



Geophysical Society of Houston

VOL. 35, NO. 8

NEWSLETTER

MARCH 2001

Technical Luncheon

Date: March 20, 2001
Location: HESS Building; 5430 Westheimer
Time: 11:30 a.m.
Cost: \$20

Discovery of Ring Faults Associated with Salt Withdrawal Basins of Early Cretaceous Age in the East Texas Basin

Steven J. Maione

Scott Pickford, A Core Laboratories Company, 6316 Windfern, Houston, Texas 77040

ABSTRACT

The Jurassic Louann salt in the East Texas Basin has played a dominant role in influencing the structural and depositional history of the basin, particularly during the Jurassic and Cretaceous periods. Salt tectonics is closely associated with sandstone distribution, depositional facies, and reef growth, and consequently, with petroleum traps in the basin. Salt withdrawal basins, developed

during the Early Cretaceous in response to salt movement and dissolution processes, are characterized by the presence of an expanded section of Lower Cretaceous marine and deltaic sedimentary rocks. Recognition of fault sets associated with the evolution of these salt-withdrawal basins has gone undetected until the recent Coherence Cube™ processing of a non-proprietary 3-D seismic survey conducted by Schlumberger in the La Rue dome - Fairway Field area, Henderson and Anderson Counties, Texas.

Images from Coherence Cube processing aptly exhibit extraordinary sets of concentric ring faults that comprise the periphery of two salt withdrawal basins. The Fairway oil field is located at the junction of these two sets of ring faults. The structural style of these high-angle ring faults creates a multitude of possible fault traps in a previously unattractive structural setting. Early Cretaceous age of the ring faults establishes that these faults are a significant element in evaluating petroleum migration pat-

terns and traps in the basin. The discovery of Early Cretaceous ring faults in the East Texas Basin by Coherence Cube processing brings new perspectives to development and exploration drilling in this mature petroleum province.

Biographical Sketch

Steven J. Maione, senior geophysicist for Scott Pickford, A Core Laboratories Company, received degrees in Geological Engineering and Masters in Geology from the Colorado School of Mines. He joined Union Oil Company of California (now Unocal Corp.) in 1971 as an exploration petroleum geologist in Casper, Wyoming. Between 1974 and 1992 he worked as an exploration geologist for the Unocal Geothermal Division, and participated in geothermal exploration and development projects in North America, Philippines, Indonesia and Japan. In 1992 he reentered the field of petroleum exploration with the Unocal Worldwide Explo-

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Joint GSH/HGS Dinner Meeting

Monday,
March 5, 2001
Westchase Hilton
9999 Westheimer

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Potential Fields	Afif Saad			afifsaad@netscape.net
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Reality Center	Fa Dwan	713/245-7352		Dwan@shellus.com
SEC. VP	Roice Nelson	281-579-0172	281-579-2141	rnelson@walden3d.com
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Shane Coperude		281-275-7500	281-275-7660	scoperude@fairfield.com
EDITOR	Patty Cardwell-Swords	713/783-7837	713/783-9780	pattyc@diamondg.com
Company Contacts	Scott Sechrist	281/856-8029	281/856-7445	acoustic@airmail.net
Electronic Pub	Scott Sechrist	281/856-8029	281/856-7445	acoustic@airmail.net
Photography	John Freeland	713-659-2618		
Publicity	Scott Sechrist	281/856-8029	281/856-7445	acoustic@airmail.net
Training Notices	Lloyd Weathers	281/556-5335	281/556-5335	lloyd_weathers@yahoo.com
PAST PRES	Pat Starich	281-423-5036	281-423-5766	patrick.j.starich@exxon.sprint.com
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SEG SECTION REPS*	Dan Ebrom	281-366-3011	281-366-7561	ebromda@bp.com
Young Kim				
Alf Klaveness		713/468-5123		
Art Ross		281/360-9331		art@dellnet.com
Dale Bird		281-463-3816		dale@birdgeo.com
Hugh Hardy		713/729-9208	713/726-0456	mghwh@aol.com
Wulf Massell		713/650-3820	713/659-3735	wulf@epicgeo.com
Alternate SEG Sec. Reps	Lee Lawyer	281/531-5347		LLAWYER@prodigy.net
Richard Verm		713/782-1234	713/782-1829	richard@geodev.com
Roice Nelson		281-579-0172	281-579-2141	rnelson@walden3d.com

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-Swords at 713/783-7837.

