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Analysis of the SCOOP/STACK Plays in Oklahoma

September 21, 2017

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Ryder Scott Company - Denver

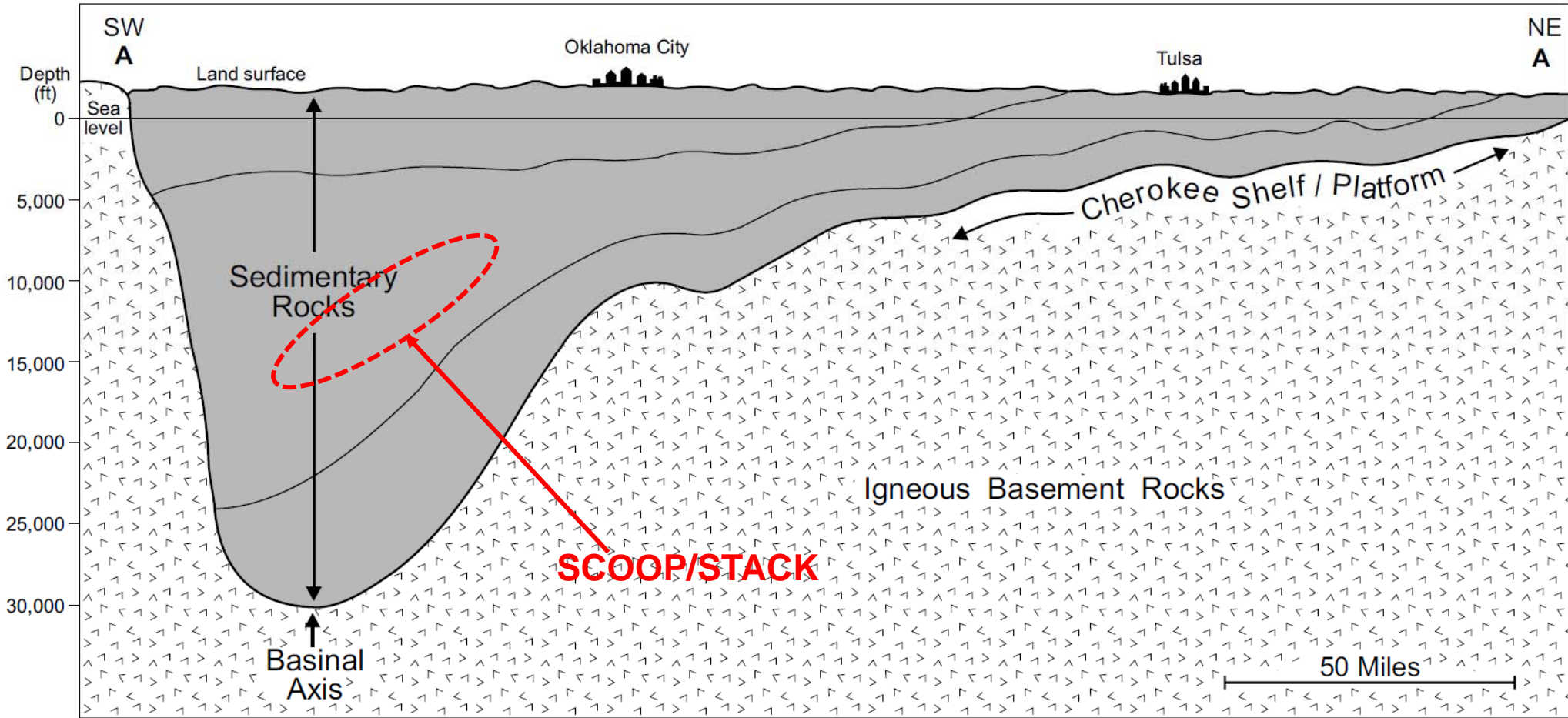


Outline

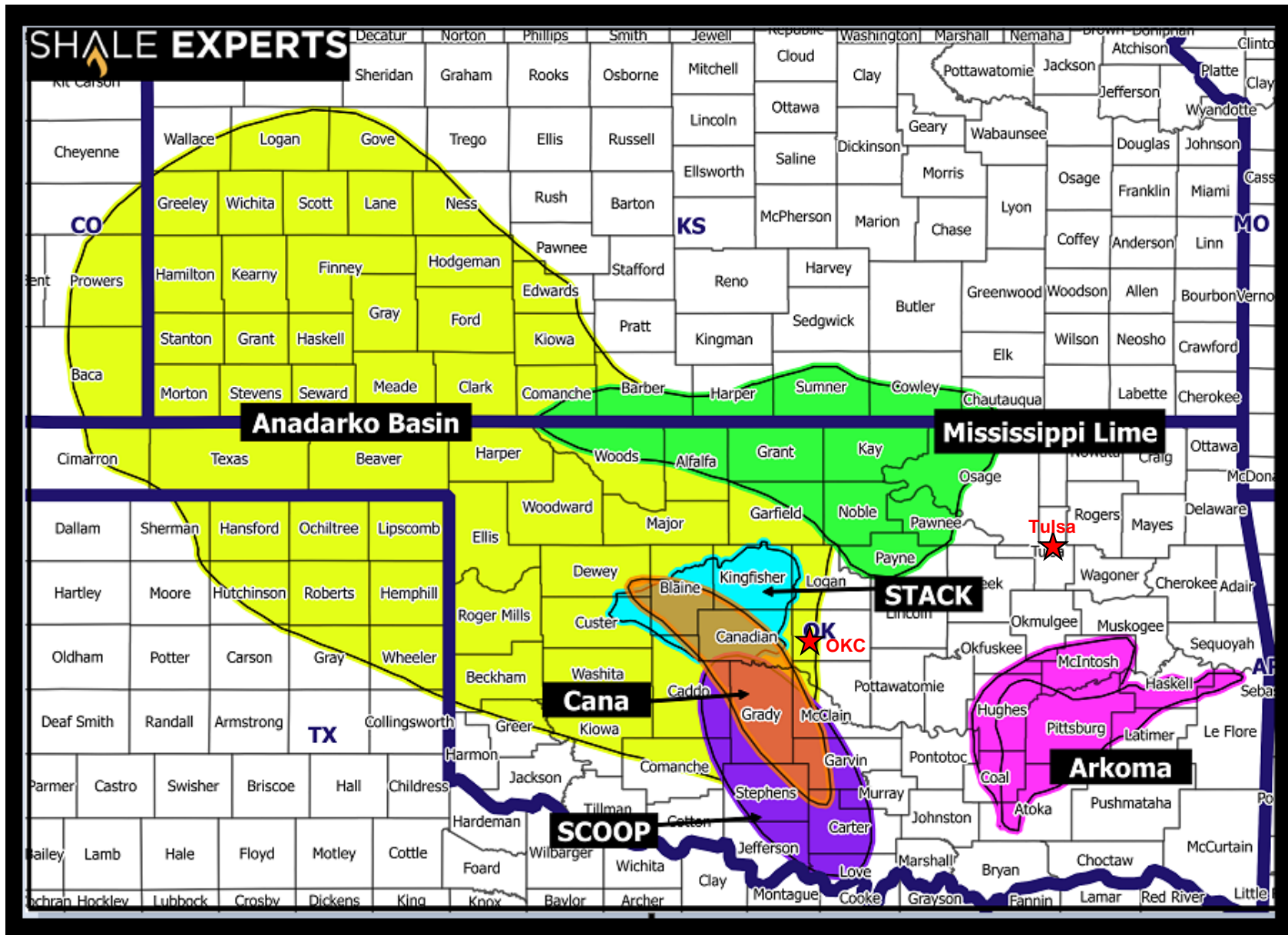
- Play Overview
- Geology, Pressure and Phase Windows
- Reservoir Performance
- What's Next?

