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In Every Issue

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Technical Meetings

Other Features

About the Cover: Upright folding in Devonian Old Red Sandtsone from southwestern Wales, U.K. *Photo by Marli Bryant Miller, Structural Geology Professor at University of Oregon, Eugene.*

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by ***Linda Sternbach***

Applied Geoscience Conference on Mudstones: An Example of HGS's Technology Transfer Programs

At the beginning of this month, HGS is sponsoring our first-ever "Applied Geoscience Conference: U.S. Gulf Region Mudstones as Unconventional Shale Gas/Oil Reservoirs, Fractured and Non-Fractured," at the downtown Houston Doubletree Hotel, October 1 and 2. This program was put together in only seven months, starting from an idea by Frank Walles and the Northsiders' technical committee in April 2007. I want to explain how the Northsiders' group could put together, and execute, a workshop in this short time period with the help of HGS leadership. I will also discuss the growing popularity of this type of 2-day technical program. I hope this can be a template for HGS technical conferences on "hot topics" in the future.

Geologists often get passionate about an industry topic; for example, carbonate reservoirs or deepwater depositional systems. Frank Walles is a Senior Geological Advisor at Devon Energy whose passion is unconventional resources. HGS is very fortunate to have Frank as one of its active members. He has put several years into organizing and leading the Northsiders' Luncheon technical program. His position at Devon is something to be proud of: he is responsible for corporate-level technology transfer and technology development and a champion of unconventional resource plays.

Frank Walles and the Northsiders' group got the idea for this conference prior to April 2007. Frank had attended past SPE technology workshops, and had organized the 2006 EMD AAPG program on "Shale Gas, Tight Sands, Coal Bed Methane and Gas Hydrates." He wanted to put together a conference involving top experts on unconventional resources, but he didn't want the conference to be another "Barnett Shale Conference" because that topic had been done recently by other societies. What helped to fast-track the Mudstone conference idea was that he and co-chair Paul Basinski of ConocoPhillips had already contacted many key people in the shale-gas/unconventional-reservoir topic area. Frank is the type of manager who is not shy about approaching key knowledge workers to present their work. The main question back in April was, "Can HGS and the Northsiders' Committee put a new idea for a conference together in time to have it advertised and ready to go to make the July deadline of the September HGS *Bulletin*?" Due to the limited time frame, Frank had to count on his Northsiders' Committee for significant logistical support. Key volunteers included Northsiders' Committee co-chair David Tonner (International Logging), Bruce Martin (Devon), Kirk Barrell (Wave Exploration) and others; they got the hotel contract at the Doubletree, arranged for catering, and put together the conference brochure and CD.

Back in April, I talked to Frank Walles about his dream of hosting a mudstone conference and realized that we could get this program organized in time for the fall schedule. I thought this could be modeled after the "Africa Symposium" and, since the 2007 Africa Symposium was being held in Cape Town, South Africa, there was an opening in our schedule for a multi-day geoscience conference. The key ingredients for a fast track conference were there: an experienced HGS technical organizer (Frank Walles), a hot topic (mudstones and shale gas), and a good conference template (the Africa Conference).

The New Model for HGS Technology Conferences

Years past, HGS organized "short courses" about geology and computer technology. The old style was that geologists "needed" to take courses to improve their skills and that our members would fit this training in on their weekends or nights. We have found that this is not a popular model for busy professionals today. What is popular today are day-time, one- and two-day conferences. One reason for the growing support of this type of conference is that attendees can get time off from work to attend, and count it towards training or continuing education credits. The day-long program has time for socializing with geoscientists of similar interests, and there are take-home notebooks and CDs.

From the President *continued on page 9*

HGS *Bulletin* Instructions to Authors

All materials are due by the 15th of the month, 6 weeks before issue publication. Abstracts should be 500 words or less; extended abstracts up to 1000 words; articles can be any length but brevity is preferred as we have a physical page limit within our current publishing contract. All submissions are subject to editorial review and revision.

Text should be submitted by email as an attached text or Word file or on a clearly labeled diskette in Word format with a hardcopy printout to the Editor.

Figures, maps, diagrams, etc., should be digital files using Adobe Illustrator, Freehand, Canvas or CorelDraw. Files should be saved and submitted in .eps (Adobe Illustrator) format. Send them as separate attachments via email or on a diskette or CD if they are larger than 1 MEG each, accompanied by figure captions that include the file name of the desired image. DO NOT EMBED them into your text document; they must be sent as separate files from the text. DO NOT USE POWERPOINT, CLIP ART or Internet images (72-DPI resolution) as these do not have adequate resolution for the printed page and cannot be accepted. All digital files must have 300-DPI resolution or greater at the approximate size the figure will be printed.

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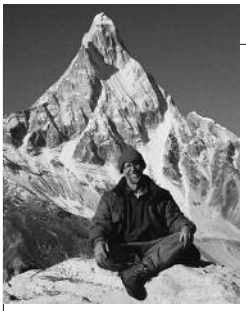

by ***Steve Earle***
hgs_editor@earthlink.net

The Power of a Word

One of the good things about the editor position is the exposure you get to new geologic thinking. We reviewed some interesting abstracts for this month which I encourage you to read. For Martin Cassidy's Northsiders talk on the distribution of CO2, he mentions areas of tectonic escape. Not being familiar with the term, I quizzed Martin and he provided this quote from his coauthor, Kevin Burke: "Because buoyant continental or arc material generally moves during collision towards a nearby oceanic margin where less buoyant lithosphere crops out, we call the process of major strike-slip dominated motion toward a 'free-face' (to be) tectonic escape." The plate boundary interactions here provide a conduit to the mantle and the gases located there.

Another moment occurs at the end of Jon Blickwede's abstract for the General Dinner Meeting where he mentions an Upper Jurassic erg. Being a bit fuzzy on this term, I looked it up and came up with this definition: "In a desert region, an area with a large accumulation of sand, generally in the bottom of a huge basin in which a former river piled up alluvium. Ergs are areas of actively shifting dunes, fossilized dunes, or extensive sand sheets." The Sahara Desert is the type locale for an erg. The Norphlet sands are interpreted as dune deposits. A paleogeographic map for Upper Jurassic time shows the Hispanic Corridor along the southern border of the North American craton, about where Louisiana to the Florida panhandle are located, as part of the proto-Atlantic which was continuing to open up. On the Pacific side we find the Entrada sands; these paleo-dunes sit above the Navajo, probably the thickest erg deposit in North America. It takes but a little stretch to realize that a substantial volume of sands, sourced from the North American craton, was blown southward and deposited along the edge of the fringing oceans. There is actually still a lot of "white space," the term used by Robin Hamilton last month in his "Identifying New Hydrocarbon Plays" talk, meaning that there are plenty of areas where potential Norphlet equivalent sand dunes could be hiding. All this from a little 3-letter word, but a word is just shorthand for an idea and the power of an idea can be tremendous.

This month we host another talk on global climate change, a topic that has engendered a fair amount of discussion. The HGS has not taken a position on this issue, nor do we see any compelling reason to do so. If you polled the members, you would get the full spectrum of opinion from "man has little to no effect on global climate" to "man is changing the atmosphere and will be directly responsible for profound and serious changes to our environment." Most of us probably fall in between these end members, although I am closer to the later statement. Following the AAPG forum was interesting with a lot of well-considered arguments and the occasional statement that suggests people should only talk on topics they know something about. I will try to talk about something I know.

As an explorationist, I have spent some time working with models. Two things you learn about models is that there are lots of assumptions and they are rarely, if ever, unique. However, they can offer valuable insights when studying complex systems. Atmospheric physicists have been improving their understanding and hence their models of global climate. They have come a long ways from the crude description they started with. I believe there is at least one critical component **From the Editor** *continued on page 9*

50 Years Ago

from The HGS Bulletin*, vol. 1, No. 2, October 1958*

"Does writing geological reports, letters, and memos give you as much trouble as it does the rest of us? Should you use 'crop out' or 'outcrop'? …The U.S. Geological Survey has recently published the fifth edition of their *Suggestions to Authors of the Reports of the United States Geological Survey…* This 228-page book, bound in hard cover, is available from the Superintendent of Documents at $1.75 per copy."

Applied Geoscience Conference (AGC)

US Gulf Region Mudstones as Unconventional Shale Gas/Oil Reservoirs Fractured and Non-Fractured

Interact and learn perspectives from unconventional reservoir characterization & knowledge specialists on hydrocarbon production from mudstone reservoirs (fractured, fracturable, and non-fractured).

Where are the new target mudstone targets in the Gulf Region? Could they be in the Bossier Fm., Eagleford Fm. or the Wilcox Fm.? What can we learn from the productive mudstone systems within the US Gulf Region?

October 1-2, 2007

The Downtown DoubleTree Hotel, Houston, Texas

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DEVON ENERGY CORPORATION

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This Applied Geoscience Conference (AGC) is sponsored by The Houston Geological Society

From the President continued from page 5

The conference is designed for Houston-based members, and rolled out at a discount price compared to the cost of a national society conference like SPE or AAPG.

I have to give credit to a break-through conference that changed HGS's approach. It was the "Dry Hole Seminar" held on Nov 8, 2000, organized by Kevin McVey, who was serving on the HGS Board of Directors. What made this successful was that it featured a day-long format of multiple speakers with case histories and a take-home notebook to document the examples shown. It was an exciting variation of the standard lecture/class format and people loved it. The first "Dry Hole Seminar" was followed by a second version called "Disappointing Seismic Anomalies" held Oct 21, 2003, at the Marathon Building, co-chaired by Kevin McVey and Evelyn Medvin.

Back in 2001, the HGS International Group's leaders decided to put together a two-day conference in Houston dedicated to exploration in offshore Africa. This was the first "Africa Symposium." The International Explorationists Group, led by Al Danforth, Steve Henry and Ian Poyntz, formed an alliance with the Petroleum Exploration Society of Great Britain to alternate Africa Symposium conference locations annually between England and Houston. In subsequent years, the two-day conference concept got established as a successful program with Houston meetings in 2001, 2003 and 2005.

I really took notice when I attended the 2005 Africa Symposium as HGS Vice-President. This successful program was held at the Marriott Westchase, and the strength of the technical program brought in over 300 attendees; many people traveled to Houston from overseas. The HGS International Group organizers showed a lot of business sense because they priced their conference right and added vendor sponsorship to help finance the social hour and meeting materials. The Africa Symposium became, in my mind, the right way to put on local technology conferences. In case you are marking your calendar early, the 2008 HGS/ PESBG Africa Symposium is going to be in Houston next September.

