President’s Column

Douglas H. McGinness II, #1964
Wichita, Kansas

Tolstoy wrote, “Spring is the time of plans and projects.” Now that the doldrums of winter are behind us we now can look forward to warmer weather and perhaps, sunnier prospects.

With Nymex Crude Oil trading above $50 per barrel, drilling activity is picking up and even though the price of oil is still depressed, there does seem to be some hint of stability in the market. The U.S. Energy Information Association predicts that volatility will not be as bad in 2017 as it was in the last two years, with long-term price predictions in the $50 to $55 per barrel range for the next two years. A recent poll of 31 energy analysts conducted by Reuters, supports an average of $56.08 for 2017, as compared to $43.47 for 2016. However, the same analysts warn that lifting costs are on the increase, up approximately $1.60 per barrel over 2016. Rising lifting costs remain a key component of the profitability of any play.

In Kansas, where my company primarily prospects and operates, most projects are profitable in the $50 to $55 per barrel range, depending on lifting costs. Drilling activity has increased slightly, but most drilling contractors have rigs stacked, or idle. Like many oil producing areas, Kansas’s margins are slim, and operators are forced to economize and trim back wherever possible.

(Continued on Page 8)

Cross-Discipline Communication: An Issue for Geoscientists

by Tom Klekamp, #2823
and Art Johnson, #3153
SIPES New Orleans Chapter

This article is the eighth in a new series submitted by SIPES Members and Chapters.

Geoscientists do pretty well at communicating technical information to others in our profession, but how well do we communicate geoscience information to engineers, planners and policy-makers? The authors, with backgrounds in oil and gas exploration, including major, independent and consultant levels, note there exists a close communication among geoscientists and engineers in the petroleum industry. The exploration process begins with geology and geophysics; engineers are involved with the decision making process at the earliest stages. What are the economics of a completion? Can we construct a platform in an upper slope/shelf edge environment with soft-sediment flows and mass movement? What size caisson can withstand the shear stresses associated with mass flows? The language among geoscientists and engineers in the oil and gas business is consistent. Most petroleum engineers are conversant with and use geophysical tools and techniques.

However, in the well, does the design of a civil works project consider the geology underlying and surrounding the project?

(Continued on Page 24)
The following reports on legislative and environmental information were prepared by SIPES State Legislative Affairs Chair Kirk Kolar and Environmental Committee Chair John Kimberly. 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 in their reports.

**NATIONAL & STATE LEGISLATIVE NEWS**

**Recent Activity**

- **May 2017** — Statement on Senate Vote Seeking to Roll Back Obama-era BLM Methane Rule
- **May 2017** — Comments to the Office of Natural Resources Revenue on its Advance Notice of Proposed Rulemaking for Federal Oil & Gas and Federal & Indian Coal Valuation
- **May 2017** — Comments to the Office of Natural Resources Revenue on its Proposed Rule to Repeal the Consolidated Federal Oil & Gas and Federal & Indian Coal Valuation Reform Rule
- **May 2017** — Divestment’s Price Tag: Higher Tuition, Fewer Services at Universities, Lower Payments for Pensioners
- **April 2017** — IPAA Applauds President Trump’s America First Energy Executive Order Regulations

**America’s Independent Producers Are Threatened by the Federal Regulatory Process**

During one of the worst national economic downturns, the American oil and natural gas industry remained a significant bright spot. Now, independent producers across the country are confronted with significant challenges because of low oil and natural gas prices — largely driven by the world marketplace.

Despite increasing American energy supply, reducing foreign oil imports for the first time in decades and strengthening national security, the oil and natural gas industry still must confront a federal regulatory framework that is complex, extensive and growing.

For the past century, the states have been the principal regulator of oil and natural gas production and have effectively managed its environmental risks. Moreover, most key federal environmental laws — the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, the Resource Conservation and Recovery Act — are written with the full recognition that states will be the primary regulators. The federal role is primarily creating broad national standards, dealing with interstate and international issues and providing the resources needed for states to effectively regulate.

**Reviving and Improving the State-Federal Partnership**

This year offers an opportunity to significantly change the nation’s regulatory framework by empowering states to fulfill their roles under federal laws. But, key and rapid actions must be taken.

First, the scope of state delegation must be fully defined. While federal laws create delegation processes, most are decades old and need to be reviewed to identify limitations and failures of the current procedures.

Second, barriers to delegation need to be eliminated. Some barriers may be created by the agency; others may be from limitations in the underlying statutes. States need to identify whether the delegation processes need to be modernized to fit within current state regulatory structures and challenges.

Third, with delegation comes a financial burden on states. Federal laws authorize funding to states to diminish these financial burdens. However, they must be reviewed for consistency with current demands. And, more critically, funds must be appropriated and apportioned to the states.

(Continued)
A Sound Partnership Produces Better Regulations

In writing federal laws, Congress recognized both the impossibility of creating massive federal agencies that would be capable of regulating every emission in the country, and the impropriety of state and federal agencies simultaneously regulating each source. State delegation resolved both issues. States have the technical expertise to properly regulate. State regulators live in the communities they regulate. They understand the unique aspects of local regulatory challenges.

At the same time, state delegation prevents the temptation of aggressive federal agencies to step into states to try to federalize issues already being managed by states. There is no evidence of systemic state regulatory failures justifying additional federal regulations. Instead, efforts to federalize the regulation of oil and natural gas production create duplicative, costly burdens that provide no additional environmental benefits.

BLM Hydraulic Fracturing Rule

On March 20, 2015, the Bureau of Land Management (BLM) released its final rule regulating hydraulic fracturing activities on federal lands. As written, this precedent-setting rule will be difficult and costly to comply with for industry, and will likely discourage investment and job creation in the West. BLM has never made a compelling case that this rule is necessary, or identified a state that has insufficient regulations in place to properly regulate hydraulic fracturing activities on federal lands in their states. In fact, states have successfully regulated more than 1.2 million hydraulic fracturing operations spanning nearly 70 years, and many have recently strengthened their regulations as production has increased and technology has improved.

IPAA, along with Western Energy Alliance and the states of Colorado, Wyoming, North Dakota, and Utah, and the Ute Indian Tribe challenged the rule in the federal district court of Wyoming, characterizing the federal government’s rulemaking as duplicative of states’ efforts and unsubstantiated. The rule is unnecessary and would add another layer of burden to independent producers already struggling to navigate the complex and confusing regulatory program governing federal lands. At a time when the U.S. oil and natural gas industry is facing incredible cost uncertainties, these new federal mandates make it more difficult for independent producers to invest, to produce, and to help keep this American energy renaissance moving forward.

(Continued)

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U.S. District Court Judge Skavdahl heard IPAA’s motion for a Preliminary Injunction and, on June 23, 2015, agreed that a temporary stay would be put in place until the Administrative Record was closed and all documents could be reviewed. On September 30, 2015, Judge Skavdahl granted IPAA’s motion for the preliminary injunction, stating, “Congress has not authorized or delegated to the BLM authority to regulate hydraulic fracturing and, under our constitutional structure, it is only through Congressional action that the BLM can acquire this authority.”

On June 21, 2016, shortly after the Preliminary Injunction appeal case was fully briefed, Judge Skavdahl struck down the BLM’s final rule. The Judge agreed with IPAA that BLM does not have the congressional authority to regulate hydraulic fracturing on federal lands. This decision makes the appeal for Preliminary Injunction as null since the case on merits is decided. This is a big and hard-fought win for independent producers.

As expected, the federal government and environmental parties involved in the lawsuit filed an appeal with the Tenth U.S. Court of Appeals. All parties submitted opening briefs and the appellate case was scheduled to be heard March 2017. Shortly before the hearing, the Tenth Circuit Court issued an order requesting confirmation from the Department of Justice on whether the arguments presented in the appeal of the case remain consistent with the new administration’s current position. The federal government responded that the administration’s priorities had shifted and it released an Executive Order instructing the Department of the Interior to suspend, revise, or rescind a number of energy regulations that became final in the previous administration, including the finalized rule governing hydraulic fracturing on federal lands. This decision makes the appeal for Preliminary Injunction as null since the case on merits is decided. This is a big and hard-fought win for independent producers.

Methane

In March 2014, President Obama issued the Climate Action Plan Strategy to Reduce Methane Emissions (CAP). President Obama had been under pressure from environmental groups to address global climate issues and target emissions from the American oil and natural gas production sector. Reducing methane emissions were a key component of the President’s climate change agenda. Environmental groups, for example, have petitioned the U.S. Environmental Protection Agency to promulgate regulations to reduce methane emissions from oil and natural gas production, which would potentially impose duplicative and burdensome regulations on America’s independent producers and job creators. What the Obama Administration failed to remember, as American natural gas production soared, methane emissions plummeted. Independent producers play a key role in reducing methane emissions.

The Oklahoma legislative session has ended. The following bills were passed and signed by the Governor:

**HB 3158** confirms that the OCC has the complete authority to regulate saltwater disposal wells and to immediately respond to “emergency situations having potentially critical environmental or public safety impact” (e.g., earthquakes) without notice or hearing.

**SB 1122** directs the OCC to work with the Secretary of Energy and Environment, the OWRB, and the DEQ to encourage industrial use of water produced in oil and gas operation. It has been suggested that increased industrial use of wastewater could reduce the use of injection wells.

**HB 2303** extends the termination date for the OCC plugging fund from 2016 to 2021, and requires the balance to be maintained at $5 million.

**HB 2599** prohibits flying a drone below 400 feet above “critical infrastructure” and it would prohibit flying a drone so close to “critical infrastructure” as “to interfere with the operations of or cause a disturbance to the facility.” The bill defines “critical infrastructure” to include several types of facilities, including refineries, natural gas compressor stations, LNG terminals or storage facilities, gas processing plants, natural gas distribution facilities, pipeline interconnections, and aboveground pipelines.

