Challenges of Urban Seismic
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INTRODUCTION
Note: This article is from the Fort Worth Chapter, and is the sixth in a new series submitted by SIPES Chapters.

Conducting a 3D seismic exploration program in a fully urban environment is often frustrating to both the operator and the land owners. Each has objectives specific to themselves that are often in conflict. So much time and effort are required to prepare and evaluate the project’s requirements and secure permits, that the participation of a third party consultant may be the most effective use of the operator’s time and dollars.

Two methods have been typically used to conduct a 3-dimensional seismic survey. Neither procedure provides flexibility in the field, nor satisfies the operator’s exploration objective. The first can be called the rigorously approach. This occurs when a project is designed with strict seismic technical requirements, but little consideration of the obstacles on the ground. The contractors are expected to adhere rigorously to the initial plan. Once those obstacles are encountered, the operator is expected to determine a way to live with it. This leads to conflicting objectives between the contractor and the operator, technically rigorous versus operational efficiency.

The second procedure can be called the serendipity approach. The various contractors are sent to the field with little coordination and simply wander around until a compromised solution develops. Typically, the technical results are degraded; revising the planned activity wastes much time and money; and a feeling of professional proficiency is never established by either party towards each other.

In urban environments the methods mentioned above can be particularly aggravating. As a result the authors propose an Advantage Triangle Model to execute the planning and permit approval process. The process involves five distinct steps:

1. Planning the seismic project layout;
2. Inventorizing the project area for sensitive sites and hazards;

(Continued on Page 25)
ENERGY CAPITAL
UPSTREAM & TECHNOLOGY

Reserve Assessment
- Volume
- Reservoir Allocation
- Composition
- Market
- Rec Optimization

Legal
- Concession Agreement
- Joint Operating Agreement
- Construction Agreement
- Offtake Agreement
- Funding Agreement

Drilling Plan
- Technology, Proven, Advanced
- Local Experience
- Domestic/Foreign Supplier
- Drilling Options/Cost
- Risk Assessment

Production Forecast
- Sensitivity
- Efficiency
- Economics
- Concession Agreement

Business Plan
- Project Reserves/Production
- Development Plan
- Capital and Operating Costs
- Crude Marketing
- Legal Structure
- Financing Plan
- Financial Analysis
- Risk Evaluation

Development Plan
- Facilities/Transport
- Conceptual -> Detailed
  - Schedule
  - Environment
  - Domestic/Foreign Supp
  - Capital vs Lease
- Operations Plan
  - Kickoff
  - Construction
  - Production
- Capital & Operations Cost

Market Demand
- Product Quality
- Market Capacity
- Purchase
- Location End User
- Product Value Hedge
- Currency Convertibility
- Offtake Contracts
- Transport/Storage

Financial Analysis
- Assumptions
- Stochastic
- Project
- Partners

Reserve Categorization
- Book Reserves
- Finance Reserves
- Managing the Result

Financing Plan
- Funding Availability/Cost
  - Source/Cost
    - Onsheet/Offsheet
      i. Commercial
      ii. Mezzanine
      iii. Industry
    iv. Service/Supplier
      v. Purchaser
    - Collateral, Pre, Post Comp.
    - Project
    - Partners - Several/Club

Project Risk Assessment
- Sale Price - Product
- Cost Overruns/Delays
- Operating Costs
- Reserves/Rate
- Engineering Design/Experience
- Environment
- Natural Hazards
- Abandonment
- Sponsor Credit Worthiness
- Political Risk
- Joint Operating Agreement
- Concession Agreement

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The following reports on national and environmental issues were presented to the SIPES Board of Directors on October 17, 2007 in Midland, Texas. 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.

**PRICE/SUPPLY/DOWN DEMAND SUMMARY**

Crude oil is currently at the highest price in the history of the industry and it appears that the price will continue to climb. It is almost impossible to keep up with the prices increases of late. I am sure that when this article is printed, the information will already be outdated. Currently, any influx of news seems to affect the price in a higher way. In September of this year, oil hit an all time high of $83.90 per barrel. Now in October, WTI is at $85.00 per barrel.

The main reason for this rise appears to be the falling value of the U.S. dollar to the Euro. This is also exacerbated by the fact that supply, even with a slowing of demand, has not been able to keep pace. It is also predicted that crude supplies will tighten up even more in the fourth quarter of this year. However, many speculators feel that the supply and demand issues are not as volatile as the difference in the trade value of the dollar and other foreign currencies. The value of the U.S. dollar was affected when the U.S. Federal Reserve cut its benchmark interest rate. This caused the U.S. dollar to reach an all time 15-year low. Additionally, in the Middle East, inflation has been increasing, 4% in Saudi Arabia, 9% in the UAE. After the U.S. announced a cut in interest rates to help combat inflation domestically, the Saudis did not follow the same path. The fallout of this action by the Saudis could in fact force investments in the Middle East to move away from the dollar. This would create a monetary gap between the U.S. and the rest of the world and in turn leave the U.S. in a deficit for foreign capital inflows to cover the current U.S. deficit. Currently in Saudi Arabia domestic oil consumption grew 6.2% (currently at 2 million b/d), which is due to an increase in construction.

These factors have helped the price of crude oil to climb to now over $85.00 per barrel ($90.00 bbl as of 10-19-07). Shell's former chairman Lord Ron Oxburgh recently stated that "today the era of cheap energy is over; a move away from fossil fuels is urgently needed." In a report issued by OPEC, non-OPEC crude production will drop by the end of the year by over 100,000 b/d, and worldwide demand will increase over another 100,000 b/d. Earlier this year, OPEC members agreed to cut the organization's crude oil output by 1.2 million barrels per day effective November 1, 2006. In December, the group agreed to cut output by a further 500,000 barrels per day effective February 2007.

OPEC is planning on increasing crude production by 500,000 b/d by the end of the year. U.S. demand in total domestic deliveries is down 2.2% as compared with deliveries this time last year.

As of August 2007, the U.S. imported 13,759,000 b/d. In August of 2006, this amount was 14,612,000 b/d. This equates out to 65.9 percent of total domestic petroleum deliveries. U.S. domestic crude production in August was 5,097,000 b/d (of which 675,000 b/d was Alaskan). U.S. natural gas liquids in August of 2007 were 1,767,000 b/d. In August 2006 U.S. crude production was 4,911,000 b/d and natural gas liquids was 1,726,000 b/d.

Domestic gas production in June 2007 was 54.5 billion cubic feet per day. Currently the U.S. average wellhead price (as of August 2007) was $6.19 per mcf; in February of the same year it was $6.70. The U.S. average residential price was $16.65 per mcf and $12.12 per mcf, respectively for the same periods.

The gross withdrawal for domestic natural gas was 2,052,000 MMCF in July, for the same period, dry gas production was 1,623,000 MMCF.

U.S. refineries have been operating above 90% capacity as of August of this year and refined products have been produced at near record levels. Gasoline production rose (Continued)
Iran is only a short time away from being capable to produce nuclear resources, it is estimated that the country would have the same destabilizing rhetoric. With the current situation on Iran's growing nuclear capabilities, concerns on Iran's growing nuclear capabilities. However, in the same context, he will also state that other world powers have nuclear weapons and why should Iran not have the capability. It remains to be seen how this will play out within the world and the wildcard yet to be played will be how much longer will Israel stand by before they take military action to take out Iran's nuclear capabilities.

Oil imports in China have increased over 38% from 2006 and have tripled in the last five years. China's infrastructure continues to expand with the government building new highways; over 15,000 miles have been built since 2000. Plans call for over 30,000 miles of new highways to be constructed by the year 2020. In 2006, China had an increase of car sales of more than 20%, which equates to over 7.2 million cars sold during this period. With China's rapid 10+% economic growth rate, vehicle sales increases and highway expansions, the world supply of oil and oil production will not be able to keep up. If this scenario continues, and it doesn't look like it will end anytime soon, oil prices are sure to continue upwards from the already record highs.

Lukoil, the second largest producer in Russia announced that it would be cutting exports to Germany by 1/3 starting in August. Russia has made arrangements with China to import oil to that country, with the slower growth of the Russian oil industry; this could indicate that supplies are possibly becoming in short supply. Gazprom, the state controlled Russian natural gas company, has been in meetings with Venezuela to discuss the possibility of joint projects in Venezuela in the Orinoco and offshore regions of the country. The 2008 forecast for growth in Russian oil is lower than previous reports. This appears to be due to unspecified delays in new oil production projects.

The new "Geopolitical Weapon" — Venezuelan oil: Hugo Chavez continues to travel the world and use his oil profits to help benefit the "needy" of the world and to spread discontent toward the U.S. He has continued to strike deals to export more oil to countries other than the U.S., but at the same time, has stated that he has no plans or intentions to decrease oil exports to the U.S. (Venezuela now exports all of Cuba’s oil in exchange for Cuban doctors and gym teachers). Venezuela exported 1.31 million b/d of crude oil in the month of June to the U.S., which is a decrease 13.2 % compared to May's deliveries. The Venezuelan parliament appears to have approved most of Hugo Chavez' requests, which include the elimination of presidential term limits. Fidel Castro will not be around much longer, and Chavez appears to be positioning himself to be in a future position of major influence in the southern hemisphere, and one not too friendly with the U.S. (Chavez has made past statements claiming if he was killed, the U.S. would get NO oil).

The U.S. House of Representatives voted recently to condemn the actions taken by Turkey in early 1915 against the
Armenian people, by designating the action as "Genocide." This is a very sensitive subject with the Turkish government, and has added to an already declining relationship with the U.S. So much so that Turkey has announced that it will take action against Kurdish rebels in northern Iraq. Turkey is tired of the PAK (Turkish guerrilla group) continuing to pass over the northern border of Iraq and into Turkey. Any military action by Turkey into Iraq has a great potential to escalate the Iraq conflict and create further instability in an already volatile region. Turkey is a member of NATO, and has anchored the southern portion of the alliance and has been a staunch ally of the U.S. Turkey refused to allow the U.S. access to military bases during the last Gulf War and the relationship with Washington has eroded since.

### ACTIVITY

The Total U.S. Rotary Land rig count in September 2007 was 1,787; this time last year the rig count was 1,649. As of October 12, 2007, the active rig count had dropped to 1767.

### ENVIRONMENTAL COMMITTEE REPORT

**Where Rocking Horse People Eat Marshmallow Pies**

When reading the various frightening scenarios presented in the popular media regarding man's alleged involvement in the cycle of atmospheric heating, I remember back to the days of my youth and wonder: does anyone ever hold these bozos accountable? I am now approaching my 50th birthday, and those of you who are my age can remember that during our formative years we were subject to similar prophesies of disaster. The first one that comes to mind is the overpopulation scare. It ran something like this: at the (then) current rate of growth, the planet would be overrun with people in a few short decades (like about now). Mass famine and pestilence would occur as we were unable to feed the planet and overpopulation would result in diseases like, for example, black plague. These were the images being propagated by the scaremongers during my elementary and junior high school years.