In closing, I have a challenge for our HGS readers: do you have a passion for a geological topic, and do you think 150-300 people would also like to share your interest in a future HGS Applied Technology Conference? How about another "Dry Hole Seminar" or Internationally-themed conference? The HGS has the ability to support and advertise these types of conferences here in Houston and the timing from concept to execution can be quite short, as demonstrated by the Northsiders' Mudstone Conference. It has to start with a passion for a conference topic and people willing to work on the program, but HGS is the place to host such a program. ■

that is still poorly understood, but they have been able to make useful predictions that test their models in the short-term and the results appear to confirm anthropomorphic impact which will accelerate the long-period warming trend which we have no control over. However, the science is still evolving so I suggest you stay tuned.

My "words of wisdom" this month came from my freshman physics professor who told his assembled students:

> **Remember, all science is a lie. As scientists, we can aspire only to a better and closer approximation of the truth.**

The North American and International Explorationists groups have teamed up to bring you "Wilcox Night" on October 29 with two papers on the deepwater Wilcox sands and, more specifically, the Jack discovery. There are two different interpretations for the depositional setting of this important new sand unit. Chevron's interpretation is provided in their abstracts. Art Berman and Joshua Rosenfeld have recently published their depositional model for the Wilcox in the deepwater, a.k.a. the "Whopper Sand." Their interpretation argues that a forced regression caused by a sea level drop of over 6,000 feet occurred due to plate tectonic movements which closed off the Gulf of Mexico and shifted deposition about 200 miles downdip. Several Paleogene-aged canyons, the best known being the Yoakum Canyon, formed as a result and fed massive amounts of sand to this new accommodation space. This is an important discussion and I encourage you to check out both sides. The proof is in the data so it will be interesting to hear how much Chevron is willing to share in support of their interpretation. ■

Reference:

A. Berman and J. Rosenfeld, "A New Depositional Model for the Deepwater Wilcox-equivalent Whopper Sand: Changing the Paradigm," *World Oil*, v. 228, No. 6, June, 2007.

K. Burke and C. Sengor, Tectonic Escape in the Evolution of the Continental Crust, in *Reflection Seismology: The Continental Crust*, eds. M. Barazangi and L. Brown, Geodynamics Series, v. 14, 1985, p. 41-53.

J. Rosenfeld and J. Pindell, "Early Paleogene Isolation of the Gulf of Mexico from the World's Oceans: Implications for Hydrocarbon Exploration and Eustasy," HGS *Bulletin*, v. 46, No. 3, November, 2003.

Monday, October 8, 2007

Westchase Hilton • 9999 Westheimer
Social 5:30 p.m., Dinner 6:30 p.m.

Cost: $28 Preregistered members; $35 non-members & walk-ups

The HGS prefers that you make your reservations on-line through the HGS website at www.hgs.org. If you have no Internet access, you can e-mail reservations@hgs.org, or call the office at 713-463-9476 (include your name, e-mail address, meeting you are attending, phone number and membership ID#).

HGS General Dinner Meeting

by ***Jon Blickwede***
Statoil Gulf of Mexico LLC

Future Exploration Plays of the Gulf of Mexico Province

The Gulf of Mexico (GoM) province, despite being one of the most intensely explored regions of the world, continues to yield new exploration plays with major hydrocarbon discoveries. A recent example is the lower Paleogene Wilcox submarine fan complex in the deepwater GoM, where a number of significant discoveries have been made in the U.S. sector since 2001. In the not-too-distant past, few petroleum geoscientists envisioned the presence of any significant Paleogene sands in the deepwater GoM, let alone hundreds of feet of net sand spread across a vast area of the present-day lower continental slope and abyssal plain. This history of paradigm-breaking new play development suggests that the GoM will continue to offer new surprises and will remain an important producing province well into the future.

Where will the new GoM plays be located? Some major parts of the province are still virtually unexplored, including offshore Florida, the Yucatan platform, and the Cuban and Mexican sectors of the deepwater GoM.

The interplay of Florida state and U.S. federal politics has kept most of the eastern third of the U.S. GoM off-limits to exploration for more than two decades. Although some aspects of the petroleum system offshore Florida are different than the prolific offshore Texas-Louisiana-Mississippi-Alabama portions, a number of promising plays have been identified.

The Yucatan Platform of Mexico comprises an area about three-fourths the size of the North Sea, and one of its exploration plays has elements that are analogous to the Arabian Platform—nevertheless, only about 50 exploratory wells have been drilled, most without the benefit of modern seismic. The Yucatan's promise is hinted at by one major discovery to date, the Xan Field in northern Guatemala, as well as two smaller discoveries in Belize.

Of the three countries having sovereignty over the GoM, Cuba has the smallest, but also least explored portion. The first well in the offshore Cuban sector of the Gulf wasn't drilled until three years ago with the drilling of the Yamagua-1 wildcat. The results of the well have not been disclosed, but it is rumored to have encountered light crude.

Probably the most promising under-explored area of the GoM province is the huge deepwater Mexican sector, where less than 10 wells have been drilled in water depths greater than 500 meters (1600 feet). In stark contrast, about 1800 wells have been drilled in the same water depths offshore from Louisiana and Texas, with the discovery of many world-class fields.

Even within the more highly explored portions of the GoM province, prolific new plays are expected to emerge in a variety of areas and age-intervals. Possible examples of these new plays include the unexplored part of the Upper Jurassic Oxfordian erg on both the U.S. and Mexican sides, Upper Cretaceous submarine fans in the deepwater western GoM, and K/T boundary mass-transport breccias Gulf-wide. ■

Biographical Sketch

Jon Blickwede is currently senior staff geologist with Statoil's Global Exploration-Americas division in Houston. He earned a BS degree in geology from Tufts University in 1977 and an MS in earth sciences from the University of New Orleans in 1981. Mr. Blickwede began his career as a geologist for Amoco Production Co. in New Orleans and Houston and as exploration coordinator for Amoco Venezuela in Caracas. From **HGS General Dinner** *continued on page 17*

HGS General Joint Dinner continued from page 11

1997 to 2002, he served as manager of geoscience at The Andrews Group, providing E&P-related technical consulting for Petróleos Mexicanos (PEMEX), then as regional manager, Mexico, Central America and Caribbean at Petroconsultants/IHS Energy Group in Geneva, Switzerland and Houston. Prior to joining Statoil in 2005, he was senior advising geologist with Unocal, focusing on regional studies in the deepwater Gulf of Mexico and assisting with new ventures evaluations in Latin America.

Mr. Blickwede has been a member of the AAPG, Houston Geological Society, Asociación Mexicana de Geólogos Petroleros, Sociedad Geológica Mexicana, Sociedad Venezolana de Ingenieros Geofísicos, Sociedad Cubana de Geología and Geological Society of Trinidad & Tobago. He has published on a variety of topics, including the Mesozoic of northern Mexico and deepwater exploration potential of the Gulf of Mexico offshore United States and Cuba. Among other professional honors, he was the 1988 recipient of the AAPG Matson Award for his paper on the Perdido Foldbelt of the ultra-deepwater Gulf of Mexico.

HGS Welcomes New Members

Effective August 9, 2007

ACTIVE MEMBERS

Stephany Baum
Sofia Campbell
Ralph DePauw
Mark Fletcher
David Fly
Lowell Lischer
Stephanie Heard
Don Mahaffey
Omar Rodriguez
Andrew Sharpe
Joo Sitt Tan
Wade Vinson
Julia Wellner
Michael Willey

STUDENT

Daniel Pinkston

Welcome New Members

Tuesday, October 16, 2007

Crowne Plaza Hotel (former Sofitel Hotel) • 425 Sam Houston Pkwy. North
Social 11:15 a.m., Luncheon 11:30 a.m.

Cost: $31 Preregistered members; $35 non-members & walk-ups

The HGS prefers that you make your reservations on-line through the HGS website at www.hgs.org. If you have no Internet access, you can e-mail reservations@hgs.org, or call the office at 713-463-9476 (include your name, e-mail address, meeting you are attending, phone number and membership ID#).

by ***Martin M. Cassidy and Kevin Burke***
University of Houston

Worldwide Distribution of Major Carbon Dioxide Deposits: Geologic Setting and Gas Isotopic Evidence of Mantle Sources in Areas of Crustal Extension and Transtension

Deposits of CO_2-rich gas (>50%) are present worldwide but in limited areas. One hundred twenty-one (121) have been identified and classified worldwide, but many others remain to be identified and studied. If encountered while drilling for oil and gas, CO_2 can be either an expensive nuisance or an economic resource. Traditionally, explorationists have only wanted to know how to avoid CO_2 deposits or at least learn how to calculate the risk of finding them. In certain areas there is now a desire to find CO_2. Evidence of the source of the CO_2 deposits is in their geologic setting and in the gas itself.

Geologic setting

The 121 known deposits of CO_2 are typically located in areas of tectonic extension. They are distributed among: cratonic arches, 14; cratonic basins with basic igneous intrusions, 47; continental rifts, 13; areas of transtensional basins related to tectonic escape, 12; back-arc basins, 13; cross-trends in foreland basins just in front of thrust sheets, 12; plate-bounding strike-slip faults, often near basaltic volcanism, 8; and in thrust belts, 2. Although the geologic settings of these deposits suggest mantle CO_2 rising with mantle-derived basalts into the crust, other evidence is needed to support a reliable model for a source of CO_2 deposits.

Gas composition and stable isotopes

Evidence of source is available from the gas itself in the stable isotopic ratios of carbon in CO_2 and in the content and isotopes of noble gases, especially of helium $^3He/^4He$. The isotopic ratio of carbon 13 to carbon 12 reported as difference in parts per thousand from the PeeDee belemnite standard ($\delta\ ^{13}C$ ‰ PDB) can aid in distinguishing different sources of CO_2. The ratio can vary from below -10 ‰ for CO_2 derived from organic matter to 0 ‰ for CO_2 from calcined limestone. Mantle CO_2 is around -5 but overlaps with CO_2 from metamorphism of limestone. A great help is the ratio $^3He/^4He$ compared to a standard that is the ratio in air (Ra). Helium 3 is a marker of access to the mantle as proved by values on the mid-oceanic spreading centers. The use of both these isotopes will be shown in the talk.

