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2008 Convention Tours, Events & Speakers — See Pages 34 & 35



**SIPES** QUARTERLY

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Society of Independent Professional Earth Scientists

# Basement Tectonics and Origin of the Sabine Uplift

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by Richard L. Adams, Carr Resources, Inc. — Tyler, Texas Note: This article is from the Houston | aries of this basement high a hapter, and is the seventh in a new series | form fault systems that paral

Chapter, and is the seventh in a new series submitted by SIPES Chapters.

#### ABSTRACT

The same processes that formed the Gulf of Mexico Basin formed the Sabine Uplift. The Sabine Uplift is supported by a large rhombic area of basement fault blocks that originated as a mid-rift high during the Triassic rifting phase of the opening of the Gulf of Mexico. Sometimes referred to as a basement block, it covers an area that is 90 miles long (NW-SE) and 60 miles wide (SW-NE). Across the Uplift the depth to magnetic basement is up to 10,000' shallower than in the middle of the East Texas Salt Dome Basin. The northeast and southwest boundaries of this basement high are major transform fault systems that parallel the opening of the Gulf of Mexico. The northwest boundary is the East Texas Salt Dome rift basin and the southeast side steps down into the South Louisiana Salt Dome Basin. Within this mid-rift high, multiple smaller transform faults with horst and graben structures are evident by mapping the base of the Louann Salt from seismic data. Within the overall Uplift area, these internal structures have influenced sedimentation on a smaller scale. Further uplift of this mid-rift high occurred during the Middle to Late Cretaceous and also during the Paleocene-Eocene.

(Continued on Page 17)

# President's Column

George S. Johnson, #2724 Amarillo, Texas

#### "When the Saints Go Marching in"

Yes, I want to be in that number. I hear Louis Armstrong singing "When the Saints Go Marching in" every morning when I am getting ready for work. What a way to start the day! You can watch him on "You Tube" and turn up the music, turn it up loud!

You might have guessed, yes, SIPES is going to New Orleans in May this year for the 45th Annual Convention. I will be in that number, and I hope that you are planning to be there too. With oil at near \$90 per barrel, and being in New Orleans in May, what could be more exciting?

(Continued on Page 28)

# SIPES 2008 CONVENTION & 45th Annual Meeting



# National, State & Environmental Information

The following reports on national, state and environmental issues were presented to the SIPES Board of Directors on January 28, 2008 in Corpus Christi, Texas. Jack Naumann, Vice President of National Energy authored the Natural Resource Report. Phil Martin, the Houston Chapter Director, provided the report on State Legislative News. Midland Director Marc Maddox submitted the Environmental Committee Report. The views and opinions expressed are those of the authors. Some of the information presented is in the public domain and is available from a variety of sources; other references were selected by the authors, and are noted on their reports.

#### PRICE/SUPPLY/DEMAND SUMMARY

In my October 2007 report, I stated that by the time the information was printed for the forthcoming *SIPES Quarterly*, it would most likely be out of date. In that report I had just listed the new all time high price WTI crude at \$83.90 per barrel. Well here we are in 2008 and we have hit the now all time high of \$100.00 per barrel oil! Currently, WTI is in the mid \$90 range, but I wonder what changes in the pricing will occur by the time this article is printed. The reasons for this appear to be based upon reports of shorter than estimated worldwide oil stocks, political unrest in Pakistan, continued insurgent activity in Nigeria, Turkish attacks upon the Kurdish region of Iraq and continued

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#### 2008 Annual Meeting Dates

May I	2-1	5																			.N	ew	Orleans	, LA
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The SIPES Quarterly is published by the Society of Independent Professional Earth Scientists. Send your comments, letters, address changes and advertising inquiries to the SIPES Headquarters in Dallas, Texas. saber rattling with Iran. Additionally, the traders in the economic sectors and their reactions have obvious repercussions. Currently, one of the biggest clouds over the oil market is the possibility of an economic recession in the U.S. and what impact this could have on demand in the world's largest consumer.

Interestingly, through all of this, "The American Consumer" has not substantially curbed energy consumption. Cars, (and large cars) are still being sold, there are no lines at the gas stations and the public continues to fill those tanks up. It is apparent that here in the United States that the extra cost to fill our tanks or purchase heating oil, is just the price we have to pay in this day and age. We as a nation have become affluent enough that even though our energy cost is at its highest levels in history; we can afford it. While consumer energy expenditures have been growing rapidly in recent years, disposable income has grown significantly over the past quarter-century. In the third quarter of 2007 U.S. consumers spent approximately 5.7 percent of disposable income on energy, 2.5 % less than the 8.2 % share of disposable income for energy expenditures in the second quarter of 1981. The potential public outcry is not so much that it costs \$70.00 to fill up your car, but if supply becomes an issue and if the American consumer could NOT fill up their car, then there would be an outcry!

Along these lines, I have listed some statistics from the Bureau of Transportation Statistics of the United States Department of Transportation (USDOT) that should be of interest.

The USDOT currently has listed over 247,000,000 registered motor vehicles in the United States. Of these 136,000,000 are passenger vehicles, 95,000,000 light trucks, 6,400,000 heavy trucks (6-tires or more), 6,200,000 motorcycles and 889,000 buses. There are 8,200 commercial air carriers, 224,000 general air carriers, 22,000 railroad locomotives, and 12,942,000 recreational boats. These all have combustible engines that utilize oil-derived fuels. Add into the mix the fuel usage for manufacturing, agricultural, industrial, military, and educational not to mention the 112 million U.S. households. In the United States alone, the total delivered motor gasoline from primary storage was 9,235,000 b/d, (API-November 2007). Every United States citizen, at any given time, is being directly affected by either petroleum or fossil fuels. Add the growth rate of vehicles in China and India and it is easy to see why in transportation alone, the demand of worldwide crude will not drop anytime soon. It is estimated that by 2012 China will have more highway miles than the United States.

So where are we going? At the current levels of nationwide consumption of petroleum products, at \$90.00 per barrel, the estimate is that the nation as a whole spends over <u>\$2 billion a day</u> for crude oil, refined products and natural gas.

#### CRUDE OIL

Currently (January 17, 2008), the average U.S. produced barrel of oil is approximately \$90.00, (last year it was \$54.00). As of November 2007, the United States petroleum imports were 13,173,000 barrels per day. This equates out to 63% of total petroleum deliveries. Petroleum imports to the U.S. from the Persian Gulf accounted for 19% of total imports. U.S. crude oil production in November 2007 was 5,155,000 BO per day, of which 780,000 BO per day was Alaskan. For comparison, the total U.S. crude oil production in November 2006 was 5,105,000 b/d. U.S. natural gas liquids production in November 2007 was 1,784,000 b/d (November 2006 production for natural gas liquids was 1,770,000 b/d). The current API estimate of total delivered petroleum products to the U.S. market in November 2007 was 20,902,000 b/d, which is 233,000 b/d higher than the same period in 2006.

The year 2007 did have an increase in domestic crude production, but this is due mainly to GOM production coming back into production since the damage from Hurricanes Rita and Katrina. These recoveries in crude production combined with a lower or flat domestic demand created a lower demand for imported oil, however, imports still averaged 65%. Crude inventories were at their highest levels since 1991, but at mid-year they declined to their 5-year average. This drop was more than 60 MM bbls, which represented the highest drop in a 6month period.

U.S. petroleum consumption in 2007 averaged an estimated 20.7 million bbl/d, which is less than a 1% increase over 2006. The API estimates that consumption will have a slight (1%) growth rate through the year 2009. Jet fuel is estimated to have a 1.2% growth rate over the next two years. Based on current weather projections and a slowdown in the economy in 2008, distillate consumption growth is projected to slow from 1.9 percent in 2007 to 1.2 percent in 2008 and 1.6 percent in 2009. Total U.S. crude oil production for 2008 is anticipated to grow by approximately 7% or 350,000 bbl/d, mainly from the GOM deepwater Atlantis, Thunder Horse and Tahiti platforms.

As of January 12, 2008:

Current spot prices are as follows: WTI \$92.74 per bbl one year ago \$52.96, Brent Sea \$91.86 bbl – one year ago \$49.95, Average OPEC \$92.69 bbl – one year ago \$50.75, Average Non-OPEC \$92.98 – one year ago \$49.31, World Average \$92.82 bbl – one year ago \$47.72.

#### Crude Oil Refinery Inputs:

East Coast 1,518,000 bbl/day – year ago 1,505,000 bbl/day Midwest 3,147,000 bbl/day – year ago 3,284,000 bbl/day Gulf Coast 7,066,000 bbl/day – year ago 7,200,000 bbl/day Rocky Mts. 515,000 bbl/day – year ago 560,000 bbl/day West Coast 2,765,000 bbl/day – year ago 2,552,000 bbl/day

#### NATURAL GAS

Due to the recent (January 9, 2008) cold weather in the lower 48, natural gas prices have recently increased in all markets. Increases have ranged from an average of 4 to 11%. At the Henry Hub, prices increased \$1.35 per Mmbtu to \$8.35 per Mmbtu or a 4% rise. As of January 16, 2008, the February futures at the Henry Hub had settled at \$8.13 per Mmbtu.



Gas storage supplies have declined as of January 2008 a total of 171 BCF, which is 275 BCF below last year's withdrawal for the same period, and is 121 BCF or 5% above the 5-year average. Currently, the overall temperatures in the lower 48 have posted a warmer than normal year, with the exception of the Pacific West, which has posted 6% lower temperatures. The largest gas consuming sectors, (Middle Atlantic, New England, and East and North Central), ranged 28-43% below normal for the 2nd week of January 2008, and prices averaged from \$8.38 - \$10.36 per Mmbtu. The NYMEX futures for February 2008 through January 2009 averaged \$8.34 Mmbtu.

Current projections for U.S. gas consumption are estimated to increase 6% through 2008, mainly driven by the residential, commercial and electric power sectors. Domestic natural gas production is estimated to increase by 2.5% in 2008, mainly from onshore activity. However, new deepwater GOM development is expected to increase total GOM production by 8% in 2008.

					% Colder/	% Colder/
	This	Last	Dev from	Dev from	(Warmer) vs.	(Warmer) vs.
Week Ending	Year	Year	Normal	Last Yr.	Last Year	Normal
October	210	340	(100)	(130)	-38.2%	-32.3%
November	566	508	(23)	58	11.4%	-3.9%
December	871	743	(14)	128	17.2%	-1.6%
Q4	1,647	1,591	(137)	56	3.5%	-7.7%
1/5/08	225	151	3	74	49.0%	1.4%
1/12/08	139	171	(87)	(32)	-18.7%	-38.5%
01 TD	364	322	(84)	42	13.0%	-18.8%

#### GASOLINE

The current national price for a gallon of gasoline is \$3.08 per gallon (November 2007).

In the U.S., demand was up 4% from 2006 to an average of 9.287 million b/d. The effects of a slowing economy and the speculation of a national recession have slowed demand. Demand was up 1% during the first quarter of 2007, but by the fourth quarter was only at 0.05%. Primary storage of gasoline for November 2007 was 9,235,000 b/d. Distillates, used to make heating oil and diesel fuel, rose by 1.1 million barrels while gasoline supplies rose by 2.2 million barrels. Analysts are looking for a potential increase of 1 million barrels in distillates supplies and a rise of 2.4 million barrels in gasoline stockpiles in the coming months after January 2008.

**Ethanol**: at the end of 2007, the reported ethanol production was 13.3 MM bbl per day, which equates out to approximately 14% of American corn production. The current estimate for one bushel of corn is an output of 2.17 gallons of ethanol. It is estimated that one acre of land (in corn producing areas), produces 100-150 bushels of corn or somewhere between 270 to 405 gallons of ethanol per acre. The USDA's current estimate of the U.S. corn crop is 90,000,000 acres. Therefore, if the entire 90,000,000 acres of the U.S. corn crop were converted to ethanol production, the result would equate out to an average of 100 million gallons per day.

The current U.S. average consumption of petroleum products is 800 million gallons per day. This does not include the cost of fuel, fertilizers, or labor to produce the aforementioned corn. Ethanol and Flex fuel vehicles make an ecological statement, but in my opinion, corn for ethanol is not the answer.

