



Tuscaloosa Marine Shale

An Emerging Play

Kirk A. Barrell

ANNUAL PLANO EXECUTIVE NIGHT

New Orleans, Louisiana

February 16, 2012

Amelia Resources, LLC

- Founded 2003
- Prospect generation
- Focus area: Florida Parishes of Louisiana
- Strategy: Leverage knowledge, experience, and relationships to obtain capital partners for projects.



Kirk Barrell - Career Summary

- Amoco Production Company (1988-95)
- Geodynamic Solutions Inc.: Founder & CEO (1995-2004)
- Barrell Energy Inc.: Founder & President (1997-Present)
- Amelia Resources LLC: Founder & President (2003-Present)
- Wave Exploration LLC: Co-Founder & Co-Manager (2005-Present)

TUSCALOOSA EXPERIENCE (22 years)

Amoco Production Company (1988-95) – Tusc 5 years

- Regional sequence stratigraphic framework
- 1300 miles of 2D seismic interpretation
- Trend-wide field development
- 3D acquisition
- 300 bcf of reserve additions



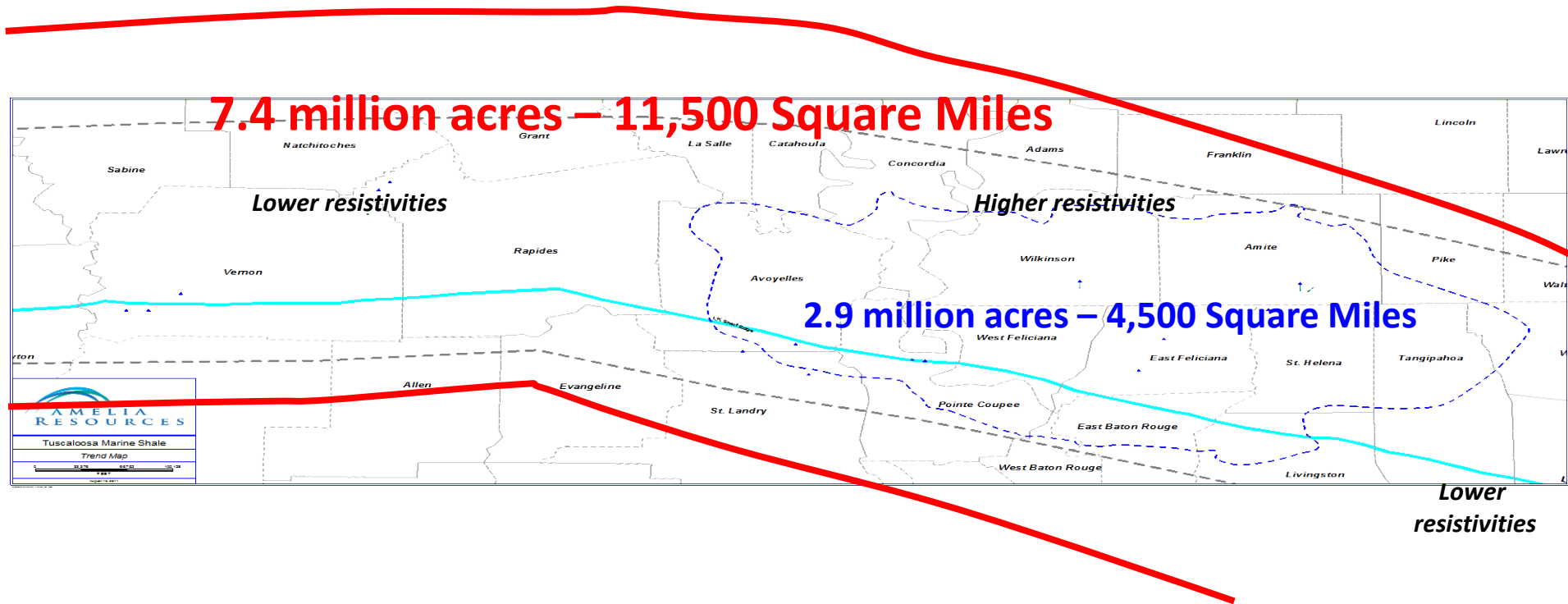
Publications

- New Orleans Geological Society South Louisiana Field Studies 2010: "Port Hudson Field"
- New Orleans Geological Society SLOPES Conference 2003: "Sequence Stratigraphy and Structural Trap Styles of the Tuscaloosa Trend"
- GCAGS Convention 1997: "Sequence Stratigraphy and Structural Trap Styles of the Tuscaloosa Trend"
- AAPG Convention 1997: "Conducting a Field Study With GIS: Port Hudson Field, The Tuscaloosa Trend"

Play Overview

- 2.9-7.4 million acres prospective
- Proven source rock
- Proven producer
- Eagle Ford age equivalent
- Oil-prone unconventional reserves

Potential Play Boundaries



Play History

• 70's

- 1971 - Sun #1 Spinks, Pike County, MS; cored over 310' of the TMS; plugged as non-commercial after perforating 24' of TMS and fracking with 30,000 lb. of sand & gelled diesel oil at up to 6,200 psi
- 1974 - Callon #1 Cutrer, Tangipahoa Parish, LA; junked and abandoned after running an uncemented liner through the TMS.
- 1975 - Callon #2 Cutrer, cored 120' of the TMS; fracked and produced from 60' of TMS perforations until 1991; fracked with about about 80,000 lbs. of sand & gel oil, but the tubing ruptured at about 15,000#, causing the frac to screen out; produced 2500 bbls oil
- 1977 - Texas Pacific #1 Blades, Tangipahoa Parish, LA; produced 24 MBO over 30 years from 134' of perforations, and is still producing a few barrels per day

• 80's

- Two blowouts: Exxon #1 Jackson 4-14 Amite, MS and the Amerada Hess #1 Montrose Plantation, Wilkinson, MS

• 90's

- 1998 - UPRC #5 Richland Plantation in E. Feliciana, LA; IP'd 117 bopd and 42 mcfgd and produced 4 MBO of 38.2 gravity oil
- 1998 - Worldwide #1 Braswell 24-12, Pike, MS; re-completed as the first horizontal well in the TMS; produced 12.7 MBO to date and is currently producing at a rate of 2 bopd.

