United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue S.E.
Aberdeen, South Dakota 57401

JUL 0 9 2010

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IN REPLY REFER TO:
DESCRM
MC-208

MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: ACTING Regional Director, Great Plains Region

SUBJECT: Environmental Assessment and Finding of No Significant Impact

In compliance with the regulations of the National Environmental Policy Act (NEPA) of 1969, as amended, for the proposed *Phase 1B- Prime Oil and Gas Gathering System* by Arrow Midstream Holdings, LLC on the Fort Berthold Reservation, an Environmental Assessment (EA) has been completed and a Finding of No Significant Impact (FONSI) has been issued.

All the necessary requirements of the National Environmental Policy Act have been completed. Attached for your files is a copy of the EA, FONSI and Notice of Availability. The Council on Environmental Quality (CEQ) regulations requires that there be a public notice of availability of the FONSI (1506.6(b)). Please post the attached notice of availability at the Agency and Tribal buildings for 30 days.

If you have any questions, please call Marilyn Bercier, Regional Environmental Scientist, Division of Environment, Safety and Cultural Resources Management, at (605) 226-7656.

Attachment

cc: Marcus Levings, Chairman, Three Affiliated Tribes (with attachment)
Perry "No Tears" Brady, THPO (with attachment)
Roy Swalling, BLM, Dickenson, ND (with attachment)
John Shelman, US Army Corps of Engineers
Dawn Charging, Virtual One Stop Shop, Fort Berthold Agency
Jeffrey Towner, Field Supervisor, U.S. Fish and Wildlife Service

Environmental Assessment

United States Bureau of Indian Affairs

Great Plains Regional Office
Aberdeen, South Dakota

Arrow Pipeline, LLC
Oil, Gas & Water Gathering System
Phase 1B - Prime

Fort Berthold Indian Reservation

July 2010

For information contact:
Bureau of Indian Affairs, Great Plains Regional Office
Division of Energy and Environment
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Finding of No Significant Impact

Arrow Pipeline, LLC,
Oil, Gas & Water Gathering System
Phase 1B - Prime

The U.S. Bureau of Indian Affairs (BIA) received a proposal for construction of three pipelines (oil, gas and water) and a utilities line. The gathering system would be installed in a single 100-foot Right-of-Way ROW) for approximately 4.36 miles on the Fort Berthold Indian Reservation in Dunn County, North Dakota. As shown in **Figure 1-1**, The ROW would begin in SWNW Section 6, T148N R92W and trend west through Section 1, 2, 3, and 4, T148N, R93W, and Section 36, T149N R93W, roughly paralleling BIA Road 12 until it reaches BIA Road 14. At BIA Road 14, the proposed pipeline would trend south paralleling the road to NWSW Section 4, T148N R93W to tie into the approved Phase 1B – South (BIA 12-14) pipeline ROW. Associated federal actions by BIA include determinations of effect regarding cultural resources and approvals of leases, ROW and easements.

Potential of the proposed action to impact the human environment is analyzed in the attached Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the recently completed EA, I have determined the proposed project will not significantly affect the quality of the human environment. No Environmental Impact Statement is required for any portion of the proposed activities. This determination is based on the following factors:

1. Agency and public involvement was solicited and environmental issues related to the proposal were identified.

2. Protective and prudent measures were designed to minimize impacts to air, water, soil, vegetation, wetlands, wildlife, water resources, and cultural resources. The potential for impacts was disclosed for both the proposed action and the No Action alternative.

3. Guidance from the U.S. Fish and Wildlife Service was fully considered.

4. The proposed action was designed to avoid adverse effects to historic, archaeological, cultural, and traditional properties, sites, and practices. The Tribal Historic Preservation Officer has concurred with BIA's determination that no historic properties will be affected.

5. Environmental justice was fully considered.

6. Cumulative effects to the environment are either mitigated or minimal.

7. No regulatory requirements have been waived or require compensatory mitigation measures.

8. The proposed project will improve the socioeconomic condition of the affected Indian community.

Acting Regional Director – Great Plains Regional Office

7/9/10
Date

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1. Purpose and Need for the Proposed Action

Arrow Pipeline, LLC (Arrow) is proposing to construct and operate a trunk line extension of an oil, gas and water gathering system on the Fort Berthold Indian Reservation (Reservation). Plans also include a buried electrical power line. For convenience, this document will refer to these facilities collectively as "Phase 1B - Prime".

Development has been proposed on allotted and tribal land held in trust by the United States in Dunn County, North Dakota. The U.S. Bureau of Indian Affairs (BIA) is the surface management agency for potentially affected tribal lands and individual allotments. As shown in **Figure 1-1**, the ROW would begin in SWNW Section 6, T148N R92W and trend west through Section 1, 2, 3, and 4, T148N, R93W, and Section 36, T149N R93W, roughly paralleling BIA Road 12 until it reaches BIA Road 14. At BIA Road 14, the proposed pipeline would trend south paralleling the road to NWSW Section 4, T148N R93W to tie into the approved Phase 1B – South (BIA 12-14) pipeline ROW. The proposed project is a branch of two other Arrow pipeline projects recently constructed and/or approved for construction and located in the north-central part of western North Dakota, roughly 80 miles south of the Canadian border and 60 miles east of Montana.

The economic development of available resources and associated BIA actions are consistent with BIA's general mission. Leasing and development of mineral resources offer substantial economic benefits to both the Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nation (MHA Nation) and to individual tribal members. Phase 1B - Prime is being proposed to reduce waste of valuable resources through continued flaring of gas and to mitigate environmental and public safety concerns – including visual impacts, noise, heavy truck traffic and road deterioration.

Oil and gas exploration and development activities are conducted under authority of the Indian Mineral Leasing Act of 1938 (25 United State Code [USC] 396a *et seq.*), the Gas Royalty Management Act of 1982 (30 USC 1701, *et seq.*), the Energy Policy Act of 2005 (42 USC 13522) and 25 Code of Federal Regulations (CFR) 169. BIA actions in connection with the proposed project are largely administrative and include approval of rights-of-way (ROW) and determinations regarding cultural resource effects.

This proposed federal action requires compliance with the *National Environmental Policy Act* of 1969 (NEPA) and analysis of the proposed project's potential to impact the human and natural environment. Compliance with NEPA is expected to both improve and explain federal decision making. This Environmental Assessment (EA) will result in either a Finding of No Significant Impact (FONSI) or a decision to prepare an Environmental Impact Statement (EIS).

There are several components to the proposed action. Existing roads would be used to access Phase 1B - Prime for construction or operation and would be maintained to existing or improved conditions. After the ROW corridor is cleared and topsoil stockpiled, the pipeline trench would be excavated, pipelines installed and the trench promptly backfilled, re-graded, re-seeded and reclaimed. Analysis of potential impacts from this portion of the project is included in this document as reasonably foreseeable and stemming from BIA actions. All project components on tribal and allotted land would eventually be reclaimed and abandoned according to applicable federal and tribal conditions, unless formally transferred with federal approval to either the BIA or the landowner.

Any authorized project will comply with all applicable federal, state and tribal laws, rules, policies, regulations and agreements. No construction or other ground-disturbing operations will begin until all necessary leases, easements, surveys, clearances, consultations, permissions, determinations and permits are in place. Additional NEPA analysis, findings and federal actions will be required prior to development beyond what is described and analyzed in this EA.

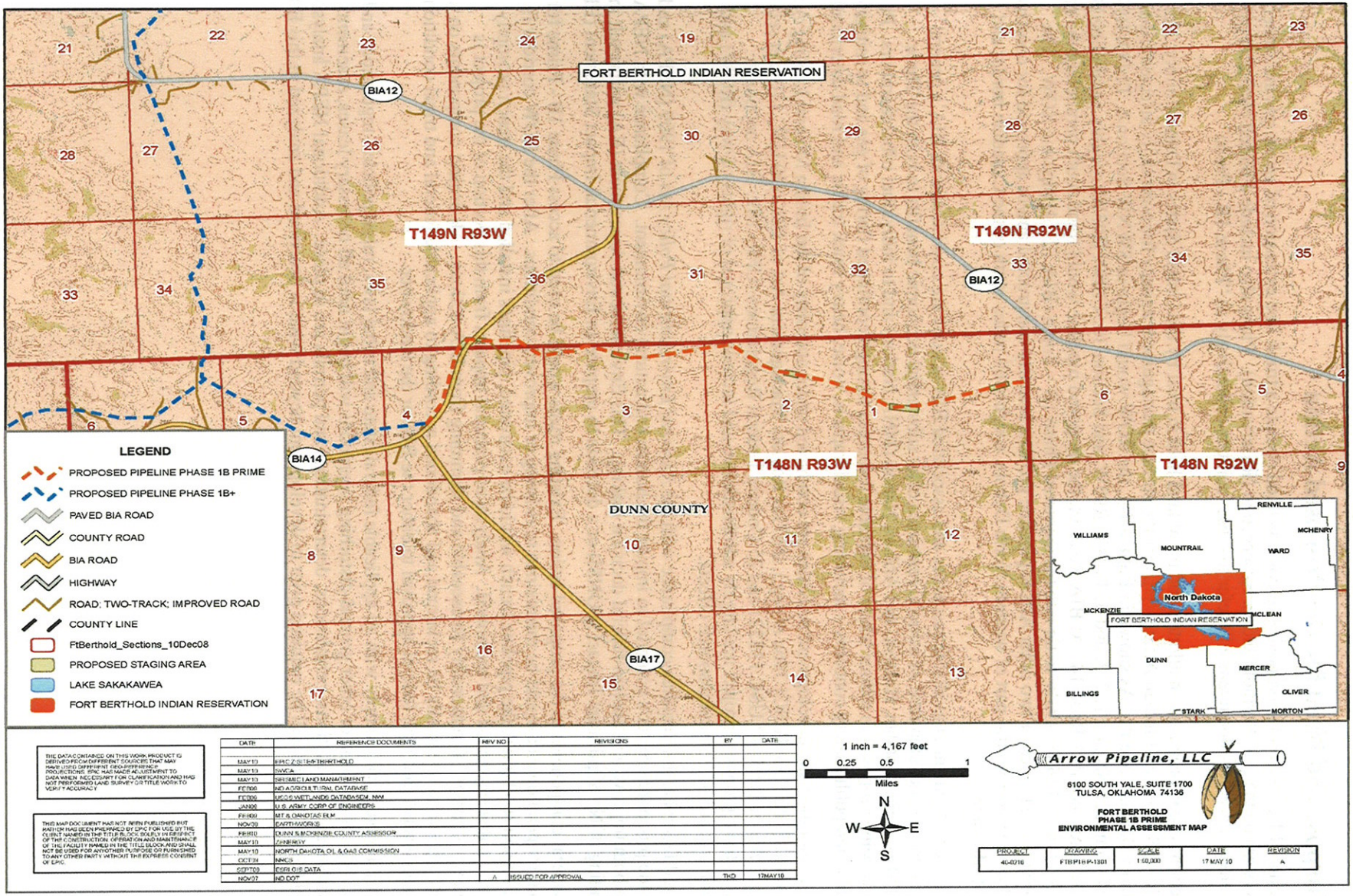

Figure 1-1 Proposed Phase 1B - Prime Project Location

2. Proposed Action and Alternatives

The **No Action alternative** must be considered within an EA. If this alternative is selected, BIA would not approve the proposed oil and gas gathering system. Current land use practices would continue, as would current oil and gas operations. Transport of oil and water from wells on the reservation would continue using heavy trucks; truck traffic would increase over time as more wells were installed. Valuable resources would continue to be wasted without economic benefit, as gas is flared rather than brought to market. The No Action alternative is the only available or reasonable alternative to the specific proposal considered in this document.

