

Exhibit BP-4

**ENBRIDGE PIPELINES (NORTH DAKOTA) LLC
BAKKEN PIPELINE PROJECT US
NORTH DAKOTA PSC CASE NO. PU-10-612**

Class 3 Survey by KLJ re-routes

**BAKKEN PIPELINE PROJECT US:
A CLASS III CULTURAL RESOURCE INVENTORY
BURKE COUNTY, NORTH DAKOTA**

Kadrmass, Lee and Jackson

Report of Investigation: 1256

December 2010



Bakken Pipeline Project US: A Class III Cultural Resource Inventory, Burke County, North Dakota

NOTE: Per discussion with NDPSC and NDSHPO staff, specific locational data on cultural resource sites has been redacted from this filed report.

Prepared For:
**Enbridge Pipeline (North Dakota), LLC
Houston, Texas**

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A CLASS III CULTURAL RESOURCE INVENTORY,
BURKE COUNTY, NORTH DAKOTA**

Prepared For:
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Report of Investigation: 1256

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ABSTRACT

Enbridge Pipelines (North Dakota) LLC is evaluating a project to install a new pipeline system in Burke County, North Dakota. The new installation stretches roughly 10.9 miles from northwest of the town of Lignite to directly southeast of the abandoned town of Woburn. Between May 12 and May 15, 2010, Kadrmas, Lee & Jackson conducted an intensive inventory of the centerline of a 10.9 mile proposed pipeline. The width of the survey corridor was 250' wide. A total of 330.3 acres was inventoried for the proposed undertaking.

Between November 2 and November 4, 2010 Kadrmas, Lee & Jackson conducted an intensive inventory of seven additional areas along the pipeline covering a total of 106.5 acres. The newly surveyed areas included re-routes and additional work spaces and were surveyed in parallel transects spaced no more than 20 meters apart.

No previously recorded cultural resources are located within the survey areas, and two new cultural resources were encountered. The two newly encountered cultural resources include a historic cultural material scatter and the remnants of an abandoned town. Both are recommended *not eligible* for the National Register of Historic Places. Kadrmas, Lee & Jackson recommends a finding of *No Historic Properties Affected* for the proposed undertaking.

Table of Contents

ABSTRACT	ii
INTRODUCTION	1
ENVIRONMENTAL SETTING	1
Topography.....	7
Flora.....	7
Fauna	7
Other Natural Resources	8
RESEARCH GOALS/EVALUATION OF RESEARCH	8
LITERATURE REVIEW	9
FIELD METHODS/CONDITIONS.....	9
RESULTS.....	9
Previously Undocumented Cultural Resources	9
32BK91	9
32BK90	13
SUMMARY AND MANAGEMENT RECOMMENDATIONS	17
REFERENCE CITED.....	19
APPENDIX A: PROJECT AREA PHOTOGRAPHS.....	20
APPENDIX B: LITERATURE AND FILE SEARCH RESULTS	24

List of Figures

LIST OF FIGURES REMOVED - CONTAINS SENSITIVE GEOGRAPHIC INFORMATION

INTRODUCTION

Enbridge Pipelines (North Dakota), LLC contracted Kadrmas, Lee, & Jackson (KL&J) to conduct a cultural resource inventory for a pipeline located in Burke County, ND. The pipeline stretches 10.9 miles from the town of Lignite on the northwest end and extends to the abandoned town of Woburn in the southeast. KL&J conducted an intensive inventory of the centerline of the proposed pipeline between May 12 and May 15, 2010. The surveyed corridor was 250' wide and a total of 330.3 acres were inventoried for the proposed undertaking. Details of the original survey can be found in the previous report, *Bakken Expansion Pipeline: A Class III Cultural Resource Inventory, Burke County, North Dakota* (Klinner and Harty, 2010) which is on file at the State Historical Society of North Dakota (SHSND).

Between November 2 and November 4, 2010 KL&J conducted an intensive survey of seven additional areas along a proposed pipeline in Burke County, North Dakota (Figures 1, 2, 3, 4, and 5). The additional areas are intended re-routes and additional workspaces and are located in 11 legal sections (Table 1). The inventory was conducted by Jennifer L. Harty, Principal Investigator, Michael Shropshire, Ian Randall, and Ray Pysarsky on November 2 through November 4, 2010. All areas were inventoried to Class III standards. The areas had no previously documented cultural resources, but two newly documented cultural resources were recorded during the inventory.

County	Township	Range	Section
Burke	162	90	30
Burke	162	91	6, 15, 16, 22, 23, 25
Burke	162	92	1, 2, 3
Burke	163	92	34

ENVIRONMENTAL SETTING

The entirety of the project area is located within the Souris River Study Unit (#11). The study unit is defined and delineated in the *North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component* (SHSND 2008: 11.1-11.72). The SHSND (2008) document presents a generalized description or overview of the physiographic and cultural setting for the study unit, along with information on the previous research conducted within the study units. The following discussion is a more localized description of the environmental setting of the project.

**MAP/PHOTO/FIGURE REMOVED TO PROTECT
SENSITIVE GEOGRAPHIC INFORMATION**

Topography

The Souris River Study Unit is located in north-central North Dakota. The study unit is bordered by the Saskatchewan and Manitoba borders to the north. The Sheyenne River and Northern Red River study units border it to the east, and the Garrison and Southern Missouri River study units border it to the south. Topography within the Souris River Study Unit, as described by the SHSND (2008), is primarily identified as the Central Lowlands and the Great Plains. As such, the area varies from ground moraine of exhibiting generally low relief with numerous potholes, to knob and kettle glaciated terrain with numerous sloughs.

