

**U.S. Department of Energy
 FEDERAL ASSISTANCE REPORTING CHECKLIST
 AND INSTRUCTIONS FOR RD&D PROJECTS**

1. Identification Number: DE-FE0006821	2. Program/Project Title: Small Scale Field Test Demonstration CO2 Sequestration											
3. Recipient: University of Kansas Center for Research, Inc.												
<p>4. Reporting Requirements:</p> <p>A. MANAGEMENT REPORTING</p> <p><input checked="" type="checkbox"/> Research Performance Progress Report (RPPR)</p> <p><input checked="" type="checkbox"/> Special Status Report</p> <p>B. SCIENTIFIC/TECHNICAL REPORTING (Reports/Products must be submitted with appropriate DOE F 241. The 241 forms are available at www.osti.gov/elink)</p> <table border="0"> <tr> <td>Report/Product</td> <td>Form</td> </tr> <tr> <td><input checked="" type="checkbox"/> Final Scientific/Technical Report</td> <td>DOE F 241.3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Conference papers/proceedings*</td> <td>DOE F 241.3</td> </tr> <tr> <td><input type="checkbox"/> Software/Manual</td> <td>DOE F 241.4</td> </tr> <tr> <td><input type="checkbox"/> Other (see special instructions)</td> <td>DOE F 241.3</td> </tr> </table> <p>* <i>Scientific and technical conferences only</i></p> <p>C. FINANCIAL REPORTING</p> <p><input checked="" type="checkbox"/> SF-425 Federal Financial Report</p> <p>D. CLOSEOUT REPORTING</p> <p><input checked="" type="checkbox"/> Patent Certification</p> <p><input checked="" type="checkbox"/> SF-428 & 428B Final Property Report</p> <p><input type="checkbox"/> Other</p> <p>E. OTHER REPORTING</p> <p><input checked="" type="checkbox"/> Annual Indirect Cost Proposal</p> <p><input type="checkbox"/> Audit of For-Profit Recipients</p> <p><input checked="" type="checkbox"/> SF-428 Tangible Personal Property Report Forms Family</p> <p><input checked="" type="checkbox"/> Other – see block 5 below</p>	Report/Product	Form	<input checked="" type="checkbox"/> Final Scientific/Technical Report	DOE F 241.3	<input checked="" type="checkbox"/> Conference papers/proceedings*	DOE F 241.3	<input type="checkbox"/> Software/Manual	DOE F 241.4	<input type="checkbox"/> Other (see special instructions)	DOE F 241.3	<p>Frequency</p> <p>Q A</p> <p>FG A</p> <p>Q, FG</p> <p>FC FC</p> <p>O</p> <p>A A</p>	<p>Addressees</p> <p>FITS@NETL.DOE.GOV FITS@NETL.DOE.GOV</p> <p>http://www.osti.gov/elink-2413 http://www.osti.gov/elink-2413</p> <p>FITS@NETL.DOE.GOV</p> <p>FITS@NETL.DOE.GOV FITS@NETL.DOE.GOV</p> <p>See block 5 below for instructions.</p> <p>FITS@NETL.DOE.GOV FITS@NETL.DOE.GOV</p>
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<p>FREQUENCY CODES AND DUE DATES:</p> <p>A - Within 5 calendar days after events or as specified. FG- Final; 90 calendar days after the project period ends. FC- Final; End of Effort. Y - Yearly; 90 calendar days after the end of the reporting period. S - Semiannually; within 30 calendar days after end of project year and project half-year. Q - Quarterly; within 30 days after end of the reporting period. Y180 – Yearly; 180 days after the end of the recipient's fiscal year O - Other; See instructions for further details.</p>												
<p>5. Special Instructions:</p> <p>Annual Indirect Cost Proposal – If DOE is the Cognizant Federal Agency, then the proposal should be sent to FITS@NETL.DOE.GOV . Otherwise, it should be sent to the Cognizant Federal Agency.</p> <p>Other – The Recipient shall provide all deliverables as contained in Section D of Attachment 2 Statement of Project Objectives.</p>												