**HB 2763** creates the Revenue Stabilization Fund. This bill attempts to stabilize state revenue derived from gross production taxes so that in the future, state revenues will not be so heavily impacted by movements in oil and gas prices. The bill is complex, but in general, it creates a moving five-year average of gross production tax collections, and when gross production tax collections exceed the moving five-year average, some gross production tax revenue is deposited in the Revenue Stabilization Fund. The state can tap a portion of the funds in the Revenue Stabilization Fund during years when collections to the General Revenue Fund decline from the previous year.

**SB 1577** imposes a cap of $12.5 million per year for the economically at-risk tax rebate. The bill also redefines an “economically at-risk oil or gas lease” so that after January 1, 2015, it means any oil or gas lease with production per well of 10 barrels of oil or 60 MCF of gas per day or less operated at a net loss or net profit which is less than the total gross production tax remitted for such lease during the previous calendar year. Prior to January 1, 2015, “economically at-risk oil or gas lease” was defined as any oil or gas lease operated at a net loss or net profit which is less than the total gross production tax remitted for such lease during the previous calendar year. So, the bill essentially adds a new production cap to the definition.

(Continued)
Milankovitch Cycles and Glaciation

The episodic nature of the Earth's glacial and interglacial periods within the present Ice Age (the last couple of million years) have been caused primarily by cyclical changes in the Earth's circumnavigation of the Sun. Variations in the Earth's eccentricity, axial tilt, and precession comprise the three dominant cycles, collectively known as the Milankovitch Cycles for Milutin Milankovitch, the Serbian astronomer and mathematician who is generally credited with calculating their magnitude. Taken in unison, variations in these three cycles creates alterations in the seasonality of solar radiation reaching the Earth's surface. These times of increased or decreased solar radiation directly influence the Earth's climate system, thus impacting the advance and retreat of Earth's glaciers.

It is of primary importance to explain that climate change, and subsequent periods of glaciation, resulting from the following three variables is not due to the total amount of solar energy reaching Earth. The three Milankovitch Cycles impact the seasonality and location of solar energy around the Earth, thus impacting contrasts between the seasons.

Eccentricity

The first of the three Milankovitch Cycles is the Earth's eccentricity. Eccentricity is, simply, the shape of the Earth's orbit around the Sun. This constantly fluctuating, orbital shape ranges between more and less elliptical (0 to 5% ellipticity) on a cycle of about 100,000 years. These oscillations, from more elliptic to less elliptic, are of prime importance to glacia tion in that it alters the distance from the Earth to the Sun, thus changing the distance the Sun's short wave radiation must travel to reach Earth, subsequently reducing or increasing the amount of radiation received at the Earth's surface in different seasons.

Today a difference of only about 3 percent occurs between aphelion (farthest point) and perihelion (closest point). This 3 percent difference in distance means that Earth experiences a 6 percent increase in received solar energy in January than in July. This 6 percent range of variability is not always the case, however. When the Earth's orbit is most elliptical the amount of solar energy received at the perihelion would be in the range of 20 to 30 percent more than at aphelion. Most certainly these continually altering amounts of received solar energy around the globe result in prominent changes in the Earth's climate and glacial regimes. At present the orbital eccentricity is nearly at the minimum of its cycle.

Axial Tilt

Axial tilt, the second of the three Milankovitch Cycles, is the inclination of the Earth's axis in relation to its plane of orbit around the Sun. Oscillations in the degree of Earth's axial tilt occur on a periodicity of 41,000 years from 21.5 to 24.5 degrees.

Today the Earth's axial tilt is about 23.5 degrees, which largely accounts for our seasons. Because of the periodic variations of this angle the severity of the Earth's seasons changes. With less axial tilt the Sun's solar radiation is more evenly distributed between winter and summer. However, less tilt also increases the difference in radiation receipts between the equatorial and polar regions.

One hypothesis for Earth's reaction to a smaller degree of axial tilt is that it would promote the growth of ice sheets. This response would be due to a warmer winter, in which warmer air would be able to hold more moisture, and subsequently produce a greater amount of snowfall. In addition, summer temperatures would be cooler, resulting in less melting of the winter's accumulation. At present, axial tilt is in the middle of its range.

Precession

The third and final of the Milankovitch Cycles is Earth's precession. Precession is the Earth's slow wobble as it spins on its axis. This wobbling of the Earth on its axis can be likened to a top running down, and beginning to wobble back and forth on its axis. The precession of Earth wobbles from pointing at Polaris (North Star) to pointing at the star Vega. When this shift to the axis pointing at Vega occurs, Vega would then be considered the North Star. This top-like wobble, or precession, has a periodicity of 23,000 years.

Due to this wobble, a climatically significant alteration must take place. When the axis is tilted toward Vega, the positions of the Northern Hemisphere winter and summer solstices will coincide with the aphelion and perihelion, respectively. This means that the Northern Hemisphere will experience winter when the Earth is furthest from the Sun, and summer when the Earth is closest to the Sun. This coincidence will result in greater seasonal contrasts. At present, the Earth is at perihelion, very close to the winter solstice.
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* Deceased
SIPES finds itself in a similar environment. The energy market downturn has affected our membership rolls, and the board has had to greatly reduce its operating budget in order for our organization to remain solvent. In December last year, the executive committee of the board of directors approved switching the SIPES Quarterly from a printed format to digital PDF format, subject to board approval. At the March 2017 BOD meeting, held in Corpus Christi, the board approved the switch from a printed Quarterly to digital PDF format. The May Quarterly will be the first, totally digital publication.

The board realizes that for many members, having a printed Quarterly is a huge bonus. Nonetheless, some of our members are not highly computer oriented, and this change could add a level of inconvenience for them. The board carefully considered all of these issues prior to making this difficult, but necessary decision. We acknowledge the conflict in this decision.

This move will save SIPES upwards of $15,000 per year in printing, handling and distribution costs. Once each Quarterly is ready for publication, members will now receive an email containing a hyperlink where they can download the Quarterly PDF file. One positive result is that this change will now allow SIPES to publish all pages in color and it removes the page number restriction limitation.

The board also trimmed additional line items from the budget, and depending on several factors, including the financial outcome of our 2017 Annual Meeting, additional cuts may be necessary in the coming months.

Looking forward to our Annual Meeting, I am excited about the convention, which for those who don’t know, will be held June 26th through the 29th, at the Four Seasons Resort & Spa in Vail, Colorado. This beautiful, 5-star hotel, located at the base of Vail mountain, offers numerous amenities and luxuries. Kudos to our Executive Director, Diane Finstrom, for securing rates at this amazing setting for only $235/night (plus taxes), a price almost $600 less than the normal per night rate.

The Corpus Christi Chapter is co-hosting the convention, and national Vice President, Patrick Nye and his team have put together an outstanding technical program and field trip. The field trip through the famous Glenwood Canyon area promises to be both scenic and informational. Our SIPES Foundation Seminar is sure to be entertaining and educational. And, as always, Diane and her staff have arranged for fun and diverse tours that are sure to pique the interests of everyone.

I am excited about the inclusion of the SIPES first ever ‘Discovery Room.’ The Discovery Room is a new forum where convention registered SIPES Members can showcase and discuss their active projects and prospects. The Discovery Room will be the ‘place to be,’ connecting prospect sellers with potential buyers. Whether you are trying to sell an idea(s) or looking for a potential deal, this room will be where great networking can take place, opening doors and quite possibly, allowing for the discovery of oil and natural gas reserves.

All members should now be in possession of the convention book and I encourage all of our members to register for this exciting convention. I look forward to seeing everyone in Vail.

Douglas H. McGinness II, #1964
Tuesday, June 27
Geology & Geophysics

8:30-9:00 a.m. — Bob Hardage — Bureau of Economic Geology
‘Double the Value of Your P-Source Seismic Data’

9:00-9:30 a.m. — Tim Rynott — Ridge Resources, LLC
‘Evolution and Economic Implications for Upper Cretaceous Sandstones: A New Example from the Inboard Gulf of Mexico’

9:30-10:00 a.m. — Brad Bacon — PDC Energy, Inc.
‘Employing Multiple Sources of Data to Optimize Field Development’ (co-author Mark Graeve)

10:15-10:45 a.m. — Randy Bissell — Headington Energy Partners, LLC
‘Evolving Models for Eocene Deepwater Channel Complexes and Fan Systems, Scotland District, Barbados’

10:45-11:15 a.m. — Scott Taylor — Branscomb PC — Shareholder
‘Leases, Operating Agreements and Letters of Intent’

1:30-2:00 p.m. — Bill Fairhurst — Riverford Exploration, LLC
‘Developing Creative, Critical & Strategic Thinking for Natural & Social Sciences’

2:30-3:00 p.m. — Jory Pacht, #3054 — Altair Resources
‘Zero to $50 Million in One Year: How to Start Up a Private Equity Energy Company’

3:15-4:15 p.m. — Bill Finley, #2167 — Aquila, LLC
Ethics Course — ‘Louisiana Board of Professional Geoscientists and Ethical Behavior’

4:15-5:15 p.m. — SIPES Discovery Room Open

Wednesday, June 28
Field Discovery

8:30-9:00 a.m. — Tony Hauglum, #2807 — Riviera Exploration, LLC/Riviera Production Company, Ltd.
‘Whitsett South Eagle Ford Project’

9:00-9:30 a.m. — Bill Fairhurst — Riverford Exploration, LLC
‘Stealth’ Exploration and Serendipitous Exploration for the Texas Woodford (Barnett), Permian Basin

9:30-10:00 a.m. — Frank Cornish, #3128 — Imagine Resources, LLC
‘Hydrocarbon Traps Associated with Upper Wilcox Canyons and Seismic Response, Mid-Gulf Coast, Texas’ (co-author Louis Lambiotte)

10:15-11:45 a.m. — Steve Sonnenberg, #2158 — Colorado School of Mines
• ‘The Niobrara Petroleum System, a Major Tight Resource Play in the Rocky Mountain Region’
• ‘Insights into Niobrara Stratigraphic Architecture and Diagenesis, Wattenberg Field, Denver Basin, Colorado’
• ‘Glenwood Canyon - Field Trip Overview’

1:30-5:00 p.m. — SIPES Discovery Room Open
CORPUS CHRISTI

ExxonMobil and SABIC are evaluating a joint project, Gulf Coast Growth Ventures, to build an $8-10 billion plastics manufacturing facility along the U.S. Gulf Coast. San Patricio County in South Texas is the top choice of four possible sites. John Mabry with ExxonMobil spoke with us about this project at the January meeting.