The entire proposed project area is affected by drainages either within or adjacent to the project corridor (Figures 15, 16, 17, 18, 19, and 20 in Appendix A). These upland areas in the vicinity of water sources have high and moderate probability areas for cultural resources. Knob and kettle topography is common and is particularly prevalent in the eastern segments where larger expanses of upland terrain were formed by glacial moraines. In addition to the drainage and upland areas, several areas containing low lying terraces, floodplains, and bottomland topography were inventoried. These areas are thought to have provided sheltered environments during harsher winter climates.

Cultural resources are most frequently identified in this area on landforms overlooking water bodies. Upland ridges, knolls, alluvial terraces, and upland plains are the landforms that appear to have been the most commonly populated within the study units during precontact times.

Flora

The project corridor lies primarily within the Northern Temperate Grassland biome. In the past, this biome would have consisted primarily of mixed grass prairie, dominated by blue grama grass, needle-and-thread grass, and western wheatgrass. Gallery forests existed along floodplains of large drainage basins such as the Missouri River. Areas of transition between upland prairies and lowland floodplains frequently included juniper, green ash, and bur oak.

The vegetation regimes present today, however, do not necessarily reflect those of the prehistoric past. Agriculture, the introduction of non-native species, and modern development have all played a role in altering the present landscape as well as the associated floral communities. The existing flora of the entire project area consists primarily of introduced species within agricultural fields interspersed with areas of native grasses in pastureland. Woody draws within the project area host communities of juniper, chokecherry, Saskatoon berries, gooseberries, green ash, and bur oak.

Fauna

As with extant flora within the project area, the types and distributions of faunal species have also been altered over time due to human interaction. While the following list is not exhaustive of the fauna present in the project area, it represents the species most likely to have

been encountered within a historic or prehistoric context. In the past, people would have commonly encountered bison (*Bison bison*), elk (*Cervus elaphus*), pronghorn (*Antilocapra americana*), and moose (*Alces alces*), as well as white tail deer (*Odocoileus* sp.). In addition, wolves (*Canis lupus*), coyotes (*Canis latrans*), jack rabbits (*Lepus* sp.), badgers (*Taxidea taxus*), weasels (*Mustela* sp., *Martes* sp.), beavers (*Castor canadensis*), ground squirrels (*Spermophilus* sp.) and prairie dogs (*Cynomys ludovicianus*) would have been present, as well as raptors, songbirds, and game birds.

The intermittent drainages and other more substantial watercourses in the general area would have contained various species of fish, including northern pike (*Esox lucius*), perch (*Perca flavescens*), and suckers (*Catostomus*), as well as different types of waterfowl (ducks, geese, etc.), amphibians, and reptiles (SHSND 2008). These waterways would also have served as major sources of water for the area, concentrating the faunal resources and creating opportunistic hunting areas.

Other Natural Resources

Lithic resources were available in abundance to prehistoric populations. These resources include chalcedonies, quartzites, jaspers, cherts, agatized wood, basalt, granite, and limestone. Swan River chert, with its source across the border in Manitoba, Canada, would have been commonly found in stream gravels. In addition to these alluvially transported and glacial fill gravels, bedrock sources are exposed throughout the area. Exposed bedrock materials include pigment stones and sandstone (SHSND 2008).

RESEARCH GOALS/EVALUATION OF RESEARCH

Following the mandated policies implementing the National Historic Preservation Act (NHPA [Public Law 89-665]), as amended, this proposed project was inventoried to locate any historic properties within the area of potential effect (APE). The APE of the original corridor measures 10.9 miles long by 250' wide. The width of the corridor will allow for movement of equipment, temporary storage of equipment and supplies, and all ground disturbances directly related to pipeline construction. The seven additional areas including proposed re-routes and additional work spaces cover a total of 106.5 acres adjacent to the original corridor.

An additional goal of the inventory was to allow Enbridge to plan the proposed undertaking to avoid any historic properties and if not possible, to test, evaluate, and if necessary, mitigate historic properties within the proposed project area prior to construction. No previously documented cultural resources were identified, however two newly recorded cultural resources were found within the APE. The methods used during the inventory to identify previously undocumented cultural resources greatly reduce the possibility of an inadvertent discovery of additional cultural resources.

LITERATURE REVIEW

On May 11, 2010, KL&J archaeologist Angie Rabe conducted a Class I Literature Review of the site records and manuscript files of the SHSND for the project area (Appendix B). Details of the literature review were included in the report for the initial survey of this project area, *Bakken Expansion Pipeline: A Class III Cultural Resource Inventory, Burke County, North Dakota* (Klinner and Harty, 2010) which is on file at the SHSND.

FIELD METHODS/CONDITIONS

A Class III Intensive Cultural Resources Inventory is an intensive, systematic, detailed field inspection done by, or under the direction/supervision of professional architectural historians, historians, archaeologists, and/or other appropriate specialists. The goal of this inventory effort is to make systematic efforts to identify all historic properties within the Area APE that might qualify for the National Register of Historic Places (NRHP) and/or the North Dakota State Historic Sites Registry and to record information sufficient to enable their evaluation or to indicate what further work is necessary to accomplish their evaluation (SHSND 2006:15).