Example of a Typical CO2 deposit

A detailed study was made of a typical CO_2 deposit, Bravo Dome Field, New Mexico, U.S.A., which contains 283 billion cu. meters (10 trillion cu. ft.) of 99% CO_2. It is a combination structural-stratigraphic trap, with Permian Tubb Formation sandstone pinching out on a basement nose and sealed above by anhydrite. Gases were specially sampled and analyzed, revealing a dynamic gas deposit in which the noble gas content varies systematically across the field from near mantle values in the west, far above the gas-water contact, to higher concentrations in the east at the gas-water contact. We interpret that CO_2 entered the lowermost sandstone on basement at the west side of the field from a basalt dike below, sweeping the connate water of the sandstone down-dip as the trap filled. The field is a window to the mantle because mantle gases are preserved to the west, while in the east, atmospheric and crustal noble gases enter the CO_2 from the water below and the CO_2 of the deposit is dissolving down-dip into the water. That the CO_2 of Bravo Dome Field is clearly of magmatic origin is shown by $\delta\ ^{13}C$ values of -3.7 to -5.1 ‰ PDB in the CO_2 gas, by the relationships of noble gas

Northsiders Luncheon Meeting *continued on page 17*

 continued from page 15

concentrations, by the isotopic ratio $^3He/^4He$ being as high as 4.26 Ra, and by the high $CO_2/^3He$ ratio. This will be illustrated by maps, charts and graphs.

Exploration use and conclusions

Examination of other CO_2 deposits worldwide will be shown to illustrate that a general model of generation of CO_2 deposits is possible; the use of the model in exploration to either avoid or find CO_2 will be explained.

It is concluded that, in general, CO_2 trapped in sedimentary rocks came from the mantle. Fractures in the crust in areas of extension allow basic magma to rise. CO_2 is expelled from the magma and enters porous reservoirs in sedimentary sections and, where adequate traps and seals are present, forms CO_2 deposits. CO_2 is unrelated to hydrocarbons, migrating separately and at different times. ■

Biographical Sketch

Martin M. Cassidy graduated from Harvard where he majored in geology and graduated with an AB cum Laude in 1955. He accepted a summer job in geophysics with Standard of Texas in Houston before serving three years in the US Air Force in Korea and Denver as a 2nd Lieutenant. After being discharged, he earned a Masters degree in petroleum geology from the University of Oklahoma and started work on a Ph.D. at Harvard, but decided to reenter the oil business before finishing.

In 1962 Mr. Cassidy joined Pan American Oil Company, later Amoco and then BP. He worked South Texas for seven years before moving to the international company where became chief geologist of Pan American Libya Exploration Company, where he and the family lived until 1973. He worked a series of assignments in Chicago and Houston, then moved to London where he rose to Exploration Manager of Amoco UK. After the industry crash of 1986, he transferred back to the U.S. as a technical advisor and later as project leader for international new ventures. During his time at Amoco, he was involved with wells in the East Natuna Sea, Indonesia that found CO_2. The reasons for the carbon dioxide occurrences were not clear and the question of source remained unsolved.

He retired from Amoco in 1994 and entered a Ph.D. program at the University of Houston taking as a topic the study of the source of CO_2 in the subsurface. From a subject of little interest to industry or academia, carbon dioxide has now become a topic of significant interest. Dr. Cassidy currently is pursuing the study of CO_2 in the subsurface and of petroleum geochemistry around the world as a research scientist for the University of Houston and as a consultant.

Tuesday, October 16, 2007

Black Lab Pub, Churchill Room • 4100 Montrose Blvd.

Social 5:30 p.m., Dinner 6:30 p.m.

Cost: $25 Preregistered members; $30 non-members & walk-ups

The HGS prefers that you make your reservations on-line through the HGS website at www.hgs.org. If you have no Internet access, you can e-mail reservations@hgs.org, or call the office at 713-463-9476 (include your name, e-mail address, meeting you are attending, phone number and membership ID#).

Structures in the Field – What You May Not See

*by **Michael A. Kurzy***
AEI Engineering Inc.

How often do you see objects in the field that you think look familiar, but you are not sure? Are there things that you have never seen before, but look important? Objects in both developed and undeveloped areas may have meaning to someone. Many structures that you see a portion of above ground indicate something below ground. Much like an iceberg, the majority of the object is unseen. What are those things and what do they mean? This presentation will present common objects that are not necessarily widely known and what those objects mean. We will discuss what to look for when you see certain things and if those objects can lead to other items that have importance. ■

Biographical Sketch

Michael Kurzy has a BS degree in civil engineering from Texas A&M University. He is a licensed professional engineer with over 16 years of experience in civil engineering. Mr. Kurzy specializes in municipal consulting, serving as the Engineer for six municipal utility districts, and is the Manager of Land Development Services for AEI Engineering, Inc. He has designed water lines, sanitary sewer, storm sewer, detention ponds and paving facilities for subdivisions, commercial sites and schools. He has also designed water plants and roads. Mr. Kurzy is a major in the US Army Reserves, Corps of Engineers, in which he has served for 18 years, with one year in Iraq as a combat engineer.

Thursday, October 18, 2007

Petroleum Club • 800 Bell (downtown)
Social 11:15 a.m., Lunch 11:45 a.m.

To attend this meeting you can register online at www.sipes-houston.org, call (713 651-1639), fax (713 951-9659), e-mail (bkspee@aol.com), or mail your reservation to Mrs. B.K. Buongiorno (1001 McKinney, Suite 801, Houston, TX 77002) by Tuesday October 16, 2007. Payment is required by regular mail or pay at the door with check or cash. Members and Affiliates who register by that date pay $30. The cost is $35 for guests and new registrations at the door. No-shows will be billed.

SIPES
Luncheon Meeting

by ***Leslie Haines***

Bridging the Gap: Leaping Between Your E&P Idea and the Capital You Need

Today, there is more capital available to oil and gas producers than at any time in the past two decades, but you have to know who has it, on what terms they will invest it and what they expect in return.

Producers continue to have strong access to commercial bank debt and, as bankers' price decks have gone up, they have become more aggressive, moving out on the curve to lend more money for proved undeveloped reserves (PUDs).

As energy matters have come to dominate the headlines, private equity firms devoted to energy investments have mushroomed in quantity. What's more, the amount of money they have raised in the past two years goes far beyond what was seen only a few years ago. It is not uncommon for a fund to raise $1 billion or $2 billion, and to commit to start-up E&P firms in amounts of as much as $500 million—even if the start-up has no assets or cash flow yet.

According to Cosco Capital Management, at year-end 2006 there was some $17 billion of private equity capital committed to the upstream and midstream space—but not yet spent. Unfortunately, these funds are looking for low- and medium-risk deals and are not apt to fund exploration or individual wells.

The biggest dilemma for producers and executives with start-up firms is to find the right match between the type of capital needed and its intended use. Do the E&P company and the money source agree on strategy, deal terms, the split of the equity stake and the timing of the final exit plan?

There are several new financial intermediary firms who are the link between those with an idea to drill, acquire acreage or buy production, and those with the capital who are looking for a way to invest in oil and gas. They can help screen deals and make the introductions that can lead to a good match.

In her remarks, Ms. Haines will provide an update on where the various capital sources stand and trends in deal terms. ■

Biographical Sketch

After being with *Oil and Gas Investor* magazine for more than 20 years, editor-in-chief **Leslie Haines** has learned a thing or two about accessing capital for E&P companies. She began writing for *Oil and Gas Investor*, Hart's flagship magazine, in 1985, and has been editor since 1992. She received the Unsell Award for Excellence in Petroleum Journalism from the Independent Petroleum Association of America (IPAA) at its annual meeting in 1992. Under her stewardship, the magazine won the prestigious Neal Award for Business Journalism Excellence in 2005. She is a past president and board member of the Houston Producers' Forum and is on the board of the Houston Energy Finance Group.

Ms. Haines began her journalism career in 1980 as a newspaper reporter in Williston, North Dakota. In 1982 she joined the Midland, Texas *Reporter-Telegram* as that paper's business and energy editor. She is a magna cum laude graduate of Keene State College in her native New Hampshire and spent her junior year at the Universite de Dijon in Dijon, France.

Monday, October 29, 2007 Joint International and N. American Explorationists **Dinner Meeting**

Westchase Hilton • 9999 Westheimer
Social 5:30 p.m., Dinner 6:30 p.m.

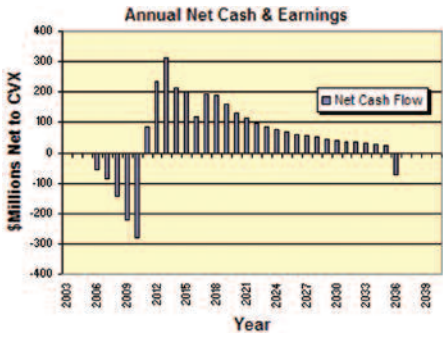
Cost: $28 Preregistered members; $35 non-members & walk-ups

The HGS prefers that you make your reservations on-line through the HGS website at www.hgs.org. If you have no Internet access, you can e-mail reservations@hgs.org, or call the office at 713-463-9476 (include your name, e-mail address, meeting you are attending, phone number and membership ID#).

by ***David B. Rains, Larry Zarra and Dave Meyer***
Chevron
R. Tom Mooney, Morgan D. Sullivan and Larry Zarra
Chevron

The Lower Tertiary Wilcox Trend in the Deepwater Gulf of Mexico

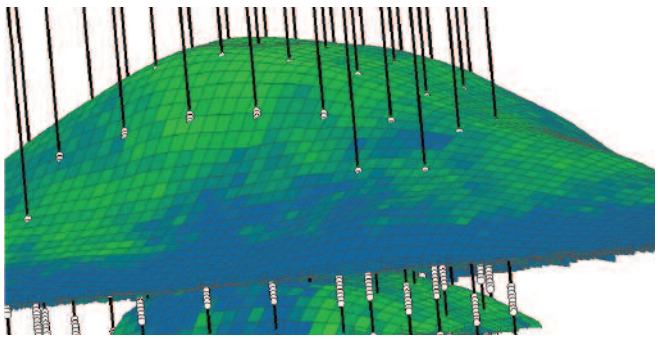
Initial Lower Tertiary penetrations in the western deepwater Gulf of Mexico (GoM) document a greater-than 6,000 foot thick succession of Wilcox Group (upper Paleocene–lower Eocene) turbidites located 250 miles down-dip from their fluvial and deltaic equivalents. These same thick turbidites have also been discovered 200–300 miles to the east, in new exploration wells in this emerging trend. Regional synthesis demonstrates a systematic progression from lower slope to extensive fan sands to starved distal basin.