The **Proposed Action alternative** consists of a single corridor in which an electrical line and pipelines for oil, gas and wastewater would be buried. As shown in Figure 1-1, the Phase 1B - Prime ROW would start in SWNW Section 6, T148N R92W and trend west through Section 1, 2, 3, and 4, T148N, R93W, and Section 36, T149N R93W, roughly paralleling BIA Road 12 until it reaches BIA Road 14. At BIA Road 14, the proposed pipeline would lead south paralleling the road to NWSW Section 4, T148N R93W to tie into the approved Phase 1B – South (BIA 12-14) pipeline ROW. All construction activities would follow stipulations, practices, and procedures outlined in this document, associated technical reports, guidelines and standards in *Surface Operating Standards for Oil and Gas Exploration and Development* (U.S. Department of the Interior [USDI] and U.S. Department of Agriculture [USDA] 2007), and any conditions added by the BIA. All pipeline operations would be conducted in full compliance with applicable laws and regulations. The proposed action is described in more detail in the remainder of this chapter.

2.1 System Design and Relation to Other Pipelines

The proposed system would consist of three separate pipelines for transport of oil, gas and produced water. An electrical utility line would also be installed for future service to compressors, well sites and pumping stations. As shown in Figure 1-1, all system components would begin at the same point at the north end of the proposed Phase 1B - Prime and tie into the Phase 1B - South (BIA 12-14) oil, gas, and water gathering system that then ties into a third existing Arrow pipeline project. A 100-foot wide construction ROW corridor approximately 4.36 miles long would cross tribal and allotted lands. The ROW would be reduced to 50-feet wide after construction is completed.

No lateral pipelines or other secondary gathering lines have been proposed to collect products or waste products from any producing or proposed wells. The proposed project consists of a trunkline system only, operating in conjunction with the two other Arrow Pipeline projects recently constructed, which could be operated at low or high pressure. At low pressure (no more than 80 pounds per square inch gauge [psig]), the entire system could move more than 14,000 barrels of oil, nine million cubic feet of gas and 4,000 barrels of water each day. This is the expected output of about 100 wells. Operated at high pressure with necessary infrastructure, daily capacity would be more than 100,000 barrels of oil, 90 million cubic feet of gas and 15,000 barrels of water, which is roughly the output of 1,000 wells. Output from the Bakken is expected to decline abruptly over the first several months of production, after which output continues to decrease, but the rate of decline tends to slow.

West and south of the Missouri River and Lake Sakakawea, the Fort Berthold Indian Reservation comprises about 365,000 acres. Most of these acres have been leased for oil and gas exploration and possible production. Well spacing units vary according to producer preference and geologic conditions, but commonly range from 320 acres to 1280 acres per well. Full development of the leased area therefore results in an estimated total number of wells between 285 and 1140.

If well locations and production rates support additional construction, the proposed trunkline is sufficiently modular to allow for extensions east and south by either ARROW or by another pipeline operator. To achieve its purpose, the proposed project must be augmented with gathering lines to individual producing wells or off-site tank batteries. Low pressure service would not require any compression or pumping stations on the Reservation, and no such facilities are included in the proposed project, but high-pressure facilities may be proposed in the future in response to production on the Reservation and producer interest. All such construction, cooperative arrangements and connections require design compatibility, mutually agreeable economic terms, additional NEPA analysis, and BIA approval. Off-Reservation connections to existing regional oil or gas pipelines do not require BIA review or approval, unless trust land may be directly or indirectly impacted.

2.2 Construction Plan and Specifications

Construction is expected to require two to three months and would be confined within a 100-foot wide temporary ROW. Pipeline materials would be staged at approved staging areas (see staging area descriptions below) and/or trucked directly to the corridor via existing federal, state, county roads and private roads. Traffic is expected to be heavy and daily at all access points. Existing roads used to access the Phase 1B - Prime corridor would be maintained until final abandonment and reclamation of the corridor occurs. Excessive rutting or other surface disturbing activities would be avoided. No new roads would be constructed. Traffic would be confined to the ROW and proposed access roads designated in **Table 2-1** and shown in **Figure 2-1**. All off-road driving, other than within the ROW, would be strictly prohibited. Signs would be installed on approved access roads and would also be used to identify roads where access is prohibited.

Table 2-1 Proposed Access Roads for Phase 1B - Prime

Access Road Number	Location	Description	Ownership Allotments and Tribal	Length (miles)
1	BIA 14 to BIA 12 (Section 4, T148N R93W to BIA 12 Section 25, T149N R93W)	Improved	634A; 249A-A; 64A-B; T64A; T3141; 2090; T3057; T2124;T1800; 871A;T869A-B; T1799-F; T1799-E	2.12
2	BIA 12 (Section 25, T149N R93W to Section 6, T148N R92W)	Paved		3.17

The gathering system would include three pipelines: one 10-inch oil line, one 12-inch gas line, and one 6-inch waterline. The pipelines would be laid in a continuous operation in either a single 60-inch trench or in two 36-inch trenches. Although U.S. Department of Transportation (DOT) regulations do not apply in the sparsely populated project area, all pipe and facilities in the system would be designed, assembled and installed in accordance with the DOT Title 49 CFR Part 195 and Part 192, and American National Standards Institute, American Society of Mechanical Engineers B31.4 and B31.8. Oil and gas lines would be constructed of carbon steel to high pressure specifications and hydrostatically tested to more than 1,000 psig; wall thicknesses would allow for a minimum of 1/16-inch internal corrosion. The 6-inch water line would consist of a fiberglass and polyethylene composite rated and tested to at least 750 psig. All three lines could be operated at either high or low pressure.

Installation of pipelines and utilities would require clearing and grading within the construction ROW. Topsoil would be separated and stockpiled to prepare for prompt re-seeding and reclamation of the disturbed surface. Continuous beneficial use of pastures, grazing units, livestock facilities and public improvements would be maintained. Trenches would be excavated to a depth of 78 inches to minimize frost heaving, using either rotary trenching equipment or backhoes, and pipelines would be covered with at least 66-inches of backfilled soil. Cover will increase to at least 72 inches at highway crossings, borrow ditches and at the lowest points within a highway ROW. Typical procedures are shown in **Figure 2-1**. After construction, the ROW would be reduced to 50-feet wide.

