LGS Luncheon Meeting
Wednesday, January 20, 2010
11:30 am – 1:00 pm
Lafayette Petroleum Club
$15 Members / $17 Non-Members

Luncheon Presentation
“Time-Lapse Seismic for Optimum Reservoir Management – Deepwater West Africa”

David H. Johnston
ExxonMobil Production Company

Visit the LGS website at:
www.lgsweb.org
LAFAYETTE GEOLOGICAL SOCIETY
2009-2010

President       Carl Richter     337-482-5353
UL-Lafayette Geology      crichter@louisiana.edu

President       Tim Duex       337-482-6222
Elect          UL-Lafayette Geology      TDuex@louisiana.edu

Vice          Dean Gresham     337-268-3236
President      Fugro GeoServices      dgresham@fugro.com

Treasurer      William Hagan   337-232-5510
Stratagraph      wahagan@stratagraph.com

Secretary      Dan Ruberg     337-268-3196
Fugro GeoServices      druberg@fugro.com

Past Pres.     King Munson    337-456-5730
Prize Petroleum, LLC      kmunson@prizepetroleumllc.com

Director      Mike Quinn     337-354-5032
Plains E & P Co.      mquinn@pxp.com

Director      Tim Bennett    337-232-1650
Bennett Systems LTD      bennett_systems_ltd@yahoo.com

BULLETIN/WEBSITE STAFF

Bulletin Editor    James Willis    337-394-3979
Odyssey Int’l, LLC      lgseditor@msn.com

Website          Karen Broussard 337-989-1365
Independent      karen.broussard@gmail.com

Photographer     Francis Broussard 337-989-3195
Chevron         francisbroussard@chevron.com

LGS DELEGATES TO AAPG

Jack Martin    King Munson    Jerry Yunker

LGS HONORARY MEMBERS

Robert Anderson    Thomas Eby, Jr.    Brian Lock
Charles Barton    Peter G. Gray     Jack Martin
Frank Harrison    Marvin Munchrath  Robert Copeland
Jim Dungan      Tim Rynott
LGS 2009 - 2010 Officers

Back Row: Tim Duex, William Hagan, Carl Richter, Francis Broussard, and Dean Gresham

Front Row: King Munson, Dan Ruberg, Karen Broussard, Michael Quinn, and Tim Bennett

Not Pictured: James Willis and Jill Willis

LGS Luncheon Meeting
Wednesday, January 20, 2010
11:30 am to 1:00 pm
Lafayette Petroleum Club
Cost: $15.00 Members / $17.00 Non-Members

“Time-Lapse Seismic for Optimum Reservoir Management – Deepwater West Africa”

David H. Johnston
ExxonMobil Production Company
I hope that everyone had a wonderful holiday season, and I wish you all a happy and healthy New Year. I like this time of year because you naturally look ahead to 2010 and think about what needs to be done and how to do it. I also like the fact that the days are getting longer with spring and summer fast approaching! No matter what, it will be very interesting to see what the new decade will bring, both economically and politically!

We hope to have a busy spring for our society members. We will start out the year with a dino dig at Broadmoor Elementary on January 19. Julia Battle is still looking for volunteers not only for this event, but for several others as well. This is a great opportunity for exposure of our society, and more importantly it is great exposure for the science of geology. I hope many of you will take the opportunity to help out and get involved with these important community activities. Just send Julia an email at jugie@centurytel.net.

In conjunction with SWLGS (Southwest Louisiana Geophysical Society), we are trying to get a continuing education course offered for this spring that will interest both our society members as well as our more geophysically “bent” brothers from SWLGS. I will keep you posted when we get something organized.

Tim Bennett is working on organizing our spring golf tournament to coincide with the Festival International. This is a great time to see people we may not run into often because we generally have a good turn out from our Houston members. I will have more information on the golf tournament shortly.

We will kick off our 2010 lunch meeting with Dr. David Johnston from ExxonMobil. David will talk about time-lapse or 4D seismic data analysis for optimum reservoir management in the deepwater. It will be interesting to hear what ExxonMobil has learned from the 4D seismic investigations in the deepwater of West Africa.

In closing I would like to mention that the GCAGS has started their 2010-2011 scholarship fund-matching program. This program runs from 1/1/2010 through 6/30/2011 and matches (1:1) newly raised scholarship funds up to $10,000 per member society. Funds that qualify for matching are charitable contributions made by individuals, companies, and other organizations to our UL scholarship foundation either directly or through LGS. Matching contributions from employers and companies will be matched for the total amount (e.g., $100 contribution, $100 corporate match, $200 GCAGS match). I hope this will be incentive enough for all of you to step up and help our local students, the next generation of geologists!

See you at the meeting!

Carl
LGS wishes to thank its Cornerstone Members for their annual financial support of speaker programs, continuing education, UL-Lafayette scholarships, social functions, and community services.

