



Geophysical Society of Houston

VOL. 34, NO. 5

NEWSLETTER

JANUARY 2000

INSIDE

GSH Meetings

GSH Technical Luncheon January 18	1
GSH Technical Breakfast January 12	3
Data Processing SIG	4
Near Surface SIG	4
Potential Fields SIG	5
Reality Centers SIG	5
Interpretive SIG	6
HGS Dinner Meeting	8

Articles and Comments

Editors Note	3
GeoEvents Calendar	3
GSH Special Award	3
Wanted Committee Chair	3
GeoQuest Forum	7
GSH Membership Report	7
International Exploration Symposium 2000	9
Annual Seismic Softball Tournament	9
1999 GSH Shrimp Peel Photos	10
GSH Auxillary Application	11
In Memorium	11

Technical Luncheon

Date: Tuesday,
January 18, 2000

Time: Registration and Cash
Bar 11:30am
Luncheon and Talk
12:00pm

Location: HESS Building
5430 Westheimer



Speaker:
Wulf Massell

Title:
Examining the
Seismic Signal
Loop from the
Exploration
Objective to Field
Acquisition, Data
Processing, and
Interpretation.

Abstract:

Seismic imaging and interpretation technology has evolved to its present state through a series of serendipitous innovations that continue to push the envelope of acquisition and data processing parameters. As we reflect on the past and look toward the new millenium, it is prudent to re-examine the fundamentals that govern the seismic method and the limitations of the techniques that shape our opinions. For example, data processing has traditionally focused on ways to get rid of seismic noise. This paper suggests that we direct our attention to the total acoustic response and, in particular, to isolate those seismic events we choose to call signal. Based on this interpretive decision we then address the question of how to select acquisition and processing parameters that assure we

are doing enough to recover as much useful information as possible.

Dr. Massell will discuss the tradeoffs between incremental increase in acquisition effort versus the additional information thus obtained by analyzing a closed loop to trace seismic signal from a geologic model of the exploration objective, to acquisition, through processing and interpretation and back to a revised subsurface model. He enters the loop by describing the objective using geophysical parameters, such as two way reflection time, geologic dip, signal bandwidth, the velocity profile, and earth attenuation. He then imposes subsurface resolution requirements to make a viable exploration play and suggests several quantitative limits on acquisition geometries for a successful seismic exploration program. The next step in the signal loop is the data processing flow. Data processing should honor the signal limitations imposed by acquisition and maximize the reflection signal used to describe the subsurface. Depending on the bandwidth, the signal-to-noise ratio, and the amplitude accuracy of the processed data, the interpreter may be working with either a structural or a stratigraphic product. Assuming the acoustic response of the earth allows sufficient signal levels and bandwidth, the data may ultimately lend itself to AVO analysis and inversion. Parameter tradeoffs between these interpretive goals are presented. The signal loop closes on itself when the seismic interpretation is used to update the original geologic model.

Technical Lunch continued on page 7

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Editor's Note

To insure your information reaches the GSH society members in a timely manner it must appear in the in the appropriate newsletter issue. Please note the following deadlines and plan your function's publicity strategy accordingly. Items must be received on or before the corresponding deadline date. Materials may be sent to patty@diamondg.com or faxed to 713/783-9780. If you have any questions please call Patty Cardwell at 713/783-7837.

2000 GSH Newsletter Deadlines

Issue February 2000
Deadline January 14, 2000

Issue March 2000
Deadline February 14, 2000

Issue April 2000
Deadline March 14, 2000

Issue May 2000
Deadline April 14, 2000

GeoEvents Calendar

Make reservations by e-mail at reservations@hgs.org and include your member number (found on Bulletin mailing label), or use the phone reservation system at 713/917-0218.

Reservation Codes

Use these codes to make voice mail meeting reservations:

Technical Luncheon	601
Data Processing SIG	602
Interpretation SIG	603
Reservoir SIG	604
Potential Fields SIG	605
Environmental Applications SIG	606
Breakfast	607

Technical Breakfast

Date: Wednesday,
January 12, 2000
Time: 7:00am - 7:30am
refreshments and
networking
Speaker introduction
7:30am - 7:45am
Speaker until 8:20am
- 8:30am, a short
Q&A session
Next month's
announcement and
adjourn by 8:30am -
8:45am
Location: Anadarko Petroleum
17001 Northchase Dr.

