

**PHASE I ENVIRONMENTAL SITE ASSESSMENT  
LEWIS & CLARK RURAL WATER SYSTEM, INC.  
CITY OF BERESFORD SERVICE LINE  
298<sup>TH</sup> STREET (FROM 467<sup>TH</sup> TO 471<sup>ST</sup> AVENUE)  
CLAY & UNION COUNTIES, SOUTH DAKOTA**

**GEOTEK #07-268**





**GEOTEK ENGINEERING  
& TESTING SERVICES, INC.**  
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August 30, 2007

RECEIVED

SEP 04 2007

Banner Associates, Inc.  
409 22nd Avenue South  
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Attn: Mr. Timothy R. Conner, PE

Subj: Phase I Environmental Site Assessment  
Lewis and Clark Rural Water System, Inc.  
City of Beresford Service Line  
298th Street (from 467th to 471st Ave)  
Clay and Union Counties, South Dakota  
GeoTek #07-268

Dear Mr. Conner:

We have completed a Phase I Environmental Site Assessment for the referenced project. We are transmitting three copies of our report. This work was done in accordance with your March 23, 2007 acceptance of our March 13, 2007 contract.

Please refer to our conclusions and recommendations for the major findings and recommendations we have made.

If you have questions or concerns regarding the information presented in this report, or if we can be of additional service, please contact our office.

GeoTek Engineering & Testing Services, Inc.

Gerald K. Zutz  
Project Manager  
PE/Remediator #5083

**TABLE OF CONTENTS**

<b>SUMMARY</b>	<b>1</b>
<b>INTRODUCTION</b>	<b>1</b>
<b>SITE DESCRIPTION</b>	<b>3</b>
<b>USER PROVIDED INFORMATION</b>	<b>5</b>
<b>RECORDS REVIEW</b>	<b>5</b>
<b>HISTORICAL RESOURCES REVIEW</b>	<b>9</b>
<b>SITE RECONNAISSANCE</b>	<b>16</b>
<b>INTERVIEWS</b>	<b>21</b>
<b>DATA GAPS</b>	<b>22</b>
<b>FINDINGS</b>	<b>22</b>
<b>OPINION</b>	<b>23</b>
<b>CONCLUSIONS</b>	<b>25</b>
<b>DEVIATIONS</b>	<b>25</b>
<b>ADDITIONAL SERVICES</b>	<b>25</b>
<b>REFERENCES</b>	<b>27</b>
<b>REMARKS</b>	<b>28</b>
<b>ENVIRONMENTAL PROFESSIONALS STATEMENT</b>	<b>29</b>
<b>QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS</b>	<b>29</b>
<b>TABLE 1 - Site Use Time Line</b>	
<b>FIGURE 1 - Topographic Map</b>	
<b>APPENDIX A - Site Photographs</b>	
<b>APPENDIX B - Historical Research Documentation</b>	
<b>APPENDIX C - Regulatory Records Documentation</b>	
<b>APPENDIX D - Special Contractual Conditions</b>	
<b>APPENDIX E - Level 1 Contaminant Survey Checklist</b>	
<b>APPENDIX F - Wetlands Map</b>	

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**Phase I Environmental Site Assessment  
Lewis and Clark Rural Water System, Inc.  
City of Beresford Service Line  
298th Street (from 467th to 471st Ave)  
Clay and Union Counties, South Dakota**

**GeoTek #07-268**

**SUMMARY**

Our Phase I Environmental Site Assessment has not identified recognized environmental conditions in association with the referenced site.

**INTRODUCTION**

**Purpose**

This Phase I Environmental Site Assessment was conducted during the period of March 23 to August 30, 2007. The purpose of this Phase I Environmental Site Assessment was to evaluate the potential presence of hazardous substances and soil/groundwater contamination due to past/current land use practices at the site, or from nearby off-site operations.

**Scope of Services**

The scope of services for this assessment was performed in accordance with the American Society for Testing and Materials (ASTM) Standard E1527-05 (plus site observations for asbestos materials and wetlands) and included the following tasks:

1. Review of information on the geology and hydrogeology of the site vicinity. Review of available information, if any, regarding previous sampling and analysis of soil, groundwater or surface water conducted at the site.
2. Review of the subject property, records, and interview of individuals associated with the property regarding the present or past existence of suspect asbestos containing materials, environmental permits or licenses, hazardous or potentially hazardous substances, distressed vegetation, stained soil, unusual grade changes, random dumping or on-site disposal, suspect lead containing materials, suspect polychlorinated biphenyls (PCBs), and underground/aboveground storage tanks.

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3. Conduct a site vicinity reconnaissance to identify nearby off-site facilities that could potentially impact the subject property.
4. Review of available historical resources such as aerial photographs, fire insurance maps, tax assessor records, recorded land title records, USGS topographic maps, street directories, county atlases, and building department records, to identify, as nearly as possible, past uses of the property.
5. Review of reasonably available regulatory agency information and records. Verbal and/or written communication with federal, state and local environmental regulatory agencies having jurisdiction to determine compliance with regulations concerning the usage, storage, treatment and disposal of hazardous substances.
6. Visually observe property for evidence of wetlands. Interview landowners for historic knowledge or presence of wetlands. If available, review a published wetlands map from USDA or US Fish & Wildlife Service.
7. Complete the Level 1 Contaminant Survey Checklist for each parcel in the project area.
8. Preparing a report presenting our observations, pertinent documents, opinions, and recommendations.

**Significant Assumptions**

This report presents the results of our work performed at the referenced site. This work was performed in accordance with the March 13, 2007 contract (copy in Appendix D).

**Limitations and Exceptions**

Information contained herein was obtained through a limited work scope by means of interviews, document research, and on-site observations. Conclusions are based on available information. However, this is not to imply that this is all of the information that exists which may be pertinent to the environmental liabilities of the site. The intent of this study was to identify environmental problems that would be evident to an environmental professional and was not intended to represent an exhaustive research of all potential hazards which may exist. Furthermore, certain potential environmental hazards reported in this study may require more comprehensive analysis to fully assess their magnitude and financial impact.

This report is representative of present conditions only. Situations or activities which occur subsequent to this report and which result in adverse environmental impacts are not relevant to this study.

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### **Special Terms and Conditions**

The scope of our services did not include collecting or analyzing physical evidence for the presence or lack of contaminants such as asbestos, urea formaldehyde, mold, petroleum, PCBs, nitrates, herbicides, pesticides or insecticides, or radon gas unless stated above.

Similarly, an assessment of mineral rights investigation, drinking water testing, indoor air quality (including vapor intrusion), or environmental audits of operations, environmental practices or management was also not included in the scope of work.

With respect to our review of recorded land title records (if provided by Client), we have not provided an opinion as to marketability of title and have not otherwise warranted as to condition of title.

### **User Reliance**

No individual, corporation, or interest other than Banner Associates Inc., or Lewis & Clark Rural Water System, Inc., may rely on this report without prior authorization from GeoTek Engineering & Testing Services, Inc.

## **SITE DESCRIPTION**

### **Location and Legal Description**

The site consists of mostly cropland, with some pasture or hay land, rural residential land, and road right of way areas (state, county, township), southwest of the City of Beresford, in Clay and Union Counties, South Dakota. The Lewis and Clark Rural Water System has a proposed pipeline easement for the City of Beresford Service Line along 298th Street (from 467th Avenue to 471st Avenue). The site is not within the city limits of Beresford, although the city limits begin on the east side of 471st Avenue (SW 13th Street based on city of Beresford addresses).

The proposed easement is approximately 4 miles long. The proposed total right of way width of both the permanent and temporary construction easement is usually 100', except on Parcel #2 where the easement is wider because the pipeline angles to the north, and in road right of ways where there is no specific width.

There are approximately 13 separate parcels. The approximate legal description and owners of the parcels are on the list in Appendix E. Additionally, although not listed in Appendix E, the proposed pipeline easement is through or across road right of ways (state, county, township).