The next one was (believe it or not) global cooling! Yes, the planet was headed into a new ice age, and we would all freeze to death while agricultural production fell, and we would have mass STARVATION AND DISEASE (like, for example, black plague)! This was to happen when? Well, about now! Okay, so where's the accountability? The future seemed bleak indeed if you wanted to believe all that was being said in those days, and none of it came true. Yet no one was held accountable for such "scientifically" based outrageous claims.

Now we have global warming, excuse me, climate change – the cause du jour for the quasi-political-religious-terrorist (they terrorize the young and ignorant) movement commonly known in the United States as the environmental movement, but more openly claimed in Europe by the Green Party. Note that in the media even the terminology has been subtly changed from Global Warming to Climate Change. This way no matter what takes place victory can be claimed (and accountability avoided). The outrageous part of all of this is that the scientific community has been partially co-opted by the overwhelming press support for this movement. Again, where's the accountability?

When the 2005 hurricane season was in full fury, the 'global warmers' were predicting gloom and doom, practically smirking as storm after storm swept into the Gulf of Mexico, saying "I told you so" in not so many words, just paternalistic gloating by the media at every opportunity. "This," they said, was "only a portent of things to come." Just wait till the 2006 season. And we all did, expecting the

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**National, State & Environmental Information Continued**

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<th>Location</th>
<th>Week</th>
<th>Last Week</th>
<th>Year Ago</th>
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<tbody>
<tr>
<td>Land</td>
<td>1695</td>
<td>1678</td>
<td>1608</td>
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<tr>
<td>Ireland Waters</td>
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<td>29</td>
<td>26</td>
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<tr>
<td>Offshore</td>
<td>46</td>
<td>49</td>
<td>94</td>
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<tr>
<td>United States Total</td>
<td>1767</td>
<td>1755</td>
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<tr>
<td>Canada</td>
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<td>332</td>
<td>477</td>
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<td>2110</td>
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<td>Oil</td>
<td>319</td>
<td>318</td>
<td>284</td>
</tr>
<tr>
<td>Gas</td>
<td>1442</td>
<td>1431</td>
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<tr>
<td>Miscellaneous</td>
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<td>Directional</td>
<td>338</td>
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<tr>
<td>Horizontal</td>
<td>428</td>
<td>428</td>
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</tr>
<tr>
<td>Vertical</td>
<td>1001</td>
<td>986</td>
<td>1003</td>
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**Major State Variances**

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<th>Area</th>
<th>This Week</th>
<th>Last Week</th>
<th>Year Ago</th>
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</thead>
<tbody>
<tr>
<td>Texas Gulf Coast</td>
<td>203</td>
<td>13</td>
<td>30</td>
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<tr>
<td>ArkaTex</td>
<td>168</td>
<td>8</td>
<td>26</td>
</tr>
<tr>
<td>Eastern US</td>
<td>79</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>South LA</td>
<td>52</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Mid-Cent</td>
<td>442</td>
<td>48</td>
<td>39</td>
</tr>
<tr>
<td>W Texas-Permian</td>
<td>759</td>
<td>19</td>
<td>64</td>
</tr>
<tr>
<td>Rocky Mtn</td>
<td>327</td>
<td>26</td>
<td>53</td>
</tr>
<tr>
<td>W Coast / Alaska</td>
<td>351</td>
<td>7</td>
<td>60</td>
</tr>
<tr>
<td>Total US</td>
<td>2381</td>
<td>139</td>
<td>289</td>
</tr>
<tr>
<td>Canada</td>
<td>669</td>
<td>203</td>
<td>173</td>
</tr>
<tr>
<td>Total US / Canada</td>
<td>3050</td>
<td>342</td>
<td>462</td>
</tr>
</tbody>
</table>

(Continued)
would be allowed to operate in, and fly all over the world in private jets, consuming copious quantities of energy and emitting enormous volumes of carbon from nasty (yet indispensable) fossil fuels, and still be forgiven this sin, in fact be held up as environmental role models. If at the same time they will jet around the world rallying masses to the cause of, what?

Did anyone catch any of the concerts for climate change hosted by our former Vice-President? At these events multi-bazillionaire spoiled-brat movie and music icons performed on stages around the world wearing synthetic materials, consuming gigawatts of electricity and staying in luxury hotel suites twice the size of the average home in the U.S., in order to raise awareness of the responsibility of man in causing Global Warming: oops, I mean Climate Change. The vitriol spewed out by the celebrities at these worldwide events was caustic; anti-industry, anti-development, anti-USA, and anti-civilization. Mega-consumers preaching that us proles need to cut our carbon emissions. The atmosphere was that of the ‘60s anti-Vietnam war protests. Think of today’s carbon credit vendor as the Abbie Hoffman of the current movement – a profiteer using popular sentiment to further their own cause. In Hoffman’s own words, “Identity (of a cause or individual) is defined by myth propagated through the media.” Couldn’t have said it better myself.

Cellophane flowers of yellow and green,
    towering over your head.

Think I’m kidding? Google the phrase “what is a carbon credit” and you’ll get the following, (the following is lifted directly from the website of carboncleaners.net):

- **What is a carbon credit?**
  
  A Carbon Credit is your commitment to have our company take actions to lower the amount of carbon emissions currently polluting our environment, and offset the carbon footprint you and/or your family are responsible for causing.

- **Can I choose how my carbon credits will be utilized?**
  
  Absolutely. Carboncleaners.net gives you the option of purchasing carbon credits to be applied toward reforestation (planting NEW trees), Solar energy, or toward Wind energy.

- **Why should my company purchase carbon offsets?**
  
  There are several reasons why a company should be “Carbon Neutral.” Obviously, the benefits to our environment from your company’s gesture of goodwill to your community and the Earth as a whole are paramount. (Author’s note: what’s the “benefit of a gesture?”)

Your company may be able to use the purchase as a business write-off, so the bottom line for your company could be zero, or depending on your specific tax situation, be an added asset. (Ah, the universal appeal of a tax shelter.)

The public relations aspect can also not be ignored, as well as being authorized to call your company “Carbon Neutral” for...
advertising purposes, as many of us choose to do business with companies that show an understanding of their role in our environment. (Authorized by whom? Only the dead are "carbon neutral.")

The website offers to sell you carbon credits in amounts of $1,000 to $1 million via credit card or bank draft. No, I'm not kidding. Who needs the old Nigerian bank scam? Just send these guys your account number and wiring instructions and they'll take care of the rest.

Here's an example of what you get:

- **$1,000 Carbon Credit - Reforestation** — Choose this $1,000 Carbon Credit and carboncleaners.net will apply your carbon offset toward planting trees that will easily flourish for generations to come. As a "Thank You," we will send you a certificate suitable for framing proclaiming you an "Earth Friend for the year 2007, as certified by carboncleaners.net." ("Earth Friend?")

- **$2,500 Carbon Credit - Solar Energy** — Select this $2,500 Carbon Credit and carboncleaners.net will direct the money toward placing solar panels on the homes of families that have come forward in need of assistance to pay their power bills. As a "Thank You," we will send you a certificate suitable for framing proclaiming you an "Earth Defender for the year 2007, as certified by carboncleaners.net." ("Earth Defender?" As in fighting off invading Martians?)

What the heck? Let's go for the big one and see what you get:

- **$1,000,000 Carbon Credit - Wind Energy** — Your breathtaking purchase of our $1,000,000 Carbon Credit will be a spectacular example to your family, friends, neighbors and all who hear of your monumental devotion to our environment. Your willingness to take a dominating stand in the area of global warming by providing funds to reforest several hundred, and possibly a thousand acres of land will be an inspiration to all who hear of this event. As an event this large will surely become the envy of those who can only dream of having the ability to make such an ecological difference single-handedly. As a special "Thank You" for this magnanimous purchase of the $1 million Carbon Credit you will receive a superbly framed special document proudly declaring you a "Champion of the Environment and Carbon Neutral for the year 2007, as certified by carboncleaners.net"

(Yes, you too can be a Champion of the Environment – I feel so good about myself, and you will be superbly framed if you go for this one).

Don't you feel all warm and fuzzy? But the trouble is, how do you know how much you've "sinned" by consuming and producing? Well, go no further than the Internet to help you find the answer. Yahoo has a handy little website (predominantly green in color to make sure you know which side you're on since green dye apparently requires no use of carbon to produce). There is also a handy online calculator (or sin-o-meter if you prefer) at http://www.carbonfootprint.com/calculator. If you still wish to go with the manual calculation, here are some of the multiple factors:

- **Electricity** — 0.43kg of Co2 / kWh (Defra 2005), if from renewables, then 0.00kg/kWh

  ‘Renewables’ include buffalo chips, and anything heavily subsidized by taxpayers.

- **Natural Gas** — 0.19kg of Co2 / kWh

- **LPG** — 1.49kg of Co2 / litre

- **Oil** — 2.69kg of Co2 / litre

- **Coal** — 2.55kg of Co2 / litre

- **Car Mileage** — You can find Co2 data for all car types at http://www.vcacarfueldata.org.uk it might be best to offer 3 to 5 different types of cars in varying engine ranges.

  - **Bus** — 0.073kg / mile (Department of Transport, Canada)

  - **Train** — 0.027kg / mile (Virgin Trains)

  - **Underground** — 0.070kg / mile (kingston.ac.uk)

  - **Flights** — This is not hugely accurate however you can break this down to: Short-haul (within U.S.) 600kg of Co2, Medium-haul (transatlantic/east coast to west coast) 1300kg of Co2 or Long-haul (world wide) 3700 kg of Co2. If you want to work this on miles rather than types a factor of 0.15kg of Co2/km (Defra 2005)

  You should also include a secondary carbon footprint as follows (these are UK figures):

- **Food and Drink** — 585kg

- **Clothes and Shoes** — 486kg

- **Car Manufacture** — 715kg

- **Buildings, Furniture and Appliances** — 982kg

- **Recreation and Services** — 1,546kg

- **Finance and other services** — 361kg

- **Share of Public Services** — 1,276kg

- **Total Secondary Footprint** — 5,950kg

It is suggested that we need to reduce our CO2 emissions to 2,500kg per person to negate climate change. Be sure to avoid flatulence-producing foods. You wouldn't want an incident of "broken wind" to "blow" your carbon footprint over the limit!