### PLATINUM MEMBERS

**NONE**

### GOLD MEMBERS

- **Jim Dungan**
- **Joe R. Klutts**
- **Brian Lock**

### SILVER MEMBERS

- Bergeron, D. J., Jr.
- Caffery, Stephen
- Champlin, Maurice A.
- Dobie, C. Walter
- Fisher, James L.
- Franklin, Joe
- Grubb, William S.
- Huffman, Gary P.
- Lane, B. J.
- Martin, Jack P., Sr.
- Munson, King
- Rainbolt, W. K., Jr.
- Raine, John, III
- Ripley, William F.
- Rutherford, Mark S.
- Terrell, William C.

### BRONZE MEMBERS

- Baird, James
- Becnel, Jim
- Bump, C. “Dan”
- Broussard, Karen
- Broussard, Mary
- Dincau, Tony R.
- Duex, Tim
- Glassinger, Craig L.
- Heppermann, Jeffrey
- Miller, Jim P.
- Porter, Samuel G.
- Slate, H. Leale
- Smart, Burton, II
- Thompson, Ronald
- Welp, William Clay
Summary

Time-lapse or 4D seismic data has proven value in reservoir management, increasing reserves and recovery by locating bypassed and undrained hydrocarbons and optimizing infill well locations and flood patterns. 4D seismic can also decrease operating costs by reducing uncertainty in the reservoir geologic model and flow simulation, optimizing completions, and minimizing the number of dry holes. ExxonMobil’s experience in West Africa demonstrates that the deepwater production environment presents unique opportunities and challenges for 4D projects. 4D seismic technology is particularly valuable in the deepwater because there are critical reservoir management issues that can be addressed using 4D data. These include gas management, heterogeneous sweep that results in bypassed pay, compartmentalization that limits the effectiveness of injectors and producers, and complex lateral and vertical connectivity that impact recovery efficiency. In many deepwater developments with high drilling and well intervention costs, 4D seismic may be the primary tool for reservoir surveillance. However, the deepwater environment also presents both technical and business challenges to the successful 4D seismic program. These include the impact of surface facilities on data quality, contending with ongoing field operations, and aggressive drilling schedules that dictate a rapid turnaround of 4D data. This presentation shows how ExxonMobil uses 4D seismic technology in three West African fields and how our project execution strategies have evolved to meet the challenges we face there.

Introduction

Time-lapse or 4D seismic is a field-scale surveillance tool. Reservoir production changes fluid saturation, pressure and other properties that result in changes in seismic velocity and density. By comparing multiple vintages of seismic data shot over our fields we can detect these changes in the seismic response and infer changes in reservoir
properties. 4D seismic is a proven and commercialized technology that can help increase reserves and recovery by locating bypassed pay and optimizing well locations. In the longer term, 4D can decrease operating costs by reducing reservoir model uncertainty and saving dry holes.

ExxonMobil’s first shot-for-purpose marine 4D seismic survey was acquired over the Jotun Field in Norway in 2002 and the application of 4D seismic technology has grown since. ExxonMobil and its partners have acquired over 140 4D seismic surveys over a variety of geographical areas, in a number of geological settings, and for a wide range of depletion scenarios. The greatest growth in 4D seismic activity in ExxonMobil-operated assets has been in the deepwater, particularly in West Africa which now accounts for over 30% of the cumulative number of surveys.

4D is valuable in the deepwater because there are critical reservoir management issues that can be addressed through the use of 4D seismic data. Gas injection is required in many of our fields and monitoring gas movement can minimize recycling and prepare the field for eventual gas production. Heterogeneous water sweep can result in bypassed pay. Compartmentalization can limit the effectiveness of injectors and producers. The potential for complex vertical and lateral reservoir connectivity can have a huge impact on recovery efficiency. And, seismic data quality tends to be relatively good over our deepwater assets. Also, the cost of 4D seismic information is relatively low in the context of deepwater drilling and reservoir intervention costs. Finally, in many fields, the use of sub sea drill centers limits conventional monitoring technologies like production logging tools. In these cases, 4D seismic may be the only tool available for reservoir surveillance where early surveys can be used to evaluate reservoir management and depletion plan effectiveness and later surveys can be used to identify infill opportunities.

(continued on page 6)
Zafiro

ExxonMobil’s first West Africa 4D seismic survey was at the Zafiro Field in Equatorial Guinea. The pre-production baseline seismic survey was shot in 1995 and the first repeat survey was acquired in late 2002, after about 6 years of production. The Zafiro Field produces from 15 Pliocene reservoirs in water depths of up to 850 meters. Complex vertical and lateral connectivity in the deep-water, confined channel systems, syndepositional growth of local thrust structures, and multiple depletion mechanisms has resulted in complicated water and gas distributions. The 4D monitor survey shows clear 4D differences associated with both water and gas saturation changes. Although the field had been producing for 6 years, the active infill campaign at the time of the 2002 repeat survey meant that in some reservoirs, a 4D response was seen in as little as a few months of production. The analysis of this data has derisked over 20 infill wells and has been used in integrated well planning. Gas exsolution from pressure decline below bubble has highlighted connected reservoir and identified baffles – even in mixed impedance sands that are relatively transparent on the original 3D survey. Regional water contact movement can be traced out over 10 km and localized water movement due to injection can be seen in some reservoirs. In some cases, planned infill wells have been moved to gain separation from 4D-interpreted gas and drilling of other wells has been deferred. Because of the value obtained from the first 4D survey, a second repeat survey was shot at Zafiro in late 2007.