KL&J conducted a Class III Intensive Cultural Resource Inventory for the proposed undertaking. Transects were spaced no more than 20 m apart to cover the 106.5 acres of the seven additional survey areas. Visibility within the survey locations was highly variable, as the locations consist of some areas of tilled farmland and others of native prairie. Overall, visibility was good, averaging 15%. In areas with good deposition, rodent burrows, blowouts, and other areas with exposed subsurface deposits were closely scrutinized for cultural materials.

RESULTS

No previously recorded cultural resources were encountered during the inventory. The nearest previously recorded cultural resource, 32BKx980, is an architectural site lead located a minimum of 1,300' to the north of the APE. Two new sites were found and recorded, 32BK91, a historic dump, and 32BK90, the site of an abandoned town.

Previously Undocumented Cultural Resources

32BK91

Site 32BK91 is a large historic material scatter located in an agricultural field to the north of the town of Lignite. The site sits on an unplowed area with deep, thick vegetation and extends out into the plow area of the field. There are three apparently abandoned modern pickup trucks parked within the site. Because of the density and nature of cultural material and the lack of structures and features the site may have been used as a dump (Figures 6, 7, 8, and 9).

**MAP/PHOTO/FIGURE REMOVED TO PROTECT
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The artifact assemblage includes historic ceramics, white ware, stone ware, glass, including some pieces of sun colored amethyst (SCA), and some metal objects, including a horseshoe. The cultural materials are spatially dense, with as many as ten or more artifacts per square meter over many areas of the site. Although there is a large concentration of cultural material at this site, it is dispersed over a wide area. The site seems to have been impacted heavily by farming activity in the adjacent agricultural field.

The presence of SCA glass, which is generally considered to date to pre-1920 indicates that some of the cultural material may be over 50 years old. However the site is highly disturbed by agricultural activity and lacks spacial integrity. As the cultural material was on the surface and no depression was observed any depth to the site is probably due to disturbances such as plowing. The location of the site is in the center of a field with no surrounding structures and cannot be associated with a specific farmstead.

The site is recommended as *not eligible* for inclusion in the NRHP because it cannot be linked with any historically significant person(s) or event(s) (Criterion A and B), there is no architecture present (Criterion C), and the location has a low potential to contain intact buried cultural deposits or to yield important information regarding the history or prehistory of the area (Criterion D). No further work or avoidance is necessary for this site.

32BK90

Site 32BK90 is the remains of the town of Woburn (Figures 10, 11, 12, and 13). Searches were conducted at the North Dakota State Library, the State Historical Society of North Dakota Archives, the Great Northern Railway Historical Society web site (GNRHS), and the Great Northern Empire web site (GNE). The following is primarily derived from Wick (1999), the Burke County Historical Society (1989), the GNRHS, and the GNE.

The location was established by the Great Northern Railway in the early 1900s, with a post office being authorized in May of 1907. The authorization was rescinded, however, and it was not until late June of 1908 that the post office opened.

No listing for the town is provided in either the GNRHS or the GNE. The location did, however, have a railway depot, along with a blacksmith shop, two stores, a pool hall, a lumber yard, elevators, and the a building named "Yeoman Hall." The lumber yard was relocated in or near the town, but burned down at a later date. The Yeoman Hall was also moved.

It is likely that the location was primarily used for local commerce, pickup and delivery of local mail, and, for an unknown length of time, by the Great Northern Railway. In any event, the town was not incorporated until 1934, with the post office closing in November of 1947. According to Wick (1999:211), at its peak population (in 1940) the town had 19 residents.

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There are no standing structures remaining, however there are several features and some cultural material present. Features include an elevated approach road and a large cement lined foundation. There are also four depressions, one of which was lined with concrete. Two wells were in the area, one stone lined and one with a now toppled windmill associated by proximity. There was also a flat concrete foundation that was still intact. A corral area was present with only the gate and fence post remaining, as well as old farming equipment and a large pile of milled lumber.

Cultural materials observed in the area include old stoves, barrels, and some unidentified machinery. Also observed were piles of milled lumber, brick and glass fragments, farm equipment, and various large metal objects. No specific railway material, such as ties, rails, or stakes, were encountered, although it is possible that one of the foundations or depressions is related to the removed depot.

The cultural material present at the site appears to date from the early 1900s to the mid-1900's. These dates roughly correspond with the dates determined by our research for the town of Woburn – 1907 through 1947 for the post office and later town, with local farm activities likely continuing after the post office closed.

The site retains little physical integrity but does retain spatial integrity. The main impact to the site is probably flooding, as the largest of the depressions was inundated and the site is surrounded by marshes. There are no standing structures or buildings.

We recommend the site as *not eligible* for inclusion in the NRHP. The site cannot be linked with any historically significant person(s) (Criterion A), it is unknown if any of the remnants at the location can be directly associated with a historically significant event(s), such construction and use by the Great Northern Railway (Criterion B), there is no architecture present (Criterion C), and the location has a low potential to contain intact buried cultural deposits or to yield important information regarding the history or the prehistory of the area (Criterion D). No further work or avoidance is recommended necessary for this site. In any event, the proposed pipeline will be constructed approximately 30 feet from an existing Enbridge pipeline in an already disturbed corridor within Enbridge's permanent right-of-way (Figure 14).