(Continued)
SIPES to the Rescue: So now all you have to do is buy enough carbon offsets to feel good about yourself. I have a suggestion that will alleviate the planet’s woes and help SIPES’ bottom line. I propose that SIPES sell carbon offsets! Think of it, we can print up a bunch of certificates exclaiming the wonderful works of the purchasers and sell them in increments of $1,000 to $50,000. You accuse me of thinking small? Okay then, let’s go to a million dollars and we’ll send the purchasers a picture of trees that members plant in their yards. Better yet, we’ll use the money to build a “green” headquarters in Dallas, and then drill some oil and gas wells to offset the carbon-neutralness of our new building.

Our organization has the perfect name to do this, as I realized during our convention on the left coast last summer. When I told a ‘local’ that we were the Society of Independent Professional Earth Scientists I got a dreamy nod of approval in reply. It was immediately apparent to me that the message received did not connote images of oil barons, but rather one of tree huggers. Think about it. Without changing our name or mission, we can supply consumers with something they want, and slice off a piece of the $24 BILLION annual market for carbon credits. Maybe we could even become the standard of trade on the Brazilian exchange. The SIPES carbon contract would be to carbon credits what WTI is to the NYMEX. Our Dallas office would become the Cushing, Oklahoma, of Carbon Credits! Dallas, Texas: GREEN CAPITAL OF THE WORLD! This market is growing at 400% per year! Oh, it brings joy to my heart to think of the service we can provide to all the poor – uh, I mean rich – souls only wanting one thing in life: to live a sumptuous lifestyle without the nasty inconvenience of suffering the guilt of consumption.

No, I have not been taking any hallucinogenic chemical substances. However, it sometimes seems as though the rest of the world has. This is not the Twilight Zone, but rather the Salvador Dali surrealist world of melting clocks, and in the background the Beatle’s “Lucy in the Sky” is softly playing...

Picture yourself in a boat on a river
With tangerine trees and marmalade skies
Somebody calls you, you answer quite slowly
A girl with kaleidoscope eyes . . .


The SIPES Houston Chapter recognized several 25 Year Members at their luncheon meeting in September. Certificates and mugs were presented to the members shown below:

Receiving certificates and SIPES mugs (l to r) are Jim Allen, Marvin Smith, Ben Buongiorno, Roger Casey, Robert Hubbell, Jim Bennett and Robert Valerius.
Previously in the SIPES Quarterly Technical Corner series you were introduced to SnagIt and SONRIS. This article will attempt to explain the steps involved in using both of these packages to place free SONRIS aerial photos, LandSat imagery, and topo maps as a cultural layer in SMT 3dPak. The process is not perfect and requires some work-arounds and assumptions, but I have found the end result to be very helpful in communicating with my operating partners about what to expect at the well site.

Note: SnagIt is a software package created by TechSmith Corporation and available at the website: www.techsmith.com. SONRIS is a free, state-maintained, web-accessible, oil and gas database for Louisiana. You can reach it by going to www.sonris.com. SMT 3dPak is a 3D interpretation package available from Seismic Micro Technology. You can reach SMT at www.seismicmicro.com.

The first part of the process happens in the GIS Access Part of SONRIS. Initiate SONRIS and select the GIS Access Application (circled) and three screens like those shown in Figure 1 should come up. This article assumes that you followed the recommendations in the previous article and took the time to download all the different software components up front so the GIS Access module is working correctly. Using the graphic icons at the top right of the screen (arrow) you can zoom into your area of interest. The button with the purple book with the (Continued)
The examples in Figure 2 show an area in Catahoula Parish, Louisiana. Since we will be selecting multiple SONRIS layers it is best to turn off by selecting the Auto button, the automatic refresh – otherwise you have to wait as each layer is drawn between adding another layer of information. When you have selected the layers and/or text that you want turned on (arrow) then just click on the Refresh Map button and the map image will redraw. In Figure 2A, the oil and gas wells, fields, parish boundaries, townships, sections, and all the reference layers around geographical markers are selected, as well as the text function initiated. Note the wells with the SONRIS Well ID, the section numbers, and Highway 1196 running east west at the bottom of the map. Go ahead and experiment with different layers. It is important that you have the right information turned on when you load the picture into SMT. I like to have the section lines and text turned on, as well as the aerial photos shot in 2004 in my image, Figure 2B. Remember, because the Auto button feature was turned off earlier, the Refresh Map button must be selected to redraw each image.

The next part of the process uses SnagIt. You want to use SnagIt to capture the SONRIS image as a .tiff file. The secret is that 3dPak will import a .tiff file or a Tagged Image File (*.tiff) as a culture layer. The .tiff file format is one of the options in the Save as type: pull down list of SnagIt. Be sure to place the .tiff image in a place you can find it. I usually place it in the directory that has the 3dPak project I want to place the image in as a cultural layer. If you are not familiar with .tiff files, they are a standard graphic file format used in mapping applications and are really just a basic or dumb graphics file.

The .tiff file we get from using SnagIt and SONRIS is just a dumb graphics file, it does not contain any information about where it is located in space or what the pixel scale is. If you purchase an intelligent .tiff file from one of many companies on the Internet, your purchased image file will come with a .tfw file. The .tfw file will contain the location information and scale information.

(Continued)
In this process flow we choose to use free information available on SONRIS and do not get this information. Because of this choice we need to consider some specific issues about the .tiff file we capture. It should have key reference points such as section lines, well, roads, etc., so when we move it into 3dPak we can use the 3dPak tools to manipulate it to be the same scale as the xy cultural information you already have loaded into your 3dPak project.

Note: I did find a freeware program on the Internet to create a .tfw file, but have not yet had time to figure out all the ins and outs of using it with a dumb .tiff file captured from SONRIS. If you are interested in helping with this process, contact me at jsf-phelps@yahoo.com and we can work on it together.

The final step of the process is to import the layer into SMT 3dPak. Select a map view and then the Cultural Tab, the Import menu option, and the Culture Group menu option. Find the .tiff file you made using SnagIt and SONRIS and select it as well as the Files of the Type – Tiff File (*.tiff). Then open the file and follow the normal 3dPak adding a culture layer process. Note: sometimes the .tiff file is saved as a .tiff file and you will need to rename it to a .tiff extension to see it in the 3dPak Culture windows. When you load it in you will get a temp window in 3dPak like Figure 3A. This temporary window contains the instructions on how you can move the dumb .tiff file in 3dPak and stretch and squeeze it till it matches the area of interest in your 3dPak project. It is a good idea to make a note of these commands because you will need them later.

Making sure that this culture layer is turned on in your 3dPak project tree, you then bring up a new base map. Because this .tiff file is a dumb graphics file and does not contain any location information, it will be placed in your 3dPak project at the x = 0, y = 0 for your particular projection or cartesian coordinate system. The resulting base map when you zoom all the way out looks like Figure 3B. Note: you can also change the scale to see the SONRIS .tiff file – in this case I used 1:300,000. Using the commands in that temporary window, you will need to move the .tiff file over to the project xy coordinate space and stretch and/or squeeze it till you get the wells and other culture features to line up with ...

(Continued)
Technology Corner Continued

the well and cultural file you loaded originally into the seismic project. You will need to mess around with this for a while but eventually you get a relationship that looks like Figure 3C. Once the .tiff file is in the same coordinate system and pixel scale as your 3dPak project, it just becomes another layer of information that you can use to help pick well locations and anticipate field operation problems and opportunities. For example, you can see that we had to cross a ditch or small stream to get from the section line road to the well site.

The next article I write will be how to get well log images from SONRIS and manipulate them using Schlumberger's free well viewer – Blueview.

SIPES 2007 Annual Meeting Location Survey Results

SIPES Members, along with spouses who attended the 2007 convention in Monterey, were asked to vote on their preferred locations for upcoming SIPES Conventions. The top 15 locations are outlined below:

1. Jackson Hole, Wyoming
2. Santa Fe, New Mexico
3. Sedona/Flagstaff, Arizona
4. Napa Valley, California
5. Carmel/Monterey, California
6. Hilton Head, South Carolina
7. Colorado Springs, Colorado
8. Lake Tahoe, Nevada
9. San Antonio, Texas
10. Savannah, Georgia
11. San Diego, California
12. Aspen, Colorado
13. Las Vegas, Nevada
14. Beaver Creek/Vail, Colorado
15. Charleston, South Carolina

In October, the SIPES Board of Directors voted to hold the 2009 Convention in Hilton Head, South Carolina and the 2010 Convention in Colorado Springs, Colorado. Thank you for voting!
Coming Soon

NAPE EXPO

February 7-8, 2008

Prospects
Producing Properties
U.S. Onshore & Offshore Plays
International Opportunities
Capital Providers
Infinite Networking
Expecting 1,500 Booths & 15,000 Attendees

Register online at: www.napeexpo.com

Call NAPE headquarters at 817.306.7171 for more information.

The 2008 NAPE Expo is presented by NAPE Expo LP, comprised of AAPL, IPAA, SEG and AAPG as limited partners.
Many thanks to the members listed below for their continuing support of our society.
Do YOU Have a Discovery to Tout?

Got a concept to run past an intelligent, and experienced audience?

Got a play that’s working?

How about an “I told you so…” or “Whatever you do, don’t do this!”

Then the SIPES 2008 Convention is the Forum for You!

The SIPES New Orleans Chapter is looking for technical papers for the 2008 SIPES Convention & 45th Annual Meeting. Speakers get a free convention registration. Please contact Mike Fein, Technical Program Chairman, if you would like to make a presentation at this meeting. (504-210-8148 or mikef@wtoffshore.com)

May 12-15, 2008 • New Orleans, Louisiana
which pumped 320 BOPD. All the investors wanted to visit the well site, so I became a tour guide. Robert Klabzuba, a geologist from Fort Worth, had an interest in the well and wanted to see the drill site. Bob is eighty-eight years old and still flies his own jet! He flew up to Amarillo and I picked him up. I drove him to the well site about an hour from Amarillo. He is a man of great stature, and looked as if he had just stepped out of the ‘40s. He was wearing a suit and tie with a Frank Sinatra hat. When we arrived at the well site, he stepped out of the car and I noticed that his shoes were untied. You see, he couldn’t bend over to tie his shoes. Then I remembered that in the Bible Jesus washed the feet of his Disciples and told them to wash one another’s feet (John 13:14). Guess what? I seized the opportunity to serve. I asked him if I might tie his shoes; he said sure. I bent down and tied both shoes. SIPES is here to serve its members. Don’t miss an opportunity to volunteer to serve.

