VOLUME XXXXIIII NUMBER 4 MAY 2008

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SIPES QUARTERLY
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Society of Independent Professional Earth Scientists

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In this issue:

President's Column

George S. Johnson, #2724
Amarillo, Texas

"Happy Trails"

As a kid, I would watch Roy Rogers and Dale Evans every week on TV. Do you remember the song at the end of the program? They would close every show singing "Happy trails till we meet again."

Well folks, it's almost time to sing. It has been a great year for all of us. I have enjoyed having the privilege to serve you. I have visited five chapter luncheon meetings, attended the Houston Chapter's fall seminar and summer and winter NAPE. In the beginning, I believed that I would be able to visit every SIPES chapter, however, my work load and time schedule wouldn't permit it.

It has been a pleasure meeting many new faces and working with fellow SIPES members. I want to give a special thank you to Diane Finstrom (SIPES Executive Director) and the SIPES staff who spent many hours working on the *Quarterly*, membership, annual convention, accounting and various other projects. Also, I would like to give a big thank you to the New Orleans Chapter including Ken Huffman, Jeanne Phelps, Mike Fein, Al Baker, Jim Zotkiewicz, Susie Baker and June Perret for helping with the SIPES Annual Convention this year. They did a superb job. Also, I would like to thank everyone that served on the Board of Directors for their service and dedication to a job well done.

I attended a breakfast this last week and the speaker was Dan J. Sanders, CEO of United Supermarkets. Also, he is the

(Continued on Page 31)

Louisiana Unitization — A Primer

by Travis A. Helms, #3101, Hardwick & Associates, Inc. — Lafayette, Louisiana

Note: This article is from the Lafayette Chapter, and is the eighth in a new series submitted by SIPES Chapters.

> ***"The Southern oil well number 3 will be turned loose and allowed to gush tomorrow afternoon at two o'clock, May 28 (1902). This exhibition will be for the express purpose of gratifying the curiosity of those who have not seen this well, and will not be repeated soon."***

--Mr. E. F. Rowson, President of the Southern Oil Company at the drilling of their third well in the Jennings Field, Jefferson Davis Parish, Louisiana (*Jennings Daily Record*, May 27, 1902).

Since the discovery of a gusher of crude oil at the Jennings salt dome in September 1901 to the time of this writing, the state of Louisiana has produced in excess of 156 TCF natural gas and 17 billion barrels of oil (McGee, 2008). At current rates of consumption, Louisiana's historic gas production could slake the United States domestic demand for almost ten more years by itself (United States Department of Energy, 2007). The majority of Louisiana's copious production has come from the onshore. While offshore discoveries make for a large portion of the current supply and make for splashy headlines, the onshore of Louisiana has truly been the workhorse of

(Continued on Page 16)

National, State & Environmental Information

The following reports on national and environmental issues will be presented to the SIPES Board of Directors on May 12, 2008. Jack Naumann, Vice President of National Energy authored the Natural Resource Report. 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.

■ INTRODUCTION

These are definitely interesting times as here we are at yet another record high for oil. As of April 16, 2008 oil futures pushed past $114.00 per barrel!!! We have all seen good times and bad times in this industry, and right now we are all fortunate to be involved in the pursuit of finding and producing oil and gas. We are all busy, and the incomes from the production or service side are at the highest we have seen as an industry. However, record prices and incomes are great, but anytime money is being made, the government is desirous to join in. Now that times are better, you would think that we could enjoy a few years of prosperity. So what do we get? We have Rep. Edward Markey, D-Mass and chairman of the House Select Committee on Energy Independence and Global Warming claiming that the oil industry is playing the biggest *April Fools* joke on the American public. Rep. Markey has recently accused the evil *big oil* of taking advantage of American families, and I quote Mr. Markey, "…who are using every trick in the book to keep billions in federal tax subsidies, as they rake in record profits." The title of the hearing was "Drilling for Answers: Oil Company Profits, Runaway Prices and the Pursuit of Alternatives." Markey continued his dissertation of facts by stating that oil companies have made over $123 billion in profits in 2007 leaving the American consumer not able to fill up their cars.

Sadly, most Americans do look only at what hits them in the pocketbook, and yes, increased prices in oil and gas have increased our cost in gasoline, heating oil and effects the cost of agriculture, manufacturing and of course transportation, which will in turn increase the cost of all those fantastic Chinese goods we Americans consume like locusts. Mr. Markey and other lawmakers see a "pot o' gold at the end of the rainbow," and they want to cash in. Pens are more effective than guns in stealing wealth. Perhaps Mr. Markey and Ms. Pelosi can take these obscene *big oil* profits and buy hybrids for the working American Joe and solve the fuel and CO_2 issues in one swoop. With energy being the driving force to global economics you would think that congress would be more focused on perpetuating a healthy energy industry, and not be so currently concerned with quite trying to bail out the unaccountable banking/sub-prime loan industry. (*I don't remember congress helping to bail out the over 500,000 jobs lost in the energy sector in the downturn of the '80s*). If congress continues down this path of taxing the "obscene profits" that the oil and gas industry has made, I think we will see more and more U.S. energy companies leaving the United States altogether and moving to more hospitable environments.

(Talking about obscene profits… why doesn't congress tax Alex Rodriguez for his quarter of a billion dollar salary??…A quarter of a billion dollars to catch and hit a ball….)

■ PRICE/SUPPLY/DEMAND SUMMARY — CRUDE OIL AND GASOLINE

As of April 1, 2008, the API reports that the total U.S. petroleum imports of crude and crude products were 12,526,000 barrels per day. This amounts to an overall 3.0% drop in imports from April 2007. For this same period, the total amounts of crude and crude products imports accounts for 55.9% of total domestic deliveries. Of the imported crude and crude products, Persian Gulf imports, as a percentage, amounted to 17.5% percent of total imports. During this period, the average price for a delivered OPEC barrel of crude oil was $86.87.

U.S. crude oil production as reported by the API in April 2008 was 5,043,000 barrels per day. This number can be broken down as 85% continental U.S. and 15% Alaskan.

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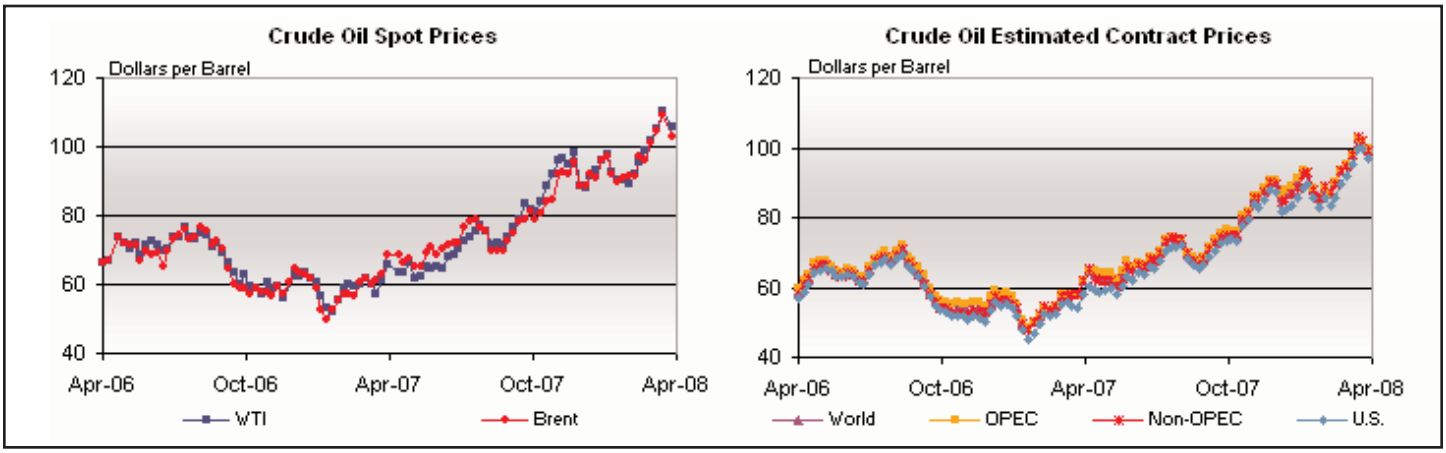
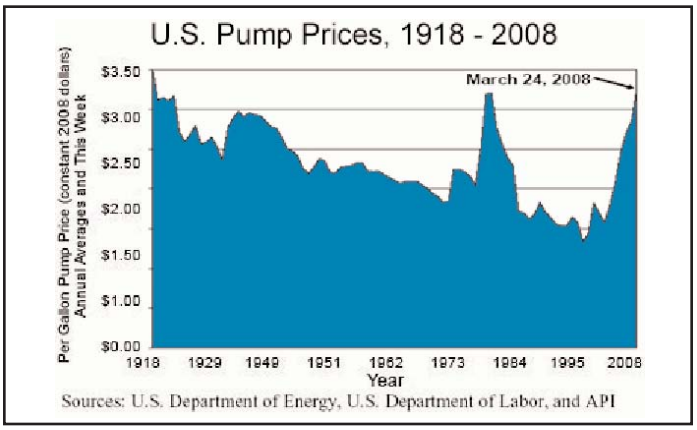


Production this time last year was 5,244,000 barrels per day, or 4% higher than current production rates. Output in the Federal Gulf of Mexico, where the Atlantis deepwater platform began production in late 2007, is projected to grow this year, but Alaska and the Lower-48 States are expected to see declines.

The one increase in production was seen in U.S. natural gas liquids as reported in April 2008. Production averaged at 1,842,000 b/d for this period and one year ago, these rates were 1,706,000 b/d.

Overall U.S. consumption is anticipated to drop in the fourth quarter of 2008. This is due to the slowing economy and high petroleum prices. The overall estimate is that U.S. consumption will fall by 90,000 bbl/day. All petroleum products are anticipated to increase in price from the higher cost of crude oil, with gasoline expected to average from $3.21 - to over $4.00 per gallon.

Deliveries of motor gasoline from primary storage in February of 2008 were 9,176,000 bbl/d, which is an increase of over 150,000 b/d from this time last year. The total consumption of liquid fuels and petroleum products averaged 20.7 million bbl/day, which is an increase of only 10,000 bbl/d from this period in 2007. Previous consumption projections had an increase of over 100,000 bbl/d for 2008, however those have been adjusted and the current projection is an additional 40,000 bbl/d.



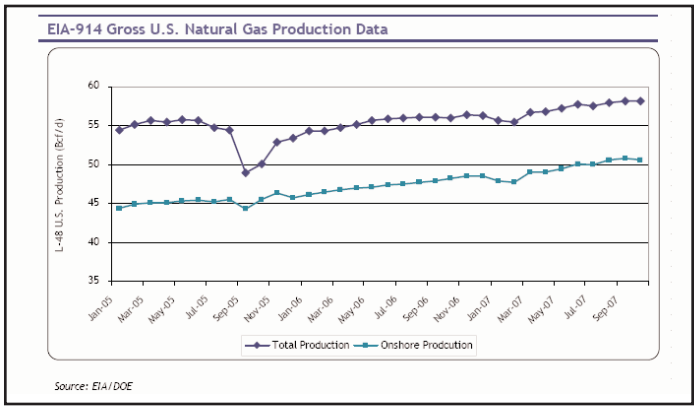
As of April 1, 2008, total gasoline stocks are estimated to be at 224 million bbl, above last year's total stocks by approximately 10%. Distillate fuel inventories started the second quarter of 2008 6 million bbls below the same period last year and are anticipated to stay the same and not experience any loss of supply.

WTI averaged $95.00 per bbl in February 2008 and March deliveries are expected to average $102.00 per bbl.

■ NATURAL GAS

Currently the Henry Hub gas spot price averages $7.17 per Mcf, the third and fourth quarter estimates are that gas will average over $8.00 per Mcf in 2008 and be slightly below that for 2009 estimates. (However, as of April 15, 2008 some gas spot prices were in the $10.00 range and natural gas appears to becoming equitable on a btu basis with crude oil).

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.



Consumption is anticipated to slow less than 1.0% in 2008. This includes electric generation from natural gas, which accounts for 30% of natural gas use in the U.S. This

(Continued)

decline is based upon projections of milder than normal summer temperatures for 2008. Natural gas consumption in the industrial sector is also anticipated to decline due to the slowing U.S. economy.

Overall, production of U.S. natural gas is projected to increase by approximately 3% in 2008 and then drop in 2009. The increase is mainly due to recent offshore gas production coming into market. The current unconventional gas plays will keep domestic production steady and not declining in 2009.

As of March 1, 2008, natural gas in storage was 1,484 BCF and current inventories are 63 BCF higher than the last 5-year average. Imports of LGN are projected to be over 750 BCF in 2008 and imports for 2009 are anticipated to exceed 995 BCF. This is primarily due to a new liquefaction capacity being constructed in Qatar and new supplies coming from Equatorial Guinea, Nigeria and Norway. Currently for the U.S., Trinidad and Tobago are the primary sources for LNG.

North American Rig Count
April 8, 2008

Location	Week	+/-	Week Ago	+/-	Year Ago
Land	1747	14	1733		1625
Inland Waters	19	4	15		26
Offshore	64	4	60		75
United States Total	1830	22	1808		1726
Gulf Of Mexico	62	3	59		74
Canada	126	-45	171		126
North America	1956	-23	1979		1852
Breakout Information	**This Week**	**+/-**	**Last Week**	**+/-**	**Year Ago**
Oil	362	12	350		283
Gas	1458	11	1447		1438
Miscellaneous	10	-1	11		5
Directional	361	11	350		404
Horizontal	481	-1	482		346
Vertical	988	12	976		976
Major State Variances	**This Week**	**+/-**	**Last Week**	**+/-**	**Year Ago**
Alaska	9	2	7		13
California	34	-1	35		32
Colorado	123	0	123		104
Louisiana	142	0	142		191
New Mexico	74	4	70		74
Oklahoma	206	-7	213		173
Texas	904	23	881		807
Wyoming	68	3	65		69

■ ENVIRONMENTAL REPORT

"…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 Thames, and a geological blink later there is an ice bridge linking Asia and North America."

I want to start this article by repeating the quote above from Nobel Prize winning climate scientist John R. Christy.

