MISSISSIPPI GEOLOGICAL SOCIETY

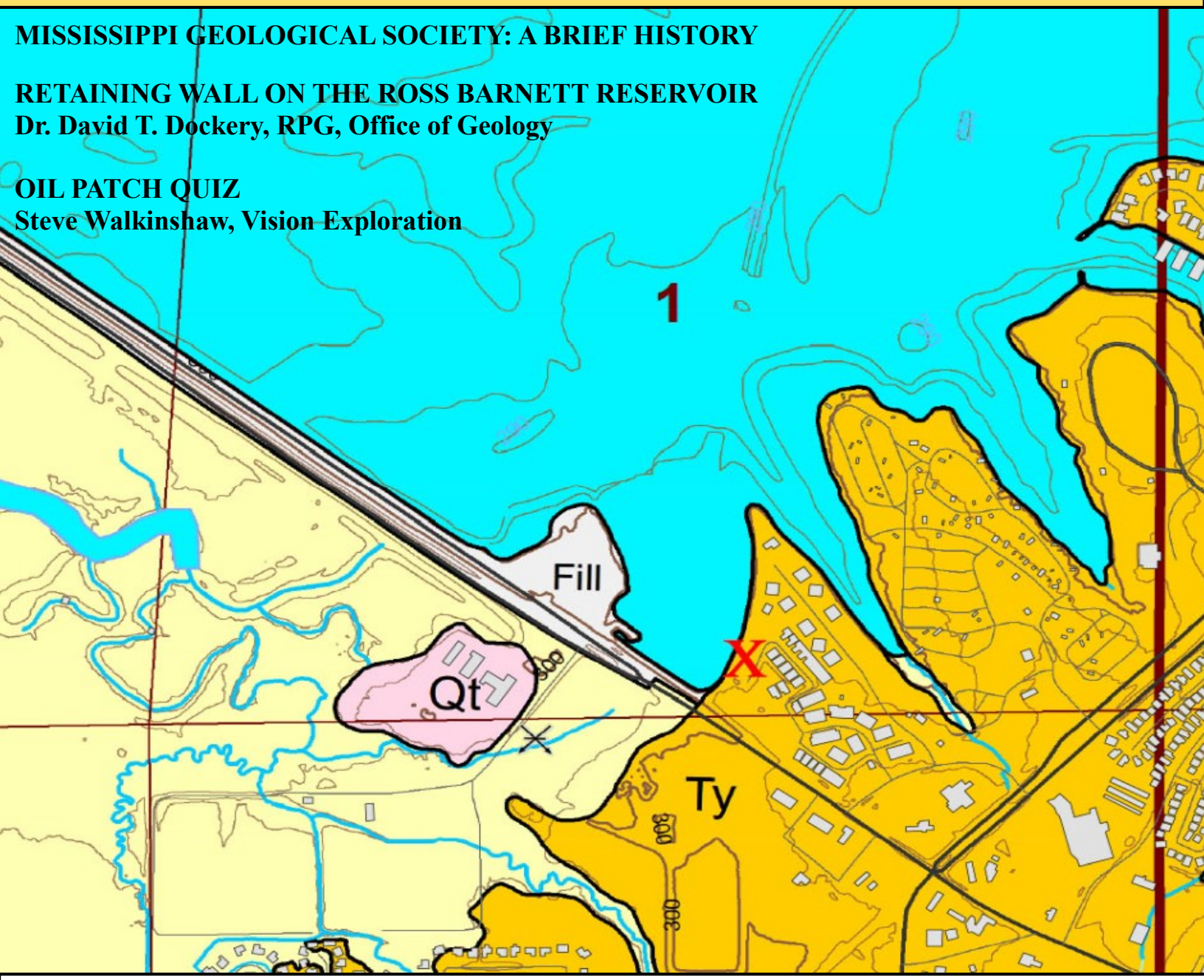
eBULLETIN

Volume 69 No. 1 September 2020

MISSISSIPPI GEOLOGICAL SOCIETY: A BRIEF HISTORY

RETAINING WALL ON THE ROSS BARNETT RESERVOIR
Dr. David T. Dockery, RPG, Office of Geology

OIL PATCH QUIZ
Steve Walkinshaw, Vision Exploration



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PRESIDENT'S LETTER

David Snodgrass, MSOGB

David Snodgrass received his Master's Science degree from Mississippi State University, Department of Geosciences, in 1998. David is currently the UIC Coordinator and Geologist Administrator at the Mississippi State Oil & Gas Board. He started his career with Veritas, DGC, working both acquisition and processing phases of off-shore seismic data collection. Prior to joining the Mississippi State Oil & Gas Board, he worked for various engineering firms as a Geologist doing contract work for Conoco-Phillips, BP, Marathon and other large and small oil companies throughout the US Midwest and Southeast.

