

# Utica Point Pleasant Play - Range's View on a Key Appalachian Basin Unconventional Target & Plans for Future Development

STRH 5<sup>th</sup> Utica Shale Mini Conference    November 14, 2013



**RANGE** RESOURCES®

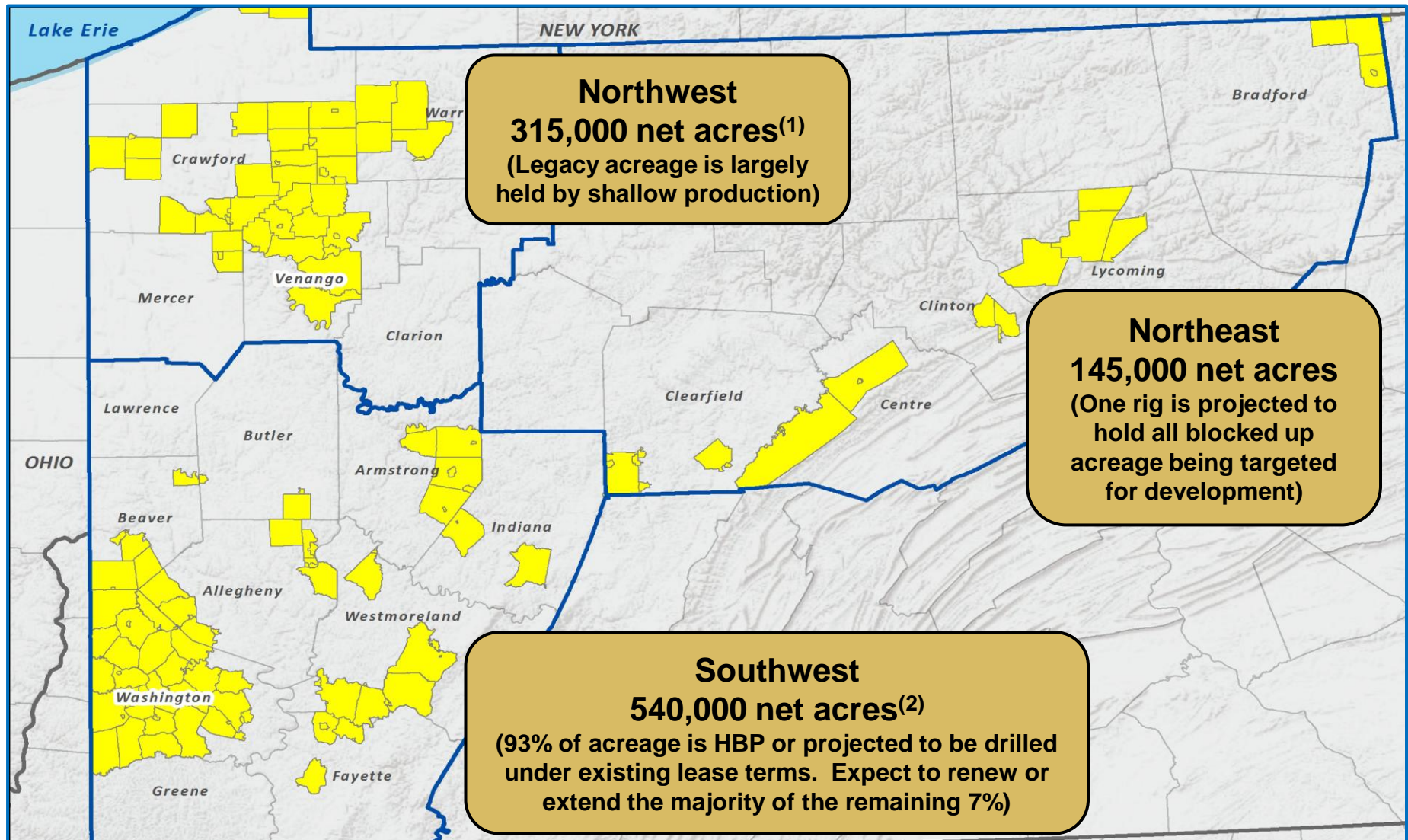
# Forward-Looking Statements

Statements concerning well drilling and completion costs assume a development mode of operation; additionally, estimates of future capital expenditures, production volumes, reserve volumes, reserve values, resource potential, resource potential including future ethane extraction, number of development and exploration projects, finding costs, operating costs, overhead costs, cash flow, NPV10, EUR and earnings are forward-looking statements. Our forward looking statements, including those listed in the previous sentence are based on our assumptions concerning a number of unknown future factors including commodity prices, recompletion and drilling results, lease operating expenses, administrative expenses, interest expense, financing costs, and other costs and estimates we believe are reasonable based on information currently available to us; however, our assumptions and the Company's future performance are both subject to a wide range of risks including, the volatility of oil and gas prices, the results of our hedging transactions, the costs and results of drilling and operations, the timing of production, mechanical and other inherent risks associated with oil and gas production, weather, the availability of drilling equipment, changes in interest rates, litigation, uncertainties about reserve estimates, environmental risks and regulatory changes, and there is no assurance that our projected results, goals and financial projections can or will be met. This presentation includes certain non-GAAP financial measures. Reconciliation and calculation schedules for the non-GAAP financial measures can be found on our website at [www.rangeresources.com](http://www.rangeresources.com).

The SEC permits oil and gas companies, in filings made with the SEC, to disclose proved reserves, which are estimates that geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions as well as the option to disclose probable and possible reserves. Range has elected not to disclose the Company's probable and possible reserves in its filings with the SEC. Range uses certain broader terms such as "resource potential," or "unproved resource potential," "upside" and "EURs per well" or other descriptions of volumes of resources potentially recoverable through additional drilling or recovery techniques that may include probable and possible reserves as defined by the SEC's guidelines. Range has not attempted to distinguish probable and possible reserves from these broader classifications. The SEC's rules prohibit us from including in filings with the SEC these broader classifications of reserves. These estimates are by their nature more speculative than estimates of proved, probable and possible reserves and accordingly are subject to substantially greater risk of being actually realized. Unproved resource potential refers to Range's internal estimates of hydrocarbon quantities that may be potentially discovered through exploratory drilling or recovered with additional drilling or recovery techniques and have not been reviewed by independent engineers. Unproved resource potential does not constitute reserves within the meaning of the Society of Petroleum Engineer's Petroleum Resource Management System and does not include proved reserves. Area wide unproven, unrisks resource potential has not been fully risked by Range's management. "EUR," or estimated ultimate recovery, refers to our management's estimates of hydrocarbon quantities that may be recovered from a well completed as a producer in the area. These quantities may not necessarily constitute or represent reserves within the meaning of the Society of Petroleum Engineer's Petroleum Resource Management System or the SEC's oil and natural gas disclosure rules. Actual quantities that may be recovered from Range's interests could differ substantially. Factors affecting recovery include the scope of Range's drilling program, which will be directly affected by the availability of capital, drilling and production costs, commodity prices, availability of drilling services and equipment, drilling results, lease expirations, transportation constraints, regulatory approvals, field spacing rules, recoveries of gas in place, length of horizontal laterals, actual drilling results, including geological and mechanical factors affecting recovery rates and other factors. Estimates of resource potential may change significantly as development of our resource plays provides additional data. In addition, our production forecasts and expectations for future periods are dependent upon many assumptions, including estimates of production decline rates from existing wells and the undertaking and outcome of future drilling activity, which may be affected by significant commodity price declines or drilling cost increases. Investors are urged to consider closely the disclosure in our most recent Annual Report on Form 10-K, available from our website at [www.rangeresources.com](http://www.rangeresources.com) or by written request to 100 Throckmorton Street, Suite 1200, Fort Worth, Texas 76102. You can also obtain this Form 10-K by calling the SEC at 1-800-SEC-0330.



