



Regional Update

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WHAT A DIFFERENCE A YEAR MAKES!

A year ago, the price of oil was \$11.50 per barrel and on its way down, and natural gas was \$1.50 per mcf. The winter saw oil prices in the \$9.00 range and natural gas remained around \$1.60. A substantial volume of oil production was shut in resulting in a decline of more than 5 million barrels from that of 1997. Natural gas production declined by about 80 billion cubic feet.

A large number of marginal wells were shut in, a number of small service companies closed their doors, and layoffs were common. Consultants checked frequently to make sure that their phones were still working, and the Legislature had to scramble to find other funds to support on-going programs. Truly, this was the domestic petroleum industry's winter of discontent.

Today, oil prices are in the \$18.00 range (the NYMEX closed on 9/1/99 at \$21.99 per barrel), and natural gas was at the highest August level since 1985 (the NYMEX settle price for 9/1/99 was \$2.91). While the activity has not reached the level of the "feeding frenzy" of the early 1980s, consultant's phones are ringing, employment listings are increasing, and most operators are cautiously beginning to smile.

What could have happened to produce such a change in about 12 months? World oil supply has declined by about 800 thousand barrels per day or about one percent. The world currently consumes about 74 million barrels per day. Some of that decline has come from reductions by major exporting countries, but more than one-third has come from a decline in U.S. production. These declines, coupled with the economic recovery taking place in the Far East have produced a dramatic turn around in oil prices.

Can this recovery last? A lot depends upon the willingness of four major exporting countries (Saudi Arabia, Venezuela, Mexico, and Iran) to sustain their reductions, and the extent of recovery of U.S. production. The rest depends on the economic health of the world economy, and especially that of the U.S. Contrary to the many skeptics, I believe the major exporting countries like these higher prices, and will continue to constrain production. This assumes that earlier efforts to encourage increases in Iraq's production will not continue. Again, contrary to the higher wisdom of others, I am convinced that the doubling of Iraqi production in one year was the primary reason for the precipitous decline in world oil prices. Iraq is now the fifth largest exporter of crude oil to the U.S.

Natural gas, however, presents a different set of issues. Unlike crude oil, world supply of natural gas has little to do with U.S. supply. Up to prices in the range of \$5.00 per mcf (the price at which the importation of LNG becomes
(See DIFFERENCE—page 2)

Message from the PAG Chair—

In my role as Chairman of the South Midcontinent Producer Advisory Group, I met with other PTTC Board members in Washington D.C. during July 18-19. High points of the meeting included the Department of Energy commitment to continue supporting the programs of the PTTC. As a result of this support, all ten Regional Lead Organization (RLO) contracts have been extended to 2003.

Efforts are underway to initiate a series of PTTC Regional Conferences. These conferences will be one or two day workshops among one or more PTTC regions in conjunction with professional societies and other industry organizations. The intent is to review examples of the latest technology proven to be successful in that particular region. These workshops will give producers an excellent opportunity to keep abreast of the latest technology with a minimum investment in time and money. Your PTTC Board also is excited about the case studies that will appear in the inaugural issue of the *Petroleum Technology Digest*. These case studies are being published as a supplement to the September issue of *World Oil*.

I look forward to serving you as your PAG Chair and working with your RLO, Dr. Charles Mankin and his very competent staff. In addition to the numerous workshops cosponsored by the OGS (Oklahoma Geological Survey),

DIFFERENCE—*continued*

marginally economic), the U.S. supply of natural gas is dependent upon that produced from domestic sources and the amount that can be imported from Canada. Given the various projections of increases in demand and the current level of activity in augmenting the supply, a number of forecasters are beginning to suggest constraints, some as early as this winter. The low level of activity in the domestic industry, brought on primarily by low oil prices, has had a corresponding effect on natural gas. That coupled with the growth in demand for natural gas certainly supports the view of a tightening supply in the near future. While that does not provide much solace for the consumers, for those operators that also are involved with natural gas, the coming months should expand that smile to a healthy grin.

Charles J. Mankin
RLO Program Manager

the PTTC will work with Rick Chapman, director for the Oklahoma Commission on Marginal Wells, and Mary Bankin, director of Geo Information Systems, to bring you more workshops in an effort to improve your overall operation. Both Mary and Rick have been very supportive of the PTTC over the years and regularly attend PAG meetings. I would personally like to thank William Lawson, Director for the National Petroleum Technology Office of the U.S. Department of Energy, for his hospitality in hosting our PAG meeting in Tulsa.



