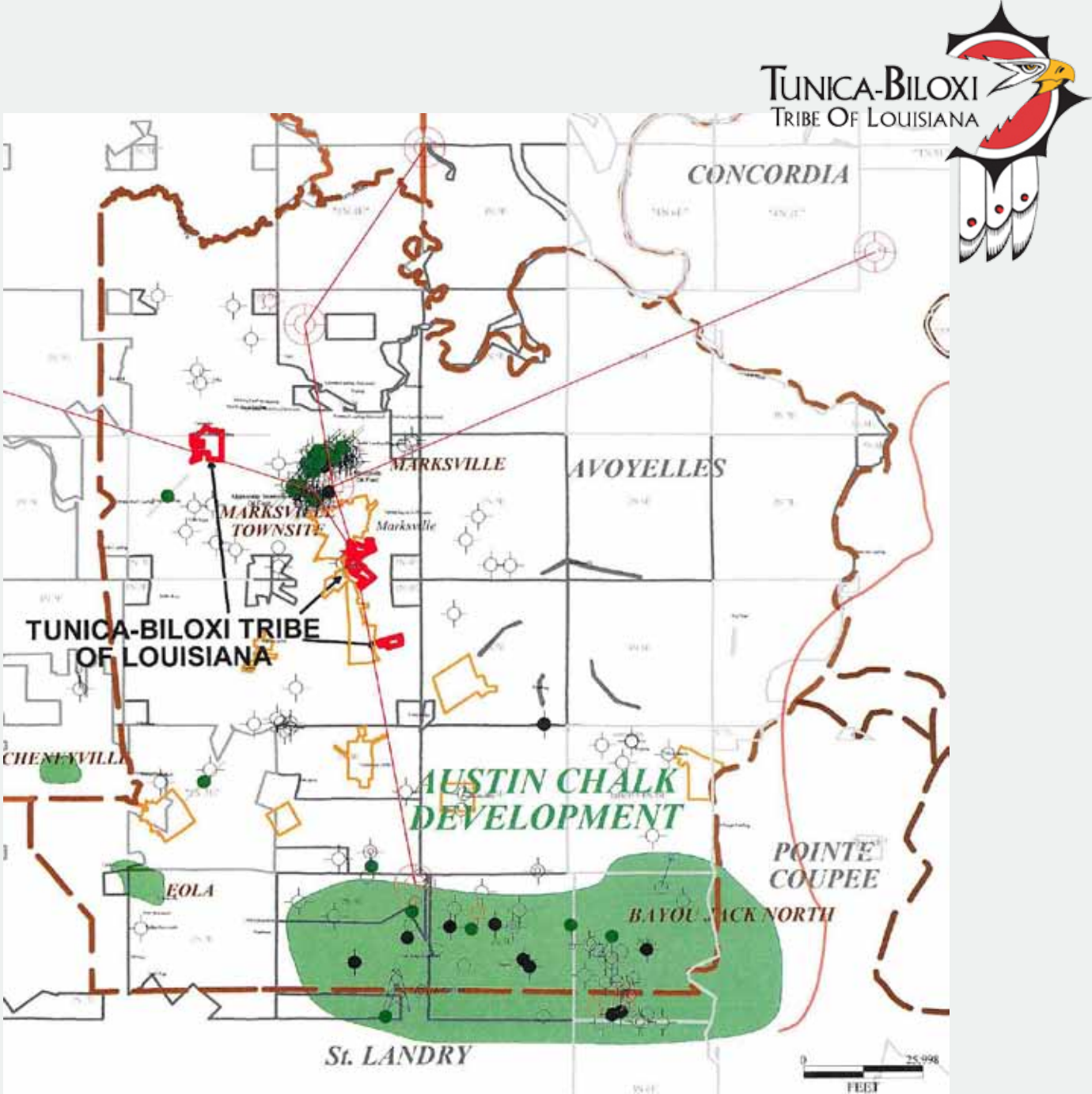


TUNICA - BILOXI TRIBE of Louisiana

AVOUELLES PARISH, LA

Potential for Oil and Gas Development



Oil and Gas Opportunity on the Tunica - Biloxi Indian Reservation, Louisiana

Ron Lloyd, Petroleum Geologist, 2010
Assistant Secretary – Indian Affairs, Division of Energy and Mineral Development

Summary

The Tunica-Biloxi Tribe of Louisiana holds approximately 1,700 acres in trust in Avoyelles Parish, Louisiana. These lands are in the vicinity of the town of Marksville, primarily in Townships 1 and 2 North Range 4 East and Township 2 North Range 3 East. Three oil and gas plays which could impact these holdings are currently active in the surrounding area. The target formations include the Austin Chalk, Eagle Ford Formation, and Tuscaloosa Marine Shale.

