

KANSAS GEOLOGICAL SOCIETY

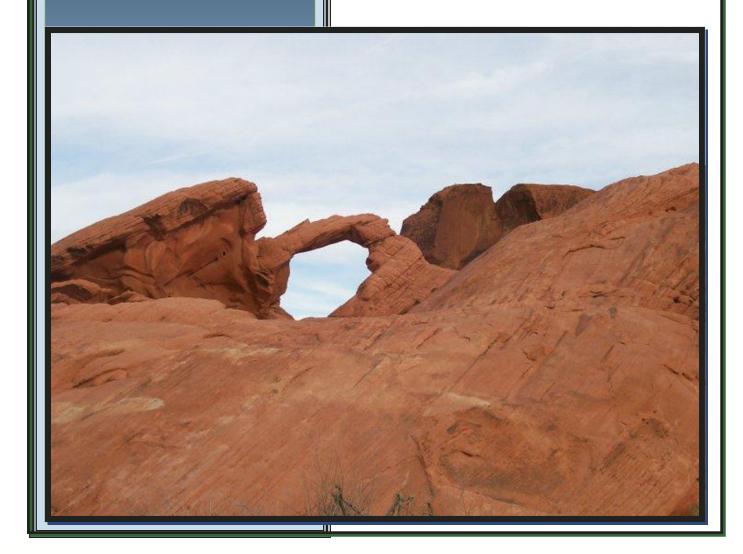
BULLETIN

Volume 86 Number 2

March—April 2011

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Devonian and Mississippian exposures
PG. 21





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ON THE COVER:

Valley of Fire State Park was the first state park for the state of Nevada, dedicated in 1935. The Valley gets it's name from the bright red sandstone formations, which were formed 150 million years ago. This particular picture is of Arch Rock, the only natural arch found within the park.

Photo taken by Marjorie Noel

CALL FOR PAPERS

The Kansas Geological Society Bulletin, which is published bimonthly both in hard-copy and electronic format, seeks short papers dealing with any aspect of Kansas geology, including petroleum geology, studies of producing oil or gas fields, and outcrop or conceptual studies. Maximum printed length of papers is 5 pages as they appear in the Bulletin, including text, references, figures and/or tables, and figure/table captions. Inquiries regarding manuscripts should be sent to Technical Editor Dr. Sal Mazzullo at salvatore.mazzullo@wichita.edu, whose mailing address is Department of Geology, Wichita State University, Wichita, Kansas 67260. Specific guidelines for manuscript submission appear in each issue of the Bulletin, which can also be accessed on-line at the Kansas Geological Society web site at http://www.kgslibrary.com

SOCIETY Technical Meetings

Spring 2011 Schedule

- Mar. 8—KU Students: The Wetzel Fields, The Little Valley Field, & The Winter North Field.
- Mar. 15—Dr. Lynn Watney— "Horizontal Wells in the Hunton Group—Unger Field"
- Mar. 22—Brian Wilhite—"Evidence for early Mississippian forebulge tectonics in the Mid-Continent based on outcrop studies; implications and considerations for subsurface Mississippian exploration" by Brian Wilhite, Sal Mazzullo, Beau Morris, Darwin Boardman
- Apr. 5—Charles Smith— "Unconventional Reservoirs Require Unconventional Solutions—Granite Wash & Shale Reservoirs"
- Apr. 19—Dr. James Puckette's Class from Oklahoma State University
- Apr. 26—Dr. Lynn Watney, etal "Basement Tests in Wellington Field"
- May 3—Alan DeGood—TBA
- May 17—Kevin Evans, "Pre-Mississippian Tectonism on the Southern Margin of the Ozark Dome"
- May 24—Larry Richardson's Wichita State Class

Location for Technical Meetings

All KGS technical presentations are held at 12:30 p.m. at the Wichita Bar Association, located at 225 N. Market, ground floor conference room, unless otherwise noted.