The facility will include an ethane steam cracker capable of producing 1.8 million tons per year of ethylene - the largest capacity of any steam cracker built to date, and three derivative units. One unit will produce monoethylene glycol, which is used in latex paints, automotive coolants and anti-freeze. It is also a building block to create polyester for the manufacture of clothing and polyethylene terephthalate (PET) for beverage bottles and containers; and polyethylene for use in film, packaging, bottles and containers, and various sized pipes.

Ethane, a product of oil and gas production will be acquired primarily from Texas-produced natural gas. This project is a unique opportunity created by the abundance of low cost U.S. natural gas.

The actual operating facilities would be located on about 200 acres in the center of a 1,300-acre site, which will allow for a buffer zone between the operating facilities and the surrounding community. The San Patricio site also has the other factors critical to this project: access to a deep water port, existing infrastructure, and community support.

The project will create 11,000 construction jobs, over 600 permanent full-time jobs, and 3,500 indirect jobs. It will also bring over $250 MM in taxes in the first five years.

In February, Rick Paige, chief project geologist at Suemaur Exploration and Production, LLC, was our speaker. Rick’s topic was the Chile Vieja Field in Willacy County.

It is a combination structural/stratigraphic trap that produces from upper-middle Frio age sands. The primary trapping element is a shale-filled erosional channel (the Raymondville Canyon) that cut and removed up to 400 feet of in situ marine deltaic sands. The canyon runs across the apex of a four-way anticlinal structural high, which formed as a downthrown rollover to a regional growth fault. The field produces from four geopressed sandstone reservoirs truncated against the perimeter of the shale-filled canyon.

Detailed log and core characterization of the dominantly upward-coarsening, productive sands place the environment of deposition in a nearshore, lower to middle shoreface environment, which was deposited near wave base. The interpreted depositional environment is a prograding to aggrading shelf-margin deltaic complex, formed within a highstand prograding wedge, punctuated by short-lived transgressive episodes. The last transgressive event in the Chile Vieja parasequence set resulted in the formation of the Raymondville Canyon, interpreted to have developed due to mass wasting of a sediment-starved, unstable delta margin.

A detailed review of the discovery and development history of this field strongly suggests that early, pre-3D seismic interpretations mischaracterized the productive structure as a ‘bald’ structural high. Following the early drilling of numerous updip, shaled-out wells, this interpretation probably led to the conclusion that productive reservoir sands ‘pinched-out’ over a pre-existing bathymetric high. Twenty-one years after initial field development ceased, Suemaur E&P’s acquisition of a large 3D seismic volume revealed the existence of the canyon. Recognition of the canyon’s presence led to the realization of likely additional reserves downdip to the original discovery well.

Prior to Suemaur’s involvement in the field, cumulative totals for this package of reservoirs was 27 billion cubic feet of gas (BCFG), and 1.02 million barrels of condensate (MMBC) from 4 wells spanning 41 years. Since Suemaur’s ‘rediscovery’ in 2006, 71 BCFG and 1.28 MMBC of additional reserves have been produced from 26 new well completions. This represents reserve increases of over 240% for gas and 100% for condensate.

In March, the Corpus Christi Chapter hosted the National Board for its quarterly meeting. We were happy to welcome the National Board of Directors to our beautiful City by the Sparkling Sea. (Continued)
Jeff Spencer was our March speaker. Jeff is a geologist with Amromco Energy in Houston, Texas, working Romania, and is the historian for the Gulf Coast Association of Geological Societies. His topic was “The White Point Gassers, San Patricio County, Texas.”

White Point Peninsula is in San Patricio County, approximately seven miles northwest of Corpus Christi, Texas. Gas seeps on the west side of the peninsula and grains of sulphur within the sediments of some local outcrops, suggested the presence of an underlying salt dome. After the discovery of Spindletop in 1901, many explorers searched the Gulf Coast for similar surface indications of oil and gas. There are conflicting sources for when the first well was drilled at White Point, but 1905 appears to be most likely.

In 1914, the first of several high rate “gassers” at White Point blew in. On November 12, 1914, the White Point Oil and Gas No. 2 well encountered a gas sand at a depth of 2,255 feet. The casing was blown from the hole and the drilling rig disappeared into a large crater. The well ran wild for several weeks at an estimated rate of 30-70 million cubic feet of gas per day (MMCFGD), eventually choking itself off.

In late 1915, the Guffey No. 2 was drilled 800 feet north of the White Point Oil and Gas No. 2 gasser. The Guffey well’s estimated open flow rates were 50-120 MMCFGD. Produced sand fell in the streets of Corpus Christi, seven miles away, and when the gas was ignited, the flames reached hundreds of feet into the sky and were visible for over sixty miles. At the time, the well was proclaimed the “largest gas well ever developed in Texas,” “one of the greatest gas wells in the world,” and the “natural gas volcano.” Visitors flocked to the site from all over Texas. Local photographer, Karl Swafford (1887-1952), photographed and produced real photo postcards (RPPCs) of the Guffey gassers and craters.

Many additional wells were drilled at White Point as operators continued to search for oil, which they assumed would be found downdip of the gas or in deeper sands. Many of these wells also experienced severe drilling and completion issues. In 1928, well-known oilfield firefighter Ward A. “Tex” Thornton (1891-1949), battled a fire at White Point’s Rachal No. 7 well. Thornton’s efforts at White Point were covered by many newspapers around the country. By the late 1920s, successful drilling and completion of White Point wells led to commercial gas production, and in 1930 oil was finally discovered in the field.

Dawn Bissell
Secretary

AUSTIN

The Austin Chapter’s regular lunch meeting is held the first Thursday of the month at the County Line on the Hill from October through May.

At our December meeting Michael Marziani, CFO of Tall City Exploration, was our speaker. He provided an overview of Tall City Exploration, a Permian-focused private E&P company based in Midland, Texas. He outlined the inception, strategy, growth, and ultimate monetization of Tall City Exploration through two sizeable asset sales in 2014/2015. Essentially, Tall City locates likely acreage blocks, proves the exploration with four or five wells, and then sells the blocks to larger companies. In May 2016, Tall City Exploration II was re-capitalized with $300mm of equity from Denham Capital, and is seeking assets in the Permian Basin.

In January, our speaker was Charles Goebel, #3031, chief geologist with Banner Resources, LLC. The talk was well received and well attended. The title of his talk was “Margham Field – Dubai, United Arab Emirates An Exploration Success Story.” The field lies within the Oman Mountain fold and thrust belt of the Northeastern Arabian Plate. The field was discovered in 1982 by ARCO using 2-D seismic. The discovery well produced 50 MMCFGD and 2500 BPD of condensate from Early Cretaceous Thamama Group shelf carbonates. Produced gas was re-injected into the reservoir after liquids were extracted maximizing liquid recovery. Over 100 MMBbls of condensate were produced from the field.

Jeff Spencer, a geologist with Amromco Energy in Houston, Texas, was the speaker at our February meeting. He spoke about the early drilling history of a field in the Corpus Christi area. The title of his talk was “The White Point Gassers, San Patricio County, Texas.”

February guest speaker Jeff Spencer of Amromco Energy.

At our March meeting, David Kessler, #3158, president of SeismicCity, Inc., gave a talk entitled “New life to an old field – Main Pass 73 Gulf of Mexico Shelf.” He discussed how reprocessing existing seismic data can lead to significant new discoveries near both onshore and offshore fields.

Ward Davenport
Chairman

MAY 2017
DENVER

The Denver Chapter opened the New Year with a great start with board members Connie Knight serving as chairman, Neil Sharp as vice chairman and program chairman, Jerry Cuzella as secretary, Gary Thompson as treasurer, and Jim Applegate as membership chair.

Program Chair Neil Sharp lined up three excellent presentations this quarter beginning in January with Paul Crevelo. Paul is currently president and CEO of Discovery Petroleum Ltd. (DP) and Societa’ Petrolifera Mediterranea slr. (SPM). Both companies are pursuing onshore and offshore exploration and exploitation opportunities in the USA, the Mediterranean, and Caribbean. Paul’s experience is in diverse exploration and exploitation projects throughout the world with primary focus on conventional carbonate and clastic reservoir systems in North and Central America petroleum basins, Asia, Africa, the Middle East, and Europe.

The title of Paul’s presentation was “Tectonics and Stratigraphy of the Jurassic-Cretaceous Cuba-Bahamas Sedimentary Province: The Making of a ‘Potential’ Supergiant Petroleum System,” focused on the Jurassic-Cretaceous stratigraphy of the northern margin of Cuba and the southern Bahamas. The stratigraphy records the late-stage breakup of Pangea during the early Jurassic, the opening of the North Atlantic and later inversion during the collision of the Caribbean tectonic plate. Rifting and opening of the Atlantic (offshore East Coast) extended through the Bahamas, Cuba, and into the Takatu Rift of Guyana and Brazil prior to the separation of North and South America. A complex structural evolution resulted in major structural traps up to 70 km. in length and closure over 1 km. Resulting Nappe emplacement onshore Cuba gave way to foreland thrust and folds in the Old Bahamas Channel. The long-lived basin evolution starting from a rift and eventually developing into a foreland basin provides the perfect ingredients for making a prolific petroleum system.