#### North American Rig Count

				Change		Percent Cha	ange
	1/18/2008	1/11/2008	1/19/2007	Weekly	Annual	Weekly	Annual
Total U.S.	1,732	1,744	1,745	-12	-13	-0.70%	-0.70%
Offshore	59	59	84	0	-25	0.00%	-29.80%
Land	1,673	1,685	1,661	-12	12	-0.70%	0.70%
Inland	25	20	23	5	2	25.00%	8 70%
oul ou	20	20	25	4	40	1 200/	17 50%
Percent	18 60%	18 80%	15 80%	-4	40 2 00%	-1.20%	17.50%
Gae	1 /01	1 /00	1 466	-0.1078	-65	-0 60%	-4 40%
Boroont	90.00%	00 000/	04 00%	-0	2 109/	-0.00 /8	-4.40 /8
reicent	00.90%	00.00 %	04.00%	0.10%	-3.10%		
Directional	359	359	387	0	-28	0.00%	-7.20%
Horizontal	448	446	339	2	109	0.40%	32.20%
Gulf of	F						
Mexico	57	57	82	0	-25	0.00%	-30.50%
Gulf Oil	5	4	2	1	3	25.00%	150.00%
Percent	8.80%	7.00%	2.40%	1.80%	6.30%		
Gulf Gas	52	53	80	-1	-28	-1.90%	-35.00%
Percent	91.20%	93.00%	97.60%	-1.80%	-6.30%		
Canada	560	515	606	45	-46	8.70%	-7.60%
Oil	163	174	201	-11	-38	-6.30%	-18.90%
Percent	29.10%	33.80%	33.20%	-4.70%	-4.10%		
Gas	352	341	405	11	-53	3.20%	-13.10%
Percent	62.90%	66.20%	66.80%	-3.40%	-4.00%		
North America	2,292	2,259	2,351	33	-59	1.50%	-2.50%

Monthly: International and Workover Rig Counts International rig count, which excludes the US and Canada, wa December, 2007 and is 85 rigs or 8.9 percent above last year's 951. vas up 44 to 1,036 for the month of The total number of rotary rigs wor Idwide in November was 3,207 up 46 from November and 82 higher than last year US workover rig count for June, 2007 was down 9 to 1,548 and is 100 rigs below last year's level of 1,657. Source: Baker -Hughes Change Percent Change Monthly Dec., 2007 Nov., 2007 Dec., 2006 Monthly Annua Annual International Rig Count\* 1,036 992 951 44 85 4 40% 8 90% World Rig Count\*\* 3.207 3.161 3.125 46 82 1.50% 2.60% U.S. Workover Rig Count 1,548 1.557 1.647 -9 -99 -0 60% -6 00%

One thing of interest is the public perception of oil and gasoline prices and how "Big Oil" manipulates them. Based upon a national average the current price of \$3.08 per gallon is split in the following costs: 13% or \$0.40 - taxes, 9% or \$0.28 - distribution and marketing cost, then 10% or \$0.31 - refining and finally 68% or \$2.09 - the price refiners pay to purchase a barrel of crude. Additional taxes or costs vary from any state that mandates differing fuel grades or additives. So less tax and marketing costs, the current cost to refine a gallon of gasoline would be \$2.40.

#### STATE LEGISLATIVE NEWS

#### COLORADO

The 2008 Session of the Colorado Legislature is in progress.

The prime political conflict of 2008 for Governor Bill Ritter may be a November ballot proposal to increase severance taxes and/or changing the way they are distributed.

The Colorado Oil and Gas Commission is proposing new basic operating rules for the energy industry as part of its comprehensive plan to add health and environment components to the permit process. The mandate to consider health and wildlife protection issues came from the legislature in **House Bills 1298** and**1341** but doesn't include the operating issues under consideration, such as requiring pit liners and raising reclamation bonds. The proposal would double bonds to \$10,000 on 3,000' wells and quadruple to \$20,000 for deeper depths. The rules are expected to be adopted by July 2008.

The Colorado Air Pollution Control Division will enforce higher emission standards governing emissions of volatile organic compounds from oil and gas operations, including storage tanks. The new rules which have previously been in place in the Front Range (the Early Action Ozone area) will go into effect over the entire state on January 1, 2008. This is an attempt to bring the state into compliance with the Clean Air Act.

A revised Indian oil valuation rule seeks to bring added certainty to valuing oil produced from American Indian lands, the Minerals Management Service reports. The

MMS also plans to convene a negotiated rule-making committee with representatives from the federal government, American Indian tribes, individual Indian mineral owners, and the oil and gas industry. It will make recommendations to the agency on the major portion provision contained in most Indian tribal and allotted leases regarding the highest price paid or offered at the time of production for the major portion of oil produced from the same field.

#### KANSAS

The Kansas Legislative Session convenes January 28, 2008. Some of the issues in play are described below.

**HB 2032** - AN ACT concerning municipally owned or operated electric or natural gas public utilities; concerning regulation by the state corporation commission; amending K.S.A. 66-1,174 and K.S.A. 2006 Supp. 66-104 and repealing the existing sections.

**HB 2306** AN ACT concerning the Kansas electric transmission authority; relating to the duties and powers of the authority; amending K.S.A. 2006 Supp. 74-99d07 and repealing the existing section.

**HB 2419** AN ACT enacting the carbon dioxide reduction act; providing for income tax reductions and property tax exemptions; providing for regulation of carbon dioxide injection wells; amending K.S.A. 2006 Supp. 79- 32,117, 79-32,120 and 79-32,138 and repealing the existing sections; also repealing K.S.A. 2006 Supp. 79-32,117l.

**HB 2476** AN ACT concerning certain energy; relating to certain fuel storage and blending equipment; concerning certain income tax credits, income tax deductions and property tax exemptions; amending K.S.A. 2006 Supp. 79-32,117, 79-32,120 and 79-32,138 and repealing the existing sections; also repealing K.S.A. 2006 Supp. 79-32,117l.

**SB 238** AN ACT relating to oil and gas; concerning fees for application of intent to drill a well; amending K.S.A. 55-151 and repealing the existing section.

**SB** 325 AN ACT concerning natural gas; relating to gas gathering activities; amending K.S.A. 55-1,102, 55-1,104, 55-1,109, 66-104c and 66-2101 and K.S.A. 2006 Supp. 66-104 and 66-105a and repealing the existing sections.

#### LOUISIANA

The 2008 Louisiana Legislature Regular Session convenes March 31, 2008.

New Governor Bobby Jindal was elected in 2007. His administration is expected to result in many reforms that will be beneficial to the state, as well as citizens and business interests. Scott Angelle will continue to serve as Secretary of Natural Resources as well as Chairman of the Louisiana State Mineral Board.

State Oil and Gas revenues hit a record high in 2007.

Various House Bills of interest to the oil and gas sector:

**HB 62 – ACT 428** (Provides relative to commissioner of conservation approval of oil and gas recovery projects and the acquisition of property for related pipelines) signed by the Governor.

**HB 513** (Provides relative to local government notification and public hearings for drilling permit applications for sites located within residential zoning districts) Assigned to House Natural Resources

HB 617 (Prohibits drilling in and around Lake Peigneur or the Jefferson Island salt dome) Assigned to House Natural Resources

HB 827 ACT 451 (Provides relative to administration of state mineral leases) Signed by Governor

**SCR 11-14** (Approves CPRA Comprehensive Plan for Coastal Protection) Filed with Secretary of State.

#### MISSISSIPPI

During the 2007 Regular Session of the Mississippi Legislature:

**Section 53-3-13** of the Mississippi Code was amended to reflect a \$600 fee for drilling permits, effective July 1, 2007. Bonds were increased to a range of \$20,000 to \$50,000 based on depth drilled. Various other operational rules and regulations were tightened.

**Section 53-1-73** was amended to extend the time to pay maintenance taxes until after the oil and/or gas are produced and sold (effective July 1, 2007).

#### NEW MEXICO

The Legislature convened January 28, 2008.

A 2007 State Court decision ruled that the Oil Conservation Division of the Energy, Minerals and Natural Resources Department has broad powers to impose penalties on oil and gas operators violating the rules or laws regulating oil and gas production in the state.

Also in 2007 Governor Richardson signed **House Bill 827** creating the Surface Owners Protection Act, the most farreaching set of landowner protections in the country.

#### **OKLAHOMA**

A legal challenge by the Panhandle Producers & Royalty Owners Association against the Oklahoma Tax Commission continues to advance toward a possible hearing before the nation's high court. The lawsuit targets a withholding law passed by the 2001 Oklahoma Legislature that PPROA alleges discriminates against royalty and working interest owners who are not Oklahoma residents. The law empowers the OTC to withhold taxes on payments owed to out of state residents, but not to Oklahoma citizens.

**SB 72** (Relating to ad valorem tax and providing for assessment of property located in more than one county) Approved by Governor.

**SB 87** (Relating to gross production taxes and modifying funds subject to certain limitations) Referred to Finance Committee.

**SB 376** (Relating to certain procedures when acquiring state property) Approved by the Governor.

#### TEXAS

In a decision that has drawn vehement opposition, the Third District Court of Appeals in Texas has ruled that the Texas Railroad Commission inappropriately defined "public interest" in granting Pioneer Exploration's application for a new disposal well in Wise County. Should the ruling stand it will give landowners more leverage with which to protest saltwater disposal well applications brought before the RRC. The issue is the propriety of the judiciary in questioning the RRC's intention of protecting public safety when its policy has always been to review permits in exacting detail.

**HB521** (Relating to notice of an application for a permit to dispose of oil and gas waste in a commercial disposal well; creating an offense) Engrossed.

**HB913** (Relating to notice to a surface owner by an oil or gas well operator of the issuance of a permit for certain oil and gas operations) Enrolled.

**HB1659** (Relating to procedures in an eminent domain proceeding initiated by certain common carriers) Engrossed.

**HB2390** (Relating to severance tax credits for qualifying low-producing wells.) House Committee Report.

**HB2390** (Relating to tax credit for enhanced efficiency equipment installed on certain wells) Introduced.

**HB 2982** (Relating to the ad valorem tax appraisal of oil or gas interests) Enrolled.

**HB3554** (Relating to the program for the regulation and remediation of underground and aboveground storage tanks.) Enrolled.

#### WYOMING

Wyoming is considering changing its tax mechanism of large natural gas processing plants, while also seeking improvements in getting that gas out of state, including incentive payments to shippers and possible severance tax reductions to producers. Committee meetings are scheduled to begin in February in advance of the 2008 legislative session.

Nine environmental groups have filed formal protests against the Bureau of Land Management's February 5, 2008 energy lease sale in Wyoming, saying the auction includes tens of thousands of acres of irreplaceable habitat for sage grouse and other wildlife species including mule deer, elk and pronghorn. In December 2007 a federal judge ordered the Fish and Wildlife Service to reconsider its 2005 decision not to add the sage grouse to the Endangered Species List, saying the agency ignored expert advice.

The auction includes 143 parcels totaling more than 165,300 acres of which 125 parcels covering 150,000 acres are under protest from groups including Audubon Wyoming, Biodiversity Conservation Alliance, the Center for Native Ecosystems, Clark Resource Council, Greater Yellowstone Coalition, TRCP, Wyoming Outdoor Council, Wyoming Wilderness Association, and Wyoming Wildlife Federation.

#### SOURCES:

Colorado General Assembly — www.leg.state.co.us/ Kansas Legislature www.kslegislature.org/legsrv-legisportal/index.do Louisiana State Legislature — www.legis.state.la.us Mississippi Oil & Gas Board — www.ogb.state.ms.us Montana State Legislature www.leg.mt.gov/css/default.asp New Mexico Legislature — www.legis.state.nm.us/lcs/ Oklahoma Legislature — www.lsb.state.ok.us/ Texas Legislature Online www.legis.state.tx.us/Home.aspx Wyoming State Legislature www.legisweb.state.wy.us/

#### ENVIRONMENTAL REPORT

The biggest environmental event since the last edition of the Quarterly was the United Nations sponsored Climate Change Conference 2007. This was held in Bali, Indonesia, December 3-17. The conference was held to determine how the world will address man's CO<sub>2</sub> emissions after the Kyoto Protocol expires in 2012. The biggest news from the conference was the public dressing-down the United States received for its resistance to the inclusion of certain provisions in the "Bali Roadmap" as it is now being called. In every article I have seen, the U.S. is depicted as having been forced to capitulate to the demands of the conference attendees. The "Bali Roadmap" is a roadmap of lower CO<sub>2</sub> emissions aimed at developed nations, designed to try and derail the economy of the United States, but also with the effect of limiting the progress of impoverished nations around the world. Undoubtedly the oil and gas industry will be singled out for special rehabilitative measures designed to suppress our ambitions and condemn us to virtual re-education camps. Members of the liberal media are all twitterpated over the prospect of a new U.S. President next year who will surely be more sensitive to its political agenda than the current resident of the White House.

The premise of these talks, as with the Kyoto Protocol, is that man's use of fossil fuels is driving global warming. All in attendance have taken this statement as fact, and are making decisions with far-reaching consequences based on that reasoning. Of course, this reasoning denies the inconvenient truth that earth scientists have studied global climate cycles since the study of earth science began. Much of the topography of northern North America is the artifact of massive ice sheets that receded long before man began burning fossil fuels.

In a great example of too little, too late, excellent and thoughtful science-based (as opposed to emotion-based) articles are beginning to show up in a variety of publications. A really excellent scientific examination of all aspects

of the cause and effect of global warming may be found at the following web address:

http://www.jpands.org/vol12no3/robinson.pdf

This article, entitled "Environmental Effects of Increased Atmospheric Carbon Dioxide" appears in the Winter 2007 volume of the *Journal of American Physicians and Surgeons*, and was written by Arthur Robinson, Noah Robinson and Willie Soon.