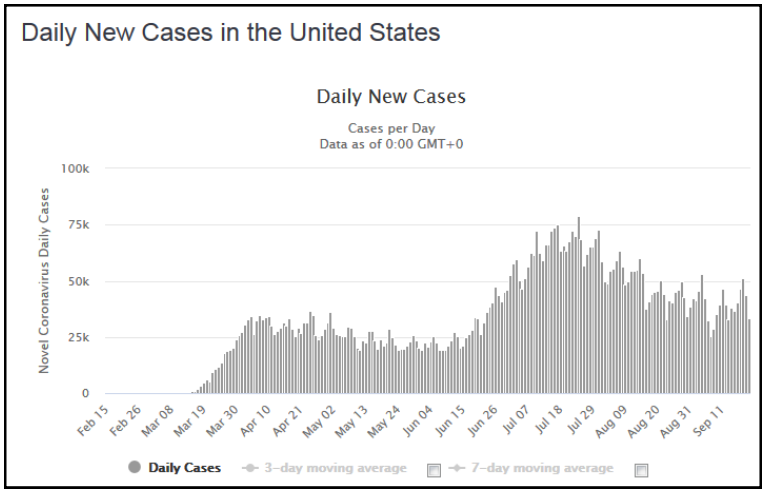
It will be an honor to serve as MGS President for 2021. Our MGS officers have served faithfully for many years, so I would especially like to thank them all for their continued service and support as we move forward to our "new normal". 2020 has been unlike anything we have ever seen from negative oil prices to a vast drop in oil and gas permits, from the Covid-19 pandemic and sick and lost loved ones. Although this past year has been difficult with unforeseen circumstances, in this next year, I hope to work closely with the MGS officers to maintain our public engagement programs and widen our interdisciplinary connections. We must commit ourselves to making the MGS into the kind of organization that will bring in new members and maintain that membership with strong advocacy. One such way to help the MGS sustain this goal is to volunteer to present your experience, knowledge and ideas at our joint monthly meetings with the Society of Petroleum Engineers at River Hills Club, Jackson, MS. To make the MGS even more responsive and to strengthen our capacities, please consider joining or renewing your membership. The MGS has always served an essential role to the discipline where our resources have proven important for education, scholarship and partnerships within various private businesses and state agencies. Our website, http://missgeo.com/, is open to any who are interested and contains membership information, past and present MGS bulletins and much more for you to browse. I look forward to working for you this year, hearing your concerns, and spending time with you at all of our events.

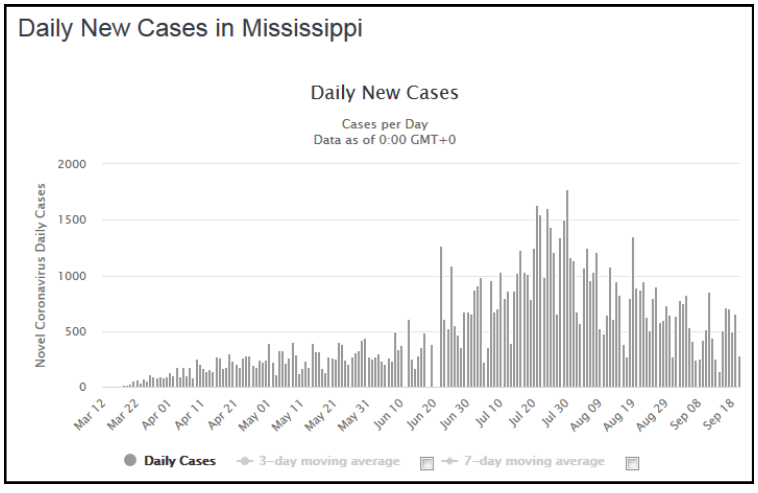
Sincerely,

David H. Snodgrass

2020-2021 MGS MEETING SCHEDULE

When	What/Who	Where
Cancelled	Cancelled	Jackson Yacht Club-5:30pm
TBD	TBD	River Hills – 11:30am
TBD	TBD	River Hills – 11:30am
TBD	TBD	
TBD	TBD	River Hills – 11:30am
TBD	TBD	River Hills – 11:30am
TBD	TBD	River Hills – 11:30am
TBD	Boland Scholarship Awards	River Hills – 11:30am
TBD	Spring Fling	Jackson Yacht Club– 5:30pm