The February meeting featured SIPES Member Ron Pritchett, #1740, and Logan MacMillan. Ron is a longtime contributing member of RMAG and Denver AIPG, having worked for both small and large independent oil companies in Denver, and as a consulting petroleum geologist. Logan MacMillan started his career in the Denver petroleum industry with Amoco Production Company and worked for small and large independent companies, as well as a consulting petroleum geologist. Logan has been active in the Denver geological societies (RMAG, SEPM, AIPG, DPA) and served on the Colorado Oil & Gas Conservation Commission.

The title of Ron’s and Logan’s talk “Advocacy for Geosciences and Resource Development” presented examples of potential oil and gas development near the Colorado Front Range urban areas of Broomfield, Boulder, and Longmont, and unincorporated Jefferson County. With the combination of safe, highly-evolved techniques in seismic acquisition and processing, drilling of extended lateral wells, and hydraulic fracturing methodology, the question arises: What is the potential for oil and gas production within city boundaries and why are cities not moving to exploit their oil and gas resources? Geoscientists are encouraged to advocate for the public to make well-informed choices for energy development and wealth creation.

Wrapping up the quarter, William DeMis was the speaker for the March luncheon. Bill is the senior vice-president-chief geologist for Goldman Sachs, and serves as the AAPG books editor and is associate editor of the AAPG Bulletin. In addition, he has worked on domestic and international projects for Marathon Oil Company and Southwestern Energy. He is the author of numerous technical papers, in 1996 and in 2000 he received national awards for his analysis of exchange rates and the “Real Global Price of Oil.” Bill received the Dedicated Service Award from the West Texas Geological Society in 2000 and best paper awards from the GCAGS and the PTTC, and RMAG.

The title of Bill’s talk is “Real Price of Oil in the Unconventional Era,” in which he presented a historical analysis of the real global price of oil with implications on the future price. The “Real Global Price” of oil is the price corrected for inflation and for exchange rate

(Continued)
March lunch speaker William DeMis, senior vice president-chief geologist for Goldman Sachs, accompanied by his wife Mary Nelis, also a geologist.

OKLAHOMA CITY

The Oklahoma City Chapter met on January 4 for lunch at the Petroleum Club. Our speaker was Kim Hatfield, president of Crawley Petroleum. His presentation was entitled “The Oklahoma Induced Seismicity Working Group or One Day I Was Minding My Own Business and the Next Thing I Knew I Was on 60 Minutes.” Mr. Hatfield is a degreed petroleum engineer with forty-two years of experience in all facets of the oil and gas business. He has served as vice-chair/West and chair for the OIPA, and currently heads the Oklahoma Induced Seismicity Working Group for the Governor’s Council on Seismic Activity. He was also called in as a consultant on the BP Macondo blowout in the Gulf of Mexico in 2010. Mr. Hatfield told us of the cooperation taking place between government, professional organizations, and industry that has developed a game plan for reducing induced seismicity by controlling the amount of fluids disposed in the Arbuckle Formation. The seismicity appears to have abated significantly with this approach, but the situation is being monitored. The people on 60 Minutes appeared to be bothered by the cooperation among parties here. Apparently, we are all supposed to be at each other’s throats all the time. This was a timely talk for our group and updated us to the current status of the Working Group.

Our February meeting on February 1 was held at the Petroleum Club. Our speaker for the event was Woodruff G. Leel, Jr., #2980, of Dallas. Mr. Leel worked for Getty Oil Company and several small independent oil companies exploring and developing oil and gas prospects in the domestic onshore USA. He joined Triton Energy in 1988 as exploration manager for all international exploration, which included South America, Southeast Asia, and New Zealand. Since 2003, Mr. Leel has been a consulting geologist, and is certified with both AAPG and SIPES. His description of producing fields with oil and gas associated with fresh water in Australia found an interested audience in the Oklahoma City Chapter geologists.

Our March Chapter meeting was held on the 8th at the Petroleum Club. Our speaker was Tim Wigley, the new head of the OIPA. For the previous five years, he was president of the Denver-based Western Energy Alliance, an oil and natural gas trade association focused on federal legislative, regulatory, environmental, public lands, and other policy issues. His topic was “The State of the Oklahoma Petroleum Industry.” The OIPA has been a leader in helping the industry keep track of the many issues and bills that come before our state legislature that affect our industry. They will continue to have input at the state capitol, and to keep us advised of developments that might impact us as an industry.

James Franks
Chairman
LAFLAYETTE

The Lafayette Chapter started the year with a great presentation by Ted Griffin titled “Digital Rock Characterization by CT Imaging: A Powerful Tool for Rapid Quantification of Rock Properties.” Mr. Griffin is a 42-year veteran of the industry, and is currently vice president of the Petroleum Services Division of Core Laboratories. Mr. Griffin updated the membership on the latest advances of non-destructive testing of cores using high-frequency imaging techniques and how it provides a viable solution for not only superior visualization, but also detailed quantitative core assessment. The latest Micro CT (computed tomography) imaging methods are now also being used in the sample selection process for sophisticated, reservoir-condition flow studies. The high-resolution, three-dimensional imaging of core plug samples helps clients better understand how variations in the pore-system properties will impact both laboratory test results and reservoir performance.

In February, local geologist Michael Quinn presented “A Few Things I Learned about the Wilcox during a 3 Year Study.” Mr. Quinn is a 37-year veteran of the industry, and is recently retired from Freeport Oil & Gas. He informed the membership that the Paleocene/Eocene age Wilcox of the Gulf Coast has been the focus of exploration and study for over 70 years. However, for the first 50 years, the majority of the study was based upon wells drilled on shore Texas and Louisiana. Over the past 15 years, the huge volumes of oil found in Wilcox reservoirs in the deep water GOM has fueled a rejuvenation in the amount of study and debate. The 2009 McMoRan Davy Jones Discovery has only added to the uncertainty surrounding this enigmatic depositional system. The discussion started with PXP’s (Plains Exploration & Production) initial focus area in south central Louisiana, and grew outward to include most of the Gulf of Mexico. Mr. Quinn touched on the age of the Carrizo/Wilcox, onshore Louisiana deposition and the St. Landry channel, the thickness of the Wilcox section, the morphology of the GOM during Wilcox time, Wilcox depositional models, and how the Davy Jones wells influenced those models.

The March meeting had another great presentation when Chris McLindon, a SIPES Limited Member from New Orleans, traveled up from the Big Easy to give us “An Overview of Coastal Litigation and its Impacts.” Mr. McLindon has been working as an exploration geologist in the New Orleans area since 1979, and is currently with Upstream Exploration LLC. He spoke about how on July 24, 2013, The Board of Commissioners of the Southeast Louisiana Flood Protection Authority-East filed suit in Civil District Court of the Parish of Orleans against approximately 100 oil and gas production and pipeline companies, alleging that those companies were responsible for the loss of hundreds of thousands of acres of coastal land in Louisiana. In the following three years, the parishes of Plaquemines, Jefferson, Cameron, St. Bernard and Vermilion filed similar suits against oil and gas companies. An examination of the science behind the lawsuits, as well as a review of the history and current status of each of the suits was discussed. The role of the State of Louisiana and the Department of Natural Resources changed over this time period, and in particular under the administration of Governor John Bel Edwards according to Mr. McLindon.

Mr. McLindon also spoke about economic impacts of the lawsuits on the oil and gas industry, the coastal parishes, and the state as a whole, as well as on the Coastal Protection and Restoration Authority. As far as membership goes, we gained one and lost one. We welcome our newest member, Gary Huffman to the Lafayette Chapter, and on a more somber note, the Lafayette Chapter lost long-time member William Hardy Bishop. Bill passed away on February 25 and is missed by all.

King Munson
Chairman
The San Antonio Chapter enjoyed talks on the history and events in oil exploration and development as well as a Valentine’s Day celebration in the first quarter of 2017. Jeff Spencer, a geologist with Amromco Energy in Houston, gave a talk in January titled “Early Texas Oilfield Photographers.” Jeff received a B.S. in geology from the University of Cincinnati, and an M.S. in earth sciences from the University of New Orleans. He is also the historian for the Gulf Coast Association of Geological Societies. He writes a petroleum history blog with emphasis on petroleum ephemera: https://petroleumhistoryblog.com/. Commercial photographers captured many views of early Texas oil booms. Common scenes included oil gushers, oilfield fires, fields of wooden derricks, and boom towns. These photographs were produced and sold, often as real photo postcards (RPPCs). Many of the early photographs and postcards have no identifying photographer name on the picture side or on the reverse, but a few photographers did include their names, and several of these men were active in specific geographic areas of Texas in the early 1900s. Port Arthur, Texas photographer Frank Trost (1868-1944) had the good fortune to photograph early scenes of the Spindletop oilfield, including perhaps the most famous photograph of the January 1901 Lucas Gusher. Trost sold over 45,000 prints of this photograph in just a few months. His other Spindletop views include dozens of derricks so close together they appear to be touching, the field’s first oilfield fire, and several views of early gushers. Benjamin Harrison Loden (1870-1926) was the founder and owner of Loden’s Studio in the North Texas town of Electra. His work appears to be limited to scenes from the town and the Electra oilfield, and a few scenes from the nearby Burkburnett oilfield. Ralph R. Doubleday (1881-1958) is known for his rodeo photography, earning him the title, Rodeo Postcard King. He produced over 30 million postcards, many sold at Woolworth Five and Dime stores. Though he is generally not known for his oilfield photography, he produced many excellent postcards of Texas, Oklahoma, and Wyoming oilfields. He also visited and photographed in and around the East Texas oilfield. Jack Nolan (1889-1972) was a pioneer Texas photographer and newspaperman who documented the East Texas oil boom of the early 1930s. Nolan’s real photo postcards are highly collectible and capture the hustle and bustle of the boom towns and oilfield camps, as well as spectacular images of oil gushers and oilfield fires. Nolan photographed some of the early gushers and boomtowns of West Texas before venturing east. Jack’s postcards are also known for their highly descriptive captions.