Speaker:
Peter Trabant, Consultant

Title:
Identifying Drilling Hazards in
Deepwater Using 3-D Seismic Cubes

Abstract:
3-D seismic cubes have proven to be an excellent tool for mapping seafloor features and shallow subsurface drilling hazards in the deep waters of the continental slope. Zapping the seafloor reflector provides both intriguing and informative bathymetric images, while extraction of seafloor reflector amplitudes allows one to differentiate between deepwater carbonate hard bottoms, hydrates and

mud volcano flows.

Detailed mapping of 3-D seismic cubes to one second beneath the seafloor reveals the Late Pleistocene sequence stratigraphy down to the system tract level for the last several glacio-eustatic sea level fluctuations. Mapping the shallow seismic section provides an excellent exercise to understand deepwater clastic systems and how to recognize them on 3-D seismic cubes.

About PETER TRABANT

Pete has been a consultant for the past twenty-five years, specializing in the assessment of marine geohazards from high resolution and 3-D seismic survey data. He applies the principles of seismic sequence stratigraphy to identify systems tracts and sand-prone depositional environments that can produce shallow water flows, a critical and expensive problem in the drilling of wells in deep water. Pete is the author of many technical papers and two textbooks in his field; he holds a M.S. and Ph.D. in geological oceanography from Texas A&M University where he worked as a research associate. Pete started out in the oil patch as a geophysicist with Pan American Petroleum (Amoco) working the Michigan Basin in 1969.

GSH Special Award

The GSH would like to congratulate Allison Radar for receiving the Geophysical Society Special Award for her experiment, "Can we save California?", presented for a school science fair at the Astrodome complex. Allison is a student at Wunderlich Jr. High in the Klein ISD. She conducted her experiment using varying amounts of water applied to marble slabs, demonstrating how water could relieve the amount of friction created between sliding tectonic plates. Keep up the great work Allison!

Wanted

Membership Directory Committee Needs Chair

GSH is seeking a volunteer to chair the committee organizing our joint GSH/HGS Membership Directory. If you feel you have the organizational skills and desire to lead this important committee, please contact Pat Starich at 713/516-4740 (patrick.j.starich@exxon.sprint.com) or Kathy Hardy at 281/980-3371 (ladyfiz77@aol.com). Knowledge of Microsoft Access is a plus, but not necessary.

DATA PROCESSING SIG

Date: Wednesday,
January 19, 1999
Time: Social 4:30
Presentations
5:00 to 6:30
Location: Shell Technology
Center 3737 Bellaire
Blvd. Between Buffalo
Speedway and Stella
Link. Park in front of
the building with the
circular drive and flag
pole. Check in with
the receptionist. If lost,
call receptionist at
(713) 245-7230.
Cost: NONE
Organizer: Fred Hilterman,
fred@geodev.com
713-782-1234

Theme:

Recognizing (and correcting) false lithologic indicators ... wave paths that are scrambled by the earth or mixed by the field-acquisition geometry.

Speaker 1:

Paul Hatchell, Shell Offshore Inc.

Title:

Fault whispers: transmission distortions on pre-stack seismic reflection data.

Speaker 2:

Jim Simmons, Bureau of Economic Geology, UT at Austin

Title:

Implications of radial-transverse (SV-SH) transformation for 9C 3-D seismic reflection data

Speaker 1:

Paul Hatchell, Shell Offshore Inc.

Title:

Fault whispers: transmission distortions on pre-stack seismic reflection data.

Abstract:

Transmission distortions are observed on pre-stack seismic data at two locations in the Gulf of Mexico. These distortions produce anomalous AVO signatures. The locations of the

distortion zones are determined using the acquisition geometry and ray-tracing. No obvious reflection events, such as shallow gas zones, are observed at the predicted locations of the distortion zones. Instead, the distortion zones correlate with buried faults and nonconformities.