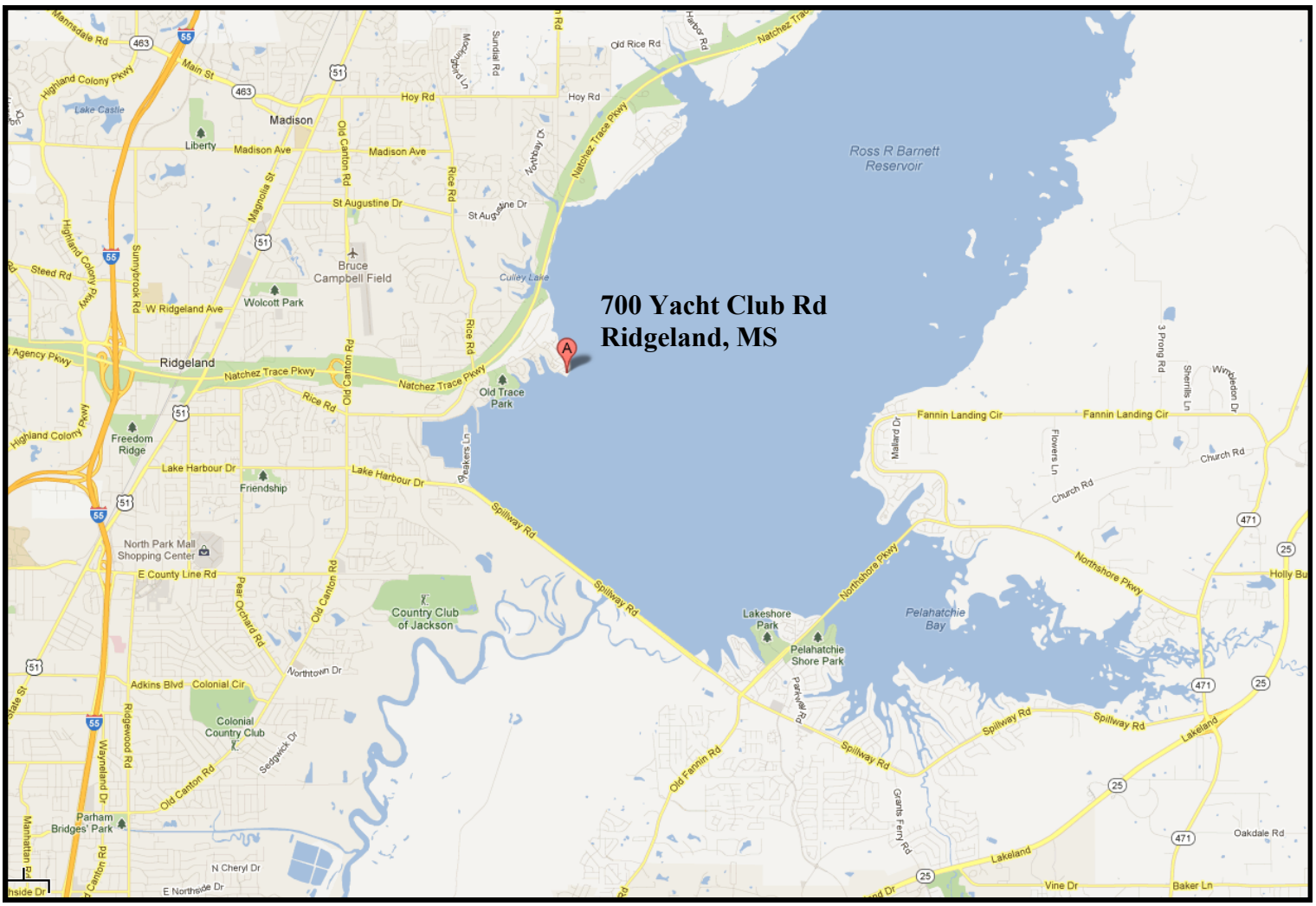
Worldometers

OFFICERS MEETINGS
TBD
TBD
TBD
TBD
TBD
TBD
TBD
TBD

FALL BBQ

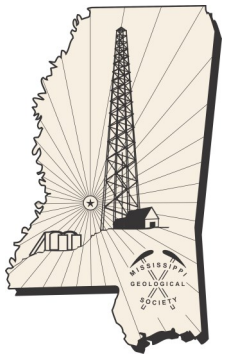
Jackson Yacht Club

Fall BBQ Cancelled due to Covid 19



MISSISSIPPI GEOLOGICAL SOCIETY

A Brief History



The Mississippi Geological Society was founded on November 28, 1939 by 38 of the 57 petroleum geologists then employed in Jackson, Mississippi. The state had just emerged as a significant oil and gas province following the discovery of large (200+ MMBO) oil reserves in Tinsley Field earlier in the year. The Society was organized with the stated purpose of "the stimulation of interest in geology and related sciences..., the encouragement of scientific research among members..., and the discussion and dissemination of geological information".

From its inception, the Society has pursued the attainment of its goals and stated purpose through the continued sponsorship of field trips, technical presentations, publications, and involvement in community affairs.

Throughout the years, the Society has sponsored twenty field trips, each with an accompanying guidebook. Copies of several of the more popular field trip guidebooks are available via the Society's Publications department. Some of the more recent field trips have been undertaken in conjunction with a seminar covering the subject of the trip.

