



**Plains CO<sub>2</sub> Reduction (PCOR) Partnership Monthly Update  
November 1–30, 2009**

**PHASE II ACTIVITIES**

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

**Highlights**

- Led a meeting on November 12, 2009, to run through all the presentations for the upcoming PCOR Partnership annual meeting and workshops.
- Attended and presented at the Regional Carbon Sequestration Partnership (RCSP) annual review meeting from November 16–19, 2009, in Pittsburgh, Pennsylvania.
- Continued plans for the upcoming 2009 PCOR Partnership annual meeting in St. Louis, Missouri, including:
  - Sent an e-mail blast entitled “Hotel Deadline Extended for PCOR Partnership Annual Meeting” on November 4.
  - Sent an e-mail blast entitled “Please Register Soon for the PCOR Partnership Annual Meeting and Workshops” on November 17.
  - Sent an “All You Need To Know Before You Go” e-mail to all registered partners on November 23.
- Sent an e-mail blast entitled “New PCOR Partnership Documentary to Air Tuesday, November 10 on Prairie Public Broadcasting!” on November 9, 2009 ([www.undeerc.org/PCOR/email/email091106.asp](http://www.undeerc.org/PCOR/email/email091106.asp)).
- Continued preparatory work for the Phase II final report due December 29, 2009.
- Phase II deliverables submitted for November:
  - D3: Task 1 – quarterly report (delayed and submitted November 2, 2009)
  - Monthly update
- Upcoming Phase II deliverables for December:
  - D44: Task 9 – Best Practices Manual: Regional Sequestration Opportunities (Update/Revision)
  - D51: Task 8 – Video: Carbon Footprint – One Size Does Not Fit All
  - D55: Task 2 – Williston Basin Field Validation Test Regional Technology Implementation Plan
  - D56: Task 1 – Phase II final report
  - Monthly update

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

### Highlights

- Several key results from postproduction monitoring, verification, and accounting (MVA) activities were obtained.
  - Final analytical results from down-hole fluid sampling
  - Final processed results of reservoir saturation tool (RST) log analysis
  - Initial processed results of vertical seismic profile (VSP) logging
- Fluid sampling revealed similar pH to preproduction, increased bicarbonate, and decreased H<sub>2</sub>S.
- Final processing of the RST logging confirms that CO<sub>2</sub> present near the perforated interval was produced and the CO<sub>2</sub> that had migrated vertically upward remained in place just below a high-density media.
- Initial results of processed VSP data appear to suggest that the plume of injected CO<sub>2</sub> migrated primarily in a northeastward direction, with a maximum extent of approximately 300 ft from the well.
- Continued efforts to prepare a PowerPoint presentation and poster for the upcoming PCOR Partnership annual meeting.
- Continued work on inverting seismic data and on creating a seismic grid for 2-D comparison once data are available.

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

### Highlights

- Continued efforts to prepare a PowerPoint presentation and poster for the upcoming PCOR Partnership annual meeting.

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

### Highlights

- Continued efforts to prepare a PowerPoint presentation and poster for the upcoming PCOR Partnership annual meeting.

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

### Highlights

- Continued efforts to prepare display exhibits, e.g., posters, for the upcoming PCOR Partnership annual meeting.

## **Task 6 – Continued Characterization of Regional Sequestration Opportunities (Wesley D. Peck)**

### Highlights

- Continued preparation of a PowerPoint presentation for the upcoming PCOR Partnership annual meeting.

- Assisted with preparation of displays for the upcoming PCOR Partnership annual meeting.

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

#### Highlights

- Tracked and analyzed various state, provincial, and regional greenhouse gas (GHG) reduction and carbon capture and storage (CCS) initiatives.
- Followed and reviewed actions occurring in Congress for any implications relating to CCS and provided updates of these activities to task leaders.

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

#### Highlights

- Assisted with the development of a press release and e-mail blast to the partnership regarding the broadcast of the fourth documentary entitled “Managing Carbon Dioxide: The Geologic Solution” on Prairie Public Broadcasting (PPB) scheduled for the viewing area on November 10, 2009, at 8:00 p.m. CST.
- Uploaded information on the geologic sequestration documentary on to the PCOR Partnership public Web site and included a streaming version to allow the public to view the entire documentary online.
- Provided a response to the DOE NETL project manager to comments regarding the draft version of the documentary transmitted for review and approval on May 29, 2009.
- Ordered and received 1200 DVDs of the fourth documentary for partner and public distribution.
- Efforts toward the fifth documentary, tentatively entitled “Carbon Footprint: One Size Does Not Fit All” included:
  - Submitted additional video time code to PPB.
  - Completed an initial video draft with narration and cover that was reviewed by program manager on November 20, 2009.
  - Initiated revisions to the narration and graphics.
  - Scheduled a second review session for the program manager on December 4, 2009.
- Continued efforts to prepare a PowerPoint presentation for the upcoming PCOR Partnership annual meeting and workshops.