2001 GSH Newsletter Deadlines

Issue April, 2001
Deadline .. March 9, 2001

Issue May, 2001
Deadline .. April 12, 2001

Membership Report

The GSH would like to welcome its newest members.

ACTIVE

Michael Abrams
Ali Berke
George Buzan
Seann Day
Fu Dwan
Christopher Gantela
Lynne Goodoff
C. Todd Nicholson
George Thompson
Jennifer Thompson
Peter Wang

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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
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Technical Luncheon continued from page 1

ration Division in Sugar Land, Texas. In 1997, Steve became an Associate of Valenti Engineering Services of Kingwood, Texas, where he specialized in 3-D seismic interpretation. In 1998 he joined the seismic interpretation services group with Coherence Technology Company (CTC), and later with Core Laboratories Company following its purchase of CTC. He has interpreted numerous 3-D surveys, including offshore Nigeria, eastern Saudi Arabia, Anadarko Basin, East Texas Basin, China, Venezuela, Texas Gulf Coast, and Mexico. He has assisted numerous corporate exploration staffs in effectively utilizing Coherence Cube(tm) processing in achieving successful 3-D interpretations.

Steve is a member of the American Association of Petroleum Geologists, the Houston Geological and Geophysical Societies, the Society of Exploration Geophysicists, the Geological Society of America, Sigma Xi, and the Rocky Mountain Association of Geologists.

Email: smaione@corelab.com

Business Relocation

Tricon Geophysics, Inc. has moved offices. They are now located at 10111 Richmond Avenue, Suite 230, Houston, Texas 77042.

The GSH Annual Honors and Awards Banquet will be held Thursday May 3, 2001 the Lakeside Country Club. Cash Bar-6:30 p.m. Dinner-7:15 p.m. Music will be provided by Marshall Maxwell.

Technical Breakfast

Date: Wednesday,
March 14, 2001
Time: 7 AM to 9 AM
Speaker: Alf Klaveness,
Klaveness Research
Company
Title: Emerging Technology
in Borehole Geophysics
(3-D Seismic while
Drilling)
Location: Cafeteria, Shell Tech-
nology EP, 3737
Bellaire Blvd Houston,
TX 77025 (a.k.a. Shell
Development Co.,
Bellaire Technology
Center)

Park on or near Bellaire Blvd (at Braes/Auden Blvd). Guest parking available at 3727, 3737, and 3747 Bellaire Blvd. Sign in at the receptionist or the guard station "near the flag pole". Ask for directions to the Cafeteria.

Emerging Technology in Borehole Geophysics (3-D Seismic while Drilling)

Alf Klaveness, Klaveness Research Company, 10565 Katy Freeway, Houston, TX 77024

A recently developed 3-D seismic procedure can be an important factor in finding new petroleum reserves and in obtaining maximum recovery from each well drilled. A seismic borehole pulser is positioned in the bottom-hole-assembly adjacent to the drill bit where it is controlled and activated from the rig floor at 30 ft intervals. This is a quiet period, when the rotation is stopped to add a new section of drill pipe. The pulser generates seismic frequencies over six octaves from 10 Hz to 640 Hz. Consequently, large volumes of broadband seismic data can be obtained without interrupting the drilling sequence. Subsurface and subsalt structure and stratigraphy are clearly imaged below and adjacent to the borehole for distances exceeding 20,000 feet (6 Km), while drilling operations are in progress. It can be apparent if the borehole must be deviated in order to penetrate a reservoir in a better position.

Each time the pulse generator is

activated in this procedure, transit times are observed over known distances, thereby providing accurate earth velocities (interval and average) over the entire field of the sensor spread. Formation densities, porosities, permeabilities, and pore pressures can be calculated more accurately, thus delineating and characterizing any oil or gas bearing reservoir encompassed within the seismic spread. The procedure can be deployed in either land or marine environments, however its most productive form is believed to be a semi-permanent installation utilized while drilling a multiple well field or during the production/development stages.

