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November 20, 2009

Mr. Stephen Sabatke
Cultural Resources Specialist/Archaeologist
HDR Engineering
701 Xenia Avenue South Suite 600
Minneapolis, MN 55416-3636

**NDSHPO REF. : 09-0923a PSC Hawthorn Oil Pipeline
Class III CRI Report and Concurrence on Determination of Effect**

Dear Mr. Sabatke:

We have reviewed letter correspondence and project documentation for: **09-0923a PSC Hawthorn Oil Pipeline "Hawthorne Oil Pipeline Project: Class I Literature Search and Class III Archaeological and Historic Facilities Resource Inventory for a Proposed Pipeline in Mountrail County, North Dakota,"** by Stephen Sabatke and Melissa Lundberg (HDR Engineering, August 2009, and find it acceptable.

We concur with "**No Historic Properties Affected**" and "**No Significant Sites Affected**" determinations provided the project is of the nature stated and it takes place in the location mapped and plotted in the report and supporting PSC documentation.

Thank you for the opportunity to review the project. If you have questions please contact either Susan Quinnell at (701) 328-3576 or Paul Picha at (701) 328-3574.

Sincerely,

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

27 PU-09-153 Filed: 11/30/2009 Pages: 28
Exhibit 5 - Letter from State Historical Society with Report Submitted to SHPO by Contractor

Hawthorn Oil Transportation (North Dakota), Inc.

c: Patrick Fahn, North Dakota Public Service Commission

Manuscript Number:

SHPO Reference #: NDSHPO: 09-0923 PSC/Hawthorn Oil Transportation

Author:

**Stephen Sabatke MA
&
Melissa Lundberg**

**Hawthorn Oil Pipeline Project: Class I Literature Search and Class III Archaeological and Historic
Facilities Resource Inventory for a Proposed Pipeline in Mountrail County, North Dakota**

August 2009

27 pages

Class I Literature Search and Class III Intensive Cultural Resource Inventory

<u>County</u>	<u>TWP</u>	<u>R</u>	<u>SEC</u>
Mountrail	156N	91W	10, 11, 13-15, 21-28, 34-36

The Class I Literature Search report was completed in the beginning of June 2009. The literature search was structured to 1) summarize the previously identified archaeological resources within the project area, 2) describe the previously completed surveys within the project area, 3) document the regulatory environment at the time of the reports completion, and 4) provide recommendations for future archaeological survey in the area. The results of the Class I Literature Search led to the decision to prepare a Class III Intensive Cultural Resource Inventory for the project area.

The results of the Class I Literature Search were used to develop the Class III Intensive Cultural Resource Inventory report for the project area. The fieldwork for the Class III intensive survey was completed in the beginning of August 2009. A report summarizing the results of the Class III intensive survey was prepared to 1) document the regulatory environment at the time of its completion, 2) document the methodology followed (which was based on the results of the Class I literature search), 3) convey the results of the survey fieldwork, and 4) document the conclusions that can be made on archaeological resources in the project area based on the results of the Class III intensive survey.

To:	Greg Jacobsen		
From:	Stephen Sabatke	Project:	Pecan Pipeline Hawthorn Oil Pipeline
cc:			
Date:	June 08 09		

Re: Hawthorn Oil Pipeline Class I Cultural Resource Literature Review

This memorandum documents the cultural resources data collection (Class I Literature Search) for the proposed Hawthorn Oil Pipeline Project in Mountrail County, North Dakota. In May of 2009 HDR began assisting Hawthorn Oil Transportation (North Dakota), Inc.. (Hawthorn) in preparing the application for a Consolidated Certificate of Corridor and Route Permit, planning and creating maps for the proposed project boundary. It is anticipated this Project is subject to regulations associated with the North Dakota Century Code 49-22. This notice is provided to the parties identified by North Dakota Administrative Code 69-06-01-05 and other parties that have been identified by the PSC staff. Additionally, HDR reviewed information on file at the State Historic Preservation Office (SHPO) located in Bismarck, North Dakota, to identify previously recorded cultural properties in the study area and to consider those properties during project planning. Cultural resource data, housed at the SHPO, consisted of cultural resource site files, cultural resource site leads, and previous professional cultural resource surveys and reports. HDR also reviewed 19th Century Public Land Survey (PLS) maps to identify potential historic-period cultural features in the project area, which is a part of the Southern Missouri River drainage basin.

SHPO Correspondence

In May 2009 Hawthorn contacted the North Dakota SHPO (ND SHPO) to request a review of potential project-related impacts on known or suspected cultural resources within the proposed wind farm project area. The ND SHPO responded with a letter (SHPO: NDSHPO REF.: 09-0923 PSC/HDR) in May 2009 recommending that Hawthorn sponsor an archival records search consisting of the project boundary plus a half mile buffer area around the project boundary to determine the nature of previous cultural resource investigations and the location of known cultural resources in the proposed project vicinity. The ND SHPO also stated that there is a potential for unrecorded cultural properties to exist in the project area. Therefore, the ND SHPO suggested that a field survey, primarily pedestrian, take place in the proposed project area.

Tribal Correspondence

During conversations between HDR, on behalf of Hawthorn, and SHPO on May 12th and June 1st, SHPO confirmed that tribal consultations would not be needed since the project lacks the federal component that would require compliance with Section 106 of the National Historic Preservation Act and its implementing regulations. However, SHPO recommends that Hawthorn submit a notification in good faith to the Indian Affairs Commission in Bismarck, North Dakota, as part of other federal, state, and local project notifications.

Cultural Resource Reports and Sites

HDR reviewed existing cultural resources documentation for specific sections in the following township for the study area (Table 1).

