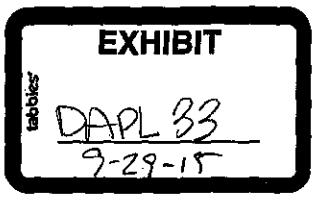
# Monica Howard

# Direct Testimony



BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

| | | |
|---|---|---|
| IN THE MATTER OF THE APPLICATION OF DAKOTA ACCESS, LLC FOR AN ENERGY FACILITY PERMIT TO CONSTRUCT THE DAKOTA ACCESS PIPELINE PROJECT | ) ) ) ) ) ) | HP14-002 |

**DIRECT TESTIMONY OF**

**MONICA HOWARD**

**ON BEHALF OF**

**DAKOTA ACCESS, LLC**

**DAKOTA ACCESS EXHIBIT 6**

**July 6, 2015**

**Q. Please state your name and business address for the record.**

A. Monica Howard. 1300 Main Street, Houston, TX 77002.

**Q. Can you briefly describe your education and experience?**

A. I have a Bachelor's of Science in Reclamation, with a biological emphasis and minors in Earth Science and Horticulture. I have over 15 years of environmental experience supporting the energy industry. I am currently the Director of Environmental Sciences for Energy Transfer and the Environmental Project Manager for Dakota Access Pipeline Project.

**Q. Which sections of the application are you responsible for?**

A. I am responsible for sections: 12. Alternatives; 13. Environmental Information; 14. Effects on the Physical Environment; 15. Hyrdology; 16. Effects on Terrestrial Ecosystems; 17. Effects on Aquatic Ecosystems; 18. Land Use; 20 Water Quality; 21. Air Quality; and parts of 23. Community Impact.

**Q. Please describe the permits in addition to the one sought in this application which will be required for construction and operation of the pipeline.**

A. The table below lists the permits and clearances currently identified for the construction of the Project within South Dakota.

| **Permits/Consultation List and Status for South Dakota Segment of DAPL** | | | |
|---|---|---|---|
| **Agency** | **Permit** | **Agency Action** | **Status as of June 2015** |
| **Federal** | | | |
| U.S. Army Corps of Engineers, Omaha District – South Dakota Regulatory Office | Sections 404/401 Clean Water Act Nationwide Permit 12 | Authorization of discharge of fill material into waters of the U.S., including wetlands | Submitted in December 2014, updated Pre-Construction Notification areas were submitted in April 2015. USACE review is ongoing. |
| | Section 10 Rivers and Harbors Act | Authorization of pipeline crossings of navigable waters of the U.S. | |
| | Section 106 Archaeological Resources Protection Act | Section 106 consultation through the Nationwide Permit 12 process | |

| Permits/Consultation List and Status for South Dakota Segment of DAPL | | | |
|---|---|---|---|
| **Agency** | **Permit** | **Agency Action** | **Status as of June 2015** |
| U.S. Fish and Wildlife Service, South Dakota Ecological Services Field Office | Endangered Species Act Section 7 Consultation | Consider lead agency findings of impacts on federally listed; provide Biological Opinion if the Project is likely to adversely affect federally listed or proposed species or their habitats | Topeka shiner is the only protected species potentially affected at three streams. No effect due to HDD and compliance with Programmatic BO for NWP in SD. |
| U.S. Fish and Wildlife Service, Sand Lake National Wildlife Refuge Complex | Wetland and Grassland Easements– Special Use Permit | Issuance of a one-time use permit, valid for 5 years, for construction of pipeline through protected features within U.S. Fish and Wildlife Service easements | Draft Environmental Assessment for Special Use Permit and right-of-way easement submitted to the USFWS in April 2015, USFWS provided comments in May 2015, the revised draft Environmental Assessment was submitted to the USFWS in June 2015. USFWS review is ongoing. |
| | Wetland and Grassland Easements– Right-of-Way easement | Issuance of a 30-year-term right-of-way easement after construction, for long-term maintenance and management of pipeline | |
| Farm Service Agency/Natural Resources Conservation Service | Crop Reserve Program | Authorization of crossing areas enrolled in the Crop Reserve Program | Consultation with the Farm Service Agency on areas enrolled in the Crop Reserve Program is ongoing. No permit required. To date we have secured easements on 12 of the 17 CRP easements crossed by the Project. |
| Pipeline and Hazardous Materials Safety Administration | 49 CFR Part 194 and 195 | Integrity Management Plan and Emergency Response Plan | Plans to be submitted in September 2016. No permit required. |
| **State** | | | |
| South Dakota Department of Environment and Natural Resources | National Pollutant Discharge Elimination System General Permit for Discharges of Hydrostatic Test Water (SDG070000) | Consider issuance of General Permit for hydrostatic test water discharge to waters of the U.S., construction dewatering to waters of the state | Anticipate submitting in October 2015 upon completion of the hydrostatic test plan. |
| | Surface Water Withdrawal Permit | Consider issuance of surface water withdrawal permit for temporary use | |
| | South Dakota Codified Law Sec 34A-18 Oil Spill Response Plan | Oil Spill Response Plan | To be submitted in September 2016. No permit required. |
| South Dakota Game Fish and Parks | State Listed Threatened and Endangered Species | Consultation on natural resources | Agency stated they would comment through the PUC process and that no formal authorization is required. |
| South Dakota State Historical Society, State Historic Preservation Office | Section 106 of National Historic Preservation Act | Review and comment on activities regarding jurisdictional cultural resources | Class III report submitted in June 2015. Federal agencies will be consulting directly with the SHPO in relation to jurisdictional crossings. |
| South Dakota Department of Transportation | Crossing Permits | Consider issuance of permits for crossing state highways | Currently completing applications and have planning meetings scheduled. |
| **Local** | | | |
| County Road Departments | Crossing Permits | Issuance of permits for crossing of county roads | Currently completing applications and have planning meetings scheduled. |

| Permits/Consultation List and Status for South Dakota Segment of DAPL | | | |
|---|---|---|---|
| **Agency** | **Permit** | **Agency Action** | **Status as of June 2015** |
| County and Local Authorities | Floodplain, Conditional Use, and building permits where required | Review under county approval process | Evaluating the need for respective permits, applications will be submitted as required. |