Xikomba

The Xikomba Field, in about 1300 m of water, was ExxonMobil’s first development in Angola block 15. Lower Miocene reservoirs are weakly confined to confined channel complex sands with porosity ranging from 26 to 31% and very high permeability. The structure is a faulted NW to SE trending anticline. First oil was in November 2003. Reservoir management strategies include crestal and downdip gas injection and downdip water injection. The baseline seismic survey was acquired in 1997 and the monitor was shot in 2006. About 80% of total EUR had been produced at the time of the 4D so the objective was to determine if there were any late-field-life infill opportunities.

The 4D response at Xikomba is complex but generally consistent with flow simulation predictions. Seismic differences from water injection, water contact movement and both crestal and downdip gas injec-
ation are clear in the data. The pattern of 4D differences demonstrates that even small-offset faults can act as baffles in the short term but the conclusion is that the current depletion plan is effectively managing the Xikomba reservoirs and that no additional producing well is needed. This saved a well that most likely would have been drilled in the absence of the 4D data.

**Kizomba A**

Kizomba A is in about 1200 m water depth. The Lower to Middle Miocene confined channel complex reservoirs form from a combination of stratigraphic and structural traps. There are five major reservoir and over twelve compartments in the field. First oil was in August 2004. The pressure maintenance strategy varies by reservoir and includes crestal gas re-injection (also used for temporary storage) and water injection.

The baseline high-resolution 3D seismic survey was shot in 2002. The 4D monitor survey was acquired in 2006. The general objectives of the survey were to evaluate reservoir connectivity by detecting exsolved gas and to monitor water movement. The application of 4D technology was challenging at Kizomba A because of the influence of salt and faults, creating a complex overburden, stacked producing reservoirs, resulting in a changing overburden, and the location of surface facilities relative to the reservoirs. However, the 4D data have been used to validate geological and flow simulation models and to identify potential well locations. A second 4D was shot over Kizomba A in early 2008.

**Challenges/Mitigation Strategies**

A successful 4D project depends on three factors. The first is seismic detectability – how big is the 4D response due to production? This depends on rock and fluid properties and the depletion mechanism. The second is repeatability – how similar are the base and monitor seismic surveys? This depends on a number of factors including acquisition geometry and processing. Fields with a high degree of both detectability and repeatability are likely to have an interpretable 4D signal. But the third factor is business impact. A 4D project is not successful unless it has a positive impact on reservoir management.

Probably the most significant technical challenge facing 4D seismic in the deepwater is dealing with field facilities and activity. Coordinating seismic acquisition with frequent tanker offloading, drilling, and

(continued on page 10)
D. J. Bergeron
INDEPENDENT EXPLORATION GEOLOGIST
AAPG Certified Petroleum Geologist #5371
SIPES #2142
704 S. Michot Drive Phone: 337 988-6966
Lafayette, LA 70508 Cell: 337 654-3003
djbergeron@cox.net Fax: 337 988-6966

Hearings
LEON E. COMEAUX & ASSOCIATES
GEOLOGICAL & PETROLEUM CONSULTANTS
David W. Comeaux
William S. McAlister, Jr.
Randy McAlister
P.O. Box 53922 Lafayette, LA 70505
305 La Rue France Lafayette, LA 70508
PHONE: 337-233-9839
FAX: 337-233-2131
lcomeaux@cox-internet.com

Evaluations
OPTIMISTIC OIL COMPANY
FRANK W. HARRISON, JR. President
200 Audubon Blvd. 1415 Louisiana
P.O. Box 51943 Suite 2400
Lafayette, LA 70505 Houston, TX 77002
Phone (337) 232-4031 Phone (713) 650-8008
Fax (337) 235-5333 Fax (713) 650-8305
E-mail: f.harrison.jr@worldnet.att.net

BADGER OIL CORP.
David Etienne
Don Sobba
Lanny Jackson
James Crane
Jerry Yunker
3861 Ambassador Caffery Phone: (337) 735-3300
Suite 400 Lafayette, LA 70503
Fax: (337) 237-5158

SUNBELT ENERGY LIMITED
Lafayette, LA
PROSPECT GENERATION AND EVALUATION
BOTH 3D AND 2D SEISMIC
Phone: (337) 233-8670
Fax: (337) 235-8066
E-mail: sunbelt@sunbeltenergy.com

Steven S. Anderson
Consulting Geophysicist
Landmark & Kingdom 3-D Pak
Kinnickinnick Exploration, Inc.
133 South Audubon Street
Lafayette, LA 70503
337-261-0211
fax 337-261-0218

Classen Exploration, Inc.
James S. Classen
Interested in close-in prospects
Looking to buy into low risk deals
P.O. Box 140637 208-854-1037 Ph
Boise, ID 83714 208-854-1029 Fax
classenllc@msn.com

ALBERT J. TREPAGNIER
PETROLEUM GEOLOGIST
P.O. Box 53607 Phone: (337) 988-6882
Lafayette, LA 70505 Fax: (337) 988-6882
Acquiring well defined drilling prospects and producing properties with development potential.

