942	11 miles
Lindteigen Const Co. Pit	Sand and Gravel, construction	47.51857, -100.88801	11 miles
Source: USGS 2011b			

6.1.4 Blasting

WBI Energy will not complete blasting activities as part of the proposed Project.

6.1.5 Geologic Hazards

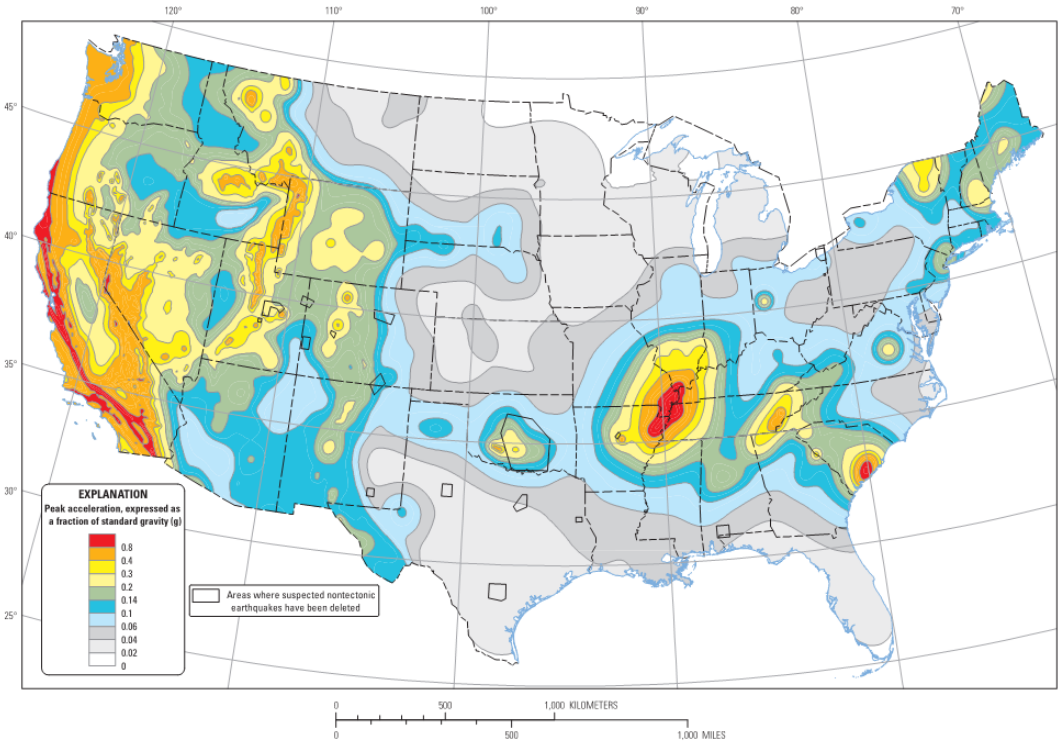
Potential geologic hazards include seismic hazards and faults, liquefaction, landslides, and subsidence. These hazards are described in detail in the following subsections.

6.1.5.1 Seismic Hazards and Faults

Seismicity refers to the frequency, intensity, and distribution of earthquakes within a given area. Earthquakes generally occur when two sides of a fault suddenly slip past each other and the movement creates ground motion, which can damage property and structures if the motion is sufficiently intense. Most earthquakes occur along the boundaries of tectonic plates.

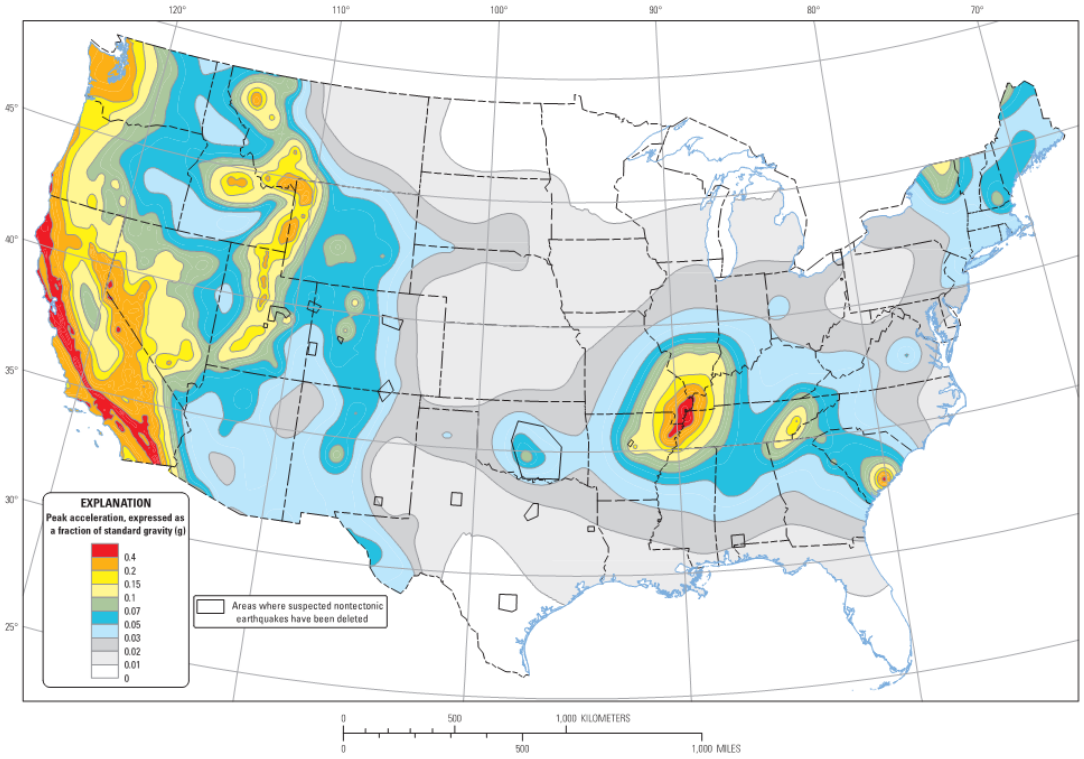
The USGS Hazard Mapping Program produced probabilistic seismic hazard maps that show an estimate of the probability that ground motion will exceed a certain value, the peak ground acceleration, in 50 years. The peak ground acceleration, or the force caused by the shaking, is expressed as a percentage of gravity (g). Low percentage g values reflect low ground acceleration and are generally associated with low seismic risk. Figures 6.1.5.1-1 and 6.1.5.1-2 below show that for the Project area, the earthquake peak ground acceleration that has a 2 percent chance of being exceeded in 50 years has a value of 0.02g, and the peak ground acceleration that has a 10 percent chance of being exceeded in 50 years has a value of 0.01g (USGS 2014a & 2014b). Figure 6.1.5.1-3 further classifies North Dakota as a low-hazard area (USGS 2018). Based on the USGS earthquake-triggered ground-failure inventories, there have been no earthquake events reported in North Dakota (USGS 2021b). Additionally, according to the USGS Quaternary Fault and Fold Database, there are no Quaternary faults or Quaternary fault areas mapped within North Dakota (USGS 2021a). No seismic hazards are anticipated.

Figure 6.1.5.1-1: 2 Percent Probability of Exceedance in 50 Years of Peak Ground Acceleration



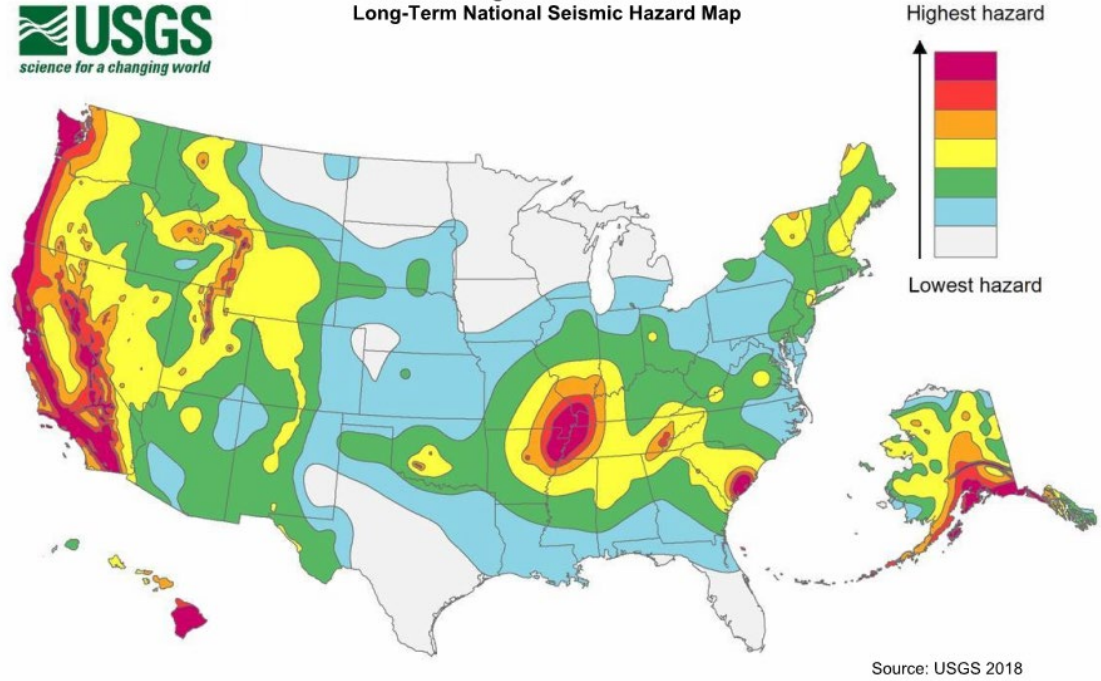
Source: USGS 2014a

Figure 6.1.5.1-2: 10 Percent Probability of Exceedance in 50 Years of Peak Ground Acceleration



Source: USGS 2014b

Figure 6.1.5.1-3
Long-Term National Seismic Hazard Map



Source: USGS 2018

6.1.5.2 Liquefaction

Soil liquefaction takes place when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking. Liquefaction occurring beneath structures can cause damage during earthquakes (USGS 2021d). There have been no recent earthquakes recorded within McLean or Morton Counties, and earthquakes within the state are typically at such a small scale that they are not felt within the surrounding area. For these reasons, liquefaction hazards are not expected to have an impact on the proposed Project.