**Q. Are there any other major industrial facilities that would contribute to cumulative impacts?**

A. Dakota Access attempted to identify current and planned major industrial projects by reviewing South Dakota Public Utilities Commission and Federal Energy Regulatory Commission dockets as well as other publicly available online resources. To date, no major projects within the Project vicinity have been identified through these searches; therefore no adverse cumulative impacts are anticipated.

**Q. How did Dakota Access categorize land found along the pipeline?**

A. The PUC land use categories (*italic*) were defined as follows for the Project.

a. *Lands used primarily for row and non-row crops in rotation* are agricultural fields that may be tilled but not irrigated. Primary row crops include corn, soybeans, sunflowers, and cereal grains.

b. *Irrigated lands* are agricultural fields irrigated with center pivots, furrows, or flood irrigation received from lateral ditches.

c. *Pasturelands and rangelands* include lands that may have been plowed at some time in the past and replanted to pasture grasses. There is a high to moderate component of non-native grasses.

d. *Haylands* include lands that have grass and alfalfa crops with evidence to suggest hay production such as the presence of bales.

e. *Undisturbed native grasslands* are dominated by native grass species. Non-native plant

species may be present but are in low densities. It also includes restored grasslands dominated by native grass species.

f. *Existing and potential extractive nonrenewable resources* include coal, uranium lignite, and oil resources that are in the vicinity of the Project.

g. *Other major industries* include wind power development and energy transfer.

h. *Rural residences and farmsteads, family farms, and ranches* are individual farmsteads and outbuildings, as well as farmstead windbreaks and shelterbelts.

i. *Residential* includes suburban and urban residential areas.

j. *Public, commercial, and institutional use* includes county roads, highways, and railroad ROWs, commercial developments, schools, and churches. This category includes roadway borrow ditches that may be vegetated.

k. *Municipal water supply and water sources for organized rural water systems* include surface water reservoirs and groundwater wells that withdraw water for public water supplies.

**Q. Were any PUC land uses not documented along the pipeline?**

A. Four land use types were not documented along the proposed route, including existing and potential extractive nonrenewable resources; other major industries; municipal water supply and water sources for organized rural water systems; and noise sensitive land uses.

**Q. What effects are anticipated on surrounding land from operation or construction of the pipeline?**

A. Permanent effects on surrounding land uses are not anticipated since the pipeline is primarily a below ground structure with little land use conversion.

**Q. Did the project analyze the effects of the Pipeline on land uses and if so, what are the impacts?**

A. The primary land use types impacted by the proposed Project are lands used for agriculture. Predominant agricultural land uses within the Project area are as follows: row crop agriculture, pastureland /rangeland, hayland, and irrigated land. A secondary use for many of the land use types is hunting and recreation; this is discussed further within Community Impact Section 23.1– Forecast of Impact on Community. Once installed, the pipeline will be below the surface and will not affect normal agricultural or recreation activities.

The public, commercial, and institutional use are road and railroad ROWs, including the borrow ditches. These areas crossed by the Project total a small percentage of the overall Project land uses (2.2 percent), but occur frequently because of the section line road system in South Dakota

**Q. Does the project cross any public properties?**

A. The only public property crossed in South Dakota is a State School and Public Lands tract, which is crossed for 2,783 feet in Campbell County.

The Project does not cross any federal or state-owned parks, recreation areas, or wildlife management areas within South Dakota. An analysis of natural or scenic areas within the Project corridor included designated scenic outlooks, viewing areas, recreational trail areas, preserves, and byways. No designated natural or scenic areas were identified along the route.

**Q. What are the regional land forms in the project area?**

A. The state of South Dakota is generally equally divided east and west by the Missouri River, with the western half of the state having greater topography than the eastern half of the state. The project is located in the eastern half of the state where elevations can range from 1,000 feet to 2,000 feet. The portion of Project area located east of the Missouri River and west of the James River is within the Glaciated Missouri Plateau of the Great Plains physiographic province (U.S. Geological Survey [USGS], 2004a).

**Q. Have you included a topographic map of the project area?**

A. A topographic map of the Project area is included in Exhibit A2.

**Q. What geological features are in the project area?**

A. The Project is located in the Great Plains and Central Lowlands physiographic provinces (USGS, 2004a), and lies within the glaciated portion of South Dakota. Surficial deposits within this region are composed primarily of alluvium, eolian deposits, lacustrine sediments, moraine (till), and outwash (USGS, 2005).

The bedrock geology is composed of Cretaceous and Precambrian aged rocks that formed in marine environments (The Paleontology Portal, 2003).

Bedrock in the Project area crops out along the Missouri River bluffs, along many rivers and creeks, and other areas where the glacial sediment has been removed by erosion.

