

# MISSISSIPPI GEOLOGICAL SOCIETY

VOLUME XLIV

NUMBER 1

SEPTEMBER 1995

## PRESIDENT'S LETTER

Welcome to the new year. We look forward to another year of professional growth and fellowship through our geological society.

The Fall barbecue will be held September 21, at the Jim "Buck" Ross Agriculture Museum on Lakeland Drive. We will meet in the old Masonic Lodge building. There will not be a September luncheon meeting. We would like to thank our fall barbecue sponsors: Digicon, Schlumberger, Haliburton, Western Atlas, LSS and SEI.

Our officers and committee heads for this year are: Les Aultman, President, Jack Moody 1st V. Pres., George Vockroth, 2nd V. Pres. and Program Chairman, Rick Erickson, Secretary, David Hancock, Treasurer, Steve Ingram, Editor ad Advertising, Steve Champlin, Audio-visual, Stan King, Historian.

In 1978-79, I served as your society president and assumed I had done my duty and that was over. Well, 17 years later I am once again in harness. This will have to become commonplace as we will, of necessity, be calling on members who have served in years past. It is our society and it is here for our benefit. It will be as good or bad as we want it to be.

We look forward to an enlightening year professionally as George Vockroth has already lined up a number of interesting speakers. If you hear or know of a good presentation, please contact George as he still has open dates in the Spring of '96.

Please remember to renew your Membership before the November deadline. Your board has voted to assess non-members and delinquent members \$12.00 for meals instead of the usual \$10.00 for members.

The Red Book Supplement is now being drafted, and hopefully, will be ready by GCAGS. The GCAGS meeting will be held in Baton Rouge, October 25-28. The technical program and exhibits will be housed in the new Radisson Hotel and Convention Center on I-10 South. I have not received any registration information.

We look forward to the coming year and look forward to your continuing support of your geological society.

W. Lester Aultman

## Coordinating Committee

The Engineering / Environmental coordinating committee will meet on a bi-monthly basis. Meetings will be held on the 3rd Tuesday of the month at the Department of Environmental Quality Commission Hearing Room, Highway 80 and Ellis Avenue, Jackson, MS at 11:45 a.m. Contact Steve Jennings for information (961-5205).

## NO LUNCHEON OR SPEAKER THIS MONTH

This month there will be no regular monthly luncheon or speaker. We will begin this new societal year with our Fall Social meeting (see details inside). The thought of no September Luncheon may worry some of you, so to keep your mind occupied with pleasant thoughts, read this poem by Tennyson:

"There rolls the deep where grew the tree.  
O earth what changes hast thou seen!  
There where the long street roars, hath been  
The stillness of the central sea."

"The hills are shadows, and they flow  
From form to form and nothing stands;  
They melt like mists, the solid lands,  
Like clouds they shape themselves and go."

TENNYSON

We want to acknowledge and thank the following companies for sponsoring our fall social:  
 Digicon • Haliburton • Location Sample Service • Schlumberger • Seismic Exchange Inc. • Western Atlas

### **CREATIONIST INTERPRETATION: THE 'BIG BANG' THEORY**



Shelly H. Fischman is a syndicated cartoonist (political and general humor) who is a member of The American Association of Editorial Cartoonists. He has been a consulting cartoonist & illustrator/contributing cartoonist and has been published widely, including such publications as The Washington Times; Science 86; Bioscience; New Scientist; Policy Review, Washington, D.C.; Geotimes; Journal of Geological Education and Foreign Service Journal, Washington, D.C. We thank him for providing these cartoons through Lars Johnson.

*Cartoon by Shelly Fischman*

### **BUSINESS MEETING LUNCHEON FALL SOCIAL**

Catfish Fry  
 Agricultural and Forestry Museum  
 Masonic Lodge Building  
 Thursday, September 21 – 4:30-8:30

### **BUSINESS MEETING LUNCHEON SCHEDULE**

Fall Social September 21  
 October 10  
 November 14  
 Christmas Party December 12

### **Mississippi Geological Society – 1994-1995**

#### **BOARD OF DIRECTORS**

W. Lester Aultman, President (353-2738).....Independent  
 Jack Moody, 1st Vice President (961-5522).....Office of Geology  
 George B. Vockroth, 2nd Vice President (948-3351).....Independent  
 David Hancock, Treasurer (355-4530).....Roundtree & Assoc.  
 Rick L. Erickson, Secretary (961-5507).....Office of Geology

#### **EXECUTIVE COMMITTEES**

Steve Ingram, Bulletin Editor (354-6328) .....Office of Geology  
 George B. Vockroth, Program (948-3351).....Independent  
 Stanley King, Historian (352-4458).....Independent

#### **SPECIAL COMMITTEES**

Advertising (352-7736).....  
 Steve Champlin, Audio-visual (961-5519).....Office of Geology  
 Danny Harrelson, Continuing Education (601-634-2685)....Corp of Engineers  
 Steve Jennings, Environmental (961-5205) .....Office of Land & Water  
 T.C. Rader, Entertainment (352-3340) .....Enmark Energy  
 George Vockroth, Field Trips (948-3351).....Vantage Oil

Charles Williams, Honorary Members (354-4612) .....Vaughney & Vaughney  
 Ed Hollingsworth, MGS/GGAGS Scholarship (944-4700).....Moon & Hines

#### **DELEGATES**

AAPG .....Steve Walkinshaw (98)  
 AAPG .....Larry Baria (99)

Mississippi SEPM Representative .....Steve Ingram

#### **HONORARY MEMBERS**

Esther Applin*	Urban B. Hughes*	Emil Monsour
Paul Applin *	Wendell B. Johnson*	William H. Moore
Lawrence F. Boland*	Walter P. Jones*	Marvin E. Norman*
Verne L. Culbertson	Wilbur H. Knight	Richard R. Priddy*
H. Leroy Francis*	Winnie McGlammary*	Thurston Connell Rader
David C. Harrell	Thomas McGlothlin*	Baxter Smith*
Oleta R. Harrell*	Frederic F. Mellen*	Henry Toler*
Dudley J. Hughes	Maurice E. Miesse*	*Deceased

*Mark your calendars and plan to attend the*

## **MGS Fall Social “Catfish Fry” at the**

### **Mississippi Agriculture and Forestry Museum**

Masonic Lodge Building

**Thursday, September 21, 1995**

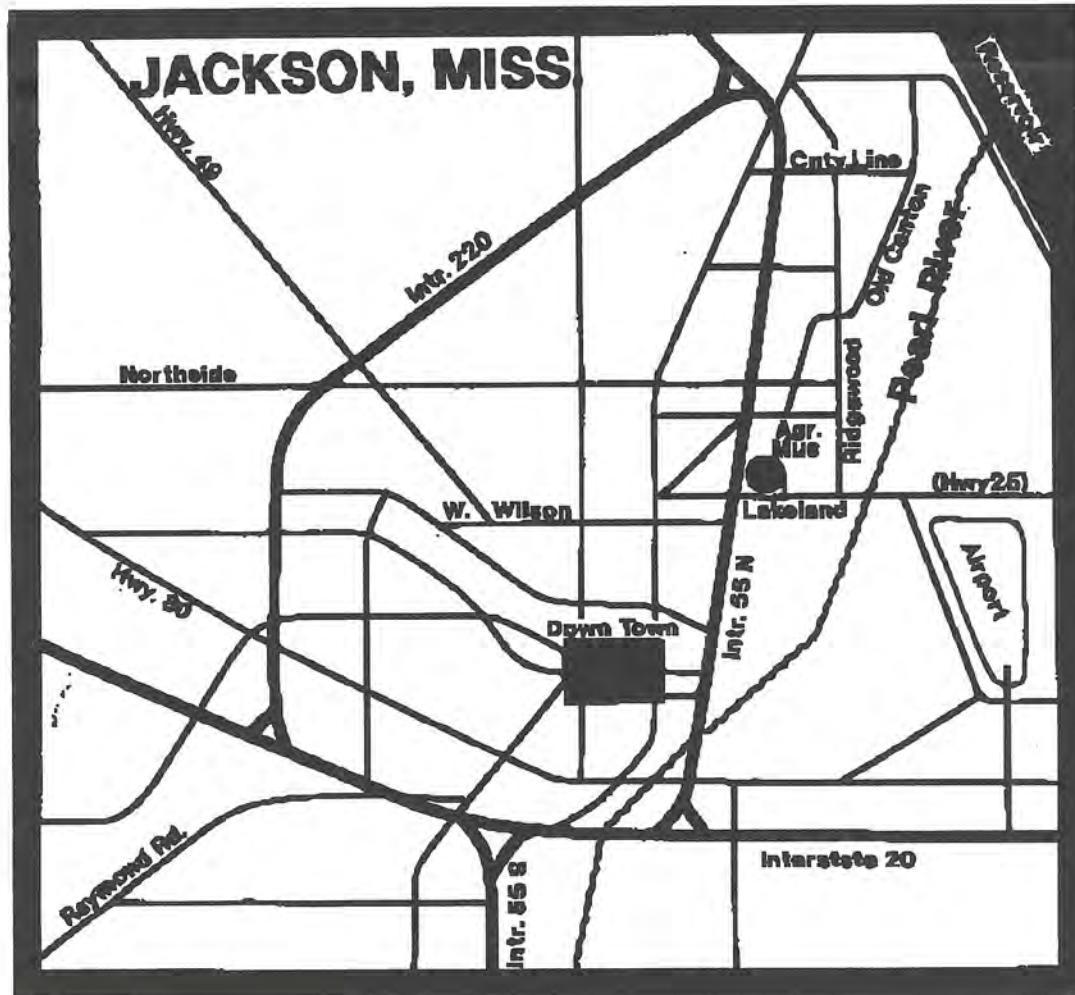
from 4:30 to 8:30 (p.m.)

Dinner at 6:00 p.m.

\$10 per person      \$5 per student

Don't forget to visit the oil pump and derick on the museum grounds!

R.S.V.P. Stephen L. Ingram, Sr., (601) 354-6328



# Information Page

*Engineering  
News-Record*

## Energy firms unite to rejuvenate gasification

Twelve major energy companies have formed the Gasification Technologies Council to promote gasifying coal, petroleum coke and heavy oils for producing power, clean fuels and chemicals worldwide. The group will focus on developing means to produce or use synthesized gas. Charter members include independent power developers and manufacturers along with Bechtel Power Corp., Fluor Daniel Inc. and Foster Wheeler Energy International Inc.

*Oil & Gas Journal*  
July 24, 1995

## Platforms for Research

BP Exploration Inc., Houston, has agreed to help

scientists identify and assess the potential risks of global climate change. The oil and gas industry has developed a tremendous geologic data base. This knowledge gives it a keen sense of the atmospheric and climatic extremes that have occurred on our planet over the past few billion years. Many industry scientists are concerned with the issues of global climate change and have engaged this research. Their motivation stems from the potential risks and magnitude of the effects of sudden, widespread environmental change with regard to the biosphere (all living things).

Data describing the role of oceans in moderating climate change are sparse. Therefore, ocean research has been given the highest priority in developing a solid scientific basis for creating public policies affecting climatic change.

In this effort, BP has offered all its production platforms in the Gulf of Mexico as sites for scientists to gather atmospheric and environmental data in

remote ocean settings.

BP is collaborating in the platforms for research program with the U.S. National Oceanic & Atmospheric Administration (NOAA), American Petroleum Institute, and several other groups seeking to establish an effective framework for long range ocean research. This program with its alliances of industry, government, and the scientific community will provide important data that will be used to help solve some of the complex environmental problems related to climate change. The platform for research program will allow atmospheric and oceanographic data to be collected during foul weather at remote locations in the Gulf. Traditional ocean research units such as ships, buoys, and aircraft often lack the flexibility that these platforms will provide.

## NEW PUBLICATION AVAILABLE FROM THE OFFICE OF GEOLOGY

The Mississippi Office of Geology announces the availability of Report of Investigations 3, "Chemical Data and Electrical Resistivity Values (Rw's) Determined from Analyses of Produced Formation Waters from Oil and Gas Well Tests in Mississippi," by Rick L. Erickson.

Report of Investigations 3 is a compilation of chemical analyses and electrical resistivity (Rw) data obtained for 303 samples of produced waters from oil well tests in Mississippi published by the Bureau of Mines in Report of Investigations 6167 (Hawkins et al., 1963), now out of print, and approximately 950 additional chemical analyses and/or electrical resistivity (Rw) data which have been obtained during the 30 years since that report was published. In Report 6167, chemical analyses and resistivity values of produced waters in Mississippi were restricted to oil wells located within the Mississippi Interior Salt Basin and the Wilcox trend. Data

contained within this report also include formation water produced by natural gas wells. Included are chemical and/or electrical resistivity data for fluid(s) produced from oil and gas tests located in an additional 22 previously unreported counties. The data set included over 2,800 laboratory determinations of the mineral constituents and/or electrical resistivities of formation samples from wildcat test wells and 241 oil, gas-condensate, and gas fields in Mississippi. In addition to these data the report lists, where available, the API number, operator, fee name, location, formation, producing zone, and the depth from which the water was produced.

The data are presented in several different forms for ease of use. The locations of the samples are shown on a series of maps with sources and specific well locations where possible. In addition to the published report, data contained therein are currently available on 3.5 inch diskette in both DBASE IV, a

database format, and QUATTRO PRO, a spreadsheet format, for data manipulation and/or increased accessibility for the user. Sample location maps are stored in AutoCAD files which are available upon request. Additional software file formats (e.g. Excel, Reflex, Symphony, Lotus 1-2-3, Paradox, etc.) are also available.

Report of Investigations 3 may be purchased from the Office of Geology at Southport Center, 2380 Highway 80 West, Jackson, for \$15.00 per copy. Mail orders will be accepted when accompanied by payment (\$15.00, plus \$3.00 postage and handling for the first copy and \$1.00 for each additional copy).

Send mail orders (with check or money order) to:

Office of Geology  
P. O. Box 20307  
Jackson, MS 39289-1307

## THE GAS QUANDRY

from: Apache Corp.

On August 1, the September gas futures contract fell 15.8 cents—or a decline of nearly 10 percent, followed by an additional six cents on August 2. Including a 9.1 cent rise on Monday, July 31, the three-day price volatility exceeded 20 percent. The two-day price decline approximated 14 percent—equating to a drop on the Dow of 670 points enough to shake the financial capitals of the world.

The commodity section headlines of the Wall Street Journal on August 1 read, "Prices of Soybeans and Corn Drop Sharply." Both were off 3-plus percent. Gas was not noted in the headlines; it received brief mention in the next-to-last paragraph under "energy." (Oil prices that day moved .3 percent—1/20th as much as gas.)

Why? Is gas less significant to the U.S. than corn? Hardly. The Department of Agriculture's Economic Research Service reports that the total 1994 corn production of 6.3 billion bushels brought \$22 billion. In 1994, U.S. gas consumption was 20.7 Tcf, including an 11 percent increase in Canadian imports; it was worth about \$30 billion. Deduct severance taxes from wellhead realizations and the 1994 Corn and gas crops were valued about equally.

What about the swings in the value of the U.S. proven natural gas resource base? While it would be improbable to realize a present value of \$1 Mcf for the nation's proven gas reserves of 162 trillion cubic feet (Department of Energy/Energy Information Agency) a two-day decline of 14 percent represents \$22 billion, or the approximate value of last year's corn and net gas crops.

In the July 25, 1995, release of NatWest Securities' Natural Gas Report, Michael Barbis, C.F.A., and Christopher Eades highlight April statistics under the headline, "Surprisingly strong April 1995 Natural Gas Demand Up 9.8% versus 1994."

"Electric utility demand up 12 percent.... Industrial demand up 13 percent.... The price of gas in April 1995 was down 24 percent versus April 1994, and gas was at a 25% discount to resid this April, while delivered gas was at a 21% premium to resid last April."

What about the relationship of prices paid by the residential consumer and that received by the producer? August's wellhead prices may average \$1.30, including severance taxes and some portion of gathering charges. If these net down to \$1, the producer realization equates in \$6 per barrel of oil equivalent.

Yet, the residential consumer paid an average price of \$6.48 per Mcf (the price has been steadily increasing for three years), equivalent to slightly under \$39 per BOE. There is now a whopping \$32 per BOE cost in the middle between producers and consumers.

Clearly, there is ample room to reduce consumer gas prices while increasing producer realizations. This is well-understood by the big winners who are currently making a killing at the expense of American independents. The producer's share of the consumer's pie has dropped by over half, but his loss was not the consumer's gain.

No wonder U.S. natural gas is not offsetting rising oil imports. No wonder rising trade deficits reached a record \$11-plus billion in May. Gas could be backing out more imported oil now increasingly severed from conventional supply and demand relationships.

Support for natural gas producer cooperative legislation by independent producers and related associations has been outstanding. While hundreds of industry colleagues have rallied behind co-ops, actual progress is difficult for me to perceive and measure. It is important that we turn up the volume now.

# Editors Note:

As we begin this new societal year, I'd like to take the time to thank past bulletin editor, Stan Thieling, for an exceptional job. Over the past several years (5 or 6?) Stan has faithfully provided us with a bulletin that we can be proud of. He labored diligently to assure that we had timely information, important announcements, and even some humor in the form of cartoons. He'd be the first to admit that it's difficult to get good information to print in the bulletin, and that it's easy to get bummed out doing it. That's not all the editor does though! Stan functioned as a "time custodian", so to speak. It was Stan's job to ensure that the President had his cover letter in on time, sometimes dropping hints about what to say. He was always after the Program Chairman to get the speaker abstracts in on time for printing deadlines. Who do you think compiled and published the Field Trip guidebooks? I could go on and on. Basically, the editor functions as the manager of the societies cohesion. The job is "thankless" and Stan should be credited for a job well done. Please take the time to personally thank him the next time you see him.

Along these same lines, I'd like to put in a request for any input that you may give for bulletin content or related matters. I will attempt to fill some tall shoes in following Stan and could use the help or criticism. In the past the bulletin has covered issues on global warming and registration; not-to-forget the articles on

ground water, and the series on structural mapping provided by Subsurface Consultants and Associates. At this time, the files are basically empty of pertinent articles or reports that have merit for inclusion in our bulletin. Stan did leave me with a number of Shelly Fischman's cartoons, for that I'm grateful. Jack Moody has offered to help by submitting reports on technical aspects, advanced tools and the like, which may be of interest to the members. Cragin Knox, Director-Office of Geology (Mississippi Geological Survey) has advised me to save plenty of space this year for publication announcements on upcoming investigative reports which are nearing completion. This input helps support and provide you with an interesting and viable monthly bulletin, worthy of reading. Yet, more is needed from the members. If you come across an interesting article or have a specific interest that you'd like to see addressed, please contact me as soon as possible. Remember we only have eight bulletins each year which carry such information; we'll need plan in advance to work things in.

Two final announcements. The annual financial report has been delayed, it is normally published in this September issue; and I have been asked to inform the membership about society membership renewals. Rick Erickson and I are working together on the Membership Directory and will need to hold to the renewal deadline mentioned below.

## IMPORTANT MEMBERSHIP NOTICE

**PLEASE NOTE THAT THIS YEAR IF YOU DO NOT PAY YOUR MGS MEMBERSHIP DUES PRIOR TO DECEMBER 1, 1995, YOU WILL BE DROPPED FROM THE MEMBERSHIP LIST AND WILL NOT RECEIVE ANY MORE MGS BULLETINS. THIS NOTICE APPEARING IN THE MGS BULLETIN WILL BE THE ONLY ONES WHICH YOU WILL RECEIVE—PLEASE MAIL YOUR DUES NOW BEFORE THE DEADLINE SLIPS BY!**

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No sponsors needed for a renewal membership.		
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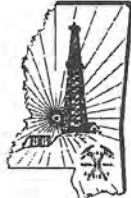
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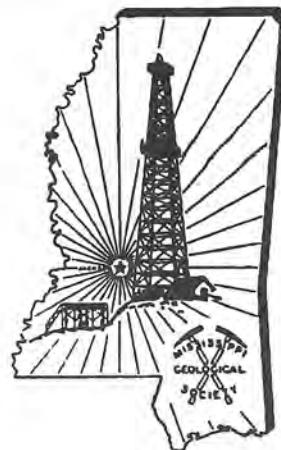
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# MISSISSIPPI GEOLOGICAL SOCIETY

VOLUME XLIV

NUMBER 1

OCT. 1995  
~~SEPTEMBER 1995~~

## PRESIDENT'S LETTER

I hope you enjoyed your catfish and fellowship at the Fall Barbecue. I want to thank John Marble for so ably taking care of liquid refreshments.

I also wish to thank our Barbecue sponsors: Digicon, Schlumberger, Haliburton, Western Atlas, Location Sample Service and Seismic Exchange. You should thank them also as they are allowing us to continue charging \$10.00 for the \$17.50 meal.

Our October meeting will feature Brian Johnson with Anadrill. Brian will inform us of drilling technology improvements and the present state of the art.

I am asked to remind you to renew your membership by November. Also the GCAGS Annual Convention is being held October 25-27, in Baton Rouge, Louisiana.

Those of you that advertise in the Bulletin will want to renew your advertising before December 31, 1995.

I have been informed that Alabama has now passed a Geologist certification bill and Texas will apparently pass one in this session of their legislature.

The need for certification has become paramount for those geologists testifying before Local, State and Federal agencies. Thus, certification has become an economic necessity for them.

Please be faithful and attend your Geological Society meetings. This is your society.

W. Lester Aultman

## Coordinating Committee

The Engineering / Environmental coordinating committee will meet on a bi-monthly basis. Meetings will be held on the 3rd Tuesday of the month at the Department of Environmental Quality Commission Hearing Room, Highway 80 and Ellis Avenue, Jackson, MS at 11:45 a.m. Contact Steve Jennings for information (961-5205).

## DRILLING TECHNOLOGY IMPROVEMENTS

By Brian Johnson



The speaker will discuss new and emerging technologies in drilling. Topics will include Logging While Drilling (LWD), Coiled Tubing Drilling (CTD), Re-entry and Multi-Lateral Drilling. LWD will cover the very latest tools available. A brief overview of CTD will be presented. A Re-entry team approach will be discussed. Finally, Multi-Lateral wells and their uses will be presented.