For subsalt drilling, the source can now be positioned under the salt for clearer imaging. During horizontal drilling, it is expected that multiple reflections will be generated from the acoustical boundaries at the top and bottom of the reservoir. Therefore, the method may be used to position and maintain the drill bit at the proper location for optimal production of the reservoir even if there are variations in its structural shape and attitude.

Dobrin Lecture

Date: Tuesday March 6, 2000
Time: 7 p.m.
Location: University of Houston; Room 117 of Science and Research Building 1. Parking will be available in front of the building in lot 14A off Cullen Avenue

Speaker: Dr. Leon Thomsen

Title: "Seismic Anisotropy: its effects on exploration and exploitation in the 21st Century"

Abstract:

The topic of seismic anisotropy in exploration and exploitation has seen a great deal of progress in the past decade-and-a-half. The principal reason for this is the increased (and increasing) quality of seismic data, and of the pro-

cessing done to it, and of the interpretation expected from it. No longer an academic subject of little practical interest, seismic anisotropy is now often viewed as one of the crucial factors which, if not taken into account, severely hampers our effective use of the data. When it is taken into account, it enables better imaging, and better subsurface characterization, as well as the effective utilization of shear waves and converted waves.

Bio:

Leon holds degrees in geophysics from Caltech (B.S. 1964) and Columbia (Ph.D. 1969). His academic career began with post-doctoral appointments at CNRS in Paris, and at Caltech, followed by faculty appointments at the State University of New York at

Binghamton (1972-80). His industrial career began with 14 years at Amoco, at its famous Tulsa Research Center. Following the change of its mission in 1994, he joined Amoco's worldwide exploration department in Houston. Following the recent merger, he serves in BP Amoco's Upstream Technology Group in Houston, as Principal Geophysicist.

For his work in seismic anisotropy, Leon was given the Fessenden Award in 1994 by the SEG. He served as its Distinguished Lecturer in 1997, and as Chair of its Research Committee (99-00). He and his colleagues received the EAGE's Best Paper Award in 1997 for their converted-wave analysis at Valhall; he has scored several near-misses with the SEG. He was given Honorary Membership in the GSH in 1998.

SIG Meetings

POTENTIAL FIELDS

Joint 3-D Inversion of Gravity, Magnetic and Tensor Gravity Fields for Imaging Salt Formations in the Deep Water Gulf of Mexico

Greg J. Jorgensen and Jerry L. Kisabeth, Conoco Inc.
Greg.J.Jorgensen@usa.conoco.com

Date: Thursday March 15, 2001
Time: 5:30 Social Hour; 6:30 Dinner; 7:30 Presentation
Location: HESS building, 5430 Westheimer, Houston
Cost: \$23.00

Contact:

Afif Saad, Chair - GSH Potential Fields Group, at 281-342-8575 (afifsaad@netscape.net) or Bob Van Nieuwenhuise,

Co-Chair at 281-679-2208 (Bob.VanNieuwenhuise@pgs.com) by Tuesday, March 13, 2001 for reservations. E-mail is best because we can confirm your reservation. Please HONOR your reservation! We must bill no-shows!

Abstract:

Exploration for hydrocarbons in subsurface areas containing salt formations can be a challenging task, partially due to seismic imaging difficulties created by the salt formations anomalous density

and highly irregular shapes. The enhanced effort in deepwater Gulf of Mexico petroleum exploration has brought with it the need to map the base of salt and sub-salt structures in areas where seismic methods are experiencing a wide range of difficulties. The anomalous density and susceptibility associated with these salt formations produce significant gravity and magnetic field variations. Utilizing gravity, magnetic and gravity tensor measurements along with inversion methods these formations can be modeled. Within Conoco we have developed robust 3-D inversion methods which can simultaneously invert on gravity, magnetic and gravity tensors fields, while accounting for lateral and vertical density and susceptibility variations within the sediments. Tensor gravity acquisition is now a commercial reality and Conoco has made a significant effort in the application of this technology to exploration problems, with a particular emphasis on the salt imaging problem. One of the unique aspects of the deepwater mini-basin exploration area is that the salt formations have a direct spatial and causative relationship with the bathymetry, thus causing the principal noise source for gravity and magnetic fields. This relationship makes the modeling problem even more challenging. In this paper we will present the general concept of a gravity tensor, outline the general inversion scheme, discuss the critical pre-inversion data processing steps, and present recent case studies from various

exploration areas throughout the mini-basin area.