QUARTERLY PROGRESS REPORT

To

DOE-NETL

Brian Dressel, Program Manager

Award Number: DE-FE0006821

**SMALL SCALE FIELD TEST DEMONSTRATING CO₂ SEQUESTRATION IN
ARBUCKLE SALINE AQUIFER AND BY CO₂-EOR AT WELLINGTON FIELD,
SUMNER COUNTY, KANSAS**

Project Director/Principal Investigator:

W. Lynn Watney

Senior Scientific Fellow

Kansas Geological Survey

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Joint Principal Investigator:

Jason Rush

Prepared by Tiraz Birdie and Lynn Watney

Date of Report: August 6, 2013

DUNS Number: 076248616

Recipient: University of Kansas Center for Research &

Kansas Geological Survey

1930 Constant Avenue

Lawrence, KS 66047

Project/Grant Period: 10/1/2011 through 9/30/2015

Seventh Quarterly Report

Period Covered by the Report: April 1, 2013 through June 30, 2013

Signature of Submitting Official:

EXECUTIVE SUMMARY

Project Objectives

The objectives of this project are: (1) inject under supercritical conditions approximately 40,000 metric tons of CO₂ into the Arbuckle saline aquifer; (2) demonstrate the application of state-of-the-art MVA (monitoring, verification, and accounting) tools and techniques to monitor and visualize the injected CO₂ plume; (3) develop a robust Arbuckle geomodel by integrating data collected from the proposed study area, and a multi-component 3D seismic survey; (4) conduct reservoir simulation studies to map CO₂ plume dispersal and estimate tonnage of CO₂ sequestered in solution, as residual gas and by mineralization; (5) integrate MVA data and analysis with reservoir modeling studies to detect CO₂ leakage and to validate the simulation model; (6) develop a rapid-response mitigation plan to minimize CO₂ leakage and a comprehensive risk management strategy; and (7) establish best practice methodologies for MVA and closure. Additionally, approximately 30,000 metric tons of CO₂ shall be injected into the overlying Mississippian to evaluate miscible CO₂-EOR potential in a 5-spot pilot pattern. An alternative supplier for the Abengoa Bioenergy ethanol plant at Colwich, Kansas is being sought. The project was informed in late July 2013 that the Colwich plant will not reopen in 2013 and opening in 2014 is questionable due to conditions beyond their control. Discussions with three sources of compressed CO₂ are in progress.

Project Goals

The proposed small scale injection will advance the science and practice of carbon sequestration in the Midcontinent by refining characterization and modeling, evaluating best practices for MVA tailored to the geologic setting, optimize methods for remediation and risk management, and provide technical information and training to enable additional projects and facilitate discussions on issues of liability and risk management for operators, regulators, and policy makers.

The data gathered as part of this research effort and pilot study will be shared with the Southwest Sequestration Partnership (SWP) and integrated into the National Carbon Sequestration Database and Geographic Information System (NATCARB) and the 6th Edition of the Carbon Sequestration Atlas of the United States and Canada.

Project Deliverables by Task

- 1.5 Well Drilling and Installation Plan (Can be Appendix to PMP or Quarterly Report)
- 1.6 MVA Plan (Can be Appendix to PMP or Quarterly Report)
- 1.7 Public Outreach Plan (Can be Appendix to PMP)
- 1.8 Arbuckle Injection Permit Application Review go/no go Memo
- 1.9 Mississippian Injection Permit Application Review go/no go Memo
- 1.10 Site Development, Operations, and Closure Plan (Can be Appendix to PMP)

- 2.0 Suitable geology for Injection Arbuckle go/no go Memo
- 3.0 Suitable geology for Injection Mississippian go/no go Memo
- 11.2 Capture and Compression Design and Cost Evaluation go/no go Memo
- 19 Updated Site Characterization/Conceptual Models (Can be Appendix to Quarterly Report)
- 21 Commercialization Plan (Can be Appendix to Quarterly Report).
- 30 Best Practices Plan (Can be Appendix to Quarterly or Final Report)