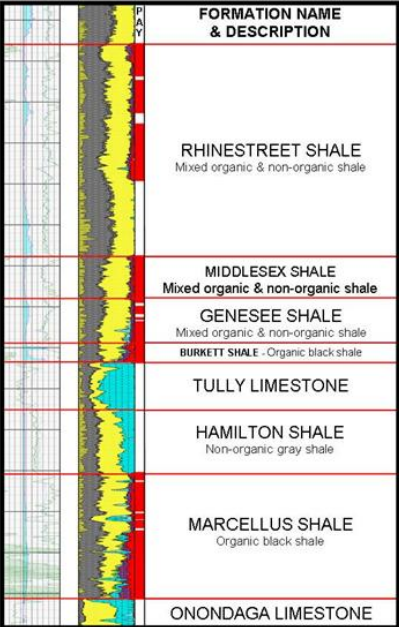

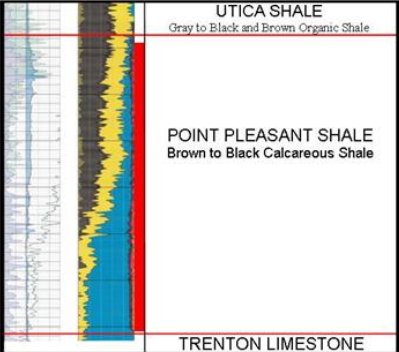
# ~1 Million Net Acres Prospective for Shale in PA



Note: Townships where Range holds ~3,000+ acres are shown in yellow (As of 12/31/2012)

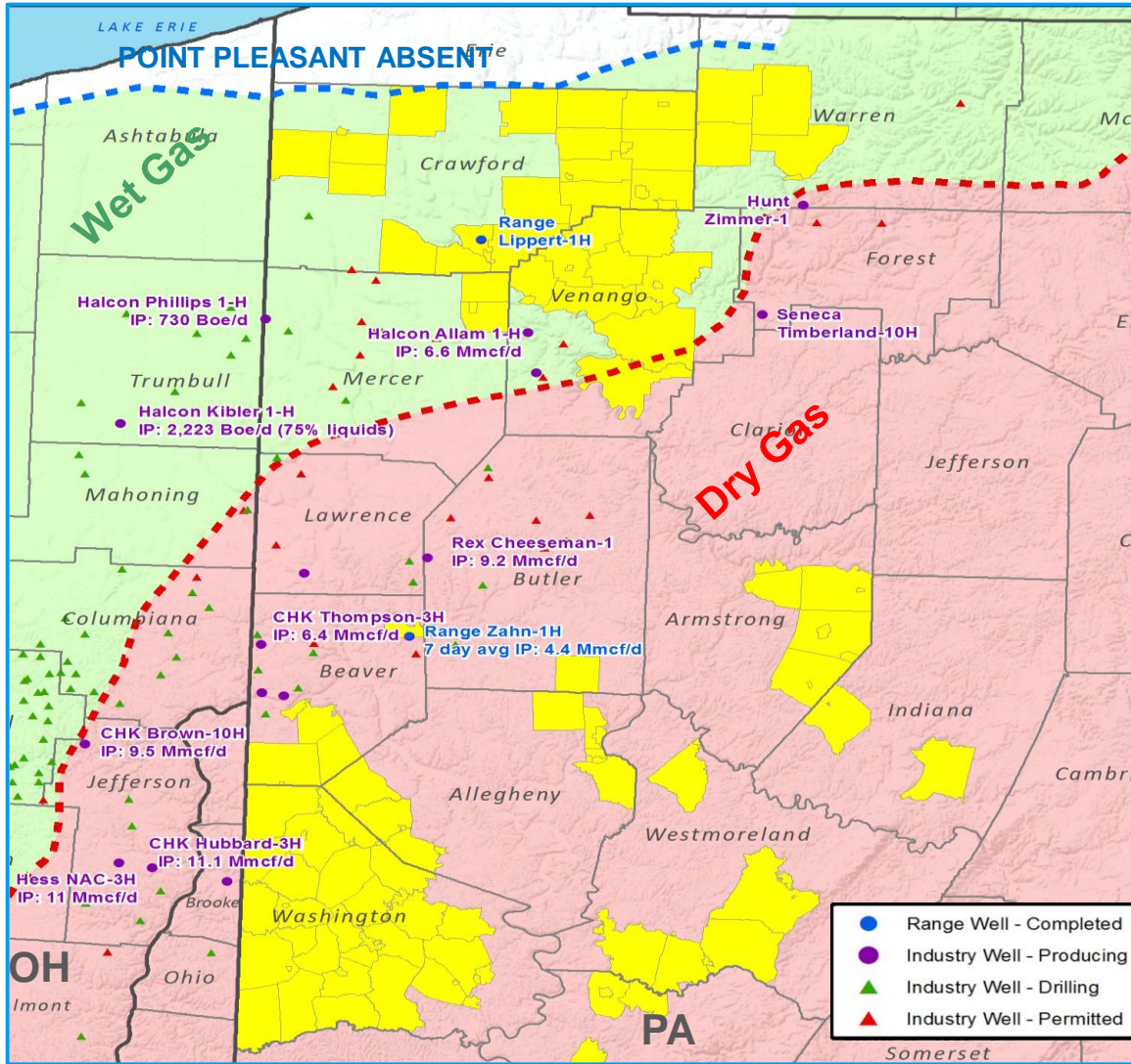
(1) Approximately 150,000 acres prospective for Marcellus; ~180,000 acres prospective for wet Utica. (2) Extends partially into WV.

# Pennsylvania Stacked Pays – Net Acreage

FORMATION NAME & DESCRIPTION		Wet Acreage	Dry Acreage	Total Acreage
	RHINESTREET SHALE <small>Mixed organic &amp; non-organic shale</small>	330,000	235,000	565,000
	MIDDLESEX SHALE <small>Mixed organic &amp; non-organic shale</small>			
	GENESEE SHALE <small>Mixed organic &amp; non-organic shale</small>			
	BURKETT SHALE - Organic black shale			
	TULLY LIMESTONE			
	HAMILTON SHALE <small>Non-organic gray shale</small>	480,000	355,000	835,000
	MARCELLUS SHALE <small>Organic black shale</small>			
	ONONDAGA LIMESTONE			
	UTICA SHALE <small>Gray to Black and Brown Organic Shale</small>	180,000	400,000	580,000
	POINT PLEASANT SHALE <small>Brown to Black Calcareous Shale</small>			
	TRENTON LIMESTONE			
		990,000	990,000	1,980,000

**Stacked pays allow for multiple development opportunities at 1,000 foot spacing between wells and later with 500 foot spacing prospective on most acreage**

# Western PA – Wet and Dry Utica/Point Pleasant



## Range has significant acreage positions in the Utica shale play

- ~400,000 net acres are prospective for dry Utica
- ~180,000 net acres are prospective for wet Utica in Northwest PA
- Recently, industry activity has picked up in both wet and dry areas offsetting Range acreage

**Note: Townships where Range holds ~3,000+ acres are shown in yellow (As of 12/31/2012)**



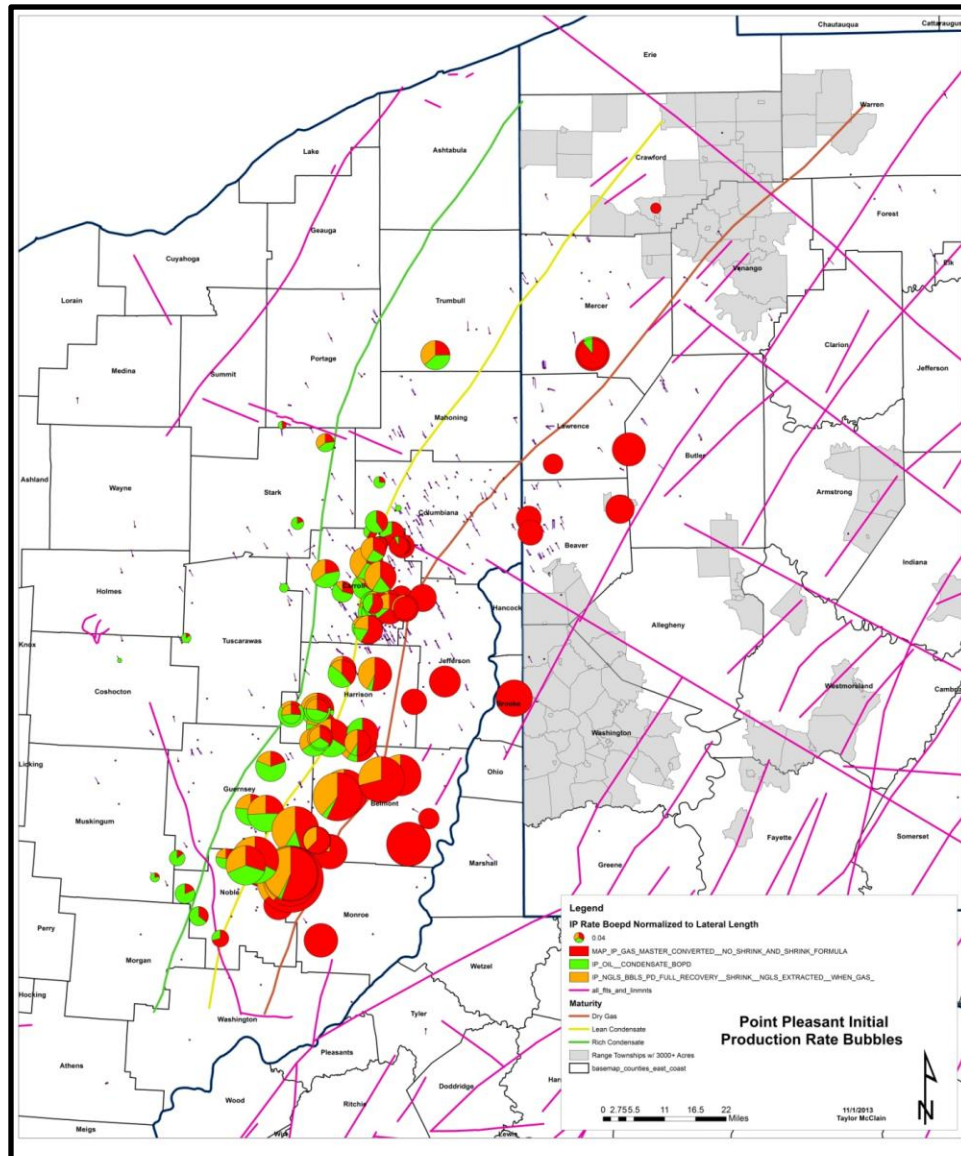
# Resource Potential is 9 to 13 Times Proved Reserves