Note: For those geologists who need 30 points to renew their licenses, there will be a sign-in sheet at each presentation and also a certificate of attendance.

KANSAS GEOLOGICAL SOCIETY



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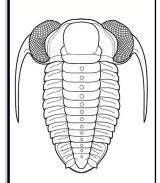
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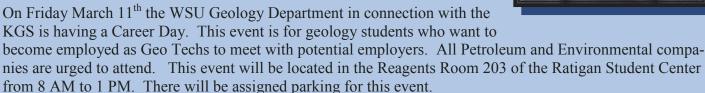
This is our latest in interesting tidbits from the oil field

President's Letter

Dear Members,

First, I would like to thank Bob Bayer for his work as the Chairman for the Annual Banquet. It was well attended and enjoyed by all. But his jokes were awful. (See photos from Banquet).

The chairman for the Fishing Tournament has decided to move the event to September, so as to have better weather conditions.



Later this month or early in April we will try to get students from the University of Kansas, Kansas State, and other universities to do the same.

The Tulsa Geological Society is having a Spring Field Trip to SW Missouri, NW Arkansas, and NE Oklahoma to view the Mississippian outcrops of the region. The trip will be led by Sal Mazzullo and Brian Wilhite. This field trip will be April 1-3. Sign up information will be located in the library. This same field trip will also be occurring at the regional AAPG at Oklahoma City in October of this year.

The AAPG National Convention is April 9-13 in Houston, Texas this year. I hope to see as many members from our society there. Bob Cowdery, Ernie Morrison and I are the delegates representing the KGS.

Finally, I would like to thank the employees of the KGS Library for their hard work this past 2 months. The library is averaging between \$1,000 and \$1,500 in sales per day. Please keep buying our data.

Respectfully submitted, Douglas V. Davis





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For those of you who attend the annual fishing tournament it is being moved to the fall.

The scheduled date is September 16th.
Randy Teter is the chair



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From The Manager-

Dear Members,

We are starting to get some of those early spring days that we all love and make us thankful we live in Kansas and not Minnesota!

Your library has been pretty busy these past few months and we are processing more and more new data all the time, getting it into our paper files and also added to the on-line Walters Digital Library. We hope that you will try out the digital library if you haven't already. As noted on page 17, you can log on as GUEST and see the database and the thumbnail views of images.

We had an opportunity to thank the two people who have written this new program, at our annual banquet. Kurt Look and Eileen Jones are pictured below receiving an award from Lynn Watney, awards chairman. We will continue to work with Kurt & Eileen to make improvements in this ever-evolving project.

Another project this year was the final publication of a new Oil & Gas Fields, Vol 6, titled *New Plays and Ways*. This one is printed in full color—see more information on page 27, following Exploration Highlights.

This spring, I am presenting a challenge to all of you to join the Kansas Geological Foundation or to renew with a stronger pledge of monetary support. The Foundation's membership is dropping and sadly, we are establishing more memorials than new members. This is a very important organization to our industry and your support is needed. Please see Debra FitzGerald's letter on page 15, in this issue.

