BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION BY SCS CARBON TRANSPORT LLC FOR A PERMIT TO CONSTRUCT A CARBON DIOXIDE TRANSMISSION PIPELINE

SD PUC DOCKET NO. _____

PRE-FILED DIRECT TESTIMONY OF DR. JON A. SCHMIDT, PHD

ON BEHALF OF SCS CARBON TRANSPORT LLC

November 19, 2024

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

A. My name is Jon Schmidt. My business address is 2510 Miccosukee Road, Suite 200, Tallahassee, Florida 32308.

Q. Can you briefly describe your education and experience?

A. I have a bachelor's, master's, and doctorate in biological sciences. I have been employed as an environmental consultant for 37 years. My primary experience has been the preparation of permit applications and regulatory filings for pipelines, powerlines, LNG facilities, and natural gas storage facilities throughout the U.S. Over my career, I have served as project task leader, project manager, project director, and owner's environmental representative for large infrastructure permitting projects covering multiple jurisdictions in the U.S.

Q. Please describe your duties with SCS Carbon Transport LLC (SCS).

A. As part of the Project team, I am EXP's Project Manager for providing environmental project management services to SCS Carbon Transport LLC (SCS). Specifically, I oversee environmental data collection, permit application preparation, and agency consultation.

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

A. I oversaw or participated in the preparation of the following sections of the Application:

- Section 1.8 – Other required permits and approvals;
- Section 5 – Environmental Information and Impact on Physical Environment;
- Section 6 – Community Impacts
- Section 7.2 – Monitoring of Impacts;
- Appendix 4 – Environmental Construction Plan;
- Appendix 5 – Map Books (Topographic, Land Use, Soils, Hydrology);
- Appendix 6 – South Dakota Agricultural Impact Mitigation Plan;
- Appendix 12 – Soil Crossing Tables;
- Appendix 14 – Wetland and Waterbody Crossings;
- Appendix 15 – Threatened and Endangered Species Report;
- Appendix 16 – Wetland Delineation Report;
- Appendix 17 – South Dakota Noxious Weeds Management Plan;

- Appendix 18 – Project Waterfowl Production Area Crossing Table;
- Appendix 19 – South Dakota Dust Control Plan;
- Appendix 22 – Environmental Agency Correspondence

Q. What is the purpose of your Direct Testimony?

A. The purpose of my testimony is to provide information concerning existing environmental conditions along the Project route, potential impacts of the Project on the existing environment, and how the Project will avoid, minimize, and/or mitigate potential impacts. In addition, I generally describe the environmental features found in the 300-foot survey corridor examined during field surveys, desk top analysis; general regional environmental conditions along the corridor; and federal and state agency correspondence and coordination.

Q. What was the overall approach to environmental analysis for the Project?

A. SCS initially completed site characterization and assessment analyses using a Geographic Information System (GIS) based routing program to identify and assess existing resources and features to inform selection of the Project's route within a study corridor. The study corridor was approximately 1-2 miles wide to identify potential route alternatives. SCS then completed a desktop analysis of constraints and further opportunities to focus on a preferred route. Changes to this base route utilized agency supplied and desktop data to minimize impacts. Using the results of the desktop analysis, SCS then coordinated with state and federal agencies and conducted field surveys/studies. Surveys of the 300-foot corridor centered on the proposed route. Interested Tribes also participated in cultural resource surveys where access was granted. The results of these efforts were incorporated into the Project design to avoid or minimize impacts to protected or sensitive resources during Project construction and operations and confirm appropriate environmental permitting requirements, if any. These environmental efforts were coordinated with landowner discussions on routing and route placement as well as engineering analysis (e.g., stream crossing locations and crossing methods) that resulted in the route provided in this Application.

Q. Please describe the environmental survey corridor used for the studies and surveys of the Project route.

A. A survey corridor of 300-feet was centered along the proposed route. Along access roads,

the survey corridor was 50 to 100-feet centered on the centerline of the access road. Any aboveground facilities (e.g., pump station) were surveyed in their entirety for their footprint.

Q. Is there any environmental study/survey work yet to be completed for the Project?

A. Field surveys for biological resources (listed species and wetland/waterbody surveys) have been completed for 357.8 miles or 51.3% of the current alignment. Desktop wetland/waterbody delineations have been completed for the remainder of the project footprint. Cultural resource surveys have been completed for 495.2 miles or 70.9%.

Q. Can you describe the permits in addition to the one sought in this Application which will be required for construction and operation of the pipeline.

A. Yes. I oversaw the compilation of the table of permits that are required for the Project. Section 1.8 of the Application provides an overview of the permits required to construct and operate the Project.

Q. How did SCS categorize land found along the pipeline?

A. Using national land use databases, field surveys, and recent aerial imagery, SCS mapped the land uses depicted in Appendix 5.

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

A. The Project does not cross existing and potential extractive nonrenewable resources, other major industries, residential, and municipal water supply and water sources for organized rural water systems.

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

A. During construction there will be short-term periods of increased noise, dust, and additional traffic on local roads as the construction spread moves through an area. None of these impacts will be significant or long-term. During operations, there will be no impacts to existing land uses along the pipelines, except where above ground facilities are sited (MLVs), and there will be some increased noise from pump stations. However, SCS will site the pump stations to avoid proximity to houses or residential areas to reduce noise impacts.

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

A. Yes, Section 5.5 (Land Use And Local Land Controls) provides an assessment of the land uses impacted by the Project and the minimization and mitigation measures that will be implemented to address those impacts. The land uses crossed are also depicted on maps in Appendix 5 of the Application. Since the predominant land use crossed by the Project is rural agriculture, and because the pipeline will be buried a depth of four feet or more below pasture/rangeland and agricultural fields and agricultural use will be allowed after construction, the pipeline project will be compatible with the current land uses crossed. The route also crosses through fourteen rural water system territories or districts. During construction and maintenance, SCS will coordinate with the One-Call system and the rural water authority to identify and avoid impacts to underground utilities, including water lines.

Q. What steps will SCS take to avoid, minimize, and/or mitigate potential impacts to the existing land uses?

A. The steps SCS will take to avoid, minimize, and/or mitigate potential impacts to existing land uses are detailed in Section 5.5.5 (Impacts and Avoidance/Mitigation Measures). To avoid, minimize, and/or mitigate potential impacts to existing land uses, SCS will take the following steps as detailed in Section 5.5.5 (Impacts and Avoidance/Mitigation Measures):

- **Compliance**: Adhere to the permitting requirements identified in Table 2 of the Application and as discussed in Section 1.8 of the Application.
- **Pipeline Installation**: Bury the pipeline with a minimum of four feet of cover to avoid interfering with normal agricultural operations. Work with landowners to identify and install the pipeline below drain tiles, repairing any impacted tiles per Section 6.7 of the SD Agricultural Impact Mitigation Plan (SD AIMP) presented in Appendix 6 of the Application.
- **Compensation**: Compensate landowners for the construction and permanent right-of-row (ROW), crop losses, and other damage caused by construction. Restore ROW for grazing and livestock movement post-construction, with seed mixes for revegetation determined after consulting landowners and Natural Resources Conservation Service (NRCS) offices. Use irrigation methods as required per Section 7.2.4 of the Project's Environmental Construction Plan (ECP [Appendix 4 of the Application]).
- **Restoration Measures**: Follow measures in the Project's ECP and SD AIMP to promote ROW restoration, including topsoil removal/restoration and reseeding with approved seed mixtures.