SUMMARY AND MANAGEMENT RECOMMENDATIONS

Kadrmass, Lee & Jackson completed a Class III Intensive Pedestrian Inventory for additional areas along a proposed pipeline installation. The Inventory was completed at the behest of Merjent, on behalf of Enbridge. Seven areas totaling 106.5 acres were inventoried to Class III standards.

During the course of the inventory, no previously documented cultural resource sites were encountered, and two new cultural resources were identified. Both of the newly recorded sites are recommended *not eligible* for inclusion in the National Register of Historic Places, with no further work required. Kadrmass, Lee & Jackson recommends a finding of *no historic properties affected*.

**MAP/PHOTO/FIGURE REMOVED TO PROTECT
SENSITIVE GEOGRAPHIC INFORMATION**

REFERENCE CITED

Burke County Historical Society

1989 *Pioneers and Progress, Volume II*. Compiled by the Burke County Historic Society. Printed by the Pierce County Tribune, Rugby, ND.

Great Northern Empire (GRE)

n.d. *Great Northern Empire* web site. <http://www.gngoat.org>. Accessed on January 25, 2011.

Great Northern Railway Historical Society (GNRHS)

n.d. *Great Northern Railway Historical Society* web site. <http://www.gnrhs.org>. Accessed on January 25, 2011.

Klinner, D., and J. L. Harty

2010 *Bakken Expansion Pipeline: A Class III Cultural Resource Inventory, Burke County, North Dakota*. Document on file at the State Historical Society of North Dakota, Bismarck.

State Historical Society of North Dakota (SHSND)

2006 *NDSHPO Manual for Cultural Resource Investigations Revised Edition*. Produced by and available from the State Historical Society of North Dakota, Bismarck.

2008 *The North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component*. Produced by and available from the State Historical Society of North Dakota, Bismarck.

Wick, D. A.

1999 *North Dakota Place Names*. Third printing, Sweetwater Communications, Inc., Bismarck, ND.

APPENDIX A: PROJECT AREA PHOTOGRAPHS



Figure 15: Overview of typical terrain in the southern portion of the project, view to the northwest.



Figure 16: Overview of typical terrain in the southern portion of the project, view to the southeast.



Figure 17: Overview of typical terrain in the southern portion of the project, view to the southeast.



Figure 18: Overview of typical terrain in the northern portion of the project, view to the southeast.



Figure 19: Overview of the northern portion of the project, view to the southeast.



Figure 20: Overview of typical terrain along the northern portion of the project, view to the northwest.

APPENDIX B: LITERATURE AND FILE SEARCH RESULTS

TOWNSHIP/ RANGE-SECTION	SITS #	SITE TYPE AND DESCRIPTION	RECORDER	MANUSCRIPT #
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		5728, 5885
		No Cultural Resources Recorded		5728, 5885
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		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		5728, 5885, 10415
		No Cultural Resources Recorded		5728, 8094
		No Cultural Resources Recorded		
	32BK49	Architectural	Ford-Dunker	5728
	32BKx600	Architectural – Site Lead	Mertz, M.	
	32BKx627	Architectural – Site Lead	Mertz, B.	
	32BKx762	Architectural – Site Lead	Mertz, B.	
	32BKx835	Architectural – Site Lead	Mertz, B.	
	32BKx865	Architectural – Site Lead	Mertz, B.	
	32BK50	Architectural	Ford-Dunker	5728
	32BK51	Architectural	Bentley	
	32BK52	Architectural	Bentley	
	32BK51	Architectural	Bentley	
	32BKx359	Architectural – Site Lead	Mertz, B.	
	32BKx360	Architectural – Site Lead	Mertz, B.	
	32BKX394	Architectural – Site Lead	Mertz, B.	
	32BKx447	Architectural – Site Lead	Mertz, B.	
	32BKx456	Architectural – Site Lead	Mertz, B.	
	32BKx457	Architectural – Site Lead	Mertz, B.	
	32BKx458	Architectural – Site Lead	Mertz, B.	
	32BKx459	Architectural – Site Lead	Mertz, B.	
	32BKx566	Architectural – Site Lead	Mertz, B.	
	32BKx594	Architectural – Site Lead	Mertz, B.	
	32BKx597	Architectural – Site Lead	Mertz, B.	

TOWNSHIP/ RANGE-SECTION	SITS #	SITE TYPE AND DESCRIPTION	RECORDER	MANUSCRIPT #
	32BKx931	Architectural – Site Lead	Mertz, B.	
	32BL24	Architectural	Borchert, J., et al.	
		No Cultural Resources Recorded	Mertz, B.	6470
	32BK30	Historic	Olson, B	6470
	32BKx253	Architectural – Site Lead	Mertz, B.	
	32BKx960	Architectural – Site Lead	Mertz, B.	
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		6470
	32BKX979	Architectural – Site Lead	Mertz, B.	8094
	32BKx980	Architectural – Site Lead	Mertz, B.	
	32BKX979	Architectural – Site Lead	Mertz, B.	