Two key wells which penetrate the play formations are located just north of Marksville. These wells drilled by Shell Oil in the 1960s encountered the key zones at depths of approximately 11,500- 12,200 feet. Electric log characteristics of these wells compare favorably with wells in areas of current activity. The Shell Barbin well is included in cross sections in the Basin Research Institute (BRI), Louisiana State University, An Unproven Unconventional Seven Billion Barrel Oil Resource – the Tuscaloosa Marine Shale.

The nearest current drilling activity is in southeastern Avoyelles Parish at Bayou Jack North Field where the Austin Chalk is the target. A number of wells are in various stages of permitting, drilling, and completion in and near Township 2 South Range 5-6 East. Another area of older Austin Chalk production lies southwest of Marksville some thirty miles at Masters Creek field in Rapides Parish. Successful new infill drilling is currently underway in the field.

The nearest Eagle Ford well completion occurred in 2011 in northwestern Rapides Parish approximately fifty miles distant. This play, distinguished as the LA Eagle Ford, has extended into central Louisiana from east Texas.

The Tuscaloosa Marine Shale play has been active to the east in Wilkinson County, Mississippi, and parishes south of the state line in Louisiana and is steadily moving west. Newly drilling units have been permitted in West Feliciana Parish less than forty miles from Tunica-Biloxi land and, most recently, two new units have been filed in Avoyelles Parish within eight miles of Marksville by EOG Resources. EOG followed by buying four state leases in the area for as much as \$801.00 per acre.

Although the LA Eagle Ford and the Tuscaloosa Marine Shale have been considered separately, regional correlation demonstrates the productive zones are age equivalent.

Published maps of these three play trends indicate all may extend into the Tunica-Biloxi area.

Introduction

The Tunica-Biloxi Tribe of Louisiana trust lands consist of approximately 1,700 acres in Avoyelles Parish, Louisiana in the vicinity of the town of Marksville. These lands are located primarily in Townships 1 and 2 North Range 4 East and Township 2 North Range 3 East (Map 1 and Figure 5).

The following brief history of oil exploration in the parish appears on the website: <http://www.gohaynesvilleshale.com/group/avoyelles> as follows:

“The earliest record of a permit for an oil well in Avoyelles Parish is June 19, 1920 for the Bordelon well near Goudreau. Only four wells were permitted in Avoyelles in the 1920s, with two near Cocoville and one near Fifth Ward. In 1933 the Haas oil field was discovered south of Bunkie which set off an oil boom in this part of the parish. The Haas field still produces oil today. In the 1960s, several wells were permitted during a second oil boom for the parish. In the 1970s, much of the parish was leased for the Tuscaloosa Trend which did not pan out. In 2009 drilling began in the deeper Austin Chalk formation, with exploration of the Tuscaloosa Shale coming soon [after].”

Regional Geology

Structural setting

Central Louisiana lies within a mature petroleum producing region dominated by the general structural dipping of rock strata toward the Gulf of Mexico. The Sabine uplift to the northwest and the Monroe Uplift to the north are positive features. The LaSalle Arch extends from the Monroe Uplift as a nose into Avoyelles Parish. Salt domes which penetrate the shallower beds are scattered to the south. Major fault trends are not present in the area (Figure 1).