- **Minimizing Wetland Impacts**: Adhere to Project's ECP measures to minimize wetland impacts, using horizontal direction drills (HDDs) where practicable to avoid impacts to wetlands, waterbodies, and grasslands.
- **Agency Coordination**: Work with the U.S. Department of Agriculture (USDA) to identify conservation parcels and ensure no landowner penalties under their easement contracts. Coordinate with the USDA and landowners on easement crossings to meet reclamation requirements or provide compensation.

SCS will also follow additional construction procedures, mitigation measures, and BMPs outlined in the Project's ECP, SD AIMP, Inadvertent Return Plan (Appendix 7 of the Application), and South Dakota Noxious Weeds Management Plan (Appendix 17 of the Application) to reduce construction and operation impacts through restoration processes.

Q. Can you provide a summary of the Project's mitigation plans to use across the Project?

A. SCS has developed or will develop several plans to minimize and/or mitigate the potential impacts of Project construction. The Project intends to update these mitigation plans as necessary after communication with various agencies. An overview of mitigation plans developed or to be developed for the Project is provided below.

- Environmental Construction Plan. SCS has prepared an ECP, which outlines construction-related environmental policies, procedures, and general protection measures for construction of the Project. The ECP identifies generally recognized BMPs SCS will implement to avoid, minimize, and/or mitigate potential impacts to wetlands, waterbodies, and agricultural areas. The ECP is included as Appendix 4 to the Application. A Spills Prevention, Control, and Countermeasure (SPCC) Plan will be prepared during the stormwater construction permitting process once construction contractors are chosen and assigned to specific spreads.
- Agricultural Impact Mitigation Plan. SCS has prepared an SD AIMP (Appendix 6), which describes proposed measures SCS will implement to minimize potential impacts to and restore agricultural lands during and after construction of the Project. The SD AIMP details methods to preserve topsoil, prevent erosion, avoid and/or minimize impacts to drain tile, restore agricultural land following construction, and establish appropriate vegetation cover that will help ensure the Project is designed, constructed, and operated in a manner allowing the land to be returned to its pre-construction condition. The SD AIMP is included as Appendix 6

to the Application.

- South Dakota Noxious Weed Management Plan. SCS has prepared a South Dakota Noxious Weed Management Plan following the requirements of the SD Department of Agriculture & Natural Resources (DANR) and best practices, which outlines strategies and practices SCS will utilize to prevent and/or control the spread of noxious weeds during and following construction of the Project. The SD Noxious Weed Management Plan is included as Appendix 17 to the Application.
- Unanticipated Discoveries Plan. SCS has prepared an Unanticipated Discovery Plan (UDP) to be used in the unlikely event that previously unidentified cultural resources are encountered during construction. As described in the Direct Testimony of Erin Salisbury, SCS's UDP sets forth specific guidelines to be used if previously unknown archaeological resources and/or human remains are encountered during construction activities. The UDP is included as Appendix 21 to the Application.
- Stormwater Pollution Prevention Plan (SWPPP). SCS will prepare a SWPPP for the Project to meet the requirements outlined in the National Pollutant Discharge Elimination System (NPDES) Permit, the SD DANR's General Permit Authorizing Stormwater Discharges Associated with Construction Activities Under the South Dakota Surface Water Discharge System that SCS will obtain coverage under prior to ground disturbing activities. SCS and its construction contractor(s) will implement the SWPPP during the construction and restoration activities associated with the Project. The SWPPP will include measures SCS will employ to minimize and/or mitigate the potential environmental impacts of construction and will be filed prior to construction.
- Inadvertent Return Plan. SCS has prepared an Inadvertent Return Plan (Appendix 7 to the Application), which will outlines operational procedures and responsibilities for the prevention, containment, and clean-up of inadvertent returns associated with the HDD crossing method, including: measures to minimize the potential for an inadvertent return of drilling fluids associated with HDD activities; procedures to ensure timely detection of inadvertent returns; measures to protect environmentally sensitive areas while responding to an inadvertent return; measures to ensure an organized, timely, minimum impact response in the event of an inadvertent return; and procedures to ensure all appropriate notifications are made.
- South Dakota Dust Control Plan. SCS has prepared a South Dakota Dust Control

Plan (Appendix 19 to the Application) that will be followed by the construction contractor to reduce fugitive dust during dry conditions or when otherwise needed along the construction ROW or access roads. Water trucks will manage to control dust in most situations, but temporary seeding or tackifiers may be used on soil piles in dry, windy conditions to prevent the loss of topsoil.

Q. Does the project cross any public properties?

A. There are approximately 698 miles of pipeline in the state. Of this, approximately 10.8 miles (1.5% of the total miles) are Department of School and Public Lands. The remainder of the land crossed is privately owned. No tribal or federally owned lands are planned to be crossed by the pipeline routes.

Q. What are the regional landforms in the Project area?

A. In the Project area, the two physiographic provinces are divided into six subdivisions, the Missouri Coteau division of the Great Plains province; and the James River Lowland, Lake Dakota Plain, Prairie Coteau, Red River Lowland, and the Loess Hills subdivisions of the Central Lowlands province.

The Red River Lowland subdivision is characterized as a broad, gently rolling valley-like area with elevations ranging from 900 to 1,100 feet above sea level (asl). The region is economically important due to the presence of high-quality granite bedrock (typically approximately several thousand feet deep) that outcrops in some locations and is commercially quarried for building stone.

The Prairie Coteau subdivision is a highland area which is part of a plateau that extends north through North Dakota into Canada. The division slopes gently to the south and west; elevations range from 1,600 feet to 2,000 feet asl, and the division drains to the south via the Big Sioux River. West of the river the surface is dotted with lakes and depressions; east of the river few lakes occur.

The James River Lowland subdivision is a broad gently rolling lowland plain drained from north to south by the James River. The division lies between the Prairie Coteau subdivision to the east and the Missouri Coteau subdivision to the west at generally lower elevations ranging from 1,300 to 1,400 feet asl.

The Lake Dakota Plain subdivision is bounded by the James River Lowland subdivision and is characterized by a nearly level surface formed by sediment deposition when Glacial

Lake Dakota was filled with water during the last glacial retreat. The mainly featureless plain exhibits a change in relief of less than 10 feet with elevation at approximately 1,300 feet asl.