Play Overview

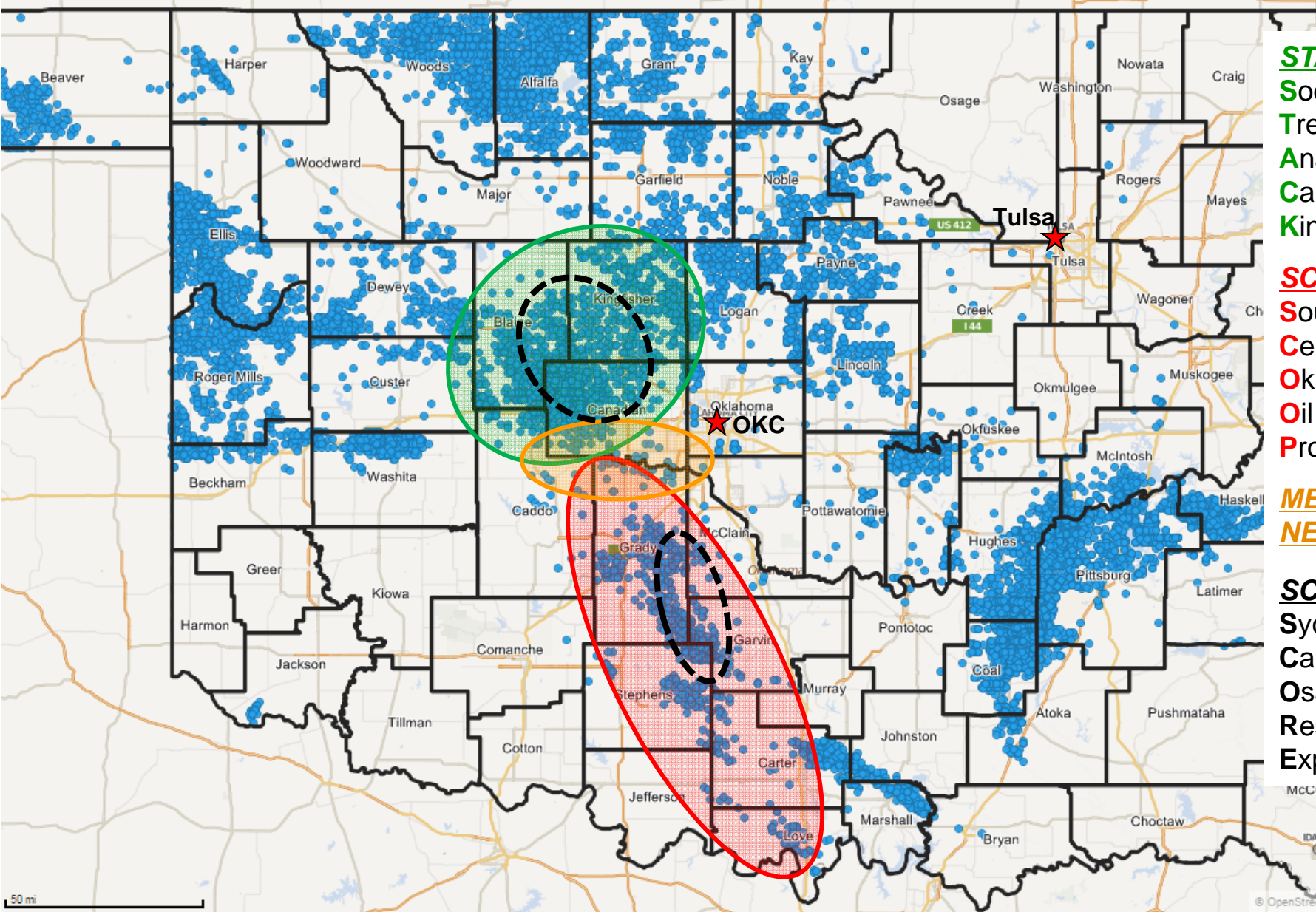
Anadarko Basin



Multiple Plays in the Area



Nomenclature



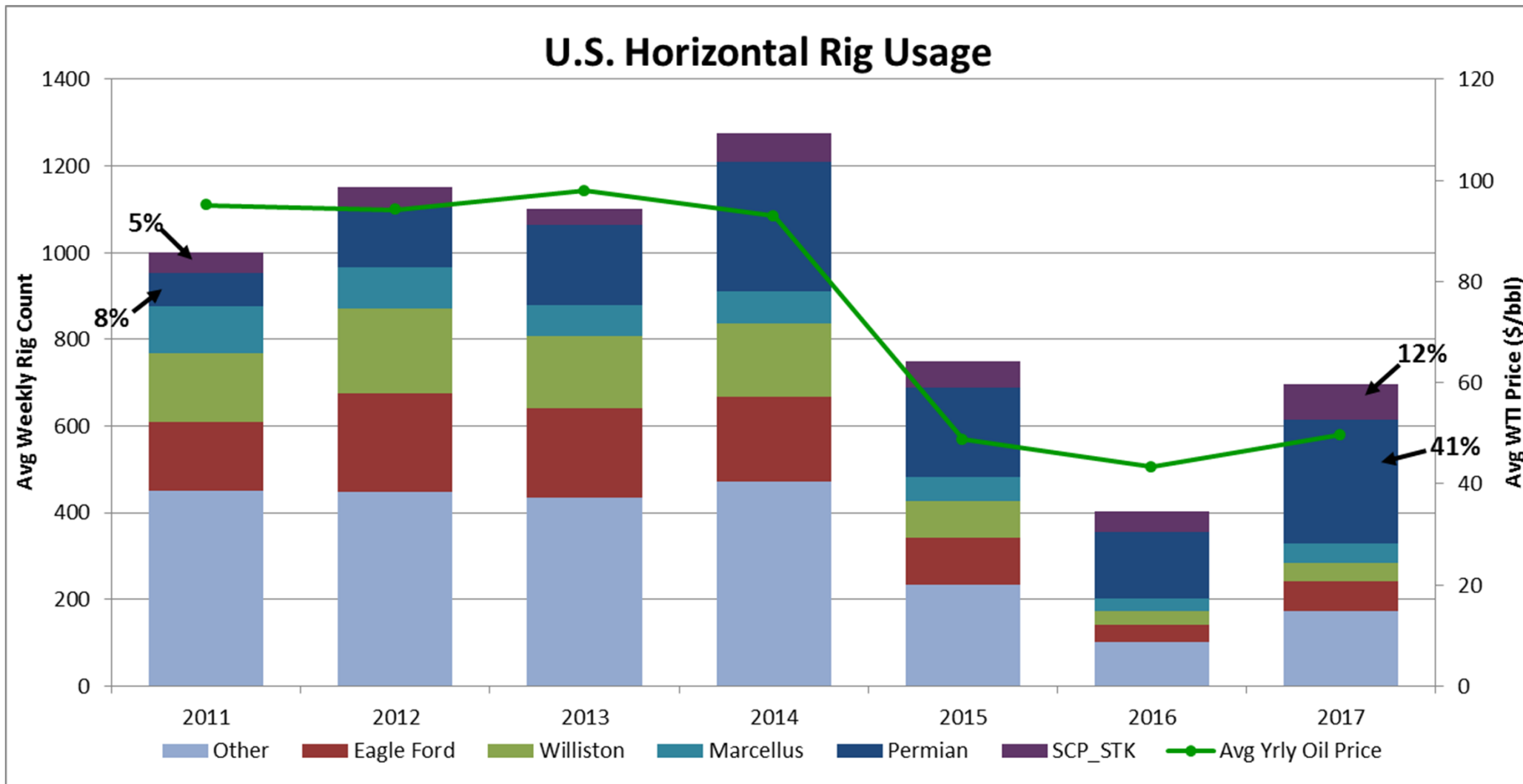
STACK
 Sooner
 Trend
 Anadarko Basin
 Canadian and
 Kingfisher Counties