Stratigraphic setting

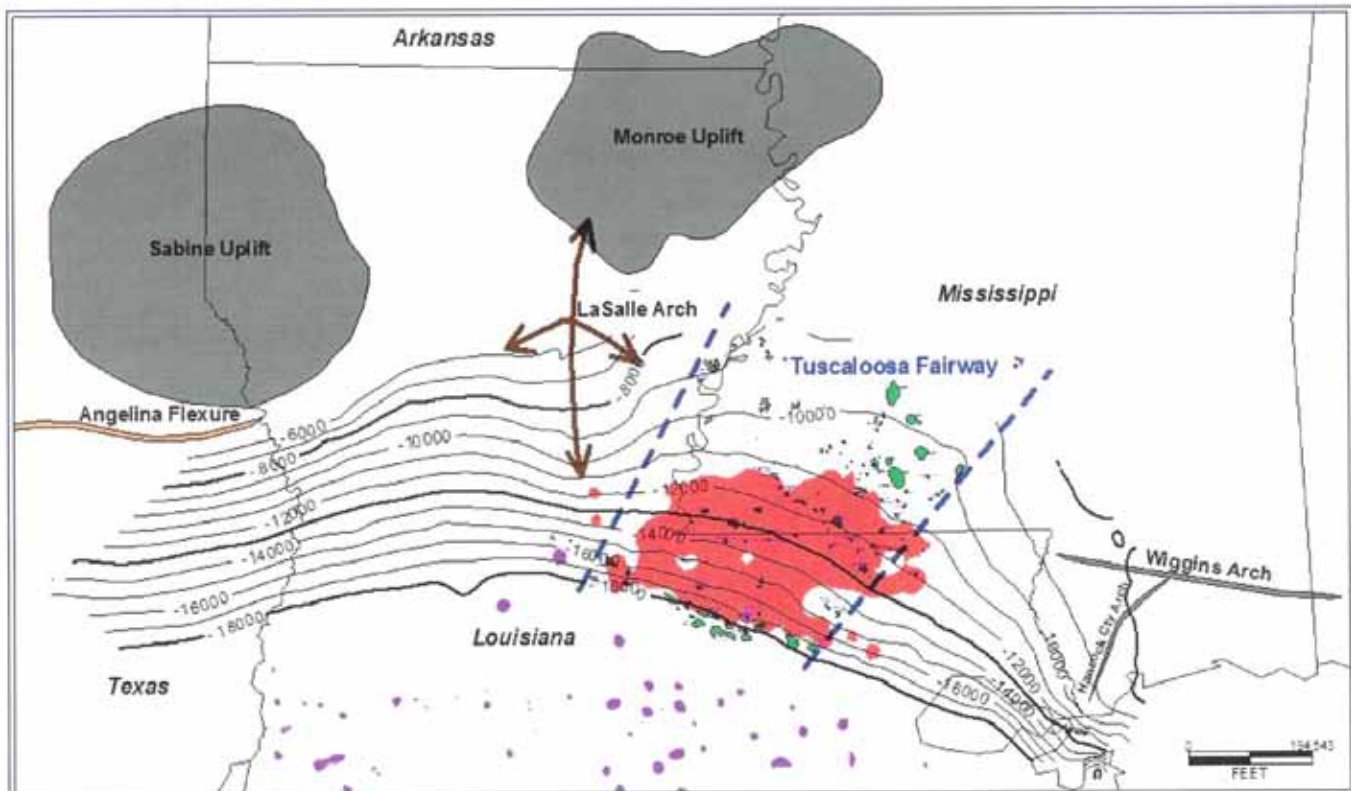
The objectives of the plays discussed in this report are Upper Cretaceous in age, belonging to the Gulf Series and the Austin, Eagle Ford, and Tuscaloosa Groups as indicated in Figure 2.

Oil and gas plays with potential for Tunica-Biloxi Tribe of Louisiana

Three major plays which may impact the Tunica-Biloxi Tribe are currently active in the region. The targets of these plays



Regional Geology



Tectonic features (gray) Base TMS Structure (black lines) TMS High Resistivity (red)
Tuscaloosa Sand Fields (green) Salt Domes (magenta) Tuscaloosa Fairway (blue dashed lines)

www.ameliareources.com

www.tuscaloosatrend.blogspot.com

Figure 1. Regional structure, base Tuscaloosa Marine Shale, Central Louisiana and surrounding areas (after Barrell, www.tuscaloosatrend.blogspot.com).

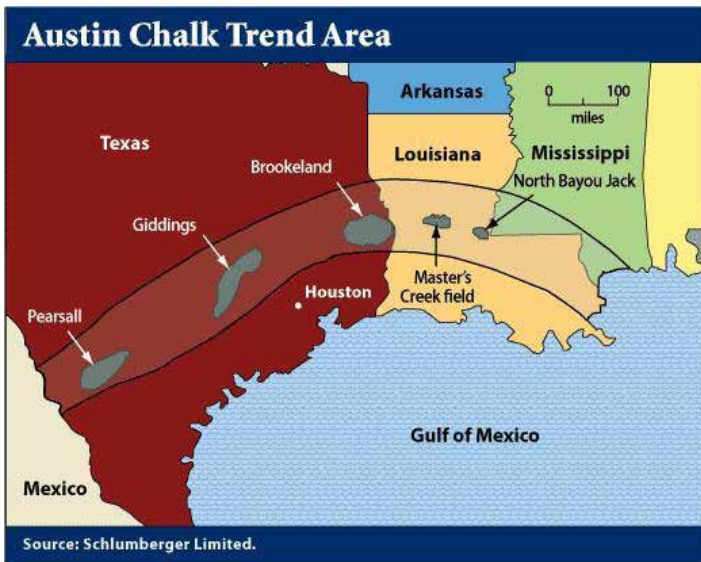


Figure 4. Austin Chalk Trend (Schlumberger Limited).