In April 1941, the Society became affiliated with the American Association Of Petroleum Geologists (AAPG). Ten years later (1951), the Society joined the Gulf Coast Association Of Geological Societies (GCAGS). MGS hosted the AAPG sectional conventions in 1946 and 1949, and GCAGS/GCS-SEPM conventions in 1955, 1960, 1968, 1975, 1983, and 1992.

Involvement in research and technical projects has always been a hallmark of the Society. In 1945, MGS was instrumental in the oversight and assembly of data for the new and revised Geological Map of Mississippi. Similarly, the Society also established the MGS Library in 1945 in order to assist geologists and students in the pursuit of their research. The Student Award Program was instituted by the Society in 1947 to recognize outstanding geologic papers originated by students majoring in geologic disciplines at the state's colleges and universities.

In 1954, the Society embarked upon the first of many financial assistance programs with the establishment of its Student Loan Program, which was designed to provide support to selected college students majoring in geology throughout the state. This was followed in 1955 with the Society's awarding of scholarships to deserving high school winners in the Science Fair that was sponsored by the Mississippi Academy Of Science. More recently, the Lawrence Boland Memorial Scholarship Fund, established by the Society in 1980, has celebrated over twenty years of annual scholarship awards to one student from each of the four colleges and universities in the state that support a significant geology curriculum. Finally, the MGS Student Award Program and the MGS Student Assistance Program continue to recognize and provide assistance to outstanding students in the field of geology throughout the state's educational system.

MISSISSIPPI GEOLOGICAL SOCIETY

A Brief History

From the early days of the Society to the present, publications have played a major role in the attainment of the purpose of the Society as set forth in its Constitution. Besides the field trip guidebooks already mentioned, other MGS publications include a number of composite and basin type logs, correlation sections, and structural / stratigraphic cross-sections. More importantly, the Society has published a series of field studies since 1952, when it first released a compendium of Wilcox oil fields, including field maps, reservoir information, and production data. The Society followed its Wilcox volume with the release of its original "Redbook" - focusing on producing fields throughout the rest of the state - in 1957. Since that time, the Society has updated its Wilcox volume and released eight successive updates to the popular Redbook, with the last having been released in 1995. In addition, MGS publishes a monthly Bulletin that is distributed to all members during the Society's active months. Finally, this website has been created in order to enable the Society to utilize the internet in distributing relevant news, geologic articles, and other materials of interest to its members and the public at large.

Technical programs and seminars have been sponsored by the Society since its inception. Seminars have focused on the Cambro-Ordovician Knox Gas Play in the Black Warrior Basin of Northeast Mississippi, salt tectonics, local sequence stratigraphy and relationship to outcrops, and the Cotton Valley Gas Play within the Mississippi Interior Salt Basin. MGS also hosts monthly luncheon meetings, held from September through May of each year, where a variety of speakers give technical presentations on topics and issues of interest to the Society's members.

During the late 1970's and early 1980's, when oil and gas exploration and production peaked in the state, membership rose to its highest level with approximately 500 members. The Society has made a special effort in recent years to encourage membership and participation by non-petroleum geologists, and currently counts a significant number of environmental, hydrological, and governmental professionals among its members. Emphasis on water quality and sensitive environmental issues, as well as the preservation of subsurface data throughout the state, have been and will continue to be important focus issues for the Society.

In the summer of 1985, the Society sponsored a field trip of historical significance when Fred Mellen led a group of MGS members on foot to traverse the very hillsides of Yazoo County that he had mapped 47 years previously in his discovery of the large surface anticline that later became the giant Tinsley Field. Four years later, the Society and other petroleum-related organizations in Mississippi sponsored a celebration of the 50-year anniversary of the discovery of Tinsley - the state's first commercial oil field - and the subsequent founding of the Society. Sadly, Fred Mellen is no longer with us, but his legacy - like that of so many other prominent MGS members - will endure.

Today, despite the cyclical nature of the oil and gas business and the continuing evolution of the other equally important geologic professions within the state of Mississippi, the same purpose and vision that originated the Society continues to propel it into the future, due to the strong foundation of a committed membership and adaptation to changing conditions in a remarkably diverse geological field.

- Stanley King, MGS Historian, with contributions from Steve Walkinshaw

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 out-standing 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