### **Task 9 – Identification of Commercially Available Sequestration Techniques Ready for Large-Scale Deployment (Melanie D. Jensen)**

#### Highlights

- Finished updating the draft Best Practices Manual: Regional Sequestration Opportunities (D44) report summarizing the cost and effort required for the initial capture, compression, and transportation of CO<sub>2</sub> within the PCOR Partnership region. The new version of the report incorporates gas-processing facilities that were added to the CO<sub>2</sub> emission database during the last year as well as updates the overview of regional CO<sub>2</sub> point sources and emissions by the ethanol plants. The hypothetical pipeline routes were also updated to reflect the changes made in the sources being considered for capture.

- Completed a PowerPoint presentation about deployable CO<sub>2</sub> capture technologies for the upcoming PCOR Partnership annual meeting.

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

#### Highlights

- Program Manager continued his efforts as the chairman of the North American Energy Working Group (NAEWG) North American Carbon Atlas Partnership (NACAP) Methodology Subcommittee, including the following:
  - Continued work determining the “level of detail/granularity in publically accessible GIS” as assigned to the Methodology Working Group and Information Technology Working Group. This work must be completed by next NACAP meeting.
  - Continued discussions with NACAP committee members on additional work assigned.
- Participated in conference calls for other various working groups, including Geologic and Modeling, Capture and Transportation, Simulation and Risk Assessment, GIS, and the Water Working Group (WWG).



## **PHASE III ACTIVITIES**

### **Task 1 – Regional Characterization (Wesley D. Peck)**

#### **Highlights**

- Attended and participated in the GIS Working Group Meeting on November 19, 2009, in Pittsburgh, Pennsylvania.
- Attended the North Dakota GIS Conference in Grand Forks, North Dakota.
- Responded to a partner inquiry regarding a map of the Bevier coal bed as part of a statewide inventory of potential CO<sub>2</sub> storage opportunities that Missouri is compiling for the PCOR Partnership.
- Coordinated efforts for production of displays and posters at the upcoming PCOR Partnership annual meeting and workshops.
- Continued efforts for a presentation at the upcoming PCOR Partnership annual meeting.

#### **Issues**

- Nothing to note at this time.

#### **Opportunities**

- Nothing to note at this time.

#### **Partners Contacted**

- George Mues of Ameren

### **Task 2 – Public Outreach and Education (Daniel J. Daly)**

#### **Highlights**

- Continued efforts toward an update to the public Web site (D13):
  - Revised the field validation site information
  - Prepared additional video clips
  - Revised the fact sheet information page
- Accepted an advisory role for outreach for sequestration projects to be developed through the Petroleum Technology Research Center in Regina, Saskatchewan.
- Provided review comments for the draft Web site for the Weyburn-Midale project as part of the Outreach Advisory Panel.
- Continued efforts to prepare a PowerPoint presentation for the upcoming PCOR Partnership annual meeting and workshops.

### **Task 3 – Permitting and National Environmental Protection Agency (NEPA) Modeling (Lisa S. Botnen)**

#### Highlights

- Continued ongoing review of recent publications relating to regulating CO<sub>2</sub> sequestration and MVA issues.
- Continued analyses of carbon market strategies.
- Continued to follow committee hearings and actions on the Boxer–Kerry Climate Change bill.
- Participated in a conference call of the Interstate Oil and Gas Compact Commission’s Pipeline Transportation Task Force.

### **Task 4 – Site Characterization and Modeling (James A. Sorensen)**

#### Highlights

- Continued work on the Fort Nelson simulations.
- Initiated efforts on a general CCS risk management document for the Partners-Only DSS Web site.
- Continued revisions to the Risk Management Policy and Process report for the Fort Nelson CCS project.
- Created a draft “value-added” fact sheet on the PCOR Partnership’s approach to risk management of CCS projects.
- Initiated an outline for the Fort Nelson MVA plan.

### **Task 5 – Well Drilling and Completion (Steven A. Smith)**

#### Highlights

- Nothing to note at this time.

### **Task 6 – Infrastructure Development (Melanie D. Jensen)**

#### Highlights

- Completed the pipeline network routing update.
- Changed identification numbers on the master spreadsheet of regional CO<sub>2</sub> sources to match the identification numbers used in the PCOR Partnership DSS.
- Participated in the RCSP Pipeline Atlas Working Group conference call.
- Continued preparation of PowerPoint presentations for the upcoming PCOR Partnership annual meeting and workshops.
- Performed statistical analysis on the sources database to determine percentages of emissions from various categories within each state/province.

### **Task 7 – CO<sub>2</sub> Procurement (John A. Harju)**

#### Highlights

- Continued discussions with potential CO<sub>2</sub> suppliers. Because of the sensitive nature of negotiations, specifics cannot be shared at the present time.

### **Task 8 – Transportation and Injection Operations (Steven A. Smith)**

- This task is anticipated to be initiated Quarter 3 – BP4, Year 4.