Table 1. Study Area

County	Township	Range	Sections
Mountrail	156N	91W	10, 11, 13-15, 21-28, 34-36

The archival report inventory documented 7 previous cultural resource investigations within half a mile of the project boundary. These reports illustrate a wide variety of investigations in the study area, including those conducted in support road reconstruction and rail yard areas.

Table 2. Previous Cultural Resource Investigations in the Study Area

Manuscript Number	Manuscript Title	Author(s)/Associations	Report Date
10774	<i>A Cultural Resource Inventory of the Proposed EOG Multiple Use Rail Yard Facility in Mountrail County, North Dakota</i>	SWCA Environmental Consultants	December 2008
10324	<i>Stanley, North Dakota: A Historic District Evaluation of Buildings Along Portions of Main Street and 6th Avenue</i>	Blain Fandrick/Ethnoscience, Inc.	January 2008
10359	<i>Class III Cultural Resources Inventory of the Stanley Pipeline and Gas Plant Mountrail County, North Dakota</i>	Joel J. Tyberg/TEC Inc.	December 2007
10647	<i>Enbridge Stanley Station: A Class III Cultural Resource Inventory in Mountrail County, North Dakota</i>	Ed Stine/Metcalf Archaeological Consultants, Inc.	September 2008
7525	<i>Skarsgaard Gravel Pit: A Class III Cultural Resource Inventory, Mountrail County, North Dakota</i>	Robert M. Ross, Jr./Metcalf Archaeological Consultants, Inc.	December 1999
5986	<i>Environmental Assessment Stanley Water Supply System Cooperative Agreement No. 6-FC-60-00210 Garrison Diversion Unit MR&I Program</i>	Kadmas Lee & Jackson PC Consulting Engineers and Surveyors	N/A
6486	<i>Fisher's Stanley Gravel Pit: A Class III Cultural Resource Inventory in Mountrail County, North Dakota</i>	Ed Stine/Metcalf Archaeological Consultants, Inc.	May 1995

Investigations in the study area documented 31 cultural resources. 24 cultural resources sites and 7 cultural resource site leads have been identified within the project corridor (Table 3). Of the 24 cultural resource sites, all are not evaluated. The cultural resource sites consist of structures, rock cairns, stone circles, and cultural material scatter. Of the 7 cultural resource site leads, all are unevaluated and consist of cultural material scatters.

Table 3. Previously Identified Cultural Resources located in the Study Area

Site Number	Site Type	Comments	Location			Eligibility to NRHP
			Township	Range	Section	
32MN755	Jay T and Myrtle Smith Property	None	156	91	28	Not Evaluated
32MN752	Aleda Rice House	None	156	91	28	Not Evaluated
32MN751	Malene Sondersen Duplex	None	156	91	28	Not Evaluated
32MN750	Fred Alger House	None	156	91	28	Not Evaluated
32MN702	Nelson Farmstead	None	156	91	28	Not Evaluated
32MN633	Flickertail Village	None	156	91	28	Not Evaluated
32MN768	Stone Circle	None	156	91	27	Not Evaluated
32MN769	Rock Cairns	None	156	91	27	Not Evaluated
32MN770	Stone Circle	None	156	91	27	Not Evaluated
32MN771	Rock Cairn	None	156	91	27	Not Evaluated
32MN772	Stone Circles	None	156	91	27	Not Evaluated
32MN460	Stone Circles	None	156	91	27	Not Evaluated
32MN461	Stone Circles/Pit	None	156	91	27	Not Evaluated
32MN574	N/A	None	156	91	23	Not Evaluated
32MN573	N/A	None	156	91	23	Not Evaluated
32MN766	N/A	None	156	91	27	Not Evaluated
32MN632	Stanley Grandstand	None	156	91	28	Not Evaluated
32MN686	St. Margarets Catholic	None	156	91	28	Not Evaluated
32MN685	Our Saviors Free Lutheran	None	156	91	28	Not Evaluated
32MN684	Maranatha Assembly of God	None	156	91	28	Not Evaluated
32MN765	Stone Circle	None	156	91	27	Not Evaluated
32MN767	Stone Circle	None	156	91	27	Not Evaluated
32MN774	Cultural Material Scatter	None	156	91	27	Not Evaluated
32MN773	Rock Cairn	None	156	91	27	Not Evaluated
32MNX0321	Cultural Material	Site Lead	156	91	14	Not Evaluated

Site Number	Site Type	Comments	Location			Eligibility to NRHP
			Township	Range	Section	
	Scatter					
32MNX0324	Cultural Material Scatter	Site Lead	156	91	34	Not Evaluated
32MNX0317	Cultural Material Scatter	Site Lead	156	91	10	Not Evaluated
32MNX0318	Cultural Material Scatter	Site Lead	156	91	11	Not Evaluated
32MNX823	N/A	Site Lead	156	91	28	Not Evaluated
32MNX818	Lyle Aho	Site Lead	156	91	28	Not Evaluated
32MNX839	Isolated Find	Site Lead	156	91	26	Not Evaluated

The following paragraphs, organized by report number, describe the nature of these investigations and identified cultural resources. All sites with an alpha-numeric site number (00ABX0000) are considered unevaluated by the SHPO and usually recommended for no further work. Alpha-numeric sites are identified by two characteristics. One states that a property solely reported by a landowner or other non-professional as containing cultural resources is not sufficient for a positive identification of cultural resource. The second defining characteristic is a location where four or fewer artifacts are identified. In addition, those alpha-numeric sites with little possibility for further buried artifacts in the immediate vicinity, are referred to as "Isolated Finds". However, alpha-numeric sites can also be those sites identified as having four or fewer artifacts and thought to have potential for buried artifacts in the immediate vicinity, warranting additional investigation.