6.1.5.3 Landslides

Landslides involve the down-slope movement of earth materials under the force of gravity due to natural or man-made causes, and most commonly occur on steep slopes. In North Dakota, there is a higher susceptibility of landslides in steep river valleys, badlands topography, and buttes that are prone to slope failure (Murphy 2017). Based on USGS Landslide Susceptibility data, the Project area lies within a region of moderate susceptibility and low incidence for landslides, shown in Figure 6.1.5.3-1 and Figure 6.1.5.3-2 below (USGS 2011a). The Project area spans across gently rolling to flat topography, with no steep slopes that would be prone to landslides. Terrain characteristics and low incidence of landslides that have occurred in the area indicate a low risk of landslides during construction.

Figure 6.1.5.3-1 Moderate Susceptibility, Low Incidence (McLean County)

This map layer, utilizing data from the U.S. Geological Survey (USGS), delineates areas in the conterminous U.S. where large numbers of landslides have occurred and areas which are susceptible to landsliding

U.S. Geological Survey (USGS) | Earthstar Geographics | State of North Dakota, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA

Figure 6.1.5.3-2 Moderate Susceptibility, Low Incidence (Morton County)

This map layer, utilizing data from the U.S. Geological Survey (USGS), delineates areas in the conterminous U.S. where large numbers of landslides have occurred and areas which are susceptible to landsliding

U.S. Geological Survey (USGS) | Maxar | Esri Community Maps Contributors, State of North Dakota, Esri Canada, Esri, HERE, Garmin, © OpenStreetMap contributors, Microsoft, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

6.1.5.4 Subsidence

Land subsidence is the gradual settling or sinking of the earth's surface due to subsurface movement of earth materials. The principal causes include aquifer-system compaction associated with groundwater withdrawals, drainage of organic soils, underground mining, and natural compaction or collapse. More than 80 percent of known land subsidence in the U.S. is a consequence of ground water use (USGS 2021c).

There is no karst terrain present, and oil and gas and underground mining extraction is limited within the Project area. Aquifers are expected to have sufficient recharge rates, with ground water levels re-establishing quickly during construction. No subsidence hazards are expected as a result of the Project.

6.1.6 Flooding

Flooding may occur during heavy rainfall events or following spring snowmelt. The Federal Emergency Management Agency (FEMA) coordinates the federal government's role in preparing for, preventing, mitigating, responding to, and recovering from flooding. FEMA has designated Special Flood Hazard Areas (SFHAs) within each county, which depict geographic areas that will be inundated by the flood event having a 1-percent chance of being exceeded in a

given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. Within these areas, floodplain permits must be obtained prior to construction.

Based on information available from the FEMA, most of the Project area is located within a minimal flood hazard zone (Zone X), crossing Flood Panels 38055C1400B, 38055C1425B, and 38055C1450B (FEMA 2021). WBI Energy's existing Glen Ullin Compressor Station is partially located within a floodplain hazard area (Zone A); however, activities will be limited to within the fenced boundaries of the compressor station within the existing footprint. WBI Energy will consult with McLean County and Morton County floodplain managers and obtain approvals as necessary prior to construction within any flood zones that are crossed by the Project. Construction and operation of the Project will not affect flood storage or floodplain elevations.

6.1.7 Paleontological Resources

Paleontological resources are vertebrate and invertebrate fossils that may be discovered by excavation or surface-disturbing activities during construction. The Project area will primarily cross the Sentinel Butte Formation, with a small portion of the workspace area crossing the Bullion Creek Formation. The sandstones and shales of the Sentinel Butte and Bullion Creek formations were deposited between 65 and 55 million years ago during erosion of the rising Rocky Mountains, when sediment was carried to western North Dakota and deposited in rivers, floodplains, lakes, and swamps. Mats of vegetation built up in swamps and the vegetation was eventually transformed into lignite coal. The climate was sub-tropical, with abundant swamps in the lowlands, and many types of vertebrates including turtles, alligators, crocodiles, champsosaurs (crocodile-like reptiles), and fish inhabiting the area. Invertebrates such as insects, snails, clams, and minute crustaceans lived in aquatic habitats. Exotic plants grew in lush forests and were consumed by insects and birds. Mammals were beginning to become established during this time after the extinction of the last of the dinosaurs a few million years earlier (Hoganson 2006).

6.1.7.1 Paleontological Discovery

The Project area crosses private land. All paleontological resources discovered on private land will be reported to the EI or WBI Energy Representative, who will then contact the landowner and decide on appropriate measures to be taken. Work will be stopped, and potential paleontological resources will be left undisturbed until the EI determines otherwise.

If paleontological resources are discovered during construction, they will be managed in accordance with WBI Energy's *Plan for Unanticipated Discovery of Paleontological Resources during Construction*, which is provided in Appendix II-J.

6.2 IMPACTS AND MITIGATION

Project activities may result in temporary impacts to geological resources. Main impacts will involve temporary soil disturbances during construction. To minimize impacts, BMPs will be installed during and following construction for erosion and sediment control. These BMPs will be installed, maintained, and inspected in accordance with the Project SWPPP and FERC Plan and Procedures. An EI will be present onsite to inspect and maintain BMPs on a regular basis. Following construction, all disturbed areas will be restored to original contours and seeded with an approved seed mix. BMPs will remain in place until final stabilization has been achieved.

Mineral resources that have the greatest potential to be impacted by the Project are coal resources and sand and gravel resources. The Falkirk Mine is located approximately 2 miles north of the Project area, with active mining permit boundaries located approximately 0.7 miles west of the Project area. The Fishers Keen Gravel Pit is located approximately 0.1 miles north of the Project area. WBI Energy will avoid active mine permit areas and sand and gravel pit locations; construction activities will be limited to only approved access roads and defined workspace areas. All disturbed areas will be restored to original conditions following construction. No impacts to mineral resources are anticipated.

Potential impacts from geologic hazards will be minimized by installing facilities in accordance with the U.S. Department of Transportation's standards found in Title 49 CFR Part 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards. WBI Energy will obtain all applicable permits prior to construction, and construction will be stopped during heavy precipitation events until the EI has determined that site conditions are acceptable to proceed. All disturbed areas will be restored to original conditions following construction.

The EI and contract personnel will be trained to monitor for potential paleontological resources and on the contents of the *Plan for Unanticipated Discovery of Paleontological Resources during Construction* to minimize impacts to these resources.

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RESOURCE REPORT 7

7.0 SOIL RESOURCES

Resource Report 7 describes existing soil resources within the Project area, potential effects of the proposed Project on soil resources, and mitigation measures that will be implemented to avoid or minimize these impacts. Soil characterization information was obtained primarily from review and analysis of the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey data, and from published NRCS soil surveys of McLean County and Morton County, North Dakota. Please refer to Resource Report 1 for a detailed description of proposed Project activities.

7.1 EXISTING SOIL RESOURCES

The Project area is located within McLean County and Morton County, North Dakota. Soil map units were assessed using the NRCS Web Soil Survey and are depicted on exhibits in Appendix II-R and in Table 7.1-1 below.

Major Land Resource Areas (MLRAs) represent landscape-level areas with distinct physiography, geology, climate, water, soils, biological resources, and land uses. The Project area lies primarily within the MLRA 53B Central Dark Brown Glaciated Plains, which is characterized by Mollisols with a frigid soil temperature regime, an ustic or aquic soil moisture regime, and mixed or smectitic mineralogy. These soils are generally very deep, well drained to very poorly drained, and clayey or loamy (NRCS 2006).

The dominant soil map unit located within the Project area consist of Williams-Bowbells loams 3-6 percent slopes (C210B). These well-drained soils are derived from fine-loamy till parent material and characterized by loamy surface textures (NRCS 2021).

Table 7.1-1: **Selected Physical and Interpretive Characteristics of the Soil Map Units within the Project Area**								
Map Unit Symbol	Map Unit Name	Surface Texture	Drainage	Permeability	Parent Material	Landform	Acres	% of Project Area
Pipeline Facilities							**Total Acres: 113.49**	
C1012F	Urban land, industrial-Ustorthents complex, 0 to 25 percent slopes	Loam	Well drained	ML to MH	Loamy till	Backslope	2.00	1.76
C210A	Williams-Bowbells loams, 0 to 3 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Rises	16.00	14.10
C210B	Williams-Bowbells loams, 3 to 6 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Rises	30.30	26.70
C210C	Williams-Bowbells loams, 6 to 9 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Rises	3.24	2.85
C451A	Arnegard loam, 0 to 2 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Swales	0.44	0.39
C135D	Zahl-Williams loams, 9 to 15 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Ridges, Hills	0.61	0.54
C874B	Wabek-Appam complex, 2 to 6 percent slopes	Gravelly sandy loam	Excessively drained	MH to VH	Sandy and gravelly glaciofluvial deposits	Rises	1.73	1.52
C814B	Bowdle-Lehr loams, 2 to 6 percent slopes	Loam	Well drained	ML to MH	Loamy alluvium over sandy and gravelly glaciofluvial deposits	Swales	4.52	3.98
C810A	Bowdle loam, 0 to 2 percent slopes	Loam	Well drained	ML to MH	Loamy alluvium over sandy and gravelly glaciofluvial deposits	Swales	7.00	6.17
C829A	Marysland loam, 0 to 1 percent slopes	Loam	Poorly drained	ML to MH	Alluvium over glaciofluvial deposits	Depressions	0.80	0.70
C825A	Divide loam, 0 to 2 percent slopes	Loam	Somewhat poorly drained	ML to MH	Local alluvium	Flats	1.80	1.59