Brian Johnson works for Anadrill, a drilling services division of Schlumberger. Anadrill provides MWD, LWD, and DD services to the industry. Brian has 15 years with Schlumberger. When with the Wireline group he held positions as a Field Engineer, Staff Engineer, Service Manager and Log Analyst, all in the Gulf of Mexico. He joined Anadrill as an LWD Field Engineer in 1991 and has since opened an LWD district in Canada, operated the LWD district in Lafayette, and is now selling all Anadrill services in the New Orleans area.



From: *De Re Metallica*, Georgius Agricola, 1556.

## BUSINESS MEETING LUNCHEON

*Tuesday, October 10th*  
**Drilling Technology Improvements**  
 Brian Johnson  
 Anadrill Schlumberger  
 New Orleans, LA

## BUSINESS MEETING LUNCHEON SCHEDULE

October 10  
 November 14  
 Christmas Party December 12  
 January 9

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Oleta R. Harrell*	Frederic F. Mellen*	Henry Toler*
Dudley J. Hughes	Maurice E. Miesse*	*Deceased

# *Special Notice:*

## **Paul A. Radzewicz,**

oil and gas producer, passed away at 75 years of age on August 20th at Memorial Hospital in Gulfport. Paul was a New Jersey transplant to Jackson, Mississippi, where he lived for 46 years. Many of us knew him to be an avid yachtsman.

Survivors include his wife, Ethel, Kennedy Lane, Biloxi, MS; son, Gene Radzewicz of Jackson; and daughter Maureen E. Radzewicz of Natchez.

Memorials may be made to the American Cancer Society, Mississippi Division, 1380 Livingston Lane, Jackson, MS 39213.

The Petroleum Auxiliary of Jackson, Mississippi is holding their annual membership drive with a luncheon scheduled for October. Contact Jenai Walkingshaw at (601) 853-4315.

## **Alabama Registration approved.**

We have just received information that the bill to register geologists in Alabama has been passed by the Legislature and signed by the Governor. Regulations should now be in the draft phase.

## **Texas Registration appears likely to pass this year.**

It's being reported that the Texas Geological Practices Act is slated for "smooth sailing" through the Legislature this year. Apparently, the problems that tabled the bill last year have been resolved.

AAPG reports that the Texas Bill is modeled after the Suggested Geological Practices Act which was developed by a consortium of representatives from all major U.S. geological/geophysical association, the Council of Professional Geological Organizations (CoPGO).

The Division of Professional Affairs were actively represented in the CoPGO model, which

has been endorsed by the AAPG Executive Committee.

**Along these same lines,** should Texas pass a registration bill this year, Mississippi and Louisiana will become an isolated pocket, completely surrounded by states having certification laws applying to geologic practices. If this occurs, certification will likely become a major economic issue for those of us wishing to continue petroleum exploration over the next 20 years and longer (It's already an economic issue for contract geologists and the environmental industry). At this time, some of you maintain a Florida registration in order to conduct O&G Board business in that state.

Reciprocity has now become a major motivating economic factor for the petroleum industry. It is essential that all states regulating geologists provide "real" reciprocity to those being regulated. Otherwise, fees will have to be paid to multiple states in order to continue our intrastate businesses.

# Information Page

## Petroleum Engineer International -

### IOGCC established panel to critique federal regulation.

The Interstate Oil and Gas Compact Commission's special committee will identify areas of federal regulation that can be transferred to states or eliminated. Texas Railroad Commission Chairman Barry Wilson led the action, noting that federal officials are a "dangerous threat" to the oil and gas industry. Ground rules will be set to evaluate, collect, audit, and conformity between the states.

### World energy consumption rose nearly 1% during 1994

to 7.92 billion tons (57.82 billion bbl) of oil equivalent, according to BP's latest Statistical Review of World Energy. Demand rose last year after remaining flat for 3 years, but demand would have been higher if it were not for a 15% drop in energy

use in the former Soviet Union. Usage in North America increased.

## World Oil -

### Natural gas storage fluctuates, but looks positive.

Total U.S. gas in storage for the summer was near the total for the same period last year; roughly 1.7 Bcf. The industry was able to work off excess gas remaining in storage at the end of the heating season, inspite of low prices. Jofree Corp. predicts that storage will be small for next heating season, beginning October 1st; and should translate to lower storage demand in the late summer and early fall at elevated prices.

## GIS World -

### Oilnet offers on-line Oil and Gas information.

Oilnet is an electronic marketplace; an on-line newsstand for exploration, production and service professionals in the O&G industry. Oilnet allows engineers, geologists,

geophysicists, landmen, and others to meet and conduct business on line. Full-color graphics, windowed and multitasking environment is accessible through dialup or Internet. For more information, contact Kris Erlewine at (303)220-7867.

## Coal -

### Gasification industry forms new council.

Twelve companies in the energy industry formed a new trade council, the Gasification Technologies Council, to promote the widespread use of gasification to utilize coal, petroleum coke, and heavy oils in Integrated Gasification Combined Cycle units. Charter members include Air Liquids America, Air Products and Chemicals, Bechtel Power, BOC Gases, Destec Energy, Dresser-Ingersoll Rand JV, Fluor Daniel, Foster Wheeler Energy International, General Electric, Praxair, Shell Synthetic Fuels, and Texaco.

## **Coal gasification plant slated for Tennessee.**

**Eastman Chemical Co. and Air Products and Chemicals** received \$90 million in DOE Clean Coal Technology Program funding for a plant to produce liquid fuels and chemical feedstocks from coal. The companies said construction of the \$214 million project is expected to begin during the third quarter, with completion and startup planned for late 1996. The venture calls for design and construction of a 260-ton/day liquid phase methanol facility at Tennessee Eastman Division in Kingsport. The plant will run for a 4 year test period and will use Air Products' novel liquid phase technology.

**\* Of Special note,** it hasn't been that long ago that Transco held lignite leases in Mississippi which were to be converted to fuels through by gasification. High sulfur coals and lignites are best suited for this process.

*Geotimes* -

## **Jet accelerates star.**

Using a satellite with a sensitive X-ray telescope, scientists have discovered a massive jet of material being ejected from a pulsar. The jet may answer the question

of what makes pulsars travel with such fantastic speed through space. The discovery may also help scientists understand how pulsars lose energy. In addition, the discovery lends support to the idea that mysterious bursts of gamma ray energy from beyond the Milk Way may come from speeding pulsars that have escaped the galaxy.

Astrophysicists, Markwardt and Ogelman, University of Wisconsin-Madison, observed a powerful jet extending 20 light years into space from the Vela pulsar, an object the size of Manhattan, but having the mass of the sun. Vela is about 1500 light years away from earth.

## **Shedding light on climate change.**

Over the last several decades, scientists have relied on radiocarbon dating to study ancient natural events and to determine ages of geological specimens. Radiocarbon dating is limited to organic material and is ineffective at 55,000 years and greater. A new dating method can now be applied to determine how much time has elapsed since mineral grains were last exposed to sunlight. Luminescence-sediment dating has its limitations too; inorganic materials exposed to heat after burial give false results. This method has been used in Europe

since the 1960's; but advances were made in the 1970-80's in Canada where sand grains have been dated at burial durations of up to 800,000 years. The grains are exposed to infrared light, causing them to release photons which are counted, recorded, then sent to a computer for calculations of age of burial.

*Oil & Gas Journal* -

## **Wave power unit collapses at site off Scottish coast.**

**Ocean Swell Powered Renewable Energy (Osprey)**, the world's first wave power generator collapse within week of its installation. Collapse has been initially attributed to damage during construction and transit. Two of nine ballast tanks were damaged after a storm. Engineers attempted to repair the initial damage prior to the storm, but could not complete the repair before the storm broke. The 850 metric ton structure, installed in 60 feet of water about 1000 feet from shore, resembles a large artificial cave with two thirds below water and one third above. Wave action displaces air in the generator's shafts to turn a turbine. Osprey was designed to produce 2000 Kw of electricity from waves, to be fed into the national power grid.

August 21, 1995

NEW PUBLICATION AVAILABLE FROM THE MISSISSIPPI OFFICE OF GEOLOGY

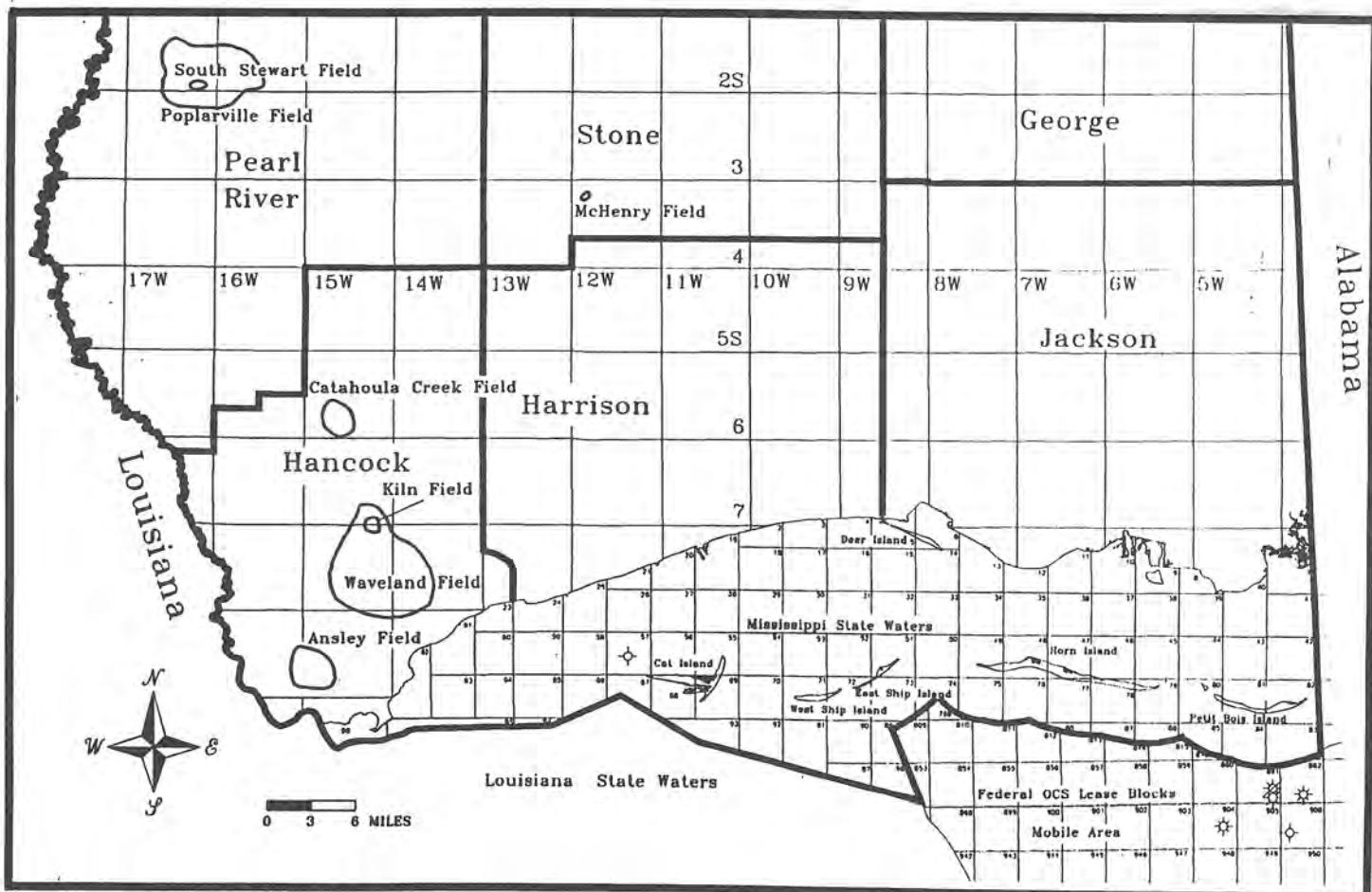
THE PETROPHYSICAL ATTRIBUTES OF CRETACEOUS RESERVOIRS OF SOUTHERN MISSISSIPPI AND ADJACENT STATE WATERS

The Mississippi Office of Geology announces the availability of Open-File Report 41, "The Petrophysical Attributes of Cretaceous Reservoirs of Southern Mississippi and Adjacent State Waters," by Rick L. Ericksen.

Open-File Report 41 is a study of the Cretaceous-age sediments in the coastal counties of Mississippi. The report includes averaged log-derived porosity and conventional core data from wells located in the three oil and gas productive fields (Ansley, Kiln, and Waveland) located in Hancock County, Mississippi. Discussions of the trapping mechanism(s) and reservoir characteristics of each field are discussed. In addition to discussions of these topics, the report includes a structure map, four isopach maps, seven tables containing data on each productive reservoir found in the three fields and one table containing the range of average porosities for potential Cretaceous reservoirs anticipated within the study area. The report, with 38 pages and 1 plate in the back pocket, was completed as a research project funded by a grant from the Minerals Management Service of the United States Department of the Interior.

Open-File Report 41 may be purchased from the Office of Geology at Southport, enter, 2380 Highway 80 West, for \$10.00 per copy. Mail orders will be accepted when accompanied by payment (\$10.00 per copy, plus \$3.00 postage and handling for the first copy and \$1.00 for each additional copy). Send mail orders (with check or money order) to:

Mississippi Office of Geology  
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Index map of the study area.

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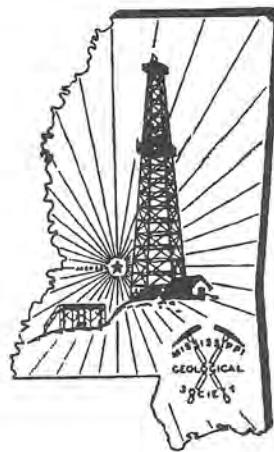
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# MISSISSIPPI GEOLOGICAL SOCIETY

VOLUME XLIV

NUMBER 3

NOVEMBER 1995

## PRESIDENT'S LETTER

You may have already read the Pratt quote, if you haven't, please do so. Many of us have been saying, "where are we going to explore, what are we going to do now that the Frisco City Sand play, as we now understand it, is becoming mature."

In the late 40's and early 50's explorationists faced the same problem. The era of large gravity minimum fields was coming to an end and many people thought all the oil had been found. Pratt

was speaking to this malaise in thinking with his now famous quote. Well, new seismic technology and new thinking changed all that. We must look at exploration with new technology and even newer thinking. We must continue to evolve or face extinction.

Remember, you must renew your membership by November 1. If you fail to do so your meal at our meeting will cost \$12.00 and you will not be included in the

Membership directory. Our society needs your support both financially and physically.

Included in your Bulletin you will find a membership renewal form and an announcement for the just released Redbook Supplement.

I trust you had an enjoyable and enlightening GCAGS meeting.

We are looking forward to an enlightening discussion of the controversial origin of oil by Bob Sabaté and Claude Baker at our November 14 meeting.

## SYNERGETIC CATALYSIS IN HYDROCARBON GENERATION

by Robert Sabaté and Claude Baker

The topic to be presented this month will be on an old battleground, hydrocarbon generation. Bob Sabaté and Claude Baker, both from the New Orleans area, will discuss old and new premise related to the generation and emplacement of hydrocarbons. At the heart of the problem are two opposing views of hydrocarbon emplacement-long range migration and insitu generation/emplacement. The topic of discussion will deal with the foundational issues of 1) thermogenic generation at great depths (not yet reached by the drill bit) which migrate into shallow reservoirs (inter-related with the theory of long range migration), and 2) empirical generation which suggests insitu generation and emplacement.

Historically, exploration philosophy and investment decisions have been formulated on either the thermogenic or insitu model; hence, this luncheon topic bares weight with regard to our livelihood as explorationists. Bob and

Claude will present some of the more recent research in organic chemistry which indicates oil generation may occur at much lower temperatures (shallow?). This new evidence is strong support for insitu hydrocarbon generation and emplacement, but not necessarily to the exclusion of thermogenic and long range migration theories.

Bob and Claude are well known to most of our members, those who've worked with or attended GCAGS and AAPG meetings through the years. Both are long standing New Orleans Geological Society members and past officers. Each has over 30 years of exploration experience. Robert Sabaté has worked for Shell and Koch Exploration, and is now President of San'Doil, an Offshore Gulf exploration company, and Vice-President of Lumitox, an environmental toxicology laboratory. Claude Baker is a consulting petroleum geologist, having worked for Getty, General Crude, and Mobil.

## Environmental Committee

The Environmental Committee will meet on a bi-monthly basis. Meetings will be held on the 3rd Tuesday of the month at the Department of Environmental Quality Commission Hearing Room, Highway 80 and Ellis Avenue, Jackson, MS at 11:45 a.m. Contact Steve Jennings for information (961-5205).

# *A new Mississippi Geological Society Red Book update is now in print!*

Supplement II, Volume III of the "Mesozoic-Paleozoic Fields of Mississippi and Alabama" (the MGS Red Book Series) comprises field data with maps of the following sixteen fields:

## MISSISSIPPI

Chaparral, Wayne County  
Davis, Clarke County  
Enterprise, Clarke County  
Frances Creek, Clarke County  
Freedom, Wilkinson County  
Independence, Wilkinson&Amite Co.  
Lake Utopia, Jasper County  
Laurel, Jones County

## ALABAMA & FLORIDA

Frisco City, Monroe County, AL  
Heartline, Fayette County, AL  
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The supplement is \$25; order from:

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P.O.Box 672  
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## BUSINESS MEETING LUNCHEON

Tuesday, November 14th

### ORIGIN OF OIL

Bob Sabate  
New Orleans, LA

## BUSINESS MEETING LUNCHEON SCHEDULE

December 12 Christmas Party  
January 9 Baria-Frisco City Sand  
February 13 Hughes-Evening meeting  
March 12 Open  
April 9 Open  
May 16 Spring Social and Officers Elections

## Mississippi Geological Society – 1994-1995

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# Information Page

## GIS World -

The US Geological Survey cut its geologic division staff by more than 500 people, about 22% of the 2,190-person work force. The reduction involved employees at headquarters and centers in Reston, Virginia, Denver, Colorado, and Menlo Park, California. It is expected that an additional 100 downgrades and 100 reassessments will also occur. Officials cited flat budgets and high personnel costs as the cause of the reductions in force. A thorough team centered reorganization is ongoing at this time. The results should be seen in improved production of timely, high quality scientific reports, maps, and data; as well as reduced costs through streamlining.

## Public Utilities Fortnightly -

The Virginia Corporation Commission (CC) has launched an investigation into whether Virginia ratepayers should continue contributing to the federal nuclear waste fund (Case No. PUE950060). The CC noted that despite \$343 million already contributed, and the possibility of \$400 million in future payments, the federal government has made little progress in resolving the spent nuclear fuel problem. In addition,

the present federal budget process has Congress using the unspent nuclear waste fund dollars -now \$4 billion - to reduce the federal budget. (Makes one think about Grand Gulf, Mississippi!)

**Gas-fired electric generation** has been heralded as the cure-all for everything that ails the natural gas industry. We've heard that for the past three years. Today there are some experts intensely suggesting that the current restructuring of the electrical utilities and the demise of the Public Utility Regulatory Policy Act (PURPA) will adversely effect the demand for gas.

Restructuring of the electric utilities have unearthed major questions regarding stranded investments-who pays?, effects on long term fuel contracts-could force legal battles over current long term contracts, foster short term contracts at higher costs, and favor lower cost fuels such as coal. Adding to that uncertainty is the possibility of a sell-off of old, depreciating generating assets which could lead to repowering of the old units by their new owners who could then sell electricity at cheaper rates.

Due to these problems, a "go slow" period is expected for new construction of gas-fired electric generation plants for the next several years. This period of transition will likely see everyone (gas producer, purchaser, generator, and ratepayer)

paying a share of whatever it costs to shake uneconomic assets out of the system. Those surcharges could be a barrier to entry for new generating assets - gas and otherwise.

Never-the-less, natural gas remains an appropriate choice. Its costs are low and it's clean. A slow steady growth in natural gas use (gas-fired generation plants) is expected over the next 20 years as older nuclear, hydro, and coal plants are removed from the national system. If there is a bias for coal, it will predominantly be due to geography and local markets.

**NYMEX and EnerSoft** (a NY State Electric & Gas subsidiary) launched Channel 4, a new gas trading system. Channel 4 is the only electronic bulletin board (EBB) that allows companies to trade natural gas and pipeline capacity in the US and Canada, via a single system. The network is private, not connected to Internet for security reasons, and is connected to over 40 pipelines from which it sweeps information. Channel 4 offers three trading methods 1) market match - matches bid and asked prices, time frames, and delivery points using standard contracts, 2) electronic auction - gives discretionary control over spot-market purchases using predetermined business partners, and 3) trader match - allows online, customized

negotiations. Channel 4 will eventually add other commodities.

## Oil & Gas Journal -

**Tougher CO<sub>2</sub> limits** to be decided by the White House Council on Environmental Quality (CEQ). CEQ will decide by December whether to recommend tougher reductions of US emissions related to global warming concerns. CO<sub>2</sub> and other greenhouse gasses are under consideration for reduction to 1990 levels by 2000, in compliance with the 1992 Rio de Janeiro treaty on global warming.

## Petro Systems World -

**Petroleum Information and Dwight's Energydata** have announced their intent to form a new information company consisting of the assets and employees of both companies. The name of the new Houston-based company will be announced soon. Officials from both companies were quick to state that there would be no increases in costs of products or services.

# *Information Page - continued :*

## **Engineering News Record -**

**Fluor Daniel and Geokinetics (GI) to use patented electrokinetic waste remediation technology in the U.S. for cleanup of heavy metals.**

GI has been using the technology for the past eight years on commercial cleanup projects in Europe. Their process allows insitu removal of heavy metals from soils and groundwater. In some cases the product is in a reusable form. In-ground electrodes attract contaminants in solution, which is then pumped to the surface for treatment.

## **Coal -**

The DOE is supporting a joint venture between Air Products and Chemicals and Eastman Chemical to demonstrate a novel liquid phase methanol coal gasification technology. The \$214 million project is the "first of its kind", DOE supplying just over \$90 million funding through its Clean Coal Technology Demonstration Program.