#10774 A Cultural Resource Inventory of the Proposed EOG Multiple Use Rail Yard Facility in Mountrail County, North Dakota.

Ferris (2008) conducted a Class III cultural resource inventory for the construction of a multiple use rail yard facility in Mountrail County. Seven previously recorded sites and one previously recorded isolated find were located in the area surrounding the project location.

#10324 Stanley, North Dakota: A Historic District Evaluation of Buildings Along Portions of Main Street and 6th Avenue.

Fandrick (2008) conducted a Class III cultural resource inventory for the North Dakota Department of Transportation to conduct a historic district analysis of portions of Stanley.

#10359 Class III Cultural Resources Inventory of the Stanley Pipeline and Gas Plant Mountrail County, North Dakota.

Tyberg (2007) conducted a Class III cultural resource inventory for a proposed pipeline and gas plant in Mountrail County. Six historic period sites, five prehistoric sites, one multi-component site, and one prehistoric isolated find were recorded, none of which had been previously recorded or reported. All sites are recommended as not eligible for listing on the NRHP.

#10647 Enbridge Stanley Station: A Class III Cultural Resource Inventory in Mountrail County, North Dakota.

Stine (2008) conducted a Class III cultural resource inventory for the expansion of the Stanley Station as part of an oil pipeline upgrade. Two previously recorded archaeological sites were noted.

#7525 Slarsgaard Gravel Pit: A Class III Cultural Resource Inventory, Mountrail County, North Dakota.

Ross (1999) conducted a Class III cultural resource inventory of a gravel pit in Mountrail County. No cultural resources were recorded.

#5986 Environmental Assessment Stanley Water Supply System Cooperative Agreement No. 6-FC-60-00210 Garrison Diversion Unit MR&I Program.

Kadmas Lee & Jackson PC Consulting Engineers and Surveyors evaluated three alternative solutions to providing the city of Stanley, North Dakota and surrounding rural area with an acceptable quantity and quality water supply.

#6486 Fisher's Stanley Gravel Pit: A Class III Cultural Resource Inventory in Mountrail County, North Dakota.

Stine (1995) conducted a Class III cultural resource inventory for a proposed gravel pit in Mountrail County. No cultural resources were observed.

#261 Projects No. F-7-002054 and F-4-002089 Ray to Berthold.

Franke (1976) conducted a survey for the right-of-way of the projects. The survey found no historic, archaeological, or architectural sites during the survey.

#8670 Cultural Resources Investigations Along U.S. Highway 2 in Ward, Mountrail, and Williams Counties, North Dakota Volume I of II.

Bradley (2001) conducted a Class III cultural resource survey for the 99.31 mile North Dakota Department of Transportation highway improvement project spanning from Minor and Williston. One hundred and twenty-three (123) archaeological sites were identified during the inventory, and 53 of the sites were newly identified.

Public Land Survey Map Review

HDR reviewed Public Land Survey (PLS) maps for the study area (Table 4). The maps illustrate environmental conditions, including elevation variation across the landscape and watercourses, during the 1870s. None of the maps show cultural features or locations of historic land use.

Table 4. Public Land Survey Data by Township and Range

Township	Range	Public Land Survey Publish Date	Cultural Feature/Locations
156N	91W	1893	*Great Northern Railway through sections 30, 20-24

*This railway is still in existence as a working railroad and pipeline construction is believed to be boring underneath it.

Implications for Archaeological Resources

After reviewing the information in the SHPO database of recorded cultural resources and previous survey reports, communication with SHPO, nineteenth-century Public Land Survey maps (PLS), and after visual inspection of the project area, HDR believes that the project area has potential to yield additional unrecorded cultural resources. Examination of the cultural resource information represented in a Geographical Information System (GIS) format has shown that a moderate to dense number of cultural properties exist near or within the project area. The previous intuitive model for this region developed by cultural resource professionals over the years suggests that cultural resource sites will be located near permanent water sources, on high or prominent landforms, and in areas with significant land use. However, in this area cultural resource locations are scattered and survey data is scarce, hence, patterning for cultural resource sites can not be predicted accurately.

Proposed Class III Survey

Cultural resource survey proposed by HDR will focus on construction locations that have not received previous survey. A previous survey report, "Kvamme Pipeline: A Class III Cultural Resource Inventory, Mountrail County, North Dakota" dated August 2008 prepared by Earthworks, Inc., establishes that a 100% pedestrian survey has already occurred with the 150 foot right-of-way in Sections 23, 24, 25, and 26 of Township 156 N and Range 91W. In addition, a previous survey report, "A Cultural Resource Inventory of the Proposed EOG Multiple Use Rail Yard Facility in Mountrail Co., ND" dated December 2008 prepared by SWCA Environmental Consultants, establishes that survey has occurred in Section 14 Township 156 N and Range 91W of the project area. HDR recommends no further survey in these locations. Once the construction footprint for the project is solidified the potential for the project to impact cultural resources can be examined and evaluated. Hawthorn in consultation with HDR will try to identify potential NRHP eligible cultural resources to the extent practical.

HDR proposes that locations identified as needing survey will be examined using the following techniques. The entire survey route will be examined for historic architecture properties. The properties will be identified using maps and via visual inspection. Archaeological survey will use primarily pedestrian survey to investigate identified areas when ground visibility is 25% or greater. Shovel testing will be used to investigate identified areas when ground visibility is 25% or less. Soils removed in this way will be screened through ¼-inch hardware mesh. A hand-held global positioning system (GPS) unit will be used to locate the project area. The GPS unit will also be used to mark locations of interest, cultural resource sites, shovel test areas, and pedestrian survey areas. A digital camera will be used to document areas along the survey route to show the projects existing environment. In addition, any location identified as having a cultural resource site will be photographed to show the existing environment. Notes will be taken to document the survey of the project area.