MS#	REFERENCE
5728	Foster, J., G. Wermers, G., and J. Borchert 1992 <i>Burke County Road Improvement Class III Cultural Resource Inventory Final Report (Project #DPI-0182(001)0701).</i>
5885	Wermers, G. 1992 <i>Williston Basin 8" Portal-Lignite Pipeline Class III Cultural Resource Inventory Burke County, ND.</i>
6470	Olson, B. 1995 <i>Portal Pipeline Cultural Resources Inventory Burke County, ND.</i>
8094	Borchert, J. 2002 <i>Highway 5, E Jct. 40 East to W Jct. 52, Highway 89, Lignite Spur, Class II Inventory Report.</i>
10415	Payette, P., P. Pflapsen, P., and P. Hendrix 2008 <i>Phase I Cultural Resource Investigation of Proposed ND-01-Lignite (44026) Telecommunications Tower Project Area, Lignite, Burke County, ND.</i>

**KENASTON AND LIGNITE PUMPING STATIONS:
A CLASS III CULTURAL RESOURCE INVENTORY
WARD AND BURKE COUNTIES, NORTH DAKOTA**

Kadrmass, Lee and Jackson

Report of Investigation: 1265

January 2011



KENASTON AND LIGNITE PUMPING STATIONS: A CLASS III CULTURAL RESOURCE INVENTORY, WARD AND BURKE COUNTIES, NORTH DAKOTA

NOTE: Per discussion with NDPSC and NDSHPO staff, specific locational data on cultural resource sites has been redacted from this filed report.

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**KENASTON AND LIGNITE PUMPING
STATIONS: A CLASS III CULTURAL RESOURCE
INVENTORY, WARD AND BURKE COUNTIES,
NORTH DAKOTA**

Prepared For:
Enbridge Pipelines (North Dakota), LLC
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Report of Investigation: 1265

January 2011

ABSTRACT

Enbridge Pipelines (North Dakota) LLC is evaluating a project to install two new pumping stations in Ward and Burke Counties, North Dakota. One pumping station will be located 0.6 miles southeast of Kenaston. The second pumping station will be located 0.7 miles east of Lignite. A third block area was inventoried for a potential pumping station. This location, named "Pumping Station 2" for this report, is located approximately 1.8 miles to the northwest of Lignite.

On September 30, 2010, Kadrmas, Lee & Jackson archaeologists Jennifer Macy and Kalin McDowell conducted an intensive inventory of the three project blocks. The Kenaston pumping station block encompasses 13.7 acres, the Lignite pumping station block encompasses 11.9 acres, and the block for Pumping Station 2 encompasses 9.0 acres. A total of 34.6 acres was inventoried for the project.

No previously recorded cultural resources are located within the inventoried blocks. One new cultural resource was encountered and recorded within the project block for the Lignite pumping station. Newly recorded site 32BK89 is a historic cultural material scatter which is recommended *not eligible* for the National Register of Historic Places. As no other cultural resources were encountered within the three project blocks, Kadrmas, Lee & Jackson recommends a finding of *No Historic Properties Affected* for the proposed undertaking.

Table of Contents

ABSTRACT ii

INTRODUCTION 1

ENVIRONMENTAL SETTING 1

 Topography..... 1

 Flora 5

 Fauna 5

RESEARCH GOALS/EVALUATION OF RESEARCH 6

LITERATURE REVIEW 6

FIELD METHODS/CONDITIONS..... 6

RESULTS..... 7

 Site 32BK89..... 7

SUMMARY AND MANAGEMENT RECOMMENDATIONS 10

REFERENCE CITED 11

APPENDIX A: PROJECT AREA PHOTOGRAPHS..... 12

APPENDIX B: LITERATURE AND FILE SEARCH RESULTS 16

List of Figures

LIST OF FIGURES REMOVED - CONTAINS SENSITIVE GEOGRAPHIC INFORMATION

INTRODUCTION

Enbridge Pipelines (North Dakota), LLC contracted Kadrmas, Lee, & Jackson (KL&J) to conduct a cultural resource inventory for two pumping stations and one potential pumping station in Burke and Ward Counties, North Dakota (Table 1). The Kenaston pumping station is located approximately 0.6 miles southeast of Kenaston. The Lignite pumping station is located approximately 0.7 miles to the east of the town of Lignite. Pump Station 2 is located approximately 1.8 miles to the northwest of Lignite.

KL&J archaeologists Jennifer Macy and Kalin McDowell conducted an intensive inventory of the pumping station blocks on September 30, 2010. A total of 34.6 acres was inventoried to Class III standards for the proposed undertaking (Figures 1, 2, and 3). One new cultural resource was encountered and recorded during the inventory. A detailed discussion of the cultural resource identified within the proposed corridor is included in the *Results* section of this document..

Name	County	Township	Range	Section	Portions of Section	Acres
Kenaston	Ward	159	88	7	N½/NW/SW, SW/NW	13.7
Lignite	Burke	162	91	7	NW/NW	11.9
Pumping Station 2	Burke	163	92	34	NW/SW/SE	9.0
Total Acres						34.6

ENVIRONMENTAL SETTING

The project areas are located entirely within the Souris River Study Unit (#11). The study unit is defined and delineated in the *North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component* (SHSND 2008: 11.1-11.72). The SHSND (2008) document presents a generalized description or overview of the physiographic and cultural setting for the study unit, along with information on the previous research conducted within the study units. The following discussion is a more localized description of the environmental setting of the projects.