The Missouri Coteau subdivision is a highland occurring in a north/south band through South Dakota, separated from the main body of the Missouri Plateau by the Missouri River which forms the division's western boundary. The topography of the subdivision is highly variable due to deposits of glacial drift underlain at great depth by Pierre Shale and older formations. Elevations range from approximately 1,750 feet asl to approximately 2,200 feet asl.

The Loess Hills subdivision forms a narrow band of sharply dissected uplands along the east edge of the Missouri River valley. The loess uplands formed as glacial meltwater deposited fine sediment into the Missouri River valley which was carried east by wind activity and deposited as dune-like accumulations of clay, silt, and fine sand along the slope of the east valley wall.

Aerial photography and USGS topographic maps showing the Project route in South Dakota are provided in Appendix 5.

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

A. Yes, topographic mapping is provided in Appendix 5 of the Application.

Q. What geological features are in the Project area?

A. Surficial overburden deposits expected to be found at the trench depth across glaciated Eastern South Dakota are composed primarily of Quaternary age alluvium, eolian deposits, lacustrine sediments, moraine (till), and outwash. Beneath the surficial overburden, which can range in thickness from a thin veneer up to 1,000 feet thick, is lithic bedrock (Tomhave et. al. 2004). Lithic bedrock in the Project area consists primarily of Late Cretaceous and Early Proterozoic rocks. Bedrock units in glaciated Eastern South Dakota are known to outcrop along rivers and creeks where the glacial sediment overburden has been eroded away; however, no known bedrock outcrops were identified along the Project route. Geosyntec (2024) determined that approximately 0.9 mile of project pipeline crosses shallow bedrock defined as bedrock less than five feet below ground surface. The depth to bedrock is assumed to be deeper than five feet for the remainder of the Project. No unique geological features protected by federal, state, or local governments will be disturbed by the Project. Construction of the

Project will include surface disturbance along the ROW and at ancillary facilities. Impacts to topography will be relatively minor and short-term since the Project will restore surface contours and drainage patterns as closely as possible to pre-construction conditions. No significant operational impacts to geological resources are expected.

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

A. The pipeline does not cross any active, inactive, or permitted mining or oil and gas extraction operations. None of the route crosses historic mining areas. The pipeline ROW does not cross or is in proximity to existing oil and gas wells. However, SCS would still follow the 811 utility call procedures to determine if unmapped flow lines or pipelines are in the area. Construction of the Project may result in short-term and localized demand for sand and gravel, but these demands will not significantly affect the long-term availability of construction materials in the area. No significant operational impacts to economic deposits are expected.

Q. What mitigation measures will the Project implement to avoid or minimize impacts to topographical and geographical features and economic mineral deposits, if any?

A. Because the project will restore topographic conditions after construction, there are no mitigation measures required. The very few acres of surface facilities that impact the surface are minor compared to the acreage extent of the project area. No mitigation measures are required for economic mineral deposits since none are impacted by the Project.

Q. Has the Project analyzed soil characteristics within the project area?

A. Yes. Project Maps depicting the limits of the soil map units within the Project area as delineated by the NRCS are provided in Appendix 5B. A description of the soils crossed is provided in Appendix 12 and a discussion of the key soil features and the Project impacts and mitigation measures is provided in Section 5.1.4 of the Application.

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

A. Approximately 26.7 percent of the lands crossed by the Project have soils identified as prime farmland. Impacts on these areas of prime farmland soils will be minimized by mitigation measures to be implemented according to the ECP and SD AIMP. During construction activities, topsoil on agricultural land, including prime farmland areas associated with the pipeline ROW, will be stripped to the maximum depth of 12 inches and

segregated from the subsoil. Unless the landowner or land management agency requests otherwise, 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, re-establishment of pre-construction contours, ensuring preservation of topsoil within the construction area. Short-term impacts such as excavation and handling, and small isolated spills of fuels or lubricants may temporarily alter the capability of prime farmland following construction. Following the completion of construction, areas of prime farmland disturbed by the installation of the pipelines and temporary access roads will be allowed to revert to pre-construction uses; therefore, construction activities in these areas will not adversely impact prime farmland. Impacts from maintenance activities in these areas will be minor and short-term.

Q. Has the Project analyzed the project area for hydric soils?

A. Yes. Approximately 6.3% of the lands that would be disturbed during construction have soils rated as hydric soils and approximately 3.8% of lands crossed by the Project are hydric and have fine texture and poorly drained to very poorly drained soils making them prone to compaction.

Q. How does the Project intend to mitigate impacts regarding hydric soils?

A. Soil compaction and rutting can occur with the movement of heavy construction vehicles along the pipeline ROW and on temporary access roads during construction. Compaction can damage soil structure, reduce infiltration, and increase runoff and erosion. The degree of compaction will depend on the moisture content and texture of the soil at the time of construction. Compaction will be most severe when heavy equipment operates on moist to wet soils with fine textures. Detrimental compaction also can occur on soils of various textures and moisture contents if multiple passes are made by heavy equipment. If soils are moist or wet where trench-line only topsoil trenching has occurred, topsoil will likely adhere to tires and/or tracked vehicles and be carried away. Rutting occurs when the soil strength is not sufficient to support the applied load from vehicle traffic. Ruts that exceed topsoil depth can mix topsoil with subsoil, thereby reducing soil productivity. Rutting affects the surface hydrology of a site as well as the rooting environment. The process of rutting physically cuts plant roots and reduces the aeration and infiltration of the soil, thereby degrading the rooting environment. Rutting also disrupts natural surface water hydrology by damming surface water flows, creating increased soil saturation upgradient from ruts, or by diverting and concentrating water flows creating accelerated erosion. As outlined in

the Project's ECP, compaction and rutting impacts will be mitigated in these areas using timber mats and special crossing techniques. Contractors will restrict certain construction activities and work in cultivated agricultural areas in excessively wet soil conditions to minimize rutting and soil compaction. Work may be suspended during wet weather when there is potential for material mixing soil horizons or the potential for excessive compaction. To minimize potential impact to soil resources, soil will be prepared after final grading to facilitate revegetation in undeveloped areas. This could include tilling compacted soil or other measures depending on the extent and severity of compaction.

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

A. Approximately 0.9-mile of the proposed pipelines are underlain by bedrock that is less than five feet below ground surface (Geosyntec, 2024). Approximately 1.8 mile of lateral SDL-514 (in the Red River Lowlands subdivision) is underlain by granite bedrock; however, the granite bedrock is unlikely to be encountered within trench depth.

Q. Are there any saline and sodic soils found along the Project route and what mitigation techniques will the Project utilize to minimize impacts, if necessary?