Conclusions

HDR recommends a Class III intensive cultural resource inventory be conducted in locations not previously surveyed for cultural resources and within the construction footprint of the project. In addition, HDR recommends that site (32MN771) be relocated because of its proximity to the proposed construction route. The site should be visibly identified with flagging for easy identification and avoidance by construction crews and be given a 20 meter or 50 foot buffer zone in order to minimize accidental construction impacts. These investigations must be conducted by a professional archaeologist permitted by the State of North Dakota per NDCC 55-03-01. In addition, the existing Great Northern Railway that runs through sections 30 and 20-24 of the project area is probably a significant historic property. HDR recommends that Hawthorn bore underneath the rail line to avoid any disturbance of this resource. The nature of the cultural resource inventory would depend on surface exposure and the characteristics of the landform for development. For the survey, HDR archaeologist in coordination with SHPO will discuss the proposed survey methodology documented above before implementation, document the areas proposed for ground disturbance, identify existing archaeological resources within those areas, and offer recommendations for archaeological avoidance and impact minimization.

References

Alvord, Frank W.

June 1893. Government Land Office (GLO) Public Land Survey Maps (PLS). North Dakota State Water Commission.

<http://www.swc.state.nd.us/4dlink9/4dcgi/GetSubCategoryRecord/Map%20and%20Data%20Resources/Government%20Surveys>

Ferris, Kade.

December 2008. *A Cultural Resource Inventory of the Proposed EOG Multiple Use Rail Yard Facility in Mountrail County, North Dakota.* SWCA Environmental Consultants.

Morrison, John.

August 2008. *Kvamme Pipeline: A Class III Cultural Resource Inventory, Mountrail County, North Dakota.* Eathworks, Inc.

The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component. January 1990. Archeology and Historic Preservation Division, State Historical Society of North Dakota, North Dakota Heritage Center.

**Hawthorn Oil Pipeline Project
Class III Archaeological and Historic Facilities
Resource Inventory for a Proposed Pipeline in
Mountrail County, North Dakota**

Hawthorn Oil Transportation (North Dakota), Inc.

August 2009



By

Stephen Sabatke MA

Melissa Lundberg

Principal Investigator:

Stephen Sabatke MA

SHPO Ref #: 09-0923

Abstract

This report documents the Class III Archaeological and Historic Facility Resources Inventory for the proposed Hawthorn Oil Pipeline Project in Mountrail County, North Dakota. In the summer of 2009 Hawthorn Oil Transportation (North Dakota), Inc.(Hawthorn) contracted with HDR Engineering Inc.(HDR) to prepare a Public Service Commission (PSC) application for a Consolidated Certificate of Corridor and Route Permit for the proposed project area. In accordance with North Dakota Century Code 49-22 regulations and PSC application instructions, HDR completed a Class I Literature Search and a Class III Archaeological and Historic Facility Resource Inventory for the proposed project area. HDR did not find any additional archaeological or historic facility sites as a result of the Class III Archaeological and Historic Facility Resource Inventory for the portions of the project area surveyed by HDR. If the project is later determined to be a federal undertaking, HDR recommends that the project constitutes a determination of “*No Historic Properties Affected*” and “*No Significant Sites Affected.*” The project should proceed as planned and documented.

Table of Contents

Abstract..... i
Introduction..... 1
Literature Search..... 2
 Recorded Archaeological Sites and Historic Properties 2
 Previous Cultural Resources Investigations 4
 Public Land Survey Map Review 5
 Environment..... 5
 Cultural Context..... 6
Research Objectives/Methodology 9
Statement of Impact/Work Summary 10
Recommendations..... 12
References..... 13

List of Tables

Table 1. Data Gathering Area 2
Table 2. Previously Identified Cultural Resources located in the Study Area..... 3
Table 3. Previous Cultural Resource Investigations in the Study Area..... 4
Table 4. Public Land Survey Data by Township and Range 5

Introduction

In July 2009, Hawthorn contracted HDR Engineering Inc. (HDR) to complete a Class III Archaeological and Historic Facility Resources Inventory for the Hawthorn Oil Pipeline Project in Mountrail County, North Dakota. The pipeline is approximately 6 miles long and in some locations runs parallel to existing pipelines. The map attached to this report documents the archaeological sites, historic facility sites, and survey locations in the project area.

Archaeological and historic facility investigations were in compliance with state and federal guidelines, such as the North Dakota Century Code 49-22 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. On July 21st HDR conducted field investigations in the project area. HDR Archaeologist Stephen Sabatke acted as Principal Investigator, and was assisted by environmental scientist Aaron Diehl. Figures 1 and 2 illustrate the environment in the project area.



Figure 1: Overview photo of the project area looking north.



Figure 2: Overview photo of the project area looking west.

Literature Search

In March of 2009 Mr. Sabatke reviewed information on file at the SHPO located in Bismarck, North Dakota, to review cultural properties in the data gathering area. Cultural resource data, housed at the SHPO, consisted of cultural resource site files, cultural resource site leads, and previous professional cultural resource surveys and reports. In addition, HDR reviewed 19th Century Public Land Survey (PLS) maps to identify potential historic-period facilities in the project area.

HDR reviewed existing cultural resources documentation for specific sections in the following townships for the data gathering area (Table 1). All these sections are located in Mountrail County North Dakota.

