



**Plains CO₂ Reduction (PCOR) Partnership Monthly Update
October 1–31, 2007**

Task 1 – Project Management and Reporting (Edward N. Steadman/John A. Harju)

Highlights

- The PCOR Partnership Web site update is complete. The new site went live on October 22, 2007.
- The report entitled “Methodology for Development of Geologic Storage Estimates for Carbon Dioxide” is currently being reviewed. Comments are due to Dawn Deel by November 6, 2007.
- The 2007 PCOR Partnership Annual Meeting was held at the Energy & Environmental Research Center (EERC) October 18–19, 2007. The meeting was very informative and valuable to all who attended.
- Strategic West Energy, Ltd., joined Phase II of the PCOR Partnership on October 11, 2007.
- Ameren Corporation joined Phase II of the PCOR Partnership on October 15, 2007.

Travel/Meetings

- October 26, 2007: Senate Energy Staff Briefing on the Phase III Carbon Sequestration Partnerships Project Awards in Washington, D.C.
- October 31 – November 1, 2007: National Conference of State Legislatures Advanced Coal Technologies Energy Institute in Tampa, Florida
- November 6–8, 2007: International Energy Agency (IEA) Meeting, Edmonton in Alberta, Canada
- November 7–9, 2007: Clean Power in the West Summit in San Francisco, California
- November 11–14, 2007: Society of Petroleum Engineers Annual Technical Conference in Anaheim, California
- November 14–16, 2007: Carbon Reduction Project Development and Finance in Houston, Texas
- December 11–13, 2007: POWER-GEN International in New Orleans, Louisiana
- January 23–31, 2008: Energy Generation Conference in Bismarck, North Dakota
- January 24–25, 2008: Platts Carbon Trading Conference in Houston, Texas
- January 27–30, 2008: 11th Annual Conference on Clean Air, Mercury, Global Warming, and Renewable Energy in Tucson, Arizona
- April 6–10, 2008: 235th American Chemical Society National Meeting (Advances in CO₂ Management: CO₂ Sequestration, Utilization, Capture and Enhanced Oil Recovery) in New Orleans, Louisiana
- June 29 – July 2, 2008: 4th International Symposium on Energy, Informatics, and Cybernetics: EIC ‘08 in Orlando, Florida

- August 13–15, 2007: Coal-Gen in Louisville, Kentucky
- November 16–20, 2008: Greenhouse Gas Technology Conference (GHGT-9) in Washington, D.C.

Task 2 – Field Validation Test at a Williston Basin Oil Field, North Dakota (James A. Sorensen)

Highlights

- The evaluation continued of oil fields in Williston Basin that may be suitable candidates to host the Task 2 injection monitoring, mitigation, and verification (MMV) activities. Efforts are focused on developing baseline characterization data for fields in the Cedar Creek Anticline area, the Billings Anticline–Dickinson area, and along the Nesson Anticline.
- Continue to work on modeling activities as follows:
 - Developing a geophysical model of a portion of the Rival and Lignite fields in Burke County, North Dakota. This model will be used to evaluate the potential for utilizing acid gas from the Lignite Gas Plant for enhanced oil recovery in this area. The gas is currently being disposed of in the Mississippian Midale Formation. This saline formation will be evaluated for the storage potential with respect to CO₂ sequestration, while the adjacent stratigraphy will be evaluated for enhanced resource recovery.
 - Continue work on focused study areas of the Broom Creek model. Ultimately, three products will be developed as the result of these activities:
 - ♦ The storage potential of Broom Creek is a 50-mile radius centered at Washburn, North Dakota. This area includes five major point sources of CO₂ in North Dakota. This exercise helped us identify potential injection sites for sequestration in this area. A report on these activities will be completed that outlines the workflow and results.
- Two reports (focused on the two areas identified through the initial model) will be completed. They will be focused on specific injection targets with simulation of CO₂ injection and the resulting migration scenarios.

Travel/Meetings

- Nothing to note at this time.

Task 3 – Field Validation Test at Zama, Alberta (Steven A. Smith)

Highlights

- Participated in Blue Source and Spectra Energy meetings, October 17, 2007.
- Proposal for mineralogical work on Zama core has been initiated between Alberta Geological Survey and Natural Resources Canada (NRCAN). Upon completion this will be provided to the PCOR Partnership as cost share from NRCAN.
- Began compilation of Zama reports into a value-added product. The goal of this exercise is to present the material obtained through research activities at Zama to the partners in a way that explains the significance of the work.
- Prepared for the International Energy Agency Monitoring Network Meeting. Will discuss an industry perspective for MMV and an update of Zama activities.

Travel/Meetings

- November 5, 2007: Zama Quarterly Meeting in Calgary, Alberta
- November 6–8, 2007: IEA Meeting, Edmonton in Alberta, Canada
- November 11–14, 2007: Society of Petroleum Engineers Conference in Anaheim, California
- April 20–23, 2008: American Association of Petroleum Geologists in San Antonio, Texas

Task 4 – Field Validation Test of Lignite Coal in North Dakota (Lisa S. Botnen)

Highlights

- A meeting was conducted with Schlumberger to go over processing techniques and initial data analysis.
- Tight-hole status was received for the research project from the North Dakota Oil and Gas Division (NDOGD). Because of the extreme interest in this project and the need to report accurate information to our partners and the public, we formally requested that NDOGD hold the status of this project as confidential for the allotted 6-month time period. At that time, all initial data should be collected and thoughtfully interpreted.
- Water level data in the five wells have been collected.
- Sundry notices were submitted to NDOGD for four wells for the Field Validation Test of Lignite Coal in North Dakota. The notices informed the state of the perforation activities that were conducted on the wells.
- Plans for additional field-scale experiments are under development and will be finalized as initial field data are analyzed and interpreted.
- Core analysis and log interpretation by Terratek and Schlumberger are continuing.
- Model development and baseline characterization are continuing.
- The applicability of various MMV technologies (tiltmeter survey, gravity survey, tracer study, and seismic survey) for the lignite test continues to be researched and evaluated.
- CO₂ sources for injection have been contacted, and various delivery methods are being evaluated.