In another excellent article published in the *Wall Street Journal* on November 1, 2007, John R. Christy stated the following:

...some scientists...see in every weather anomaly the specter of a global-warming apocalypse. Others of us scratch our heads and try to understand the real causes behind what we see. We discount the possibility that everything is caused by human actions, because everything we've seen the climate do has happened before. Sea levels rise and fall continually. The Arctic ice cap has shrunk before. One millennium there are hippos swimming in the Themes, and a geological blink later there is an ice bridge linking Asia and North America.

Christy goes on to note that the recent CNN report "Planet in Peril" spent considerable time on the shrinking Arctic sea ice cover, but did not mention that in October 2007 winter sea ice around Antarctica set a record maximum for coverage since areal measurements have been taken.

Who is John R. Christy? He was one of thousands of climate scientists who participated in the International Panel on Climate Change (IPCC). This makes him a small winner of half the Nobel Peace Prize, the other half of which was awarded to Al Gore. As usual, the scientists get swept under the rug while the politicians get all the glory.

Mr. Christy goes on to question the morality of diverting huge amounts of money and energy to marginally limit "global warming" when a cost–benefit analysis shows that the money could be much more effectively spent eliminating human suffering and disease in third world nations. Even the time spent debating global warming displaces news from the public that could heighten awareness of events in other parts of the world, and thus takes these very real issues off the table for discussion while the invented issue of anthropomorphic global warming grabs the spotlight. It is easier for a politician to take a stand on global warming, where the cause and effect can be swayed by the media, than to stand up for genocide victims in Africa, where results could be measured and thus the politician held accountable.

In a continuation from this article in the last *Quarterly*, let's follow the money a bit further. Consider the following in the context of the statement "Giant subsidies lead to opportunity for corruption and inefficiency."

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#### WIND POWER - CAPACITY FACTOR LIMITATIONS

Capacity factor is the term used to describe the amount of time the rated output of a power generating facility is actually available. The following comes from the website http://www.stopillwind.org/downloads/LessForMore.pdf:

Because of wind energy's intermittency and the limits of technology, the capacity factors of wind facilities, which indicate expectations of annual production, average between 20% and 30% of their rated capacity. Less than one-half of one percent is able to meet or exceed 30%. On average, a wind plant rated at 100 MW would therefore annually yield about 25 MW. Consequently, wind developers often dwell on their projects' installed capacity rather than focus upon capacity factors. No other type of industrial power generator has such a low capacity factor because of its inherent technical limitations and the nature of its power source. Nuclear plants, even with outages for maintenance, have capacity factors in excess of 90%; their national average approaches that level.

Individual large modern coal plants also have much higher capacity factors than wind farms (the national average capacity factor for coal generation is 71%), as do many gasfired facilities, if they are targeted to serve base load. Low aggregate capacity factors for generally reliable energy sources such as hydro and natural gas are the result of management choice, not a function of their intrinsic behavior, as is the case with wind energy. Wind developers frequently cite low capacity factors for hydro, claiming weather and climate limit its availability. But these conditions, such as drought, are often seasonable and can be projected (and compensated for) by reasonable planning efforts. Hydro is also typically storable day-by-day, week-by-week, and highly reliable. If grid controllers are able to use it as part of base load supply, the capacity factor for hydro is high, frequently more than 95%, far more than capacity factors that will ever be achieved for industrial wind energy. Many small turbine (and internal combustion) generators have extremely low capacity factors because they are built and/or make economic sense only for peak load operation. Capacity factors under 5% are very common among these units.

The low capacity factor for wind energy has enormous implications. Without considering any other variables, simple arithmetic shows that over 2000-2.0 MW wind turbines, each with a generous capacity factor of 30% and spread over hundreds of miles, would be necessary to equal the output of one 1600 MW coal plant situated on a few acres.

#### PROS AND CONS

Proponents of wind energy almost universally cite the need to cut CO<sub>2</sub> emissions as justification for building wind farms. This presupposes that man is responsible for global warming. The massive subsidies being handed out by Congress are likewise based on the "fact" that man is causing global warming.

Log onto the Internet and search for opposition to wind farm development and you will find a multitude of wellorganized groups opposing the construction of wind farms. Opponents cite the need for heavy subsidies, low capacity factors, decreased property values, and threats to birdlife. It is amazing how much development has been done without any scrutiny from the EPA. Can you imagine the necessary studies required to build oil and gas infrastructure on such a large scale? Environmental impact statements are virtually non-existent for wind farm proposals.

In an interesting development, the King Ranch in south Texas has asked for injunctive relief to stop a wind energy development on the adjacent Kennedy Ranch. Relief is being sought on the basis that no environmental study has been done to determine the effect on migrating waterfowl.

The supposition of man-made global warming is also being used to trample the constitutional rights of property owners in Washington state. The residents of a small town there recently voted to reject a wind farm development proposal due to the eyesore of the towers and implied loss

Past SIPES Pre-

sident Bill Goff,

#2068, of Den-

ver, Colorado is

currently serv-

ing as Councilor,

Rocky Mountain

Section for the

DPA of AAPG.

Recently he was

to

of property values. The Governor then stated that the farm will go in anyway, basing his action on the "fact" that the greater good of mankind in cutting CO<sub>2</sub> emissions outweighed the rights of the citizens who actually live on the site of the proposed development. Or perhaps it was the campaign contributions received from the wind development company. Apparently it is possible to justify nearly any act if it is done in the cause of stopping global warming.

#### PARTING THOUGHTS

Environmentalists claim the moral high ground - clean air, clean water, stop global warming - but at what cost? The cost to implement the Kyoto agreement, built on the premise of anthropomorphic global warming, is untold gazillions of dollars. This is the same type of logic that got the use of DDT banned, dooming millions of people in third world nations to death by malaria and yellow fever diseases easily defeated by insect control through pesticide use. Now "they" want to condemn the people of these same nations to poverty through the forced use of inefficient and unreliable energy sources.

Think about this: The Cape wind project being pushed by environmentalists and opposed by the elite citizens of the area - including that noted environmental lawyer Robert Kennedy, Jr. - claims that it will supply all the electrical needs of Cape Cod. Yet these same environmentalists claim that due to global warming and the melting of ice caps, Cape Cod will be under water in a few years. So why build the project to supply electricity to a bunch of flooded houses? Sometimes the logic of environmental groups can be rather convoluted.

Ever notice how stories about global warming are hard to find when winter sets in?

### News of Members



William T. Goff

nominated run for the office of president-elect of DPA. Bill is also serving as membership chairman for the SIPES Denver Chapter.



Robert C. Leibrock

land, Texas, and Scott A. Wainwright, #2216, of Metairie, Louisiana.

Bob and Scott are being recognized for their long history of service to the SIPES National organization, the

At their meeting in January, the SIPES Board of Directors voted to present SIPES Outstanding Service Awards to **Robert** C. Leibrock,

#1673, of Mid-

SIPES Foundation and to their local chapters.

They will receive award plaques on Tuesday, May 13, 2008 at the awards banquet held dur-



Scott A. Wainwright

ing the SIPES 45th Annual Meeting in New Orleans, Louisiana.

## Chapter News

### MIDLAND

Guests at our October 17 meeting included the SIPES Board of Directors who were in Midland for a quarterly board meeting. In conjunction with this event, a dinner for Midland Chapter officers, past presidents of SIPES and the SIPES Foundation, as well as national directors and their spouses was held the evening before at the Midland Country Club.



Midland Director Marc Maddox (left) with Past President David Eyler (center) and George Johnson at the Midland Board of Directors dinner.

Our guest speaker was Patricia Wood Dickerson, currently working with the American Geological Institute, and the Jackson School of Geosciences at the University of Texas in Austin. The title of her presentation was "Earth Dynamics from Aorounga to Zimbabwe — Astronaut Instruction in Geological Observation."

Pat has worked as a geologist, editor, photographer, writer, dance instructor and apricot cutter for a California fruit-packing firm (not in that order)! Her research in rifts and mountain



Midland Chapter Chairman Robin Vasicek (left) and New Orleans Director Ken Huffman.

chains of the world, including doctoral studies at UT in the Big Bend of West Texas, has provided opportunities for wide-ranging explorations: the Rocky Mountains, Rio Grande rift, Iceland, Norway, the Cordillera of western North America, Mexico, Belize, the Argentine Precordillera, the Appalachian chain from the Canadian Maritimes through west Texas, and the Southern Alps of New Zealand. She has drawn from those investigations in petroleum, gold, and water resource assessments, and now applies those passions in astronaut crew training, teaching, and in leading natural history field seminars for students, professional scientists, and nonscientists. For her efforts in astronaut training in field geophysics and geology, she was recently awarded the NASA Exceptional Public Service Medal. Pat currently serves on the Science Committee of the NASA Advisory Council, appointed to advise the agency on scientific strategies for exploring the Moon, Mars and the Solar System at large.

She explained that geological instruction begins during astronaut candidate training, with a week-long geological excursion and field geophysical exercise in New Mexico. In concert with ground observations of great faults, volcanoes, dunes and canyons, stereo photos taken from Shuttle/ISS help demonstrate analogous features that they will see from orbit. After selection for a mission, crews are briefed on such subjects as the global fresh-water supply (lakes, glaciers, ice sheets, etc.), great river systems and deltas of Asia, El Niño/ Southern Oscillation cycles, coral reef ecology and health, atmospheric phenomena, rift basins and transform zones, the East African rift system, and geohazards such as volcanic eruptions and earthquake-prone regions. Crews may request additional briefings – e.g., terrestrial analogues to features/processes on Earth's Moon and Mars. Many examples of these spectacular photos were shown during her presentation.

Space Shuttle and the International Space Station orbit Earth every 90 minutes, traveling at a ground speed



October guest speaker Patricia Wood Dickerson.

of  $\sim 4$  nautical miles/second. As the continents pass below, their characteristic colors and textures become familiar - the rolling red-gold dune fields and bare black volcanic shield of northern Africa, the brilliant blues of the Bahama Banks and the dark rumpled ridges of the Appalachians of eastern North America, the jagged icy whiteness of the Himalayas and the great braids of the Brahmaputra and Ganges Rivers carrying mountain bits to the Indian Ocean. Orbiting spacecraft are 210-mile-high windows on global and local geological phenomena, as well as on natural and humaninduced changes to the planet and atmosphere. A Space Shuttle mission may last a dozen days and an International Space Station expedition four to six months, so crews are able to document both seasonal variations and singular events.

In November, local member Donald P. McGookey, #1003, presented a talk entitled, "Permian Basin - Why So Prolific?" He pointed out that Mother Nature did everything right to create the major petroleum reserves of the Permian Basin. Throughout 300 million years of the Paleozoic Era the southwest part of the North American plate moved back and forth across the equator, staying within the 30-degree north and south latitudes. The paleogeography that resulted from these latitudinal positions contributed to the deposition of thick source beds and excellent carbonate reservoirs for the storage of oil and gas in the Permian Basin.

During the Paleozoic there were three major changes in this area. A broad spoon-shaped basin along the southwest edge of the continent characterized the Permian Basin area from Cambrian to Middle Mississippian.

From Middle Mississippian to early Permian time, the entire southwest part of the continent was subjected to periodic twisting plate tectonic movements that formed contemporaneous compressional basins and uplifts from the Oquirrh Basin of northwest Utah to the Ouachita Trend. The latter is a collision plate boundary that extends from southwest Texas to Mississippi.

Major features of this time in the Permian Basin of West Texas and southeast New Mexico were the Diablo Uplift, Delaware Basin, Central Basin Platform, Midland Basin and the Eastern Shelf (west flank of Llano Uplift).

The basins were the receptacles of thick deep-water shales and turbidites. The flanks of the uplifts were the site of pinnacle and barrier reefs, shelf carbonates and fluvial systems. All Late Paleozoic sedimentation was cyclic and controlled by changes in sea level caused by periodic continental glaciation in the southern hemisphere.

### FORT WORTH

The October meeting of the Fort Worth SIPES Chapter was held on October 18, 2007 at the Fort Worth Petroleum Club. Thirty members and guests attended. Chairman Jamie Robertson welcomed guests; at each table, they introduced themselves. Jamie singled out Annette Borkowski and Wayne Hoskins for their work on a paper called "Challenges of Urban Seismic" for the November 2007 SIPES Ouarterly.



Chapter Chairman Jamie Robertson (left) and October speaker Phil Carlisle.



November speaker Donald McGookey.

During the remainder of the Permian, the basins were filled to the brim and the uplifted areas were buried. The last event in the Permian was the deposition of a thick evaporite section over the entire area. The evaporites provided an excellent seal to prevent escape of migrating hydrocarbons. The basins and uplifts have remained buried and undisturbed since the end of the Permian. Major accumulations of oil and gas always enjoy the simple parameters of:

Source(s), burial of source beds to proper depth for the generation of oil and gas, migration of oil and gas to thick reservoir sections, structural and stratigraphic traps, seals and relatively simple history since migration. These parameters can be visualized as a giant chemical system.