The project could be a preview of future commercial facilities in which co-product methanol is made from coal-derived gas as an adjunct to integrated gasification combined cycle (IGCC) power plants.

Construction of the 260-ton-per-day liquid phase demonstration plant should begin soon at the Kingsport, Tennessee site. Completion and startup are scheduled for late 1996, with a 4 year test period

slated. Most of the methanol produced during the demonstration will be used as chemical feedstock in Eastman's chemical plant at the site. Smaller amounts of methanol will be used to demonstrate the products suitability as a fuel. (Could this rekindle lignite gasification -from the 70's in Mississippi?)

U.S. Utilities received a record 832 million tons of coal in 1994, surpassing last year's total. Record deliveries were spurred by historically low coal stocks, and a short fall in hydroelectric generation which was made up by increases in coal-fired power. Utilities also took delivery of extra low-sulfur coal (Rocky Mt. area) to run test burns in preparation for Phase I of the Clean Air Act.

The delivered cost of coal fell, while the average Btu content rose. Only a very slight drop in average sulfur content was seen. Delivered cost per ton averaged \$28.03 in 1994, down from \$38.58 in 1993. Average Btu was 10,338 per pound in 1994, up from 10,315 in 1993.

Overall, coal accounted for 82% of the total Btu content of fossil fuels delivered to utilities in 1994. Gas accounted for 14%, and petroleum made up the remaining 4%.

Hazardous Air Pollutants (HAPs) are moving to the forefront as the next environmental challenge for the coal industry.

EPA has released a preliminary draft report (peer review) on electric

utility HAPs emissions, as mandated in the Clean Air Act. This report is intended to serve as the basis for EPA emissions standards.

At issue are as many as 189 HAPs, but only about 10 are important to coal: arsenic, cadmium, chromium, lead, manganese, mercury, nickel, dioxins and furans, hydrogen chloride, and hydrogen fluoride.

Mercury has been given the greatest attention, but there is a great lack of understanding about the behavior of various types of mercury throughout the combustion process. Also of concern is the issue of background and other sources of mercury. About 50% of the mercury deposition identified in the mercury study is thought to have been emitted in the past, prior to the many improvements made in coal burning technology which are in use today. Even with those levels, some estimates place utility mercury deposition contributions as low as 18% of the total, with waste combustion incineration posing the greatest risk.

Radiation, another HAP, is also difficult to separate from background sources. The nuclear industry recently claimed that coal plants emit more radiation than nuclear plants. Interestingly enough, the primary radioactive elements emitted by coal plants (Uranium 238 and Thorium 232) are about half that of the earth's crust. Even natural gas emits radiation in the form of Radon 222.

Much hangs on the implementation of the HAPs standards; especially

in light of the dominance of coal-fired electric generation plants. More than 50% of U.S. electric power is provided by coal. (Not to forget the Phillips Coal plant planned for Mississippi.)

## **Science News -**

Icy theory explains strange sliding stones. For decades, geologists have struggled to understand the processes related to the etched surface trails of the "sliding stones" in a lake bed near Death Valley. At the end of each track, sits a stone, the obvious perpetrator. The stones measure up to 1 1/2 feet across, weighing as much as 700 pounds.

Some have suggested strong winds push the rock after infrequent rains. However, geologists from Hampshire College and the Univ. of Massachusetts are challenging that theory.

According to Dr. Reid, friction measurements on the playa surface show that wind could only budge the boulders with the help of ice. The coefficient of friction for the biggest rock was about .8 (a 700 lb. boulder). It would take a 600 pound force to move the rock, an impossibility for wind to blow hard enough to move it. There's not even enough surface area for the wind to push on. But, when the lake surface freezes after a rain, wind passing over a large sheet of ice could generate enough force to drag several rocks embedded in the same ice.

This same theory was first made in 1955 and rejected. But Reid's group found support for the idea while doing precise surveys of the trackways.

## GEOLOGICAL REGISTRATION TASK FORCE/ADVISORY COMMITTEE

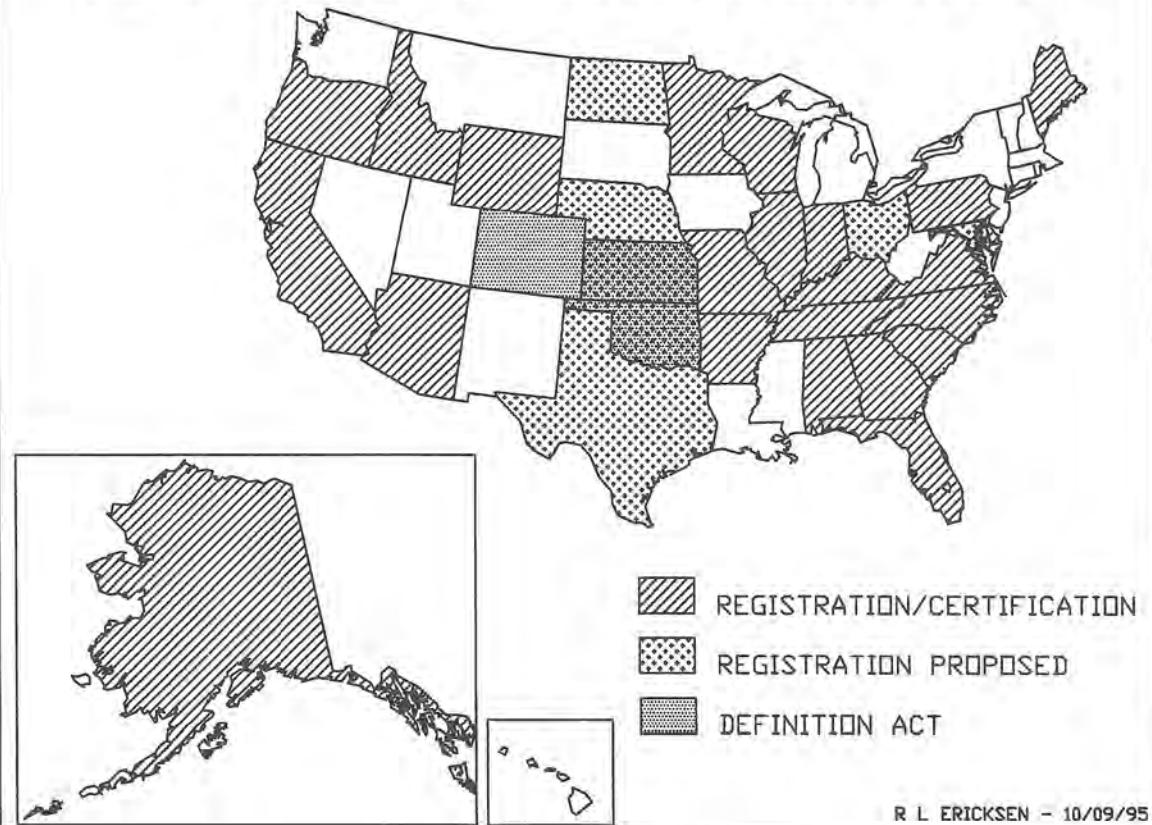
As the result of Alabama's recent passage of a geological registration law and the increasing number of states which have registration laws, a Task Force/Advisory Committee is being assembled to address the issue of registration as it now affects the geological profession in Mississippi. The Task Force will review the existing laws of the states which have registration and then assess what impact geological registration would have in Mississippi. From these and related investigations, the Task Force will then be prepared to make a recommendation concerning the issue of geological registration in Mississippi.

The Task Force will have, at a minimum, representation from the following groups: American Association of Petroleum Geologists (MPG), American Institute of Professional Geologists (AIPG), Society of Independent Professional Earth Scientists (SIPES), Mississippi Geological Society (MGS), Natchez Geological Society (NGS), Association of Engineering Geologists (AEG), Jackson Geophysical Society (JGS), Society of Exploration Geophysicists (SEG), and the Association of State Boards of Geologists (ASBOG).

The Task Force desires to have an ongoing, open dialogue with all interested parties and will be publishing updates on its progress in this bulletin. Comments or questions may be directed to the following:

Rick Erickson, Acting Chairman  
Mississippi Registration Task Force  
P. O. Box 254  
Ridgeland, MS 39158-0254  
phone - 601/961-5507

CURRENT GEOLOGICAL REGISTRATION/CERTIFICATION STATUS OF U.S.



NEW PUBLICATION AVAILABLE FROM THE MISSISSIPPI OFFICE OF GEOLOGY

**BEACH AND NEARSHORE SEDIMENT BUDGET  
OF HARRISON COUNTY, MISSISSIPPI:  
A HISTORICAL ANALYSIS**

The Mississippi Office of Geology announces the availability of Open-File Report 43, "Beach and Nearshore Sediment Budget of Harrison County, Mississippi: A Historical Analysis," by Klaus J. Meyer-Arendt of the Department of Geosciences at Mississippi State University.

Open-File Report 43 contains a compilation of historical modifications to the Mississippi Sound shoreline of Harrison County which resulted in nearshore fill and reclamation. Emphasis was placed on subaerially exposed fill areas and documented dredging activities. The results presented in this report required extensive archival research and comparative analysis of detailed historic maps to reconstruct the activities described. Human activities, including oyster canning, harbor construction, urban expansion, road/seawall/beach construction and maintenance, and channel dredging, have added at least 600 acres of land to the Harrison County shoreline along Mississippi Sound. Chronology of fill activities and volumetric data are presented in maps, tables, and historic photographs to document the changes which have occurred between 1850 and 1992.

Open-File Report 43 may be purchased from the Office of Geology at Southport Center, 2380 Highway 80 West, for \$10.00 per copy. Mail orders will be accepted when accompanied by payment (\$10.00 per copy, plus \$3.00 postage and handling for the first copy and \$1.00 for each additional copy). Send mail orders (with check or money order) to:

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Starting with the November Noon Luncheon Meeting, **for members who have not paid their 95-96 dues the meeting-meal cost will be \$12.00 instead of the \$10.00 regular charge for the meeting-meal cost. Dues, (\$20.00), may be paid at the meeting for admission at the \$10.00 meeting-meal cost or \$30.00 total.**

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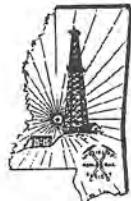
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EXISTS ONLY AS AN IDEA IN THE MIND OF SOME OILFINDER.  
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ALONG WITH FREEDOM AND INCENTIVE TO EXPLORE,  
JUST SO LONG NEW OIL FIELDS MAY CONTINUE TO BE  
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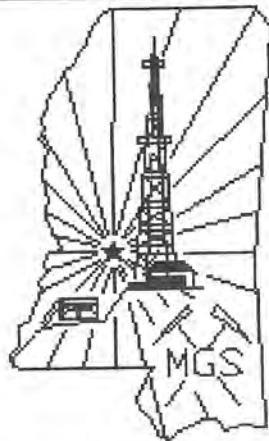
WALLACE E. PRATT, 1952

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# MISSISSIPPI GEOLOGICAL SOCIETY

VOLUME 44

NUMBER 4

DECEMBER 1995

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Dec 12	Christmas Social
Jan 9	Frisco City Sand
Feb 13	Paleoclimate * Evening Meeting
March 12	open
April 9	open
May 16	Spring Social & Elections

**President's Letter***Les Aultman*

Your Geological Society Board would like to take this opportunity to wish you a very Merry Christmas. We would also remind you of our joint MGS, Desk and Derrick, Jackson Geophysical Society Christmas party December 12, 4:00 pm to 6:00 pm at the Capitol Club.

We take this opportunity to congratulate Nuevo Energy for their recent Eutaw discovery on the flank of Brownsville Dome.

Salt Domes are, and will continue, receiving a lot of attention with Nuevo, Amerada, and Fina's recent string of discoveries. It is heartening to see discoveries on features that had been condemned by the exploration community for years. Our thinking must always be open

to overlooked possibilities.

You will find a Redbook order form incorporated in your Bulletin this month. Please take the opportunity to bring your Redbook up to date.

In response to our request for an advertising chairman we now have two. Roger Townsend with Spooner Petroleum and Bob Schneeflock graciously volunteered to perform this service for our society.

Our membership chairman (Rick Erickson) informs us that approximately 90 people have not renewed their membership as of November 20. This bulletin will be the last delinquent members will receive and, unfortunately, we will remove their names from our membership. Please take this opportunity to renew your membership.

I take this opportunity to thank the following members of our Redbook Committee for contributing their time and expertise to this project: Jim Files, Harry Spooner, Marvin Oxley, Dean Kebert, Steve Walkinshaw, Todd Hines, Mark Stephenson, Ed Hollingsworth, Stewart Welch, and Karl Kauffman. Thank you very much.

**Environmental  
Committee**

*Don't forget! The Environmental Committee meets on a bimonthly basis. Contact Steve Jennings for details, (601) 961-5205.*

**CHRISTMAS  
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**Merry Christmas and  
Happy New Year.**

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## *Application Form*

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## **December 15th Deadline for MGS Advertising**

MGS Advertising year runs from January 1st through December 31st each year. For details contact :

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## **Geological Task Force / Advisory Committee Update**

The first meeting of the Task Force/Advisory Committee, which was formed in response to examine the need for geological registration in Mississippi, was held November 15, 1995. The meeting was well attended and four (4) subcommittees were formed to study various issues and facets of registration. As noted in the announcement of the formation of the Task Force/ Advisory Committee which first appeared in this bulletin, it is anticipated that a recommendation for or against geological registration in Mississippi will be announced in March, 1996.

The Task Force desires to have an ongoing, open dialogue with all interested parties and will be publishing updates on its progress in this bulletin. Comments or questions may be directed to Rick Erickson, Acting Chairman, Mississippi Registration Task Force, P.O.Box 254, Ridgeland, MS 39158-0254, (601) 961-5507.

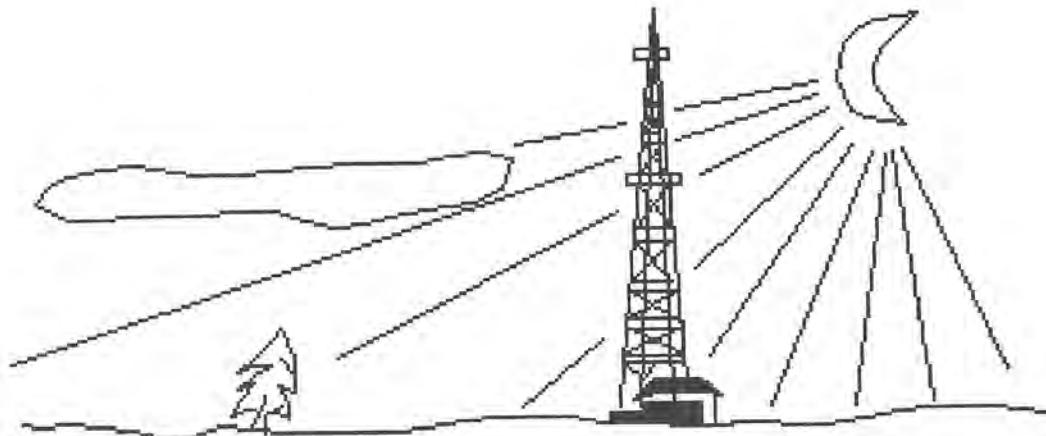
- \* The following poem was submitted by a member, and friend, for your holiday reflection.  
The poem came from a 1967 vintage South Texas Geological Society bulletin.  
Author is L. L. Palmer, geologist and scout.

## **'TWAS THE NIGHT BEFORE CHRISTMAS**

( Oil Field Version )

'Twas the night before Christmas and all through the Field  
 Not a roughneck was stirring or turning a wheel  
 Their socks were all hung in the doghouse with care  
 In hopes that the odor would take to the air  
 The geologists were nestled all snug in their beds  
 While visions of oil sands danced in their heads  
 The boss in his flannels and I in my cap  
 Had just settled down for a much - needed nap  
 When out on the floor there arose such a clatter  
 I sprang from my bunk to see what was the matter  
 Away to the door I flew like a flash  
 Tore the seat of my trousers and lost all my cash  
 The moon on the calendar of old fifty-five  
 Showed a large-bosomed gal who seemed almost alive  
 When what to my wondering eyes should appear  
 But a broken-down scout who was loaded with beer  
 He burped and he stumbled and tripped on a stick  
 I knew in a moment it wasn't Saint Nick  
 More rapid than eagles his curses they came  
 And he whistled and shouted and called us by name  
 Now Dassaw, now Daubert, now Parker and Diskin  
 Just look at the money this company is riskin'  
 To the top of the derrick, his heart filled with hope  
 He kept looking for someone to give him the dope

He was dressed like a dude but purely a dud  
 And his clothes were all wrinkled and covered with mud  
 A bundle of well dope he had in his sack  
 A pencil in hand and his mind off the track  
 His eyes were glassy and his cheeks so hairy  
 His head like a pumpkin, his nose like a cherry  
 He was sneezing and coughing and fighting a cold  
 And the beard on his chin was at least a week old  
 The butt of a cigar held tight in his lips  
 Had the odor of rubber ablaze in the pits  
 He had a broad face and a round little belly  
 That shook when he tripped and bumped into the kelly  
 He was chubby and plump, a messy old elf  
 And I laughed when I heard him just cussin' himself  
 A blink of his eyes which were weary and red  
 Soon gave me to know he was out of his head  
 He spoke not a word but went straight to his work  
 And mad a few notes, then turned like a jerk  
 - And laying his finger aside of his nose  
 He blew 'till I'll swear the preventors did close  
 He sprang to his car and stepped on the gas  
 And away he went looking for something to pass  
 But I heard him exclaim as he drove out of sight  
 "Just another dang well - and they're drilling it tight!"



# *A new Mississippi Geological Society Red Book update is now in print!*

Supplement II, Volume III of the "Mesozoic-Paleozoic Fields of Mississippi and Alabama" (the MGS Red Book Series) comprises field data with maps of the following sixteen fields: **MGS 009SV**

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## Petroleum Engineer International

A newly developed shear wave (S) seismic source for single-well surveys provides simple, straightforward lithological information by mapping underground structures as far away as 330 ft. Well spacing and geometry make cross-well surveys prohibitive in areas like the North Sea. Information from current single-well techniques suffers in quality and accuracy because of disruptive tube waves and limited S-wave strength.

A Terfenol-based horizontal point force clamping device has been developed by Read Well Services along with ETREMA Products to produce low-frequency, highly-radial forces that emit S-waves along the borehole and eliminate tube wave production. A Terfenol actuator is mounted on the clamping section to drive a 50kg tungsten reaction mass. The bandwidth of the source is 0-300 Hz. The radial source also provides a single-frequency, low-harmonic distortion signal that simplifies the geological mapping survey.

Test well data indicate that the controlled frequency source generates clean signals (primarily S-waves, present for the entire span of the well), resulting in a more discernable wave front in the reflection data. The frequency content of the source at this stage is centered around 140Hz. The magnetostrictive driving transducer material allows the transfer of electrical energy into mechanical displacement which is 50% more than other similar materials and 10 times the energy density.

The merchant role in power generation is drawing the attention of more U.S. companies. Among the latest moves, Equitable Resources Inc., Pittsburgh, formed a new business unit, Equitable Merchant Power (EMP), aimed at becoming a major player in the "converging gas and electric industries."

Equitable Resources CEO Fred Abrew says, "We have the core competencies needed to build a successful merchant power business, including substantial gas reserves, logistical and marketing capacity, project development and financing skills, and cogeneration skills." Equitable plans to focus on projects in the 50-250 mw range and will in 1996 commit resources to site selection and identification of gas fired generating assets that could be converted to merchant plants.

## Journal of Petroleum Technology

The science of fiber optics is moving closer to the time when petroleum engineers will see a clearer picture of their goals through acoustic sensors that will allow them to "eavesdrop" on the very sounds of production. Robert Heming, general manager of Chevron Petroleum Technology Co., believes the advent of optical fiber "ears", known as acoustic sensors, will create a new branch of expertise in oil and gas technology. Production geophysics, the application of geophysical techniques to production issues, will have the power to extend the productive life of older wells and enhance the yield of newer ones.

Making that happen depends on two complementary advances in technology - the ability to generate a seismic signal actually within the reservoir itself, and the development of acoustic sensors, fixed at known positions within the reservoir, that relay a stream of accurate information to the surface. The downhole seismic source, based on an original Chevron patent, has been developed through a collaborative venture involving Chevron, Amoco, Exxon, Sandia Natl. Lab-oratory, and E-Systems.

The Interstate Oil and Gas Compact Commission (IOGCC) has published, "Visions of the Future:

Technology and Invention Needs of the Independent Petroleum Industry", a publication that showcases the work of the IOGCC Research Committee and its recent speakers. Distribution will target researchers and funding agencies to educate about future requirements and to influence the level of funding and direction of research efforts.

## Earth Observation

MSE Corp. of Indianapolis, Ind. has announced that it has completed the digital landbase for Mississippi Power Company's portion of the SEGIS geographic information system. Mississippi Power is an operating company of The Southern Company and a sister firm to Alabama Power for which MSE is also providing data conversion services.

Mississippi Power provides electric service to more than 183,000 customers in a 13,625 square-mile area that covers 23 counties in southeastern Mississippi. The utility owns and operates 2,200 miles of transmission line, 162 substations, and more than 6,150 miles of distribution line.

MSE Corp. produced digital orthophotos based on existing NAPP photography. In addition, USGS quad maps were scanned, digitized, and updated from the orthophotos. The resulting landbase is accurate enough to allow for placement of facilities in a phased conversion, as well as performance of maintenance. In addition, MSE provided additional ground control as an enhancement to the existing photography.

(MSE Corp., 941 N. Meridian Street., Indianapolis, IN 46204-1061  
317-634-1000.)

## Coal

Alabama Gov. Fob James signed a bill giving coal companies a \$1 per ton tax credit for increasing coal

production. United Mine Workers of America representative Charles Tipton said the law will help coal companies financially as well as provide growth opportunities and security to the work force.