<i><b>Resource Area</b></i>	<i><b>Gas (Tcf)</b></i>	<i><b>Liquids (Mmbbls)</b></i>	<i><b>Net Unproven Resource Potential (Tcfe)</b></i>
<i><b>Marcellus Shale</b></i>	<b>27 – 35</b>	<b>1,800 – 2,400</b>	<b>38 – 49</b>
<i><b>Upper Devonian Shale</b></i>	<b>8 – 12</b>	<b>600 – 940</b>	<b>12 – 18</b>
<i><b>Midcontinent, Nora and Permian</b></i>	<b>6 – 8</b>	<b>800 – 1,380</b>	<b>10 – 16</b>
<i><b>TOTAL</b></i>	<b>41 – 55</b>	<b>3,200 – 4,720</b>	<b>60 – 83</b>

Does not include Utica or tighter spacing in dry Marcellus areas; Liquids include Ethane

As of 12/31/2012 except for Marcellus Shale (updated 6/30/2013) tighter spacing in super-rich and wet Marcellus areas only

# Utica Point Pleasant Play IP Test Summary Map



**The Utica Point Pleasant Play has been in active since 2010 in Pennsylvania and 2011 in Ohio.**

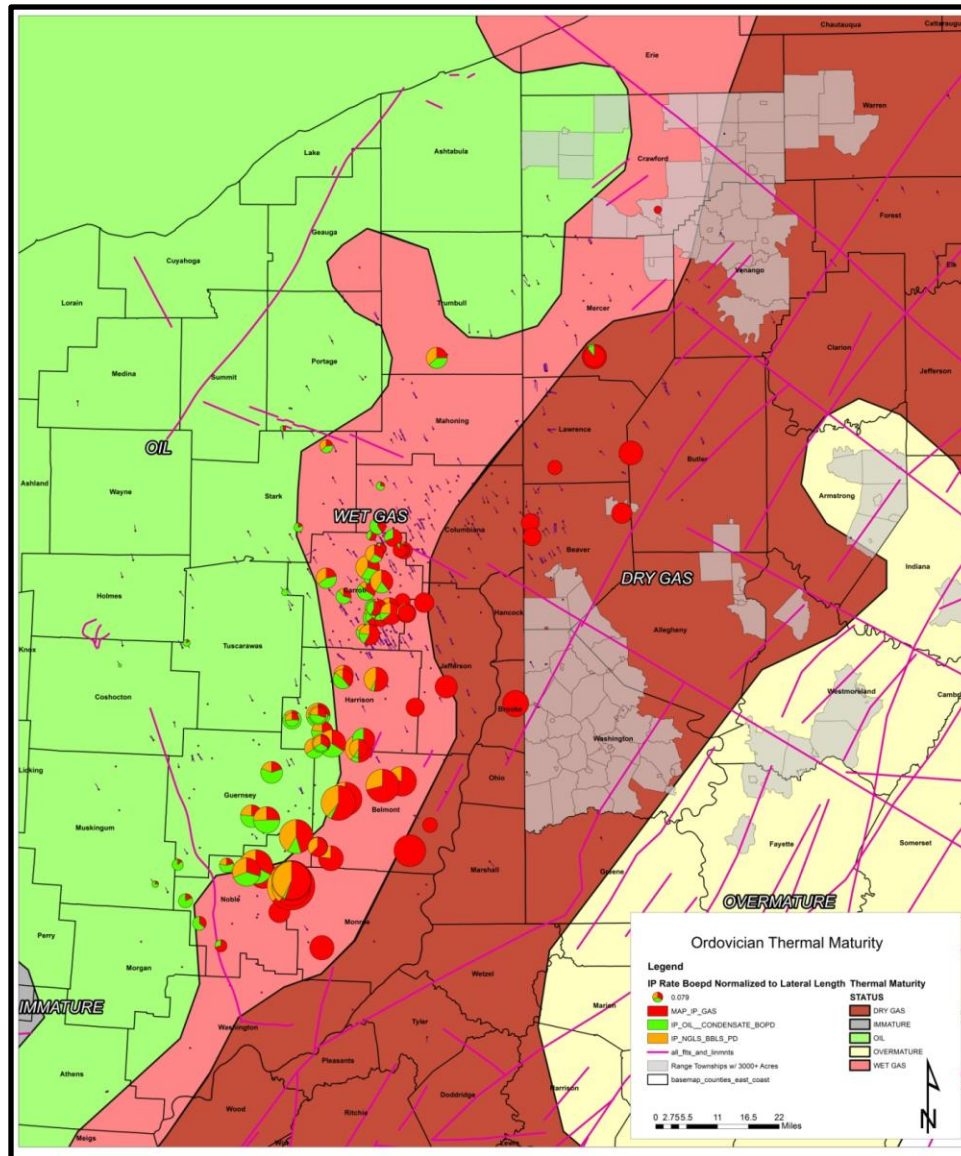
**Reported initial test rates range from 1 Mmcfe/d to over 40 Mmcfe/d.**

**Activity has been largely focused in Ohio on the Point Pleasant play and is approaching an advanced level of development.**

**The Utica portion play has been a recent focus of industry exploration in OH and PA although initial test rates to date have been lower than the Point Pleasant focused areas to the southwest in Pennsylvania and Ohio.**

**Potential core area developing in the southeastern Ohio and extending into northern West Virginia and southwestern Pennsylvania.**

# Thermal Maturity Trends – Utica Point Pleasant Play



Thermal maturity trends are key factors in the play.

Up-dip limits to date appear to relate to the oil to wet gas window boundary to the west.

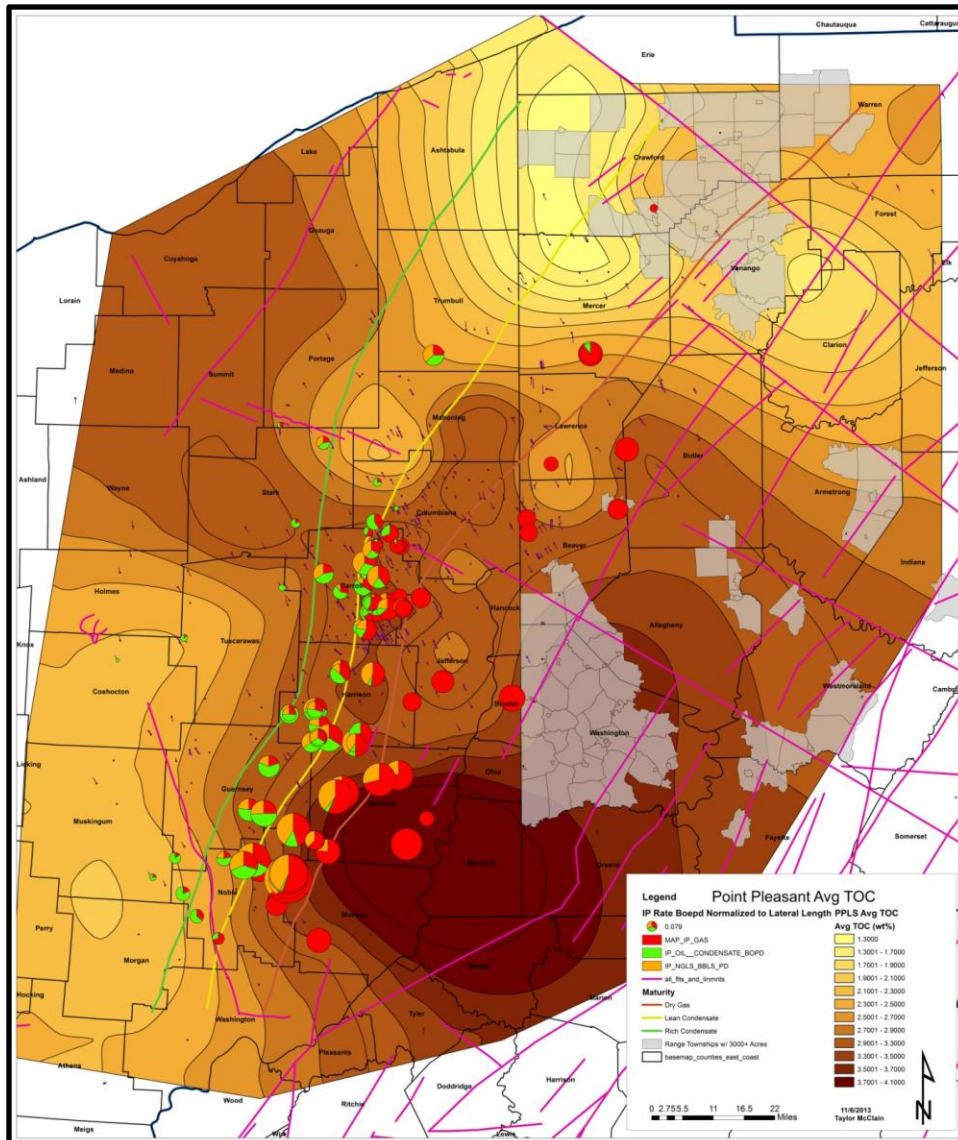
Down-dip limits not yet fully established but include a combination of thermal maturity and required drilling depths.