It is postulated that the distortions are produced by velocity changes across buried faults and nonconformities. The distortions are then due to an interference pattern resulting from seismic waves arriving from different sides of the faults. A simple model is developed which explains many of the characteristics of the distortion pattern.

Biography:

Paul J. Hatchell received his PhD (1989) in theoretical physics from the University of Wisconsin. He spent seven years at Shell's Bellaire Technology Center researching and developing shear-wave logging technology, rock properties, quantitative seismic amplitude analysis, and 3-D AVO applications. Since 1996 he has worked for Shell Offshore Inc. and is currently a Staff Research Physicist pursuing oil and gas exploration and development in the Gulf of Mexico.

Speaker 2:

Jim Simmons, Bureau of Economic Geology, UT at Austin

Title:

Implications of radial-transverse (SV-SH) transformation for 9C 3-D seismic reflection data

Abstract:

Nine-component 3-D reflection data are acquired using orthogonal shear-wave sources and orthogonal horizontal geophone components. However, once the geophones are positioned in a 3-D field pattern, then the source and geophones are not necessarily orthogonal to each other. These field coordinates implicitly mix SH, SV and P-waves. Shear-wave data processing and interpretation is simplified if the pre-stack data are

azimuthally rotated to a radial-transverse co-ordinate system.

Normal moveout and amplitude-versus-offset are different for SH and SV waves, and the SV data contain P-waves and converted waves. Field coordinates mix all these components together in variable proportions, confusing attempts at processing and interpretation. Field examples will illustrate these statements.

Biography:

James L. Simmons, Jr. received a BS in geological sciences, as well as a Master degree and PhD in geophysics from the University of Texas at Austin. He is a research associate at BEG. He is currently Associate Editor for AVO for Geophysics. His research interests include AVO analysis, seismic inversion, and 3-D interpretation methods.

GSH Near-Surface SIG Meeting

Date: Tuesday,
February 1, 2000,
5:30 PM

Location: Exxon Production
Research Complex
Buffalo Speedway at
Richmond Avenue
South Tower Building
(On Richmond)

Speaker:

Mr. Sharma Dronamraju, C.P.G.
Project Geologist
Fugro GeoServices, Inc.

Title:

"New Developments in Offshore Hazard Surveys"

Please mark your calendar now...look for details in February GSH Newsletter.

POTENTIAL FIELDS SIG

Date: January 20, 2000
Location: HESS building, 5430
Westheimer, Houston
Time: 5:30 Social Hour;
6:30 Dinner;
7:30 Presentation
Cost: \$22.00
Contact: Mike Kowalski,
Chair - GSH Potential
Fields Group, at
713-432-6828
(kowalma@texaco.com)
by Tuesday, January
18, for reservations.
E-mail is best because
I can confirm your
reservation. Please
HONOR your
reservation! We must
bill no-shows!

Title:

THE BASEMENT FAULT BLOCK
PATTERN: ITS IMPORTANCE IN
PETROLEUM EXPLORATION AND
ITS DELINEATION WITH RESIDUAL
AEROMAGNETIC TECHNIQUES

Speaker:

S. Parker Gay, Jr.

Abstract:

A continuously emerging fact of geology is the great influence that basement has had on the structural and stratigraphic development of the sedimentary section. Faults in the section occur over basement faults; carbonate reefs, offshore bars, and shoreline sands occur along these faults; drainage is controlled by fracture zones over basement faults and these, in turn, control fluvial sands; basement topography controls structure in the lower part of the sedimentary section by compaction. The majority of structural oil and gas traps and a substantial percentage of sedimentary traps can be, or are, controlled by movement of the basement faults or by compaction over basement topography.

Given the tremendous influence of basement, it is important to know how basement can best be mapped to reveal

the locations of the controlling basement faults. First of all, maps of total intensity, the quantity measured by the magnetometer, are of little value in mapping basement where depths are greater than 1km. It is essential to residualize the total intensity magnetic data, or to calculate derivatives, in order to properly enhance the response of the basement fault block pattern. The technique preferred at Applied Geophysics, Inc., is a profile residual (NewMag-registered) calculated in a direction normal to the faults of interest. These faults may strike in more than one direction, however, and may require more than one map and more than one operator width to best enhance their signatures. After arriving at a suitable map, or maps, to show the faults of interest, 3D stereo anaglyphs (viewed with red-blue glasses) are generated for final interpretation. Many subtle faults, especially cross-cutting faults, become apparent with this technique. Long, regional faults are better shown by black and white banded residual maps.