Table 1. Data Gathering Area

County	Township	Range	Section
Mountrail	156N	91W	10,11,13-15, 21-28, 34-36

Recorded Archaeological Sites and Historic Properties

Review of the data gathering area documented 31 archaeological and or historic facility sites and site leads. None of these archaeological and or historic facility sites and site leads are located within the project area. Table 2 documents the archaeological and historic facility sites and site leads are within the data gathering area. None of the 24 archaeological and or historic facility sites have been evaluated. The resource sites consist of historic facilities, rock cairns,

stone circles, and prehistoric or historic material scatters. None of the 7 archaeological and or historic facility site leads have been evaluated. The site leads consist of prehistoric or historic material scatters.

Table 2. Previously Identified Cultural Resources located in the Study Area

Site Number	Site Type	Comments	Location			Eligibility to NRIIP
			Township	Range	Section	
32MN755	Jay T and Myrtle Smith Property	None	156	91	28	Not Evaluated
32MN752	Aleda Rice House	None	156	91	28	Not Evaluated
32MN751	Malene Sondersen Duplex	None	156	91	28	Not Evaluated
32MN750	Fred Alger House	None	156	91	28	Not Evaluated
32MN702	Nelson Farmstead	None	156	91	28	Not Evaluated
32MN633	Flickertail Village	None	156	91	28	Not Evaluated
32MN768	Stone Circle	None	156	91	27	Not Evaluated
32MN769	Rock Cairns	None	156	91	27	Not Evaluated
32MN770	Stone Circle	None	156	91	27	Not Evaluated
32MN771	Rock Cairn	None	156	91	27	Not Evaluated
32MN772	Stone Circles	None	156	91	27	Not Evaluated
32MN460	Stone Circles	None	156	91	27	Not Evaluated
32MN461	Stone Circles/Pit	None	156	91	27	Not Evaluated
32MN574	N/A	None	156	91	23	Not Evaluated
32MN573	N/A	None	156	91	23	Not Evaluated
32MN766	N/A	None	156	91	27	Not Evaluated
32MN632	Stanley Grandstand	None	156	91	28	Not Evaluated
32MN686	St. Margarets Catholic	None	156	91	28	Not Evaluated
32MN685	Our Saviors Free Lutheran	None	156	91	28	Not Evaluated
32MN684	Maranatha Assembly of God	None	156	91	28	Not Evaluated
32MN765	Stone Circle	None	156	91	27	Not Evaluated
32MN767	Stone Circle	None	156	91	27	Not Evaluated
32MN774	Cultural Material Scatter	None	156	91	27	Not Evaluated
32MN773	Rock Cairn	None	156	91	27	Not Evaluated

Site Number	Site Type	Comments	Location			Eligibility to NRHP
			Township	Range	Section	
32MNX321	Cultural Material Scatter	Site Lead	156	91	14	Not Evaluated
32MNX324	Cultural Material Scatter	Site Lead	156	91	34	Not Evaluated
32MNX317	Cultural Material Scatter	Site Lead	156	91	10	Not Evaluated
32MNX318	Cultural Material Scatter	Site Lead	156	91	11	Not Evaluated
32MNX823	N/A	Site Lead	156	91	28	Not Evaluated
32MNX818	Lyle Aho	Site Lead	156	91	28	Not Evaluated
32MNX839	Isolated Find	Site Lead	156	91	26	Not Evaluated

Previous Cultural Resources Investigations

The archival report inventory documented 7 previous investigations within a halfmile of the project area. These reports illustrate a wide variety of investigations in the data gathering area, including those conducted in support of road reconstruction and rail yard areas.

Table 3. Previous Cultural Resource Investigations in the Study Area

Manuscript Number	Manuscript Title	Author(s)/Associations	Report Date
10774	A Cultural Resource Inventory of the Proposed EOG Multiple Use Rail Yard Facility in Mountrail County, North Dakota	SWCA Environmental Consultants	December 2008
10324	Stanley, North Dakota: A Historic District Evaluation of Buildings Along Portions of Main Street and 6 th Avenue	Blain Fandrick/Ethnoscience, Inc.	January 2008
10359	Class III Cultural Resources Inventory of the Stanley Pipeline and Gas Plant Mountrail County, North Dakota	Joel J. Tyberg/TEC Inc.	December 2007
10647	Enbridge Stanley Station: A Class III Cultural Resource Inventory in Mountrail County, North Dakota	Ed Stine/Metcalf Archaeological Consultants, Inc.	September 2008
7525	Skarsgaard Gravel Pit: A Class III Cultural Resource Inventory, Mountrail County, North Dakota	Robert M. Ross, Jr./Metcalf Archaeological Consultants, Inc.	December 1999
5986	Environmental Assessment Stanley Water Supply System Cooperative Agreement No. 6-FC-60-00210 Garrison Diversion Unit MR&I Program	Kadmas Lee & Jackson PC Consulting Engineers and Surveyors	N/A
6486	Fisher's Stanley Gravel Pit: A Class III Cultural Resource Inventory in Mountrail County, North Dakota	Ed Stine/Metcalf Archaeological Consultants, Inc.	May 1995

Public Land Survey Map Review

HDR reviewed Public Land Survey (PLS) maps for the project area (Table 4). The maps illustrate environmental conditions, including elevation variation across the landscape and watercourses, during the 1890s. One historic facility site was identified during the literature search near the survey area. This historic facility is represented by a rail line. The rail line was labeled on an 1893 PLS map as the “Great Northern Railway”. The rail line is currently labeled the “Burlington Northern”.