Don McGookey is from Sandusky, Ohio. He spent two years in the navy as an electronic technician. He earned a B.S. at Bowling Green State University, a M.S. from the University of Wyoming, and a Ph.D. at Ohio State University. Texaco Inc. employed him from 1952 to 1979. He worked in various parts of the Rocky Mountains for seventeen years, and the balance in assignments in New York (international exploration) and as chief geologist in Houston, Texas. Don ended his career with Texaco as manager of exploration in Midland. Since 1979, he has been an independent geologist working primarily in the Permian Basin of West Texas and southeast New Mexico. He is the author of the Cretaceous Chapter in the RMAG Rocky Mountain Atlas, 1972, "Geologic Wonders of South Park, Colorado," 2001 and "Geologic Wonders of West Texas," 2004.

The Midland Chapter had no December meeting.

George Friesen Secretary

The speaker, Phil Carlisle, #2557, spoke on "Going Independent: Case History of Aspen Integrated Oil & Gas Company LLC." Phil went independent in December of 1985. He enumerated several factors as critical to the process. These included having a business plan (desire and focus), developing relationships, creating opportunities, assembling talent, having staying power, diversifying, leveraging assets, acquisitions, dealing with risk, debt, and sacrifice. Fortuitous market conditions play their part too. Even an independent requires a team effort for success.

Our November meeting was held on November 15, 2007 at the Fort Worth Petroleum Club. Twenty-seven members and guests attended. We were especially pleased to have TCU students attend.

The speakers, Jeff and Gail Wendt of The Eagle Wing Group, spoke on "Meeting People Where They Are -



November guest speakers Jeff Wendt (left), and Gail Wendt with Jamie Robertson.

Keys to Leadership and Management Whatever Your Position." Jeff discussed facets of leadership such as knowing your destination, determining your available resources, and utilizing resources (including other people). Gail described different personality styles, how to recognize their strengths, and how to maximize your efforts with them and for the team.

There was no December meeting. SIPES Fort Worth Chapter

# SIPES Foundation Donor Awards

The SIPES Foundation is pleased to honor donors who, in 2007, reached the following cumulative gift levels:

#### EMERALD - \$2,500

Michael N. Austin James P. Evans III Robert B. Ferguson George S. Johnson Robert B. Owen

#### GOLD - \$1,000

James K. Anderson Robert A. Anderson Garnet W. Brock William C. Burkett Jon F. Cobb Rex D. Coppedge Edward K. David Ralph C. Duchin

Robert D. Gunn Donald R. Hembre Constance N. Knight Edgar B. Krider Peter MacKenzie J. Phil Martin, Jr. H. Jack Naumann, Jr. Edward B. Picou, Jr. Stephen R. Robichaud C. Ray Scurlock William M. Smith M. Robin Vasicek Roger D. Wilkinson

#### SILVER - \$500

Robert D. Dougherty Duncan D. Dubroff

John A. Hord Kenneth J. Huffman George R. Jones Larry L. Jones Henry C. Libby Douglas H. McGinness II Eric L. Michaelson Lewis M. O'Neal Hugh C. Pendery David M. Pulling Dwight S. Ramsay C. Randall Schott Jeffry A. Smith G. Clint Wainwright, Jr. Scott A. Wainwright W. David Willig Mark D. Wilson

# SIPES Chapter Meeting Information

#### AUSTIN

Chairman: V-Chrmn: Secretary: Treasurer: Meets:

Doug Watkins Ward Davenport TBA Dwight Cassell The County Line (On the Hill) 1st Thursday

#### CORPUS CHRISTI

Chairman:	Patrick Nye
V-Chrmn:	Stephen Thomas
Secretary:	David Desenberg
Treasurer:	Duncan Chisholm
Meets:	Town Club
	Last Tuesday of month

Cliff Walker

Mike Taylor

Roval Oaks

Country Club 3rd Tuesday

Terry O'Hare

Keith Brownlee

#### DALLAS

Chairman: V-Chrmn: Secretary: Treasurer: Meets:

### DENVER

Chairman: Bob Cluff V-Chrmn: Jim Applegate Secretary: TBA Treasurer: Tom Stander Wynkoop Brewing Co. Meets: 4th Thursday

#### FORT WORTH

Chairman:	James Robertson
V-Chrmn:	James Robertson
Secretary:	ТВА
Treasurer:	ТВА
Meets:	Fort Worth Petroleum Club
	3rd Thursday

#### HOUSTON

Chairman:	Jim Norris
V-Chrmn:	Mark Gregg
Secretary:	Glen Pankonien
Treasurer:	Steve Hartzell
Meets:	Petroleum Club
	3rd Thursday

#### LAFAYETTE

Chairman:	Ellis Guilbeau
V-Chrmn:	Johnny Walker
Secretary/	
Treasurer:	David Bieber
Meets:	Petroleum Club
	2nd Wednesday

#### MIDLAND

Chairman:	Robin Vasicek
V-Chrmn:	Tom Gentry
Secretary:	George Friesen
Treasurer:	Pete Schrenkel
Meets:	Midland Country Club
	3rd Wednesday

#### **NEW ORLEANS**

Chairman:	Al Baker
V-Chrmn:	Tony Carollo
Secretary:	Jim Zotkiewicz
Treasurer:	Reese Pinney
Meets:	Andrea's Restaurant
	3rd Tuesday

#### OKLAHOMA CITY

Chairman:	Tom Rowland
V-Chrmn:	James Jackson
Secretary:	Mike Pollok
Treasurer:	Victor Cooper
Meets:	The Petroleum Club
	Bank One Bldg., 35th Floor
	1st Wednesday

#### SAN ANTONIO

Chairman:	Donna Balin
V-Chrmn:	Doug Draves
Secretary/	
Treasurer:	Joe Finger
Meets:	Petroleum Club
	3rd Thursday

### NEW ORLEANS

On behalf of SIPES National and the SIPES New Orleans Chapter, we extend an invitation to you to join us at the SIPES 45th Annual Meeting and 2008 Convention from May 12-15, 2008 in New Orleans. Our program will include exciting talks, great seminars, field trips, and spouse events which are unique to New Orleans. We hope you will also allow us the opportunity to show you our great city, which is world-renown for its history and culture and lies in one of the most geologically diverse basins in the continental United States.

Our chapter officers for 2008 are: Chairman Al Baker; Vice Chairman Tony Carollo; Secretary Jim

### SAN ANTONIO

The October meeting of the San Antonio Chapter featured Mark H. Holtz, formerly of the Bureau of Economic Geology, the University of Texas at Austin, with a talk entitled, "Moving Permian Basin Technology to the Gulf Coast: the Geologic Distribution of CO<sub>2</sub> Enhanced Oil Recovery Potential in Gulf Coast Reservoirs." Mr. Holtz pointed out that although the Permian Basin in West Texas has seen a long history of CO<sub>2</sub> enhanced oil recovery (EOR), the experienced gained has not been extended to the much more porous and permeable clastic depositional systems of the Gulf of Mexico Coast. Proximity to possible anthropogenic CO<sub>2</sub> sources, enabling reduced costs and infrastructure, and the petrophysical character of these sandstones are just two of the many attributes that showcase the Gulf Coast formations as an attractive option for this type of tertiary recovery. A large oil reservoir database was analyzed to determine the geologic distribution of CO<sub>2</sub> EOR potential in Gulf Coast oil reservoirs. The analysis showed that the CO<sub>2</sub> EOR resource potential along the Texas Gulf Coast is 2.7 billion stock tank barrels (BSTB) and the total Gulf Coast potential, including Mississippi, Zotkiewicz; Treasurer Reese Pinney; Past Chairman and National Director Ken Huffman.

Our October luncheon meeting featured Mitch Luehr and Coerte Voorhies from Seismic Micro-Technologies (SMT), a company whose PC based 3-D evaluation software has almost become a standard for independent geologists. Mitch and Coerte spoke to the group about some of the new features in SMT's upcoming 8.2 version.

In November, the SIPES meeting is traditionally a joint meeting with the API, NOGS, PLANO, and several other local professional societies. Clancy DuBos, a political analyst and owner of the *Gambit Weekly*, a New

Louisiana, and Alabama, is 4.5 BSTB. Results of this assessment indicate that mature Gulf Coast clastic oil reservoirs are a new large potential target for  $CO_2$  EOR when experience in the Permian Basin is retooled for this setting.

At the November luncheon, Jason Robinson, vice president for North and South America with MTEM, spoke on "Using ElectroMagnetics for Onshore Hydrocarbon Detection and Delineation - with a case study from Trinidad." Electromagnetic (EM) surveys have the potential to identify fluid content in rocks prior to drilling, differentiating between low resistivity water-saturated reservoirs and high resistivity hydrocarbon-containing reservoirs. The main reason that surface EM methods have long been overlooked in the oil industry is that resolution of conventional EM data has been low compared with that derived from seismic data. However, today's signal processing techniques and high precision multi-channel recording systems have significantly increased both the frequency bandwidth and the dynamic range of EM data.

The MTEM (multi-transient electromagnetic) method described by Jason Robinson works by injecting a series of pulse-coded electrical transient sigOrleans area newspaper, gave us his insight on our recent elections. Mr. DuBos pointed out how the political landscape of Louisiana is changing for the better, especially post-Katrina. Louisianans elected a young reformist Republican, of Indian descent, as governor, imposed term limits on the legislature, and formed "watchdog" groups to keep an eye on corruption significant changes for the State.

Our December Christmas luncheon was a lively open microphone session where members could, and did, speak their minds on various topics.

> Jim Zotkiewicz Secretary

nals into the ground and measuring the voltage response between pairs of receiver electrodes along the recording line at different offsets from the source. Signal processing techniques are used to produce a resistivity cross section; zones identified as highly resistive may indicate the presence of hydrocarbons. Real Time Appraisal on site provides both QC and initial processing results within hours of recording.

Also at the November meeting, new SIPES member Nic Weatherston, #3121, was welcomed by our chapter. Nic is a third-generation geologist who has worked for the past twentyfour years in his family-owned business, Discorbis Oil, here in San Antonio.

In lieu of the December luncheon, SIPES members and their spouses/guests attended the All-Industry Christmas Party, which our chapter co-sponsored. It was held at the San Antonio Petroleum Club and had a great turnout of members including those of the South Texas Geological Society, San Antonio Geophysical Society, and the local chapters of the SPE, API, and AAPL.

> **Donna Balin** Chairman

### LAFAYETTE

The Lafayette Chapter's October meeting continued our tradition of an afternoon barbecue at Girard Park. A large member turnout listened to musical entertainment by Pee Wee Whitewing. This was a very informal meeting with everyone enjoying a great meal and picture perfect weather.

Also in October, we held our annual Dove Hunt at the Diamond W Ranch. It was a great success with most hunters getting their limit of birds and enjoying a delicious meal.

Our November meeting was held in conjunction with the Lafayette

### DALLAS

The Dallas Chapter presented it's Fall Symposium titled, "The Business of an Oil and Gas Independent" at the Ellison Miles Geotechnology Institute, Brookhaven College Campus on Tuesday, October 16, 2007.



Former Dallas Chapter Chairman Mark Mathisen (right) introduces SIPES Foundataion Traveling Seminar Speaker Steve Reynolds of Denver.

Approximately thirty-five professionals attended from the surrounding oil and gas community. Presenters included Steve Reynolds, #2852, vice president of Infinity Oil and Gas; John Tintera with the Permitting Department of the Texas Railroad Com-mission; Jennifer Keefe from law firm of Patton & Boggs, LLP; Eddie Rhea, #2937, CEO of Foundation Energy; and Marlan Downey, #2711, chairman of Roxanna Oil Company and former president of ARCO. Geological Society. The speaker was Louis Buatt, an attorney with the Department Louisiana of Environmental Quality. His talk was entitled "Legacy Lawsuits" in which he discussed his thoughts and observations related to the sixty or more associated with lawsuits the "Corbello" case. Mr. Buatt did an excellent job with his presentation, showing the historical and chronological events that took place with the interested parties, the state courts, and also the resulting legislation that followed.

The December meeting was a great success with our members and their significant others attending a sit down dinner at our annual Christmas Party held at the Lafayette Petroleum Club. The Christmas Party is quickly becoming the most attended and popular meeting of the entire year. We also installed new officers for the coming year with the current officers agreeing to accept another term at their present positions. Lafayette Chapter officers for 2007-2008 are: Chairman Ellis Guilbeau; Vice Chairman Johnny Walker; Secretary/Treasurer David Bieber and Director Bill Finley.

> David Bieber Secretary/Treasurer



Dallas Chapter Chairman Ed Gonzales (right) welcomes John Tintera.