Biography:

Greg J. Jorgensen
B.S. Geology (minor in mathematics): Brigham Young University
M.S. Geology and Geophysics: Brigham Young University

Marathon Oil Company 1984 - 1989
International Geophysical Service
Conoco Inc. 1989 - Present
Exploration Production Technology - Geophysical Advisor

RC-SIG NEWS

The next RC-SIG meeting will be held May 9th and 10th at the Virtual Environment Application Center (VRAC) at Iowa State University (ISU) in Ames, Iowa. ISU has the only publicly known C-6 in North America (a six wall CAVE(TM) or Computer Aided Visualization Environment).

Those interested in following the organization committee meetings, seeing results from previous meetings, or becoming involved in the RC-SIG can do so at <http://www.walden3d.com/rcsig>. Those interested in presenting case histories or who have questions about the RC-SIG contact the GSH representative, Roice Nelson at rnelson@walden3d.com or call 281.579.0172.

Join the Geophysical Auxiliary of Houston!

The Geophysical Auxiliary of Houston invites the wife of any present or past member of the GSH or SEG, the widows of former members of the GSH or SEG, and women members of the GSH or SEG to join us for our 2000-2001 events.

Sunday March 11, the Spring Brunch will be held at Lakeside Country Club, 100 Wilcrest Drive. For a "space

walk on the wild side" we will hear from Dr. Pat Dickerson who trains the astronauts at NASA in Clear Lake and may be able to get us a seat on a flight to Mars.

Yearly dues are only \$15.00. Call Marinell Williams at 713-467-4517 or Donna Parrish at 281-589-8088 for information on how to join. For more information about the programs and to offer suggestions, please call Georgeann

Massell at 281-353-4517.

The GAH encourages social relationships among its members, donates money to the GSH scholarship fund and assists the GSH in any manner possible.

"Strangers are just friends waiting to happen." We look forward to having you join us!

Joint GSH/HGS Dinner Meeting

Date: Monday,
March 5, 2001
Location: Westchase Hilton,
9999 Westheimer

Speaker: David Johnston (ExxonMobil).
Topic: Interpretation and Modeling of
Time-Lapse
Seismic Data: Lena Field, Gulf of
Mexico.

Abstract

Two 3D seismic data sets from the Lena Field, Gulf of Mexico are analyzed for time-lapse effects. The seismic analysis involves cross equalization and residual migration of the post-stack seismic data, as well as full reprocessing and attribute analyses. The time-lapse differences for the B80 reservoir are compared with production data, geologic models, flow simulations, and forward seismic models. The time-lapse seismic difference anomaly is interpreted to be a region of gas invasion. Areas bypassed by the injected gas are identified from 4D seismic data as opportunities for infill drilling. Successful interpretation of this time-lapse seismic data illustrates the importance of integrating the results of modeling and simulation with seismic processing and interpretation.

Introduction

Seismic monitoring (time-lapse or 4D seismic) has the potential to significantly increase recovery in existing and new fields. One important issue is the significance of the seismic difference anomaly relative to non-repeatable noise. While future field developments should benefit from seismic acquisition designed for time-lapse monitoring, current seismic monitoring opportunities consist of existing fields for which one or more 3D seismic surveys have already been acquired. The reliability of a 4D interpretation is measured by the repeatability and the reconciliation of the time-lapse anomaly with geologic and production data. The objective of this paper is to interpret the seismic difference observed in the Lena B80 reservoir through the use of geologic modeling, flow simulation, and seismic modeling.

B80 Reservoir and Production History

The Lena Field (Mississippi Canyon Block 281) is located south of the modern Mississippi delta in 1,000 feet of water. The field is situated on the western flank of a salt diaper within a fault-bounded intraslope basin. The B80 reservoir is located about 10,500 feet below sea level and is interpreted as a low-stand fan systems tract representing deposition in distributary lobes composed of amalgamated and channelized turbidities. The average total porosity of the B80 sands is 27% and the permeability ranges from 30-200 md. The average reservoir thickness is 100 feet with a net-to-gross of 47%.