**Q. Are any economic deposits found within the project area?**

A. Of South Dakota's primary non-fuel resources, approximately 69 percent of the total non-fuel production value in 2011 originates from a combination of cement (portland), clays, feldspar, gemstones, gold, gypsum, iron ore, lime, mica, silver, and stone (dimension granite). Crushed stone amount to approximately 16 percent of the state's non-fuel production value, while the remaining 15 percent comes from construction sand and gravel.

Campbell, Edmunds, Kingsbury, Lake, Lincoln, McPherson, Spink, and Turner Counties contain construction sand and gravel. Minnehaha County contains construction sand and gravel, as well as crushed stone. The SDGS Sand, Gravel, and Construction Aggregate Mining Interactive Map did not identify industrial mining operations within one mile of the Project area; therefore, it is not anticipated that the Project will impact mineral resources (SDGS 2014).

**Q. Please describe the soils found within the project area.**

A. Maps depicting the limits of the soil map units within the Project area are provided in Exhibit A3. Exhibit C includes total crossing distance of each soil series unit, the acres impacted by construction of the aboveground pump station, and the characteristics of each of the soil map units within the Project area, including prime farmland, hydric properties, compaction potential, erosion, restrictive soil layers, shallow bedrock, and revegetation properties.

**Q. Is there prime farmland located along the pipeline route?**

A. The U.S. Department of Agriculture (USDA) defines prime farmland as "land best suited to food, feed, forage, fiber, and oilseed crops" (Natural Resources Conservation Service [NRCS], 2014).

Approximately 37 percent (99.9 miles) of the soils crossed by the pipelines are considered to be prime farmland, and approximately 44 percent (120.5 miles) of the route is identified as farmland of statewide importance.

The pump station in Spink County is located on 4.3 acres of prime farmland; however this location is not under active cultivation.

**Q. Please describe the impacts to hydric soils from construction of the pipeline.**

A. The majority of the soils within the Project area are classified as hydric in Exhibit C, some of which are prime farmland if drained. Soil compaction and rutting will likely result from the operation of heavy equipment along the Project. The extent of soil compaction will depend on the degree the soils are saturated, with the most severe compaction occurring where heavy equipment is operated on highly saturated soils. Dakota Access will minimize these impacts by implementing mitigation measures during construction such as the uses of timber mats or the use of low ground weight bearing equipment. Decompaction in the form of ripping/tilling will take place where needed during restoration.

**Q. Please describe any measures which the project is taking with regard to erosion.**

A. Soils with high erosion potential within the Project area were identified based on NRCS designations of land capability class and subclass. The majority of the soils within the Project area have low erosion potential. Various areas are characterized by steep slopes (slopes greater than 8 percent) and are indicated as such in Exhibit C. To minimize or avoid potential erosion impacts, Dakota Access will utilize erosion and sedimentation control devices as described in the Project-specific SWPPP (Exhibit D).

Environmental Inspectors will be retained throughout construction to oversee and report on construction compliance. The effectiveness of revegetation and permanent erosion control devices will be monitored by Dakota Access' operating personnel during the long-term operation and maintenance of the Project Facilities.

**Q. Are there any restrictive soil layers or shallow bedrock found along the pipeline route?**

A. No shallow bedrock was identified within the Project area; however shallow Natric was identified through desktop analysis and field surveys. Natric is a subsoil layer with a high concentration of sodium salts. Dakota Access has retained an agricultural consultant to develop specific mitigation measures for work in these areas.

**Q. How will the project revegetate the construction areas?**

A. Once the land contours are restored, a seed bed will be prepared in non-agricultural areas and reseeded with appropriate seed mixed based on the time of year, landowner agreements, and land managing agency recommendations. Additionally, any necessary additional erosion protection measures will be implemented/installed including water berms, mulch, erosion control mattiner, etc. Agricultural areas will be turned over to the farmer to resume agricultural

activities in agreement with the easements.

**Q. Are seismic hazards present and mitigated in the project area?**

A. Seismic hazards include earthquakes, surface faulting, and soil liquefaction. According to the USGS Seismic Hazards maps for the U.S., the Project is situated in an area of very low seismic probability; therefore no mitigation is proposed.

**Q. Is there karst terrain along the pipeline?**

A. Karst terrain results from the dissolution of highly soluble bedrock such as limestone and dolomite. Areas with karst terrain are more susceptible to subsidence events (Galloway et al., 2005). Karst occurs in approximately 47.5 miles of the Project ROW.

**Q. Are there areas of expected slope instability along the pipeline route?**

A. Slope instability occurs when unconsolidated soils and sediments located on steep slopes become saturated, usually from a flooding event. Only one geologic formation is known to be susceptible to landslides in the Project area, the Pierre Shale. Approximately 189 miles of the Project area is located in Pierre Shale

**Q. Does the project expect construction constraints as a result of the land forms and geology along the route?**

A. If shallow bedrock or boulders are encountered during construction that cannot be economically excavated from the ROW by an excavator or rock trencher, blasting may need to be utilized to assist in ditch excavation. In the unlikely event blasting is necessary; Dakota Access has developed a Blast Plan for the Project which outlines best management practices to minimize potential impacts due to blasting.

As outlined in Section 14.7– Seismic and Subsidence, desktop studies have identified a potential for karst geology along certain portions of the route. Dakota Access will conduct pre-

construction training to educate personnel on the identification of karst features during excavation. If karst features are identified along the route, Dakota Access will take steps to ensure the integrity and safety of the pipeline, which may include realignment or specialized construction techniques.

**Q. Has the pipeline examined the impacts to hydrology from construction?**

A. The following sections include information on the hydrology of the Project area including drainage patterns, water uses, and hydrostatic testing.