Respectfully submitted, Rebecca Radford
Manager



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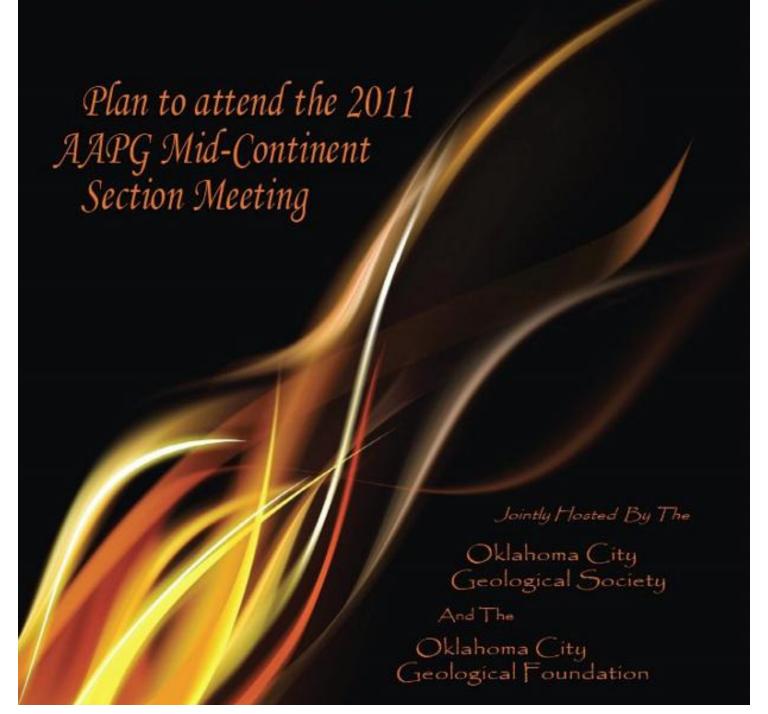




2011 AAPG MID-CONTINENT SECTION MEETING

Oklahoma City, Oklahoma Saturday through Tuesday, October 1st - 4th, 2011

www.2011AAPGMCSectionMeeting.org



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Membership Details

- If you are a member of the Kansas Geological Society Library, you can purchase a yearly membership to the WDL for an additional \$600.00/yr.
- If you do not belong or qualify to belong to the KGS library, you can purchase a yearly membership to the WDL for \$2000.00 /yr.
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KIOGA 19th Annual Mid-Year Meeting

April 21-22, 2011

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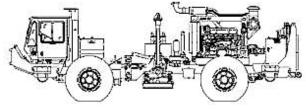
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ON COMMENTS TO PHIL KNIGHTON'S TALK, FEB. 15, 2011, ON URANIUM RESOURCES

The comments of the gentleman at my talk spurred me to look again into the internet and there is a good article that appeared in Scientific American magazine (see cite below). His points are well taken and my focus on uranium resources per se, didn't force me to look into new technology or designs of reactors. My bad, as the kids say today.

I did find this: Scientific American article, Jan. 6, 2009, "Next Generation of Nuclear Power" notes liquid sodium reactor designs will use less uranium. These are not expected to be available until 2020. It is on the drawing boards, but problems with the so called fourth generation designs (GEN IV) are still the use of liquid sodium as a coolant and heat transfer agent to water to make steam. This is a real difficulty since sodium reacts explosively with water. Also the design is more expensive to build. No quantitative data was given to support the statement that this type of reactor uses less uranium. A more detailed explanation given in blog attachments also list a Thorium/uranium reactor (GEN IV) design which is cooled by liquid salt. Interesting... These reactors are still on the drawing boards I think. China is building GEN II units and GEN III units are available only recently. I don't see reference to Gen III being much more efficient, rather more safety factors built in and less complicated to build.

There is still a fundamental problem that is not addressed by a new generation of reactors. Any of the new generation of reactors doesn't solve the problem of the shortfall in world uranium supplies for the currently existing reactors. I still contend we are woefully short of uranium supplies for the current generation worldwide, and particularly the USA is in trouble.

http://www.scientificamerican.com/article.cfm?id=next-generation-nuclear&page=4
Another discussion in the Wall Street Journal, Sept. 8, 2009, discusses up to Gen III reactors are available now. http://online.wsj.com/article/SB10001424052970204409904574350342705855178.html

I would be most appreciative of any information anyone can provide on lower uranium consumption per kWe output of any new designed reactors.

Phil Knighton pknighton@cox.net

To: KGS/KGF From: Fred James

Re: Kansas Education Commission

February 16, 2011

Last Year, I was appointed to be a member of the Kansas Education Commission, which body was charged with examining the K-12 public school system and making recommendations as to its improvement. The Commission's final report was made in December, following final committee meetings (see enclosure) and it is presently under consideration by the State School Board. The document is online.