The deepwater Wilcox Trend covers over 30,000 square miles. Well target depths range from 12,000 to 35,000 feet subsea, water depths range from 4,000 to 10,000 feet, and salt canopies vary from 7,000 to more than 20,000 feet thick and cover approximately 90% of the trend. More than twenty wildcats have been drilled in the deepwater Wilcox Trend. The twelve announced discoveries have ultimate recoverable reserves ranging from 40–500 mmboe. Ultimately, the deepwater Wilcox Trend has the potential for recovering 3–15 billion barrels of reserves (bboe) from these and additional untested Louann salt-cored structures.

The Jack #2 production test (Walker Ridge 758) had a sustained

Joint International and North American Dinner Meeting *continued on page 25*



Understanding Wilcox 1 and Wilcox 2 Reservoir Distribution at Jack Prospect (It's possible that you don't know Jack!)

Chevron's 2004 Jack Prospect oil discovery encountered more than 350 feet of net pay oil sands in the Wilcox (Upper Paleocene) in approximately 7,000 feet of water in the Gulf of Mexico. Chevron cored the Wilcox 1 reservoir, which was interpreted to represent truly unconfined basin-floor turbiditic sheets. The following year Chevron drilled Jack #2 well approximately a mile from the #1 and cored both the Wilcox 1 and Wilcox 2 reservoirs. As in the Jack #1 well, the Wilcox 1 cores were interpreted as unconfined sheets, but the Wilcox 2 core was interpreted as confined channel deposits. We used commonly recognized criteria to interpret and differentiate between unconfined sheet elements and confined channel elements.

Sub-salt seismic data in the Jack area are generally poor and lack the resolution to effectively characterize the reservoirs. Consequently, we used core analysis, log correlation and depositional models to characterize the Wilcox 1 & 2 reservoirs. Both channel and sheet elements are part of a larger 3D body interpreted to be a distributary lobe. The distributary lobe

Joint International and North American Dinner Meeting *continued on page 25*

Joint HGS International and North American Dinner *continued from page 22*

flow rate of over 6,000 bopd from perforations that opened approximately 40% of the reservoir. The test occurred in 7,000 feet of water and below 25,000 feet subsea; it established six world production test records. Test results significantly increase our understanding of trend deliverability.

Many technical challenges need to be resolved before the billions of barrels of hydrocarbons trapped in deepwater Wilcox structures can be recognized as recoverable economic reserves. These challenges include complex sub-salt imaging improvements, reservoir quality, distribution and flow capability, cost-effective drilling and completion, facilities, and infrastructure designs. ■

Biographical Sketch

David Rains earned his BS in geology from Baylor University in 1998, and received his MS in geology in 2001 from Texas A&M University. Mr. Rains joined Chevron in 2001, where he was assigned to the Gulf of Mexico Deepwater Business Unit on the Western Trends Exploration Team. As an exploration geologist, he was on the ground floor of the emerging Lower Tertiary Trend, working both the Jack and St. Malo discoveries. In 2004 he followed both discoveries into deepwater appraisal as the project geologist. As subsurface coordinator for the Jack Project, he helped plan and execute the Jack well test. In January 2007, Mr. Rains accepted his current assignment with Chevron's Southern Africa Business Unit working offshore Angola.

depositional model is the result of previous outcrop research and subsurface analogs. Using the interpreted elements and previously derived aspect ratios (width to thickness ratios), we were able to provide dimensions and reservoir distributions for each element, as well as for the larger distributary lobes.

In 2006, the Jack #2 well was successfully tested and sustained a flow rate of more than 6,000 barrels of crude oil per day. ■

Biographical Sketch

R.T. (Tom) Mooney received his BS in geology in 1977, and his MS in geology in 1979, both from Florida State University. In 1979 Mr. Mooney joined Exxon where he worked as a stratigrapher for 21 years in Exxon's research, exploration and production companies. He left Exxon in 2000 and established a small flight school. After several years as a flight instructor, he decided to return to the oil industry and joined ChevronTexaco in February 2004. Since joining Chevron, Mr. Mooney has worked as a stratigrapher in Chevron's Energy Technology Company (ETC) and is currently the team leader for ETC's Deepwater Stratigraphy Team.

Wednesday, October 31, 2007

Petroleum Club • 800 Bell (downtown)
Social 11:15 a.m., Lunch 11:45 a.m.

Lunch meetings are $30 per person (until the Tuesday before the meeting); $35 for late registrations and at the door - no shows will be billed. Register online at http://www.sipes-houston.org/.

HGS General Luncheon Meeting

*by **André W. Droxler***
Dept. of Earth Science,
Rice University

Past Earth Climate Change in the Context of Current and Future Global Warming: Facts and Implications

Earth's climate has fluctuated in the past at time scales from tens of millions of years to one or two decades. Ocean and continental sediments are excellent climate archives in a wide range of time scales. Ice cores, though limited in time to the last 800,000 years, are also excellent Earth climate records and have the additional advantage of providing a direct measure of fluctuations in atmospheric greenhouse gases.

Understanding the natural variability of the Earth's climate and the external and internal causes of past climate fluctuations is essential to determine the anthropogenic influence on Earth global warming observed in last century and to limit the amount of uncertainty in future climate predictions. A firm statistical basis requires knowledge not only over the last several 100,000 years of glacial cycles but also further back in time to assess previous warm intervals. The talk will focus on past rapid climate changes and emphasize that the current atmospheric concentrations of carbon dioxide and methane have reached levels unobserved for at least the last 800,000 years according to the evidence preserved in ice records and most likely for the last 30 million years. ■

Biographical Sketch

André W. Droxler received his Master's degree equivalent from University of Neuchâtel (Switzerland) and pursued his PhD at RSMAS University of Miami (Florida). He was a postdoctoral research scientist at University of South Carolina in Columbia from 1985 to 1986. Since 1987, he has been a faculty member at Rice University. Dr. Droxler is currently a Professor in the Earth Science Department and since 2007 the director of the Rice Center for the Study of Environment and Society. His research focuses on carbonate and mixed siliciclastic/carbonate deposits on slopes and basins surrounding carbonate platforms, emphasizing processes, evolution, and paleoceanographic and climatic records. He was senior editor of the 2003 AGU Monograph 137, titled *Earth's Climate and Orbital Eccentricity: The Marine Isotope Stage 11 Question.*

Revisiting an Outcrop

by ***George Devries Klein***

While working as a research geologist for Sinclair Research in 1961, I received an urgent phone call from my boss instructing me to drop everything I was doing and respond to a "fire-drill" request. The operating company wanted a research geologist to check out the origin of the sands in a new play in the Arkoma basin, and they wanted an answer in two weeks (although the boss said, "Sooner is better"). I got to work, analyzed relevant data, received permission to do some field work and presented my report on schedule.

One outcrop I visited was of the Atoka Formation in a roadcut north of a bridge on Oklahoma Highway 82 crossing Lake Tenkiller, south of Tahlequah, OK. I noticed the sandstone was organized as a fining-upward sequence and I interpreted it as a meandering fluvial channel fill (Figure 1). A month later, I brought my office-mate, Glenn Visher, and a Sinclair palynologist, Bill Meyers, to the roadcut, and Glenn concurred with my interpretation. Neither of us had time to examine outcrops behind the roadcut, and because it was copperhead season, we weren't motivated to try.

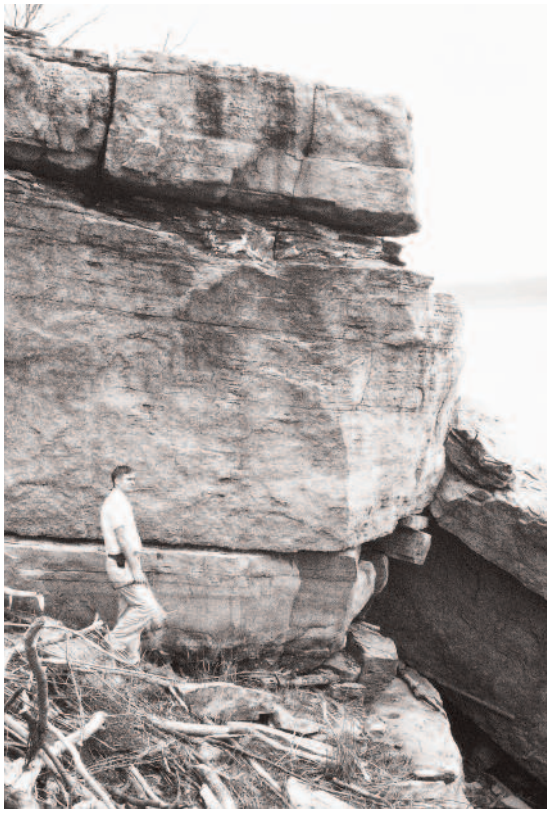


Figure 1. Fining-upward sequence in Atoka Sandstone, Tenkiller Reservoir, OK Hwy 82, south of Tahlequah, OK. Bill Meyers, Sinclair palynologist, for scale. Base of sequence right above his belt. (Photo taken in 1961)

When appointed to the faculty of the University of Illinois in Urbana-Champaign, I offered a graduate field trip to the Arkoma basin and the Ouachita fold belt to demonstrate different clastic depositional systems and to show Midwesterners that rocks were folded. The first trip was in 1972, right after SEPM had given me a JSP Best Paper Award for research on tidalites in the Bay of Fundy, and we stopped at the Tenkiller outcrop. I had shown slides of that outcrop to illustrate fining-upward sequences characterizing ancient meandering channel fills in all my classes, and the graduate students recognized the outcrop instantaneously. Immediately, they all took pictures with people in groups or individually because suddenly my slides became physical reality and they wanted their own picture.

While pictures were being taken, two paleontology graduate students started to hammer away at the lag conglomerate at the base of the fining-upward sequence. Although most of what they cracked open was shale chips, they suddenly spotted something else and yelled out, "Hey Doc, there are marine fossils in here." I checked. Sure enough they were right. The shells also were concave up as they are supposed to be, and it turned out to be a tidal channel (and, yes, I had missed the fossils). It was a good lesson for the students because they discovered that even a person considered to be an expert can make mistakes or miss something, that professors don't know everything,

Rocks *continued on page 30*

Figure 2. Superimposed current ripples oriented at right angles to cross-bedding dipping down (in picture), immediately to northeast of 0.1 m on folding metric stadia rod. Faint reactivation surface and cross-bedding to right in overlying sandstone. Atoka Formation, 150 meters inland (to North) of outcrop in Figure 1. (Photo taken early May 1972)

Rocks continued from page 29

and that every time one returns to an outcrop one will see something new they didn't observe beforehand.

