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# Regional Update

Winter 2004

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## *Ardmore Sample Cut Collection Material Now Resides in Norman at OPIC*

A venerable and important collection of well samples important to Oklahoma petroleum producers now resides in Norman at the new and rapidly growing Oklahoma Petroleum Information Center (OPIC). The sample collection was donated by Ardmore Sample Cut and Library, Inc., and consists of more than 25,000 boxes of samples, according to Robert Allen, one of the founders of Ardmore Sample Cut.

The collection contains drill bit cuttings, referred to as "samples," taken by well-site geologists every few feet while wells are being drilled. These bits of material from around the drill are then sacked and cataloged to become part of the well records. There are samples in this collection from approximately 80,000 wells, the oldest drilled in 1913, Allen notes.

"We are very fortunate to receive the material contained in this generous donation," said Dr. Charles J. Mankin, Director of PTTC South Midcontinent's Program, OGS, and OPIC. "This supplies an important piece of the puzzle for petroleum exploration in Oklahoma and expands the range of information available here under one roof."

Tom Dunlap, Frank Merrick, and Allen, all of Ardmore, formed Ardmore Sample Cut & Library, Inc. in 1985. The men raised \$600,000 to fund the project and buy the collection from J. Elbert King, who had been gathering the material since the middle 1930's when he began taking in, washing, and storing samples brought in directly from the wells, Allen said.

At some point in the late 1940s or early 1950s, Wallace McClendon designed a sample washing machine for the facility, a feature that attracted more samples and made the facility more popular, Allen said. The samples were filed by section, township, range, and well name, allowing the material to be easily identified and retrieved for future inspection.

Elbert enjoyed his work, Allen said, and was glad to be a part of the thriving oil industry in Ardmore. In 1954, there were 168 geologists in Ardmore, with geologists and land people representing 17 major oil companies.

Allen expects that at some time in the future the Sample Cut's electric log collection also will reside at OPIC. This collection was started by Dr. C. W. Tomlinson in the late 1930s when electric logs came into popular use. When Tomlinson died in the late 1970s, the collection went to his partner, Charles A. Milner, who later moved it to the Daube Building in Ardmore. Allen and John A. Hoard bought the collection from the Milner estate, and the library was donated to Ardmore Sample Cut five years ago when Hoard died.

So the story this valuable exploration material tells us continues and grows, and Oklahoma's petroleum pioneers work to see that their legacy is passed on and protected for future generations. Due to their hard work and generosity, our history and heritage is not lost.

## OPIC Keeps Adding Cores and Samples, and Filling Shelves

OPIC just keeps growing and growing! The facility now houses some 375,000 boxes of core material, with approximately 35 percent of this material reshelved and in its permanent location.

"Just give us a little time to locate the material and get it ready for you," Jimmy Denton, manager of OPIC, said. "We can usually find anything within 48 hours or so, which makes an advance call to us a good idea."

Denton is stepping in after Walter Esry, the previous manager, recently retired due to health reasons. For those who know Walt, however, he will be helping get the transition done at OPIC on a periodic basis. And for those of you who might wonder, the Core Library Cuts have found homes with friends and employees, and declined to move to OPIC.

Denton was the manager of the BP collection of earth core samples that was donated to OPIC in 2002. This collection, valued at more than \$2.5 million, includes some 100,000 boxes of core samples and rock cuttings, and more than 300,000 feet, or approximately 57 miles, of cores weighing in at some 6 million pounds. Also included was core analysis equipment and storage system components from BP's core facility in Tulsa. Included in the donation was the only fluoroscopic core scanning system in the U.S. The technology, which can provide a 360-degree evaluation of a core sample, was originally patented by the company and Denton expects to have it up and running by the end of the year. By that time, the facility will be involved with scanning cores, sample preparation, and sawing.