Will consider both open acreage ideas and assembled prospects with reasonable promote.

CONTACT:

Malloy French            Carlton Cook            Steve Caffery
985.801.4300            281.752.1100            337.408.4006
Covington, LA            Houston, TX            Lafayette, LA

Louisiana, Texas and Gulf of Mexico

Operations preferred
Minimum participation 50%

GEORGE N. MAY
& ASSOCIATES
Consulting Geologists and Paleontologists

WILLIAM S. GRUBB
201 HEYMANN BLVD.
P.O. BOX 51858
LAFAYETTE, LA 70505
OFFICE (337) 234-3379
FAX (337) 234-3389
HOME (337) 235-1923

JAMES O. UNDERWOOD
CONSULTANT
Geologist, Radiation Safety Officer
Logging Supervision/Evaluation/QC
Wellsite Operations Geology
NORM Assessment/Safety/Auditing
Environmental Site Assessments
120 Catherine St. (337) 235-0750
Lafayette, LA 70503 Pgr: 271-9719

SOLEX CORP.
Philip C. Judice
Consulting Geologist
900 East Bayou Parkway
Lafayette, LA 70508
Phone: (337) 235-4643

LEO R. BADER, JR.
P.O. BOX 51515
Lafayette, LA 70505
337-237-0274

PAGE 9
construction projects demands detailed planning and close communication between the seismic vessel and field operations. But more importantly, platforms and FPSOs are significant obstacles to towed streamer acquisition, requiring expensive two-boat undershooting in order to obtain seismic coverage under them. In these areas, the geometry of a repeat survey is very different from the baseline survey, which is typically acquired before facilities are in place. If field facilities were located away from producing reservoirs, there would be less of an issue for 4D seismic. But in many of our deepwater fields, they are placed directly above the producing reservoirs. The poorer repeatability in these areas increases uncertainty in the 4D interpretation. Even away from facilities, variable ocean currents can result in significant variations in streamer feather making matching the baseline geometry problematic.

From the analysis and modeling of our early deepwater 4D surveys, we’ve begun to understand the causes of poor repeatability. For example, modeled seismic illumination differences between base and monitor survey can explain amplitude difference artifacts observed in the actual data. These learnings are helping us devise new acquisition and processing strategies to minimize geometry differences between sur-
veys and increase repeatability. For example, overlapping streamer coverage and elective infill data to minimize geometry differences between base and monitor surveys are standard practice. We’ve also developed 4D binning strategies to maximize repeatability during processing.

And, the recognition of facility impact on 4D success has led to pre-production baseline surveys that are easier to repeat. New baseline surveys have been acquired over two West African fields. Both were shot with straight line pre-plots, overlapping coverage, and phantom undershoots of planned facilities.

The business environment in which we work impacts both the near-and long-term 4D application strategy. 4D delivery is often complicated by a lengthy procurement process – often exceeding a year. And while the market has recently softened, the availability of seismic vessels has delayed startup in several 4D projects. We can also find ourselves resource constrained when multiple 4D programs are on similar schedules. In a six month period in 2007-2008, ExxonMobil acquired repeat surveys over five West African fields. These surveys require a significant effort in geophysical operations, seismic processing and 4D analysis and interpretation.

Dynamic drilling schedules often require quick turn around of 4D data. As a result, a long lead time is required for both survey and resource planning. ExxonMobil begins assessing the potential for 4D application early in field life. Technical screening and feasibility studies identify those fields where 4D technology has the greatest chance of success and can impact reservoir management. For those fields where 4D makes sense, the studies also establish the timing of repeat surveys which is included in the surveillance plan. During production, the plan is evaluated relative to field performance and business drivers to identify the optimal time to acquire a 4D survey and ensure delivery of the data to fully impact reservoir management.

(continued on page 18)
Calendar of Upcoming Events


Feb., 2010 — API: As of press time the Teche Chapter of the American Petroleum Institute has no scheduled February events.

Feb. 1, 2010 — NOGS: New Orleans Geological Society luncheon meeting, 11:30 am at the Loyola Ave. Holiday Inn — Dr. Kraig Derstler, UNO Dept. of Earth and Environmental Sciences, will present “Comparative taphonomy of tyrannosaurid dinosaurs from the Late Cretaceous of the western United States.”

Feb. 4, 2010 — SGS: Southeastern Geophysical Society luncheon meeting, 11:15 am at Le Pavillon in New Orleans — speaker and topic not available as of press time.

Feb. 9, 2010 — SPE: Society of Petroleum Engineers as of press time has no events scheduled for December. Meetings are typically held on the 2nd Tuesday of each month. Please visit www.spe-laf.org.

Feb. 9, 2010 — SWLGS: Southwest Louisiana Geophysical Society luncheon meeting, 11:30 am at the Petroleum Club in Lafayette — speaker and topic not available as of press time.


Feb. 11, 2010 — SPWLA: Society of Professional Well Log Analysts luncheon meeting, 11:30 am at the Petroleum Club in Lafayette — Sami Eyuboglu, Sperry, will present “Non-invasive testing of downhole fluid samples.”

