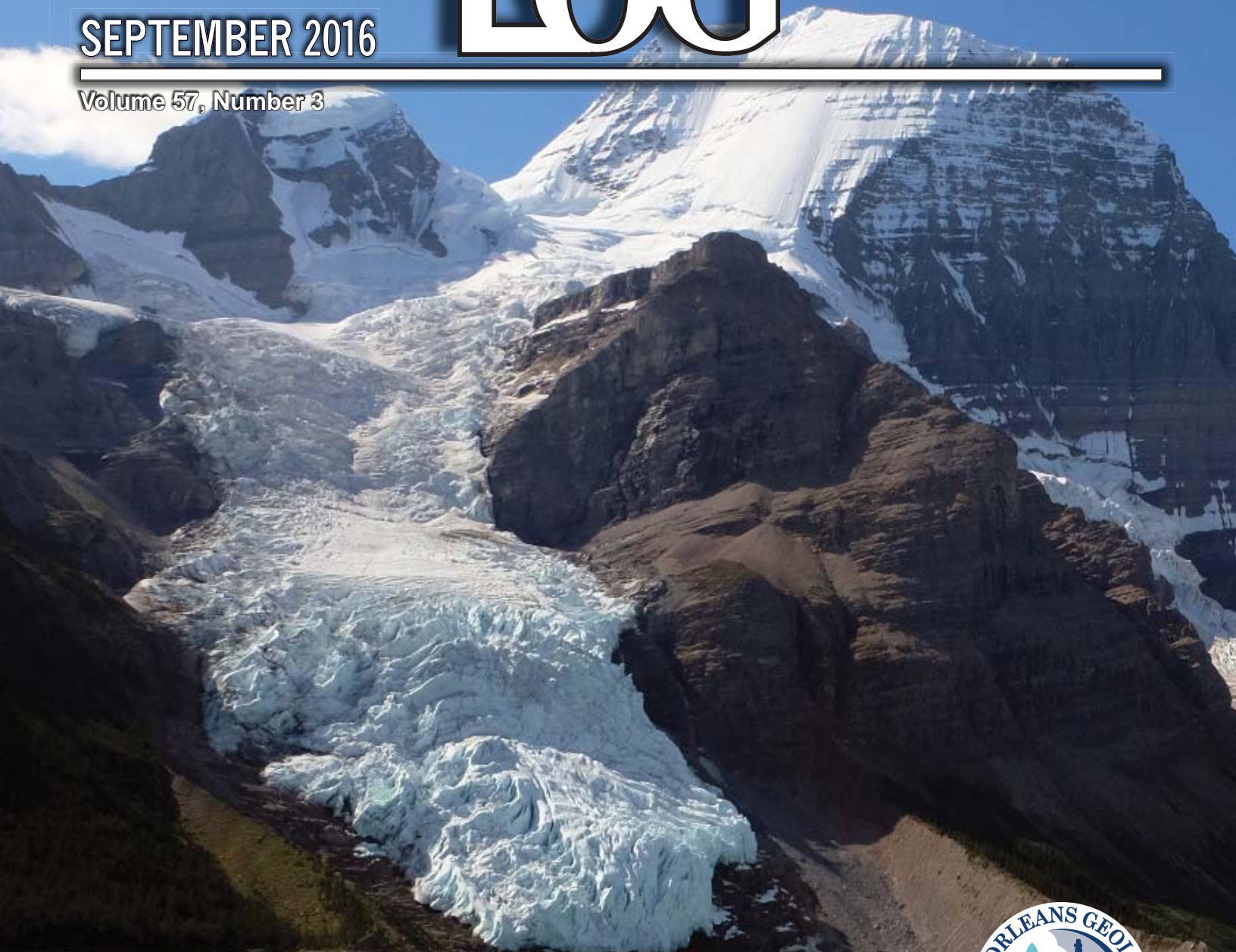


NOGS LOG



SEPTEMBER 2016

Volume 57, Number 3



SEPTEMBER 12 - NOGS LUNCHEON
Presentation: The Ten Habits of Highly Successful Oil Finders
Guest Speaker:
Robert C. "Bob" Shoup
Subsurface Consulting & Associates, LLC • Houston, Texas





girl scouts louisiana east

*Women Geoscientist Role Model
Volunteers Needed!*

3 Hour Shifts Needed

GSLE

#BIGevent16



Saturday
September 24th

Southeastern University
Hammond, LA

9:30 a.m. - 3:30 p.m.

Contact Tom Bergeon for additional details
Tom.bergeon@upstreamexp.com



Published monthly by the New Orleans Geological Society. This issue was sent to press on August 26, 2016.

Interested in contributing to the NOGS LOG? Please submit items by the 1st Friday of the month to nogseditor@gmail.com. Advertising requests should contact the NOGS office at info@nogs.org.

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From the Editor

Unlike the hypothetical problems that plague high school physics students, geology does not exist in a vacuum. One of the most intriguing and even intoxicating aspects of practicing earth science is the knowledge that our results often drive practical applications and occasionally public policy. In these instances, we endeavor to participate in the process in a meaningful way that enables the results to influence policy rather than policy driving the results. Beginning in 2007, the Southeast Louisiana Flood Protection Authority replaced the Orleans Levee Board as the levee authority for the Greater New Orleans Metropolitan Area. The SLFPA-West oversees the west bank portions of Orleans and Jefferson Parishes and approximately 80 miles of levees, floodwalls, and floodgates designed to protect against flooding from the Mississippi River and hurricanes. A seven-member board of supervisors administers the Authority and consists of professionals in relevant fields like geology, hydrology, engineering, and environmental science. For obvious reasons, competent and comprehensive flood control for New Orleans is of interest to all of us. But in order to inform this vital area of policy, you must stand and deliver, so to speak, with your technical expertise and commitment to service. If you are interested in potentially serving on the SLFPA-West, please see page 16 for more information. After all, to paraphrase from the Ragin' Cajun himself, "It's the science, stupid."

Laura

Laura Sorey, Editor

ON THE COVER

Cover Photo Submitted by: Dana Smith

Mount Robson — Rainbow Range, British Columbia

This month's cover photo of Mount Robson in the Canadian Rockies comes from Dana Smith, formerly a petroleum geologist here in New Orleans. Currently in the process of completing a transcontinental geology trip that she once referred to as "Life After Oil", Dana struck out from New Orleans in June in search of trails and campsites in most of the major national parks in western North America including Zion, Arches, Yellowstone, Glacier, Banff, and Jasper as she nears her final destination in Alaska. This picture of Mount Robson captures the famed peak's regional prominence, the greatest in the North American Rocky Mountains, as the Berg and Mist glaciers calve into Berg Lake on the north face of the mountain. At 12,972 ft above sea level, Mount Robson is the highest peak in the Canadian Rockies and is composed of Cambrian aged sedimentary rocks thrust up by the subduction of the Kula Plate during the Laramide Orogeny that gave rise to the modern Rocky Mountains during the Late Cretaceous.