SIPES has many opportunities for networking and fellowship. One such opportunity is going on a SIPES cruise. I have been on two SIPES cruises - the Mexican Riviera Cruise of January 2005 and the Panama Canal Cruise of March 2006. It was on that last SIPES cruise where I got a chance to really get to know Joe and Mary Warren of Dallas. I learned that Joe was a West Point graduate, and worked Pecos County where he earned his living. They were sweet and gracious people. I remember that every night at dinner, Joe would come in slowly with Mary, who had a cane to steady her walk. He would always greet each of us with a smile or a laugh. Then he would pull the chair out for Mary and seat her. They would always order a bottle of wine with their meal. Joe passed away this last December, but I still remember our last cruise together.

SIPES has a Southern Caribbean Cruise coming up on March 15-25, 2008. (See Page 12). I would recommend taking a SIPES cruise and meeting new friends. They may just be friends for life. Remember, memories last a lifetime.

Finally, I want to encourage you to come to New Orleans next May 12-15, 2008 for the SIPES Annual Convention. I can assure you that the New Orleans Chapter and your National Board are working very hard to make it the best SIPES Convention in 45 years.

Send your questions, comments, ideas or prayer requests, to sunshineex@suddenlinkmail.com or dreamsfoil@suddenlink.net.

To Him be the glory,
George S. Johnson
MIDLAND

In July our speaker was Judge John Hyde. The title of his presentation was "Black Gold in the Prairie Desert." The program focused on the discovery of oil in the Permian Basin, the development of boom towns, and the continuing economic impetus of the petroleum industry.

John Hyde serves as the 238th District Court Judge in Midland, Texas. He received a bachelor’s degree in political science from Hardin Simmons University in 1964. In 1967 he earned his JD degree from the University of Texas Law School. Judge Hyde moved to Midland in 1970 after a tour of duty in Vietnam with the U.S. Army. He has served as District Judge for seventeen years, having been appointed by Governor Bill Clements in 1990.

J. Michael Party, of Wagner & Brown, Ltd. in Midland discussed "Barnett-Type Shale Plays; What We Think We Know" at our August meeting. Shale plays have become the big buzz in the oil & gas industry since Mitchell Energy started developing the Barnett Shale in the Fort Worth Basin. Everyone is looking for the next Barnett Shale play. This talk outlined the aspects of what makes the Barnett distinctive, including the characteristics that make the Barnett unique, and the things it has in common with other shales. This talk covered topics from geochemical aspects of the Barnett to its deposition. Mr. Party looked at the Floyd/Neal Shale of the Black Warrior Basin, the Fayetteville Shale in Arkansas, the Caney and Woodford Shales in Oklahoma, and the Barnett and Woodford Shale of West Texas.

J. Michael Party attended the University of Missouri-Rolla where he received a B.S. degree in geology/geophysics in December of 1978. He was awarded an honorary professional degree in 1995. After graduation, Mike accepted a job in Midland with Cities Service Oil Company. He worked in Midland for Cities Service and then for Aminoil USA before taking a position with Wagner & Brown, Ltd. in December 1981. Mike is currently the Division Exploration Manager for Wagner & Brown, Ltd. He has worked exploration plays for Wagner & Brown Ltd. worldwide over the past twenty-five years. Mike is a Certified Petroleum Geologist as well as a Certified Petroleum Geophysicist. He is currently the secretary of the American Association of Petroleum Geologists, and has served as president of the Association's Division of Professional Affairs.

Russell K. Hall and Associates, Inc. provides oil and gas evaluations for properties located throughout the United States, with special emphasis on the Permian Basin. Russell K. Hall and Associates was founded in 1996, and includes four petroleum engineers, with more than 120 years of combined experience, and a full time engineering technician.

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George Friessen
Secretary
SIPES QUARTERLY

SAN ANTONIO

During one of the wettest Julys on record, SIPES members managed to turn out to hear and see a presentation on "Cost-effective electric logging for shallow wells," by Mike Miller (Geo-Cam, San Antonio). His presentation included showing some outstanding video of karstic, cavernous water wells from the Lower Cretaceous Edwards Aquifer.

Gary Murrill (Welltec, Midland) was our speaker in August. He has over 27 years in the oil patch (with Dresser Atlas and Computalog, as well as Welltec, which he joined in 2003); his current title is senior business development manager, U.S. Land. His presentation was titled "Conveying tools in highly deviated/horizontal wells using advanced well 'tractor' technology." His talk summarized the state of the industry for tractors (their use continues to grow), approximate tractor numbers (they have been operating in cased holes since 1996, and in open holes since late 1999) and recent innovations/applications (recently a tractor for performing mechanical services in horizontal wells has been introduced as well as CT drilling with a tractor providing constant weight on the bit). Mr. Murrill then reviewed the strengths and weaknesses of various tractors, and perhaps most importantly, gave a typical cost savings for the client (which can be expected over rig/pipe conveyed operations).

"Section 1031 Tax-Deferred Exchanges" was the topic of our September program, presented by Bill Bennett from San Antonio. As many of us realize, there is this somewhat nebulous thing in the Tax Code under Section 1031 that allows us to defer the taxes on properties bought and sold, provided a "like-kind" property can be identified and included in the transaction, but few of us appreciate THE MAGNITUDE and the details of these deferrals, unless he/she is a CPA. Mr. Bennett's talk was geared toward emphasizing the importance of being aware of this potentially deal-making - or deal-breaking - component. I, unfortunately, was unable to attend this meeting, as this is just the kind of business-related presentation I think most of us joined SIPES for. (Mr. Bennett's talk was presented at the 2007 Convention in Monterey. His presentation is available on DVD through the SIPES Foundation Film Library.)

Bob Robinson, former national director, suffered a stroke on August 31. He has relocated, as of the end of October, to an assisted living facility in Tulsa where his son Brad lives.

Bill Wilbert
Correspondent

FORT WORTH

After a summer break, the Fort Worth SIPES Chapter meeting was held on September 20 at the Fort Worth Petroleum Club. Bob Loucks spoke on "Mississippian Barnett Shale in the Northern Fort Worth Basin: Lithofacies, Depositional Setting, and Pore Network of a Deepwater Mudstone Succession." He described the play as a classic "shale-gas" system where the rock is source, reservoir, and seal. The Barnett rocks there are not shales: they are nonbioturbated, laminated carbonate and siliceous mudstones, deposited in a deeper-water foreland stratified basin characterized by poor circulation with the open ocean. For most of the basin's history, bottom waters were euxinic, facilitating preservation of organic matter resulting in a rich source rock. This rock contained abundant microframboidal pyrite that was precipitated out of a euxinic water column. The Barnett strata, comprising a variety of lithofacies, are dominated by fine-grained (clay- to silt-sized) particles, many of which are peloids. Three general lithofacies are recognized on the basis of mineralogy, fabric, biota, and texture: (1) laminated siliceous mudstone (2) laminated argillaceous lime mudstone, and (3) skeletal, argillaceous lime packstone. Each facies contains abundant pyrite and phosphate. All biota within the basin were transported from the shelf or upper oxygenated slope by hemipelagic mud plumes, dilute turbidites, and debris flows. Biogenic sediment was also sourced from the shallow, oxygenated water column. It was suggested that water depths in the northern Fort Worth Basin may have been as great as 400 ft. to 700 ft. These depths seem to be required for below storm-wave base and stratified water-column conditions. Barnett deposition is estimated to have taken place over a 25-Ma period, and despite variations in sublithofacies, sedimentation style remained remarkably similar throughout this span of time. The pore network consists predominately of nanopores with rarer micro- and macropores. The nanopores appear to be associated with maturation of organic material to hydrocarbon liquids. Natural fractures are present but are cemented.
Lee Wayne Moore, #460
1913 — 2006

Wayne Moore died at his home in Midland, Texas on July 29, 2006 at the age of 92. He was born in Owasso, Oklahoma, graduated from Tulsa Central High School and attended Oklahoma A&M University (now Oklahoma State University) until 1936. He then attended Oklahoma University where he graduated in 1939 with a degree in geology.

Wayne worked for Stanolind Oil and Gas first in Mississippi then transferring to Midland in 1940. In 1944 he left Stanolind, and with Bill Gilmore, formed Moore and Gilmore, where he participated in the discovery and development of numerous oil and gas fields in Texas, New Mexico, Colorado, North and South Dakota, Wyoming and Montana. In addition to being active in the oil and gas industry, he also owned and operated several ranches in Texas, New Mexico and Colorado. He remained active in both the oil industry and ranching until his death.

He was a trustee as well as chairman of the board of Brite School of Divinity, and served on the board of directors at Texas Christian University in Fort Worth. He also served on the board of directors of Juliette Fowler Homes in Dallas, and was a board member at First City National Bank in Midland, and at Midland College. He was a deacon, elder and trustee of the First Christian Church in Midland, and participated in the development of Midland Presbyterian Homes (Manor Park). He was also a member of several professional and technical societies in addition to SIPES.

In 1946, Wayne married Joann Montgomery of Fort Stockton. He was predeceased by his wife and their two daughters, Esther and Pearl. He is survived by two grandchildren in Midland.

W. B. “Beegie” Newberry, #531
1928 — 2006

W. B. “Beegie” Newberry passed away on December 10, 2006 at his home. Beegie was a long-time member of SIPES. He was one of the first geologists to realize the potential of the Austin Chalk and will be remembered as a friend and mentor to many individuals in the oil and gas community. We will miss seeing Beegie at our local meetings and we were honored to have him as a member. Our heartfelt condolences go out to John Newberry and the rest of his family.

SIPES Midland Chapter

WELCOME NEW MEMBERS

The following new members were approved by the SIPES Membership Committee from June 13 to October 4, 2007:

<table>
<thead>
<tr>
<th>SIPES Number</th>
<th>NAME</th>
<th>CHAPTER</th>
<th>SPONSORS</th>
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<tr>
<td>3119</td>
<td>Philip L. Haerer</td>
<td>New Orleans</td>
<td>A. Baker, H. Ecroyd, K. Huffman</td>
</tr>
<tr>
<td>3120</td>
<td>Charles E. Price</td>
<td>Austin</td>
<td>G. Hawkins, D. Haynes, J. Selby</td>
</tr>
<tr>
<td>3121</td>
<td>Nicholas D. Weatherston</td>
<td>San Antonio</td>
<td>D. Pressly, C. Kosarek, J. Finger</td>
</tr>
<tr>
<td>3122</td>
<td>Douglas E. Bradford</td>
<td>New Orleans</td>
<td>D. Broadbridge, E. Broadbridge, A. Carollo</td>
</tr>
<tr>
<td>3123</td>
<td>Michael C. Forrest</td>
<td>Dallas</td>
<td>M. Downey, W. Leel, J. Robertson</td>
</tr>
<tr>
<td>3124</td>
<td>D. Craig Smith</td>
<td>Midland</td>
<td>A. Bell, J. Naumann, S. Reid</td>
</tr>
</tbody>
</table>
The seventh luncheon of 2007 was a joint SIPES-HGS meeting held at the Petroleum Club on July 19, with M. Ray Thomasson, #2636, of Denver as speaker. His discussion was titled "Global Climate Change - A Geologic Perspective - What Does the Data Tell Us?" 168 SIPES and HGS members registered for this sold-out presentation, the largest ever joint meeting of these organizations.