Topography

The Souris River Study Unit is located in north-central North Dakota. The study unit is bordered by the Saskatchewan and Manitoba borders to the north. The Sheyenne River and Northern Red River study units border it to the east, and the Garrison and Southern Missouri River study units border it to the south. Topography within the Souris River Study Unit, as described by the SHSND (2008), is primarily identified as the Central Lowlands and the Great Plains. As such, the area varies from ground moraine of exhibiting generally low relief with numerous potholes, to knob and kettle glaciated terrain with numerous sloughs.

**MAP/PHOTO/FIGURE REMOVED TO PROTECT
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The Kenaston pumping station block is located on an upland plain. A small intermittent tributary for Taskers Coulee is located to the west, south, and east of the project block. The coulee flows east into Des Lacs Lake. Much of the area has been cultivated (Figures 7 and 8 in Appendix A).

The Lignite pumping station and Pumping Station 2 blocks are located on a rolling upland plain bisected by numerous potholes and small marshes. A majority of the surrounding area has been converted to agricultural use (Figures 9, 10, and 11 in Appendix A)

Flora

The project corridor lies primarily within the Northern Temperate Grassland biome. In the past, this biome would have consisted primarily of mixed grass prairie, dominated by blue grama grass, needle-and-thread grass, and western wheatgrass.

The vegetation regimes present today, however, do not necessarily reflect those of the prehistoric past. Agriculture, the introduction of non-native species, and modern development have all played a role in altering the present landscape as well as the associated floral communities. The existing flora of the entire project area consists primarily of introduced species within agricultural fields. Native vegetation is located in narrow bands along the edges of the fields and roadways.

Fauna

As with extant flora within the project areas, the types and distributions of faunal species have also been altered over time due to human interaction. While the following list is not exhaustive of the fauna present in the project area, it represents the species most likely to have been encountered within a historic or prehistoric context. In the past, people would have commonly encountered bison (*Bison bison*), elk (*Cervus elaphus*), pronghorn (*Antilocapra americana*), and moose (*Alces alces*), as well as white tail deer (*Odocoileus* sp.). In addition, wolves (*Canis lupus*), coyotes (*Canis latrans*), jack rabbits (*Lepus* sp.), badgers (*Taxidea taxus*), weasels (*Mustela* sp., *Martes* sp.), beavers (*Castor canadensis*), ground squirrels (*Spermophilus* sp.) and prairie dogs (*Cynomys ludovicianus*) would have been present, as well as raptors, songbirds, and gamebirds.

The intermittent drainages and other more substantial watercourses in the general area would have contained various species of fish, including northern pike (*Esox lucius*), perch (*Perca flavescens*), and suckers (*Catostomus*), as well as different types of waterfowl (ducks, geese, etc.), amphibians, and reptiles (SHSND 2008). These waterways would also have served as major sources of water for the area, concentrating the faunal resources and creating opportunistic hunting areas.

RESEARCH GOALS/EVALUATION OF RESEARCH

Following the mandated policies implementing the National Historic Preservation Act (NHPA [Public Law 89-665]), as amended, this proposed project was inventoried to locate any historic properties within the area of potential effect (APE). The APE consists of three blocks for proposed or potential pumping station locations, and encompasses a total of 34.6 acres.

An additional goal of the inventory was to allow Enbridge to plan the proposed undertaking to avoid any historic properties and if not possible, to test, evaluate, and if necessary, mitigate historic properties within the proposed project area prior to construction. No previously documented cultural resources were identified, however one newly recorded cultural resource was encountered within the block for the Lignite pumping station. The methods used during the inventory to identify previously undocumented cultural resources greatly reduce the possibility of an inadvertent discovery of additional cultural resources.

LITERATURE REVIEW

On May 11, 2010, and October 6, 2010, KL&J archaeologists conducted a Class I Literature Review of the site records and manuscript files of the SHSND for the APE. A total of 24 cultural resources have been previously recorded within a one mile radius of the project area. Of these previously recorded cultural resources, most are located in and around the town of Lignite. Cultural resources consists of one historical isolated find, one historical site, five architectural sites, and 17 architectural site leads. The nearest previously recorded cultural resource is located over 2,000 feet to the west of Pumping Station 2. No precontact sites have been recorded in the reviewed sections.

In addition to the previously recorded cultural resources, the literature review revealed that seven previous inventories were conducted within a one-mile radius of the project area. A summary of the literature review is provide in Appendix B.

FIELD METHODS/CONDITIONS

A Class III Intensive Cultural Resources Inventory is an intensive, systematic, detailed field inspection done by, or under the direction/supervision of professional architectural historians, historians, archaeologists, and/or other appropriate specialists. The goal of this inventory effort is to make systematic efforts to identify all historic properties within the Area APE that might qualify for the National Register of Historic Places (NRHP) and/or the North Dakota State Historic Sites Registry and to record information sufficient to enable their evaluation or to indicate what further work is necessary to accomplish their evaluation (SHSND 2006:15).

KL&J conducted a Class III Intensive Cultural Resource Inventory for the proposed undertaking. Transects were spaced no more than 15 m apart to cover the blocks of the three survey areas. Visibility within the survey locations averaged 80%.

RESULTS

One newly recorded cultural resource was encountered during the inventory. This cultural resource is discussed below.