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### **Site and Vicinity General Characteristics**

The site and vicinity is mixed rural agricultural land (mostly cropland; some pasture or hay), farmsteads, rural residential, road right of ways, vacant land (one parcel apparently used for gravel storage), and a church. The proposed pipeline easement crosses several roads, driveways, and approaches.

### **Current Use of the Property**

The site consists of mostly cropland, with some pasture or hay land, rural residential land, and road right of way areas.

### **Description of Improvements**

Improvements on the site are:

- Interstate Highway 29
- gravel roads
- a few driveways or approaches
- two tree shelter belts
- livestock fencing (barbed wire) along many parcel boundaries, and separating some interior areas.

### **Current Uses of Adjoining Properties**

The vicinity and adjoining land consists of rural agricultural land (cropland, pasture, hay land, farmstead), road right of ways, rural residential, vacant land (one parcel apparently used for gravel storage), and Beresford Zion United Methodist Church (adjacent to the east).

A drive-by survey of the immediate site vicinity revealed the following items of apparent significance such as suspect UST locations, potential hazardous waste generators, industrial properties, etc:

1. Two piles of gravel were observed on a vacant lot at the southeast corner of 298th Street and 471st Avenue.
2. One or more aboveground storage tanks (ASTs) were observed at farmsteads/acreages in these locations:

- Section 1-95-51
- Section 2-95-51
- Section 11-95-51

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3. Apparent wastes were observed in these locations:

- waste concrete pieces and boulders by the bridge south of the pipeline route on Parcel #9 (Section 6-95-50)
- waste concrete pieces by a culvert north of the pipeline route on Parcel #8A (Section 1-95-51)
- waste concrete pieces at the northeast end of the dam in Section 12-95-51
- cut brush and a few logs in and south of the tree shelterbelt in Section 2-95-51

**USER PROVIDED INFORMATION**

The user of this report may conduct certain tasks to assist in identifying possible recognized environmental conditions of the site. There were no significant items identified by the user. We have not been informed of environmental liens, activity or land use limitations, or a value reduction of the subject property due to environmental reasons.

Previous Phase I Environmental Site Assessments (ESAs) for the subject property are not known.

On adjacent land, one previous Phase I Environmental Site Assessment was conducted by GeoTek Engineering & Testing Services, Inc. (GeoTek report #05-A65, dated September 30, 2005) for Lewis & Clark Rural Water System Segments 6, 7, & 8 (along the west side of 467th Avenue adjacent to the west of the subject property). There were no apparent significant findings regarding the subject property.

Abstracts of title or other title records for the subject property were not available for review.

The reason this Phase I Environmental Site Assessment was performed was to attempt to identify significant environmental risks, if present, for the proposed pipeline easement and installation.

**RECORDS REVIEW**

Copies of regulatory lists reviewed or databases searched are attached in Appendix C.

**National Priority List**

The U.S. Environmental Protection Agency (EPA) National Priority List (NPL) was reviewed for facilities within an approximate one mile radius of the subject property. The NPL is a list of federal superfund sites of known releases or threatened releases of hazardous substances, pollutants or contaminants throughout the United States. The NPL serves to identify sites which appear to warrant remedial actions or investigations.

There were no listed sites within the radius reviewed.



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### **CERCLIS List**

The U.S. E.P.A. CERCLIS (Comprehensive Environmental Cleanup Liability Information System) list was reviewed for facilities within an approximate one-half mile radius of the subject property. The CERCLIS list is an automated inventory system used by the EPA to keep record of hazardous sites or potential uncontrolled hazardous sites which may require cleanup based upon state investigation efforts and upon notifications received as provided by the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA or "Superfund"). It does not necessarily imply that an environmental problem exists at any particular site listed. Delisted NPL sites are also included. The sites are in various stages of investigation.

There were no listed sites within the radius reviewed.

### **Archive CERCLIS List**

The U.S. E.P.A. CERCLIS (Comprehensive Environmental Cleanup Liability Information System) list of NFRAP (no further remedial action planned) sites was reviewed for facilities within an approximate one-half mile radius of the subject property.

There were no listed sites within the radius reviewed.

### **RCRIS List**

The U.S. E.P.A. Resource Conservation and Recovery Information System (RCRIS) list was reviewed for facilities within an approximate one-fourth mile radius of the subject property (one mile radius for treatment, storage, and disposal facilities, and facilities subject to corrective action).

The RCRIS site list is a printout of permitted generators and transporters of hazardous waste, and hazardous waste treatment, storage or disposal facilities regulated by the RCRA Act of 1976.

LQG = large quantity generator, over 1000 kilograms (about 2200 lbs)/month of hazardous waste.

SQG = small quantity generator, 100-1000 kg (about 220-2200 lbs)/month of hazardous waste.

CESQG = conditionally exempt small quantity generator, less than 100 kg (about 220 lbs)/month of hazardous waste.

Listed sites within the radius reviewed were:

1. Sioux Steam Cleaner Corp., Sioux Plaza, Beresford, CESQG
2. Truck Town Dipping Service, RFD, NA
3. Western Area Power Admin Beresford Sub, no street available, Beresford, NA

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### **Federal Brownfields Sites**

A brownfield site is real property for which the expansion, redevelopment or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Mine scarred lands may also be considered a brownfield site. EPA grants are available for assessment, cleanup, revolving loans funds and job training. The intent of the grants is to promote assessment, cleanup and reuse of brownfields. The list was reviewed for facilities within an approximate one-half mile radius.

There were no listed sites within the radius reviewed.

### **Emergency Response Notification System**

This EPA list of reported spills was reviewed for facilities within an approximate one-fourth mile radius of the subject property.

Listed sites within the radius reviewed were:

1. Amoco Pipeline, either in Lincoln, Union or Minnehaha Counties, SD; leak suspected in 6" pipeline due to drop in pressure in the pumping station in Hawarden, Iowa, 4-1-93.

### **Federal Institutional Control/Engineering Control Registry**

Institutional controls are a legal or administrative restriction on the use of or access to a site to reduce or eliminate potential exposure to hazardous substances or petroleum in soil or groundwater, or to prevent activities that interfere with a response action. Engineering controls are physical modifications to a site to reduce or eliminate potential exposure to hazardous substances or petroleum in soil or groundwater. The list was reviewed for facilities within an approximate one-fourth mile radius.

There were no listed sites within the radius reviewed.

### **South Dakota Department of Environment and Natural Resources (DENR)**

A. There were no open or pending investigations involving a spill, leakage, or contamination of soil and water within an approximate 1/2 mile radius of the subject property.

B. Closed, inactive, or no further action status investigations involving a spill, leakage, or contamination of soil and water within an approximate 1/2 mile radius of the subject property were:

1. 89.197 Beresford School District, 7th and W. Maple, Beresford, C
2. 98.152 Beresford School District, 301 W. Maple, Beresford, C
3. 96.092 Farmers Coop Elevator, 298th Street (East of 13th Street), Beresford. A 400 gallon pesticide mixture was released on the oil road on April 22, 1996 when a supply unit hose broke. The mixture had about 20 lbs or 5 gallons of Treflan (active ingredient Trifluralin).

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It spilled on the road for 1/4th to 1/2 mile. There was a creek about 200' north of the area. The material that did not evaporate was picked up with floor dry that same day. On April 25, 1996, a little more product was noted in pools along the edge of the road (believed to have drained from cracks in the road). Additional cleanup was apparently conducted by collecting the product with saw dust. Collected material was apparently applied on off-site cropland in accordance with SD Department of Agriculture oversight. A soil sample taken from the ditch right after clean up had 18 ppm Trifluralin. Later, dead vegetation was noted in the ditch, and a soil sample taken near the fence line had 6.5 ppm Trifluralin. The March 1, 1997 DENR letter closed the project file.

C. There were apparently no UST removals on the Environmental Events database in the immediate vicinity where contamination was not detected above state standards.