I went back two weeks later, and this time I hacked my way through the underbrush behind the road cut. There the sandstones all showed herringbone cross-bedding with reactivation surfaces,
current ripples superimposed on cross-bedding at right angles to dip (Figure 2), lenticular bedding, flaser bedding, wavy bedding (Figure 3), bioturbation, and a host of other features confirming the tidal origin of this fining-upward channel sequence.

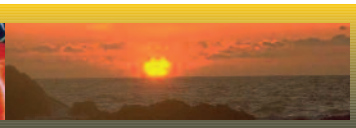
I then wished I had bushwhacked behind the roadcut in 1961.

Among the 12 students who participated in the 1972 trip were: Frank Ettensohn, (University of Kentucky), Dennis Kolata (Illinois Geological Survey), Margaret Leinen (National Science Foundation), John Barnes (deceased), Roscoe Jackson (Jackson Brothers, LLC,), Linda Provo (lost contact), Nancy Lee (lost contact), Bill Rice (lost contact), Jeannie Kulla (lost contact), Roger Chagnon (somewhere in Canada) and Jim Hooten (lost contact). ■

Figure 3. Flaser bedding weathered out from sandstone face at 0.1 m, 0.2 m, and immediately above and below wavy bedding at 0.39 m on folding metric stadia rod. Atoka Formation, 100 meters inland (to North) of outcrop in Figure 1.

October 2007

Sunday	Monday	Tuesday	Wednesday
	1	2	3
7	8	9	10
14 **AAPG Mid-Continent Meeting** *Wichtia, Kansas* **HGS/PESGB Africa**	15 **HGS General Dinner** *by James Markello, "The Carbonate Analogs Through Time (CATT) Hypothesis—A Systematic and Predictive Look at Phanerozoic*	16	17 **SIPES Continuing Education Seminar** **GSH Technical Breakfast** *by Don Caldwell, "Reservoir Characterization Below Seismic Resolution"*
21	22 **HGS Golf Tournament** Page 16 **HGS International Dinner** *by Robin Hamilton, "Identifying New Hydrocarbon Plays—The Challenge and an Approach"* Page 21	23 **HGS Northsiders Luncheon** *by Ted Lukas, "Thinly-Bedded Deepwater Channel Complexes, Zafiro Field, Equatorial Guinea"* Page 23 **HGS Environmental & Engineering Dinner** *by Darren DeFabo and Ed Dolan, "Horizontal Well Remediation"* Page 24	24 **GSH Tennis Tournament**
28 **77th Annual SEG Convention** *San Antonio*	29	30 **12th Annual Gulf Coast Prospect Expo** *Lafayette, Louisiana*	31 **HGS General Luncheon** *by Cathy Farmer, "Structural and Sedimentological Evolution of the Ultra-Deep Gas Play Fairway—Gulf of Mexico Shelf, Texas and Louisiana"* Page 31

GeoEvents

Thursday Friday Saturday

Thursday	Friday	Saturday
4 **NOW you can make your reservations on-line at www.hgs.org**	5	6
11	12 **Geoscience Day @ BEG**	13
18	19	20
25 **SIPES Luncheon Meeting** *by Jason Robinson, "Using ElectroMagnetics for Onshore Hydrocarbon Detection and Delineation—A Case Study from Trinidad"* Page 29 **NeoGeos Happy Hour**	26	27

Reservations:

The HGS prefers that you make your reservations on-line through the HGS website at www.hgs.org. If you have no Internet access, you can e-mail reservations@hgs.org, or call the office at 713-463-9476. **Reservations for HGS meetings must be made or cancelled by the date shown on the HGS Website calendar, normally that is 24 hours before hand or on the last business day before the event.** If you make your reservation on the Website or by email, an email confirmation will be sent to you. If you do not receive a confirmation, check with the Webmaster@hgs.org. Once the meals are ordered and name tags and lists are prepared, no more reservations can be added even if they are sent. **No shows will be billed.**

Members Pre-registered Prices:

General Dinner Meeting	$28
Nonmembers walk-ups	$35
Env. & Eng.	$25
Luncheon Meeting	$30
Nonmembers walk-ups	$35
International Explorationists	$28
North American Expl.	$28
Emerging Technology	$25

Upcoming GeoEvents

Monday & Tuesday, October 1–2
AGC Conference: Gulf Region Mudstones as Unconventional Reservoirs, *page 8*

Monday, October 8
HGS General Dinner
New Exploration Plays in the GOM
Jon Blickwede

October 13–20
Earth Science Week

October 17–20
Association for the Study of Peak Oil & Gas (ASPO) 2007 Houston World Oil Conference

October 21–23
GCAGS Convention, Corpus Christi

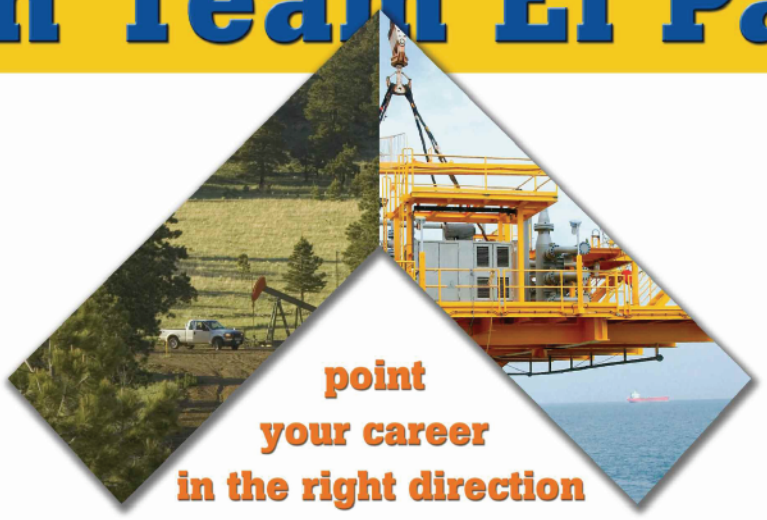
Tuesday, October 23
HGS Northsiders Lunch
HGS Environmental & Engineering Dinner
Speakers TBA

Thursday, October 25
NeoGeos Happy Hour

Monday, October 29
HGS International & North American Explorationists Joint Dinner
Wilcox papers by David Rains & Tom Mooney

Wednesday, October 31
HGS General Lunch
Tentative: Earth Climate Change - Facts & Implications
Dr. A.W. Droxler

Join Team El Paso



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Reservoir Engineers • Production Engineers • Engineering Techs

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Earth Science Week 2007 Events

by ***??***

Now is the time to make plans to attend the 10th annual Earth Science Week. This year's theme is "The Pulse of Earth Science" with a wide range of exciting activities planned for educators, students and anyone interested in the study of the earth.

AGI has organized Earth Science Week nationally to promote public and professional awareness of the status of Earth science in education and society. Last year an estimated 2 million people participated in Earth Science Week.

Below are some of the exciting local activities organized by HGS. You are encourage to attend or help out at these events. For more information on any of the field trips, or to volunteer to help out, please contact Audrey Reznik at m09795@yahoo.com. To learn more about national programs, visit the Earth Science Week website at http://www.earthsciweek.org.

HGS Earth Science Week
Saturday, October 13
Time: TBA

Join us for the annual Family Earth Science Festival at the Houston Museum of Natural Science's Weiss Energy Hall. The festival will include an energy passport contest, hands-on demonstrations, special presentations, Boy Scout badge activities and other great programs.

We will have an opening ceremony at the entrance to Weiss Energy Hall at 1:00pm. Please join us as a visitor or a volunteer, and bring your family and friends! There is no additional fee to participate in the Earth Science Week activities, just the price of regular admission to the Houston Museum of Natural Science.

Geology Field Trip 1
Ocean Star Offshore Drilling Rig & Museum
Pier 20, Galveston, TX — Saturday, October 20
Time: TBA

The Gulf of Mexico is extremely important to the oil industry. Vast amounts of oil lie thousands of feet below sea level. Ever wonder how that oil is accessed and recovered? Join us for a morning of exploring the Ocean Star Offshore Drilling Rig & Museum in Galveston. We'll take a look at the equipment used for oil recovery and have a tour of an actual (retired) offshore drilling rig. Please bring a sack lunch, water, sunblock and a pair of sturdy shoes.

Museum Admission is:
Adults $6
Seniors (over 55) $5
Students (ages 7-18) $4
Children (under 7) Free

Geology Field Trip 2
Geology and Beaches
Galveston Island State Park, TX — Sunday, October 21
Time: TBA

Ever wonder what makes a beach a beach? Please bring your family and friends and join area experts at Galveston Island State Park for a discussion and tour of key beach elements. There is more to beaches than just sand—really! We will make a small trench and discuss tides, storms, sand composition, and of course the biology of beaches. It's not just us humans who enjoy the beaches!

The field trip has no registration fee and is open to the public with minors welcome when accompanied by an adult. Your entrance fee to the park will be waived and volunteers will be stationed at the entrance with information and directions. Please bring a sack lunch, water, sunblock and a pair of sturdy shoes. ■

A North Slope Exploration Tale

by ***Steve Earle***

This story of how an exploration program can get twisted off was passed on to me by one of the "old hands" at Amoco, where I started my exploration career.

Shortly after the discovery of Prudhoe Bay Field by Atlantic Richfield in 1968, the State of Alaska held a much anticipated lease sale. The Amoco geophysicists interpreted their seismic data and prepared structure maps on the top of the Saddlerochit Sand. As those of you who have worked the North Slope know, variations in permafrost thickness result in large velocity changes laterally, but cannot be seen in the reflections. Time structure maps then are a mix of the subsurface structure and the amount of permafrost. The other thing you need to keep in mind is that the industry at about this time was starting to move from single-fold seismic to multi-fold data. The use of common depth point (CDP) data allowed geophysicists to determine stacking velocities, which were then used as pseudo-average velocities for depth conversion after applying a fudge factor. The Amoco dataset included areas with the new 600% data and areas with the old single-fold coverage.