Several years ago I received a weather radio as a Christmas present. It is tuned into the National Oceanic and Atmospheric Administration station and broadcasts the weather forecast on a continual loop. I listen to it most mornings while dressing for work. During the climate summary part of the broadcast, the conditions for the prior day are stated, including the high and low temperature and the record highs and lows for that date. It seems that quite often the record high temperature for any given date falls in the 1930s. I decided to try and retrieve some historical data in an attempt to see whether or not my casual observation could be substantiated. As the search for information was conducted, it was difficult to come up with any tabular data, while repeatedly the sites visited showed the famous "hockey stick" graph. Though unable to locate anything for the local weather station, the following site was found for the Sioux Falls South Dakota site, where records from 1893 to 1995 are available at the following website: http://www.crh.noaa.gov/fsd/?n=daysabove100. I have copied some of the information off the site and include it below:

WEATHER RECORDS FOR SIOUX FALLS, SOUTH DAKOTA COMMENCED IN 1893 AND CONTINUE TO THE PRESENT DAY.

THE MAXIMUM TEMPERATURE HAS REACHED 100 DEGREES OR HIGHER DURING THE MONTHS OF MAY THROUGH SEPTEMBER ON 211 OCCASIONS. THIS EVENT OCCURRED IN 58 OF THE 103 YEARS FOR SLIGHTLY MORE THAN HALF /56%/ OF THE YEARS ON RECORD.

100 DEGREES OR HIGHER OCCURRED MOST OFTEN IN 1936. THE TOP 12 YEARS WERE...

1936 21 TIMES
1988 14 TIMES
1894 12 TIMES
1934 10 TIMES
1974 8 TIMES
1947 7 TIMES
1941 7 TIMES
1931 7 TIMES
1930 7 TIMES
1975 6 TIMES
1911 6 TIMES
1901 6 TIMES

(Continued)

100 DEGREES OR HIGHER OCCURRED MOST OFTEN DURING THE DECADE OF 1930-1939. THE BREAK-DOWN BY DECADES...

1893 - 1899 19 TIMES (PARTIAL DECADE)
1900 - 1909 9 TIMES
1910 - 1919 12 TIMES
1920 - 1929 8 TIMES
1930 - 1939 58 TIMES
1940 - 1949 22 TIMES
1950 - 1959 13 TIMES
1960 - 1969 10 TIMES
1970 - 1979 31 TIMES
1980 - 1989 23 TIMES
1990 - 1995 6 TIMES (PARTIAL DECADE)

** Author's comment: Note that the data end in 1995*

THE HIGHEST TEMPERATURE EVER RECORDED IN SIOUX FALLS WAS 110 DEGREES ON JULY 17, 1936 AND JUNE 21, 1988.

THE HIGHEST TEMPERATURE EVER RECORDED IN EACH OF THE MONTHS OF MAY THROUGH SEPTEMBER...

MAY 104 ON MAY 30, 1934
JUNE 110 ON JUNE 21, 1988
JULY 110 ON JULY 17, 1936
AUGUST 109 ON AUGUST 24, 1936
SEPTEMBER 104 ON SEPTEMBER 4, 1913
SEPTEMBER 5, 1913
SEPTEMBER 6, 1913
SEPTEMBER 6, 1922
SEPTEMBER 6, 1976

THE RECORDS FOR CONSECUTIVE DAYS OF 100 DEGREES OR HIGHER...

9 DAYS JULY 9 THROUGH JULY 17, 1936
6 DAYS JULY 19 THROUGH JULY 24, 1934
5 DAYS JULY 16 THROUGH JULY 20, 1926
4 DAYS JUNE 18 THROUGH JUNE 21, 1988
JULY 22 THROUGH JULY 25, 1941
JULY 26 THROUGH JULY 29, 1935
3 DAYS AUGUST 26 THROUGH AUGUST 28, 1973
JULY 9 THROUGH JULY 11, 1930
JULY 22 THROUGH JULY 24, 1901
JULY 21 THROUGH JULY 23, 1894

What can be concluded from this? It is clear that my casual observation from listening to the weather broadcast in Midland is substantiated to some extent - at least in the limited data available from Sioux Falls. Global warming alarmists cite man's emission of CO_2 - primarily in the post WWII expansion - as being the primary causative agent behind the catastrophic projections for temperature increases. From the Sioux Falls data, it might be easy to conclude the opposite. Clearly the hottest years occurred during the 1930s, over seventy years ago, and before WWII.

"Do we live in a special time in which the laws of physics and nature are suspended?"

Let's proceed on to a more scientific approach to the issue. To that end, please direct yourself to the following website: http://westinstenv.org/wp-content/Solar_Arch_NY_Mar2_08.pdf

The title of this article is "Solar Cycle 24: Implications for the United States." This is a paper presented by David Archibald at the International Conference on Climate Change in March 2008. The first line of the paper asks this intriguing question, "Do we live in a special time in which the laws of physics and nature are suspended?" In this article the cycle of solar activity is historically linked to temperature variations. Following is an excerpt from the paper:

> "The sun reverses magnetic polarity with each solar cycle, and sunspots of the new cycle start forming before the old cycle has completely died off. The average length of a solar cycle is 10.7 years. Solar

(Continued)

Cycle 23 started in May 1996, rising to a peak of 120.9 in April 2000. For Solar Cycle 23 to be of average length, Solar Cycle 24 should have started in January 2007. The first sunspots of a new solar cycle appear usually at more than 20° latitude on the Sun's surface. According to the last couple of solar cycles, the first sunspots appear twelve to twenty months prior to the start of the new cycle. With the first sunspot of Solar Cycle 24 seen on 4th January, 2008, Solar Cycle 24 may start from late 2008 to mid-2009."

How refreshing it is to hear scientific data presented by a scientist, rather than a lawyer/politician looking for votes or journalism major looking for his first major byline.

The headlines in mid-April are proclaiming that President Bush has finally joined the global warming bandwagon. I suspect this is more out of wanting to have a say in how the inevitable regulations to curb CO_2 emissions will be written than a capitulation on the issue. The sad political reality of the moment is that global warming has become fact in the eyes of our leaders, and the only way to have a voice is to acquiesce, or make a trip to the inquisitors in the dungeon. Would a firm stand on the issue not be borne out in time as the more intellectual, and thereby less emotional, reaction to all the hysteria surrounding global warming? The laws of physics and nature have not been suspended anywhere except in Washington D.C. Not surprising in light of the reality that many of our politicians think themselves above, and therefore not subject to, the laws of man or God. Now we can add nature to that list.

Cannibalism and its effect on Global Warming

Many news items today begin with "…blah, blah, blah, the hottest ever in history blah, blah…" and so on, without quoting any hard data. Many news stories clearly provide an interpretation of data not presented that refutes any logical conclusion that a trained scientific mind might come up with. How can "they" get away with this? There are two ways. One is to follow the logic that a lie repeated often enough becomes the truth. The second can be demonstrated by a conversation I recently overheard.

Although the specifics of the discourse escape me, at one point it was stated that Austin was below sea level. My first reaction was to pity the poor person who made the remark. Then I realized that the author of the statement is not a stupid person. Upon further analysis I lay the blame at the feet of poor science education in the public schools. This very intelligent individual had simply never been given the proper training in science to understand the implication of what "below sea level" means. The only conclusion to draw from this is that "lies repeated often enough to uneducated people become the truth."

In the case of the global warming hysteria, the blame can be traced to the lack of basic science instruction in public schools. Clearly many of our politicians are victims of this lack of education. Lawyers vastly outnumber scientists in Washington. The only other way to excuse the way politicians have embraced global warming would be would be to presume that they operate at a frightening level of gullibility. Choice three leads back to a favorite line from detective shows: "follow the money."

In the *New York Times* bestseller *Guns, Germs, and Steel* by Jared Diamond, the author makes some observations regarding government and the tendency toward kleptocracy. It is a wonder how self-enriching governments stay in power. Diamond asks the question, "What should a governing elite do to gain popular support while maintaining a more comfortable lifestyle than commoners?" He cites four ways, which are paraphrased as follows: 1) Disarm the populace; 2) Redistribute tax revenue in popular ways; 3) Maintain order and curb violence using the government monopoly of force; and, 4) construct an ideology or religion justifying kleptocracy. It is this fourth point that hits home when it comes to the whole global warming/carbon tax agenda. Think of how global warming is presented, almost as religion and certainly an ideology. It has wholesale support in the popular media and strangely enough almost across the board support of politicians. We who dissent are scoffed at, patronized, rebuffed and criticized as being heretics. Think Galileo's imprisonment for daring to buck the authorities by stating his studied conclusion that the earth revolves around the sun. This is no longer an issue of science: it has become a quasi political/religious movement.

What amazes me is how the issue is being used to justify all sorts of antics. Viewed in the context of the liberal environmentalist mantra, *the end justifies the means*, it becomes clear what the goal is. In other words, it's acceptable to propagandize ordinary weather events, terrify the young, the old and the ignorant, pervert scientific method, distort facts, repeatedly make preposterous statements, dismiss qualified experts and co-opt scientific jargon, if it will achieve the desired end result. That end result is a worldwide tax on carbon emissions, payable to the United Nations or some such governing body, in order to enhance their power and bank balance. Democracy, by nature, serves to limit kleptocracy by holding those in power accountable to voters. Who gets to vote on members of the United Nations Climate Change Council? Remember that these were the same guys who handled the "oil for food" billions with such integrity.

Any objective observer who keeps track of the issue in the media knows how distorted the coverage is in favor of anthropomorphic global warming (I refuse to use the new terminology of 'climate change' in order to hold the media and environmentalists accountable). Here are a few samples from the media since the last *Quarterly*:

- *Economist Strikes Gold in Climate-Change Fight*, by Leila Arboud, *Wall Street Journal*, March 13, 2008. A story about Richard Sandor and his company, London-based Climate

(Continued)

Exchange PLC. This company, which traded $27 million in carbon credits in 2007, has a market capitalization of $1.31 billion. Enron II? Certainly no assets there, or am I missing something?

• *Spring Keeps Coming Earlier for Birds…Because of Climate Change*, by Seth Borenstein, Associated Press, March 30, 2008. Give me a break. As a geologist, I have studied the effect of climate change throughout history. All evidence cited in the article is anecdotal. I recently read a book about Abraham Lincoln in which it was mentioned that during his administration the weather during one New Year's Eve party in Washington D.C. was so warm that the men were in shirt sleeves. So they even had warm spells during the winter in the early 1860s: surprise, surprise. That was before Seth's time so it obviously doesn't count.

• *Kansan Stokes Energy Squabble With Coal Ruling*, by Steven Power, *Wall Street Journal*, March 19, 2008. This story is about Rod Bremly, secretary of the Kansas Department of Health and Environment, who cited Global Warming (guess he didn't get the 'climate change' memo) in blocking permits for two new coal-fired power plants in Kansas. There is no mention of the permits being filed incorrectly. Apparently Mr. Bremly just decided to appoint himself judge, jury and executioner. Talk about overstepping! In essence this mid-level bureaucrat, without any public hearing, abused his power and usurped the Kansas legislature by denying the permits. The article goes on to state that his action 'delighted politicians in Washington who want to curb U.S. reliance on coal, the source of about half of the country's electricity.' What kind of public servant would delight in the unilateral exercise of power to deny the public access to a reasonably priced and abundant source of electricity?

Last but not least, that noted scientist Ted Turner chimed in with these comments in and interview with Charlie Rose on (appropriately) April 1: "We'll be eight degrees hotter in...30 to 40 years. And basically none of the crops will grow. Most of the people will have died and the rest of us will be cannibals." And there's more, "We've got too many people. That's why we have global warming." Hmmm…Ted might be on to something here. If it is true that too many people are the cause of global warming, and also that global warming will cause massive crop failure, and the lack of food will drive people to cannibalism, then viola! Problem solved! The Turner Hypothesis is that global warming is a self-limiting phenomenon: people eating people will solve the problem! I wonder if too few people cause global cooling. This would lead us to the question: what is the right number of people? I guess that would matter on what the optimum temperature is. My head is spinning. Some advice Ted: just fly to wherever your ranch is that is closest to the right temperature for you. Mark Twain might conclude that you have just eliminated all doubt as to whether you are a fool by not keeping your mouth shut!

Least but not Last…

Now comes the latest scandal in the Global Warming cornucopia. In its misguided effort to use the issue of global warming to feather the nest of big agribusiness, congress handed out huge subsidies to ethanol producers. This in turn drove up corn prices (as they no doubt expected). The law of unintended consequences has now reared its ugly head. It seems that in just the last three years global food prices have increased by 83%. Not only the price of corn, driven by competition from ethanol producers in the U.S., but also the prices of other grains as those crops are displaced by corn production in order to take advantage of taxpayers. To make a long story short: in essence the fat cats in Washington are starving the world's most impoverished citizens to provide largesse to big campaign donors. Somehow or another the blame will no doubt be shifted on to *big oil*. Any honest politician would cry out in outrage at the injustice. Is there an honest politician in Washington? This is proof of the Maddox theorem: anytime politicians make rules or create subsidies they distort the balance of the economy and the end result will not be good for the rest of us. In this case the poorest citizens of planet earth are paying dearly.

One last website address and I will sign off. This one, like many popping up on the Internet, voices dissention over the motives and validity of the global warming adherents.

Science and Public Policy Institute site:
http://scienceandpublicpolicy.org/

I encourage each of you, as members of the science community, to become engaged in the debate. Arm yourselves with the facts and don't back down from discussing the issue. One small way to do this is hold the other side accountable for their outrageous claims by not letting them re-package the issue as "climate change." Remember, they said we were going to have global warming. Don't let them off the hook by allowing them to now claim that man causes all changes to the climate. One final thought from 'Extraordinary Popular Delusions and the Madness of Crowds,' by Charles Mackay, 1841.

"Men, it has been well said…go mad in herds, while they only recover their senses slowly, and one by one."

■

FORT WORTH

Our January 17 meeting was held at the Fort Worth Petroleum Club. Bo Henk of Matador Resources in Dallas, and adjunct professor at TCU, presented a talk co-authored with Dr. Jim Garrison, TAMU Corpus Christi and Rachael M. Creel, titled "Neoichnology and Sedimentology of the Modern Micro-tidal Texas Gulf Coast Shallow Marine System."

January guest speaker Bo Henk of Matador Resources.

Neoichnology is the study of modern trace-making invertebrate organisms. Sedimentology is the study of sediments in various depositional environments, in this case, a micro-tidal shallow marine setting. The study area extends over 200 miles, from Galveston Bay and shoreline all the way to Baffin Bay and Padre Island shoreline.