D. Registered underground or aboveground storage tanks (USTs & ASTs) within an approximate 1/4 mile radius of the subject property are listed below:

1. Leland A. Nelson, RR1, Vermillion, 2 removed USTs
2. Larson Farms, RR2, Vermillion, 2 removed USTs
3. Sioux Alfalfa Meal Co., PO Box 398, Vermillion, 2 removed USTs
4. Farmers Union Cooperative Association, no street, Wakonda, 5 current ASTs
5. Former Bradey Station, PO Box 384, Wakonda, 2 removed USTs
6. Johansen Construction, Box 413, Wakonda, 1 seasonal temporary UST
7. Clay County Highway Shop, RR3, Wakonda, 2 removed USTs
8. SD Dept of Transportation, Hwy Maint Shop, Beresford, 2 removed and 2 current USTs
9. Kennedy & Soderstrom Inc., RR3 Box 23, Beresford, 1 removed UST
10. Louis Vander Laan Jr., RR3 Box 35, Beresford, 1 removed UST

E. State Brownfields Sites

A brownfield site is real property for which the expansion, redevelopment or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Mine scarred lands may also be considered a brownfield site. SD DENR assistance is available for targeted assessment and perhaps cleanup. There are also revolving loans funds. The intent of the program is to promote assessment, cleanup and reuse of brownfields. The list was reviewed for facilities within an approximate one-half mile radius.

There were no listed sites within the radius reviewed.

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F. State Institutional Control/Engineering Control Registry

Institutional controls are a legal or administrative restriction on the use of or access to a site to reduce or eliminate potential exposure to hazardous substances or petroleum in soil or groundwater, or to prevent activities that interfere with a response action. Engineering controls are physical modifications to a site to reduce or eliminate potential exposure to hazardous substances or petroleum in soil or groundwater. At this time, we are not aware of a state registry or list of such facilities.

G. Permitted Solid Waste Facilities

This state list identifies active and closed landfills, rubble sites, ash monofill, sludge monofill, transfer stations, petroleum contaminated soil landfarms and similar facilities. It was reviewed for facilities within an approximate one-half mile radius of the subject property.

There were no listed sites within the radius reviewed.

H. Storm Water Quality Program

DENR administers federal regulations (40 CFR 122-123) for storm water discharges from industrial facilities, or construction activities involving over one acre of earthwork or land disturbance. If over one acre of land will be disturbed, a notice of intent to be covered under the state's general permit should be submitted to DENR at least 15 days prior to conducting work. As part of the permit, a pollution prevention plan must be developed and implemented.

SD also has a general permit for temporary dewatering and temporary water use. If temporary or long term dewatering is conducted, the appropriate notice of intent to be covered under the state's general permit for those activities should be submitted to DENR at least 15 days prior to conducting the work.

## HISTORICAL RESOURCES REVIEW

### Aerial Photograph Review

A review was conducted of available historical aerial photographs from various sources. Photographs from the years 1937, 1962, 1974, 1982, 1984, 1991, 2002, and 2007 were available and reviewed. The following pertinent information about the site and vicinity was obtained from the review. The photo source and scale are also listed. Excluding the 2002 photos, copies of the photos are attached in Appendix B. The scale and clarity of some photos do not allow a detailed review.

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\* 1937 - USDA (Scale 1" = 1320')

The photo is small scale. The site and vicinity appears to be mostly agricultural land. There are some drainages or streams marked on the photos. There are several apparent farmsteads along 298th Street, although they do not appear to be located on the proposed pipeline route itself.

\* 1962 - USDA (Scale 1" = 1760')

This photo does not cover the east 1/2 mile of the site. The photo is small scale. The site is mostly as previously seen. There is apparent earthwork or terraces on land in the SE1/4 of Section 2. Shelterbelts in Sections 2 and 3 (adjacent to site) are now present.

\* 1974 - USDA (Scale 1" = 1320/1670')

There are two photos for 1974; one is from the county soils book. The photos cover only the east one mile of the site. The photos are small scale. Interstate Highway 29 is now seen crossing the site in Section 6; there is an overpass bridge on 298th Street. The highway adjacent to the east of the site (formerly US Highway 77) is seen.

\* 1982 - USDA (Scale 1" = 1320')

This photo does not cover the west 3/4ths mile of the site. The photo is small scale. There appears to be a vacant land parcel in the southwest corner of Section 1. Otherwise, the site appears mostly as previously seen. There is now a dam and lake on the south side of 298th Street (Section 12-95-51).

\* 1984 - USDA (Scale 1" = 1320')

The photo is small scale. The site and vicinity appear as previously seen.

\* 1991 - USDA (Scale: 1" = 660')

This photo does not cover the west half of the site. The photo is small scale. The site and vicinity appears mostly as previously seen.

\* 2002 - Banner Associates (Scale: 1" = 100')

These photos were reportedly taken in November 2002. The site is agricultural land, mostly cropland. In Section 2 (Parcel #4), there are some trees and terraces on the site. In Section 1 (Parcel #6), an apparent mobile home is now seen adjacent to the north. In Sections 2 and 3, tree shelterbelts are seen adjacent to the south of the site.

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\* 2007 - USDA (Scale 1" = 750')

This photo shows only the east 1 mile of the site. The photo is small scale. The site appears to be mostly agricultural land. An apparent house is now seen adjacent to the north of the route in the SW1/4 of Section 6.

**City Directories**

Polk's City Directories of the area were reviewed for the site and vicinity for years that directories were locally available (1999, 2002). The site's street addresses are approximately 46700 to 47100 298th Street based on rural street addresses. From our work in the area, rural street addresses appear to have been first established in about 1997. Listings along this street in the immediate site vicinity for 1999 follow (excluding apparent residential listings; there were no apparent business listings in 2002).

298th Street (46700 to 47100)

46629	1999	Delmer Olson corn
46924	1999	not verified
46973	1999	not verified

**County Atlases/Maps**

The site is within both Clay and Union Counties. The atlas review is separated by county below. Copies of the atlas pages are attached in Appendix B.

Clay County

1. 1884 Clay County, South Dakota Map (from 1990 Centennial Atlas Company)

The site is in Sections 1, 2, & 3 of Glenwood Township. This map lists land owners, and shows major streams, rivers, and roads, but not building sites. Land owners are individuals (apparent business names not seen). A creek crosses the site in Section 3. A proposed railroad line is shown crossing the route in Section 2. The section lines in the area do not appear to be major roads, although roads are shown elsewhere in the county. The town of Glenwood is shown just south of the site in Section 11 of Glenwood Township.

2. Illustrated Historical Atlas of Clay County, SD, 1901 by E. Frank Peterson

This map lists land owners, and show buildings sites. There is a road along all of 298th Street adjacent to the site. There are several residences both to the north and south of the proposed pipeline route. There are some trees shown on the site in Section 2. There are about three streams crossing the site from southeast to northwest. The rail line (proposed on 1884 atlas), and the town of Glenwood are not present now.

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3. Illustrated Historical Atlas of Clay County, SD, 1902 by E. Frank Peterson

The site appears as in 1901. The creek in Section 1 and to the north is now labeled Ash Creek.

4. Illustrated Historical Atlas of South Dakota, 1904 by E. Frank Peterson

This map does not list land owners. The site and vicinity appears essentially as in 1902.

5. Atlas of Clay County, South Dakota, 1912 by Anderson Publishing Company

This atlas shows some driveways. There are two driveways in Section 2 that cross the site. The SE1/4 of Section 2 is shown as the "Holmesdale Farm". Otherwise, the site and vicinity appear as previously seen.

6. Atlas of Clay and Union Counties, SD, 1924 by Anderson Publishing Company

The SE1/4 of Section 1 and other land is shown as the "Plainview Farm". The Holmesdale Farm is no longer identified as such. The vicinity appears as previously seen.

7. Clay County Farm Ownership Atlas, 1937 by Clay County Planning Board

This atlas is not entirely legible. The Plainview Farm is no longer identified. Otherwise, the site and vicinity appear mostly as previously seen.

8. Atlas of Clay County, South Dakota, 1948 by R. C. Booth

This map does not show building sites. The site and vicinity appear as previously seen.