9-11-01
We will never forget!





2016 ADVERTISING RATES

Contact:
Annette Hudson
info@nogs.org

The New Orleans Geological Society was formed in 1941, with an initial membership of only 55. It has always been an active professional society and presently has a membership of 500.

AD SIZE	2015 RATE	NEW 2016 RATE!
Full Page (7.5"x10")	\$3500	\$1750
Half Page (3.75"x10" or 7.5"x5")	\$1850	\$925
Quarter Page (3.75"x5" or 7.5"x2.5")	\$1000	\$500
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Twelfth Page (3.75"x1.65")	\$375	\$188
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PREMIUM LOCATIONS

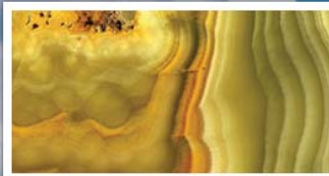
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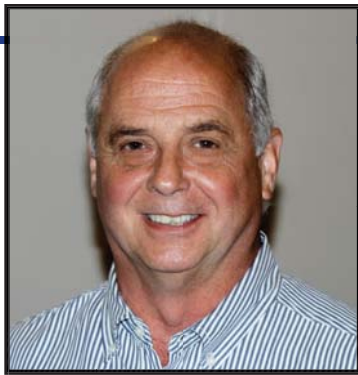


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President

I just returned from a driving vacation up to New Jersey and Pennsylvania to visit some of my relatives. I grew up in New Jersey and like to get back several times a year. We drove pretty much along the spine of the Appalachian Mountains. As we drove, it reminded me of my days in undergraduate school when I first learned about their formation. New Jersey is actually a great place to learn geology. It comprises of four distinct physiographic provinces: The Cenozoic-Mesozoic Coastal Plain, the Mesozoic Rift Basin, the thrust pre-Cambrian Highlands, and the Paleozoic Valley and Ridge Province. I have very fond memories of the many field trips we took exploring the region and nurturing my fascination with geology.

There are probably as many interesting stories of how NOGS members first fell in love with geology as there are members. Many of us first picked up our love of the science while in college after taking a course from a professor who made it come alive for us. Some of us, however, picked it up at an earlier age. For me, it was during junior high school. A friend of mine had discovered that the local museum offered a giveaway program with mineral specimens as the prize. Once a month you were allowed to pick three specimens from a box they had. If you could correctly identify them, you could keep them. I did this for about six months, and then my interest began to wane. A museum worker named Mr. Black noticed this and asked me if I was interested in looking at some fossils. When I looked at these examples of life from millions of years ago that looked so different from anything I had seen before, it immediately sparked a lasting interest in geology that culminated in a 28 year career in the oil industry.

With the realization that our nation will need a lot more STEM (Science, Technology, Engineering, and Mathematics) professionals than we currently have, there is a strong emphasis on recruiting students into the sciences. In order for geology to grow and and continue to have a great, if underappreciated, impact on society we must recruit a new generation. Our schools have just reopened, and this offers us an excellent opportunity to introduce students to geology. Ask your child's teacher, or even a teacher you happen to know, if they would like to have a presentation on fossils or minerals made to their class. Scouting organizations also offer opportunities to introduce young people to geology. NOGS has a fantastic collection of fossils that Tom Bergeon has acquired for us over the years as well as a very nice mineral kit that Dave Cope put together last year that are wonderful teaching tools. These are available on loan to any NOGS member. If you don't want to make the presentation yourself, call the NOGS office and we can find someone to do it.

One of the best ways to ensure the future of the geological sciences is to expose youngsters to the things that first fascinated us. You can help with this; sometimes it only takes one person to get things started.

The GCAGS annual meeting will be held in Corpus Christi from September 16-18. I will be there and will be on the lookout for potential NOGS luncheon speakers and would encourage anyone else going to do the same.

Al Melillo



NOGS Office

Office Manager: Annette Hudson
 Phone: 504-561-8980 • Email: info@nogs.org • Website: www.nogs.org
 The office is located at 810 Union Street, Suite 300, New Orleans, LA 70112.
 Correspondence and all luncheon reservations should be sent to the above address.



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Editor	Laura Sorey		601-421-3352	nogseditor@gmail.com
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Advertising-Log	TBD			
Auditing	David E. Reiter	Stone Energy Corporation	504-593-3623	reiterde@stoneenergy.com
Awards	Michael N. Fein		504-717-6465	lfeinmnl@cox.net
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New Geoscientists (NGNO)	Jeremy Prouhet	Chevron	985-773-6927	Jeremy.Prouhet@chevron.com
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Non-Technical Education	Duncan Goldthwaite	Consultant	504-887-4377	DGldthwt@aol.com
Office Operations	David E. Reiter	Stone Energy Corporation	504-593-3623	reiterde@stoneenergy.com
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School Outreach	Thomas C. Bergeon	Upstream Exploration	504-832-3772	tom.bergeon@upstreamexp.com
Special Projects	TBD			

NOGS LOG STAFF

Editor	Laura Sorey		601-421-3352	nogseditor@gmail.com
Editor-Elect	Sassan Mouri	Chevron	985-773-7225	smouri@chevron.com
Auxiliary	NOGA Officers and Directors	NOGA		
Drill Bits	Al Baker	Beacon Exploration, LLC	504-836-2710	ABaker1006@aol.com
Drill Bits	Carlo C. Christina	Retired (C & R Expl. Inc.)		carlocc398@aol.com
Drill Bits	Kevin Trosclair	BOEM	504-202-7997	kevintrouclair@gmail.com
Staff Photographer	Arthur Christensen	Shalimar Consulting	985-893-2013	arthur_shalimar@yahoo.com
Layout / Printing	Kristee Brown	Creative Graphics & Printing, LLC	985-626-5223	kpbrown@bellsouth.net
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September 5 • Labor Day

September 12 • NOGS Luncheon

Holiday Inn Downtown Superdome

\$3.00 validated parking in hotel garage

Presentation:

The Ten Habits of Highly Successful Oil Finders

Guest Speaker:

Robert C. "Bob" Shoup

Subsurface Consulting & Associates, LLC • Houston, Texas

See pages 8 & 9 for Abstract and Biographies

HOLIDAY INN DOWNTOWN SUPERDOME

Check with concierge or front desk for location.
Lunch served at 11:30 am

ADMISSION:

With reservation..... \$30.00
Without reservation \$35.00
Student Member with reservations..... FREE

September 7-11

NABG Annual Technical Conference

Embassy Suites Convention Center • 315 Julia Street • New Orleans, LA
For more information, www.nabg-us.org

September 10

NOGS Fall Kick Off Party

Rock 'N' Bowl • 2016 S. Carrollton Ave., New Orleans, LA
See announcement on page 27 for additional information

September 18-20

66th GCAGS Convention

American Bank Center • Corpus Christi, TX
For more information, <http://www.gcags2016.com/>
Announcement on page 17 of this issue

September 24

Girl Scouts Louisiana East B.I.G. Event

Southeastern Louisiana University • Hammond, LA
For more information, see page 2 and contact Tom Bergeon
Tom.bergeon@upstreamexp.com

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Continued from previous page

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2018(a)	Earl Cumming	Reservoir Frameworks LLC	985-630-6898	earlcumming@bellsouth.net



Sept. 12 NOGS Luncheon Presentation

☆☆☆ at the Holiday Inn Superdome ☆☆☆

The Ten Habits of Highly Successful Oil Finders

Presented by

Robert C. "Bob" Shoup*

**Subsurface Consulting & Associates, LLC
Houston, Texas**



ABSTRACT

Our industry spends hundreds of millions of dollars a year drilling dry holes that were predictable dry holes. These wells were drilled on inaccurate interpretations and maps; and they were dry holes before they were spud! Do these sound like your wells? Most of us would say no, yet for over 85% of the industries geoscientists, they are.