Site 32BK89

Site 32BK89 is a sparse historic material scatter located in an agricultural field to the east of the town of Lignite (Figures 4, 5, and 6). Observed cultural material consists of approximately 45 fragments clear glass, brown glass, and amethyst glass, 12 fragments of brown and cream colored crockery, and a few pieces of rusting iron. The cultural materials are dispersed over a wide area.

The site retains little physical integrity but does retain spatial integrity. There are no standing structures or buildings. It is recommended that the site is *not eligible* for inclusion in the National Register of Historic Placers because it cannot be linked with any historically significant person(s) or event(s) (Criterion A and B), there is no architecture present (Criterion C), and the location has a low potential to contain intact buried cultural deposits or to yield important information regarding the history or the prehistory of the area (Criterion D). As such, no further work or avoidance is necessary for this site.

PHOTOGRAPH REMOVED TO PROTECT SENSITIVE INFORMATION

Figure 4: Overview of site 32BK89, view to the east.

**MAP/PHOTO/FIGURE REMOVED TO PROTECT
SENSITIVE GEOGRAPHIC INFORMATION**

SUMMARY AND MANAGEMENT RECOMMENDATIONS

Kadrmass, Lee & Jackson completed a Class III Intensive Pedestrian Inventory for the Kenaston and Lignite pumping stations and a block area for a potential pumping station location. The Inventory was completed at the behest of Merjent, on behalf of Enbridge. Three areas totaling 34.6 acres were inventoried to Class III standards.

During the course of the inventory, no previously documented cultural resource sites were encountered, and one new cultural resource was identified. The newly recorded site, 32BK89, is a sparse scatter of historic debris. The site is recommended *not eligible* for inclusion in the National Register of Historic Places, with no further work required. Kadrmass, Lee & Jackson recommends a finding of *No Historic Properties Affected* for the project.

REFERENCE CITED

State Historical Society of North Dakota (SHSND)

2006 *NDSHPO Manual for Cultural Resource Investigations Revised Edition*. Produced by and available from the State Historical Society of North Dakota, Bismarck.

2008 *The North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component*. Produced by and available from the State Historical Society of North Dakota, Bismarck.

Klinner, D., and J. L. Harty

2010 *Bakken Expansion Pipeline: A Class III Cultural Resource Inventory, Burke County, North Dakota*. Document on file at the State Historical Society of North Dakota, Bismarck.

APPENDIX A: PROJECT AREA PHOTOGRAPHS



Figure 7: Overview of the Kenaston pumping station block, view to the north.



Figure 8: Overview of Kenaston pumping station block, view to the northwest.

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Figure 10: Overview of Lignite pumping station block, view to the south.



Figure 11: Overview of the Pumping Station 2 block, view to the north.

APPENDIX B: LITERATURE AND FILE SEARCH RESULTS

Table 2. Previously Recorded Cultural Resources.

Township/ Range-Section	Site #	Type/Description	Recorder/Date	MS #
		No Cultural Resources Recorded		136
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
	X0448	Historical – Isolated Find	Schneider, F.	
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		258
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		5728, 5885
		No Cultural Resources Recorded		5728, 5885
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		5728, 5885, 10415
		No Cultural Resources Recorded		5728, 8094
		No Cultural Resources Recorded		
	32BK50	Architectural	Ford-Dunker	5728
	32BK51	Architectural	Bentley	
	32BK52	Architectural	Bentley	
	32BK51	Architectural	Bentley	
	32BKx359	Architectural – Site Lead	Mertz, B.	
	32BKx360	Architectural – Site Lead	Mertz, B.	
	32BKX394	Architectural – Site Lead	Mertz, B.	
	32BKx447	Architectural – Site Lead	Mertz, B.	
	32BKx456	Architectural – Site Lead	Mertz, B.	
	32BKx457	Architectural – Site Lead	Mertz, B.	
	32BKx458	Architectural – Site Lead	Mertz, B.	
	32BKx459	Architectural – Site Lead	Mertz, B.	
	32BKx566	Architectural – Site Lead	Mertz, B.	
	32BKx594	Architectural – Site Lead	Mertz, B.	
	32BKx597	Architectural – Site Lead	Mertz, B.	
	32BKx931	Architectural – Site Lead	Mertz, B.	
	32BL24	Architectural	Borchert, J. et al.	
		No Cultural Resources Recorded	Mertz, B.	6470
	32BK30	Historic	Olson, B	6470
	32BKx253	Architectural – Site Lead	Mertz, B.	
	32BKx960	Architectural – Site Lead	Mertz, B.	
		No Cultural Resources Recorded		
		No Cultural Resources Recorded		6470
	32BKX979	Architectural – Site Lead	Mertz, B.	8094
	32BKx980	Architectural – Site Lead	Mertz, B.	
	32BKX979	Architectural – Site Lead	Mertz, B.	