Play History continued

• 2000's

- 2000 - Petroquest Lambert H-1, Amite, MS; horizontal well; cored the TMS; IP'd at 54 bopd and produced 11.6 MBO over nine years; currently produces 1 bopd
- 2004 - Worldwide Companies #1A Spears in Amite, MS; produced 11.8 MBO to date; currently producing 1 bopd.
- 2005 – Encore Joe Jackson 4-13H, Amite, MS; twinned the Exxon #1 Jackson 4-14 that blew out in the shale in 1982; lateral length of 1650'; 3 frac stages; initially averaged 74 bopd on pump; produced 25.8 mbo over the first two years of production and has produced 28.8 mbo to date
- 2007 – Encore Richland Plantation #1; lateral length of 3100'; 3 stage frac; averaged 14 bopd over the first two years with cumulative production of 10.7 mbo.
- 2008 – Encore Weyerhaeuser #1; St. Helena, LA; 17,000 ft with a 4,100' lateral; initial potential of 323 bopd, 1 mcfgd, 360 bwpd, 3800 sitp, 3100 cp, 12/64, 20% bs&w, and 38.7 gravity; The well has produced 27 mbo.
- 2008 – Encore Board of Education 1H, Amite, MS; 3814' lateral; never completed due to acquisition by Denbury Resources
- 2010 – Devon Energy commences leasing across the play.
- 2011 – Encana, Goodrich, EOG, Indigo Minerals and others commence leasing across the play.

Why Now?

- Other shale plays with more proven geologic properties have become very competitive, expensive, and leases are scarce.
- Eagle Ford Shale: success; similar age
- Oil prices are at very economically attractive levels.
- Most shale gas projects are uneconomic at current prices.

Opportunity Summary

- Extremely attractive lease terms
- Existing infrastructure
- Oil industry friendly environment
- Hundreds of existing wellbore penetrations
- Austin Chalk: secondary target (southern area)

SWOT Analysis

STRENGTHS

- Hydrocarbon source rock
- Secondary targets
- Proven producer
- Large geographic extent
- Thick (~150-200')
- Numerous existing wellbores

WEAKNESSES

- Questionable rock properties: brittleness, TOC, permeability
- Unproven completion practices
- Unproven production rates
- Unproven economics

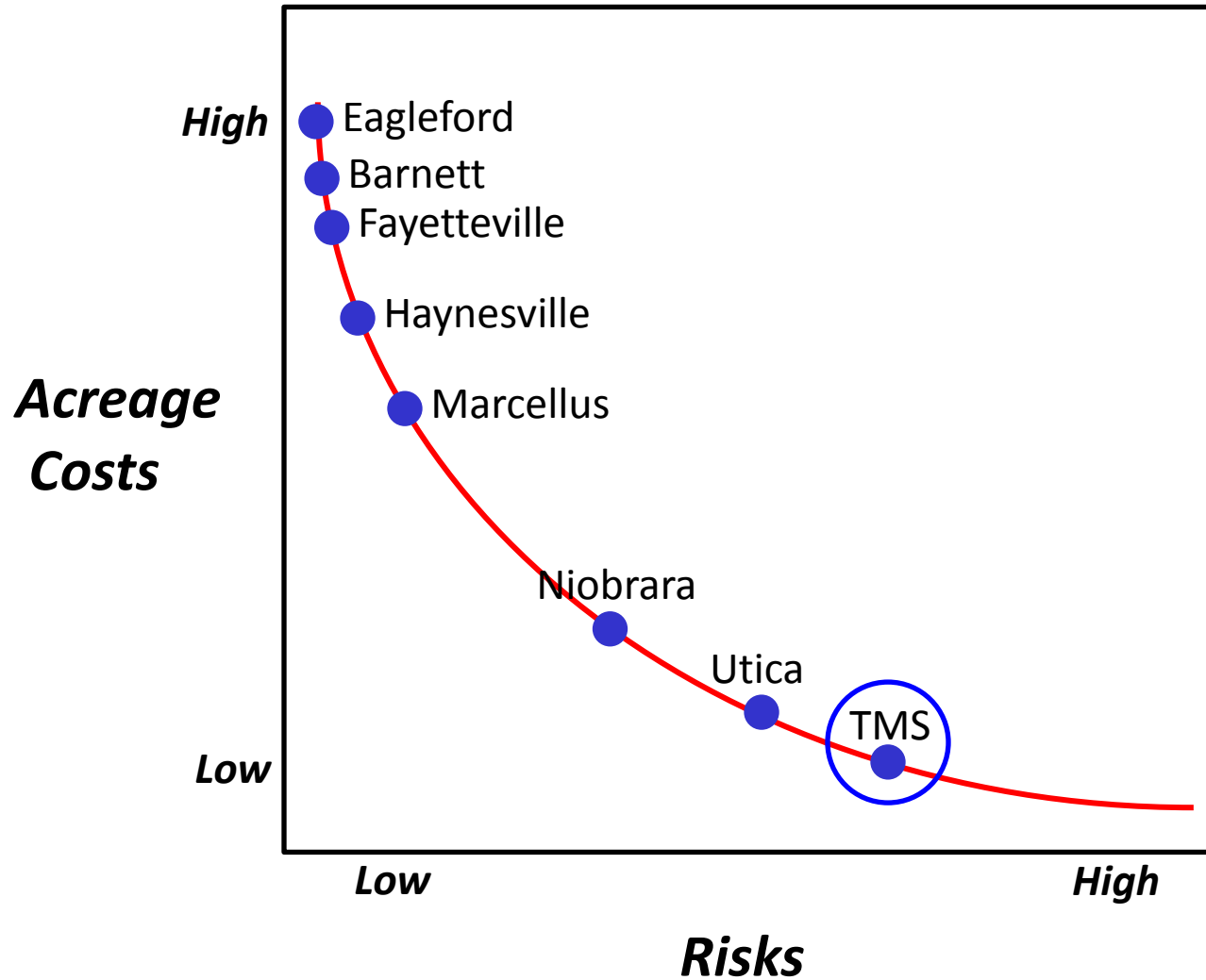
OPPORTUNITIES

- Acreage: available, low cost, and attractive royalties

THREATS

- Active leasing
- Active transactions

Risks vs Costs



Major Leaseholders

February 2012

- Encana – 250,000+ acres
- Devon – 250,000+ acres
- Indigo Minerals – 255,000 acres
- EOG – 120,000+ acres
- Goodrich Petroleum – 85,000+ acres