In February, the chapter enjoyed romance and camaraderie at a candlelit Valentine’s Day celebration at Little Italy restaurant. Flowers, chocolates, food, and wine provided a Valentine’s Day ambiance.

At our March meeting, Paul M. Bommer, a distinguished senior lecturer, and holder of the Chevron Lectureship in Petroleum Engineering at the University of Texas at Austin, gave a talk on “The Causes and Aftermath of the Macondo Disaster – A Cautionary Tale.” Dr. Bommer received his Bachelor’s (1976), Master’s (1977), and Doctoral (1979) degrees in petroleum engineering, all from the University of Texas at Austin. He served on a NOAA committee tasked with estimating the flow rate from the Macondo well, and on the NAE and NTSB committee that investigated the cause of the blowout...
NEW ORLEANS

The January luncheon was held at Andrea’s Restaurant in Metairie, and featured a presentation on “Unveiling the Prospectivity of Mexico Deepwater Basins: Opportunities and Risks” by John Dribus. Dribus is the global geosciences advisor for Schlumberger Oil Field Services. He is a reservoir geologist with over forty years’ experience, and has worked all aspects of petroleum exploration, exploitation, and production geology, including twenty years with Mobil Oil. For the past fifteen years, he has worked for Schlumberger as Gulf of Mexico data and consulting services manager, and as the global geologic advisor for exploration and deep water projects. His primary focus has been on understanding the petroleum system characteristics of fan and channelized turbidites, and pre-salt and sub-salt carbonate reservoirs. Among other activities, Dribus serves on the AAPG Imperial Barrel Award Committee, and in 2013, was recognized by the SPE with the Eastern North America Region Reservoir Description and Dynamics Award.

Dribus gave an overview of the emerging opportunities for Mexico’s deepwater basins, noting that while 3,400 wells have been drilled in the U.S. portion of the deepwater Gulf of Mexico, there have only been 60 deepwater wells drilled offshore Mexico. Those wells have resulted in 11 discoveries. The recent Round 1.4 lease offering for Mexican acreage drew operators from the U.S., Europe, and Asia – an indication of the resource potential that companies are considering. Dribus described the structural history, stratigraphy, and petroleum potential of the Perdido Fold Belt, adjacent Sub-Salt Fold Belt, and southern Campeche Province west of the Cantarell complex. Dribus also described the challenges that may be encountered on the deep-sea floor, and around the salt canopies present in the north and south.

For the February 21 luncheon, our speaker was local geologist Chris McLindon, SIPES Limited Member. McLindon has been a leading advocate for the integration of sound geology into government programs for hurricane protection and coastal restoration, and a leading voice in insisting that geological processes are included in legal issues involving the oil and gas industry. McLindon’s topic for our luncheon was “A Review of Coastal Litigation.” He noted that the current litigation began on July 24, 2013, as the Board of Commissioners of the Southeast Louisiana Flood Protection Authority-East filed suit in Civil District Court of the Parish of Orleans against approximately 100 oil and gas production and pipeline companies alleging that those companies were responsible for the loss of thousands of acres of coastal land in Louisiana. In the following three years, the parishes of Plaquemines, Jefferson, Cameron, St. Bernard and Vermillion filed similar suits against oil and gas companies.

McLindon examined the science (and ignorance of true science) behind the lawsuits. The economic impacts of the lawsuits were also examined. These include impacts on the oil and gas industry, the coastal parishes and the state as a whole, as well as posing threats to coastal sustainability. A significant concern is the continued false information in the print and broadcast media, with any anti-industry report seen as pro-environment and no critical review seen to be needed. The audience was challenged to help communicate valid science.

With new members and applicants for membership, the February meeting included 40 members and 14 guests – the largest luncheon attendance seen for many years.

In March, the speaker was Ben Broussard, director of marketing and membership for the Louisiana Oil and Gas Association (LOGA). Broussard spoke on “Both Sides of the Story: The Current State of the Louisiana Oil and Gas Industry.” As part of a high-level view on the industry and the need for oil and gas, he noted that at current prices,
the major global producers are producing at a loss. The oversupply of oil in the world shows that we are victims of our own success in finding and producing. Operators in the U.S. doubled production in just a few years—we got “too good, too quickly.”

For Louisiana, it is a mixed bag. We produce a lot of natural gas so the big winner is the LNG export business. There are currently 14 LNG export projects on the books for Louisiana with an announced investment of $89 billion. The downside is that the number of drilling rigging currently running is the lowest in the state’s history (although drilling in North Louisiana is picking up). The low numbers are in contrast to the 50% increase in drilling in the U.S. since the bottom of the cycle. The reason is the uncertainty caused by the legal environment. This includes legacy lawsuits (currently 400 cases) and lawsuits filed by the state and coastal parishes. The result has been the loss of 20,000 jobs in Louisiana. Additional pressure has come as the legislature has tried to address the state’s budget deficit through tax increases on the industry.

Broussard found reasons for hope with OPEC production cuts, growth in the petrochemical industry, the lifting of the federal export ban, the reduction in regulation due to the new administration in Washington, and the growing global demand for oil and gas.

An example of the LOGA online videos may be viewed at: http://videos.loga.la/drilling-report-for-louisiana-3-15-17.

During the business portion of the meeting, Cliff Williams was approved as vice chairman for the New Orleans Chapter.

Art Johnson
Secretary

MIDLAND

Our January speaker was the Midland Chapter Website Chairman, Randall L. Anderson, #3289, who runs his own company, Anderson Geoconsultants. His talk was entitled “An Overview of Remote Sensing Applications for the Exploration and Production Industry.” He compared traditional cost-effective geologic mapping, like satellite imagery, aerial photography, and digital elevation data, to new technique InSar.

In February, we held our annual Spouse’s Night Dinner. Our dinner speaker was Bill Bynum. His talk was entitled “‘Tails’ of the South Pacific.”

Sheri Bowman-Young, ESG Solutions, was our March guest speaker. She is shown here with Past Chairman Fred Behnken.

At the January meeting are (L to R) Chairman Roger Freidline, speaker Randall Anderson, and Past Chairman Fred Behnken.

Dove Entzminger (right) receiving his new member certificate at the March meeting.

Midland Chapter Member Clement E. (Clem) George III, #132, passed away on March 22. Our condolences go out to his family.

New officers for 2017-2018 are as follows: Roger Freidline, chairman; Bill Mueller, vice chairman; Jasha Cultreri, treasurer; Curtis Helms, Jr., secretary; and Fred Behnken, past chairman.

Curtis Helms
Secretary

MAY 2017
FORT WORTH

The Fort Worth Chapter began the first quarter of 2017 with several impressive speakers.

In January, 34 members and guests attended the Fort Worth Petroleum Club as Dwayne Purvis, #3470, of Fort Worth presented his insights regarding “Decline Curve Analysis, Year-end Reserves and Ethical Perils.”

Also in January, in conjunction with TCU’s Energy Institute, we held a one-day seminar at TCU’s Alumni Center to learn more about Drillinginfo.com and their product suite. The seminar drew sixty plus attendees and was well received by all.

Our second meeting of the year was on February 1. We had thirty members and guests in attendance to hear Christopher P. Ross with Cross Quantitative Interpretation of Santa Fe, New Mexico educate us with his presentation of “Improving tight reservoir definition using seismic object detection within the Woodford Formation.”

Closing out the first quarter, forty-five members and guests attended the Fort Worth Petroleum Club on March 1 as Susan Nash, AAPG’s Director of Innovation and Emerging Science/Technology, presented us with “Making Money with Mature Fields: Synopsis of an AAPG Workshop.”

The Fort Worth Chapter meets September through June on the first Wednesday of each month at the Fort Worth Petroleum Club.

Jay Moore
Secretary

DALLAS

The Dallas Chapter welcomes new 2017 members Jon Herber and Mark Bengtson. Jon and Mark are independent consulting geologists.

New 2017 Dallas SIPES Officers are: Donald P. Muth, Chairman and Continuing Education, Michael Adams, Vice Chairman, Neil Barman, Treasurer and Activities, Jon Herber, Membership, David Shiels, National Director and Chapter Field Trips, and Carol Shiels, Past Chairman and National Director.

The Dallas SIPES Chapter has meetings every third Tuesday of the month except for July and August. Contact Donald P. Muth: don@donaldmuth.com or 972-768-3112 to be a guest.

At the January luncheon, Robert Clarke, research director at Wood Mackenzie, presented the direction, profitability and breakeven point of shale plays in the United States as seen by Wood Mackenzie, a worldwide commercial intelligence firm. Oil exploration and development from the Permian and Delaware basin shale plays is the primary focus for capital investment in 2017. Shale plays are economical at $50 barrel oil! Robert can be contacted on LinkedIn.

Gary Crews of DigitalGlobe Energy, presented high resolution imagery radar-satellite surveys and their utility to the energy industry at our February luncheon. Several images of “before and during” effects of fluid injection and extraction on surface topography were (Continued)
visible showing measurable minute displacement. The rock volume displacement becomes critical for pipeline placement and other structure design. High resolution radar and satellite imagery continues to improve surface to subsurface geologic interpretation while reducing exploration/development expenditures.

In March, Eric Tangumonkem presented a motivational talk on “adaptation and change” at the Dallas Petroleum Club. Dr. Tangumonkem, a geologist and financial planner with an MBA, presented the rapid technology changes in the last ten years to our daily lives and what it means. Personal attributes of resilience, creativity and mindfulness of new ideas are priorities for prosperity. The U.S. domestic energy industry is a major driver of innovation, having increased daily oil production over 3 million BOPD since 2007 by accepting change. The challenge is for individuals to understand what change means and how to successfully adapt. Visit Eric on LinkedIn.