No. 27-1H (Section 27, Township 2 South Range 4 East) with an initial potential reported as 753 BOPD, 1,151 Mcfg, and 1,484 BWPD. Cumulative production reported as 9,884 BO for the last 5 months of 2011. Nelson Energy Deshotels No. 13H-1 (Sec 13 Township 2 South Range 5 East) was completed in October 2011 flowing 1,167 BOPD, 644Mcfg, 350 BWPD. Production through April 2012 is 12,499 barrels of oil (8 months). Over a year ago Anadarko completed the Deshotels No. 1-20H (Section 20 Township 2 South Range 6 East) flowing 600 BOPD and 458 Mcfg. Cumulative production through January 2010 (14 months) is 62,747 barrels of oil. Pryme Energy, a partner in wells in the area, has indicated mechanical problems causing disappointing production.

Currently indicated as in post-completion status is Anadarko

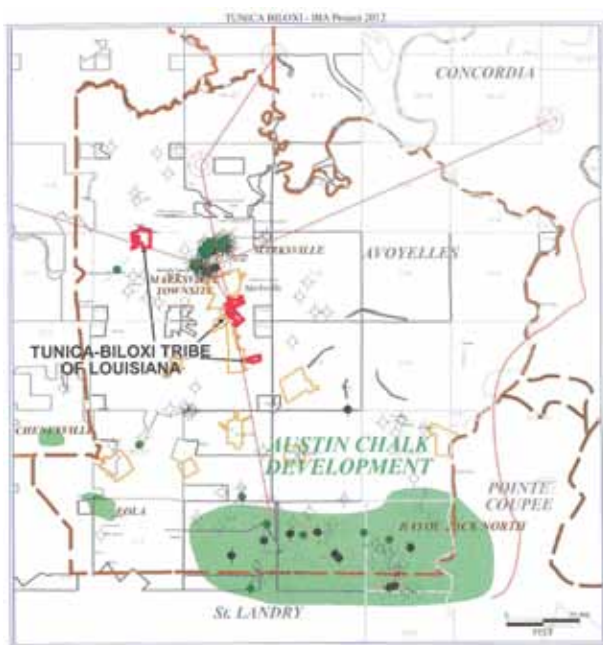


Figure 5. Avoyelles Parish Austin Chalk play activity.

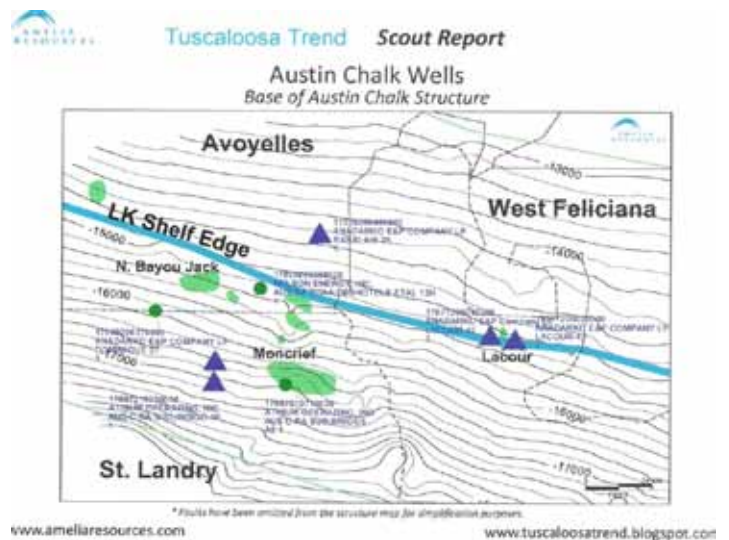


Figure 6. Austin Chalk Activity, southeastern Avoyelles and adjacent parishes (after Barrell, <http://www.tuscaloosatrend.blogspot.com/>).



Figure 7. Masters Creek area.

Rabalais No. 35-1 (Surface location: Section 3 Township 2 South Range 6 East, bottom hole Section 35 Township 1 South Range 6 East), but no initial potential has been posted on SONRIS. Anadarko and other companies have established new drilling units nearby, including Nelson's Rosewood Plantation 1-21H (Section 21 Township 2 South Range 6 East). Other Austin Chalk activity is currently underway to the south in St. Landry Parish and to the southeast in West