ACCOMPLISHMENTS

1. **Continued progress of Milestone 2 (Task 3) --** Site characterization of Mississippian Reservoir for CO2 EOR - Wellington Field.
2. **Subtask 1.8 Arbuckle Injection Permit Application** – The permit application consists of 14 chapters (sections). Drafts for all section have been completed by KGS and forwarded to Petrotek Engineering Corporation for review. Petrotek has extensive experience with permitting of injection wells, with one of their staff member being a former EPA reviewer. KGS has been receiving technical comments from Petrotek and incorporating the same in the Class VI draft document. The completion status for each section is described in Table 1 below. The draft of the permit application is expected to be complete in August, following which it will be forwarded Berexco, the oilfield operator, for review by their legal team prior to submitting the application to the EPA Region VII Director.

The permit document contains extensive amount of raw, processed, and analyzed technical information along with model simulation results which summarizes the suitability of the Wellington site for conducting not only the small-scale pilot test, but potentially long-term commercial scale carbon capture and sequestration (CCS).

Milestone Status Report

Task	Budget Period	Number	Milestone Description
Task 2.		1	1 Site Characterization of Arbuckle Saline Aquifer System - Wellington Field
Task 3.		1	2 Site characterization of Mississippian Reservoir for CO2 EOR - Wellington Field
Task 10.		2	3 Pre-injection MVA - establish background (baseline) readings
Task 13.		2	4 Retrofit Arbuckle Injection Well (#1-28) for MVA Tool Installation
Task 18.	3-yr1		5 Compare Simulation Results with MVA Data and Analysis and Submit Update of Site Characterization, Modeling, and Monitoring Plan
Task 22.	3-yr1		6 Recondition Mississippian Boreholes Around Mississippian CO2-EOR injector
Task 27.	3-yr2		7 Evaluate CO2 Sequestration Potential of CO2-EOR Pilot
Task 28.	3-yr2		8 Evaluate Potential of Incremental Oil Recovery and CO2 Sequestration by CO2-EOR - Wellington field

Project Schedule

Abengoa Biofuels informed us in late July that the Colwich Ethanol Facility would remain shut for the rest of the year because of the drought in the Midwest. However, Abengoa did indicate that may be possible for them to supply the CO₂ from their newly constructed cellulosic ethanol plant at Hugoton, Kansas. KGS has ongoing discussions with Abengoa and other potential

suppliers of anthropogenic CO₂ including Praxair, Airgas, Chaparral Energy, and Trenton Agri Products, LLC. Geologic CO₂ has not been an option for the Wellington project, due to demand for this product along existing pipelines in Texas, New Mexico, Colorado, and Wyoming. Anthropogenic is the only viable source to provide the CO₂ needed for CO₂-EOR. Berexco are keenly interested in the saline aquifer storage in order to obtain enhanced prices for ethanol, obtain disposal fees, and with the case at Wellington, the income generated by carbon trading through Biorecro in Sweden.

The KGS is committed to starting injection at the Wellington site in the first quarter of FY2014 by first injecting in the Mississippian oil and gas reservoir. Therefore, contacts were made with alternative anthropogenic CO₂ producers as noted above. We have also had discussions with Pioneer Energy who is interested in generating the CO₂ onsite from conversion of pipeline natural gas to hydrogen and CO₂. Excess energy will be used to create electricity. However, this latter option is still in the prototype stage.

The Class VI UIC geosequestration permit application is planned to be submitted to EPA in late summer/early fall 2013. Construction of monitoring wells and installation of monitoring equipment will commence on approval of the permit, if permission is granted from DOE.

A condensed version of the Gantt Chart tracks tasks based on the one year no cost extension of Budget Period 1 (Figure 1). The PMP and Gantt Chart will be updated during the next quarter.

Activities of Lawrence Berkeley National Lab

No work has been completed or funds expended during this quarter by LBNL.

