THE PLAINS CO_2 REDUCTION (PCOR) PARTNERSHIP: CO_2 SEQUESTRATION DEMONSTRATION PROJECTS ADDING VALUE TO THE OIL AND GAS INDUSTRY

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ABSTRACT

The Plains CO_2 Reduction (PCOR) Partnership, one of seven regional partnerships established by the U.S. Department of Energy National Energy Technology Laboratory, is identifying the most suitable CO_2 storage strategies and technologies, aiding in regulatory development, educating the general public, and investigating appropriate infrastructure for carbon capture and storage (CCS) commercialization within its region. The PCOR Partnership region includes all or part of nine U.S. states and four Canadian provinces.

The PCOR Partnership has teamed with industrial partners to conduct two commercial-scale projects that are of immediate interest to the oil and gas industry. The goal of the Fort Nelson project is to demonstrate the concept of CCS to manage the CO_2 emissions of the largest natural gas-processing facility in North America by injecting CO_2 into a saline formation in British Columbia, Canada. The Bell Creek project's goal is to integrate site characterization, modeling and simulation, and risk management to design a comprehensive monitoring plan for CO_2 storage and enhanced oil recovery (EOR) in the Bell Creek oil field in Montana, USA. The PCOR Partnership is also evaluating oil fields in its region to estimate potential CO_2 storage amounts and the applicability for CO_2-based EOR.

Through regional and detailed site characterization, subsurface CO_2 modeling, risk assessments and mitigation plans, and baseline surface and subsurface monitoring, the PCOR Partnership is improving the understanding of factors affecting CO_2 storage permanence, capacity, and safety in geologic formations.

The results of these commercial projects to store human-generated CO_2 deep underground will benefit the environment by decreasing the carbon footprint of oil and gas industry operations. The lessons learned will help future projects to effectively implement proven CO_2 monitoring, verification, and accounting systems as part of a comprehensive approach to safe geologic CO_2 storage.