9. Plat Book of Clay County, South Dakota, 1956 by The Plain Talk

This map does not show building sites. The site and vicinity appear as previously seen.

10. Atlas of Clay and Union Counties, South Dakota, 1959-60 by Title Atlas Company

This atlas shows building sites. The site and vicinity appears as previously seen.

11. Atlas of Clay and Union Counties, South Dakota, 1980 by United States Atlas, Inc.

There is now a small parcel in the SW corner of Section 2.

12. Centennial Atlas of Clay and Union Counties, South Dakota, 1990 by Centennial Atlas Co.

This atlas includes a 1990 map as well as the original homestead map. The site appears as previously seen.

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13. Atlas of Clay County, South Dakota, 1992 by Title Atlas Company

There is a small tract in the SW corner of Section 1. The previous small tract in the SW corner of Section 2 is no longer shown.

Union County

1. Illustrated Historical Atlas of South Dakota, 1904, by E. Frank Peterson

The site is in Section 6 of Prairie Township. There are roads on the section lines in the area. There are two building sites on the north side of 298th Street. This map does not identify land owners. The city limits of Beresford are adjacent to the east.

2. Standard Atlas of Union County, South Dakota, 1910, by Geo. A. Ogle & Co.

There are no building sites on the immediate north side of 298th Street. Land across the road to the east appears mostly undeveloped.

3. Atlas and Farm Directory, Union County, South Dakota, 1917, by The Farmer

The site and vicinity appears as previously seen.

4. Atlas of Clay and Union Counties, South Dakota, 1924, by Anderson Publishing Company

There are two building sites on the north side of 298th Street. The vicinity appears as previously seen.

5. Atlas of Clay and Union Counties, South Dakota, 1959-60 by Title Atlas Company

The site appears as previously seen. The corner adjacent to the east of the site is US Highway 77 (runs eastward and southward from intersection). Land to the east is shaded as part of the City of Beresford.

6. Atlas: Union County, South Dakota, 1966, by Dakota Atlas Company

Interstate Highway 29 is now shown crossing the site (in the center of Section 1). There is a bridge along 298th Street over I-29. Land to the east is shaded as part of the City of Beresford.

7. Atlas of Clay and Union Counties, South Dakota, 1980 by United States Atlas, Inc.

The site appears as previously seen. Off-site to the north is shaded land that is now part of the City of Beresford.



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8. Centennial Atlas of Clay and Union Counties, South Dakota, 1990 by Centennial Atlas Co.

This atlas includes a 1990 map as well as the original homestead map. The East 1/2 of Section 6 is now shaded as part of the City of Beresford. There are county highways on the section lines to the east. There is now a small tract adjacent to the south in Section 7.

9. Atlas of Union County, South Dakota, 1992 by Title Atlas Company

The site and vicinity appear as previously seen.

10. Union County, South Dakota Directory of Land Owners & Residents, 2006,-07 by County Wide Directory LLC

The east end of the site in Section 6 is shown as part of the City of Beresford, with several building sites (apparently north of the site). The west end of the site in Section 6 is labeled small tracts. There are two land owners and one building site in the south central part of Section 6. The vicinity appears as previously seen.

**Fire Insurance Maps**

A review was conducted of available fire insurance maps. Sanborn Map Company maps of Beresford were available for the years 1893, 1898, 1904, 1912, 1917, 1928, and 1943. Map coverage of the site is described below. Copies of the 1943 maps are attached in Appendix B.

\* 1893 - The site or adjacent land does not appear to be shown in detail.

\* 1898 - There is a Beresford Creamery Co-operative Association property at the northwest corner of an unnamed intersection. Otherwise, the site or adjacent land does not appear to be shown in detail.

\* 1904 - The Beresford Creamery Co-operative Association property is now identified as being in the north part of Beresford. The site or adjacent land does not appear to be shown in detail.

\* 1912 - The site or adjacent land does not appear to be shown in detail.

\* 1917 - The site or adjacent land does not appear to be shown in detail.

\* 1928 - There is a now a city wide map. The intersection by the east edge of the site is shown on the city wide map. However, there are no features or improvements shown in the area. Apparently, there is no significant development in the area. The site or adjacent land does not appear to be shown in detail.

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\* 1943 - The intersection by the east edge of the site is shown on the city wide map. However, there are no features or improvements shown in the area. Apparently, there is no significant development in the area. The site or adjacent land does not appear to be shown in detail.

**Topographic Maps**

A review was conducted of available historical topographic maps from various sources. The site was shown on one map (attached as Figure 1). The following pertinent information regarding the subject property and vicinity was observed.

\* 1968 - USGS Beresford, South Dakota 7.5 minute Quadrangle

The site and vicinity appears to be mostly vacant or agricultural land. On the west end of the route are two tree shelterbelts adjacent to the south side of the site. Ash Creek and three unnamed intermittent streams cross the site from southeast to northwest. An overhead electric line crosses the site from north to south in Section 1-95-51. Interstate Highway 29 crosses the site in Section 6-95-50. There is a road along the section line to the south (now 298th Street). The elevation of the site is roughly 1350' above mean sea level on the west end, sloping up to about 1500' on the east end. There are several apparent farmsteads along the route (but off-site).

**Data Failure**

The all appropriate inquiry standard requires that standard historical sources be consulted to develop a history of the previous uses of the site (at five year intervals) and surrounding area. Standard historical sources include aerial photographs, fire insurance maps, property tax files, recorded land title records, local street directories, building department records, zoning/land use records, and other sources. Standard historical sources that are reasonably ascertainable, publicly available, available at reasonable time and cost, and practically reviewable must be reviewed from the present back to the first developed use (which includes agricultural use or placement of fill dirt) or back to 1940, whichever is earlier. Review of standard historical sources may be excluded if they are not reasonably ascertainable or not likely to be sufficiently useful, accurate or complete.

Data failure occurs when all standard historical sources that are reasonably ascertainable and likely to be useful have been reviewed, and yet the objective of the research has not been met. Data failure is not uncommon in trying to identify previous uses of property back to 1940 or earlier. If data failure occurs, the report shall document the failure, and if any standard historical resources were excluded, give the reasons for exclusion.

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Minor data gaps consisting of a lack of historical information for intervals greater than 5 years were present. Data gaps greater than the required interval ranged up to 9 years. Use prior to and following the data gaps was not significantly different, therefore site use was assumed to be consistent across the gaps. Historical zoning/land use records and building department records were not reviewed. The zoning/land use records were deemed not likely to be useful or available. Building department records do not exist. Sufficient local street directories or other records were not available to document uses of the site and surrounding area at five years intervals. Please refer to the time line listed on Table 1 for a summary of historical site use.

## **SITE RECONNAISSANCE**

### **Methodology and Limiting Conditions**

Observations were made by viewing the subject property from the fence line or right of way of adjacent roads, and traversing select site areas by auto or on foot.

### **Hydrogeology**

#### **Geology**

The geology discussion below is separated by county.

#### **Clay County**

The surficial geologic unit along the proposed pipeline easement is Quaternary Till (ground moraine). Till is a heterogeneous mixture of boulders, sand, silt, and clay. It is up to about 136' thick, and can be locally sandy, or locally contain chalk boulders. It may be covered by up to 4' of loess (wind-deposited silt). The area of the site has relatively high relief (Christensen, 1967).

Below the surficial till are other Quaternary units: till, Sappa(?) silt and clay, and Grand Island(?) sand and gravel. Note that till often contains buried outwash (sand and gravel) deposits. The bedrock below the site is believed to be mostly the Cretaceous Niobrara Marl. The Carlile Shale is believed to be the bedrock in the area of the SW1/4, Section 2-95-51. The bedrock is at about 1240-1320' in elevation, or up to 150' below the land surface (Christensen, 1967).

#### **Union County**

The surficial geologic unit along the proposed pipeline easement is Quaternary Till, Ground Moraine. It forms a relatively flat to gently undulating topography (McCormick, 2004). Till is a heterogeneous mixture of boulders, sand, silt, and clay. There may be a layer of loess (wind-deposited silt) at the land surface.