The interpreters constructed their maps over the entire area of the upcoming lease sale and, where they had multi-fold data, they converted the maps to depth. Not having a way to get velocity control and understanding the problem of depth-converting single-fold data, they left that area in time. As the time for management presentations approached, the District Geophysicist reviewed the work done. Noting the area with time contours, he told his interpreters they had to do the entire map in depth. The interpreters objected to this meaningless exercise, but were overruled. They put one of those wavy lines on the map with a label indicating that a single velocity function was used to depth-convert over this part of the map. They then made their presentation to management showing the closures they recommended to bid on and, as an aside, explaining the significance of this change of control. The managers nodded their heads in understanding, rolled up the maps and headed off to come up with their bid strategy.

Security was very tight as the lease sale was expected to be extremely competitive. Amoco was partnered with Union Oil of California, and they took the unusual step of renting a train for several weeks. The managers who would determine the actual dollar amount to bid on the tracts got on that train with the maps and everyone stayed on that train as it rolled up and down the same section of track until it was time to turn in the bids. Of course, none of the interpreters was invited. The managers began a review of the recommended tracts and then noticed a large closure that was not on the list. This feature was high to the discovery at Prudhoe! It had to be a great prospect.

The lease sale bids were read and the Amoco geophysicists were rather surprised by the size of the winning Amoco-Unocal bid on a tract they had not recommended because it was over an area of single-fold coverage. Particularly telling was how much higher the Amoco-Unocal bid was over the next larger bid. Immediately after the sale, Amoco traded for a velocity survey in an offsetting well. The new velocity control completely tilted out the time closure and the "prospect" was never drilled. ■

Government Update

*by **Henry M. Wise, P.G.** and **Arlin Howles, P.G.***

TBPG Update

The Texas Board of Professional Geoscientists (TBPG) has released their video record of the July 13, 2007 at: http://www.texasadmin.com/cgi-bin/agenda.cgi?location=txgeo&savefile=TBPG_BM071307. Some people have had problems downloading these files. Real Player works and you can download it for free at: http://www.realplayerweb.com/co/real/realplayerweb/?sid=M2AG0002cGS

Matt Cowan, with the Texas Association of Professional Geoscientists (TAPG) addressed the Board on anonymous complaints and waivers to the ASBOG test. He suggested that the format be modeled after the Professional Engineer's guidelines. A complaint could be filed anomalously, the Executive Director would review the information, and if he finds it to be frivolous or contain insufficient information, he could through out the complaint and have the records sealed. This would help to protect someone from being maliciously maligned or blackballed.

Mr. Cowan also asked the TBPG to make a standard policy for granting ASBOG exemptions. He suggested that, in addition to the minimum TBPG requirements, 16 years of experience be required. This could be mitigated by higher education levels (MS or PhD). He'd also like the TBPG come up with a policy to help university professors get their PGs. Evidently, most of them haven't, and Mr. Cowan believes that having professors who are registered will encourage their students to do the same.

In response to a complaint of someone practicing geology without a license filed in April 2007, the TBPG has come up with the following policy for this type of situation:

- The TBPG will determine if action is warranted and a cease-and-desist letter issued within 15 days of receipt of the complaint.
- The respondent (who in this case has 40 years of experience and a PhD) will be given 15 days to correct the deficiencies in the letter. In this case, that includes removing his geological website, stop accepting and completing geological work in Texas, and submits his application for a PG).
- If he complies with the above, no fines will be applied.
- If the above isn't complied with within 15 days, the fine will be equal to the number of years he's been practicing times the fees the TBPG would have collected during that period of time ($800, in this case).

This intent is to bring people into compliance. The TBPG will consider other situations as they come up.

Proposed Texas Rules and Regulations

The TBPG proposes an amendment to 22 TAC §850.62, regarding complaints against activities that are regulated by TBPG. The proposed amendment clarifies that complaints can be filed against unlicensed individuals or entities if the Board regulates their activities.

The TBPG proposes an amendment to 22 TAC §850.82, regarding dishonored check fees. The proposed amendment clarifies fees for dishonored payments.

The TBPG proposes an amendment to 22 TAC §851.28, concerning license renewal and reinstatement. This amendment is proposed to more closely align TBPG rules with its enabling statute and clarifies the language regarding notification of license expiration. The TBPG will issue notices of expiration 60 days in advance.

The TBPG proposes an amendment to 22 TAC §851.31, concerning temporary licenses. The proposed amendment removes redundant language from the rule.

The TBPG proposes an amendment to 22 TAC §851.80, regarding licensing fees set by TBPG. The proposed amendment updates the examination fee for geophysics ($175), and adds the fee ($25) for insufficient funds.

For more information on these proposed changes go to: http://www.sos.state.tx.us/texreg/sos/PROPOSED/22.EXAMINING%20BOARDS.html#149

The Railroad Commission of Texas (RRC) proposes amendments to §§12.147, 12.309, 12.337, 12.395, 12.681, 12.682, 12.688, 12.689, 12.693, and 12.816 relating to Reclamation Plan: Postmining Land Uses; Terms and Conditions of the Bond; Topsoil: Redistribution; Revegetation: Standards for Success; Public Hearing; Review of Notice of Violation or Cessation Order; Determination of Amount of Penalty; Assessment of Separate Violations for Each Day; Request for Hearing; and Liens. The RRC proposes these amendments to update provisions of the Texas Coal Mining Regulatory and Abandoned Mine Land Programs. For more information on these proposed changes go to: http://www.sos.state.tx.us/texreg/sos/PROPOSED/16.ECONOMIC%20REGULATION.html#7

The Texas Commission on Environmental Quality (TCEQ) is beginning to work up proposed rule changes in accordance with recently passed Texas laws. These are still in the preliminary stages and have not been published in the Texas Register yet:

- Chapter 288, Water Conservation Plans, Drought Contingency Plans, Guidelines

Government Update *continued on page*

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and RequirementsSenate Bill 3 and House Bill 4: Water Conservation Plan Review. These amendments are proposed under Texas Water Code (TWC), §16.402(e) which requires that the Texas Water Development Board (Board) and the commission jointly adopt rules implementing provisions of Senate Bill (SB) 3 and House Bill (HB) 4 from the 80th Legislative Session.

- SB 1604: Uranium Mining and Radioactive Waste (Phase 1). This rulemaking implements SB 1604 from the 80th Texas Legislative Session relating to transfer of certain regulatory responsibilities for radioactive waste from the Texas Department of State Health Services (DSHS) to the TCEQ

For more information on the above, go to: http://www.tceq.state.tx.us/rules/pendprop.html#07028.

Other TCEQ new rulemaking initiated as a result of legislation from the 80th Regular Session 2007 are listed below. There is currently no other information available on these:

- HB 3098: Edwards Aquifer Fees: This rulemaking implements HB 3098, by revising the 30 TAC Chapter 213 fee structure for water pollution abatement plans and contributing zone plans submitted to the TCEQ for review by the Edwards Aquifer Protection Program.
- HB 1956: PST Financial Assurance: This rulemaking would require proof of financial assurance with annual UST registrations.
- HB 3220: Dry Cleaner Regulation and Remediation: Sets deadline for Property Owners (POs) to register by 12/31/07 as requirement for eligibility for fund benefits. Allows for quarterly billing for registration fees. Amends fees for solvents; requires refund of current credit balances; restricts use of perc at sites where corrective action completed. Allows an owner of non-participating drop station to move and retain non-participating status.
- SB 662: Groundwater Availability for Platting: Rulemaking to implement legislation from the 80th R.S., 2007, on S.B. 662.
- HB 576, HB 713, HB 1127, HB 1886, HB 2984, HB 3378, HB 3770, SB 657: Water Districts: Rulemaking to implement water district legislation from the 80th R.S., 2007, on HB 576, HB 713, HB 1127, HB 1886, HB 2984, HB 3378, HB 3770, and SB 657.
- HB 2654: UIC Class I Nonhazardous Rules for Water Treatment Residuals: This rulemaking will allow the commission to issue a general permit for Class I nonhazardous wells injecting desalination concentrate and other water treatment residuals from public water systems. This rulemaking will also revise technical standards to be equivalent with federal Class I nonhazardous regulations.
- HB 3554, HB 1956: Regulation, Remediation, and Financial Assurrance of AST's and UST's: HB 3554 requires the commission to use "risk-based corrective action"; allows the use of money in the Petroleum Storage Tank Remediation (PSTR) Account for certain AST and UST expenses; extends the fee imposed on the delivery of a petroleum product on withdrawal from bulk; eliminates the current annual UST and AST facility fee and allows its reinstatement at per tank amounts set by the commission; and extends the sunset date of the PSTR Account and the expiration date of the petroleum storage tank reimbursement program. HB 1956 requires financial assurance.

1. SB 1037: Evaporation Pits: Prevention of surface water or groundwater pollution from evaporation pits operated for the commercial production of brine, salts, or minerals.

- HB 3838: In Situ Uranium Mining / SB 1604: Phase II: Relating to regulation of injection wells used for in situ uranium recovery by the Texas Commission on Environmental Quality.

AGI Government Affairs Monthly Review (June 2007)

House Announces Energy Independence Initiative

On June 28, 2007, Speaker of the House Nancy Pelosi (D-CA) announced an Energy Independence Initiative in what her press release called the "New Direction Congress". The press release describes 21 energy-related bills passed by 10 House committees plus energy-related measures in several appropriation bills. The purpose of the legislation, which Speaker Pelosi hopes to pass in July, is "to achieve energy independence, strengthen national security, grow our economy and create new jobs, lower energy prices, and begin to address global warming."

Many of the bills deal with improving energy efficiency standards and providing tax incentives for alternative energy. Of particular interest to the Earth science community are the seven energy-related bills passed by the Science and Technology Committee and the energy-reform bill passed by the Natural Resources Committee.

The "Energy Policy Reform and Revitalization Act of 2007" (H.R. 2337) passed by the Natural Resources Committee would repeal many aspects of the Energy Policy Act of 2005 and also authorize the U.S. Geological Survey to conduct a nationwide assessment of geologic formations capable of sequestering carbon dioxide. The Senate is considering a related bill (S. 1321) to direct the USGS to survey geologic formations for carbon capture and enhance the carbon capture research and development portfolio of the Energy Department.

The House Science and Technology Committee passed seven energy bills addressing issues such as carbon sequestration, solar energy, biofuels and geothermal energy. Below is a brief summary of each bill.

"The Department of Energy Carbon Capture and Storage Research, Development, and Government Update continued on page

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Demonstration Act," (H.R. 1933) authorizes $315 million over the next three fiscal years to be allocated to research of carbon capture and storage. The bill covers lab-based and field-based integration of developing techniques in carbon sequestration. The Senate is considering a related bill (S. 1321).