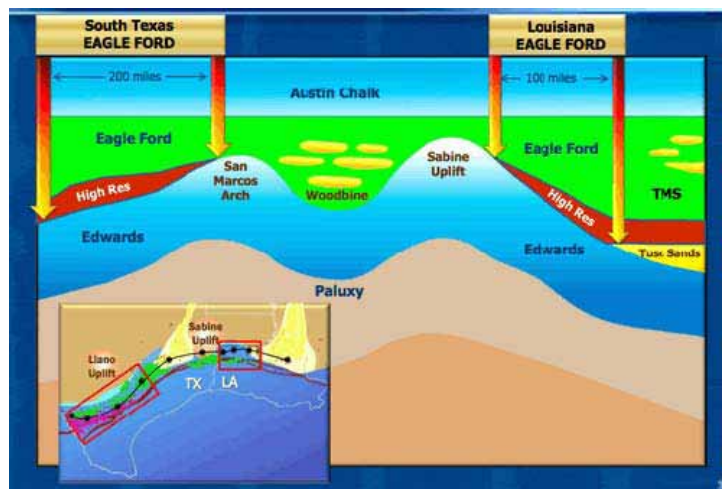


Figure 8. Diagrammatic cross section, Eagle Ford Play (after Barrell, <http://www.tuscaloosatrend.blogspot.com/>)

Feliciana Parish (Figure 6.).

Masters Creek Field (Figure 7), another Austin Chalk field thirty miles west in southwestern Rapides and southeastern Vernon Parishes, is currently undergoing infill drilling by Swift Energy. A recent well, Exxon Corp. #10-1, initially tested 600 BO and 4.5 MMcf gas per day. High water production is an issue and the well is waiting on construction of production facilities. In March 2012, the well produced 7,498 BO and 72 MMcf gas.

Louisiana Eagle Ford Play

The Eagle Ford Shale play has been active in Texas for

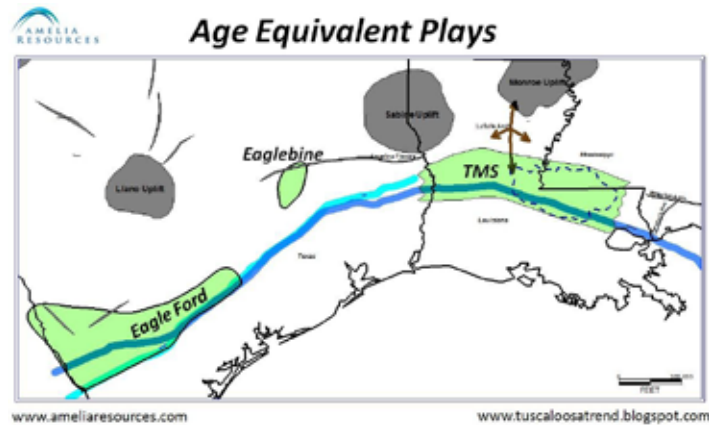


Figure 9. Age-equivalent Texas Eagle Ford and Tuscaloosa Marine Shale (TMS) plays (after Barrell, <http://www.tuscaloosatrend.blogspot.com>)

some time. More recently the play has been pursued where prospective beds are present in Louisiana (Figure 8).

It should be noted that the LA Eagle Ford zone is stratigraphically equivalent to the Tuscaloosa Marine Shale discussed in detail below. This is demonstrated by cross sections S-1 and D-5 developed for this report. Exact stratigraphic correlation of the LA Eagle Ford with the Texas Eagle Ford was not pursued in this study because of time and expense of gathering and evaluating additional data. However, Kirk Barrell of Amelia Resources recently posted the map below (Figure 9), indicating the age equivalence of the TMS and Eagle Ford zones.

This fact is encouraging from the Tunica-Biloxi point of view because the LA Eagle Ford activity to the west and the Tuscaloosa Marine Shale activity to the east effectively bracket the Tunica-Biloxi land holdings.

In 2010 Indigo Minerals drilled a vertical well, Bentley Lumber #1 (Section

32 Township 4 North Range 5 West, Vernon Parish). The well was reportedly drilled primarily to gather stratigraphic information, but was completed with perforations from 11,562-11,704 feet from surface with an initial potential rate of 5 barrels of oil, 8 Mcf gas, and 46 barrels of water per day. This interval correlates with the Tuscaloosa Marine Shale zone as represented in cross sections of the BRI paper on the Tuscaloosa Marine Shale. The log of the well indicates low resistivity in the perforated zone which confirms the low resistivity area in Figure 11 below.

In November 2011 the Indigo II Louisiana Operating LLC Bentley Lumber No. 1-34H well (Section 34, Township 5 North Range 5 West, Rapides Parish) had a reported initial daily potential production rate of 324 barrels of oil, 154 Mcf gas, and 240 barrels of water per day from Eagle Ford.