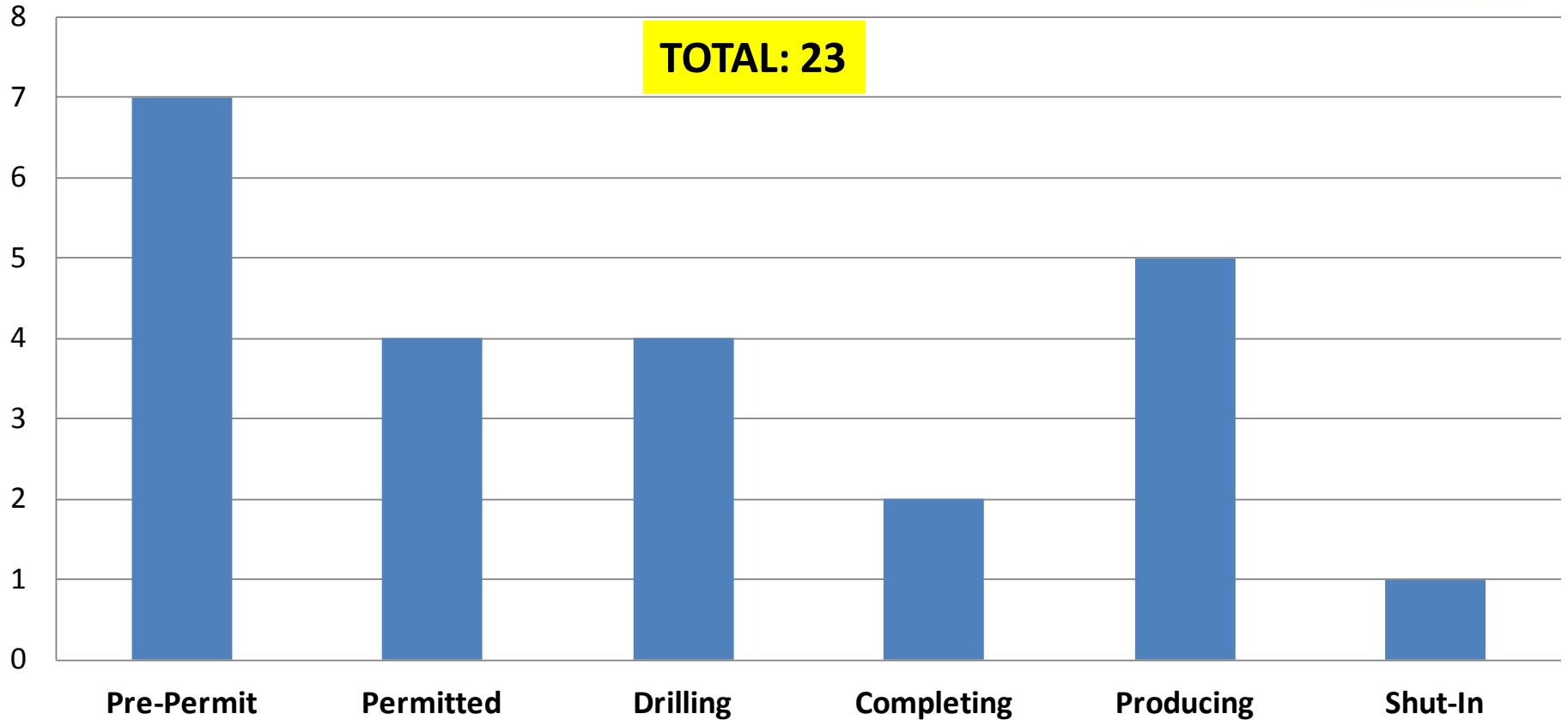
Joint Ventures

- Encana/Denbury
- Devon/Sinopec
- EOG/? (not announced)