Table 3. Manuscript List.	
MS#	Reference
136	Schneider, F., and F. Holland 1977 <i>Preliminary Field Reconnaissance and Literature Search of Cultural Resources in the Burlington Dam Project; Preliminary Cultural Resource Investigation of the Upper Souris River Basin, North Dakota.</i>
258	Franke, N. 1976 <i>Basin Electric Power Cooperative Transmission Line Right of Way Negative Declaration Survey Report, McLean Co., Ward Co., and Mountrail Co., ND.</i>
5728	Foster, J., G. Wermers, G., and J. Borchert 1992 <i>Burke County Road Improvement Class III Cultural Resource Inventory Final Report (Project #DPI-0182(001)0701).</i>
5885	Wermers, G. 1992 <i>Williston Basin 8" Portal-Lignite Pipeline Class III Cultural Resource Inventory Burke County, ND.</i>
6470	Olson, B. 1995 <i>Portal Pipeline Cultural Resources Inventory Burke County, ND.</i>
8094	Borchert, J. 2002 <i>Highway 5, E Jct. 40 East to W Jct. 52, Highway 89, Lignite Spur, Class II Inventory Report.</i>
10415	Payette, P., P. Pflapsen, P., and P. Hendrix 2008 <i>Phase I Cultural Resource Investigation of Proposed ND-01-Lignite (44026) Telecommunications Tower Project Area, Lignite, Burke County, ND.</i>

Exhibit BP-5

**ENBRIDGE PIPELINES (NORTH DAKOTA) LLC
BAKKEN PIPELINE PROJECT US
NORTH DAKOTA PSC CASE NO. PU-10-612**

SHPO concurrence correspondences

**SHPO CONCURRENCE RESPONSES RE:
BAKKEN PIPELINE PROJECT US**

(re: Report of Investigation 1256)

January 11, 2011

January 27, 2011



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January 11, 2011

Ms. Jennifer Harty
Principal Investigator
KLJ
128 Soo Line Drive
PO Box 1157
Bismarck ND 58502-1157

ND SHPO REF: 10-1847A PSC Enbridge *Revised Report for the Bakken Expansion Pipeline, Documenting the Survey of Re-Routes and Extra Workspace Areas: A Class III Cultural Resource Inventory, Burke County, North Dakota*

Dear Ms. Harty,

We reviewed ND SHPO REF: 10-1847A PSC Enbridge *Revised Report for the Bakken Expansion Pipeline, Documenting the Survey of Re-Routes and Extra Workspace Areas: A Class III Cultural Resource Inventory, Burke County, North Dakota*. We concur with a "No Historic Properties Affected" and "No Significant Sites Affected" determinations, provided site 32BK0090 is avoided by keeping ground disturbance at least 250 feet away from the railroad bed in Burke County.

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Thank you for the opportunity to review this project. If you have any questions please contact Susan Quinnell, Review and Compliance Coordinator at (701) 328-3576, e-mail squinnell@nd.gov

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)
and
Director
State Historical Society of North Dakota



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January 27, 2011

Ms. Jennifer Harty
Principal Investigator
Kadrmas Lee & Jackson
128 Soo Line Drive
PO Box 1157
Bismarck ND 58502-1157

**ND SHPO REF: 10-1847A PSC Bakken Pipeline Project US: A Class III Cultural
Resource Inventory, Burke County, North Dakota.**

Dear Ms. Harty,

Thank you for the re-write of "Bakken Pipeline Project US: A Class III Cultural Resource Inventory, Burke County, North Dakota." We find the revised report acceptable. We concur with the recommended "No Historic Properties Affected" determination for historic archaeology site 32BK0090. However this is based only in part on the KLJ report and site form. Much additional material supporting a "No Historic Properties Affected" recommendation is easily available in the SHSND Archives and this source should always be investigated for complex historic archaeological sites such as town sites. Materials found in the Burke County history *Pioneers and Progress Volumes I & II* by the Burke County and White Earth Valley Historical Societies support the brief existence of the town site but refute the supposition that flooding was involved. Finally please note the correct NRHP Criteria A, B, C and D as listed in the National Register Bulletin "How to Apply the National Register Criteria for Evaluation" at: <http://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf>. They are incorrectly listed on page 17.

Thank you for the opportunity to review this report. If you have any questions please contact Susan Quinnell, Review and Compliance Coordinator at (701) 328-3576, e-mail squinnell@nd.gov

Sincerely,


Merlan E. Paaverud, Jr.

State Historic Preservation Officer (North Dakota)
And Director State Historical Society of North Dakota

**SHPO CONCURRENCE RESPONSE RE:
LIGNITE AND KENASTON PUMPING STATIONS**

(re: Report of Investigation 1265)

January 24, 2011



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January 24, 2011

Ms. Jennifer L. Harty
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NDSHPO REF.: 11-0548 PSC/Enbridge Pipeline (North Dakota), LLC Kenaston and Lignite Pumping stations in portions of [T159N R88W Section 7] Ward County and [T162N R91W Section 7; T163M R92W Section 34] Burke County, North Dakota

Dear Ms. Harty,

We reviewed NDSHPO REF.: 11-0548 PSC/Enbridge Pipeline (North Dakota), LLC Kenaston and Lignite Pumping stations in portions of [T159N R88W Section 7] Ward County and [T162N R91W Section 7; T163M R92W Section 34] Burke County, North Dakota. We concur with "No Historic Properties Affected" and "No Significant Sites Affected" determinations provided the project area is as located and described in your report and with further stipulations. These are that ground disturbance be limited to north

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the North Dakota SHPO recommends and strongly encourages (pursuant to NDCC 23-06-27 and NDAC 40-02-03 burial disturbance)

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If you have questions please contact either Paul Picha at ppicha@nd.gov or (701) 328-3574 or Susan Quinnell at squinnell@nd.gov or (701) 328-3576.

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota) and
Director, State Historical Society of North Dakota

c: Patrick Fahn, North Dakota Public Service Commission

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