**Q. Will the pipeline interfere with drainage patters along the route?**

A. The pipeline is a below ground facility and therefore will not interrupt drainage patterns within the Project area.

**Q. What are the sensitive area or water uses along the project route?**

A. Consultation with the SDDENR during the Project fatal flaws analysis identified Zone A Wellhead Protection and Source Water areas within Minnehaha County. These areas define the boundaries in which the land area contributes water to a well. These protection areas are in place to protect the quality of local drinking water (SDDENR, 2014a). The baseline centerline crossed/clipped two of these areas; however, through the reroute process Dakota Access has successfully avoided crossing these protected areas.

The South Dakota Association of Rural Water Systems supports water uses including clean drinking water and water for local agriculture and industries. These water uses are managed throughout the state by districts based on region. The Project crosses seven rural water systems within South Dakota including WEB, Mid Dakota, Kingbrook, Minnehaha, Lincoln, South Lincoln, and the Lewis and Clark system which overlaps the majority of these water districts that are located on the eastern border of the state, and continues into Iowa. Dakota Access is in

discussions with the rural water systems regarding appropriate methods and measures for crossing their respective lines.

**Q. Will the project use surface water and/or ground water in construction or operation?**

A. Dakota Access will utilize surface waters as a water source for hydrostatic testing in agreement with the owners of the water rights and/or any state or federal permit. The exact locations of the hydrostatic testing and discharge sites will be determined in coordination with the selected contractor. Groundwater is not expected to be used during construction or operation.

**Q. Are there impacts to aquifers expected along the pipeline route?**

A. Groundwater is not currently proposed for use during construction and operation of the Project. The trench will need to be dewatered occasionally where the shallow groundwater or stormwater is pumped from the trench and discharged to a near-by upland to create a more suitable working environmental for installing the pipeline. This effect of this pump and discharge will be highly localized and is not anticipated to have impacts to the use of groundwater in the immediate or general project area.

**Q. What water quality permits are expected for the project?**

A. Dakota Access is permitting the Project through the USACE nationwide permit program for Section 404/10 of the Clean Water Act (CWA) impacts; specifically Nationwide Permit 12. The SDDENR has previously issued Section 401 water quality certification for projects that qualify for nationwide permit 12 coverage; Dakota will abide by all general and regional conditions of the permits.

Under Section 303(d) of the CWA, states are required to identify waterbodies that are not attaining their designated use(s) and develop total maximum daily loads (TMDLs), which

represent the maximum amount of a given pollutant that the a waterbody can assimilate and still meet its designated use(s). Three U.S. Environmental Protection Agency (EPA) 303(d) impaired waterbodies are crossed by the project: Turtle Creek, James River, and Big Sioux River. However all will crossed by HDD and additional impacts to these impaired waterbodies are not expected.

The general discharge permit for hydrostatic test water discharges will be sought as needed and conditions adhered too, direct discharges to waters are not proposed.

**Q. Please describe the terrestrial setting of the project.**

A. The Project area crosses the Great Plains Steppe Province and the Prairie Parkland (Temperate) Province ecoregions (USDA, 2014a). The western part of the Project area in South Dakota is located in the Great Plains Steppe Province and is characterized by rolling, flat plains. Elevations slope from approximately 2,500 feet from the west to 1,000 feet in the eastern section of this ecoregion. The majority of this region is made up of young glacial drifts and dissected till plains. Vegetation is mostly comprised of short and tallgrass prairie with not much woody vegetation. However, there are some scattered areas of eastern cottonwood (*Populus deltoids*) forested floodplains within this prairie dominated ecoregion (USDA, 2014b).

**Q. What are the vegetation community types found along the project route?**

A. The Project route crosses six terrestrial vegetation community types in South Dakota which largely mirror the PUC land use types and include pastureland/rangeland (18%), native grassland (<1%), hayland (7%), row-crop agriculture (71%), residences and farmsteads (<1%), and ROW corridors (2%). The predominant vegetation communities crossed are row-crop agriculture and pastureland/rangeland as depicted in the table below.

| **Vegetative Communities Crossed by the Project** | |
|---|---|
| **Counties** | **Vegetation Communities (acres)** |

| Crossed (North to South) | Pastureland / Rangeland | Native Grassland | Hayland | Row-Crop Agriculture | Residences & Farmsteads | Right of Way Corridors |
|---|---|---|---|---|---|---|
| Campbell | 222.3 | 30.1 | 102.4 | 189.0 | 1.5 | 15.5 |
| McPherson | 8.4 | 0.0 | 2.9 | 107.9 | 2.7 | 3.8 |
| Edmunds | 45.1 | 0.0 | 56.5 | 593.0 | 0.2 | 12.8 |
| Faulk | 73.4 | 0.0 | 47.2 | 420.2 | 4.0 | 12.7 |
| Spink | 182.5 | 0.0 | 42.7 | 461.7 | 2.1 | 19.3 |
| Beadle | 154.7 | 0.0 | 24.5 | 352.5 | 2.8 | 12.0 |
| Kingsbury | 73.4 | 0.0 | 29.7 | 303.0 | 1.2 | 9.3 |
| Miner | 23.2 | 0.0 | 0.7 | 242.0 | 9.3 | 6.9 |
| Lake | 59.6 | 0.0 | 26.3 | 268.0 | 1.0 | 6.8 |
| McCook | 2.6 | 0.0 | 4.3 | 19.6 | 0.1 | 0.7 |
| Minnehaha | 90.4 | 0.0 | 21.9 | 375.2 | 0.3 | 16.1 |
| Turner | 6.5 | 0.0 | 5.0 | 28.0 | 2.4 | 0.9 |
| Lincoln | 27.4 | 10.8 | 5.6 | 403.0 | 2.6 | 11.3 |
| **State Total** | **969.3**<br>**18 %** | **41.0**<br>**< 1%** | **369.5**<br>**7%** | **3763.1**<br>**71%** | **30.0**<br>**< 1%** | **128.1**<br>**2 %** |