A. Yes. A review of the 2024 SSURGO database indicates that approximately 174.4 acres (1.9%) of soils crossed by the Project are considered saline and approximately 111.7 acres (1.2%) are considered sodic both occurring within the top six feet. In areas with the potential to find saline or sodic soils at trench depth, testing will be performed to identify the exact locations of the presence and extent of the soils. Triple lift soil excavation will be used to separate the topsoil from the subsoil and any layer of saline/sodic soils. After construction, the soil layers will be put back in the same order to prevent mixing and reduce the likelihood of reducing reclamation of the vegetation.

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

A. The overall impact from soil erosion is anticipated to be minor because only 32.3 acres of the pipeline ROW have soils identified as susceptible to wind erosion (<1%) and 3,563.2 acres have soils identified as susceptible to water erosion (38.4%). The contractors will use erosion and sedimentation control devices to reduce impacts from erosion following the best management practices outlined in the ECP (Appendix 4). SCS will monitor the effectiveness of erosion mitigation measures to maximize

revegetation efforts following construction. Operations of permanent facilities will likely result in permanently altered soils or loss of soil resources within the specific facility footprint, accounting for less than one percent of the total acreage of the Project. Impacts from maintenance activities will be minor because disturbances will be isolated, short-term, and infrequent and include clearing the permanent pipeline ROW of vegetation (in areas outside wetlands, waterbodies, and agricultural land) and identifying corrosion through regular inspections. SCS will routinely monitor the pipeline ROW to identify areas where erosion occurs.

Q. How will the Project revegetate the construction areas?

A. More than 83% of the Project impacts are in agricultural production (crop, hayfield, improved pasture). All of this land will be allowed to revert to agricultural production in the year following construction. There will be no long-term impacts to the use of the land for agricultural purposes. What is not in agricultural production is barren, open water, or herbaceous vegetation, so impacts will be short term and herbaceous vegetation allowed to regrow across the ROW. Approximately 15.83 acres are classified as wooded and scrub-shrub, of which approximately 15.68 acres are a temporary impact and 0.15 acres are a permanent impact. Trees will be removed and either provided to the landowner for their use or sale or hauled and disposed of in an appropriate manner. The permanent ROW will be kept free of trees within 15 feet of either side of the pipeline to ensure integrity and ease of maintenance and aerial patrols. The ECP (Appendix 4) will be followed for soil handling, restoration, seeding and stabilization measures to allow vegetation in non-agricultural areas to regrow to previous conditions following construction.

Q. Has the Project examined the impacts to hydrology from construction?

A. Yes, the Project has considered impacts regarding surface water, ground water, and other water sources for construction and operation of the pipeline. Section 5.2 provides additional detailed assessment of the hydrologic features impacted by the route and the measures that will be undertaken to protect those resources. The measures outlined in the ECP (Appendix 4) describe the minimization of impacts that will occur with the best management practices described in that plan.

SCS has obtained information on springs from the U.S. Geological Survey (USGS), but the information is only a reflection of what is reported as opposed to a concerted effort to survey for the feature. A digital map of the surficial aquifer was also obtained from the South Dakota geological survey. SCS has prepared a Water Resources Map Book

included as Appendix 5 of the Application that includes the location of permitted water wells, and surface hydrology features (perennial, intermittent, and ephemeral drainages) as mapped in the field by SCS or via a desktop review for those parcels which survey access was denied. The U.S. Army Corps of Engineers (USACE) will be reviewing all drainage features as part of their review of the Nationwide Permit 58 permit application package.

Q. How does the Project intend to mitigate impacts to surface water from construction and operation?

A. Potential impacts to surface water drainage from Project construction could include altering surface contours which could alter surface water runoff paths; creating compaction or rutting, altering the volume and rate of surface water runoff; damaging existing drainage channels such as agricultural drainage tiles and culverts which could diminish surface drainage capabilities and result in ponding or flooding; and altering stream banks and beds which could encourage sedimentation or change the stream's scour pattern resulting in changes to runoff and discharge.

The following measures will be implemented during construction to reduce impacts to surface hydrology:

- Identify drain tile systems within the pipeline ROW prior to construction to avoid during construction. If drain tile systems are damaged during construction, SCS will implement repairs.
- Identify waterbodies and install erosion and sediment control devices for those with potential to receive stormwater discharge during construction. Install ECDs per the ECP to prevent erosion entering waterbodies.
- Conduct civil surveys prior to construction to document terrace elevations and contours. Preserve terrace drainage patterns and reduce terrace erosion during construction by installing ECDs as detailed in the ECP. Return all terraces to preconstruction conditions.
- Construct permanent slope breakers as detailed in the ECP across the ROW (except in actively tilled agricultural fields) where necessary to limit erosion. Slope breakers will divert surface runoff to adjacent stable vegetated areas or to energy-dissipating devices.

The pipeline will be constructed under river channels with potential for lateral scour. Engineering design will ensure that the pipeline will be buried at an adequate depth under

channels, adjacent floodplains, and flood protection levees to avoid pipe exposure caused by channel degradation and lateral scour. Determination of the pipeline burial depth will be based on site-specific channel and hydrologic investigations were deemed necessary.

Mitigation measures used at stream crossings include using the HDD crossing and bore crossing methods. Descriptions of HDD and other waterbody crossing methodologies are provided in the ECP. Other crossing methods, such as wet open cut, which will involve disturbance of stream banks and channel bottoms will be mitigated by using measures detailed in the ECP which include:

- Restoring banks to preconstruction contours unless too steep for restoration, in which case the banks will be restored to a stable angle of repose. Restoration includes grading, stabilization, and possibly revetments. These types of restorations will include bioengineering concepts which encourage the natural restoration of streambanks.
- Restoring stream bottoms to pre-construction conditions leaving no impediments to normal water flow.
- Restoring wetland edges to the preconstruction contours to maintain the hydrology of the wetland and stabilizing the wetland by installing permanent erosion control devices during final clean up.
- Installing trench breakers at wetland boundaries where the pipeline trench may cause a waterbody to drain.

After the installation of the pipeline, the disturbed ROW will be restored to its pre-construction elevations to avoid changes to the original surface drainage patterns.

SWPPPs will be prepared for the pipelines and all facilities (e.g., pump stations) in the course of obtaining General Stormwater Construction Permits and will identify how surface runoff will be managed.

More information can be found in the Application in Section 5.2.1.1 and Appendix 4.

Q. Will the pipeline interfere with drainage patterns along the route?

A. No, since the pipeline will be buried beneath stream channels or installed with a trenchless method, there will be no permanent impact to stream structure or the ability of the stream to maintain pre-construction flow characteristics. Wetland and waterbody crossing methodologies are provided in Table 10 of the Application and the Wetland and Waterbody

Crossing tables (Appendix 14) of the Application.