Material presented by Steve Reynolds included structuring oil and gas deal contracts, lease and purchase agreements, joint operating agreements, and avoiding liabilities. John Tintera reviewed new online permitting procedures, and changes within the Texas Railroad Commission to streamline permitting.

Lunch and refreshments were provided as Jennifer Keefe presented a continuing education course on ethics titled, "How to avoid litigation." The afternoon concluded with excellent firsthand experience from Eddie Rhea detailing the formation, structure and growth of Foundation Energy from institutional funding. Marlan Downey concluded the symposium with his sixty plus years of experience in the corporate world and becoming an independent. Special thanks to 2007 Chapter Chairman Ed Gonzales, and his wife for organizing the event. The symposium was first class!

The Dallas SIPES Chapter thanks our guest lecturers and sponsors, including Chesapeake Energy, Halliburton, Browning Oil Co., Drilling Info, Foundation Energy, Watkins Production Co., Suttles Logging, Inc., North Texas Energy Council, Petroleum Technology Transfer Council and Oakmont Minerals, Inc.



Eddie Rhea (left) and Marlan Downey presented excellent strategies at the Fall Symposium.

The Dallas Chapter Christmas Party was held on Saturday, December 1, 2007 at the Dallas Petroleum Club. This was a premium event featuring excellent food, spirits, accommodations and music. New chapter officers for 2008 are: Chairman Cliff Walker; Vice Chairman Terry O'Hare; Treasurer Keith Brownlee; and Secretary Mike Taylor.

> Don Muth 2007 Secretary

### HOUSTON

On October 18, Leslie Haines, editor-in-chief from *The Oil and Gas Investor* was our guest speaker. Her discussion was titled "Bridging the Gap: Leaping Between Your E&P Idea and the Capital You Need."



October guest speaker Leslie Haines.

Ms. Haines stated that, among other things, access to outside capital generates speedier growth for a company, more flexibility in choosing strategies regarding areas or plays of interest, introduction to more contacts within the oil industry, and tax advantages for LP and LLC companies. Sources of capital can be located by reading publications such as The Oil and Gas Investor, the Oil and Gas Financial Sourcebook, the Oil and Gas Investor This Week, and also through financial intermediaries. Through 2007, \$22 billion have been raised by private equity funds, hedge funds, and mezzanine funds.

Possible sources of capital are individual high-worth investors, individual aggregators (mutual funds, hedge funds), institutional investors (GE, pensions, endowments), and institutional aggregators. Potential investors are going to want to see a strong management team, a good track record, competitive advantages (play or trend expertise, special technology, etc.), and, sometimes, a company with some of their own money at risk. Several companies have begun small, grew with mezzanine loans, and sold out for a profit; after selling, some principals immediately start a new company.

With today's product prices, capital providers are eager to hear your plans. When presenting your ideas, remember that execution is more important than strategy; return is more important than growth; and dollars are more important than barrels.

Tim Brown, geophysical manager of Sierra Resources, was our guest speaker in November. His discussion was titled "Time is Fact and Depth is an Opinion, But We Drill Wells in Depth." Mr. Brown stated that the degree of accuracy desired in the conversion of seismically derived time structure maps to depth depends on the accuracy desired and the available resources. There is a cost in time and money for the most complex, state-ofthe-art solutions to depth conversion problems, but sometimes the high cost may not always be necessary. He does recommend that open hole logging for all wells include full density and sonic logs from TD to surface to aid in generating accurate synthetic seismograms which can be useful velocity information for that well.



November guest speaker Tim Brown of Sierra Resources.

The least desirable source of velocity information is from seismic processing velocities. Constant velocities derived from a time surface may result in erroneous depths; this method is quick, accurate. but sometimes not Purchased velocity functions are also questionable in that they may contain acquisition or processing errors, but they are useful if that is all that is available. If used, they are good at best for only one well, but don't allow for lateral variation between wells. A high quality synthetic is good, if properly tied to the data. A synthetic relates



Guest speaker Lawrence Bruno at the December meeting.

well tops to seismic events, and can be adjusted to match the seismic data. Good tied synthetics in multiple wells across an area are a desirable depth solution. The most accurate source of velocity data for depth conversion is a Vertical Seismic Profile (VSP). A VSP measures time versus depth resulting in the generation of an actual seismic trace for an accurate tie between the well and seismic.

The preferred solution for depth conversion is to use velocity functions in multiple wells in an area in order to generate a gridded velocity map for input for multiplying against a time grid. The resulting velocity derived depth information then can be contoured to provide a more accurate presentation of structure.

Our last luncheon of 2007 was held at the Petroleum Club on December 20, with Lawrence Bruno of Core Laboratories as guest speaker. His discussion was titled "Drilling Mud Tracers for Formation Evaluation."

Mr. Bruno stated that drilling mud tracers used in water-based mud in conjunction with conventional coring can result in more accurate water and hydrocarbon saturations of the formation, a more accurate determination of Rw in a reservoir that produces no water, a validation or adjustment of the petrophysical parameters used in the log-calculated Sw model, and, overall, more confidence in reserve calculations. Some of the characteristics of high quality mud tracers are that they are not naturally occurring in the reservoir, they must be soluble

in the mud filtrate, they must be biologically and chemically stable, and they must be able to be accurately detected in low concentrations in the laboratory.

Tritium (tritiated water) is the optimum water-based mud tracer. It does not occur naturally in formation water, can be detected at extremely low concentrations, and is safe to use

### DENVER

The Denver Chapter's luncheon meetings are held monthly on the fourth Thursday at the Wynkoop Brewing Company, 1634 18th Street in lower downtown Denver.

At the October meeting, Jim Burnell, minerals geologist of the Colorado Geological Survey, gave a very informative presentation on the uranium industry of Colorado and neighboring states and the current high level of activity. From the early 1870s, when pitchblende was identified in a Gilpin County gold mine, Colorado has played a significant role at the forefront of the nuclear industry's demand for uranium. In the past 137 years the mining of uranium has gone through numerous cycles within three major periods. Early on the world was fascinated by radium.



October guest speaker Jim Burnell.

Then came vanadium exploration, which in the early 1940s became a cover for the Manhattan Project's search for uranium, followed by the uranium period from 1945 until the present.

Uranium mining is now entering another phase as demand increases, and the price of yellowcake rises in the face of shortage and speculation. without the need for protective gloves or clothing when used in drilling mud.

For the best attainable results when using drilling mud tracers during coring operations, Mr. Bruno stated that tight controls should be placed on the drilling mud design, with mud monitoring and sampling occurring during coring operations. He also said that

The current world demand is 160 million pounds of U3O8 per year, which is expected to double by 2080. World nuclear-power generation is now 700 billion kwh and is projected to increase to 800 billion kwh within the next decade. Colorado's infrastructure is in place and expanding along with adjoining states. In 2006 there were 5,693 uranium-mining claims filed on federal lands. There are four uranium mills, but only one is currently active in the region, and thirty-one new mills are licensed for construction. Colorado's most significant uranium deposits are found in ancient fluvial sandstones. The redox sensitivity of uranium controls its occurrence in the sandstone deposits and is also the key to extraction by the in-situ leaching method, proposed in projects throughout the western U.S.

Some problems stand in the way of uranium production reaching the levels envisioned by prospectors, miners and investors. One critical problem is a lack of milling capacity for uranium ore. Use of the in-situ leaching process, a technique that is low-cost, less hazardous to workers and enables the producer to bypass traditional milling, must win trust among environmental groups. In underground mines the radiation hazard presented by polonium 210 carried by water vapor in the mine air is real and must be overcome.

Our speaker at the November luncheon meeting was Genevieve Young, a petroleum geologist with the Colorado Geological Survey. Her topic was "CO<sub>2</sub> Sequestration Potential of Colorado."

The Colorado Geological Survey is a participant in the Southwest Regional Partnership on carbon sequestration, low fluid loss and a low invasion bit design are recommended in order to obtain optimum mud cake buildup, and that coring rates of 80'-120' per hour are preferred to minimize invasion.

> Michael Jones 2007 Secretary



November guest speaker Genevieve Young.

whose primary goal is to develop a plan for reducing greenhouse gas in the southwestern United States by storing it underground in proximity to large CO<sub>2</sub>-emitting facilities such as coal-fired power plants. The partnership is a large group made up of organizations and individuals in science, engineering and public relations. Currently the partnership is conducting three pilot tests in the San Juan, Paradox and Permian Basins to gain practical knowledge in gathering and injecting  $CO_2$  into suitable subsurface formations. The project uses public funds allocated to the U.S. Department of Energy/NETL Carbon Capture and Storage Program.

Denver SIPES members and friends attended a happy, catered annual holiday party at Southglenn Country Club. At that December event, Mike Austin announced the chapter officers for 2008: Bob Cluff, chapter chairman; Jim Applegate, vice chairman; Tom Stander, treasurer; and the secretary, to be announced. Bill Goff continues as membership chairman. Mike Austin and Mike Cruson are national directors.

> Keith Droullard 2007 Secretary

### OKLAHOMA CITY

The meeting on October 3 had fellow SIPES member from Houston and president of New Century Exploration, Inc., Phil Martin, #2390, presenting a very informative talk titled "Fishing with Dynamite: 3D Tips and Trip-Ups in the Gulf Coast." Phil presented an excellent talk giving

### CORPUS CHRISTI

Our October meeting was held on October 30 at the Corpus Christi Town Club, with guest speaker Gary Tindall, Branch Chief, Analytical Investigation, U.S. Army. His talk was entitled "There's Always a Reason." Gary is stationed at the Corpus Christi Naval Air Station. The mission of the branch is to investigate the U.S. Army's aviation mishaps worldwide. His work has taken him all over the globe including Iraq, Afghanistan, South America, Europe, and Asia. One of the most meaningful investigations was a portion of the Challenger disaster. His work is related to the investigation of material failure in fixed wing and rotary wing aircraft. His main focus has been on rotary wing aircraft material failure mechanisms. Gary's group indirectly investigates other aspects of a failure, such as human factors, to determine the root cause of the mishap.

Gary is a native of Victoria, Texas, He started his career with Bill Findley at FESCO in Victoria. Gary graduated from Texas State University with a B.S. in chemistry, and Embry Riddle Aeronautical University with an M.S. in aeronautical science. He is presently writing his Ph.D. dissertation that concentrates on unmanned aerial vehicles. Gary has received the Aviation Safety Certificate from the University of Southern California, and performed postgraduate study in molecular spectroscopy at Arizona State University. examples of production found using 3D seismic.

Our November speaker was Richard Andrews, a petroleum geologist with the Oklahoma Geological Survey. His talk is entitled "Production and Outcrop/Reservoir Characteristics of the Woodford Shale in South-Central and Southeast Oklahoma." We had a

In addition to his regular duties, Gary is an associate professor with an extension campus of Embry Riddle in Corpus Christi in the curriculum of aeronautical science.

At our November meeting, Mike Flecker of Core Laboratories was the guest speaker. His presentation was entitled "Completion Diagnostics; Is It Your Completion Or Your Rock?" Mike Flecker is currently the vice president/general manager of the Pro-Technics Division of Core Laboratories. He started his career with Dresser Atlas (then Western Atlas) in 1980, where he focused on cased hole logging services. Through his 17-year term he held various positions in operations, sales, management, research and global geosciences. He then headed up the reservoir engineering department at Group before Wood joining ProTechnics as the director of technology in 2000. He then headed up their engineering department where he guided the advancement of their logging technology. Mike has authored technical papers published in SPE's Journal of Petroleum Technology, SPWLA's The Log Analyst and SEG's Journal of the Society of Exploration Geophysicists.

Wells that underperform expectations are evaluated on a daily basis. This evaluation often leads to pointing at possible completion problems or inaccurate petrophysical assessments. Limited information leads to low confidence or incorrect interpretations of the source of the disappointment. large turnout as there are copious horizontals that have been drilled, and are being drilled, with many slated for future drilling to establish gas production from the Woodford.

> **Tom Rowland** *Chairman*

Completion diagnostic services are commonly being employed to measure the completion results and quantify each reservoir layers' production. Several case examples highlight some of the possible completion problems that can be directly identified using completion diagnostic services. These data provide for targeted solutions consisting of remedial workover and optimization of the field development.

The annual Christmas dinner of the Corpus Christi Chapter was held at the Town Club on Wednesday, December 12. The evening began with a cocktail hour where members and their spouses enjoyed an open bar, delicious hors d'oeuvres and good conversation. Dinner was a choice of prime rib or fresh catch of the day. A special program of Christmas music by the Sweet Adelines quartet was presented as the guests enjoyed dessert.

Outgoing Chairman Duncan Chisholm presented the new officers for 2008. They are: Patrick Nye, chairman; Steven Thomas, vice chairman/programs; David Desenberg, secretary; and Duncan Chisholm, treasurer. Duncan also recognized Brian Calhoun, Bernie Brauer and Ed Riddle for their past service.