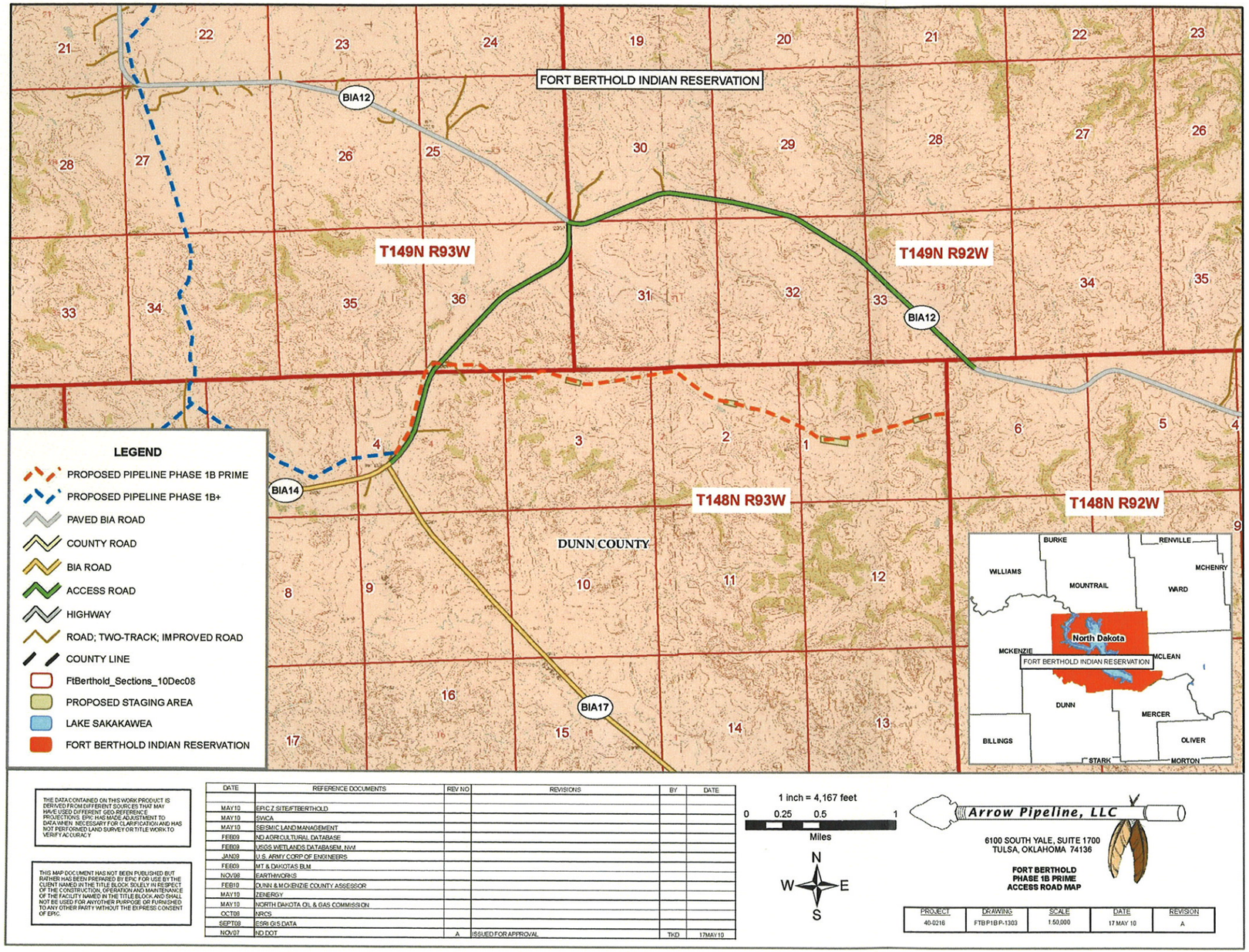

Figure 2-1 Proposed Access Roads for Phase 1B - Prime

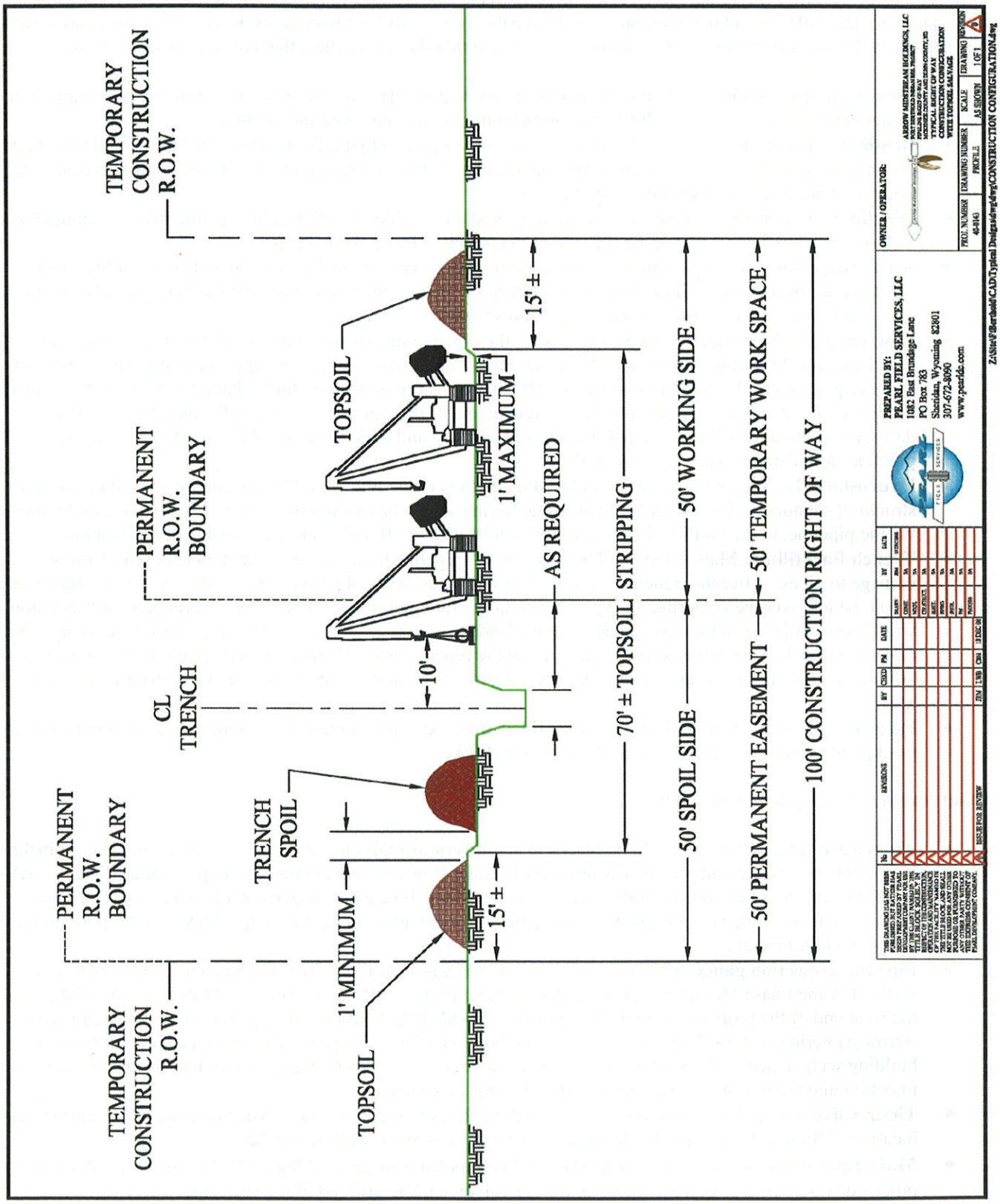

Figure 2-2 Typical ROW Construction

Trenches may be open for several days before pipes are placed and the trench backfilled. Crossings would be created as needed by temporarily filling the trench to allow pedestrians and vehicles to cross over. Ramps or soft plugs would be installed to help wildlife and domestic stock to escape the trench. BIA's instructions on all of these measures would be binding on the operator/installer. Installation involves several other procedures that are summarized below:

- **Stringing:** Stringing is a method of pipeline delivery that involves trucking the pipe from the pipe supplier to designated locations along the ROW prior to bending, line-up, and welding the pipe.
- **Bending:** After stringing is completed along a section of pipe, a hydraulic bending machine would field-bend each pipe to conform to vertical and horizontal changes in the trench. If a required bend exceeds certain design criteria, factory-bent segments may be required.
- **Welding:** After the pipe segments are bent, they would be welded together. The pipeline will be mounted on supports as a continuous line along the side of the trench to facilitate welding.
- **X-ray/Inspection:** A certified welding inspector would visually inspect each weld and 100% of the welds would be x-rayed in the field to detect flaws that could lead to pipeline failure. All welds of pre-fabricated assemblies and welds at road and stream crossings would be x-rayed.
- **Lowering:** Sideboom tractors would then lower the pipeline into the open trench. Before backfilling, the trench and pipeline would be inspected to ensure that 1) the trench is deep enough to comply with minimum cover requirements; 2) the bottom of the trench is free of large rocks, tree limbs, large roots, and other debris; 3) the pipe bends adequately conform to the trench; and 4) the external coating on the pipe has not been damaged. If the trench line is located in rock, soil padding and rock shield would be used to protect the pipeline from damage when it is lowered.
- **Hydrostatic Testing:** After the pipe is placed in the trench, the line would be pressure tested with water for structural soundness. Test water for hydrostatic testing would be trucked from a municipal source and returned, via the pipeline, to the facility. The water will then be hauled off and disposed of in a permitted facility.
- **Trench Backfilling:** Marker tape will be added to the pipeline trench to avoid unintended excavation or damage to pipes. After the trench is backfilled, it will be compacted with a wheel roller. A 3- to 6-inch crown would be left over the centerline of the trench to allow for natural subsidence. Trench breakers, or water stops, would be installed, as necessary, adjacent to wetlands or stream crossings to eliminate groundwater migration along the trench. Trench breakers are areas along the pipeline where bentonite, or a similar material, is packed around the pipe. In the event of a pipe blowout, the trench breakers effectively stop water from washing out the area.
- **Re-grading:** After the trench has been backfilled, disturbed areas would be re-graded to original contours and stockpiled topsoil would be redistributed over the ROW.

Other features of the system would include:

- **Air release valves** (ARVs) would be placed at about various high-elevation locations along the water pipeline to release air pressure and prevent disturbances in water flow and prevent damage to pipes and fittings. ARVs would surface in a five-foot by eight-foot wide covered manhole extending about 12 inches above ground surface. The manhole is a non-pressurized, insulated vessel allowing access to the ARV. ARVs pose no threat to livestock or humans.
- **Pipeline inspection gauges** (PIGs) are tools sent down gas and oil pipelines to clean the line or inspect the walls. For the Phase 1B – Prime project, there are two proposed PIG receivers (one for oil and one for gas) at the west end of the proposed pipeline in Section 4, T148N R93W where this pipeline ties into an approved Arrow gathering system. The receivers would be built on a 50' x 50' pad enclosed by a chain link fence or building with an access road. The launcher enclosure may also include storage for 90 barrels of methanol for injection into the gas line to prevent freezing of water in that line.
- **Tie-in valves** would be needed to connect lateral pipelines to the Phase 1B - Prime corridor. The number and location of these valves would be determined as more productive wells are drilled.
- **Main Line valves** located on the pipelines, allow a portion of the pipeline to be isolated for repairs or any other purpose. One or more of these mainline valves will be utilized along the route.
- **Staging Areas** would temporarily serve as storage areas for pipeline construction materials. There are six proposed staging areas along the pipeline corridor (see Figure 2-1). Staging Area #1 in SWSW Section 36,

T149N R93W would be 2.0 acres in size. Staging Area #2 in SWSW Section 36, T149N R93W would be 1.0 acre is size. Staging Area #3 in Lot 2 & 3 Section 3, T148N R93W would be 2.30 acres in size. Staging Area #4 in SWNE of Section 2, T148N R93W would be 2.20 acres in size. Staging Area #5 in NWSW & NESW of Section 1, T148N R93W would be 3.50 acres in size. Staging Area #6 in SESE of Section 1 T148N R93W would be 3.0 acres in size. Topsoil at the proposed staging area would be cleared and stockpiled and when construction is completed, topsoil would be redistributed and the area reseeded and reclaimed. Non-hazardous materials, such as paper, plastic and wood, would be collected and stored in appropriate waste containers with lids. Portable toilets would be confined to trailers while parked in the ROW. A sanitation company would be contracted to periodically remove solid, non-hazardous waste materials and deposit them in an approved landfill.

2.3 Directional Drilling

Directional drilling – sometimes referred to as horizontal drilling or boring – can reduce or mitigate surface disturbance, traffic interruptions, damage to roads and environmental impacts to waterways, wetlands, cultural resources or other valuable surface or near-surface assets. A hole would be bored beneath the asset in a shallow arch from one surface location to another. The pipeline is pulled through either the bare hole or through a casing. The bore location identified within the proposed project area is required to conform with BIA regulations. Confirmed bore locations are listed in **Table 2-2**. There is no additional disturbance at these bore locations. If unseasonable weather causes more water run-off than anticipated, other drainage crossings may be bored to minimize disturbance.

Table 2-2 Directional Drilling Locations

Location	Type of Asset	Asset	Length (ft)
SWSW SEC 36, T149N R93W	Road bore	BIA Road 14	120

2.4 Reclamation

Reclamation would take place throughout the project lifespan. Reclamation would be required after the initial construction, after any maintenance work or addition of auxiliary infrastructure, and before final abandonment of the decommissioned system. At all times, successful reclamation would remain the obligation and responsibility of the system operator.

Trenches would be backfilled immediately after pipe and utility installation and testing, waiting only if soils are frozen or overly wet. A stormwater pollution prevention plan is not required by the EPA. Appropriate temporary and long-term measures would be applied to all disturbed areas to minimize and control erosion. Field practices would conform with standard recommendations of the Natural Resources Conservation Service (NRCS) (2003) and may include 1) installing silt fences and erosion fabric, mats or logs; 2) construction of ditches, water bars; 3) seeding, planting, mulching and creation of buffer strips; and/or 4) any other measures required by BIA to minimize erosion and soil loss.

After subsoil on the working side of the ROW is plowed to alleviate compaction, stockpiled topsoil would be redistributed over the ROW. Re-contouring and reclamation of disturbed areas would be accomplished as soon as possible after construction is completed, and no later than by the next appropriate planting season (fall or spring). The ROW would be re-seeded with certified, weed-free seed mixtures established by BIA. In all cases, native species would be used to the extent possible and all seeding and planting would comply with BIA directions to ensure successful reclamation.

The entire corridor would be monitored to identify areas of excessive erosion, subsidence or invasion of noxious weeds. Periodic monitoring would be performed – and repeated reclamation efforts would be undertaken in problem areas – until BIA has certified the entire corridor as successfully reclaimed. Successful reclamation is defined to include the following observable factors: reproduction from seeded and re-established species, natural invasion of plants from undisturbed adjacent communities, and control or exclusion of noxious weeds. A noxious weed survey was conducted in the project corridor. A weed management plan was developed with BIA to facilitate the treatment of known and likely noxious/invasive weed species. Details of the vegetation surveys can be found in Section 3.11. If re-seeding is not successful within two growing seasons, BIA may require extraordinary efforts to stabilize the site, such

as matting the entire area or using a mix of rapidly growing forbs and annual grasses, followed by re-seeding with grasses, forbs, and shrubs with rapidly expanding, deep root systems.

Decommissioning of the pipeline would result in mandatory final reclamation of the corridor. All surface facilities would be removed. Cement foundations would be broken and hauled to an approved disposal site. Gravel pads would be buried onsite or hauled to a disposal site. Compacted areas would be scarified, ripped and re-contoured. Stockpiled topsoil would be redistributed and re-vegetated. Due to economic and environmental costs associated with excavation and removal, pipelines would be purged with water to remove hydrocarbons, and then abandoned in place. Long-term monitoring would be required to ensure successful reclamation and implementation of any necessary remedial efforts.

2.5 Operation and Maintenance

County, state, private and BIA roads used by Phase 1B - Prime would be maintained in the same or better condition as existed prior to the start of operations, as documented in photographs taken prior to construction. Maintenance of roads used to access the ROW would continue until final abandonment and reclamation of the corridor occurs. Excessive rutting or other surface disturbing activities would be avoided or immediately repaired. Maintenance on pipelines and utilities would be confined to the 50-foot permanent ROW. Corrosion or leaking might require replacement of system sections. Loss of products or waste products might require excavation of contaminated soils and other remedial projects. All applicable regulations and best management practices would be implemented aggressively to minimize waste of resources and/or environmental damage.

3. The Affected Environment and Potential Impacts

The Fort Berthold Indian Reservation is the home of the MHA Nation. Located in west-central North Dakota, the Reservation encompasses more than one million acres, of which almost half are held in trust by the United States for either the MHA Nation or individual allottees. The remainder of the land is generally owned in fee simple title, sometimes by the MHA Nation or tribal members, but usually by non-Indians. The Reservation occupies portions of six counties, including Dunn, McKenzie, McLean, Mercer, Mountrail and Ward. In 1956, much of the land was inundated by water and the balance divided into three sections by Lake Sakakawea, an impoundment of the Missouri River upstream of the Garrison Dam near Riverdale, North Dakota.

The proposed Phase 1B - Prime project is situated geologically within the Williston Basin, where the shallow structure consists of sandstones, silts, shales and some lignite coal. These date from the Tertiary Period (65 to 2 million years ago). Oil, gas and water to be transported by the proposed project would usually be from the underlying Bakken, Sanish or Three Forks formations. Earlier oil/gas exploration activity within the Reservation was limited and commercially unproductive, but recent economic changes and technological advances now make accessing resources more feasible. Impacts and hazards have increased proportionately.