By studying together the physical sedimentary structures plus the biogenic sedimentary structures, i.e., burrows and tracks, we are able to better define the relative types of sand-rich and mud-rich systems. Beaches and shorefaces differ from tidal sand flats and bayhead or river dominated deltas. Fully marine salt water communities differ from brackish to freshwater communities. Comparing and contrasting them makes for better interpretations of the ancient systems preserved in the rock record. Bioturbation can also control fluid flow in petroleum reservoirs where the burrow networks are the actual permeability pathways for oil and gas flow.

Richard J. Zinno, chief geophysicist of Global Borehole Seismic Services at Weatherford International Ltd., was our speaker at the February luncheon. His talk was entitled "Microseismic Mapping and Fracturing in Shale Reservoirs, A Model for Fracture Networks in Jointed Rock."

Richard Zinno, chief geophysicist of Global Borehole Seismic Services.

Dick opened his talk by noting that microseismic analysis has proven to be useful both in mapping how fractures develop in a shale reservoir during a hydraulic fracture stimulation, and in understanding how the fracture pattern determines the dynamics of hydrocarbon production from the reservoir. An analysis begins by deploying a geophone array in a well offsetting the borehole to be fraced. One records microseismicity before, during and after the frac, and the microseismic signals (typically a million times smaller than what can be felt at the surface) are then processed and displayed in real time. The 3D display of microseismicity shows the fracture pattern created by the stimulation and how the pattern changes over time. Fractures typically open in a progressive stair-step manner in response to the interaction of the stimulation and the local stress field of the earth. The pattern is heavily influenced by the pattern of natural fracturing in the rock. If the maximum principal stress of the local field is mostly parallel to natural fractures, the pattern of the induced fracturing will be long and narrow. If orthogonal, the pattern will be shorter and wider. As production of the reservoir fluid proceeds, choke points typically develop across bridges between long fractures. Refracing eventually is required to open these bridges and restore economic producing rates. Dick concluded by observing that one generally wants to drill horizontal wells perpendicular to the maximum regional stress in a shale reservoir, but this general rule must be evaluated in the context of the natural fracture pattern as these are what will actually open. Fractures that appear to be sealed on FMI logs are part of the available natural fracture system in shales as apparently closed fractures are weak and will open when stimulated (because calcite cement bonds poorly to shale). Dick used data from the Barnett Shale in the Fort Worth Basin to illustrate the various points of his talk.

In March, Michael J. FitzGerald III, William Moulton, and Al Garcia, of Toreador Resources Corp. in Dallas, presented "South Akcakoca Gas: A Black Sea Discovery 30 Years in the Making." Prior to 2004, there had been only six wells drilled in the Turkish Black Sea, four in the far western Black Sea area and two in the west central area, offshore from a small vacation town, Akcakoca.

Early seismic had indicated the presence of sizable structures formed by compressional tectonics bounded by trust faults. In 2000, Toreador Resources, through an acquisition, gained a 962,000 acre permit to drill. A 3D shoot would have taken too long, so a conventional 2-D seismic survey and follow-up high resolution 2-D surveys were undertaken.

Michael FitzGerald of Toreador Resources Corp.

In 2004 the Ayazli #1 wildcat was drilled on a thrusted anticline 3 km. south of the original Akcakoca #1 well. This well tested approximately 12.0 mmcfgpd from four Eocene age sands. Drilling over the next two and a half years saw the exploration group drill twelve successful wells out of fourteen and initiate the first gas production in the Turkish Black Sea.

SIPES Fort Worth Chapter

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OKLAHOMA CITY

Our January speaker, Jim Puckette, an associate professor from the school of geology at Oklahoma State University, presented a lecture on the status of the mineral industry in Oklahoma, which included not only oil and gas, but industrial minerals as well.

Travis Vulgamore from Pinnacle Technologies.

Travis Vulgamore from Pinnacle Technologies, delivered a very enlightening talk during our February luncheon meeting, on fracture mapping, fracture software, and fracture consulting.

In March, Ezat Heydari, associate professor of geology at Jackson State University, gave us an excellent presentation, "A Microbial Smackover Formation and the Dual Reservoir - Seal System at the Cedar Creek Field Conecuh County, Alabama." The Little Cedar Creek Field appears to be the largest Smackover field discovered in the Northern Gulf Coast in the last three decades. The field has demonstrated an oil column of 850 feet, and extends along strike for over eight miles.

Our chapter continues to experience excellent growth, as we have added six new members and these include:

March guest speaker Ezat Heydari (R) receiving his speaker award from Vice Chairman James Jackson.

Tom Cronin, Mark Herndon, John Hooper, Barbra Landreth, Pete Massion, and John Preston. Several new members are awaiting final approval.

Tom Rowland
Chairman

■

WELCOME NEW MEMBERS

The following new members were approved by the
SIPES Membership Committee from January 30, 2008 to April 10, 2008:

SIPES Number	NAME	CHAPTER	SPONSORS		
2047	John O. Harris	Lafayette	Reinstatement		
3142	Thomas H. Wilson	Midland	R. Blackwell	L. Carr	J. Naumann, Jr.
3143	Thomas J. Ervin	Dallas	J. Cobb	R. Halpin	D. Martineau
3144	Steven K. Miller	Dallas	B. Greenwood	D. Martineau	D. Neuberger
1620	Thomas C. Cronin	Oklahoma City	Reinstatement		
3146	William T. Brown, Jr.	Denver	R. Cluff	W. Goff III	W. Lilley
3147	David L. Kunovic	Denver	M. Austin	W. Goff III	W. Miller
2933	Terrence T. O'Donnell	New Orleans	Reinstatement		
3148	Martin M. Cassidy	Houston	Reciprocal-	DPA	
1754	Robert A. Manning	Midland	Reinstatement		

LAFAYETTE

The January meeting of the Lafayette Chapter featured fellow SIPES member, Phil Martin, #2390, with New Century Exploration, LLC in Houston, Texas. Phil's presentation was entitled "Fishing with Dynamite: 3D Tips and Trip-ups in the Gulf Coast." Phil shared his experiences using 3D technology and track record of drilling wells in the Gulf Coast over the years, and what he has learned. These real-life examples were very informative to everyone who attended.

Our February luncheon was very well-attended. Jack Drake, a financial advisor with UBS Financial Services here in Lafayette held a discussion on the importance of asset allocation in reaching your financial goals. Jack is a graduate of The Citadel and served our country as a special agent in army intelligence. His talk was very informative, as everyone wanted to know how to hold on to their money, grow their investments, and reduce risk along the way.

Douglas Bradford, #3122, a fellow SIPES member from Covington, Louisiana, was the featured speaker at our March meeting. Doug is a graduate from USM/LSU and began working for AMOCO in 1967. In 1975, Doug became an independent geologist and sold prospects in South Louisiana for seventeen years until, in 1992, he joined the Louisiana DEQ. In 2005, just two weeks before Hurricane Katrina hit the Louisiana Gulf Coast, Doug retired from LDEQ.

Doug's presentation was on the 2001 Memorial Day train derailment that took place near Eunice, Louisiana, where thirty-three cars derailed. Doug shared a great slide show and in-depth knowledge of the environmental catastrophe that occurred and the ensuing cleanup that followed.

David Bieber
Secretary/Treasurer

■

DALLAS

The Dallas Chapter's first meeting of the year was held on January 15 at the Royal Oaks Country Club. Texas Railroad Commissioner Elizabeth Ames Jones was our guest speaker, and presented an "Update on Energy in Texas." She stated that the Railroad Commission is administering a record number of drilling permits, and she pledged that the Commission would continue its legislative endeavors to assist the oil and gas industry in increasing production in Texas. Commissioner Jones also stated that she is committed to "firm but fair" regulation of our industry which is such an important one for our state.

Texas Railroad Commissioner Elizabeth Ames Jones, and Dallas Chapter Vice Chairman Terry O'Hare.

Jim Johnstone, president of Contek Solutions, LLC spoke at the February 19 lunch meeting about his company's work in the Barnett Shale play.

February guest speaker Jim Johnstone of Contek Solutions, LLC.

Contek has provided logistical and operational consulting services for Chesapeake Energy's development project at the DFW Airport. Chesapeake was awarded an oil and gas lease under DFW through a bid process, and began drilling there in 2007. Gas sales began on September 28, 2007, and currently five drilling rigs are operating at DFW for Chesapeake. Horizontal wells will be drilled from fifty-three pad sites, starting at the north end of the airport, then moving counter-clockwise around the outside of the 18,000-acre tract and finally into the parking lots to complete development of the property. Contek says that the key to successful completions in the Barnett Shale is the use of slick-water frac treatments across three to seven segments in the horizontal wellbore, each segment being fraced with about 1 million gallons plus proppant. Chesapeake currently has about 1,000 landmen working the Barnett Shale play.

On March 6, the chapter's monthly meeting was held in conjunction with the Texas Energy Council's 20th Anniversary Annual Energy Symposium; Our chapter is a member society of the TEC. The symposium was held at Southern Methodist University, and the theme was "Global Energy: Today and Tomorrow." Ray L. Hunt, CEO of Hunt Oil Company, delivered the keynote luncheon address. He predicted continued strength in the oil market due to increasing demand from developing countries. Mr. Hunt also listed the five characteristics which he says separate "great" companies from "good" ones. These are:

- A strong corporate culture, with shared values and work ethic
- Differentiation; finding a niche where one can excel
- Adaptability
- Agility
- Willingness to be contrarian

Other speakers at the symposium included Dr. William Fisher, #2110, of the University of Texas, and Elizabeth Ames Jones, Texas Railroad Commissioner.

Mike Taylor
Secretary

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NEW ORLEANS

Our January to March luncheon meetings were all geared toward issues regarding Louisiana. Tom Harris, a division administrator of the Louisiana Department of Environmental Quality, spoke to us in January about post-Katrina soil and water conditions in the New Orleans area. Mr. Harris's presentation, "Katrina Toxic Soup, Myth or Reality" covered a topic which was of great interest to the local membership. During the flood, New Orleans was literally an enormous cauldron of mixed chemicals. Volatile and semi-volatile organics, metals, pesticides, herbicides, PCBs, and petroleum hydrocarbons combined in the floodwaters to create a chemical soup. Mr. Harris's group took 1,800 floodwater samples and analyzed 192 compounds per sample. The overall results of his study found that the soil chemistry, post-Katrina, is little changed from pre-Katrina conditions, and levels of contaminants are similar to other older urban centers around the country.

Our February luncheon speaker, Tony Duplechin, a geologist administrator also of the Louisiana Department of Environmental Quality, discussed several problems with groundwater aquifers in the state, and supplying the population with safe drinking water. Aquifers, such as the Sparta Aquifer in northern Louisiana have such high levels of groundwater being withdrawn that recovery measures are needed. In several areas, water is being pumped out faster than the reservoir can be recharged, and saltwater wedges are contaminating some of the wells. The problem is so great that the Louisiana Department of Natural Resources has declared several parishes in this watershed as "areas of groundwater concern." The state is currently working on conservation methods to ensure a future safe water supply.

In March, we had an economic recovery and coastal development plan presented by Eric Orgeron, whose organization has developed several ideas to create a local economic mechanism to cover the enormous costs of coastal restoration and hurricane protection. Most of his ideas were not based upon any fundamental engineering or scientific doctrine; therefore, an exciting discussion ensued.

The New Orleans Chapter is looking forward to the upcoming SIPES 45th Annual Meeting and 2008 Convention.

Jim Zotkiewicz
Secretary

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SIPES Chapter Meeting Information

AUSTIN

Chairman:	Doug Watkins
V-Chrmn:	Ward Davenport
Secretary:	TBA
Treasurer:	Dwight Cassell
Meets:	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

DALLAS

Chairman:	Cliff Walker
V-Chrmn:	Terry O'Hare
Secretary:	Mike Taylor
Treasurer:	Keith Brownlee
Meets:	Royal Oaks Country Club 3rd Tuesday

DENVER

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

FORT WORTH

Chairman:	James Robertson
V-Chrmn:	James Robertson
Secretary:	TBA
Treasurer:	TBA
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:	Tom Gentry
V-Chrmn:	Steve Robichaud
Secretary:	David Overton
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

HOUSTON

The first SIPES Houston Chapter luncheon of 2008 was held at the Petroleum Club on January 17, with Frank Cornish, #3128, of Imagine Resources LLC as guest speaker. His discussion was titled "Discovery and Development of the Lower Wilcox Southwest Speaks Field; Lavaca County, Texas."

SIPES member Frank Cornish.

Mr. Cornish reviewed the prospect/field development history of the Southwest Speaks field beginning with the initial Lower Wilcox discovery in January 1996. The Lower Wilcox play concept was propagated on undrilled Lower Wilcox sands beneath Upper Wilcox dip-trending structural features. Previous Lower Wilcox tests in the area had encountered gas in non-commercial quantities.

Five wells were drilled on the original prospect model before 3D seismic was shot in 1997 over the field. The main pay sands discovered were the Roeder, Rainbow and Magnolia sands. All of the sands in the field require fracture stimulation and had varying levels of H2S and CO2. Generally speaking, the best wells in the field are located on structural highs but there are some high porosity/permeability zones off structure.

Production from the Southwest Speaks field Lower Wilcox sands is expected to exceed 230 BCFG with the best well, the Eaves #1, producing over 16 BCFG from the Rainbow Sand. The Rainbow Sand has produced over 84 BCFG through October 2006.

Fred Hilterman of Geokinetics was our guest speaker in February. His discussion was titled "New Interpretation Techniques for Predicting Pore Fluid, Lithology and S_w from Seismic AVO."

Fred Hilterman of Geokinetics.

Dr. Hilterman provided a dynamic presentation on the use of seismic reflectivity transforms to determine the lithology and fluid content of target horizons. His presentation showed that the amplitude-versus-offset (AVO) response is dominated by lithologic properties. The far-angle amplitude is linearly related to the near-angle normal incident (NI) response, which holds true for high to low porosity sands. The pore fluid interpretation is contained in a linear relationship of the NI for a hydrocarbon charged sand to the NI for its equivalent brine saturated sand state. The NI difference between a prospect and its equivalent downdip wet reservoir leads to the prediction of pore fluid and, thereby, water saturation.

This proposed methodology can be used to distinguish between "fizz-gas" and commercial quantities of gas. (For his analysis, "fizz-gas" was defined as horizons containing gas saturations of less than 36%, while commercial gas had gas saturations of around 70%.) Additionally, the far-angle amplitudes to the near-angle amplitudes can be used to estimate porosity.