Drilling Activity

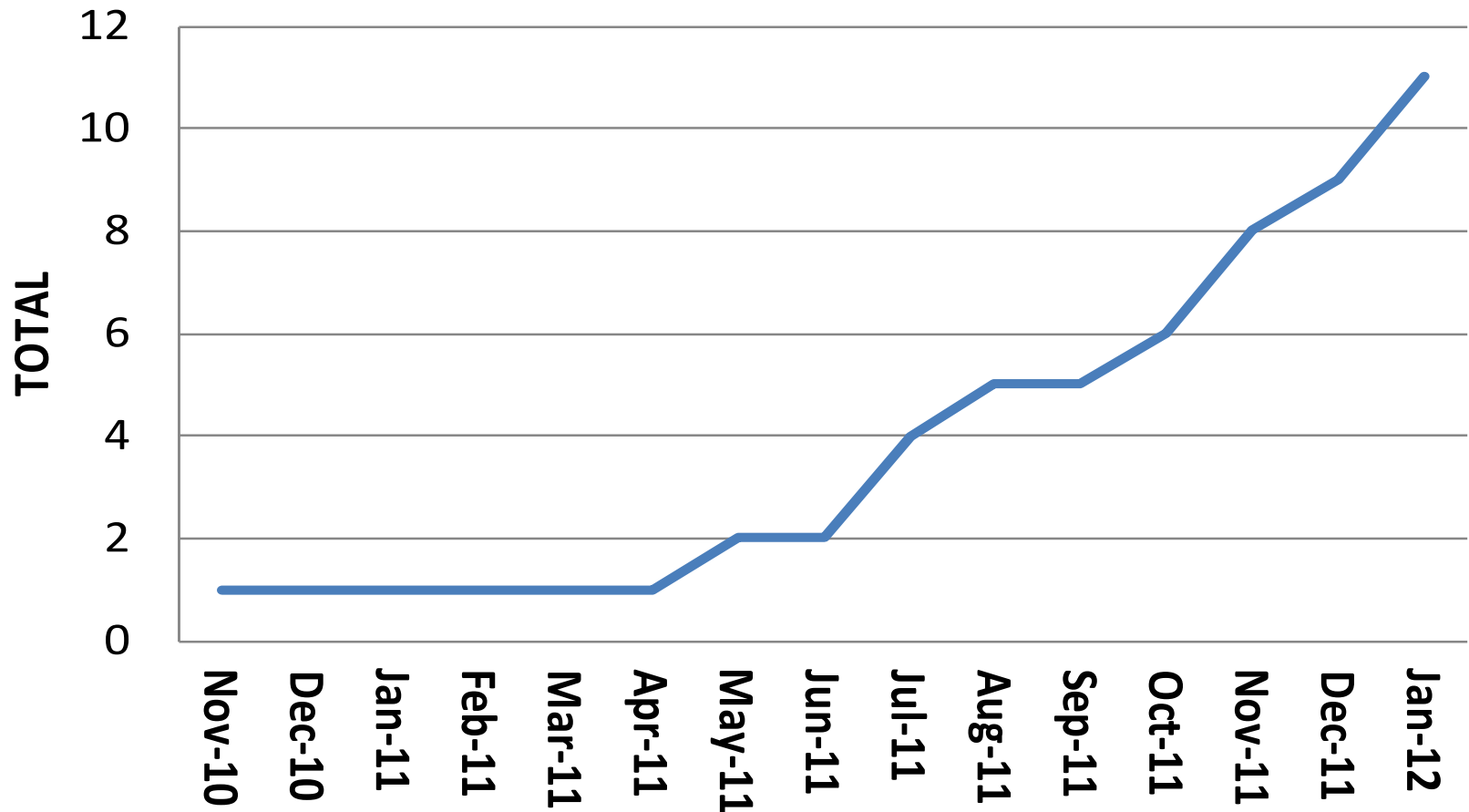
Tuscaloosa Marine Shale Wells

TOTAL: 23

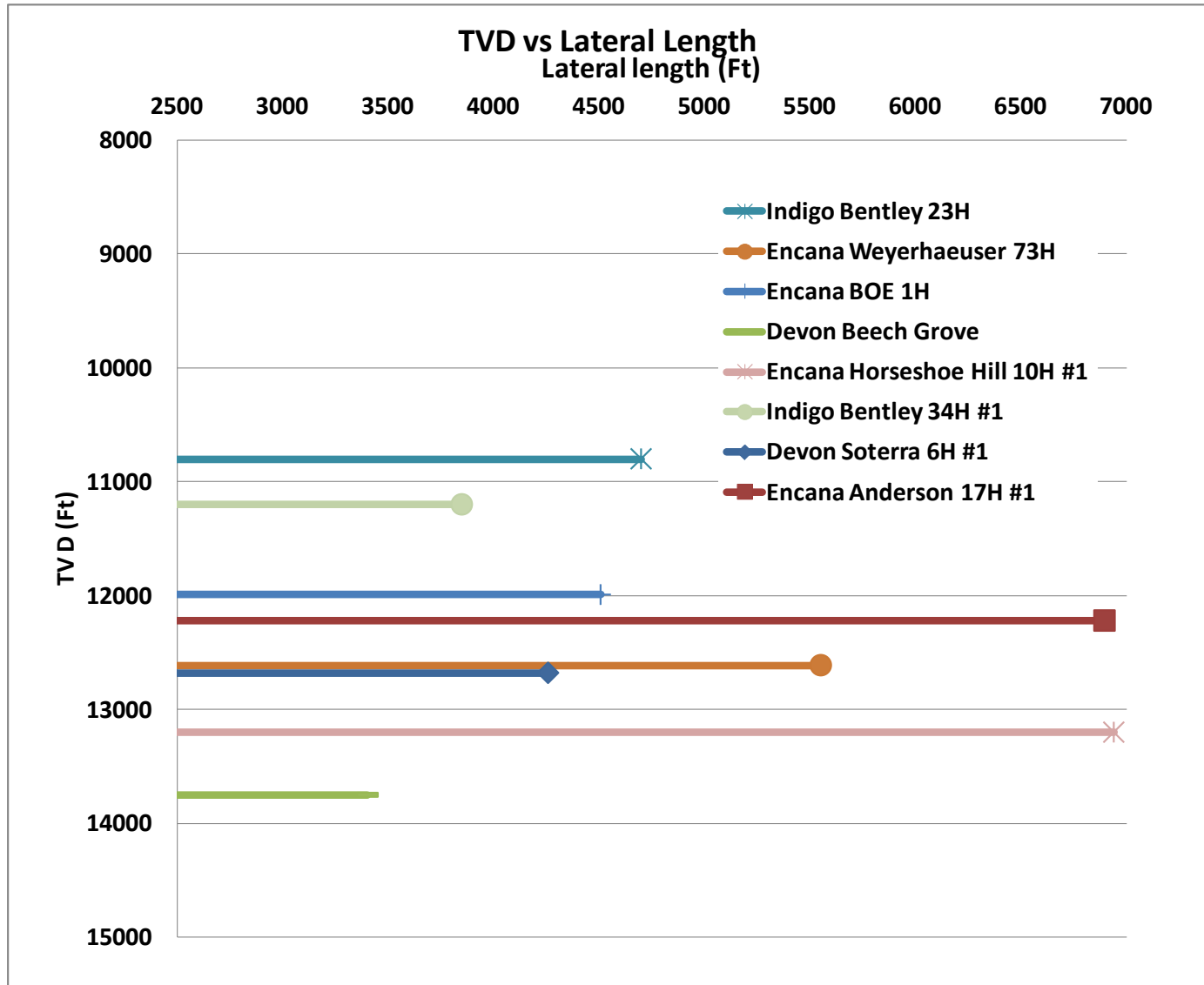


Drilling Activity

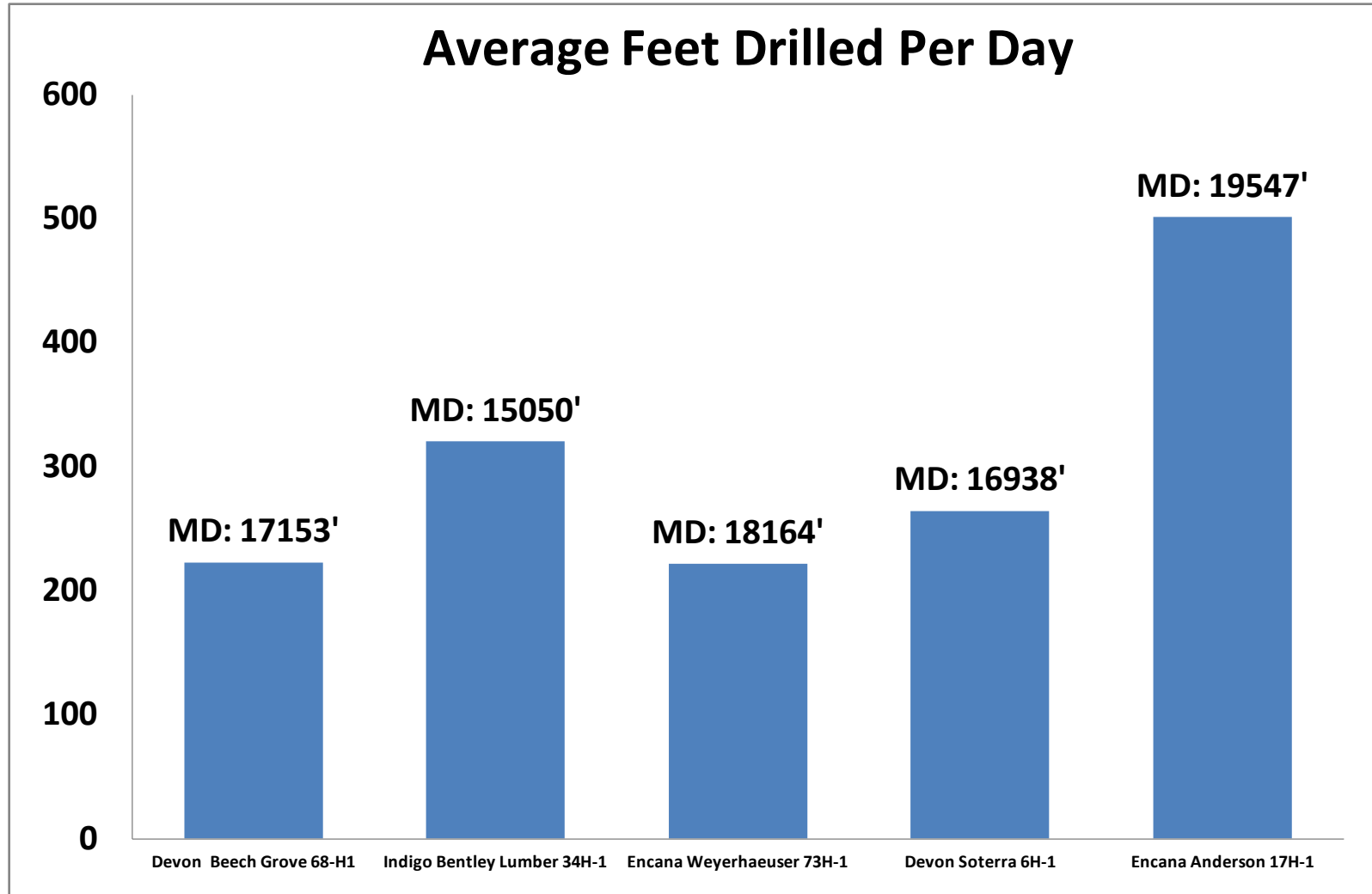