The majority of drilling to date has focused on a relatively specific trend in the wet gas window.

Dry gas trends tested earlier but now again becoming realized as a potential high rate target as the play matures.



# Overview Map of Point Pleasant Play



**The Point Pleasant member becomes most organic rich in eastern Ohio and southwestern Pennsylvania and in the West Virginia Panhandle.**

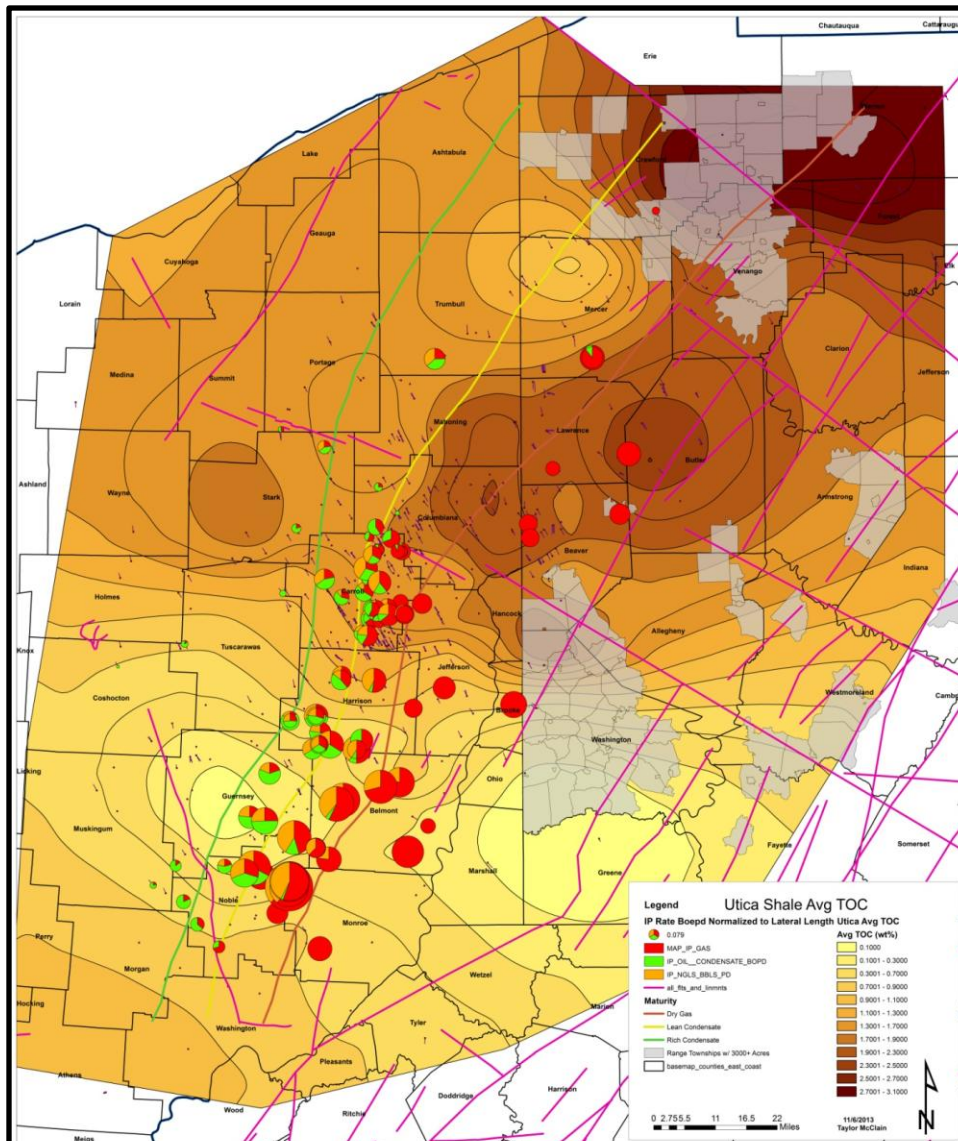
**Average TOC's up to 4.0% noted.**

**Represents the primary play target in the Appalachian Basin.**

**Results to date have been excellent particularly in the condensate window in OH and gas window near Ohio River.**

**Operators experimenting with different landing targets and completion designs.**

# Overview Map of Utica Shale Play



The Utica Shale member overlying the Point Pleasant becomes more organic rich in northwestern Pennsylvania.

Average TOC's up to 3.0% noted.

Primary play target in the region.

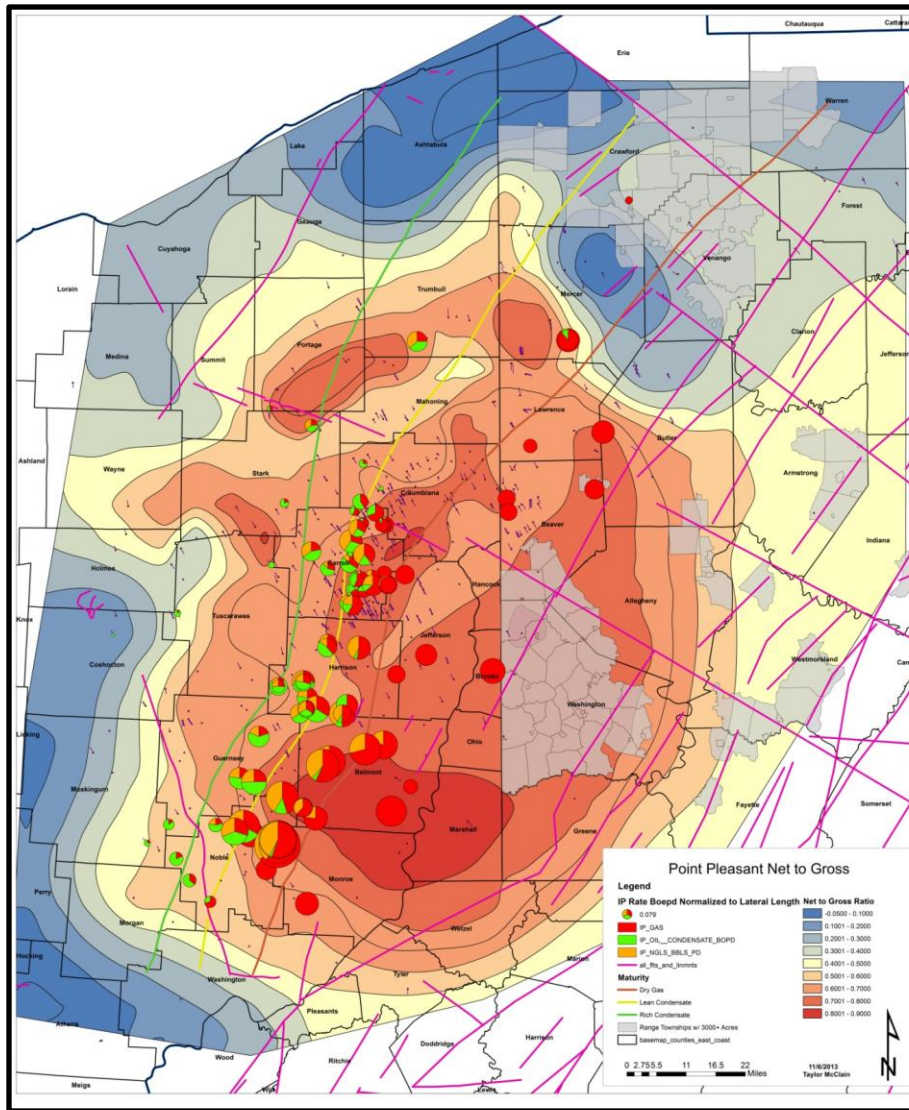
Results to date encouraging but less than Point Pleasant play test rates to the south and southwest.

Lower IP's per stage based on activity reported to date.

Operators experimenting with different landing targets and completion designs for further optimization.



