



ENVIRONMENTAL CONSULTANTS

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October 26, 2011

Mr. Mark Bordelon
Plains All-American Pipeline, L.P.
333 Clay Street, Suite 1600
Houston, Texas 77002

RE: Addendum to the Bakken North Pipeline- Natural Resources Report for the Joann Arends Property

Dear Mr. Bordelon,

SWCA Environmental Consultants (SWCA) completed a wetland delineation and natural resources assessment of the proposed Bakken North Pipeline alignment (pipeline) that occurs on the Arends property (survey area) on October 20 and 25, 2011. Ecologists inventoried a portion of the alignment, located in the SE $\frac{1}{4}$ and SW $\frac{1}{4}$ of Section 12, and NE $\frac{1}{4}$ and NW $\frac{1}{4}$ of Section 22, Township (T) 155 North (N), Range (R) 102 West (W), Williams County, North Dakota, herein referred to as the Arends reroute. Recently, the pipeline was adjusted so that, as currently proposed, it traverses the Arends property. Plains All-American Pipeline, L.P. requested SWCA develop this natural resources report to detail the methods used to inventory the Arends reroute and the results of the natural resources survey.

METHODS

Wetland Delineation

SWCA conducted determinations in accordance with guidelines presented in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (U.S. Army Corps of Engineers [USACE] 2010). For an area to be considered a wetland, it must exhibit three criteria: the presence of hydric soils, wetland hydrology, and a vegetative community comprised of greater than 50% hydrophytes.

Waterbodies

Waterbodies (i.e., ponds, creeks, streams, rivers) were identified by the presence of an ordinary high water mark (OHWM). Common identifiable indicators of an OHWM include open water or evidence of a clear, natural line visible on the bank; shelving; changes in soil characteristics; the destruction of terrestrial vegetation; the presence of litter and debris; and watermarks on structures that are inundated during normal high water conditions. The OHWM typically represents the potential limits of the USACE jurisdiction. Please note that the USACE has full discretion in determining the jurisdictional status of referenced wetlands and waterbodies.

SWCA classified streams as perennial, intermittent, or ephemeral based on field observations. During a typical year, a perennial stream contains flowing water year-round and the water table is located above the stream bed. Groundwater is the primary water source for stream flow while precipitation runoff is supplemental. Ecologists classified streams that showed significant flow during the field survey or were named or designated as solid blue lines on the U.S. Geological Survey topographic maps as perennial.

An intermittent stream has flowing water for only portions of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for stream flow. Runoff from rainfall is the primary source of water for stream flow.

Tree/Sapling/Shrub Count

SWCA ecologists determined the total number of trees, saplings, and shrubs present within the survey area. Additionally, ecologists taxonomically identified all species observed within the survey area to species level. The boundary of all forested upland and shrubland habitat was geographically referenced using a Trimble GeoXT series handheld global positioning system (GPS) unit.

Wildlife including Threatened and Endangered Species

Information regarding the presence of threatened or endangered species, which may occur within the survey area, was obtained from the U.S. Fish and Wildlife Service list of threatened and endangered species by North Dakota county (U.S. Fish and Wildlife Service 2011). This document does not represent a comprehensive survey, but rather acknowledges the past and/or current presence of listed species. The lack of discovery of threatened or endangered species does not signify their non-existence within the area, but only that no primary or secondary indications of these species were recorded.

SWCA completed a cursory survey for all listed species and their habitat potentially impacted by construction activities within the survey area. A line-of-sight survey for wildlife was also conducted for a distance of approximately 0.5 mile with the aid of binoculars. Unique wildlife habitats were closely inspected on foot. Additionally, SWCA characterized suitable threatened and endangered species habitat encountered during the field survey.

SWCA ecologists noted all wildlife observed during the field survey. Wildlife sightings can involve primary observations (i.e., actual sighting of an animal) or secondary observations (i.e., observation of scat, tracks, or fur deposits).

Mapping

The survey area was inventoried using a Trimble GeoXT GPS unit. The aforementioned GPS unit is capable of recording geographic data with sub-meter accuracy. SWCA used Universal Transverse Mercator Zone 13N as the projected coordinate system and North American Datum

1983 as the datum. ArcGIS v10.0 (ESRI Redlands, California) was used to generate the survey area maps. Please note that any data collected using the GPS unit, and displayed on the attached map, are for review purposes only and do not represent a professional civil survey.

RESULTS

Wetlands/Waterbodies

SWCA ecologists did not identify any waterbodies or wetlands within the survey area.

Woody Vegetation and Noxious Weeds

SWCA ecologists did not identify any woody vegetation or state/county listed noxious weeds within the survey area.

Wildlife including Threatened and Endangered Species

No common or threatened and endangered wildlife species were observed within the survey area. The survey area is bordered by cultivated agricultural fields and palustrine emergent wetlands. Therefore, whooping crane individuals may traverse or forage within or near the project area during migration. Overall, this reroute will not alter the results and affects determinations provided in the original Bakken North Natural Resources Report (Bivens 2011).

CONCLUSIONS

On October 20 and 25, 2011, SWCA completed a natural resources survey of the proposed Arends reroute located in the SE $\frac{1}{4}$ and SW $\frac{1}{4}$ of Section 12, and NE $\frac{1}{4}$ and NW $\frac{1}{4}$ of Section 22, T155N, R102W, Williams County, North Dakota.