Table 7.1-1: **Selected Physical and Interpretive Characteristics of the Soil Map Units within the Project Area**								
Map Unit Symbol	Map Unit Name	Surface Texture	Drainage	Permeability	Parent Material	Landform	Acres	% of Project Area
C3A	Parnell silty clay loam, 0 to 1 percent slopes	Silty clay loam	Very poorly drained	ML	Local alluvium	Depressions	0.51	0.45
C132C	Williams-Zahl-Zahill complex, 6 to 9 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Ground moraines	3.07	2.71
C580A	Harriet-Regan-Stirum complex, 0 to 2 percent slopes, occasionally flooded	Loam	Poorly drained	ML	Local alluvium	Drainageways	0.50	0.44
C999F	Orthents-Aquents-Urban land, highway complex, 0 to 35 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Swales	0.54	0.48
C667A	Williams-Niobell loams, 0 to 3 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Rises	3.00	2.64
C6A	Tonka-Parnell complex, 0 to 1 percent slopes	Silt loam	Poorly drained	ML	Local alluvium over till	Depressions	5.00	4.41
C471A	Grail silty clay loam, 0 to 2 percent slopes	Silty clay loam	Moderately well drained	ML	Local alluvium	Swales	1.60	1.41
C412A	Roseglen silt loam, 0 to 2 percent slopes	Silt loam	Moderately well drained	ML to MH	Loamy glaciolacustrine deposits	Flats on glacial lakes (relict)	17.00	14.98
C155F	Zahl-Max-Arnegard loams, 15 to 60 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Ridges	0.22	0.19
C160A	Falkirk loam, 0 to 3 percent slopes	Loam	Well drained	ML to MH	Fine-loamy glaciofluvial deposits over till	Swales	13.00	11.45
C413B	Roseglen-Transem silt loams, 2 to 6 percent slopes	Silt loam	Moderately well drained	ML to MH	Loamy glaciolacustrine deposits	Flats on glacial lakes (relict)	0.60	0.53

Table 7.1-1: **Selected Physical and Interpretive Characteristics of the Soil Map Units within the Project Area**								
Map Unit Symbol	Map Unit Name	Surface Texture	Drainage	Permeability	Parent Material	Landform	Acres	% of Project Area
C64C	Wamduska low precipitation-Mauvais complex, 1 to 9 percent slopes	Loamy coarse sand	Excessively drained	MH to VH	Sandy glaciolacustrine deposits	Beaches	0.01	0.01
Aboveground Facilities							**Total Acres: 4.99**	
Blue Flint Delivery Station							Total Acres: 1.35	
C1012F	Urban land, industrial-Ustorthents complex, 0 to 25 percent slopes	Loam	Well drained	ML to MH	Loamy till	Backslope	1.35	27.05
Blue Flint Take Off Valve Setting							Total Acres: 3.54	
C412A	Roseglen silt loam, 0 to 2 percent slopes	Silt loam	Moderately well drained	ML to MH	Loamy glaciolacustrine deposits	Flats on glacial lakes (relict)	3.54	70.94
Receipt Facility Upgrades within the Glen Ullin Compressor Station								
E0415A	Belfield-Daglum complex, 0 to 2 percent slopes	Silt loam	Moderately well drained	ML to MH	Slope alluvium derived from shale and siltstone	Hillslopes	0.1	2.01
Storage Yards							**Total Acres: 20.96**	
C201A	Bowbells loam, 0 to 3 percent slopes	Loam	Moderately well drained	ML to MH	Fine-loamy till	Flats	2.66	12.69
C210A	Williams-Bowbells loams, 0 to 3 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Rises	1.28	6.11
C210B	Williams-Bowbells loams, 3 to 6 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Rises	10.15	48.43
C164A	Williams-Falkirk loams, 0 to 3 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Ground moraines	1.51	7.20
C810A	Bowdle loam, 0 to 2 percent slopes	Loam	Well drained	ML to MH	Loamy alluvium over sandy and gravelly glaciofluvial deposits	Swales	4.39	20.94

Table 7.1-1: **Selected Physical and Interpretive Characteristics of the Soil Map Units within the Project Area**								
Map Unit Symbol	Map Unit Name	Surface Texture	Drainage	Permeability	Parent Material	Landform	Acres	% of Project Area
C814B	Bowdle-Lehr loams, 2 to 6 percent slopes	Loam	Well drained	ML to MH	Loamy alluvium over sandy and gravelly glaciofluvial deposits	Swales	0.97	4.63
Existing Access Roads							**Total Acres: 18.90**	
C1012F	Urban land, industrial-Ustorthents complex, 0 to 25 percent slopes	Loam	Well drained	ML to MH	Loamy till	Backslope	2.30	12.17
C210A	Williams-Bowbells loams, 0 to 3 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Rises	0.92	4.87
C210B	Williams-Bowbells loams, 3 to 6 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Rises	1.40	7.41
C810A	Bowdle loam, 0 to 2 percent slopes	Loam	Well drained	ML to MH	Loamy alluvium over sandy and gravelly glaciofluvial deposits	Swales	2.23	11.80
C814B	Bowdle-Lehr loams, 2 to 6 percent slopes	Loam	Well drained	ML to MH	Loamy alluvium over sandy and gravelly glaciofluvial deposits	Swales	0.83	4.39
C874B	Wabek-Appam complex, 2 to 6 percent slopes	Gravelly sandy loam	Excessively drained	MH to VH	Sandy and gravelly glaciofluvial deposits	Rises	0.39	2.06
C135D	Zahl-Williams loams, 9 to 15 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Ridges, Hills	0.42	2.22
C580A	Harriet-Regan-Stirum complex, 0 to 2 percent slopes	Loam	Poorly drained	ML	Local alluvium	Drainageways	0.86	4.55
C132C	Williams-Zahl-Zahill complex, 6 to 9 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Ground moraines	1.00	5.29
C999F	Orthents-Aquents-Urban land, highway complex, 0 to 35 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Swales	0.15	0.79

Table 7.1-1: **Selected Physical and Interpretive Characteristics of the Soil Map Units within the Project Area**								
Map Unit Symbol	Map Unit Name	Surface Texture	Drainage	Permeability	Parent Material	Landform	Acres	% of Project Area
C667A	Williams-Niobell loams, 0 to 3 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Rises	0.51	2.70
C667B	Williams-Niobell loams, 3 to 6 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Rises	0.46	2.43
C160A	Falkirk loam, 0 to 3 percent slopes	Loam	Well drained	ML to MH	Fine-loamy glaciofluvial deposits over till	Swales	3.50	18.52
C412A	Roseglen silt loam, 0 to 2 percent slopes	Silt loam	Moderately well drained	ML to MH	Loamy glaciolacustrine deposits	Flats on glacial lakes (relict)	2.12	11.22
C6A	Tonka-Parnell complex, 0 to 1 percent slopes	Silt loam	Poorly drained	ML	Local alluvium over till	Depressions	0.27	1.43
C164A	Williams-Falkirk loams, 0 to 3 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Ground moraines	0.85	4.50
C451A	Arnegard loam, 0 to 2 percent slopes	Loam	Well drained	ML to MH	Fine-loamy till	Swales	0.01	0.05
E2203A	Farland silt loam, 0 to 2 percent slopes	Silt loam	Well drained	ML to MH	Fine-silty alluvium	Alluvial flats	0.67	3.54
E0415A	Belfield-Daglum complex, 0 to 2 percent slopes	Silt loam	Moderately well drained	ML to MH	Slope alluvium derived from shale and siltstone	Hillslopes	0.01	0.05
New Access Roads							**Total Acres: 0.23**	
C1012F	Urban land, industrial-Ustorthents complex, 0 to 25 percent slopes	Loam	Well drained	ML to MH	Loamy till	Backslope	0.16	69.57
C412A	Roseglen silt loam, 0 to 2 percent slopes	Silt loam	Moderately well drained	ML to MH	Loamy glaciolacustrine deposits	Flats on glacial lakes (relict)	0.07	30.43

Table 7.1-1: **Selected Physical and Interpretive Characteristics of the Soil Map Units within the Project Area**

Map Unit Symbol	Map Unit Name	Surface Texture	Drainage	Permeability	Parent Material	Landform	Acres	% of Project Area

VL: Very Low – ML: Moderately Low – MH: Moderately High – H: High
NRCS 2021e

7.1.1 Standard Soil Limitations

Table 7.1.1-1 below summarizes primary soil limitations for construction activities. Principal soil characteristics of concern include prime farmland and farmland of statewide importance. Impacts on prime farmland and farmland of statewide importance are of general concern because of the potential for decreases in long-term agricultural productivity. Other soil characteristics assessed in this section include hydric soils, soil erodibility, compaction potential, revegetation concerns, and stony or rocky soils.

Table 7.1.1-1
Summary of Soil Characteristics in the Project Area [a-h]

Facility Type	Total Acres	Prime Farmland [a]	Farmland of Statewide/Local Importance [b]	Hydric [c]	Water Erodible [d]	Wind Erodible [e]	Compaction Prone [f]	Revegetation Concerns [g]	Stony-Rocky [h]
Pipeline	113.49	15.04	77.14	7.38	10.14	0	2.11	11.92	0
Storage Yards	20.96	2.66	17.33	0	0	0	0	0	0
Aboveground Facilities	4.99	0	3.54	0	1.35	0	0	1.35	0
Access Roads	19.13	3.51	9.23	0	2.61	0	0	4.16	0
Totals	**158.57**	**21.21**	**107.24**	**7.38**	**14.10**	**0**	**2.11**	**17.43**	**0**

a. Includes soils classified in Web Soil Survey as prime farmland
b: Includes soils classified in Web Soil Survey as farmland of statewide or local importance
c: Includes Wetlands crossed by the Project area
d: Includes soils with a slope class of greater than 9-15 percent or soils within a delineated wetland
e: Includes soils in wind erodibility groups 1 through 3
f: Includes soils that have a silty clay loam or finer surface texture
g: Includes soils with a land capability classification of 4 or greater
h: Includes soils with a cobble, rock, boulder, shale, channery, or gravelly modifier to the map unit name.

Source: NRCS. 2021. Web Soil Survey. Available online at: http://websoilsurvey.nrcs.usda.gov/. Accessed September 2021.