We have tried low sun angle visualization techniques—"shadowing," or "shaded relief"—(1989), but found it to be of little or no use in bringing out the basement faults, and we are not strong advocates of color coded magnetic maps as they sometimes hide more than they enhance. Both of these "new" methods are quite popular at the present time, but are not as effective for basement mapping as the techniques I will describe. I will show examples of over 30 structural and stratigraphic oil fields controlled by basement faults that we have mapped.

Biography:

S. Parker Gay is currently president and chief geophysicist of Applied Geophysics, Inc., a company that he co-founded in 1971. He received his academic training in geology and geophysics at MIT (B.S., 1952) and Stanford University (M.S., 1961). He has been actively engaged in geological and geophysical mapping and in oil, gas and mineral exploration for nearly 40 years, 27 of which as an independent consultant, and has several discoveries in minerals and ground water to his credit. Gay was

President of the Utah Geophysical Society in 1971-72 and national Vice President of the SEG in 1974-75, from which he received the Best Paper Award for 1963. In 1974, he co-founded the International Basement Tectonics Association that has held conferences biennially in eleven international locations through 1994 and has published Proceedings volumes containing 380 papers. Gay has published 20 papers in the interpretation of magnetic anomalies and their geological causes and has written many papers and given numerous talks to professional groups.

Reality-Center Special Interest Group (RC-SIG) First Meeting:

Formation of the North American RC-SIG was announced in last month's HGS Bulletin. The goal is to create a network of like-minded people, experienced in the operation and management of human scale visualization centers, to share information, and to aid those who are building new facilities. The group aims to provide an arena for disseminating both the day-to-day operational issues and the long-term business issues that can occur.

Twelve representatives from Anadarko, Arco, Continuum Resources International Corporation, Exxon-Mobil, MuSe Technology Inc., Oxy California, Paradigm Geophysical, Shell E&P Technology & Research, and Texaco met on Thursday December 9th to (1) learn from the experiences of the RC-SIG in London, and (2) to organize the North America RC-SIG. There is question about the name and a formal name will be selected at the next meeting. The first semi-annual two day meeting was set for January 31st and February 1st, 2000, 8:00 AM - 5:00 PM both Monday and Tuesday, at Continuum Resources, 11700 Old Katy Road,

RC-SIG continued on page 6

Suite 100 (Kirkwood and I-10). There will be four half-day sessions with speakers and panel discussions concerning various aspects of human scale visualization centers. If you have questions or wish to participate, please contact Roice Nelson at 713.860.5007 or roice@continuumcorp.com:

General Chairman.

Darrel Fanguy
dfanguy@continuum-corp.com

Technology Session (hardware developments)

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Interpretive SIG

Date: Wednesday, Jan 12, 2000
Time: 4:30 P.M.- 6:00PM
Location: 200 Westlake Park Blvd., British Petroleum-Amoco Building No. 4, 3rd floor Conference Room Area. Please check with the receptionist or on the announcement board on the 3rd floor for the room number. The address is located between the Katy Freeway and Memorial Drive just East of Highway 6.
Parking: Visitor Parking is located to the west of the building. The Visitor Parking Entrance is on the West side of the garage.

Speaker:
Erling Fjar

Title:
Stress Induced Seismic Anisotropy

Abstract:

It is well established that alterations in the stress state may induce seismic anisotropy. Such anisotropy may cause problems for seismic interpretation, however it also opens for the possibility that seismic data can be used to characterise the stress field.