The annual May Dallas SIPES geology field trip starts Friday evening, May 19, with a reception at Baylor University. The Comanchean Stratigraphy around Waco, Texas will be reviewed. SIPES Member David Shiels is our tour guide starting Saturday, May 20, with onsite visits of the Glen Rose, Edwards (Goodland) Del Rio Clay, Pepper Shale and a private tour of the Waco Mammoth National Monument. Bus transportation is provided for Saturday only from Baylor University to local sites. Box lunches are included. The price is $175 payable to Dallas SIPES. Lodging is still available at 254-752-8686. Meet and sign in at the Baylor Science Building on Friday the 18th before 6:30 p.m. Contact David Shiels to register at: david@shielsengineering.com, or 214-577-5987.

Don Muth
Chairman
WICHITA

The Wichita Chapter did not hold meetings during January or February.

Our March meeting was held at the Wichita Petroleum Club with 33 members and guests in attendance. Our guest speaker was Ron Estes, the Kansas Secretary of the Treasury, who was currently running as the Republican nominee for the Kansas 4th Congressional district of the United State House of Representatives. Mr. Estes explained how the special election process was being conducted, and how his experience in state and county government and private industry has prepared him for this run for the U.S. Congress. Our members were able to present concerns for independent producers and opera-
tors on issues that would be part of his duties on the national level if he were elected. As an update: Mr. Ron Estes did win the first special election in the nation held after the inauguration of President Trump.

Lanny Butner
Chairman

At the March meeting are (L to R) Chairman Lanny Butner, Congressman Ron Estes, and Wilbur Bradley.
Dr. Rotzien provided an evaluation of depositional environments and reservoir quality in the deep-water Paleogene Wilcox Group, Gulf of Mexico, and the progression in understanding deepwater depositional systems over the past twenty years. He asked and answered questions regarding whether deep-water coarse-grained sandstone margins can be recognized from core and whether in-channel and out-of-channel bedding in fine-grained turbidite systems are distinguished using a high-resolution sedimentology.

Dr. Rotzien’s conclusions were that geoscientists must compare and scale reservoir data to outcrop. They must interpret flow test or production data and compare stratigraphic data from different intervals or sections of a field to build predictive models. He stressed the importance of characterizing clastic reservoirs to recognize stratigraphic margins in building a depositional environment map. Additionally, the geoscientist must identify all the depositional environments to predict reservoir quality for the system. Dr. Rotzien proposed that interpreting the range of uncertainty in utilizing a quantitative stratigraphic data approach to reservoir sand models can provide valuable input directly into the reservoir model. Sandstone reservoir qualities can be modeled to predict the different depositional systems in the Gulf of Mexico utilizing the comparable field examples of France and Ireland.

The February luncheon was a joint SPEE/SIPES luncheon. The lecture was presented by Dee Patterson of Moyes & Company. His presentation was “The LNG Industry: Redefined by North America.” Mr. Patterson predicts that North American LNG exporting facilities will have a significant advantage in the global LNG market due to lower costs for North American LNG infrastructure and continued growth in Asian LNG demand.

Several key points regarding the LNG market were provided. LNG is the fastest growing segment in the global energy business. Although significant new LNG capacity was recently added in Australia, North American LNG exporters will be disruptive to the international LNG industry due to their lower infrastructure build costs. This will result in a more affordable market product for LNG consumers.

Mr. Patterson supported his discussion of the LNG Global market with several graphs. Illustrations were provided showing the history of LNG production from 1990 to present, as well as a forecast of LNG industry growth to 2020. A graph of LNG volumes trading under non-long-term contracts was presented to support the fact that the LNG market has moved from an “end user” buyer to “trader” buyer. Examples were provided of LNG capacity rotation from Australia to the North American exporters and the effect on global natural gas prices. The speaker contends that the North American exporter has a market advantage for LNG in Japan with lower cost Henry Hub LNG versus the higher cost Japan LNG.

Mr. Patterson’s conclusions were that LNG is a changing dynamic international commodity business with major LNG producers supplying Asian power generation and heating fuel developing markets. Recent LNG projects in Australia suffered from major cost overruns resulting in higher cost LNG, allowing North American LNG exporters to become major suppliers in the global LNG industry.

The March luncheon lecture was presented by William DeMis, senior vice president-chief geologist for Goldman Sachs. His presentation was “The Down-Dip Austin Chalk Trend, Grimes County, Texas: Early Key to the Eagle Ford Play.” The emphasis of Mr. DeMis’ talk was that geoscientists must spend time to understand the small field that could define the potential presence of a larger play. His first example was Marathon’s Grimes County down-dip Austin Chalk play that led to EOG’s successful lease position in Dewitt and Karnes Counties Eagle Ford Play.

Mr. DeMis’ detailed knowledge of the Eagle Ford Trend discovery was obtained from his work at Marathon, and from interviews he conducted with former EOG employees. He defined the general geology and production of the Austin Chalk and Eagle Ford Trends and the far down-dip over-pressured dry gas area of the Austin Chalk Trend in Grimes County, Texas. He cited that the Marathon geoscientists utilized seismic attribute analysis and mapping to define fractures.

Mr. DeMis provided a summary of the discovery events. Marathon leased 50,000 acres in the Champions area to (Continued on Page 22)
CHAPTER NEWS CONTINUED

William DeMis of Goldman Sachs was the March guest speaker.

drill 5,000-foot horizontal wells in the base of the Austin Chalk. Austin Chalk was thin in the area at approximately 200 feet, and the challenge was not to steer into the Eagle Ford which would cause well bore collapse. Marathon results were good (up to 80 million cubic feet per day). They drilled sixteen wells with four dry holes. Management decided the risk was too high and the trend was abandoned. Marathon wanted the team working this trend to move from Tyler to Midland and the team instead went to EOG. The new EOG team recognized that the gas production from the fractured Austin Chalk was greater than could be accounted for by fractures and logs. The conclusion was made that gas was produced from the Eagle Ford. However, Eagle Ford was difficult to produce in Grimes County. EOG recognized that a land zone and competent well bore in the Eagle Ford was required and searched for an optimal area. The area selected was south of the San Marcus Arch and this started the Eagle Ford Trend. Knowledge that the EOG team acquired from down-dip Austin Chalk was critical in development of the play in 1997 and EOG leased over 500,000 acres in the new trend.

Mr. DeMis highlighted two additional examples of small fields that led to large plays: the Fayetteville Shale and the Salawati Basin. The Fayetteville Shale play was discovered by Southwestern Energy. Southwestern Energy recognized the importance of the Wedington Field and Wedington incongruity. The field was analyzed and the production was 600% over the volumetric calculations for the Wedington Sand. Geoscientists realized the Fayetteville shale was responsible for the additional production. The company acquired 240,000 acres for eleven million dollars in 2003, and an additional 600,000 acres were acquired the next year. The depth of the Fayetteville Shale is approximately 3,000 feet. The wells were extremely profitable, and in six years Southwestern was producing 2.6 billion cubic feet of gas per day from the Fayetteville.

The third example provided by Mr. DeMis, was a conventional play in the Salawati Basin, Irian Jaya, Indonesia. Royal Dutch Shell led a consortium that explored there for 35 years and found one Miocene reef field in 1936 which made 33 million barrels of oil. The consortium ceased exploration in 1960, and Trend Exploration Ltd. entered the area in 1969 and found 430 million barrels of oil. This was accomplished by studying the data and realizing that the consortium reef model was correct, but too simplistic. Trend Exploration Ltd. had a better play model for a reef and began to analyze the surface geomorphology. They overlaid the consortium seismic data and recognized the data was specifically shot around steeply-sloped hills on the otherwise flat Salawati coastal plain. The hills were the geomorphic expression of compaction drape above the pinnacle reefs.

Mr. DeMis’ conclusion is that many fields in all types of plays are initially misinterpreted. His contention is that careful evaluation of the anomalous or misunderstood fields holds the key to larger trend plays.

Chapter executive officers for the 2017 term are as follows: Chapter Chairman Russell Hamman; Chairman Elect Bill Bippus; Past Chairman James Mertz; Secretary Coerte Voorhies III; Treasurer Bruce Blake; and Technical Program Chair Linda Sternbach.

Sponsorship for the organization has been a significant topic at the board of director meetings for the first quarter of 2017, and the board is working diligently to solve the challenge. The March 2017 meeting SIPES National Representative and Continuing Education Chairman Barry Rava provided the theme for the October 26, 2017 Continuing Education Seminar “Prospecting and Production Soup to Nuts.”

Coerte Voorhies III
Secretary
Margaret M. Dalthorp, #2161, of Houston, Texas is a candidate for HGS Director.

Thomas E. Ewing, #1610, of San Antonio, Texas is serving as 2017 President of the GCAGS.

At the AAPG convention in Houston this past March, veteran oilman and SIPES member Frank W. Harrison, Jr., #209, was the 2017 recipient of the AAPG Foundation’s Chairman’s Award. The AAPG Foundation Chairman’s Award is the first award established by the Foundation. It is given to recognize persons who have made extraordinary contributions (monetary or service) to the AAPG Foundation. “Mr. Frank” is the owner of the Optimistic Oil Company.

Scott C. Sechrist, #2503, of Houston, Texas is a candidate for HGS Vice President.

James W. Tucker, #3373, of Houston, Texas is the new editor-elect of the Houston Geological Society.

Margaret Dalthorp, Tom Ewing, Frank Harrison, Jr., James Tucker

### WELCOME NEW MEMBERS

In accordance with the SIPES Constitution, By-Laws & Code of Ethics, the following announcement of new members unanimously approved by the SIPES Membership Committee during the last quarter is printed below.

Any member in possession of information which might possibly disqualify an applicant is asked to submit this information to the secretary of the society (Michael L. Jones) within thirty days of this publication. To be considered, this information should be in writing and bear the writer's name. If this information is received within thirty days after the publication of the applicant's name, the SIPES Board of Directors must reconsider its previous approval of the applicant. The board's action, after consideration of such new information, shall be final.