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There is a poor probability of finding surficial sand and gravel deposits in the area (Jarrett, 1988).

Below the surficial till are other Quaternary units: till, outwash (sand and gravel), and loess. The bedrock on the east 1/2 of the route in Union County is the Cretaceous Carlile Shale. The bedrock on the west 1/2 of the route in Union County is the Cretaceous Niobrara Formation. The bedrock surface is at an elevation of about 1300' (about 130-200' below the land surface; McCormick, 2004).

## **Groundwater**

Groundwater usually exists within glacial till deposits within about 10-15' below the land surface. The groundwater gradient is often in the direction of the surface topographic gradient, which varies along the route. Many other factors can also affect the groundwater gradient, such as streams, pumping wells, etc.

### Area Aquifers

Groundwater within glacial till is not normally considered an aquifer due to poor quantity and quality of water. Likewise, thin surficial (fine grained) loess in Clay County is not considered an aquifer (Christensen, 1967).

These potential aquifer units are known to exist in the immediate area, although it is not certain that they actually exist below the site:

Quaternary sand and gravel deposits (whether glacial outwash or alluvium) in the northeast part of Clay County contain groundwater and are considered an aquifer (Christensen, 1967).

Parker-Centerville Aquifer - This aquifer is present in nearby Lincoln County, and may be present in the site area. It is in mostly surficial outwash (sand and gravel) deposits. It is about 20-40' thick in the area. Water flow is generally towards the west and south (Niehus, 1994).

Brule Creek Aquifer - This is a sand to gravel aquifer in the area. It averages about 33' thick, at an average depth below the land surface of about 46'. Water movement is to the southeast (Niehus, 1994). Early data indicates the buried outwash is from 0-100' thick in the site area (Baker, 1963).

Niobrara Aquifer - This is a calcareous siltstone that may contain layers of chalk. It is a minor aquifer in Union County (Niehus, 1994). It is present below nearly all of the proposed pipeline easement in Clay County (Christensen, 1967).

Carlile Aquifer - This is a shale unit (over 250' thick in some areas). The Codell Sandstone Member is the aquifer part. It is considered a minor aquifer in Union County (Niehus, 1994). It also exists in Clay County (Christensen, 1967).

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Dakota Aquifer - This is a sandstone unit, with interbedded siltstone, sandstone, and shale. It is up to at least 327' thick in the area, with water movement to the south (Niehus, 1994; Christensen, 1967).

Sioux Quartzite Wash Aquifer - In some areas, quartzite sand is present above the Sioux Quartzite Formation. It is a minor aquifer in Union County (Niehus, 1994). It is usually less than 5' thick (Niehus, 1997).

Sioux Quartzite Aquifer - In Union County, this bedrock unit is considered a minor aquifer (Niehus, 1994).

Based on the area geology, there are likely other deeper bedrock aquifers. However, due to the abundance of groundwater in shallower units, deeper units have generally not been explored.

Newer information (Jensen, 2000) indicates the first aquifer below that part of the route in Clay County is the Niobrara Formation for most of the route (at up to 100' below land surface), a sand and gravel unit on the east 1/4th mile (50-100' below land surface), and the Dakota Formation for about one mile of the central part of the route (>100' below land surface).

Newer information (McCormick, 2004) indicates the first aquifer below that part of the route in Union County is a sand and gravel unit (50-100' below land surface).

Water Source Protection Areas

Clay County has established Aquifer Protection Overlay (APO) Districts. The west 1/4th mile of the site appears to be within the district. A copy of the county zoning map and zoning information on the district is attached in Appendix B. We understand that Clay Rural Water System has a wellhead protection area around their wellfield in north central Clay County.

We are not aware of water source or aquifer protection zones for Union County or the City of Beresford area.

Municipal Water Supplies

The municipal water supply of nearby communities or rural water districts is listed below:

-the City of Beresford gets their water from three wells (65-75' deep) (DENR, 2003). The wells are screened in the Brule Creek Aquifer. Formerly, Beresford got water from the Dakota Aquifer (Baker, 1963). The city wells are about three miles east of town (personal communication, Mr. Jerry Zeimetz, 2007).

-the City of Centerville gets their water from three wells (135' deep) (DENR, 2003). The wells are screened in the Upper Vermillion-Missouri Aquifer.

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-the Clay Rural Water System (serving Clay County and most of Union County) gets water from three wells (two 60' and one 200' deep; DENR, 2003). The wells are in the Lower Vermillion-Missouri Aquifer, in north central Clay County.

-the Lincoln County Rural Water System purchases their water from the City of Sioux Falls. They also have one 29' deep well (DENR, 2003). The well is apparently in the Big Sioux Aquifer in extreme eastern Lincoln County (Iles, 1996).

-the South Lincoln Rural Water System gets their water from five 650' deep wells (DENR, 2003). The wells are in an area 2-6 miles south of Worthing, and screened in the Dakota Aquifer (Iles, 1996).

**Soils**

For specific information about soils along the proposed pipeline easement, refer to the county USDA soil survey (Cooley, 2003; Driessen, 1978). The soil types indicate the parent materials, as well as low or poorly drained areas (wetlands). Some areas may have significant shallow groundwater that could complicate proposed pipeline installation.

Clay County

The general soil association in Clay County along the proposed pipeline easement is the Egan-Ethan-Trent Association. It consists of well drained and moderately well drained, nearly level to undulating silty and loamy soil on till plains. The water table is as shallow as 3.5' deep for Trent soils. The parent material is silty glacial till (Cooley, 2003).

Union County

The general soil association in Union County along the proposed pipeline easement is the Wentworth-Shindler-Worthing Association. It consists of deep, well drained and poorly drained, level to steep, silty and loamy soils on uplands (Driessen, 1978).

**General Site Setting**

On May 10, 2007, we performed a reconnaissance visit of the site to make visual observations of existing site conditions and land use practices.

The site consists of mostly cropland, with some pasture or hay land, rural residential land, and road right of way areas.

These creeks cross the site: Ash Creek, Sections 6-95-50 and 1-95-51; four tributaries of Ash Creek, Sections 1-95-51, 2-95-51, 3-95-51.

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There were no buildings or improvements observed on-site. Unusual grade changes, distressed vegetation, surface stains, or on-site waste disposal was not observed. Evidence of sumps, cisterns, or wells was not observed.

The subject property is roughly linear shaped, being approximately 4 miles long. The proposed total right of way width of both the permanent and temporary construction easement is usually 100', except on Parcel #2 where the easement is wider because the pipeline angles to the north, and in road right of ways where there is no specific width.

Photographs of the site are attached in Appendix A.

**Hazardous or Potentially Hazardous Materials**

Hazardous or potentially hazardous materials were not observed or suspected to exist on-site.

Agricultural or lawn chemicals such as herbicides, pesticides, insecticides, fertilizers, etc., have likely been applied to the site in the past. If used or handled on-site, there is potential for uncontrolled releases to have occurred. We presume there is no concern regarding ag chemical usage at crop/lawn application rates. Evidence of uncontrolled ag chemical releases (i.e. unusual areas devoid of vegetation) was not observed.

**PCB Review**

Pole mounted electrical transformers were observed on or adjacent to the site in the following locations (apparent electric cable boxes, and transformers across a road, are excluded):

- one on Parcel #10, Section 6-95-50
- one on Parcel #6, Section 1-95-51
- one on Parcel #5, Section 2-95-51

The transformers are suspected to contain polychlorinated biphenyls (PCBs), including "non-PCB" transformers which can have up to 50 ppm PCBs. Markings indicating PCBs were not observed. Evidence of leakage from transformers was not observed.

**Water Supply Well**

Water supply wells were not observed on-site. Although it is possible a well may exist at or near current or former residences and farmsteads, typical surface features of wells were not observed on-site.