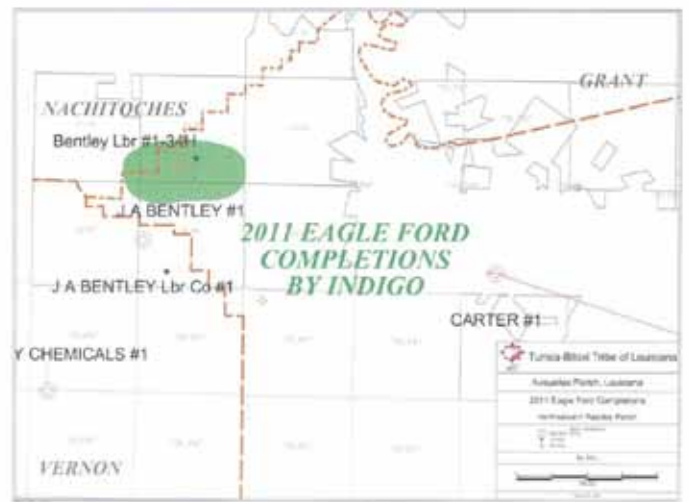


Figure 10. Eagle Ford wells, northwestern Rapides Parish area.

Production data on the SONRIS site is reported as:

November 2011	1412 BO	28 Mcfg
December 2011	3077 BO	753 Mcfg
January 2012	868 BO	784 Mcfg
February 2012	818 BO	656 Mcfg



Figure 11. Tuscaloosa Marine Shale play boundaries (after Barrell, www.tuscaloosatrend.blogspot.com).

No production was reported since February. These production data are not particularly impressive given the probable cost of the well and may be a reflection of the location in an area of low electric log resistivity.

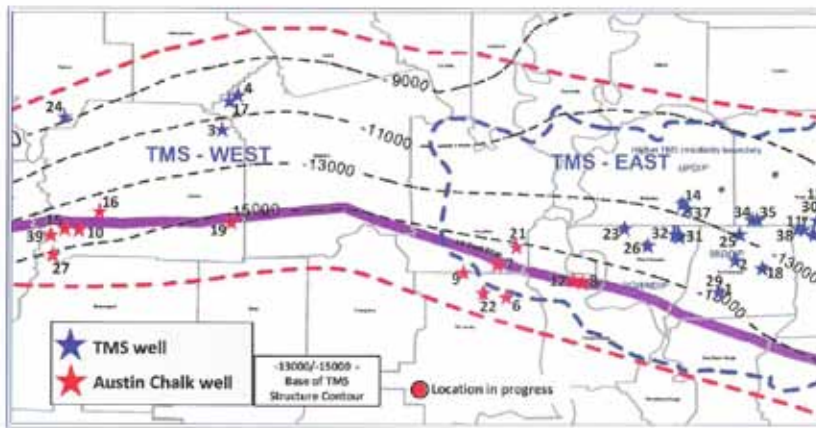


Figure 12. Recent Tuscaloosa Marine Shale Activity (after Barrell, www.tuscaloosatrend.blogspot.com).

This play is in an early stage in Louisiana. Comments regarding the characteristics of the formation indicate difficult drilling and completions. These operations will likely improve with time as more wells are drilled and completed. The play's impact relative to Tunica-Biloxi lands is difficult to predict at this point.

Tuscaloosa Marine Shale Play

The Tuscaloosa Group consists of three units. The lower is a transgressive depositional section of massive and stringer sands. This section has produced oil and gas locally. The middle unit is gray to black, fissile to sandy marine shale representing the inundated phase of the depositional cycle. In turn the Tuscaloosa Marine Shale is overlain by sands and clays of the regressive phase of the cycle.

The potential of the Tuscaloosa Marine Shale was espoused in a 1997 report by Louisiana State University's Basin Research Institute entitled An Unconventional Seven Billion Barrel Oil Resource – the Tuscaloosa Marine Shale.

The objective is present in a band roughly coincident with the Austin Chalk, parallel to the Cretaceous shelf edge marked in Figures 9 and 11. Note that Avoyelles Parish is within the High Resistivity area. Higher resistivity is typically considered a positive attribute indicating the presence of petroleum in

shales.

At the June 13, 2012 Louisiana state mineral auction, EOG bought 4 one-section leases in the area of the proposed drilling units for lease bonuses of \$751.00 to \$801.00 per acre. These tracts were sections 16 in Township 3 North Range 6 East, Township 3 North Range 4 East, Township 2 North Range 5 East, and Township 2 North Range 6 East.

Lease Bonus and Royalty

Lease bonuses in the area of the plays have been reported in the range of \$150.00 per acre up to \$500.00 per acre. Bonuses in other “hot” plays have been seen to move into the four-figure range when proven and anticipated production rises.

Royalty in the key plays has been reported as high as 25%.

To the west the nearest activity is in extreme northwest Rapides Parish (also known as LA Eagle Ford as discussed above).