ONGOING ACTIVITIES –

TASK 1. PROJECT MANAGEMENT AND REPORTING

Permit Status and Activities

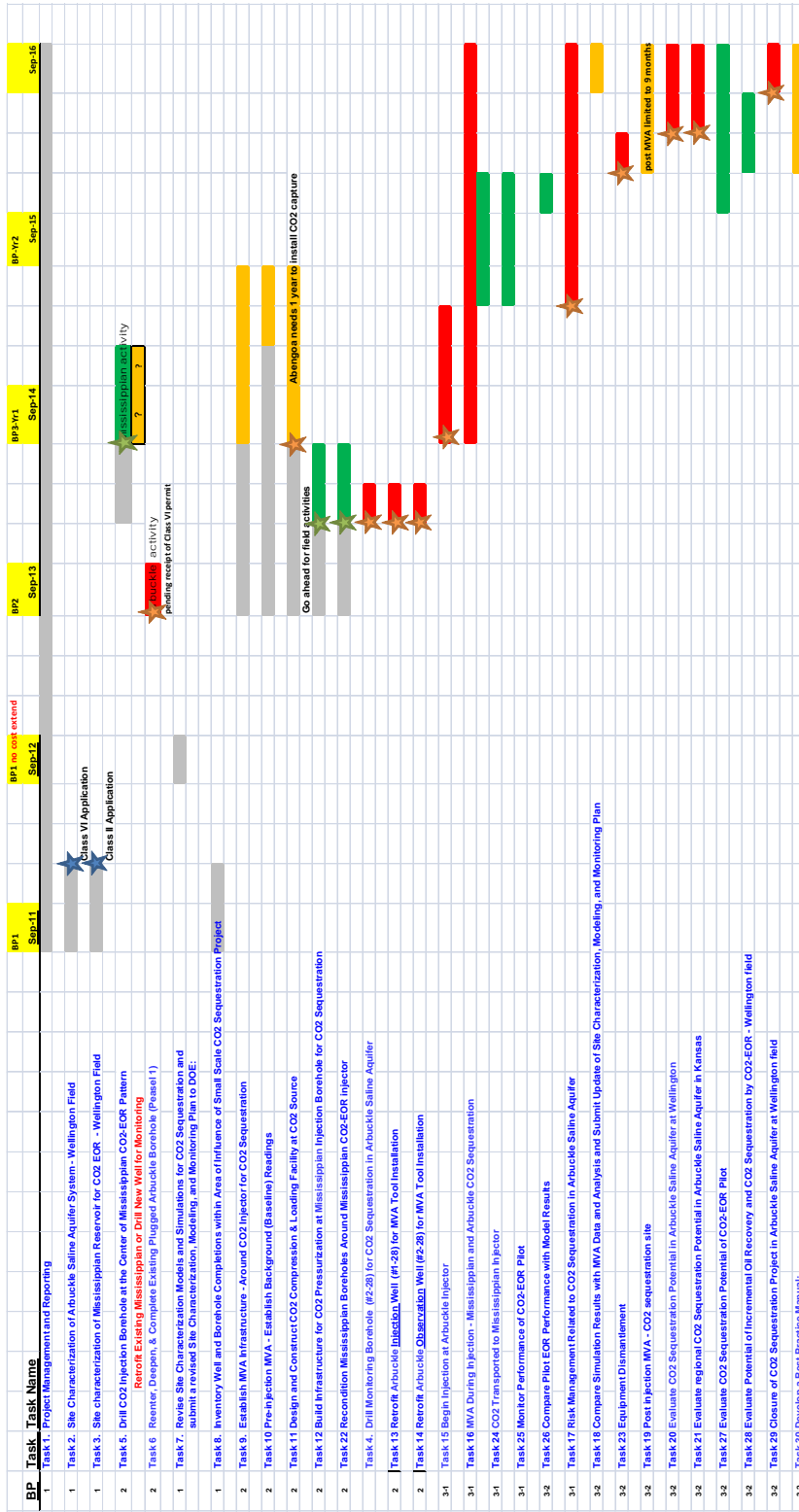


Figure 1. Condensed version of the project Gantt Chart.