**Q. Please describe the pastureland/rangeland crossed in South Dakota.**

A. The pastureland/rangeland vegetative community is primarily located in the northern portion of the Project in South Dakota and includes lands that may have been plowed at some time in the past and replanted to non-native pasture grasses. The primary land use is grazing by livestock. This plant community has a high to moderate percent cover of non-native grasses. Native grasses and forbs may be present but are not dominant and have low cover.

**Q. Please describe for us the native grassland community.**

A. The native grassland vegetative community includes grassland dominated by native mixed grass and tall grass species. Non-native plant species may be present but in low quantities. This land use includes undisturbed grasslands that may have been plowed at some time in the past. It also includes restored grasslands dominated by native grass species. Native grasslands were only identified in Campbell and Lincoln counties.

**Q. Please describe the hayland plant community.**

A. The hayland plant community is land that has been cropped for hay forage production.

**Q. Please describe row-crop agriculture.**

A. Row-crops are characterized by annual herbaceous vegetation planted for the production of human consumption, animal feed, biofuel, or other specific purposes. Row-crop agriculture accounts for the majority (71 percent) of the Project route.

**Q. Please describe the vegetation in residences and farmsteads.**

A. This vegetation community describes the rural residences and farmsteads, and suburban residential land uses and may include farmsteads and outbuildings (including abandoned farmsteads), farm windbreaks and shelterbelts, and maintained residential yards.

**Q. Please describe the vegetation along existing right-of-way corridors.**

A. These are road and railroad ROWs including the vegetated borrow ditches. Vegetation is typically non-native planted vegetation, some native species are present and tract noxious species can be present.

**Q. What are the noxious weeds?**

A. In addition to collecting data on the vegetative communities just described, Dakota Access identified and collected data on areas of noxious weeds encountered along the route. There are 7 noxious weeks published on the South Dakota state noxious weed list (South Dakota Weed - Chapter 38-22). South Dakota counties also have noxious weed lists for species that are locally problematic. Table 16.1-2 from the application lists the state and county listed noxious weeds in South Dakota and is presented below.

**Table** Error! No text of specified style in document.**-1**
**2014 South Dakota State and County Noxious Weeds**

| Latin Name | Common Name | State | County |
|---|---|---|---|
| *Acroptilon repens* | Russian knapweed | X | |
| *Arctium minus* | *burdock | | X |

| **Table** Error! No text of specified style in document.-1<br>**2014 South Dakota State and County Noxious Weeds** | | | |
|---|---|---|---|
| **Latin Name** | **Common Name** | **State** | **County** |
| *Artemisia absinthium* | *absinth wormwood | | X |
| *Cardaria draba* | hoary cress / whitetop | X | |
| *Carduus acanthoides* | *plumeless thistle | | X |
| *Carduus nutans* | *musk thistle | | X |
| *Centaurea diffusa* | diffuse knapweed | | X |
| *Centaurea maculosa* | spotted knapweed | | X |
| *Cichorium intybus* | chicory | | X |
| *Cirsium arvense* | *Canada thistle | X | |
| *Cirsium vulgare* | *bull thistle | | X |
| *Conium maculatum* | *poison hemlock | | X |
| *Convolvulus arvensis* | *field bindweed | | X |
| *Cynoglossum officinale* | houndstongue | | X |
| *Euphorbia esula* | *leafy spurge | X | |
| *Hyoscyamus niger* | black henbane | | X |
| *Hypericum perforatum* | St. Johnswort | | X |
| *Leucanthemum vulgare* | oxeye daisy | | X |
| *Linaria dalmatica* | Dalmatian toadflax | | X |
| *Linaria vulgaris* | *yellow toadflax | | X |
| *Lythrum spp.* | purple loosestrife | X | |
| *Onopordum acanthium* | Scotch thistle | | X |
| *Phragmites australis* | **Phragmites* / common reed | | X |
| *Polygonum sachalinese* | giant knotweed | | X |
| *Potentilla recta* | sulfur cinquefoil | | X |
| *Sonchus arvensis* | *perennial sowthistle | X | |
| *Tamarix spp.* | saltcedar | X | |
| *Tanacetum vulgare* | common tansy | | X |
| *Tribulus terrestris* | puncturevine | | X |
| *Verbascum thapsus* | common mullein | | X |
| Source: South Dakota Department of Agriculture, 2014<br>* Noxious weeds identified to date within the Project area. | | | |

Dakota Access is collecting noxious weed species locations, and the size and percent canopy cover of infestations during field surveys along the Project route. To date, a total of 12 species of state and county noxious weeds were documented within the Project area (Table 16.1-2). The overall percentage of canopy cover was low (3.4 percent) within areas where noxious weeds were identified during field surveys. Canada thistle, field bindweed, and absinth wormwood

(*Atemisia absinthium*) are the common noxious weeds identified along the proposed route.