Mr. Thomasson pointed out that the world climate system is extremely complex, with a number of factors, including astronomical causes, tectonic causes, temperature variations, and atmospheric conditions all contributing to climate change. Global warming and cooling can be documented as far back as 1,000 BC. From this data, there appears to be a direct relationship between average temperature and CO2 content of the atmosphere for at least the past 400,000 years, with maximum CO2 concentrations being reached 600-1,000 years after the temperature peak. Although it has been documented that CO2 concentration in the atmosphere has increased from 280 ppm to 380 ppm in the past century, it is not known if this increase is leading to a rise in temperature because of the historical 600-1,000 year lag of the temperature peak to max CO2 concentration.

He also noted that it is nearly impossible to model worldwide climate variations. Some of the many influences on the model include sun spot activity and equatorial ocean currents, but perhaps the least attributed are the effects of cloud cover. There is more CO2 absorbed in the atmosphere in the presence of water vapor than in a dry atmosphere.

The simplest model, which also has the greatest impact, involves the relationship between the sun and the earth. Water covers 80% of our planet and holds many times more CO2 than the atmosphere. When solar radiation increases, the oceans heat up and release CO2 in amounts exponentially greater than anthropogenic sources. There is a double whammy when solar radiation increases - at the same time that the temperature of the oceans rises, solar winds block off cloud-causing cosmic rays from reaching the earth, diminishing the reflective index of worldwide cloud cover. Heating the oceans also increases water vapor, a greenhouse gas of much greater impact than CO2.

The discussion was concluded with the point that the climate is constantly changing, and there has been a warming trend documented over the past 300 years. The burning of fossil fuels does throw a lot of CO2 into the atmosphere, so it is in everyone's best interest to reduce emissions. Mr. Thomasson also stated, however, that more research needs to be focused on causes rather than the effects of climate change. Wine sponsorship was provided by Eagle Geophysical, Inc.

In August, Janet Douvas Chafin from the Jackson Walker L.L.P. law firm was our guest speaker. Her discussion was titled "Business Ethics in the Oil and Gas Industry: How to be Ethical and How to Protect Yourself From Those Who Aren't."

Ms. Chafin pointed out that in deciding if a confidentiality agreement is enforceable, the court will review how careful the offeror was in showing what he considered his trade secret. A trade secret is a compilation of information used in your business that gives you an opportunity to gain an advantage over your competitors who don’t have access to the information that you developed. Whether or not your data is a trade secret depends on the extent that the information is known outside the office, the extent that the information is known by employees and those that work with you, and the extent of measures taken by you to guard the secrecy of the information.

In order to protect yourself from those who would steal your ideas, Ms. Chafin recommended that all agreements be put in writing, as oral agreements are not enforceable in court. She said that your confidentiality form should state that your information is being disclosed in confidence, should include an area of mutual interest, and should require the Receiver to demonstrate promptly if it claims to have already developed the same information. The offeror should also consider including a statement expressing that the proprietary and confidential nature of the information being provided to the receiver shall continue to be owned by the offeror as its confidential trade secret after the expiration of the term of the agreement. (See www.sipes.org for the model DPA/SIPES Confidentiality Agreement). Wine sponsorship was provided by Westerly Exploration, Inc.

On September 20, Jason Robinson from MTEM was our guest speaker. His discussion was titled "Using Electromagnetics for Onshore Hydrocarbons Detection and Delineation - With a Case Study from Trinidad."

Using the MTEM technique, an electromagnetic impulse goes into the earth and back to the surface where receivers measure it as a voltage. The acquisition method is similar to that for 2D seismic. The source establishes electrical contact with the earth, and consists of 40-50 electrodes. The receivers are copper-coated re-bar, connected to the recording truck. Travel time, amplitude, and full waveform are measured vs. time, and, after
remaining areas of potential in old oil and gas fields.

This technique works equally well with oil or gas, but some interference may occur from carbonates, salt, and mafic intrusive rocks. Surface pipelines with galvanic protection and overhead electrical lines may also cause some electrical noise. In addition, the quality of the response depends on the ratio of target to overburden resistivity, so it may not be possible to see thin resistive intervals as depth increases. For these reasons, prior to initiating the project in the field, a feasibility study is done. A nearby analogous well log is located, and synthetics are created with and without pay in the interval of interest to model the anticipated responses. Wine sponsorship was provided by Noble Royalties, Inc.

Business was booming at the Summer NAPE SIPES Booth with at least seventeen potential new members expressing interest in joining SIPES. Many SIPES members visited and volunteered at the booth including SIPES National President George Johnson, Houston Chapter Chairman Pat Shannon, Past Houston Chapter Chairman Pat McKinney, Scott Daniel, Elwin Peacock, Bob Bell and Hans Sheline among others.

Volunteering at the SIPES booth at Summer NAPE are (L to R) Scott Daniel, Pat McKinney, Chapter Chairman Pat Shannon, and SIPES National President George Johnson.

The hugely successful 2007 SIPES-Houston Chapter Continuing Education Seminar was held on September 12 at the Marathon Conference Center Auditorium. This outstanding event was organized by Continuing Education Chairman Steve Hartzell, and included presentations and discussions of the latest research from both industry and academia.

Michael Jones
Secretary

DALLAS

The Dallas SIPES Chapter recognizes and thanks James R. Turner, Vice President of Exploration from Barrow-Shaver Resources Company of Tyler, Texas for his July presentation of "Application of the Enhanced Pickett Plot to the Travis Peak and Cotton Valley Formations, East Texas Basin." Pickett plots are a graphical petrophysical cross plot of porosity and resistivity that allow a more accurate interpretation of Rw to be calculated for interpreting pay zones from electric logs. The plots allow correction for cementation, shale, and other petrophysical properties negatively affecting resistivity. The end result is improved log analysis and commercial completions in pay zones normally interpreted to be non-productive. Several East Texas fields were utilized as models. Excellent "find more oil" presentation!

The Dallas SIPES Chapter recognizes and thanks Mike Austin, #2366, and Mike Pollok, #2512, for the September presentation of "An Exploration Success Utilizing Regional Subsurface Mapping with 3-D Seismic on the Pratt Anticline in Barber County, Kansas." The two independents presented their case history for developing an exciting play concept on the Pratt Anticline utilizing subsurface geology and concepts to develop a multi well drilling program on a previously unrecognized structure. Operation and lease

Vice Chairman David Bissmeyer (left) and July guest speaker James Turner.

SIPES National President George Johnson (left) and Dallas Chapter Chairman Ed Gonzales.

issues included management of a bison herd, environmental safety and facility stealth implementation. Excellent "can do" presentation!

The Dallas SIPES Chapter recognizes the outstanding effort of Vice Chairman David Bissmeyer, of Ventex Oil and Gas for scheduling our excellent guest lectures.

Donald Muth
Secretary
OKLAHOMA CITY

The Oklahoma City Chapter luncheon meetings continue to be well attended with 60-65 members from a membership of 90. Normally 5-6 guests also attend. Chapter meetings are held in the Oklahoma City Petroleum Club on the 35th floor downtown Chase Building on the first Wednesday of the month, excluding June, July, August, December and May. December we reserve for our annual Christmas function and May is our annual picnic.

Our September 5th meeting had Bob Westermark and June Scheming, from Grand Resources, Inc., in Tulsa, Oklahoma speaking on how horizontal wells improve recovery in 100-year-old Pennsylvanian sandstone reservoirs in Northeastern Oklahoma and Southeastern Kansas. They presented ample data via charts and diagrams exhibiting how their innovative tool enhanced the production from these older fields.

We have two new members as of this fall, Joe Vaughn and Freddy Hensley. We also have a new chairman, Tom Rowland, since former Vice Chairman Randy von Netzer has joined Crusader Exploration in Oklahoma City.

Tom Rowland
Chairman

CORPUS CHRISTI

3D seismic technology has brought about extremely successful exploration in the Gulf Coast Region. Along with that, it has facilitated the fusion of the geoscience, engineering, and finance industries. In July, J. Phil Martin’s (#2390), presentation emphasized gas signatures, which in some instances can be more accurate than well logs, in identifying hydrocarbons.

After earning his B.S. from LSU and M.S. from UL, Phil worked as an exploratory geologist for Union Texas Petroleum. Shortly thereafter, Phil joined the independents with his company, New Century Exploration, Inc., drilling more than twenty wells per year off the coast of Texas and Louisiana. New Century Exploration is based in Houston and specializes in drilling wells using 3D seismic to identify untapped oil and gas reserves.

Prospects are confirmed by the presence of 3D seismic oil and gas indicators that range in depth from 3,000’ to 17,000’. New Century Exploration currently holds an 80 percent success ratio.

Chuck Segrest spoke at our August meeting. Chuck received his B.S. degree from Baylor University in geology. For over 30 years, he has been involved in the petrophysical evaluation of rock samples for the purposes of improved reservoir characterization. He has authored/co-authored six technical papers on various aspects of rock data evaluation and integration. His background includes all phases of core analysis including routine core analysis, special core analysis and petrophysical analysis.

Chuck has over twenty years experience in carbonate reservoirs, ten years experience in sandstone reservoirs and three years experience in shale gas reservoirs. He is experienced in the evaluation of causes of formation damage, controls on reservoir quality and aspects affecting proper log interpretation.

He is currently a partner in the company GeoSystems, which is a geologic/petrophysics-based company specializing in the integration of multiple data sets for the purpose of improved reservoir characterization.

September guest speaker Samuel Talbot has 25 years of exploration and development experience in the uranium industry. He earned a B.S. degree in geology from the University of Wyoming, a B.A. degree in earth science and a B.A. degree in biology from Chadron State College in Chadron, Nebraska.

Mr. Talbot is currently the manager of exploration and development for Mestena Uranium L.L.C. where he has been in charge of the geology department since January of 2005. Prior to joining Mestena Uranium L.L.C., Mr. Talbot was the senior geologist for URI, Inc. at their Vásquez Project. Mr. Talbot has also worked for URI, Inc. as project geologist at the Kingsville Dome Project.

From 2000 to 2004, Mr. Talbot worked in the Powder River Basin in Wyoming as a drilling supervisor and coal geologist. He consulted with Marathon, Williams and Conoco-Phillips and was responsible for overseeing the drilling and completion of coal-methane wells.