If a water well is later discovered on-site, it may be considered abandoned. State well construction standards (ARSD 74:02:04:69) would require that abandoned wells be plugged. Well abandonment may be performed by the property owner or by a licensed well driller. The cost of well plugging would be dependent upon the depth and diameter of the well, and other factors.

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### **Underground/Aboveground Storage Tank Review**

Evidence of underground storage tanks (USTs), such as fill/vent pipes or dispenser islands, was not observed. Aboveground storage tanks (ASTs) were not observed on-site. There is no knowledge of USTs or ASTs being previously located on-site.

### **INTERVIEWS**

The objective of interviews is to obtain information indicating possible recognized environmental conditions of the site. An interview of the owner/key site manager, and occupant(s) if different than manager, and at least one state and/or local government official are required. In the case of abandoned properties where there is evidence of unauthorized use or uncontrolled access, interviews of one or more neighboring owners or occupants are required. The site was not an abandoned property.

#### **Owners**

Level 1 Contaminant Survey Checklists were sent to the owners of the parcels of the subject property. Of about 13 checklists sent, 6 were returned to us. An example letter sent to the property owners, and the returned checklists are attached in Appendix E.

There were these 'positive' or 'unknown' responses on the returned checklists:

-Parcel #2, one positive response (contaminates in private well or non-public water system)

-Parcel #3, while there were no positive or unknown responses, notes on the questionnaire form state a former barn, pig house, shed, and house (in the area of current day corn cribs) were burned down and debris buried. Environmental wastes were reportedly not present in the buildings (Note the former farmstead in the SW1/4, Section 2-95-51 was located approximately 500' north of the proposed pipeline route).

#### **Local Government Officials**

On July 2, 2007, Mr. Layne Stewart, Clay County Emergency Management Director was interviewed regarding that part of the route in Clay County. He had no knowledge of leaks, spills, releases, or hazardous material conditions at the site or in the immediate area. He was not aware of dumps or landfills in the area. To the best of his knowledge, there are no liquid petroleum pipelines in the site area.

On August 30, 2007, Mr. Ray Roggow, Union County Emergency Management Director was interviewed regarding that part of the route in Union County. He had no knowledge of leaks, spills, releases, or hazardous material conditions at the site or in the immediate area. He was not aware of dumps or landfills in the area. To the best of his knowledge, there are no liquid petroleum pipelines in the site area.



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On August 30, 2007, Mr. Tarzan Mullinix, Beresford Fire Department Fire Chief (tel. 605-310-2192), was interviewed regarding the route near the City of Beresford. The City of Beresford provides fire protection services for the area. He had no knowledge of leaks, spills, releases, or hazardous material conditions at the site or in the immediate area.

On August 28, 2007, Mr. Jerry Zeimetz, City Administration for the City of Beresford (tel. 605-763-2008), was interviewed. He has worked for city for eight years, and has been an area resident all his life (45 years). He had no knowledge of leaks, spills, releases, or hazardous material conditions at the site or in the immediate area. He was not aware of landfills/dumps, or liquid petroleum pipelines along the route (the city does not have any landfills or dumps in the area). The site is not within the city limits, but land to the east is within the city limits of Beresford. The City of Beresford does not have a wellhead protection area for their wells. The city wells are about three miles east of town.

### **DATA GAPS**

A data gap is defined as a lack of or inability to obtain the required information for this report despite a good faith effort, such as the inability to perform the site reconnaissance, interviews, etc. A data gap may not always be considered significant, and data failure of standard historical source review may or may not be considered a data gap. This report must identify and comment on significant data gaps that affect the ability to identify recognized environmental conditions, and identify sources of information that were consulted to address the data gaps (if any).

Significant data gaps were not noted for this report. About 10 minor data gaps consisting of a lack of historical information for intervals greater than 5 years were present. Unspecified use spanned up to 9 years and previous use was not significantly changed from following use, suggesting low potential for an alternate site use in the gap.

In our opinion, there were no additional interviews, records, or data to be reviewed that would be considered likely to be useful within the cost and time frame of this work.

### **FINDINGS**

The following summarizes our professional opinions regarding the Phase I Environmental Site Assessment performed on the subject property, based on the information presented in the previous sections of this report.

\* There were no buildings or improvements observed on-site. Unusual grade changes, distressed vegetation, surface stains, or on-site waste disposal was not observed. Evidence of sumps, cisterns, or wells was not observed.

\* Hazardous or potentially hazardous materials were not observed or suspected to exist on-site.

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\* Pole mounted electrical transformers were observed on or adjacent to the site in the following locations (apparent electric cable boxes, and transformers across a road, are excluded): one on Parcel #10, Section 6-95-50; one on Parcel #6, Section 1-95-51; and one on Parcel #5, Section 2-95-51. The transformers are suspected to contain polychlorinated biphenyls (PCBs), including "non-PCB" transformers which can have up to 50 ppm PCBs. Markings indicating PCBs were not observed. Evidence of leakage from transformers was not observed.

\* Water supply wells were not observed on-site. Although it is possible a well may exist at or near current or former residences and farmsteads, typical surface features of wells were not observed on-site.

\* Evidence of underground storage tanks (USTs) was not observed. Aboveground storage tanks (ASTs) were not observed on-site. There is no knowledge of USTs or ASTs being previously located on-site.

\* Vicinity reconnaissance identified about three farmsteads or acreages with ASTs, and a few apparent minor waste items (concrete, boulders, brush, logs).

\* Owner questionnaires returned to us had a few positive/unknown responses: Parcel #2, one positive response (contaminates in private well or non-public water system); Parcel #3, while there were no positive or unknown responses, notes on the questionnaire form state a former barn, pig house, shed, and house (in the area of current day corn cribs) were burned down and debris buried. Environmental wastes were reportedly not present in the buildings (Note the former farmstead in the SW1/4, Section 2-95-51 was located approximately 500' north of the proposed pipeline route).

\* Interviews with local government officials did not reveal significant items such as: leaks, spills, releases, or hazardous material conditions at the site or in the immediate area; dumps or landfills; or liquid petroleum pipelines.

\* Extensive review of various historical resources did not reveal apparent significant items.

\* The site is not on the regulatory agency lists reviewed. There are several nearby facilities that occur on regulatory lists (RCRIS, ERNS, DENR Release List, Registered USTs & ASTs). There were about 3 "closed" status releases reported to DENR for the area within a 1/2 mile radius of the site.

**OPINION**

There is one transportation related release reported nearby to the east, and there is a risk of other similar (unreported or unknown) releases, especially from I-29 and the highway adjacent to the east of the site (formerly US Highway 77).

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The few farmsteads adjacent to or near the site have several environmental risks. One is agricultural chemical and fertilizer storage and use. Animal wastes may be generated, stored, and disposed of. There may be current or former disposal pits for household and farm wastes. There may be current or former water supply wells, storage tanks (ASTs/USTs), household septic fields and lines, manure pits, agricultural drainage tiles, etc. Each of these items, if present, could: result in increased nutrients; contaminate soil, groundwater, or surface water; or provide a transport mechanism to them.

Should substance releases be encountered or detected, notification to the US Environmental Protection Agency or the SD Department of Environment and Natural Resources may be necessary. If the substance release is a motor fuel or fuel oil, a responsible party or impacted third party may be eligible for reimbursement of assessment and cleanup costs from the SD Petroleum Release Compensation Fund. The PRCF has a \$10,000 deductible (except for third party liability cases), with coverage up to \$1,000,000 for eligible expenses related to releases of motor fuels and fuel oil. Expenses related to hydraulic oil, used oil, and other substances (i.e. cutting oils, solvents) are not eligible for reimbursement. Transmission pipeline releases are reportedly excluded from PRCF coverage. Releases from vehicles may be covered if certain criteria are met. If a release originates off-site, there is also some coverage of expenses for an impacted third party. However, coverage is secured through the responsible party.