The Energy Information Administration reported in its U.S. Electric Utility Demand-Side Management 1993 report that utility programs to cut electric demand are continuing to grow rapidly. According to the report, energy savings in 1993 totaled 45,294 gigawatt hours (gwh), up 27% from the year before. By contrast, energy savings totaled just 14,672 gwh in 1989.

DOE will fund 1/2 of the commercial demonstration of NOXSO Corp.'s proprietary acid rain and ozone control technology. The \$41.4 million includes an \$8 million increase from DOE's original \$33 million project commitment.

Under its contract with Alcoa, NOXSO will build a 150 mw, coal-fired power plant at Alcoa Generating Corp's Warrick Power Plant N.# in Evansville, Ind. The NOXSO flue gas treatment system will remove 98% of the SO<sub>2</sub> and 75% of the NOx from the plants emissions.

The Office of Surface Mining gave notice to 265 of its 920 employees in response to budget cuts, effective October 1. Employees in 26 OSM locations across the country were affected. Also, more than 70 vacant positions were abolished. Secretary of Interior Bruce Babbitt said the cuts will impair significantly OSM's ability to administer the Surface Mining and Reclamation Act.

## Science News

The Hubble space telescope is helping overturn the conventional concept of the universe, dominated by

giant, grand-design spiral and elliptical galaxies. A set of faint, blue galaxies that ground-based telescopes discern only as fuzzy blobs now appear to represent a new, oddly shaped class of galaxies having distinctive shapes - stringy wisps or clumpy blobs, dotted by beads of light that may signify intense starbirth.

In the past, these galaxies apparently outnumbered the more familiar spirals and ellipticals that populate the cosmos today. Some of the more distant of these newly identified galaxies may represent a long-sought population of protogalaxies. These amorphous objects, which reside as far as 10 billion light-years from Earth, seem aglow with what could be their first wave of starbirth, before gravity has had a chance to sculpt their final form.

Recent observations by several research groups indicate that the universe today is awash in barely visible galaxies. One group at the University of Hawaii obtained the distance of more than 40 galaxies imaged in their own Hubble survey of faint blue objects. Many lie relatively nearby, but some reside much farther away, indicating that Hubble has imaged them as they appeared when the universe was 1/4 its current age.

Blinded by the outpouring of light from the surface of the sun, astronomers can't peek directly inside the star where hydrogen burns to make helium, and a cauldron of hot gases seethes and churns. However, these violent motions hint at internal solar activity by generating vibrations that make the sun ring like a bell. The traveling oscillation, akin to seismic waves that propagate through the Earth's crust, cause the sun's surface to rise and fall periodically by small amounts.

By monitoring the solar surface, scientists have tracked some of these oscillations since the 1960's. Except for a lone observation that follow-up studies failed to confirm, the tiniest oscillations which originate in the deepest layers of the sun have eluded detection until now.

Scientists studying data from both the Ulysses (1992) and Voyager 2 (1985) satellites report that they have found strong evidence of this most subtle of vibrations in the solar symphony.

The finding comes from the discovery of tiny, periodic variations in the intensity of the solar wind, the stream of charged particles that blows out from the sun's outer atmosphere. It was previously thought that the solar wind could not retain the pattern of solar vibrations as it traveled through the turbulent regions of interplanetary space.

Theory suggests that the sun shows two types of oscillations : 1) pressure mode (p mode) vibrations move like sound waves, originating as heat-driven currents just beneath the sun's visible surface; and 2) the more elusive gravity mode (g mode), resembling the bobbing up and down of water waves. Scientists now believe they can detect the g mode vibrations which are postulated to be generated when low-density gas pushes against high-density gas closer to the core of the sun.

Researchers weren't looking for waves when they began analyzing the intensity of hydrogen and helium ions in the solar wind. Rather, they were hoping to find a correlation between solar activity and the failure of several communications satellites. To their surprise, the data revealed that the intensity varied at two characteristic sets of time intervals - one about every 5 minutes (p mode) and the other varying from several hours to several days (g mode).

The scientists speculate that the magnetic fields at the sun's surface sense the g mode vibrations and communicate them to solar wind ions that travel with the fields. Analysis from other space craft support that hypothesis, showing magnetic field oscillations in synchrony with the gravity mode waves.



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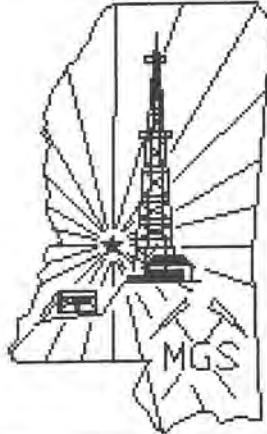
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# MISSISSIPPI GEOLOGICAL SOCIETY

VOLUME 44      NUMBER 4

DECEMBER 1995

JAN. 1996

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## Lunch Schedule

Jan 9 Frisco City Sand  
Feb 13 Paleoclimate  
\* Evening Meeting  
March 12 open  
April 9 open  
May 16 Spring Social & Elections

## President's Letter

*Les Aultman*

Welcome to 1996. Think back to 1986 and ten dollar oil prices and the ensuing years. If you are reading this you are a survivor, whether in the petroleum business or related geological professions. We now press on into the future knowing that conditions will improve.

I trust you enjoyed your geological society Christmas reception. We had an attendance of 90 people.

George Vockroth has an interesting slate of speakers forthcoming. Larry Baria will speak at our January meeting regarding the environment of deposition of the Frisco City Sand in Monroe County, Alabama area. Dudley Hughes will speak in February. This will be an evening meeting with the talk beginning at 5:00 followed by a reception. Dudley will be speaking on earths paleoclimates. This should be very interesting to all disciplines of earth science.

Our advertising committee is doing a wonderful job. We appreciate their effort and are encouraged by the desire of the advertisers to place an ad in our bulletin. Many people not only want an ad, they want a large ad! Obviously these people understand the power of advertising.

I have been informed there will be a G.S.A. Southeastern Section meeting in Jackson, March 13-15, 1996.

## Environmental Committee

*Don't forget! The Environmental Committee meets on a bimonthly basis. Meetings begin at 11:45 on the 3rd Tuesday of every other month in the Commission Hearing Room at the Department of Environmental Quality, Highway 80 and Ellis Avenue. For Details, contact Steve Jennings at (601) 961-5205.*

## Luncheon Topic

Facies, Seismic and Sequence Stratigraphic Aspects of the

Frisco City Sand, Haynesville Formation (Kimmeridgian/Tithonian) of Southwest Alabama

by Lawrence R. Baria  
and Robertson Handford

The Frisco City (basal Haynesville sand) as well as middle and upper Haynesville sands continue to receive a concerted exploration effort due to the prolific oil potential they provide at relatively shallow depths. These Haynesville targets are located throughout Monroe, Conecuh and Covington counties, in southwest Alabama at depths from 9,000-12,000 feet (2730-3650 meters). Completion rates above 3,000 BOPD with sustained production between 250 to 1250 BOPD per well have made this currently one of the most active plays in the U.S. onshore.

The overall setting for Haynesville sand deposition occurs as continental and paralic sequences along the irregular, northern margins of the Gulf Coast extentional system. The greatest volume of sand deposition probably occurred in association with three distinct sea level lowstands and was reworked during succeeding marine transgressions (Kimmeridgian to Tithonian).

Regional subsurface cross-sections in combination with high resolution 2-D and 3-D seismic delineate several Haynesville sequence boundaries and sand body geometries typical of alluvial fan and pediment aprons.

Individual fields occur as discrete four-way structural closures where late Jurassic sands formed around or draped over exposed Paleozoic basement highs (inselbergs). Examination of slabbed core indicates that the reservoir sands are composed of angular, gravelly alluvial fans with avalanche and sheet flood bedding, wadi style braided stream deposits, fan deltas, and to a lesser extent, eolian and playa sediments. Petrographic studies indicate only (continued next page)

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### *Application Form*

### **Mississippi Geological Society, Inc.**

P.O. Box 422, Jackson, Mississippi 39205-0422

I hereby submit an application for membership in the Mississippi Geological Society for:  
**NEW / ASSOCIATE / RENEWAL / ADDRESS CHANGE** (circle one).

Please complete and return this card with your annual dues (\$20.00) (\$5.00 student) to the above address.  
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### *(Luncheon Topic continued)*

minor chemical alteration of feldspars and rock fragments in these arid sands; as a result, porosities averaging 20% and permeabilities measuring as high as 5 Darcies constitute excellent hydrocarbon reservoirs.

Lawrence R. Baria  
 1967 BS Geology, Northeast Louisiana University  
 1970 MS Geology, Northeast Louisiana University  
 Sandstone Petrology  
 1971 - 74 Attended LSU working on PhD. in Sulphate Geochemistry and Carbonate Petrology  
 1974 - 77: Getty Oil Company, Research  
 1977 - 79: Ensearch Exploration - Jackson, MS  
 1980 to present: Independent & Consulting geologist

Primarily involved in Smackover exploration (MAFLA area), and the last three years concentrating on Haynesville exploration.

## SPECIAL NOTICES :



The 1995 Larry Boland Scholarship recipients are (from left): Stephanie Carney-MSU, Edwin Emmer-USM, Lisa Price Waskom-Millsaps, and (not shown) Billie Robinson-UM.

### 1996 GCAGS Nominations

John Marble informs us that it is time for the 1996 GCAGS Distinguished Service Awards. Outstanding Educator and Honorary Membership are being solicited. Forms and requirements for these nominations are available from either John Marble or Steve Ingram at the Mississippi Office of Geology. Forms must be completed and forwarded to the Awards and Nominations Committee by March 1, 1996 for consideration.

### GEOLOGICAL REGISTRATION TASK FORCE/ADVISORY COMMITTEE

The second meeting of the Task Force/Advisory Committee was held December 5, 1995. The spokespersons for each of the four (4) subcommittees gave oral reports on their subcommittees progress and attendees had that opportunity to ask questions and provide additional input to each subcommittee. All subcommittees are proceeding on schedule with the anticipated recommendation for or against geological registration by the Geological Registration Task Force/Advisory Committee in Mississippi, March, 1996.

The Task Force desires to have an ongoing, open dialogue with all interested parties and will be publishing updates on its progress. Comments or questions may be directed to the following:

Rick Erickson, Acting Chairman

Mississippi Registration Task Force  
P.O. Box 254  
Ridgeland, MS 39158-0254  
phone - 601/961-5507

### NEW PUBLICATION AVAILABLE FROM THE MISSISSIPPI OFFICE OF GEOLOGY

#### THE PETROPHYSICAL CHARACTERISTICS OF JURASSIC RESERVOIRS OF THE COASTAL MISSISSIPPI COUNTIES AND ADJACENT STATE WATERS

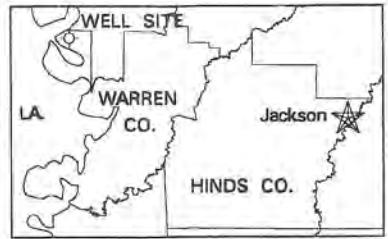
The Mississippi Office of Geology announces the availability of Open-File Report 42, "The Petrophysical Characteristics of Jurassic Reservoirs of the Coastal Mississippi Counties and Adjacent State Waters," by Stephen D. Champlin.

Open-File Report 42 is a study of the potential of the Jurassic-age rocks and the only Jurassic-age reservoir (Catahoula Creek Field, Hancock County) in the coastal counties and state offshore waters of Mississippi. The report includes core data and log-derived porosities from field and wildcat wells drilled in the study area. Additional data are included from selected Jurassic fields in adjacent southwestern Alabama and the Federal offshore waters of the Mobile OCS area. Also included as part of the study is a review of Mississippi's statewide Jurassic oil and gas production through December 31, 1994. The report, with 80 pages including 26 figures and 12 tables, was completed as a research project funded by a grant from the Minerals Management Service of the U. S. Department of the Interior.

Open-File Report 42 may be purchased from the Office of Geology at Southport Center, 2380 Highway 80 West, for \$10.00 per copy. Mail orders will be accepted when accompanied by payment (\$10.00 per copy, plus \$3.00 postage and handling for the first copy and \$1.00 for each additional copy). Send mail orders (with check or money order) to:

Mississippi Office of Geology, P. O. Box 20307, Jackson, MS 39289-1307

Because of recent successes in onshore salt dome exploration in the state, Jack Moody, Mississippi Office of Geology, has asked to have the following core description published for our members. The Amerada - Bonelli was drilled in 1947 but has become interesting due to more recent drilling on Eagle Bend Dome. The dome is located roughly 45 miles west of Jackson near the Mississippi River in Warren County. For details, contact Jack Moody (601) 961-5522 or Jack Henderson (601) 354-6328.



## Eagle Bend Dome

Amerada Petroleum Corp., # 1 Dabney-Bonelli

Warren County

Sec. 9-18N-2E

Loc.: 560'N; 660'E of SW corner of Section

Elev.: 109' DF      Total Depth: 5200'      Comp: plugged and abandoned June 15, 1947  
 Perfs: 3600-06'      Test: DST-Rec. 122' SW & 671' muddy SW /NS (1hr, 43 min.) BHFP 300#  
 Perfs: 3612-17'      Test: DST-Rec. 3412' SW /NS (4 hrs. 45 min.)  
 Tops: (Amerada-Larry Boland) Zil 2092', Win 2303', Wz 2614', Midway 3700', Ign. & altered Igneous 3838-4090', Tusc. 4090', Mass sd 4121-98', Com 4198', altered Igneous 4265-85', Igneous 4302-55', Gyp (?), 4355-4410', Igneous 4410-4505', Salt 4505'  
 Comments: \* Core and sample description by Jack Henderson, CPG 1360; 10-12-95  
               \* Amerada (L. Boland) reported oil shows: "3311' & 3313', por. sd, sl irreg dead oil stain; 3612', sl por lign. sd, irreg brn oil stain, sl ether cut; 3615', sl-fair por sd, more uniform brn oil stain, good ether cut; 3617, sl-fair por sd, more uniform brn oil stain, good ether cut; 3617', fair pro liq, calc sd, irreg stain, good cut, no fluor"  
               \* Drillers may have started oil base mud at 4546' because sample recovery became mostly cement and salt w/ spotted oil stain, Y fluor, and Y cut starting at this depth and continuing to total depth.

Symbols: \* Live (migrated) oil show + Dead oil shows (i.e., tar, asphalt, etc.) - Source type oil show (in impermeable rocks-Shale, siltstone, Limestone, etc.)

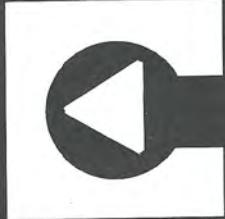
Abbreviations:	AA (as above)	G (Gold)	Ss (Sandstone)	xls (crystals)
	ang (angular)	gr (grain)	Sd (Sand-unconsolidated)	Y (Yellow)
	asph (asphaltic residue)	ign (igneous)	Sltst (Siltstone)	
	calc (calcareous)	inst (instant)	Sh (Shale)	
	Cs (course)	LCM (Lost Circulation Material)	stn (stain)	
	DGF (dull gold fluorescence)	Ls (Limestone)	vDGF (very dull golden fluor.)	
	Dolo (Dolomite or dolomitic)	NS (No Show)	vfc (very finely carbonaceous)	
	extr (extremely)	o.stn (oil stain)	vfm (very finely micaceous)	
	foss (fossiliferous)	qtz (quartz) (quartzitic)	vole (volcanic)	
	frags (fragments)	RR (Ring Residue)	WLV (water lain volcanics)	

### SAMPLE DESCRIPTION

1030-1090	Sh, lt gry, soft, vfm, vfc, sl calc: (crushed) sl-pale Y cut; dirty wht, vfm, sl carb (v fn), foss; shell frags in sample; Sh, lt-m brn, dk brnsh-blk, v fm & carb, NS
1090-1180	Sh, lt gry, m gry, wht, red; tr Sltst, wht, v fn, argill, tr sulphur xls; shell frags
1180-1220	Shell frags; Sh, m-dk red, silty-sdy (v Fn-Fn gr), glauc; Ss, m-dk red, v Fn-Fn gr, ang, glauc, v calc, v argill
1220-1250	Ss lt-m red, v Fn-Fn gr, ang, glauc, argill-v argill - no stn, no fluor, slow pale Y cut and pale Y RR, Sd, clear, frosted, Fn-Mgr, ang: Sh, lt-m red, v sdy in pt; Sh, dk brn-blk, vitreous in pt (Lignite?)
1250-1310	Lignite, dk-v dk brn, blk, resinous, tr wht film (gyp?) on frac planes: (crushed) slow pale Y cut, good Y RR
1310-1340	Ss, m red, v Fn-Fn gr, tr M gr, sub-ang, v argill: Sh, AA; Sh, AA w/tr sulphur, pale yell
1340-1430	Lignite, v dk brn, blk: os AA
1430-1460	Lignite, AA; Ss, lt-m red, v Fn gr ang, tr glauc, v argill-grades to sdy Sh; os AA tr sulphur "films", a few foss frags
1460-1490	os AA; tr siderite frags, dk brn, vfn xl:
1490-1520	No sample
1520-1525	Ss, lt red, v Fn-M gr, ang-subang, tr glauc, extr argill-grades to sdy Sh; scatt foss frags; Lignite, blk
1525-1550	Ls, wht, vfn blk speckled, v Fn xl, chalky, sl mica (vfn), sl foss
1550-1580	AA; Lignite, blk, (appr interbedded in ls) os AA
1580-1610	AA; tr Lignite, blk, subconc, frac, vitr; Ss, , dull-brt red, reddish-brn, v Fn gr-silt, v calc: (crushed) tr pale Y RR
1610-1670	AA; I frag ls w/ a blob of tar; Ss, AA w/films of v Fn calcite xls (frac surfaces), vfm
1670-1730	AA; Sltst, lt gry, scatt v Fn sd grs, argill vfm vfc, extr calc, tr mica, tr pyrite, (crushed) pale Y RR
1730-1760	Poor sample
1760-1790	Ls, lt tan-wht, Fn xl, tr v fn carb material; Ls, lt brn, micritic-v Fn xl, tr glauc; Sh, lt brn, vfm, vfc
1790-1820	Ls, buff-cream, tr pale brn micritic, tr foss; Qtz grs, clear & frosted, Fn-Cs, subrded-subang
1820-1910	Ls & Qtz grs, AA; Ls, wht, chalky, vfm, vfc, tr embedded Qtz grs; Sh, lt brn, vfm, vfc
* 1910-1940	Sd, frosted, clear, dull gry, v Fn-Fn gr, tr M gr, subang-ang, tr shell frags, few lg clear mica flakes, sl Y cut, fair Y RR
1940-70	Sh, pale earthy brn, v silty, vfm, vfc, non-calc; tr Sh, dk red, silty-sdy, vfc, v calc
1970-2000	Sh, dk red, AA; Sd, clear, frosted, tr milky wht, Fn-Mgr, ang-subang; tr Ls, lt brn, vFn xl, foss
2000-2120	Sh, lt earthy brn, vfm, vfc, tr chalk incl & foss frags; a few foss frags; Siderite, m brn vfn xl
2120-2180	AA; tr Sh, m red, hard, vfm, vfc
2180-2240	Sh, lt brn, vfm, vfc, v small chalk incl in pt: (crushed) tr pale Y RR
2240-2270	AA; tr Lignite blk, : (crushed) fair Y cut, fair Y RR
2270-2360	Sh, earthy brn, vfm, vfc, tr blk carb (?) laminae, scatt wht spots (chalk?), sl-v calc, , tr gyp xls (needles) on a few frags:(crushed) tr Y RR; Marl, wht-gry w/abund blk specks (carb?), extr calc: (crushed) NS
2360-2660	Marl, AA; glauc pellets; tr Sh lt- m brn, vfm, vfc, calc
2660-2690	AA; tr Sh, blk, carb: (crushed) NS
2690-2720	AA; Sd, clear, frosted, M-Cs gr, subrded
2720-2780	Sd, AA NS
2780-2840	Sh, lt m brn, vfm, vfc, glauc in pt, v calc; tr Sh, blk, carb, vfn xls sulphur (crushed) NS
2840-2870	Sh, blk, bitum: (crushed) sl Y RR; Marl & Sh, AA
2870-2900	Marl, lt gry, vfm, vfc, sl glauc in pt