CURRENT PRICES

Crude Oil WTI (NYM $/bbl) Front Month

+ WATCHLIST

OPEN

Last Updated: Sep 21, 2020 4:08 p.m. EDT - Delayed quote

$39.68

-1.43 -3.48%

SETTLEMENT PRICE 09/18/2020

$41.11

Natural Gas Continuous Contract

+ WATCHLIST

OPEN

Last Updated: Sep 21, 2020 at 4:14 p.m. EDT - Delayed quote

$1.856

-0.192 -9.37%

SETTLEMENT PRICE 09/18/2020

$2.05

Marketwatch

MONTHLY POST

Dr. David T. Dockery lll RPG

RETAINING WALL ON THE ROSS BARNETT RESERVOIR

David T. Dockery III, RPG

Before our monthly article, I have some news! On August 15, 2020, I married Carolyn Ellis, a family friend and someone—as a secrete love—that I had been after some 2.5 years until as recently as July 4, 2020, when she had a change of heart. Now my secrete love is no secrete anymore. So, what did the State Geologist and new geology first lady do on their honeymoon? In the collage of Figure 1, they: 1, walked a creek at Rocky Springs; 2, posed on the retaining wall at Natchez; 3, posed at the ruins of Fort Rosalie; 4, visited the Grand Village of the Natchez; 5, visited the home of B. L. C. Wailes, who wrote the first book on the geology of Mississippi; and 6, visited the state's oldest college at Washington, Mississippi, Jefferson College.

Figure 1

MONTHLY POST

Dr. David T. Dockery lll RPG

The newly released *Geologic Map of the Madison Quadrangle* with building footprints was tested in the field on September 6, 2019, in our investigation of a complaint of a slope failure threatening lakefront property on the Ross Barnett Reservoir. The slope failure was found to have a scarp composed of weathered Yazoo Clay. The slump cut through the backyard of three homes and threatened some seven homes. These homes on waterfront property were in dire need of an engineering solution. In Figure 2, Jonathan Leard points to the location of the slump on his Madison Quadrangle geologic map, where it is correctly mapped as Yazoo Clay as shown by the red X in Figure 3.