Feb. 12, 2010 — BRGS: Baton Rouge Geological Society luncheon meeting, Mike Anderson Seafood Restaurant, 1031 W. Lee Dr., Baton Rouge — Clint Wilson, LSU Civil and Environmental Engineering Dept., will present “Issues associated with large-scale diversions in the Lower Mississippi River.”

Welcome back to San Antonio! Our theme this year is *Weathering the Cycles* —a challenge that resource geologists certainly have faced and overcome in the past! How do we weather the economic cycles? We…

- Network with our community
- Experience the latest technology in the technical exhibition
- Take a course or a trip and grow new and diverse skills
- Listen to special presentations on strategies to endure and prosper during an economic downtime and prepare for the inevitable rebound.

By celebrating our successes, facing our challenges, and learning from the research results of our peers, we are paid back many fold by sharing ideas and experiences among our professional community. So come and share your experiences! Suggest a session topic, present an oral paper or a poster, learn about the latest ideas and technologies in our field. Come to San Antonio and enjoy the Gulf’s own geoscience convention!

Please visit www.gcags2010.com for information on proposed technical sessions and how to submit an abstract.

Abstract deadline: 01 February 2010
ENERGY DRILLING COMPANY

CONTRACT DRILLING
(LAND RIGS ONLY)

3,000’ — 14,000’

LOUISIANA
EAST TEXAS
MISSISSIPPI-ALABAMA
FLORIDA

Pat Burns, Jr.           Jody Helbling
413 Liberty Rd.   Ed Ellis
P.O. Box 905   (601) 446-5259
Natchez, MS 39121  F AX 446-8607
**East Breaks**  MultiClient Wide Azimuth

- **Size** - 450 OCS blocks
- **Focus** - Sub-Salt Paleogene
- **Technology:**
  - Ramform Acquisition with 4.2 km Crossline Offset
  - True Azimuth 3DSRME & TTI Beam and TTI RTM Imaging
- **Delivery** - Available Q1 2010
Building For The Future

Aries Marine Corporation

Quality Service
Dependable Equipment
Experienced Crews
Excellent Safety Record

Supply Boats
337-856-7380

The new "Tiger Shark" PSV
292' x 64' x 24.6'

Liftboats
337-232-0335
ROCK-BASED PETROPHYSICAL SOLUTIONS

Core Lab offers a unique approach to petrophysical evaluations for even the most challenging reservoir.

➢ Deep Water, Deep Shelf
➢ Tight Gas Sands
➢ Gas & Oil Shale
➢ Heavy Oil & EOR

Pay Recognition  Core-Log Data Integration  Improved Reservoir Estimates
Completion Recommendations  Reservoir Performance Prediction

Answers From The Rocks
Lafayette (337) 837-8616
New Orleans (504) 733-6583  Houston (713) 328-2121

www.corelab.com
To ensure both technical and business needs are being met by the 4D project, ExxonMobil has also implemented a collaborative, multidisciplinary project stewardship process to survey planning, acquisition, and processing. Integrated project teams partner technical specialists with business unit interpreters and management, resulting in optimal alignment of all interests.

**Conclusions**

There are significant rewards for applying 4D seismic in the deep water – from more efficient gas management, optimized well locations, new infill opportunities, and improved reservoir models. As a result, over 30% of all ExxonMobil operated 4D surveys are in the deepwater – and that percentage is likely to grow in the next 5-10 years. However, there are both technical and business challenges inherent in deepwater operations ranging from facilities that impact seismic data quality and repeatability to business drivers that demand rapid turnaround of data. With early planning and technology adaptation, we can help mitigate the risks associated with these challenges, recognizing that a multidisciplinary approach to project execution and life-cycle seismic planning are critical to 4D success.

(Please see speaker biography on page 27.)

Figure 1. Production facilities for the Kizomba A development in Angola Block 15. The tension leg platform and FPSO are anchored in about 1200 m of water.
Figure 2. 4D seismic results for the Xikomba Field shows how water has moved from injection wells and along the original oil-water contact. Gas has been injected at the crest and on the northern flank of the structure.

Figure 3. Gas released from solution as the reservoir pressure declines illuminates connected volumes of a reservoir in the 4D data at Kizomba A. The data also show effective water sweep in one reservoir interval and fingering in another zone.
Define your geological model faster than ever before

**NO MORE WAITING! Available today from IHS, easy and affordable access to one of the largest U.S. digital log collections**

- More than 185,000 LAS files with over 1.5 million curves
- Regional subscription packages for today’s active play areas
- Indexed to IHS well and production data
- Linked to the IHS Enerdeq® Browser for quick regional studies and log selection
- Available via IHSLogNet.com or on DVD
- Ready to use in PETRA and other log packages

Request a free 2’ x 3’ IHS digital log coverage map at ihs.com/energy/DigitalLogs

---

Use PETRA® to integrate digital log, well, production, perf, seismic and tops data. IHS is the only company to provide you with the complete picture.