Although not suspected, if an abandoned petroleum UST is discovered, it could be removed at no expense to the property owner under a current DENR program. Abandoned petroleum USTs are eligible for the DENR Tank Yank Program unless they are at a commercially operated motor fuel station operated on or after April 1, 1988. USTs storing motor fuel, heating oil, motor oil, waste oil, etc., are eligible. DENR hires private contractors and consultants to conduct the work. UST contents are removed. Soil samples are collected at the time of UST removal. Contaminated backfill soils, if present, are removed. Replacement soil is minimally compacted. If there is pavement over the UST, it would not be replaced. The state also pays for "any additional cleanup that is needed". Currently, there is no known ending date for this program.

If a water well is later discovered on-site, it may be considered abandoned. State well construction standards (ARSD 74:02:04:69) would require that abandoned wells be plugged. Well abandonment may be performed by the property owner or by a licensed well driller. The cost of well plugging would be dependent upon the depth and diameter of the well, and other factors.

If over one acre of land will be disturbed by earthwork (i.e. pipeline construction or other earthwork), a notice of intent to be covered under the state's general permit for storm water discharges in association with construction activities should be submitted to DENR at least 15 days prior to conducting work. As part of the permit, a pollution prevention plan must be developed and implemented. Likewise, if dewatering of trenches is conducted, the appropriate notice of intent to be covered under the state's general permit should be submitted to DENR.

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### CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM E1527-2000 of the referenced site. Any exceptions to, or deletions from, this practice are described in the "Scope of Services" section of this report.

Our Phase I Environmental Site Assessment has not identified recognized environmental conditions in association with the referenced site.

### DEVIATIONS

Any exceptions to, or deletions from, this practice are described in the "Scope of Services" section of this report.

### ADDITIONAL SERVICES

#### Asbestos Review

The subject property was reviewed for obvious suspected asbestos containing building materials. There were no buildings or improvements on-site. There may be some buried wastes on Parcel #3 (off-site to the north of the site).

If suspect asbestos materials are later encountered, the following paragraphs may apply:

An inspection and sampling of suspect asbestos containing building materials is usually required by EPA (NESHAPs rules in 40 CFR 61) and SD Department of Environment and Natural Resources (DENR) rules prior to construction, demolition, or renovation activities involving the materials. Additionally, a notification form must be submitted to DENR at least 10 working days prior to demolition (including those where no asbestos is present), and prior to disturbing or removing certain quantities of asbestos. Asbestos materials may require special disposal.

Most landfill operators/owners will accept building debris without segregating non-friable (non-dust producing under hand pressure) suspect asbestos containing materials. However, the landfill accepting the waste may also have requirements regarding packaging, transport, and disposal of the material.

These factors should be considered when selecting a landfill for demolition debris. During building demolition, we recommend care be taken to lessen the possibility that the non-friable materials would become friable. Possible precautions include: demolition equipment should not traverse or pulverize areas of floor tile, use water to keep material wet during removal, keeping debris sections relatively intact, and minimizing breakage, etc.

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Federal OSHA rules may apply to contractors and employees working with asbestos containing materials. Notification of the existence of suspected and confirmed asbestos building materials is required. Thermal system insulations, spray or trowelled surfacing materials, and asphalt or vinyl flooring must be presumed to contain asbestos in buildings constructed before 1980 unless tested otherwise. For employees such as custodial and maintenance workers, an asbestos awareness course is required in buildings with confirmed or presumed asbestos containing materials.

**Lead Review**

There are little to no painted surfaces on-site. If present, paint may contain lead. Most definitions of lead-based paint define it as paint containing 0.5% or more lead. Beginning in 1955, voluntary industry standards were 1% or less lead in residential interior paint. In 1971, a federal law prohibited the use of paint with over 1% lead in federal government residences. In 1973, federal law lowered the allowable amount to 0.5%. In 1977, federal law lowered the allowable amount of lead in residential interior paint to 0.06%. Contractors should comply with OSHA lead exposure rules during work involving potential lead-based paint (29 CFR 1926.62).

**Wetlands**

**Map**

A review was conducted of available National Wetlands Inventory maps prepared by the US Department of the Interior, Fish & Wildlife Service (Beresford Quadrangle, published in 1990, based on aerial photos from 1983). A copy of the map is attached in Appendix F. Please refer to the actual map for the type and number of wetlands. Below are observations from the map, arranged by section of the proposed pipeline easement (from east to west). Wetlands that would appear to be low road ditches, and therefore may be off-site are indicated by parenthesis (x).

- 6-95-50 - 1 area
- 1-95-51 - 4 areas (1)
- 2-95-51 - 3 areas (1)
- 3-96-51 - 2 areas (1)

Therefore, according to the US Fish and Wildlife Service maps, excluding nearby apparent road ditches, it appears that there may be about 7 wetland areas along the proposed pipeline easement.

**Observations**

Below are field observations of May 10, 2007 (i.e. surface water, low elevation, type of vegetation or other) that would appear to be a wetland. Note that the area received heavy rains a few days before our observations. The observations are arranged by section-township-range from east to west. Wetlands that would appear to be low road/rail ditches are excluded. Occasionally, tall crops and grass can obscure our view.

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- 6-95-50 - 3 areas (2 low farmed areas with shallow water, 1 creek with water)
- 1-95-51 - 2 areas (1 low area, 1 creek with water)
- 2-95-51 - 3 areas (1 waterway with water, 2 creeks with water)
- 3-96-51 - 2 areas (1 low farmed area, 1 creek with water)

Therefore, based on field observations, it appears that there may be about 10 wetland areas along the proposed pipeline easement.

**Questionnaire Response**

Returned questionnaires did not indicate wetlands exist on-site.

**REFERENCES**

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US EPA, Institutional Controls/Engineering Controls Facility List, August 8, 2007.

US EPA, RCRIS Facility List, June 8, 2006.

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**REMARKS**


The conclusions and recommendations contained in this report present our professional opinions. These opinions were arrived in accordance with currently accepted hydrogeological and engineering practices at this time and location. Other than this, no warranty is implied or intended.

GeoTek Engineering and Testing Services, Inc. appreciates the opportunity to provide our services on this project. Please contact us if we can be of further assistance or if you have questions.

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**ENVIRONMENTAL PROFESSIONAL STATEMENT**

We declare that, to the best of our professional knowledge and belief, that we meet the definition of *Environmental professional* as defined in 40 CFR Part 312.10. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

  
Jerald K. Zutz  
Senior Project Manager  
PE/Remediator #5083

This report was reviewed by:



Daniel R. Hanson  
General Manager  
PE/Remediator #4829

**QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS**

Jerald K. Zutz-Project Engineer/Manager: Jerry is a senior project engineer/manager on assessment and remediation projects. He holds a degree in geologic engineering from South Dakota School of Mines and Technology. Jerry has completed over 550 Phase I Environmental Site Assessments throughout South Dakota, Iowa, Minnesota and Nebraska. Jerry is a licensed asbestos building inspector in South Dakota and has received training as a lead-based paint inspector/risk assessor under the EPA model curriculum. He is a Registered Professional Engineer and a Certified Petroleum Release Remediator in South Dakota with 18 years of experience.

Daniel R. Hanson - General Manager: Dan is the general manager of GeoTek Engineering. Previously, he was a senior project engineer/manager on assessment and remediation projects. He holds a degree in civil engineering from South Dakota State University. Dan is the general manager of GeoTek. He is a Registered Professional Engineer and a Certified Petroleum Release Remediator in South Dakota with 22 years of experience.