Ed Riddle
Secretary

IN MEMORIAM

We regret to note the passing of the following members:

Samuel J. Cerny, #3096
of Oklahoma City, Oklahoma
who died on June 17, 2007

George B. McBride, #1029
of El Paso, Texas
who died in June 2007

Wilbur E. McMurtry, #2480
of Oklahoma City, Oklahoma
who died on October 27, 2007

Thomas Mairs, #2334
of Dallas, Texas
who died on October 29, 2007

Charles E. Mear, #2463
of Austin, Texas
who died on September 18, 2007

Harold J. Reedy, #1346
of Oklahoma City, Oklahoma
who died on October 15, 2007

James A. Savage, #1662
of Dallas, Texas
who died on August 3, 2007

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Ed Riddle
Secretary
Chapter News Continued

DENVER
The Chapter’s second annual Buffalo BBQ Picnic was held on July 22 at the Fox Hollow Golf Course in Lakewood, Colorado. The event was preceded by a Workaholic’s 9-Holes of golf. The picnic featured Tom Stander’s barbecued buffalo and beef roasts with famous KC-style sauces.

There was no meeting in August. Speakers at the well-attended September 27 luncheon meeting were Tom Roelfs, Tom Gipson and Tom Jones of Advanced Drilling Technology. Their topic was "Coiled tubing drilling operations in eastern Colorado and western Kansas." There is a significant change underway in the coiled tubing industry overall. Operations prior to 1990 were largely limited to well intervention services such as the jetting of wellbores to clean up or start flow. As stronger tubing, better tools and new technology have emerged, coiled tubing now can be used in almost any application rotary rigs can - given certain inherent limitations on wellbore length and reservoir conditions - and do it faster and cheaper.

Coiled tubing (CT) drilling operations have had a significant impact on drilling in the shallow Niobrara gas play of eastern Colorado and western Kansas. These operations have lowered drilling costs and increased drilling rates in the play. The surface hole is drilled and 7-inch surface pipe is set by a shallow hole drill rig a day or so ahead of the CT rig. With coiled tubing 300 to 400 feet of 6-1/4-inch hole can be drilled per hour in the Cretaceous Pierre shale. Commonly, wells are drilled, logged and 4-inch production casing set in a day. Although drilling with coiled tubing accounts for only about 15 percent of the coiled tubing service industry, it is growing faster than the coiled tubing intervention market, according to a report sponsored by the DOE in June 2005.

Bill Miller  
Chairman

SIPES Chapter Meeting Information

AUSTIN
Chairman: Doug Watkins
V-Chrm: Ward Davenport
Secretary: TBA
Treasurer: Dwight Cassell
Meets: The County Line
(On the Hill)
1st Thursday

CORPUS CHRISTI
Chairman: Duncan Chisholm
V-Chrm: Eldon West
Secretary/ Treasurer: Ed Riddle
Meets: Town Club
Last Tuesday of month

DALLAS
Chairman: Ed Gonzales
V-Chrm: David Bissmeyer
Secretary: Don Muth
Treasurer: Bobby Greenwood
Meets: Royal Oaks
Country Club
3rd Tuesday

DENVER
Chairman: Bill Miller
V-Chrm: TBA
Secretary: Keith Drouillard
Treasurer: George Carlstrom
Meets: Wynkoop Brewing Co.
4th Thursday

FORT WORTH
Chairman: James Robertson
V-Chrm: TBA
Secretary: TBA
Treasurer: TBA
Meets: Fort Worth Petroleum Club
3rd Thursday

HOUSTON
Chairman: Pat Shannon
V-Chrm: Jim Norris
Secretary: Mike Jones
Treasurer: Mark Gregg
Meets: Petroleum Club
3rd Thursday

LAFFAYETTE
Chairman: Ellis Guillebeau
V-Chrm: Johnny Walker
Secretary/ Treasurer: David Bieber
Meets: Petroleum Club
2nd Wednesday

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

NEW ORLEANS
Chairman: Al Baker
V-Chrm: Tony Carollo
Secretary: Jim Zokiewicz
Treasurer: Reese Pinney
Meets: Andrea’s Restaurant
3rd Tuesday

OKLAHOMA CITY
Chairman: Tom Rowland
V-Chrm: 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-Chrm: Doug Draves
Secretary/ Treasurer: Joe Finger
Meets: Petroleum Club
3rd Thursday
LAFAYETTE

The Lafayette Chapter took a break in June, July and August and resumed our regular scheduled meeting on September 12 at the Lafayette Petroleum Club. Our speakers were Bryan Groves, #3110, and James Bullen, both from Lafayette. These gentlemen have many years of experience in the field of Louisiana unitization. The title of their presentation was, "The Zone and the Box - Save Money and Protect Your Override."

Mr. Groves is an independent geologist practicing in Lafayette with over 20 years of experience in unitization, prospect generation, and evaluating producing properties. Bryan graduated from the University of Southwestern Louisiana and is an active member of SIPES.

Mr. Bullen is a partner in the Lafayette law firm of Strain, Dennis and Bates, LLP. He graduated from Louisiana State University and Tulane University School of Law. Several of James' areas of expertise include oil and gas title, transactions, litigation and unitization.

Their talk was very informative and demonstrated the method of combining several prospective sands and intervals into a "zone" instead of unitizing each sand individually. The cost savings as well as ability to hold more acreage was an obvious and substantial benefit in using the "zone."

David Bieber
Secretary

NEW ORLEANS

Our Chapter officers for 2008-09 are: Chairman Al Baker; Vice Chairman Tony Carollo; Secretary Jim Zotkiewicz; Treasurer Reese Pinney; and Past Chairman and National Director Ken Huffman.

The New Orleans Chapter is gearing up for the SIPES 2008 Annual Meeting and we’re ready for business. All of the city’s favorite restaurants, shops, and music clubs are back and fully operational. The major tourist areas had minimal damage and are also operating normally. Our Annual Meeting program is in its final stages and we have two key events that can only be experienced in New Orleans. One will be a SIPES Foundation Seminar on the post-Hurricane Katrina geologic influences of the levee breeches, "Hurricane Katrina - What Happened" given by Steven A. Nelson, Department of Earth & Environmental Sciences, at Tulane University. In addition, a post meeting field trip, also led by Dr. Stevens, will take SIPES attendees to the sites of the breached levees and through the devastated, historic neighborhoods flooded after the storm. This is truly a unique opportunity to see how the failure to acknowledge the geology of an area led to the nation’s worst preventable disaster.

Our first meeting after the summer break was the September luncheon meeting, Local SIPES member Doug Bradford, #3122, with Energy and Exploration Solutions, spoke on the environmental clean-up of the Eunice Train Derailment that took place on Memorial Day weekend, May 2001, near Eunice, Louisiana. At that time Mr. Bradford was employed by the Department of Environmental Quality, and oversaw the regulatory faction of the clean-up. The Union Pacific Railroad train derailment happened as a train pulling railcars crossed a railroad trestle which had weakened supports due to differential subsidence between the trestle and the rail bed. Thirty-three out of one hundred thirteen railcars fell and leaked chemicals into the surrounding area. Several railcars burned and some exploded spilling a variety of carcinogens and contaminants, such as hydrocarbons, diethyl either, diethyl propylene, polyethylene pellets, and chicken feed, into Bayou Cane and on an adjacent golf course, pasture, and farmland. The derailment also caused the evacuation of 3,000 people within a mile and a half radius of the site. No one was hurt.

The removal of the contaminants posed many logistical problems. One potential concern was the contamination of a small stream that emptied into a local lake which is part of the town’s water system. Dams were erected to prevent flow into the lake. In addition, the top layer of the affected soil had to be scraped off and replaced with clean fill dirt. Trees and other vegetation had to be tested, chipped up, and removed to special landfills. The spill threatened the Chicot aquifer, a regional water supply, lying just 40 feet under the affected area. Cores were taken and injection wells were drilled to monitor the downward flow of the contamination. Hydrogen peroxide was pumped down the injection wells to oxidize the chemicals in an attempt to make them inert. The total cost of the clean-up was thirty-five million dollars.

Today the site is officially cleaned up. Regular inspections and monitoring wells ensure that the site remains safe.
• Planning how to avoid or minimize effects to sensitive area;
• Implementing the protocol used by operational teams on the ground; and
• Monitoring the effectiveness of and adherence to the protocols.

The Triangle is formed between the Public, the Operator, and the Consultant. The advantage is that each party has an expert consultant to address specific requirements in the permitting process as well as the overall project. This paper will examine XTO Energy Inc’s River Legacy Project in Tarrant County, Texas as an illustration of this model. In this case the Consultant leg of the triangle was composed of expert consultants representing the fields of permitting, surveying, mechanical vibration monitoring, and seismic design (Consultant). The other two legs of the triangle were completed by the various land owners, state, county, and local governmental entities (Public), and XTO Energy Inc of Fort Worth, Texas (Operator).

The River Legacy Project is located in the cities of Arlington, Euless, and Fort Worth, Texas. The Barnett Shale objective is 8,300 feet deep with an overlying unconformity and known to have significant faulting with possible karsting.

ADVANTAGE TRIANGLE MODEL

What is it?

The Advantage Triangle Model is a systematic business approach utilized by the consultants assisting with the XTO Energy Inc’s River Legacy Project (Project). Three entities, the Operator, the Public, and the Consultant illustrate the Triangle. Each entity is comprised of many different supporting professionals all working towards a central goal.

Each participant has a different perspective and subsequently has different roles and responsibilities in the overall project. Envision three people standing on the rim of the Grand Canyon admiring the scene. One is an artist, the second a geologist, and the third a rancher. The artist is struck by the beauty of the landscape and says that I can’t wait until dawn to paint the different shades of color as the sun rises over the rim. The geologist exclaims that the canyon represents all the strata of geologic time and can’t wait to collect samples from each one. The rancher just stands there, looking sideways at the other two, with a stern look on his face, stating that it would be a heck of a place to lose a calf.

PLANNING

Operator’s Requirements

Identifying the Operator’s requirements for the project required several preliminary meetings between the Operator and the lead consultant. Once all of the necessary areas of expertise were identified and the appropriate consultants retained, a general meeting was held to ensure that everyone knew what was required, who was going to do what, and when it was to be done. Various personnel responsible for each area of expertise attended the meeting: the operator, seismic project designer, seismic contractor, permit agents, and surveyors. Maps were reviewed, requirements were discussed, and most importantly, everyone knew who the other folks were.

Who’s on First?

One geographical database was established for the Project using software specifically designed to plan, coordinate, and monitor seismic projects. The lead consultant’s project coordinator maintained the database. Digital topographic maps and satellite images serve as the background in the database. The digital images are ortho-registered to the State Plane Coordinate survey system. This means that any location of the computer cursor is described by X and Y coordinates on the ground and that any data imported to the database is similarly registered to a location on the ground. Any information given to the surveyors comes from the database and all information produced by the various field teams is imported to that database.