Approximately 10% of the world's geoscientists are highly successful oil (and gas) finders, that being that they have exploration drilling success rates between 25 and 70%. Conversely, approximately 10% of the world's explorationists routinely drill dry holes. The remaining explorationists have exploration drilling success rates close to that of the industry average of 15 to 30%. What is it that sets the highly successful oil finders apart?

All oil finders seem to be creative and to have perseverance, but those traits alone do not make successful oil finders as there have been many "creative" dry holes. Company studies combined with years of observation, have shown that the highly successful oil finders share 10 habits in their interpretation of the data and their portrayal

of the structure in their maps. The focus of this talk is on those 10 habits, and how they contribute to an individual's or companies' exploration and development success. For a complete list of the Ten Habits, see page 15 of this issue.

**Coauthor, Dan Tearpock, deceased.*

BIOGRAPHIES

Bob Shoup is the International Training and Consulting Manager for Subsurface Consulting & Associates, LLC (SCA) and Director of Clastic Reservoir Systems. He is a board certified petroleum geologist with over 35 years of experience in basin analysis, regional studies, new play generation, prospect evaluation, field studies and development planning, drilling operations, and project management. Bob began his career in New Orleans at Shell Oil in 1980. His 18 years with Shell were followed by four years working for private oil companies before becoming an independent consultant in 2003, consulting in Thailand, Malaysia, Vietnam, and New Zealand. A recognized expert in clastic depositional environments, rift basins, and syndepositional



structural systems, Bob is a proven oil finder with a 46% exploration commercial success rate and over 100 MMBOE discovered resources. In addition to consulting, Bob teaches various SCA training courses in Houston, the Asia Pacific and Middle East Regions.

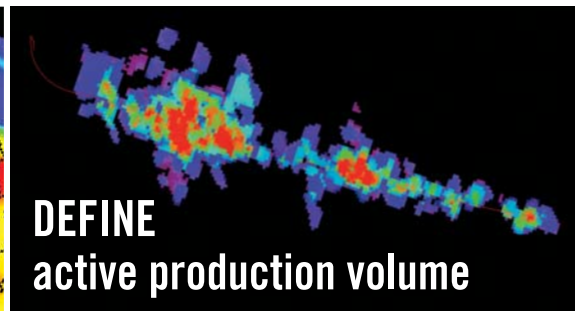
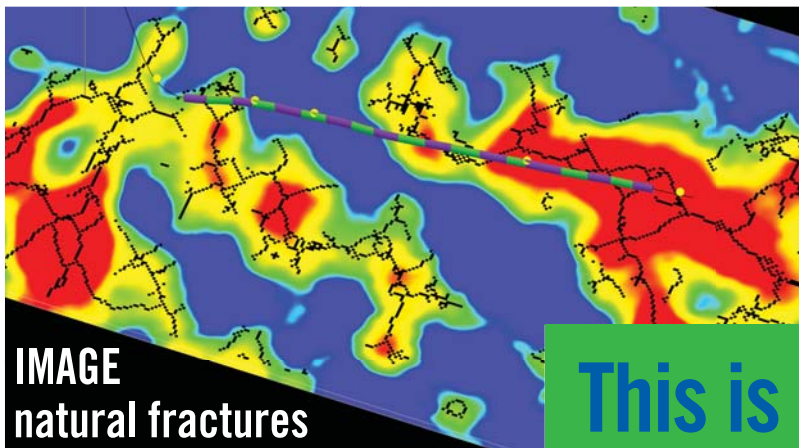
Bob is also an active contributor in the professional community. He is the past Chairman for the AAPG House of Delegates. He has served as Past President of Bangkok's Chapter of the South East Asia Petroleum Exploration Society and of AAPG's Division of Professional Affairs, and past Secretary-Editor of the AAPG House of Delegates. He has served on numerous AAPG

Committees and was Chairman of AAPG's Mentor, Membership and Student Chapter Committees. He is a recipient of numerous AAPG Certificates of Merit, AAPG's Distinguished Service Award, the DPA's Distinguished Service Award and DPA Life membership in 2010. He is a Life Member of the Southeast Asia Pacific Exploration Society (SEAPEX), the Geological Society of Malaysia, and the Indonesia Petroleum Association. When not teaching, Bob resides in Kuala Lumpur.

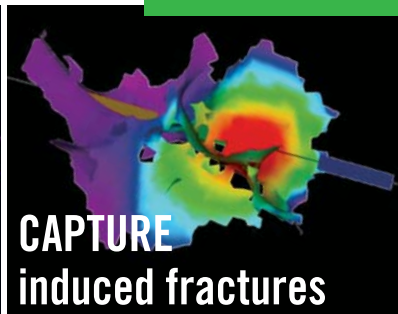
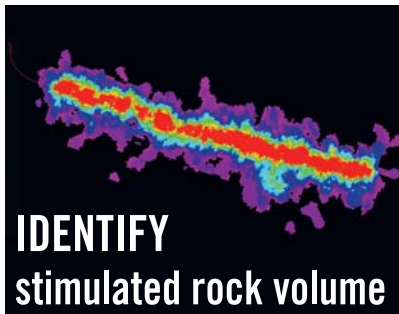
THE LUNCHEON RESERVATION DEADLINE IS SEPT. 9 - CONTACT THE NOGS OFFICE

"And Looking Ahead . . ."

The next luncheon will be held on October 3. Our guest speaker, Paul Mann, University of Houston, will present "Recent Progress in Understanding a Two-Stage, Mesozoic Opening Model for the Gulf of Mexico." Contact the NOGS office at 504-561-8980 or use the PayPal link at www.nogs.org to make your reservation.



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CALENDAR OF EVENTS: SEPTEMBER — OCTOBER 2016

Editor's Note on Calendar Events: In the spirit of the NOGS mission to engage with students, the NOGS LOG calendar will begin featuring guest lectures and seminars of note hosted by local universities and schools. Just as we want students to attend NOGS luncheons, I encourage NOGS members to take advantage of these opportunities for continuing education and support south Louisiana schools with your attendance and participation. If you know of upcoming seminars or academic events that may be of interest to our members, please email the event details to Laura Sorey at nogseditor@gmail.com to be included in the monthly calendar.