During the question and answer period following the talk, Dr. Hilterman was asked about the applicability of his methodology for carbonate reservoirs. He indicated that carbonate reservoirs were more complex to analyze because they have the added variables of changes of porosity and fracturing. Dr. Hilterman stated that it is essential to limit as many variables as possible so that the seismic changes seen are more likely to be due to changes in lithology and/or fluid content.

He was also questioned about zone thickness impact on the analysis. He stated that this analysis assumed that the target horizon was less than one-quarter wavelet thick. If the target horizon thickness exceeds these criteria, you could have separate influences from the top and base of the sand bed, then a different equation is applicable.

Our third luncheon of 2008 was held on March 20, with Tim Brittan of Infinity Oil & Gas, and Jeff Roberts of The Unconventionals, as our guest speakers. Their discussion was titled "Selling Your Prospect in a Risk Averse Environment."

Tim Brittan of Infinity Oil & Gas.

Tim stated that there has been a marked decrease in conventional exploration drilling opportunities over the last few years. Investors are responding to higher oil prices and are looking for prospects/plays with significant reserve potential with development drilling opportunities. This motivation has pushed the industry toward unconventional resource type plays where the exploration risk has been reduced in exchange for a higher commodity price risk.

The key to success has been to recognize what investors are wanting and providing them a high quality prospect/play at a low price. This can be achieved by:

· getting into the play early or not at all,

· having a highly motivated focused team that is experienced in the area,

· being very thorough on your legal paperwork, and

· being great at what you do.

Glen Pankonien
Secretary

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MIDLAND

At our January meeting Glenn Winters and Stonnie Pollock of Fasken Oil and Ranch, Ltd. in Midland spoke on "Successfully Searching for Spraberry Reservoirs by Integrating Old and New Exploration Techniques, Dawson County, Texas." Traditional exploration techniques for stratigraphic traps including regional play concepts; subsurface well control; 2-D seismic; and early 3-D seismic surveys often yield marginal results. Integration of these older methods and implementation of newer and different techniques may reduce risk and improve success rates. Remaining exploration targets in the Permian Basin comprise mostly stratigraphic traps, which if discovered, often get over-drilled and become uneconomic. The Spraberry Trend of the Midland Basin, although a significant widespread play (10 billion bbl OOIP), poses significant challenges in extracting known reserves. Poor recovery factors are due to low permeable, mud-rich, distal fan deposits, basinward of the Horseshoe Atoll. Proximal fan deposits in the northern half of the Midland Basin often contain better reservoir properties, but are much more discontinuous and difficult to delineate.

In 2004, Fasken Oil and Ranch drilled an industry-generated prospect in Dawson County, Texas that was developed from subsurface well control. Fasken owned two early 1980s vintage seismic lines near the well site. It was thought that this seismic data demonstrated a geophysical anomaly associated with the reservoir target. After drilling a dry hole on this prospect, the Exploration Department initiated a series of steps to determine if it was feasible to actively explore for Spraberry targets in this part of the Midland Basin, since most Spraberry Fields in the area have been discovered by serendipity on the way to deeper targets.

Field studies were completed over several producing fields that contained multiple Spraberry zones. Fasken reprocessed and mapped its widespread database of 2-D seismic data and acquired and reprocessed old 3-D data sets. During late 2006,

Susan Schrader from the University of Texas of the Permian Basin and Chapter Vice Chairman Steve Robichaud.

Fasken acquired a high effort 3-D survey over the area. Other technologies applied were surface geochemical analysis by GoreTM Survey for Exploration and Geotrace's RockRes seismic processing techniques. The integration of data from these exploration techniques resulted in Fasken successfully finding seven of eight economic wells and the prediction of several dry or uneconomic wells drilled by competitors in the area.

We held our annual Spouse's Night Dinner celebrating Valentine's Day on Tuesday, February 12 at the Midland Country Club. The Midland High School Mystique Chamber Ensemble provided music during the social hour before dinner. Our local "eclectic tie" collector and SIPES member, Arlen Edgar, #620, entertained and challenged us with a talk about "Community Volunteerism," and DJ Reid Boyd topped the evening with music for dancing. It was a great evening of friendship and romance.

In March, Susan Schrader, an assistant professor at The University of Texas of the Permian Basin, spoke on "Closing the Personnel Gap, Outreach and Education for the Next Generation of Oil and Gas Professionals." An often-voiced concern in the oil and gas industry is the shortage of qualified personnel. In order to mitigate problems in this area, it is important to motivate young people to consider a career in the industry, and provide the appropriate educational offerings to help them to be successful. This talk addressed both of these issues, by first looking at the results of an extensive survey about the industry given to two groups of high school students (one in an "oil town" and one in which oil and gas do not play a significant role in the local economy), and then looking at the educational offering that the region's four-year university, UTPB is providing to help prepare students for industry careers.

The surveys given to junior and senior high school students gauged the interest in careers in the oil and gas industry and helped to quantify the reasons that students may not be seeking out these careers. Information from this study will provide valuable insight for companies and universities interested in enticing people to work in the variety of oil and gas careers.

UTPB has long offered both an undergraduate and graduate program in geology. In addition, they have recently responded to the industry's concerns by adding new degree programs and courses that focus on petroleum. These new programs and curricula will be discussed, as well as the school's future plans for a new college of engineering.

David Overton
Secretary

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IN MEMORIAM

We regret to note the passing of the following members:

Joe Canon, #1078
of Midland, Texas
who died on February 13, 2008

❖

Robert F. Dundon, #989
of Dallas, Texas
who died on February 19, 2008

❖

Jim K. Hartman, #1575
of Midland, Texas
who died on February 17, 2008

❖

E. Lee Mills, #208
of Lafayette, Louisiana
who died on March 22, 2008

❖

David N. Schell, #1042
of Metairie, Louisiana
who died on February 20, 2008

❖

I. D. Simpson, Jr., #1249
of Prairieville, Louisiana
who died in January 2008

❖

SIPES DIRECTORY CORRECTIONS AND CHANGES

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News of Members


James A. Gibbs

James A. Gibbs, #314, of Dallas, Texas recently received AAPG's Michel T. Halbouty Outstanding Leadership Award which recognizes those who have provided excellence in association leadership. The award was presented at the group's 2008 Convention in San Antonio, Texas. Jim is also a SIPES Honorary Member.


Dudley J. Hughes

Dudley J. Hughes, #1481, of Jackson, Mississippi was awarded AAPG's Outstanding Explorer Award at the group's recent convention in San Antonio.

Carroll L. Kinney, #2603, of Oklahoma City, Oklahoma has recently been awarded honorary membership in the Oklahoma City Geological Society recognizing her many years of tireless work for the society and as a delegate to AAPG.


Jeannie F. Mallick

Jeannie F. Mallick, #2961, of Houston, Texas received the AAPG House of Delegates Long Service Award on April 20, 2008 at the AAPG Convention in San Antonio, Texas.


H. Jack Naumann

H. Jack Naumann, Jr., #2420, of Midland, Texas will be installed as president of SIPES during the 45th SIPES Annual Meeting and Convention in New Orleans, Louisiana from May 12-15, 2008. Jack has previously served as SIPES Vice President of National Energy during 2007-2008, as well as a director for the SIPES Foundation.


Suzanne M. Rogers

Suzanne M. Rogers, #2729, of Oklahoma City, Oklahoma was recently elected president of the Oklahoma City Geological Society.


Stephen A. Sonnenberg

Stephen A. Sonnenberg, #2158, of Denver, Colorado received AAPG Honorary Membership at the association's 2008 Convention in San Antonio, Texas.


Bonnie R. Weise

Bonnie R. Weise, #1735, of San Antonio, Texas served as general vice chair of the recent 2008 AAPG Conven-tion in San Antonio, Texas.

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the state's historic production. This province still holds many opportunities for discovery, and if you are an independent oil and gas prospector, then onshore Louisiana is probably where your focus will lie. And if you have a Louisiana prospect, then you need to know something about Louisiana unitization.

Oil and gas production from Louisiana's nearly 140,000 productive wells (Sandoz, 2008) has been allocated on either a lease basis or a unit basis. Lease basis production is a familiar concept to most Texas and Oklahoma petroleum geologists, and is the situation in which all of the production attributable to the royalty interest of a well is paid to the wellsite mineral owner. In contrast, production on a unit basis is the situation in which the production attributable to the royalty interest is distributed among a group of leases or mineral interests, pooled together in a "unit."

If the affected leases provide for it, or an agreement can be reached among all or a majority of the separate royalty-interest and working-interest owners, then an operator can produce his well on the basis of a "declared unit" or a "voluntary unit." These two types of contractual units (or "conventional units") commonly range in size from 40 to 640 acres and are typically comprised of geographic squares or rectangles. Voluntary and declared units can be a good option when your prospect is underlain by just a few relatively large landowners among whom a pooling agreement can be easily reached. If instead you have a problem lease, an aggressive offset operator, or a prospect that simply won't conform to a 40-acre box, Louisiana offers the prospector a compelling option in the form of a "commissioner's unit."

The commissioner's unit, the focus of this article, is a special type of unit created by the Commissioner of Conservation that supersedes the authority of the previously described pooling agreements (voluntary or declared unit bases). The Commissioner of the Louisiana Office of Conservation is appointed by the governor and is vested by the legislature with the authority to create commissioner's units and decide all other unitization matters in the state, subject to judicial review. Based on recommendations from his staff of geologists and engineers, the Commissioner of Conservation signs the orders which adopt units, and approves alternate unit wells, substitute unit wells, and commingling requests.

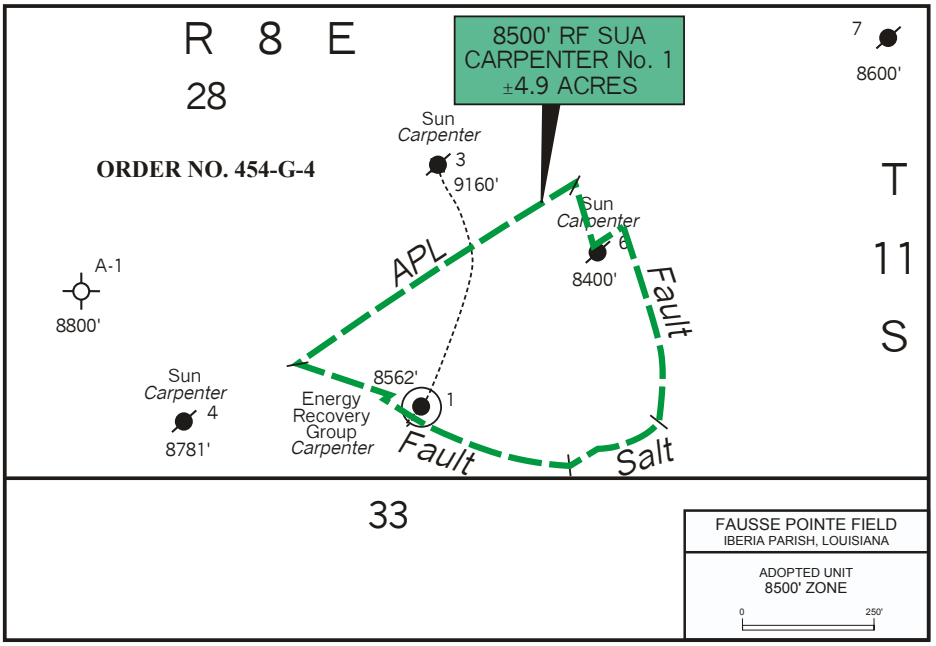

Figure 1A. Geologic unit on the flank of Fausse Pointe Salt Dome in Iberia Parish, Louisiana. Unit is bounded by two faults, a salt contact, and an approximate productive limit (APL).

Commissioner's units can range in size from less than five (5) acres on the flank of a highly-fractured salt dome in Iberia Parish (**Figure 1A**) to 1280 acres in the deep, pressured Tuscaloosa Trend of Pointe Coupee and West Baton Rouge Parishes (**Figure 1B**), to over 5,000 acres in recently-discovered coalbed methane reservoirs in Caldwell Parish of north Louisiana (**Figure 1C**). Commissioner's units can be formed either before, during or after the drilling of a productive well, and they cover a specific areal extent as well as a specific vertical extent as defined in a particular stratigraphic interval in a referenced wellbore, referred to as a sand definition. Sand definitions can cover individual sands or zones. Commissioner's units can have exterior boundaries that are determined by geologic features such as faults, permeability barriers, and water levels, or they can have boundaries that conform to geographic features such as section lines, tract boundaries, or lease lines. In north Louisiana, large patterns of geographic units are and have historically been common. In the early days of south Louisiana unitization, reservoirs were typically served by geologic units after one or more productive wells had been drilled, with separate and discrete units created for each individually productive sand lobe. More recently in south Louisiana, and coinciding with the predominance of 3-D seismically-identified prospects, geographic units are commonly created before the drilling of a well for sand "zones" up to several thousand feet, covering many individual sandstone lobes separated by shale.