Table 4. Public Land Survey Data by Township and Range

Township	Range	Public Land Survey Publish Date	Cultural Feature/Locations
156N	91W	1893	*Great Northern Railway through sections 30, 20-24

**This railway is still in existence as a working railroad.*

Environment

The project area is located in Mountrail County east of the town of Stanley. This area of North Dakota is referred to as the Garrison Study Unit (GSU), which encompasses the northwestern part of North Dakota. The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component (ND SHPO:1990) states that the land in this area of North Dakota has gently rolling hills dissected by numerous river and creeks which drain to the Missouri River (now referred to as Garrison Reservoir or Lake Sakakawea). Knob-and-kettle glaciated terrain with potholes and other glacial features are also commonly found in this area. Immediately following the last glacial expansion a large lake formed at the edge of the retreating glacier. This lake, known as Glacial Lake Agassiz, was present on the landscape for thousands of years.

The Garrison Study Unit

The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component (ND SHPO:1990) currently divides the state into 13 Study Units, or drainage basins which helps to better identify and understand the flora and fauna in the area. The Garrison Study Unit (unit 6) is located within the glaciated Missouri Plateau Subsection of the Missouri Plateau Section of the Great Plains Physiographic Province. The majority of the study area is made up of Missouri Coteau and Coteau Slope terrain. This area's vegetation is dominated by mixed grasses including blue grama grass, needle-and-thread grass, and western wheatgrass. Forests scattered along the Missouri River housed vegetation such as cottonwoods, box elder, elm, and willows. The wildlife included bison, white-tailed deer, bison, elk, pronghorns, grizzly bears, mountain lions, wolves, coyotes, foxes, otters, porcupines, prairie dogs, mink, cottontail rabbits, jackrabbits, golden and bald eagles, hawks, owls, grouse and a variety of waterfowl. Over half of the recorded sites in this area consist of stone circles and other rock features.

Cultural Context

The following section is not intended to be an exhaustive description of the project area's prehistoric environment. Rather it is intended to be a brief explanation of the project area that documents the significant themes of each time period. The general themes that will be touched on here are climate, fauna, flora, terrain, technology, and human occupation. No significant climate or terrain changes have occurred since the end of the Plains Woodland time period, so themes such as climate, fauna, flora, and terrain from that period to the present will not be discussed.

Paleo-Indian

Around 13,500 years ago, environmental shifts in climate had warmed enough to cause the Des Moines Sub-Lobe to begin to retreat. Environmental conditions around the project area at the time would have been tundra-like immediately adjacent to the glacier and gradually turning to forest farther away from the glacier. Eventually climate shifts would push the forest out and be replaced by prairie. Some of the floras identified from this period are poplar, willow, sage, grasses, chenopods, sedges, aspen, spruce, and pine (Kay:1998). Some of the faunas identified from this period are American mastodon, Columbian mammoth, long-nosed peccary, Harlan's ground sloth, horse, camel, giant bison, dire wolves, saber-toothed tigers, along with a variety of other species (Kay:1998).

The Paleo-Indian time period is between 11,500 years ago to 7,500 years ago. The tradition was characterized by hunting big game animals and gathering local resources. Diagnostic artifacts from this time period are: Clovis, Goshen, Folsom, Hell Gap-Agate Basin, Cody knives, Parallel Oblique Flaked, Pryor Stemmed, and Caribou Lake Paleo-Indian complexes. Lifeways from this time are not well known but site types include: camps, Knife River flint quarries, other lithic procurement areas, lithic workshops, and isolated artifact finds.

Archaic

Climatic shift during this time period trends to a warmer and dryer climate (Kay:1998). At this time tall and short grass prairie environments expanded into states east of the Mississippi River and into the northern plains. This time period is often called the Hypsithermal, or the prairie period or prairie maximum. At this time modern flora and fauna took over as the dominant wildlife in the area. Sites identified from this time period indicate a heavy reliance on bison hunting (Dyck and Morlan:2001). However, during this time period other fauna such as elk, white-tail deer, ground squirrel, wolf, coyote, fox, muskrat, pocket gopher, chipmunk, deer mouse, rabbit, fish when accessible, waterfowl, and a variety of other modern flora show up in the soil matrix.

This time period can be divided into three periods: Early (7,500 to 4,500 years ago), Middle (4,500 to 3,000 years ago), and Late (3,000 to 2,400 years ago) (ND SHPO:2003). The tradition is characterized by development of the atlatl along with hunting and gathering of essentially modern flora and fauna. Diagnostic artifacts from this time period include: Oxbow, McKean Lanceolate, Duncan, Hanna, Pelican Lake, and Yonkee. Known site types include: animal kill sites, camps, Knife River flint quarries, lithic workshops, and burial sites.

Woodland, Plains, and Equestrian

The Woodland period introduced new traditions of the individuals settling in this area. The practice of mound burials, the production and use of ceramic vessels, and the intensified use of indigenous seedy plants and grasses for food all became more prominent during this time. This time period brought more permanent habitation due to the increase in harvesting. The term Middle Missouri is used to identify this area and is defined as a subarea within the Northern Plains that “includes the Missouri Valley from just below the mouth of the White River in South Dakota to just above the mouth of the Yellowstone River in North Dakota” (Kay:1998). The people populating these villages were not nomadic as many of the other tribes in the plains were. They were horticultural people living in substantial rectangular dwellings. This is because the soil in the Middle Missouri Valley is more fertile than the Red River Valley to the east. This allowed the surrounding tribes to settle and build permanent villages in which they could plant crops and sustain themselves along with bison being the main component of their diets (Kay:1998). The domestic plants found in the Middle Missouri include: maize, cucurbits, common beans, sunflower, and marsh elder. Wild plums, grapes, rose hips, hackberries, chokecherries, and buffaloberries were also harvested. Cultural complexes from this time period include: Sonota/Besant, Laural, Avonlea, Blackduck, Mortlach, Old Women’s, and Sandy Lake. Known site types include: burial mounds and or other burial sites, occupation camps, quarries and lithic procurement areas, and bison kill sites.