7.1.1.1 Prime Farmland and Farmland of Statewide and Local Importance

Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. Prime farmland has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops (NRCS 2021c). Approximately 21.21 acres of prime farmland are crossed by the Project.

Farmland of statewide importance includes land other than prime farmland that is of statewide or local importance and generally consists of soils that nearly meet prime farmland requirements. Farmland of local importance includes lands not identified as having national or statewide importance, that are identified by local agencies to be important for the production of food, fiber, forage and oilseed crops (NRCS 2021c). A total of 107.21 acres of farmland of statewide/local importance will be impacted by proposed Project activities, listed in Table 7.1.1-1 above.

7.1.1.2 Hydric Soils

Hydric soils are soils that have been formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper profile (NRCS 2021b). The Project area crosses approximately 7.38 acres of wetlands, as detailed in Table 2.3.1-1 of Resource Report 2. Hydric soils will be temporarily impacted during pipeline installation. Main impacts will consist of excavating an approximate 3-foot-wide x 6-foot-deep trench to install the proposed pipeline using conventional open-ditch methods through several wetland crossings (Wetlands 2, 4, 6, 7, 8, 9, 13B, & 14) and placement of equipment mats through wetlands.

7.1.1.3 Erosion Hazards

Soil erosion involves the breakdown, detachment, transport, and redistribution of soil particles by forces of water, wind, or gravity (NRCS 2021a). The most common causes of erosion are typically from wind and water forces.

Loamy soils that dominate the Project area are more susceptible to wind and water erosion than soils with a high clay content. Approximately 14.10 acres of soils with high water erodibility are present within the Project area, as detailed in Table 7.1.1-1. These soils are located within wetlands crossed by the Project area and may be temporarily impacted to complete pipeline installation. No soils with high wind erodibility are present within the Project area. Slopes within the Project area are flat to gently sloping, with no steep slope erosion hazards anticipated.

7.1.1.4 Compaction Potential

Soil compaction occurs when soil particles are pressed together, reducing pore spaces between particles. Soils may be either naturally compacted (heavy clay soil) or compaction may be caused by management activities (equipment travel over soil surfaces). Compacted soils may result in root growth restrictions and decreased infiltration through the soil profile, leading to poor plant growth and increased runoff and erosion (NRCS 2012). The surface texture of soil within the Project area primarily consists of loam. A total of approximately 2.11 acres of compaction-prone soils are present within the Project area, detailed in Table 7.1.1-1.

7.1.1.5 Revegetation Concerns

Soils with an NRCS Web Soil Survey land capability classification of 4 or greater were included in this limitation category. Approximately 17.43 acres of soils with revegetation limitations are present within the Project area. Revegetation concerns will mainly result from potential mixing of topsoil and subsoil materials during construction, drought conditions, and weed infestations.

7.1.1.6 Rocky and Shallow-to-Bedrock Soils

Soils within the Project area that consist of a cobble, rock, boulder, shale, channery or gravelly modifiers to the map unit name were included in this category. No rocky soils are crossed within the Project area. WBI Energy will conduct construction activities in accordance with the FERC Plan to ensure that if rocky soils are encountered, they are managed appropriately.

7.2 GENERAL IMPACTS AND MITIGATION

7.2.1 Pipeline Construction and Operational Impacts

Pipeline construction activities that have the potential to affect soils and revegetation efforts include clearing of vegetation, topsoil stripping, grading, trenching, backfilling, and restoration. Potential impacts include loss of soil due to wind or water erosion, reduction of soil quality by mixing topsoil with subsoil, soil compaction from construction equipment, rutting, and disruption of surface and subsurface drainage systems. Potential spills or leaks during construction also have the potential to impact soils through contamination.

Impacts to soil resources will be minimized by limiting ground disturbance whenever possible and only utilizing the minimum workspace needed to complete construction activities. Erosion and sediment controls (BMPs) will be installed in accordance with the Project SWPPP and the FERC Plan and Procedures. Except for in saturated wetland areas, the entire topsoil layer will be stripped and clearly separated from subsoil materials to ensure successful reclamation. The soil surface will be de-compacted prior to seeding. Construction activities will be conducted in accordance with the FERC Plan and Procedures, the Project SPCC Plan (Appendix II-G), and the *Plan for Unanticipated Discovery of Contaminated Media* (Appendix II-K). All disturbed areas outside of permanent aboveground facilities will be restored to pre-disturbance conditions following construction.

Impacts to hydric soils will be minimized by boring Wetlands 10, 11C, 11D, 13A, and 13C. No topsoil will be stripped through saturated soils to preserve the natural vegetation and soil composition. Wetland soils within the Project area are increasingly susceptible to rutting. If rutting occurs during construction, ruts will be repaired, and original surface contours restored. Construction activities will be halted during heavy rainfall events until the EI determines that conditions are acceptable. Equipment mats may be placed through saturated soil areas to avoid rutting and prevent soil compaction/damage to the wetland. All necessary permits to conduct construction activities within wetlands will be obtained prior to construction. All disturbed areas will be restored to original conditions following construction.

Seeding will take place within NRCS-recommended seeding windows. Vegetation establishment will be monitored during regular inspections in accordance with the Project SWPPP and the FERC Plan and Procedures. The Project area will not meet final stabilization criteria until successful vegetation establishment has been achieved. Noxious and invasive weeds will be

monitored and recorded in the Project area during routine inspections, and chemical or mechanical treatment will be applied as needed.

7.2.2 Aboveground Facility Construction and Operational Impacts

Construction activities at the Blue Flint Delivery Station, Blue Flint Take Off Valve Setting, farm tap locations, and WBI Energy's receipt facilities within the Glen Ullin Compressor Station have the potential to impact soil resources. Upgrades to WBI Energy's receipt facilities within the Glen Ullin Compressor Station will take place within the fenced compressor station boundaries on soil that has previously been disturbed. New soil disturbance is associated with installation of the Blue Flint Delivery Station, Blue Flint Take Off Valve Setting, and farm taps. Temporary impacts may include soil compaction from equipment operation and vehicular traffic, spills or equipment leaks that may lead to soil contamination, and mixed topsoil and subsoil material that may decrease soil quality and impact revegetation success. 1.05 acres of land will be converted to permanent use for operation of aboveground facilities.

To minimize impacts, WBI Energy will conduct aboveground facility construction in accordance with the FERC Plan and Procedures, the Project SPCC Plan, and the Plan for Unanticipated Discovery of Contaminated Media. All workspace areas outside the permanent footprint of the aboveground facilities will be restored to pre-disturbance conditions following construction. BMPs will be installed as necessary to stabilize soils until final stabilization is achieved.

7.2.3 Access Road Construction and Operational Impacts

WBI Energy will use existing public and private access roads to access pipeline construction areas and existing aboveground facilities. Standard-maintenance public roads will be used for access without modification or improvement. However, some minimum-maintenance public roads and private roads may require improvement (such as grading; placement of gravel, crushed rock, or scoria for stability and surface improvement; replacing or installing culverts; and clearing of vegetation if present on the road surface) to safely accommodate equipment and vehicular traffic. The use of existing dirt (two-track) access roads could cause minimal disturbance to soils; however, these soils are already disturbed, and no additional impacts are expected.

Potential soil impacts to existing access roads may result from spills or equipment leaks that may lead to soil contamination. To minimize impacts, equipment will be routinely inspected for leaks and spills and WBI Energy will conduct construction activities in accordance with the FERC Plan and Procedures, the Project SWPPP and SPCC Plan, and the *Plan for Unanticipated Discovery of Contaminated Media*.

WBI Energy is proposing to construct two new access roads for access to the Blue Flint Delivery Station and Blue Flint Take Off Valve Setting. Soil impacts will include decreased soil infiltration along the new permanent access roads, which may lead to increased runoff. To minimize impacts, WBI Energy will install BMPs as necessary along the access road to maintain

natural flow and drainage patterns across the landscape. Road conditions will be maintained and monitored during routine site visits.

7.2.4 Staging Areas

WBI Energy is proposing to utilize two storage yard locations as temporary staging areas during construction. Preparation of staging areas will consist of topsoil segregation and minor grading and leveling. Once construction is complete, the land within the staging areas will be restored to pre-disturbance conditions in accordance with the FERC Plan and landowner agreements. BMPs will be installed as necessary until final stabilization is achieved. No permanent impacts to soils in these areas are anticipated.

7.3 SPECIFIC SOIL IMPACTS AND MITIGATION MEASURES

The following sections discuss potential impacts on agricultural land, erosion and restoration activities, and soil contamination, along with mitigation measures to minimize these impacts.

7.3.1 Agricultural Land

The dominant land cover type within the Project area is agricultural land. To minimize impacts to these areas, WBI Energy will work directly with landowners to resolve potential issues that may arise during construction. Project activities have the potential to interrupt planting and harvesting schedules and impact soil fertility and overall productivity. Agricultural land will be restored to original conditions and uses following construction. Construction activities will be conducted in accordance with the FERC Plan and special construction procedures detailed in Section 1.4.4.3 of Resource Report 1. Extra care will be taken to strip the entire topsoil layer (up to 12 inches) and maintain segregation of topsoil and subsoil materials throughout all phases of construction. The Project area will be inspected regularly until final stabilization is achieved.

7.3.2 Erosion Control and Restoration Activities

To address potential erosion within the Project area, WBI Energy will install BMPs in accordance with the SWPPP and FERC Plan and Procedures. Temporary BMPs may consist of (but are not limited to) silt fence, straw wattles, erosion control blankets, and equipment mats. Permanent BMPs may include (but are not limited to) vegetative buffers and seeding. BMPs will be inspected on a regular basis during and following construction in accordance with SWPPP requirements. An EI will be present onsite to supervise the maintenance, installation, and repair of BMPs. Temporary BMPs will be removed following final stabilization, and permanent BMPs will remain in place.