Q. Will the Project use surface water and/or ground water in construction?

A. SCS will require the temporary use of surface water or water from municipalities to hydrostatically test the pipelines before operation. Water is used as a test medium by filling the welded pipeline segment with water and bringing the water to a pressure greater than the operating pressure of the pipeline. This kind of test ensures operational integrity before the pipeline is put into service. The water is withdrawn from existing surface or municipal resources and after use, returned to the source (except municipal supplies). There are no additives or chemicals added to the water. During hydrostatic testing, the water is used only to put pressure on the pipeline to test its integrity. Water will also be used for dust control along the construction ROW and gravel or dirt access roads. Water use for each source is dictated by the availability from municipal or surface sources near the Project. Authorizations and/or permits will be acquired for water use for dust control. Water will be required for HDDs. Water for the HDD operation is used to mix drilling mud (e.g., bentonite clay) for drilling operation lubrication, hole stability and to remove drill cuttings. The Project will apply for the necessary permits required for water usage from the South Dakota Department of Agriculture and Natural Resources if surface water resources are used.

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

A. There will be no operational use of surface or groundwater for the Project.

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

A. No, the pipelines will be buried a nominal depth with approximately four feet of cover. This would put the trench depth at 7-10 feet depending on the location and whether any crossings are necessary. The soil removed from the trench will be returned in the order it was removed, with topsoil last. This will ensure that recharge properties will not be impacted and the impacts to aquifers temporary and minor. Pipeline installed by the HDD method will be 25 feet or greater below the bottom of the feature crossed (highway, river bottom, etc.). In this case, the use of naturally occurring drilling mud (e.g., bentonite clay) will seal the hole drilled for the pipeline. This will ensure that the pipeline is not a conduit between aquifer zones or to introduce surface flows into the HDD hole. During operations, there will be no impacts to aquifers from operations. The pipeline is largely installed in the shallow confines of surficial aquifers and in the event of a release, the CO_2 would vent to the atmosphere since it is under pressure. These events are unlikely and would be

infrequent to result in no impacts on aquifers from operations.

Q. What measures will the Project take to avoid, minimize, or mitigate potential impacts to hydrological resources?

A. The Project has designed the route to avoid or minimize impacts to hydrologic resources. The Project has conducted, and is continuing to conduct, wetland and waterbody delineations. That data has been and will continue to be used to inform routing and design to avoid or minimize impacts to the extent practicable. Impacts to some waterbodies will be avoided with the use of HDD or bore crossing methods. The Project has been designed to limit permanent wetland impacts. The construction ROW will result in the permanent conversion of approximately 0.9 acres of palustrine scrub-shrub (PSS) wetlands and 0.7 acres of palustrine forested (PFO) wetlands to palustrine emergent (PEM) wetlands in the permanent ROW. Herbaceous vegetation in PEM wetlands where temporary impacts occur is expected to re-establish to preconstruction conditions within one to five years following the completion of reclamation, resulting in a short-term loss of vegetation and available habitat for some wildlife species. Additionally, SCS has avoided siting aboveground facilities in delineated wetlands. Impacts to wetlands and Waters of the U.S. are anticipated to be minor and would be authorized under the USACE Nationwide Permit 58. SCS will implement numerous measures to avoid or minimize impacts to hydrologic resources, including but not limited to working with landowners to identify and repair drain tile systems within the ROW, implementing appropriate erosion and sediment control BMPs, and utilizing appropriate crossing methods The ECP and Application Sections 5.2.1 and 5.4.1 also describes measures SCS will implement to restore wetlands and waterbodies impacted by construction of the Project, such as grading, stabilization, and revegetation.

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

A. SCS will be required to obtain a general permit for stormwater discharge from the construction footprint, a general permit for the discharge of hydrotest water, a general permit for trench dewatering, and if necessary, permits to appropriate surface water for construction purposes.

Q. Please describe the terrestrial setting of the project.

A. A majority of the Project is located in agricultural land uses. This includes cropland, hayfields and grasslands (83%). The setting therefore is mainly of agricultural land use

and vegetative cover, with row crops (mainly corn and soybean) interspersed with hayfields and grasslands that are overseeded with legumes for grazing. Sporadically located along the Project are waterbodies (streams and rivers), barren areas, small tree lines or wind breaks, and transportation or utility corridors. General descriptions of these ecoregions and the proportion of the Project that will be within the ecoregion can be found in Table 14 of the Application.

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

A. The majority of the pipelines in South Dakota will impact agricultural land uses, mainly row crop (70.2%), and hayfields and grasslands utilized for pastureland (12.9%). Areas used for the production of annual crops are usually planted in wheat, corn, and/or soybeans. Dominant vegetation observed in hayfields within the Project area consist of oat (*Avena sativa*), blue grama (*Bouteloua gracilis*), smooth brome (*Bromus inermis*), redroot (*Ceanothus americanus*), orchardgrass (*Dactylis glomerata*), creeping wildrye (*Elymus repens*), fox-tail barley (*Hordeum jubatum*), alfalfa (*Medicago sativa*), reed canarygrass (*Phalaris arundinacea*), Kentucky bluegrass (*Poa pratensis*), tall false ryegrass (S*chedeonorus arundinaceus*), and common dandelion (*Taraxacum officinale*). Grasslands used as pasture are areas dominated by graminoid or herbaceous vegetation. There are very few wetlands (4.8%) found along the pipeline routes, mostly herbaceous wetlands, and the Project avoids residential areas. Sections 5.3.1 and 5.5.1 of the Application, along with the aerial imagery provided in Appendix 5, provides an overview of the land use/vegetative communities found along the Project.

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

A. The route traverses agriculture, grassland/rangeland, palustrine emergent/scrub-shrub wetlands, previously disturbed, riverine/open water, and upland forest. The dominant vegetation types traversed are agricultural. In agricultural lands, construction will result in relatively small, temporary loss of crops during construction. SCS will repair or restore any drain tiles, fences, and land productivity that are temporarily disturbed during construction. Grasslands/rangelands will be temporarily impacted during construction. SCS will adhere to their ECP and SD AIMP to restore these areas and allow vegetation to recover in the ROW. There will be no permanent impact to, nor maintenance of, the vegetation along the route in this community type except shrubs will not be allowed to grow over 15 feet high within 15 feet of either side of the centerline. Temporary impacts to emergent and scrub-

shrub wetland vegetation will occur during construction. To mitigate the potential impacts, SCS will implement specific procedures as outlined in the. Pipeline construction through wetlands must comply, at a minimum, with USACE Section 404 permit conditions. Construction of the pipeline will disturb approximately 15.8 acres of forested and scrub/shrub land in South Dakota. Construction of the pipeline will necessitate clearing of the ROW and permanent conversion of the affected wooded areas for the lifetime of the project. During operations, the majority of the ROW will be allowed to revert to pre-construction conditions. Woody vegetation in forested areas will be removed periodically above the pipeline (approximately 15 feet on each side of the centerline) to maintain visibility of the area above the pipeline for aerial pipeline observation and to permit access to all areas along the pipeline in the event of an emergency. Routine maintenance activities would not result in long-term alterations of vegetation since disturbances would be isolated, short-term, and infrequent.