Dr. Walt Chappell is our elected member of the State School Board, and met with the Kansas Geological Foundation Board of Directors on February 10. With the KGF Board's support, my role in the Commission's work was to emphasize the importance of industry input into classroom and field trips to motivate students and provide information as to industry practices and career possibilities. The Commission's final report included this recommendation. Bob Cowdery's speakers' bureau is our ideal vehicle for this effort, and if the State School Board will endorse and push for this program, we can materially aid the encouragement of potential young geoscientists in Kansas' public schools. Dr. Chappell is very much in favor of this effort on the part of all professional disciplines, is pleased we are available, and will urge it upon the State School Board.

The Kansas Geological Foundation Board urges all geoscientists, to join us in this effort to provide young professionals for the future, presently lacking nationwide, especially in Kansas. Please be a member of KGF and help us.

Respectfully, Fred James

NEWS FROM THE KANSAS GEOLOGICAL FOUNDATION



Dear Society members and supporters,

The Kansas Geological Foundation is a non-profit organization founded with the goals of

- Promoting geology and earth sciences
- Preserving geological records
- Establishing memorials, endowments, and scholarships
- Supporting field trips and seminars
- Providing financial aid and grants to students and educators in the field of geology and earth sciences

Since the beginning of 2011 the Kansas Geological Foundation has awarded \$7000.00 in scholarships to students at Wichita State University, Kansas State University, University of Kansas, and Emporia State University. This money partly came from the Knighton Scholarship, the Robert Dilts Scholarship, and the James Dilts Scholarship. Those scholarships have been established through and for the Foundation.

Additionally the KGF approved a Grant Request for \$2,000.00 to Kansas State University graduate student Drew Evans. His thesis is on the Spivey-Grabs Field and the finished abstract will be available for publication in the KGS Bulletin.

Lastly the Foundation granted the Teacher of the Year award to Mr. Robert McKinney (pictured below.) Mr. McKinney teaches earth science at Emporia High School and is a member of KESTA (Kansas Earth Science Teachers Association.) The award was given to him at the KGS Annual Banquet along with a check for \$1500.00.

As Membership Chair for the Foundation this year I will continue with these updates and include an integration report in the next bulletin along with a list of the Foundation members. Because of our members generosity we are able to move forward with our goals.

Thank you,

Debra FitzGerald Membership Chairman, Kansas Geological Foundation

Beth A. Isern President, Kansas Geological Foundation



Kansas Geological Society Board Minutes

January 11, 2011 Mr. Doug Davis called the meeting to order at 11:34 A.M.

FINANCIAL REPORT/MANAGERS REPORT

- A. Treasurer's Report- Mrs. Noel presented us with the Treasurer's report for December 2010. The earliest a CD will be maturing is March 24, 2011 at Andover State Bank. Mrs. Radford noted there is a difference between the interest earning on the Treasures Report and on the Managers Report. The Treasures Report has Interest Income for December as \$524.51 and for the Year as \$6,293.35. The Managers Report has Interest Income for December as \$1,666.93 and for the Year as \$8,341.24. Mrs. Radford suggests the difference may be from when the CD interest is compounded verses the monthly accruing of interest. Mrs. Radford will investigate the discrepancies. Mr. Saenger moved to accept the Treasurer's report "as to be corrected". Mr. Dean seconded the motion and the motion passed unanimously.
- B. Manager's Report- Mrs. Radford presented the Manager's Report for December 2010. Monthly income was \$64,932.79 and expenses were \$42,665.96, making the paper library profit \$22,266.83 for the month. When the library net income is combined with the WDL net income of \$8,629.77, the net income for the month was \$30,896.60. Mrs. Radford noted that income in the month of December was the best December in 10 years, mostly from strong data sales. Mrs. Radford noted the WDL 2010 Kansas Geological Survey programming contract's final quarterly invoice has not been received but when paid, will be entered under the December 2010 booking. The WDL 2011 contract with the Kansas Geological Survey is for hosting and programming but will be substantially less (\$50,817) because most of the programming has been accomplished. The Society has 727 members, the Library has 277 members and WDL has 182 members (one member added in January 2011).