Stress induces seismic anisotropy indirectly by generating or closing cracks that affect the seismic waves. Such cracks are potential channels for fluid flow, and it is thus interesting to be able to characterise the crack geometry as accurately as possible from seismic data. To do this, it is required that the impact of cracks on acoustic waves is thoroughly understood. This has been described theoretically in numerous papers over the last 40 years. Experimental verification has on the other hand rarely been reported, mainly due to a lack of suitable model materials. However, some years ago

scientist at SINTEF Petroleum Research developed a technique for manufacturing synthetic sandstone with controllable crack geometry. By using this technique, several aspects of the impact of cracks on acoustic waves - like crack shape, crack size, and hydraulic coupling between cracks and pores - have been experimentally investigated.

The sensitivity of acoustic anisotropy to stress geometry opens for the possibility of seismic monitoring of stress field alterations. There is for instance a possibility that seismic data may reveal the stress path of a reservoir during depletion. It is however important to notice that also the stress history has an impact on the relation between stress and seismic properties. The stress sensitivity of acoustic velocities is often measured on core plugs from the relevant formations. These cores have been subject to an unloading process during coring which has a significant impact on several physical properties of the core. Extensive experimental studies at SINTEF Petroleum Research have shown that the stress sensitivity of acoustic velocities as measured on a core plug may differ significantly from the virgin behavior of the same rock.

Biography:

Erling Fjaer graduated from the Norwegian Institute of Technology in Trondheim, Norway, in 1977. He holds a PhD in physics from 1983, from the same university. He joined the Norwegian research giant SINTEF in 1985, and has since then been working within the area of petroleum related rock mechanics. He is currently Petroleum Technology Manager at MARINTEK (USA) Inc., a member of the SINTEF Group.

GeoQuest Forum2000

Connected Decisions

Austin, Texas
Renaissance Hotel
March 22, 2000 Welcome Reception
March 23-24, 2000 Forum 2000

Today, oil and gas companies must combine data and information delivery, risk-based asset management, and domain expertise at key decision points to stay ahead of the competition. For information on how to better connect these critical components of your decision process throughout all levels of your organization, make plans to attend Forum2000.

Forum2000 is a two-day program for decision-makers, influencers and asset-team members of the exploration and production industry. At Forum2000 you will learn more about how GeoQuest can help you refine your ability to quantify risk and manage assets throughout your reservoir life cycle, provide innovative services to foster collaboration among your asset teams, or devise a data management

strategy that meets corporate objectives. Importantly, GeoQuest offers solutions supported by a team of knowledgeable experts, leading-edge technology and flexible global service targeted toward your financial and technical objectives.

Regardless of your position or expertise, we invite you to participate fully in our executive presentations, various product demonstrations and workshops, insightful client technical presentations and interactive exhibits designed to offer you tools necessary to make confident decisions and implement solutions for desired results.

Mark your calendars to join us at Forum2000 and tap into a reserve of answers to chart your course for success in the new millennium.

For registration information contact Philip C. Crouse & Associates, Inc. (214)-841-0044. For abstract submission details, please contact, Karen S. Glaser, Ph.D, GeoQuest (713) 513-2744.

Technical Lunch continued from page 1

Biography

Wulf Massell is President and CEO of EPIC Geophysical, a Houston based seismic data processing company. His industry experience includes employment at Amoco Production Co., at Geosource, Inc., and as an independent consultant providing seismic survey design, processing, and data interpretation services. He has also held academic appointments at The University of Texas at Austin, the Federal University of Bahia in Brazil, the University of Houston, and the Houston Advanced Research Center.

Dr. Massell holds the BS, MA, and Ph.D. degrees in Geology and Geophysics. He is an active user and developer of 2-D and 3-D seismic reflection technology. In 1992 he founded EPIC Geophysical, a division of E&P Imaging Corporation. EPIC's processing philosophy focuses on optimizing parameter choices that will assure undistorted reflection signal flow from the seismic source to the subsurface target, the receiver, the acquisition instruments, through data processing, and finally to the final interpretation display.

Wulf is an active member of the Geophysical Society of Houston and of the Society of Exploration Geophysicists. He has served both societies in numerous capacities including as President of the GSH and First Vice President of the SEG.