SCS will implement procedures detailed within the South Dakota Noxious Weed Management Plan specific to the Project to prevent the spread of noxious weeds. The Contractor will clean the tracks, tires, and blades of equipment by water or compressed air to remove excess soil prior to moving the equipment out of weed or soil-borne pest infested areas. The Contractor may also utilize cleaning stations to remove vegetative and soil materials using water at a high pressure in lieu of compressed air. The duration between final grading and permanent seeding will be minimized to reduce the potential growth of nuisance species establishing. Certified weed-free hay or straw will be used for mulch and sediment barriers. Where required by weed control boards for specific species that require treatment ahead of construction, the topsoil will be stripped from the full width of the ROW where isolated weed populations exist and will be stored separately from other topsoil and subsoil. These locations will be identified and marked prior to construction activities by an Environmental Inspector (EI). Alternatively, approved herbicides may be used to prevent the growth and spread of weeds. Only non-residual herbicides will be used.

SCS will implement proposed measures within SD AIMP to minimize impacts to and restore agricultural lands during and after construction. Mitigation measures within the SD AIMP include procedures for segregating and replacing topsoil, trench backfilling, relieving areas compacted by heavy equipment, removing surface rock fragments, and implementing water and wind erosion control practices such as installation of seeding nets. In addition, SCS will work closely with landowners and soil conservation agencies to identify and implement recommended soil

conservation practices in specific areas where they are needed. Damaged irrigation and tile drainage systems will be repaired in accordance with the SD AIMP.

Q. Has the project considered impacts to grassland and wetland easements?

A. Yes. The Project has adjusted the route to avoid U.S. Fish and Wildlife (USFWS) grassland and wetland easements. Construction of the Project will not result in any surface disturbance within the grassland or wetland easements. SCS has committed to utilizing HDD or bore crossing of all of these easements if the Project route crosses them.

Q. Has the Project analyzed whether noxious weeds are present along the Project and developed mitigation procedures for them?

A. Yes. Surveys have not been conducted in the Project footprint, but the Project has received state lists of noxious weeds as well as lists of relevant weeds from each County weed board and will complete pre-construction surveys for those species prior to ground disturbance.

In addition, the Project will implement procedures to prevent the spread of noxious weeds. The Project has developed a noxious weeds management plan, which can be found in Appendix 17. In addition, the ECP also addresses noxious weeds. The Contractor will clean the tracks, tires, and blades of equipment by water or compressed air to remove excess soil prior to moving the equipment out of weed or soil-borne pest infested areas. The duration between final grading and permanent seeding will be minimized to reduce the potential growth of nuisance species establishing. Certified weed-free hay or straw will be used for mulch and sediment barriers. Where required by weed control boards for specific species that require treatment ahead of construction, the topsoil will be stripped from the full width of the ROW where isolated weed populations exist and will be stored separately from other topsoil and subsoil. These locations will be identified and marked prior to construction activities by an EI. Alternatively, approved herbicides may be used to prevent the growth and spread of weeds. Only non-residual herbicides will be used.

Q. What kinds of wildlife are along the Project?

A. Various big game and small game species are found along the Project. These include deer, pronghorn antelope, wild turkey, prairie grouse, ringneck pheasant, and waterfowl. In addition, threatened and endangered species could potentially occur in the counties, and non-game species are found along the route.

Q. What the expected impacts to wildlife?

A. Much of the habitat crossed by the route consists of agriculture or grassland/rangeland. Impacts in these habitats will be short-term and represent a small fraction of the total available habitat in the Project area. Consequently, the effects of long-term habitat loss on native wildlife populations will be minor. Since the Project involves very little forest or tree clearing, the potential for disturbance to raptors is minor. Impacts from increased noise and human presence during construction also will be temporary and minor. Big and small game wildlife will experience temporary impacts as they move away from the construction ROW. After construction, the agricultural land will be restored to the previous vegetative cover and land use. Very little forested area will be converted that would displace species using this habitat. Since the amount of habitat temporarily affected during construction represents a small fraction of the total available habitat, and species are mobile, impacts to game species will be minimal. Noise from operations (pump stations) will also be minor since there are so few and are sited mostly in agricultural land and housed in acoustic buildings.

Q. What mitigation measures will be adopted to reduce expected impacts to wildlife?

A. The Project team has conducted preliminary meetings with federal and state agencies and incorporated their recommended conservation measures to mitigate impacts to listed species and wildlife in general. These measures are outlined in the Threatened and Endangered Species Report (Appendix 15 to the Application) and Section 5.3.2 and 5.3.3 of the Application.

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

A. SCS completed general habitat surveys for listed species in the summer/fall of 2021, 2022, 2023, and 2024. The results of those species surveys are provided in Appendix 15 and discussed in Section 5.3.3 of the Application. A Biological Assessment (BA) will be prepared and filed with the USFWS and USACE in Q1 2025. Those agencies will finalize that document and conclude the Endangered Species Act consultation in the process. Reports of state listed species surveys will be provided to SD Game, Fish, and Parks (SD GFP) after the conclusion of the 2025 survey season for their review and concurrence.

A summary of the results through 2024 are provided below:

- In July 2022, 2023, and 2024 experienced botanists surveyed approximately 428

cumulative acres for western prairie fringed orchid and suitable habitat. No western prairie fringed orchid individuals or populations were observed in any of the areas.

- Most of the surveyed habitat along the Project route in South Dakota is rated as either Unsuitable or Poor for western prairie fringed orchid. This lack of suitable habitat is consistent with the general loss of habitat for western prairie fringed orchid due primarily to cultivation and the dominance of non-native vegetation that has replaced high-quality native prairie. Survey will be completed in July 2025 on approximately 67 acres of potentially suitable habitat in Codington, Grant, Lake, and Lincoln counties if access is available. Additional details can be found in Appendix 15 of the Application.
- SCS has completed survey for Dakota skipper habitat and individuals along the Project in South Dakota in 2022, 2023, and 2024. No Dakota skipper were observed in any year. Most of the sites surveyed in 2022 and 2023 are no longer on the current route. Two general areas of potentially suitable habitat have been identified along the route as currently configured; it is unknown if suitable habitat is actually present at these sites. Survey is scheduled for 2025 if access is available. If suitable habitat is present, then occupancy surveys will be completed consistently with the USFWS's protocol. Additional details can be found in Appendix 15 of the Application.
- Sixteen streams or rivers in South Dakota that support Topeka shiner would be crossed by the Project at 35 crossing locations since, in some cases, a single stream or river would be crossed in more than one location. Thirty-two stream crossings would be crossed using trenchless methods to avoid impacts to either species consistent with mitigation guidance received from the USFWS and SDGFP. Four streams do not support habitat at the crossing location and include: Middle Pearl Creek (SDM-104), Redstone Creek (north crossing, SDT-208), South Fork Pearl Creek (SDM-104), and West Fork Vermillion River (SDM-104). These streams may be crossed using standard waterbody construction procedures.
- The Project crosses four streams that currently support, or have historically supported, northern redbelly dace. One stream, the West Fork Vermillion River, would be crossed 3 times by different laterals. West Fork Vermillion River (SDM-104) does not support habitat at the crossing location and may be crossed using standard waterbody construction procedures.