The "Biofuels Research and Development Enhancement Act" (H.R. 2773) is a comprehensive bill that establishes research efforts for the infrastructure of biofuel development and refining. The bill also directs the Department of Energy to examine the consequences of biofuel use, including environmental impacts and impacts on diesel vehicles running on E85, a fuel that is 85% ethanol.

"The Solar Energy Research and Advancement Act" (H.R. 2774) establishes programs to encourage the use of solar energy technologies including thermal energy storage and training a larger solar energy workforce to help install and maintain photovoltaic equipment. The act authorizes $41 million over the next five years to investigate thermal energy storage.

The committee also passed a bill, H.R. 364, creating a new Advanced Research Projects Agency for Energy (ARPA-E) within the Department of Energy (DOE), to be modeled after the Department of Defense's similarly named agency, DARPA. ARPA-E's mission will be to reduce the nation's dependence on foreign oil by 20% over the next decade. ARPA-E will fund grants to research institutions to encourage these developments. The Senate included the creation of ARPA-E in a larger bill, called "America COMPETES" (S.761) approved by the Senate in April.

"The Global Change Research and Data Management Act" (H.R. 906) reauthorizes a 1990 act that authorizes the U.S. Global Change Research Program to conduct research and monitor Earth climate. The bill directs the program to provide information pertaining to climate change to local, state, and federal officials.

"The Advanced Geothermal Energy Research and Development Act" (H.R. 2304) encourages geothermal and hydrothermal sources for energy production. The act authorizes $90 million each year for five years starting in 2008, $10 million of which must be directed towards the promotion of co-produced geothermal energy from oil and gas fields. Other efforts encouraged in the bill includes the creation of two centers for the development of pertinent geothermal equipment, efforts to make geothermal energy more feasible beyond Western states, and promotion of exploratory programs for hydro- and geothermal energy sites not visibly apparent at the surface. The potential for geothermal power is vast in the United States. Currently over 2,800 MW of power are generated by geothermal resources, however, the U.S. Geological Survey estimates there is between 95,000 to 127,000 MW of geothermal resources available.

"The Marine Renewable Energy Research and Development Act" (H.R. 2313) authorizes $50 million each year for five years starting in 2008 for marine renewable energy. The Act directs the Secretary of Energy to support not only research and development, but also quicker commercial implementation. The bill also establishes at least one National Center for marine research, which would be a permanent research facility aiming at making energy capture and connection to electrical grids viable.

All of these bills are now placed on the agenda for debate on the House floor. Scheduling for the discussion of these bills will be determined by the majority leadership.

More information about Speaker Pelosi's Energy Independence Initiative and summaries of the other bills are available at her web site or through the following link:
http://speaker.gov/issues?id=0010

The full text of each House bill is available from Thomas at the following links:
HR 364:
http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.00364:
HR 906:
http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.00906:
HR 1933:
http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.01933:
HR 2304:
http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.02304:
HR 2313:
http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.02313:
HR 2337:
http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.02337:
HR 2773:
http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.02773:
HR 2774:
http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.02774:

House Resources Committee Passes Ocean Exploration Bills

On June 19, 2007, the House Resources Subcommittee on Fisheries, Wildlife, and Oceans approved two bills to expand ocean exploration efforts by the National Oceanic and Atmospheric Administration (NOAA). The first bill, the National Ocean Exploration Program Act, H.R. 1834, would authorize $486 million and $265 million for ocean exploration and undersea research, respectively, over the next ten years. In doing so, it creates the Ocean Exploration Advisory Board, under NOAA, to advise and help coordinate the research efforts.

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2007 GCAGS / GCSSEPM
Annual Convention

Gulf Coast Association of Geological Societies
Gulf Coast Section of the SEPM
Corpus Christi Geological Society

Corpus Christi, Texas
October 21-23, 2007

With our presence on the sparkling Gulf Coast of Texas, the Corpus Christi Geological Society has set the theme of the 57th annual convention as

"EXPLORING THE THIRD COAST"

Better product pricing has sparked a tremendous growth in our industry. We anticipate papers that will reflect aspects of today's exploration and exploitation and will stand as a legacy to those just entering our profession.

CONVENTION HIGHLIGHTS

- Over 100 Oral & Poster Presentations
- 2 Field Trips & 6 Continuing Education Courses
- Global Climate Change Forum
- Co-location for Gulf Coast Prospect Expo

Online Registration Now Available
www.gcags2007.com

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The Ocean and Coastal Mapping Integration Act (H.R. 2400) mandates a new interagency committee, led by NOAA, to enact a federal mapping plan for the nation's oceans, coastal areas, and Great Lakes regions. An approved amendment to the bill directs NOAA to coordinate pertinent data acquired about coastal and oceanic regions. In addition to organizing geographic data, the national registry would also serve to integrate existing onshore and offshore maps.

The full text of each bill is available from Thomas at the following links:
HR. 1834:
http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.01834:
H.R. 2400:
http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.02400:

National Academies Releases Its Future of Coal Report

On June 20, 2007 the Committee on Coal Research, Technology and Resource Assessments to Inform Energy Policy released a prepublication version of their report. Senators Robert Byrd (D-WV) and Arlen Specter (R-PA) requested the Academies to examine coal research and development (R&D) for the entire fuel cycle with emphasis on "upstream" R&D such as the mining, processing and transport of coal. They also ask the committee to highlight any stumbling blocks to increase coal production and to develop a national coal R&D strategy for the next 25 years.

Coal accounts for about 23% of total U.S. energy use and about 50% of U.S. electricity generation. About 92% (1.1 billion tons) of the coal mined every year is used for electricity generation. The committee estimated that by 2020, the use of coal could grow by 25% above 2004 levels or decline by 15% below 2004 levels. Estimates beyond 2020 become even more unclear; in 2030, projections of coal demand could grow from 70% above or 50% below 2004 levels. Overall, the United States has sufficient coal through 2030 at current consumption rates and will probably have enough coal for 100 years.

The committee recommended a "comprehensive accounting of national coal reserves within the next 10 years." The current reserves estimates are based on studies done before 1974 and more recent small area surveys suggest that only a small fraction of estimated reserves are reachable with current mining techniques. The U. S. Geological Survey (USGS) would conduct this study at an annual cost of $10 million over 10 years. Additionally the committee also recommended that the USGS conduct an assessment of the nation's carbon capture resources and that an additional $10 million per year be spent for 5 years to conduct this research.

As the easily mined coal is exhausted, mining will become more challenging and hazardous. The committee recommended that an additional $35 million be spent through the National Institute for Occupational Safety and Health to reduce exposure to hazardous conditions and improve worker training.

The committee also recommended increased spending for improved environmental protection and land reclamation. Acid mine drainage and hill top removal are among some of the most pressing issues that need to be addressed. The committee recommended an additional annual funding of $60 million for R&D research to be carried out by the Office of Surface Mining.

Improvements in mine productivity have been incremental in recent years, perhaps because federal funding for mining technologies has been minimal (0.2 percent of total coal R&D) over the past decade. Therefore the committee called for $30 million annually from federal funding as well as $30 million annually from non-federal funds to support advanced coal processing and optimization of coal resources. The Office of Fossil Energy at the Energy Department would serve as the lead agency for this research.

Taking into account all of the committee's recommendations an additional $144 million would be spent on "upstream" R&D funding bringing the total spending up from $46 million per year to $190 million per year. Coal will be a major source of energy in this country for at least the next few decades, so it is essential to have a thorough assessment of coal resources, improved technologies for efficient, safe and environmentally sensitive extraction and improved methods for environmental protection and reclamation after the mining is done.

A press release about the report is available from the National Academies at:
http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=11977
The prepublication version of the report is available at:
http://books.nap.edu/catalog.php?record_id=11977

Army Corps Releases Flood Map of New Orleans

The U.S. Army Corps of Engineers (USACE) released a study on areas most vulnerable to flooding in New Orleans. So far over $7 billion has been spent on hurricane protection since hurricane Katrina to decrease the risks of major flooding. The study states that the chances of the entire city being flooded with over six feet of water are one in 500 for this year. The risks of flooding will continue to drop as the USACE completes its levee rebuilding project which will be finished in 2011.

Despite the lowered risk the USACE encourages all local citizens to download the flood maps **Government Update** continued on page

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from a public web site and become familiar with the local geography in order to find areas of safety during a flood. The maps are also being used by local leaders to make future urban planning decisions. The Federal Emergency Management Agency (FEMA) has also been made aware of the flood maps and is using them to create federal flood insurance rate maps. The USACE has made it clear that this report is only a start in a 100 year hurricane protection plan. As part of this plan, the Interagency Performance Evaluation Task Force (IPET) has provided projected flood water levels along the Gulf Coast and is using them to create a risk assessment model over a 100 year time span to aid in future hurricane protection projects.

A link to the USACE's report can be found at:
http://nolarisk.usace.army.mil/science.htm

Key Federal Register Notices

EPA – The EPA issued a final National Pollutant Discharge Elimination System (NPDES) general permit for the Western Portion of the Outer Continental Shelf of the Gulf of Mexico (No. GMG290000). The general permit authorizes discharges from new sources, existing sources, and new dischargers in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category (40 CFR Part 435, Subpart A). The reissued permit will become effective October 1, 2007. [Federal Register: June 7, 2007 (Volume 72, Number 109)]

DOI - The MMS proposed to extend the proprietary term of certain reprocessed geophysical information submitted to MMS under a permit. The proposed rule would give up to 5 years of additional protection to reprocessed vintage geophysical information that MMS retained and, under the current rule, is subject to release by MMS 25 years after issuing the germane permit. The extension would provide incentives to permittees and third parties to reprocess, market, or in other ways use geophysical information that may not otherwise be reprocessed without the term extension. This rule would apply to Geological and Geophysical (G&G) Explorations of the Outer Continental Shelf For more information contact David Zinzer, Geophysicist, Offshore Minerals Management, Resource Evaluation Division, at (703) 787-1628 or e-mail david.zinzer@mms.gov. Federal Register: June 18, 2007 (Volume 72, Number 116)]

AGI Government Affairs Monthly Review (July 2007)

House Passes Water Resources Bill

The House passed the Water Resources Development Act (H.R. 1495) by a vote of 381 to 40 on August 1, 2007 and now the measure awaits a final vote in the Senate before it can be sent to the President.