The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component (ND SHPO:1990) defines people of the Plains Village tradition as those of a horticultural-hunt-gather. The introduction of Europeans brought diseases that caused the populations to decline, however communities were able to continue to thrive due to stored surplus of food, particularly corn. Known site types include: fortified and unfortified earthlodge villages, winter villages, camps, quarries, eagle trapping sites, conical timber lodges, burials, lithic workshops, bison kill sites, and rock art sites.

The Equestrian Nomadic Tradition refers to those dependent upon horses and traveled throughout the Northern Plains hunting. This allowed for a greater capacity to acquire food and transport it which began in the mid 1700’s. Known site types include: camps, battle sites, and animal kill sites.

Fur Trade/Contact

The first fur trade contact in this area occurred in 1738 when a French explorer named La Verendrye reached the Missouri River (Remele:1998). Increasing numbers of explorers and fur traders would reach the area in the years following first contact and increased demand for furs by European societies led to the establishment of settlements or forts in strategic locations throughout the Northern Plains. This exchange linked the Northern Plains to a world-wide economic and political system. Known site types include: fur trading posts and forts, trails, loading and shipping facilities, trapping, trading and hunting grounds, camps and camp sites, steamboat docks, stores, dwellings, warehouses, and residences of prominent fur trade participants.

Military Confrontation

This time period, defined as between 1862 and 1870, is characterized by and increasing Federal presence in form of a chain of military outposts (Remele:1998). An unfulfilled treaty between the Federal government and the Dakota lead conflict in Minnesota in 1862. This in turn led to military expeditions by the United States government in 1863, 1864, and 1865 within the western territories. Battles at Whitestone Hill and Killdeer Mountain in 1863 and battles in the Badlands in 1864 diminished Dakota resistance. Known site types include: forts, posts, armories, battlefields, trails, roads, bridges, fords, mail stations, cemeteries, villages, camps, camp sites, dumps, defensive work corrals, barns, storage areas, and dwellings and residences.

American Settlement/Statehood

The American Settlement time period ran from 1861 through North Dakota's statehood on November 2, 1889 (Remele:1998). The settlement of North Dakota has a direct tie to the creation of railroads and railroad lines across the state. Towns and settlements developed in order to serve the homesteaders, frontier citizens, and railroad crews working in the territory. Around 1879, a population boom occurred that had direct ties to the development of organized, highly mechanized, and large bonanza farms. These bonanza farms had a dramatic effect on the landscape. For the first time, large sections of the prairie were able to be cultivated and farmed. This led to a dramatic decrease in wild prairie land.

The Great Depression

During the Great Depression (1929-1940), a slowing national economy, heavy from debt, low prices for agricultural goods, crop failures, dust storms, and extreme weather resulted in series of farm foreclosures, bank failures, and residential dwellings and business abandonment. Known site types may include: abandoned farms, banks, businesses buildings, city parks, civic improvements, relief facilities, WPA projects, Civilian Conservation Corps camps and project sites (ND SHPO:1990).

Modern Industrial Development

Remele defines this time period as the 1940s, 50s, and 60s (Remele:1998). During this time period, a post-war economy was driving the development of large industrial facilities in order to change raw materials into products for local and national consumption. Large construction project, such as dam building and reservoirs, allowed farms, corporations, and citizens of the state to control their access to water resource throughout the year in a more predictable manner. Discovery of natural resources, such as oil and coal, allowed for the development of these industries in the state. Additionally, the beginnings of Cold War stress between the United States and foreign governments generated a perceived need for strategic placement of military bases. Known site types include: Air Force installations, armories, storage areas, dwellings and residences, brick plants, concrete plants, blotting plants, meat packing plants, food processing plants, assembly plants, factories, foundries, saw mills, gristmills, gravel potash and uranium mines, tipples, mines, mine entrances, loading and transportation facilities, storage yards,

railroad spurs, office buildings, camps, oil wells, gas wells, petroleum product refineries, tank batteries, pipelines, and pumping stations.

Research Objectives/Methodology

The archaeological and historic facility investigation review consisted of locations not receiving previous survey within the project area. HDR felt that any of the site types described within the cultural context or literature search portions of this document could be found within the project area.

Environmental landforms along the project area were examined in order to identify high, medium, and low potential areas for archaeological resources. High potential areas were defined as locations within 500 feet of existing or former extensive water sources, on a relatively level and minimally disturbed surface, and with enough elevation not to be easily inundated in times of heavy moisture. Areas of medium potential were defined as locations with a relatively level surface, sufficient elevation to not be inundated in times of heavy moisture, further than 500 feet from existing or former extensive water sources, and/or showing minimal amounts of ground disturbance. Low potential areas were defined as areas on slope, areas easily inundated by heavy moisture, areas with existing wetlands, areas inundated by water, and/or areas that showed excessive amounts of ground disturbance. HDR investigated land forms with high to medium potential.

Shovel testing and pedestrian survey techniques were used to survey the project area. Shovel testing was used when the project crossed heavily vegetated areas that did not lend themselves to pedestrian survey. Shovel testing was restricted to areas where soil exposure was 25 percent or less and areas that had good to moderate potential to produce archaeological remains. Soils removed in this way were screened through one-quarter-inch hardware mesh. Pedestrian survey was used to examine the project area when ground visibility was 25 percent or greater.

A Trimble ProXT GPS unit (ProXT) was used to locate and follow the project area. In order to survey the project area effectively, the ProXT zoom function was used to show an area of 100 m (or 300 ft). The ProXT unit was used to mark locations identified as areas of interest and/or areas where shovel testing occurred. The ProXT has sub-meter accuracy and the ability to have comments written on specific locations.