SCOOP
 South
 Central
 Oklahoma
 Oil
 Province

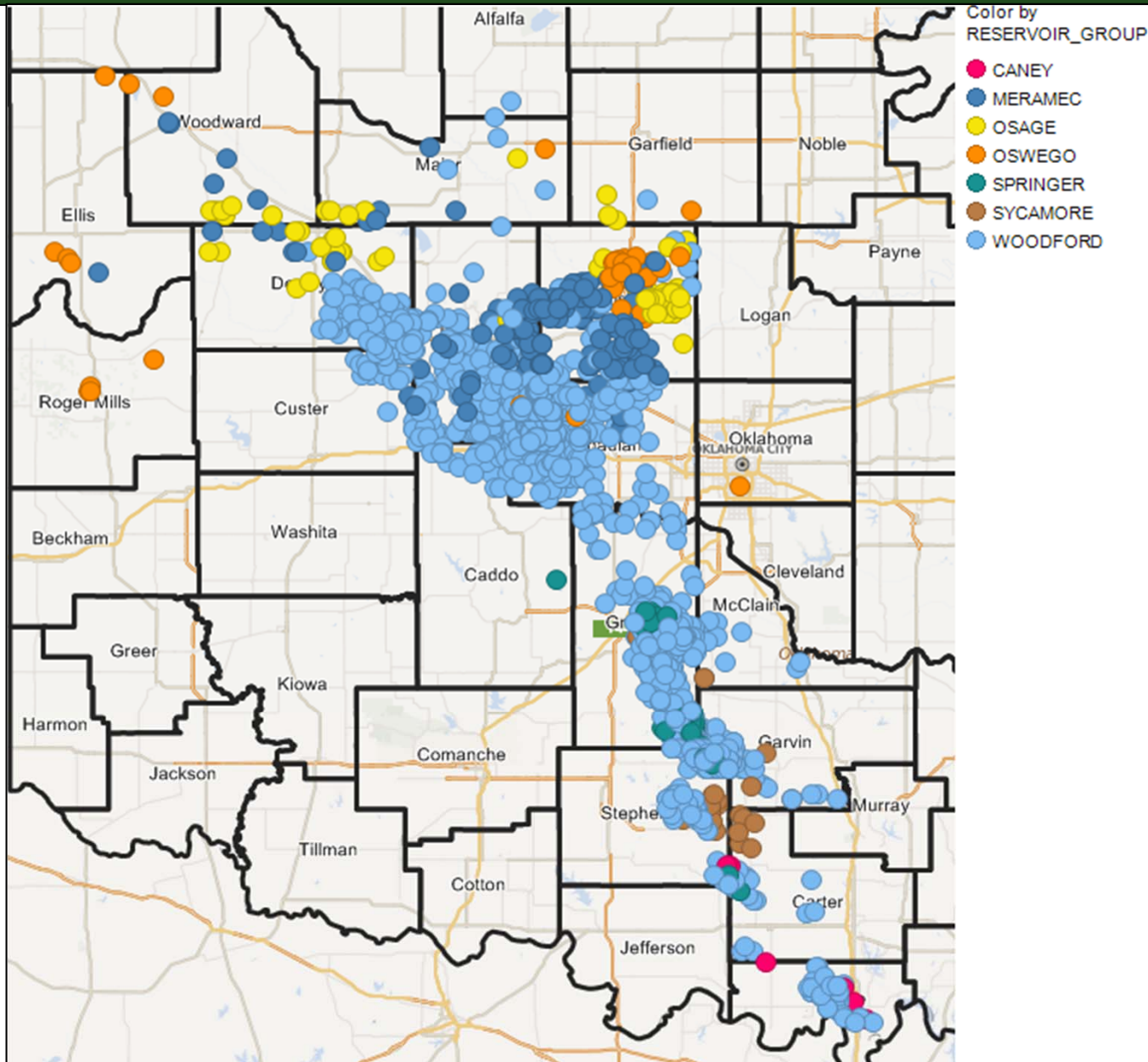
**MERGE/STOOP/
 NECK**

SCORE
 Sycamore
 Caney
 Osage
 Resource
 Expansion

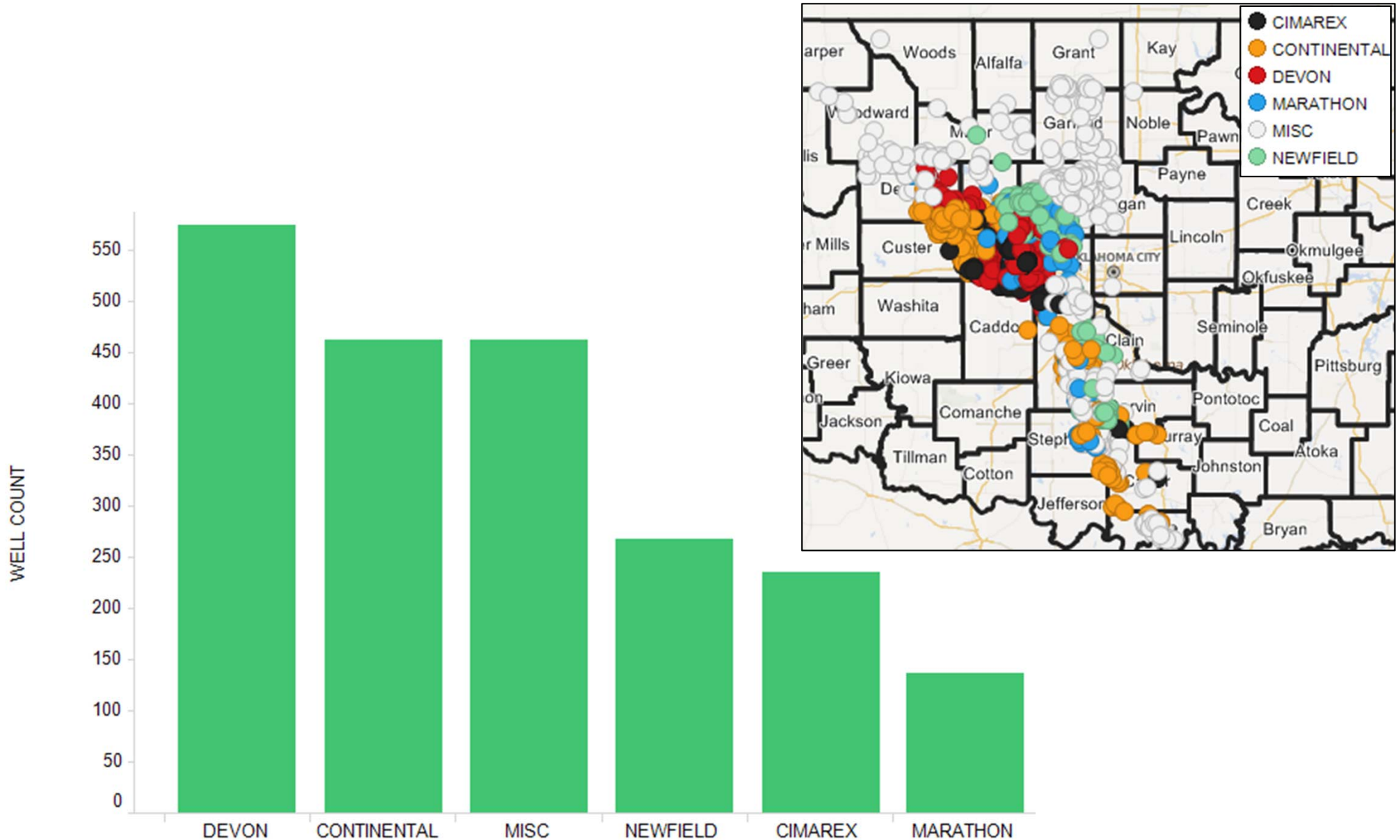
Development Pace



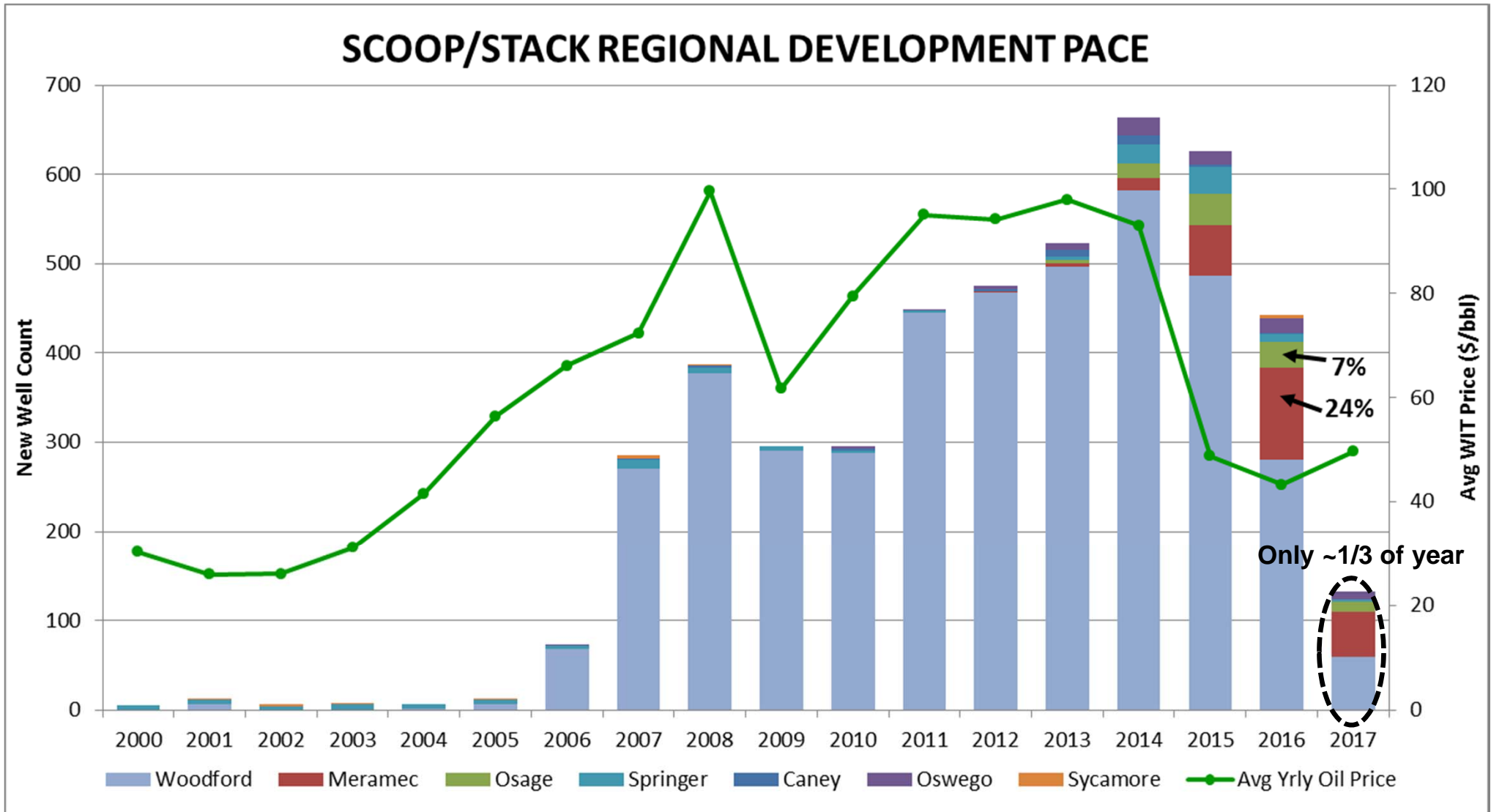
Horizontal Well Locations by Reservoir



Major SCOOP/STACK Operators

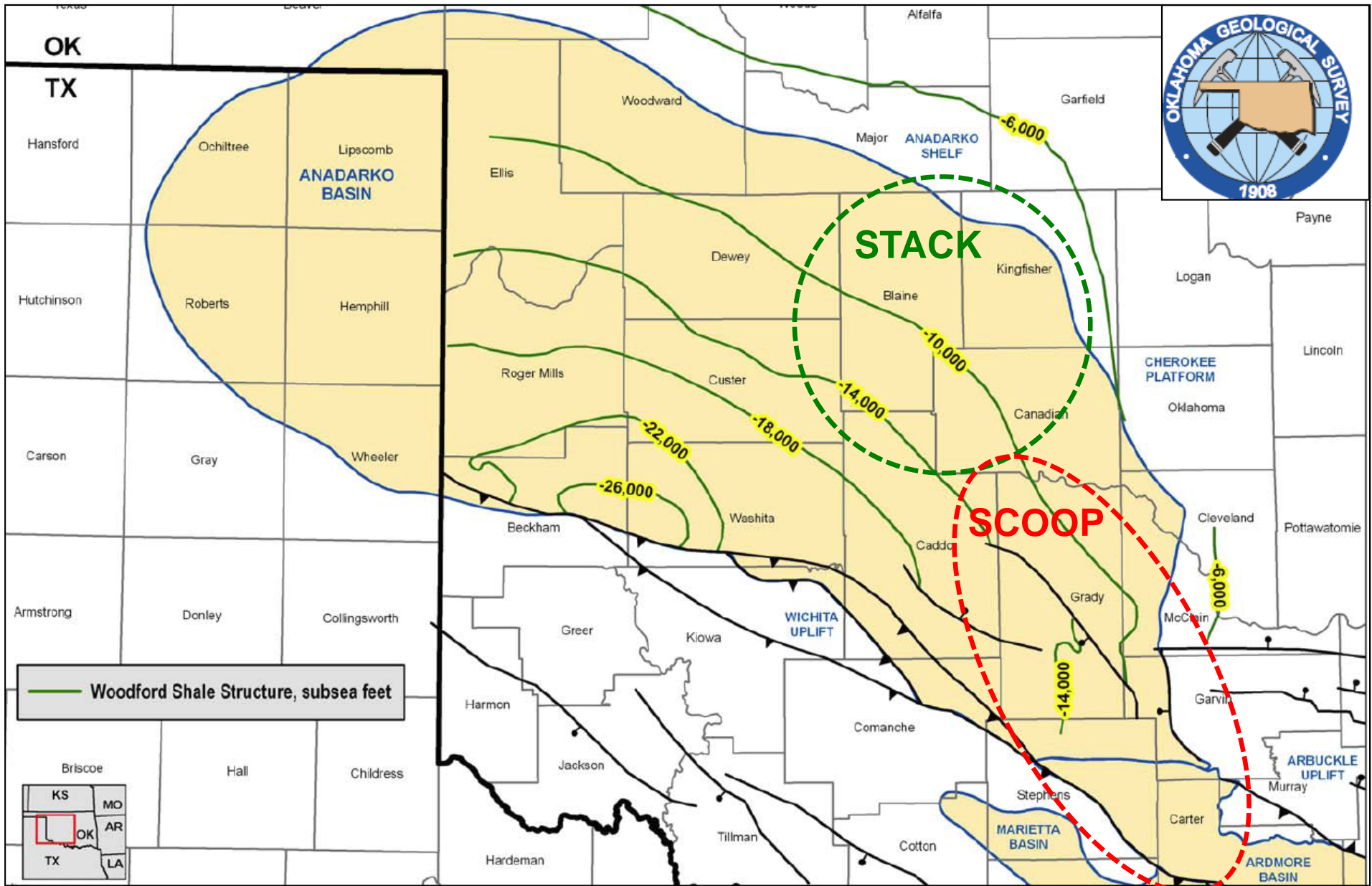


Regional Development Pace

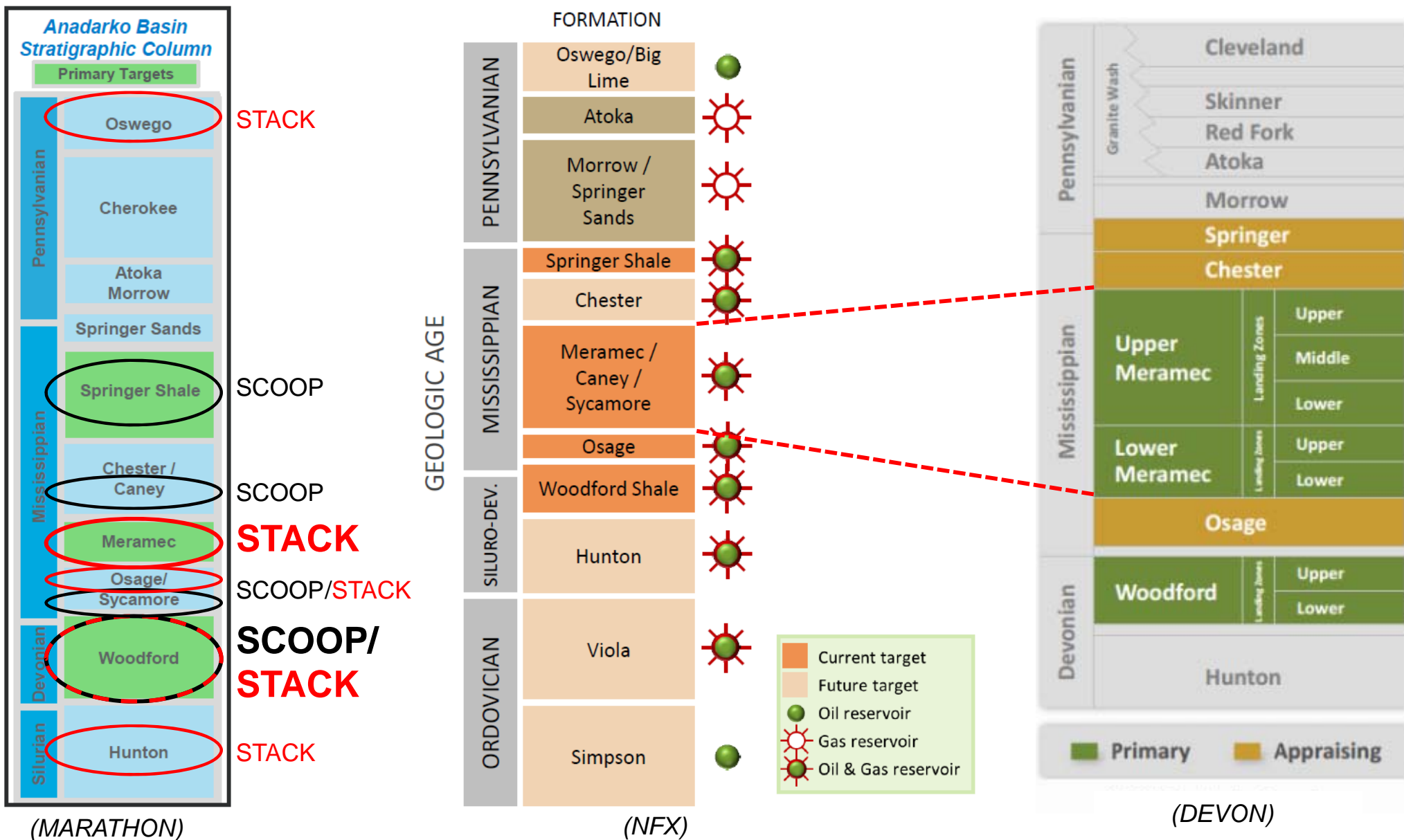


