

## **TransCanada Keystone Pipeline Project Cultural Resources Selected Survey Protocol in North Dakota, South Dakota, and Missouri**

### Cultural Resources Investigations Prior to the Field Survey

Initially, ENSR's archaeological subcontractors contacted the State Historic Preservation Officers (SHPOs) in North and South Dakota, Nebraska, Kansas, Missouri, and Illinois to discuss the possibility of surveying only those segments of the proposed Keystone ROW with the potential for cultural resources. North and South Dakota, Kansas, and Missouri SHPOs were open to the idea of a sampling survey; however, Nebraska and Illinois SHPOs requested that the entire pipeline ROW be surveyed for cultural resources. Following these discussions, a records and files search was conducted by the subcontractors to identify previously conducted cultural resources inventories and previously documented cultural resources within the proposed pipeline ROW. Using the results of the records and files search, along with topographical maps and information obtained from discussions with the SHPOs, a research design was developed for each state and submitted to the SHPOs for review and concurrence. The following paragraphs summarize consultation with the individual SHPOs and the research designs for those states that allowed a sampling strategy approach to the field surveys. Kansas has been omitted from the summaries since the Keystone ROW parallels the REX-West ROW, which was previously surveyed within the last 9 months.

### North Dakota

In January 2006, Metcalf Archaeological Consultants, Inc. (Metcalf) prepared a research design for the cultural resources field inventory to be conducted along the proposed pipeline corridor in North Dakota. The ideas and concept underlying the research design were the result of informal discussions with the Chief Archaeologist of the North Dakota SHPO. In a letter dated February 23, 2006, the SHPO concurred with the cultural resources inventory protocol as presented in the research design (see attached PDF). The research design was intended only for the cultural resources field inventory phase of the proposed pipeline project. Issues such as open trench monitoring, site evaluative testing, and mitigation/data recovery will be addressed separately following the field inventory. The procedures for monitoring or evaluative testing (if necessary) will be determined following the field inventory in consultation with the SHPO and the North Dakota Public Service Commission (PSC).

A sampling strategy comprised of five levels of investigation was proposed for the project. Two of these levels applied to the entire proposed pipeline route through North Dakota, while the remaining three applied only to selected areas. The first level, a literature and files search of an area 1 mile wide centered on the proposed pipeline route, was completed in January 2006. The second level of investigation was a reconnaissance of the proposed pipeline route by a geomorphologist, who identified areas that required closer investigation and conversely areas that were not archaeologically sensitive. The third level was an intensive pedestrian field inventory of selected segments of the proposed pipeline route in areas with high potential to contain archaeological resources. Approximately 51.8 miles of the proposed 215-mile pipeline corridor was selected for intensive field inventory (see attached table). The fourth level was a reconnaissance (drive-by) inventory of approximately 42.3 miles of the proposed

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pipeline corridor. The fifth level was no survey, which applied only to areas determined to have essentially no potential for the presence of cultural resources. These areas were determined by the results of the previous four types of investigations.

The geomorphological investigations consisted of a study of existing geologic and soil maps and a review of the literature and file search data followed by a reconnaissance drive-by of the entire proposed pipeline route in order to determine areas that may have the potential for archaeological sites, in particular, buried sites. At the time of the reconnaissance inventory, specific areas were identified where more detailed investigations (e.g., intensive pedestrian survey, soil coring) were recommended.

Approximately 42.3 miles of the proposed pipeline route were inspected through reconnaissance or drive-by inventory. In forested areas or where the proposed pipeline route was generally over 0.25 mile from the road, the proposed pipeline route was inspected with a single transect (i.e., archaeologist). Specific areas that appeared to be sensitive (e.g., locally prominent rises, areas near good sources of potable water) were inspected by intensive field inventory.

## South Dakota

In January 2006, Metcalf prepared a research design for the cultural resources field inventory to be conducted along the proposed pipeline corridor in South Dakota. The ideas and concept underlying the research design were the result of informal discussions with the Review and Compliance Officer at the South Dakota SHPO. In a letter dated March 28, 2006, the SHPO concurred with the cultural resources inventory protocol as presented in the research design (see attached PDF). The research design was intended only for the field inventory phase of the project and any issues such as open trench monitoring, site evaluative testing, and mitigation/data recovery will be addressed after completion of the field inventory in consultation with the SHPO and the South Dakota PSC.

A sampling strategy comprised of five levels of investigation was proposed for the pipeline corridor in South Dakota. The five levels of investigation are similar to those described for North Dakota with the exception of the number of miles recommended for the intensive pedestrian field survey and reconnaissance drive-by inventory. Approximately 43.3 miles of the proposed 223-mile pipeline corridor in South Dakota were selected for an intensive pedestrian field survey (see attached table) and approximately 52.3 miles of the proposed pipeline route were selected for reconnaissance drive-by inventory.

## Missouri

In January 2006, ARG prepared a research design for the cultural resources field inventory to be conducted along the proposed pipeline corridor in Missouri. ARG developed the research design in consultation with the Missouri SHPO. In a letter dated March 15, 2006, the SHPO concurred with the cultural resources inventory protocol as presented in the research design (see attached PDF). The sampling strategy proposed in the research design included a probabilistic survey of a random transect of the proposed pipeline corridor through Missouri. Those areas to be surveyed were identified through the literature and files search, an examination of the site distribution patterns documented by previous archaeological research conducted in the region, past

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geomorphological investigations in the project area, and topographic map review. Approximately 153.8 miles of the 273-mile proposed pipeline corridor in Missouri were selected for intensive field survey. Subsequent to the research design, it was determined that the segment of the Keystone ROW that parallels the REX-West ROW would not require survey; therefore, the miles of proposed pipeline corridor selected for survey was reduced to 78.0 miles (see attached table).

Based on review of USGS topographic maps of the proposed pipeline corridor, 52 stream valley locations on 49 different drainages were evaluated as having the potential for containing buried cultural features; therefore, they were selected for geomorphological investigations. Eleven of the selected drainages are rivers: Missouri River, Platte River, Little Platte River, Grand River, Mussel Fork River, Chariton River, Middle Fork Little Chariton River, East Fork Little Chariton River, South Fork Salt River, West Fork Cuiivre River, and Mississippi River. All of the remaining drainages are perennial streams. The geomorphological investigations entailed visiting the identified locations and testing the soil with a sampling tube. For those areas that produce evidence of buried cultural deposits, the location will be further evaluated using backhoe trenching.