WBI Energy plans to restore all disturbed areas outside permanent aboveground facility boundaries to pre-disturbance conditions or better following construction. WBI Energy will

work directly with landowners to resolve potential issues that may arise during construction. Care will be taken to strip the entire topsoil layer and topsoil and subsoil materials will be clearly segregated to ensure that soil fertility and overall productivity is maintained. Seed mixes will be based on surrounding vegetation and historic native plant communities and approved by the local conservation service and landowner prior to application. The NRCS-recommended seeding methods, rates, and timeframes will be implemented to ensure successful reclamation efforts. Vegetation establishment will be regularly monitored until final stabilization has been achieved. No long-term impacts are anticipated.

7.3.3 Soil Contamination

Soil contamination may result from accidental spills or equipment leaks during construction. WBI Energy will minimize potential impacts by conducting construction activities in accordance with the Project SPCC Plan. All fuels, oils, and other chemicals will be stored within appropriate secondary containment and equipment will be inspected regularly for possible leaks and maintained in good condition. An EI will be present onsite to assist with spill clean-up and reporting procedures. The EI and construction crew will be trained on the contents of the SPCC Plan, the *Plan for Unanticipated Discovery of Contaminated Media*, and appropriate spill response and contaminated soil disposal procedures.

7.4 REFERENCES

Federal Energy Regulatory Commission (FERC). 2013a. Upland Erosion Control, Revegetation, and Maintenance Plan. Available online at: https://www.ferc.gov/industries/gas/enviro/plan.pdf. Accessed June 2021.

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RESOURCE REPORT 8

8.0 LAND USE, RECREATION, AND AESTHETICS

Resource Report 8 addresses land use affected by the proposed Project through characterizing and quantifying land use types and identifying recreational and visual resources. Impacts to these resources are analyzed, along with mitigation measures implemented to minimize these impacts. Land use data in this report was compiled using a variety of sources, including environmental field surveys, aerial imagery, and U.S. Geological Survey (USGS) national land cover data and quadrangle maps. Please refer to Resource Report 1 for a detailed Project description.

8.1 EXISTING LAND USE

The Project area is located within McLean and Morton Counties, North Dakota. Agriculture is the dominant land use in the project area and includes primarily cropland. Cropland primarily consists of hay, corn, spring wheat and winter wheat, lentils, dry beans, and durum. Cattle are the dominant livestock type (NRCS 2019). For the purposes of this report, land use has been divided into four main categories to encompass the entire Project area:

- Agricultural Lands: Lands currently harvested for crops.
- Open Lands: Grassland dominated by native grass species and used primarily for grazing.
- Developed Lands: Lands that contain existing aboveground facilities, existing aboveground or belowground utilities, paved roadways, gravel, or two-track roads.
- Open Water: Delineated wetlands crossed by the Project area.

These land use categories, and potential impacts from construction activities are discussed in detail in the following sections. Table 1.2-1 in Resource Report 1 summarizes overall land requirements for the Project, Resource Report 2 discusses potential impacts on water resources, and Resource Report 3 assesses vegetation cover types.

8.2 LAND USE REQUIREMENTS BY PROJECT FACILITY

The Project will involve installation of approximately 9.6 miles of 8-inch lateral natural gas pipeline from WBI Energy's existing Line Section 7 main line to a new delivery station at Blue Flint. In addition, a new take off valve setting, and three farm taps are proposed to be installed along the proposed pipeline, along with minor upgrades to receipt facilities within WBI Energy's existing Glen Ullin Compressor Station. The Project will impact a total of approximately 158.57 acres, including 113.49 acres of disturbance for pipeline construction, 4.99 acres of disturbance for aboveground facility construction, 20.96 acres at staging area locations, and 19.13 acres to utilize access roads (Table 1.3-1 RR1). The total acreage required for operation of the pipeline, aboveground facilities, and access roads is estimated at approximately 59.55 acres. Table 8.2-1 below summarizes land affected by construction and operation of the Project.

Table 8.2-1

Land Affected by Construction and Operation of the Project (acres)

Facility Type	Ag. Land		Open Land		Dev. Land		Open Water		Total	
	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Pipeline										
Pipeline[a]	94.04	50.27	9.52	4.27	2.55	0.40	7.38	3.41	113.49	58.35
Subtotal	94.04	50.27	9.52	4.27	2.55	0.40	7.38	3.41	113.49	58.35
Aboveground Facilities										
Blue Flint Delivery St.	0	0	0	0	1.35	0.92	0	0	1.35	0.92
Blue Flint Take Off Valve Setting	3.54	0.13	0	0	0	0	0	0	3.54	0.13
Receipt Facilities withing the Glen Ullin Compressor Station	0	0	0	0	0.10	0	0	0	0.10	0
Subtotal	3.54	0.13	0	0	1.45	0.92	0	0	4.99	1.05
Staging Areas										
Storage Yards	20.96	0	0	0	0	0	0	0	20.96	0
Subtotal	20.96	0	0	0	0	0	0	0	20.96	0
Access Roads										
Existing Access[b]	0	0	0	0	18.90	0	0	0	18.90	0

New Access	0[c]	0.06	0	0	0.23	0.09	0	0	0.23	0.15
Subtotal	0	0.06	0	0	19.13	0.09	0	0	19.13	0.15
Total Impacts	**118.54**	**50.46**	**9.52**	**4.27**	**23.13**	**1.41**	**7.38**	**3.41**	**158.57**	**59.55**

[a] Pipeline construction area includes temporary workspace and additional temporary workspaces for installation of the pipeline. Farm tap facilities are located within land affected by pipeline construction and are included within the pipeline facilities acreage.

[b] Existing access roads have an approximate road width of 20 feet.

[c] Construction acreage is included within the Blue Flint Take Off Valve construction acreage total.

8.2.1 Pipeline Facilities

Pipeline construction will entail excavation of an approximate 3-foot-wide x 6-foot-deep trench to install the pipeline using conventional open-ditch methods. In addition to conventional open-ditch methods, the pipeline will be installed across several road, railroad, and wetland crossings using the guided bore method. Construction of the pipeline will predominantly affect agricultural land (94.04 acres). In addition to agricultural land, 9.52 acres of open land, 7.38 acres of open water, and 2.55 acres of developed land will also be impacted by construction activities. WBI Energy will implement a 75-foot-wide construction right-of-way, except in limited areas along the proposed route, where ATWS has been requested to accommodate boring operations and point of intersection locations. ATWS will be required for equipment/materials storage and pipe stringing along the R/W at guided bore locations to allow adequate space for the drilling rig and materials, drilling mud pits, and any additional equipment.

WBI Energy will obtain a 50-foot-wide permanent easement for operation of the pipeline. Approximately 58.35 acres of land will be retained for permanent operation of pipeline facilities. This includes 50.27 acres of agricultural land, 4.27 acres of open land, 3.41 acres of open water/wetlands, and 0.4 acres of developed land. All land use types will be converted back to pre-disturbance conditions and uses following pipeline construction. The general location aerial and topographic exhibits included in Appendix II-B and Appendix II-C detail pipeline workspace areas.

8.2.2 Aboveground Facilities

Aboveground facilities will consist of a new take off valve setting, a new delivery station, and three farm taps. WBI Energy will also need to upgrade receipt facilities within the Glen Ullin Compressor Station. Construction activities to install/upgrade aboveground facilities will affect approximately 3.54 acres of agricultural land and 1.45 acres of developed land. All disturbed areas outside the permanent facility footprint will be restored to pre-disturbance conditions in accordance with the FERC Plan and landowner agreements.

Operations of aboveground facilities will require 0.13 acres of agriculture land be converted to developed land. All other aboveground facility work will occur in land already classified as developed land. Aboveground facility plot plans are included in Appendix II-E.

8.2.3 Staging Areas

Two storage yard locations are proposed to be utilized as part of the proposed Project. Preparation of these storage yards will consist of topsoil segregation and minor grading and leveling to provide a stable surface to store equipment and construction materials. Approximately 20.96 acres of agricultural land will be impacted at storage yard locations. All areas will be restored to pre-disturbance conditions in accordance with the FERC Plan and

landowner agreements. No land associated with staging areas will be maintained for ongoing operations of Project facilities.

8.2.4 Access Roads

Existing public and private access roads will be utilized to access pipeline construction areas and receipt facilities at the existing Glen Ullin Compressor Station. Standard-maintenance public roads will be used for access without modification or improvement. However, some minimum-maintenance public roads and private roads may require improvement (such as grading; placement of gravel, crushed rock, or scoria for stability and surface improvement; replacing or installing culverts; and clearing of vegetation if present on the road surface) to safely accommodate construction equipment and increased vehicular traffic during construction. Approximately 18.90 acres of developed land will be impacted to utilize existing access roads for the Project. All roads will be restored to original conditions or better following construction.

New access roads are proposed to be constructed to gain access to the proposed Blue Flint Delivery Station and Blue Flint Take Off Valve Setting. The Blue Flint Take Off Valve Setting proposed access road is located within the aboveground facility extra workspace area, and therefore was not called out separately in Table 8.2-1. This proposed access road to the take off valve setting is located entirely within agricultural land. The Blue Flint Delivery Station proposed access road is located entirely on developed land. Approximately 0.23 acres of developed land will be impacted to construct the two proposed access roads. New access roads will be maintained and regularly inspected during routine site visits.

8.3 LAND USE IMPACTS AND MITIGATION

Temporary impacts to land use may result from construction and operation of the proposed Project. The land associated with the pipeline temporary R/W and permanent R/W will be restored to pre-disturbance conditions and uses. Vegetation along the pipeline corridor will be monitored until successful reclamation is achieved, and the permanent pipeline R/W will be maintained in an herbaceous state. Aboveground receipt facility upgrades within the Glen Ullin Compressor Station will result in an increase in the quantity of equipment on developed land at an existing facility location. The proposed Blue Flint Take Off Valve Setting will convert approximately 0.13 acres of agricultural land to developed land for permanent operation of facilities. The proposed Blue Flint Delivery Station is located on developed land and 0.92 acres will be maintained for permanent operation of the new facility. WBI Energy will conduct restoration activities in accordance with the FERC Plan and Procedures to minimize potential impacts. Specific land use impacts are detailed below, along with mitigation measures that will be implemented.