Geology, Phase Windows and Pressure

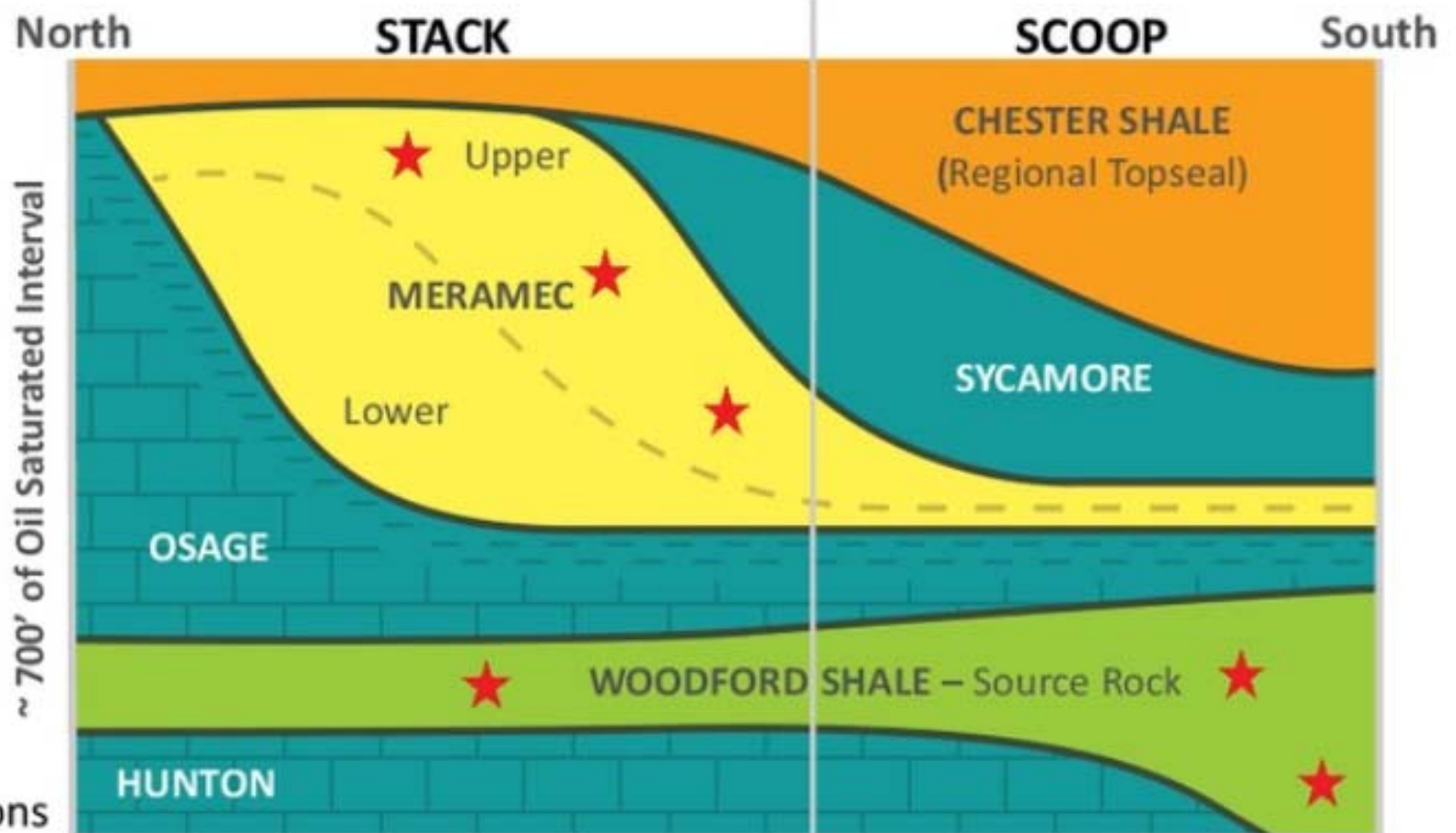
Woodford Structure



Stratigraphic Column

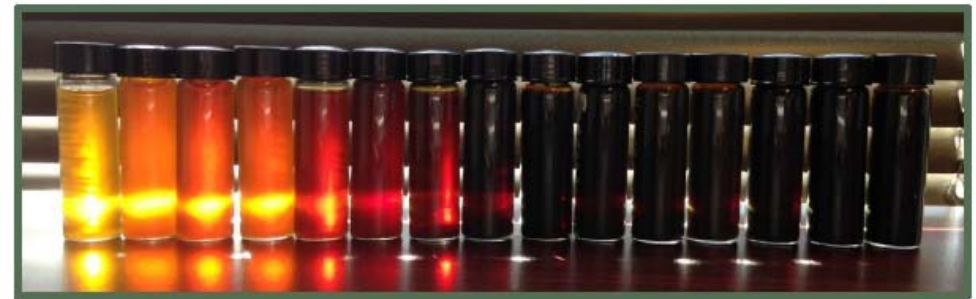
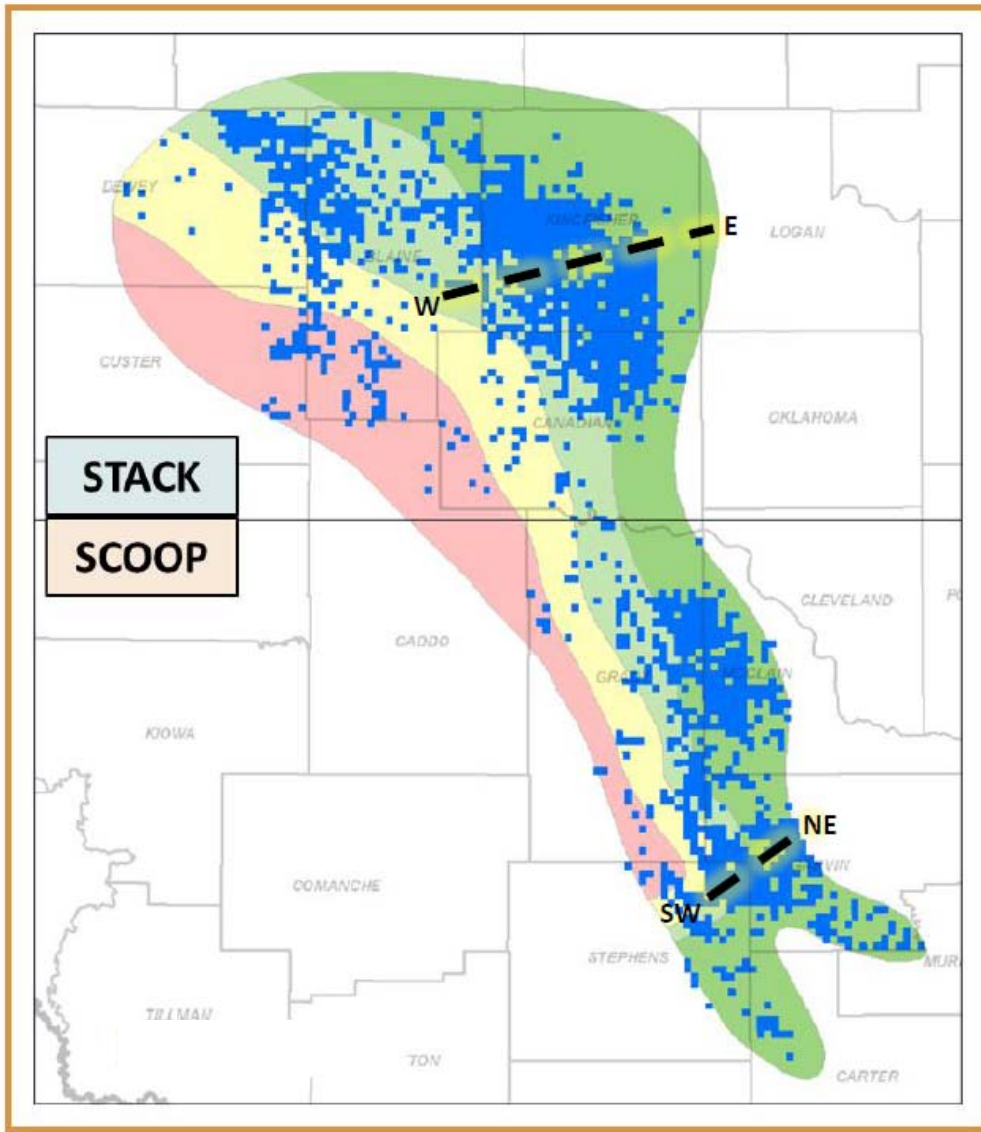


Cross-Section



	STACK Meramec	STACK Woodford	SCOOP Woodford
Thickness	275-475'	200-300'	225-350'
Porosity	3-6%	3-7%	3-10%

Woodford Phase Windows

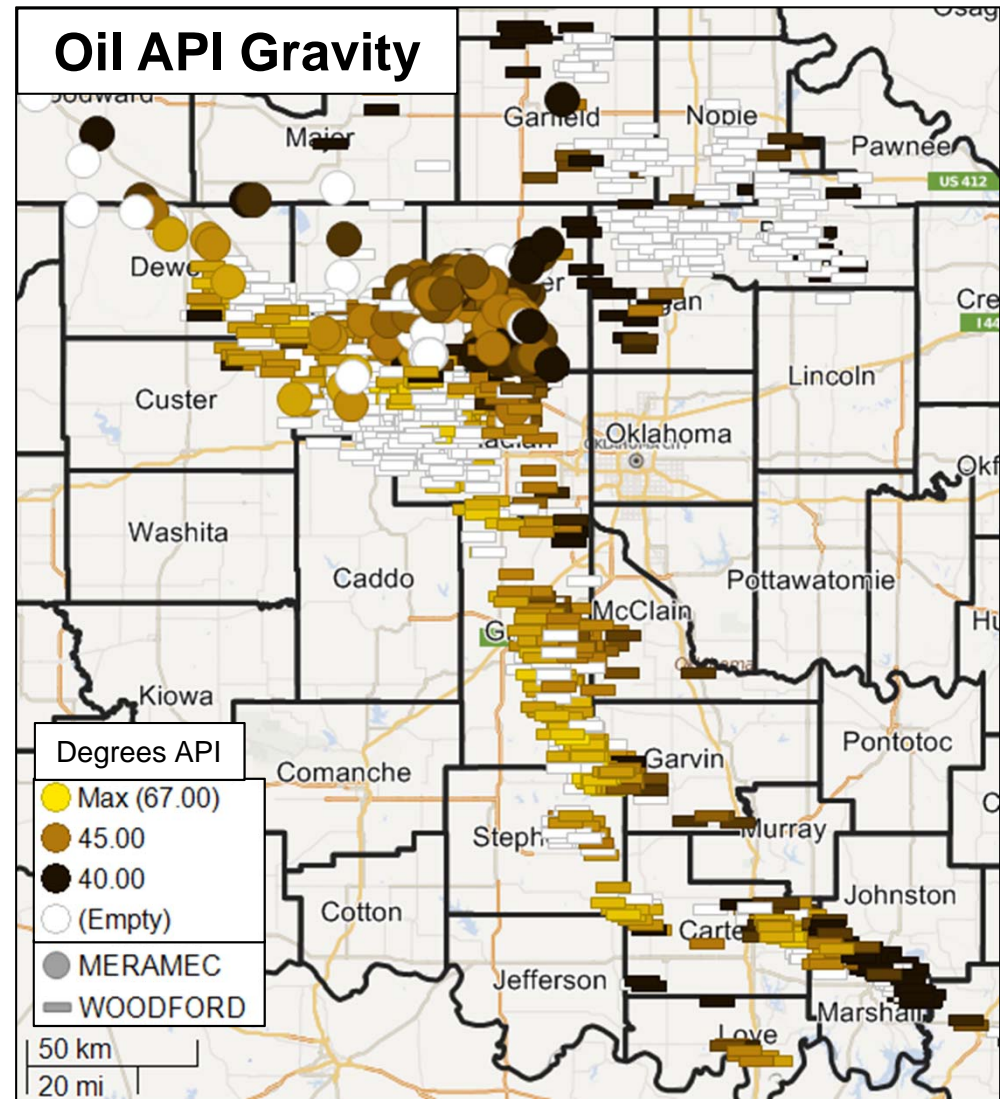
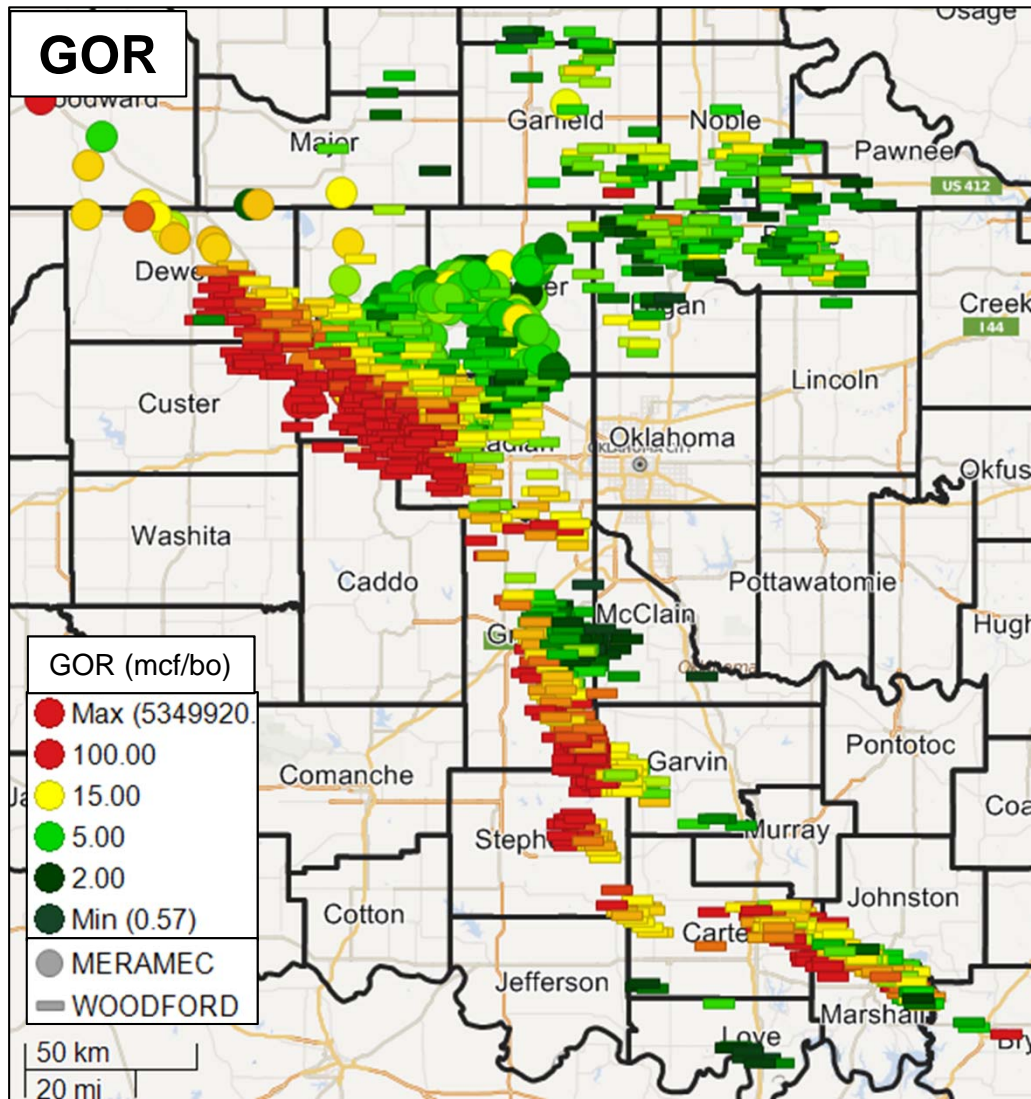