Cumulative TMS Wells Drilled



TVD vs Lateral Length



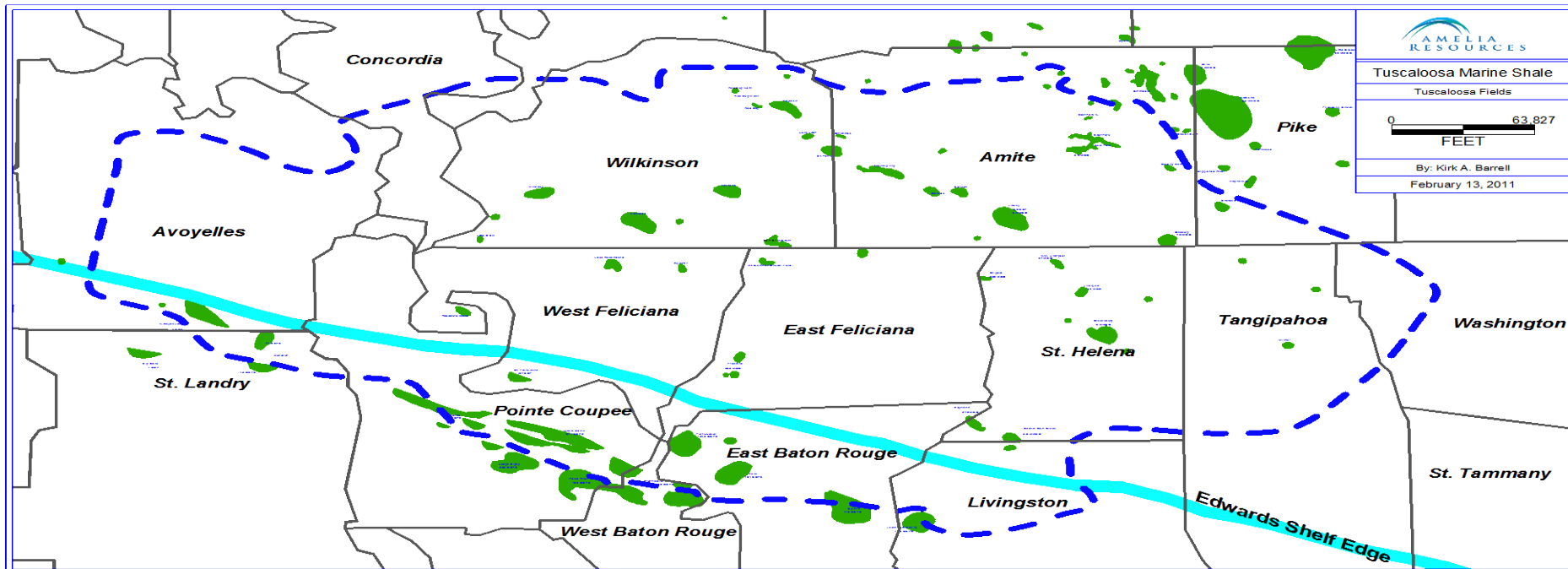
Drilling Activity



Play Benchmarks

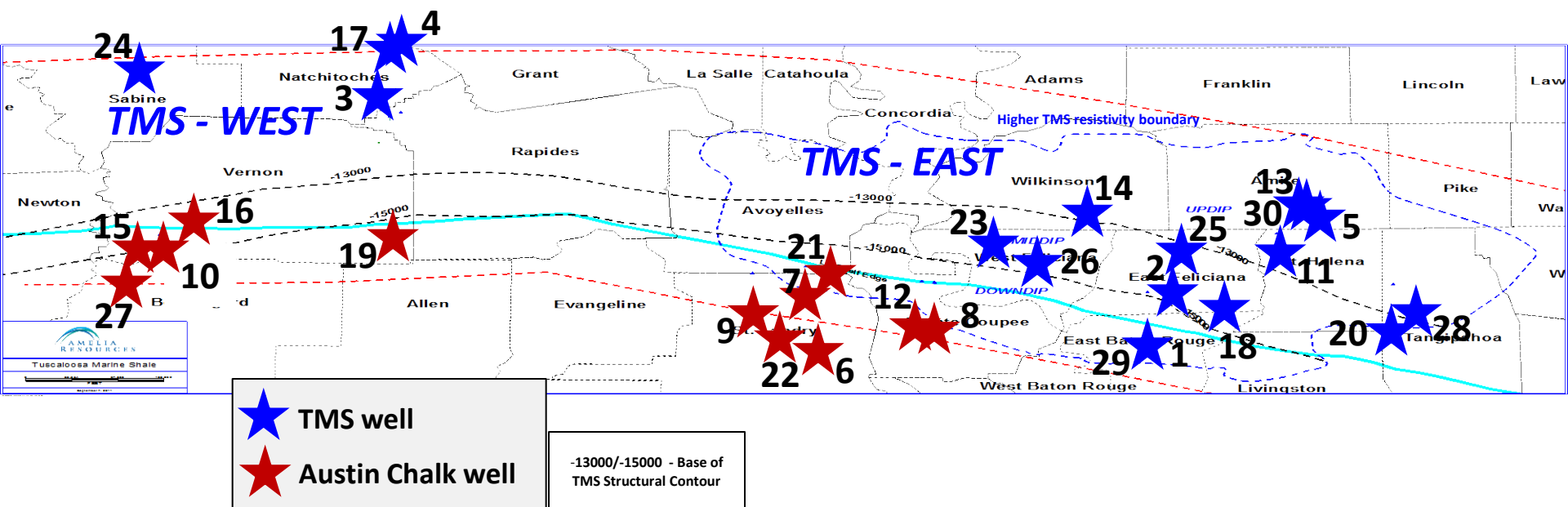
- Long Laterals – Encana, 7327’
- Drilling Time – Encana, 19547’ in 39 days
- Initial Potential – Encana, 784 bopd 309 mcfgd (837 boepd)
- 1st Year Production Decline: unknown