The Reservation is in the northern Great Plains ecoregion, which consists of four physiographic units: 1) the Missouri Coteau Slope north of Lake Sakakawea; 2) the Missouri River trench (now flooded); 3) the Little Missouri River badlands; and 4) the Missouri Plateau south and west of Lake Sakakawea (Williams and Bluemle 1978). Much of the Reservation is on the Missouri Coteau Slope. Elevation of the glaciated, gently rolling landscape ranges from a normal pool elevation of 1,838 feet at Lake Sakakawea to over 2,600 feet on Phaelan's Butte near Mandaree. Annual precipitation on the plateau averages between 15 and 17 inches. Mean temperatures fluctuate between -3° and 21° F in January and between 55° and 83° F in July, with 95 to 130 frost-free days each year (Bryce et al. 1998; High Plains Regional Climate Center 2008).

The proposed Phase 1B - Prime project is in a rural area with native/mixed-grass prairie. Areas with steep slopes and/or rocky, thin soils are usually used to graze cattle. Some of the areas with broad gentle slopes are farmed, mostly in small grains or perennial hay crops. The broad definition of the human and natural environment under NEPA leads to the consideration of the following elements: air quality, public health and safety, socioeconomic, environmental justice cultural resources, wildlife, soils, water resources, wetlands, vegetation and invasive species. Potential impacts to these elements are analyzed for both the No Action alternative and the preferred alternative. Impacts may be beneficial or detrimental, direct or indirect, and short-term or long-term. The EA also analyzes the potential for cumulative impacts and ultimately makes a determination as to the significance of any impacts. In the absence of significant negative consequences, it should be noted that a significant benefit from the project does *not* in itself require preparation of an EIS.

3.1 The No Action Alternative

Under the No Action alternative, the proposed project would not be constructed or operated. Trucking of products and waste products from existing wells would continue, as would flaring of gas at well pads. With no practicable alternative, trucking and flaring would increase as more wells are completed; existing conditions would be progressively impacted for the following critical elements: air quality, invasive species, and public safety. Flaring of gas from more wells might lead over time to measurable degrading of air quality. Trucking impacts range from seeding of invasive species to loss of human life. Loss of tribal and individual royalties from existing and potential wells would impact tribal and individual economies and planning.

No Action exacerbates waste of resources and loss of revenue. Gas income loss due to flaring is estimated at two million dollars over the life of each well, based on average gas prices in North Dakota 2006-2008, Estimated Ultimate Recovery of 350,000 barrels oil per Bakken well, and a typical gas to oil ratio (Energy Information Administration, 2009). Typical leases assign 18% of these revenues to the lessor, either the MHA Nation or allottees. Inasmuch as losses to producers are significantly higher, No Action may also have an indirect dampening effect on development decisions, further depressing economic benefits to the MHA Nation and individual Indians.

3.2 Air Quality

The North Dakota Department of Health (NDDH) network of Ambient Air Quality Monitoring (AAQM) stations includes Watford City in McKenzie County, Dunn Center in Dunn County, and Beulah in Mercer County. These stations are located west, south and southeast of proposed well sites. Criteria pollutants tracked under National

Ambient Air Quality Standards (NAAQS) of the *Clean Air Act* include sulfur dioxide (SO_2), particulate matter (PM_{10}), nitrogen dioxide (NO_2) and ozone (O_3). Two other criteria pollutants – lead (Pb) and carbon monoxide (CO) – are not monitored by any of three stations. **Table 3-1** summarizes federal air quality standards and available air quality data from the three- county study area.

Table 3-1 Air Quality Standards and County Data

Pollutant	Averaging Period	NAAQS ($\mu g/m^3$)	NAAQS (ppm)	County		
				Dunn	McKenzie	Mercer
SO_2	24-Hour	365	0.14	0.004 ppm	0.004 ppm	0.011 ppm
	Annual Mean	80	0.030	0.001 ppm	0.001 ppm	0.002 ppm
PM_{10}	24-Hour	150	--	50 ($\mu g/m^3$)	35 ($\mu g/m^3$)	35 ($\mu g/m^3$)
	Annual Mean	50	--	--	--	--
$PM_{2.5}$	24-Hour	35	--	--	--	--
	Weighted Annual Mean	15	--	--	--	--
NO_2	Annual Mean	100	0.053	0.002 ppm	0.001 ppm	0.003 ppm
CO	1-Hour	40,000	35	--	--	--
	8-Hour	10,000	9	--	--	--
Pb	3-Month	1.5	--	--	--	--
O_3	1-Hour	240	0.12	0.071 ppm	0.072 ppm	0.076 ppm
	8-Hour	--	0.08	0.061 ppm	0.066 ppm	0.067 ppm

Source: U.S. Environmental Protection Agency (EPA) 2006. $\mu g/m^3$ = micrograms per cubic meter. ppm = parts per million.

North Dakota was one of only nine states in 2006 that met standards for all criteria pollutants. The state also met standards for fine particulates and the eight-hour ozone standards established by the U.S. Environmental Protection Agency (EPA) (NDDH 2007). The three counties addressed in Table 3-1 are also in full attainment and usually far below established limits (American Lung Association 2006). The Clean Air Act mandates prevention of significant deterioration in designated attainment areas. Class I areas are of national significance and include national parks greater than 6,000 acres in size, national monuments, national seashores, and federal wilderness areas larger than 5,000 acres and designated prior to 1977. There is a Class I airshed at nearby Theodore Roosevelt National Park, which covers about 110 square miles in three units within the Little Missouri National Grassland between Medora and Watford City, about 50 miles west and upwind of the proposed Phase 1B - Prime corridor. The Reservation can be considered a Class II attainment airshed, which affords it a lower level of protection from significant deterioration.

The proposed project is similar to other projects installed nearby with the approval of state offices. Construction traffic would generate temporary, intermittent and nearly undetectable gaseous emissions of particulates, SO_2, NO_2, CO, and volatile organic compounds. Road dust would be controlled as necessary and other best management practices implemented as necessary to limit emissions to the immediate project areas (USDI BLM 2009).

No detectable or long-term impacts to air quality or visibility are expected within the airsheds of the Reservation, state, or Theodore Roosevelt National Park. Despite minor construction impacts, the proposed project is expected to have an overwhelmingly positive and long-term impact on air quality. In addition to eliminating flaring of gas from connected wells, the gathering system will drastically reduce heavy truck traffic. Over its first ten years, the typical Bakken well will produce almost 2,000 tanker loads of oil and 450 loads of produced water. Within that period, a gathering system servicing 50 wells will make unnecessary about 6,000,000 miles of heavy truck traffic. No laws, regulations or other requirements have been waived; no monitoring or compensatory measures are required.

3.3 Public Health and Safety

Health and safety concerns include traffic hazards posed by heavy trucks and equipment during construction, hazardous materials used or generated during installation or production, and burning or explosive hazards during operation of the pipelines.

Negative impacts from construction would be largely temporary. Noise, fugitive dust, and traffic hazards would be present for 60 to 90 days during construction and then diminish sharply during operations. The U.S. EPA specifies

chemical reporting requirements under Title III of the *Superfund Amendments and Reauthorization Act* (SARA) of 1986, as amended. No materials used or generated by this project for production, use, storage, transport, or disposal are on either the SARA list or on EPA's list of extremely hazardous substances in 40 CFR 355. The most common and potentially hazardous substances used during the construction of the pipeline would include diesel fuel, gasoline, lubricating oils, paints, and solvents. The Spill Prevention Control and Countermeasure (SPCC) plan includes procedures for hazardous materials storage, handling, disposal, cleanup and reporting. Potentially hazardous materials would be stored only in designated and permitted staging areas at least 100 feet from watercourses and wetlands. Vehicle refueling would comply with the same minimum setback. Material Safety Data Sheets for each potentially hazardous substance would be maintained onsite in the control room at the Arrow central facility and at the point of use at all times.

According to the Pipeline and Hazardous Materials Safety Administration (PHMSA 2009), pipelines are a reliable and cost-effective means to transport natural gas and hazardous liquids. PHMSA statistics show one gallon of oil is spilled for every barrel of oil that is transported one million miles: "In household terms, this is less than one teaspoon of oil spilled per thousand barrel-miles". In the event of a spill, Arrow would notify local emergency management authorities and state or federal response centers. After the pipeline is operational, Arrow would also install and utilize the following programs for public safety: operator training, cathodic protection, detailed ROW marking, regular inspections, and integrity management programs (automated PIG launcher). Pipeline pressure would also be monitored at both ends of the system; significant leaks causing pressure drops would be located by launching a special PIG or other detection equipment down a line.

There have been four oil transport related deaths on or near the Reservation in the past two years. PHMSA data show that pipelines generally have a far better safety record (deaths, injuries, fires/explosions) than other modes of oil transportation. For a given volume transported, there are 87 times more oil transport truck-related deaths, 35 times more oil transport truck related fires/explosions and twice as many oil transport truck-related injuries. There are about 7,000 miles of gas and hazardous liquid pipelines in North Dakota. Over the past 10 years, there have been no fatalities and four injuries associated with these facilities (PHMSA 2009).

A comprehensive gathering system would eliminate the need for most of this traffic and increase overall public safety. During the first 10 years of operation, the typical Bakken well is expected to produce 256,595 barrels of oil and 48,180 barrels of water. Oil is commonly carried in tankers with a capacity of 140 barrels, while water tankers usually carry up to110 barrels. Ten-year transportation needs are therefore about 2,300 trucks. Average roundtrip distances from oil depots can be very conservatively estimated at 50 miles. Service to each productive well on the Reservation will therefore result in at least 115,000 miles driven during the ten year period of interest. Fifty typical wells will require almost six million miles to be driven by heavy trucks on sometimes substandard roads through sometimes severe weather. Since full development estimates range from 285 wells to as many as 1,185 on the west side of the Reservation, traffic loading may be between 33 million and 130 million miles over ten years.

Combustion and explosive hazards are considered extremely unlikely for the proposed project, but modeling results show that most damage would be expected within 0.5 mile of either side of the pipeline as shown in **Figure 3-1.** Within this estimated maximum blast zone, there are 4 existing houses. Prevailing winds in the area are to the southwest, minimizing potential combustion and explosive hazards from the pipeline to the town of Mandaree.

Project design and operational precautions mitigate against impacts from traffic or hazardous materials. The size of the area potentially impacted by leaks, fire or explosion is limited by burial of the pipelines at least 5.5-feet underground and the relatively small diameter of the proposed lines. All operations would conform to instructions from BIA fire management staff. Impacts from the proposed project are considered minimal, insignificant or unlikely. No laws, regulations or other requirements have been waived; no compensatory mitigation measures are required.