Travel/Meetings

- To be determined: Denver, Colorado, to observe Schlumberger and Terratek processing of data collected in the field.

Task 5 – Terrestrial Validation Test (Barry W. Botnen)

Highlights

- The draft Task 5 (2007 Q4 Milestone) – Fact Sheet 11, “Land Use Management Practices that Increase Soil Organic Carbon (SOC),” was approved by the U.S. Department of Energy (DOE) on October 19, 2007. The fact sheet is now available on the PCOR Partnership Web site (www.undeerc.org/PCOR/products/factsheets.asp).
- Completed 2007 grassland and wetland sampling efforts at North Dakota and South Dakota sites; samples are currently being prepared for analysis. Grassland samples from 2006 have been analyzed, and the results are available.

- Working on draft topical reports for providing a primer on carbon market basics and an overview of the business flow process for terrestrial offsets from private lands. We anticipate submitting this report next quarter.
- Evaluating other state and regional greenhouse gas or cap-and-trade program rules and policies and DOE Guidelines for Aggregators and Terrestrial Offset Providers.
- Documents have been developed to answer potential grassland carbon sequestration investor questions on issues such as leakage and, additionally, biotic values of Prairie Pothole Region, emission offsets because of tillage practices, and sequestration rates. These documents will be presented as fact sheets.
- Continuing to update Ducks Unlimited, Inc. (DU)–PCOR Partnership terrestrial project Web site.
- Working on characterization inputs and the terrestrial portion of the Decision Support System (DSS, © 2007 EERC Foundation).

Travel/Meetings

- October 25–26, 2007: DU carbon deal kickoff meeting in Bismarck, North Dakota

Task 6 – Continued Characterization of Regional Sequestration Opportunities (Erin M. O’Leary)

Highlights

Characterization

- Assisting with efforts related to sequestration characterization in the saline Broom Creek Formation and data gathering for the investigation focused on acid gas injection in the Rival oil field area.
- Working on Gap Assessment Report.
- Resolved all conflicts of CO₂ source emissions with Big Sky Partnership.

Gas Analysis Web Site

- Began work on new graphing requirements for the Gas Analysis Web site application as defined by North Dakota Industrial Commission.

DSS

- The database of pertinent studies related to terrestrial sequestration in the PCOR Partnership area has been included in the live version of the DSS. The contents of this database can be accessed through the indirect sequestration portion of the site.
- Did a complete review of the DSS Web site including the geographic information system (GIS) site to identify broken links or any functionality problems.
- Added Mid Continental Rift to the Sedimentary Basin layer.

Other

- Configured the new PCOR Partnership ArcGIS Server 9.2 to run existing ArcIMS projects. This allows developers to maintain and host existing 9.1 projects, while using the new development capabilities of the Microsoft .Net Framework found in version 9.2.

- Prepared a new version of the PCOR Partnership poster that was presented at the annual International GIS Conference.

Travel/Meetings

- Nothing to note at this time.

Task 7 – Research, Safety, Regulatory, and Permitting Issues (Lisa S. Botnen)

Highlights

- Sundry notices were submitted to NDOGD for four wells for the Field Validation Test of Lignite Coal in North Dakota. The notices informed the state of the perforation activities that were conducted on the wells.
- Reviewed the Interstate Oil and Gas Compact Commission report entitled “Storage of Carbon Dioxide in Geologic Structures, A Legal and Regulatory Guide for States and Provinces.”
- Met with representatives from Spectra Energy and the British Columbia government to discuss regulatory issues in British Columbia, Canada as a whole, and the United States.
- Met with a representative from Blue Source to discuss CO₂ sequestration market and regulatory activities in the region.

Travel/Meetings

- Nothing to note at this time.

Task 8 – Public Outreach and Education (Daniel J. Daly)

Highlights

- The draft Task 8 – Carbon Markets and Trading video was submitted to DOE for review on September 28, 2007.

Documentaries

- Carbon Market Video is currently being reviewed by DOE.
- Terrestrial video is being compiled and organized by Prairie Public Television in anticipation of the editing process.

Public Web Site

- A hard copy of the Web site is being compiled for future updates.

Travel/Meetings

- December 12–14, 2007: Regional Carbon Sequestration Review Meeting in Pittsburgh, Pennsylvania

Task 9 – Identification of Commercially Available Sequestration Techniques Ready for Large-Scale Deployment (Melanie D. Jensen/Michael L. Jones)

Highlights

- The PCOR Partnership Task 9 Best Practice Manual (November 2006 deliverable) is currently being revised.
- Continued to review and update emission data for the PCOR Partnership sources database.
- A draft was developed for a report describing the methodology used to determine source emission rates in the PCOR Partnership region.

Travel/Meetings

- December 12–14, 2007: Regional Carbon Sequestration Review Meeting in Pittsburgh, Pennsylvania
- December 3–5, 2007: Carbon Capture Status and Outlook Conference in Washington, D.C.

Task 10 – Regional Partnership Program Integration (Edward N. Steadman)

Highlights

- The second edition of the PCOR Partnership Regional Atlas is complete. Stakeholders received a copy at the PCOR Partnership 2007 Annual Meeting.

Travel/Meetings

- October 18–19, 2007: PCOR Partnership Annual Meeting at the EERC in Grand Forks, North Dakota
- December 12–14, 2007: Regional Carbon Sequestration Review Meeting in Pittsburgh, Pennsylvania