GEOLOGIC UNITS

Louisiana is unique in the United States as being the only state that unitizes oil and gas reservoirs on the basis of geology. Geologic units are based

(Continued)

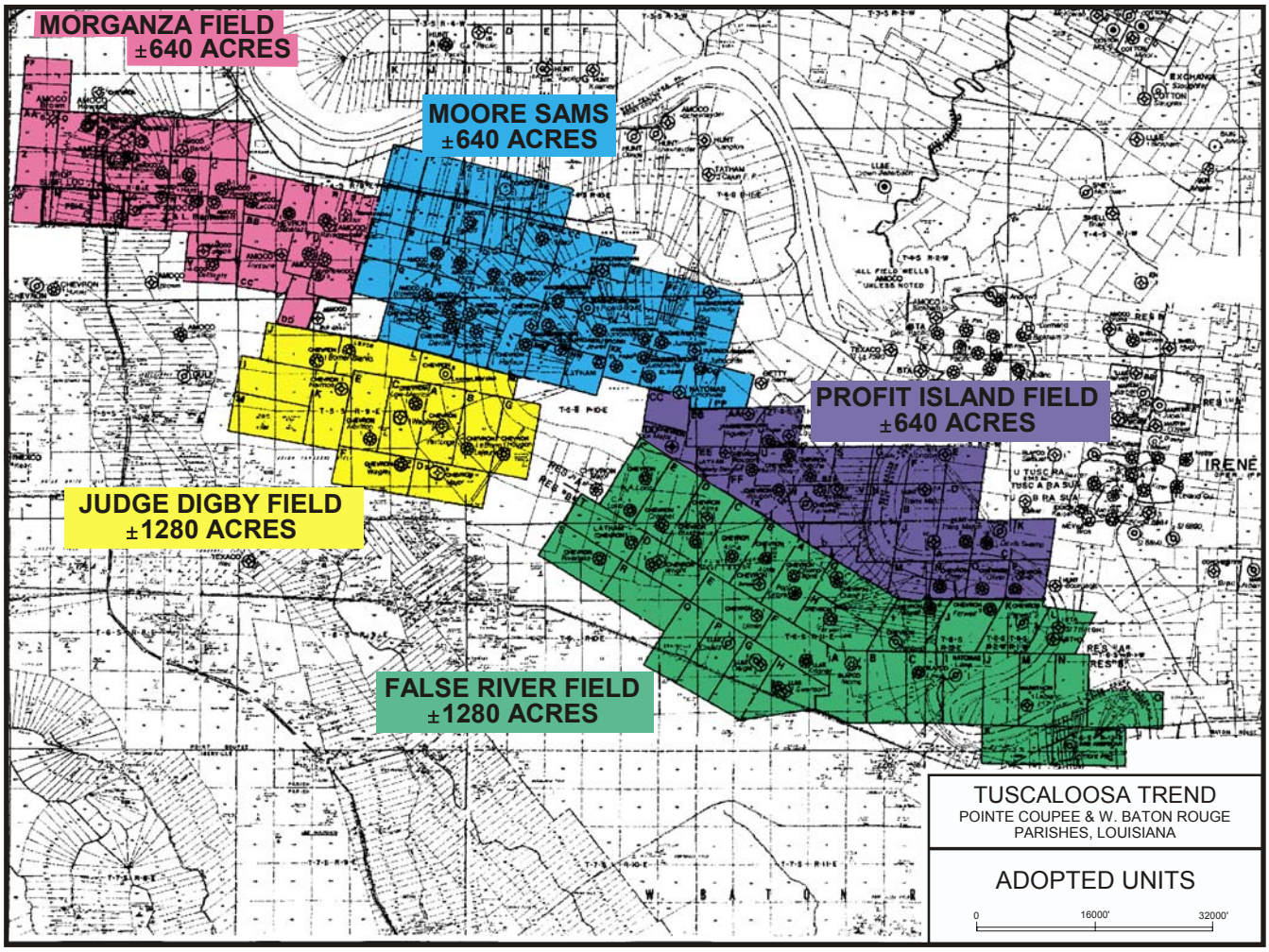

Figure 1B. Pattern of geographic units for the Tuscaloosa Sands in Pointe Coupee and West Baton Rouge parishes, Louisiana with units ranging in size from 640 to 1280 acres.

on geologic boundaries such as faults, shale-outs, salt boundaries, permeability barriers, and down-dip limits, or some combination of the above. For geologic units, detailed structure maps and fault plane maps are prepared and submitted to the Office of Conservation in order to accurately depict the reservoir boundaries. As a result, geologic units require a sufficient amount of subsurface control and are more common in mature fields and areas of relatively dense drilling. The choice of a down-dip reservoir limit can be somewhat subjective. When a well inside the geologic unit has a clear gas-water or oil-water contact, this value is typically used for the down-dip limit. When instead the productive unit sand is loaded to base without a water level, then the down-dip limit can be either low-known gas (LKG), low-known oil (LKO) or high-known water (HKW) in a particular well in the fault block. An alternative approach for the down-dip limit is to use an approximate productive limit (APL) such as a projected distance below the base of the productive sand, a specific number of sand thicknesses, or using the arithmetic midpoint between LKG and HKW.

Figure 2 shows an example of a pre-drill geologic unit for two prospective sand members of the Alliance Zone at Southeast Gueydan Field in Vermilion Parish, Louisiana which illustrates the choice of a down-dip limit. In this case, the operator initially proposed a unit bounded on the west and east by faults and bounded on the south by an approximate productive limit (APL) of one sand thickness below the anticipated sand top. A dry hole had previously been drilled in the fault block, structurally low to the operator's anticipated down-dip limit, in which the prospective sands were water wet. The Office of Conservation adopted a composite geologic unit for the Alliance Zone made up of the composite exterior boundary of the productive outlines of the prospective sand members, which utilized a down-dip limit of high-known water (HKW), going through the wet well.

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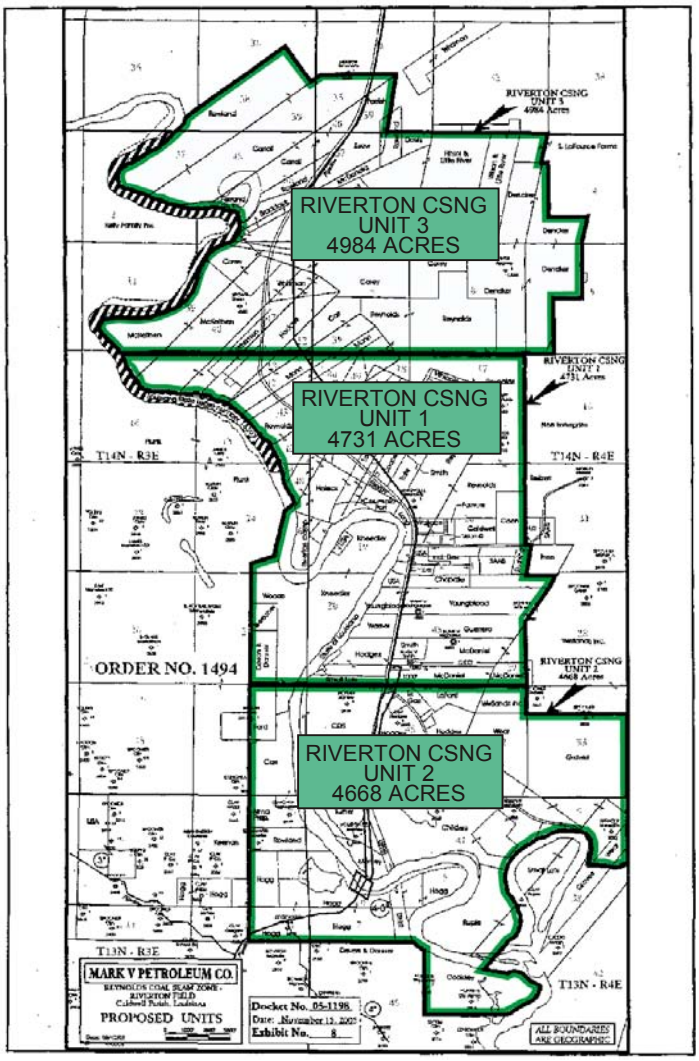

Figure 1C. Geographic units for the Reynolds Coal Seam Zone (Coalbed methane) in the Riverton Field, Caldwell Parish, Louisiana with unit sizes approaching 5,000 acres.

If you are in the fortunate position of having multiple productive horizons in your wellbore, you have options in terms of unitization. While individual units can be created for each individually productive sand, another common approach is to create a single composite geologic unit for a zone of productive sands. **Figure 3** shows a pattern of individual geologic units created for a series of Bolivina mexicana sands (members A, B, C, D, and E) in Perry Point Field in Acadia and Lafayette Parishes that produce on the upthrown side of a down-to-the-coast fault, along with the structure map used to create the individual geologic unit for the Bol mex "B" Sand. In contrast, **Figure 4** shows an example of a composite geologic unit at Lake Gero Field in Terrebonne Parish, in which each productive horizon was mapped, and a composite exterior productive outline was utilized to create a single unit which covered the entirety of the productive zone.

An example of a hybrid geologic unit comes from Allen Parish at Oberlin Field, shown in **Figure 5**. In this field, a Yegua (Cockfield) sand about 50 feet thick produces on the downthrown side of a down to the south fault closure. In this case, a number of wells were drilled and initially produced on the basis of a pattern of 160-acre geographic units. As the field was defined by further drilling, the operator applied for a unit revision for the reservoir using the fault as a northern boundary and a zero sand line or permeability barrier as the southern boundary. The resulting reservoir was split up into a number of individual sand units with geographic interior boundaries to serve each of the productive wells, with sand unit sizes ranging from 100 to 260 acres. Over time, the unit boundaries were revised as the drilling of additional wells indicated that a geologic revision was necessary.

GEOGRAPHIC UNITS

The other main type of commissioner's unit is the geographic unit. These units have boundaries which coincide with geographic features and are suitable when the exact geologic boundary of a reservoir cannot be precisely determined. Some geographic units coincide with governmental section constructions; for example, a 160-acre square conforming to the southwest quarter of a standard section. Other geographic units may be formed by centering a rectangle or square around the productive area. Geographic units also commonly have boundaries that are determined by non-productive wells and lease lines or tract boundaries. The geographic unit is particularly well-suited for amplitude-type, 3-D seismic prospects in areas of sparse well control and high stratigraphic variability, such as the Hackberry and Yegua (Cockfield) trends of the southwestern Louisiana parishes.

In Turps Field in Beauregard Parish, an operator made a discovery in the 10,200' (Yegua) Zone, and subsequently created a single 320-acre geographic unit in the shape of a square, with the productive well near the geographic center of the unit (**Figure 6**). As additional development wells

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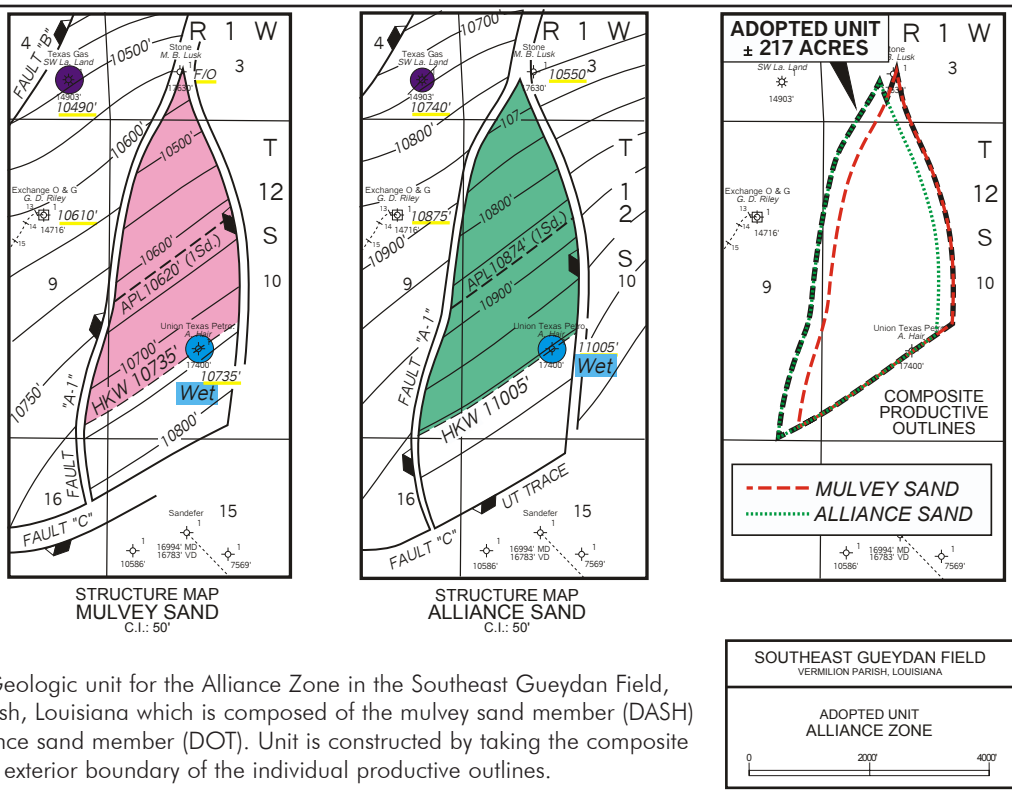

Figure 2. Geologic unit for the Alliance Zone in the Southeast Gueydan Field, Vermilion Parish, Louisiana which is composed of the mulvey sand member (DASH) and the alliance sand member (DOT). Unit is constructed by taking the composite exterior boundary of the individual productive outlines.

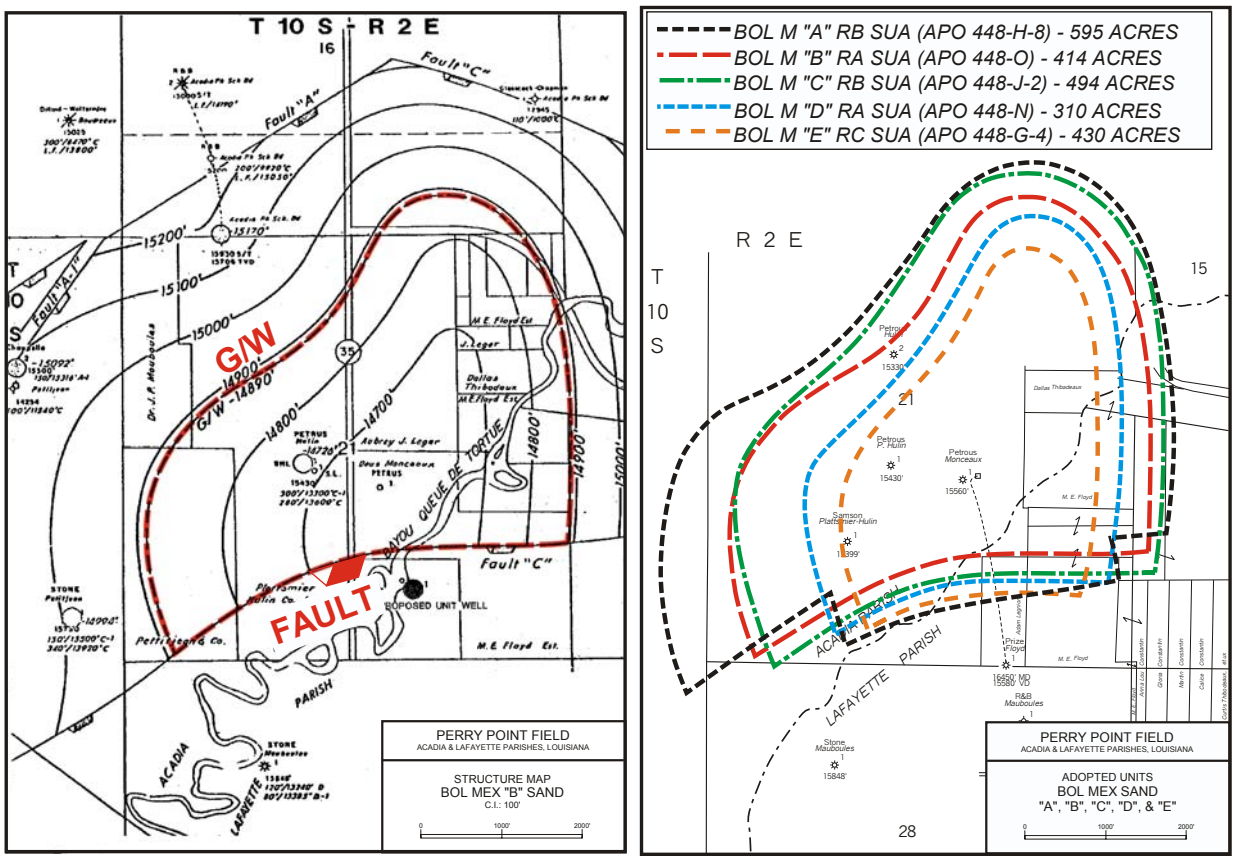

Figure 3. Pattern of individual geologic units for the Bolivina Mexicana Sands (A, B, C, D & E) in the Perry Point Field, Acadia and Lafayette parishes, Louisiana with the Bol Mex "B" sand structure map.