2900-2930	Sh, lt brn, wht speckled (chalk?), vfc, vfm, extr calc; Marl, AA; Sh, blk, carb, some heavy sulphur films (vFn xls); tr Sltst, buff-brn, red speckled, vfm, vfc
2930-2960	Marl, lt gry, blk speckled (carb?), vfm; Sh, lt earthy gry, vfc, vfm; Ss, m red, v Fn-Fn gr, glauc
2960-2990	Sh, buff, lt brn, vfm, vfc, extr calc; Marl, AA: tr Ss, lt gry-red speckled, v Fn gr-silt, hard, NP
2990-3020	Sh, lt gry-buff, vfm,vfc; Ss, AA; Sh, red, sdy (v Fn gr), glauc hard; foss frags
- 3020-3050	Sltst, lt gry, blk speckled, vfm, vfc, sl calc: (crushed) v sl Y RR; Sh & Marl, AA
- 3050-3080	Sh/Marl, lt gry, buff, vfn, vfc, extr calc; Sltst, AA; Sh, blk, carb, tr sulphur xls: (crushed), sl Y RR
- 3080-3110	Ss/Sltst, lt gry, red speckled in pt, v Fn gr, vfm, vfc, v calc, NP; Sh/Marl, AA
- 3110-3140	Sh/Marl, AA; tr Ss, AA; Sh, rust-red & orange-red, v sl carb (v fn) in pt
- 3140-3170	Ss, ltgry, scatt. red specks, vFngr, v silty, vfm,vfc, tr yell sulphur xls; tr Lignite, dk brn-blk, v brittle, subconc frac: (crushed) fair Y RR
- 3170-3200	Sh, lt brn, vfm, vfc, extr calc; tr Sh, lt-dk red, vfm, vfc, hard
- 3200-3230	AA; increase % red Sh; tr yell sulphur xls; a few large calcite xls
* 3230-3290	Ss, lt gry, Fn gr, v calc, kaol(?), v spotted lt brn o.stn, no fluor, slow Y cut
* 3290-3320	Ss, AA, disaggregated in pt, v spotted lt brn o. stn, no fluor, slow Y cut, fair Y RR
* 3320-80	Ss, lt gry, v Fn gr, v silty, vfc, vfm; no stn, no fluor, slow Y cut, fair pale Y RR
* 3380-3410	No sample
* 3410-3500	Ss, lt gry, wht speckled (kaol), v Fn-Fn gr, vfm, vfc, sl glauc, por in pt: v sl. Y cut, Fair Y RR ; Sh, blk, pseudo slkensides, waxy; tr Coal, blk, brittle
- 3500-3530	Ss, lt gry, reddish speckled/mottled in pt, vFn-Fn gr,v silty, vfm, vfc; tr Ss. (Ironstone) red-brn
- 3530-3560	Ss, AA; Sh, buff-lt brn, vfc, vfm, NS; Coal, blk, vitr inpt, subconc frac in pt: (crushed) pale Y RR
- 3560-3590	No sample (see E-log-interesting looking Ss in this interval)
- 3590-3620	Ss, lt gry, scatt red grs, v Fn gr, silty, kaol, v fn, vfc, tr glauc NP NS
* 3620-3650	Ss, lt gry, irreg brn stn (oil) in lg %, v Fn-Fn gr, glauc, subang, scatt red, blk, wht incl, por in lg%, no fluor, instant Y cut, heavy Y-G RR (sample appears to be 30' low to E-log tested thru perfs 3600-06' and 3612-17' - rec saltwater, NS
- 3650-3680	Ss, lt gry, wht spots (kaol:), v Fn-Fn gr, pred v Fn gr, scatt red specks, scatt glauc, NS
- 3680-3720	Sh, lt brn, vfc, vfm; tr Sh, lt-dk red (ironstone?)
- 3720-3750	Siderite, m-dk bm, dk reddish-brn, v Fn xln, argill, calcite veinlets; Sh, m gry, vfm, vfc
- 3750-3810	Sh, AA; Sh, m gry, vfm
+ 3810-3860	AA; Ign rock, dk gry w/bluish-wht veinlets, abund v small pyrite xls; scatt asphalt incl: (crushed) rapid pale Y cut, fair Y RR; tr Ign Rock, orange-red, cream, mottled; tr Ash (?), lt gry, v. fnly gran w/areas, v Fn xls sulphur; tr Ign Rock, lt-m brn w/spots blk resinous asphalt; (crushed) slow Y cut, heavy Y RR; abund siderite
- 3860-3870	AA; Ign Rock, red, lt tan, cream w/clusters blk minerals
- 3870-3874	Sh, m gry, vfm; Ign Rock, wht, tr red minerals; (crushed) v weak tr v pale Y RR
- 3874-3895	Ign Rock, AA; Ign Rock, lt tan-wht-red w/blk minerals & laths: (crushed) v slow pale Y cut
- 3895-3905	Sh, dk gry, vfm; Sh, lt brn, vfm, vfc; Ign Rock, AA: abund Ig calcite xls
- 3905-3910	Ign Rock, AA; Ign Rock, wht, lt tan, tr red; Sh, AA w/gyp(?) xls (needles) on frag surfaces
- 3910-3930	Sh, m-dk gry, vfm; Ign Rock, wht-pale pink, scatt chalcopyrite & pyrite, tr calcite veinlets
- 3930-3937	Sh, AA: (crushed) NS: tr Ss, lt gry, v Fn-Fn gr, pred Fn gr, por; tr Sltst, m gry, v Fn xls of pyrite, sl calc
- 3937-3947	(Core) Sh, blk, waxy in pt, carb: (crushed) NS
- 3947-3957	Sh, AA: Ign Rock, m gry-wht (lg calcite xls); Ign Rock, lt brn, small blk xls; numer lg calcite xls in sample
- 3957-3960	AA; Sltst, lt gry & blk speckled (carb?), non-calc, argill, vfm; tr Sh, lt brn, vfm, vfc, soft: (crushed) tr pale Y RR
- 3960-4020	Ign Rock, lt-m red, dense-v Fn xln, tr Fn xln; Ign Rock, wht-lt gry, red speckled, v Fn xln
- 4020-4030	Ign Rock, pred, wht; Sh, m-dk gry, vfm; Sltst, wht, tr red specks, vfm, v calc
- 4030-4050	AA; pred Sltst, m brn, vfm, vfc; Ign Rock, AA (crushed) NS
- 4050-4060	Sltst, AA; tr Sltst, altered, secondary mineralization)-pale red & pale grn lens; Ss, lt gry-red mottled, v Fn gr, extr silty: NS
- 4060-4090	Sltst, wht, tr red specks,vfm, vcalc( secondary mineralization?); Sltst, lt tan, vfm, vfc, argill, NS; tr Sh, buff, vfm, vfc. glauc
- 4090-4100	AA; Ss & Sd, wht, v Fn-Fn gr, v calc, NS
- 4100-4110	Ign Rock, wht-red, v Fn xln; "loose" Lg calcite xls; Sh, dk gry, vfm, vfc, non-calc
- 4110-4121	(circ) Sh, dk gry, vfm, vfc: (crushed) NS; tr Ss, wht, few red specks, v Fn-Fn gr, ang-subang, v calc
* 4121-4125	Sh, dk red, tr pale grn mottling, dk reddish-brn, vfm, waxy on some surfaces; tr Ss, wht, tr red specks, v Fn-Mgr, ang, v calc, tr pyrite xls, por in pt: v slow pale Y cut, fair pale Y RR 4125-4130 AA; sl increase % Ss
- 4131-4141	(core rec 1 1/2'): Ss, lt, brn "oil stn", v Fn-Mgr, subang, v silty, kaol, prob NP: v weak pale Y cut and v pale Y RR (Cuttings): Ss,clear,Fn-M gr, ang, kaol, NP NS; Sh, m-dk reddish brn, vfm: (crushed) NS; tr Chert, lt red, hard (prob pebbles)
- 4140-4190	Chert, dull gry, lt brn, lt yell-brn, pink, micro-pebbles & pebble frags; tr Ss, AA except v hard
- 4190-4200	AA; Ss, wht, lt tan, v Fn-Fn gr, tr M grs, v silty, kaol, hard, NP
- 4200-4210	AA; tr Ss, red, v Fn gr, v silty NP
- 4210-4220	Sh, lt-dk red, vfm; Ss, wht-dull gry, v Fn-Fn gr, ang-subang, silty, tr gry Sh, laminae, v pyritic in small %: tr Ss, cem.w/iron, hard NP NS; Sh, dk gry, vfm
- 4220-4230	Ss, lt gry, AA; tr Ss, wht-lt gry, vFn-Fn gr, kaol, numer pyrite xls
- 4230-4240	Poor sample: Sd, clear, wht, v Fn gr ang: Sh dk red, vfm
- 4240-4260	Sh, m-dk gry, vfm: (crushed) NS; Sh, m-dk red, reddish-brn, vfm; Ss, lt-m gry, wht, v Fn-M gr, subrded-subang, silty
- 4260-4290	Sh, AA; tr Salt, clear, Cs xln
- 4290-4310	Salt, clear, wht, large xls; Ign Rock, lt tan-cream w/blk min, vFn-v Cs xln; Sh, red
- 4310-4335	No sample (taken 1980 by D. Harrelson for age determination - not usable)
+ 4335-4375	Ign Rock, lt-m grnsh gry w/blk min, v Fn-Cs xln, tr calcite veinlets: (crushed) v pale Y RR; Ign Rock, lt brn, tr pink w/calcite veinlets; tr Sh (?)-Ign Rock (?), pale yell-grn w/wht xls
- 4375-4395	No sample
- 4395-4415	Salt, clear, wht, Fn xln
+ 4415-4430	Ign Rock, lt grn, wht fibrous xls, blk speckled in pt w/some calcite veinlets: (crushed) dull Y RR; Salt xl clusters in samples
+ 4430-4450	AA; (crushed) v weak v pale Y RR [D. Harrelson K-Ar 96.1 +/-4.3 ma- middle Cenomanian,(Camptonite) sample 4440-4450]
- 4450-4470	Ign Rock, AA
- 4470-4500	Ign Rock, (?), m gry, m brn, v Fn xln, (poss a foss Ls?)
- 4500-4510	AA: tr Salt, clear, xln
- 4508-4518	(Core): Salt, clear, lumps
- 4518-4665	No samples-set 6 5/8" @ 4546

4665-4680 Cement, irreg but abund o.stn, heavy DY RR (os from 4665' to T.D. believed due to mud contamination); Sh, pink w/a few embedded clear - lt brn M-Cs Qtz grs  
4680-4740 AA  
4740-4765 No sample  
4765-4775 Cement, o.stn AA: tr Ss, wht, v Fn-Mgr, pred, v Fn gr, ang-subang, friable, v ashy (?), v calc NP  
4775-4830 AA  
4830-4850 AA; tr Salt, clear, Fn xln  
4850-4905 Salt  
4905-4980 No samples  
4980-5200 Salt DTD 5200' June, 1947



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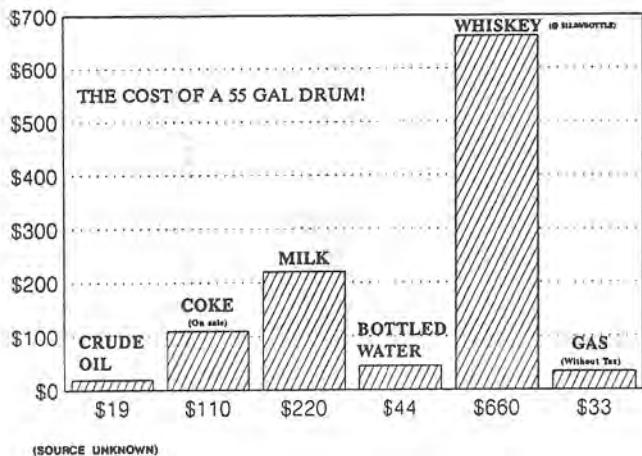
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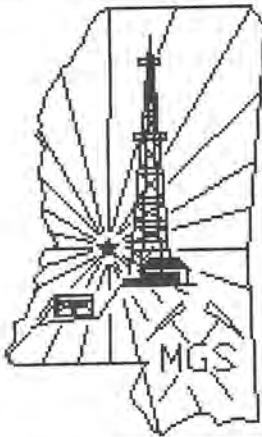
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VOLUME 44

NUMBER 6

February 1996

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## Lunch Schedule

Feb 13 Paleoclimate  
Evening Meeting

March 12 open

April 9 open

May 16 Spring Social  
& Elections

## President's Letter

*Les Aultman*

I don't know about you but I really enjoyed the January meeting. We had a wonderful crowd and heard an extremely good presentation. Larry Baria's talk was very good and very timely.

The February meeting will feature Southeastern States Geological Legend, Dudley Hughes. Due to the complex nature of his talk we will hear his presentation at 5:00 p.m. followed by a reception.

The 37th Annual Gem, Mineral, Jewelry & Fossil Show will be held at the fairgrounds on February 24th and 25th.

If anyone reading this understands the wildly fluctuation oil and gas futures prices many of us would appreciate your talking to our group in the spring.

## Luncheon Topic

### Earth's Atmospheric History Revised

*by Dudley J. Hughes*

Re-interpretation of geological events indicate much higher temperatures existed during the Precambrian than present theories contemplate. Atmospheres on each planet are now generally believed to have been formed during accretion, attaining maximum size by 3.9 Ga as impacts subsided. The Earth's atmosphere initially exceeded 500 bars. Major components were some 180 bars of water, 100 bars of carbon dioxide and possibly 100 to 150 bars of sulfur gases.

As the planet cooled, its atmosphere began a process of slow collapse brought about by contraction and gas removal by phase changes or chemical action. Elemental sulfur gas was transferred very early, eventually becoming bound in chemical compounds of the lithosphere. The second major gas to transfer was water resulting in the Earth's oceans. After removal of sulfur

gases and water, carbon dioxide became the principle gas in the atmosphere for some two billion years. Carbonate rock deposition removed carbon dioxide from the atmosphere primarily during the Phanerozoic, leaving nitrogen, a minor gas, the principle gas in the Earth's atmosphere.

The geologic record reveals the timing and magnitude of these events. Atmospheres which existed on Venus, Mars, and on some of the satellites of the outer planets, support this interpretation of Earth's atmospheric history.

Dudley J. Hughes  
1951 BS Geology, Texas A&M  
1952-53 US Army (Artillery)  
1953-57 Union Prod. Co., Geologist - Jackson, MS  
1957-60 American Petrofina, Dist. Geologist "  
1960-65 Triad Oil & Gas Partner "  
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1976-84 Australian Exploration  
1973-85 Chemical Plants - England, Italy, and Switzerland

## Environmental Committee

*Don't forget! The Environmental Committee meets on a bimonthly basis. Meetings begin at 11:45 on the 3rd Tuesday of every other month in the Commission Hearing Room at the Department of Environmental Quality, Highway 80 and Ellis Avenue. For Details, contact Steve Jennings at (601) 961-5205.*

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## GEOLOGICAL REGISTRATION TASK FORCE/ADVISORY COMMITTEE

The third meeting of the Task Force/Advisory Committee was held January 6, 1996. At this meeting, the positions of chairman and recording secretary were formalized. By unanimous vote, the members of the Committee elected Rick Erickson to the chairmanship and Steve Ingram to recording secretary. It was further moved that in the absence of the chairman, that the recording secretary would assume that position.

After these motions were acted upon, the spokespersons for each of the four (4) subcommittees updated the group on their subcommittee's progress and attendees had an opportunity to ask questions and provide additional input to each subcommittee. In keeping with the intent of the Committee for input from all interested parties, Mr. Eugene Wardlaw with GeoScience Engineers, a member of the Mississippi Engineering Society, was in attendance, providing constructive advice to the Task Force.

As previously noted, final written subcommittee reports are scheduled for submittal at the next Task Force meeting. The Mississippi Geological Registration Task Force/Advisory Committee is preparing to pass a recommendation, for or against geological registration, by March, 1996.

The Task Force desires to have an ongoing, open dialogue with all interested parties and continues to publish updates on its progress. Comments or questions may be directed to the following:

Rick Erickson, Chairman 601 / 961-5507  
Mississippi Registration Task Force, PO Box 254, Ridgeland, MS 39158-0254

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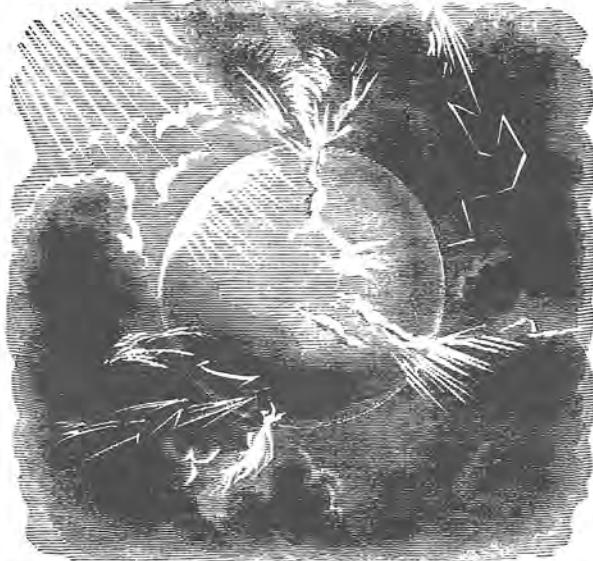
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The creation of the earth can not fail to be a matter of speculation to those who seek, in material cause and effect, its rule of existence, to whom it is not given to see the work of a divine power. (contributor: Jack Henderson)

## ***Oil & Gas Journal***

Major differences exists in computations for import dependence, publicized over the past 20 years. The Energy Information Administration (EIA) divides net petroleum and products imports by products supplied to get the percentage of dependence. 1994 products supplied averaged 17,718,000b/d, while net imports were 8,054,000b/d; dependence was 45% in 1994. Calculating dependence in this way implicitly assumes differences among petroleum products as insignificant relative to overall dependence, e.g. - light product imports (more in demand) are offset by petroleum coke exports. A further assumption to the EIA calculations is that an event causing disruption of imports would likewise disrupt exports.

Other analysts divide total crude and products imports (without subtracting exports) by products supplied. Using this calculation with total 1994 average imports (8,996000b/d) the U.S. dependence is ran 50.8% last year.

EIA believes that using the net imports in the numerator of the calculation yields a better indicator of real import dependence because U.S. petroleum exports do not make the country more dependent on foreign suppliers. In spite of the lower EIA calculation of dependence shown above, EIA does predict an increase in U.S. net import dependence of about 58% by 2005, expecting it to hold there through 2010.

---

## ***Journal of Petroleum Technology***

Published estimates of the potential U.S. gas resource base vary considerably. Never-the-less, there is general agreement that a large, accessible natural gas resource base exists which backs up the current inventory of proved gas reserves and is available to make a larger contribution to the nation's energy supply. Variance in assessments of the potential gas resources are based on different perceptions of that resource

base, data sources, and analytical approaches, all of which lead to different conclusions. In light of the varied approaches, the differences relate more to the role of current technology, and the employment of forthcoming technical advances projected into the future. Again, each analytical approach indicates a stable, accessible, untapped natural gas resource base upon which the U.S. may depend.

---

## ***Geotimes***

Oil and gas wells are orphaned for many reasons — operators go broke, owners die, wells cease to be profitable. States must then plug the orphan well and assume all abandonment and environmental liabilities for them. States are not in a position to analyze the well's economic value. The orphanning of wells normally is a negative situation; however the Petroleum Foundation of America (PFA) has created an opportunity out of the problem. PFA, based in San Ramon, California, was formed two years ago to receive donations from domestic oil and gas sources and channel them into charitable, energy-related projects. PTA can receive partnership interests, fee mineral rights, oilfield equipment, and geologic data. The organization solicited universities across the nation and has enlisted support from petroleum engineering departments to conduct analyses for donated wells. Graduate students and upper-class engineering majors will study well data to produce "first-pass" economic evaluations. If recoverable reserves are detected, recommendations will be made for production. Advances in production technology may provide the means to extract it when otherwise abandonment would have taken place. Owners who donate their wells to PFA would receive a tax deduction based on the market value of the property. The foundation would be granted title to the well and would work with university departments to develop an appropriate workover program. PFA is particularly interested in establishing joint ventures with domestic producers to undertake the workover projects. PFA welcomes the involvement of retired geologists and professors to work with students in developing initial cost analyses

and workover plans. Revenues from the recovered wells (under joint agreements) would go to the domestic producer. For more details contact PFA.

---

The apparent passion of the Communists for a return to the grim past should not be underrated because, according to opinion polls, 75%W of the public is disappointed with reform and a majority deems the market — or, at least, their experience with something of that name — a failure. Historically, over the past 300 years, Russia has turned to the West six times seeking to modernize its economy and to reform its society. The first five attempts, starting with Peter the Great and ending with Lenin, failed and autocracy reasserted itself. The sixth attempt, begun by Boris Yelstin in 1991, is now at a critical juncture. With the parliamentary elections in December {results of} and the presidential election next June, Russia is likely to face another try at reversal. "The chains of habit are too weak to be felt until they are too strong to break" — Samuel Johnson.

---

## ***Mississippi Dept. Environ. Quality Environmental News***

Most of Mississippi's groundwater is unaffected by agricultural practices, according to a recently released report by the Mississippi Department of Environmental Quality. Out of 348 wells sampled (326 drinking water wells, and 60 irrigation and fish culture wells) 326 or 96% had no detectable concentrations of pesticides. Of the 22 wells found to have detectable concentrations of pesticides, 19 were within safe drinking levels established by the EPA. The 3 wells exceeding safe levels of pesticides were retested. Only 1 remains unsafe due to improperly stored chemicals near the wellhead. Tests following removal of the chemicals showed a decline in water contamination.

DEQ tested for 96 pesticides and related compounds, and 27 minerals, residues, nutrients, and metals. Only 4 wells exceeded acceptable levels of nitrates, the 27 mineral constituents tested for.

## (continued DEQ News)

Contamination from household septic systems, rather than agricultural sources, could not be ruled out

Some chemicals not normally associated with agricultural use were detected in a higher percentage of wells, but most concentration's were considerably lower than safe level for drinking water.

## *Earth*

Pesticides have spread far enough to pollute even the least-developed parts of the globe – despite industrialized nation's having banned some of the compounds. Simonich and Hites of Indiana University have discovered traces of chemicals related to DDT, chlordane, lindane, and 19 other insecticides in tree bark from 90 locations around the world. Not surprisingly, bark from cities in industrialized countries contain the highest concentrations of the organochlorine compounds. Samples from Japan were concentrated in and around Tokyo, but research found residues in undeveloped areas in remote South American rain forests. The compounds became more concentrated at higher latitudes which may suggest that the compounds evaporated in hotter latitudes and then re-condensed in colder areas.

## *21<sup>st</sup> Century*

A new German spectrometer called Crista, deployed on the U.S. Space Shuttle in 1994, has produced the first high precision, 3-D global map of ozone. According to the University of Wuppertal, who designed the instrument, the ozone layer is a patchwork of large- and small-scale structures and not a uniform longitudinal phenomenon. Crista's preliminary results show that the currently accepted ozone models are "junk".

Everyone would like to know what the temperature will be tomorrow and some

far-sighted people wonder what it will be like fifty, one hundred, or even thousands of years into the future. The only honest answer is that we really do not know.

As indicated by the fluctuations and sometimes rather rapid reversals of global and regional climate briefly documented here, it is not possible to draw competent conclusions from trends of a few decades, or even centuries concerning the direction of climatic trends. It is certainly not possible to forecast future climates on the basis of one parameter (CO<sub>2</sub> density). What the historical record does tell us is that we are in a secular tendency toward a new glaciation. To propose – as does the currently popular Malthusian fad known as global warming – that we are moving into a period of substantial glacial melt and sea-level rise runs counter to the evidence and the conclusions of more than two centuries of scientific work.

It is sufficient to point out a few anomalies to call the whole global warming conjecture into serious doubt.

\* The Greenland ice sheet and snow build-up in Antarctica have recently advanced.