Why wait? Subscribe today!
Call 888.OIL.DATA (645.3282)
or e-mail sales.energy@ihs.com

©2008 IHS Inc. All rights reserved.
The December luncheon meeting offered a two-part presentation on coastal effects of hurricanes by Richard A. Ashmore (left) and Donald E. Owen of Lamar University in Beaumont, Texas.
Get Lit with Teche Electric—President-Elect Tim Duex (left) presents one of the December door prizes to Pete Gray.

December co-presenter Donald Owen (left) receives a gift of appreciation from President-Elect Tim Duex.
LAFAYETTE GEOLOGICAL RESEARCH CENTER, LLC

201 Heymann Blvd., Suite 33
Lafayette, LA 70503
Tel: 337-233-8197    Fax: 337-233-8177

orders@lafayettengrc.com
nancy@lafayettengrc.com
claudia@lafayettengrc.com

CALL OR EMAIL TODAY FOR MORE INFORMATION!

The Industry’s Premier Well Data Center

We provide:

• Well Logs
• Completion Data
• Production Data
  • Maps

With Exceptional Service!
EXPLORATION, L.L.C.

Jon Q=Petersen, President
Autie T. Orjias, V. P. /Land Manager
Dean Giles, Secretary/Treasurer
Joe R. White, Jr., Chief Geologist
S. Cody Lenert, Geologist
Ryan Q=Petersen, Land
Rhonda White, Admin. Assistant

401 Edwards Street, Suite 1200
Shreveport, LA 71101

P.O. Box 1367
Shreveport, LA 71164

(318) 222-8406  Fax (318) 222-6061
e-mail: mei@marlinexploration.com

PALEO DATA
FULLY INTEGRATED AND
CENTRALIZED BIOSTRATIGRAPHIC SERVICES

- Onshore-Offshore biostratigraphic databases
- Integrated foram / nannofossil analyses
- Wellsite paleo services
- Sample preparation lab and warehouse services
- Sample transport service

6619 Fleur de Lis Drive
New Orleans, LA 70124
(504) 488-3711

www.paleodata.com
January Speaker Biography

David H. Johnston is Global Geophysics Coordinator for the ExxonMobil Production Company in Houston, Texas. He received a B.S. 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. Before his current assignment he was the geophysical advisor and technical team leader for time-lapse seismic research and application.

Dr. Johnston is active within the Society of Exploration Geophysicists (SEG), the Society of Petroleum Engineers (SPE), and the American Association of Petroleum Geologists (AAPG). 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, and Best Paper in The Leading Edge in 2005. He was an SPE Distinguished Lecturer from 1992 to 1993, the SEG Distinguished Lecturer in 1999, and an AAPG Distinguished Lecturer in 2008. In 2003 he received Honorary Membership in the Geophysical Society of Houston in recognition of distinguished contributions to the geophysical profession and in 2004 he was awarded Life Membership in the SEG. Dr. Johnston was also the first recipient of ExxonMobil’s Peter Vail award for distinguished technical achievement in 2007.
Gulf of Mexico and International Services

Marine Geohazard Surveys
AUV & Mid Tow Surveys
Shallow Exploration Surveys
Shallow-Water-Flow Assessments
Deepwater Development Planning Studies
Integrated Geophysical/Geotechnical Development Studies

Ted Hampton, Vice President
Kerry Behrens, Geosciences Manager
Don Broussard, Executive Marketing Manager
Melissa Jeansonne, AUV
Jack King, Pipelines
Kerry J. Campbell, Mgr., Geoscience Consulting Services
Adam Jackson, International
Melissa Wood, Marketing

LAFAYETTE
(337) 237-2636

HOUSTON
(713) 369-5800
BASIN EXPLORATION, INC.

Purchasing and Developing Oil and Gas Projects/
Property Acquisitions in the Gulf Coast Region

John Duhon  200 Travis, Ste. 201
Braden Despot  Lafayette, LA  70503
Mark Despot  (337) 233-9199
Marlin Roberts  FAX (337) 233-9198
Helen Brierre

ENDEAVOR NATURAL GAS, LP

Seeking Drill-Ready Prospects

Texas and Louisiana Gulf Coast
East Texas · North Louisiana

Contact:  Bill Russ, Ext. 260, or Bud Foster, Ext. 255
(O) 713 658-8555 · (F) 713 658-0715
(Email) bruss@endeavorgas.com
1201 Louisiana, Suite 3350 · Houston, Texas 77002

DAVID STURLESE

PETROLEUM & CONSULTING GEOLOGIST
AAPG CPG #5480
(337) 232-1700
FAX (337) 234-0403
dsturl@bellsouth.net
DEVELOPING OIL AND GAS PROSPECTS
IN THE GULF COAST
Your success increasingly depends upon a better understanding of your reservoir. At Weatherford Laboratories, we provide a single source for comprehensive laboratory analyses, creating a synergy previously unknown in laboratory services. This single source includes distinguished geologists, geochemists, analysts, engineers, technicians and software developers, 38 worldwide laboratories, and the broadest portfolio of services for acquiring and interpreting data from physical samples. The end result is an unsurpassed combination of intellectual capital and technical resources — all working together to help you enhance development planning and reduce reservoir uncertainty.

