

MISSISSIPPI GEOLOGICAL SOCIETY

eBULLETIN

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FORENSIC GEOLOGY AND THE CATAHOULA SANDSTONE
Dr. David T. Dockery, RPG, Office of Geology

OIL PATCH QUIZ
Steve Walkinshaw, Vision Exploration



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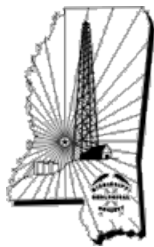
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PRESIDENT'S LETTER

David Snodgrass, MSOGB



MGS Members,

Due to the ongoing Covid-19 pandemic the MGS as decided to postpone our monthly luncheons at the River Hills Country Club until further notice. Updates will be made in the upcoming Bulletins. Please stay tuned.

I attended the Gulf Coast Association of Geological Societies 70th Annual Convention that was successfully held in Lafayette, LA September 30th to October 2nd. This was hosted by the Lafayette, New Orleans and Baton Rouge Geological Societies and included short courses on day one followed by two days of oral presentations on a variety of contemporary issues and one day of field trips. Although I couldn't be there for the entire convention, the MGS was also well represented by Steve Walkinshaw of Vision Exploration.

In the September 2020 Bulletin, I referenced a need to commit ourselves to making the MGS into an organization that will bring in new members from other geological disciplines. I have reached out to the Mississippi Board of Registered Professional Geologists as part of this effort to more easily connect with their registrants. It is my sincere hope that MGS will be the "go to" place for all of Mississippi's geologists and anyone interested in Mississippi Geology.

I look forward to updating everyone next month. For now, take care.



BOLAND SCHOLARSHIP WATCH

Faculty & Students,

This is a new year and the Mississippi Geological Society along with the Boland Scholarship Fund would like to remind you that we want to honor the most outstanding overall students for the 2020-2021 year.

Each year, the Boland Scholarship awards 1 student from each institution a check that rewards students for their hard work and dedication to the Geosciences and their community.

We look forward to a great year and hope to see you at our monthly meetings.

Best Regards,

Matt Caton
Editor



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CURRENT PRICES

Crude Oil WTI (NYM \$/bbl) Front Month

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Last Updated: Oct 20, 2020 10:22 a.m. EDT - Delayed quote

\$ **40.40**

▼ -0.43 -1.05%

SETTLEMENT PRICE 10/19/2020

\$40.83

< Advanced Charting 1M ▾ \$ % VOL



Natural Gas Continuous Contract

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Last Updated: Oct 20, 2020 10:25 a.m. EDT - Delayed quote

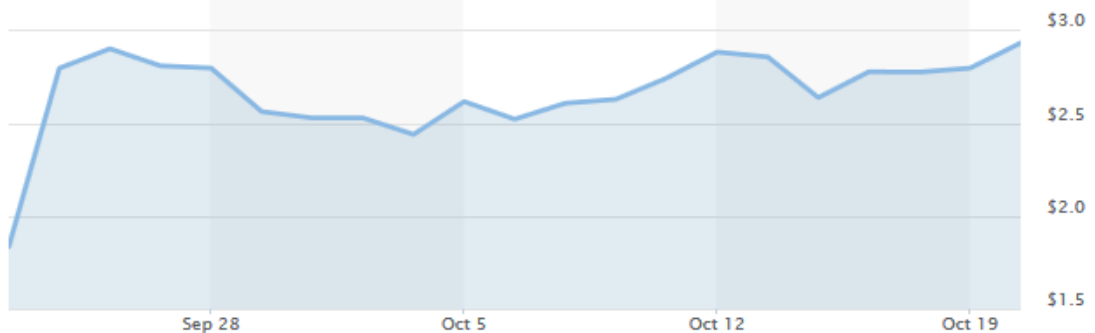
\$ **2.931**

▲ 0.136 4.87%

SETTLEMENT PRICE 10/19/2020

\$2.795

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Marketwatch





MONTHLY POST

Dr. David T. Dockery III RPG

FORENSIC GEOLOGY AND THE CATAHOULA SANDSTONE

David T. Dockery III, RPG

Over the years we have been called upon to determine the bedrock sources of certain gravestones and building stones. The local source of such building stone in central Mississippi are sandstone beds within the Catahoula Formation and to a lesser extent the Glendon Limestone. One recent request was for the Kazery house on 4920 Robinson Road Extension in Jackson, Mississippi (Figure 1).