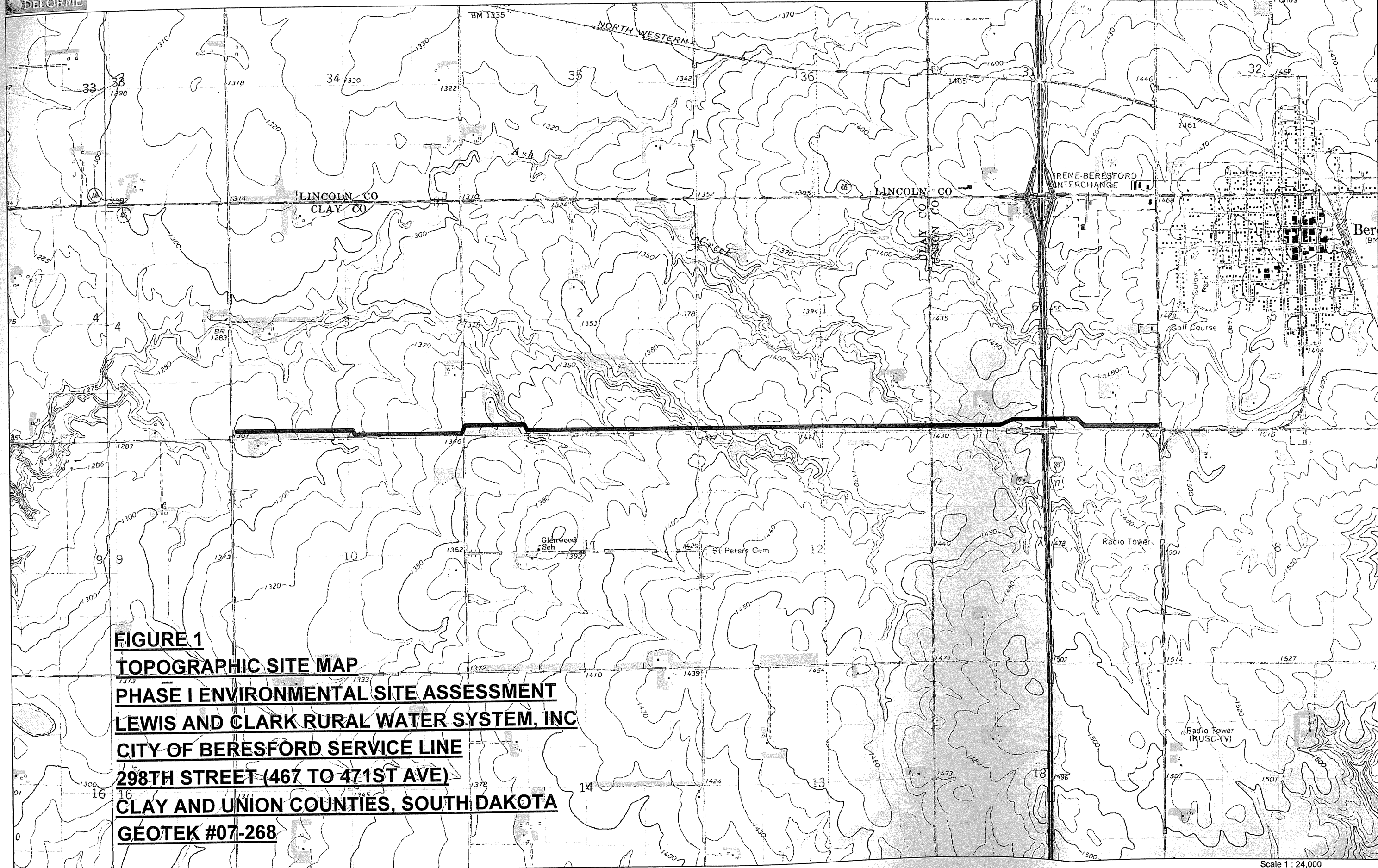
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TABLE 1- SITE USE TIME LINE		
Year	Historical Source	Site Use
1884	County Atlas	This atlas shows Clay County. Site land owners are individuals. A creek is shown crossing the site in Section 3. There is also a proposed rail line in Section 2.
Data gap greater than 5 years. Significant change in use from previous and following years not suspected.		
1893	Fire Insurance Map	The site does not appear to be shown in detail.
1898	Fire Insurance Map	The site does not appear to be shown in detail.
1901	County Atlas	This atlas shows Clay County. The site is owned by several individuals. There are area residences. About three streams cross the site.
1902	County Atlas	This atlas shows Clay County. The site appears as previously seen.
1904	Fire Insurance Map	The site does not appear to be shown in detail.
1904	County Atlas	This atlas does not identify land owners. There are several building sites along the pipeline route.
Data gap greater than 5 years. Significant change in use from previous and following years not suspected.		
1910	County Atlas	This atlas shows Union County. The site appears as previously seen.
1912	Fire Insurance Map	The site does not appear to be shown in detail.
1912	County Atlas	This atlas shows Clay County. There are two driveways in Section 2 that cross the site. The SE1/4 of Section 2 is the "Holmesdale Farm".
1917	Fire Insurance Map	The site does not appear to be shown in detail.
1917	County Atlas	This atlas shows Union County. The site appears as previously seen.
Data gap greater than 5 years. Significant change in use from previous and following years not suspected.		
1924	County Atlas	The SE1/4 of Section 1 and other land is shown as the "Plainview Farm".
1928	Fire Insurance Map	The site does not appear to be shown in detail. Development is not shown in the site area.
Data gap greater than 5 years. Significant change in use from previous and following years not suspected.		
1937	Aerial Photo	The site appears to be mostly agricultural land.
1937	County Atlas	This atlas shows Clay County. The site appears as previously seen.
Data gap greater than 5 years. Significant change in use from previous and following years not suspected.		
1943	Fire Insurance Map	The site does not appear to be shown in detail. Development is not shown in the site area.
1948	County Atlas	This atlas shows Clay County. The site appears as previously seen.
Data gap greater than 5 years. Significant change in use from previous and following years not suspected.		
1956	County Atlas	This atlas shows Clay County. The site appears as previously seen.
1959-60	County Atlas	The site appears as previously seen. US Highway 77 is adjacent to the east.
1962	Aerial Photo	This photo does not cover the east 1/2 mile of the site. The site appears as previously seen. There are terraces or apparent earthwork in Section 2.
1966	County Atlas	This photo covers Union County. Interstate Highway 29 now crosses the site in Section 6.

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TABLE 1- SITE USE TIME LINE continued		
Year	Historical Source	Site Use
1968	Topographic Map	The site appears be to mostly vacant or agricultural land.
Data gap greater than 5 years. Significant change in use from previous and following years not suspected.		
1974	Aerial Photo	This photo covers only the east one mile of the site. Interstate Highway 29 is now seen crossing this part of the site.
Data gap greater than 5 years. Significant change in use from previous and following years not suspected.		
1980	County Atlas	There is now a small parcel in the SW corner of Section 2.
1982	Aerial Photo	This photo does not cover the west 3/4ths mile of the site. There appears to be a vacant land parcel in the southwest corner of Section 1. The remainder of the site appears as previously seen.
1984	Aerial Photo	The site appears mostly as previously seen.
Data gap greater than 5 years. Significant change in use from previous and following years not suspected.		
1990	County Atlas	The east 1/2 mile of the site is within a shaded area representing the City of Beresford.
1991	Aerial Photo	This photo does not cover the west half of the site. The site appears as previously seen.
1992	County Atlas	There is a small tract in the SW corner of Section 1. The previous small tract in Section 2 is no longer shown.
Data gap greater than 5 years. Significant change in use from previous and following years not suspected.		
1999	City Directory	There were no apparent significant site listings.
2002	County Atlas	The site appears as previously seen.
2002	Aerial Photo	The site appears to be agricultural land, mostly cropland. In Section 2 (Parcel #4), there are some trees and terraces.
2002	City Directory	There were no apparent site listings.
2006-2007	County Atlas	This atlas shows Union County. The east end of the site is shown as part of the City of Beresford, with several buildings sites (apparently north of the site). The west end of the site in Section 6 is labeled small tracts.
2007	Aerial Photo	This photo covers the east one mile of the site. The site appears to be mostly agricultural land.

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**FIGURE 1**  
**TOPOGRAPHIC SITE MAP**  
**PHASE I ENVIRONMENTAL SITE ASSESSMENT**  
**LEWIS AND CLARK RURAL WATER SYSTEM, INC**  
**CITY OF BERESFORD SERVICE LINE**  
**298TH STREET (467 TO 471ST AVE)**  
**CLAY AND UNION COUNTIES, SOUTH DAKOTA**  
**GEOTEK #07-268**