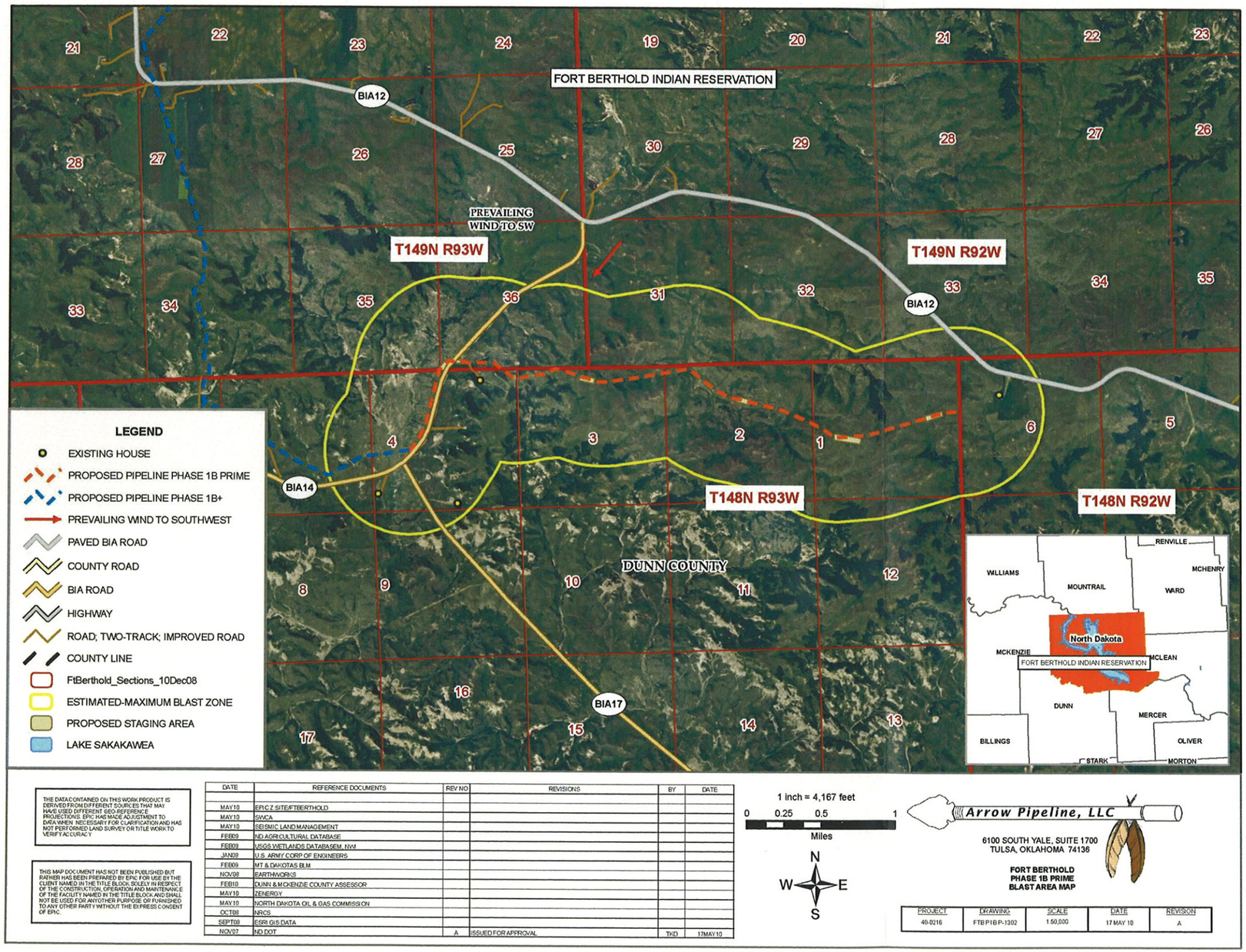

Figure 3-1 Blast Overview Phase 1B - Prime

3.4 Socioeconomics

Socioeconomic conditions include population, demographics, income, employment, and housing. These conditions can be analyzed and compared at various scales. This analysis focuses on the Reservation, the four counties that overlap most of the Reservation, and the state of North Dakota. The state population showed little change between the last two censuses (1990–2000), but there were notable changes locally, as shown in **Table 3-2**. Populations in Dunn, McKenzie, McLean, and Mountrail counties declined 5 to 11%, while population on the Fort Berthold Reservation increased by almost 10%. These trends are expected to continue (Rathge et al. 2002). While American Indians are the largest group on the Reservation, they are a minority within the four counties and statewide. More than two-thirds (3,986) of the Reservation population are tribal members.

Table 3-2 Population and Demographics

County/Reservation	Population in 2000	% of State Population	% Change, 1990-2000	Predominant Group	Predominant Minority
Dunn County	3,600	0.56%	- 10.1%	White	American Indian (12%)
McKenzie County	5,737	0.89%	- 10.1%	White	American Indian (21%)
McLean County	9,311	1.45%	- 11.0%	White	American Indian (6%)
Mountrail County	6,631	1.03%	- 5.6%	White	American Indian (30%)
Fort Berthold	5,915	0.92%	+ 9.8%	American Indian	White (27%)
North Dakota	642,200	100%	+ 0.005%	White	American Indian (5%)

Source: U.S. Census Bureau 2007.

In addition to the ranching and farming that are mainstays in western North Dakota, employment on the Reservation largely stems from tribal government, tribal enterprises, schools, and federal agencies. The MHA Nation's Four Bears Casino and Lodge, near New Town, employs over 320 people, 90% of whom are tribal members (Three Affiliated Tribes 2008). Counties overlapping the Reservation tend to have per capita incomes, median household incomes, and employment rates that are lower than North Dakota statewide averages. Reservation residents have lower average incomes and higher unemployment rates compared to the encompassing counties. MHA Nation members are in turn disadvantaged relative to overall Reservation incomes and unemployment rates that average in non-Indian data.

The most recent census found that per capita income for residents of the Reservation is $10,291 (less than ⅓ of the state average). Overcrowded housing skews the median Reservation household income upward to $26,274 (about 66% of the state average). A BIA report in 2003 found that 33% of *employed* MHA Nation members were living below federal poverty levels. The unemployment rate for tribal members is 22 %, compared to 11.1% for the Reservation as a whole and 3.2% statewide. These and other comparisons are shown in **Table 3-3**.

Table 3-3 Income and Unemployment

Unit of Analysis	Per Capita Income	Median Household Income	Unemployment Rate (2007)	Employed but Below Poverty Level	Percent of All People in Poverty
MHA Nation members	--	--	22 %	33 %	Unknown
Fort Berthold Reservation	$ 10,291	$ 26,274	11.1 %	--	Unknown
Mountrail County	$ 29,071	$ 34,541	5.8 %	--	15.4%
Dunn County	$ 27,528	$ 35,107	3.4 %	--	13%
McKenzie County	$ 27,477	$ 35,348	3.1 %	--	15.8 %
McLean County	$ 32,387	$ 37,652	4.7 %	--	12.8%
North Dakota	$ 31,871	$ 40,818	3.2 %	--	11.2 %

Source: U.S. Department of Agriculture Economic Research Data 2008 and BIA 2003.

Availability and affordability of housing could impact oil and gas development and operations. The tribal Housing Authority manages a majority of the housing units within the Reservation. Housing typically consists

of mutual help homes built through various government programs, low-rent housing units, and scattered-site homes. New housing construction has recently increased within much of the analysis area, but availability remains low. Housing data is summarized in **Table 3-4**.

Table 3-4 Housing

Housing Development	Fort Berthold Reservation	Dunn County	McKenzie County	McLean County	Mountrail County
Existing Housing					
Owner-Occupied Units	1,122	1,570	2,009	4,332	2,495
Renter-Occupied Units	786	395	710	932	941
Total	1,908	1,965	2,719	5,264	3,436
New Private Housing Building Permits 2000-2005	--	18	4	135	113
Housing Development Statistics					
State rank in housing starts	--	51 of 53	15 of 53	21 of 53	17 of 53
National rank in housing starts	--	3112 / 3141	2498 / 3141	2691 / 3141	2559 / 3141

Source: U.S. Census Bureau, 2007 and 2008.

The proposed project is not expected to have measurable impacts on population trends, housing starts or local unemployment rates. Construction jobs would result from pipeline construction on the Reservation, but these opportunities are short-term. The capture and sale of gas presently wasted in well pad flare pits would provide significant royalty income and other indirect economic benefits.

3.5 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, was signed by President Clinton in 1994. The Order requires agencies to advance environmental justice by pursuing fair treatment and meaningful involvement of minority and low-income populations. Fair treatment means such groups should not bear a disproportionately high share of negative consequences from federal programs, policies, decisions or operations. Meaningful involvement means federal officials actively promote opportunities for public participation and federal decisions can be materially affected by participating groups and individuals.

The U.S. EPA headed the interagency workgroup established by the 1994 Order and is responsible for related legal action. Working criteria for designation of targeted populations are provided in *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* (EPA 1998). This guidance uses a statistical approach to consider various geographic areas and scales of analysis to define a particular population's status under the Order.

Environmental justice is an evolving concept with potential for disagreement over the scope of analysis and the implications for federal responsiveness. It is nevertheless clear that tribal members on the Great Plains qualify for environmental justice consideration as both a minority and low-income population. The population of the Dakotas is predominantly Caucasian. While some 70% of Fort Berthold residents are tribal members, Indians comprise only 5% of North Dakota residents and 12% of the population of Dunn County. Even in a state with relatively low per capita and household income, Indian individuals and households are distinctly disadvantaged.

There are, however, some unusual considerations when proposed federal actions are meant to benefit tribal members. Determination of fair treatment necessarily addresses the existence and distribution of both benefits and negative impacts, due to variation in the interests of various tribal groups and individuals. There is also potential for major differences in impacts to resident tribal members and those enrolled or living elsewhere. A general benefit to MHA Nation government and infrastructure has already resulted from tribal leasing, fees and taxes. Oil and gas leasing has also already brought much-needed income to MHA Nation members who hold mineral interests, some of whom might eventually benefit further from royalties on commercial production. Profitable production rates at proposed locations might lead to exploration and development on additional tracts owned by currently non-benefiting allottees. The absence of lease and royalty income does not, moreover, preclude other benefits. Exploration and development may provide many relatively high-paying jobs, with oversight from the Tribal Employment Rights Office.

The owners of allotted surface within project areas may not hold mineral rights. In such cases, surface owners do not receive oil and gas lease or royalty income and their only related income would be compensatory for productive acreage temporarily lost to the pipeline corridor. Tribal members without either surface or mineral rights would not receive any direct benefits whatsoever. Indirect benefits of employment and general tribal gains would be the only offset to negative impacts.

Potential impacts to tribes and tribal members include disturbance of cultural resources. There is potential for disproportionate impacts, especially if the impacted tribes and members do not reside within the Reservation and therefore do not share in direct or indirect benefits. This potential is significantly reduced following surveys of the proposed pipeline route and access road routes and determination by the BIA that there will be no effect to historic properties. Nothing is known to be present, furthermore, that qualifies as a traditional cultural property or for protection under the American Indian Religious Freedom Act. Potential for disproportionate impacts is further mitigated by requirements for immediate work stoppage following an unexpected discovery of cultural resources of any type. Mandatory consultations will take place during any such work stoppage, affording an opportunity for all affected parties to assert their interests and contribute to an appropriate resolution, regardless of their home location or tribal affiliation.

The proposed project has not been found to pose significant impacts to any other critical element—air, public health and safety, water, wetlands, wildlife, soils or vegetation— within the human environment. Avoiding or minimizing such impacts generally also makes unlikely specific and disproportionate impacts to low-income or minority populations. The proposed action offers many positive consequences for tribal members, while recognizing environmental justice concerns. Procedures summarized in this document are binding and sufficient. No laws, regulations or other requirements have been waived; no compensatory mitigation measures are required.

3.6 Cultural Resources

Historic properties, or cultural resources, on federal or tribal lands are protected by many laws, regulations and agreements. The *National Historic Preservation Act of 1966* (16 USC 470 *et seq.*) at Section 106 requires, for any federal, federally assisted or federally licensed undertaking, that the federal agency take into account the effect of that undertaking on any district, site, building, structure or object that is included in the National Register of Historic Places (National Register) before the expenditure of any federal funds or the issuance of any federal license. Cultural resources is a broad term encompassing sites, objects, or practices of archaeological, historical, cultural and religious significance. Eligibility criteria (36 CFR 60.6) include association with important events or people in our history, distinctive construction or artistic characteristics, and either a record of yielding or a potential to yield information important in prehistory or history. In practice, properties are generally not eligible for listing on the National Register if they lack diagnostic artifacts, subsurface remains or structural features, but those considered eligible are treated as though they were listed on the National Register, even when no formal nomination has been filed. This process of taking into account an undertaking's effect on historic properties is known as "Section 106 review," or more commonly as a cultural resource inventory.

The area of potential effect (APE) of any federal undertaking must also be evaluated for significance to Native Americans from a cultural and religious standpoint. Sites and practices may be eligible for protection under the *American Indian Religious Freedom Act of 1978* (42 USC 1996). Sacred sites may be identified by a tribe or an authoritative individual (Executive Order 13007). Special protections are afforded to human remains, funerary objects, and objects of cultural patrimony under the *Native American Graves Protection and Repatriation Act* (NAGPRA, 25 USC 3001 *et seq.*).