Oil production in the B80 reservoir began in 1984. The B80 has been depleted by a combination of bottom water and gas-cap expansion drive, supplemented with up-dip gas injection. Pressure decline below the bubble is believed to have trapped about 5% gas in the entire oil leg. In 1987 gas injection was initiated just below the original gas-oil contact. Gas quickly broke through to producers resulting from gravity. By 1995, most down-structure wells had watered out and many producers had high GOR production.

Seismic Data

A pre-production 3D seismic survey was acquired over the Lena Field in 1983 and a regional 3D spec survey covering the field was acquired in 1995, after 11 years of production. The 1983 survey was acquired in an east-west direction and the 1995 survey was shot in a N58oE direction. Initial differences in the two seismic data volumes are substantial and are primarily due to different acquisition and processing parameters.

A stepwise approach was taken regarding the processing of the two data volumes. Post stack re-processing represents an inexpensive, rapid analysis technique, while re-processing both data sets represents a more rigorous, expensive, and time-consuming methodology.

One of the obstacles to full re-processing is that the navigation data for the 1983 data is unavailable. Naviga-

tion information was generated based on knowledge of the acquisition parameters, the final seismic grid, and observer's notes. The fidelity of the re-processed volumes exceeds the original processing for both the 1983 and 1995 surveys, especially for steeply dipping reflectors at the salt flank.

For the relatively low dip B80 reservoir, which is removed from the salt dome flank, the time-lapse difference anomaly is similar for each processing stream.

4D Difference and Interpretation

Differences of the 1995 and 1983 surveys are calculated from interpolated time-aligned seismic traces and illustrated in Figure 1. There is a large difference anomaly unambiguously associated with the B80 reservoir. The anomaly is restricted to the reservoir (outlined by the polygon). The difference is nearly zero away from the reservoir, demonstrating that the data are repeatable and that the seismic difference is significant.

Reservoir flow simulation and the 3D geologic model are used to generate a synthetic seismic difference volume. Petrophysical analyses based on sonic and density logs relate the reservoir properties in the geologic and simulation models to seismic properties. A comparison of the synthetic and actual seismic differences is used to facilitate the interpretation of reservoir changes imaged by 4D seismic data.

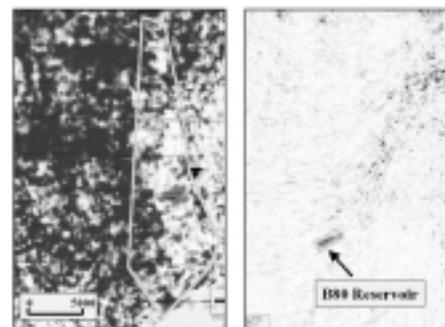


Figure 1. Seismic difference volume. The average absolute amplitude map is calculated around the B80 reflection from the difference volume. The polygon outlines approximately the B80 reservoir.

Dinner Meeting continued on page 7

Geologic Models and Simulation

Geologic models of effective porosity and shale volume are initially constructed independently for each parasequence using Sequential Gaussian simulation. Because the reservoir is below seismic resolvable thickness, collocated cokriging with Bayesian updating is used to incorporate seismic amplitude attribute information in the geologic model. The seismic attribute is corrected for the effect of reservoir fluids using forward seismic modeling. The resulting reservoir flow model has a good match between the simulated and actual cumulative production history of the B80 reservoir

Petrophysics

Petrophysical analysis shows that from 1983 to 1995 the original water leg sees a very slight increase in impedance because the formation fluid pressure has declined, increasing the effective stress on the reservoir. Where oil has been swept by water, the impedance is almost unchanged because of the compensating effects of trapped gas, water displacing oil, and pressure decline on the rock frame. In the remaining oil leg, the small decrease impedance is again the result of trapped gas competing with the effect of pressure. Impedance in the original gas cap increases as a result of pressure decline. The gas-invaded zone, originally the up-dip portion of the oil leg, has the largest impedance change.

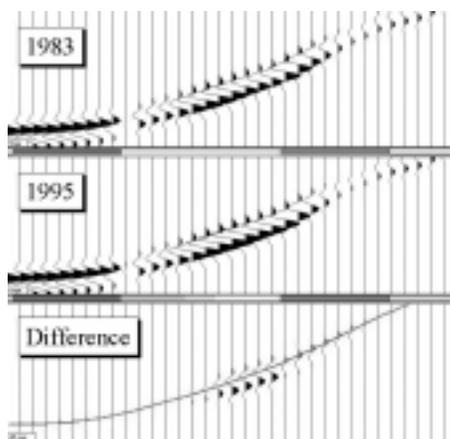


Figure 2. Cross-sections from 1983, 1995, and difference seismic models. The greatest change occurs in the gas-invaded zone (yellow). The top B80 horizon time is shown by the red line on the difference.