2016	EVENT	LOCATION	CONTACT / INFO
5 Sep	National Association of Black Geoscientists Annual Technical Conference	Embassy Suites N.O. Convention Center	www.nabg-us.org/
7-11 Sep	Tulane Seminar Series: Dr. Suniti Karunatillake "The Nature of Water in Martian Soil at Regional Scales" LSU	Noon, Room TBA	www2.tulane.edu/sse/eens/events-and-seminars/seminars/index.cfm
9 Sep	BRGS Luncheon	Baton Rouge Mike Anderson's Seafood	lisapultz@cox.net
9 Sep	NOGS Fall Kickoff Party	Rock 'N' Bowl	info@nogs.org www.nogs.org/payment-center/
10 Sep	NOGS Luncheon Bob Shoup Subsurface Consulting and Associates, LLC "Ten Habits of Highly Successful Oil Finders"	Holiday Inn Superdome	annette@nogs.org or 504-561-8980
12 Sep	Tulane Seminar Series: Dr. Andrea Dutton "Polar Ice Sheet Retreat During Past Warm Periods: An Update from the Seychelles" University of Florida	Noon, Room TBA	www2.tulane.edu/sse/eens/events-and-seminars/seminars/index.cfm
16 Sep	API-Delta Golf Tournament	Covington Country Club	www.api-delta.org
16 Sep	GCAGS Convention	Corpus Christi, TX	www.gcags2016.com
18-20 Sep	Tulane Seminar Series: Dr. Giulio Mariotti "A Fresh Look at Salt march Erosion Processes: Bank Creep, Ponding, and Wave Erosion" LSU	Noon, Room TBA	www2.tulane.edu/sse/eens/events-and-seminars/seminars/index.cfm
23 Sep	Girl Scouts Louisiana East B.I.G. Believe in Girls Event	Hammond Southeastern University	tom.bergeon@upstreamexp.com
24 Sep	Tulane Seminar Series: Dr. Meg Palmsten "A Data Driven Model for Dune Morphodynamics" NRL Stennis	Noon, Room TBA	www2.tulane.edu/sse/eens/events-and-seminars/seminars/index.cfm
3 Oct	NOGS Luncheon Paul Mann University of Houston "Recent Progress in Understanding a Two-Stage, Mesozoic Opening Model for the Gulf of Mexico"	Holiday Inn Superdome	annette@nogs.org or 504-561-8980
21 Oct	LSU Departmental Endowed Speakers Series: Dr. Hank Frankel "Ted Irving and the Paleomagnetic Test of Continental Drift" University of Missouri	LSU Baton Rouge E137 Howe-Russell-Kniffen	www.lsu.edu/science/geology/seminars/item72050.php
28 Oct	LSU Departmental Endowed Speakers Series: Dr. Rob DeConto Topic: TBA Umass-Amherst	LSU Baton Rouge E137 Howe-Russell-Kniffen	www.lsu.edu/science/geology/seminars/item72050.php

New Orleans Geological Auxiliary News

"The objective of the Auxiliary is to promote fellowship among the wives of the members of the New Orleans Geological Society and to render assistance to NOGS upon request."

Congratulations to NOGS on their upcoming 75th Anniversary!



Carol Andrews and Ruth Bussey, 2012

Recently when I was asked about the history of the New Orleans Geological Auxiliary, known as NOGA, I did some research and found some interesting facts. In 1954 Eugene Baysinger, President of NOGS, requested that wives of NOGS members form an organization to promote fellowship among the wives and assist the

NOGS with social functions. The first meeting of NOGA was held in November 1954, and an organization was formed consisting of 168 charter members. Of the active members today, Mrs. Robert (Ruth) Bussey is the only surviving charter member. Mrs. David (Mary) Collier joined one year later, followed by Mrs. Donald (Carol) Andrews the next year.



Beverly Christina, 1985

The annual dues were \$3.00, and the membership grew to approximately 300 during 1960's. Until the early 70's the end-of-the-year reports by officers were given orally at the annual business meeting, and the meetings were quite lengthy. Much to the relief of the members attending, that has been changed to written reports.

There are still four meetings a year and many other activities including tours on the Mississippi River, antebellum homes, French Quarter, museums, and bayous. The luncheons have been held in local restaurants as well as homes of the members.



Camille Yeldell, Trudy Corona, and Alma Dunlap, 1989

NOGA has assisted with social functions of NOGS including GCAGS and AAPG conventions, Kick Off parties, Christmas parties, Spring Socials and theme parties. The NOGA Anniversary celebrations have been spectacular beginning in 1964 with the 10th at the Vista Shores

Club, 20th at the Jefferson-Orleans, 25th at the Plimsol Club, 30th at the home of Imogene Heffner, 35th and 40th at English Turn Country Club, 50th at the Metairie Country Club, and the 60th at Ralph's on the Park.

Our membership has fallen to fewer than fifty, and we welcome new members.

**Camille Yeldell
Parliamentarian**



Mary Collier, 2014



NOGA Past Presidents, 1991

New Orleans Geological Auxiliary Membership Application

Name _____	Spouse's Name _____
Address _____	Home Phone _____
City, State, Zip _____	Cell Phone _____
Spouse's Company _____	Email _____

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AAPG Honors Longtime NOGS Member Arthur H. Johnson

by William M. Whiting and Edward B. Picou, Jr.

Established in 1979, the AAPG Distinguished Service Award is presented to “members who have distinguished themselves in singular and beneficial long-term service to AAPG.” This year’s award was presented to nine individuals including NOGS member Art Johnson in recognition of his outstanding dedication and service to the organization. NOGS offers Art the warmest congratulations for this most recent and most richly deserved honor.

The full inscription of his award citation follows below.

ARTHUR H. JOHNSON **Distinguished Service Award Citation**



To our friend and colleague Arthur H. Johnson for the AAPG Distinguished Service Award. Art is a high energy individual who gives his all to his ventures including service to AAPG (in particular the EMD), Affiliates, and his local Geosciences Community. He has an intense interest in gas hydrates, their formation, geo-hazards to the drilling industry, potential recovery

as an energy source, and potential effects on the environment via climate change. He continues to share his love of geosciences with academia, K-12 schools, and other interested groups. When asked why he was giving away so much of his time, he responded “it’s what we geologists should be doing”.

Art was born in Richmond, California, San Francisco Bay Area. He attended high school in Southern California (Arcadia). He obtained his undergraduate degree from Humboldt State University, Arcata, California and graduate studies at LSU. Following his graduation from Humboldt and LSU, he went to work for Gulf Oil Corporation, which later merged with Chevron. He rose through the ranks to become a division geologist.