Thomas J. Wintermute, #1850, SIPES member and a member of the Coastal Bend Geological Library, died on November 1, 2007, at the age of 80.

**Ed Riddle** 2007 Secretary

While the mid-rift high has a thin Louann Salt cover, an estimated 5,000 to 7,000 feet of salt was deposited off this high in the East Texas Salt Dome Basin. Salt isochrons infer both the external and internal shape of the mid-rift high. The Halbouty Ridge, located along the Smith-Rusk County line, and the San Augustine High are notably absent or salt isochron thins that are evident on the mid-rift high.

The shape of the mid-rift high has also influenced later sedimentary depositional patterns. In the areas adjacent to it, i.e., southwest of the Trinity River and east of the Louisiana State Line, the Haynesville-Bossier-Cotton Valley System is aggradational due to very large available accommodation spaces. Conversely, in the area suprajacent to the mid-rift high, the Haynesville-Bossier-Cotton Valley System prograded across a flat marine shelf environment over an area nearly three times as large due to a loss of available accommodation space.

The Cotton Valley sands across this shallow marine mid-rift high are shoreface sands that were deposited along a shoreline that extended from southwest to northeast across the shelf. The sands of Overton Field, as well as the sands at Oak Hill, Willow Springs and Carthage Fields are all examples of this deposition. Thin widespread limestone beds are present within the Cotton Valley across the Sabine Uplift. These limestones are interpreted as transgressive shell lags and back-bay oyster beds. The position of each active shoreface system prograded through time, with the oldest system to the northwest and the youngest migrating to the southeast.

Middle to Upper Cretaceous Laramide foreland tectonics applied lateral compression from the southwest and formed a foreland fold pair (the Sabine Uplift and the North Louisiana Salt Basin). Later, Paleocene-Eocene compression reactivated the uplift again. Pre-Jurassic transform fault lineations along NW-SE lines strongly influenced the shape



Fig 1. Surface Geologic Map of the Sabine Uplift as outlined by the Mid-Rift High and the Wilcox (Paleocene - Eocene) outcrop of East Texas & Louisiana. The Wilcox outcrop outline is displaced to the northeast of the Mid-Rift High. Outline is from Geologic Highway maps of Texas and Louisiana. Maps published by permission of the AAPG.

and style of the resultant uplift. The current outline of the Sabine Uplift is defined by the edge of the Wilcox outcrop, resulting in a rectangular shape along a NW-SE axis (**Fig. 1**).

Any exploration program for the Sabine Uplift area should include a serious consideration of Laramide compressional tectonics, sub-salt structures, and both gravity and magnetic mapping early in the evaluation process.

#### INTRODUCTION

This paper will provide a framework for the structural and stratigraphic history of the Sabine Uplift that is better understood when looked at in a regional context. It is herein suggested that a large left-lateral wrench fault system, originating near Saltillo, Mexico is the source of external compression for the foreland folding that formed the Sabine Uplift. The Sabine Uplift formed at a restraining *(Continued)* 





stepover/sidestep (Dooley and McClay, 1997) in that wrench fault system. This wrench system continues across the North American continent, and is referred to as the Saltillo-St.Lawrence Shear System.

#### **BASEMENT TECTONICS**

Pre-salt structures reflect the Triassic rift tectonics that formed as the Africa-South America block separated from the North American block. Transfer faults, commonly known as "transform faults," that formed by strike-slip motion during this rifting are oriented at ~N60W (Fig 2). Faults that parallel this orientation are present across the North American Craton. These faults form the basic building blocks for understanding structural basement tectonics. Another fault orientation of ~N45W is found almost exclusively within the post-salt sedimentary section. This orientation is the compressional synthetic shear that followed the Pennsylvanian/Permian Ouachita Orogenic thrusting (Fig. 2). These faults were re-activated during the Triassic rifting and have formed linear shear zones that are affecting structural and sedimentary systems to present day. These synthetic shears control the course of all of the major river systems

in Texas today and in the geologic past (Fig. 2). The Paleo-Trinity River controlled Bossier sedimentation on the west flank of the East Texas Basin in much the same way that the location of the Sabine River controls the location of the beaches and shelf sand deposits between Sabine Pass and Galveston, Texas today.

Major transform systems are visible on maps of magnetic susceptibility, i.e., gravity, surface geologic maps, 2-D seismic data, and surface lineament analyses. These features can also be inferred from surface geography and Landsat analysis. These major faults can be traced into the offshore domain where they merge into the major mapped transform faults of the Atlantic and Gulf Coast Margins (Stephens, 2001).

The expected suite of rift horst and grabens can be found at right angles to the major transform orientation (Adams, 1989, 1993, 1997). These horsts and grabens terminate into smaller strike-slip faults that also parallel the major transform orientation (**Fig 3**). The net effect of this fault pattern is a mosaic of rectangular-rhombic fault blocks. The rectangles are elongate in a NE-SW direction, and the ends of the rectangles define smaller offset transform faults that are *(Continued)* 



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continuous for many miles, if not continuous across much of the basin. Across portions of the Sabine Uplift where the Louann Salt cover is thin (less than ~1000'), these fault blocks can be mapped utilizing seismic data. The base of salt surface is critical to understanding later depositional and structural trends. Repetitive at large, intermediate, and small scales, features such as the East Texas Salt Dome Basin and the Sabine Mid-Rift Horst, the Halbouty Ridge, and offset horsts such as those that influenced the seaward edge of Haynesville oolite shoal deposition at Gladewater, Gilmer, and Overton Fields are all influenced by these basement fault blocks (Fig. 4).

The synthetic shear zones cut across this basement architecture and have a unique internal structure. These synthetic shear zones have opened by transverse shear along planes within the shear zone that are parallel to the



major transform systems. This generates a linear series of rhomb-shaped basins with intervening horsts that are at an angle within the synthetic shear zones. Both modern and ancient rivers follow the synthetic shear zones by flowing diagonally across the individual rhomb-shaped basins (**Figs. 5A & 5B**). These rhombs are also preferential sites for salt deposition because of their early formation. Features such as salt domes, pillows, and salt welds are all to be expected within these isolated rhombs.

The Sabine Uplift of today is a reactivated mid-rift high. This large rhomb-shaped area owes its origin to the same tensional forces that formed the East Texas Salt Dome Basin, a large rift basin, and the basement transform faults. The northeast and southwest boundaries are major transform systems. They extend into the offshore Gulf of Mexico where they are among the transfer faults shown by Stephens, 2001. Also in that paper, Stephens' work reflects both the N60W and N45W basement fault orientations. It is important to recognize that the origin of the Sabine Uplift cannot be interpreted without placing it into its proper regional context.

#### SALT TECTONICS

The key to understanding salt tectonics across the Sabine Uplift is to initially understand the geometry of the Louann Salt at the end of salt deposition. The depositional surface of the Louann Salt was originally a flat surface; therefore, the original salt isopach was a cast of the pre-salt surface (Fig. 3).

It follows from this that subsequent sediment loading will cause salt deformation to proceed along predictable and repeatable paths. These paths will lead to salt deformation that yields structures that can now be used to predict the original salt isopach. Original salt thicknesses of less than about 1000' will deform very little, unless the salt thins abruptly against the edge of an adjacent horst. *(Continued)* 



Thicker salt will deform into pillows, stocks, ridges and domes. Along the edge of the salt basin, the salt movement will cause the formation of large relief faults. Similarly, faults will form within the basin where the salt thins abruptly, or where the slope on the pre-salt surface is great enough to allow salt flowage down slope. Thus, salt structures can be used as indicators of sub-salt faults.

The shape, size, and type of salt deformation must be mapped and understood in order to map and understand the pre-salt tectonics; the pre-salt tectonics must be understood to predict its effects on later depositional and structural patterns.

For example, salt domes, pillows, and ridges may form along the edges or more often in the corners of the basement grabens. Proper analysis of the lines of domes and ridges will define the basement transform systems (Adams, 1993). The horst and grabens can often be determined after the transform systems are defined (Adams 1993, 1997).

One of the most important conclusions to understand is the necessity for external forces to initiate salt movement. These external forces can be the gravitational force of uneven sediment loading, gravitational movement along a sloping basal surface, or external tectonic compression or tension which either change the confining pressures on the salt body or physically change the shape of the confining boundaries of the salt body.

### HAYNESVILLE-BOSSIER-COTTON VALLEY DEPOSITION

The Sabine Uplift had a profound effect on deposition of the Haynesville, Bossier, and Cotton Valley sediments. A subsiding shelf characterized the area southwest of the Trinity River and east of the Texas-Louisiana State Line (**Fig. 6**). In contrast, the area between the Trinity River and the Texas-Louisiana State Line was supported by the large midrift high in the pre-salt. This area did not subside during the Jurassic deposition like the areas on either side. Therefore, the sedimentary section across the mid-rift high was forced to prograde to the southeast instead of aggrading in place.

The East Texas Salt Dome Basin also had a profound influence on this Jurassic sedimentation. Since the top of the Louann Salt was deposited as a flat surface, the Salt Dome Basin was a large flat area with little or no stream gradient potential nor any relief to aid in the nucleation of Haynesville grainstone shoals. However, Haynesville grainstone shoals developed in front of the flat basin area and nucleated over the Halbouty Ridge on the northwest flank of the mid-rift high (Fig. 7). Upon detailed examination, the Halbouty Ridge is determined to be a ridge composed of many smaller horsts. Grainstone shoal development

(Continued)



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occurred suprajacent to these individual horsts and coalesced into a regional shelf-edge grainstone complex. At the end of Haynesville deposition, the carbonate system was drowned by the transgressive Bossier Shale influx. The shape and amount of the pre-Bossier relief on the Haynesville shelfedge can be determined by isopaching the Bossier Shale as illustrated in the dip cross section (Fig. 8). The Haynesville porosity is time-transgressive to the east as it climbs stratigraphically. The Halbouty Ridge and the Haynesville grainstone shoal became part of a buttress that diverted major Bossier river systems.

The Bossier rivers and streams were diverted around the flat area of the East Texas Salt Dome Basin into the synthetic shear zones adjacent to the mid-rift high, i.e., the Trinity River. The East Texas Salt Dome Basin had no sufficient stream gradient except within the synthetic shear zones on either side of the East Texas Salt Dome Basin and the Halbouty Ridge. Therefore, gravity forced these rivers into the synthetic shears. The Bossier is the basinward deep water time equivalent of the Cotton Valley Massive Sands. Progradation of the Bossier-Cotton Valley Delta System migrated the Cotton Valley shoreline across the East Texas Salt Dome Basin onto the mid-rift high.

The Sabine Uplift mid-rift high became the ideal shallow water shelf for Cotton Valley sand deposition. Multiple bay-beach-shoreface systems developed with a NE-SW strike orientation and prograded across the shelf. Figure 9 shows a stylized distribution of the major Cotton Valley shoreface systems across the Sabine Uplift as depicted in the N-S cross-section in Figure 10. The lowermost Cotton Valley sequence for the Taylor Sands contain minor transgressive events that cap each sand sequence with shell limestone lags that are correlative and mappable across the Sabine Uplift. On a regional scale these limestones correlate into time-equivalent shales that developed on the shelf bas-



inward of the shoreface system. Each system prograded seaward of the prior shoreface system. The limestones are important vertical seals within the predominantly sand-shale sequence and are almost always associated with the gas production from the Cotton Valley sands below.

A regional N-S cross-section shows the progradational nature and correlation for each general sand package and its capping limestone beds (Fig 10). This cross-section also shows the effects of the Halbouty Ridge on Haynesville grainstone development as well as the effect of basement grabens on Haynesville sedimentation. In Harrison County, a large area of Haynesville Limestone in front of the Halbouty Ridge is replaced by a predominantly shale interval. Figure

(Continued)



Fig. 9 A simplified map view of the prograding Cotton Valley barrier island systems across the Sabine Mid-Rift High. Lower Taylor Sands are to the northwest and Upper Cotton Valley sands are to the southeast.



7 includes a limestone percent map of the Haynesville interval where the shale in this trough is inferred to have its origin in the North Louisiana Salt Dome Basin and is considered roughly correlative to the shales that encase the Gray Sand.

#### LARAMIDE COMPRESSION

The lasting effects of the mid-rift high do not stop with Cotton Valley deposition. The large basement high acted as a buttress during Laramide wrench faulting and became a fault fold with significant thinning over the crest of the fold. Jackson and Laubach, 1988a, 1988b, and 1991 recognized the fold nature of the Sabine Uplift. They recognized the coincidence of timing of the folding with the Laramide Orogeny to the west, but they did not discuss the mechanism by which the Sabine Uplift was connected to the Laramide Orogeny. Further work and model studies have provided more insight into the nature of the fault origin and orientation of the Sabine Uplift. Aydin and Nur, 1985 use the term stepover to describe the process of en echelon fault movement, while Dooley and McClay, 1997 refine that terminology and include both stepover and sidestep as well as defining the nature of the geometry as

either releasing or restraining. They also incorporate the term "double bend" as a fault style. This work is important in explaining how large amounts of energy can be transmitted long distances to form arches and uplifts. Scaled sand box models are used to demonstrate several of these styles (Dooley and McClay, 1997).