Seismic Models

Synthetic 3-D seismic volumes representative of the 1983 and 1995 reservoir conditions are derived from the geologic models, reservoir flow simulations, and the petrophysical analysis. The most significant change in the seismic response between 1983 and 1995 occurs in the gas cap expansion or gas injection zone. The seismic difference anomaly in Figure 1 is located in the area invaded by gas and represents regions of significant gas saturation changes.

Interpretation

As shown in Figure 3, the anomaly is restricted to the central portion of the reservoir, suggesting there may be regions of bypassed oil or areas not contacted by gas to the north and to the south. But, the area to the north may be an area of poor reservoir quality or an area swept by water as suggested by the flow simulation. Both conditions will result in little seismic change. Thus, an area of bypassed oil is identified to the south near the A29ST well. The interpretation is consistent with well production data.

Conclusions



Figure 3. 3D visualization of the B80 seismic difference. Blue wells (A28, A25, A17) have watered out, red wells (A5, A7, A25ST) are gas injectors or producers, green wells (A28ST, A18, A17ST) are oil producers and the gray well (A29ST) was lost during a workover in 1994.

Lena represents a significant challenge for the application of time-lapse seismic methodology. Even so, the time-lapse seismic analysis at Lena represents an important success. Post-stack processing and full reprocessing of the seismic data has shown that time-lapse differences in the B80 reservoir are distinct and robust. These differences are interpreted using reservoir simulation

and forward seismic modeling to be the result of gas cap expansion and/or gas injection. By comparing measured time-lapse seismic differences with model predictions, areas bypassed by the injected gas can be identified. The identification of potentially bypassed oil may affect future drilling decisions.

Acknowledgment

We thank Exxon USA New Orleans Production Office for their support in this study.

Biography

David H. Johnston is a Research Associate for the ExxonMobil Upstream Research Company (URC) in Houston, Texas. He received a BS degree in Earth Sciences from the Massachusetts Institute of Technology in 1973 and a Ph.D. in Geophysics in 1978, also from MIT. He joined Exxon in 1979 and has held assignments in rock physics research, velocity analysis, and seismic reservoir characterization. He is currently technical team leader for time-lapse seismic research and is responsible for the development and the world-wide application of the technology.

Dr. Johnston is active within the Society of Exploration Geophysicists (SEG) and the Society of Petroleum Engineers (SPE). He was Secretary/Treasurer of the SEG in 1990 and has chaired the Development and Production Geophysics Committee and the Interpretation Committee. Dr. Johnston was awarded the Best Presentation by the SEG in 1993, was an SPE Distinguished Lecturer from 1992 to 1993, and an SEG Distinguished Lecturer in 1999.



SEG - GSH Spring Symposium 2001

Reservoir Resolution Through Comprehensive Use of Seismic Data Attributes

Dates: May 8 - 10, 2001

Location: Houston, TX

Program: Seismic data attributes comprise not only the standard complex trace attributes, but AVO attributes, non-linear transformations, spatial attributes, velocity, and virtually any seismically-derived measurements that may shed light on the subsurface picture. Applying modern mathematical and computational techniques, such as neural networks and multi-variant analysis, coupled with the emerging visualization technology, the predicted characterization of reservoirs is becoming sharply resolved, and realistic. Topics to be addressed in the symposium include the following.