In 2001 following his career with Chevron, Art pursued a lifelong ambition of organizing his own company with two partners, Hydrate International, LLC. HEI conducts assessments of resource potential and geo-hazards related to gas hydrates and other unconventional resources for companies and government agencies in North and South America, Europe and Asia. In doing so he has added to our understanding of gas hydrates.

Art is married to Alice (Winton) Johnson and they have one daughter, Emily.

Art has advised Congress and the White House on energy issues since 1997, and chaired advisory committees

for several Secretaries of Energy. He has an ongoing role coordinating the research efforts of industry, universities, and government agencies. He served as a lead analyst for the “Global Energy Assessment,” an international project supported by the World Bank, UN organizations, and national governments that evaluated the resource base of the entire planet with a view of addressing energy needs in the decades to come.

Art has published over 80 papers and articles, along with several books. These cover a diverse range of topics that include geology, geophysics, economics, and astrogeology.

Art has served as the chair, Energy Minerals Division, Gas Hydrate Committee since 2002, short course instructor at the 2008 and 2010 ACE meetings, and EMD Technical Program chair, ACE 2010. He is the coauthor and coeditor for Memoir 89: Natural Gas Hydrates-Energy Resource Potential and Associated Geologic Hazards. He also is coauthor of Memoir 101: Energy Resources for Human Settlement in the Solar System and Earth’s Future in Space. Art is the author of two articles for the AAPG Explorer.

In addition, he has been a poster and oral presenter at multiple ACE, OTC, and 3P Arctic meetings. Art has also been an oral presenter at Pacific and Eastern Section meetings, and proudly a member of AAPG Astrogeology Committee.

Art is a visiting geoscientist with 2-4 college visits per year. He is also a NOGS delegate to the AAPG House of Delegates.

For the AAPG affiliate, the New Orleans Geological Society, he has served as president 2007- 2008 and as a board director 2009-2012, treasurer 2014-2015 and is a board member and past chairman of the NOGS Memorial Foundation. He participates in NOGS school outreach with 10- 25 K-12 classroom visits per year.

Art is a trainer and participant in NOGS activities at the Louisiana Children’s Museum. He is planning team member, Deepwater Technical Symposium (New Orleans) and an organizer of the DWTS Geoscience Seminar 2015, with Paul Weimer, presenter.

For the 2013 GCAGS he was general chairman and sponsorship chairman, and was publicity chairman for the 2005 Convention.

Art is the treasurer of the Louisiana Board of Professional Geoscientist, 2014- 2016. He participated in formulating the criteria for registration with the board. For the above reasons and his commitment to the local and geosciences community, Arthur H. Johnson is worthy of the AAPG’s Distinguished Service Award.



The Ten Habits of Highly Successful Oil Finders

D. J. Tearpock and R. C. Shoup

Habit 1: Successful oil finders ensure that their interpretations are geologically and geometrically valid.

This may sound intuitive, and with workstations and 3D data sets, a habit that is no longer necessary. Unfortunately, we have seen, and continue to see, countless maps, even from 3D data sets that are geologically improbable, and many maps that are geometrically impossible.

Habit 2: Successful oil finders have a strong background in geology, and have a thorough knowledge of the tectonic and depositional environments for the area in which they are working.

Workstations are doing to geologic skills what the calculator has done to math skills. We hear many managers lament the fact that their geoscientists do not understand their maps.

Habit 3: Successful oil finders plan their time and their work in order to ensure accurate interpretations and maps.

Rushed maps and interpretations are poor maps and interpretations. Poor maps and interpretations are a great recipe for drilling dry holes.

Habit 4: Successful oil finders use all of the data to ensure their interpretations are valid.

Failure to use all of the data is perhaps the single biggest factor in causing dry holes. We are a data-rich industry and it takes time to review and understand all of the data (see Habit 3). There are many interpreters today who have not read the paleo reports or the mud log reports or looked at the cores for their wells; some have never talked to the reservoir engineer.

Habit 5: Successful oil finders ensure that their seismic and well correlations are accurate and loop-tied.

Well log correlations are the foundation for all of our interpretations. Many interpreters do not correlate the entire well log using resistivity markers (see Habit 4). Many others do not loop tie their correlations as “strike lines are hard to interpret.”

Habit 6: Successful oil finders know which methods, tools, and techniques are needed to define and understand the subsurface.

Another intuitive habit, yet most interpreters simply do not know many of the techniques and methods needed to make valid interpretations and maps, even those with 30 years of experience.

Do you use TVT as opposed to TVD? Do you calculate restored tops for faulted or ‘not-reached’ wells? Do you use the Wharton Method for mapping net pay? If not, you are not using Habit 6.

Habit 7: Successful oil finders map all relevant geological surfaces.

Do you map fault surfaces? For thick reservoir sequences, do you map the top and base of the reservoir? If not, you are not mapping all relevant geological surfaces, and you are also most likely coming up with inaccurate, and quite possibly incorrect maps and reserve estimates.

Habit 8: Successful oil finders map multiple horizons.

Do you map multiple horizons? Do you ensure that the fault traces migrate appropriately with depth? If not, you are increasing the possibility of drilling your wells in the fault gap.

Habit 9: Successful oil finders document their work.

We live in an audit-friendly world today (yes that is an oxymoron). The first thing an auditor will look at is your documentation, do you have it?

Habit 10: Successful oil finders seek mentors.

We learn many of the methods and techniques for making valid interpretations and maps from mentors. Do you have one?

The application of these ten habits in your interpretation work flow, or your teams or companies work flow, will improve your success rate by helping to ensure that your interpretations and your maps are as accurate and as geologically valid as possible.

You can still drill dry holes on prospects based on valid geologic interpretations and maps. But, with inaccurate maps and incorrect interpretations, you are almost certainly going to call for cement.

(See biography for R. C. Shoup and information about NOGS luncheon on page 9 of this issue.)

Geology and Flood Protection in Louisiana



The Southeast Louisiana Flood Protection Authority consists of levee commissioners charged with the oversight of flood protection measures in the Greater New Orleans area designed to protect against river as well as hurricane related flooding. The Authority is made up of two boards, East and West, that are responsible for their respective banks of the Mississippi River.

By design, these commissioners hail from technical fields that better inform their abilities to direct policy regarding the future of New Orleans flood protection. However, few have any geological training to give them a rigorous understanding of the threats of subsidence, sea level rise, faulting, or the methods used to evaluate them. As a result, the regional structural geology and geologic processes affecting our south Louisiana homes and livelihoods are not well understood by most levee stakeholders.

Having professional geologists on these boards as voting members or perhaps as technical geological resources to the agencies is crucial because a better awareness of structural geology and the evaluation tools of our trade is vital to informing flood protection efforts. For example, encouraging the regional flood authorities to evaluate and identify potential zones of weakness and encourage new design approaches for construction in those levee reaches impacted by faults will increase our chances of surviving the storms of the future.

As Mike Merritt, a NOGS member, concludes his term on the SLFPA-West, a spot on the board will become available for new appointment by the Governor. NOGS encourages qualified geologists to review the role of the Southeast Louisiana Flood Protection Authority and to consider serving your community by serving as a Commissioner. Those interested should see the requirements detailed below and submit an application for appointment.