The Sabine Uplift is a rectangular uplift that owes its antecedent shape

to the Triassic Mid-Rift High that underlies the current arch. The surface geologic map of the Sabine Uplift area shows the outline of the Wilcox outcrop to be a rectangle, with its long dimension oriented NW-SE (Fig. 1). Coincidentally, this Wilcox outcrop outline is very similar to the outline of the mid-rift high with displacement to the northeast. This strongly supports the idea that compression was from the southwest. It can be concluded that the forces that caused the Cretaceous and Eocene uplift of the Sabine Arch (Granata, 1963, Jackson and Laubach, 1988b, and 1991, and Halbouty and Halbouty, 1982) acted on the mid-rift basement block in its entirety. This data supports the opinion of Jackson and Laubach, 1988b that the arching is not due to volcanism or igneous intrusions, but rather to exterior compressive forces as being the most reasonable cause of the arching.

It is suggested that the external force responsible for the arching of the Sabine Uplift was transmitted to the southwest flank of the mid-rift high by a Laramide wrench fault that originated near Saltillo, Mexico and which is oriented NE-SW from that point to







near Jacksonville in Cherokee County, Texas. At that point the wrench fault is offset via the Mt. Enterprise Fault Zone to a point near Black Lake Field in eastern Red River Parish, Louisiana where the fault turns back to the northeast. The fault system continues to the northeast through the New Madrid Fault Zone, the Lima-Indiana (Trenton) Field, and exits the craton through the St. Lawrence River gap (**Fig. 11**). This wrench fault system is termed the Saltillo-St. Lawrence Shear System. Both surface and buried faults define most of this pathway, as do sites of historical seismicity (Davis etal, 1985). Occurrences of some of the larger earthquakes in Texas are near Jacksonville and Rusk in Cherokee County, where the wrench fault line (here defined by the Elkhart graben system) turns east along the Mt. Enterprise fault zone.



The line of this wrench fault system defines a restraining double bend or restraining sidestep where the system is offset by the Mt. Enterprise fault. In this scenario, the Sabine Uplift becomes a fault fold or a pop-up block at the point of impingement. Not unexpectedly, the periods of major uplift on the Sabine are coincident with the major periods of Laramide activity, namely the Middle Cretaceous and the Paleocene-Eocene (Jackson and Laubach, 1988b).

#### SABINE UPLIFT

What does the structure of the Sabine Uplift look like when viewed in the context of lateral compression across a restraining side-step along a continental scale wrench fault? Figure 12 is a cartoon map view of this scenario. Note the position of the side-step relative to the basement mid-rift high. The mid-rift high is nearly bisected by the side-step in the Saltillo-St. Lawrence Shear System (the Mt. Enterprise Fault), and the offset of the side-step is nearly coincident with the width of the mid-rift high. Also, the Wilcox outcrop outline is offset to the northeast.

Figure 13 is a SW-NE cross-section of this compressive system as viewed parallel to the wrench fault prior to the compression. Note the thick Jurassic salt away from the mid-rift high versus the thin salt over the midrift high. Also note the subtle thinning of the Upper Jurassic and Lower Cretaceous interval over the mid-rift high. This is a continuation of the Haynesville-Bossier-Cotton Valley response described earlier in this paper. Salt movement, crustal isostacy and differential compaction are all in part responsible for the thickening of this interval off of the mid-rift high. The mid-rift high is shown here with flanking blocks that gradually step deeper. This may not be the case in all orientations, but is valid for this model.

The resultant post-compression cross-sectional view is shown in



Figure 14. The major uplift is accomplished by vertical reactivation of the NW-SE transform faults that flank the mid-rift high. Compression has squeezed the mid-rift high upward and generated vertical thrust faults on the flanks. These faults are not seen on seismic but are inferred to fit the observed uplift based on the depths to magnetic basement. The two periods of uplift are demonstrated diagrammatically with the Middle Cretaceous uplift centered over the mid-rift high and the Paleocene-Eocene uplift offset slightly to the northeast. This offset can be viewed as an early precursor to the formation of an overturned fold. Overturned folds are present along the Saltillo-St. Lawrence Shear System near Monterrey, Mexico in the Huastecan Fold Belt. The difference in the amount of fold asymmetry, or overturning, is related to the amount of horizontal versus vertical stress applied at that particular point along the shear system.

If the Sabine Uplift is a response to craton-wide stresses and intra-plate movement, it then stands to reason that other similar features may have a similar or related origin. For example, the Llano Uplift, the Monroe Uplift, and possibly the Chittim Anticline all appear to have formed at similar

times to the Sabine Uplift. Likewise, active salt dome growth in the East Texas and North Louisiana Salt Dome Basins began in the middle Lower Cretaceous. If salt movement was more sensitive to external force rather than up-warping, salt deformation would have started prior to the major uplifts that are adjacent to the salt dome basins. The Sabine Uplift and the North Louisiana Salt Dome Basin have the general appearance of a fold pair. That is, they appear to be genetically related in both time and space. The presence of a heretofore unmapped wrench fault system across the Gulf Coast of Texas has major implications for paleogeographic and structural reconstructions of the Gulf Coast, especially for the Lower Cretaceous and older intervals. Many faults that have been mapped solely as down-to-the-coast faults along the Middle Texas Coast may, in fact, have an important strikeslip component. This hypothesis would also impact fault and fracture orientation interpretations.

Occam's Razor states that when more than one solution is proposed for a problem, the more likely solution is the simpler solution. In the case of the origin of the Sabine Uplift, the simplest solution is the presence of a wrench fault system that links multiple known fault and earthquake zones and areas of known hydrothermal activity with a simple fault fold geometry that is linked in time and space to known orogenic activity in Mexico.

#### SUMMARY

Basement structures play an integral part in understanding the history of the Gulf Coast. The orientation of pre-existing transform faults and the presence of rift-related horst and graben structures control the location, size and shape of subsequent salt structures, fault systems, rivers, shelf margins, reefs, basins and indeed all of the elements necessary for mapping and understanding a depositional system. For the Sabine Uplift, the presence of a Triassic mid-rift high influenced the location of the Haynesville Shelf Margin, the location of the Bossier rivers and depo-centers, the depositional slope and extent of the Cotton Valley shelf sand system, the orientation of the Cotton Valley shoreface systems, the extent of erosion during uplift, and the shape of the present-day surface outcrop pattern.

The transforms and rift structures control the extent and thickness of the original salt deposits. The extent and thickness of the original salt deposits control the shape, size, and orientation of the resultant salt structures.

The mid-rift high caused the Haynesville-Bossier-Cotton Valley sequence to prograde across a low-relief marine shelf while the same sequence on either side of the mid-rift high was aggradational.

The shape of the mid-rift high also determined the manner in which the Sabine Uplift responded to the lateral compression associated with the Saltillo-St. Lawrence Shear System. The rectangular shape of the mid-rift high is reflected in the rectangular shape of the Sabine Uplift. The timing and extent of erosion during the uplift of the Sabine Uplift has controlled the trapping of some of the largest oil and gas fields in the United States.

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### An Introduction to GIS

#### by Jon B. Selby, #2928 – Austin, Texas

GIS, a.k.a. Geographic Information Systems, is a frequently used acronym in almost every professional jargon. While some readers might be familiar with or even current users of a GIS, there are some for whom it is another technological thingamajigger. Let's begin with an overview of GIS.

There are several different definitions for GIS, dependent upon its source field, e.g., geography, cartography, computer science, however, all definitions consist of a database of information and specific locations, a map(s) and a computing system which links the two. Paul Bolstad in *GIS Fundamentals* (p. 1) describes GIS as, "a computer-based system to aid in the collection, maintenance, storage, analysis, output, and distribution of spatial data and information" or simply "a tool for making and using spatial information."

Over the past 50 years this tool has become increasingly more powerful and integral to any industry that deals with "what" and "where." The *New York Times* reported in April of 2007 that "the Bureau of Labor Statistics lists GIS-related jobs as among the fastest growing new or emerging fields." The article cites GIS technicians starting at \$38,000/year, an average of \$50,000 for analysts, \$85,000 for directors and about \$100,000/year for private contractors. GIS is employed by urban planners, environmental organizations, emergency agencies, health care organizations, almost every government agency (including the military), geologists, zoologists, ranchers, agricultural industries, nonprofits, and is even used to reshape congressional districts.

Several of the most important contributing factors to the increasing use of GIS are advancements in technology, the development of GPS and the blossoming of GIScience, which is the science/theoretical aspect behind GIS. Combine these factors with the very real fact that humans have doubled in population over the past 50 years to 6 billion and another 5 billion more are expected to arrive over the next 50 years. Massive efforts are underway to catalog the status quo of Earth's environment and monitor changes. For example, GIS is used to track the oceans' and atmosphere's ability to absorb carbon dioxide and nitrogen). GIS is also used to track Earth's known resources (agricultural, energy, water, mineral, etc.), to identify what is available (and at what cost), to determine future potential and to explore for more.

In short, GIS is a tool which allows the user to assign data to specific locations and create images such as maps and 3D models based upon select criteria. GIS software is used to perform the following standard functions: data entry, editing, data management, analysis and output.

In our industry GIS can be used to create geologic/geographic maps and models used to help locate hydrocarbons, water and other resources, and it could be utilized to find the best placement of a well or pipeline. In upcoming articles, the focus will be on applications of GIS for geologists, engineers and landmen, current uses and future capabilities, as well as a review of some of the software available.

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#### President's Column Continued



George S. Johnson (left) with guide book author Paul Burger, and Midland Member James Brezina touring Carlsbad Caverns.

Some of you may remember that SIPES held its Annual Convention in New Orleans in 1994; it was the highest attendance on record with 307 attendees. I believe that we can set a new record this year. We have an excellent program lined up, and a beautiful location. If you love food, there is none better than "Bubba Gump Shrimp Co." Check it out!

The SIPES National Board and the New Orleans Chapter are working very hard to finalize the details of the meeting. You will be able to listen to a technical program with twenty talks ranging from new field discoveries, old field studies, drilling trends, price forecasting and making a profit. You will also be able to meet old friends and meet new faces; it will b e a time to relax and to smell the roses. I have heard all my life be sure to take time out to smell the roses along life's journey. This is your opportunity, don't miss it.

This last year, the SIPES Foundation funded the printing of the "Walking Guide to the Geology of Carlsbad Caverns." Many of you participated in giving funds to support this project. SIPES received an invitation to attend the 2007 annual Carlsbad Caverns-Guadalupe Mountains Association membership meeting held in Carlsbad, New Mexico. I accepted the invitation, and attended the meeting on October 20 with James L. Brezina of the Midland Chapter and our wives. SIPES was given recognition at the event, and it was expressed on behalf of Carlsbad Caverns National Park. The park personnel wanted to extend their appreciation to SIPES members for their generous support of the park and its resources. After the meeting and lunch, we went out to the Caverns for a private guided tour of the Carlsbad Caverns conducted by Paul Burger who wrote the guide book. It was a wonderful event and you can put another star in the book for SIPES members!

A special thank you goes to A. T. Green in New Orleans for his encouragement and commitment to SIPES. A. T. wrote me saying, "George, I will work hard to encourage my friends within SIPES to attend our New Orleans Convention." Are you willing to commit? All it takes is effort and time to share.

Finally, Proverbs 16:24 "Pleasant words are like a honeycomb. Sweetness to the soul and health to the bones." Send your questions, comments, ideas or prayer requests, to sunshineex@suddenlinkmail.com or dreamsofoil@suddenlink.net.

> To Him be the glory, George S. Johnson

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# How I Became an Independent

I was born in

Vernon, Texas and

grew up in the town of Tulare,

California, work-

ing the summers

when in high

cotton, peaches,

about \$1.00 per

picking

earning

and

school

oranges

grapes

### by George S. Johnson, #2724 Sunshine Exploration Company – Amarillo, Texas



George S. Johnson

hour. This is when I realized that I wanted to go to college. Also, I learned a work ethic that has lasted me a lifetime.

I was fortunate, to have been raised in a fire station, my dad was training officer for Tulare County, California Division of Forestry. I earned my way through college by working the summers as a firefighter making \$500 per month. It was here where I learned responsibility that would add to my work ethic.

I began at College of the Sequoias studying engineering, then transferring to Humboldt State College to study forestry. Then it happened, I took physical and historical geology my junior year and fell in love with geology. That summer I transferred to West Texas State University and graduated two years later with a B.S. in geology followed later with an M.S. in geology.

My first job was with the Texas Highway Department drafting highways and calculating cut and fill. After six months, I got a job with Schlumberger Well Services as a logging engineer in Brownfield, Texas and I was on my way to a career in petroleum. This was the best training that I could have received toward being an independent geologist. I learned to read electrical logs, and how to sleep with my eyes open.