Figure 2

MONTHLY POST

Dr. David T. Dockery lll RPG

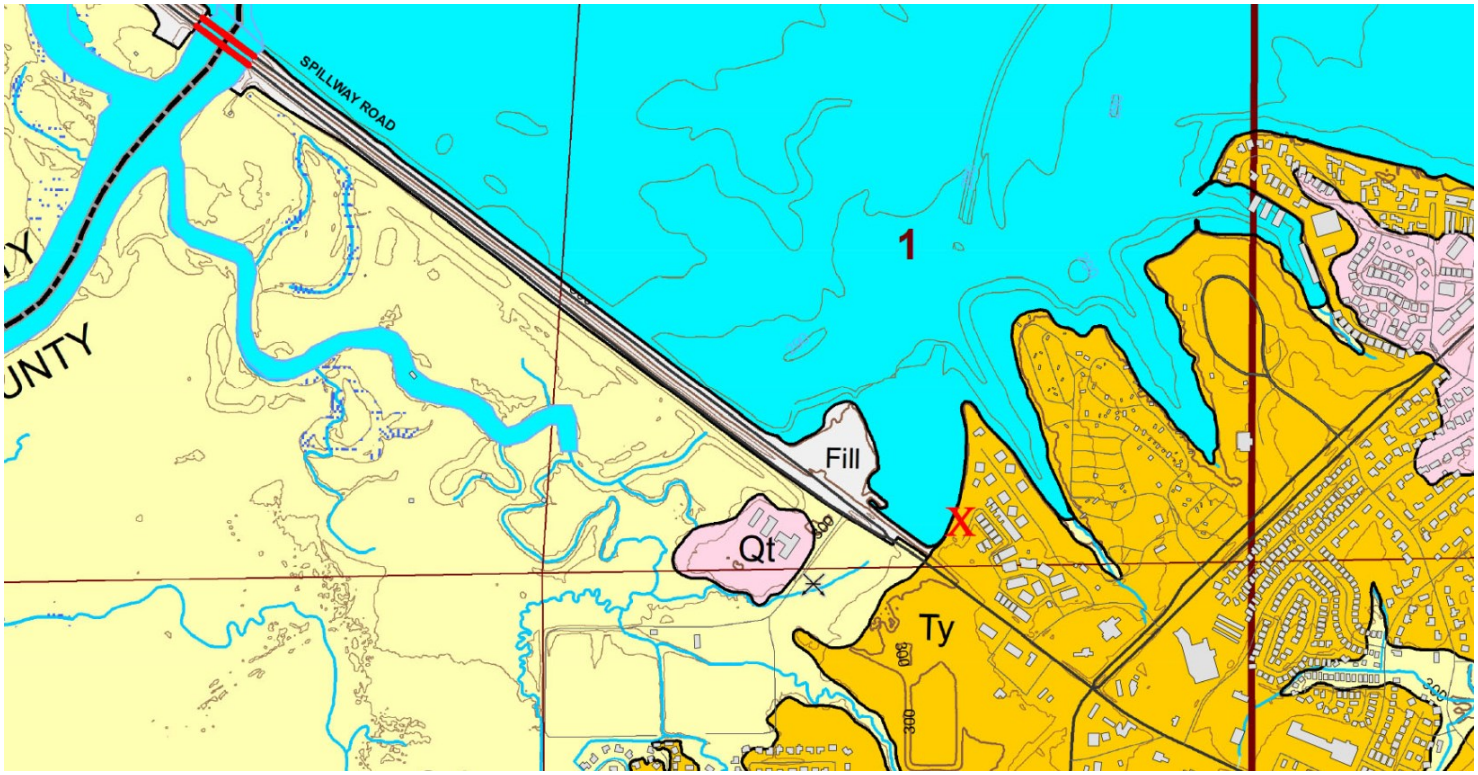


Figure 3

Now, after a period of litigation, a retaining wall, consisting of forty 25-foot-long I-beams and concrete panels, is under construction as of this writing. The I-beams are placed in 20-foot-deep drill holes and anchored in 3.5 cubic yards of concrete. The reinforced concrete panels will be placed in the slots between I-beams. A 500-foot long "turbidity curtain barrier" protects the reservoir from sediment and appears to be doing a great job, even in waves from Hurricane Sally, as shown in Figure 4.

Figure 4

In Figure 5, Jonathan Leard shows the contractor Ray Thompson the construction site's location on the Madison Quadrangle geologic map.

Figure 5

In Figure 6, the tack hoe's bucket is used to transfer concrete to hard-to-get I-beam foundations.

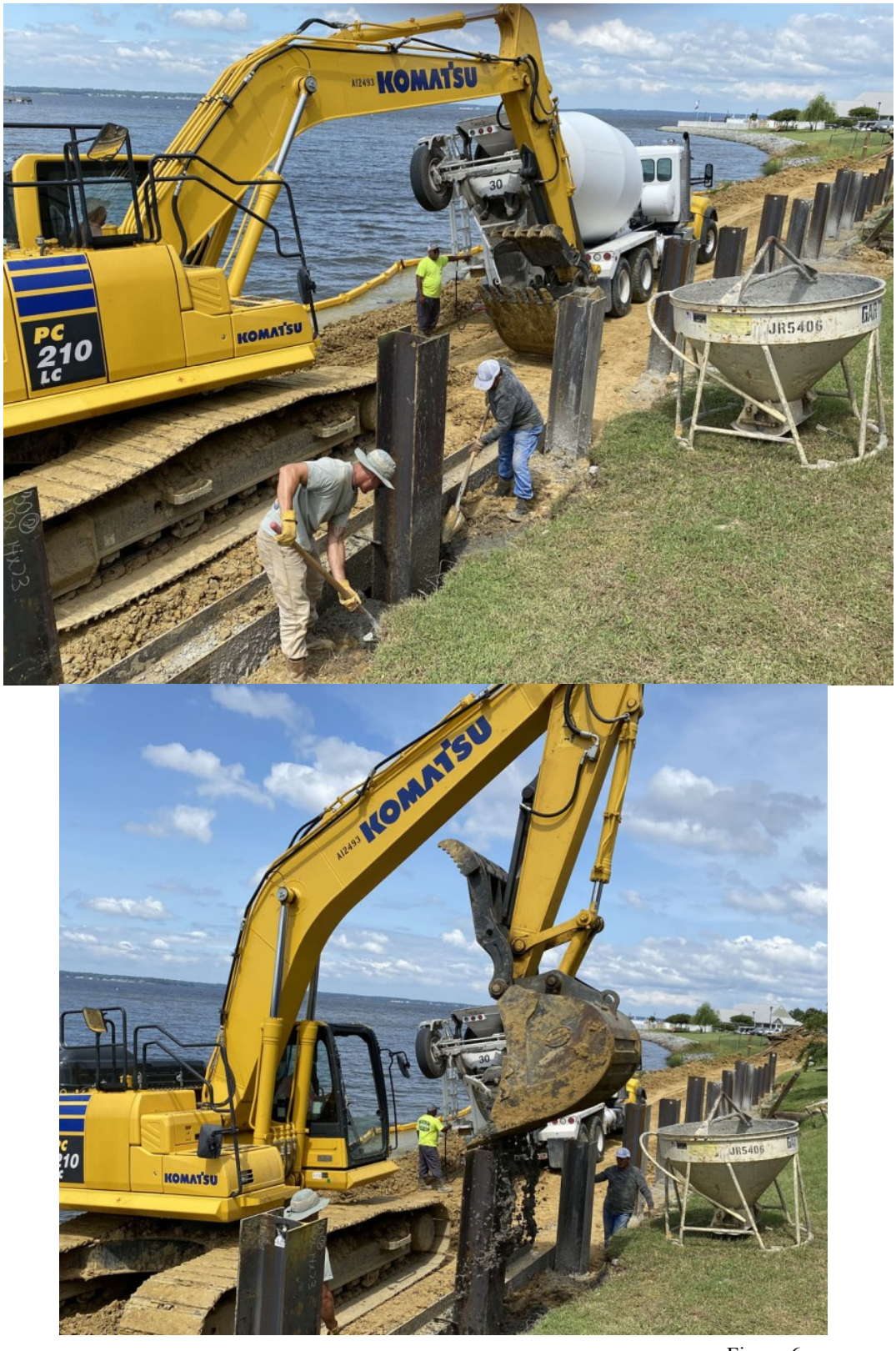


Figure 6

Figure 7 shows a line of 27 (of 40) in place I-beams along the waterfront and a concrete panel behind two I-beams, not yet fitted in place.