SLFPA-West Board Application:

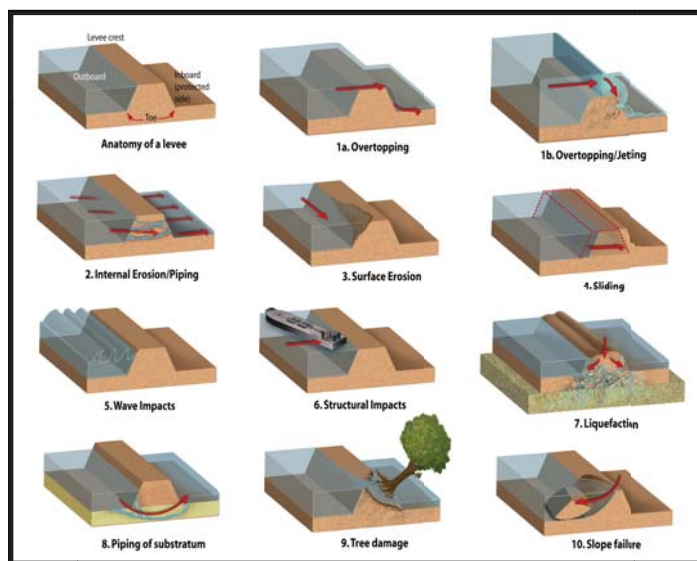
<http://slfpaw.org/wp-content/uploads/2016/07/Application-For-Appointment-SLFPA.pdf>

SLFPA-West Board Requirements:

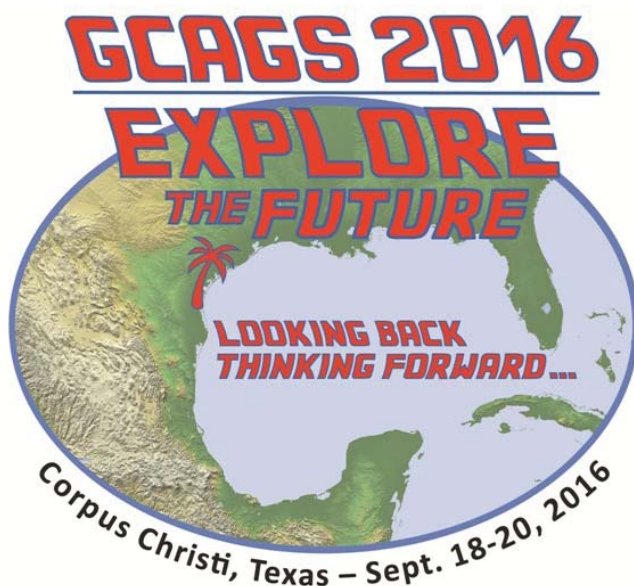
<http://slfpaw.org/resources/board-requirements/>

Board Requirements:

1. The SLFPA—West Board must consist of no more or no less than two (2) members from each parish (Orleans and Jefferson) on the West Bank.
2. The board must have two (2) at-large members.
3. Three (3) members who shall either be an engineer or a professional in a related field, such as geotechnical, hydrological, or environmental science.
4. Two (2) members who shall be a professional in a discipline other than that occurring in #3 above, with at least 10 years of professional experience in that discipline.
5. A Nominating Committee shall recommend one name for those members listed in #3 above, and two names for those listed in #2 and #4 above for each board position to the Governor.
6. The Governor shall appoint from the list of nominations.
7. Senate Confirmation is required.
8. Members serve staggered terms.
9. Members are prohibited from political activity similar to the Louisiana Board of Ethics.



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- Advances in Geophysical Technologies; New Methodologies; Geo-Education
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- Climate from Multiple Perspectives; Protecting and Stewarding Water Resources; The Changing Coastal Landscape

Field Trips

- Geology of Holocene Rio Grande Delta (2 days)
- Storm Signals in the Stratigraphic Record
- Ice Age Mammal Fossil Hunt
- Coastal geomorphology field trip from the Nueces River to the Gulf of Mexico, Celebrating South Texas History*
- Fulton Mansion Tour; Segway Tour of Corpus Christi Bay Front (Guest Activities)

Short Courses

- Depositional Environments from Well Logs*
- Basic and Advanced Methods of Biostratigraphy
- Geopressure and Prospect Risk Assessment
- Basic Seismic Attributes and AVO

*Short course/field trip combination compares ancient and modern clastic systems.

Estimated total attendee cost is less than \$950/person, including early registration, hotel, food, and travel from Houston or San Antonio.

South Louisiana and Offshore Gulf of Mexico Exploration and Production Activities

LAFAYETTE DISTRICT, ONSHORE AREA

By Kevin Trosclair and Carlo C. Christina

The Baker-Hughes United States rig count for the week of July 29 was 463 rigs, down from 874 rigs from a year ago, however that is an increase of 42 rigs from last month. The rig count for Louisiana (not including the OCS) was 28 rigs, down from 45 rigs one year ago, but up 7 rigs from last week

North Louisiana Rigs:15

South Louisiana Rigs:13 (9 Land - 4 Inland Waters)

The Office of Conservation, Lafayette District, Onshore Area, issued 9 permits to drill during the month of July compared to 18 permits one year ago. There are four new location of interest to report this month:

NEW LOCATIONS

In Jefferson Parish, **Manila Village Field (A)**, LLOX, LLC permitted the #1 SL 21653 (SN 249685) in 19S-24E to a proposed total depth of 12,840 feet (12,500 TVD) targeting Amp 2 Sands. The well is located on the southern edge of the field one-half mile from gas production in Saturday Island Field. LLOX has been very active in this area permitting 6 wells in 2016.

In Beauregard Parish, **Cowpen Creek Field (B)**, Fontainebleau Operating, LLC permitted the #1 FORESTAR MINERALS 23 (SN 249695) in Sec. 23, 6S-10W to a proposed total depth of 11,600 feet targeting Wilcox Sands. The proposed location offsets current Wilcox production.

In Cameron Parish, **Grand Cheniere Field (C)**, LOXX, LLC has permitted the #1 MIAMI CORPORATION (SN 249698) in Sec. 6, 15S-4W to a proposed total depth of 13,931 feet (11,968' TVD) targeting the Gyrodina zone. The closest active production is approximately one mile to the northwest from shallower gas sands. The proposed bottom hole location for this long directional well offsets several old wells drilled to similar depths. The field has produced gas at the proposed depths.

In Iberville Parish, **Wildcat (D)**, Vitol Resources Inc. of Delaware has permitted the #1 VUA; SCHWING 60 (SN 249684) in Sec. 60, 7S-10E to a proposed total depth of 5,700 feet targeting Miocene sands. The nearest production is 1.5 miles to the northeast in Southeast Maringouin Field. This is also a Vitol Resources well producing oil from Cockfield sands at a depth of 10,500 feet.