Put our union of Synergy and Energy to work for you.
Crawfish Leases

Hunting Leases

Campsite Leases

Timber Leases

ALSO - OIL AND GAS LEASES
CALL: Bob Holleman
337-234-5611

W.H. ROBBINS & ASSOCIATES, LLC
CONSULTING GEOLOGISTS

W. H. ROBBINS
BILL DALE
REMY WILLIAMS
ARTHUR CHRISTY
RUSTY DEAS

302 LA RUE FRANCE, SUITE 100
LAFAYETTE, LA  70508
OFFICE (337) 232-5004
FAX (337) 232-8271

Look what Sir Speedy is delivering now.

Get all the ink and toner cartridges you need,
at 20-50% savings.

Corner of Jefferson & Vermilion
Downtown Lafayette
$93,995

Better Choice
Cartridges
(l. to r.) King Munson, William Hagan, Tim Bennett, and Mike Quinn at the LGS Christmas Party.

Cathie & Tim Duex and Bradon Despot enjoy excellent hors d'oeuvres and spirits at the Christmas Party.
Victor P. Smith
Oil Company L.L.C.

Seeking Oil & Gas Prospects Open or Assembled

Contact:
Danny Frederick
Ph: 337 993 3838
103 White Bark Drive
Lafayette, LA 70508

Victor P. Smith
Ph: 601 932 2223
P. O. Box 6177
Jackson, MS 39288

J. Brooke Furrh, III
FAX: 601 932 1348
P. M. McNames
Ph: 337 267 2552
P.O. Box 6177
Jackson, MS 39288

---

Stanley T. Broussard
Vice President - Investments

SMITH BARNEY
Citigroup

400 E. Kaliste Saloom Rd., Ste. 1200
P.O. Box 52089
Lafayette, LA 70505-2089

Tel 337 267 2552
Tel 800 662 3925
Fax 337 267 2525
stan.broussard@smithbarney.com
Citigroup Global Markets Inc.

---

William A. Hagan
Vice President of Business Development
wahagan@stratagraph.com
Mobile: (337) 501-5025

(337) 232-5510
P.O. Box 53848
Lafayette, LA 70505
HOPEWELL PARTNERS, LLC
PROSPECT GENERATION AND EVALUATION

JUAN DILIBERTO
Certified Petroleum Geologist #5612
(337) 993-2410 office/fax — (337) 739-8495 cell
P.O. Box 80055, Lafayette, LA 70598
hopewellpartners@aol.com

D-O-R ENGINEERING, INC.
120 Oil Center Dr., Bldg. 12, 70503
P.O. Box 51707
Lafayette, La 70505

DRILLING - OPERATIONS - RESERVOIR
3-D AND GEOSCIENCE SERVICES

Phone (337) 233-2378  Fax (337) 233-2907
e-mail: mail@dorengineering.com

DYNAMIC EXPLORATION PARTNERS, L.L.C.

W.K. (Dub) Rainbolt, Jr.  Roy Melton
126 Heymann Blvd.  12720 Hillcrest Rd.
Lafayette, LA 70503  Suite 1080
(337) 232-6841  Two Hillcrest Green
Actively Seeking Oil & Gas Prospects:
Dallas, TX 75230  Open Acreage and Leased.
(972) 233-8622

EL TORO PETROLEUM CORP.
P.O. Box 52241  JACK P. MARTIN
Lafayette, LA 70505  Petroleum Geologist
Phone: (337) 235-5288
Roland D. Liberda

P.O. Box 51134  Lafayette, LA 70505
(337) 232-4088  Fax: (337) 234-5320
LGS ADVERTISING

A great way to get exposure for you and your service is by advertising in the LGS Bulletin. For just a few dollars a month, you can make your products and services known to about 400 geoscientists and petroleum related companies. We publish from September through May. Advertising is good for your business and helps support your Society.

Advertisement submission can be in digital format (any number of common formats such as .pdf, .gif, .tif., .jpg, .bmp can be accepted) or in a high-resolution print-out for scanning purposes.

To guarantee publication, please send materials by the 1st of the month directly to the LGS Editor.

ADVERTISEMENT DIMENSIONS & COSTS

<table>
<thead>
<tr>
<th>Size</th>
<th>Dimensions</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 SPACE (1/16th)</td>
<td>.906” X 2.25”</td>
<td>@ $75.00/year</td>
</tr>
<tr>
<td>2 SPACE (1/8th)</td>
<td>1.812” X 2.25”</td>
<td>@ $150.00/year</td>
</tr>
<tr>
<td>1/4 PAGE AD</td>
<td>1.812” X 4.5”</td>
<td>@ $300.00/year</td>
</tr>
<tr>
<td>1/2 PAGE AD</td>
<td>3.625” X 4.5”</td>
<td>@ $450.00/year</td>
</tr>
<tr>
<td>FULL PAGE AD</td>
<td>7.25” X 4.5”</td>
<td>@ $600.00/year</td>
</tr>
</tbody>
</table>

A limited number of color advertisement spaces are available as well. Please contact the LGS Editor for more information.