NEW BUSINESS

- **A.** Depth Registered Log Points- Mrs. Radford reported that a member that has purchased a large quantity of raster logs from the Library would like to sell the depth registrations he has done on the logs to the Library. The depths registrations would be of value if they can be imported into other geological programs.
- **B.** Moving Tech-Talks to Bank Auditorium- Some of the Technical Programs have been overcrowded in the Law Library facility and the Bank of America auditorium would better for a large attendance. Soliciting sponsors for the programs was suggested as a means to pay for the auditorium rental.
- C. <u>AAPG Delegates</u>- KGS should provide three delegates for upcoming AAPG conventions.

ADJOURNMENT- Mr. Saenger moved to adjourn the meeting at 12:51 p.m. and the motion passed unanimously.

Respectfully submitted, Robert Milford, Secretary

February 16, 2011 Mr. Doug Davis called the meeting to order at 11:35 a.m.

FINANCIAL REPORT/MANAGERS REPORT

- A. <u>Treasurer's Report-</u> Mrs. Noel presented us with the Treasurer's report for January 2011. The earliest a CD will be maturing is March 24, 2011 at Andover State Bank. Mrs. Noel said the January 2011 Treasures Report is incomplete because interest amounts cannot be computed until we receive all of the year end statements from the banks. Mrs. Radford noted there was a decrease in value of the Securities America Money Market (Treasury Bills) account and she is investigating the matter. The Treasures Report has Interest Income for January 2011 as \$791.97 and for the Year 2010 (estimate) as \$5,201.66. Mr. Dean moved to accept the Treasurer's report as presented. Mr. Dixon seconded the motion and the motion passed unanimously.
- B. Manager's Report- Mrs. Radford presented the Manager's Report for January 2011. The paper library and WDL are now combined into one report. Monthly income was \$67,083.12 and expenses were \$48,074.82, making the profit \$19,008.30 for the month. Mrs. Radford noted the annual payment of \$13,122.48 to the Kansas Geological Foundation for the purchase of the WDL is being prorated monthly on the report. Mrs. Radford stated the WDL 2010 Kansas Geological Survey programming contract's final quarterly invoice was paid under the December 2010 booking. Mrs. Radford stated that January's income was very good.

NEW BUSINESS

- **A.** AAPG Delegates- Mr. Scribner motioned for Mr. Ernie Morrison to fill the position of the vacant AAPG Delegate 3 year term. Mrs. Noel seconded the motion and the motion passed unanimously.
- **B.** <u>KGS Supporting Members</u>—Mrs. Noel motioned to accept the applications for Supporting Memberships. Mr. Scribner seconded the motion and the motion passed unanimously.
- C. <u>Change Board Meeting Dates for March & April</u>- The March meeting is moved to March 9th and the April meeting is moved to April 14th.
- D. <u>Career Day for College Students</u>- Mr. Davis is organizing an event for college students to meet with people in the oil industry for job or internship opportunities. One event is tentatively planned at WSU in the 2nd or 3rd week of March. Mr. Davis plans to have another event that KU and KSU students can attend.
- E. New Equipment for Library- Mrs. Radford is requesting the Library Committee assess the need for a new wide format scanner and a plotter. The current scanner is over 9 years old and is only capable of B&W images up to 36" wide. Newer scanners are usually capable of color and 42" width. A new Neuralog scanner would enable faster scanning of logs and strip logs. There has also been request from members for the Library to have a plotter that can print a member's plot files. Committee Review- Mr. Davis is talking to the various committee members to determine who will be the Committee Chairman and if the committee should be retained.
- **F.** <u>KGS Advertisement in the KIOGA Newsletter-</u> Mrs. Radford will contact KIOGA about the KGS placing an advertisement in their newsletter and see if they would want to advertise in the KGS Bulletin.
- **G.** AAPG 2013 Mid-Continent Meeting The KGS needs to put in a request to the AAPG to host the 2013 Mid-Continent Meeting.