The design of a seismic project is a very technical exercise. Three-dimensional seismic surveys must produce a proper image of the subsurface to be of any value to the operator. The spacing, location, and geometric organization of the seismic signal source and receiver locations are determined by advanced modeling of known or assumed strata in the earth. An ideal situation is first laid out in the database. As additional obstacles and constraints are realized, the source and receiver points are moved in a particular fashion that maintains the image quality of the data. During this planning exercise an offset protocol is developed. This allows the surveyors in the field to react to particular circumstances they encounter. The production of a surveyed project is a constant push and pull from both the geophysical design and restrictions found on the ground.

Data coordination is crucial to the proper deployment of the various field teams performing permitting and surveying. Everyone is working from the same map. The various field teams were informed daily of the type of activity to be performed. This required detailed planning and tracking of daily activities.

Avoidance Strategies

Avoidance strategy is the hallmark of the Advantage Triangle. As many actual features as possible are identified and located in the database before anyone goes to the field. This planning activity gives the Project designer an opportunity to develop strategies to properly avoid structural and special condition features, pipelines, highways, railroads, drainage, and ponds. The resulting strategies are aimed at minimizing or eliminating the surface impact from the seismic activity.

Operational constraints require that the correct activities occur in the correct order. Coordinating multiple

(Continued)
activities with different recommendations over a period of several months requires careful planning and a lot of patience. Each of the ground teams maintained a separate set of recommended actions to avoid obstacles which were sifted, sorted, and evaluated by the Project designer. Many points were offset to acceptable locations, while others were simply dropped due to frustration. Regardless, an acceptable solution for all was reached.

Special Conditions Assessment

Figure 1 is a plat of the hazards discussed below.

- **Landfills**
  The City of Arlington has two landfills in the project. Several meetings were held with the operations manager to conduct the hazard survey, coordinate access, and have knowledgeable personnel available to identify sensitive areas. One of the landfills is completed and has a methane collection system installed, so no source points could be located on it. The second landfill is active and has several bulldozers handling material with hundreds of large vehicles dumping trash every day except Sunday, so no receiver locations were permitted. Access roads change daily according to the amount of material brought in. Source locations had to be surveyed on the fly just ahead of the VibroSeis trucks.

- **River Legacy Park**
  The City of Arlington has a signature city park located in the project. It contains a paved hike and bike trail, light duty bridges, rest rooms, soccer fields, picnic areas, and wildlife viewing areas. Hundreds of people use this park daily, all of whom are uninformed about the activity and produce many inquiries. Several meetings were held with the park maintenance personnel to coordinate access, mowing schedules, and scheduled events.
  The hike and bike trail is thin, unreinforced concrete and could not support VibroSeis equipment. Park users simply pulled up wire and geophones, then piled them up to play soccer games and have picnics. The nationally advertised Walk for Breast Cancer event was conducted one weekend while recording the data. Thousands of people attended with kiosks set up for refreshments, donations, and souvenir sales. A large church congregation held outdoor services on Sunday morning.

- **Sewage Disposal Farm**
  An abandoned sewage sludge farm is located on the project and is considered a hazardous waste disposal site. Therefore, no activity at all was allowed.

- **Golf Course and Sports Center**
  The City of Euless owns a large sports complex and The Star of Texas Golf Course that is located in the Project. Meetings were held with the city personnel responsible for maintenance of the facilities to identify hazards, access, maintenance, and scheduled events. Two golf tournaments were held during the Project activity. The golf course would only allow their vehicles on the course and provided maintenance carts for the surveyors and line crew to use.

- **Auto Auction Lot**
  A large privately operated auto auction lot is adjacent to the golf course. Auctions are held each week and thousands of vehicles are transported in and out on auto carrier semi-trailers. Most of the facility is paved, but certain areas are still gravel based. We were able to place sources there. While the Project was underway, a paving company arrived to pave the gravel lots. We were able to collect those source points the evening before paving operations began the next morning.

- **Railroad**
  The Trinity Rail commuter line runs through the middle of the Project. This line is a passenger rail service between Dallas and Fort Worth. There is a lot of traffic in the mornings and afternoons with a less regular schedule through the day and evenings.

- **Fuel Products Tank Farms**
  Two product tank farms are located on the east edge of the Project, one owned by CITGO and one by Flint

(Continued)
Hills Resources. Neither of those facilities would allow access.

- **Production Facilities and Pipelines**

  Of course, the Operator and other oil and gas operators in the area had production facilities to be avoided. This is standard procedure for a seismic crew to avoid damaging their client's equipment. Another operator off the east edge of the project completed a well and was conducting a frac job during recording.

**CENTRAL CONTROL**

**Integration of Activities**

Field procedures were published for each of the various field teams. The document is tailored to contain specific examples of what was expected, how it was to be done, and how the result was to be reported. Customized maps were published at various scales to aid the individual teams with their activity. The survey and layout activity in the landfill, River Legacy Park, and the golf course had very different considerations. Actually, all of the maps published were carefully edited. The database accumulated so much information that a map was illegible if everything was posted on it.

Field presence by the Consultant is crucial. Full-time logistical and technical support keeps the field teams productive. They were not lost, confused, or trying to find something. Confusion and repeated visits to the same area were avoided by having someone in the field that can answer questions and make decisions that stick. Any particular logistical or technical issues were immediately addressed and dealt with on the spot. A full diary of field activity was maintained and reported to the operator daily. This gave the project operations a smooth flow so that no one was waiting on someone else. First-hand knowledge of the terrain and special conditions were invaluable when presenting problem issues to the operator. Maintaining technical quality of the seismic project was the responsibility of the project coordination Consultant. All of the team’s production reports were submitted daily and consolidated into an update to the database twice weekly. The updates were scrutinized by the Consultants for accuracy and whether or not the team followed the proper protocol. Each of the activities were staged such that none interfered with the other and the positions on the ground were visited in the correct order and in a timely fashion.

Coordinating the activities of dozens of folks on the ground requires communication. All of the field teams had commercial FM radios that permitted regular check-in and reporting of any problems. Planning the daily activities of the field teams were done at a general meeting each morning before work began. Large maps of the project were kept on the walls of the field office. The various teams reported their progress and the maps were marked accordingly. Some of the teams maintained a GIS database to track their data. This permitted easy generation of a progress map that could be e-mailed to the client.

**Survey Design**

Non-urban surveys usually have uniform acquisition where source and receiver lines are laid out with a regular geometry having minimal disruption from terrain or hazards. These designs have a robust azimuth and offset distribution.

Urban survey on the other hand require almost random source and receiver geometries. The Project design must depend upon the power of the stacked data to overcome cultural noise. One design technique that produces very high fold, in this case 80, is receiver patches laid out in rectangular patterns that can have skips and offsets to accommodate the hazards. The selection of a wireless recording system was crucial to implement this design.

**Three Phases - Two Crews**

VibroSeis trucks were not allowed in the River Legacy Park on the south edge of the project, or the golf course.

(Continued)
and auto auction lot sites on the north edge of the Project. Two recording crews were selected to collect the data. Each used different recording and source equipment. The Project was broken into three phases shown in Figure 2: the central phase recorded using an OpSeis recording system with VibroSeis trucks, the north and south phases recorded with an Ultra recording system using a Digi-Pulse thumper. An overlap of receivers was designed to merge the three sets of data such that a seamless volume of data results. Additionally, a previously collected 3D was merged in processing on the east side.

**Pre-plot vs. post-plot survey design**

As anyone familiar with seismic design knows, the pre-plot is what is intended and the post-plot is what actually happened. In this case, the pre-plot was substantially modified before any of the field teams were deployed. The ideal design of patches and sources is shown in Figure 3.

What was designed for deployment and actually happened is shown in Figure 4.

The resulting coverage is dramatic despite the disturbance of source and receiver distribution. The fold plot, Figure 5, shows that a lot of redundancy is produced. Upwards of 90 fold is produced across the target acreage. Experience with urban projects has taught that overdesigning the project is necessary to overcome operational and noise issues.

**Crew Operations**

- **Noise Issues**

Noise level in general from railroads, trains, planes, construction, frac jobs, road traffic, power lines, lawn mowers, recreational activities, etc. are enough to shut down the recording for any seismic crew operating out of town, but must be accepted when recording data in urban areas. Documented noise levels in urban environments are typically an order of magnitude greater than normal. Noise from trash trucks and bulldozers operating in the landfill was incredible. Vibration from the trucks on unstable landfill as much as 50 feet thick could be felt anywhere in the landfill area. At one point the client was standing next to the recorder on the landfill berm and asked who’s bright idea was it to record a seismic project here?

*(Continued)*
Equipment Issues

Theft of equipment was surprisingly low. The police actually stopped the line crew once inquiring about copper wire theft. Most disruptions occurred from the general public's curiosity about the equipment by handling cables and geophones or removing them to clear space for recreational activities.

Timing Issues

Logistics due to car lot transport vehicles, golf course and park activities, construction, and landfill hours of operation were a constant challenge to coordinate with deployment of equipment and placing source units. Many of the areas had restrictions about hours of operation or what days we were allowed to do things. In several cases, source equipment was moved to an area for an opportunity that only lasted a few hours to record those data.

Thumper Issues

The Digi-Pulse thumper permitted access to source points in several areas where VibroSeis was either too heavy, too large, or too strong a source, such as River Legacy Park, auto auction lot, and golf course. The signal strength was significantly less than the VibroSeis and had difficulty overcoming the noise level regardless of how many thumps were summed at each source location. Also, the VibroSeis sweep could be tailored to avoid strong ground roll and had a source array length of the distance between the two trucks. We believe that future use of the thumper should introduce a source array by having the unit move up every few thumps and summing more total thumps, the ground roll and noise issues can be overcome.

Processing

- Different Sources

Equalization of the phase and bandwidth differences between the two sources is a much easier task than in the past. Current processing software normalizes various source and receiver signatures so that the merged data is consistent. However, poor signal to noise ratio in the thumper data had to be addressed before the data could be merged. Several processing operations were attempted to equalize these data with the VibroSeis data, but were not able to overcome the high noise levels in the area. As a result, the two phases of the Project containing thumper sources was considerably noisier than the central part of the data.

- Refraction Statics

Variations in the near surface velocity and strata are solved using refraction statics. The landfills contained several tens of feet of poorly consolidated material, that is, slow velocity with high variability, which produces extremely large static corrections. This was further aggravated by the Quaternary fill in the Trinity River floodplain where the landfill was placed. Extra attention was required to achieve a proper solution, particularly in light of the high noise levels.

- Migration

Pre-Stack Time Migration (PSTM) was not appropriate due to the random nature of the source and receiver geometry. PSTM requires consistent offset distribution to work properly. Our experience in urban seismic projects is that post-stack migration yields a satisfactory result.