**Q. Please briefly describe the impacts to vegetation and any mitigation measures which the project intends to adopt.**

A. Both temporary and permanent impacts to vegetation may occur as a result of the Project. Row-crop agriculture and haylands will be temporarily disturbed and removed from production during construction. However, agricultural production will resume during the growing season following completion of the pipeline construction. Dakota Access will restore row-crop agriculture and haylands to preconstruction conditions as soon as practicable following construction in accordance with the Agricultural Impact Mitigation Plan (AIMP) (Exhibit D of the application) and landowner agreements. Landowners will be compensated for crop losses, short term reduced yields, and other damages resulting from the pipeline construction.

The proposed Project area includes limited areas of residences and farmsteads, including windbreaks. The 50-foot pipeline permanent ROW will be kept clear of trees, to allow for pipeline inspection and maintenance. Landowners will be compensated for loss to landscaping, timber, etc. on areas impacted by the project. Disturbed areas outside the permanent ROW will be revegetated with a recommended seed-mix and natural succession will allow the vegetation to revert to preconstruction types. Tree and shrub replanting is not proposed.

The route crosses grasslands and pastureland/rangeland that are primarily used for grazing. This grass-dominated land cover controls water runoff and sediment from directly entering groundwater, nearby lakes, rivers ponds and streams while contributing to wildlife habitat and livestock forage. Dakota Access will restore all grasslands as near to pre-construction conditions as practicable. Where conservation programs are in place, Dakota Access will work in accordance with the Natural Resource Conservation Service and Farm Service Agency regarding

reseeding and reclamation.

Dakota Access will incorporate topsoil segregation within agriculture, improved pasture, and residential areas during construction. A maximum depth of 12 inches or to the depth of top soil if less than 12 inches, or as agreed upon with the landowner, will be segregated. Unless otherwise requested, topsoil will be stripped from over the pipeline trench and the adjacent subsoil storage area. Segregated topsoil will be returned following backfilling of the subsoil, ensuring preservation of topsoil within the construction area. This practice preserves the seed bank within the topsoil and encourages revegation within the ROW.

Reclamation and revegetation of grasslands and pastureland/rangeland may include soil conditioning such as de-compaction when reseeding as necessary to improve vegetative re-growth. Seed mixes will be developed based on data from pre-disturbance field surveys and with input from the local NRCS.

Revegetation success will be monitored along the pipeline ROW in accordance with applicable requirements.

**Q. What will be done regarding noxious weeks along the project?**

A. To mitigate the spread of any noxious weeds, BMPs and weed control practices during construction and operation may be implemented; common measures include:

- Treating known noxious weed infestations prior to ground disturbance.
- Immediately reseeding following construction.
- Using weed-free seed in reclamation activities.
- Using weed-free erosion control materials.

Routine mowing of the permanent right-of-way can assist in week control. Operation and maintenance excavation activities should not exacerbate noxious weed conditions since

disturbances will be infrequent and isolated.

**Q. What types of terrestrial wildlife may be found along the pipeline route?**

A. The Project area provides foraging and sheltering habitat for many species of mammals, raptors, and songbirds.

**Q. What impacts to wildlife are expected and what mitigation measures will be adopted?**

A. Construction will be short-term and result in temporary and permanent impacts to wildlife. Given the large percentage of agricultural development along the Project ROW, species that may utilize the Project area are used to seasonal vegetation impacts. Displacement of more mobile species from the corridor to adjacent similar habitat could occur during increased human and equipment presence during the construction period. Causality to less mobile species may take place during the clearing and grading phases of construction.

The Project area will be returned to pre-construction contours, land uses, and vegetation cover after pipeline construction. There are very few trees along the project ROW, and where impacts occur, they are typically associated with residences and shelterbelts; many of which are comprised of fast growing non-native tree species.

**Q. Are there terrestrial sensitive, threatened and endangered species wildlife found along the pipeline corridor?**

A. A comprehensive list of federal and state listed species within the counties crossed by the Project, including habitat assessments and determinations of impact or effect on the species was performed. Early coordination and informal consultation with the USFWS, the South Dakota Natural Heritage Program (SDNHP), and South Dakota Game, Fish and Parks (SDGFP) was initiated. Species occurrence records and designated critical habitat were obtained.

**Q. What impacts and mitigation measures if any, can be anticipated for sensitive, threatened and endangered species?**

A. Based on completed survey data and assessment, no effect to protected terrestrial species is anticipated. Dakota Access is continuing to consult with the resource agencies to obtain concurrence with this determination prior to initiating construction.

**Q. Approximately how many waterbody crossings have been identified?**

A. Dakota Access has identified 279 waterbody crossings located within the Project footprint. Of these, 10 are perennial, 105 are intermittent, 139 are ephemeral streams, and 25 are ponds (open water). The MP, waterbody name, state water classification, and flow regime for surface waters crossed or otherwise impacted by the Project can be found in Exhibit C. The Project does not cross any waterbodies categorized as high-quality fisheries within South Dakota. A total of three waterbodies crossed by the Project are categorized as low-quality, and have warmwater fishery classifications: Turtle Creek (warmwater marginal), James River (warmwater semipermanent), and Big Sioux River (warmwater semipermanent) (ARSD 74:51:01, 2014); all of which will be crossed via HDD.

**Q. What impacts to aquatic ecosystems are expected and what mitigation measures will be implemented?**

A. Impacts to waterbodies that are open-cut will be limited to general crossing area during the construction phase and include: increased sedimentation and turbidity; introduction of water pollutants; or entrainment of fish. To reduce the possibility of potential impacts from a potential release, Dakota Access will implement the Spill Prevention, Containment, and Countermeasures Plan. No permanent long-term effects on water quality or fish communities are anticipated to occur as a result of the construction or operation of the pipeline.