Figure 16 shows a standard economic evaluation considering costs versus production rates. The type curve (upper right) graphs the projected production versus time incorporating the anticipated steep first year decline of 73% beginning with an initial potential of 800 barrels of oil per day (BOPD). This

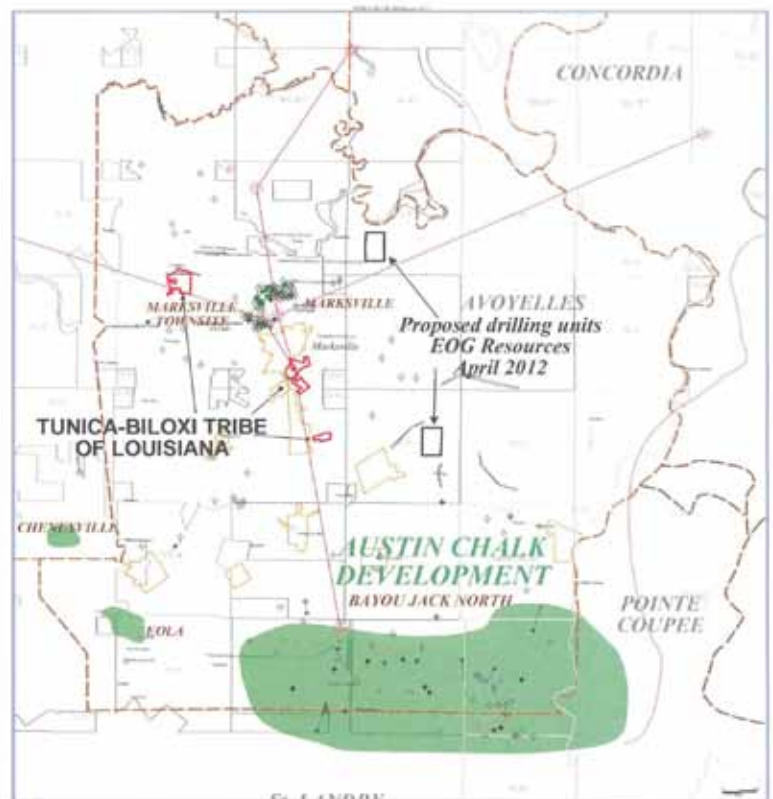


Figure 13. Recent proposed drilling units filed by EOG Resources in Avoyelles Parish.

Current Activity
Base TMS Structure Map



Figure 14. Wells, drilling units, and new locations in the TMS play east of Avoyelles Parish (after Barrell <http://www.tuscaloosatrend.blogspot.com>).

Comments and Conclusions

A study of the regional geology of central Louisiana indicates that Tunica-Biloxi Trust Lands are within the projected trends of the major “shale” plays currently under way. Whether any of these plays will extend into the area of Tunica-Biloxi land holdings cannot be predicted with certainty. However, the recent activity by EOG Resources to the east less than ten miles is encouraging.

The ongoing economics of each play will be a determining factor. Leasing, seismic, drilling, completion, and infrastructure costs compared to ultimate production coupled with oil and gas pricing will determine continued activity. High initial production rates followed by steep declines are characteristic of plays of this nature.

Companies typically desire to lease large tracts first. After assembling a sizable block, they try various drilling and completion techniques. This process could take two years or more. The better funded companies in these plays use their available resources to develop the best techniques for drilling and completion of the wells, as well as monitoring production rates in order to maximize the ultimate recovery.

In order to obtain the highest lease bonus and royalty, patience is often the key. Negotiation of favorable lease will be predicated on the status of the plays at the time of an offer and best estimation of future success in the area.

Tuscaloosa Trend Scout Report
Tuscaloosa Marine Shale Wells
Base of Tuscaloosa Marine Shale Structure

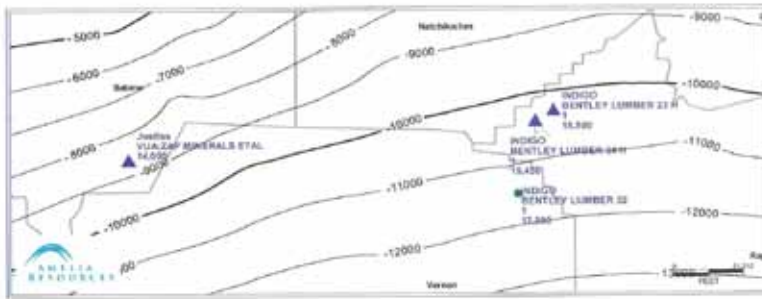


Figure 15: Wells and new locations in the TMS play west of Avoyelles Parish in Sabine, Vernon, and Rapides Parishes (after Barrell, <http://www.tuscaloosa-trend.blogspot.com>).