\* Since 1980, there has been an advance of more than 55% of the 625 mountain glaciers (Austria, Switzerland, Italy, Iceland, U.S., and Soviet Union) under observation by the World Glacier Monitoring group in Zurich (from 1926-1960, 70%-95% of the monitored glaciers were in retreat).

\* The limit of the citrus-growing region in the U.S. Southeast has moved southward, and the U.S. Dept. of Agriculture has revised its hardiness zones southward.

The often cited figures for the current warming trend show a rise in mean global temperature of about 1 degree F since 1880. However, these data are somewhat suspect. A great deal of statistical manipulation is required to try to discount the warming caused by urbanization around the monitoring stations. What one should bear in mind is that the global climate in 1880, including the Northern Hemisphere was exceptionally cool. Thus the curve starts from a point in time when temperatures were unusually low, which exaggerates the warming effect.

The global temperature curve shows warming from 1880-1940, cooling from 1940-1976 and renewed warming from 1976 to present – the net rise being .5C or about 1 degree Fahrenheit. The point should be made that most of this warming took place in the first half of the century before widespread use of fossil fuels (and increased CO<sub>2</sub> emissions). Moreover, the recent global temperature increase has occurred over tropical regions. Prior to 1940 the warming was greatest in the North Atlantic during winter. Since 1976 the warming has been greatest in the tropics with some of the earlier warming in the North Atlantic decreasing. These are conditions that apparently favor advance of glaciation.

Consider the following with regard to the role of atmospheric CO<sub>2</sub>:

\* Preindustrial CO<sub>2</sub> estimates are subjective. Nineteenth century measurements of CO<sub>2</sub> were carried out with error factors of up to 100%.

\* The Mauna Loa observatory in Hawaii is considered an ideal site for CO<sub>2</sub> monitoring; however it is also near the

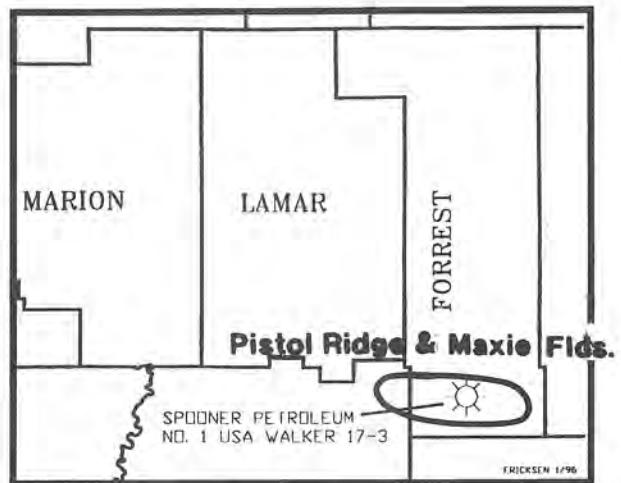
site of an active volcano whose CO<sub>2</sub> emissions must be "edited" from the data.

\* The concentrations of CO<sub>2</sub> in air bubbles trapped in ice are often taken as previous atmospheric concentrations, which assumes that the air's composition remains unchanged. Studies show that CO<sub>2</sub> content in ice can be greatly enriched or depleted in comparison to original atmospheric levels.

\* Outgassing from the Earth's mantle annually is 10 times that of man-made sources, and the CO<sub>2</sub> exchanged annually between the ocean and the atmosphere is much greater than that. If all the Earth's fossil fuels were burned it is likely that the CO<sub>2</sub> produced would be dissolved in the ocean before reaching an atmospheric concentration double current levels.

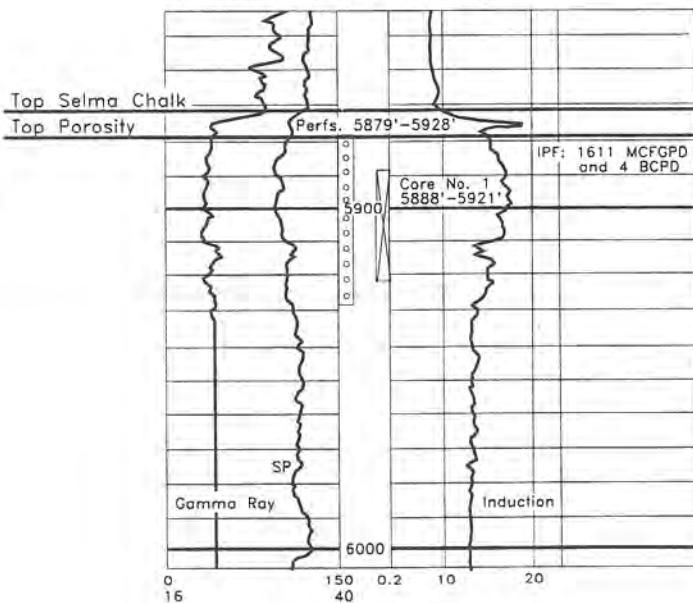
It is not out of the question that a short-term, counter-cyclical trend, as is conjectured in human-induced CO<sub>2</sub> driven warming, might disrupt the longer-term cooling trend; but this must be proven. The conjecture of the global warming case has not been put forth as science, but more as scare scenarios to gain public support and funding.

The Spooner #1 USA-Walker 17-3, Maxie Field, was drilled and completed to evaluate a high porosity but low permeability chalk reservoir in the Navarro section of the Selma Chalk. The Schlumberger litho density-compensated neutron log indicated porosity from 5880' to 5928' which is confirmed by core analysis from 5888' to 5921'. The matrix porosity ranged from 14.7% to 20.4% but the interval has almost no permeability, ranging from 0.2 to 0.3 md. Perforations, 5879-5982', were frac'ed and the well flowed 1611 MCFG and 4 BCPD. Production in December averaged about 200 MCPD which may indicate the need of a more extensive frac-job. This well suggests the possible existence of high pore volume but low permeability chalk reservoirs in many wells, some not suspected, which may contain significant reserves. Due to the widespread nature of this resource future experimentation with fracturing and/or horizontal drilling may be warranted. We thank Spooner Energy for permission to use this information. (Contributed by Mississippi Office of Geology)



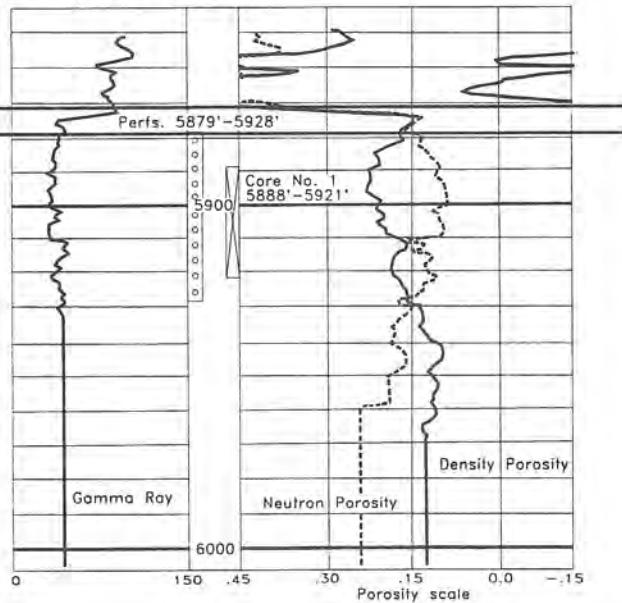
### Schlumberger Array induction gamma ray & correlation log

COMPANY: Spooner Petroleum  
WELL: U.S.A. Walker 17-3 #1  
FIELD: Maxie  
COUNTY: Forrest STATE: Mississippi  
LOCATION: Section 17 T1S-R12W



### Schlumberger Litho-density compensated neutron log

COMPANY: Spooner Petroleum  
WELL: U.S.A. Walker 17-3 #1  
FIELD: Maxie  
COUNTY: Forrest STATE: Mississippi  
LOCATION: Section 17 T1S-R12W

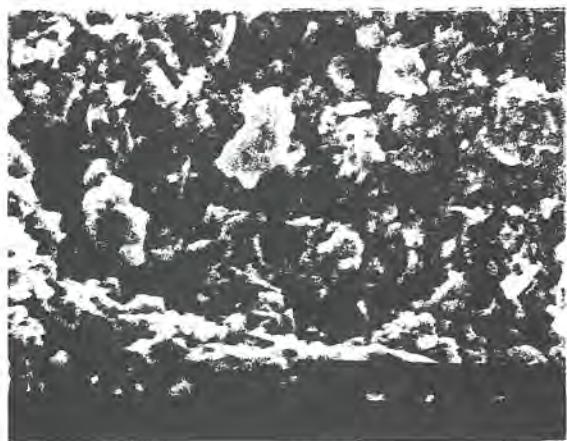


County: Forrest  
Field: Maxie  
Operator: Spooner Petroleum Co.  
Elev: 313' GL 323' KB  
Casing: 8 5/8 @ 579' 4 1/2 " @ 6000'  
IPF 1611 MCFGPD + 4 BCPD

Sec. 17-15-12W  
Loc: 400' FNL X 1600' FWL  
Fee: #1 U.S.A.-Walker 17-3  
Total Depth: 6001'  
Perfs: 5879-5928'  
Compl: 8-16-95

Sample descriptor by: Jack Henderson CPG 1360 7-95  
Comment: December, 1995 - Prod. average: 200 MCFGPD  
Tops: (operator) Wilcox 2851', Selma 5874'

Core No. 1- 5888-5921' (33') Upper Selma Chalk (Navarro)  
5888-5909': Ls, cream-pale gray, v. chalky in pt., micritic microcoquina in thin beds, scatt. extremely small pyrite xls, near-horizontal stylolites, no oil stain, no fluor., no cut except after crushing - all samples have a slow dull yellow cut and a weak dull yellow ring residue.  
5909-10': AA except cut and ring residue are v. slow and v. weak  
5910-11': AA except great increase in stylolites and has a 6" stylocumulate\*  
5911-12': AA except decrease in stylolites and no stylocumulate  
5912-14': AA except increase in stylolites and has a 3" stylocumulate  
5914-15': AA except has only a few stylolites and no stylocumulate  
5915-16': AA except has increase in stylolites and has a 4" stylocumulate  
5916-19': AA except has decrease in stylolites and has no stylocumulate  
5919-21': AA except v. stylitic



SEM x 2000; Millsaps College

SMP NO.	DEPTH FEET	PERM md(Ka)	FLD POR	REL POR	OIL% PORE	WTR% PORE	PROB PROD	DESCRIPTION	ODOR	FLU	GRN
1	5888.0-89.0	0.05	18.5	19.3	0.6	37.5	LP	Chalk white-gray	NO	NO	2.72
2	5889.0-90.0	0.06	18.5	19.7	1.2	37.7	LP	Chalk white-gray	NO	NO	2.73
3	5890.0-91.0	0.09	17.8	18.7	1.3	33.1	LP	Chalk white-gray	NO	NO	2.73
4	5891.0-92.0	0.10	19.0	19.6	1.1	32.4	Cond	Chalk white-gray	NO	NO	2.71
5	5892.0-93.0	0.10	20.0	19.2	1.1	32.4	Cond	Chalk white-gray	NO	NO	2.73
6	5893.0-94.0	0.20	19.2	18.4	0.6	32.2	Cond	Chalk white-gray	NO	NO	2.73
7	5894.0-95.0	0.20	18.4	19.4	1.9	35.9	Cond	Chalk white-gray	NO	NO	2.73
8	5895.0-96.0	0.20	20.4	20.4	0.5	36.0	Cond	Chalk white-gray	NO	NO	2.74
9	5896.0-97.0	0.10	20.2	19.9	0.6	31.9	Cond	Chalk white-gray	NO	NO	2.74
10	5897.0-98.0	0.10	19.8	18.6	0.2	32.7	Cond	Chalk white-gray	NO	NO	2.74
11	5898.0-99.0	0.20	19.0	18.7	0.4	33.5	Cond	Chalk white-gray	NO	NO	2.71
12	5899.0-0.0	0.10	19.0	18.8	0.4	32.3	Cond	Chalk white-gray	NO	NO	2.73
13	5900.0-1.0	0.09	17.6	17.3	0.7	39.1	LP	Chalk white-gray	NO	NO	2.73
14	5901.0-2.0	0.09	18.4	18.5	0.0	33.6	LP	Chalk white-gray	NO	NO	2.73
15	5902.0-3.0	0.10	17.6	17.4	0.6	32.4	Cond	Chalk white-gray	NO	NO	2.72
16	5903.0-4.0	0.10	18.9	19.0	1.8	34.6	Cond	Chalk white-gray	NO	NO	2.72
17	5904.0-5.0	0.10	19.1	18.9	1.0	35.0	Cond	Chalk white-gray	NO	NO	2.73
18	5905.0-6.0	0.10	17.6	17.6	1.9	29.7	Cond	Chalk white-gray	NO	NO	2.72
19	5906.0-7.0	0.09	17.6	17.3	0.3	34.4	LP	Chalk white-gray	NO	NO	2.72
20	5907.0-8.0	0.30	17.4	16.8	1.0	31.6	Cond	Chalk white-gray	NO	NO	2.72
21	5908.0-9.0	0.09	17.9	17.6	1.9	34.9	LP	Chalk white-gray	NO	NO	2.72
22	5909.0-10.0	0.07	15.5	16.2	0.0	49.0	LP	Chalk white-gray shy	NO	NO	2.71
23	5910.0-11.0	0.07	14.5	14.7	0.0	40.9	LP	Chalk white-gray shy	NO	NO	2.72
24	5911.0-12.0	0.09	14.6	14.5	0.0	38.6	LP	Chalk white-gray shy	NO	NO	2.72
25	5912.0-13.0	0.10	17.5	17.7	0.5	41.9	Cond	Chalk white-gray shy	NO	NO	2.72
26	5913.0-14.0	0.10	16.5	16.6	0.9	36.2	Cond	Chalk white-gray shy	NO	NO	2.72
27	5914.0-15.0	0.10	16.6	16.8	1.0	41.9	Cond	Chalk white-gray shy	NO	NO	2.74
28	5915.0-16.0	0.09	17.8	17.5	0.3	41.3	LP	Chalk white-gray shy	NO	NO	2.72
29	5916.0-17.0	0.10	16.4	15.9	0.5	42.9	Cond	Chalk white-gray shy	NO	NO	2.72
30	5917.0-18.0	0.20	16.2	15.9	0.8	42.8	Cond	Chalk white-gray shy	NO	NO	2.72
31	5918.0-19.0	0.08	15.2	15.3	0.0	43.1	LP	Chalk white-gray shy broken	NO	NO	2.74
32	5919.0-20.0	0.09	17.0	17.7	1.6	55.7	LP	Chalk white-gray shy broken	NO	NO	2.73
33	5920.0-21.0	0.02	15.9	16.2	0.0	41.3	LP	Chalk white-gray shy broken	NO	NO	2.73
34	5921.0-22.0	0.06	16.0	16.3	0.0	31.0	LP	Chalk white-gray shy broken	NO	NO	2.74

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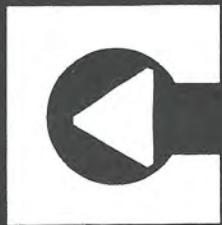
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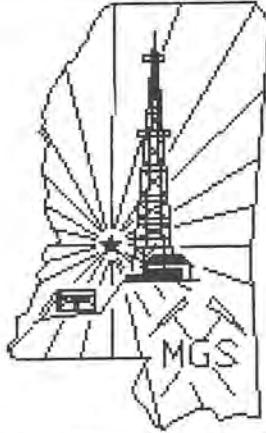
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VOLUME 44      NUMBER 7

March 1996

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## Lunch Schedule

March 12 Walkinshaw  
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& Elections  
Summer Recess.  
Professional luncheons  
resume in September.

## President's Letter

*Les Aultman*

As I write this article the spot price of oil is \$21.00. A leading investment firm is predicting spot prices of \$23.00 to \$24.00 in May of 1996. Hopefully we are seeing the leading edge of an easing of the petroleum oversupply we have been living and persevering through.

We look forward to hearing Steve Walkinshaw's presentation concerning Nuevo's 3-D program at Brownsville Dome. Their recent discovery and subsequent confirmation well should bring more attention to the numerous shallow piercement domes in Mississippi and North Louisiana.

We wish to thank Dudley Hughes for the presentation of his research into paleotemperatures and paleoclimate of earth. Dudley's basic conclusions were reasonable and therefore probably abhorrent to many chicken-little environmentalists.

## Luncheon Topic

Brownsville Dome  
*by Steven S. Walkinshaw*

In December of 1994, Nuevo Energy, along with its partners Output Exploration and Presidio Energy, acquired the largest active ("live") channel, deep-hole dynamite, 3D survey ever shot onshore, worldwide. The target was the Brownsville Salt Dome, which was a pure exploration target with no here-to-fore established production. The dome is located in the Interior Salt Basin of Mississippi, just west of the state capitol, Jackson. In acquiring the survey, the equivalent of three normal 3D field crews was employed using state-of-the-art equipment and intensive on-site quality control. In a rare glimpse of an exploratory 3D survey, the aspects, risks, and potential rewards which precipitated this exploratory venture will be presented.

## Vitae

Steven S. Walkinshaw has sixteen years of industry experience. He graduated from Millsaps College in 1981 with a B.S. with Honors in Geology. From 1981 to late 1989, he was employed with Mr. Dudley Hughes, Hughes Eastern Corporation (HEC), as staff geologist, serving as District Geologist in the latter half of his tenure at HEC. Since 1989, he has been affiliated with Paramount Petroleum, both as Manager of the Cougar Exploration Group from 1989 to 1992, and in his current capacity as Exploration Geologist for Paramount and its parent company, Nuevo Energy. Mr. Walkinshaw has extensive experience in the Smackover Trend of the MAFLA area; the Black Warrior Basin; the Lower Tuscaloosa, James Lime and Hosston trends of Mississippi and Southeast Louisiana; and many other trends throughout the MAFLA. In previous years, Mr. Walkinshaw has served as President, Secretary, and Treasurer of the Mississippi Geological Society; as Adjunct Professor for the Geology Department at Millsaps College; as a two-term (and current) regional delegate to AAPG; is a Certified Petroleum Geologist through AAPG/DPA; and is a registered geologist in Florida.

## Environmental Committee

*Don't forget! The Environmental Committee meets on a bimonthly basis. Meetings begin at 11:45 on the 3rd Tuesday of every other month in the Commission Hearing Room at the Department of Environmental Quality, Highway 80 and Ellis Avenue. For details, contact Steve Jennings at (601) 961-5205.*

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Applicants Signature : \_\_\_\_\_ Date : \_\_\_\_\_

## GEOLOGIC REGISTRATION TASK FORCE ADVISORY COMMITTEE UPDATE

At the February meeting the Committee welcomed an invited guest, Mr. Robert Case, with the Mississippi State Board of Registration for Professional Engineers and Land Surveyor. After the introduction of Mr. Case, the State Registration Assessment and State Need subcommittees presented formalized reports concerning their findings with regard to geologic registration. After the presentation of each of the subcommittee's reports, there was a question and answer session during which Task Force members and Mr. Case added additional input.

Based on these subcommittee reports the Task Force /Advisory Committee's membership in adherence to its schedule, will vote on whether to recommend or not recommend geologic registration to Mississippi's geologic community in March. Should you desire additional information or wish to provide any input to the Task Force/Advisory Committee on Geologic Registration please contact the following:

Rick L. Erickson, Chairman  
Geologic Task Force/Advisory Committee  
PO Box 254  
Ridgeland, MS 39158-0254  
phone: 601 / 961-5507

## GSA Southeastern Section Meeting

**March 13<sup>th</sup>-15<sup>th</sup>, 1996  
Ramada Plaza Hotel  
Jackson, Mississippi**

Sessions & Symposia include :  
Allegheny Orogeny  
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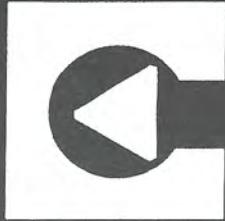
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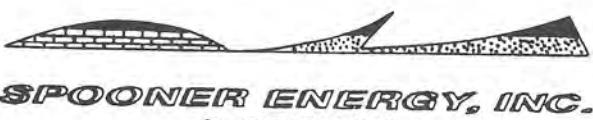
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*These items for your humor or interest ! Credits given where known.*

Coast Wise, Spring 1995

## And finally, here are the New simplified Wetlands Definitions:

*Author Unknown (but much appreciated)*

1. If it's wet, it's wet.
2. If it's dry, it's dry.
3. If it's wet, but not overly dry, or dry, but not overly wet, refer to items 1 & 2.
4. If it's wet, but could be dry, or dry, but could be wet, refer to item 3.
5. If it is neither wet nor dry, refer to the Atmospheric Delineation Manual.
6. If it is wetter than dry or drier than wet, then it is damp. If it is damper than what would be considered dry, then refer to item 1. But if it is drier than wet, but would still be considered damp, but not as damp as what would be considered wet, or is drier than a damp wet area, then refer to item 2.
7. For wet areas that are sometimes damp but not dry and have standing water except when damp, and would not be classified as dry areas that are sometimes damp but not wet, at which time the dampness is dependent upon its wetness; then it would be considered a damp wet area which is not the same as a bay (because a bay is a bay) but be classified as a damp dry area that is sometimes wet but not enough to be considered a river (because a river is a river) but wet enough to be considered damp, which is not enough to be considered wet so it is dry.