**Key Play Element – Pay quality, efficiency. NTG Ratio**



**Optimal results in play located in areas displaying highest net to gross ratio.**

**Strong basement structure control on depositional trends and reservoir quality in the Utica Point Pleasant petroleum system.**

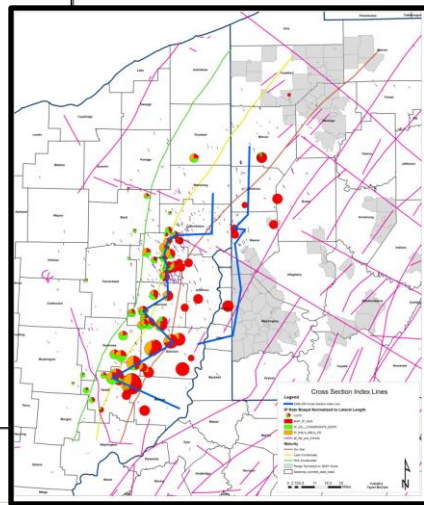
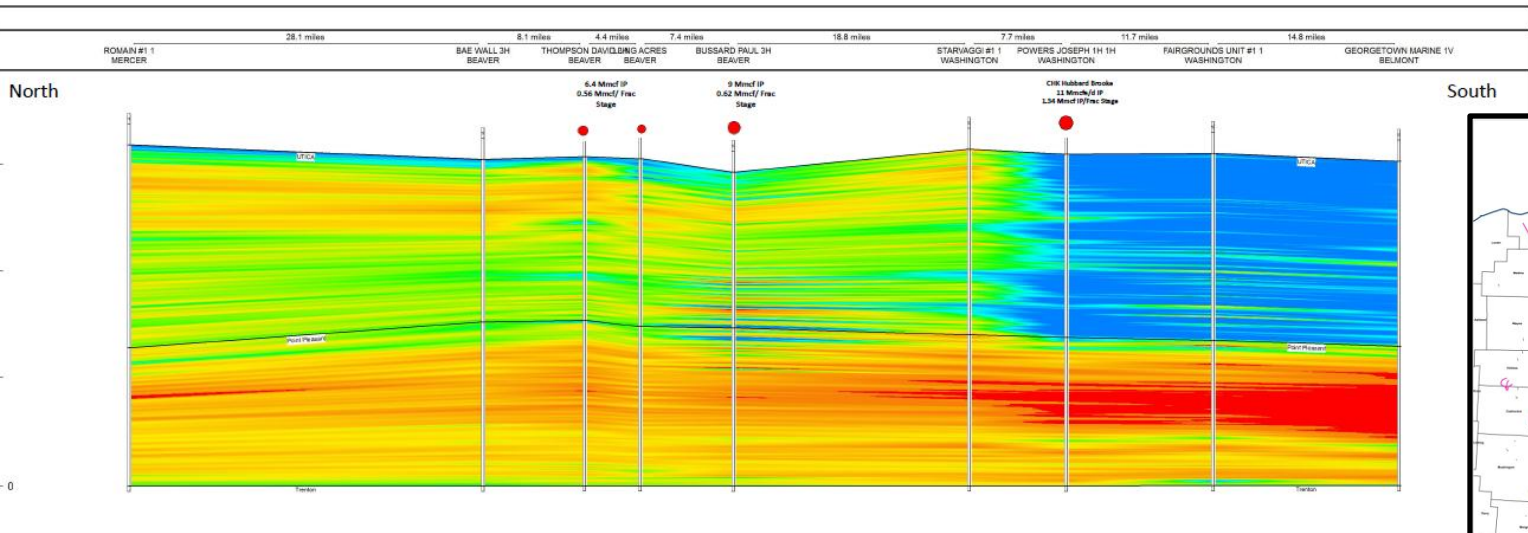
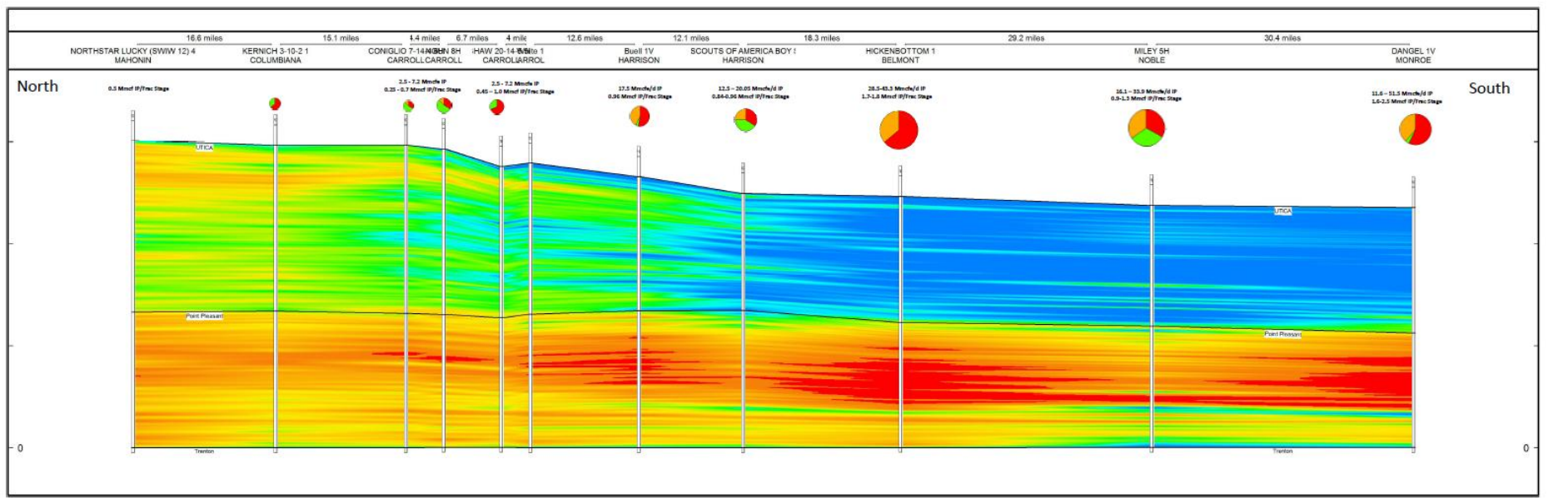
**Core areas defined by best porosity, permeability, and high NTG ratios especially in the basal Point Pleasant member of the play.**

**Analogous to Marcellus Super Rich  
play in SW PA and northern WV.**

**Highest IP's located in areas of high NTG ratios in Point Pleasant combined an overlying non organic Utica which may act as a top seal.**