OPIC brings together the core and samples provided by BP and the collections and petroleum-related information formerly maintained at a number of separate sites by the Oklahoma Geological Survey. Donations to OPIC also come from Ardmore Sample Cut, Chevron-Texaco, out of New Orleans, Shawnee Sample Cut, Sampson Resources Company, Vintage Petroleum, Devon Energy, and several individuals who provided their private collections.

"We have core from all over the U.S., along with some from Canada and Alaska," Denton notes. "But we also have room for another 625,000 boxes of material, so we are in the great position of being able to house other donations that will come our way."

Denton also is in the process of combining the catalogs of these collections into one database that will allow for quicker access to the records. It will be a simple matter then to find material and not have to search a number of catalogs and combine that information. The process of combining the material isn't so simple, but it is a project that Jimmy feels is well worth the time invested.

OPIC consists of four different branches of the OGS combined in one huge complex. There is the Core Library, the Well-Data Library, Publication Sales, and the Imaging Lab. Across the street from the main complex, there is also a conference center that is available for Survey workshops or for meetings and gatherings of other organizations.

If you are in the area, stop by for a tour and meet Jimmy and Gene Kullmann, a geological imaging specialist who also worked at BP. The OGS is happy to have their expertise and experience in assembling this vast collection, and so far they seem to enjoy the challenge.

OPIC is located at 2020 Industrial Blvd. in Norman, just down the street from the former Publication Sales Office that was shared with Marginal Wells Commission. For further information, call 405/360-2886 or 800/330-3996.



*Jimmy Denton, left, manager of OPIC, and Gene Kullmann, right, geological imaging specialist at OPIC, in the middle of boxes of core samples being examined at the Information Center. The two men have many years of experience at the BP/Amoco core facility in Tulsa, and the OGS is fortunate to have this combined knowledge and expertise available for consolidating the core collections and getting the scanner and other equipment up and running.*

# Upcoming Events

## March

- 9-10 Unconventional Energy Resources in Southern Midcontinent, Oklahoma City, \*OGS, DOE, PTTC
- 2 Oil and Gas Measurement Problems Workshop, Enid, \*MWC, PTTC
- 9 Oil and Gas Measurement Problems Workshop, Ada, \*MWC, PTTC
- 16 Oil and Gas Measurement Problems Workshop, Tulsa \*MWC, PTTC
- 17 Oil and Gas Measurement Problems Workshop, Oklahoma City, \*MWC, PTTC

## October

- 26-28 Stratigraphic and Structural Evolution of the Ouachita Mountains and Arkoma Basin: Applications to Petroleum Exploration, Poteau, \*OGS, OU, OSU

## Coalbed Methane, Gas Shales, Tight Gas

### 2-Day Workshop Targets Unconventional Energy Resources

Unconventional energy resources will contribute significantly to the energy supply of the United States in the future. This workshop will focus on reservoir characterization, exploration models, successful practices, development, and potential gas yields from unconventional energy resources in the southern Midcontinent.

Topics for discussion include coalbed methane, gas shales, and tight gas. Coalbed methane papers will cover Arkansas, Kansas, and Oklahoma. Several papers will discuss the Barnett Shale gas play in the Fort Worth Basin.

Exhibits by several companies and organizations and poster presenters will be on site during the morning and afternoon breaks and during the Poster Session Tuesday, March 9, from 5-7 p.m. OGS Publications Sales will be on hand with the Survey's latest publications and other standard items.

This 17th annual workshop will consist of 20 oral papers, 3 poster presentations, and 8 exhibits. For further information, contact the OGS at the locations on the front page of this newsletter.