"Static Corrections for the 21st Century"

SEG 2000 Spring Distinguished Lecture

Mr. Mike Cox, Bedford, England

Technical Luncheon speaker on April 18, 2000

Membership Report

8 December 1999

ACTIVE

Burce Blake
David Brewster
Alan F. Chatfield
Philip A. Coholich
Kenny D. Coleman
Don W. Crosby
Crouch, Kenneth W.
David C. De Martini
Gunnar Ekman
Andrew Fryer
Ray Gedaly
Annin Hou

James D. Huggard
Thomas R. Klopf
Kurt M. Loof
Simon Lopez-Mora
Alex Martinez
Thomas S. Martinsen
Ray L. Mays
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Chris C. Payton
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Associates

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Carrie L. Kienenberger
Bruce Lindsey
John J. Mc Cague

Sean Mc Pherson
Mark T. Miller
Mervyn J. Parry
Lou T. Pierce
Jeff K. Toxey
Lynn A. Turner

Student

Byron C. Golden
Nelson Okafor
Mike R. Under

Total Membership 1929

Houston Geological Society January Dinner Meeting

“Legends in Wildcatting”

Panel discussion and open question session January 10, 2000, on the 99th anniversary of Spindletop.

The HGS is pleased to present a panel discussion featuring living legends in wildcatting to be held January 10th in honor of the Spindletop 99th Anniversary.

The HGS “Legends in Wildcatting” panel features Houston and Texas individuals who have done extraordinary things in the oil business and who have relevant messages for today’s explorers. Each speaker will tell his story, with insights for today, followed by a panel discussion fielding questions from the audience. Mark your calendars now for an evening of wildcatter stories, legendary tales, and some history in the making!

Reservations can be made by e-mailing Joan Henshaw at joan@hgs.org (web page www.hgs.org) or calling the HGS office 713-785-6402.

The dinner will be held at the Westchase Hilton Hotel, 9999 Westheimer, January 10, 2000. Social hour begins at 5:30 p.m., dinner is served at 6:30 p.m. followed by the Legends in Wildcatting panel. A poster session is planned for the social hour.

Panelists for HGS’ “Legends in Wildcatting” are:

George Mitchell

Mitchell Energy

George P. Mitchell is Chairman and CEO of Mitchell Energy & Development Corp. and its two principal operating subsidiaries.

During his career, Mr. Mitchell has been active in the drilling of approximately 8,000 wells, including more than 1,000 wildcats. He and his company have found upwards of 200 oil and 350 gas discoveries. He was the visionary behind the development of The Woodlands. He was personally instrumental in the founding of the

Houston Advanced Research Center (HARC), a contract and grant research institution headquartered at The Woodlands’ Research Forest and is an active philanthropist.

Gene Van Dyke

President, Vanco Energy Company

Gene Van Dyke is president and owner of Vanco Energy Company, the largest license holder of deepwater acreage off West Africa with in excess of 20 million gross acres under lease in four countries. After 20 years of successful exploration on the Gulf Coast, this visionary moved to new international frontiers in 1972, first in the North Sea, and in 1992, into West Africa.

By 1996, and 46 years into his career, Gene decided to concentrate on deepwater exploration, this time looking for “elephants” offshore West Africa. He recognized that the time was right for deepwater exploration, both in terms of the potential reserves to be found as well as the fact that the emerging technology for drilling, development and production was in place. Using his talents as a dealmaker, first honed in North Central Texas, he has signed contracts in Gabon, Morocco, Cote d’Ivoire and, most recently, Senegal.

Joe B. Foster

Chairman and Chief Executive Officer of Newfield Exploration Company

Newfield was founded by Foster in January, 1989, and is an independent oil producer, exploring for and acquiring oil and gas reserves primarily in the Gulf of Mexico. By 1998 Newfield had become the 10th leading operator of production in the Gulf of Mexico.

Previously, Foster was Chairman of Tenneco Oil Company and Executive Vice President and director of its parent, Tenneco Inc. He was with Tenneco for 31 years and also served as Chairman of the Tenneco Gas Pipeline Group.