ADJOURNMENT- Mrs. Noel moved to adjourn the meeting at 1:28 p.m. and the motion passed unanimously.

Respectfully submitted, Robert Milford, Secretary

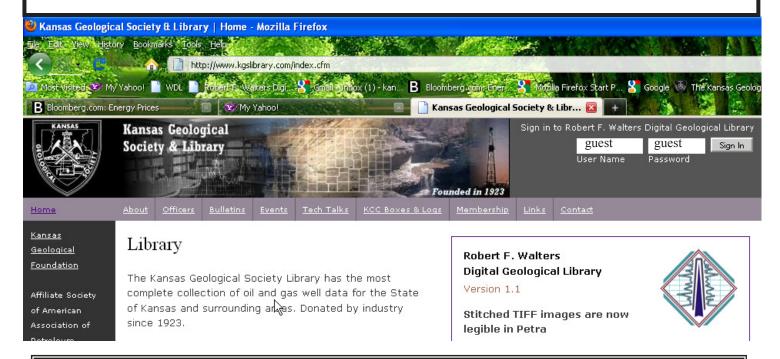
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FYI Are you aware??????

We keep a list of all the new data coming from the KCC to our Paper Library in an Excel Spreadsheet.
On the Home Page of www.kgslibrary.com
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If you click on this link, you will be able to download the list of new well data received.
If you do not find it in the file cabinets, please ask staff and they will assist you in locating the new data in our boxes.
Some of this data has not been entered yet, and we must keep track of it so

PLEASE — ALWAYS ASK STAFF TO HELP YOU.













Receiving 50 Year member pins Mrs. Richard Strong , Eldon Schierling, Bill Ree



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These donations are used in part to pay for geology students to attend the banquet

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GEO-SCENES



Some Devonian and Mississippian Exposures in the Arbuckle Mountains, Oklahoma

Fantastic exposures of Precambrian to Pennsylvanian igneous and sedimentary rocks are present in the Arbuckle Mountains in east-central Oklahoma. This area has traditionally been the site of countless field trips over the years by professional and student geologists alike, and many of you reading this contribution probably have stomped

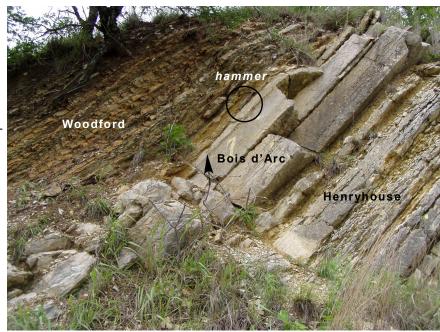
around this field area over the years.

Figure 1 is an exposure of the Woodford Formation, just west of the Arbuckle Mountains proper, with extremely large, nearly spherical phosphate concretions. Many of us who have examined the Upper Devonian to Kinderhookian Woodford in roadcuts along I-35 in the Arbuckle Mountains have seen the dark chert and typical golf ball-size phosphate concretions in those rocks, but what is illustrated in Figure 1 is an example of phosphate nodules gone crazy – super-sized nodules on steriods! Phosphate and chert nodules are not present in what is referred to as the Woodford or Chattanooga Formation in northeastern Oklahoma and adjoining northwestern Arkansas and southwestern Missouri. The Woodford/Chattanooga present in the subsurface of



Kansas also does not contain phosphate nodules or chert. These rocks are solely of Upper Devonian age rather than of Devonian to Kinderhookian age as in the Arbuckle Mountains. The absence of Kinderhookian age Woodford rocks to the north-northeast is the result of erosion in post-middle Kinderhookian but pre-Osagean time.