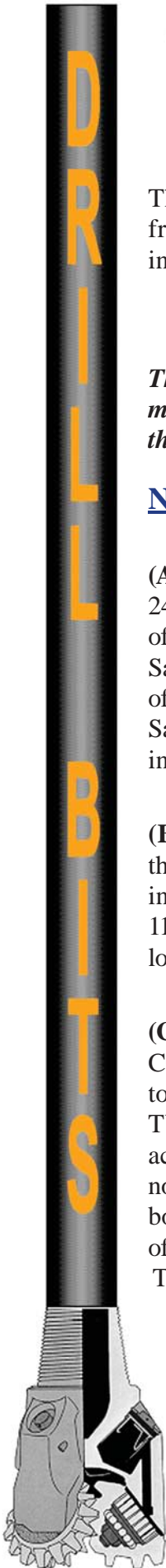
COMPLETIONS

Hilcorp Energy has filed its completion report on the #2 Rockefeller SL 2038 (SN 249540), in **Deep Lake Field, (E)** in Cameron Parish. As previously reported the well was drilled to a total depth of 17,134 feet and stuck drill pipe. It was sidetracked and drilled to a depth of 15,003 in the sidetracked hole with a liner set to total depth. The well was perforated in the interval 14,360 to 14,400 feet and completed flowing 3615 MCFD and 60 BCPD in the 13150 Sand. The well was drilled in Sec.34, 15S-3W, 1 mile from production in the field.

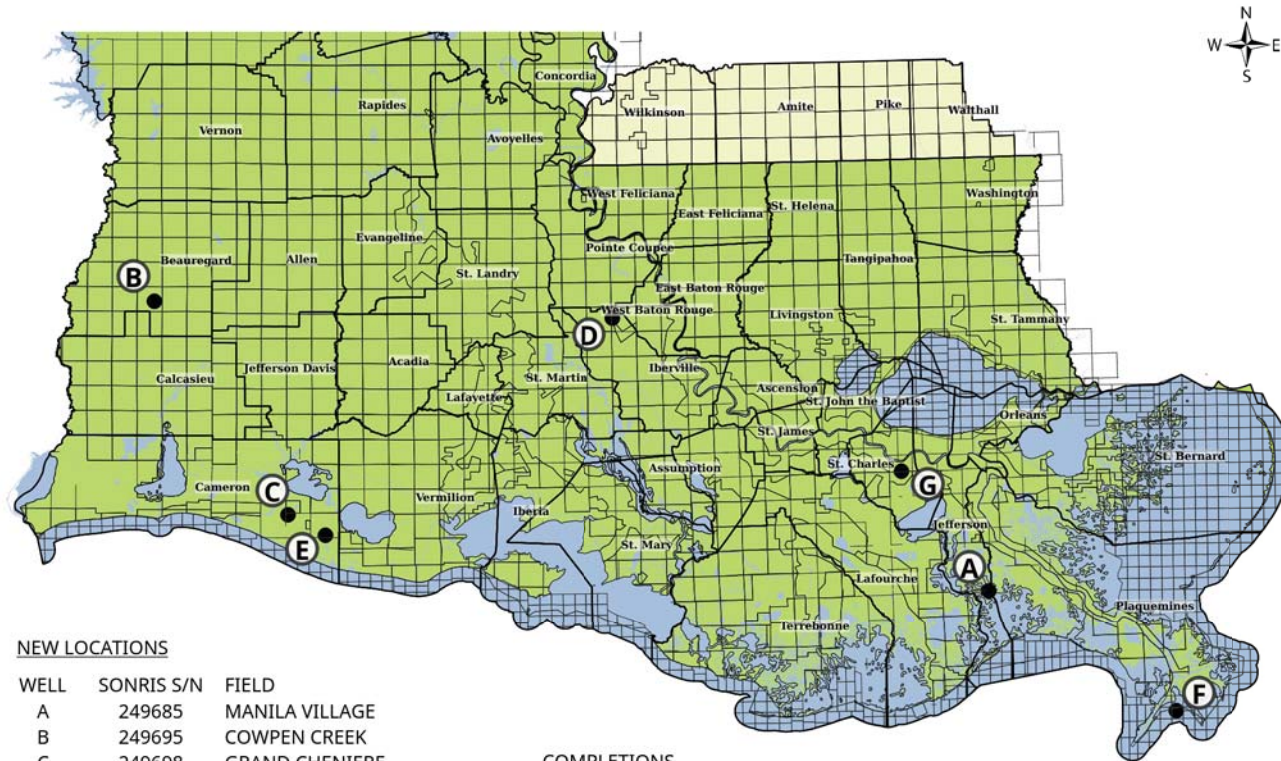
In Plaquemines Parish, **South Pass Block 24 Field, (F)**, Whitney Oil & Gas has completed an interesting well, the #45 SL 1007, (SN 217758), as a good oil well flowing 600 BOPD through perforations 9332 to 9352 feet in the P Sand. Whitney recently re-entered and sidetracked the hole which was originally drilled in 1995 by Flores & Rucks and completed in the P2 Sand flowing 918 BOPD.

South Pass Block 24 Field, along with East Bay and several additional old fields was recently sold with plans to re-enter and complete other similar wells.

LLOX has completed a **new discovery, (G)**, in St. Charles Parish. The #1 Rathborne Land, (SN 249458), was completed as an oil well flowing 254 BOPD through perforations 12,595 to 12,675 in the Gheens Sand. The well was drilled to a total depth of 12,933 feet in Sec. 43, 13S-21E, approximately 2 miles south of production in St. Rose Field.



SOUTH LOUISIANA ACTIVITY MAP SEPTEMBER 2016



NEW LOCATIONS

WELL	SONRIS S/N	FIELD
A	249685	MANILA VILLAGE
B	249695	COWPEN CREEK
C	249698	GRAND CHENIERE
D	249684	WILDCAT

COMPLETIONS

WELL	SONRIS S/N	FIELD
E	249540	DEEP LAKE
F	217758	SOUTH PASS BLOCK 24
G	249458	NEW DISCOVERY

CCC

OFFSHORE GULF OF MEXICO SHELF AND DEEPWATER ACTIVITIES

by Al Baker

During **July 2016**, the **BOEM** approved **60** Gulf of Mexico drilling permits. Of these, **9** were for shelf wells and **51** were for deepwater wells. Of the total number of permits, there were **3 new well permits** issued; all were **deepwater** permits.

The three new deepwater well permits were for exploration wells. One new well permit was issued to **Cobalt International Energy** for their **Mississippi Canyon 693 #1**. **Shell Offshore** was awarded the other two new well permits for their **Mississippi Canyon 812 #1** and **851 #2** wells.