John N. Seitz

President and Chief Operating Officer, Anadarko

Mr. Seitz began his career at

Anadarko in 1977 as a Senior Exploration geologist and became Chief Geologist in 1982. In 1983, Mr. Seitz was appointed General Manager overseeing all exploration for the Company and was promoted to Vice President of Exploration and Production in 1989. He was named Senior Vice President of Exploration in 1995 and Executive Vice President of Exploration and Production in August of 1997. Mr. Seitz was appointed to his present position in April of this year.

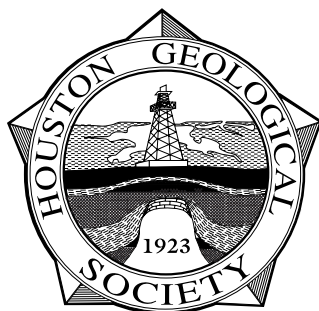
In his capacity as president and COO, John Seitz is responsible for Anadarko’s exploration and development drilling activities and production operations in the U.S. and overseas.

Marlan W. Downey

Bartell Professor of Geology & Chief Scientist-Sarkeys Energy Center University of Oklahoma

Marlan worked for Shell Oil Company from 1957 to 1987. He spent four years in Shell’s Research Center, responsible for making Shell’s theoretical work in organic geochemistry useful in finding oil. In 1969, he became Shell’s youngest Chief Geologist, and in 1973 became Shell’s first Alaska Division Exploration Manager. In 1977 Marlan moved to Shell Oil’s International Exploration & Production business and became Vice President of Shell, and then President of Shell Oil’s newly-formed International subsidiary, Pecten International. At Pecten, Marlan’s team increased reserves 325% and production 600% in a 7-year period. Marlan retired from Shell in 1987 after 30 years of service.

Marlan joined ARCO in 1990 as Senior Vice President of Exploration for ARCO International, becoming President of ARCO International, and then Senior Vice President and Executive Exploration Advisor to ARCO. His responsibilities were to oversee oil and gas exploration and development for ARCO in foreign countries.



Houston Geological Society presents

International Exploration Symposium 2000 “INTERNATIONAL BUSINESS OF EXPLORATION”

Tuesday, February 22, 2000
Westchase Hilton,
9999 Westheimer
Registration: 7:30-7:55am
Presentations: 8:00-5:30pm

Whether you need an introduction or refresher course in how to do oil & gas business internationally, this is the seminar to attend. Twelve contributing authors of the upcoming AAPG memoir, *International Oil and Gas Ventures: A Business Perspective*, will present overviews on the international exploration business:

Dr. Michelle Foss,
University of Houston
Major Influences in the International E&P Business

Peter Kennel, Consultant
International Petroleum Negotiations: Successful Dealmaking in Exploration

Ann McNaughton, Arthur Andersen Business Consulting
Conflict Management and Cross-Cultural Awareness

Jeff Barndt, Randell and Dewey
Oil and Gas Acquisition as a Country Entry Vehicle

Rick Bott, Ocean Energy - Yemen
Operational Interdependence: The Local Office and Initial Exploration Program

Daniel Johnston, Consultant
International Petroleum Contract Analysis: The Commercial Terms

Terri Griffiths/Tim Tyler, Mayer, Brown and Platt
Arbitration of International Oil and Gas Dispute Practical Considerations for the Businessperson

Jerry Hutchital, Schlumberger
Alliances and Partnerships: Experiences and Lessons Learned - A Service Company Perspective

Jorge Carnevalli, PDVSA - CVP
Private Capital Participation in Venezuela's Oil Sector - An Engine of Growth

Thomas O'Connor, World Bank
The International Development Banking View of Petroleum Exploration and Production in Developing Countries

Frank Alexander, Consultant
Central Asia Petroleum - Seven Years of Experience Since the Breakup of the Soviet Union, 1986-1998

Roberto Blocki, Perez-Compagn
Building an International E&P Company: A South American Company Perspective

\$ 85 HGS, SIPES Houston, GSH, SPE Gulf Coast, SPEE Houston, HAPL, and SPWLA Gulf Coast members

\$ 95 Non-members
\$125 Walk-ins

Lunch and networking reception after symposium is included.