Crude API	60	40
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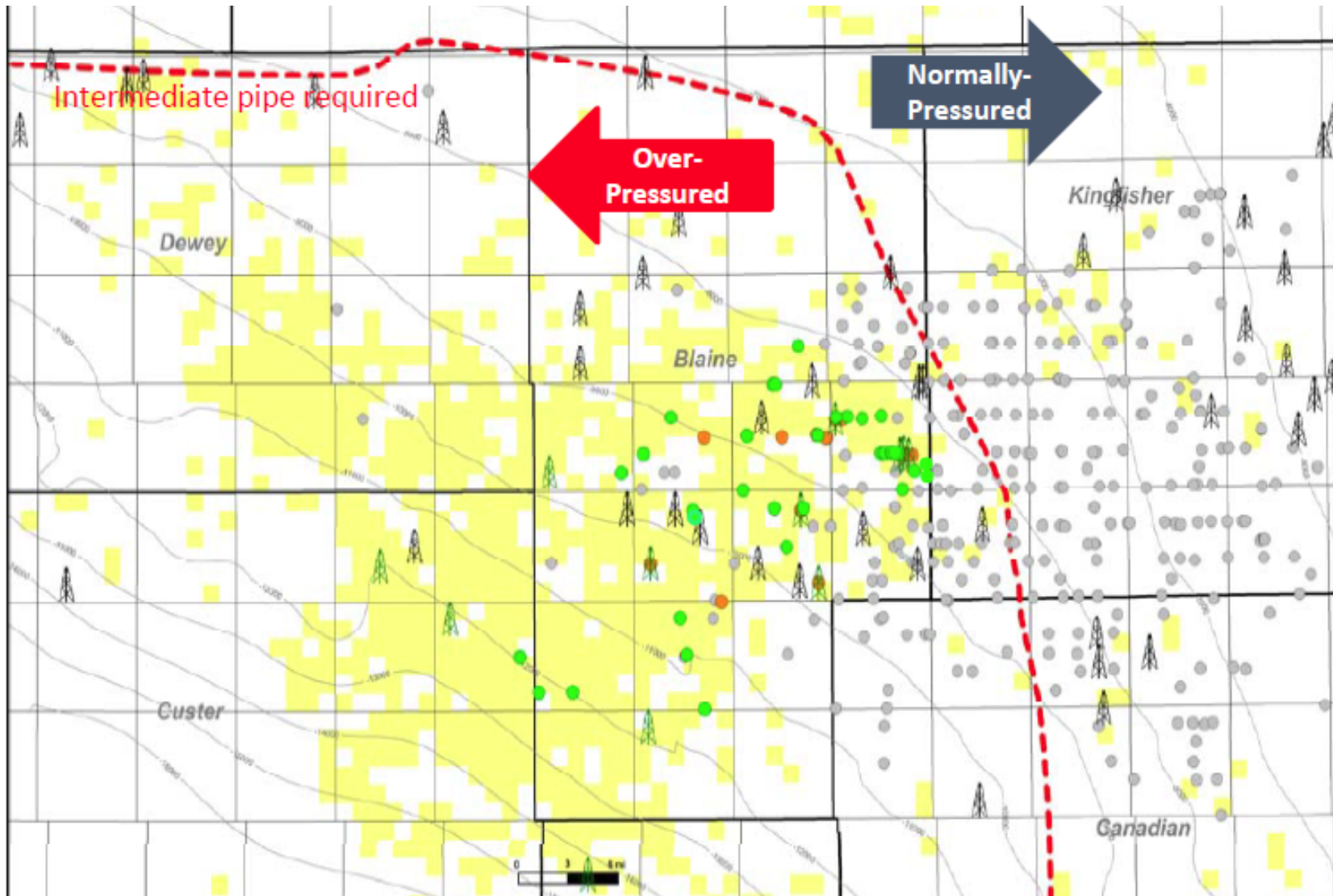


Crude API	60	40
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Woodford & Meramec Phase Windows



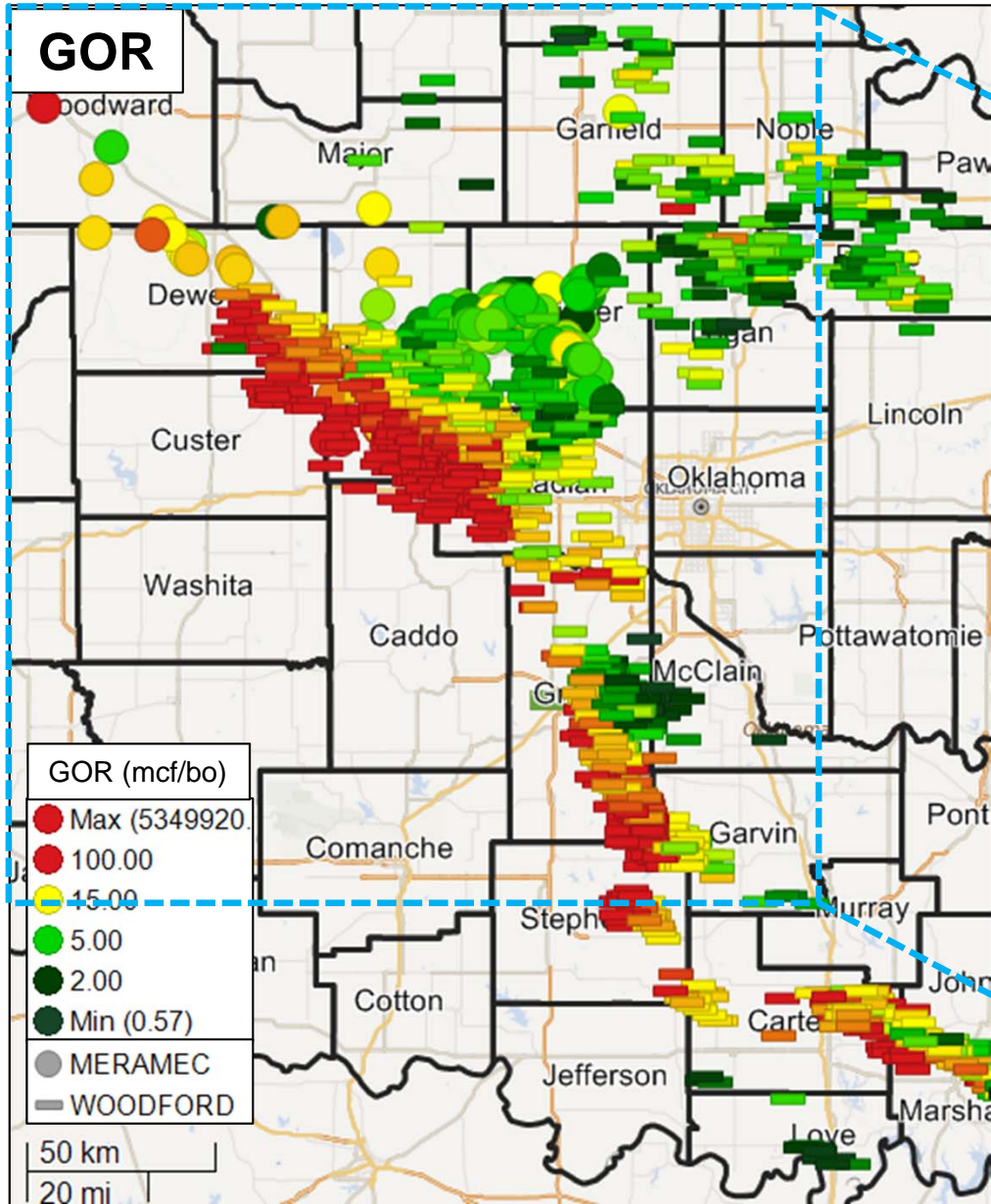
Pressure in STACK



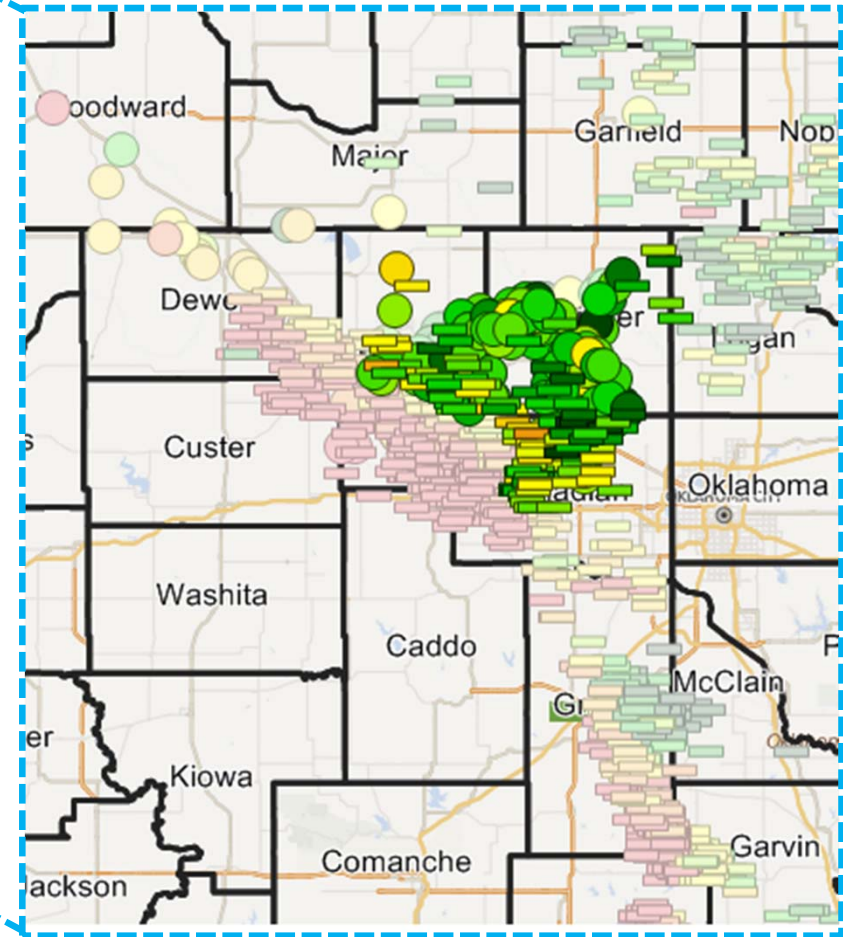
(Continental Resources)

Reservoir Performance

Woodford vs. Meramec: GOR



Oil / Vol. Oil windows only

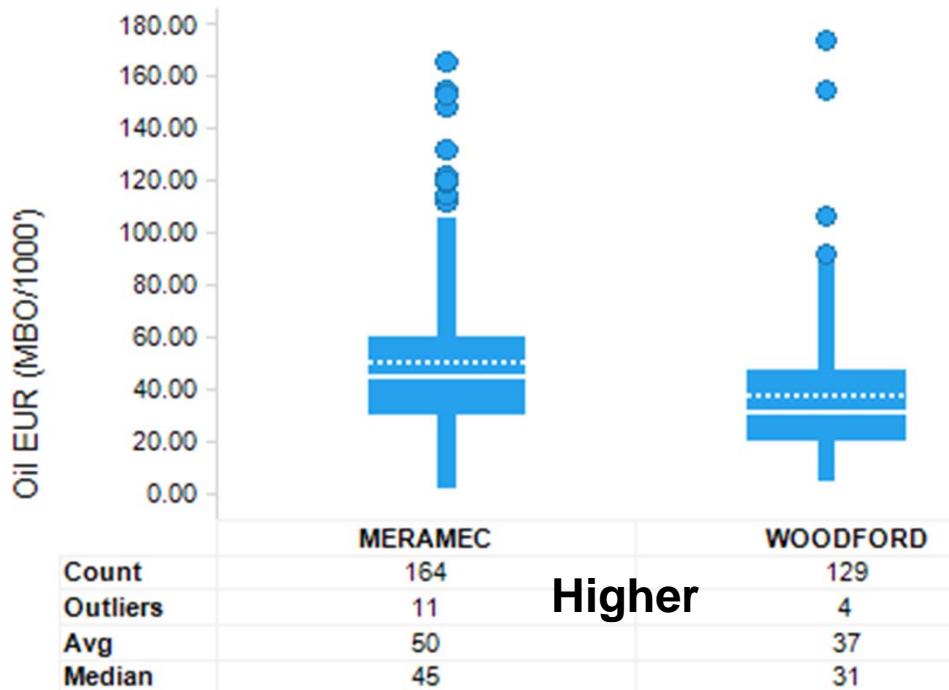


Woodford vs. Meramec: EURs

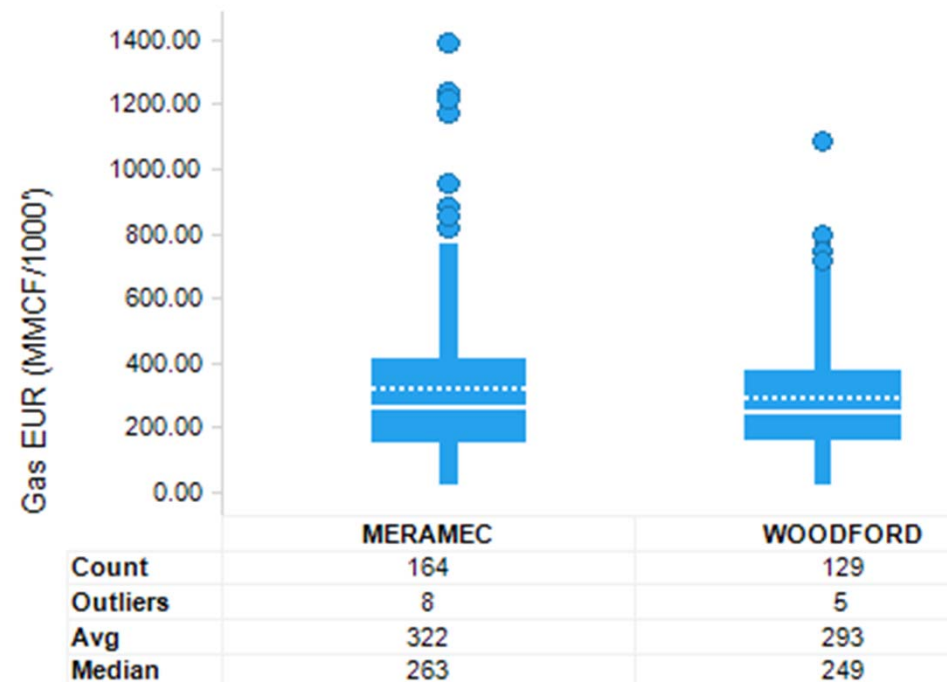


Oil / Volatile Oil Phase Window*:

Normalized Oil EUR



Normalized Gas EUR

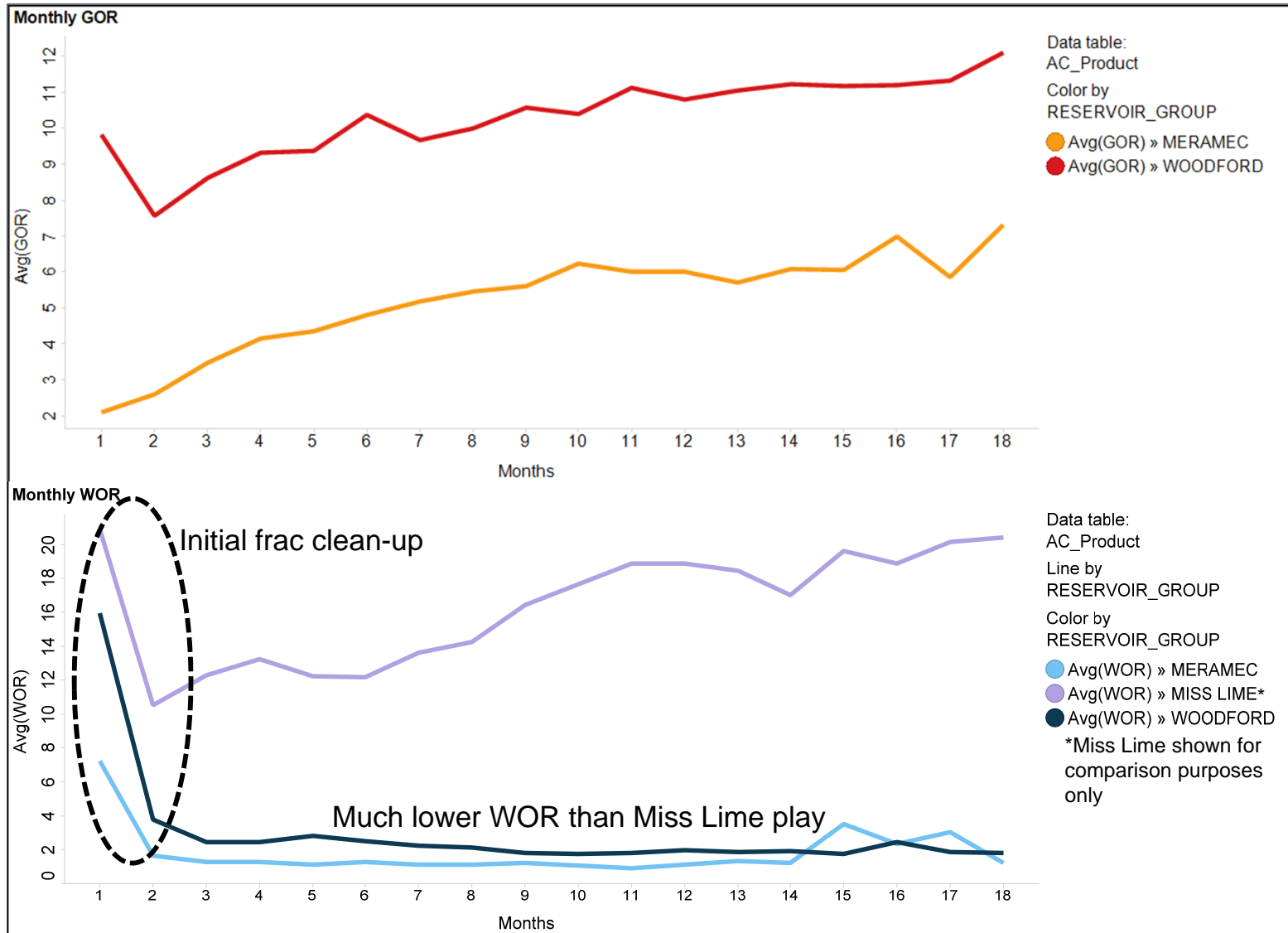


*Data is included for the oil and volatile oil phase windows. Localized conditions may vary significantly. Variables like phase window locale, lateral length, completion design, operational strategy, etc. are all import factors, making any type curve work case specific.

Woodford vs. Meramec: GOR & WOR

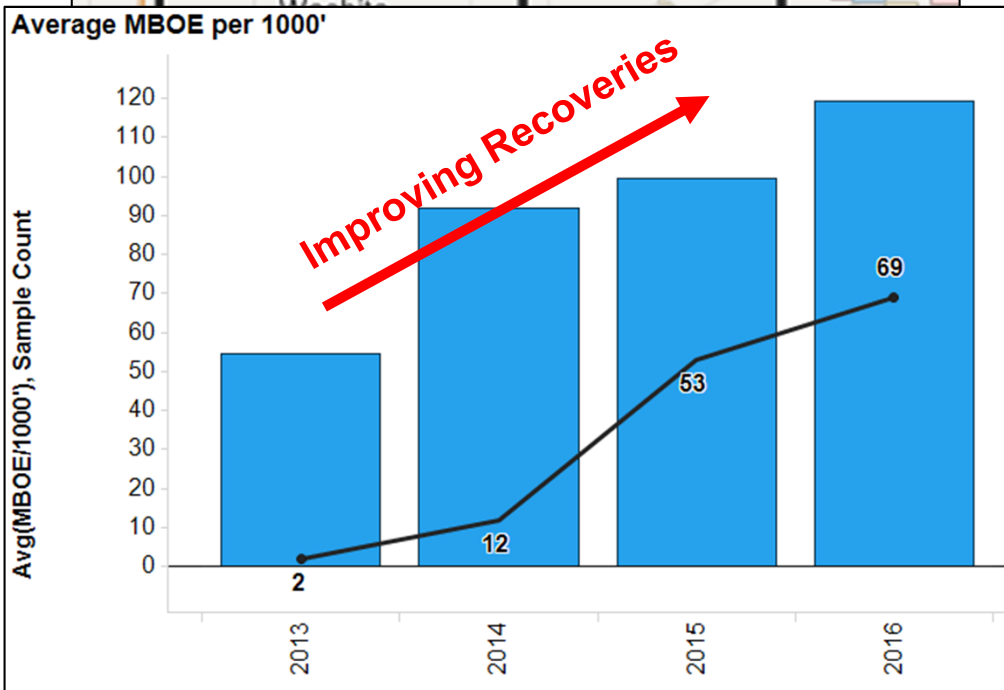
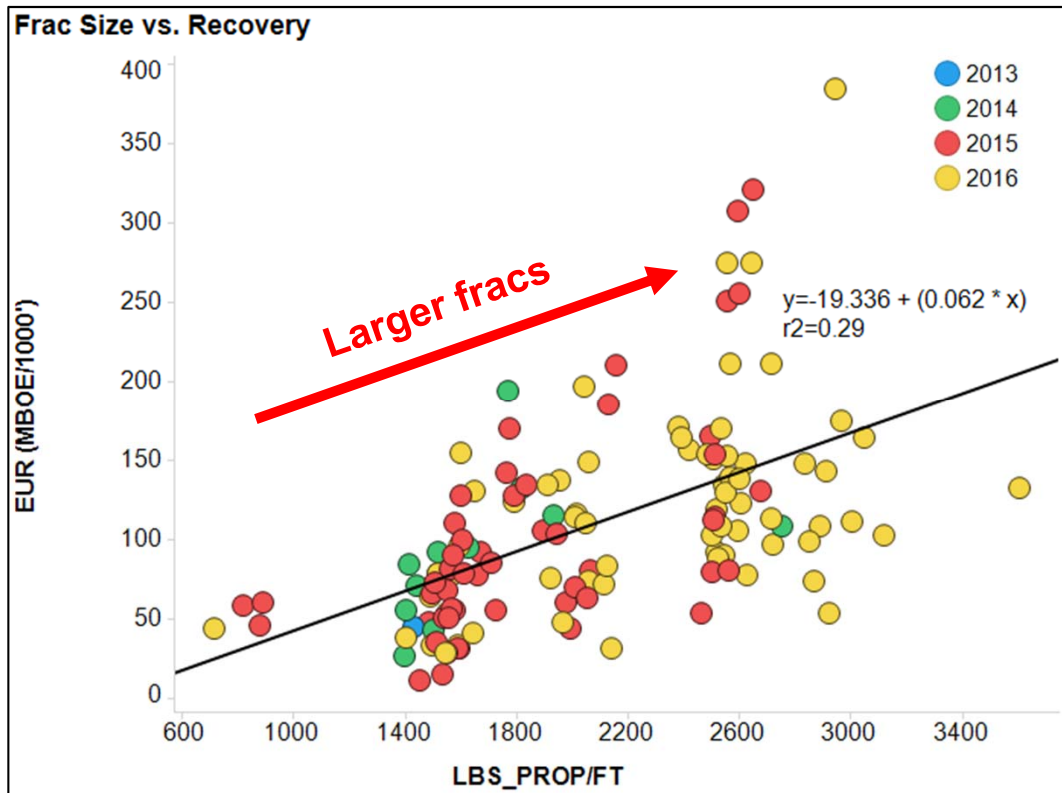
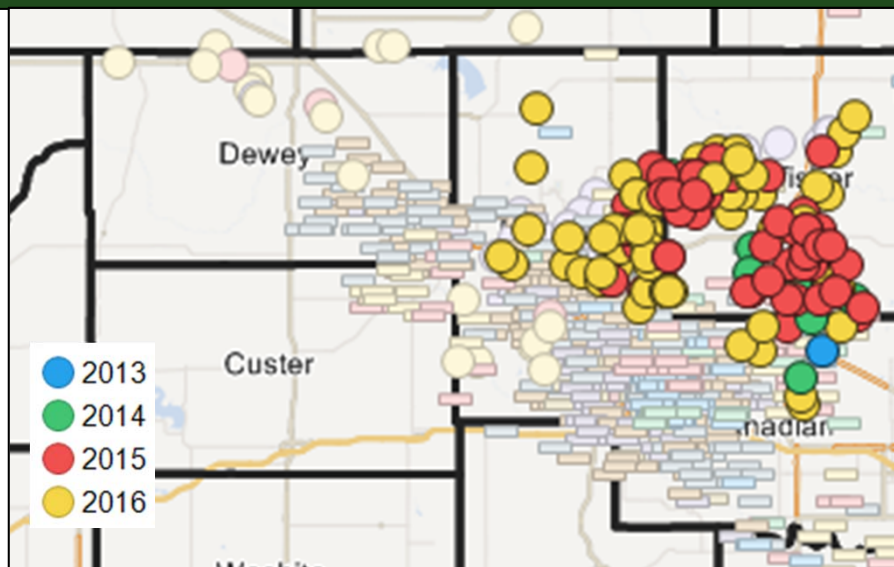


Oil / Volatile Oil Phase Window*:



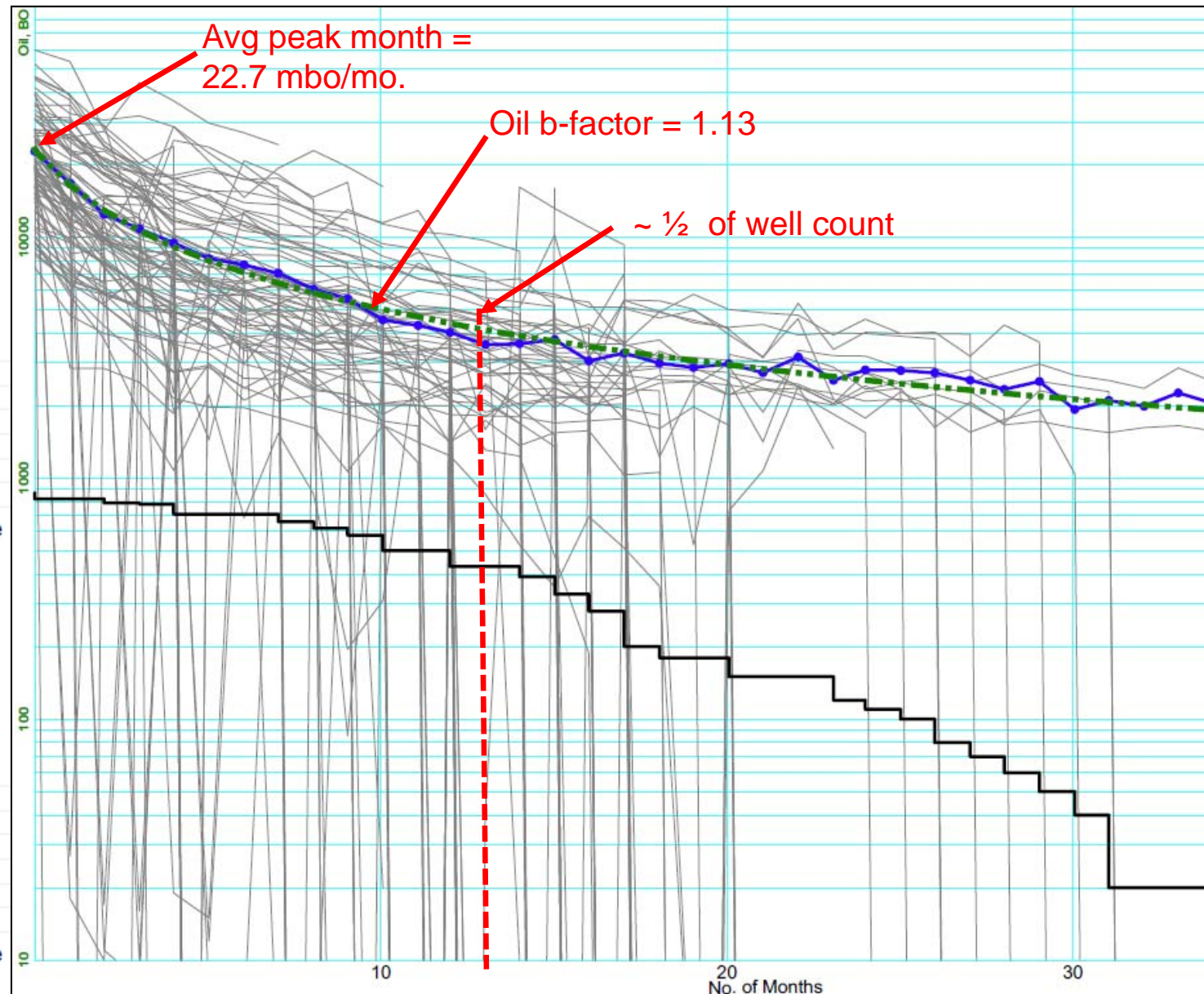
*Data is included for the oil and volatile oil phase windows. Localized conditions may vary significantly.