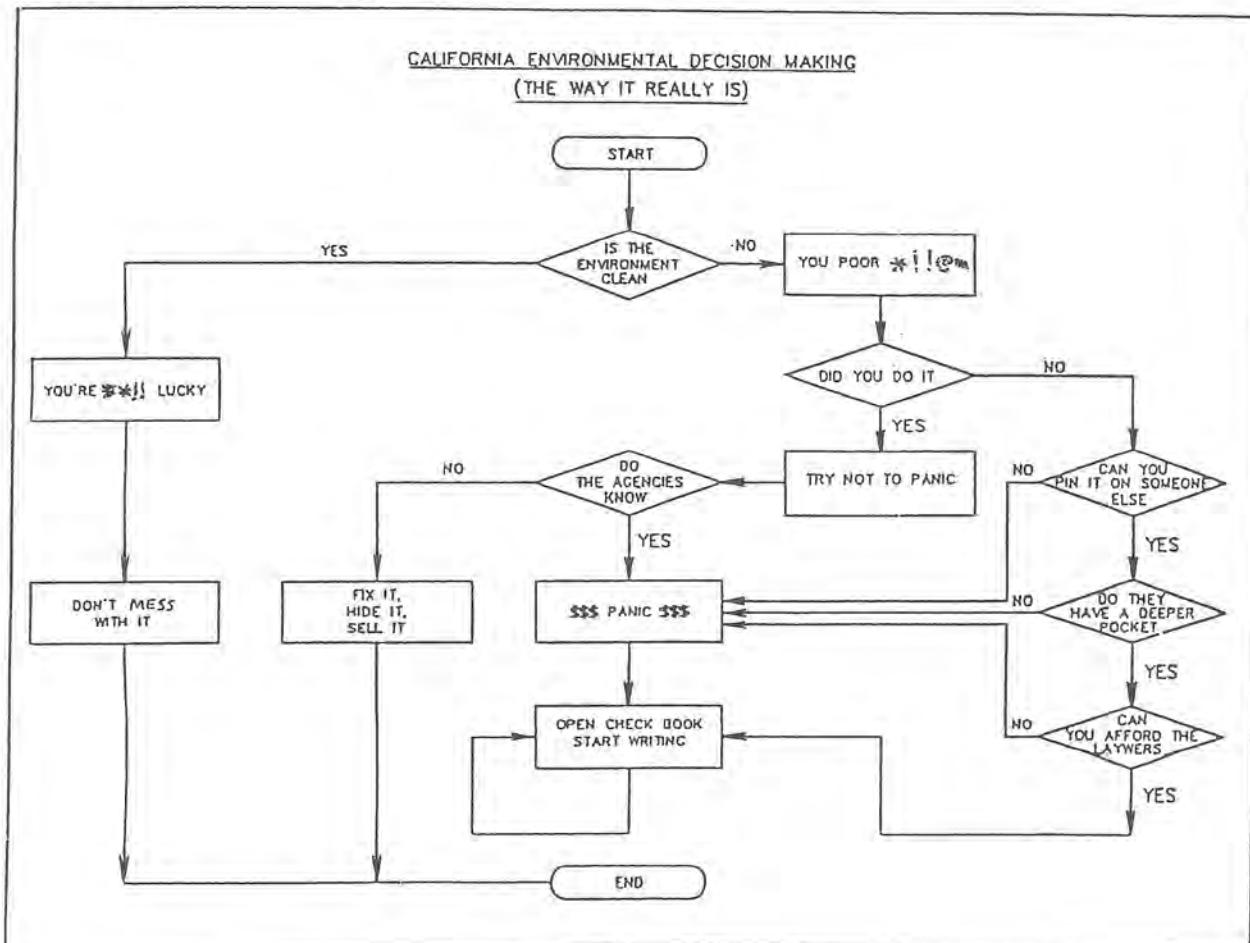


8. For dry areas that are sometimes damp but not wet and don't have standing water except when wet, and would not be classified as wet areas that are sometimes damp but not dry, at which time the dampness is dependent upon its dryness; then it would be considered a damp dry area which is not the same as a lake (because a lake is a lake) but would be classified as a damp wet area that is sometimes dry, but not enough to be considered and ocean (because an ocean is an ocean) but is dry enough to be considered damp, which is not enough to be considered dry so it is wet.
9. If in doubt about the dryness or wetness of an area, and uncertain if water occurs in a form other than H2O, contact your nearest political representative.

## NOTICE HORN ISLAND FIELD TRIP March 30, 1996 (One Day Only)

The Lafayette Geological Society Field Trip Committee announces a field trip to Horn Island, Mississippi to study the stratigraphy and sedimentary processes of the Gulf Coast barrier island complex. We will board a replica of a turn-of-the-century schooner in Biloxi harbor for a morning run across Mississippi Sound to the island for a day of geological study and upclose experience with coastal environments. The trip will be led by, Jim Rucker and Phil Beron of the New Orleans Geological Society.

Cost will be \$50, prepaid. This includes boat rental, instructor, guidebook, lunch, and refreshments. Participants are responsible for transportation to and from Biloxi and for lodging. Space is limited, early reservations are recommended. For reservations contact Ted Gard at (318) 237-0410.



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## **New Release:**

**Debbie Siegfried and Tony Lentini of Independents for Co-ops (IFC)** recently released information on natural gas producer co-ops to the internet (<http://www.gas-coop.com>) in hopes of generating support for a bill now pending before Congress. IFC is a grassroots organization aimed at revolutionizing the way natural gas is marketed to U.S. consumers. The Natural Gas Competitive Act (H.R. 2342) would enable independents to aggregate and market their gas volumes directly to customers. The bill has 31 cosponsors, as well as the support of virtually all independent-producer and royalty-owner trade associations. The legislation provides a mechanism for independent producers, who are essentially excluded from participation in the present market system, to achieve the economies of scale required to compete for customers and eliminate many of the "middleman" costs that are ultimately passed along to consumers. For more information contact Debbie at (713) 296-6218 or Tony at (713) 296-6227.

This fact contributed greatly to the gas price volatility seen this winter. Wellhead prices have been beaten down to the point where producers cannot afford to drill, while residential gas bills are being ratcheted up to pay for unneeded or nonexistent services.

The Gas Research Institute (GRI) thinks total natural gas demand, driven by strong underlying economic activity, could grow to more than 29 quads by 2015, a 1.5% yearly increase from 1994's 21.4 quads. This latest projection describes an era of low energy prices, not just low oil prices. GRI's 1996 energy supply & demand report predicts that electric generation will account for half of the demand for our U.S. natural gas supply. Electric utility restructuring will focus industry efforts on maximizing the use of existing capacity. In response, gas industry research and development and infrastructure requirements will shift from serving new, gas-fired generating capacity to servicing the expanded use of existing capacity. Future gas supply outlook depends greatly on continued advances in supply technology, as well as gas transportation charges. Declining transportation and delivery charges are expected to offset near-term gas acquisition price hikes, but new technology and increasing gas sales will be critical to containing gas transportation charges.

FERC has approved Enron's request for market-based storage rates for firm and interruptible natural gas service under section 311 of the Natural Gas Policy Act of 1978, subject to conditions (Docket # PR94-2-000). FERC will only grant market-based rates in individual cases where applicants demonstrate that they lack significant market power or have adopted conditions that sufficiently mitigate market power (market power – the ability of a seller to profitably maintain prices above competitive levels for a significant period of time). FERC found that Enron's share to be less than 9% of existing storage capacity in its market area, and concluded that Enron had appropriately defined its market area because it included storage competitors in the Gulf Coast region as well as storage owned or operated by pipelines directly connected to Louisiana Resources Pipeline Co. Ltd. Partnership, Koch Gateway, and Acadian (Enron connects with these pipelines). The lack of market power finding was based partly on Enron's lack of local distribution (LDC) affiliates outside Louisiana. Any changes to that status will cause a reexamination of conditions and approval.

## **Public Utilities Fortnightly**

The Natural Gas Competitiveness Act of 1995 (H.R. 2342), authored by Reps. Lamar Smith (R-TX) and John Bryant (D-TX), was introduced in the U.S. House of Representatives this Fall. The bill would give independent producers an opportunity to avoid antitrust laws and join together in cooperatives to market their natural gas directly to the end user.

Forty percent of the natural gas produced in the U.S. is by small, private companies with fewer than 15 employees. As individual companies, these producers have little ability to market their gas. Together, through co-ops, they may have a better chance in the marketplace, and the consumer will have a greater choice of suppliers. Congress is attempting to correct market imbalances resulting from FERC 636 which opened the gas marketing function to everyone (in theory). Order 636 actually ended up giving near-monopoly control of the nation's gas supplies to the middleman.

The FERC has issued two final rules that seek to reduce the filing burden on the natural gas industry. One simplifies the Uniform System of Accounts and the FERC's reporting requirements. The other simplifies the filing requirements for making rate and tariff changes under Part 154 of the regulations. The rules recognize that most interstate pipelines now serve as transporters rather than as merchants. The simplifications instituted will reduce the reporting burden by almost 13%. In addition, several forms have been eliminated, as well as the requirement for monthly storage reports {other changes have also been made but not reported here}.

## **World Oil**

The American Gas Association is pushing natural gas use, promoting it as the global energy resource for the 21<sup>st</sup> century. Never-the-less, U.S. producers plan to focus their energies on oil E&P in 1996. Anderson's 1996 O&G survey of 141 companies showed that only 33% will focus on gas exploration this year. Nearly half of these companies planned gas exploration in 1995.

## **Earth News**

French and American researchers have discovered subterranean bacteria in an oil reservoir (location not given) at a depth of 5,480 feet. The bacteria are believed to be native to the underground and not introduced by drilling activities. Researchers believe that some of the more salt-tolerant bacteria probably have a marine origin; the less salt-tolerant possibly originated on land.

## Engineering News Record

Environmental cleanup firms are coping with politically induced market shifts by repackaging services to clients and zeroing on specific niches. Legislative gridlock in Washington and congressional scalping of federal cleanup budgets are taking a toll. Consulting and remediation have seen no growth but all is not bleak. Cleanup firms are reinventing themselves to meet current needs while industrial buyers are looking for long term solutions. Industry's buying patterns have changed. The drivers are profit, not regulatory. Proposal activity is as strong as ever despite what you see on Capitol Hill. Startup technology firms are viewed with promise, seen as generators which will replace high-cost solutions. Federal contracts remain top priority for many.

## U.S. Water News

The water processing industry continues to be sharply divided between mature, older technologies and newer, fast-growing developments. According to projections from a new market analysis by Frost & Sullivan, the U.S. water treatment market will grow from \$908 million in 1994 to \$1.4 billion by the year 2001 at a 6% compound annual rate. The study forecasts that revenues of the overall market will increase 5.8% this year to exceed \$1 billion for the first time ever.

Contrary to most public perceptions formed over the past 15 years in regard to the "greenhouse effect", the most significant greenhouse gas doesn't come out of an aerosol can nor does it leak from air-conditioning systems. A new report by the American Geophysical Union (AGU) cites the most important greenhouse gas is water vapor. AGU suggests that scientists begin monitoring long-term changes in the water vapor content of the upper atmosphere in hopes of gaining better understanding of climate trends.

The basic behavior and distribution of water vapor is thought to be well understood but there remain some very important questions involving : 1) the radiation effects of water vapor in the

troposphere, and 2) long-term trends in water vapor and cloud processes.

Water vapor is involved in an important "climate feedback loop", and much of the current uncertainty in these areas stems from insufficient observation. As the temperature of the Earth's surface and atmosphere increases, the atmosphere is able to hold more water vapor. The additional water vapor, acting as a greenhouse gas, absorbs energy that would otherwise escape and so causes further warming. This basic concept is complicated by important interactions between water vapor, clouds, atmospheric motion, and radiation from both the Sun and the Earth. The most recent of several global estimates of long-term changes in tropospheric water vapor shows an increase in precipitable water during the period 1973-1990, with the largest gains in the tropics where increases as large as 13% per decade were found. A recent study of water vapor trends above North America based on radiosonde measurements during a 20-year period ending 1993 shows increases in precipitable water over all regions except northern and eastern Canada where slight decreases were noted. Most generally, the regions of moisture increase are associated with regions of rising temperatures over the same period, and the regions of decreased moisture are associated with falling temperatures. Much more work is needed to link other climate variations and trends prior to developing a functional model for predicting climate change.

## Nature

The controversy regarding dumping the Brent Spar oil platform (containing an estimated 100 tons of oil) in the North Sea is a drop in the ocean by comparison to what the oceans have borne in the past. The German Navy, for example, sank some 10 million tons or more of shipping in the North Atlantic during the Second World War, much of it as oil in tankers and in fuel tanks in merchant and naval vessels. Goodness knows what heavy metals went to the sea floor with the cargo of military hardware and lubricants.

## Mining Voice

Soybeans have a multitude of practical uses. On the cooking end, there's tofu and soy sauce. On the technology end, there's soy-based ink and soybean oil, which is useful in the manufacture of glycerin, soaps and plastics. The U.S. Bureau of Mine (USMB) is working with soybean oil as a low-emission alternative fuel for underground mining equipment. USMB is conducting a demonstration of pickup trucks, some of which will run on gasoline or petroleum diesel, and some of which will run on biodiesel - a combination of soy fuel (methyl soyate) and petroleum diesel. The biodiesel can be used with no alterations to existing engines for fueling equipment. The DOE will report on the demonstrations results. Soybeans are a renewable source. The methyl soyate fuel will be provided by the Minnesota Soybean Growers Association.

## Rocks & Minerals

Late last August, a house trailer in Windsor, Ontario, caught on fire and burned to the ground. Shortly beforehand, a fiery object had been seen streaking through the skies of southern Ontario and northeastern United States. The coincidence in timing led people to speculate that a meteorite had hit the trailer, starting the fire; however, no other evidence was found -- no meteorite, no fragment of a satellite or other space junk, no hole in the roof of the trailer. Typically, several buildings are struck by meteorites each year. Animals have also been killed, but there are no documented human fatalities caused by falling meteorites. In October 1994, a meteor was observed in the skies over the northeastern United States. One fragment struck the roof of a home in the small town of Coleman, Michigan and was subsequently recovered. This meteorite, which was seen falling and was recovered immediately afterward, is considered a *fall*. Meteorites that are found but not seen to fall are called *finds*.

Relative Abundance of Meteorites :		
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Terry Travis  
Log Analyst



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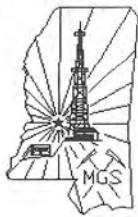
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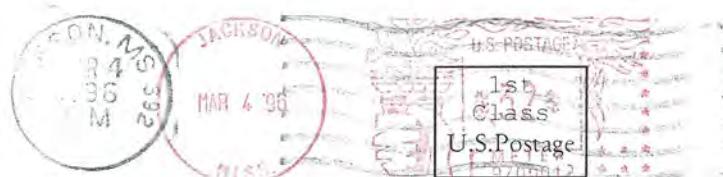
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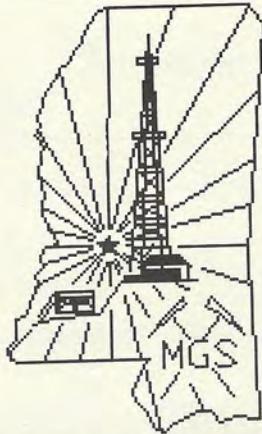
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VOLUME 44

NUMBER 8

April 1996

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## Lunch Schedule

April 9 Franz K. Hiebert  
Enhanced Oil Recovery  
and Microbial Technology

May 16 Spring Social  
& Elections

Summer Recess,  
Professional luncheons  
resume in September.

## President's Letter

*Les Aultman*

It's amazing how much your outlook can be improved by \$24.00 spot oil prices. Even in the face of anticipated resumption of Iraqi oil sales the price of oil has risen. I would anticipate prices eroding somewhat but not as low as they were when this rise began. Hopefully we are seeing the beginning of the end of this oil industry depression.

George Vockroth continues his outstanding slate of speakers. We will hear Dr. Franz Hiebert speak on Enhanced oil recovery and Microbial technology this coming month.

Your Board of Directors has bestowed honorary membership on Don Reese. Don is a longtime MGS member highly deserving of this honor.

## Luncheon Topic

Enhanced Oil Recovery  
and Microbial Technology  
*by Dr. Franz K. Hiebert*

Chemical and physical effects of naturally occurring microorganisms may be harnessed for enhanced oil recovery. Microbial enhanced oil recovery (MEOR) has been investigated for over 60 years. In the past ten years field applications in the United States have increased dramatically. This talk will review briefly the science and technology behind MEOR and present data from MEOR applications in Mississippi and Arkansas.

Franz K. Hiebert, Ph.D., is a Senior Project Manager with the engineering firm RMT/Jones and Neuse, Inc. in Austin, Texas. He has over twenty years of experience in the fields of environmental and oil-related geoscience. Dr. Hiebert's technical specialty is hydrocarbon-related microbial geochemistry. Dr. Hiebert recently served as the principal advisor on microbial enhanced oil recovery (MEOR) to a consortium of national and international service companies. In this capacity, he designed and advised bench scale and field applications of MEOR technology for a wide diversity of reservoir types and conditions in the United States and overseas.

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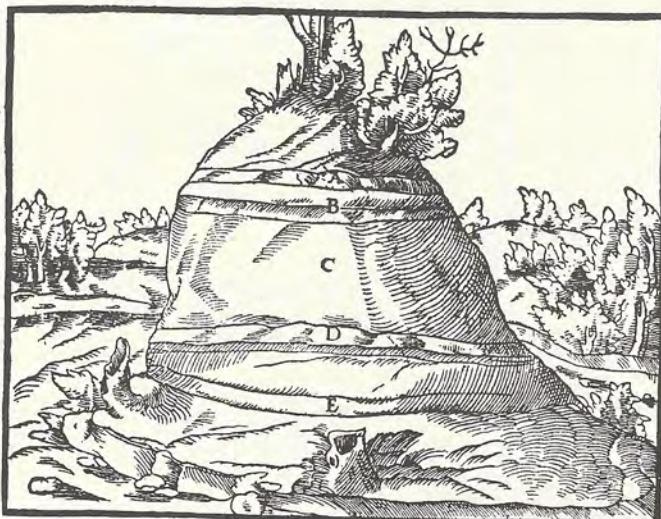
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## MISSISSIPPI GEOLOGICAL SOCIETY

Post Office Box 422 • Jackson, Mississippi 39205-0422

March 7, 1996

Mr. Donald M. Reese  
3973 Dogwood Drive  
Jackson, Mississippi 39211

Dear Mr. Reese:

I would like to inform you that the Mississippi Geological Society Board of Directors has voted to accord you Honorary Membership in the Society for your many years of faithful membership.

You join a very distinguished group of Mississippi oil and gas pioneers. This is your Geological Society's way of saying thank you for many years of valuable service to the geological and petroleum industry.

With kindest regards,

A handwritten signature in black ink, appearing to read "W. Lester Aultman".

W. LESTER AULTMAN  
President

# PRESS RELEASE

MISSISSIPPI GEOLOGICAL TASK FORCE/ADVISORY COMMITTEE ON PROFESSIONAL LICENSURE  
PO BOX 254 RIDGELAND, MS 39158-0254

For Immediate Release

Date: March 20, 1996

RICK L. ERICKSEN, Chairman, Mississippi Geological Registration Task Force/Advisory Committee  
On Professional Licensure

## GEOLOGICAL TASK FORCE TO PURSUE PROFESSIONAL LICENSING LEGISLATION

The Geological Task Force/Advisory Committee is recommending, by its unanimous vote, to the state's geologic community that a professional licensing bill be submitted to the state's legislature for consideration at the next regular legislative session. The Geological Task Force/Advisory Committee was formed in response to the growing number of states with geologic registration laws and the need for geologic work which impacts the public health, safety, and welfare be done by geologically degreed persons, as well as researching the need for the licensing of the geologic profession in Mississippi. Last year Alabama, Illinois, and Minnesota all had geological licensing bills passed and signed into laws joining a group of states now totaling 20.

The Committee has representatives from regional, national, and international professional geologic and geologically-related groups/societies which includes the American Association of Petroleum Geologists (AAPG/DPA), American Institute of Professional Geologists (AIPG), Society of Independent Professional Earth Scientists (SIPES), Mississippi Geological Society (MGS), Natchez Geological Society (NGS), Association of Engineering Geologists (AEG), Jackson Geophysical Society (JGS), Society of Exploration Geophysicists (SEG), Association of State Boards of Geologists (ASBOG), and academia. The Committee has also been maintaining an open dialogue with related groups which include the State Oil & Gas Board, Mid-Continent Oil & Gas Association, and the Mississippi Board of Registration For Professional Engineers and Land Surveyors.

The first state with professional geologic licensure/registration was Arizona in 1956, followed by California in 1968. In addition to Arizona and California, all the following states have professional geologic licensure: Idaho, Delaware, Maine, Georgia, Oregon, North Carolina, South Carolina, Arkansas, Florida, Tennessee, Wyoming, Kentucky, Pennsylvania, Missouri, Wisconsin, Illinois, Minnesota, and Alabama. Alaska, Indiana, and Virginia have certification laws and Colorado, Kansas, and Oklahoma have definition acts. The latest information indicates that Oklahoma, Kansas, and North Dakota may propose licensure legislation in the near future. It is also apparent that legislative efforts for geologic licensure continue and are likely to be successful in Texas during its next legislative session.

The Committee has been meeting on a regular monthly basis since last November and have completed in-depth studies of the licensing laws of all the states in the southeastern US and is in the process of determining the number of potential registrants. In addition, the Committee has been accruing data on examples where geologic reports, information, etc. which impact the public health, safety, and welfare were supplied by unqualified, non-geologic degreed persons.

Currently a subcommittee of the Task Force/Advisory Committee is drafting a geologic registration bill and will conduct public meetings at various locations across the state over the next several months. The purpose of these meetings is to inform those in the state's geologic community of the bill and to seek additional input as of the content of the proposed legislation. The exact times and dates of these meetings will be conspicuously published so those who wish to attend may. Locations for these meetings will include Jackson, Starkville, Oxford, Hattiesburg, and Natchez.

As of this news release there has only been strong support shown from all interested parties for the legislated licensure of the geologic profession. Should anyone desire additional information, please contact the following:

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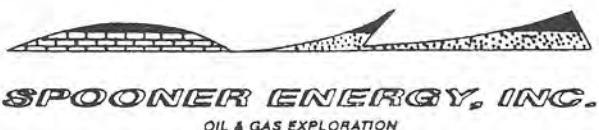
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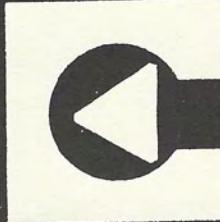


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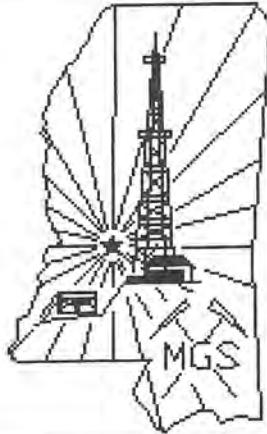
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VOLUME 44      NUMBER 9

May 1996

May 02 1996

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## Lunch Schedule

May 16 Spring Social & Elections

May 22 Geologic Registration  
Rick Erickson

Summer Recess,  
Professional luncheons  
resume in September.