Whatever the nature of the cultural resource addressed by a particular statute or tradition, implementing procedures invariably include consultation requirements at various stages of a federal undertaking. The MHA Nation has designated a Tribal Historic Preservation Officer (THPO) by Tribal Council resolution, whose office and functions are certified by the National Park Service. The THPO operates with the same authority exercised in most of the rest of North Dakota by the State Historic Preservation Officer (SHPO). Thus, BIA consults and corresponds with the THPO regarding cultural resources on all projects proposed within the exterior boundaries of the Fort Berthold Reservation.

A cultural resource inventory of this pipeline route was conducted by personnel of SWCA Environmental Consultants, using an intensive pedestrian methodology. Approximately 106.77 acres were inventoried on April 29, 2010 (Lechert *et al.* 2010). One archaeological site was located that may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register. As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached a determination of **no historic properties affected** for this undertaking, as the pipeline has been rerouted so as to avoid the archaeological site. This determination was communicated to the THPO on June 3, 2010, and the THPO concurred on June 10, 2010 (see Part 4).

If cultural resources are discovered during construction or operation, the operator must immediately stop work, secure the affected site, and notify both BIA and THPO. Unexpected or inadvertent discoveries of cultural resources or human remains trigger mandatory federal procedures that include work stoppage and BIA consultation with all appropriate parties. Following any such discovery, the operator would not resume construction or operations until written authorization to proceed was received from the BIA. **Project personnel are prohibited from collecting artifacts or disturbing cultural resources or practices under any circumstances.** No laws, rules, regulations, or other requirements have been waived; no compensatory mitigation measures are required. The presence of qualified cultural resource monitors during construction activities is encouraged.

3.7 Wildlife

The USFWS has identified six federally listed threatened and endangered species occurring in Dunn County, in addition to one species that is a candidate for listing under the *Endangered Species Act* (ESA) (USFWS 2008a). None of these species were observed during field reconnaissance of the proposed site (SWCA 2010). The state of North Dakota (North Dakota Game and Fish Department, NDGFD), BIA, Bureau of Land Management (BLM), and Fort Berthold Reservation do not have a list of threatened or endangered species different from the federal government. Tribes and states may recognize additional species of concern; such lists are taken under advisement by federal agencies, but are not legally binding in the manner of the ESA. The USFWS concurred with these potential effect determinations on July 2, 2010 via email.

Whooping crane *(Grus Americana)* **Status:** Endangered.

Potential Effect: May affect, but is not likely to adversely affect

Whooping cranes historically nested in North Dakota, but the whooping crane is currently only a migrant through North Dakota in the spring and fall. During spring and fall whooping crane migration, preferred roost habitat consist of large shallow marshes with a minimal to nonexistent emergent zones and preferred foraging habitat consists of upland cropland and pastures adjacent to and usually within one kilometer (0.62 mile) of roosts (Howe 1989). The lack of a cropland/wetland matrix habitat makes migratory stopovers by whopping cranes unlikely.

Interior least tern *(Sterna antillarum)* **Status:** Endangered

Potential Effect: May affect, but is not likely to adversely affect

Natural habitat for interior least terns in North Dakota includes islands, beaches and sandbars of the Missouri and Yellowstone Rivers and along the shorelines of Lake Sakakawea and Oahe (USFWS 2006). Interior least terns are generally restricted to larger meandering rivers with a broad floodplain, slow currents and greater sedimentation rates, which allow for the formation of suitable habitat. Interior least terns experience the greatest nesting success on sand or gravel bar islands because predation by terrestrial predators is reduced (USFWS 2006). Interior least terns' seasonal habitat requisites are associated with rivers, streams and reservoirs. There is no existing suitable habitat within or near the project area that would be appropriate for this species.

Pallid sturgeon *(Scaphirhynchus albus)* **Status:** Endangered

Potential Effect: May affect, but is not likely to adversely affect

The pallid sturgeon is known to occur in North Dakota primarily at the confluence of the Missouri and Yellowstone Rivers and Lake Sakakawea (USFWS 2006). There is no existing or potential aquatic habitat within or near the project area that would be suitable for this species.

Black-footed ferret (*Mustela nigripes*) **Status:** Endangered

Potential Effect: No Effect

Black-footed ferrets historically occurred in this region of North Dakota, but mostly in the extreme southwest part of the state (USFWS 2006). Suitable habitat includes large black-tailed prairie dog (*Cynomys ssp.)* colonies or complexes of colonies. The ferret's primary food source is the black-tailed prairie dog and ferret's also inhabit black-tailed prairie dog burrows. The proposed project area does not contain active black-tailed prairie dog colonies. The black-footed ferret is not expected to be present given the paucity of food and habitat on the project area.

Gray wolf (*Canis lupus*) **Status**: Endangered

Potential Effect: May affect, but is not likely to adversely affect

The most suitable habitat for the gray wolf in North Dakota is in the dense and contiguous forested areas in the north central and northeast parts of the state. There have been documented occurrences of gray wolves in south-central North Dakota (1985, 1990, and 1991) and confirmed reports of gray wolves in the Turtle Mountains of North Dakota (NDGFD 2006). The project area does not contain dense, contiguous forested areas required by the gray wolf and there have been no historical wolf sightings within or near the project area (USFWS 2006).

Piping plover (*Charadrius melodus)* **Status:** Threatened

Potential Effect: May affect, but is not likely to adversely affect

Critical habitat for the piping plover includes sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with the water bodies (USFWS 2006). Lake Sakakawea and the Little Missouri River contain suitable nesting sites for the piping plover (*Charadrius melodus*). As the project area is composed primarily of grassland habitat, there are no suitable nesting/foraging habitats for piping plovers present.

Dakota skipper (*Hesperia dacotae)* **Status:** Candidate

Potential Effect: May affect, but is not likely to adversely affect

North Dakota has a large and stable population of Dakota skippers. In the western part of the state, its habitat includes ungrazed native prairie with little bluestem (*Schizachyrium scoparium)*, needle and thread (*Stipa viridula)*, purple coneflower (*Echinacea spp.)* and a high forb and grass diversity (USFWS 2006). The Dakota skipper has been documented within both McKenzie and Dunn Counties in the NESW & NWSE Section 28, T149 N R94W. and the NENW of Section 33, T149 N R94W (USFWS 2008a). The project area does contain potentially suitable habitat for the Dakota skipper. No individuals were observed during the survey.

Construction and operation of the proposed pipeline is not likely to affect the six federally listed threatened or endangered species that have ranges that include the project area. No adverse effects on listed species are expected due to the unlikely nature of their occurrence within the proposed project area. Interim reclamation and the use of BMPs over the life of the project will further reduce the potential for long-term impacts to wildlife, including threatened and endangered species.

Bird and mammal species potentially present in the vicinity of the project area based on the field reconnaissance and potential habitat, queries of state and federal natural resource related databases, and interviews with state (NDGFD 2008) and federal management personnel (USFWS 2008b). Eighteen resident birds are known from Dunn County and at least 71 migratory birds could potentially occur in the vicinity of the project. During field surveys, no suitable nesting habitat for bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*) was observed within a half mile of the proposed project area. Based on a lack of suitable waterfowl nesting habitat present within the project area, only limited use of the area by migrating waterfowl species would be expected. In addition to avian species, 21 species of mammals could occupy the project area both continually and intermittently throughout the year. A review of NDGFD winter

aerial survey data indicates that white-tailed deer density within Dunn County is excellent and suggests a healthy and stable-to increasing deer population.

Construction will commence after July 15th to mitigate any impacts to migratory bird species. Construction activities that remove vegetation and disturb soil may cause direct mortality, displacement, or increased exposure to predators for of less mobile wildlife species (i.e. small mammals, amphibians, reptiles, ground-nesting birds). More mobile species (i.e. medium to large mammals and birds) would be expected to disperse from the project area during construction and re-enter the area following completion of construction activities. Long-term habitat loss would be minimal and restricted to the localized area of permanently altered vegetation. Disturbance to wildlife due to noise, increased traffic, and human presence may temporarily displace individuals during the construction period. However, due to the migratory and transient behavior of wildlife species, these effects are not likely to cause long term declines in populations.

3.8 Soils

Physiographically, the project area is part of the Missouri Plateau, a relatively high plain that slopes to the east and northeast. In some areas, sedimentary material is covered with a thin layer of glacial drift or till. Where present, this may consist of just a few pebbles or be distinct layer of stony soils. In places, the till has been mostly eroded away and is only represented by large granite glacial boulders.

Published soil surveys for Dunn County were reviewed and soils in the Phase 1B - Prime corridor were surveyed by professionally certified specialists on April 26 and 27, 2010. Soils were categorized and described as soil mapping units. The detailed Natural Resources report (SWCA 2010) is on file with BIA and indicates 19 soil mapping units are present as shown in **Table 3-5**. Almost half (49%) of the Phase 1B - Prime ROW is comprised of just three soil types. Soils found within the project area were described as shallow to deep and moderately to excessively well drained. Slopes ranged from 0 to 70 percent and mean annual precipitation ranged from 14 to 16 inches per year. Soil permeability ranged from very slow to moderately rapid.

Table 3-5 Common Soils

Map Unit	Soil Map Unit	Acres	Project Area (%)
73C	Cherry-Vanda complex, 2 to 9 percent slopes, gullied	11.07	20.87%
30E	Cohagen-Vebar fine sandy loams, 9 to 25 percent slopes	9.26	17.46%
9E	Cabba loam, 15 to 45 percent slopes	5.90	11.13%
52C	Morton-Dogtooth silt loams, 6 to 9 percent slopes	5.12	9.65%
88C	Williams loam, 6 to 9 percent slopes	3.92	7.39%
81C	Verbal-Parshall fine sandy loams, 6 to 9 percent slopes	3.91	7.37%
62D	Dogtooth-Cabba complex, 9 to 15 percent slopes	3.27	6.17%
62B	Rhoades silt loam, 0 to 6 percent slopes	2.64	4.98%
31F	Cohagen-Verbar-Rock outcrop complex, 15 to 40 percent slopes	2.17	4.09%
81D	Verbar fine sandy loams, 6 to 9 percent slopes	2.11	3.98%
94E	Wayden silty clay, 9 to 25 percent slopes	1.93	3.64%
3	Straw loam, channeled, 0 to 2 percent slopes	1.10	2.07%
21C	Cherry silty clay loam, 6 to 9 percent slopes	0.52	0.98%
44B	Lihen loamy fine sand, 0 to 6 percent slopes	0.10	0.19%

Source: USDA-NRCS 2009

Soil components in the project area are known to support native mixed grass prairie species and most of these soils present no special construction problems and when trenched and compacted after pipeline placement, will be receptive to re-seeding and reclamation. Erosion potential increases in the interval between construction

and reclamation, while topsoil and stabilizing vegetation are absent. Soil erosion rates have been extensively studied and various practices have been shown to feasibly and significantly reduce erosion of a wide variety of soils, including those within the project area (BLM 2009, USDI and USDA 2007). Phase 1B - Prime has been aligned and situated to generally avoid steep areas more susceptible to erosion. Directional drilling would be used to avoid increasing erosion problems in several wetland areas.

3.9 Water Resources

Surface Water

The proposed Phase 1B - Prime project is located within the Missouri-Little Missouri drainage basin, the Little Missouri River basin and the Lower Little Missouri sub-basin. Within the Lower Missouri sub-basin, the project area traverses the Waterchief Bay sub-watershed and the Lower Squaw Creek sub-watershed. The project area ends in the Lower Missouri sub-basin, which traverses the Waterchief Bay sub-watershed, and into the Bear Creek sub-watershed (SWCA 2010). No perennial water bodies are located within the project area (SWCA 2010). Intermittent and ephemeral streams could be temporarily impacted by construction activities but are anticipated to return to their normal state once ROW is reclaimed.

Ground Water

Aquifers in Dunn County include Sentinel Butte, Tongue River, Hell Creek, Fox Hills, and Fort Union (North Dakota State Water Commission 2008). The project area does not intersect any of the known aquifers, with the closest located approximately five miles to the west, northwest of the project area. The proposed depth of the pipeline is anticipated to be approximately 6.5 feet to ensure 5.5 feet of soil coverage over the largest pipeline diameter. No significant impacts to surface water or groundwater are expected as a result of the proposed pipeline construction.