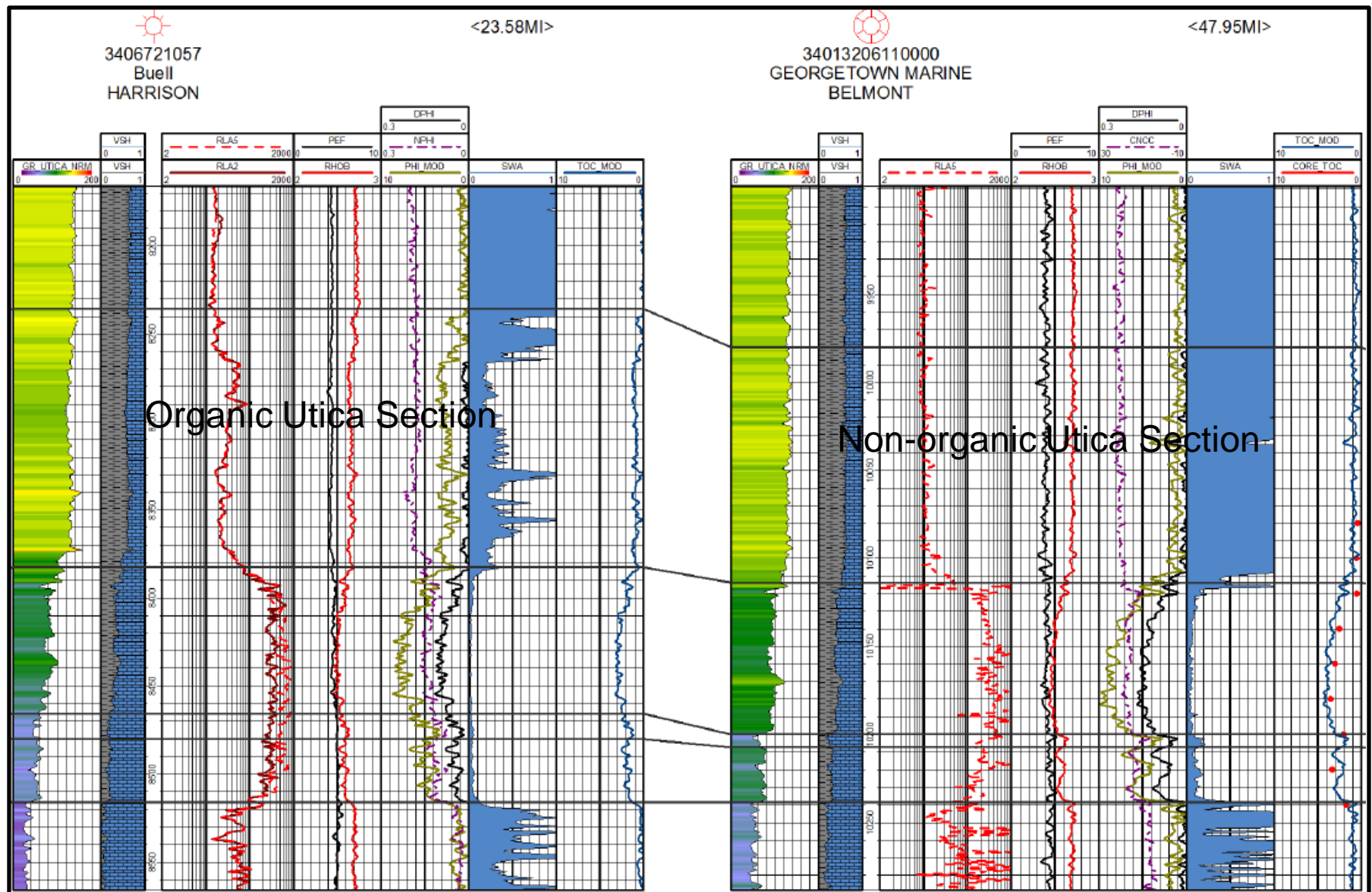


# Regional Cross Section Showing Utica Source To Seal Facies Change

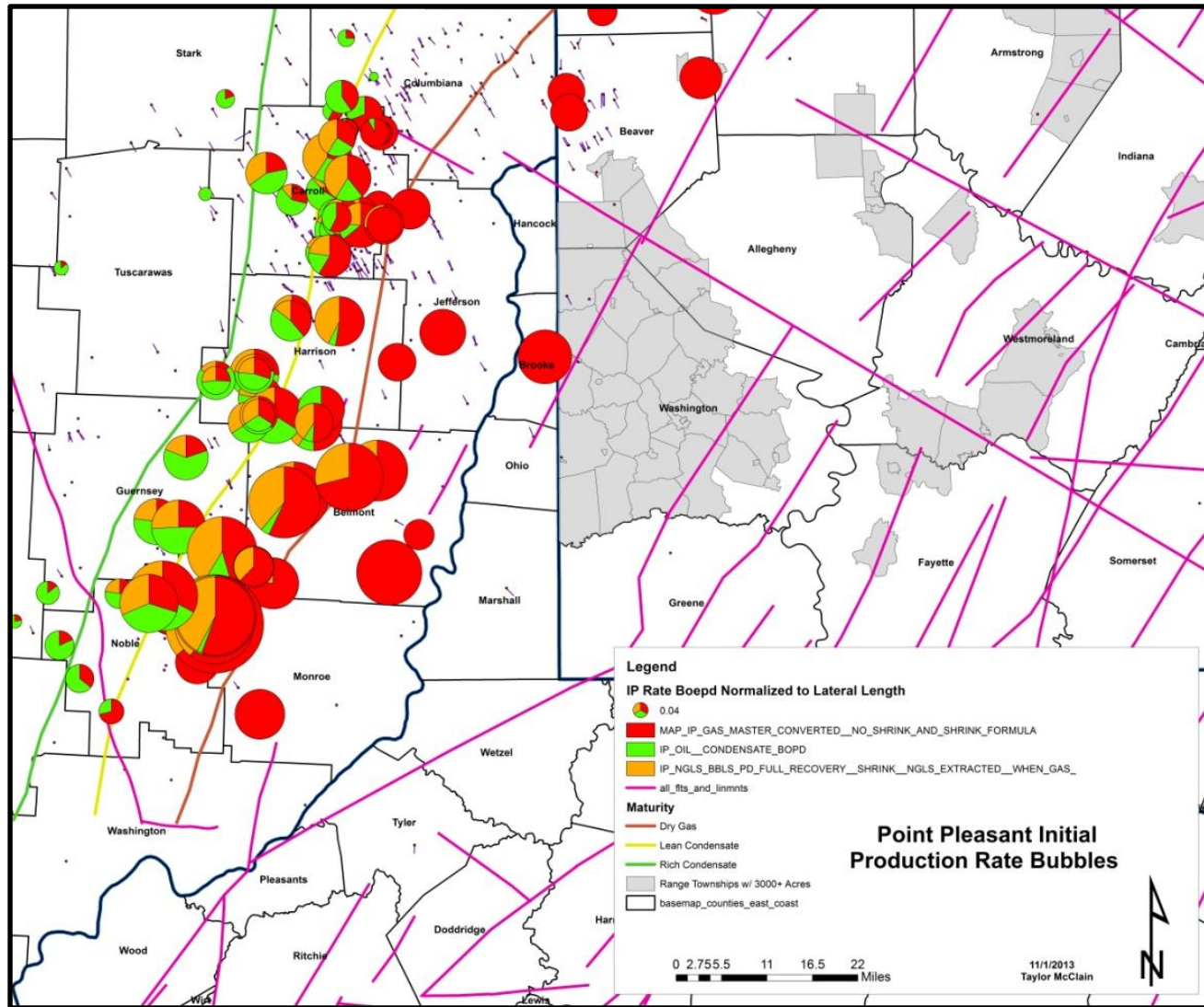


Regional cross sections showing facies change from organic rich Utica shale to non organic seal and IP's. RANGE RESOURCES®