The massive legislation would fund over 900 Army Corps of Engineers flood and environmental restoration projects and would cost $21 billion. This is much larger than the original House bill ($15 billion) or the original Senate bill ($14 billion) and the President has threatened to veto the legislation because of its cost. The Ranking Member of the House Transportation and Infrastructure Committee, Congressman John Mica (R-FL) promised to have enough votes to override the veto. Although the Senate has not set a time table for considering this bill, in an unusual meeting of the minds, Senator Barbara Boxer (D-CA) and Senator James Inhofe (R-OK) both pledged to get enough votes in the Senate to override a possible veto too.

The full text of the bill is available from Thomas at:
http://thomas.loc.gov/cgi-bin/bdquery/z?d110:HR01495:@@@D&summ2=m&;

Clean Water Amendment Gets a House Hearing

Congressmen John Dingell (D-MI) and Jim Oberstar (D-MN) have introduced a measure that would erase the term "navigable" and replace that term with "waters of the United States." in the Clean Water Act. The bill (H.R. 2421) would increase the number of waterways protected by the Clean Water Act by removing the requirement that only navigable waterways are protected. The measure is in response to two recent Supreme Court decisions that focused on what Congress intended by the phrase "navigable waters of the United States". The Supreme Court cases in question are Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers and the joint cases of Rapanos v. United States and Carabell v. U.S. Army Corps of Engineers. The legislation also includes a clause that would retain existing Clean Water Act exemptions, including those for agriculture, mining and silviculture.

The measure was introduced in May and is currently sitting in the House Committee on Transportation and Infrastructure. A hearing on the legislation took place in July and the measure has 169 co-sponsors.

The full text of the bill is available from Thomas.

National Petroleum Council Issues Energy Outlook for Oil and Gas

On July 18 2007, the National Petroleum Council (NPC) released a draft report entitled "Facing the Hard Truths About Energy, A Comprehensive View to 2030 of Global Oil and Natural Gas". The draft report was released at an NPC meeting in Washington DC. The work is being led by Lee Raymond, the former Chief Executive Officer of Exxon Mobil, and involves 350 experts plus more than a thousand others who have been invited to provide comments and advice. Major issues highlighted in the executive summary include: **Government Update** continued on page

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1. During the past 25 years, energy demand increased by 60 percent and the next 25 years is likely to see a similar rate of increasing energy demand.
2. Coal, oil and natural gas are indispensable resources for the next 25 years.
3. The majority of the energy sector workforce is eligible for retirement in the next 10 years and this workforce must be replenished.
4. Policies to reduce carbon dioxide emissions will alter the energy mix, increase energy-related costs and require reductions in energy demands.

The NPC called for the following actions to mitigate the highlighted problems:

1. Reduce demand by increasing energy efficiency.
2. Expand and diversify energy resources.
3. Integrate energy policy into trade, environmental, security and foreign policy.
4. Enhance science and engineering capabilities and create sustainable opportunities for research and development of all energy resources.
5. Develop a legal and regulatory framework for carbon capture and storage.

The 40-page report contains many useful statistics on global oil and natural gas as well as energy usage, particularly in the United States. Although many of these statistics come from different sources, having them all in one document is helpful.

The full draft report is available from the NPC web site at: http://www.npc.org/

Apollo Archives Available

Arizona State University and NASA's Johnson Space Center have teamed up to make available high-resolution scans of original Apollo flight films. They are available to browse or download at: http://apollo.sese.asu.edu.

Key Federal Register Notices

DOC - The purpose of this notice is to announce a decision by the Federal Geodetic Control Subcommittee (FGCS) under NOAA to recommend adoption of a standard method for mathematical transformations between the vertical geodetic datums: The National Geodetic Vertical Datum of 1929 (NGVD 29) and the North American Vertical Datum of 1988 (NAVD 88). In order to maintain consistency of results and to minimize misuse associated with the mathematical transformation method, FGCS recommends software identified as VERTCON (Vertical Conversion) as a Federal standard. Written comments should be sent to the attention of David Doyle, Chief Geodetic Surveyor, Office of the National Geodetic Survey, National Ocean Service (N/NGS2), 1315 East-West Highway, Silver Spring, Maryland 20910, fax 301-713-4324, or via e-mail Dave.Doyle@noaa.gov. [Federal Register: July 11, 2007 (Volume 72, Number 132)] ■

vrroooom!!

HGS Annual Road Rally

The Annual HGS Road Rally is Coming

A team or individual is given a packet with clues directing you to travel by car to secret cultural, historical, and geological sites in and around Houston. The team that answers the most questions based on the sites/clues and does it in the least mileage wins a trophy.

Coffee and donuts are included. The course takes 3 to 4 hours to complete and ends in a social event where trophies are awarded (meal/drinks not included).

HGS Road Rally

WHEN??

Saturday November 10, 2007 at 9:00 AM

HOW??

Registration forms and more information will be available in the next *Bulletin* and on the HGS website (www.hgs.org).

HGS Road Rally

Sponsored by HGS Field Trip Committee

If you want information please contact Diane Yeager
dyeager@enercon.com or 713-941-0401.

vrroooom!!

Application to Become a Member of the Houston Geological Society

Qualifications for Active Membership

1) Have a degree in geology or an allied geoscience from an accredited college or university; or
2) Have a degree in science or engineering from an accredited college or university and have been engaged in the professional study or practice of earth science for at least five (5) years.

Qualifications for Associate Membership (including students)

1) Be involved in the application of the earth or allied sciences.
2) Be a full-time student enrolled in geology or in the related sciences.

Annual Dues Expire Each June 30. (Late renewals – $5 re-instatement fee)

Annual dues are $24.00; full-time students and emeritus members pay $12.00.

Mail this application and payment to:

Houston Geological Society
14811 St. Mary's Lane, Suite 250 • Houston, TX 77079-2916
Telephone: 713-463-9476 Fax: 281-679-5504

Payment method:

☐ Check, ☐ VISA, ☐ MasterCard, ☐ American Express, ☐ Discover

Card # _____

Expiration Date: _____ Card I.D. _____

(Card I.D. – 3 or 4 digit number on front or back of card)

To the Executive Board: I hereby apply for ❑ Active or ❑ Associate membership in the Houston Geological Society and pledge to abide by its Constitution and Bylaws. ❑ Check here if a full-time student.

Name: _____
Address: _____

_____

Home Phone: _____ *Spouse's Name:* _____
Email: _____
Job Title: _____
Company: _____
Company Address: _____

_____

Work Phone: _____ *Fax Number:* _____
Circle Preferred Mailing Address: Home Office
Professional Affiliations:

❑ AAPG member No.: _____

Professional Interest:

❑ Environmental Geology
❑ International E&P
❑ North American E&P (other than Gulf Coast)
❑ Gulf Coast E&P (onshore & offshore)

School _____
Degree _____ *Major* _____ *Year* _____

School _____
Degree _____ *Major* _____ *Year* _____

School _____
Degree _____ *Major* _____ *Year* _____

Earth Science Work Experience _____

_____

_____

Applicant's Signature _____ *Date* _____

Endorsement by HGS member (not required if active AAPG member)

Name: _____

Signature _____ *Date* _____

Membership Chairman _____ *HGS Secretary* _____

rev. 3/13/2007

HGA

Thanks to Hellen Hutchison, our Program Chairman, the luncheon and party held at the Petroleum Club on September 11 was an incredible success. Our members were entertained by Sylvia Thompson, noted Texas history lecturer. Her topic for the day was "The Houston Big Rich," a compendium of historical and hysterical tales.

Thanks to Chef Manuel of the Petroleum Club, the luncheon proved to be very delicious and was very artistically presented.

Another big event is in the making!!! HGA, together with HPAC, will have a Luncheon and Fashion Show by "BAGS and MORE" at Lakeside Country Club on Friday, October 12, from 10:30 a.m. until 2:00 p.m. The Chairman is Carole Giffhorn, who is a member of the Engineering Auxiliaries. We are all excited to see the new fashion trends for the season. For information, please call Daisy Wood at 713-977-7319, Hellen Hutchison at 713-877-8494 or Audrey Tompkins at 713-686-0005. ■

As a HGA member you are invited to join

GeoWives

2006–2007 dues are $7.50

make check payable to *GeoWives* and mail to:

Sara Nan Grubb

11212 Memorial Drive • Houston, Texas 77024

Please provide the following

Name: _____

Sreet Address: _____

_____

City/State/Zip: _____

Telephone: _____

email: _____

I will help plan a GeoWives activity ☐

I will serve on a committee ☐

Notification / Phone Committee ☐

Courtesy / Hostess ☐

My home is available for a meeting ☐

GeoWives

GeoWives was originally formed as a group for new members of HGA to get to know the area and each other. It has evolved into a group of ladies that enjoy getting together for a variety of outings and social meetings.

We are pleased to announce our Geo Wives Board for 2007/2008:

President	Sholeh Huber
First Vice President	Sara Parr (Programs)
Second Vice President	Daisy Wood (Memership)
Secretary	Sandra Pezzetta
Treasurer	Jean Allred
Historian/Parliamentarian	Pat Burkman

Our Programs Chair, Sara Parr, has arranged some exciting activities and we present our Social Calendar for the season:

Saturday, November 3, 2007
Join us for a magical evening at
MAGIC ISLAND
2215 Southwest Freeway, Houston
Guests welcome, cash bar

Wednesday, January 30, 2008
FEDERAL RESERVE BANK Tour
1801 Allen Parkway, Houston
10:00 a.m. – Lunch on your own

Wednesday, March 5, 2008
BAYOU BEND Tour
1 Westcott, Houston
Lunch on your own

Thursday, April 10, 2008
Annual Spring Trip with Martha Lou Broussard
Destination to be announced

Tuesday, May 20, 2008
End of year luncheon and installation of officers
TREVISIO Restaurant
6550 Bertner Ave., 6th Floor, Houston
11:00 am

If you would like to join us, please contact Daisy Wood at 713-977-7319 or Sara Parr at 281-242-3315. ■

You are invited to become a member of

Houston Geological Auxiliary

2007–2008 dues are $20.00 • Due by July 15th 2007

Mail dues payment along wtih the completed yearbook information to **Audrey Tompkins**, 3007 Stally, Houston, TX 77092

YEARBOOK INFORMATION

Last Name	First Name	Name Tag
Spouse Name	Name Tag	HGS Members Company
Home Phone	Business Phone	Business Fax
Street Address	City	Zip
Email Address	Home Fax	

Please choose a Committee Assignment

☐ Fall Event ☐ Yearbook ☐ SOS ☐ Membership
☐ Christmas Event ☐ Spring Event ☐ Notification ☐ Game Day
☐ May Luncheon ☐ Courtesy

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