8.3.1 Agricultural Land

Agricultural land within the Project area includes land currently harvested for crops. Approximately 118.54 acres of agricultural land will be temporarily impacted during

construction, with 50.46 acres permanently impacted by operation of pipeline facilities, aboveground facilities, and access roads. Agricultural land along the proposed pipeline corridor and outside permanent aboveground facility boundaries will revert to original use and condition following construction, and WBI Energy will work with landowners to minimize impacts. The pipeline will be installed with a minimum cover depth of 48 inches. This increased depth of cover will allow for continued, uninhibited tillage operations in agricultural fields following construction. Care will be taken to strip the entire topsoil layer (up to 12 inches) and clearly segregate topsoil material from subsoil materials during construction to preserve soil quality and ensure that soil fertility and quality is restored following construction. BMPs will be installed in accordance with the Project SWPPP and FERC Plan and Procedures during and following construction to stabilize soils until final stabilization is achieved.

8.3.1.1 Prime Farmland and Farmland of Statewide Importance

A total of 21.21 acres of prime farmland and 107.24 acres of farmland of statewide importance is crossed by the Project. Impacts to prime farmland and farmland of statewide importance are further detailed in Section 7.1.1.1 of Resource Report 7.

8.3.1.2 Agricultural Drain Tiles

There are no known agricultural drain tile systems located within the Project area. If drain tile systems are identified during construction, WBI Energy will work with landowners and drain tile experts to relocate, reconfigure, or replace existing drain tile systems.

8.3.2 Open Land

Open land within the Project area primarily consists of grass-dominated rangeland used for livestock grazing and existing utility rights-of-way. Approximately 9.52 acres of open land will be temporarily impacted by pipeline construction activities.

Potential impacts to open land will be minimized by restoring all disturbed areas to original conditions following construction. Extra care will be taken to adequately strip topsoil and maintain topsoil and subsoil segregation. Only approved access roads and workspaces will be utilized. Temporary and permanent erosion and sediment controls will be installed in accordance with the Project SWPPP, and site conditions will be monitored through routine inspections to identify issues in accordance with applicable regulatory requirements. WBI Energy will consult with the local soil conservation service and landowners, and adhere to recommended seeding methods, rates, and timeframes to ensure successful reclamation. Reclamation will be monitored until final stabilization and desired vegetation establishment is achieved.

8.3.3 Developed Land

In general, developed land includes lands that contain existing aboveground facilities, existing aboveground or belowground utilities, and paved, gravel, or two-track roads. Developed land within the Project area primarily consists of existing aboveground facilities and existing access roads. Approximately 23.13 acres of developed land will be impacted during construction activities. Operational impacts will total 1.41 acres. Existing access roads will remain in place following construction.

WBI Energy will minimize impacts to developed land by restricting travel to only approved access roads and workspace areas. WBI Energy will communicate with landowners and stay up to date on concerns that may arise during construction. Off-site tracking will be monitored, and cleanup measures implemented as necessary. No improvements to existing roads are anticipated. Developed land will be restored to pre-disturbance conditions following construction.

8.3.4 Open Water

Open water includes delineated wetlands crossed by the Project area (Wetlands 2, 4, 6, 7, 8, 9, 10, 11C, 11D, 13A, 13B, 13C, and 14). A total of 7.38 acres of open water will be temporarily impacted by the Project. WBI Energy will minimize impacts to open water by implementing guided bore techniques at several wetland crossings and installing BMPs during construction. WBI Energy will install equipment mats across saturated soils to avoid rutting and damage to sensitive wetland areas. No topsoil will be stripped through saturated soil and existing vegetation will be preserved whenever possible. WBI Energy will conduct all construction activities in accordance with the FERC Procedures. All wetlands will be restored to original conditions following construction. Wetland resources and potential impacts and mitigation measures are further detailed in Resource Report 2.

8.4 PLANNED RESIDENTIAL OR COMMERCIAL AREAS

There are no planned residential or commercial areas within the Project area. The nearest facilities consist of the Blue Flint Ethanol Plant and the Coal Creek Station power plant, located at the west end of the Project. The nearest residence is located approximately 250 feet north of the proposed pipeline, on the north side of 3rd Street SW. If planned residential or commercial developments are discovered within the Project area, WBI Energy will work with affected parties to resolve any potential issues that may arise.

WBI Energy will minimize potential impacts to surrounding residential and commercial areas by notifying landowners of anticipated work schedules and by completing Project activities within approved workspaces. Construction activities will be limited to daylight hours, and tracking will continually be monitored to ensure good maintenance of existing access roads.

8.5 PUBLIC LAND, RECREATION, & OTHER DESIGNATED AREAS

8.5.1 Public Lands, Trails, Recreationally or Culturally Significant Areas

The Project area crosses private land. There are no public lands, state recreation areas, scenic byways, state parks, national parks, or hiking trails within the Project area. Significant areas within the vicinity of the Project area are discussed below.

The nearest state parks include the Cross Ranch State Park (located approximately 11 miles South of the Project area) and Lake Sakakawea State Park (located approximately 17 miles northwest of the Project area) (NDTD 2021). The Fahlgren Park State Recreation Area is located approximately 5 miles south of the Project area.

WBI Energy also assessed significant sensitive habitat within the vicinity of the Project. NWR wetland easement areas associated with the Audubon Wetland Management District are located approximately 0.14 miles North of the Project area, as detailed in Section 3.2.2.1 of Resource Report 3. The Falkirk Waterfowl Production Area is located approximately 3 miles North of the Project area.

To assess historical or culturally significant areas within the Project corridor, BCA conducted Class I and Class III archaeological investigations of the Project area. The Class III cultural resource inventory resulted in three new cultural resources, detailed in Section 4.3.1 of Resource Report 4. All sites were recommended as ineligible for nomination to the NRHP, and no avoidance measures are recommended (Baker & Lembo 2021).

In addition to recreationally or culturally significant areas, the Washburn Municipal Airport is located approximately 1.4 miles South of the Project area.

Due to the limited nature of project activities and the distance of the Project from the recreational areas described in this section, no impacts are anticipated. As noted in Section 3.2.3 of Resource Report 3, impacts wildlife habitat will be minimized by restoring construction workspaces to previous use and condition and ensuring successful revegetation of disturbed areas. No impacts to historical or culturally significant areas are anticipated as none were encountered during field surveys. WBI Energy will implement measures in the *Plan for Unanticipated Discovery of Historic Properties or Human Remains during Construction* in the event potential cultural resources are uncovered during construction.

8.5.2 Landfills, Hazardous Waste Sites, Quarries and Mines

The Falkirk Mine is located approximately 2 miles North of the Project area, with active mine permit boundaries coming to within approximately 0.7 miles of the Project. There are no known landfills or hazardous waste sites within the vicinity of the Project area. Mining activity is further detailed in Section 6.1.3 of Resource Report 6. WBI Energy will avoid impacts by limiting construction to only approved workspaces and access roads and conducting construction activities in accordance with the FERC Plan and Procedures, Project SPCC Plan, and *Plan for*

Unanticipated Discovery of Contaminated Media. An EI will be present onsite to ensure compliance with environmental commitments and regulations.

8.6 VISUAL RESOURCES

The visual character of the existing landscape is defined by historic and current land uses such as agricultural, open land, and development. The Project will primarily affect agricultural land, which will be restored to original conditions following construction. The proposed Blue Flint Delivery Station will be located within the boundaries of the existing Blue Flint plant. Upgrades to the receipt facilities within the Glen Ullin Compressor Station will be completed within the fenced boundaries of the facility, with no impacts on the current visual character of this facility anticipated. The proposed Blue Flint Take Off Valve Setting will be limited to a few pieces of equipment on a small graveled/fenced area near main roadways and surrounded by agricultural fields. Farm taps will be located along the permanent proposed pipeline R/W and consist of three 2-inch taps. The pipeline workspace will be restored to pre-disturbance conditions following construction.

Most visual and aesthetic impacts associated with the Project will be limited to the period of active construction as a result of construction equipment, personnel, and disturbed soil. After construction is complete, the landscape will be re-contoured and restored to original conditions in accordance with the FERC Plan and Procedures. Aboveground facilities associated with the Project are located primarily in areas already developed and used for industrial purposes. For these reasons, minimal visual and aesthetic impacts are anticipated for the Project.

8.7 REFERENCES

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RESOURCE REPORT 9

9.0 AIR AND NOISE QUALITY

Resource Report 9 describes the existing air and noise environment that will be affected by the Project. The report addresses potential impacts of the Project on the existing air and noise environment and measures that will be implemented to mitigate these impacts. A detailed Project description is provided in Resource Report 1.

9.1 AIR QUALITY

9.1.1 Local Climate

The Project area has a dry-subhumid, continental climate that is characterized by cold winters and warm summers. Winters are generally long and cold with temperatures as low as -40 degrees Fahrenheit and summers warm with average daily temperatures ranging from 62-72 degrees Fahrenheit. Most annual precipitation occurs from April through September (Klausing 1974). Average annual precipitation is 17.4 inches (NDSU 2014).

9.1.2 Existing Air Quality

The Clean Air Act of 1970 (CAA) requires that the Environmental Protection Agency (EPA) establish ambient air quality standards for pollutants considered harmful to human health and the environment. These standards are known as the National Ambient Air Quality Standards (NAAQS). The EPA establishes NAAQS for six pollutants, known as criteria air pollutants. The six criteria air pollutants include: sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter, sized 10 microns and smaller (PM_{10}) and 2.5 microns and smaller ($PM_{2.5}$), lead (Pb), and ozone (O_3). The EPA also establishes primary and secondary standards for NAAQS. Primary standards provide protection to public health and the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards provide protection for vegetation, wildlife, soils, and other aspects of public welfare (EPA 2021b).

The EPA also identifies areas of the country that meet and do not meet the NAAQS for the six criteria air pollutants. Attainment areas meet the NAAQS and nonattainment areas do not meet the NAAQS. Areas that are not defined under these standards are called “unclassifiable areas”. The Project is located within an attainment area, meeting the NAAQS for all six criteria air pollutants (EPA 2021g) (EPA 2021c).