Table 1. Status of Class VI permit application

Section	Status
Project Overview	Review completed by Petrotek and suggestions implemented by KGS. Document production staff at KGS incorporating write up in draft permit application for review by Berexco and DOE.
CO2 Sequestration Potential of Arbuckle Group	Review completed by Petrotek and suggestions implemented by KGS. Document production staff at KGS incorporating write up in draft permit application for review by Berexco and DOE.
Regional Geology and Hydrogeology	Review completed by Petrotek. KGS implementing suggestions.
Local Geology and Hydrogeology	Partial review completed by Petrotek. KGS implementing suggestions.
Reservoir Modeling and Area of Review	KGS modeler working on completing alternative models and sensitivity scenarios.
Geomechanical and Caprock Stability Investigations	Review completed by Petrotek. KGS implementing suggestions.
Trapping Potential of Mississippian Formation	Review completed by Petrotek. KGS implementing suggestions.
System Design, Construction, and Operations	Petrotek conducting review.
Area of Review and Corrective Action Plan	KGS staff awaiting completion of modeling runs prior in order to finalize this section

Testing and Monitoring Plan	Petrotek reviewing write up by KGS
Well Plugging Plan	Petrotek reviewing write up by KGS
Post Injection Site Care and Site Closure Plans	Review completed by Petrotek. KGS implementing suggestions..
Emergency Remedial Response Plan	Review completed by Petrotek. KGS implementing suggestions.
Financial Assurances	Petrotek reviewing write up by KGS

The bulk of the EPA Class VI permit application efforts in third quarter of FY 2013 were expended towards finalizing the draft of the permit application. This involved:

- Providing a draft version of the permit application to Petrotek Engineering Corporation for review. Petrotek has been conducting the review on a section by section basis, and their comments are incorporated in the draft permit document as soon as they are received.
- Revising the upper confining zone by including the argillaceous Pierson Formation in the lower Mississippian as part of the confining zone. Initially, only the underlying Simpson Group and the Chattanooga Shale were considered as part of the confining zone as the concern was that there would be many existing wells requiring corrective action, especially during commercial scale injection of CO₂. However, in order to expedite the Class VI permit application, it was decided to include the low permeability Pierson Formation as part of the upper confining zone.

- Preparing a vertical permeability profile throughout the Arbuckle from core data, which was not possible to construct previously due to lack of an appropriate technical methodology. A KGS staff member, working with external engineers, has developed a new methodology for estimating vertical permeability throughout the cored interval and extrapolating the same at nearby wells. A patent application has been filed by development team for this new technical approach.
- Developing a new 3-D Petrel based geo-model by KGS staff using the vertical permeability distribution at the proposed injection and monitoring wells (KGS 1-28 and KGS 1-32) as described above, and up-scaling the same to the reservoir model.
- Updating the CMG reservoir simulation model by utilizing the updated geomodel which incorporated the new vertical permeability distribution. In order to properly simulate flow in the high permeability intervals within the stratified Arbuckle aquifer, the model was discretized in 72 layers versus the 33 layers employed in the previous model. The KGS modeler is currently working on completing alternative model runs and conducting sensitivity scenarios.
- Characterizing and documenting fractures within the upper confining zone by synthesizing the data obtained from (core based) fracture studies, XMRI logs, and CT scans. The findings convincingly demonstrate that the upper confining zone is free of transmissive fractures which should allay EPA concerns of CO₂ migration from the caprock above the Arbuckle aquifer.
- Revising the Class VI testing and monitoring plan to be submitted to the EPA by scaling down the scope of activities. A minimum amount of monitoring activities necessary for obtaining a Class VI permit is proposed to the EPA, without committing to conducting all monitoring, verification, and accounting activities as stated in the PMP. This was done after considering the potential for a reduced set of monitoring activities for the project in the event that there is a budget shortfall due to the high cost of CO₂ procurement.