Figure 1

Family member Sam Kazery was seeking a grant to restore the house and donate it to a local nonprofit organization. He hoped that the use of native rock in the building might help in securing funding. Upon inspection, the house seemed to have Catahoula sandstone as a facing stone, but then locally used Arkansas Fieldstone looks very much the same. The Catahoula Formation straddles the Oligocene-Miocene boundary, while Arkansas Fieldstone is of Mississippian age, the age of the Hartselle Sandstone in northeastern Mississippi. A microscopic examination by James Starnes confirmed the Kazery house stone to be from the Catahoula sandstone.



MONTHLY POST

Dr. David T. Dockery III RPG

The Old Capitol Building in Jackson, Mississippi, was originally faced with Catahoula sandstone. This sandstone was later replaced because of the decomposition of the stone due to weathering of the stone's pyrite content and leaching of the stone by sulfuric acid. During the building process, it was discovered that the state stone mason was using the best stone for his side job of making gravestones, while sending inferior stone for the facing of the Capitol Building. The old stone quarry was at Mississippi Springs near Raymond, Mississippi. Gravestones from this quarry can be seen in the old Raymond cemetery. Figure 2 shows James Starnes at a Scottish box grave made of Catahoula Sandstone. Below is a Catahoula sandstone monument in the cemetery with a well-preserved inscription dated 1837.

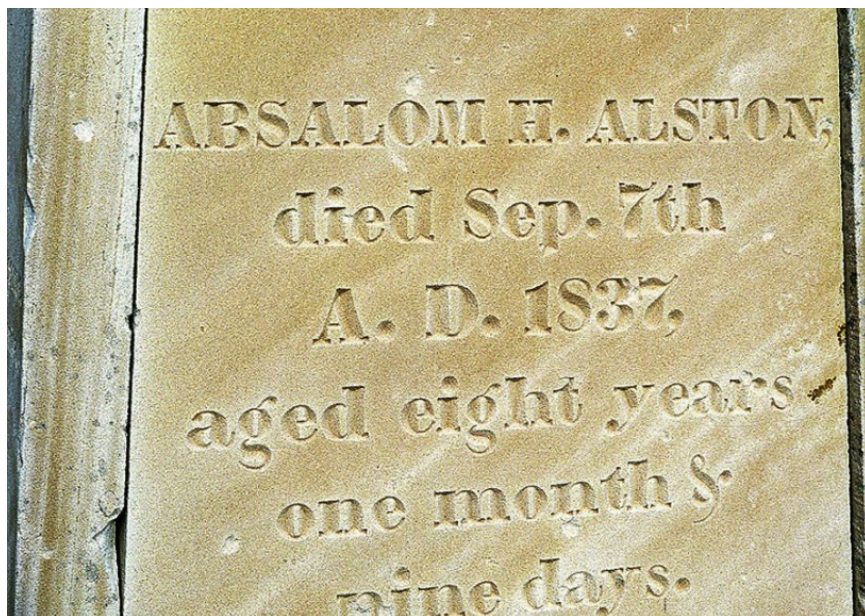


Figure 2



MONTHLY POST

Dr. David T. Dockery III RPG

Figure 3 shows an exposure of Catahoula sandstone in the Mississippi Springs quarry, and below, the Catahoula sandstone chimney of the Porter House built around 1830 near Raymond, Mississippi.



Figure 3



MONTHLY POST

Dr. David T. Dockery III RPG

Figure 4 shows the sandstone wall of the Clinton, Mississippi, Post Office. This wall appears to be built of Catahoula sandstone, but the *Lepidodendron* bark print at the right shows it to be of Mississippian age and thus of Arkansas Fieldstone.



Figure 4



GEOLOGY POST

ARTICLES, PAPERS or NEWS?

ATTENTION!!!!!! Industry, Professors and Students:

I am adding a dedicated section that includes more content from the industry and our schools.

Submissions can include anything from professional papers, thesis abstracts, job opportunities to pictures. Anything!!!!

If you have any information or news you would like to share with the Society **PLEASE** email them to the MGS Editor at:

mcaton13@yahoo.com

Thanks & Regards,

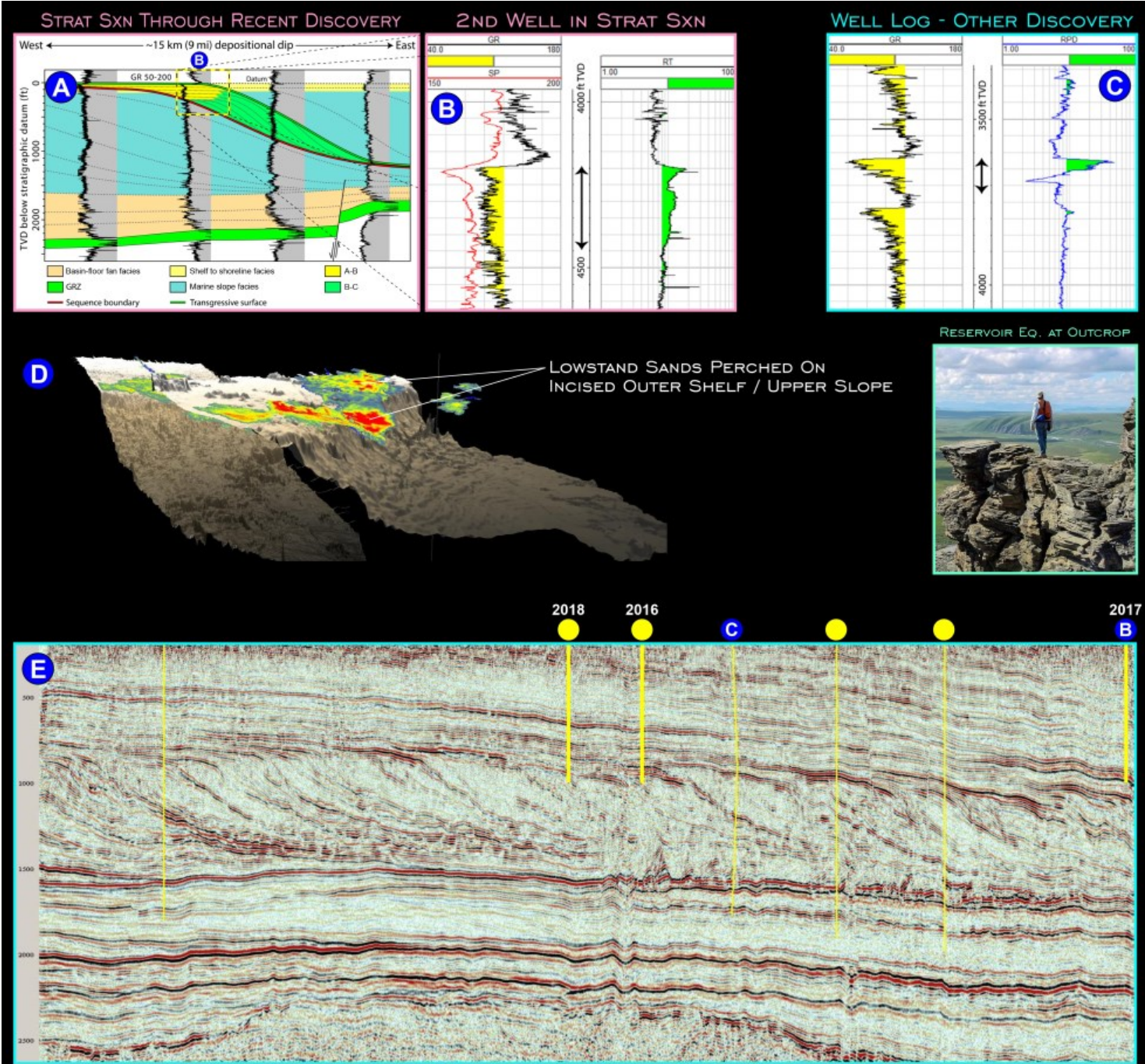
Matt Caton
Editor



MONTHLY QUIZ

Steve Walkinshaw

OIL PATCH QUIZ



FULL CREDIT FOR THE SOURCE OF THESE IMAGES TO BE PROVIDED ONCE THE QUIZ HAS BEEN SOLVED



MONTHLY QUIZ

Steve Walkinshaw

The first oil discoveries in this region were drilled by a unit of this country's armed forces, ~70 years ago. Since that time, several large commercial discoveries here have contributed significantly to this country's reserve base.

The serendipitous discovery of a large stratigraphic trap in a giant field had encouraged the search for analogous traps in the region, which has led to 5 significant new discoveries. Logs from 2 of those new discoveries are shown.

A well drilled 18 years ago represents a key "show well" for the area, having encountered an oil-filled, shaley shoreface sand. 11 years later, a U.S.-based independent and its foreign partner targeted the same horizon and drilled a significant discovery in the area. Oil column height is ~600'.

Questions...

Part 1: What country and region am I referring to?

Part 2: What significant discovery ("A", "B") was completed 7 years ago (unit name)?

Part 3: What is its principal reservoir?

Part 4: Who is the U.S.-based independent / generator?

Part 5: What was its significant 2017 "offset" discovery (extension) called?

Part 6: Who drilled the show well ~18 years ago?

Part 7: What is its recent (2017) discovery ("C") (unit) called?

Bonus:

Part 8: In what field was the serendipitous discovery made?