Dakota Access will minimize potential impacts to open-cut waterbodies by implementing best management practices, where necessary.

Maintenance activities within the Project area will likely be infrequent, short-term, isolated, and will not affect aquatic biota or their habitat

The pipeline trench will be excavated immediately prior to pipe installation to limit the duration of construction will be expedited to minimize impacts. Excavated materials will be stored no less than 10 feet from the edge of the waterbody and temporary erosion control devices will be utilized to prevent the sediment from reentering the waterbody. Additional temporary workspace will be set back a minimum of 30 feet from the waterbody where conditions allow and vegetation will remain in place along the banks for as long as practical prior to crossing to further filter sediment from entering the waterbody. Bridges will be installed to allow for maximum flow of the waterbodies, and down stream flow will be maintained throughout construction actvities

The HDD crossing method will be utilized at all waterbody crossings greater than 100 feet wide, where required to avoid impacts to sensitive resources, and as needed for other constructability concerns. The HDD method allows for pipeline installation without excavating a trench. A HDD Contingency Plan has been prepared for construction. HDD crossings of wetlands and waterbodies are listed in the table below.

| Wetland and Waterbody Horizontal Directional Drill Locations | | |
|---|---|---|
| **County** | **Waterbody Name** | **HDD Length** |
| Faulk | Wetland | 1,270 |
| Spink | Turtle Creek | 1,500 |
| Spink | Wetland | 1,650 |
| Beadle | James River | 3,227 |
| Beadle | Wetland | 1,194 |
| Lincoln | Big Sioux River | 2,350 |

**Q. What wetland vegetation types are found along the pipeline route?**

A. Wetlands are limited in extent to depression features (e.g., prairie potholes) and riparian

areas. Palustrine emergent (PEM) wetlands are the dominant wetland type throughout the Project area; there is one shrub scrub wetland and no forested wetlands.

Table 17.2-1 below summarizes all wetlands within the Project area; this includes USACE jurisdictional wetlands and non-jurisdictional wetlands.

| Summary of Wetlands Crossed by the Dakota Access Project by County | | | |
|---|---|---|---|
| **County** | **PEM (acres)** | **PSS (acres)** | **Total (acres)** |
| Beadle County | 4.4 | 0 | **4.4** |
| Campbell County | 2.7 | 0 | **2.7** |
| Edmunds County | 8.3 | 0 | **8.3** |
| Faulk County | 7.0 | 0 | **7.0** |
| Kingsbury County | 5.0 | 0 | **5.0** |
| Lake County | 5.1 | 0 | **5.1** |
| Lincoln County | 1.4 | 0 | **1.4** |
| McCook County | 3.5 | 0 | **3.5** |
| McPherson County | 2.5 | 0 | **2.5** |
| Miner County | 2.5 | 0 | **2.5** |
| Minnehaha County | 5.0 | 0.6 | **5.6** |
| Spink County | 20.9 | 0 | **20.9** |
| Turner County | 0.2 | 0 | **0.2** |
| **Total** | **68.5** | **0.6** | **69.1** |

**Q. What impacts to wetlands are expected and how did Dakota Access work to minimize impacts?**

A. Dakota Access has designed the Project to avoid permanent fill in wetlands. Aboveground facilities have been sited within upland areas resulting in no permanent loss of wetlands. As wetland features were surveyed, minor route adjustments were made where practicable to avoid or minimize the impact. Some wetland impacts will be avoided by implementation of an HDD.

Temporary impacts to wetlands that will be open cut will be limited to the construction phase and include disturbance of vegetation, potential for sedimentation, temporarily increased turbidity and related secondary effects.

**Q. What best management practice will be implemented to protect and restore them?**

A. Where impacts to wetlands are unavoidable, Dakota Access will implement BMPs to ensure that the wetland is restored post-construction in accordance with appliable regulations and permits. These BMPs include the following:

- Wetland boundaries will be clearly defined and marked prior to initiating construction in the area.
- The minimum construction equipment necessary for pipeline installation will be utilized within wetlands.
- If standing water or saturated soil conditions are present, or if construction equipment will cause ruts or mixing of the topsoil and subsoil, construction equipment operating in wetland areas would be limited to the use of low ground pressure equipment or normal equipment operating from timber equipment mats.
- Limit tree stump removal and grading within wetlands to the area directly over the pipeline, unless required for safe installation.
- Segregate topsoil from the area directly over the trench line in unsaturated soils.
- Use of trench plugs/breakers at wetland boundaries ensures that wetland hydrology is restored following construction.
- Pre-construction contours will be restored along the pipeline ROW, allowing wetlands to naturally revegetate.

**Q. What sensitive, threatened and endangered aquatic species might be found along the route?**

A. A comprehensive list of all federal and state listed species within the counties crossed by the Project, including habitat assessments and determinations of impact or effect on the species

was completed.

The USFWS South Dakota Ecological Field Office identified eight waterbodies crossed by the Project that have Topeka shiner occurrences; including the James River, Shue Creek, Pearl Creek, Middle Pearl Creek, Redstone Creek, Rock Creek, East Fork Vermillion River, and Big Sioux River. An additional waterbody, the West Fork Vermillion River, was also identified for occurrence; however, the project crosses in its headwaters where it is an emergent wetland with no perennial flowing water and therefore not suitable habitat for the species. Some of these will be crossed via HDD and avoid impacts to the species. All open cut crossing will take place in accordance with the *Programmatic Biological Opinion for the Issuance of Selected Nationwide Permits Impacting the Topeka Shiner in South Dakota* (October 2014) and result in no likely adverse effects.