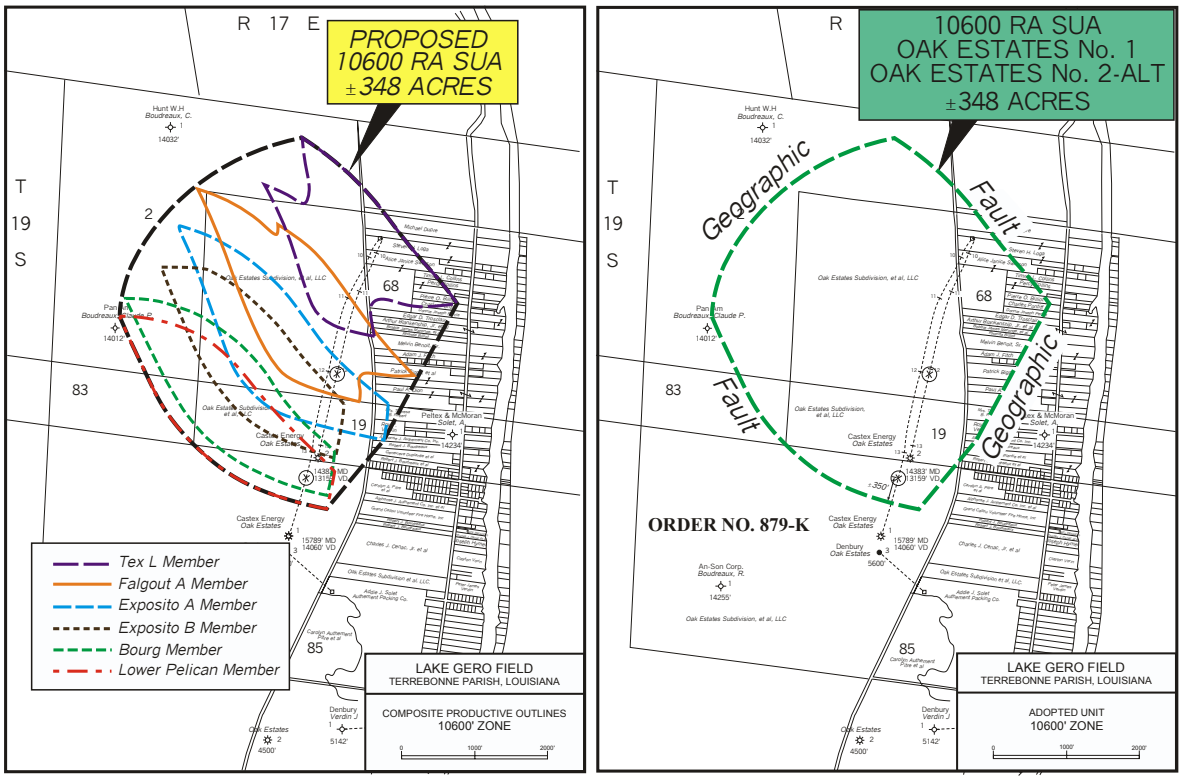

Figure 4. Composite geologic unit for the 10,600' zone in the Lake Gero Field, Terrebonne Parish, Louisiana. Unit is constructed by utilizing a composite exterior boundary that encloses the productive outlines of the six individual sand members.

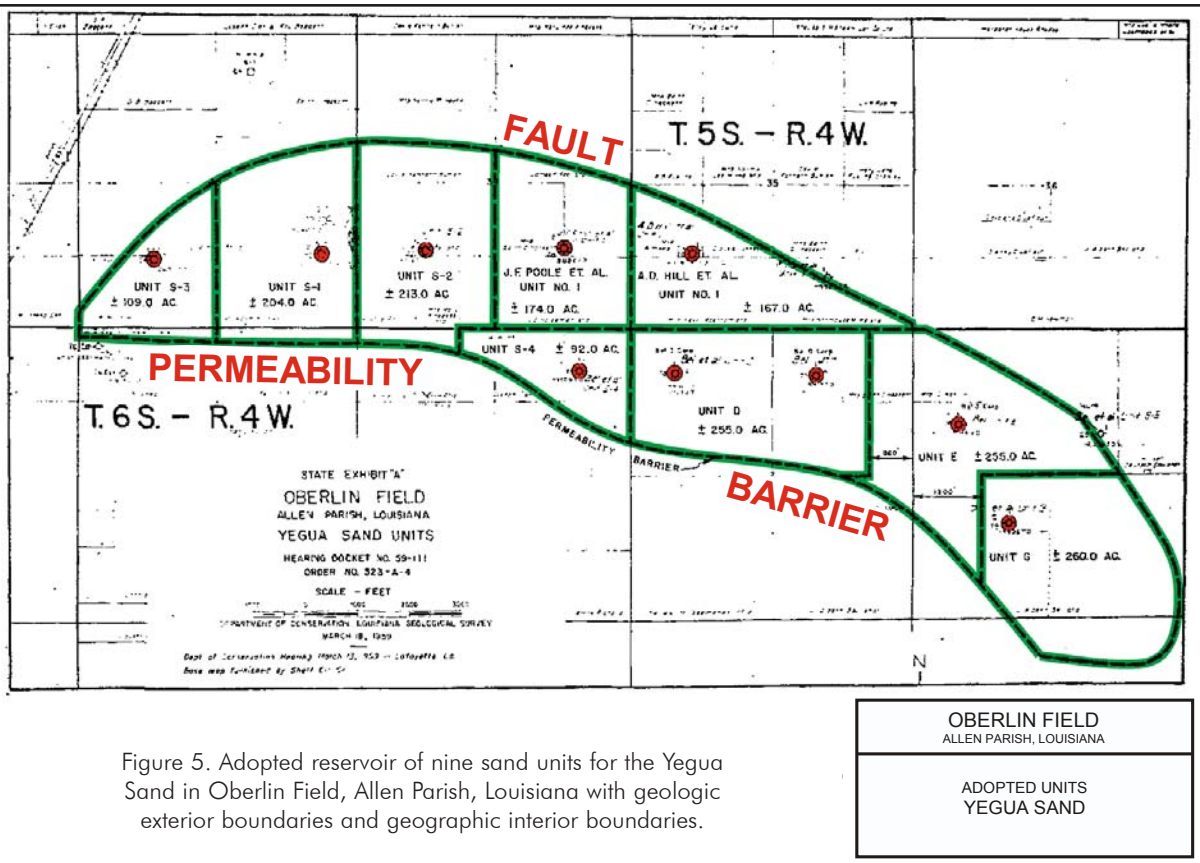

Figure 5. Adopted reservoir of nine sand units for the Yegua Sand in Oberlin Field, Allen Parish, Louisiana with geologic exterior boundaries and geographic interior boundaries.

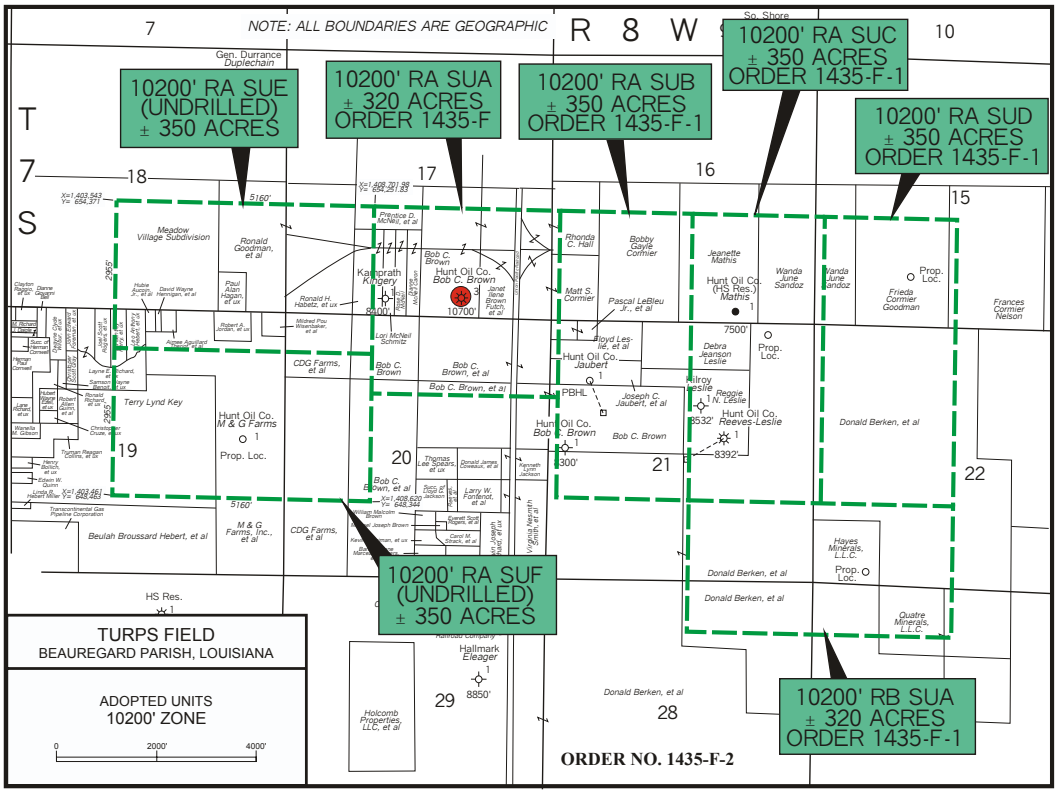

Figure 6. Pattern of geographic units for the 10,200' zone (Yegua) in the Turps Field, Beauregard Parish, Louisiana, ranging from 320 to 350 acres in size.

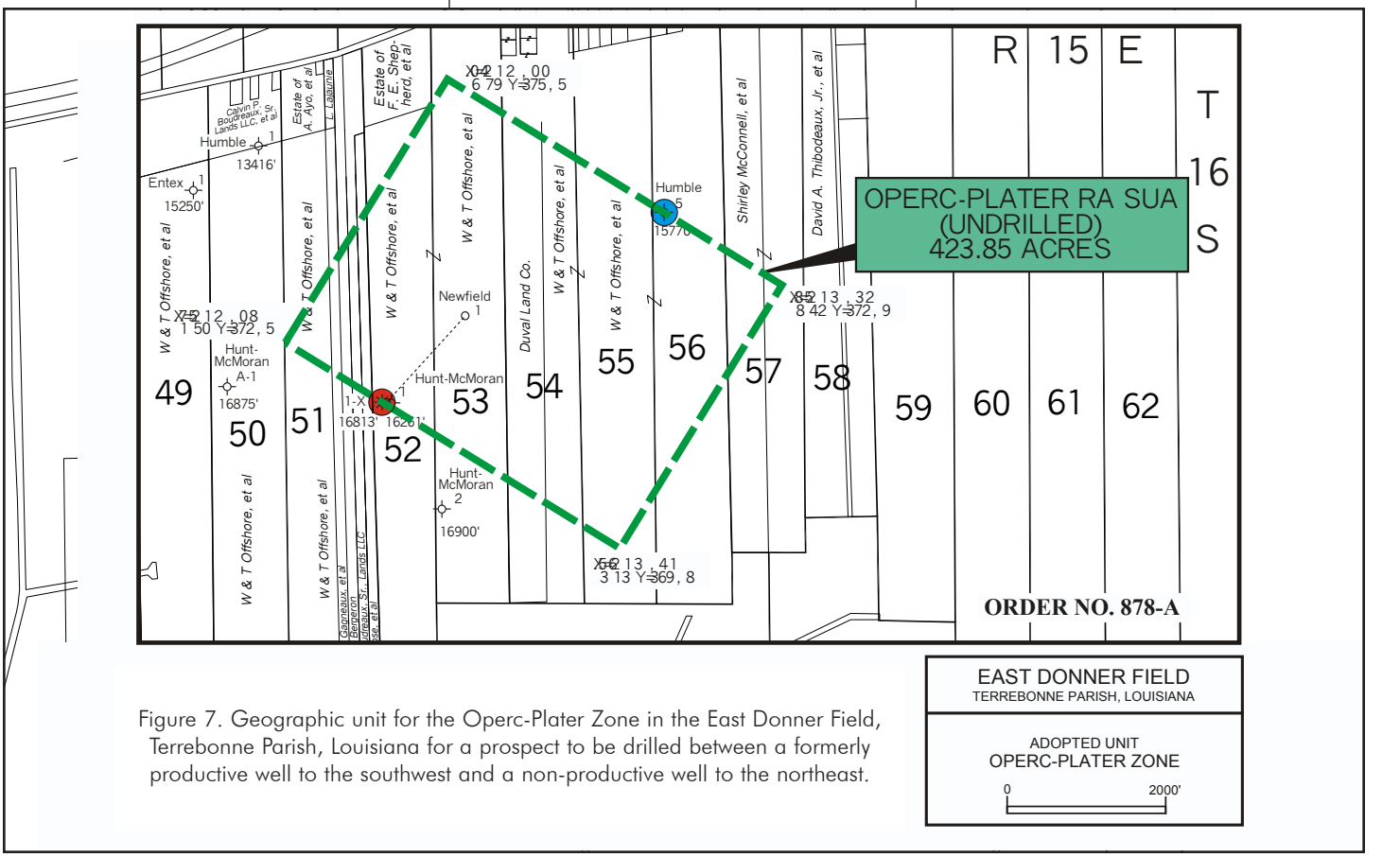

Figure 7. Geographic unit for the Operc-Plater Zone in the East Donner Field, Terrebonne Parish, Louisiana for a prospect to be drilled between a formerly productive well to the southwest and a non-productive well to the northeast.