To reserve a seat, send a check payable to HGS to:
HGS, 7457 Harwin, Suite 301, Houston, Texas 77036, Attn: Intl Symposium 2000

Once again, thank you to all our sponsors for making the 1999 Shrimp Peel a success! I would also like to thank the committee helpers for all their hard work: Wendy Jones, Tim Hartnett, Joe Parker, Carl Henderson, Drake Davis, Audry Granger, Cindi Boutte, and Kent Horstmann.

Thanks, Lee Shelton



Have you checked your name in the 1999 Membership Directory yet? Have you had a company change, name change, address? Be sure to update any changes by calling the GSH/HGS office at 713-785-6402. Thanks, Kathy Hardy, Directory Editor GSH

GEOPHYSICAL AUXILIARY OF HOUSTON

Many of our members were involved in the planning of the spouses' program for the recent SEG convention. And even more were at the events each day carrying through those plans. Special thanks to Donna Parrish, Linnie Edwards, and Emilie Fulton who coordinated those efforts. And, a special thanks to the many members who worked long hours stuffing bags, working on the luncheon, and greeting spouses in the hospitality room.

If you are a spouse of a GSH dues paying member, a woman member of the GSH, or the widow of a deceased member of the GSH or the SEG, we would welcome you as a member of our fun group. The dues are only \$15.00 per year. Simply complete the form below and mail it along with your check to Mary Blanchard. You will enjoy great fellowship at luncheons and special events.

Our next luncheon will be at the Briar Club on Wednesday, January 19, 2000. Ray Miller will talk to us on travel in Texas.

GAH MEMBERSHIP APPLICATION

Please enclose check in the amount of \$15.00 and mail to:
Mary Blanchard, 6631 Burning Tree Drive, Houston, TX. 77036

NAME _____

HOME ADDRESS _____

HOME PHONE _____ WORK PHONE _____

SPOUSE NAME and COMPANY _____

BIRTHDAY (month and day) _____

E-MAIL ADDRESS _____

For more information call Georgeann Massell at 281-353-7894.
Carol Gafford - GSH Liaison

In Memorium

DANIEL S. TUDOR, 69, of Willis and Houston, Texas, died Saturday, November 20, at Conroe Regional Medical Center. He was born May 14, 1930, in Hammond, Indiana, son of Carlos and Jennie (Strain) Tudor. He attended Indiana University and earned advanced degrees in geophysics including B.S., M.S. and Ph.D. He was a geophysicist at Chevron and achieved the position of President of Chevron Exploration and Production Services (CEPS) before his retirement in 1993. After retirement and until his death, he was active as a consultant in geophysics for several oil exploration companies and served as a member on the board of directors of GSI. He served on the Department of Geological Sciences advisory board at Indiana University. He was active in many related organizations including the European Association of Geoscientists and Engineers, the Geophysical Society of Houston, Sigma Xi (the honors society in science), and the American Association of Petroleum Geologists. He served as Trustee Associate with the Society of Exploration Geophysicists. Survivors include wife, Janet E. (Widerberg) Tudor, and daughter, Elizabeth J. Tudor, of Houston, Texas, sister, Mary K. (Tudor) Nichols of Hemet, California, and numerous nieces and nephews. A memorial service was held at 2 p.m. Tuesday, November 30, at Cashner Funeral Home in Conroe with longtime friend, George Nevers, officiating. Memorial Contributions may be made to the American Lung Association in lieu of flowers. CASHNER FUNERAL HOME, 801 Teas Rd. Conroe, Tx. 409-756-2126.

JANUARY 2000

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2	3	4	5	6	7	8
9	10 HGS Dinner Meeting	11	12 GSH Technical Breakfast Interpretation SIG	13 GSH Board Meeting SPE Applied Technology Workshop	14 NEWSLETTER DEADLINE SPE Applied Technology Workshop	15
16	17 HGS International Explorationists Dinner Meeting	18 GSH Technical Luncheon	19 Auxiliary Winter Luncheon Data Processing SIG	20 Potential Fields SIG	21	22
23	24	25	26	27	28	29
30	31					

GEOPHYSICAL SOCIETY OF HOUSTON

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