- * Lithologic and Pore Fluid Predictions
- * High Resolution Reservoir Imaging
- * Reservoir Modeling ... Fluid Substitution Techniques
- * Developments in Neural Network Classification
- * Case Histories with Technique Validation
- * AVO Attributes and their Applications
- * Well Log Prediction
- * Visualization Technology

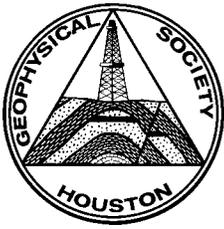
Call for Papers (Deadline: April 17, 2001):

Please submit an expanded abstract of your paper as follows:

Electronic form: as an e-mail attachment in MS Word or Power Point to < seg.papers@texseis.com >

Hardcopy:
SEG Symposium
Attention: Mike Gaul
Texseis, Inc.
10810 Old Katy Rd., Ste. 201
Houston, TX, 77043

For information:
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Co-Chairman Tury Taner, phone: 713-783-5593; e-mail: mt.taner@rocksolidimages.com



Golf Tournament and Dinner Geophysical Society of Houston



DATE:	Monday, May 21, 2001	FORMAT:	Four Man Florida Scramble
PLACE:	Kingwood Country Club	COST:	\$115.00 Members and Guests
TIME:	9:30 AM Registration 11:30 AM Tee off (Shotgun)	DEADLINE:	April 15, 2001

MAIL ENTRIES TO:

Fairfield Industries • 14100 Southwest Freeway, Suite 600 • Sugar Land, TX 77478 • Attn: George Lauhoff

MAKE CHECKS PAYABLE TO:

Geophysical Society of Houston

GOLFERS READ CAREFULLY

The three courses at Kingwood are available to the first 432 entrants. No entry will be accepted until the entry form and fees are received in full. NO EXCEPTIONS!!!

MULLIGANS \$5.00 EACH (MAX. 2/PERSON) AVAILABLE AT CHECK-IN

If you are not playing golf but want to join your friends attending the dinner following the tournament, please send in \$15.00 per person to cover the cost of the dinner. Make a note at the bottom of the check "Dinner Only". These checks should also be payable to the Geophysical Society of Houston.

GOLF TOURNAMENT FORM

You may select your own foursome, if not you will be assigned to a group. The first name listed will be considered the TEAM SPOKESPERSON.

Name: _____

Name: _____

Circle: Member Guest

Circle: Member Guest

Company: _____

Company: _____

Phone: _____ HDCP: _____

Phone: _____ HDCP: _____

Name: _____

Name: _____

Circle: Member Guest

Circle: Member Guest

Company: _____

Company: _____

Phone: _____ HDCP: _____

Phone: _____ HDCP: _____

Course Preference: ISLAND LAKE MARSH DEERWOOD
(Circle One)



➤ **Exhibit Space Available**

Society of Exploration Geophysicists
San Antonio, TX
September 9 - 14, 2001

SEG 2001

International Exposition and Seventy-First Annual Meeting



Explore the world's largest marketplace of geophysical technology and services.

Join an estimated 10,000 geoscientists in San Antonio who will be **"Thriving On New Challenges"** with the latest acquisition, processing, and interpretation technologies and methods. Survey more than 500 technical presentations and approximately 300 exhibits displaying state-of-the-art products and services for the geophysical industry.

3 Ways to Register

- Input online at <http://meeting.seg.org>
- Use forms inserted in the "Annual Meeting Announcement"
- Contact SEG Business Office and we will fax the forms to you

Technical Papers Deadline	March 7
Advance Registration Due.....(save off the on-site fee)	July 27

For more info: tel + 1.918.497.5500
fax + 1.918.497.5557
email meetings@seg.org



Thriving On New Challenges

University of Houston Geoscience Alumni Association Luncheon

Date: April 25, 2001

Where: Petroleum Club, 43rd floor, in the Exxon building downtown: 800 Bell Ave

Cost: \$25

Reservations: Matt Martin (President, UHGAA) at 281-874-1632 by noon Friday, April 20th.

Title: Geologic Overview of the NE Mississippi Fan and Shelf to West Florida Terrace Region, Offshore Gulf of Mexico
Norman E. Biles¹, Andrew E. Hannan¹, George A. Jamieson¹, and John E. Bain²

¹WesternGeco, 3600 Briarpark Drive, Houston, Texas 77042

²Galileo Geophysics, Inc., 6100 Hillcroft, Houston, Texas 77081

ABSTRACT

This study is based on the joint venture (WesternGeco and TGS NOPEC) Phase 46, 16,000-line-mile 2D seismic and gravity/magnetic program that was acquired, processed, and interpreted from 1997-1999. It consists of a 2 x 2

mile grid (16,100 mi²), covering parts of Main Pass, Destin Dome, Viosca Knoll, Mississippi Canyon, Desoto Canyon, Atwater Valley, and Lloyd Ridge. Water depths range from 75 feet to over 10000 feet. Geological control from 44 biostratigraphy wells helped calibrate seven mapped horizons. In addition, a velocity cube was generated from this dataset.