- Preparing for the DOE Program Review in Wichita which focused on discussing and communicating the following,
 - 1) Wellington serves as a calibration site for the Mississippian reservoir, and summarizing the information necessary to describe and model this reservoir,
 - 2) Collaborative research at Wellington to evaluate utilization for EOR in the Mississippian and storage of CO₂ in underlying saline aquifer,
 - 3) Research and testing supported by DOE as part of large study directed toward CO₂ use and storage in Kansas supported by Berexco and other industry and academic partners,
 - 4) Benefits to industry and state,
 - 5) Share results and information with the petroleum industry and public to develop and optimize for new CO₂ projects.

Key Findings

1. The new simulation results indicate that the CO₂ plume will stabilize within a year of cessation of injection. This finding will support a KGS/Berexco petition to EPA to allow closure of the Wellington site in 1.5 years following injection, instead of the default 50 year post-injection period.
2. Unlike the previous model results, the pressure induced in the injection zone may cause the brines to migrate into the USDW if artificial penetrations are not properly sealed.
3. The revised vertical permeability distribution in the Arbuckle has resulted in the CO₂ remaining confined in the lower Arbuckle injection zone. This will mitigate concerns pertaining to caprock integrity. In the previous model, the plume migrated to the top of the Arbuckle, albeit at low pressures.
4. The simulation results were compared with sequestration volume estimates using equation utilized by researchers for preparing the US CO₂ geologic sequestration

capacity atlas, and found to generally be in good agreement. This provides an independent validation of the simulation results.

Plans

1. Negotiate the prospect of injecting CO₂ first in the Mississippian reservoir with the DOE so as to resume project activities in FY2014 starting October 1, 2013.
2. Submit Mississippian Injection Permit Application (Class II injection well under Kansas primacy, regulated by Kansas Corporation Commission) using updated geomodel and simulation of the Mississippian oil reservoir.
3. Top priority remains to finalize and submit application for Class VI injection permit to the EPA in late summer/early fall 2013. A day long or half-day permit kickoff meeting is to be requested with the EPA in order to communicate the project findings and contents of the permit document to EPA reviewers, and provide them an opportunity to ask questions/seek clarification. This will expedite the EPA review process. On obtaining the permit, field activities shall commence in conjunction with construction of new monitoring wells, and deepening of the existing Peasel well.
4. Submit updated management plan, well drilling and installation plan, MVA plan, Public Outreach Plan based on material included in Class VI application.

PRODUCTS

Publications, conference papers, and presentations

- Watney, W.L., Newell, K.D., Holubnyak, E., and Raney, J., 2013, "Oil and Gas in Central Kansas Potential for Enhanced Oil Recovery Using CO₂", regarding use of petroleum coke in refinery that would include CO₂ generation: to McPherson Kansas Development Corporation hosted meeting, April 3.
- Watney, W.L., 2013, Analysis of the Late Devonian to Early Carboniferous (Fransnian-Tornaisian) Woodford (Chattanooga) Shale, presentation to AAPG Forum Woodford, Oklahoma City, April 11. This is an important caprock in Kansas and Oklahoma.
- Watney, W.L., 2013, Petrophysical Analyses and Integrated Approaches, April 16-19, AAPG Short Course, Austin, TX. Centerpiece of the course material comes from the DOE-CO₂ project.
- Watney, W.L., 2013, Mississippian Exploration: Stratigraphy, Petrology, and Reservoir Properties with an emphasis on Wellington Field, April 23, Denver, RMAG & PTTC Symposium titled, "Making Money with Science", April 23, Denver, Colorado.
- W. Lynn Watney, John Youle, Dennis Hedke, Paul Gerlach, Raymond Sorenson, Martin Dubois, Larry Nicholson, Thomas Hansen, David Koger, and Ralph Baker, 2013, Sedimentologic and Stratigraphic Effects of Episodic Structural Activity During the Phanerozoic in the Hugoton Embayment, Kansas USA: AAPG Annual Meeting, Oral presentation, Pittsburgh, PA, May 21
- W. Lynn Watney, Jason Rush, Martin Dubois, Robinson Barker, Tiraz Birdie, Ken Cooper, Saugata Datta, John Doveton, Mina Fazelalavi, David Fowle, Paul Gerlach, Thomas Hansen, Dennis Hedke, Yevhen Holubnyak, Breanna Huff, K. David Newell, Larry Nicholson, Jennifer Roberts, Aimee Scheffer, Ayrat Sirazhiev, Raymond Sorenson, Georgios Tsoflias, Eugene Williams, Dana Wreath, John Youle, 2013, Evaluating Carbon Storage in Morrowan and Mississippian oil fields and Underlying Lower Ordovician Arbuckle Saline Aquifer in Southern Kansas: AAPG Annual Meeting, Poster, Pittsburgh, PA, May 20.
- DOE Site visit and project review, June 3-5, 2013, Regional CO₂ Storage, Wellington and Cutter field calibration sites, SW Kansas CO₂-EOR Initiative, and Small Scale CO₂ Test Injection at Wellington, Wichita, KS.
- Lyle, S., Buchanan, R., Watney, L., Rush, J., Raney J., and Brian Dressel, DOE Project Manager, 2013, Presentation to the KGS Annual Kansas Field Conference participants including Kansas legislators and state officials, morning of Tuesday, June 4th, Meet bus at site of Wellington KGS #1-32. Brought core and posters in addition to describing DOE-CO₂ project and answering questions pertaining economics, safety, and policy.