Figure 7

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

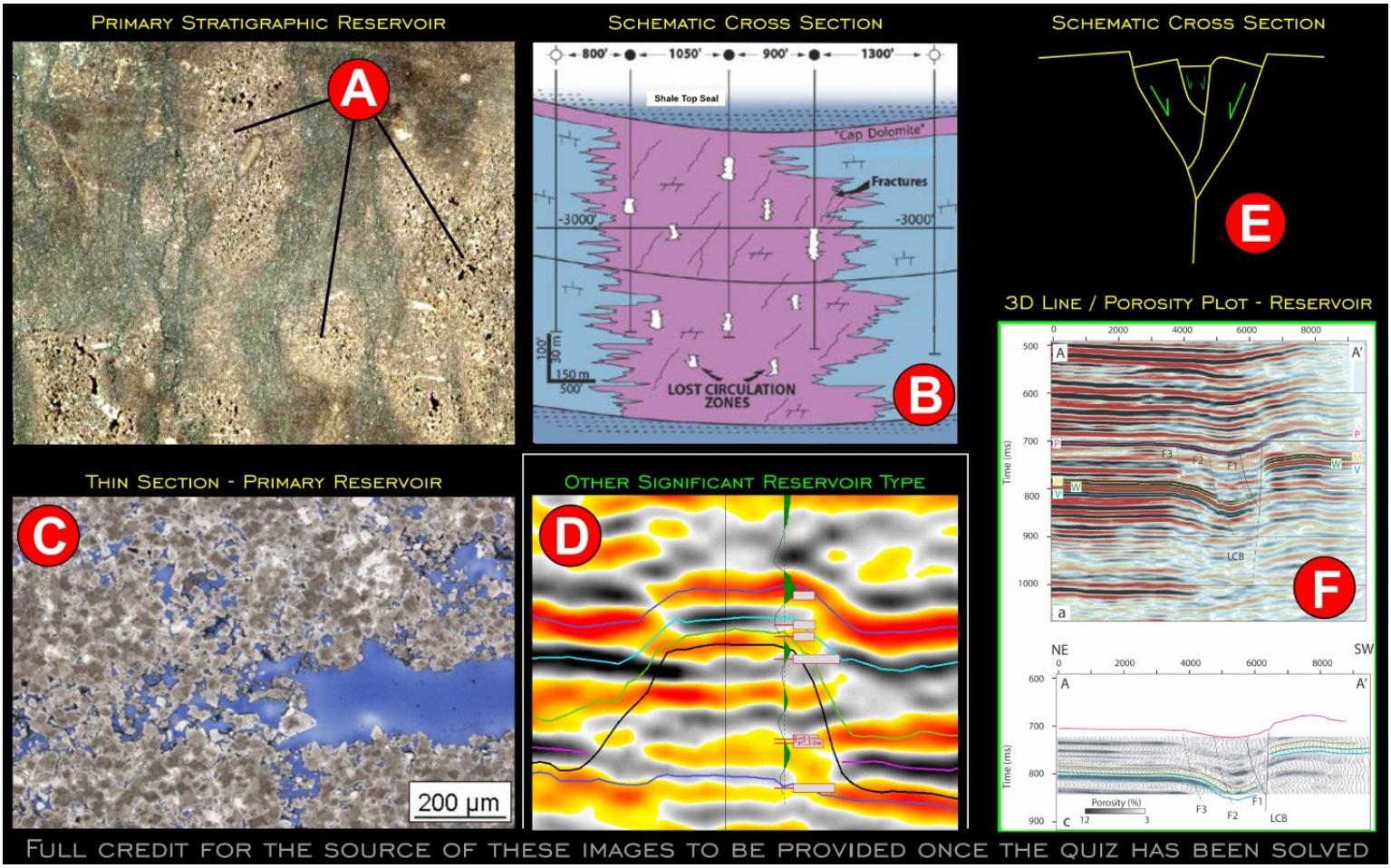


Figure 1

MONTHLY QUIZ

Steve Walkinshaw

Oil patch quiz time. The images shown pertain to the two predominant and prolific types of Paleozoic reservoirs that produce oil and gas in a certain state.

The image labeled "B" is a schematic cross section across the most prolific oilfield in this state. The discovery well for this giant (147 MMBO + 260 BCF) oilfield complex was drilled at a location recommended by a local practicing psychic.