James E. Bruning at August PAG meeting.

James E. Bruning
South Midcontinent PAG Chair

Oil and Gas Management— The Beginning Course

The purpose of the Oklahoma Commission on Marginally Producing Wells' (MWC) new workshop entitled *Oil and Gas Management—The Beginning Course*, is to take ownership of an interest from inception of the mineral ownership through title changes, document recording, prospect development, leasing, drilling, division order title opinion, division orders, and revenue check reconciliation. This course is a beginning course, and is designed to give a basic scenario on how a well is developed from inception to production.

This course is scheduled for presentation on October 22, in Oklahoma City; November 12, in Tulsa; and November 19, in Wilburton. For more information, contact Liz Fajen, Technology Transfer Coordinator, at 405/366-8688; 800/390-0460; or visit their web site at <<http://www.state.ok.us/~marginal>>.

Fall Meetings and Workshops Present New Opportunities

Bartlesville Play in Half-Day Format September 29, Oklahoma City

If you missed the Bartlesville Play FDD Workshop, or would like a chance to refresh your memory, the Bartlesville-specific material is scheduled for September 19, in Oklahoma City. This workshop is sponsored by the OGS, PTTC, and the OCGS. Call 405/236-8086 or 405/235-3648 for information.

Second Waterflood Workshop Set for October 20 in Norman

Kurt Rottmann again will be the principal presenter in this second look at waterflooding, titled: *Geological Perspectives of Reservoir Engineering*. This workshop will present new information on the subject, and is not a repeat of the previous session.

Rottmann will concentrate on rock and fluid properties an engineer or geologist would incorporate into a preliminary evaluation of a waterflood prospect. He believes this material will help geologists communicate more effectively with engineers, leading to a more efficient and economic operation.

Other topics to be covered in the session include: oil originally and currently in place, effects of production on the oil, material balance and formation volume factor, rock and fluid properties, displacement efficiency, areal and vertical sweep efficiencies, and waterflood patterns.

The workshop is presented by the OGS and South Midcontinent Region of PTTC.

The workshop will be held on October 20, from 9 a.m. to 4 p.m., at the Moore-Norman Technology Center in Norman. Workshop registration is \$30, which includes coffee breaks, lunch, and the workbook to be published by the OGS.

Not Just the "Same Old" Morrow! New Workshop Examines Gas Play

A completely new and different Morrow workshop and publication will be presented November 10 at the Moore-Norman Technology Center in Norman. Sponsored by OGS and PTTC, "Morrow Gas Play in the Anadarko Basin and Shelf of Oklahoma" will be led by Rick Andrews, with three guest speakers providing additional information on field studies and drilling and completion practices.

The new Morrow study and workshop include regional mapping of various Morrow sandstone zones from the upper Morrow chert conglomerate in the deep basin to

the more shallow lower Morrow and Primrose sandstones along the eastern and northern play boundaries. Other regional work includes shelf-to-basin cross sections, a map showing fields that have production from the Morrow Formation, a Morrow structure map, and a production allocation map based on current stratigraphic interpretations by IHS Energy Group (PI/Dwights). Three field studies will be presented to represent typical Morrow gas parameters.

A significant contribution to this workshop will be made by IHS Energy Group for their geologic expertise and stratigraphic interpretations, for completing a reservoir field study, and providing production reallocation information and field reservoir data elements of the Morrow.

The workshop also will include displays of Morrow core along with interpretations of important reservoir characteristics and environments of deposition.

Oklahoma Coalbed Methane Workshop Planned for Norman on December 1

As coalbed methane becomes more and more accepted and sought after as a source of natural gas, interest in this resource is on the rise in Oklahoma. On December 1, at the Moore-Norman Technology Center in Norman, the PTTC and OGS will present a one-day workshop on the subject.

As of press time for this newsletter, tentative titles include: Coalbed methane producibility model; Coalbed Methane Activity in Oklahoma; Oklahoma Coal Cleat; Coalbed Methane Completion Practices in Oklahoma; and Economic Analysis of Coalbed Methane from the Hartshorne Coal, Arkoma Basin, Oklahoma.