Rex Buchanan, Interim Director of KGS, addressing field conference participants with Watney and Dressel (in background looking on) .



Portion of the Mississippian oil reservoir and caprock and the lower Arbuckle injection zone were displayed along with posters relating to the project and the core.



Discussions with field conference attendees after the conference . Shane Lyle, organizer of field conference, in the foreground center.

PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

A project organization chart follows. The work authorized in this budget period includes office tasks related to preparation of reports and application for a Class VI permit to inject CO₂ into the Arbuckle saline aquifer. Tasks associated with reservoir characterization and modeling are funded in contract DE-FE0002056.

ORGANIZATION CHART

Kansas Geological Survey		
Name	Project Job Title	Primary Responsibility
Lynn Watnev	Project Leader, Joint Principal Investigator	Geology, information synthesis, point of contact
Yevhen Holubnyak	Petroleum Engineer	Reservoir engineer, dynamic modeling, synthesis
Jason Rush	Joint Principal Investigator	Geology, static modeling, data integration, synthesis
John Doveton	Co-Principal Investigator	Log petrophysics, geostatistics
Dave Newell	Co-Principal Investigator	Fluid geochemistry
Rick Miller	Geophysicist	2D seismic acquire & interpretation
TBN	Geology Technician	LiDAR/InSAR support, water well drilling/completion
Tiraz Birdie	President, TBirdie Consulting, Inc.	Assemble and analyze data, report writing
		Hydrogeologic modeling, permitting, MVA, integration
KU Department of Geology		
Michael Taylor	Co-Principal Investigator	Structural Geology, analysis of InSAR, LiDAR, seismometer array
TBN	Graduate Research Assistant	Structural Geology, analysis of InSAR and LiDAR, seismometer array
Kansas State University		
Saugata Datta	Principal Investigator	
TBN	Graduate Research Assistant	Aqueous geochemistry
TBN	3- Undergraduate Research Assistants	
Lawrence Berkeley National Laboratory		
Tom Daley	Co-Principal Investigator	Geophysicist, analysis of crosshole and CASSM data
		Hydrogeology, analysis of soil gas measurements
Barry Freifeld	Co-Principal Investigator	Mechanical Engineer, analysis of U-Tube sampler
Sandia Technologies, Houston		
Dan Collins	Geologist	Manage CASSM and U-Tube operation
David Freeman	Field Engineer	Manage field install of CASSM and U-Tube
Berexco, LLC		
Dana Wreath	VP Berexco, LLC	Engineering, Manager of Wellington Field
Randy Koudele	Reservoir engineer	Engineering
Staff of Wellington Field		Field operations
Beredco Drilling team		Mississippian and Arbuckle drilling operations
Abengoa Bioenergy Corp.		
Christopher Standlee, Danny Allison		CO2 supply Colwich Ethanol Facility

IMPACT

The project has been discussed in public venues – presentations at professional meetings, legislative committees, and town hall meeting, and has provided information on the project via the website to encourage a dialog on the merits and economies related to carbon management in Kansas. Kansans are realizing the potential for an important collaboration between the two of the largest economies in Kansas – agriculture and related ethanol industry and the petroleum industry to advance energy and contribute to a viable rural economy.