On July 29th, **IHS-Petrodata** reported that the Gulf of Mexico mobile offshore rig supply stood at **109**, which are **3** less rigs than reported last month. The marketed rig supply consisted of **53** rigs, of which **40**

were under contract. The marketed contracted versus total rig supply utilization rate is **36.7%**, while the marketed contracted versus marketed supply utilization rate stands at **75.5%**. The marketed rig supply number is **8** less than reported last month and the contracted rig supply number is **1** less than reported last month. In contrast, the July 2015 fleet utilization rate stood at 67.3% (versus 48.6% today) with 74 out of the 110 rigs under contract.

As of July 29th, **BakerHughes** indicated that there were **19** active mobile offshore rigs in the Gulf of Mexico, which is **47.5%** of the rigs under contract mentioned above. This active rigs number is **1** less than reported last month. The current active rigs count compares to 34 active rigs during the same period last year, representing a **44.1%** drop (minus 15 rigs) in yearly rig activity.

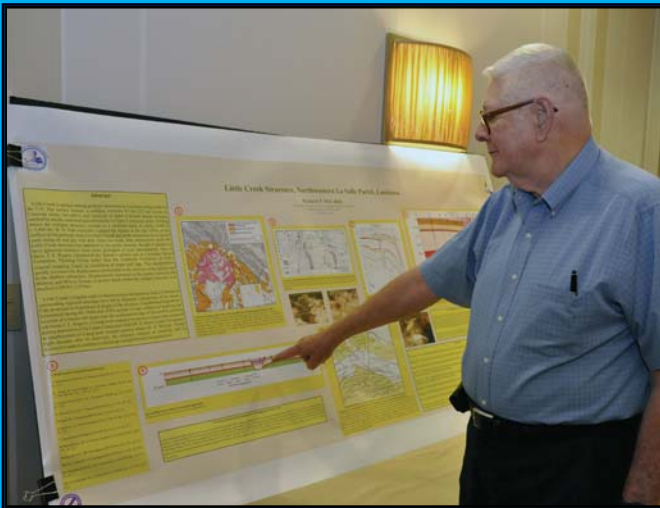
As of July 29th, the **BakerHughes** total U.S. rig count stood at **463** rigs **down 76%** from the **September 26, 2014, high of 1931** rigs. At this time a year ago, the rig count stood at 874 rigs. Of the current 463 rigs, **374** are **oil rigs** and **86** are **gas rigs**.

On July 27th, **Venari Resources LLC** announced that their operating partner successfully drilled an appraisal well at the **Shenandoah Field**. Venari reported that more than **1000 feet of high-quality oil pay** was found in the **Walker Ridge Block 51 #5 well**. The oil pay encountered was in **Lower Tertiary Wilcox sands**. The well was drilled in approximately 5,900 feet of water to a total depth of 31,100 feet. The #5 well was drilled updip to the #2 well and further extends the field's reservoir boundaries to the east. **Shenandoah Field** is located on **Walker Ridge Blocks 51, 52 and 53**. **Anadarko** is the **operator** of the field with 33 percent interest. **Venari** holds a 17 percent interest, and other partners include **ConocoPhillips** with 30 percent interest and **Cobalt International Energy** with 20 percent interest.

On July 28th, **Shell** announced a new deepwater discovery in their **Fort Sumter well** drilled in **Mississippi Canyon Block 566**. The initial **estimated recoverable reserves** for the well are more than **125 Mmboe**. The well was drilled approximately 73 miles southeast of New Orleans in a **water depth of 7,062 feet**. The **total vertical depth** of the initial well was **28,016 feet**. An **appraisal sidetrack** well was later drilled to a **total depth of 29, 200 feet**. This new discovery adds to Shell's recent **Norphlet** exploration success at the Appomattox (2010), Vicksburg (2013) and Rydberg (2014) discoveries in the Mississippi Canyon area. **The total resources found by Shell since 2010 is estimated at 1.3 Bboe.**



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Geological Facts of Life for Flood Protection

Public Works Projects

Located Upon the New Orleans West Bank: A Great Example

Trip Leader: Honorable Michael L. Merritt, LPG

Founding Commissioner, Southeast Louisiana Flood Protection Authority-West

by Mike Merritt

This NOGS field trip will tour the Greater New Orleans West Bank to investigate delta stratigraphy, geotechnical properties of delta plain units and basic stratigraphic and structural elements. These factors (geologic facts of life) affect the balance of this geologically dynamic delta system and ultimately determine if flood protection projects will succeed or fail.

This field trip, scheduled for the last Saturday before Halloween, October 29, 2016, will show participants examples of grossly inadequate, post Katrina and Rita, site geology characterizations prepared for recently built flood control structures. These inadequate geology reports were written either by unattributed or unlicensed authors.

Participants will study the geological complexity of building and maintaining huge public works projects when geo-hazards are unrecognized. Examples of subtle, geomorphologic warning signs indicating a relentless and robust transgressive event is underway will be pointed out.

Addressing these geological issues and improving the effectiveness of flood control efforts is vital to prevent imminent danger to life, health and property and protect the U.S. economy from commercial disruptions triggered by hurricanes and tropical storms defeating flood defenses unable to perform up to their design estimates due to overlooked, underlying geological conditions.



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Caverns. No, there was no mistype. Salt caverns to be more precise. The US Government stores 714 million barrels of crude in underground storage caverns created in salt domes along the Texas and Louisiana Gulf Coast.

Please tell me you have questions following the above two paragraphs, because if you do not have questions, you must have stopped reading this article as soon as you read the word "BOOM." How do you create a salt cavern? Why salt? Do you have photographs of this so called "salt cavern?" I live in



Louisiana. Do I live near one and can I visit?

Salt caverns were created through a process called solution mining. Drill a well into a salt formation and then begin injecting massive amounts of water. Remember my article two *NOGS LOGS* ago? Water is important. You did not read it? Shame on you. Anyway, the water dissolves the salts and is removed as brine and is either injected into disposal wells or piped offshore into the Gulf of Mexico.

If the salt is pure and is not interbedded with other types of rocks, it will not allow fluid to pass through. It is, in geologic terms, impervious.

We owe this innovative concept, conceived during World War II, to the Canadians. During the 1950's, storage of light hydrocarbons in salt became more common.

Salt caverns have also been used for unconventional purposes as well for storing hydrogen, anhydrous ammonia, helium, and butane. Hazardous waste has also been stored in salt caverns here in Louisiana. The Vinton salt dome was used in the 1980s to store hazardous waste, but this practice was banned quickly.

The United States has even used salt domes to test nuclear devices. Two 5-kiloton devices were detonated in two different salt domes. One was detonated in Carlsbad, New Mexico, code name "Gnome" of the Plowshare program in 1961, and the other was detonated in Hattiesburg, Mississippi, code name "Salmon" of Project Dribble, in the Tatum Dome in 1964.

So to wrap it up, what did we learn today? One, shame on you for not reading the past "On the Rocks" articles; two, there is a lot of oil stored in salt domes on the gulf coast right in our own back yard; three, code names make any project more intriguing. So next time you

decide to change a light bulb, remember to come up with your very own cryptic code name.

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Source: U.S. Department of Energy, Sandia National Laboratories



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