The northern river otter and whooping crane have SDNHP species occurrence records within one mile of the Project. The northern river otter has been documented in the James and Big Sioux Rivers (SDNHP, 2014 and SDGFP, 2014c) within the Project area; however, both of these rivers will be crossed via HDD so potential impacts to the northern river otter will be avoided. The Project area is within the migratory range of the whooping crane; however, this stop-over species is highly mobile and would likely avoid construction areas for the vast similar and suitable habitat throughout the area and region, therefore no effect on this species is anticipated.

No other aquatic threatened, or endangered aquatic species or their critical habitat has been reported within two miles of the Project. Pending final results of field surveys and input from resource agencies, appropriate mitigation and protection measures will be implemented to minimize potential impacts.

**Q. What air quality impacts are expected from the pipeline construction or operation?**

A. Air quality impacts along the pipeline include potential air emissions during both construction and operation of the pipeline. Dakota Access will comply with all federal and state air quality regulations that are applicable to the proposed facilities along the pipeline and will take necessary steps to ensure that they do not cause an exceedance of any air quality standard. There is one proposed pump station along the pipeline; however, if the potential to emit is below 25 tons per year of each of the relevant criteria pollutants, a source is exempt from obtaining either a construction or operating permit in South Dakota. Emissions from the pump station are anticipated to be well below this threshold; additionally emissions from all launcher/receiver and main line valve sites will be well below the threshold. Therefore, no air permits are being sought.

**Q. How has the project planned for its impacts on cultural resources?**

A. Cultural resources surveys were conducted for the Project in accordance with Section 106 of the National Historic Preservation Act and the guidelines set forth by the South Dakota State Historical Society to identify and record the extent and temporal affiliation of archaeological resources and assess the potential eligibility for inclusion in the National Register of Historic Places (NRHP).

In August of 2014, consultation was initiated with the South Dakota State Historic Preservation Office (SHPO), and a scope of work was submitted and approved that detailed the Level III intensive survey plan for the Project. It included a survey plan for the Pre-construction Notification (PCN) permit areas defined by the lead Federal agency (USACE-Omaha District), provided a tiered survey approach for high and moderate probability areas as delineated through extensive background research, and the survey of any identified NRHP properties to comply with SDCL 1-19A-11.1. To provide additional information to the SHPO, GIS modeling based on

environmental factors and known cultural resources was used to create a predictive model for locations of unidentified cultural resources.

**Q. Were literature reviews conducted and if so, what were the results?**

A. Prior to initiating fieldwork for the proposed project route and all reroutes/route modifications, literature reviews were conducted. No properties listed in the NRHP are located within 1-mile of the Project centerline. Within one mile, 215 previous surveys, 148 archaeological sites, 397 historical structures and, eight cemeteries were noted. Two of these resources, both railroad segments, are eligible for inclusion in the NRHP; one which is not within the Project footprint and will be not be impacted and the other is the grade bed for the historic Great Northern Railroad in Spink County.

**Q. Has the project performed archaeological investigations?**

A. Archaeological investigations were conducted from August through November 2014 and March through July of 2015. Fieldwork consisted of pedestrian reconnaissance, shovel test excavation and test unit excavation. The artifacts collected during this survey were washed, analyzed, and catalogued. As of July 1 2015, all high and moderate probability areas have been surveyed in addition to low probability areas where access was permitted for a total of 97.7% of the route.

Surveys of three previously recorded sites (39CA85, 39ED53, 39BE85) listed as unassessed were re-surveyed and not relocated.

Three stream crossings in the Project were determined by the Level III survey to have the potential for buried cultural deposits. Deep trenching was conducted at these locations following a SHPO approved scope of work. The results of the trenching were negative for cultural material.

**Q. Are any sites found along the project eligible for inclusion in the NRHP?**

A. As of July 2015, a total of 55 cultural resources consisting of 50 archaeological sites and two historical districts and three individual structures were documented within the Project footprint. Of these, 42 sites have been recommended to be not eligible for inclusion in the NRHP. These sites consist of artifact scatters, isolated finds, or historic sites that do not possess adequate data or integrity to meet NRHP criteria. The three relocated sites discussed in the previous response remain unevaluated. The remaining ten sites consisting of two newly recorded prehistoric stone circle sites, two revisited prehistoric sites (39BE29/39BE94/39BE95; 39LN21), and six historic railroad/railroad bed segments have been recommended as eligible for inclusion in the NRHP. Reroutes have been evaluated to avoid impacts for the newly recorded prehistoric stone circle sites in Campbell County. Additionally, sites 39BE29/39BE94/39BE95 and 39LN21 will be avoided by HDD.

In South Dakota, all railroads are considered eligible for inclusion in the NRHP. Upon consultation with the SHPO it was determined that a construction trench could be excavated across the bed, but the bed must be reconstructed at the conclusion of construction. Photographic documentation and a brief context for each of these sites was determined to be an appropriate mitigation measure for the portion of the railroad beds impacted by the project. Dakota Access will comply with the excavation and restoration of these beds; therefore the impact would be negligible.

**Q. Have reports of the investigations been prepared? If so, how will they be utilized?**

A. Reports detailing the results of the comprehensive field investigations were prepared in accordance with the SHPO Guidelines submitted to the SHPO in June 2015 for review, no comments have been received to date. An Unanticipated Discovery Plan was also submitted to

the SHPO.

**Q. Does this conclude your written pre-filed direct testimony?**

A. Yes.

Dated this _____ day of July, 2015

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Monica Howard