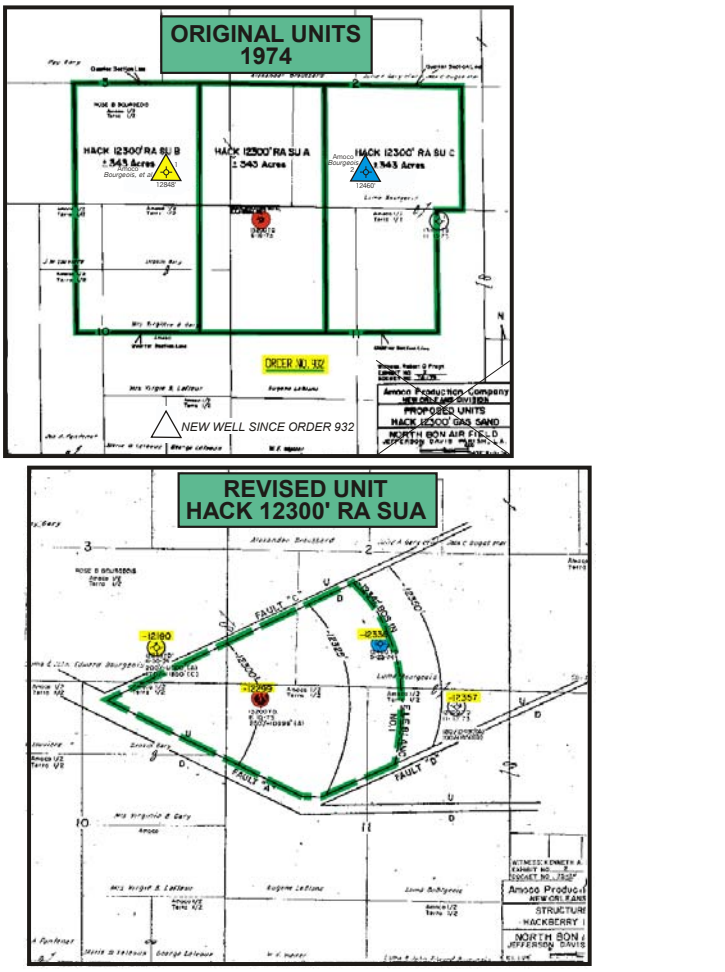

Figure 8. Example of three geographic units for the Hackberry (12,300') sand in the North Bon Air Field, Jefferson Davis Parish, Louisiana, which were revised to a single geologic unit as additional non-productive wells were drilled.

were proposed, the pattern of geographic units in the field was extended to the west and east, comprising a pattern of 320- to 350- acre standup and laydown rectangles.

Figure 7 shows an example of a geographic unit formed for the Operc-Plater Zone at East Donner Field in Terrebonne Parish, Louisiana. In this case, the operator proposed to drill a prospect in between a deep dry hole to the northeast and a well which formerly produced to depletion from a member of the prospective zone to the southwest. The resulting geographic unit that was adopted was in the shape of a canted rectangle with the northeast and southwest boundaries placed through the two geologically significant wells.

A final example of a geographic unit comes from the North Bon Air Field in Jefferson Davis Parish (**Figure 8**). In the early 1970s, the operator drilled one successful well in the Hackberry (12,300') Sand and created a standup geographic unit of 343 acres to serve the unit well along with two equal-sized geographic tack-on units east and west of the discovery well to accommodate two proposed offset locations. The eastern tack-on unit was notched along its eastern boundary to account for a previously drilled dry hole. After the two proposed offset wells were drilled and determined to be non-productive, the operator filed to dissolve the three geographic units and replace them with a single geologic unit of 300 acres.

In conclusion, the commissioner's unit, in both geologic and geographic forms, provides an operator with several apparent benefits: (1) allows an operator to drain the reservoir by a single well and eliminates the necessity to drill a well on every lease; (2) provides an economic and efficient way to hold a relatively large group of leases by production from a single unit well on a single lease, and (3) protects the operator from being cornershot by other offset operators by encompassing all of the productive area. In addition, the commissioner's unit protects the mineral resources of the state, prevents waste and the drilling of unnecessary wells, and protects the correlative rights of Louisiana landowners.

When operators think of drilling an onshore well in Louisiana, many may be put off by what they perceive as a complicated and unpredictable unitization process. The reality is that many opportunities to develop oil and gas reservoirs still exist in the state, and that unitization practices are designed to both encourage development of the state's resources and to ensure that Louisiana citizens receive their just and equitable share of the contents of oil and gas reservoirs.

ACKNOWLEDGMENTS

I would like to extend a special word of thanks to Jason Stewart at Geoland Graphics in Lafayette, Louisiana (337-233-1887) for graciously drafting the figures. All of the figures presented herein are modified after exhibits presented to the Commissioner of the Louisiana Office of Conservation, which are part of the public record.

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How I Became an Independent

by Lanny O. Butner, #2639
Lanny Butner & Associates – Wichita, Kansas

Lanny Butner

Growing up in Texarkana, Texas, I was never exposed to the oil & gas industry other than filling the tank of my prized 1966 Pontiac LeMans with 17 cent/gallon fuel. The summer after my high school graduation found me unable to land a summer job, so I went to college by default with no particular degree in mind. After being invited to leave the second institution I attended, that Pontiac LeMans transported me down to the University of Texas and I enrolled in the petroleum engineering department. After making both dean's lists, I did graduate with my petroleum engineering degree.

Like most of my fellow petroleum engineering brethren in the 1970's, I first went to work for one of the major oil companies who were battling on the college campuses for engineering graduates of all types. I left the comfortable confines of the University of Texas in 1975 driving that 1966 Pontiac LeMans with everything I owned inside of it and headed for a drilling engineering career with Atlantic Richfield Company (ARCo). After training in the swamps of Louisiana and offshore in the Gulf of Mexico for a mere nine months, the head of all drilling in the national headquarters office in Dallas flew me in to talk about the choice of my next assignment. I really wanted to stay in Lafayette, Louisiana at the time because of the great level of drilling activity, the challenge of high pressure drilling and the offshore work. Plus, I was basically living off my expense account and banking my salary. But in those days the major oil companies wanted you to have a well-rounded oil field experience. The drilling master gave me two location choices for my next assignment: Midland, Texas or Alaska. Well, I had seen the West Texas desert, and it didn't take more than two seconds for me to start singing the Johnny Horton song, "North to Alaska." So off I went to drill wells in the frozen tundra of Prudhoe Bay Field on the North Slope of Alaska. Being part of the early development of the largest oil field in North America at the time was a great experience in my development. I learned how to present projects to upper management, as well as develop my drilling and completion skills. I later learned that I was an experiment to see if a young pup engineer could make it in the Arctic. (Most of my fellow drilling engineers in Alaska were men in their 40's and 50's.) Apparently the experiment did work because later in my stint in Alaska, I was asked to go back to college campuses to recruit engineers to work in Alaska directly out of college.

ARCo of course would not let you stay in any one place for long, and after four years I was going back to the Lower 48 with an assignment in Tulsa, Oklahoma. Before leaving the frozen north and after 165,000 miles, I sold the Pontiac LeMans to a preacher in Anchorage. After drilling some of the early deviated well bores in the Midcontinent, I decided I was ready to go to work for a large independent oil company. A fellow petroleum engineering buddy who did not graduate, (couldn't get through structural geology classes and physical chemistry), had become a headhunter and placed me with Ladd Petroleum in Tulsa. I entered as a general petroleum engineer with responsibilities for production and drilling in the Texas Panhandle, western Oklahoma and western Kansas. At the same time as I was coming on board with Ladd, the geophysical staff was quitting in mass. The lure of overrides during the boom was too much to hold most explorationists at companies that did not share overrides. Before the geophysical manager left the company, I asked him to train me to keep the seismic program going in western Kansas. I had no experience in geophysics, but no one else was available to run the program at that district office.

In the next two years I was extremely lucky in drilling exploratory wells utilizing 2D seismic for Mississippian channels. At one point I drilled seventeen successful Morrow sand wells in a row before drilling two dry holes that TD'd on the same weekend and shook my confidence. However, my success at Ladd Petroleum caused Murfin Drilling Company in Wichita, Kansas to recruit me to live and work in Kansas as a production manager over western Kansas and eastern Colorado. And of course the kicker was the lure of the overriding interest.

I was downsizing again to a company, which at a personnel count of around 275, was much smaller than my previous two employers. I was now a supervisor with responsibility not only for the production, drilling and workovers within my region, but the care and feeding of about twenty-five people. This became a six-year stint that really broadened my overall education as an oilman. Murfin Drilling Company owned drilling rigs, well service rigs, rig moving trucks, water trucks, ditching equipment, backhoes, etc. I learned how to operate an oil company similar to the way the business had been run in the 1950's. The bust of 1986 occurred during my time with Murfin Drilling Company. The pain of cutbacks in personnel and salaries was a rude lesson learned.

(Continued on Page 28)

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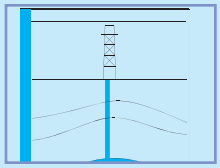

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Randolph Acock — Corpus Christi, TX
Arden A. Anderson — Lafayette, LA
Craig F. Anderson — Houston, TX
Robert A. Anderson — Lafayette, LA
Robert W. Anderson — Houston, TX
Thornton E. Anderson — Wichita, KS
James B. Bennett — Houston, TX
Arthur E. Berman — Sugar Land, TX
Raymond N. Blackhall — Spring, TX
Paul W. Britt — Sugar Land, TX
Gilbert D. Brown — Amarillo, TX
Johnnie B. Brown — Midland, TX
Leonard S. Bryans — Dallas, TX
T. Lynn Bryant — Tyler, TX
Lanny O. Butner — Wichita, KS
Brian S. Calhoun — Corpus Christi, TX
Alfred T. Carleton, Jr. — Midland, TX
James S. Classen — Boise, ID
Rex D. Coppedge — Fairview, TX
Douglas J. Cristina — Covington, LA
Marshall C. Crouch III — Denver, CO
Michael G. Cruson — Golden, CO
Ralph J. Daigle — Houston, TX
Edward K. David — Roswell, NM
Douglas A. Draves — San Antonio, TX
Duncan D. Dubroff — Houston, TX
Ralph C. Duchin — Tucson, AZ
James P. Evans III — Franklin, LA
David A. Eyler — Midland, TX
Robert B. Ferguson — Lake Forest, CA
William R. Finley — Lafayette, LA
Thomas E. Gentry — Midland, TX
Dennis M. Gleason — Arlington, TX
William T. Goff III — Littleton, CO
A. T. Green, Jr. — Metairie, LA
Bobby M. Greenwood — Dallas, TX
Robert D. Gunn — Wichita Falls, TX
Paul E. Haskins — Addison, TX
Edward W. Heath — Durango, CO
Donald R. Hembre — Littleton, CO
James H. Henderson — Dallas, TX
Albert R. Hensley — Rockwall, TX
Terry L. Hollrah — Oklahoma City, OK
Dudley J. Hughes — Flowood, MS
Charles M. Jacobs — Mandeville, LA
Larry L. Jones — Houston, TX
John E. Kimberly — Midland, TX
Robert C. Leibrock — Midland, TX
Peter MacKenzie — Worthington, OH
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J. Phil Martin, Jr. — Houston, TX
Christophe G. Mazzini — Dallas, TX
Patrick H. McKinney — Houston, TX
Gerard J. Medina — Norman, OK
Robert J. Moffatt, Jr. — Shreveport, LA
Marvin A. Munchrath — Lafayette, LA
Robert G. Murphy — Santa Rosa Beach, FL
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Lloyd K. Parrish, Jr. — Wichita, KS
Hugh C. Pendery — Dallas, TX
Jeanne S.F. Phelps — Houston, TX
Robert E. Pledger — Houston, TX
David M. Pulling — Norman, OK
Harry Ptasynski — Casper, WY
Larry J. Rairden — Bellaire, TX
John M. Rakowski — Florissant, CO
Bradley S. Ray — Dallas, TX
Julius M. Ridgway — Jackson, MS
James D. Robertson — Fort Worth, TX
Deborah K. Sacrey — Houston, TX
C. Randall Schott — Houston, TX
Jonathan B. Selby — Austin, TX
George D. Severson — New Orleans, LA
D. Craig Smith — Midland, TX
Daniel L. Smith — Houston, TX
William M. Smith — Oklahoma City, OK
William M. Smith — Houston, TX
John F. Sulik — Corpus Christi, TX
Earl R. Swett, Jr. — Galveston, TX
C. Al Taylor, Jr. — Reston, VA
C. G. Tyner — Houston, TX
M. Robin Vasicek — Midland, TX
G. Clint Wainwright — Houston, TX
Scott A. Wainwright — Metairie, LA
Jerry W. Watkins — Dallas, TX
H. Vaughan Watkins, Jr. — Madison, MS
W. David Willig — Houston, TX
James M. Zotkiewicz — Metairie, LA

Investor – $100

John T. Abney — Tulsa, OK
Joseph T. Ambrister — Allen, TX
H. Sherman Anderson — Dallas, TX
William C. Balhburg — Plano, TX
Norman K. Barker — Midland, TX
Teresa H. Becker — Houston, TX
Louis C. Bortz — Denver, CO
Foy W. Boyd, Jr. — Midland, TX
Garnet W. Brock — Midland, TX
Robert A. Cooksey — Richardson, TX
William R. Dixon — Midland, TX
C. Walter Dobie — Lafayette, LA
M. R. Douglass — Destrehan, LA
Paul R. Fenemore — Irving, TX
Bruce W. Fields — Corpus Christi, TX
Cliff J. Fontenot — Brenham, TX
William J. Furlong — New Orleans, LA
John C. Goss — Houston, TX
Peter G. Gray — Lafayette, LA
Richard S. Guenther, Jr.— Midland, TX
Paul E. Habermas — Houston, TX
Verlan W. Harrell — Oklahoma City, OK
W. Ralph Holloway — Dallas, TX
Dick S. Horton — Edmond, OK
J. D. Hughes — Austin, TX