While at Schlumberger, the army called me to active duty and basic

training in El Paso during June and July, then I went on to Arizona for clerk school, where I learned my discipline, and how to be humble.

After active duty, I returned to Schlumberger to finish one year as a logging engineer. Then I left and took a job as a groundwater geologist in Amarillo, Texas where I learned waterwell logging, testing, and subsurface mapping. Then came my big break after a year and a half, I landed a job as a petroleum geologist with Colorado Interstate Gas Company. At CIG, I learned the West Panhandle Gas Field by sitting on Red Cave and Wolfcamp development wells. Four and a half years later, I took a job with Amarillo Oil Company as a petroleum geologist working the Panhandle of Texas and Western Oklahoma. This is when I knew that someday, I would become an independent geologist.

Texas Oil and Gas Corp. was the best training ground for independents. Later, I moved to Oklahoma City, and accepted a petroleum geology job with TXO working Canadian and Grady Counties, Oklahoma. I worked seven and a half months for TXO and drilled thirty-eight wells, all productive. I was ready to be independent except for one thing, MONEY. So, I took a job with Search Drilling Company, starting their exploration department in Amarillo, and receiving a 1%-2% ORRI on everything that the company drilled.

I continued my drilling success, and two and a half years later left Search Drilling Company making \$50,000 per month in overrides. At last, I was ready to become an independent in 1980, starting Sunshine Exploration Company, an Oklahoma Corporation.

After twenty-seven years as an independent I have learned that your best assets are the people in the industry. It is true, people need people. That is why I joined SIPES in 1999, so that I

could serve my fellow geologists and give something back to the profession that's been so good to me. Also, I have learned that you can accomplish more in one hour with God than in one lifetime without him.

How did you become an independent? Send your 1-2 page account to the SIPES Office in Dallas, or by email to sipes@sipes.org. All stories will be included on a CD that will be published by the SIPES Foundation.

#### **IN MEMORIAM**

We regret to note the passing of the following members:

Richard W. Boebel, #988 of New Orleans, Louisiana who died on September 1, 2007

Arthur N. Budge, Sr., #1838 of Dallas, Texas who died on November 27, 2007

Lucius C. Geer, #408 of Houston, Texas who died on December 12, 2007

Warren Y. Pickering, #833 of Oklahoma City, Oklahoma who died in the Fall of 2007

Paul C. Raymond, Jr., #2076 of Midland, Texas who died on November 27, 2007

Robert L. Segar, #1986 of Allen, Texas who died on December 16, 2007

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# SIPES Foundation Scholarship Appreciation Letters

November 19, 2007

Connie (Dodge) Knight Golden, Colorado

Dear Colleagues and Friends:

I am pleased to make a donation of \$1,000.00 to the SIPES Foundation Scholarship Endowment Fund. I want to express the heartfelt gratitude that comes with my donation.

I began my career in petroleum geology with Amoco in 1973. About nine years ago, when I was completing my Ph.D. at Colorado School of Mines, I received a scholarship check from SIPES. I can't tell you what a shot in the arm that was.

In 1995, when I made the decision to work full-time on my Ph.D., I was a single parent and sole provider for myself and my daughter. At that time, I deeply appreciated SIPES's financial support. However, more than that, I was humbled and greatly honored by the vote of confidence from professionals that meant so much to me.

I completed my Ph.D. in 1999, and I have worked in the petroleum industry since. I feel very fortunate that I am able to give something back. I don't know which SIPES members elected me for the scholarship. However, please use my check to help another student. Also, would you please pass on my sincere gratitude to the Denver Chapter Members?

Sincerely,

*Connie Knight Acting VP of Exploration True North Energy Corp.*  December 1, 2007

Jaron Andrews New Mexico Tech University Socorro, NM

Dear Lanny Butner & SIPES Members:

I just wanted to extend my thanks and gratitude for the money I received from the SIPES Foundation scholarship. The money that I received from from the award will help me with research costs. This May I graduated from New Mexico Tech with a B.S. in geochemistry, with a chemistry minor. I have now completed my first semester of graduate school at New Mexico Tech in the master's program for hydrology. The scholarship money will go towards my research which focuses on using surfactant/iron modified zeolites as a filter media to remove arsenic from groundwater.

As you may know, arsenic drinking water standards have been lowered from 50ppb to 10ppb, and municipalities from all over New Mexico are desperate for cheap and efficient methods to meet the new EPA standards. I hope that my research work will aid in this new problem, and make a difference in my neighborhood.

All throughout college I was able to fund my entire education solely on scholarships, and I want to thank you for having a scholarship which is merit-based. I could not qualify for financial aid, but still had to pay my own way through school. Your scholarship has given me the means to carry my education onward to new heights. I am very proud to win the SIPES award, and hope that someday I can start my own business and become an independent earth scientist. Thank you again!

Sincerely,

Jaron Andrews



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## WELCOME NEW MEMBERS

The following new members were approved by the SIPES Membership Committee from October 17, 2007 to January 14, 2008:

SIPES Number	NAME	CHAPTER	SPONSORS		
3125	David B. Olutusin	At-Large (Alberta, CANADA)	M. Freeman	B. Fyke	D. Oicle
1607	Arthur T. Cerniglia	New Orleans	Reinstatement		
3126	John M. Hooper	Oklahoma City	Reciprocal-	DPA	
3127	George B. Asquith	At-Large (Lubbock, TX)	Reciprocal-	DPA	
3128	Frank G. Cornish	Corpus Christi	W. Croft	R. Parker	G. Stanton
3129	Robert H. Baillio	Houston	J. Grubb	W. Neville	J. Putman III
3130	Henry L. Cullins, Jr.	Houston	J. Grubb	L. Jones	J. Putman III
3131	Bruce H. Houff	Houston	B. Buongiorno	J. Crocker	C. Fontenot
3132	Gerrit Wind	Houston	Reciprocal-	DPA	
3133	Walter W. Wornardt	Houston	G. Klein	N. Neidell	J. Pacht
3134	Gary C. Huber	Denver	M. Cruson	G. Nydegger	A. Pansze
3135	Susan G. Hall	Midland	L. Melzer	T. Gentry	B. Graham
1141	Jerry H. Dunnam	Midland	R. Guenther, Jr	H. Hansen	D. McGookey
2059	Harry P. Trivedi	Oklahoma City	Reciprocal-	DPA	
2610	Charles M. Killgore	Dallas	Reinstatement		
2146	James M. Green	Houston	Reinstatement		
3136	Russell K. Hall	Midland	Reciprocal-	SPEE	
3137	Gary M. Weir	Houston	Reciprocal-	DPA	
3138	Russell S. Peeples	At-Large (Sunray, TX)	G. Brown	G. Johnson	J. O'Connell
3139	Barbra S. Landreth	Oklahoma City	K. Gentry	H. Lackey, Jr.	T. Rowland
3140	Cyril M. Gallick	Midland	J. Kullman	D. McGookey	S. Robichaud
3141	William G. Watson	Midland	Reciprocal-	DPA	
3145	Mark W. Herndon	Oklahoma City	M. Austin	H. Lackey, Jr.	M. Pollok



# SIPES 2008 Convention The Omni Royal Orleans Hotel

The **Omni Royal Orleans Hotel** is located in the heart of the historic French Quarter at the intersection of St. Louis and Royal streets and will serve as host hotel for the SIPES 2008 Convention. The SIPES Group room rate is \$189 per night. To receive your special group rate, it is important that you make your reservations by **April 18, 2008**. To make your reservation, **please call the Omni Group Reservations Desk at 1-800-578-0500**, and advise the reservationist that you are with the SIPES group.

SIPES 2008 Convention Technical Program New Orleans 2008 Speakers Listed Alphabetically Marion Bone — TimeSlice Technology, Inc., ◆ Lee Petersen, #2838 — **Oro Quay Corporation**, Houston, TX Palo Pinto Exploration, Inc., "Urban 3D Seismic in the Barnett Shale Play" Fort Worth, TX ♦ Bill Britain — EnergyNet, Inc., Amarillo, TX "Low-budget Subsurface "A&D Metrics and the 'MLP Factor" Exploration in the 21st Century" Philip Carlisle, #2557 — Fort Worth, TX ◆ Jeanne Phelps, #2509 — Houston, TX "Going Independent - Case History of Aspen Integrated "SONRIS: Louisiana's Oil and Gas Database" Oil and Gas Company, LLC" ◆ David Pursell, Pickering Energy Partners — ♦ Jim Clancy, Branscomb PC — Corpus Christi, TX Houston, TX "The Five Oil and Gas Contract Clauses "Oil and Gas Supply and Demand" You Can't Live Without" ◆ Stephen Reynolds, #2852 — Thomas Ewing — Infinity Oil and Gas, Denver, CO Frontera Exploration Consultants, San Antonio, TX "Barnett Shale" "Ethics, Professionalism, and Codes of Ethics" ◆ Eddie Rhea, #2937 — Foundation Energy, ♦ Bill Finley, #2167 — Rozel Energy, LLC, Dallas, TX Lafayette, LA "Creating and Financing an Oil & Gas Company" "Creole Geology Breathes New Life ◆ Deborah Sacrey, #1271 into First Gulf of Mexico Oil Field" Independent Geologist/Geophysicist, Houston, TX ◆ Russell Hall, #3136 — "Unconventional Pay in the Cook Mountain Formation -Russell K. Hall and Associates, Inc., Midland, TX Wharton County, Texas" "Evaluating Resource Plays with Statistical Models" Stephen Trammel — IHS Energy, Houston, TX ◆ Allen Howard, Nutech — Houston, TX "Hot Oil and Gas Trends in The Lower 48" "By-passed Oil Case Studies" • Benjamin Waring — Oil and Gas ♦ Kenneth Huffman, #2936 — La Bay Exploration, Landman/Attorney, New Orleans, LA New Orleans, LA "Offshore Lease and Online Information" "Rabbit Island SL 340 Revitalized: Getting New Energy from an Old Rabbit" Roger Young — eSeis, Inc., Houston, TX "Relating Depositional Facies to Seismic AVO Response" ◆ George Johnson, #2724 — Sunshine Exploration Company, Amarillo, TX "Turning Water into Oil" • Bill Knebusch, #3050 — Consultant, Amarillo, TX "Granite Wash in the Texas Panhandle"

Speakers and topics are subject to change

Don't Miss the SIPES Convention New Orleans, Louisiana May 12-15, 2008 Register Early for Tours and Events!

Tuesday – May 13



NEW ORLEANS LITERARY FEAST - WALKING TOUR 9:00 a.m. - 12:00 Noon Cost: \$60.00 Before 4/18/08 (\$85.00 After 4/18/08)

Wednesday – May 14



"A RIVER RUNS THROUGH IT" — New Orleans Motor Coach City Tour 9:00 a.m. - 12:00 Noon Cost: \$60.00 Before 4/18/08 (\$85.00 After 4/18/08)



LONGUE VUE ESTATE & GARDENS WITH LUNCH AT RALPH'S ON THE PARK RESTAURANT 10:00 a.m. - 2:00 p.m. Cost: \$95.00 Before 4/18/08 (\$120.00 After 4/18/08)



THE SAVVY GOURMET COOKING CLASS 9:30 a.m. - 2:00 p.m. Cost: \$140.00 Before 4/18/08 (\$165.00 After 4/18/08)



GARDEN DISTRICT GRANDEUR & FRENCH QUARTER FACETS -WALKING & MOTOR COACH TOUR 1:00 - 4:00 p.m. Cost: \$90.00 Before 4/18/08 (*\$115.00 After 4/18/08*)



GRAND DAME OF THE RIVER ROAD -HOUMAS HOUSE PLANTATION TOUR & LUNCH 10:00 a.m. - 3:30 p.m. Cost: \$120.00 Before 4/18/08 (\$145.00 After 4/18/08)



SIPES AWARDS BANQUET 6:30 - 9:30 p.m. Cost: \$75.00



Thursday – May 15

GEOLOGY OF THE KATRINA DISASTER FIELD TRIP 9:00 a.m. - 1:30 p.m. Cost: \$45.00 Before 4/18/08 (\$60.00 After 4/18/08)

2007-08 SIPES Officers	President Vice-President Vice-President of National Energy Secretary Treasurer	George S. Johnson Lanny O. Butner. H. Jack Naumann, Jr. Clifford A. Walker. Lee M. Petersen	Amarillo Wichita Midland Dallas Fort Worth
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	SII To be th th of indep In achiev (	PES Vision Statement with the pre-eminent organization for furthering the pre-eminent organization for furthering the professional and business interests bendent practitioners of the earth sciences. wing this vision, emphasis will be placed of (1) professional competence, (2) professional business ethics, and (3) presenting a favorable, credible and effective image of the Society.	n

Adopted by the SIPES Board of Directors September 21, 1996

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