Tuscaloosa Sand Producing Fields



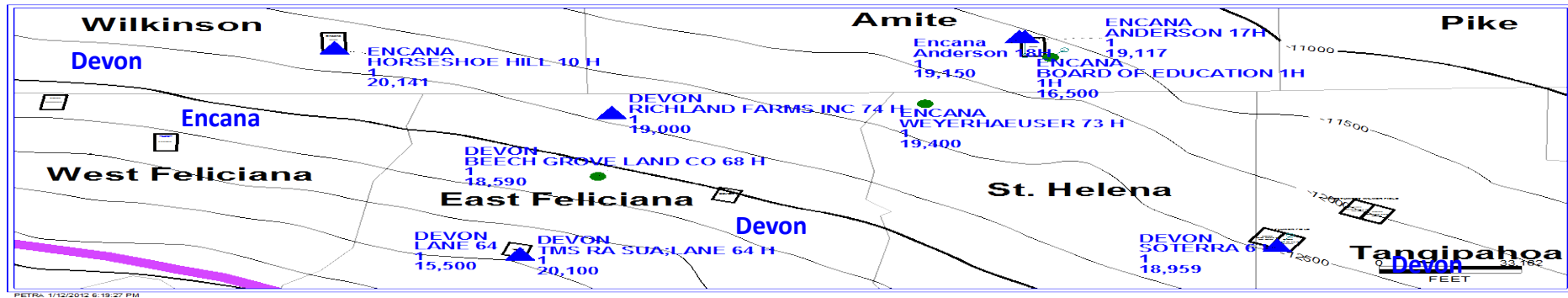
PETRA 2/13/2011 12:52:40 PM

Current Activity



Current Activity

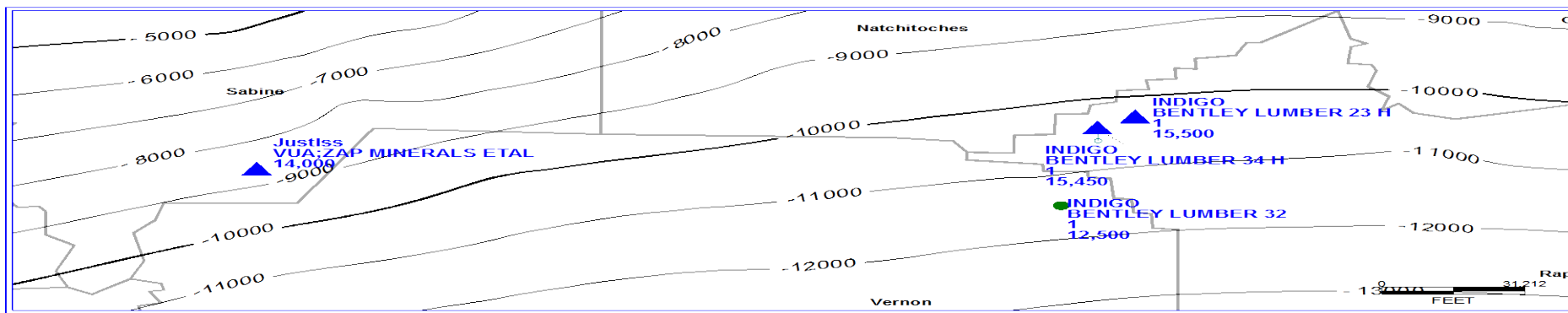
Base TMS Structure Map



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Current Activity

Base TMS Structure Map



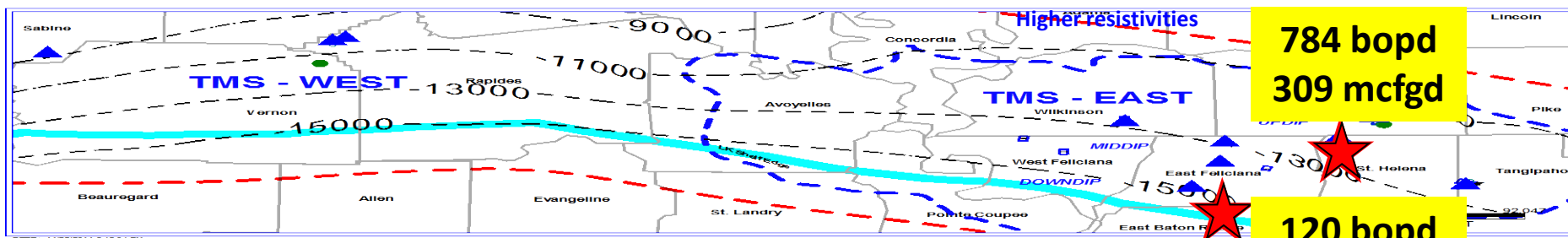
Recent Discoveries

- Encana Weyerhaeuser 73H-1: 784 bopd, 309 mcfgd
- Indigo Minerals Bentley Lumber 34H-1: 324 bopd, 154 mcfd
- Devon Energy Beech Grove 68H-1: 120 bopd, 100 mcfd

Tuscaloosa Marine Shale

Recent Initial Potentials

324 bopd
154 mcf/d

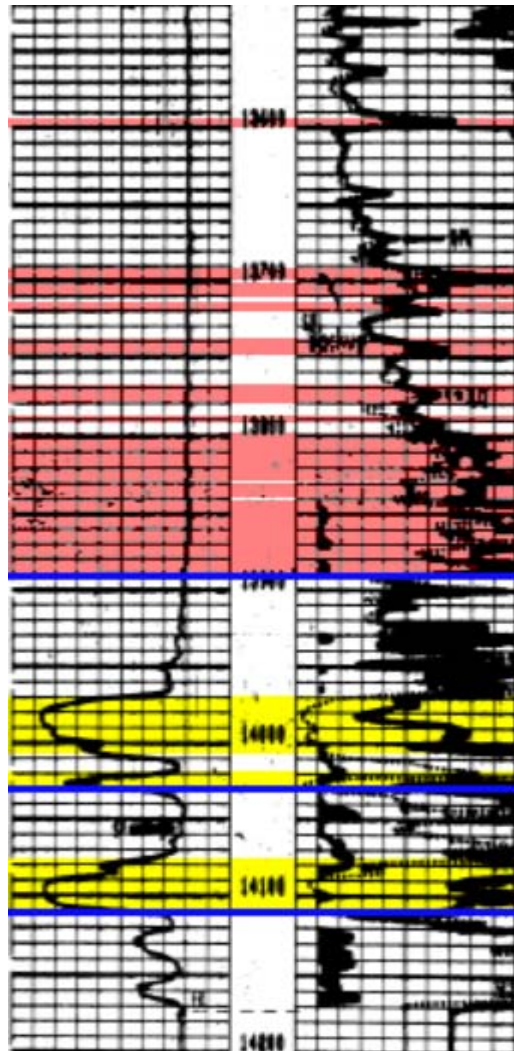


Tuscaloosa Marine Shale

Offset Wells To Devon Energy TMS Wells

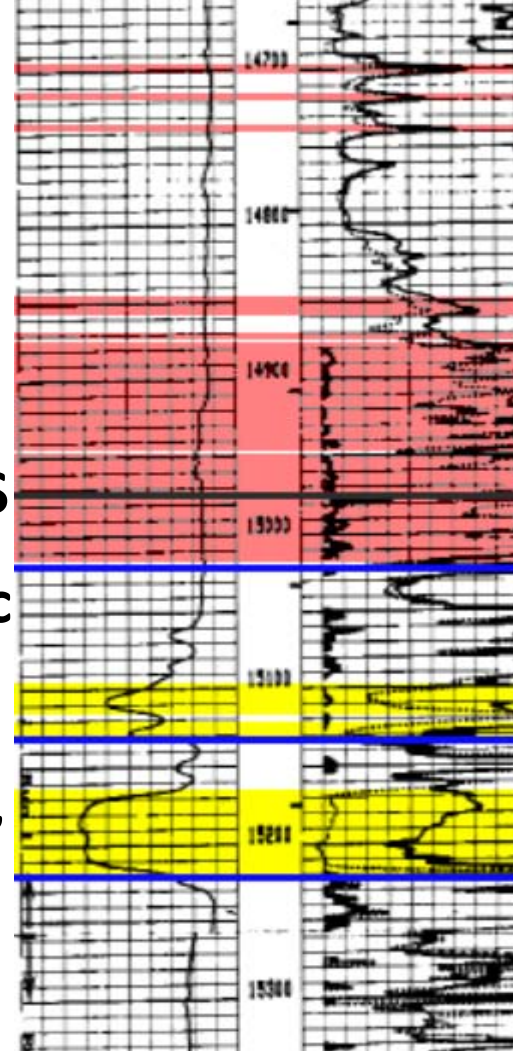
Great Southern J. Barton #1 2-2s-1e

(2.5 miles northwest of Devon Beech Grove 68H-1)



Exchange O&G Price #1 63-3s-1e

(1.1 miles north/northwest of Devon Lane 64-1)



TMS

Tusc

"A"

"B"

129' of resistivity
> 5 ohm-m

13890' MD

MW: 10.6 ppg,
267 deg. F @ 14280'