### **Task 9 – Operational Monitoring and Modeling (Charles D. Gorecki)**

#### Highlights

- Continued geologic modeling of the Fort Nelson site along with numerical simulations on Version 2 of the geologic model to predict the fate of the injected sour CO<sub>2</sub>.
- Selected an approximate location for the second injector well and a 3-D seismic survey – both scheduled for this winter's drilling and data acquisition program at Fort Nelson. This new data will be incorporated into Version 3 of the geologic model.
- Continued negotiation of special core analysis on the first test well, as well as a geomechanical, geochemical, and a cap rock testing program for the core from the first well drilled last winter at the Fort Nelson site.
- Initiated discussions for a well testing, coring, and reservoir testing program with Spectra Energy for the well that is to be drilled this winter.

### **Task 10 – Site Closure (to be announced [TBA])**

- This task is anticipated to be initiated in Quarter 1 – BP 5; Year 9.

### **Task 11 – Post Injection Monitoring and Modeling (TBA)**

- This task is anticipated to be initiated in Quarter 1 – BP 5; Year 9.

### **Task 12 – Project Assessment (Katherine Anagnost)**

- Initiated efforts for the next project assessment annual report scheduled to be submitted on December 31, 2009.

### **Task 13 – Project Management (Edward N. Steadman)**

#### Highlights

- Led a meeting on November 12, 2009, to run through all the presentations for the upcoming PCOR Partnership annual meeting and workshops.
- Attended and presented at the RCSP annual review meeting from November 16–19, 2009, in Pittsburgh, Pennsylvania.
- Continued plans for the upcoming 2009 PCOR Partnership annual meeting in St. Louis, Missouri, including:

- Sent an e-mail blast entitled “Hotel Deadline Extended for PCOR Partnership Annual Meeting” on November 4.
  - Sent an e-mail blast entitled “Please Register Soon for the PCOR Partnership Annual Meeting and Workshops” on November 17.
  - Sent an “All You Need To Know Before You Go” e-mail to all registered partners on November 23.
  - Continued preparations for submittal of several abstracts for 10th International Conference on Greenhouse Gas Control Technologies, September 19–23, 2010, RAI, Amsterdam, The Netherlands ([www.ghgt.info/GHGT10.html](http://www.ghgt.info/GHGT10.html)).
  - Phase III deliverables/milestones for November:
    - M23: Task 14 – monthly WWG conference call held
    - D58/D59: Task 13 – quarterly progress report/milestone quarterly report (delayed and submitted November 2, 2009)
    - Monthly update
- Upcoming Phase III deliverables for December:
- M23: Task 14 – monthly WWG conference call held
  - D57: Task 12 – project assessment annual report
  - Monthly update

#### **Task 14 – Regional Carbon Sequestration Partnership (RCSP) Water Working Group Coordination (Charles D. Gorecki)**

##### Highlights

- WWG minutes distributed on November 2, 2009, from the conference call held October 26, 2009.
- Led a meeting and held the monthly WWG conference call on November 16, 2009, in conjunction with the RCSP Annual Review Meeting in Pittsburgh, Pennsylvania.
- Participated in a joint WWG and Outreach Working Group meeting on November 16, 2009, in Pittsburgh.
- Continued efforts between the WWG and Public Outreach Group on a fact sheet based loosely on the white paper.

##### **Phase II – Travel/Meetings**

- November 3, 13, 16, 18, and 25, 2009: Traveled for a documentary edit session to PPB offices in Fargo, North Dakota.
- November 30 – December 3, 2009: Participated in the PCOR Partnership annual meeting and workshops in St. Louis, Missouri.

##### **Phase III – Travel/Meetings**

- November 1–5, 2009: Participated in the 2009 Society of Petroleum Engineers International Conference on CO<sub>2</sub> Capture, Storage, and Utilization (November 2–4, 2009) in San Diego, California.
- November 4–7, 2009: Visited the Petroleum Engineering Lab to discuss core flood apparatus at Stanford University in San Francisco, California.
- November 2–4, 2009: Attended the North Dakota GIS User Conference in Grand Forks, North Dakota.



- November 4–5, 2009: Attended PCOR Partnership project planning meeting with Brian Strasizar in Pittsburgh, Pennsylvania.
- November 6, 9, 2009: Attended meetings with Dave Nakles from Carnegie Mellon University, in Washington, D.C.
- November 8–10, 2009: Participated in the Great Plains Energy Expo and Showcase (November 9–10, 2009) in Bismarck, North Dakota.
- November 9–12, 2009: Participated in the Simulia Training Course entitled “Analysis of Geotechnical Problems with Abaqus” in Houston, Texas.
- November 15–19, 2009: Participated in the RCSP annual review meeting in Pittsburgh, Pennsylvania.
- November 30 – December 3, 2009: Participated in the PCOR Partnership annual meeting and workshops in St. Louis, Missouri.