- Surveys for lined snake were completed in 2022 on one accessible parcel; no lined snakes were observed, and suitable habitat was not present. The only area of potentially suitable habitat on the current route occurs at the Big Sioux River in Lincoln County; however, the likelihood that this area is occupied is low due to high tree cover. Further, this site will not be affected since the Big Sioux River will be crossed using HDD technology which will avoid this site.
- The proposed Project would traverse areas in South Dakota with various types of habitat for northern long-eared bat (NLEB). The desktop habitat assessment for NLEB is intended to assess the quality and type of habitat that a wooded area within the Project environmental survey area (ESA) and footprint in South Dakota could provide for NLEB. The Project in South Dakota occurs in a highly fragmented landscape with limited wooded areas. Most of the wooded areas that do occur within the Project ESA are comprised of small, isolated stands surrounded by large areas of cultivation; it is unlikely that these types of isolated wooded areas provide habitat for NLEB. Almost all wooded areas with Suitable Habitat for NLEB are located along creeks, rivers, wooded valleys, and associated tributaries; however, it is unknown if NLEB are actually present at these sites and the USFWS notes that based on the best available science, most Suitable Habitat is now expected to be unoccupied.
- Habitat for monarch butterflies is widely scattered across the Project in South Dakota based on the widely scattered milkweed observations that were recorded during wetland delineations and survey for Dakota skipper. Although milkweed occurs at several sites on the Project, only 3 monarchs have been observed in South Dakota over 3 years of survey.

Though suitable habitat for listed species is limited in the Project footprint, the SCS will implement mitigation measures to further reduce or avoid impacts. These measures include the following:

<u>Forested areas</u>:

- SCS will clear trees in suitable habitat during the state-specific inactive season dates for NLEB (South Dakota: October 1 – May 15).
- SCS will not remove 10 acres in any wooded stand or within a collection of stands that are within 1,000 feet of each other.
- No wooded area will be separated by more than 1,000 feet due to tree removal.

- SCS will not install permanent artificial lighting in suitable habitat.

Native Prairie:

- Suitable, commercially available native grasses and forbs will be seeded in areas of native prairie if acceptable to the landowner.
- Fugitive dust abatement measures will be utilized to minimize disturbing adjacent habitats.
- Restrict the use of insecticides during construction or operation within verified habitats.
- During construction chemicals (e.g., herbicides) will not be used during the Dakota skipper adult flight period to avoid injurious impacts.

Waterbodies:

- All rivers and major waterbodies will be crossed via HDD. No dredging or other impacts will occur to major river systems.
- Trenchless crossing methods (i.e., HDD or bore) and no in-stream work between May 15 and July 31 at all streams identified by agencies as supporting Topeka shiner or northern redbelly dace.
- All temporarily impacted wetlands will be returned to pre-construction contours and allowed to revegetate naturally upon completion of construction.

Whooping Crane:

- Contractors performing work will be educated to identify a whooping crane and be advised that if a crane appears within 1,000 feet of construction activities, all work will cease until the crane(s) move outside that 1,000-foot buffer area or if USFWS provides relief based upon site-specific circumstances. SCS's environmental inspectors will coordinate with the USFWS on sightings during construction as well as data the Service may have for the area.
- During the migratory season, if equipment over 15 feet high is to be used for Project work, the equipment will be flagged or marked to increase visibility to whooping cranes and lessen the risk of collisions.
- During nighttime hours and periods of low visibility all construction equipment containing components that could reach 15 feet (i.e., track hoe boom) would be lowered to prevent any potential interference with whooping crane individuals, should they be traveling at lower altitudes in the vicinity of the Project area.

Q. Approximately how many waterbody crossings have been identified?

A. The Project footprint lies within five South Dakota River basins. Construction of the Project will involve 69 crossings of named waterbodies within these basins, including 4 ephemeral stream crossings, 16 intermittent stream crossings, 43 perennial stream crossings, and 4 lake crossings, and 1 pond crossing. Project construction will involve 258 additional crossing of other types of waterbodies including small ephemeral unnamed streams, named streams with no defined channel, roadside and field ditches, prairie potholes, and man-made ponds. A listing of all waterbody crossings is provided in Appendix 14. Additional information on the impact of these crossings is provided in Sections 5.2 Hydrology and 5.6 Water Quality and Uses. Typical drawings of waterbody crossings are found in Appendix B of the ECP.

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

A. Potential impacts to surface water drainage from Project construction could result from such things as altering the contours of the ground thereby altering surface water runoff paths, changing the consistency and porosity of the surface which can alter the amount and rate of surface water runoff, blocking existing drainage channels such as agricultural drainage tiles and culverts which can lower surface drainage capabilities and result in ponding or flooding; or alteration of stream banks and bottoms which can cause the stream to widen, meander, or infill, resulting in changes to runoff and discharge. Construction of the Project will have only minor and temporary impacts on surface drainage. BMPs outlined in the ECP will be implemented to ensure that any impacts on surface drainage and hydrology are minor.

Most named waterbodies (31) will be crossed using HDD or bore (21) technologies. These methods do not require in-water work, avoiding disturbance of waterbody banks or channels and preventing sediment suspension. Descriptions of HDD and other waterbody crossing methods are provided in Section 2.2 and Appendix 4 of the application. Since HDD and bores avoid direct contact with the waterbody, channel bed, or banks, no significant impacts to hydrology, including from aquatic invasives, are expected at these crossings.

Restoration includes grading, stabilization, and revetment BMPs. These BMPs embrace bioengineering concepts, which encourage the restoration of natural streambanks. After the installation of the pipeline, the disturbed ROW will be backfilled and restored to its pre-

construction grade thus avoiding any change to the pre-existing surface water drainage patterns. The pipeline will be constructed under river channels with potential for lateral scour. Engineering design will ensure that the pipeline will be buried at an adequate depth under channels, adjacent floodplains, and flood protection levees to avoid pipe exposure caused by channel degradation and lateral scour. Determination of the pipeline burial depth will be based on site-specific channel and hydrologic investigations were deemed necessary.

