



PLAINS CO₂ REDUCTION (PCOR) PARTNERSHIP (PHASE III) THREE TARGET AREAS SELECTED FOR DETAILED CHARACTERIZATION – MILESTONE M1

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Detailed subsurface mapping and characterization must be conducted prior to large-scale injection of CO₂ for the purpose of secondary or tertiary oil production techniques. As part of the PCOR Partnership's Phases I and II Regional Characterization (Task 6) activities, site evaluations were completed on a reconnaissance level using readily available public sources of data. These investigations have resulted in the evaluation of the theoretical storage capacity for oil fields throughout the PCOR Partnership region and provide the basis for further evaluation. Phase III activities will be completed in greater detail, utilizing all sources of data available through the PCOR Partnership, including wire-line well logs, core analysis, production decline curves, drill stem test, and produced fluid analyses. Site characterization activities will be conducted to develop predictive models, using industry standard software, that address three critical issues to determine the ultimate effectiveness of the target formation: 1) the capacity of the target formation, in this case, an oil reservoir within an established oil field; 2) the overall potential for enhanced resource recovery from the identified target; and 3) the mobility and fate of the CO₂ at near-, intermediate-, and long-term time frames. Key site characterization parameters that will be addressed during Years 1 and 2 (BP3) and Year 3 (BP4) include properties of the reservoir and seal rocks, properties of the fluids in the reservoir and overlying fluid-bearing formations, and the production and operational history of the target oil reservoir.

During the first two quarters of Phase III activities, the PCOR Partnership has been identifying target areas in which to conduct enhanced oil recovery (EOR). The following sites have been selected as target areas for further evaluation with regard to the utilization of CO₂ for EOR:

1. Rival Field – This field is located in northwestern North Dakota and is proximal to a gas-processing plant that currently disposes of acid gas into the subsurface. The field will be modeled in detail with respect to the geological framework and fluid flow regimes. This model will then be used to run injection scenarios that utilize the current volume of acid gas injected as a miscible fluid for EOR.
2. Eland Field – This field is located in central North Dakota directly south of several major stationary point sources of CO₂. The site has been identified by industry partners and internal investigations by the PCOR Partnership as having potential for CO₂ EOR operations.
3. Sleepy Hollow Field – This field is in southwestern Nebraska and has significant potential for CO₂ EOR operations. The field's CO₂ needs could be served by future ethanol plants and will be modeled using volumes of this magnitude.

Each of these site investigations will address unique opportunities to utilize CO₂ obtained from a myriad of industrial applications and provide valuable information with regard to the economic impact of CO₂ EOR.