The small scale field test at Wellington Field as designed integrates two petroleum business activities: 1) use of CO2 for enhanced oil recovery and revitalizing many older mature oil fields and 2) disposal/storage of CO2 in the underlying saline aquifer for the longer term. It has been conveyed to the local petroleum industry that drilling and oil production infrastructure of an active oil field are important components that could lead to a successful carbon sequestration project including 1) knowledge about the subsurface including injection zones and caprock, 2) knowledge about abandoned wells, 3) access and suitability of land with greater likelihood for participation by landowner, and 4) access to insurance and investors to facilitate economic success.

CHANGES/PROBLEMS

KGS is committed to starting BP2 on October 1, 2013 by injecting first in the Mississippian reservoir as part of the EOR initiative, pending discussions and approval by DOE. To ensure this, discussions are ongoing with alternative suppliers to deliver the source CO2 since the Abengoa facility will remain out of operation for the remainder of 2013.

BUDGETARY INFORMATION

Cost Status Report

See next page for the cost status for quarters 1-7

		COST PLAN/STATUS						
		BP1 Starts: 10/1/11				Ends: 9/30/13		
		10/1/11-12/31/11	1/1/12-3/31/12	4/1/12-6/30/12	7/1/12-9/30/12	10/1/12-12/31/12	1/1/13 - 3/31/13	4/1/13 - 6/30/13
Baseline Reporting Quarter		Q1	Q2	Q3	Q4	Q5	Q6	Q7
Baseline Cost Plan (from SF-424A)	(from 424A, Sec. D)							
Federal Share		\$326.84	\$17,208.52	\$17,282.92	\$31,693.50	\$23,000.00	\$23,000.00	\$23,000.00
Non-Federal Share		\$365,421.00	\$365,421.00	\$365,421.00	\$365,421.00	\$0.00	\$0.00	\$0.00
Total Planned (Federal and Non-Federal)		\$365,747.84	\$382,629.52	\$382,703.92	\$397,114.50	\$23,000.00	\$23,000.00	\$23,000.00
Cumulative Baseline Cost		\$365,747.84	\$748,377.36	\$1,131,081.28	\$1,528,195.78	\$1,551,195.78	\$1,574,195.78	\$1,597,195.78
Actual Incurred Costs								
Federal Share		\$326.84	\$17,208.52	\$17,282.92	\$31,693.50	\$31,572.56	\$25,465.07	\$13,849.88
Non-Federal Share		\$0.00	\$6,475.85	\$43,028.94	\$9,058.04	\$15,226.34	\$0.00	\$0.00
Total Incurred Costs-Quarterly (Federal and Non-Federal)		\$326.84	\$17,208.52	\$60,311.86	\$40,751.54	\$46,798.90	\$25,465.07	\$13,849.88
Cumulative Incurred Costs		\$326.84	\$17,535.36	\$77,847.22	\$118,598.76	\$165,397.66	\$190,862.73	\$204,712.61
Variance								
Federal Share		\$0.00	\$0.00	\$0.00	\$0.00	-\$8,572.56	-\$2,465.07	\$9,150.12
Non-Federal Share		\$365,421.00	\$358,945.15	\$322,392.06	\$356,362.96	-\$15,226.34	\$0.00	\$0.00
Total Variance-Quarterly (Federal and Non-Federal)		\$365,421.00	\$358,945.15	\$322,392.06	\$356,362.96	-\$23,798.90	-\$2,465.07	\$9,150.12
Cumulative Variance		\$365,421.00	\$724,366.15	\$1,046,758.21	\$1,403,121.17	\$1,379,322.27	\$1,376,857.20	\$1,386,007.32