For more specifics on this meeting, check the web page, or contact Brian J. Cardott, meeting chair, at the OGS.

Prue and Skinner FDD Half-Day Workshop Meets December 6 in Oklahoma City, Again on December 8 in Tulsa

The popular Prue and Skinner FDD workshop will be revisited in half-day format on December 6 in Oklahoma City. Sponsored by the OGS, PTTC, and OCGS, the program will contain only Prue-Skinner specifics.

To register for the workshop, or for more information, contact the Oklahoma City Geological Society at 405/236-8086 or 405/235-3648, ext. 40.

OGS will present the workshop again in Tulsa on December 8, in cooperation with the PTTC and TGS.

To register, or receive more information, contact Tom Heinecke at 918/742-5531.

Upcoming Events

September

- 9/15-17 Gulf Coast Association of Geological Societies Annual Meeting and Convention, Lafayette, Louisiana
9/23 Beam Pump Optimization, Oklahoma City, *MWC
9/29 Bartlesville Play Workshop, Oklahoma City, *OCGS, OGS, PTTC

October

- 10/10-16 Earth Sciences Week
10/14 Beam Pump Optimization, Tulsa, *MWC
10/20 Waterflooding Workshop: Geological Perspectives of Reservoir Engineering, Norman, *OGS, PTTC
10/22 Oil and Gas Management - The Beginning Course, Oklahoma City, *MWC
10/25-28 GSA Annual Meeting, Denver

November

- 11/10 Morrow Gas Play in the Anadarko Basin and Shelf of Oklahoma Workshop, Norman, *OGS, PTTC
11/10 Beam Pump Optimization, Enid, *MWC
11/12 Oil and Gas Management - The Beginning Course, Tulsa, *MWC
11/19 Oil and Gas Management - The Beginning Course, Wilburton, *MWC

December

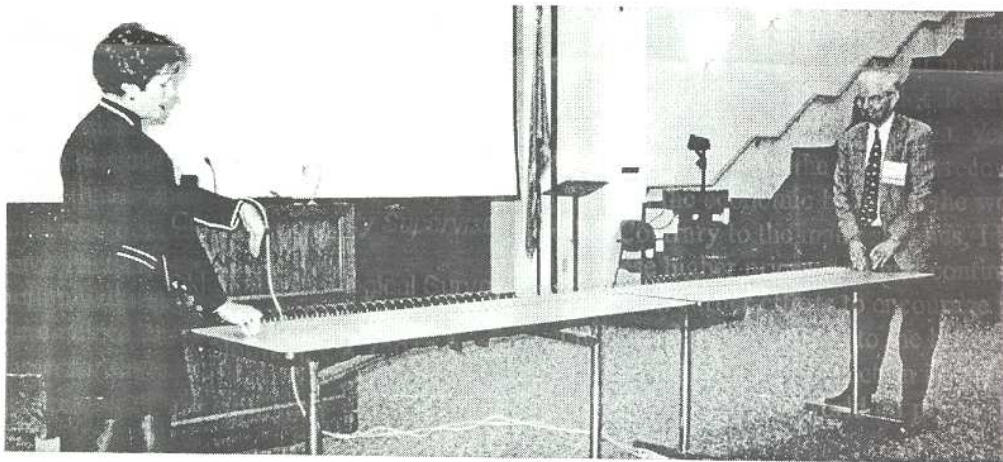
- 12/1 Coalbed Methane Workshop, Norman, *OGS, PTTC
12/6 Prue and Skinner Plays Workshop, Oklahoma City, *OCGS, OGS, PTTC
12/12-14 Interstate Oil and Gas Compact Commission, New Orleans, Louisiana

*OGS=Oklahoma Geological Survey, 405/325-3031 or 800/330-3996

*MWC=Marginal Wells Commission, 405/366-8688; 800/390-0460

*OIPA=Oklahoma Independent Petroleum Association 405/942-2334 or 800/838-6472

*OCGS=Oklahoma City Geological Society, 405/236-8086



Workshop leader Deborah King Sacrey, with help from RLO Program Manager Charles J. Mankin, uses a "Slinky" toy to demonstrate one of the principles of seismic reflection during the July 29th workshop in Oklahoma City. The workshop was attended by a crowd of 106, and many favorable comments were made about the session.