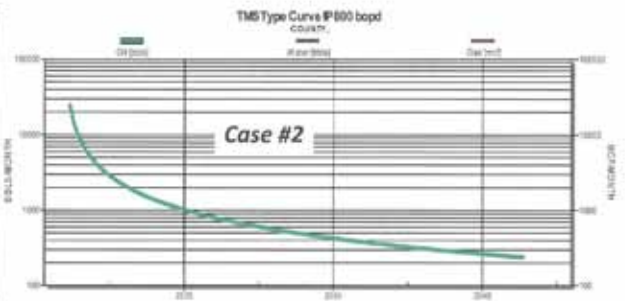
example will payout in just over one year with an expected ultimate recovery over 460,000 barrels.

High initial potentials are required for a play to be economical, given the \$10,250,000 total well cost.



Location	Louisiana
1st Year Decline	73%
Working Interest	100%
Net Revenue Interest	78%
Lease Cost	\$ 250,000
Dryhole Cost	\$ 6,500,000
Completion Cost	\$ 3,500,000
Total Cost	\$ 10,250,000
Start Date	Apr-12
End Date	Sep-42
Years Produced	30
B exponent	0.925
Di	2.493
Oil Price	\$ 100

Targeted Economics



Case #	1	2	3	4
30 Day IP (bopd)	600	800	1000	1200
Estimated Ultimate Recovery (bbls)	346,885	462,513	578,141	693,770
PV10 (\$)	\$ 4,578,797	\$ 9,814,332	\$ 15,053,862	\$ 20,297,460
PV20 (\$)	\$ 2,231,074	\$ 6,561,145	\$ 10,896,689	\$ 15,235,191
PV30 (\$)	\$ 862,726	\$ 4,691,796	\$ 8,524,885	\$ 12,359,792
Investment	\$ 10,250,000	\$ 10,250,000	\$ 10,250,000	\$ 10,250,000
Payout (Years)	2.00	1.08	0.75	0.58
ROI	1.99	2.74	3.49	4.24
IRR (%)	39%	75%	120%	160%

Figure 16. Tuscaloosa Marine Shale well economics (after Barrell, ameliaresources.com).

Key Online Sites - Central Louisiana Oil & Gas Plays

General

Louisiana Department of Natural Resources (LADNR) Data Access site, including oil and gas and other information <http://sonris.com/>

LADNR Public Oil & Gas Hearings. Search for well and unit applications: <http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=779&pnid=0&nid=331>

Mississippi State Oil and Gas Board (MSOGB) <http://gis.ogb.state.ms.us/MSOGBOnline/>

Within this general geology site are links to plays, hydraulic fracturing, directional drilling, and other areas of interest: <http://geology.com/oil-and-gas/>

Marksville newspaper site for oil and gas: http://avoyellestoday.com/pages/forum_oil_and_gas

Google Map site showing Tuscaloosa Marine Shale and Austin Chalk wells: <http://maps.google.com/maps/ms?msid=204256365055521729132.0004b5bbdae554174421a&msa=0&ie=UTF8&t=m&z=11&vpsrc=1>

Activity in Avoyelles Parish: <http://www.gohaynesvilleshale.com/group/avoyelles>

Wide-ranging site with information on various shale plays: <http://oilshalegas.com/>

An interesting blog regarding leasing, bonuses, and royalty: <http://www.gohaynesvilleshale.com/forum/topics/>

Presentation by Kirk Barrell of Amelia Resources to Louisiana's U.S. Senator Mary Landrieu's team regarding Louisiana oil and gas activity regarding unconventional plays, horizontal drilling, and hydraulic fracturing with a focus on the Tuscaloosa Marine Shale: <http://www.ameliarresources.com/documents/presentations/>

Tuscaloosa Marine Shale (TMS)

Weekly Scout Reports and commentary: <http://www.tuscaloosatrend.blogspot.com/>

Play overview from Amelia Resources <http://www.ameliarresources.com/documents/presentations>

See also link above in General section re: Presentation by Kirk Barrell of Amelia Resources to Louisiana's U.S. Senator Mary Landrieu's team regarding Louisiana oil and gas activity regarding unconventional plays, horizontal drilling, and hydraulic fracturing with a focus on the Tuscaloosa Marine Shale.

Additional links to revised and updated presentations noted just above include Hart's DUO Conference and New Orleans Geological Society, both in May 2012.

CONTACT INFORMATION

For more information about the Tunica-Biloxi Tribe and access to geology data, please contact:



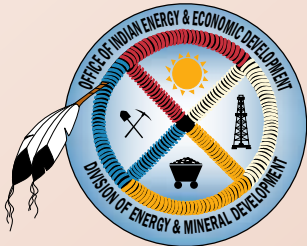
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