Meramec: Oil / Volatile Oil Windows

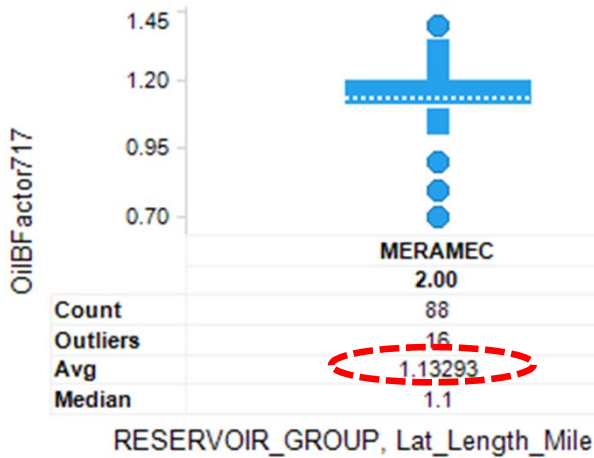


Meramec: Decline Parameters

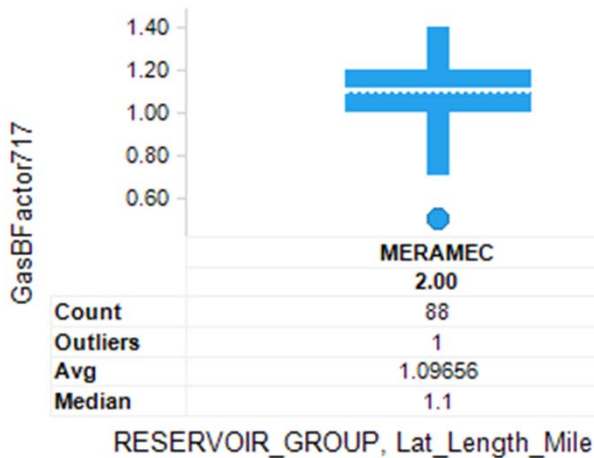
Oil / Volatile Oil Phase
Window, 2-mile laterals:



Oil B-Factor



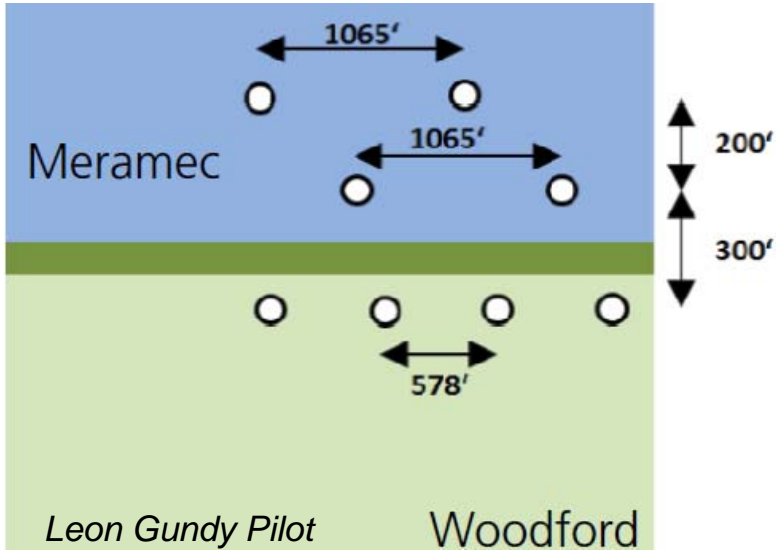
Gas B-Factor



What's Next?