(Continued)

Cornerstone Group Continued

William M. Kazmann — RichardsonTX
Robert W. Luker — Corpus Christi, TX
Frank C. Mabry III — Cedar Park, TX
William J. Malin — New Orleans, LA
Donald J. Malone — Wichita, KS
Jack P. Martin — Lafayette, LA
Robert W. Maxwell, Jr. — Corpus Christi, TX
Michael F. McKenzie — Lafayette, LA
Eric L. Michaelson — Midland, TX
Michael S. Morris — Azle, TX
James F. O'Connell — Amarillo, TX
Lewis M. O'Neal — Midland, TX
Elwin M. Peacock — Houston, TX
Sam H. Peppiatt — Houston, TX
Edward B. Picou, Jr. — New Orleans, LA
John W. Raine III — Lafayette, LA
E. Gordon Reigle — Midland, TX
Christopher P. Renaud — Midland, TX
Peter R. Rose — Austin, TX
Steven R. Russell — Amarillo, TX
Wayland C. Savre — Houston, TX
John T. Schulz, Jr. — Portland, TX
Rudolf B. Siegert — Slidell, LA
Stephen A. Sonnenberg — Golden, CO
Marion E. Spitler — Carrollton, TX
Raymond W. Stephens, Jr. — Covington, LA
Charles J. Swize — Pattison, TX
James P. Walker — Oklahoma City, OK
William A. Walker, Jr. — Austin, TX
Roy C. Walther — New Orleans, LA
William G. Watson — Midland, TX
Jon R. Withrow — Oklahoma City, OK
John C. Worley — Rockport, TX

Scout – $50

Orville R. Berg — Shreveport, LA
Richard C. Blackwell — Midland, TX
E. Bernard Brauer — Corpus Christi, TX
G. Pat Bolden — Midland, TX
Herbert L. Brewer — Dallas, TX
James R. Cleveland — Dallas, TX
Curtis E. Covey — Derby, KS
M. G. Peter Crain — Midland, TX
Rebecca L. Dodge — Carrollton, GA
Michael N. Fein — Metairie, LA
Eduardo Gonzales — Carrollton, TX
David N. Grimes — Midland, TX
David R. Grogan — Woodbine, MD
John C. Grunau — Shreveport, LA
William R. Guffey — Dallas, TX
Floyd E. Heard — Midland, TX
Lee Higgins — Dallas, TX
Nolan Hirsch — Midland, TX
J. Richard Hunt — Carbondale, CO
Charles R. Jones — Midland, TX
John D. Kullman — Midland, TX
Steven R. Lockwood — Austin, TX
Jeannie F. Mallick — Spring, TX
Sally J. Meader-Roberts — Midland, TX
Wayne D. Miller — Midland, TX
Craig E. Moore — Houston, TX
George E. Moore — Midland, TX
W. George Nancarrow — Dallas, TX
Matthew J. Parsley — Midland, TX
Matthew J. Riddiford — Spring, TX
Jeffry A. Smith — Midland, TX
Joseph D. Stewart — Golden, CO
Colles C. Stowell — Manchester, MA
Michael W. Taylor — Highland Village, TX
Gary M. Weir — Houston, TX

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How I Became an Independent Continued

After fighting the low oil price scene for my last three years with Murfin Drilling Company, I conceived of a way to purchase an even smaller oil company in Wichita. K & E Petroleum, Inc. was my target. With the help of an investment banker, we purchased the company and I was installed as vice president. Now I was part-owner of a company of only twelve people. The investment banker brought in his own top management because he thought that I was not ready to lead a company at that time. So, while working at K & E Petroleum, I started my MBA degree at night at Wichita State University. I began the quest to gain the financial knowledge necessary to lead an oil company. After four years of growing K & E Petroleum through acquisitions, which was my principal duty, the investment banker decided to liquidate the company. Since I was a minority owner, I found that the majority rules. I went to work to find a buyer for our company. The successful sale of K & E Petroleum occurred on Ground Hog Day, 1993. On that day, I fully became an independent; I had downsized myself down to a number of one.

My very first assignment as an independent petroleum engineer came soon after the sale. I received a call from my oil and gas banker. (Thank goodness I had repaid that oil and gas loan ahead of schedule) He had another customer that needed help in evaluating some Texaco properties for sale in western Kansas. So began my career as an independent petroleum engineer. I discovered that now I could schedule my own hours, set my own rates and work for a variety of clients. I soon discovered that my hours became whenever my clients needed me, and my rates were subject to the current price of oil and gas. Of course since 1993, there have been downturns in commodity pricing and I have been forced to work outside the industry on three different occasions. The MBA degree paid off handsomely during short periods in the telecommunications, computer periphery and manufacturing industries during the low commodity price era. [I hope none of us relive the $8/Bbl and $1/Mcf days.] All the while, I maintained a consulting practice in petroleum engineering. I joined SIPES in January 1998 and worked within my local Wichita, Kansas chapter. Later, I became involved with SIPES at the national level. My time spent on the SIPES national board has been so rewarding in the friendships and professional relationships gained across the entire U.S. industry. At the time of this writing, January 2008, our industry is strong and appears to have the legs to sustain us for quite some time. It has been quite a ride, and I look forward to the challenges and successes that will confront me in the coming years. I miss that old Pontiac LeMans.

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.

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An Introduction to GIS - Part 2 — by Jon B. Selby, #2928 – Austin, Texas

Last issue Geographic Information Systems (GIS) was described as *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. And that GIS software is used to perform the following standard functions: data entry, editing, data management, analysis and output*. You might notice that DATA is the key ingredient of GIS. It is the important function of GIS to link geospatial data with attribute data, that is, the location of something on the Earth with a description of said thing.

Data can be acquired from an amazing number of sources, some are free and others are not. In fact, data acquisition is the most time consuming and expensive part of any good GIS project. Fortunately this is usually a one-time occurrence, unless it is the type of data that needs continual updating. There is a wealth of data that can be obtained from federal, state and local governments and departments. For example, the State of Kansas offers GIS data to help aid in the search for hydrocarbons. Data is also acquired from surveying, Global Positioning Systems, map digitizing, remote sensing, etc. Data is integral to GIS and it is critical that the user understand its meanings and applications.

Geospatial data in GIS is compiled under two main models, Vector and Raster:

Vector data models use points, lines or polygons, stored as a series of x, y locations, known as *features*. These features are grouped into *feature classes* based upon similar attributes and like geometry (points with points, etc) and saved as individual files. For example, to examine septic systems in rural neighborhoods near a river would require a layer file of known septic system locations in the area (points), the boundaries of rural neighborhoods near the river (polygons) and the river in question (lines). Also, each feature has its own object identification number and attribute data. For example each septic system could have information about its address, what subdivision it is located within, how far it is from the river and when it was installed. The Vector data model is common because it requires less storage space, is fairly simple to perform coordinate conversions and is limited in positional accuracy only by the quality of positional measurement. Also it is the ideal choice for map making because of its high precision and ability to be detailed.

Raster data models use a grid system with each pixel having an address in the grid and receiving a specific value. Raster data is stored either as discrete or continuous data. Discrete values tend not to repeat themselves in adjacent pixels (consider a land use map), while continuous data vary smoothly across the extent (a digital elevation model, DEM). While raster has a simpler data structure it requires vastly more storage space with increasing resolution and it is the resolution that determines positional accuracy such that the floor is set by the cell size. The result is that a low resolution will not only be less accurate but also that objects such as roads will have a pixilated razor-back look. However at high resolution the Raster data model can produce some amazing maps showing subtle changes over areas.

When you acquire your raw geospatial data it could either be projected or unprojected. This means that either data is correlated to the Earth's coordinate system of decimal degrees or converted to a projected "map view." It is beyond the scope of this article to detail cartographic principles, geocoordinate systems, etc., however, it is **necessary** for the GIS user to understand what type of data is being used and its projected and coordinate status, otherwise geospatial data will be located incorrectly and layers will not match and analysis will be erroneous or impossible to perform.

Data is becoming more plentiful yet also more costly. Companies and agencies are finding that information in GIS format is of value, and accordingly they have begun to charge for their information. Map digitizing, surveying, aerial photography, satellite imagery and Global Positioning Systems are some of the most common ways data are acquired to create digital data for use with GIS. The best data is collected in digital format and is directly transferable to a GIS and avoids one having to transfer the data to hard copy and then converting to digital form.

The most common types of digital data are:

- digital line graphs (DLG) - this is vector data that used in USGS maps
- digital raster graphics (DRG) - is a georeferenced raster layer scanned from a USGS map
- digital elevation models (DEM) - raster data of elevation used by most governments
- digital orthophoto quadrangles (DOQ) - scanned photos that have been corrected for distortions until planimetrically sound
- digital census data - compiled by the United States Census Bureau, aka the Census TIGER system

There is information available about wetlands, soils, precipitation and just about anything else you can think of. There are several key agencies that provide GIS data, such as the U.S. Census Bureau, the National Oceanic and Atmospheric Administration, the U.S. Geological Survey, the Federal Emergency Management Agency, the Natural Resources Conservation Service, etc. Here are two websites for finding government GIS data: http://geodata.gov (http://gos2.geodata.gov/wps/portal/gos), and http://data.geocomm.com/catalog/US/index.html, which has charges of less than fifty cents for geological data.

Also some State of Texas agencies have available data such as:

TNRIS at http://www.tnris.org/default.aspx,

TCEQ at http://www.tceq.state.tx.us/gis/index.html,

TGLO at http://www.glo.state.tx.us/gisdata/gisdata.html and

TPWD at http://www.-tpwd.state.tx.us/landwater/land/maps/gis/data_downloads.

If all else fails, a quick Google search using the keywords *GIS, data* and your *subject* area will definitely bring up something.

■

author of the New York Times Bestseller book titled "Built to Serve." He has built United Supermarkets on how to drive the bottom line with people-first practices. You can apply many of the same values to your business, for example, treat your customers like partners, create a people-centered culture, communicate your vision, focus on strengths, not weakness and tie performance to the success of your mission. He is a great man of God and leads by example to serve one another. If you want to receive a blessing, serve on the SIPES Board of Directors or your local Chapter.

One thing you may not know about me is that I was a missionary to Brazil

George S. Johnson

(Brasil) for four summers. I went about telling the "Good News" in small communities like "America" and "Boas Novas." The people are very loving and very receptive to the gospel. Many people came to know the Lord as their personal savior. Don't miss an opportunity to serve your fellow man.

Finally, John 3:16 "For God so loved the world that he gave his one and only Son, that whoever believes in him shall not perish but have eternal life." Send your questions, comments, ideas or prayer requests, to sunshineex@suddenlinkmail.com or dreamsofoil@suddenlinkmail.net.

To Him be the glory,
George S. Johnson

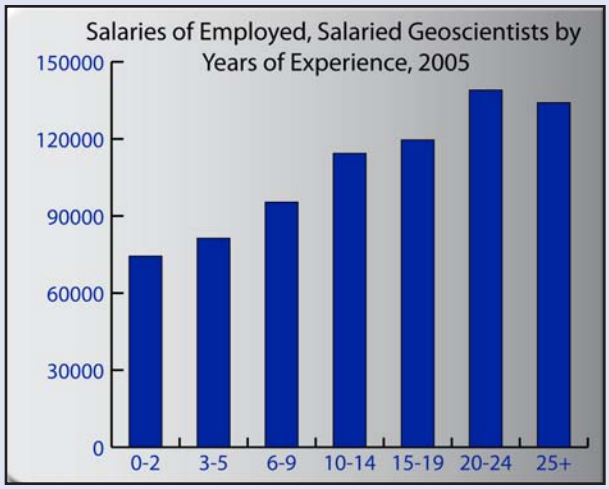
Geoscience Information from AGI

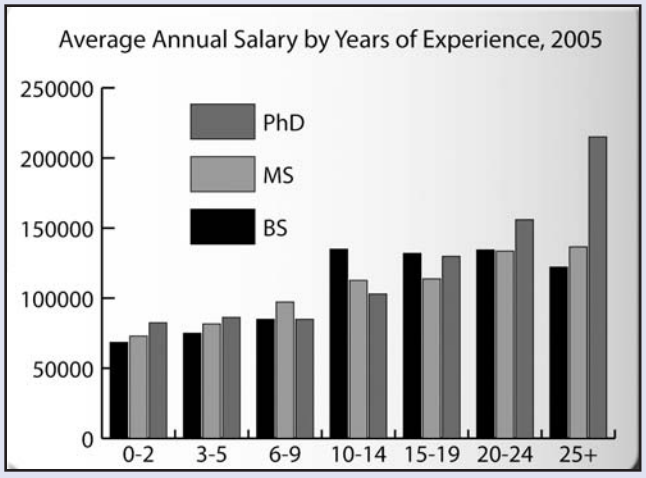
The American Geological Society's "Geoscience Currents" provides data on the overall health of the geoscience industry. Outlined below are graphs on industry salaries. To subscribe to this free service go to: http://www.agiweb.org/workforce and click "Register." The website also contains other resources pertaining to careers in the geosciences.

The average salaries for geoscientists in 2005 varied by years of experience. For geoscientists employed for 0-2 years, the average salary was $74,000, a 9.7% increase over 2004's average. Geoscientists employed for 20-24 years earned an average of $139,000, which was more than a 23% increase over 2004 salaries. After 25 years of employment, average salaries dip slightly, to $138,100.

As expected, the greater the education, then generally the higher the compensation. However, given the premium on experience and small population of mid-career geoscientists in the US, even Bachelors' degree recipients can out-earn PhD and Masters degreed scientists. Geoscientists with their highest degree as the Bachelors earned an average of $135,000 with 10-14 years of experience, compared to only $103,000 for doctoral geoscientists with the same experience.

- Cindy Martinez and Chris Keane





Source: CPST 2007, Salaries of Scientists, Engineers, and Technicians: A summary of Salary Surveys (data derived from MLA Resources, Inc., Geological Salary Surveys, 2004 and 2005).

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of independent practitioners of the earth sciences.
In achieving this vision, emphasis will be placed on
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(2) professional business ethics, and
(3) presenting a favorable, credible
and effective image of the Society.

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September 21, 1996

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