**Patrick A. Nye, National Membership Committee**

<table>
<thead>
<tr>
<th>SIPES No.</th>
<th>Name</th>
<th>Chapter</th>
<th>Sponsors</th>
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<td>Joseph S. Herrin</td>
<td>Houston</td>
<td>G. Pankonien</td>
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<td>LTD</td>
<td>Christopher D. McLindon</td>
<td>New Orleans</td>
<td>S. Wainwright</td>
</tr>
<tr>
<td>3487</td>
<td>Dennis W. Browning</td>
<td>Ft. Worth</td>
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<td>Jon A. Richards</td>
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<td>3489</td>
<td>Allan E. Kean</td>
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<td>N. Neidell</td>
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<tr>
<td>3490</td>
<td>Aaron J. Anderson</td>
<td>Oklahoma City</td>
<td>B. Broekstra</td>
</tr>
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<td>3493</td>
<td>Jeremy T. Greene</td>
<td>Houston</td>
<td>L. Sternbach</td>
</tr>
<tr>
<td>3494</td>
<td>Jonathan R. Rotzien</td>
<td>Houston</td>
<td>J. Pacht</td>
</tr>
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CROSS-DISCIPLINE COMMUNICATION CONTINUED

For many projects, the flow of information starts with geology and is then passed on to people in various engineering disciplines. If that information is not effectively communicated, mistakes can be made. It is essential that information, especially regarding risk, is clearly communicated early in the planning phase of any project. Significant issues include differences in terminology and inability to communicate risk. Engineering structures are sited in nature, yet how far does the engineer go to understand the geomorphology, petrology and structure of the site and area beyond the site. (Rollings and Rollings, 2005)

Table 1. Pitfalls in Word Usage (Modified after Maynard, Bowers and Potter, 2016)

<table>
<thead>
<tr>
<th>Concept</th>
<th>Geology</th>
<th>Civil Engineering</th>
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<tbody>
<tr>
<td>1. Cemntation</td>
<td>Binding together of particles of a soil or sediment by precipitated minerals</td>
<td>Injection of cementing agents into permeable or fissured soil or rock to reduce fluid flow or improve strength</td>
</tr>
<tr>
<td>2. Clay</td>
<td>Rock or mineral fragment &lt; 4 μm; in soil science, the limit is 2 μm, the size below which all particles are clay minerals</td>
<td>Plastic material consisting mainly of particles finer than 2 μm</td>
</tr>
<tr>
<td>3. Compaction</td>
<td>Volume reduction from overburden pressure</td>
<td>Densification by mechanical means</td>
</tr>
<tr>
<td>4. Consolidation</td>
<td>Lithification of a sediment by compaction or cementation</td>
<td>Gradual reduction of soil void ratio from dissipation of excess pore pressure (owing to an increase ineffective stress) and in a squeezing of fluids from the soil pores</td>
</tr>
<tr>
<td>5. Dike</td>
<td>A tabular igneous rock cutting across the planar structures of the surrounding rocks</td>
<td>Artificial wall or embankment of earth or rock fill</td>
</tr>
<tr>
<td>6. Grade</td>
<td>In mining, metal content of an ore body</td>
<td>Degree of inclination of an engineering structure</td>
</tr>
<tr>
<td>7. Graded</td>
<td>Vertical trend in grain size in a bed or bedding sequence. Normally graded is fining-up Reverse graded is coarsening-up</td>
<td>Possessing a range of grain sizes</td>
</tr>
<tr>
<td>8. Grain-size units</td>
<td>Φ = –log2(mm)</td>
<td>US standard sieve mesh sizes; mm</td>
</tr>
<tr>
<td>9. Grain-size distribution</td>
<td>Sorting: the degree of similarity of grain sizes of a sediment</td>
<td>Gradation: the frequency distribution of sizes of a granular material</td>
</tr>
<tr>
<td>10. Grain-size distribution parameters</td>
<td>Inclusive graphic standard deviation: SD = (Φ84–Φ16)/4 + (Φ95–Φ5)/6.6</td>
<td>Coefficient of uniformity: CU = D60/D10</td>
</tr>
<tr>
<td>11. Grain-size distribution quality designators</td>
<td>Poorly-sorted = wide range of grain sizes</td>
<td>Well-graded = wide range of coarser grain sizes</td>
</tr>
<tr>
<td>12. Grain size distribution qualifiers</td>
<td>&lt; 0.35 Φ very well sorted 0.35–0.5 Φ well sorted 0.51–0.70 Φ moderately well sorted 0.71–1.00 Φ moderately sorted 1.01–2.00 Φ poorly sorted 2.01–4.00 Φ very poorly sorted &gt;4.00 Φ extremely poorly sorted</td>
<td>Well-graded: &lt;5% fines; CU &gt; 6 (sand) or 4 (gravel) 1 &lt; CC &lt; 3 Poorly graded: not meeting the CU and/or CC requirements May be uniformly graded or gap graded</td>
</tr>
<tr>
<td>13. Moisture content</td>
<td>Weight water/total weight x 100 (also used by environmental engineers)</td>
<td>Weight water/dry weight x 100 (used by geotechnical engineers)</td>
</tr>
<tr>
<td>14. Permeability units</td>
<td>Geologists and engineers in the petroleum industry will use darcy as the unit of intrinsic permeability</td>
<td>Hydrogeologists and civil engineers will use cm² for intrinsic permeability or cm/sec for hydraulic conductivity</td>
</tr>
<tr>
<td>15. Pore space</td>
<td>Porosity: Volume of pores/total volume x 100. In hydrogeology, expressed as a decimal</td>
<td>Void ratio: Volume of voids/volume of solids (expressed as a decimal, not a percent)</td>
</tr>
<tr>
<td>16. Rock</td>
<td>Naturally formed consolidated material formed of one or more minerals and having a degree of chemical consistency</td>
<td>Any natural material that requires drilling and blasting or similar methods of brute force for excavation</td>
</tr>
<tr>
<td>17. Sand</td>
<td>A detrital particle between 1/16mm (0.062 mm) and 2 mm. US soil scientists use 0.05 to 2 mm</td>
<td>A soil particle retained on US standard sieve no.200 (0.074 mm) and passing sieve no. 4 (0.476 mm)</td>
</tr>
<tr>
<td>18. Silt</td>
<td>A detrital particle between 1/256mm (0.004mm) and 1/16 mm (0.062mm). US soil scientists use 0.002 to 0.05mm.</td>
<td>Non plastic or slightly plastic material exhibiting little or no strength when air-dried consisting mainly of particles passing US standard sieve no.200 (0.075 mm) yet &gt; 0.002 mm</td>
</tr>
<tr>
<td>19. Soil</td>
<td>Unconsolidated earthy materials over-bedrock supporting or capable of supporting plant life (includes only in situ material)</td>
<td>Uncemented aggregate of mineral grains and decayed organic matter down to solid rock, along with the liquid and gas that occupy the interparticle spaces (includes in situ and transported material); the corresponding term in geologic usage is regolith</td>
</tr>
<tr>
<td>20. Soft</td>
<td>Commonly refers to rocks of sedimentary origin. Soft-rock vs. hard-rock geology</td>
<td>Refers to a cohesive soil that can be molded by slight pressure. The opposite term is stiff (not commonly used in geology). Non-cohesive soils would be termed loose or dense</td>
</tr>
</tbody>
</table>

Examples of Communication Failures

Terminology

There are times when geoscientists and engineers are not speaking the same language. When a geologist speaks of pore space it is defined as porosity (volume of pore space/total volume). But when a civil engineer speaks of pore space, he or she means void ratio (volume of voids/volume of solids). Maynard et al (2016) list twenty ways geologists and engineers differ in terminology. (Table 1)

(Continued)
Geophysics

Seldom seen in the oil and gas sector, where petroleum engineers have embraced geophysics, communications appears more of a problem in the case of geophysics for engineers in site investigations. Egan noted (2017) “[A] theme that became wildly popular in conferences, workshops, and internal boardrooms was better integration of seismic with other oilfield disciplines,” and “several developments in seismic were motivated in direct response to the needs of ... [petroleum] engineers.”

Conversely, Luke and Penumadu (2007) make the point that engineers and geophysicists agree that geophysics is underutilized in [civil] engineering investigations. It is not used because engineers are unfamiliar with it. Some view geophysics as an impenetrable and therefore suspicious “black box,” while others are simply unfamiliar with the capabilities, costs, and timeframe of geophysical investigations. Some describe a “language gap” between the groups; this leads to a ‘disconnect’ between what the geophysicists can do and what the engineers think they can do. Engineers claim that geophysicists sometimes over-sell their capabilities. And even in a situation where the well-informed engineer knows that it is advisable to use geophysics, some contract specifications preclude its use.

It is perhaps an oversimplification to say that engineers and geologists have distinct preferences in how they receive numerical information, but our experience has led us to infer strong trends, with engineers preferring tabular data (spreadsheets) and geologists preferring graphical displays. Consider Figure 1 and Table 2. In this example, the same information is presented. Which conveys the information more clearly to you, the table or the pie chart?

Table 2. United States Primary Energy Consumption by Fuel (2015)

<table>
<thead>
<tr>
<th>Source</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
<td>37.4</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>31.3</td>
</tr>
<tr>
<td>Coal</td>
<td>17.3</td>
</tr>
<tr>
<td>Nuclear Energy</td>
<td>8.4</td>
</tr>
<tr>
<td>Renewables</td>
<td>3.17</td>
</tr>
<tr>
<td>Hydroelectric</td>
<td>2.51</td>
</tr>
</tbody>
</table>

To some extent, preferences may be swayed by the type of data and what the data will be used for. All the same, we have found that geoscientists tend to receive information visually, while engineers tend to prefer tabular data.