- SWCA ecologists did not observe any wetlands within the survey area.
- SWCA ecologists did not record any waterbodies within the survey area.
- No areas of woody vegetation were recorded within the survey area.
- No threatened or endangered were observed within the survey area.

Please contact Mike Cook at 701-258-6622 or mcook@swca.com should you have any further questions regarding the information gathered during SWCA's field survey.

Sincerely,



Pete Christensen
Ecologist
Bismarck Natural Resources
SWCA Environmental Consultants

Attachment: Site Layout Map

REFERENCES

- Bivens, Jason. 2011. *Natural Resources and Wetland Delineation Report for the Bakken North Pipeline, Williams, County, North Dakota*. Prepared by SWCA Environmental Consultants. Bismarck, North Dakota.
- U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)*. Edited by J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-30. Vicksburg, Mississippi: U.S. Army Engineer Research and Development Center.
- U.S. Fish and Wildlife Survey. 2011. County occurrence of endangered, threatened, and candidate species and designated critical habitat in North Dakota. Available online at http://www.fws.gov/northdakotafieldoffice/county_list.htm. Accessed June 14, 2011.

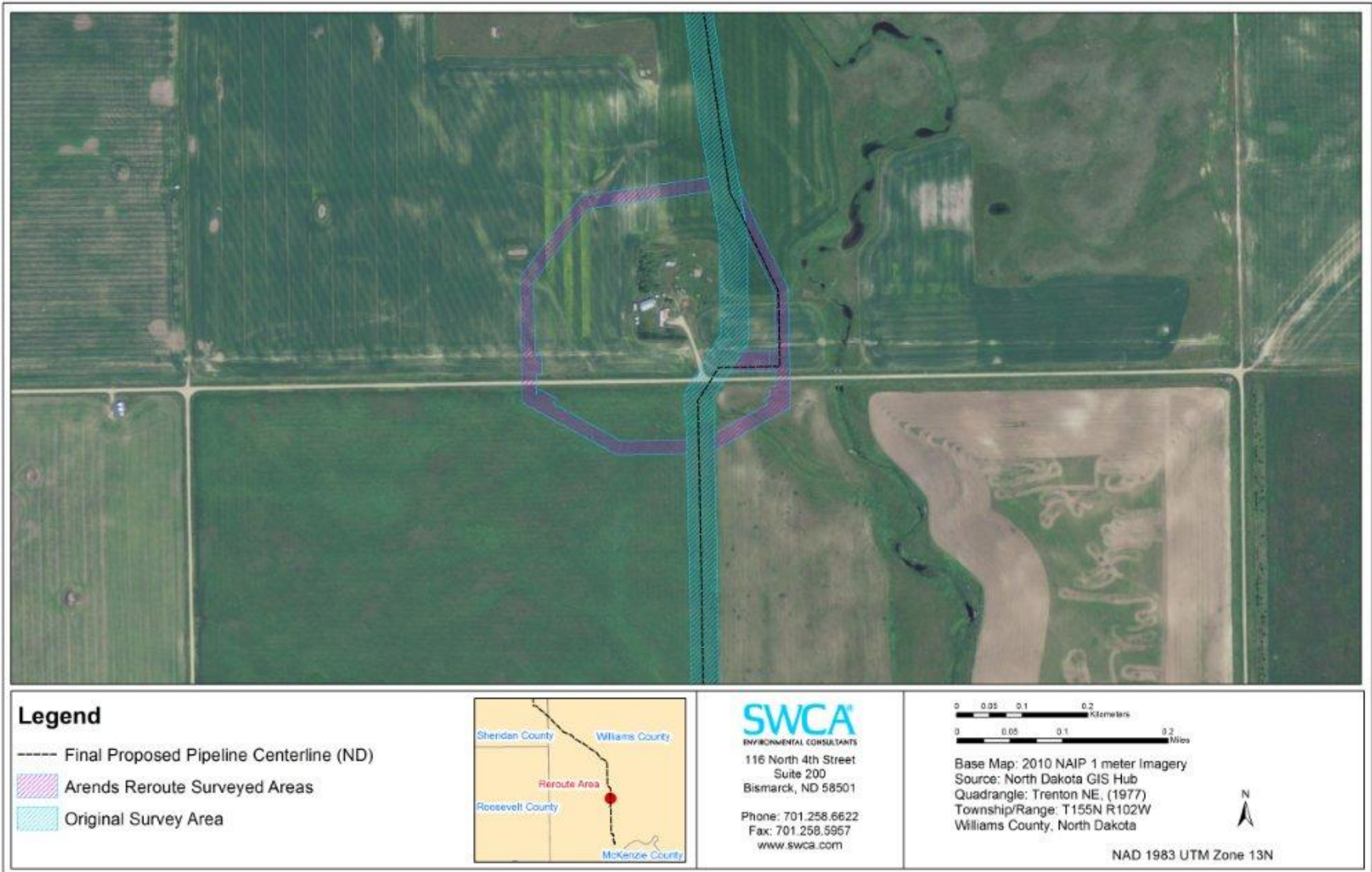


Figure 1. Site layout map for Arends reroute.