RED TRAIL ENERGY, LLC

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Red Trail Energy begins carbon capture and storage

Richardton, N.D. – The first carbon capture and storage project allowed under state primacy in the United States has commenced operations. Red Trail Energy, LLC (RTE) announces it officially began carbon capture and storage (CCS) at its ethanol facility located near Richardton, ND on June 16, 2022.

"After six years of research, development and investment Red Trail Energy is celebrating this historic moment in North Dakota and United States history of becoming the first facility permitted under state primacy to capture and store CO_2. Our success establishes a trail for other industries in the state to follow," said Gerald Bachmeier, chief executive officer of Red Trail Energy. "The significance of implementing this project cannot be understated. From the beginning we wanted to set Red Trail Energy apart from other ethanol plants and this project puts us ahead of the curve in terms of lowering the carbon intensity of our ethanol."

Already considered a low-carbon fuel, ethanol produced at RTE now has a lower carbon footprint than conventional ethanol sources thanks to carbon capture. This allows RTE to not only be better stewards to the environment but also places more value on the ethanol in the clean fuel market.

The RTE ethanol plant emits an average of 180,000 metric tons of CO_2 annually from the fermentation process during ethanol production. With CCS, RTE is capturing 100% of their CO_2 emissions from the fermentation process and is injecting approximately 500 metric tons of CO_2 per day. The CO_2 is permanently stored underground more than a mile below the surface in the Broom Creek formation.

In October 2021, less than five months after receiving the RTE application, the North Dakota Industrial Commission approved the Class VI injection well and the reservoir pore space RTE needed to operate the facility. Part of the approval process required RTE to demonstrate the Broom Creek formation contained the characteristics needed for proper CO_2 storage. These characteristics include a deep porous layer to absorb the CO_2 but also contain impermeable rock layers above and below the Broom Creek formation that keeps the CO_2 from escaping into the atmosphere or ground water. RTE is utilizing state-of-the-art monitoring technology from the Japan Research Institute of Innovative Technology for the Earth (RITE) for real time CO_2 plume monitoring.

"We are thankful for the North Dakota Industrial Commission and the staff at the Department of Mineral Resources who never gave up on receiving Class VI primacy from the EPA," continued Bachmeier. "We are especially grateful to the Energy and Environmental Research Center for their dedication to understanding North Dakota's geologic storage potential, without them this wouldn't be possible."

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“It is rewarding to see this carbon capture and storage project begin in North Dakota,” said Charlie Gorecki, EERC Chief Executive Officer. “The EERC has been researching and testing the geologic storage potential of North Dakota’s resources for decades. The location of Red Trail Energy’s ethanol facility always made it a perfect candidate for CCS.”

“North Dakota regulators and policymakers have long seen the importance of creating a regulatory framework that complies with the federal rules while managing the pore space resource for the benefit of North Dakota property owners. Receiving primacy from the EPA paved the way for projects like this one to become operational in the state and this is a large step towards making North Dakota a leader in carbon neutrality and a showcase for the rest of the world on how to treat carbon,” said Department of Mineral Resources Director Lynn Helms.

Carbon Capture and Storage is the process of capturing carbon dioxide (CO_2) from a large stationary source, compressing the CO_2 into a liquid and injecting it via a Class VI injection well deep underground for permanent geologic storage. North Dakota was the first state to be granted primacy from U.S. Environmental Protection Agency (EPA) in 2018. Wyoming followed in 2020.

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About Red Trail Energy: Red Trail Energy, LLC (RTE) is a North Dakota-based investor group formed to finance, construct and operate a corn-based ethanol production facility located near Richardton, North Dakota. This vision became a reality when the state-of-the-art plant began producing ethanol, in January of 2007. RTE now employs 47 personnel with an annual payroll of $4 million. Originally constructed as one of the first coal-fired ethanol plants in the nation, RTE was converted to natural gas in 2015. RTE produces 59-64 million gallons of ethanol, using 21-23 million bushels of corn annually. The plant will generate 2.8 gallons of ethanol from every bushel of corn. Coproducts produced by RTE include 125,000 tons of dried distillers grain, 80,000 tons of modified-wetcake and 15 million pounds of corn oil annually. The Mission of Red Trail Energy is to create economic benefit for our investors, local communities, and the state of North Dakota by converting our natural resources and regional corn production into ethanol and beneficial coproducts.