#### Tuesday, March 9

8:30 Welcoming Addresses

8:40 Targeted Reservoir Characterization of Unconventional Gas: Tight Sand, Coalbed Methane, Deep Gas and Fracture Gas Shale, by Carrie L. DECKER, Gas Technology Institute, Houston, TX

9:10 Overview of Unconventional Energy Resources of Oklahoma, by Brian J. CARDOTT, Oklahoma Geological Survey, Norman, OK

9:40 Reversing the Trend, the Impact of Unconventional Energy Development on Drilling Activity and Production in Oklahoma, by James O. O'CKETTE, Oklahoma State University, Stillwater, OK

10:10 Coffee Break; Exhibits; Poster Session

10:40 Interaction of Gas, Organic Solids, and Water in Paleozoic Basins: Implication for Accumulation of CBM, Shale Gas, and Tight Gas, by Alton A. BROWN, consultant, Richardson, TX

11:10 Characteristics of Coalbed Methane and Shale Gas: Similarities, Differences, and Overlooked Reservoirs, by Andrew R. SCOTT, Atoka Geological Consulting, San Antonio, TX

11:40 Reservoir Characterization of Coals and Carbonaceous Shales in the Western Region of the Pennsylvanian Age Interior Coal Province, by Steven A. TEDESCO, Atoka Geochemical Services Corporation, Englewood, CO

12:10 Discussion of morning papers

12:20 Lunch, Imperial Ballroom, speaker: David Fienchaker, Oklahoma Secretary of Energy

1:45 The Barnett Shale: An Unconventional Gas Play in the Fort Worth Basin: Now the Largest Gas Field in the State of Texas, by Jeffrey D. HALL, Devon Energy Corporation, Oklahoma City, OK

2:30 The Barnett Shale Play, Fort Worth Basin, by Kent A.

BOWKER, Star of Texas Energy Services, Inc., The Woodlands, TX

3:00 Coffee Break; Exhibits; Poster Session

3:30 Assessment of the Gas Potential and Yields from Fractured Shales: the Barnett Shale Model, by Daniel M. JARVIE, Humble Instruments & Services, Inc., Humble, TX

4:00 Facies Distribution and Petroleum Potential of Woodford Shale in the Southern Midcontinent, USA, by John B. COMER, Indiana Geological Survey, Bloomington, IN

4:30 New Technologies for the Exploitation of Tight Gas in Pennsylvanian and Mississippian Reservoirs in the Northwestern Shelf of the Anadarko Basin, by F. I. AMES III, Ames Energy Consultants, San Antonio, TX

5:00 Discussion of afternoon papers

5:15 Reception; Exhibits; and Poster Session, Salon 1

#### Wednesday, March 10

8:30 Coalbed-Methane Development in Kansas, by Timothy R. CARR, K. Duval NEWELL, Troy A. JOHNSON, W. Matthew BROWN, and Jonathan P. LANGE, Kansas Geological Survey, Lawrence, KS

9:00 Natural Gas Potential of Arkansas Coals, by William L. PRIOR, Arkansas Geological Commission, Little Rock, AR

9:30 Coalbed-Methane Activity in Oklahoma, 2004 Update, by Brian J. CARDOTT, Oklahoma Geological Survey, Norman, OK

10:00 Coffee Break; Exhibits; Poster Session

10:30 Comparison of Reservoir Properties from Cooperative Research Core Holes in the Western Interior Basin, by Timothy PRATT and Chris HOFFMAN, TICORA Geosciences, Inc., Arvada, CO

11:00 Coalbed-Methane Potential in Osage County, Oklahoma, by John F. SINCLAIR, Amwest Oil & Gas, Charlottesville, VA

11:30 Vertical CBM Wells in the Arkoma Basin: Methods and

(See 2-DAY)—continued on page 41

## 2-DAY—continued

*Economics*, by John H. WENDELL, Jr., Wendell Consulting L.L.C., Fort Worth, TX

12:00 Discussion of morning papers

12:15 Lunch, Imperial Ballroom

1:15 Using Traditional Completion Practices to Optimize

Horizontal CBM Wells in the Hartshorne Coal, Arkoma Basin, OK, by Brian D. WEATHERL, Source Rock Energy Partners, L.L.C., Tulsa, OK