Segments of the Big Sioux River, James River, Webber Gulch, and Whetstone River crossed by the Project have been designated by the State with the beneficial use of "warmwater semipermanent fish life propagation water." The Willow Creek, Moccasin Creek, East Fork Vermillion River, and West Fork Vermillion River stream segments and Lake Henry crossed by the Project have been designated the beneficial use value of warmwater marginal fish life propagation. Only two waterbodies, Brant Lake and the North Fork Yellow Bank River, crossed by the Project have a designation with warmwater permanent fish life propagation. The North Fork Yellow Bank River and Brant Lake will be crossed via HDD and impacts will be avoided as further discussed in Section 5.4.2. All other waterbody crossings are considered to be low quality fishery waters. Warmwater fish species are generally more resistant to increased sediments than coldwater species. Timing construction to avoid spawning periods further minimizes impacts. The Fisheries in these prairie streams are adapted to frequent sediment loads from spring melt and agricultural runoff. The Federal Energy Regulatory Commission's (FERC's) procedures for waterbody and wetland crossings, followed in the ECP, help minimize construction impacts and support adequate resource recovery.

Timing the construction to avoid periods when aquatic fauna is spawning is another way to minimize impacts. The FERC also provides a comprehensive set of procedures to follow for waterbody and wetland crossings and the ECP follows these best practices.

SDGFP reports infestations with aquatic invasive species in three waterbodies within the Project footprint. These waterbodies include segments of the Big Sioux River (Lincoln County), East Fork Vermillion River (Turner County), and James River (Beadle, Brown, Sanborn, and Spink counties). None of the rivers/streams identified with invasive or exotic species will be crossed with an open cut construction method and will therefore avoid the possibility of spreading those species. Any water withdrawals from those waterbodies will utilize screens to prevent the uptake of any invasive species and the water will be returned to the source, avoiding spreading the invasive species to another waterbody.

Construction of the Project will have only minor and temporary impacts on aquatic habitat and fisheries. The primary impact will be the re-suspension of sediments in the water column which will temporarily reduce water quality and could result in the destruction of sessile benthic organisms during excavation or mortalities to benthic organisms due to re-deposition of the suspended sediments most of which are silty clay. Fish eggs and larvae could be negatively affected in a similar manner. Motile adult fish will be displaced from the work area as they will move away from areas of increased turbidity. Displacement could briefly interfere with spawning or feeding and reduce fishing opportunities or success. However, these impacts will be temporary as the crossings are small and will be conducted rapidly - in a matter of a couple of days. Impacts such as increased suspended sediments will dissipate within hours of completion of the crossing. Twenty (20) of the 68 named stream crossings will occur in stream segments with ephemeral or intermediate flow regimes, which indicates significant spawning does not take place in these locations.

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

A. Wetlands within the Project area were classified into three categories: PEM wetlands, PSS wetlands, and PFO wetlands (Cowardin et al. 1979). Wetlands within the Project area in South Dakota are limited to approximately 42.8 miles of PEM wetlands, 0.11 mile of PFO wetlands, and 0.13 mile of PSS wetlands. PEM wetlands generally are dominated by fowl blue grass (*Poa palustris*) and fox tail (*Hordeum jubatum*) in areas that typically contain water for several weeks after spring snowmelt. Shallow-marsh vegetation such as spikerush (*Eleocharis palustris*) and wheat sedge (*Carex antherodes)* dominate areas where water typically persists for a few months each spring, and deep-marsh vegetation like cattails (*Typha latifolia*), and hardstem bulrush (*Scirpus acutus*) occupies areas where water persists throughout the year (USDA NRCS 2008b; USEPA 2008a; USGS 2006b). Dominant woody vegetation in PSS wetlands in the Project survey area consists of white willow (*Salix alba*), narrowleaf willow (*S. Interior*), and common lilac (*Syringa vulgaris*). The dominant woody vegetation in PFO wetlands in the Project survey area consists of eastern cottonwood (*Populus deltoides*), crack willow (*S. fragilis*), white willow, peachleaf willow (*S. amygdaloides*), green ash (*Fraxinus pennsylvanica*), and common buckthorn (*Rhamnus cathartica*). The report provided in Appendix 16 provides complete lists of dominant species in the wetlands as well as descriptions of soils and hydrology.

Q. What impacts to wetlands are expected and how did SCS Carbon Transport LLC work to minimize impacts?

A. Impacts on wetland vegetation will be greatest during and immediately following construction. The USACE has determined pipeline crossings of wetlands do not result in long term or significant impacts in the reissuance of the Nationwide Permit program, specifically Nationwide Permit Number 58 (NWP 58). Woody vegetation in PFO wetlands will be removed during construction (approximately 0.1 acre) and will regrow within the temporary workspace over many years. Construction will result in the permanent conversion of approximately 0.7 acres of PFO wetlands and 0.9 acres of PSS wetlands to PEM wetlands in the permanent ROW (approximately 0.017% of Project impact acreage), which would result in loss of the incremental portion of functional value associated with loss of tree cover, but these wetlands would retain other wetland values such as water retention, water filtration, and aquatic habitat. To mitigate the potential for these impacts, SCS will implement specific procedures as outlined in the ECP. All wetland areas within USFWS grassland and wetland easements will be avoided through routing or using HDD/bore.

For wetlands outside of USFWS easements, SCS will restore soil grade and replace topsoil to allow wetlands affected by construction activities to naturally revegetate. The Project will restore soil horizons by placing subsoil into the trench followed by topsoil to allow wetlands affected by construction activities to naturally revegetate. This is the preferred method of restoration based on decades of success that has resulted in the USACE NWP conditions that specify this requirement in their approvals. SCS conducted an extensive desktop and field survey data collection and analysis effort to identify and avoid, or minimize impacts to, wetlands and waterbodies. This is reflected in the absence of impacts to grassland and wetland easements, and minimal impacts to wetland easements as well as wetlands altogether (approximately 411 acres of PEM wetland impacts, and approximately 0.6 acres of permanent loss of PEM wetland).

Q. What analysis was used regarding impacts to flora and fauna?

A. Consistent with Council on Environmental Quality (CEQ) regulations that characterize the analyses required for a National Environmental Policy Act (NEPA) document, the Project focused the assessment on impacts that were considered significant or specifically stated in the PUC regulations. Pipeline construction and operation has been shown in numerous NEPA documents and South Dakota Public Utility Commission (SD PUC) proceedings to result in minor, localized impacts to surface resources when coupled with the execution of best management practices. This is borne out in the fact that federal and state agencies only require general permits for construction across wetlands and waterbodies, water use,

construction stormwater discharges, and water discharge.

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

A. Construction equipment used on the Project will be compliant with emission requirements for on and off-road vehicle classification. Because construction moves along in a linear fashion, emission impacts will be minor and transitory. There are no operational emissions from operation of the electric pumps at the pump stations. Periodic blowdowns at mainline valves or pig launcher/receivers will be minor and infrequent.

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

A. Yes.

Dated this 19th day of November, 2024.

/s/ Jon A. Schmidt

Jon A. Schmidt, Ph.D.