# Log Section Showing Utica Source To Seal Facies Change

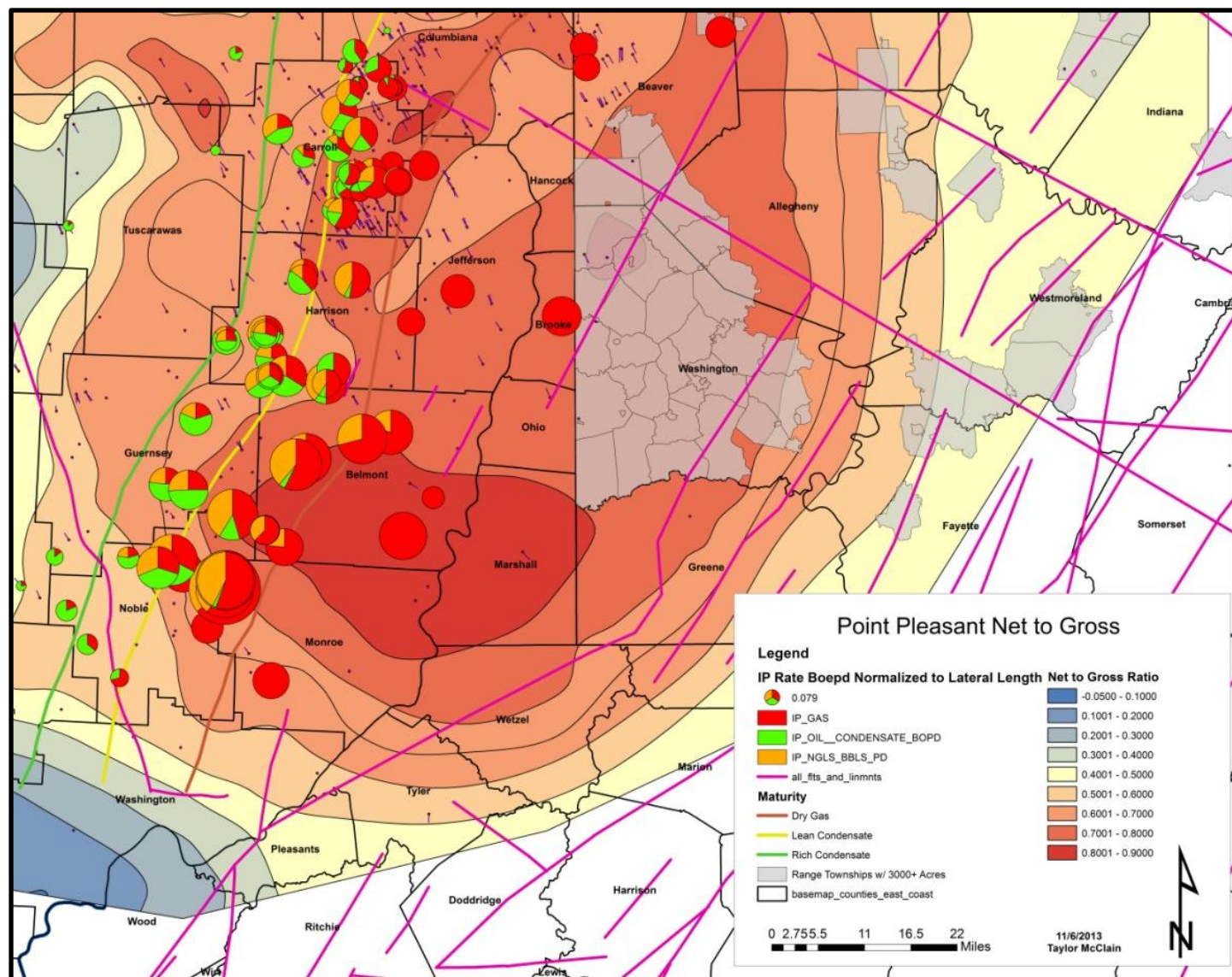


# Utica Point Pleasant Play IP Test Summary Map

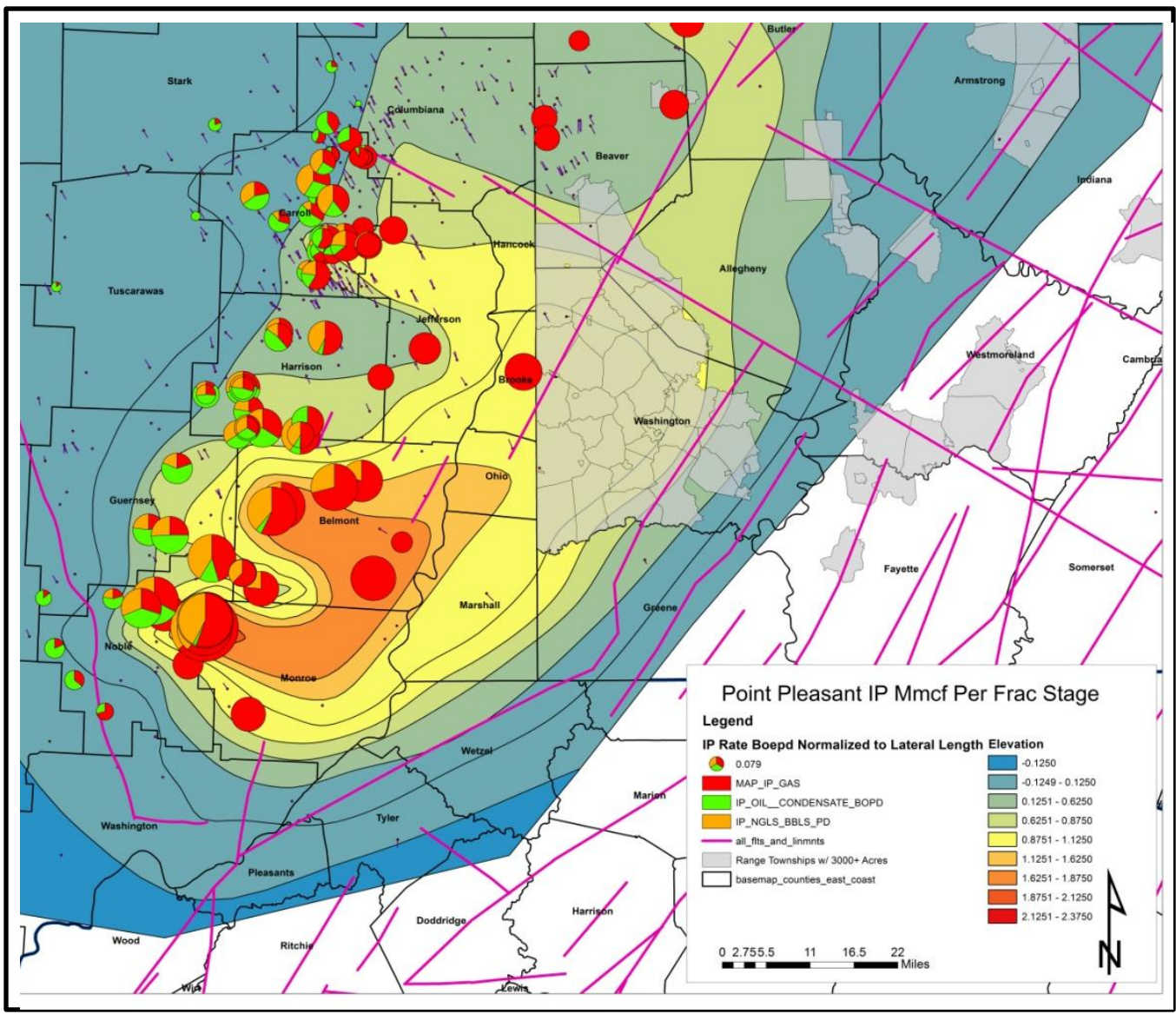




# Range Focus Area – Utica Point Pleasant NTG Ratio

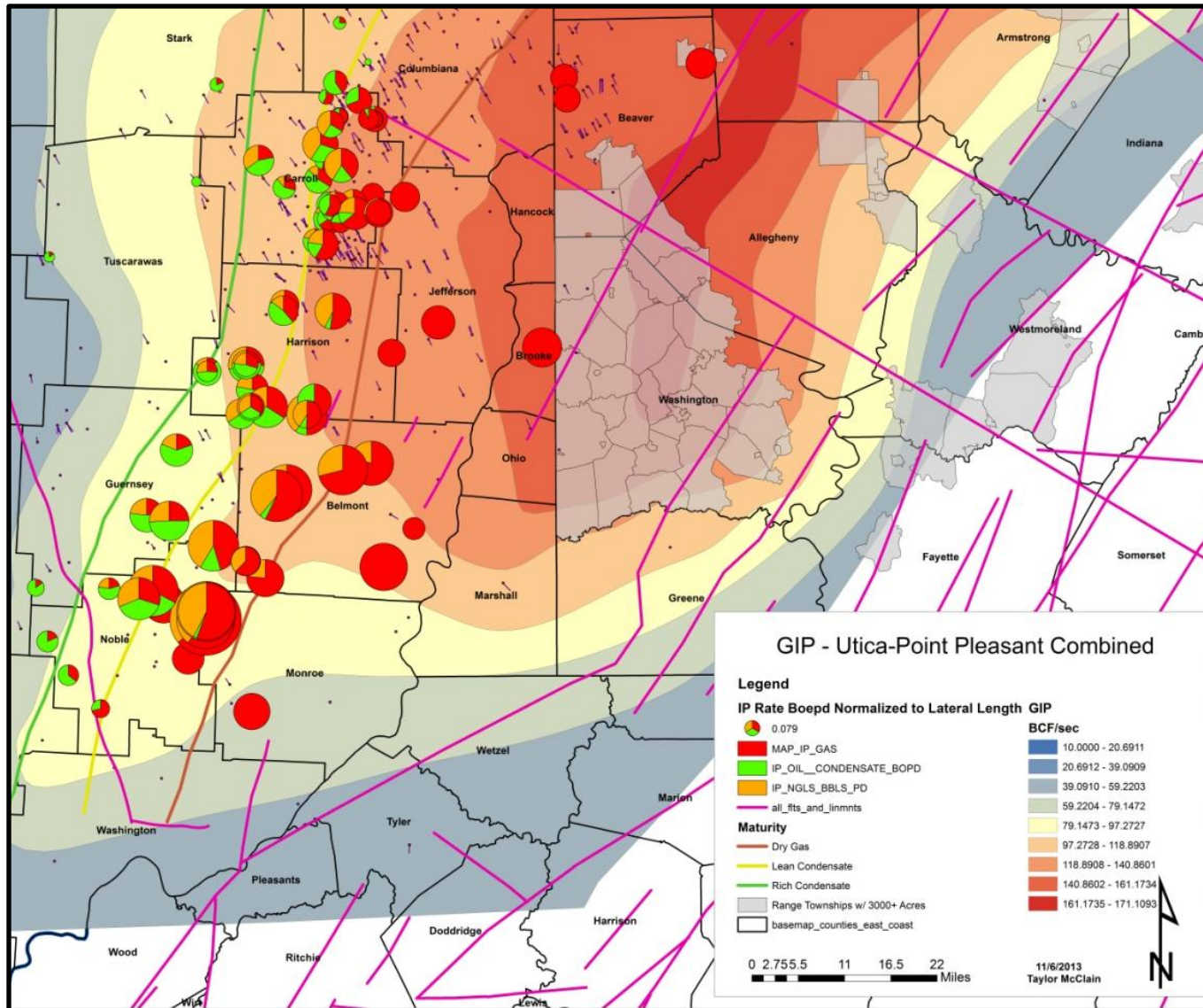