Answers at end of Bulletin

GEO LINK POST

USGS TAPESTRY OF TIME AND TERRAIN <http://tapestry.usgs.gov> The CCGS is donating to all of the 5th and 6th grade schools in the Coastal Bend. Check it out—it is a spectacular map. You might want a framed one for your own office. The one in my office has glass and a metal frame, and it cost \$400 and it does not look as good as the ones we are giving to the schools. Call Owen 510-6224 if you want one for your office for \$150. Duncan, Mike, Chris, Dave, Bob Randy, Seb., Kevin, Ken, Craig, Patrick, Robert.

FREE TEXAS TOPO'S <http://www.tnris.state.tx.us/digital.htm> these are TIFF files from your state government that can be downloaded and printed. You can add them to SMT by converting them first in Globalmapper. Other digital data as well.

FREE NATIONAL TOPO'S [http://store.usgs.gov/b2c_usgs/b2c/start/\(xcm=r3standardpitrex_prd\)/.do](http://store.usgs.gov/b2c_usgs/b2c/start/(xcm=r3standardpitrex_prd)/.do) go to this webpage and look on the extreme right side to the box titled TOPO MAPS DOWNLOAD TOPO MAPS FREE.

<http://www.geographynetwork.com/> Go here and try their top 5 map services. My favorite is 'USGS Elevation Date.' Zoom in on your favorite places and see great shaded relief images. One of my favorites is the Great Sand Dunes National Park in south central Colorado. Nice Dunes.

<http://antwrp.gsfc.nasa.gov/apod/astropix.html> Astronomy picture of the day — awesome. I click this page everyday.

<http://www.spacimaging.com/gallery/ioweek/iow.htm> Amazing satellite images. Check out the gallery.

<http://www.ngdc.noaa.gov/seg/topo/globegal.shtml> More great maps to share with kids and students.

www.geo.org Don't forget we have our own web page.

<http://micro.magneet.fsu.edu/primer/java/scienceoptiscu/owersof10/>

<http://asterweb.jpl.nasa.gov/galery/default.htm> Great satellite images of volcanoes

<http://terra.nasa.gov/gallery/> More here

www.ermapper.com They have a great free downloadable viewer for TIFF and other graphic files called ER Viewer.

www.drillinginfo.com This is an incredible (subscription) well and completion data service for independents. Can be demo'ed for free.

<http://terrasrver.com/> Go here to download free aerial photo images that can be plotted under your digital land and well data. Images down to 1 meter resolution, searchable by Lat Long coordinate. Useful for resolving well location questions.

<http://www.fs.fed.us/gpnf/volcanocams/msh/> This is a live cam of Mt. St. Helens refreshed every 5 minutes. At the bottom are old videos of past eruptions in this cycle. It is worth a watch especially now.



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2020-2021

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(Note: Please contact Steve Walkinshaw at (601) 607-3227 or mail@visionexploration.com for details concerning placing your ad on the MGS web site.)

Total Remitted \$ _____

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1976-1977	P. David Cate	2017-2018	David Hancock
1977-1978	Sarah Childress	2018-2019	Dr. David Dockery
1978-1979	Les Aultman	2019-2020	James O. Sparks
1979-1980	Philip R. Reeves		



MONTHLY QUIZ

Steve Walkinshaw

ANSWERS

Part 1: What country and region am I referring to? Alaska, North Slope / NPRA

Part 2: What significant discovery ("A", "B") was completed 7 years ago (unit name)? Pikka

Part 3: What is its principal reservoir? Nanashuk

Part 4: Who is the U.S.-based independent / generator? Armstrong

Part 5: What was its significant 2017 "offset" discovery (extension) called? Horseshoe

Part 6: Who drilled the show well ~18 years ago? ConocoPhillips Part 7:

What is its recent (2017) discovery ("C") (unit) called? Beartooth Unit, Willow Reservoir

Part 8: In what field was the serendipitous discovery made? Alpine Field

Here are the credits for / sources of the images shown.

Images "A", "B" and "C": "Petroleum systems framework of significant new oil discoveries in a giant Cretaceous (Aptian–Cenomanian) clinothem in Arctic Alaska" (David W. Houseknecht), AAPG Bulletin, v. 103, no. 3 (March 2019), pp. 619–652

Images "D" and "E": "Nanushuk Formation Discoveries: World-class exploration potential in a newly proven stratigraphic play, Alaska North Slope" (Paul Decker, Alaska Department of Natural Resources, Division of Oil and Gas), 2018 AAPG ACE Discovery Thinking Forum, May 21, 2018

Photo of Tuktu Bluff outcrop: www.pikist.com, source / photographer unnamed / not cited