169' of resistivity
> 5 ohm-m

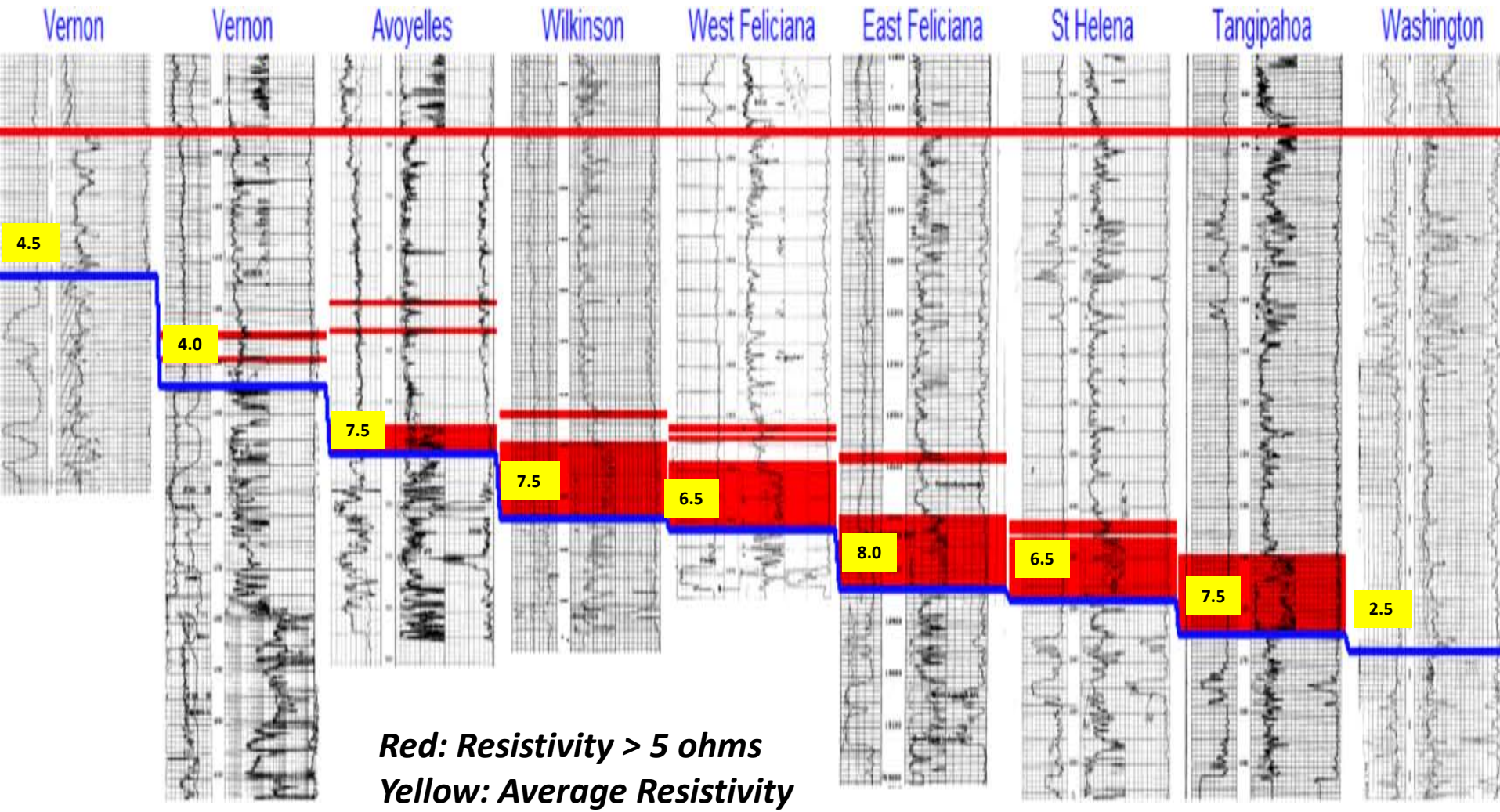
15020' MD

MW: 10.9 ppg
@15000'

236 deg. F
@15328'

Regional Strike Stratigraphic Cross Section

Average Resistivities



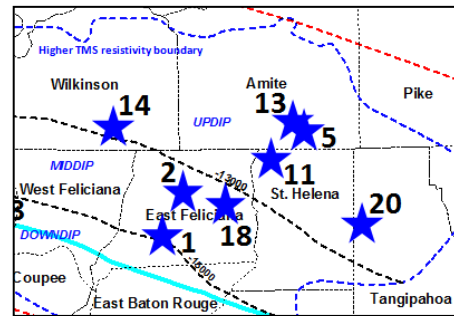
Drillsites



#14: Encana Horseshoe Hill 10H #1



#2: Devon Beech Grove 68H-1



#1: Devon Lane 64-1



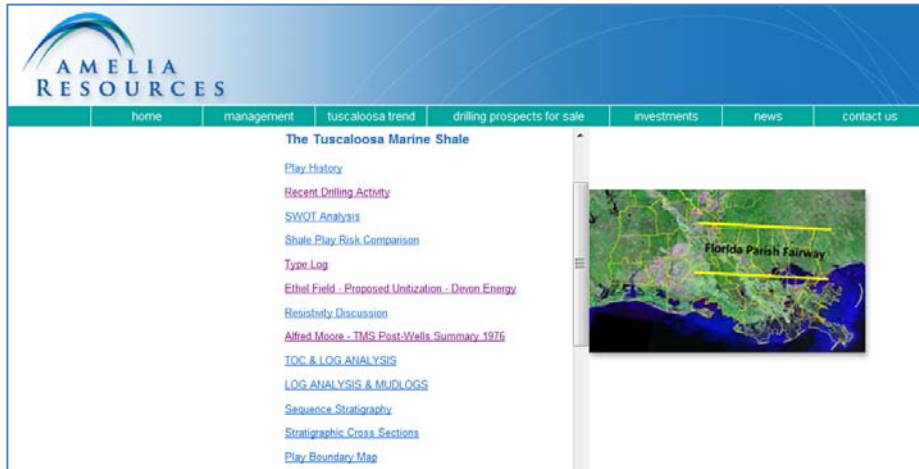
#11: Encana Weyerhaeuser 73H-1

Play Summary

- Play still unproven
- Several well capitalized companies have large lease blocks
- Several wells drilling and permitted
- First initial potentials are encouraging

Online Resources

www.ameliareources.com



<http://www.linkedin.com/pub/kirk-barrell/5/752/6a9>

Articles

http://www.indigominerals.com/docs/Emerging_Plays.pdf

<http://www.aapg.org/explorer/2011/08aug/tuscaloosa0811.cfm>

<http://theadvocate.com/news/business/1567513-123/agency-tuscaloosa-oil-well-tests.html>

<http://www.p2energysolutions.com/tobin-talk/tuscaloosa-marine-shale-brings-new-attention-louisiana>

www.tuscaloosatrend.blogspot.com

Tuscaloosa Trend

Discussion On Central Louisiana Oil & Gas Activity

TUESDAY, JUNE 7, 2011

Devon Energy Lane 64-1 at 12000'



Devon Energy Lane 64-1

Drilling at 12000'

SONRIS:
DRLD T/ 12000'; CIRC; LWD F/ 12000-15040';

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