Figure 2 is a photo of the Silurian-Devonian Henryhouse and Bois d'Arc formations at a roadcut exposure along I-35 in the Arbuckle Mountains. The Bois d'Arc is only 4 ft thick here (see circled hammer for scale), and it is in unconformable contact with the overlying Woodford. There likewise is an unconformity between the Bois d'Arc and Henryhouse formations as the Silurian Haragan Formation is not present here. The thin layer at the top of the Bois d'Arc (arrow) may be a soilstone crust, which is a weathered surface common along unconformity surfaces in carbonate rocks. Similar soilstone crusts have been described from exposed Pleistocene rocks in the Bahamas, Belize, and South Florida as well as from many older rocks carbonate rocks around the world.

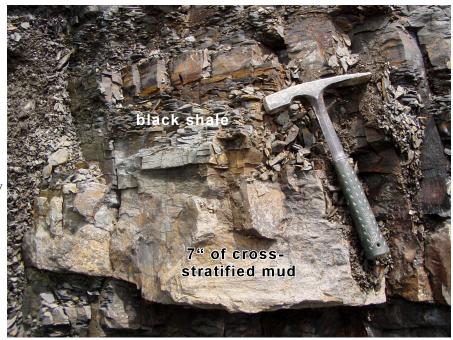


Continued on page 22

Figure 3 is a roadcut exposure of the Mississippian (Osagean?) Sycamore Limestone along I-35 in the Arbuckle Mountains. These rocks are thin to medium bedded, argillaceous lime mudstones with thin interbeds of dark gray and black shale. They are inferred to be relatively deep-water slope and possible toe-of-slope deposits that are the down-dip facies correlatives of highly eroded, shallow-water limestones to the south (likely the Chapel Limestone shelf in north Texas according to Dr. Darwin Boardman, 2009).



Figure 4 shows a relatively thin section within the lower part of the Sycamore that grades upward from cross-stratified lime mudstone to shale. This genetic package of rocks comprises part of a Bouma sequence, which is some of the evidence identified to formulate a relatively deep-water origin of these rocks.



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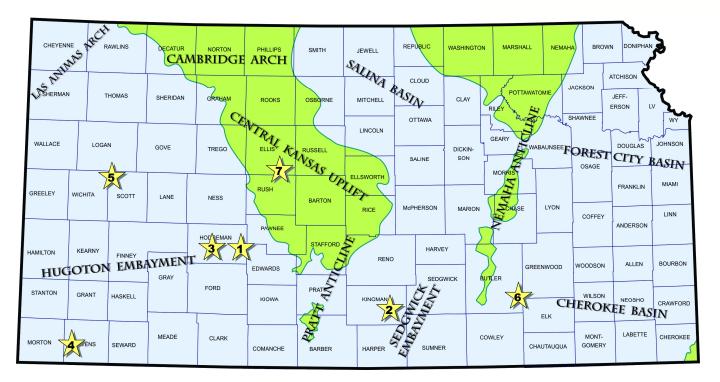
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Exploration Highlights