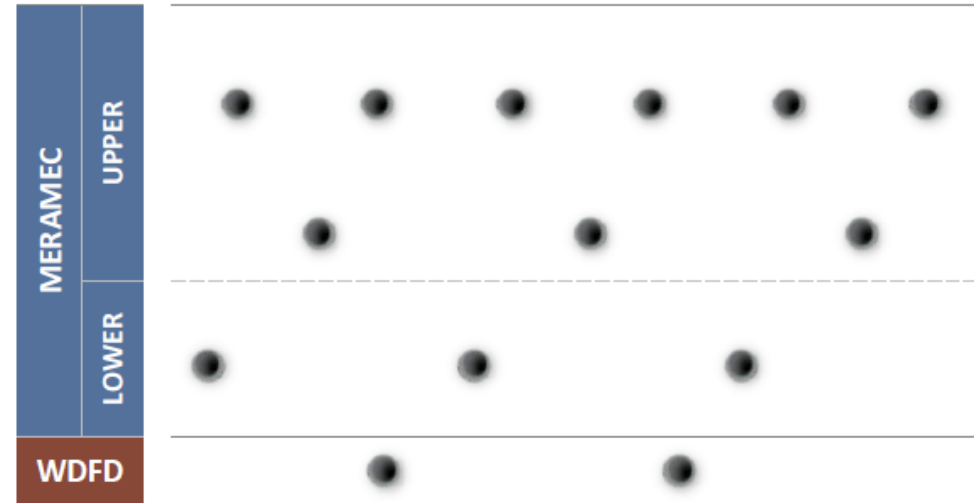
2017 Spacing/Density Pilots

Cimarex – STACK

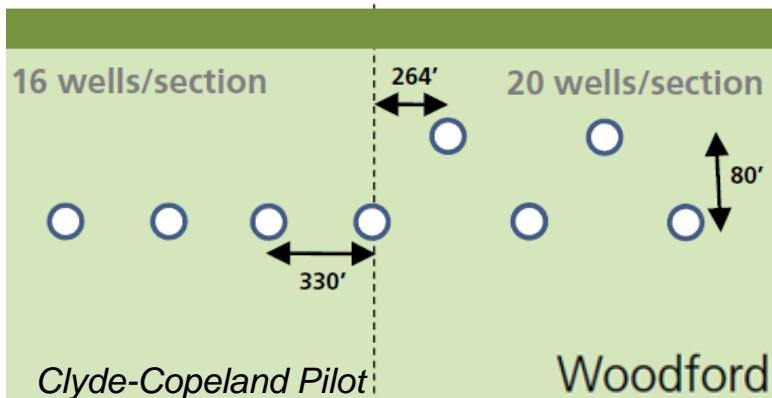


Devon – STACK

Showboat Development: 25-30 wells across two DSU's

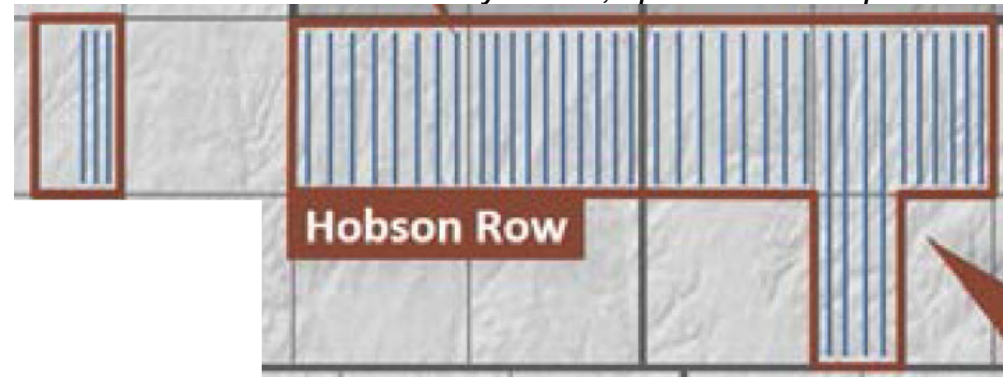


Cimarex – Northern SCOOP / MERGE



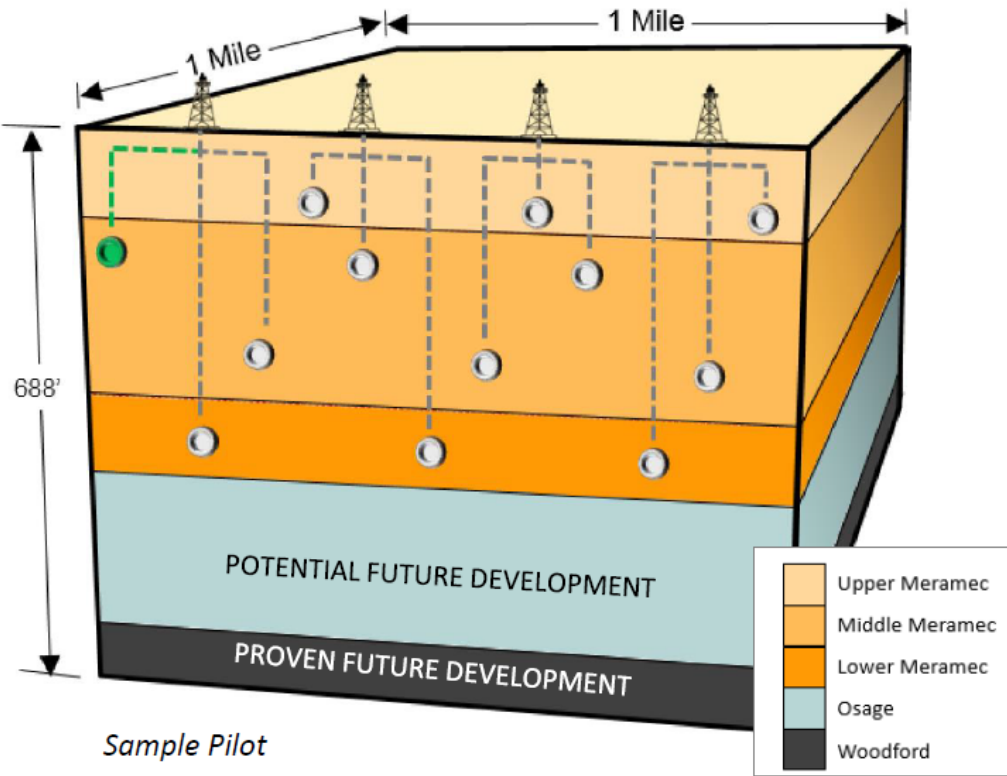
Devon – STACK

Woodford – 39 wells recently online, spaced at 8-12 per mile

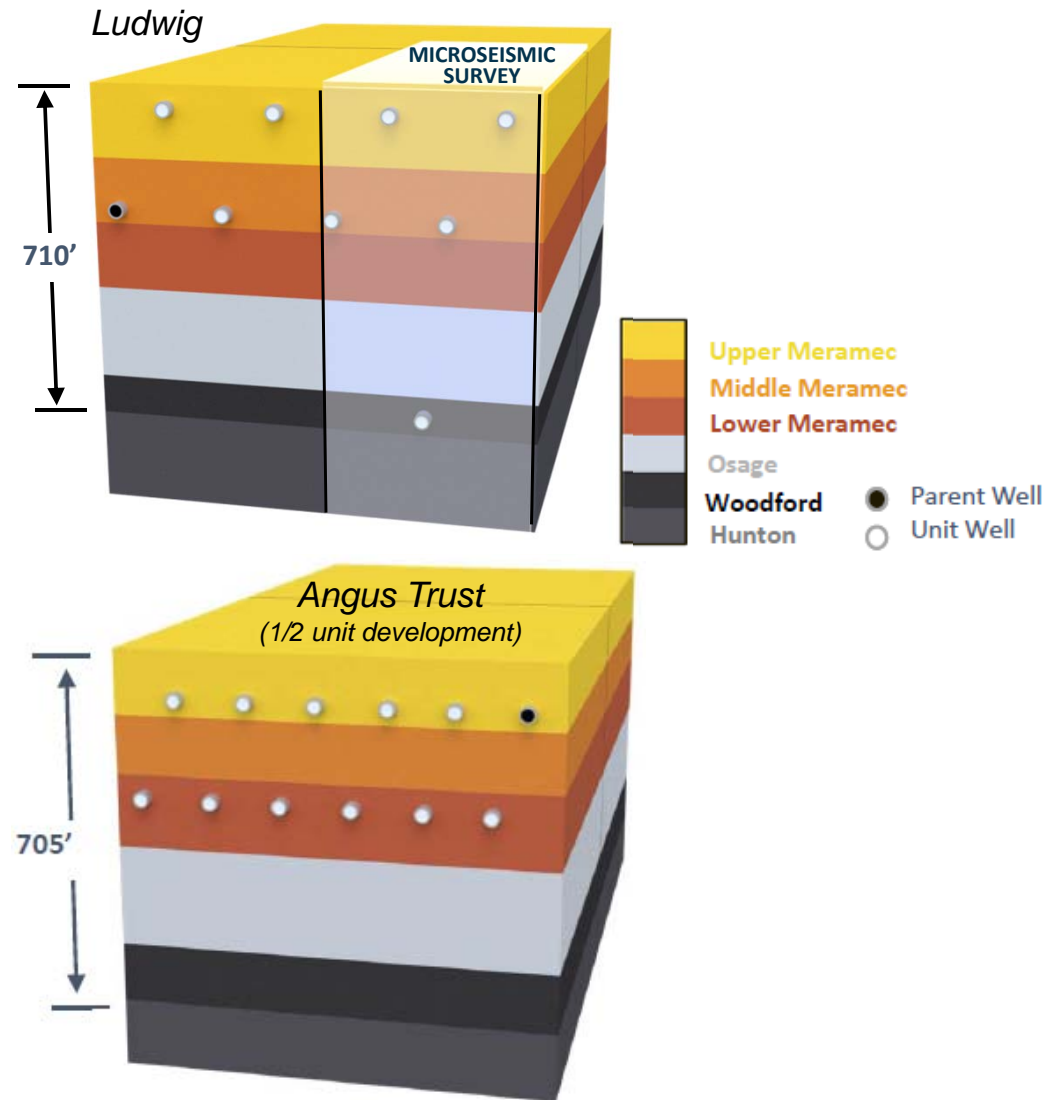


2017 Spacing/Density Pilots

Newfield – STACK



Continental – STACK

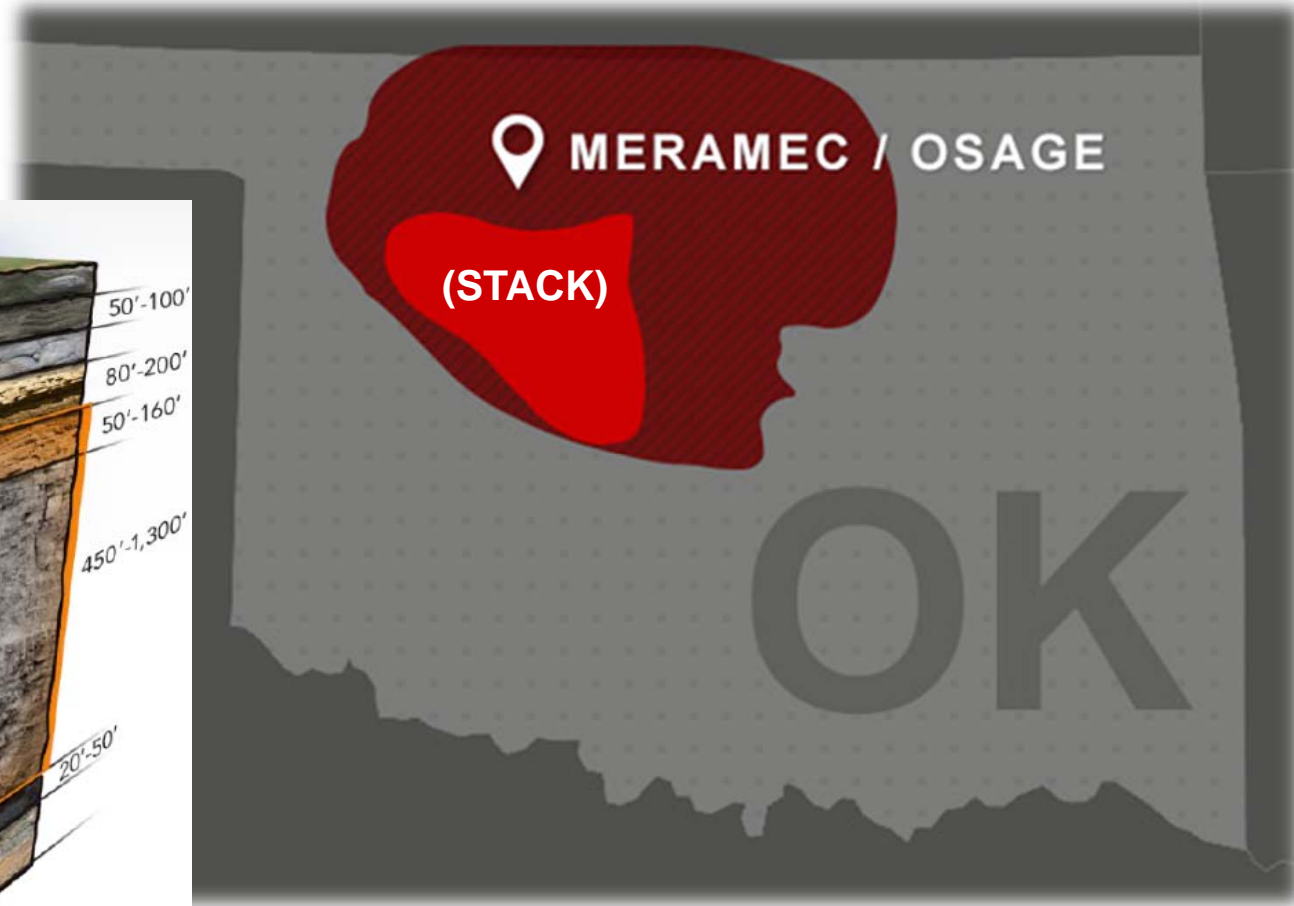
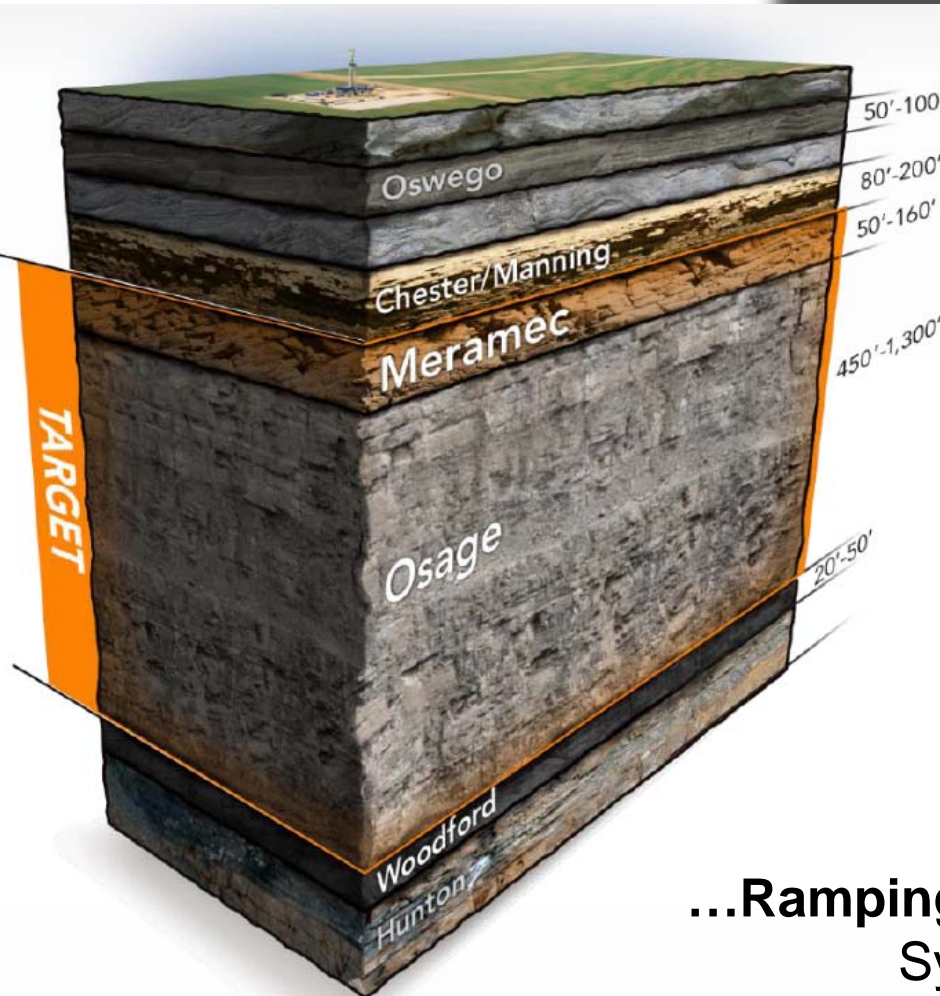


Chaparral – STACK

- Oswego: 3
 - Osage: 6-12
 - Meramec: 6-12
 - Woodford: 3-6
- Total: 18-33 potential locations per section

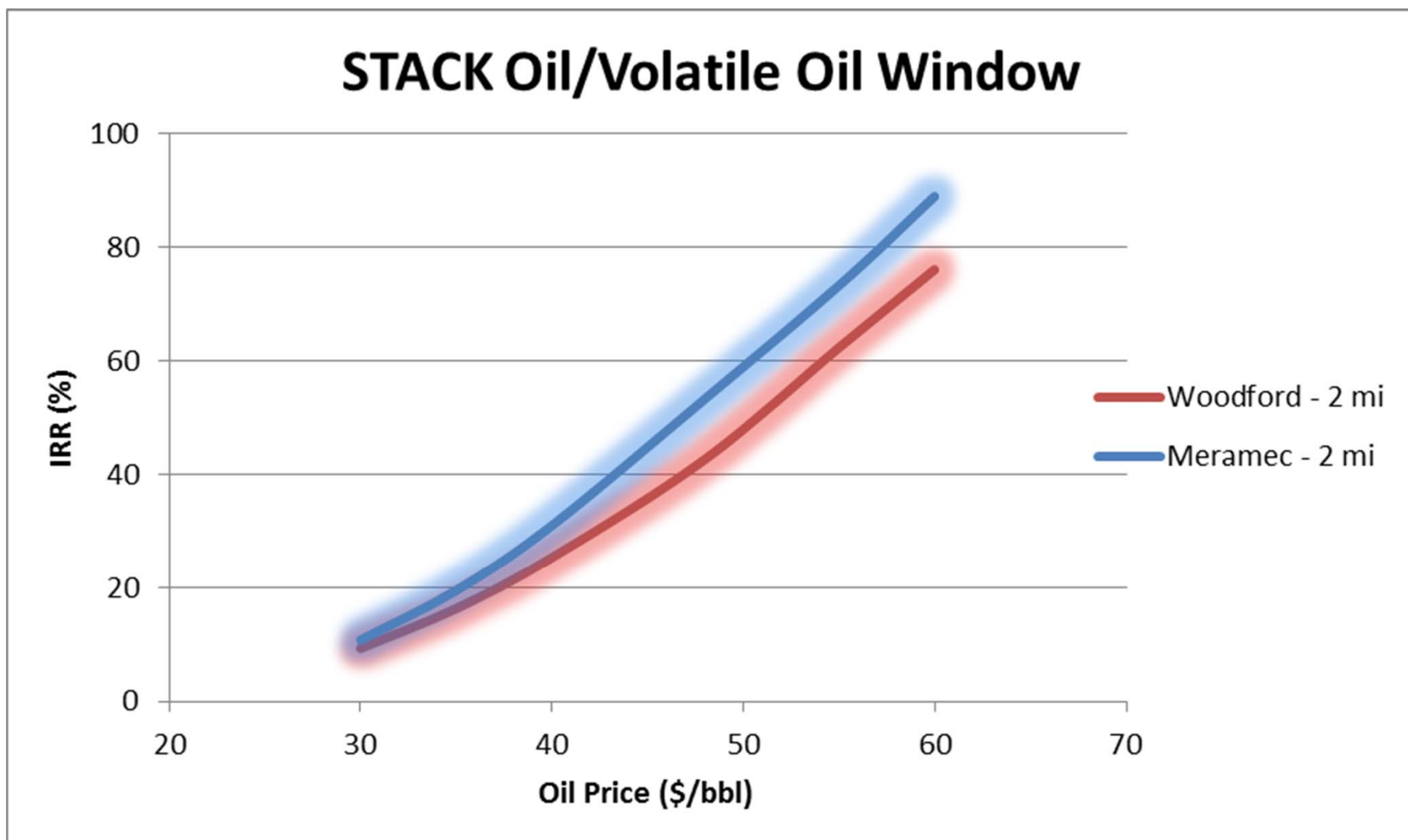
Expansion of Meramec and Osage

Northwest STACK



...Ramping up of other SCOOP/STACK reservoirs, too?
Sycamore, Hunton, Oswego, Caney

Price Sensitivity – What Lies Ahead?



Results shown are approximations based on 2-mile laterals and do not represent any particular operator. Economics may vary significantly situation to situation.

Questions?

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