1:45 Horizontal Drilling the Lower Hartshorne Coal, Arkoma Basin, OK: Techniques and Results, by Curtis B. MATTHEWS, El Paso Production Company, Houston, TX

2:15 Discussion of afternoon papers

2:30 End of workshop

## POSTER SESSION

Tuesday, March 9

*Assessing Subeconomic Natural Gas Resources in the Anadarko Basin*, by Kelly K. ROSE, Ashley S.B. DOUDS, James A. PANCAKE, H.B. PRATT III, EG&G Technical Services, Inc., Morgantown, WV, and Ray BOSWELL, National Energy Technology Laboratory, Morgantown, WV

*Remagnetizations in the Woodford Shale (Devonian-Mississippian), South-Central Oklahoma, and Implications for Dating of Hydrocarbon Maturation*, by Donald WALKER, University of Oklahoma, Norman, OK

*Overview of Unconventional Energy Resources of Oklahoma*, by Brian J. CARDOTT, Oklahoma Geological Survey, Norman, OK

## Pump Project Extended

PTTC's South Midcontinent Region and West Coast Region have both been participating in the DOE-supported PUMP (Preferred Upstream Management Practices) program for the past two years. Although the project was originally scheduled to end by October 1, 2003, the late arrival of significant supplemental funding (\$300,000) from the California Energy Commission to the West Coast Region resulted in both regions being granted a non-funded, one-year extension by DOE.

This additional time allows Oklahoma's field agent, Sam Farris of the Marginal Well Commission, to visit more independent operators one-on-one, seeking ways to assist them with problems associated with oil production. Sam's role is to help operators find answers or identify best-practice technologies that can lead to the resolution of their problems, thereby maximizing production and/or profits.

Example issues Sam has dealt with recently include: repairing a tank leak with fiberglass reinforced plastic; selecting an appropriate plungerlift system; converting an abandoned well into a disposal well; and researching gel polymer treatment for a waterflood.

If you would like to discuss possible solutions for an oil production problem or you have questions about the application of one of the newer technologies, give Sam a call at 405/604-0460 or 800/390-0460.

Another major component of the PUMP project is documenting increased (or prolonged) production resulting from the application of knowledge or technology gained from PTTC/PUMP contacts. If you are willing to share such information in relation to your operation, PTTC would like to hear from you. Contact Jane Weber at 405/325-3031 or 800/330-3996 or [jlweber@ou.edu](mailto:jlweber@ou.edu).

## Cromwell Play and Plates Published

A new Special Publication covering the Cromwell Play, long a prolific producer of oil in Oklahoma and now also an important source of natural gas, is for sale by the OGS. The Cromwell extends from the Arkoma Basin of southeastern Oklahoma westward into structural provinces east of the Arbuckle Uplift.

SP2003-2, *Cromwell Play in Southeastern Oklahoma*, by Richard D. Andrews, OGS geologist, is 87 pages and contains 58 figures, 8 tables, and 8 plates. The chapters include material on Cromwell (Morrow)-Springer boundary and clay mineralogy of shale; stratigraphy (including the Arkoma Basin, Ada High, Frank's Graben, and Lawrence Horst Provinces, the Morrow in the Ozark Uplift), and a discussion of Cromwell sandstones. The three cross sections clarify regional correlations,

identify unconformities, and document facies changes.

The book has in-depth studies of the Scipio NW field and the Raiford SE field. The Scipio NW Field is about equal distance between McAlester and Henryetta in the southwest corner of McIntosh County. The study area is located near the center of the Cromwell play and Arkoma Basin, and includes four closely spaced but separate gas pools along upthrown fault blocks. The Raiford SE field in south-central McIntosh County, includes three closely spaced but separate gas pools producing mainly from the upper Jefferson sandstone, Cromwell Sandstone, and Hunton limestone.

SP 2003-2 is \$16, with an additional \$3.20 postage if mailed. For more information, contact the OGS at the addresses on the front cover of this newsletter.