Image "D" is a 3D image of another prolific type of reservoir that produces here. ~1,000 such reservoirs have been discovered to date in this trend area; over 475 MMBO and 2.8 TCF have been produced "locally" from this type of reservoir.

Questions...

Part 1: What state am I referring to?
Part 2: What is the giant field "discovered" by the psychic?
Part 3: What depositional features are highlighted by "A" (and "zoomed in" in "C")?
Part 4: What secondary process accounts for the enhancement of porosity in this carbonate reservoir?
Part 5: What (related) type of structure is illustrated by "E" (and "F")? (Answer has three words)
Part 6: What is the name of the principal producing reservoir in "B"?
Part 7: What is its age?
Part 8: What is the reservoir type shown in "D"?
Part 9: What is its age?

Bonus:

Part 10: What is the name of the top seal shale shown in "B"?

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 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.

MGS HONORARY MEMBERS

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David C. Harrell*	Oleta R. Harrell*	Ralph Hines*
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Charles H. Williams	Jerry Zoble	Julius Ridgeway
David Cate	Stanley King	Dr. David T. Dockery III
Bob Schneeflock		

* deceased

MEMBERSHIP APPLICATION / RENEWAL FORM

MISSISSIPPI GEOLOGICAL SOCIETY

P.O. BOX 422, JACKSON, MISSISSIPPI 39205-0422

2020-2021

Membership year is June through May

New Membership ($20/yr)____ Renewal ($20/yr)____ Student (FREE)____ Associate ($20/yr)____

Boland Scholarship Fund Donation $_____ Total Amount Enclosed $_____

Last Name:_____ First:_____ MI:_____

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Office Phone:_____ Home Phone:_____ FAX:_____

E-mail Address: _____

College/University Attended: _____

Degree(s) Obtained and Year(s) Awarded: _____

Professional Associations, Certifications, & Licenses: _____

MGS ADVERTISING ORDER FORM

September 2020 – May 2021

I. Bulletin Advertisements:

Size	Rate/Year	Amt. Remitted
Full Page Ad (6" x 8")	$500	$_____
1/2 Page Ad (6" x 4")	$300	$_____
1/4 Page Ad (3" x 4")	$200	$_____
Business Card Ad (1 1/2" x 3")	$100	$_____
Professional Listing (1/2" x 3")	$ 50	$_____

II. Web Page Advertisements (www.missgeo.com):

Type of Web Page Ad	Rate/Year	Amt. Remitted
Front Page Sponsor (Banner Ad – limit of 5)	$500	$_____
Second Page Banner Ad	$250	$_____
Professional Listing/Link	$100	$_____

(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 $_____

Please make checks payable to the Mississippi Geological Society. If you have any questions, contact Matt Caton at (601) 898-7444 or mcaton@tellusoperating.com

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1992-1993 Michael Noone/Stanley King
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1998-1999 Rick L. Ericksen
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2011-2012 Stanley King
2012-2013 Jim Files
2013-2014 Neil Barnes
2014-2015 Ezat Heydari
2015-2016 Jack Moody
2016-2017 Cragin Knox
2017-2018 David Hancock
2018-2019 Dr. David Dockery
2019-2020 James O. Sparks

MONTHLY QUIZ

Steve Walkinshaw

Quiz Answers

Part 1: What state am I referring to? Michigan

Part 2: What is the giant field "discovered" by the psychic? the Albion-Scipio / Stoney Point field complex

Part 3: What depositional features are highlighted by "A" (and "zoomed in" in "C")? Burrows

Part 4: What secondary process accounts for the enhancement of porosity in this carbonate reservoir? Hydrothermal dissolution

Part 5: What (related) type of structure is illustrated by "E" (and "F")? Negative or inverse flower structure

Part 6: What is the name of the principal producing reservoir in "B"? Trenton / Black River

Part 7: What is its age? Ordovician

Part 8: What is the reservoir type shown in "D"? Niagaran pinnacle reef

Part 9: What is its age? Silurian

Part 10: What is the name of the top seal shale shown in "B"? Utica Shale

Credits for / sources of the images shown:

Images A-D: "An Integrated Approach to Characterization and Modeling of Carbonate Reservoirs" (G. Michael Grammer), Search and Discovery Article #50784 (2013)

Images E and F: "Evidence of Fault–Fracture "Hydrothermal" Reservoirs in the Southern Midcontinent Mississippian Carbonates" (Jaiswal, P., J. M. Gregg, S. Parks, R. Holman, S. Mohammadi, and G. M. Grammer, in G. M. Grammer, J. M. Gregg, J. O. Puckette, P. Jaiswal, S. J. Mazzullo, M. J. Pranter, and R. H. Goldstein, editors, "Mississippian reservoirs of the midcontinent: AAPG Memoir 122", pages 513–526, 2019)

These are two great articles, especially if one is interested in learning more about the hydrothermal dissolution of carbonate reservoirs.