Please send all advertisements and communication (address changes) to the following address:

Lafayette Geological Society
P.O. Box 51896
Lafayette, LA 70505

Or, if you prefer, e-mail your file to the editor:

James Willis
LGSEditor@MSN.com
Name:___________________________________________________________________________
E-mail Address:____________________________________________________________________
Mail Address:______________________________________________________________________
Street or P.O. Box                  City                   State    Zip
Birthdate:_______________Company:__________________________________________________
Position in Company:__________________________     Office Phone:________________________
School:_______________________________Grad.Year:_______ Degree:________ Major:_______
__________________________________________________________________________
__________________________________________________________________________
Home Address:____________________________________________________________________
Street or P.O. Box                      City                  State         Zip
Spouse Name:_____________________________ Home Phone:____________________________
Type AAPG Member:______________________ (Non, Jr., Associate, Active)
Type Membership Requested in LGS ___________(Student, Active, Associate)
Sponsor's 1. ______________________________________________
Signatures 2. ______________________________________________
3. ______________________________________________
Type Membership Approved:_______________ Date:_________________
Dues Amount:____________
Date Dues or Fee Received:____________________________

Membership Categories - Qualifications - Dues (Yearly in May)
1. Student - Full Time Geology - $5.00
2. Associate - No Geology Degree - $20.00
3. Active - Geology Degree - $20.00
4. Senior - Active who reaches age 60 - NO DUES
5. Life - One time fee of $200.00 - NO DUES
6. Honorary Life - Elected by Board (Active) - NO DUES
7. Special Benefactor Life - One time donation of $1000.00 - NO DUES

Each members' involvement in the Society is encouraged and any assistance with the areas below is welcomed. Please indicate if you are interested in serving on one (or more) of the following committees of the Lafayette Geological Society.

**LGS Committees**

- Advertising
- Balloons and History
- Community Youth Activity
- Educational Outreach
- Field Trip
- Mentoring
- Photography
- Publications
- Awards and Nominations
- Bulletin
- Continuing Education
- Entertainment
- Golf Tournament
- Personnel Placement
- Program and Publicity
- Webmaster

**Check payable to:**
Lafayette Geological Society, Inc.
P.O. Box 51896
Lafayette, LA 70505
## LGS Committees and Chairpersons

<table>
<thead>
<tr>
<th>Committee</th>
<th>Chairperson</th>
<th>Phone</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising</td>
<td>Jill Willis</td>
<td>394-3979</td>
<td>Odyssey International, LLC</td>
</tr>
<tr>
<td>Awards &amp; Nominations</td>
<td>Dan Ruberg</td>
<td>268-3196</td>
<td>Fugro GeoServices</td>
</tr>
<tr>
<td>Ballots &amp; History</td>
<td>Jim Dungan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barbeque</td>
<td>Dean Gresham</td>
<td>268-3236</td>
<td>Fugro GeoServices</td>
</tr>
<tr>
<td>Bulletin</td>
<td>James Willis</td>
<td>394-3979</td>
<td>Odyssey International, LLC</td>
</tr>
<tr>
<td>Community Youth Activity</td>
<td>Julia Battle</td>
<td></td>
<td><a href="mailto:jugie@centurytel.net">jugie@centurytel.net</a></td>
</tr>
<tr>
<td>Continuing Education</td>
<td>Carl Richter</td>
<td>482-5353</td>
<td>UL-Lafayette Geol. Dept.</td>
</tr>
<tr>
<td>Education Outreach</td>
<td>Mary Broussard</td>
<td>354-5041</td>
<td>Plains E &amp; P Co.</td>
</tr>
<tr>
<td></td>
<td>and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education Outreach</td>
<td>Carl Richter</td>
<td>482-5353</td>
<td>UL-Lafayette Geol. Dept.</td>
</tr>
<tr>
<td>Entertainment</td>
<td>Tim Bennett</td>
<td>232-1650</td>
<td>Bennett Systems LTD</td>
</tr>
<tr>
<td>Field Trip</td>
<td>Tim Duex</td>
<td>482-6222</td>
<td>UL-Lafayette Geol. Dept.</td>
</tr>
<tr>
<td>Golf Tournament</td>
<td>Tim Bennett</td>
<td>232-1650</td>
<td>Bennett Systems LTD</td>
</tr>
<tr>
<td>Mentoring</td>
<td>Cathy Bishop</td>
<td>482-0678</td>
<td>UL-Lafayette Geol. Dept.</td>
</tr>
<tr>
<td>Personnel Placement</td>
<td>Jim Underwood</td>
<td>235-0750</td>
<td>Independent</td>
</tr>
<tr>
<td>Photography</td>
<td>Francis Broussard</td>
<td>989-3195</td>
<td>Chevron</td>
</tr>
<tr>
<td>Program &amp; Publicity</td>
<td>Tim Bennett</td>
<td>232-1650</td>
<td>Bennett Systems LTD</td>
</tr>
<tr>
<td>Publications</td>
<td>Victoria Hover</td>
<td>482-1166</td>
<td>UL-Lafayette Geol. Dept.</td>
</tr>
<tr>
<td>Webmaster</td>
<td>Karen Broussard</td>
<td>989-1365</td>
<td>Consultant <a href="mailto:lgsweb@cox.net">lgsweb@cox.net</a></td>
</tr>
</tbody>
</table>