

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

IN THE MATTER OF THE APPLICATION
OF SCS CARBON TRANSPORT LLC FOR
AN ENERGY FACILITY PERMIT TO
CONSTRUCT THE SUMMIT CARBON
SOLUTIONS PIPELINE

**DIRECT TESTIMONY OF
LAWRENCE MEREDITH, P.E.**

ON BEHALF OF

SCS CARBON TRANSPORT LLC

SCS CARBON TRANSPORT LLC EXHIBIT #

February 7, 2022

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

A. My name is Lawrence Meredith. My business address is 2321 N. Loop Dr., Suite 221, Ames, IA 50010

Q. What is your position with SCS Carbon Transport LLC (Applicant)?

A. I'm the Director of Engineering and Technical Services for Summit Carbon Solutions ("Summit"), parent company of the Applicant, SCS Carbon Transport LLC, in this proceeding.

Q. Please briefly describe your educational experience.

A. I have a Bachelor of Science in Civil Engineering, from the University of Houston, in Houston, TX.

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

A. I ensure all technical deliverables for the CO₂ capture facilities, pipeline & pump stations, and sequestration facilities are completed on schedule and meet all quality and performance requirements per the regulations, Design Basis and engineering design & specifications.

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

A. Section 2.2, Appendix 4 and provided input to Appendix 1, Spread Overview; Appendix 2, Typical Aboveground Facility Layouts; and, Appendix 3, Environmental Construction Plan.

Q. Provide a general description of where the facility is located in South Dakota.

A. The Project covers 5 states. In South Dakota, the pipeline is entirely east of the Missouri River and proceeds from Lincoln County in the southeast to McPherson County in the north central. Additionally, there are laterals from ethanol plants as well. The proposed pipeline consists of approximately 469.1 miles of buried pipeline, four pump stations, 16 MLVs, five launcher-

receivers, sites, eight contractor/laydown yards, and 5.22 miles of access roads. A summary of the Project facilities in South Dakota is in Table 2 of the application.

Q. Describe all above ground facilities present along the pipeline route.

A. There are three types of above ground facilities:

Pump Stations: The operating pump stations are planned to be located in the counties listed in Table 2. Each pump station will be fenced and contain three or more pumps driven by electric motors, provide an electrical and controls building, electrical substation, a communications tower, and parking area for station personnel. Design and construction of the pump stations will meet the requirements of the National Electric Code and Federal regulation 49 CFR Part 195. SCS Carbon Transport LLC will purchase electricity for the pump stations from local providers. The pump stations will be fully designed for remote, unmanned operation via the Pipeline Control Center in Ames Iowa.

The pipe entering and exiting the pump station will be located underground; however, some of the piping within the pump station yard (after entering and prior to exiting the pump station facilities) will be above ground.

Main Line Valves (MLV's): The MLVs will be constructed within the 50-foot permanently maintained ROW and be approximately 50-feet-long and no more than 50-feet-wide. These valve sites will be located within an easement obtained from landowners. The spacing intervals between the MLVs along the ROW are based upon the location of the high consequence areas (HCAs), DOT requirements, and permit requirements. Remotely activated valves are located at pump stations, upstream of major river crossings, and upstream of sensitive waterbodies. In the unlikely event of an emergency, these valves can be remotely activated to isolate sections of the pipeline to minimize potential discharge. The valves will also be designed to allow for local operation.

Launcher/Receivers: All pipeline segments will allow the passage of internal inspection devices called smart pigs, which can detect internal and external anomalies in the pipe such as corrosion, dents, and gouges. Launcher/Receivers are designed to launch and receive these internal inspection devices. All Launcher/Receivers and MLVs will be above-ground fabricated settings which will have a design factor of 0.5 with an appropriate pipe wall thickness.

Q. What is the design and construction standard by which the Project will be built?

A. The Project is being designed according to US DOT regulations at 49 CFR Part 195, Transportation of Hazardous Liquids by Pipeline; the final design and construction will meet or exceed all ASME B31.4, Pipeline Transportation systems for Liquids and Slurries as well as other applicable technical standards.

The entire pipeline will have a basic design factor of 0.72. Higher design factors will be used at crossings and above ground facilities. The pipeline system consists of nominal outside diameter pipe varying from 4” up to 24”. Pipe material grade will vary from API 5L X-52 up to X-70 and comply with API 5L-PSL2. Pipe wall thickness will be adequate to meet the appropriate safety factors used. To protect against corrosion, SCS Carbon Transport LLC will apply an external FBE coating to the pipeline, special Abrasion Resistant Overcoat (ARO) for certain crossings, and an impressed cathodic protection system will be used. All material will be manufactured, constructed, and operated in accordance with applicable regulations.

Q. Have you applied for any waivers from PHMSA?

A. No.

Q. As proposed, does the project meet or exceed all federal and state standards?

A. Yes.

Q. What is the design capacity and design pressure?

A. The pipeline has been designed as follows:

- Maximum Operating Pressure (MOP): 2,183 pounds per square inch gauge (psig).
- Maximum operating temperature: 120 degrees Fahrenheit.
- Maximum design flow rate: 624 million standard cubic feet (MMSCF)/day which is approximately equivalent to 12 million metric tons per annum (MMTPA) of CO₂

The design of the pipeline system is based on a maximum 2,150 psig discharge pressure at each pump station. The MOP of the pipeline between pump stations is 2,183 psig. The design of the pipeline is based on a steady state and transient analysis to identify MOPs under normal and abnormal operating conditions.

Q. Does the Project include compressor stations?

A. No, as described above, the project will utilize pump stations.

Q. Does the Project include storage facilities?

A. Not in South Dakota.

Q. In addition, are you sponsoring any Appendices to the Application?

A. Appendices 1, 2, 3 and 4.

Q. Does this conclude your testimony?

A. Yes

Dated this 7th day of February 2022.

/s/ Lawrence Meredith

Lawrence Meredith