The ambient air quality monitoring program in the state is administered by the North Dakota Department of Environmental Quality (DEQ) Division of Air Quality. The Air Quality Monitoring branch ensures that the ambient air quality in North Dakota is better than the levels required by the state per Chapter 33.1-15-02 and by the National Ambient Air Quality Standards.

To address this responsibility, the Department owns and operates a network of eight ambient air quality monitoring sites stationed throughout the state. In addition to the DEQ monitoring sites, the National Park Service (NPS) has installed an ambient monitoring site at Theodore Roosevelt National Park-South Unit in which the DEQ operates and monitors on their behalf (NDDEQ 2021a). Details of this monitoring program and its practices are included in the program's *Air Quality Monitoring Network Plan/Assessment with Data Summary 2020* (NDDEQ 2020). The nearest monitoring station to the Project area is the Hannover site (AQS No. 38-065-0002), located approximately 18 miles southwest of the Project area. This station monitors NO_2 levels (EPA 2021a).

9.1.3 Regulatory Requirements

The CAA is the basic federal statute governing air quality. The provisions of the CAA that are potentially applicable to construction and operation of the Project are:

- New Source Review (State and Federal)
- Federal Class I Area Protection
- State and Title V Operating Permit Programs
- New Source Performance Standards
- National Emission Standards for Hazardous Air Pollutants
- State Regulations
- General Conformity
- Mandatory Greenhouse Gas Reporting

9.1.3.1 New Source Review (State and Federal)

The CAA requires that all new and modified stationary sources of air pollution obtain a preconstruction permit. This New Source Review (NSR) permitting process is required in both nonattainment areas, where national ambient air standards have been exceeded, as well as attainment and unclassified areas where air quality is currently acceptable. North Dakota's NSR is administered by the NDDEQ permitting program-specifically through the issuance of Permits to Construct (PTCs). The PTC process provides for the review of proposed sources or proposed modifications to existing sources of air contaminants. A construction permit is issued only if it is expected that the proposed source or modification will comply with the applicable rules. Since the Project does not involve construction of a new major source or modifications to an existing major source of air pollutants, New Source Review is not applicable to the proposed Project (NDDEQ 2021b).

9.1.3.2 Federal Class I Area Protection

The Regional Haze rule requires that states, in coordination with the EPA, the NPS, U.S. Fish and Wildlife Service (USFWS), and other interested parties develop and implement air quality protection plans to reduce the pollution that causes visibility impairment. This rule mandates

gradual progress toward restoring "natural" visibility conditions by the year 2064 at designated national parks, wilderness areas, monuments, forests, seashores, and wildlife refuges, collectively referred to as Class I areas. If a proposed source is a new major source or major modification under the Prevention of Significant Deterioration (PSD) program, the source must undergo an analysis to determine its impact on Class I areas (NDDEQ 2021c).

Proposed Project activities do not involve new major sources or modifications, and there are no national parks, wilderness areas, monuments, forests, seashores, or wildlife refuges within the Project area. Therefore, Federal Class I Area Protection does not apply to the proposed Project.

9.1.3.3 State and Title V Operating Permit Programs

Title V of the 1990 Clean Air Act Amendments required states to establish an air operating program in an effort to standardize air permits across the United States. The Title V permit program (40 CFR Part 70) requires major sources of air pollutants to obtain operating permits. The operating permits set operational and emission limits, monitoring, record-keeping, and reporting requirements for sources of air emissions. Major sources emit or have the potential to emit at or above the major source threshold for any air pollutant. These threshold levels are 100 tons per year (tpy) of any air pollutant, 10 tpy of any single hazardous air pollutant (HAP), or 25 tpy of any combination of HAPs (EPA 2021i).

None of the new aboveground facilities to be constructed for the Project are considered major sources of air pollutants requiring operating permits. The Glen Ullin Compressor Station is considered a major source of air pollutants and currently operates in accordance with Title V Operating Permit Number T5-O92003 issued by NDDEQ. None of the work to be completed at the receipt facilities within the Glen Ullin Station will result in a modification to the current Title V permit as no increase in criteria pollutants or HAPs will occur.

9.1.3.4 New Source Performance Standards

Section 111 of the CAA authorizes the EPA to develop technology-based standards which apply to specific categories of stationary sources. These standards are referred to as New Source Performance Standards (NSPS) (EPA 2021f). The NSPS in Title 40 of the Code of Federal Regulations (CFR) Part 60 establish emission limits and other requirements for certain new, modified, or reconstructed emission sources. NSPS does not apply to any of the facilities proposed to be constructed or modified as part of the Project.

9.1.3.5 National Emission Standards for Hazardous Air Pollutants

The EPA has established National Emission Standards for Hazardous Air Pollutants (NESHAP) for specific pollutants and industries in 40 CFR Part 61. The Project may involve the removal of asbestos containing materials in the form of pipe wrap on pipe in locations where Project facilities are tied into the existing pipeline system such as at the Blue Flint Take Off Valve

Setting. Subpart M of 40 CFR Part 61 contains standards for asbestos projects. WBI Energy and its contractors will treat the material as asbestos containing unless laboratory analysis is completed to confirm the absence of asbestos. All potential asbestos containing material will be handled and disposed of in accordance with the Federal asbestos NESHAP and in accordance with the North Dakota Administrative Code (Chapter 33.1-15-13).

Additionally, 40 CFR Part 63 contains NESHAP requirements for various source categories. None of the facilities or equipment associated with the Project are considered affected sources subject to regulation in 40 CFR Part 63 (EPA 2021e).

9.1.3.6 State Regulations

In addition to the federal regulations described above, North Dakota has state-specific air quality regulations administered by the DEQ. Subject to EPA oversight, the DEQ manages the statewide air permitting, compliance, and enforcement programs. North Dakota air emissions are regulated by the NDDEQ Division of Air Quality under North Dakota Administrative Code (NDAC) 33-15. Listed below are the applicable air quality regulations from the NDAC that apply to the Project, as well as required air impact reviews (NDDEQ 2021d).

- NDAC 33.1-15-01 sets the general provisions pertaining to all state-level regulations, including definitions of terms used by the regulations.

- NDAC 33.1-15-03 restricts emissions of visible air contaminants. This regulation applies to both point sources and fugitive sources of visible emissions. WBI Energy will maintain equipment to not exceed opacity standards and perform construction to minimize dust. Appendix II-L contains the Project *Fugitive Dust Control Plan*.

- 33.1-15-07-02 sets requirements for organic compound gas disposal. No person may cause or permit the emission of organic compounds, gases, and vapors, except from an emergency vapor blowdown system or emergency relief system, unless these gases and vapors are burned by flares or an equally effective control device. Organic compounds may be present in the event of a pipeline blowdown. WBI Energy will comply with the applicable requirements of this regulation during Project construction and operation.

- 33.1-15-16-02 sets restrictions on emissions of odorous substances. In areas located within a city or the area over which a city has exercised extraterritorial zoning, a person may not discharge into the ambient air any objectionable odorous air contaminant that measures seven odor concentration units or higher outside the property boundary where the discharge is occurring. WBI Energy will comply with the applicable requirements of this regulation during Project construction and operation.

- NDAC 33.1-15-17 restricts fugitive emissions from any source, including emissions of particulates (dust) and various gaseous emissions such as those subject to an AAQS or PSD increment, an odorous substance, or those subject to the restrictions of a visible air contaminant. WBI Energy will comply with the applicable requirements of this

regulation during Project construction and operation. Information regarding specific techniques for the control of fugitive dust during construction is included in the Project's *Fugitive Dust Control Plan*.

9.1.3.7 General Conformity

General conformity regulations in 40 CFR Part 93, subpart B, are intended to ensure that actions from a federal agency that occur in nonattainment and maintenance areas do not interfere with a state's ability to comply with NAAQs (EPA 2021h). The Project is in areas that are in attainment with the NAAQs; therefore, a general conformity determination is not required for the proposed Project.

9.1.3.8 Mandatory Greenhouse Gas Reporting

The mandatory greenhouse gas (GHG) reporting rule (40 CFR Part 98) establishes reporting thresholds and requirements for emission sources of carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) and each fluorinated GHG (EPA 2017i). The carbon dioxide equivalent (CO2e) is the aggregate of these emissions. The GHG reporting rule establishes a reporting threshold of 25,000 actual metric tpy of CO2e emissions (EPA 2021d).

Per the 2015 Revisions to 40 CFR Part 98 Subpart W, Transmission Pipeline was added as a facility required to report GHGs from pipeline blowdowns. A Transmission Pipeline Facility is the total U.S. mileage of natural gas transmission pipeline as defined in 40 CFR 98.238. WBI Energy currently reports GHG emissions from its transmission pipeline affected facility. The new sections of pipeline associated with the Project will be included in the affected facility. WBI Energy will continue to monitor GHG emissions from pipeline blowdowns and comply with the GHG reporting requirements, as necessary.

The Glen Ullin Compressor Station is considered an Onshore Natural Gas Transmission Compression facility per 40 CFR Part 98. Facility GHG emissions are calculated on an annual basis and reported to the EPA if the reporting threshold is exceeded. To date, GHG emissions at the Glen Ullin Compressor Station have been below the reporting threshold.

9.1.4 Air Emissions Impacts and Mitigation

9.1.4.1 Construction Emissions

Construction activities may temporarily result in air emissions from diesel/gasoline-powered equipment or fugitive dust emissions from soil disturbance and vehicular traffic. Large earth-moving equipment are potential sources of combustion-related emissions, including criteria pollutants and small amounts of HAPs. Emissions from construction equipment will be temporary and limited to the immediate vicinity of the construction area. Impacts from

construction equipment exhaust emissions will be mitigated through use of equipment that meets EPA design standards for diesel and gasoline-fueled equipment and use of fuel that meets federal and state fuel standards. Fugitive dust emissions from construction activities (ground clearing, grading, excavation, and backfilling) and vehicle travel on unpaved roads will be continuously monitored, and water trucks will be available onsite to minimize impacts. These emission sources are not expected to have a significant impact on ambient air quality concentrations in the Project area.