By John H. Morrison, III Independent Oil & Gas Service



- **(1) BEREXCO, Inc.**, Wichita (KS), is producing an unknown amount of crude oil from the Mississippian formation at its Sheila No. 1 well, spotted in the SW/4 of section 17- T23s- R21W, in **Hodgeman** County. The new unnamed pool opener discovered reserves over three-quarters mile east of known Marmaton oil production in the Krupp field. Closest Mississippian production in the area lies over two and one half miles away. Operator used BEREDCO tools to bottom the well at a total depth of 4,710 feet. Field area is located five and one half miles southeast of Hanston, Kansas.
- (2) Rupe Oil Company, Wichita (KS), is currently pump testing oil shows from perforations in the Misener Sand and Mississippian Chert formations at their No. 1 Rosenhagen, located in the northeast corner of section 20- T29s- R6W in **Kingman** County. The wildcat well is testing for commercial production at site over three-quarters mile northeast of the multipay Spivey-Grabs-Basil oil and gas field. The well was drilled to a total depth of 4,635 feet by Duke Drilling tools. Misener zone was perforated from 4,551 to 4,555 feet and the Chert zone was perforated from 4,161 to 4,164 feet. Well site lies almost six and one-quarter miles northeast of Rago, Kansas.
- (3) American Warrior, Garden City (KS), is producing oil and gas from the Mississippian formation at the King No. 1-4 wildcat well in **Hodgeman** County. The new find is situated in the NE/4 of section 4- T23s- R24W, about one and one-quarter miles northwest of nearest production in the Jetmore South field. The Jetmore South field also produces oil from the Mississippian formation. Daily production rate on the King lease is unknown. Rotary total depth was obtained at 4,725 feet. The new field is located approximately three miles west of the town of Jetmore. It has not been named.

- (4) EOG Resources, Oklahoma City (OK), is flowing an unknown volume of natural gas at the Jean No. 27-1. The 6,650 foot deep wildcat well was drilled over two miles east of the Gentzler Southwest (Morrow) gas field in **Stevens** County. No completion information has been released. New discovery was made in the SE/4 of section 27- T33s- R38W, about four and one-half miles southwest of Hugoton, Kansas. The Mississippian formation was shown as primary objective when the drilling permit was filed.
- (5) Shakespeare Oil Company, Salem (IL), is pump testing oil shows being recovered from an undisclosed formation at the Church of GOD No. 1-27, located in the NE/4 of section 27-T16s R34W in Scott County. The remote wildcat well establishes a new oil field over ten miles from the Christy Canyon (Cherokee) oil field. Operator drilled the well to a total depth of 4,876 feet utilizing H. D. Drilling tools. The new field has not been named. The Lansing-Kansas City, Marmaton and Cherokee zones were all designated as primary zones of interest for exploration. The new field lies about ten miles north of Modoc, Kansas.
- (6) Eagle Creek Corporation, Wichita (KS), has established a new unnamed oil field in Butler County with the successful completion of its Harry Lewis No. 1-6. The wildcat well was drilled 1,980 feet from the south line and 7,260 feet from the east line of irregular section 6- T28s R8E, approximately three and one-half miles southwest of Beaumont, Kansas. Production zone has not been released, though the primary zones of interest were Lansing-Kansas City, Mississippian and Arbuckle formations. The well found oil deposits one and one-half miles east of producing wells in the Brandt-Sensenbaugh (Mississippian) oil field.

(7) Samuel Gary Jr & Associates, Denver (CO), has a new oil discovery in Ellis County at their No. 1-1 Schumacher-Dreiling well, located in approximately the center of the W/2 of section 1- T15s- R17W. The well targeted the Arbuckle formation when drilled to a total depth of 3,610 feet by VAL Energy tools. However, well site is located two miles southwest of Lansing-Kansas City oil production in the Victoria Township field. Exact producing zone and volume has not been released. The unnamed field is situated four and one-half miles north of Pfeifer, Kansas.







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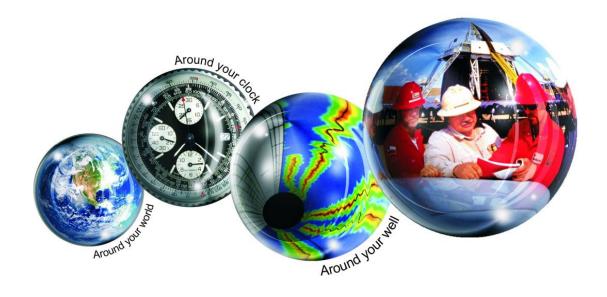
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