CONCLUSIONS

The Advantage Triangle Model has proven to be an efficient procedure for XTO Energy Inc to collect 3D seismic data in highly urban areas. The frustrations of dealing with hundreds of details from day to day were handed to their consultants then tailored their operations to manage the details necessary to acquire quality data under difficult circumstances. Most significantly, the decisions that affect the outcome of the final product are made from the top down by skilled consultants before the field operations begin. Placement of sources and receivers in a deliberately designed fashion to collect the best data cannot be accomplished using either the rigorous or serendipity methods.

The quality of the final merged migrated data set at River Legacy was (Continued)
more than adequate to address XTO’s quest to understand the Barnett Shale in this portion of Tarrant County, Texas. Except for the northern part of the seismic survey, the data continuity, and signal to noise ratio, were high. Faulting within the Barnett, with some faults breaching into the overlying Marble Falls, and other, Basement-involved faults, were readily apparent on the seismic data. Working within the Advantage Triangle Model to acquire this data set enabled XTO to plan horizontal wells on the River Legacy project in the best possible orientation, and with the optimum lateral lengths.

B. Wayne Hoskins, #2661, is the owner of The MapSnapper Group in Euless, Texas which specializes in design and execution of 3-D seismic field projects. The company has completed hundreds of 3-D seismic projects over thousands of square miles for dozens of clients throughout the southern United States. Wayne holds bachelor’s and master’s degrees in geology from the University of Texas at Arlington. He is also a member of AAPG, SEG, both the Fort Worth and Dallas Geological Societies, and is also a Texas Professional Geoscientist, #656. His email address is mapsnapper@sbcglobal.net.

Annette H. Borkowski, #2865, currently senior geophysicist at XTO Energy in Fort Worth, has over 20 years experience in the oil and gas industry. Her specialty is seismic interpretation. She has worked in exploration and development in many U.S. basins, and a few international ones. Her best technical and economic accomplishment is the discovery (along with Tom Fletcher) of Etouffee Field in South Louisiana. Annette has worked for a number of companies, large and small, as a consultant and a salaried employee. Her technical degrees are from Texas A&M (geology), Penn State (geophysics), and SMU (Hazardous and Waste Materials Management).
The SIPES Board of Directors is accepting nominations for recipients of SIPES Honorary Membership, and the SIPES Outstanding Service Award. Names and credentials of nominees should be sent to the chairman of the SIPES Honors and Awards Committee, Mike Cruson at 1717 Washington Avenue, Suite 300, Golden, CO 80401 by January 15, 2008. Specific criteria for both SIPES Awards can be read in the SIPES Constitution located on the Membership Directory CD. The CD also contains a list of previous award winners. A summary of the award requirements is listed below.

- Honorary Membership is bestowed on members who have distinguished themselves through accomplishment and significant service to SIPES and any of the professions within the realm of earth science.
- The Outstanding Service Award is presented to members who have distinguished themselves in singular and beneficial service to SIPES.

Proposals for this award must be submitted, with documentation, to the chairman of the Awards Committee. The Awards Committee will retain submittals for candidates who are not selected up to three years for future consideration.
I guess that the idea of being an independent was always there. All it needed was a catalyst, so the day that one walked into my office, was the day my 'employed' career came to an end. It was in 1979, while working in the Houston offices of Santa Fe Energy. My boss at the time walked in with the old good news - bad news choice. Of course I wanted the bad news first. He simply said that our budget for the next year was already spent on a couple of Gulf of Alaska fiascoes, in which we should not have even been involved. The good news was that I could keep on exploring with my geophysicist team member, but we wouldn't see any drilling for at least a year or more.

Armed with little more than a pencil and a desire, I calmly informed him that I would likely move on, which he understood. Giving up the nice office, salary, support, company car, and benefits was a bit disconcerting, but in spite of all of the apprehension, I made the choice to at least give it a try. With little savings, being single, without a working spouse, no insurance, an old car, and all the other perks of being a new independent, I considered the sanity of the decision more than once. I blamed it on the idea of being an "oil man" that started as a youth growing up in suburban Buffalo, New York, not exactly the "heart of the oil business." Most people who asked me what I wanted to be while I was growing up, had a very quizzical look when I answered their question. I'm sure a few thought that I was either weird or a little goofy.

They say timing is everything, and this was definitely not the best time to become an independent. The boom and all of its dollars was still a few years away. I had been working on several prospect ideas at Santa Fe and respected my former employer's rights to those prospects. After a couple of visits with my geophysicist compatriot from Santa Fe, he agreed to join me after a while, if I would kind of pave the way. I looked around and found suitable office space, joined a log library, managed to scrounge up some base maps and a few office supplies, incorporated a new Texas Corporation called Subsurface Resources, Inc., and readied myself for my new career. Money was going in one direction and there was not that much of it.

"I think that anyone who has been in the oil patch long enough knows that being in the right place at the right time and perseverance really are the keys to success."

Just to make things more interesting, my lady friend, and soon to be wife Sally, quit her job to start her own contract drafting business. We also bit off a new house and a move across the city to the north side. The bank laughed at our situation when we made application for a mortgage loan, but a builder with too many houses starts actually co-signed our loan. Our first offices were quite nice, with a couple of good-sized work spaces, conference room, reception and storage. Not bad for two aspiring independents, but the big question was how to cover our new overhead and put food on the table.

Our first break came when an associate at Anadarko asked if we would help establish a South Louisiana exploration program. That short time retainer got us over the hump and gave us time to just explore. Within a year a change in management eliminated our retainer, so once again we had to go it on our own. We linked up for a short time with a group that would supply land dollars, but before we were ready to lease they had spent their money on coal leases with no coal and on leasing another group's prospect where there was no prospect. They spent more time drinking beer and playing golf than they spent thinking. We were having no luck with any kind of partner at this point.

I had come up with a good idea for a prospect based on some subsurface strip mapping work and a well with a three-foot sand with good resistivity. It looked like an updip play against a regional fault was a good possibility. Before the demise of our land dollar supplying good old boys, we had hired a landman to check the area in detail. Our second break was a case of being in the right place at the right time. The entire prospect was leased for a deep wildcat well, not much of a break, but the deep well had just reached TD and been plugged and abandoned. Because of where it had been drilled, it looked like it had tested the prospect. My business partner knew the geologist at the company who drilled it, so he gave him a call. Of course they were not going to release the log, but we asked if we could just have the upper part, run one, down to about 9800'. He didn't have a problem with that, so my partner ran over to visit and pick up that section of the log. This is where the luck comes in. While sitting in his friend's office with log in hand and getting ready to say goodbye, their landlady stuck her head in and asked if they were going to pay the rentals since the well was dry. The answer was no.

When my partner returned to the office with the log, he laid it down on my desk and said there was no sand. He was correct. The potential reservoir sand was not present in the interval of interest. A few minutes of correlation with the nearby logs indicated that the zone was faulted out. They had drilled the well in the perfect spot.

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to fault out the potential Cockfield Sand on their way to test the deep Wilcox. The estimated downthrown point put our objective fifty feet high to the downdip shows and actually high to three old wells more than a mile away that were producing from the interval. We told our contract landman to pick up all of the leases immediately, which he did with land funds in his account. The problem was that the dollars he spent were not our land funds, and this was when our land dollar suppliers went south.

This was just one more problem to tackle. It so happened that our landman had a friend whose company needed some prospects. We arranged to fly to New Orleans to meet our landman and go show the prospect to his contact. We entered the conference room and spread out our maps and logs. I finished an overview while the company geologist and principal peered intently at the maps. The principal swept my maps down the long conference table and yelled "Elizabeth!" I cringed figuring that he disliked the whole idea, and wondered why he was calling her. When she stepped into the conference room he said to lease this, get together with the landman and finish any leasing and pay for them. He then looked at me and said, "I love it, what else have you got to show me?"

The rest is history. When we drilled the well in early 1981, it was a discovery with a nicely developed pay sand immediately downthrown to the fault. The deep Wilcox test had missed the discovery by less than one hundred feet. Seven gas wells and one dryhole later, this first well and discovery thankfully kept us going as true independents and, even though we only had small overrides, they paid the house note for years to come.

Three wells are still producing to this day. I think that anyone who has been in the oil patch long enough knows that being in the right place at the right time and perseverance really are the keys to success. Twenty-eight years later I am still an independent.

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

SIPES Foundation Seminar

Monday, May 12, 2008
2:30 to 5:00 p.m.
Omni Royal Orleans Hotel
New Orleans, Louisiana

Hurricane Katrina...
What Happened?

By
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The SIPES Foundation gratefully accepts all donations and acknowledges these contributions with a letter. Due to limited space in the newsletter, we are unable to list gifts under $26.
FOR IMMEDIATE RELEASE  

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Dallas, Texas – The SIPES Foundation, administering the scientific, educational and charitable programs of the Society of Independent Professional Earth Scientists, is very pleased to announce that four outstanding earth science students have been selected to receive scholarship awards this year. Applications were accepted from upper-division or graduate students in any field of earth science who had a cumulative grade point average of 3.5 or higher.

Receiving $2,500 awards from the Marvolene Speed Bennett and Carleton D. Speed, Jr. Endowed Fund and the Edward A. McCullough Endowed Fund are Jacob McKinney, a doctoral candidate in geology at Southern Methodist University, and Billy U. Hales, an undergraduate geosciences student at Texas A&M University – Kingsville.

$1250 scholarship awards were presented to John Allen Robbins, a Ph.D. candidate in geology at Southern Methodist University, and Jaron Andrews, an undergraduate student in geochemistry at New Mexico Institute of Mining and Technology.

Since its establishment in 1981, the SIPES Foundation has awarded scholarships to more than 155 promising earth science students. Funding for the 2007 awards was made available through donations from SIPES members; a bequest from the estate of Marvolene Speed Bennett, widow of the society’s founding member, Carleton D. Speed, Jr.; and the Edward A. McCullough Endowed Fund. The SIPES Foundation also conducts and films educational seminars, contributes funding to earth science publications and continuing education programs, and also maintains an extensive library of earth science films.

The Society of Independent Professional Earth Scientists is a national organization of more than 1250 self-employed geologists, geophysicists and engineers engaged primarily in domestic energy exploration and development. SIPES has eleven chapters located in oil and gas centers of the United States.

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SIPES Vision Statement

To be the pre-eminent organization for furthering the professional and business interests of independent practitioners of the earth sciences. In achieving this vision, emphasis will be placed on (1) professional competence, (2) professional business ethics, and (3) presenting a favorable, credible and effective image of the Society.

Adopted by the SIPES Board of Directors
September 21, 1990

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