3.10 Wetlands

After review of the National Wetland Inventory maintained by the USFWS, in conjunction with soil and vegetation surveys, the ROW corridor was examined for wetlands meeting criteria in the Corps Wetlands Delineation manual (Environmental Laboratory, 1987) and the *Interim Regional to the Corps of Engineers Wetland Delineation Manual: Great Plains Region* (Corps 2008). Criteria include hydrophytic vegetation, hydric soils, and wetland hydrology. Areas meeting two of the three criteria are classified as wetlands. Wetland indicator status for plant species was determined using Reed (1997). No wetlands were identified within the Phase 1B - Prime corridor during field surveys (SWCA 2010). No permits were required by the Corps, under Section 404 of the Clean Water Act, regarding work in or near wetlands within the corridor.

3.11 Vegetation and Invasive Species

Physiographically, the area crossed by the proposed Phase 1B - Prime project is part of the Missouri Plateau, a relatively high plain that slopes to the east and northeast. The plateau is underlain by sedimentary materials deposited by water during the Tertiary period. These materials include layers of soft shale and soft sandstone noticeable on the hilltops. In some areas the sedimentary material is covered with a comparatively thin layer of glacial drift or till. Where present this till may consist of just a few pebbles or be distinct layer of stony soils. In places, the till has nearly has been nearly entirely eroded away and is only represented by large granite glacial boulders.

The Phase 1B - Prime project area was surveyed by SWCA on April 26 and 27, 2010. General observations were made concerning the topography, soils and the general composition of the vegetation. All species that could be identified were noted. Special effort was made to ascertain the presence of sensitive plant species especially those of concern to the U.S. Forest Service (USFS 2004) or any listed by the North Dakota Natural Heritage Inventory (2006) as well as any species listed by North Dakota's Noxious Weed Law (NDDA 2005). The following vegetation descriptions are taken from SWCA field observations (SWCA 2010).

Dominant vegetation observed along the proposed Phase 1B - Prime ROW corridor was indicative of upland and lowland prairies of the Missouri Plateau, interspersed with forested habitats and cultivated pastures. Tree vegetation observed included green ash (*Fraxinus pennsylvanica*) and burr oak (*Quercus acrocarpa*). Shrub and woody vegetation species observed included western snowberry (*Symphoricarpos occidentalis*),

chokecherry (*Prunus virginiana*), and silver buffaloberry (*Shepherdia argentea*). Observed herbaceous species included fringed sage (*Artemisia frigida*), white sagebrush (*A. ludoviciana*), common sagewort (*Acampestris*), little bluestem (*Schizachyrium scoparium*), blue grama (*Bouteloua gracilis*), smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), and a sedge species (*Carex* sp.), all which can provide cover and/or fair to good forage for species such as deer (*Odocoileus* spp.), elk (*Cervus elaphus),* birds, rabbits, mice, and various livestock.

No significant impact is anticipated as a result of construction activities. Through reclamation practices, the vegetative communities in the project area should recover to near pre-construction conditions. Additionally, measures will be taken to control any noxious weeds (see below) that are introduced during the construction and reclamation processes.

The Noxious Weed Team of North Dakota coordinates the efforts of county and city weed boards and state and federal land managers to implement integrated weed management programs to control and mitigate the impacts of undesirable plant species. The North Dakota Department of Agriculture (NDDA 2010) lists 11 plant species as noxious: Absinth wormwood *(Artemisia absinthium);* Canada thistle *(Cirsium arvense);* Dalmatian toadflax *(Linaria dalmatica* ssp. *Dalmatica);* Diffuse knapweed (*Centaurea diffusa);* Leafy spurge *(Ephorbia esula);* Musk thistle *(Carduus nutans);* Purple loosestrife (*Lythrum virgatum);* Russian knapweed (*Acroptilon repens);* Saltcedar (*Tamarix chinensis);* Spotted knapweed (*Centaurea stoebe* ssp. *Micranthos);* Yellow starthistle *(Centaurea solstitialis).*

3.12 Mitigation and Monitoring

Monitoring programs would be initiated immediately following all reclamation efforts, whether following initial construction, any operational ground disturbance or after final reclamation. Monitoring results would be used to determine need for additional seeding, planting or other soil preparation or stabilization measures. Identified problem areas would be treated as soon as possible. Unauthorized vehicle access would be noted during monitoring and measures to block access would be taken, such as fencing or signage of the pipeline corridor. Many protective measures and procedures are described in this document. No laws, regulations, or other requirements have been waived.

3.13 Irreversible and Irretrievable Commitment of Resources

Construction of an oil, gas and water gathering system may expedite removal and consumption of oil or gas from the Bakken Formation would be an irreversible and irretrievable commitment of resources. Other potential resource commitments include acreage devoted to the facility and associated infrastructure along the Phase 1B - Prime project, soil lost through wind and water erosion, cultural resources inadvertently destroyed, wildlife killed by earthmoving, habitat loss or in collisions with vehicles, and energy expended during construction and operation.

3.14 Short-term Use of the Environment versus Long-term Productivity

Short-term activities would not detract significantly from long-term productivity of the project area. The small area dedicated to the Phase 1B - Prime corridor would be temporarily unavailable for livestock grazing, wildlife habitat or other uses, but original uses would be re-established very quickly. Allottees with surface rights would be compensated for temporary loss of productive acreage and project footprints would shrink considerably once the pipeline was backfilled and non-working areas were reclaimed and reseeded. Successful and ongoing reclamation of the landscape would quickly stabilize the soil, reduce potential for erosion and sedimentation, and re-establish customary land uses for wildlife and livestock. The major long-term resource loss corresponds with the project purpose: gathering of hydrocarbons from the Bakken Formation for economic benefit of MHA Nation and individual Indians.

3.15 Cumulative Impacts

Environmental impacts may accumulate either over time or in combination with similar activities in the area. Unrelated activities may also have negative impacts on critical elements, thereby contributing to cumulative

degradation of the environment. Past and current disturbances in the vicinity of the project include farming, grazing, roads, and other oil/gas wells. Virtually all available acreage is already organized into agricultural leases or range permits. Small-scale disruption of these activities during construction of the proposed gathering system would not have more than a minor, temporary effect on surface use patterns.

Construction of the proposed system could facilitate additional oil/gas exploration by salvaging revenue streams currently wasted in flaring. Gathering capability may therefore lead to more wells drilled, even while commodity prices are relatively low, but all such developments remain speculative and incapable of analysis. Extensions of the gathering system itself are viewed generally as posing relatively minor direct impacts and tending to reduce indirectly overall oil field environmental impacts, through reductions in flaring, trucking and public hazards from all serviced wells. No significant cumulative, negative impacts are reasonably foreseen from proposed activities.

4. Consultation and Coordination

The project notice reproduced below was posted at the BIA Fort Berthold Agency and direct-mailed to the recipients listed in Table 4 on February 25, 2010.

February 25, 2010

Dear Interested Party:

The Bureau of Indian Affairs (BIA) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA), in cooperation with the Bureau of Land Management (BLM). BIA and BLM are considering approval of three pipelines (oil, gas and water) and a utilities line in one 100 foot Right-of-Way (ROW) on the Ft. Berthold Reservation by Arrow Midstream Holdings, LLC.

The proposed route of the Phase 2 – Skunk Creek ROW, is shown on the enclosed map and described in the following paragraph:

> The ROW will start in approximately Section 31, T149N, R92W and will trend south roughly paralleling BIA Road 13 until it approaches BIA Road 12 in Section 3 and 4 of T148N R92W. It will then turn west and parallel BIA Road 12 in Sections 4, 5 and 6 T148N, R92W. It continues to roughly parallel BIA Road 12 into Section 1, 2, 3 T148N R93W until it approaches BIA Road 14 and then trends south where it ties into the Phase 1B – South (BIA 12-14) pipeline ROW.

To ensure that social, economic, and environmental effects are analyzed accurately, we solicit your views and comments on the proposed action, pursuant to Section 102(2) (D) (IV) of NEPA, as amended. We are interested in developments proposed or underway that should be considered in connection with the proposed project. We also ask your assistance in identifying any property or resources that you own, manage, oversee or otherwise value that might be adversely impacted. Please send your replies and requests for additional project information to:

> Epic
> Attn: Christi Haswell
> PO Box 783
> Sheridan, WY 82801

Questions for the BIA can be directed to Marilyn Bercier, Great Plains Regional Office in Aberdeen, SD at (605) 226-7656.

Sincerely,

Christi Haswell
Permitting Manager

Table 4-1 Public Comments

Organization	Name	Comment
Barnes County Municipal Airport	Larry Lindemann	No Comments
Christi Haswell	Epic Integrated Services	No Comments
Dunn County	Reinhard Hauck	No Comments
FAA	Steve Obernauer	No Objection
FEMA	Insurance & Hazard Director	Contact local Floodplain Manager, Cliff Whitman, DES Director for Fort Berthold Reservation to receive guidelines regarding impact the pipelines might have relative to the regulations and policies of the National Flood Insurance Program.
Fort Berthold Rural Water	Marvin Danks	No Comments
Ft. Berthold Allottee Land & Minerals Association	Tex Hall	No Comments
Garrison Project Office Corps of Engineer's, Omaha District	P.O. Box 527	No Comments
Indian Affairs Commission	Cheryl Kulas	No Comments
Killdeer, Weydahl Field	Warren Hoffman	No Comments
McKenzie County	Frances Olson	No Comments
McKenzie County	Richard Cayko	No Comments
McKenzie Electric Cooperative	Gary Thorson	No Comments
McLean County	Julie Hudson-Schenfisch	No Comments
McLean Electric Coop., Inc.	Reginald Rudolph	No Comments
Mercer County	County Courthouse	No Comments
Mid-continent Cable Company	Bill Boyd	No Comments
Minot Air Force Base	Chief Missile Engineer	No Comments
Montana Dakota Utilities	Doug Dixon	No Comments
Mountrail County	David Hynek	No Comments
ND Department of Health	David Glatt	The department believes impacts will be minor and can be controlled with the following methods: Minimize fugitive dust emissions. Minimize adverse affects to waterbodies. Obtain a permit to discharge storm water runoff from the U.S. EPA if needed. Check with local officals for local storm water management considerations. Minimize noise levels. ND Dept of Health owns no land in or adjacent to the proposed improvement nor does it have projects scheduled in the area. Minimal requirements to ensure minimal environmental degradation are included. All projects will be desinged and implemented to restrict the losses or disturbances of soil, vegetation cover, and

		pollutants from a site.
ND Department of Transportation	Walter Peterson	No Comments
ND Game & Fish Department	Mike McKenna	It is recommended that construction be avoided to the extent possible within native prairie, wooded draws, and wetland areas. It is requested that disturbed areas be reclaimed to pre-project conditions. NWI indicates several wetlands within project corridor. Steps should be taken to avoid and protect wetland areas. No significant adverse effects on wildlife or wildlife habitat are expected, provided best management practices are implemented.
ND Parks & Recreation Dept.	Jesse Hanson	The proposed project does not affect state park lands or Land and Water Conservation Fun projects. Based on review of the North Dakota Natural Heritage database, there are no known plant or animal species of concern within a one mile radius of the project area. Regarding reclamation efforts, it is recommended that any impacted areas be revegetated with species native to the project area.
NoDak Electric Coop., Inc.	George Berg	No Comments
Northern Border Pipeline Company	Sandy Roth	No Comments
Reservation Telephone Coop.	Roger Hovda	No Comments
Sioux Tribe Chairmanm Sisston-Wahpeton	Michael Slevage	No Comments
Southwest Water Authority	Ray Christenson	No Comments
Spirit Lake Sioux Tribe	Myra Pearson	No Comments
Standing Rock Sioux Tribe	Ron His Horse is Thunder	No Comments
State Historical Society	Merlan Paaverud	NDSHPO requests a copy of cultural resources site forms and report be sent to their office.
THPO, Three Affiliated Tribes	Perry Brady	No Comments
Three Affiliated Tribes	NAGRPA Office	No Comments
Three Affiliated Tribes	Natural Resource Department	No Comments
Three Affiliated Tribes	Mervin Packineau	No Comments
Three Affiliated Tribes	Fred Poitra	No Comments
Three Affiliated Tribes	Mandaree Segment Rep.	No Comments
Three Affiliated Tribes	Frank Whitcalf	No Comments
Three Affiliated Tribes	Damon Williams	No Comments
Three Affiliated Tribes	Scott Eagle	No Comments
Three Affiliated Tribes	Barry Benson	No Comments
Three Affiliated Tribes	V. Judy Brugh	No Comments
Three Affiliated Tribes	Fred Fox	No Comments
Three Affiliated Tribes, Chairman	Marcus Wells	No Comments
Turtle Mountain Band of Chippewa, Chairman	David Brien	No Comments