Excessive or Irrelevant Geoscience Detail – a two-edged sword

In some cases, the geologist, often an entry-level staffer, can provide too much irrelevant data and nomenclature to the engineer. The one author recalls an incident where a foundations engineer, after reading a core description, remarked, “I’m not interested in *Platystrophia ponderosa*! Can I build a bridge on it?” Here, the geologist, whose focus was invertebrate paleontology, included the fossil nomenclature while logging the core. In this situation, a simple ‘fossiliferous’ would suffice. The engineer needed to know the top of competent bedrock, the depth of weathering, and thicknesses of shale and limestone for drilling a pier foundation. We note that the use of Dunham’s terminology for carbonates would be useless in geotechnical engineering. However, detail is important. The geologist needs to recognize mineralogy in the core or outcrop that could have an adverse effect on the structure, roadway or airfield. Pyritiferous shales can oxidize with an increase in volume, leading to foundation heaving. In the American Southwest, sulfate minerals are a hazard to construction and can be a problem in concrete aggregate.

Inability to Convey and Anticipate Geologic Risk and Time

At a break during a geohydrology symposium one of the authors overheard the informal conversation among several engineers from the highway department. While looking at the latest iteration of 1:100,000 geologic maps, they discounted geologic time to describe the age of (Continued)
the various mapped units, which they found unnecessary and confusing. Their discussion underscored that many engineers complain about the way geologists seemingly toss around time and time scales. An engineering structure is constructed with some useful life, which may span decades or even centuries. However, the geologist’s mind-clock is capable of running from seconds to 100 m.y. or longer. Furthermore, the geologist should understand and be able to convey to engineers and policy makers the time-rate of deformation of geologic materials and geologic events. The rates of geomorphic change projected at the inception of a civil works project, may drastically change under changing climate weather patterns. Oroville Dam was designed not anticipating the unexpected storms in 2016-2017. Many highway culverts were constructed using a 100-year design, only to be destroyed by a 500-year storm event. Interestingly, such events are occurring with greater frequency.

Maintaining geologic records

Goodman (2004) cites three examples where engineers and engineering geologists had to evaluate the safety issues with projects. “In each case, the engineers and engineering geologists were able to access construction-phase geology records that were found to be essential, although not sufficient elements in making timely decisions about important new engineering issues. As builders, we must remember that our civil works structures will likely have lives that extend far beyond those initially charged with their design and construction. As geo-professionals, we must produce geologic reports when we construct important facilities on, or in, rock or soil and keep these data in usable and retrievable form. And, finally, we must continue to educate engineers in engineering geology and related disciplines about the importance of these resources during the service lives of structures.”

Wolf Creek Dam

Several examples of communication failures occurred in the construction of TVA dams. It should be noted that while caves were known engineering hazards, the extensiveness of karst networks was poorly understood. Wolf Creek Dam has become our primary example of poor communications. This dam, on the Cumberland River in Kentucky, was built on known karst, and continues to plague engineers even though research in karst flow (White, 1988; Ford and Williams, 1989) was known during the latest grouting program. Wolf Creek Dam is a combined earthen fill and concrete structure on the Cumberland River in Russell County, Kentucky. Initial construction was undertaken in 1941, but due to WWII wasn’t completed until 1951. It was to provide hydroelectric power, navigation on the Lower Cumberland River, flood control, and recreation on Lake Cumberland. While a portion of the dam was constructed of concrete, most of the structure is an earth fill dam. (Figure 2)

The bedrock foundation of the dam is situated on a well-developed karst formation with extensive large void space in the limestone beneath the dam and reservoir. (Figure 3) Geologic maps of the area showed the presence of this lithology. By 1961 solution channels had developed that led to sinkholes near the downstream toe of the dam. In addition, water in the outflow channel showed increasing levels of muds and clastic content. A catastrophic failure of the dam would result in massive damage downstream, with potential loss of life. For a concrete structure, the optimal solution would be the inject grout into the void space – and this was undertaken between 1968 and 1970. For the larger earthen fill section of the dam it was necessary to construct concrete cut-off wall, extending through the earth embankment to the limestone bedrock. This was completed in 1979; this meant a drawdown for Lake Cumberland and a loss in revenue to the recreational industry in the region.

Since then, new seepage paths have developed around, and possibly through, the cut-off wall. In response, an extensive program of grout injection was conducted between 2006 and 2012 to create

Figure 2. Aerial view of Wolf Creek Dam, Russell County, Kentucky, showing the concrete structure, power house and earth fill embankment. The grouting measures were undertaken along this earth fill section, first in the late 1960s and again in the 1990s. Photo by USACE. (Continued)
a “grout curtain” along with a new concrete wall. It remains to be seen whether these remedial efforts will be sufficient to address geological issues in the decades to come. Some officials within the Corps of Engineers proposed relocating the dam downstream on non-karst bedrock. In this case and others in the TVA dam system the cavernous karst was reported, but engineers lacked experience with this rock type and failed to understand the extensive porous network. Backfilling with dirt was a temporal fix.

Hurricane Protection System Failures — Katrina

During Hurricane Katrina, a number of elements of the Hurricane Protection System (HPS) that was intended to protect the city failed, resulting in extensive [damage] and loss of life. A significant lesson learned from these events and the follow-up IPET study was recognition the HPS was a system in name only. It was not designed, operated or maintained as a system and as a consequence did not perform as one. (Dams as Systems, Nat’l Performance of Dams Program, Stanford U., http://npdp.stanford.edu/dams_as_systems)

Katrina was the most expensive disaster in U.S. history, with property damage of at least $108 billion. It was also one of the five most deadly hurricanes in U.S. history. Had the levees held, Katrina would have been a significant storm due to extensive wind damage and coastal flooding from Texas to Florida. But the failure of the levees resulted in catastrophic loss of life and damage, from which Southeast Louisiana has yet to fully recover.

Numerous studies conducted after the storm concluded that subsurface geology was not fully taken into account in the construction and maintenance of the levees and floodwalls.

Some aspects of floodwall design were clearly insufficient to protect populated areas from storms that U.S. Army Corps of Engineers (USACE) models had indicated should be expected. In addition, lateral variations in subsurface lithology were far more complex than the USACE and local levee boards appear to have integrated into construction plans.

Have the lessons of Katrina been learned?

Since Katrina, floodwalls with better designs have been installed and high-capacity pumping stations are being added, but subsurface geology is not being fully integrated into plans and construction. Since Katrina, the New Orleans Geological Society has helped organize a series of symposia on “Geologic Facts of Life for Flood Protection in Coastal Louisiana” with the local levee boards. While well attended, it has become clear that the importance of near-surface geological dynamics has not been viewed as an important factor for planning and construction of levees and floodwalls.

To increase protection from storms and address coastal land loss, the Coastal Protection and Restoration Authority (CPRA) was established in 2005. In its 2017 master plan, CPRA laid out a proposed budget of $50 billion, with approximately half of the funds going to restoration projects (such as sediment diversions, marsh and barrier island reconstruction, and habitat renewal) and half going to structural projects including levees and floodwalls. The CPRA staff is aware of local subsidence issues, but unaware (or unwilling to accept) the presence of surface faulting as a component of the dynamic geology of Southeast Louisiana. With support of the SIPES New Orleans Chapter, the University of New Orleans and other schools are carrying out mapping projects to document this faulting. CPRA has been warned by local geoscientists about the threat of faulting to the long-term viability of the construction and it is hoped that through ongoing communication of sound geoscience to the CPRA engineers and policymakers the plans will be modified to take geological factors into account. We believe it is the responsibility of geoscientists to inform the public and policymakers when there is risk to the public or massive government spending may be misspent.

Unanticipated Geologic Problems

Many times, the extent of the geology isn’t known until excavation or tunneling is well underway. Lienhart (2013)
describes normal and thrust faulting discovered during the excavation of the locks and dams on the upper Ohio River. Leinhart attributed the features to valley stress relief associated with fluvial erosion and downcutting of the Ohio River Valley.

Rogers (2010) notes the Hales Bar Dam on the Tennessee River was built on extensive karst, grouted, ultimately deemed a failure and relocated over impervious strata.

Legal Ramifications

The Macondo blowout April 20–September 19, 2010 offers a prime example of communications mistakes that led to criminal indictments, lawsuits, and billions of dollars in remediations to coastal zones. What the operator knew and what was reported became central to how much financial exposure would be administered by the Federal courts. It comes down to a matter of personal ethics whether you choose to communicate your geologic or engineering facts in the course of an investigation.

Takeaway Points

- Operationally define your terms when communicating with engineers.
- When communicating with engineers and policymakers – minimize the “geologese.”
- Keep records and field notebooks.

References


Ford, Derek and Paul Williams (1989) Karst Geomorphology and Hydrology, Unwin Hyman, Inc., USA, 601 pp. This textbook and White’s (below) are essential to understanding karst drainage.


IN MEMORIAM

We regret to note the passing of the following members:

William H. Bishop, #2136 of Lafayette, Louisiana who died on February 25, 2017

Earl E. Gaertner, #282 of Fredericksburg, Texas who died on April 27, 2017

Clement E. George III, #132 of Midland, Texas who died on March 22, 2017

Bernard W. Lounsbury, #244 of Andover, Kansas who died on December 22, 2016

Robert B. Ferguson, #1837 of San Juan Capistrano, California who died on May 8, 2017

James M. Norris, #2764 of Kingwood, Texas who died on March 10, 2017

Tom Klekamp and Art Johnson are both independent consulting geologists in the New Orleans area. They can be reached at klekamp@bellsouth.net and artjohnson51@hotmail.com.
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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 $50. Please remember the SIPES Foundation in your estate plans.

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Application Deadline is July 29, 2017
Awards Presented after July 29, 2017
Applications accepted from upper-division or graduate students majoring in any field of earth science, geophysics or petroleum engineering who have an overall GPA of 3.5 or higher, and are U.S. Citizens
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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, 1996