An Olympus Stylus 300 Digital Camera was used to photograph the project area. Photos were taken using the camera's high quality function. Photos were taken to show the general landscape of the area surveyed. Photos were also used to document areas of interest identified during the survey.

Notes were taken to keep a record of events that occurred during the day. These notes were used to keep track of information pertinent to the project. Items recorded included; date, weather condition during the day, travel time, start time of survey, locations of survey, locations of interest, shovel tests, meals, brief conversations with informants during survey if applicable, soil information, e-mail time, and photographic log.

Statement of Impact/Work Summary

In general survey went from west to east. Access to the line was obtained via roads (80th Ave. NW and 62nd St. NW) on the section lines that crossed the project area. The Hawthorn Pipeline project area is sandwiched between the Embridge Pipeline (to the north) and a new unmarked pipeline (to the south). The Hawthorn pipeline project area seems to be adjacent to the Embridge Pipeline and unmarked pipeline to the south. A second unmarked pipeline was noted near the Embridge pipeline as the survey continued.

Survey was conducted in sections 26 and 27 where the pipeline runs from east to west. The majority of the previous identified sites can be found in section 27. Hence it was felt that additional sites would be located in this area. The rest of the proposed pipeline was surveyed by SWCA Environmental Consultants in December of 2008 and by Earthworks in August 2008. SWCA surveyed Section 14 of Township 156 and Range 91 and Earthworks surveyed the line between Sections 23, 24 and 25, 26 Township 156 and Range 91. These surveys covered the 150 foot right-of-way project area in their respective locations. Since survey complete by SWCA and Earthworks was recent and followed the same general methodology for investigation, HDR did not revisit these locations for additional survey.

No shovel testing was required due to adequate visibility, and no artifacts were recovered via this method of survey. Areas with crops had adequate visibility for pedestrian survey because agricultural practices and immature plants covered the survey area. In addition, much of the project area was adjacent to recent pipeline construction that had survey investigation.

The right-of-way for the pipeline in section 27 is about 15 meters wide (or 50 feet) and the pipeline right-of-way in section 26 is about 21 meters wide (or 70 feet). Pedestrian survey in section 27 was accomplished by the crew walking 4 meters apart on the south side of the center line from east to west and then walking 4 meters apart on the north side of the center line in parallel transects from west to east. Pedestrian survey in section 26 was accomplished by the crew walking 10 meters apart (5 meters to each side of the center line) in a parallel transect from west to east. No artifacts were recovered via pedestrian survey.

The survey team was unable to reestablish the previously reported location of site 32MN771. Upon reaching the location of site 32MN771 as documented in the ND SHPO records two pipelines were observed. One was marked as an Embridge pipeline and one was unmarked. It appears, according to the existing data, that the site now lies within the right of way of the Embridge pipeline. The visibility was adequate in this area and no shovel testing was conducted. Figures 3 and 4 below illustrate the environment in this area. No additional archaeological or historic facility sites were identified in the part of the project area that was surveyed by HDR.



Figure 3: Looking to the northwest from the top of the east bank. The Embridge Pipeline is in white and the second unmarked pipeline is in brown.



Figure 4: Looking to the west. The white storage facility in the middle of the photo is where the Hawthorn Pipeline heads. The linear green swaths on the landscape represent other pipeline construction that had occurred in and near the project area.

The right of way on the west bank has more vegetation than the east, however it is located on a slope. The project area is disturbed by other pipeline construction and visibility was adequate. No shovel testing was conducted in this area. Photo 5 illustrates the environment in this area.



Figure 5: Looking east from the west bank. The large green swath represents previous pipeline construction.

Recommendations

No archaeological or historic facility sites were found during the Class III Archaeological and Historic Facility Resource Inventory for the portions of the project area that received survey by HDR. If the project is later determined to be a federal undertaking, HDR recommends that the project constitutes a determination of “*No Historic Properties Affected.*” and “*No Significant Sites Affected.*” The project should proceed as planned and documented.

If federal funds or permits are required, this study could likely be used as a basis to satisfy the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations in 36 CFR 800. If Section 106 requirements are identified, consultation with the SHPO, tribal communities, and other interested parties would be needed.

If construction plans change and additional survey is needed, then survey should continue to focus on areas of higher potential for cultural resources. HDR also recommends that, if previously unknown cultural resources are encountered in the immediate area during preconstruction and/or construction, ground disturbing activities at that location cease and a professional archaeologist be notified.

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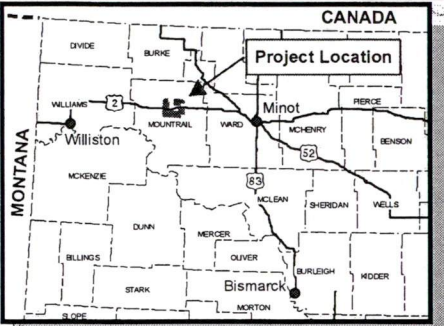
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Appendix A: Maps

Map Document: (\\nspe-gis\file\GIS\Proj\Peconr\110617\map_docs\mxd\FigX_CRM_Bx11_Haw20090804.mxd) B6B9_c.sxs



Hawthorn Oil Pipeline

Mountrail County, ND

Archaeological, Historic facilities, and Survey data

Legend

Firm

- SWCA - December 2008
- Earthworks - August 2008
- HDR, Inc - July 2009

SHPO Data

- Archaeological site
- Archaeological site lead
- Historic structure
- Oil Pipeline Route
- Pipeline Right-of-Way
- Data gathering area: 1/2 Mile from CL
- Gas pipeline
- Section
- Township

0 1,000 2,000
Feet

hawthorn oil transportation

August 2009