US Army Corps of Engineers	Charles Sorenson	No Comments
US Army Corps of Engineers	Dan Cimarosti	Please submit a location map and completed Corps permit application if a Section 10/404 permit is required.
US Army Corps of Engineers, Planning Branch	Brad Thompson	Project does not appear to be located with in Corps lands. Coordinate with EPA, USFWS, ND Game and Fish Dept, and ND SHPO. Placing fill material into waters of the US requires permit under 404 of CWA.
US Bureau of Indian Affairs, Great Plains Regional Office	Marilyn Bercier	No Comments
US Bureau of Indian Affairs	Mike Black	No Comments
US Bureau of Land Management	Mike Nash	No Comments
US Bureau of Land Management	Lonny Bagley	No Comments
US Bureau of Reclamation	Richard Nelson	Proposed pipelines could potentially affect Fort Berthold Rural Water System lines. A detailed map of the water system in the general proximity of 149N 92W is enclosed. We request that any work planned be coordinated with Mr. Marvin Danks, Fort Berthold Rural Water Director.
US Department of Agriculture, NRCS	J.R. Flores	No Comments
US Environmental Protection Agency	Joyce Dhieux	No Comments
US Environmental Protection Agency	Larry Svoboda	No Comments
US Forest Service	Watford City, ND	No Comments
WAPA	Gerald Paulson	No Comments
Ward County	Carroll Erickson	No Comments
West Plains Electric Coop., Inc.	David Schelkoph	No Comments
Xcel Energy	Manager	No Comments

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue S.E.
Aberdeen, South Dakota 57401

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

JUN 0 3 2010

Perry 'No Tears' Brady, THPO
Mandan, Hidatsa and Arikara Nation
404 Frontage Road
New Town, North Dakota 58763

Dear Mr. Brady:

We have considered the potential effects on cultural resources of the proposed Arrow Midstream Phase 1B Prime Pipeline in Dunn County, North Dakota. Approximately 106.77 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the areas depicted in the enclosed report. One archaeological site (32DU1491) was located that may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. No properties were located that appear to qualify for protection under the American Indian Religious Freedom Act (42 USC 1996).

As the surface management agency, and as provided for in 36 CFR 800.5, we have therefore reached a determination of **no historic properties affected** for this undertaking, as the pipeline has been rerouted so as to avoid the archaeological site. Catalogued as **BIA Case Number AAO-1785/FB/10,** the proposed undertaking, locations, and project dimensions are described in the following report:

Lechert, Stephanie, Alan Hutchinson and Norma Crumbley
(2010) A Class I and Class III Cultural Resource Inventory of the Arrow Midstream Holdings Phase 1B Prime Pipeline, Fort Berthold Indian Reservation, Dunn County, North Dakota. SWCA Environmental Consultants for Arrow Midstream Holdings, LLC, Tulsa, OK.

If your office concurs with this determination, consultation will be completed under the National Historic Preservation Act and its implementing regulations. The Standard Conditions of Compliance will be adhered to.

If you have any questions, please contact Dr. Carson N. Murdy, Regional Archaeologist, at (605) 226-7656.

Sincerely,

Regional Director

Enclosure

cc: Chairman, Three Affiliated Tribes
Superintendent, Fort Berthold Agency

Three Affiliated Tribes
MANDAN * HIDATSA * ARIKARA

TRIBAL HISTORIC PRESERVATION
Mandan Hidatsa Arikara
Perry 'No Tears' Brady, Director.
404 Frontage Road.
New Town, North Dakota 58763
Ph/701-862-2474 fax/701-862-2490

June 10, 2010

Dr. Carson N. Murdy,
Great Plains Regional Office
115 Forth Avenue S.E.
Aberdeen, South Dakota 57401

RE: **Recommendation and Concurrence:**

As Director of the Tribal Historic Preservation Office and the Tribal Historical Preservation Officer representing the Mandan Hidatsa Arikara Nation I Concur With: **BIA Case Number AAO-1785/FB/10**

Lechert, Stephanie, Alan Hutchinson, and Norma Crumbley A Class I and Class III Cultural Resource Inventory of the Arrow Midstream Holdings Phase IB Prime Pipeline Fort Berthold Indian Reservation. Dunn County, North Dakota SWCA Environmental Consultants for Arrow Midstream Holdings, LLC. Tulsa, OK.

If you have any questions or need additional information, you can contact me at (701) 862-2474 or 862-2475 or at (701) 421-0547 cell number.

Sincerely:

Perry Brady
Director
Mandan, Hidatsa, & Arikara Nation

Cc. File

5. List of Preparers

An interdisciplinary team contributed to this document, following guidance in Part 1502.6 of Council on Environmental Quality regulations. Epic Integrated Services, Inc. prepared portions of this EA under contract to Arrow Pipeline, LLC and under the direction of the BIA, Great Plains Regional Office, Division of Energy and Environment. SWCA performed fieldwork and prepared water, soil, vegetation, archeology, and wildlife reports. Preparers, reviewers, consultants, and federal officials include the following:

- Marilyn Bercier — Division Chief, Division of Energy and Environment, BIA – Great Plains Regional Office. Editing of EA and recommendation to BIA Regional Director regarding FONSI or EIS.
- Epic Integrated Services, Inc.
  - Christi Haswell, Regulatory Project Manager.
  - Tracey Ostheimer, Regulatory Project Coordinator.
- SWCA Environmental Consulting
  - Nelson Klitzka, Archaeologist
  - Jon Markman, Archaeologist/ Field Coordinator

6. References and Acronyms

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Acronyms

AAQM	Ambient Air Quality Monitoring
APE	Area of potential effect
ARVs	Air release valves
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
DOT	Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
MHA Nation	Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nation
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NDDA	North Dakota Department of Agriculture
NDDH	North Dakota Department of Health
NDGFD	North Dakota Game and Fish Department
NDSWC	North Dakota State Water Commission
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
PIG	Pipeline inspection gauge
PHMSA	Pipeline and Hazardous Materials Safety Administration
Psig	Pounds per Square Inch Gauge
Reservation	Fort Berthold Indian Reservation
ROW	Right-of-way
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Officer
SPCC	Spill Prevention, Control, and Countermeasure
TCP	Traditional Cultural Property
THPO	Tribal Historic Preservation Officer
USC	United States Code
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service

Notice of Availability and Appeal Rights

Arrow Midstream Holdings: Phase 1B – Prime

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to installation of the Arrow Midstream Holdings, LLC Oil and Gas Gathering System Phase 1B – Prime as shown on the attached map. Construction by Arrow Midstream Holdings is expected to begin in the Summer of 2010.

An environmental assessment (EA) determined that proposed activities will not cause significant impacts to the human environment. An environmental impact statement is not required. Contact Howard Bemer, Superintendent at 701-627-4707 for more information and/or copies of the EA and the Finding of No Significant Impact (FONSI).

The FONSI is only a finding on environmental impacts – it is not a decision to proceed with an action and *cannot* be appealed. BIA's decision to proceed with administrative actions *can* be appealed until August 9, 2010, by contacting:

United States Department of the Interior
Office of Hearings and Appeals
Interior Board of Indian Appeals
801 N. Quincy Street, Suite 300, Arlington, Va 22203.

Procedural details are available from the BIA Fort Berthold Agency at 701-627-4707.

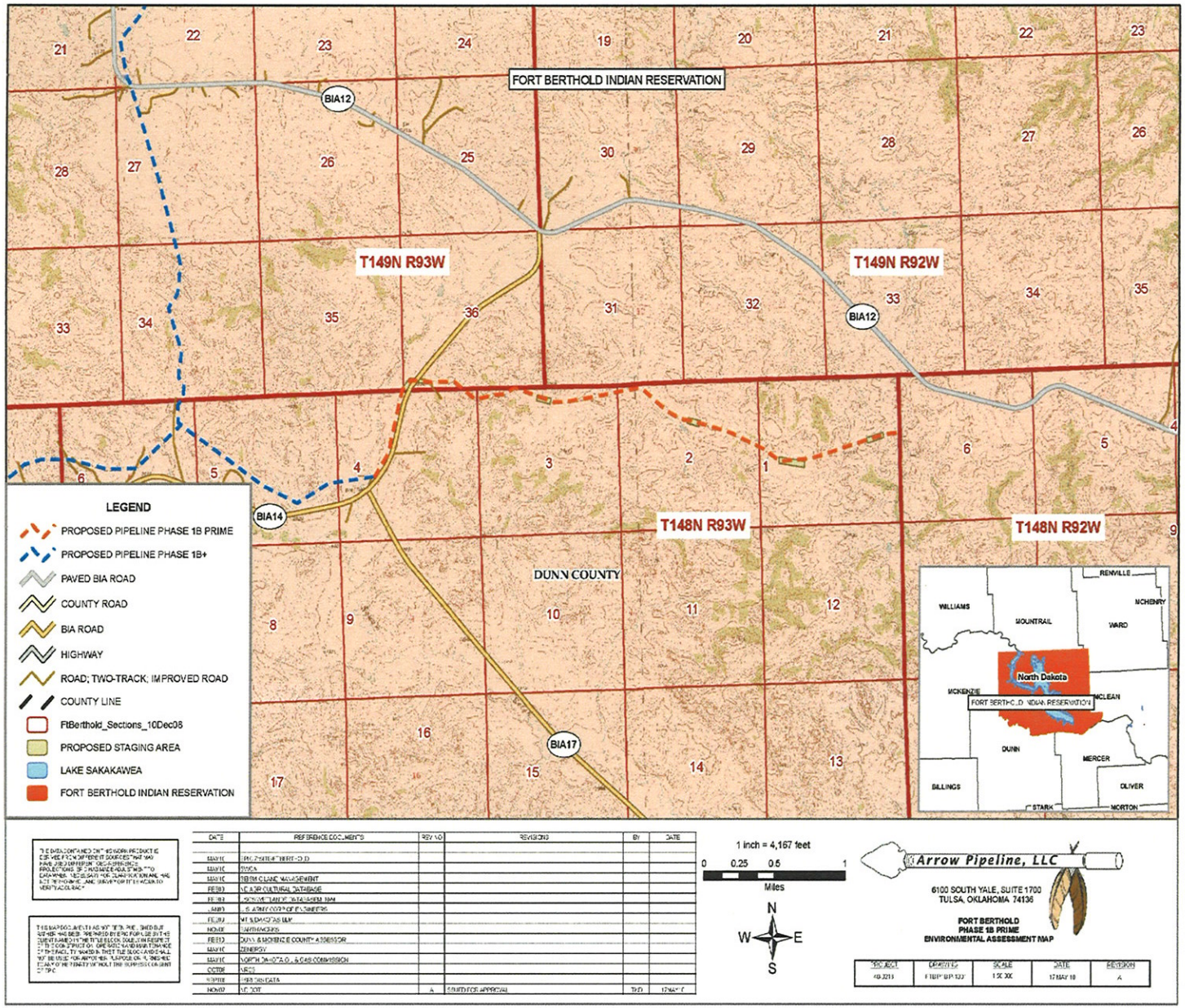

Figure 1-1 Proposed Phase 1B - Prime Project Location