## President's Letter

*Les Aultman*

How quickly a year passes. Your geological society Board has concentrated on repairing our financial condition this year and we have succeeded. I cannot thank the board members enough for their devotion to their various duties.

We look forward to our Spring Fling May 16th, in the Ethnic Center at the Agriculture Museum. The meal will be served at 6:30 p.m.

Please remember we will have a luncheon meeting May 22nd, to hear a report from the Mississippi Task Force on Geologic Registration.

We want to thank our advertisers and sponsors for their support.

## Luncheon Topic

The Issue of Professional Registration  
of Geologists in Mississippi  
*by Rick L. Erickson*

Currently there are 20 states which have registration or certification of practicing geologists, including most recently the adjacent state of Alabama. As a result of this and other related issues a committee, Geologic Task Force/Advisory Committee, was formed to evaluate existing registration - certification laws and the need, including reciprocity to develop an acceptable registration document which would then be submitted to the state's geologic community and state's legislature. Over the past five years (5), geologic registration bills have been discussed and some sent to the state's legislature. All failed for a variety of reasons including apathy, adversity, misinformation, and politics from within and outside the geologic community.

Common aspects to most of the registration laws are as follows:

- 1) Protection of the public health, safety, and welfare;
- 2) Restriction of the practice of geology to those either so degreed or to those who have completed a predetermined number of semester hours in geology courses from an accredited college or university;
- 3) Exemption of those who are employed in the petroleum industry;

By unanimous vote the Geologic Task Force/Advisory Committee voted in March of this year to recommend and proceed with geologic registration efforts in Mississippi. It is anticipated that a registration bill will be submitted to the

state's legislature and acted upon during its next regularly scheduled session in 1997. A cornerstone to the Geologic Registration Task Force/Advisory Committee has been and remains one of open dialogue with all interested parties. A preliminary bill is currently being written and will be available for distribution and additional input from the geologic community. (*speaker info inside*)

## MGS OFFICERS ELECTION

will be held at the SPRING FLING SOCIAL, May 16th, 1996. Absentee ballots may be obtained through Secretary Rick Erickson 961-5507. Jack Moody assumes the Presidency for 1996-97. The candidates are:

1st V.P. George Vockroth  
Virginia Tech BS Geology  
1951 Harvard MS Geology  
1951-1977 Chevron  
1977-present Vantage Oil  
1995-96 2nd V.PRES MGS

2nd V.P. Larry Baria  
1967 Northeast La. BS Geology  
1969 Northeast La. MS Geology  
1970-74 LSU PhD studies  
1971-74 Arkansas Geol. Comm.  
1974-76 Getty Oil  
1976-79 Enserch  
1979-81 Tideway  
1981-present Consulting Geol.  
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Secretary Roger Townsend  
1983 USM BS Geology  
1986 Northeast La. MS Geology  
1985-90 TXO  
1990-92 Sage Energy  
1992-95 Matador Petroleum  
1995-present Spooner Petroleum  
1995-96 MGS Advertising Chair

Treasurer Steve Champlin  
1977 USM BS Geology  
1977-79 Gulf Oil  
1979-80 Getty Oil  
1980-83 Dixie Energy  
1983-93 Independent  
1993-present Miss. Office Geol.  
MGS Sec; 2nd VP; Boland Scholarship; speaker.

# Mississippi Geological Society 1995 - 1996

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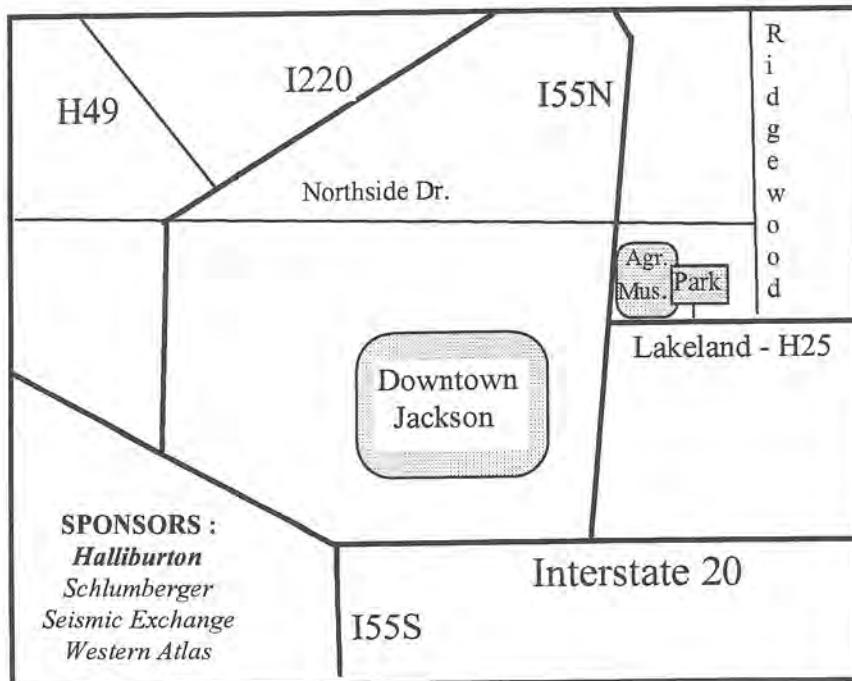
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## **MGS Fall Social**

The annual "Spring Fling"  
 (our end of the year bash !)  
 will be held at the Mississippi  
 Agriculture and Forestry Museum  
 from 4:30 to 8:30 p.m.  
 (Dinner at 6:00 p.m.)  
 Thursday 16<sup>th</sup>, 1996

\$10 per person \$5 per student

Don't forget to visit the pump jack on  
 the Museum grounds!  
 Officer elections will be held.

## Speaker Info

Rick L. Erickson has over twenty (20) years of oil and gas industry experience. He received his B.S. in Geology from Northern Illinois University with multiple honors from the university's Department of Geology, as well as, the university's Dean of Liberal Arts and Sciences in 1973, and his M.S. in Geology-Geochemistry in 1975, also from Northern Illinois University. Mr. Erickson has been employed with Chevron, Skelly (Getty), Texas Oil & Gas, and Pruet Oil Company in a variety of positions from Development Geologist to Exploration Coordinator. since 1991, he has been employed with the Mississippi Office of Geology in its Energy Section. Mr. Erickson has had numerous field discoveries to his credit in the Black Warrior Basin and has broad experience in exploitation and exploration in most of the plays of the MAFLA, Louisiana, and Gulf offshore areas.

In previous and current years, Mr. U. Erickson has served as Secretary of the Mississippi Geological Society and Delegate to AAPG, as well as being a member of numerous other professional and civic societies, boards, and organizations. He is a Certified Petroleum Geologist through AAPG/DPA (1982-) and has been a member of the Mississippi Geological Society since 1977. He has authored or co-authored twenty-four professional publications, has been a presenter at numerous poster and professional talks at both regional and national meetings, and is currently involved with the development of several additional publications and research projects related to the oil and gas industry in Mississippi. Mr. Erickson is the Chairman of the Task Force/Advisory Committee on Geological Registration in Mississippi and has been involved with the Committee's efforts in this

archaeologist R. J. Hasenstab is now hoping to find artifacts related to the December 16<sup>th</sup>, 1773 "Tea Party" where 90 citizens dressed as Mohawk Indians boarded three British ships and dumped 342 chests of tea into the harbor.

## Geotimes

According to DOE, U. S. energy consumption in September 1995 totaled  $6.797 \times 10^{15}$  BTU's. Petroleum accounted for  $2.902 \times 10^{15}$  BTU's (42.69%), natural gas  $1.421 \times 10^{15}$  BTU's (20.91%), coal  $1.640 \times 10^{15}$  BTU's (24.13%), hydroelectric power  $.228 \times 10^{15}$  BTU's (3.35%), and nuclear power  $.595 \times 10^{15}$  BTU's (8.75%).

Domestic field production was estimated at 8,444 thousand barrels a day (6,380 crude and 1,773 natural gas liquids). Dry gas production was estimated at 1,509 billion cf, and domestic coal production was estimated at 87,937 thousand short tons.

U.S. imports of crude and petroleum products in November 1995 averaged 9,429 thousand barrels a day, an increase of 8.3% from 1994. The American Petroleum Institute reports imports met 50.01% of U.S. supply. Imports for that period averaged 8,708 thousand barrels a day and met 46.33% of U.S. supply. Supply in November 1995 was .3% higher than in 1994.

The American Geophysical Union report *Water Vapor in the Climate System* provides a basic description of the behavior and distribution of water vapor and discusses its roles as a greenhouse gas and component of the global hydrological cycle. Copies can be ordered (\$4 each) from AGU, 2000 Florida Ave. NW, Washington D.C., 20009.

## Engineering News Record

Excavations at Boston's Central Artery/Tunnel project has recovered colonial era hardware, ceramics, and mundane household garbage. Project

## Public Utilities Fortnightly

For the second year in a row, natural gas fueled an increasing share of U.S. electric generation. When the final numbers are

tabulated for 1995, electric generation is expected to have increased about 2.7% over the previous year. This compares to a .98% increase for 1993-94. Gas accounted for over 10% of the 1995 utility fuel mix – up from 8.8% just two years ago. And perhaps for the first time in history, coal burn by utilities should remain flat despite robust growth in electric generation.

Bulk-power markets continue to expand despite uncertainty surrounding the outcome of the FERC "Mega-NOPR". Over the past five years, purchases in the wholesale power markets grew by more than 40%, to \$57 billion annually in 1994. Investor-owned utilities (IOUs) alone increased purchases by 64%, accounting for 52% of all power-purchase expenditures in 1994. Cooperatives (24%) and public utilities (22%) accounted for the balance. Power marketer purchases accounted for only .25% of the wholesale market. The group of nonutility generators (NUGs) made up of independent power suppliers, large cogenerators, and other qualifying facilities has made the most significant impact on current power markets. In the past five years, bulk power provided by NUGs has increased by more than 114%. The growth in market activity by power traders offers further evidence that power markets are opening at a dramatic rate.

## Mississippi Dept. Environ. Quality Environmental News

The Office of Land and Water Resources has completed a two-year low flow management study of the Lower Pascagoula River. For information, contact the Office of Land and Water at (601) 961-5200.

## From the Editor :

*Hope you enjoyed the newsletter this year! During the past year, we provided you with a mix of professional news which was both directly and indirectly related to the practice of geology. For suggestions, contact Steve Ingram, Editor - MGS Bulletin, at (601) 354-6328.*

*(Next Bulletin September 1996)*

Terry Travis  
Log Analyst



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The following data page is a portion of an 8 page core and sample description report contributed by the Energy Section of the Office of Geology. The full report and abbreviation code is available from:

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County: Wayne

Field: Wildcat

Operator: Natomas North American

Elev.: 339' KB 317.46' GL

Total Depth: 19,013' (Schl.)

Casing: 10 3/4 @ 5742

Tests: None (attempted DST in "Smackover")

Sec. 30-9N-6W

Loc.: 1718' FWL  
& 1840' FNL

Fee: #1 Audry

Saxon

Perfs: None

Compl: 5-4-81

Logged by: Jack Henderson CPG 1360 12-15-95

Comments: Operator reported a trace of gas while drilling 17,350-360' - and a core was taken from 17,383' to 17,442'. Many, if not all, limestones in the Haynesville and Smackover sections will give very weak to fair chloroethane cuts and ring residues and are regarded as source rocks. Many fractures in anhydrites are filled with limestone which will yield dark brown oil films and filaments on or within HCl acid bubbles. This well has a very thick Haynesville section, about 3200', compared to approximately 400' reported in Mill Creek Field, located about 1 1/2 miles northeast. This is said by some to indicate the well's presence on a "turtle" structure. Thin beds of pelletal limestone occur in the Haynesville which may reflect sea level fluctuations or interruptions in subsidence due to episodes of passivity in salt movement. Either of the above suggested mechanisms may have caused the development of Haynesville reservoirs proximate to this location. Operator called top Smackover at 15,650' - Commercial service called top Smackover at 18,420'.

Tops:	Samples	DIL (Schlumberger)
Haynesville	15,130-140'	15,130'
Smackover	18,330-340'	18,330'

Show symbols: \*Live (migrated) oil show  
- Source oil type show (in impermeable rocks-Shale, Siltstone, Limestone, etc.)  
+ Dead oil shows (i.e., tar, asphalt, gilsonite, etc.)

### SAMPLE DESCRIPTIONS

16,950-17,000'	Ls & Anhy, AA
(-)17,000-040'	Ls, lt tan-m brn, micritic:(crushed) weak Y RR; Ls, dk brn micritic: (crushed) v weak Y RR Anhy, AA
17,040-080'	Anhy, wht-pale pink (mud), v Fn xln, Ls & Sh, red, AA
17,080-090'	Ls, lt gry-buff, chalky-micritic; Anhy, AA
(-)17,090-120'	Ls, m-dk brn, micritic: (crushed) v weak pale Y RR
(-)17,120-130'	Ls, lt tan-brn & dk gry speckled, (pellets), v Fn xln, spotted DG fluor, v weak, pale Y RR
17,130-150'	No samples
17,150-160'	Ls, lt gry-lt tan-lt brn, micritic; Ls, m-dk brn, micritic; tr Anhy, wht, v Fn xln
17,160-170'	AA; Ls, wht, buff, chalky
17,170-230'	Ls, lt gry-lt tan-lt brn-tr dk grysh-brn, micritic

(-)17,230-300'	AA; tr Ls, dk brn, micritic, scatt brn Anhy xls: (crushed) v weak DY RR; tr Anhy, AA
(-)17,300-380'	Ls, lt gry-lt tan, v Fn xln, pettetal: (crushed) spotted Y-G fluor, Fair DY RR; Anhy, wht Fn xln-tr Cs "blades"

(-)17,383-389'	Anhy, wht w/numer thin brn clay (v calc) & calc filled fractures (desiccation cracks?), chicken-wire pattern w/2" lens of Ls, brn, micritic, copious dk brn oil in acid bubbles, (crushed) weak DY RR: Note: Anhy frag has v slow Y cut & Fair DY RR
(-)17,389-389 1/2'	Ls, lt brn, micritic peloidal, tr oolites, many pellets/oolites replaced w/brn Anhy xls, scatt "blind" molds, scatt small irreg fractures-some healed w/brn "clay" (calcite residue?)

### CORE DESCRIPTIONS

NATOMAS #1 Audry Saxon  
Boyce Fld., 73  
Mill Creek Fld., 79  
Waynesboro Fld., 85  
Waynesboro  
WAYNE COUNTY MISSISSIPPI  
0 5 10 Miles

(crushed) DYF, slow DY cut, weak DY RR	dk brn, lithographic stylolitic, hairline fractures, oil film on acid bubbles
(-)17,389 1/2-391 3/4' Anhy & Ls, AA-mixed-about 50% each-as desc above w/OS AA	-437' (12 1/2") Anhy, AA
(-)17,391 3/4-393' Ls, dk brn, micritic, peloidal & sl oolitic-some replaced w/brn anhy xls, small ant heavy brn oil in acid bubbles: (crushed) tr DY RR	-439 (14 1/2") AA, Ls (8") lt-m brn, micritic scatt brn anhy xls (replacing oolites, stylolites, brn oil film on acid bubbles; Anhy (4") AA
(-)17,393-397 1/4' Ls, lt brn, lithographic, abund brn anhy xls (replacing intraelasts & peloids), random-oriented healed (calcite) fractures high-angle blk stylolites, dk brn oil filaments in acid bubbles, one laminae blk bitum sh @ 17,394 1/2: (crushed) Fair DG RR	(-) -441' (17") Ls (5") lt tan- m brn mottled, micritic, abund brn Anhy xls (repl oolites, intraclasts, anhy lens, brn oil film on acid bubbles, Anhy (12"), AA
(+)17,397 1/4-398' Anhy, wht lt gry numer calc veinlets (filling dessication cracks), dk brn oil films on acid bubbles (calc veinlets)	(-) -443' (13") Ls, lt tan-lt brn, micritic, pelletal (silt size), scatt small brn Anhy xls
(-)17,398-401' Ls, lt-m brn, lithographic, a few brn anhy xls, random-oriented healed fractures, small tube (worm?) filled w/blk bitum; Sh lens 17,399'	17,440-450' Poor sample: Ls, m brn, micritic, scatt small brn Anhy xls
(-)17,401-411 3/4' Anhy, AA w/4 3/4" lens at 17,410' + of Ls, pale brn, micritic, abund brn anhy xls replacing oolites, pellets, intra-clasts, poss foss, scatt wht anhy blebs: DGF (crushed) DG cut, v slight DG RR	17,450-480' Ls, lt-m brn, micritic, pelletal, scatt oolites, dull yell fluor: (crushed) rapid pale Y cut, Fair Y RR; Anhy, wht, v Fn xln; tr Ls, pale brn, lithographic
(-)17,411 3/4-412 3/4' Ls, m brn, micritic, pellets, oolites, v lite film of oil on acid bubbles	17,480-490' Ls, lt grysh-brn, m brn, tr dk brn, micritic
(+)17,412 3/4-413' Anhy, AA	17,490-510' Ls, wht, lt gry, buff, chalky: (crushed) NS; Ls, m-dk brn, micritic
(-)17,413-415' Ls, lt brn, lithographic, several high-angle blk stylolites, abund v small pyrite xls, w/thin lens oolites & intraclasts, dk brn oil films on acid bubbles	17,510-520' AA; Ls, lt gry, lt gry,-lt brn (pellets), micritic: tr Coal, blk, fibrous
(-)17,415-416' Ls, lt-m brn, micritic, pelletal, abund oolites, intra-clasts, med-large anhy blebs & lens, scatt v small pyrite xls, tr dk brn oil in acid bubbles (crushed) slow DG cut	17,520-540' Ls, m-dk brn, micritic, scatt wht anhy blebs; tr Coal, AA
(-)17,416-417 1/2' Ls, m brn, lithographic, scatt small brn anhy xls, a few small pyrite xls: (crushed) DGF, slow DG cut, weak DG RR	17,540-570' Ls, lt-m brn, micritic, pelletal, scatt oolites
(-)17,417 1/2-418 1/2' Ls, m-dk brn, micritic abund pellets, oolites, DGF:(crushed), v slow DG cut, v weak DG RR	17,570-600' AA; tr Coal, blk, fibrous; tr Anhy, wht, v Fn xln
(-)17,418 1/2-419' Anhy, wht- lt gry	17,600-610' Ls, dk brn, micritic, scatt small brn anhy xls
(-)17,419-423' Ls, m-dk brn, lithographic, random oriented healed (calc) fractures, dk brn oily film on acid bubbles, numer hair-line cracks, abund dk brn anhy xls @ 17,421-423' (crushed) DGF, v slow DG cut, weak DG RR	AA-pred Ls, pelletal Anhy, wht-lt tan mottled, v Fn xln; tr Coal, blk, fibrous; Ls, AA
(-)17,423-425' (9 1/2")Ls, AA	17,680-690' Ls m-dk brn, micritic, pelletal; Ls, dk brn, micritic scatt small brn anhy xls
(-) -427' (9")Ls, AA	17,690-710' Anhy, wht-pale pink (mud) v Fn xln; Ls, AA
(-) -429' (9 1/2") Anhy, (7 1/2") wht-lt gry, numer hairline fractures, some healed (calc) fractures; Ls,AA	17,710-720' Ls, lt tan, micritic, scatt small pellets; Anhy & Ls, AA
(-) -431' (11 1/2")Ls, AA	17,720-730' Anhy, wht, v Fn xln; Ls, AA
(-) -433' (7")Ls, AA	17,730-760' Ls, lt gry, micritic, scatt brn pellets; Ls, m brn, grysh-brn, micritic, scatt wht anhy blebs
(-)17,433-435' (10")Anhy (9") AA (17,427-29'); Ls (1"),	17,760-780' Ls, buff, grysh-brn, micritic, wht anhy blebs; Ls, dk brn, micritic
	17,780-800' Ls, lt gry, micritic, scatt brn pellets; Ls & Anhy, AA
	17,800-850' Ksm n-d brn, micritic, w/wht anhy blebs
	(-)17,850-860' Ls, AA: (crushed) v slow Y cut, Fair pale Y RR
	17,860-870' Anhy, wht lt gry, v Fn xln--amorph; Ls, AA
	17,870-890' Ls & Anhy, AA
	17,890-900' AA -increase % Anhy
	17,900-910' AA;decrease % Anhy

NOTE: Cores described at 2' intervals - inches of core now in boxes in parenthesis

- (-)17,423-425' (9 1/2")Ls, AA
- (-) -427' (9")Ls, AA
- (-) -429' (9 1/2") Anhy, (7 1/2") wht-lt gry, numer hairline fractures, some healed (calc) fractures; Ls,AA
- (-) -431' (11 1/2")Ls, AA
- (-) -433' (7")Ls, AA
- (-)17,433-435' (10")Anhy (9") AA (17,427-29'); Ls (1"),

(Due to the limited space available here, only a portion of the sample descriptions from the original report, in the Haynesville section, are presented. As stated earlier, the full report is available from the Office of Geology.)

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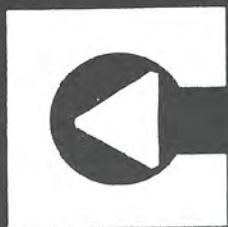
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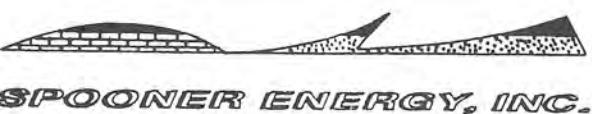
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