A Cretaceous carbonate shelf, a prominent escarpment to the southeast, dominates the east and northeast portions of the survey. It is overlain by primarily regressive Cenozoic clastics. West of the carbonate shelf is a Miocene to Plio-Pleistocene shelf /slope/fan complex. The shelf facies is developed in the northwest and progresses through slope to deepwater fan deposits toward the southeast. This complex contains numerous allochthonous salt bodies. In general, autochthonous salt structures are present east of the detached salt, underlying the slope fan complex. These continue eastward to the Cretaceous shelf edge.

This region is becoming an increasingly attractive area to explore. For example, "Crazy Horse" in Mississippi Canyon (MC) Block 778 is a recent subsalt discovery within the study area.

Biography

Norman E. Biles received a BS in physics from Lewis and Clark College, and an MS (1966) in geophysics from New Mexico Tech. He worked for Phillips Petroleum from 1966 to 1988 in data processing and international/domestic exploration. Consulted for BP and TGS on GOM lease sales and velocity interpretation from 1988 to 1990. Since 1990 he has been involved with velocity studies and seismic interpretation at WesternGeco (previously Schlumberger Geco-Prakla). Recent seismic interpretation assignments include the eastern Gulf of Mexico and deepwater Brazil. He is a member of the SEG and Houston's geologic and geophysical societies.

Environmental Applications/Near-Surface SIG

By Stephanie Hrabar, GSH Liaison to CEC

Annual Meeting Well Attended. More than 60 people representing various Citizen Environmental Coalition member groups attended the annual meeting on February 8th. Participants enjoyed appetizers donated by Carrabba's Restaurant, and then learned about CEC's major accomplishments in 2000 and future plans.

Next, three outgoing CEC board members were thanked for their services, and five new board members were elected. CEC welcomed new member organizations: The Children's Museum of Houston's EcoStation, Citizens' League for Environmental Action Now (CLEAN), Community Environmental Legal Defense Fund - Texas (CELDF), Garden Club of Houston, Houston Renewable Energy Group (HREG), Natural Legacy, SNAP (Spay-Neuter Assis-

tance Program), and the Texas Marine Mammal Stranding Network.

The guest speaker for the annual the meeting, Dewayne Huckabay spoke on "Retiring Optimistically: Insights After 25 Years of Public Service to Houston. During his presentation he compared the published plans and actual outcomes of environmental projects (such as air quality, sewer, wastewater, and major thoroughfares) during the administration of various mayors. Mr. Huckabay described a major event that occurred during the administration of Mayor Whitmire, lay public participation.

Prior to Mayor Whitmire's administration, bureaucrats and contractors got together to determine the development projects without public comment from neighborhoods. During her administration two major policy changes took place: 1) capitol improvements plans (CIP) were open to review and comment

by the lay public prior to approval and implementation and 2) competitive bidding for contracts. To this day members of City Council chair open public meetings during which the neighborhoods are informed of proposed major projects. Concerned citizens candidly ask questions of the council member and various city department leaders. Citizens may also provide written comments afterwards. . . .and they do.

Implications for environmental geophysics. Ground vibrations, ground collapse, and noise have become major concerns to the lay public based on the public meetings that I have attended over the past 10 years. Concerned citizens in older neighborhoods have requested measurements and monitoring of vibrations. Seismic services may find more application and opportunities that are driven by civic associations.

MATCH 2001

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3
4	5 HGS/GSH Joint Dinner Westchase Hilton 9999 Westheimer	6 Dobrin Lecture U of H, Room 117 Science and Research Bldg. 1	7 SEG Technical Papers Deadline	8	9	10
11 GAH Spring Brunch Lakeside Country Club 100 Wilcrest Drive	12 NEWSLETTER DEADLINE	13	14 Technical Breakfast Shell Technology EP 3737 Bellaire 7 a.m.	15 Potential Fields SIG HESS building 5430 Westheimer 6:30	16	17
18	19	20 Technical Luncheon HESS building 5430 Westheimer 11:30 a.m.	21	22	23	24
25	26	27	28	29	30	31

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