Table 9.1.4-1 below summarizes peak construction emissions from operation of construction equipment and motor vehicles, and fugitive dust emissions from construction activities and vehicular traffic on unpaved surfaces. Construction activity emissions were calculated based on estimated area of disturbance during construction and estimates of typical construction equipment required to complete work. The combined estimated area of disturbance taking place at the pipeline, pipe yards, access roads, and aboveground facility locations totaled approximately 158.57 acres. Construction activity calculations were conservatively estimated and assumed all activities were continuous throughout construction with no fugitive dust control. Appendix II-Q provides detailed emission calculations.

Table 9.1.4-1
Peak Construction Emissions (tons per construction duration)

	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	GHG CO_2e[a]	VOC	HAP
Off-Road Construction Equipment	4.09	5.27	0.67	-	0.007	913	0.50	0.03
On-Road Motor Vehicles	0.50	0.26	0.02	0.02	0.002	199	0.07	-
Construction Activities	-	-	61.25	23.80	-	-	-	-
Unpaved Vehicle Travel	-	-	13.86	2.03	-	-	-	-
Total Construction Emissions	**4.59**	**5.53**	**75.81**	**25.84**	**0.009**	**1,111**	**0.57**	**0.03**

[a] Metric tons per year

Acronyms:

PM_{10}	particulate matter less than 10 microns in diameter	SO_2	sulfur dioxide
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter	VOC	volatile organic compound
NO_x	nitrogen oxides	HAP	hazardous air pollutant
CO	carbon monoxide	GHG	greenhouse gases
		CO_2e	carbon dioxide equivalents

WBI Energy will conduct construction activities in accordance with the Fugitive Dust Control Plan (Appendix II-L). Dust suppression measures will be employed as necessary to control fugitive dust emissions and maintain compliance with applicable regulations. Water trucks will be readily available to spray disturbed areas or dirt/gravel roads with water. Only approved access roads will be utilized and speed limits on paved and unpaved roads will be enforced. WBI Energy will comply with the applicable EPA mobile source emissions performance

standards by using well-maintained vehicles, and equipment will be shut down when not in use to minimize idling emissions.

9.1.4.2 Operational Emissions

The modification of existing aboveground facilities and construction of the new delivery station, new take off valve setting, and new farm taps are not expected to increase criteria pollutants or cause significant increases in GHG emissions. The new aboveground facilities constructed for the project will not be subject to major source permitting requirements. The upgrades to receipt facilities within the Glen Ullin Compressor Station will not require modification to the existing Title V Permit. Potential operating emissions from Project facilities may consist of fugitive emissions from leaking components and pipeline blowdowns which are expected to be insignificant.

Appendix II-Q provides detailed emission calculations for operation of the new equipment at aboveground facilities and pipeline. The combined total potential GHG emissions, as CO2e, from routine operations of the pipeline and above ground facilities is expected to cause an increase of 41.8 tons per year. This is significantly less than the EPA Mandatory GHG Reporting threshold of 25,000 tons per year of GHGs as CO2e. Therefore, fugitive emissions for the aboveground facilities are considered negligible.

Routine operation of the pipeline is not expected to require the need for frequent blowdowns that would cause a release of GHG emissions. Blowdowns are only expected to occur when the pipeline must undergo repair or maintenance, which is expected to be minimal. Additionally, WBI Energy's routine monitoring of pipeline facilities includes leak detection and monitoring. Leaks are repaired in a timely manner upon discovery.

9.2 NOISE QUALITY

Construction of the proposed Project will result in temporary noise impacts on the Project area. Operation of the pipeline and aboveground facilities are not expected to impact noise quality within the Project area. Construction equipment will generate noise throughout pipeline and aboveground facility construction activities. Construction noise will be variable depending on type of equipment, specific activities being performed, and the duration of equipment use. Noise impacts will be localized and temporary, with no long-term effects anticipated.

9.2.1 Applicable Noise Guidelines

In 1974, the EPA prepared a document known as "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." This document published information on levels of environmental noise with respect to public health and safety. The publication identified that day-night (L_{dn}) sound levels for outdoor activities should not exceed 55 decibels (dBA). No other known state or local noise regulations are applicable to the proposed Project (EPA 1974).

9.2.2 Construction Noise Impacts and Mitigation

Construction activities will generally occur during daytime hours and will not have an impact on night (10 p.m. to 7 a.m.) sound levels. Noise sources will primarily result from construction equipment operation. The type of construction equipment will vary depending on the specific phase of construction (clearing and grading; pipe stringing, bending and welding; trenching; lowering-in and backfilling; hydrostatic testing; final tie-in; commissioning; and right-of-way cleanup and restoration). Aboveground equipment installations and modifications at existing facilities and construction of new facilities will also require excavation equipment. Standard heavy equipment such as track-excavators, backhoes, or bulldozers will be utilized during construction.

Pipeline construction will involve several guided bores at wetland and road/railroad crossings. These guided bores will be minor in scale but will involve noise-generating equipment such as the drilling rig, mud mixing system and generator, a small backhoe/front loader/side boom, and welding equipment. Boring and hydrostatic testing activities may extend into nighttime hours; however, impacts would be very short term and are not expected to have a significant impact on noise levels. Blasting is not expected to be required for this Project.

Project activities are temporary in nature, with no adverse or long-term impacts anticipated. Noise mitigation measures will include limiting construction to daytime hours to the extent possible, ensuring equipment is in good maintenance, and notifying adjacent landowners or stakeholders prior to construction, as necessary.

9.2.3 Operational Noise Impacts and Mitigation

New aboveground facilities and new equipment installations at existing aboveground facilities are not expected to increase operational noise levels above current levels following construction.

Other potential operational noise impacts may occur during pipeline blowdown operations. Blowdown operations will involve the release of natural gas from a section of pipeline so that work can be completed safely. Loud noise may occur when the compressed natural gas escapes through the valve opening. Frequency of blowdown operations is expected to be very low for the proposed pipeline, and no adverse or long-term impacts to noise levels are anticipated.

9.3 REFERENCES

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RESOURCE REPORT 10

10.0 ALTERNATIVES

Resource Report 10 describes the alternatives WBI Energy evaluated to determine whether they would be reasonable and environmentally preferable to the proposed Project. These alternatives included: (1) taking no action, (2) 6-inch diameter pipeline lateral alternative, (3) 8-inch diameter lateral and 8-inch diameter Underwood Lateral Loop alternative, and (4) South Minot Compressor Station alternative. Please refer to Resource Report 1 for a detailed Project description.

No Action Alternative

Under the no-action alternative, WBI Energy would not construct any component of the proposed Project and no additional environmental impacts from WBI Energy's construction or operations would occur. However, WBI Energy would consequently not be able to satisfy the requests for gas transportation service. Blue Flint, as well as the farm tap customers located along the pipeline lateral route, would be forced to utilize alternative fuel sources for their energy needs. Because taking no action would not satisfy the requests of the customers for firm or interruptible natural gas transportation service and may lead to the use of more costly or environmentally impactful fuel sources, this alternative was not selected.

6-inch Diameter Pipeline Lateral Alternative

As an alternative to the proposed Project, WBI Energy examined installing a smaller, 6-inch diameter lateral from WBI Energy's existing Line Section 7 mainline to the new delivery station location. The smaller-diameter lateral would utilize the same R/W and length as the proposed Project. The costs for this alternative would be slightly less; however, the smaller diameter lateral would not have sufficient firm transportation capacity. The 6-inch diameter lateral would have a firm transportation capacity of 5,700 million cubic feet per day (MCFD), and the customer has requested 6,700 MCFD of firm transportation capability. The modifications to receipt facilities within the Glen Ullin Compressor Station for the proposed Project are the same for this alternative. The environmental impact of the smaller diameter lateral is equal to the proposed Project as they both utilize the same route and both 6-inch diameter and 8-inch diameter pipeline requires the same temporary and permanent R/W. Due to the insufficient capacity of this alternative, only minor cost savings, and the same environmental impact, this alternative was not selected.

8-inch Diameter Lateral and 8-inch Diameter Underwood Lateral Loop Alternative

Another alternative to the proposed Project would include installing approximately 8.7 miles of new 8-inch diameter lateral from WBI Energy's existing Underwood lateral to the new delivery station location. The existing Underwood lateral is a 3-inch diameter pipeline and does not have sufficient capacity for the required Project volumes. Approximately 6.6 miles of the Underwood

lateral would need to be looped with 8-inch diameter pipeline. This would result in a total of 15.3 miles of new 8-inch diameter pipeline being installed. The modifications to receipt facilities within the Glen Ullin Compressor Station for the proposed Project are the same for this alternative. Due to the increased pipeline length, costs, and environmental impacts, this alternative was not selected.

South Minot Compressor Station Alternative

WBI Energy also examined an alternative that would transport the required natural gas volumes on a path from the Robinson Lake Plant receipt point (located near Stanley, ND on WBI Energy's Line Section 7 mainline) through Minot, ND to the proposed 8-inch diameter lateral. Additionally, a new mainline compressor station located near Minot, ND with an estimated 750 horsepower engine would be required. The existing Robinson Lake Plant receipt point has sufficient capacity for the Project volumes, so no modifications to the receipt point would be required. Due to the increased Project and operating costs, fuel, and environmental impact associated with the installation of the new compression facilities, this alternative was not selected.

RESOURCE REPORT 11

11.0 RELIABILITY AND SAFETY

A resource report on Reliability and Safety is not required unless the project involves construction of new LNG facilities, recommissioning of existing LNG facilities, or for pipeline projects where significant safety concerns have been raised in prefiling consultations. The Line Section 7 Expansion Project does not meet these criteria. Therefore, Resource Report 11 is not required.

RESOURCE REPORT 12

12.0 PCB CONTAMINATION

Resource Report 12 addresses replacement, abandonment by removal, or abandonment in place of pipeline facilities determined to contain liquids having concentrations of polychlorinated biphenyls (PCBs) of more than 50 parts per million (ppm). The Project involves installation of approximately 10 miles of 8-inch lateral natural gas pipeline. No pipeline or facilities will be removed or abandoned as part of the Project; therefore, no PCB contamination is anticipated.