# Range Focus Area – Utica Point Pleasant IP per Stage



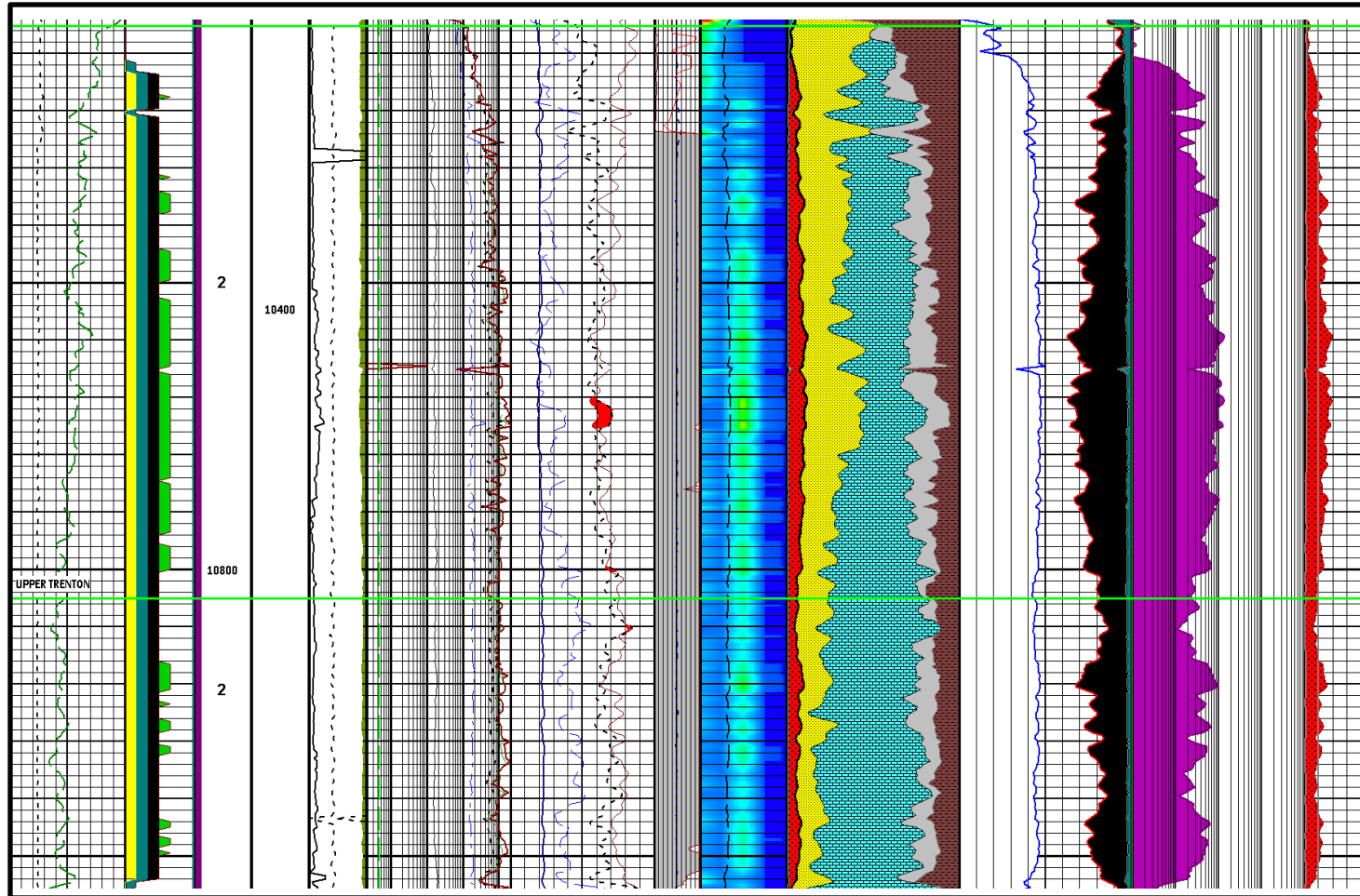


# Utica Point Pleasant Play – Gas In Place Map

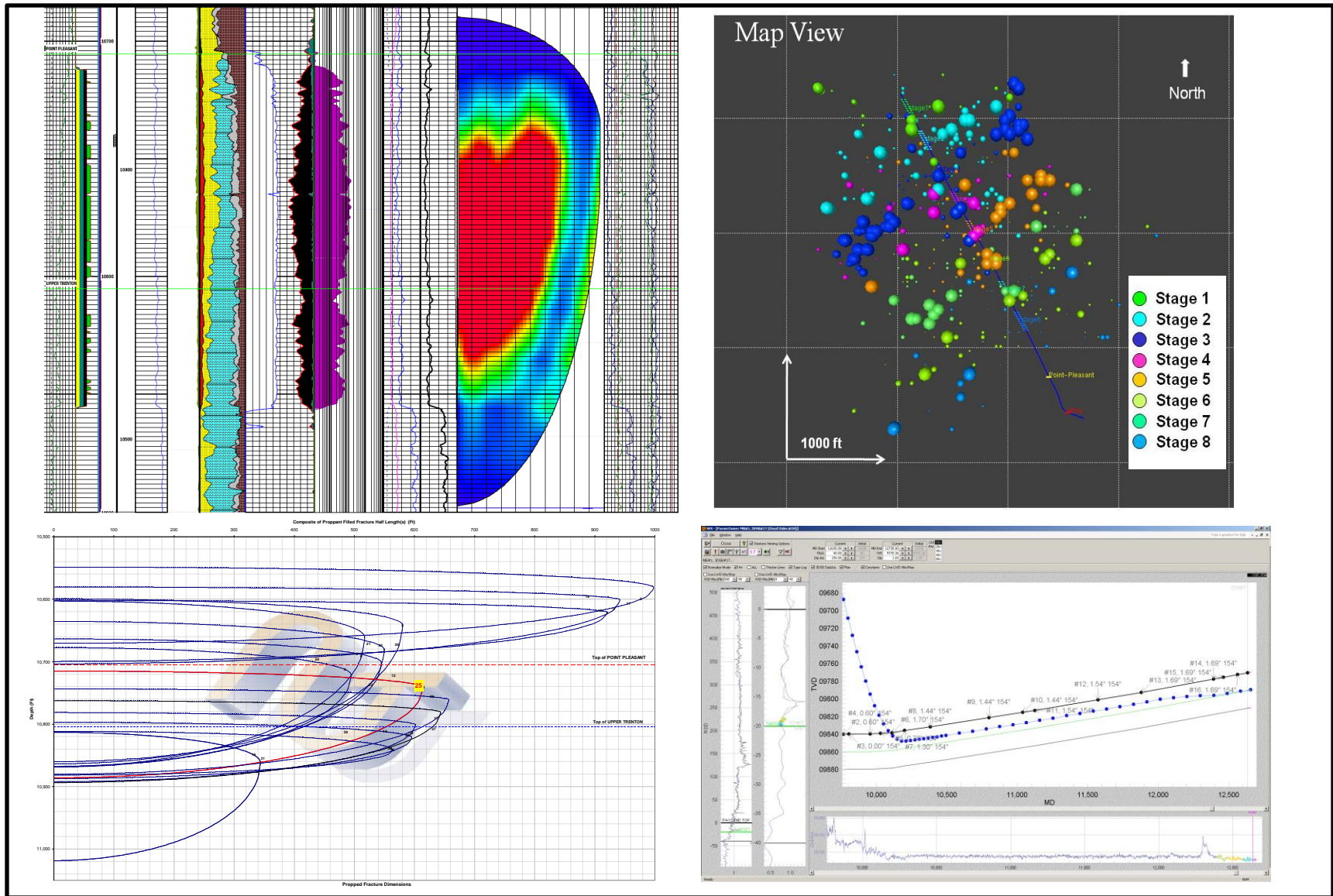




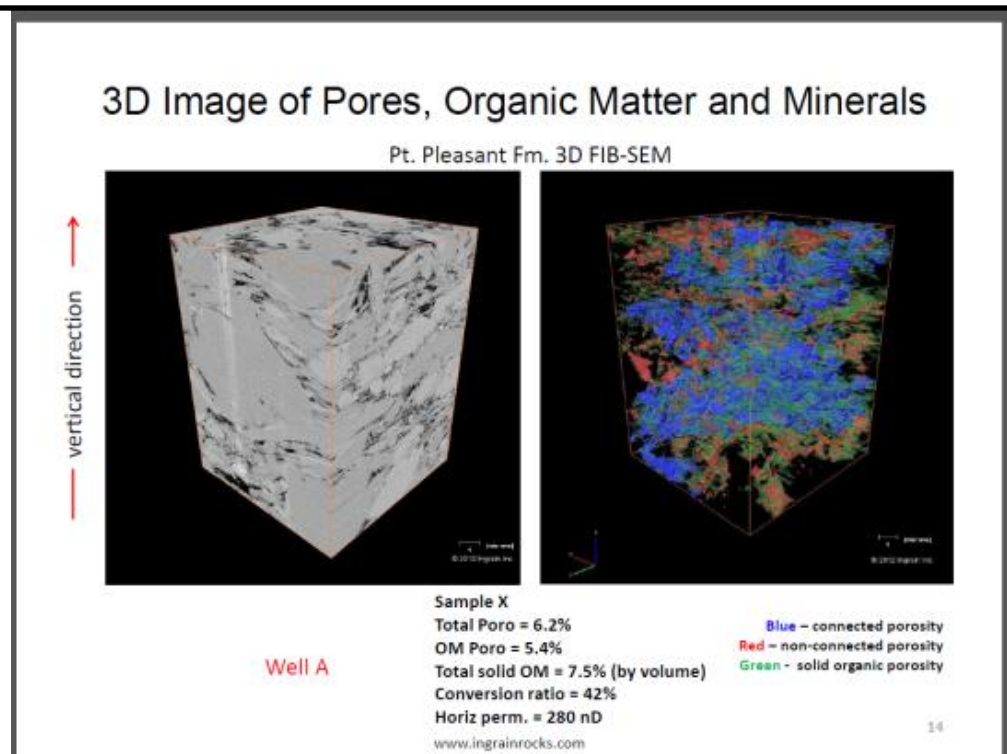
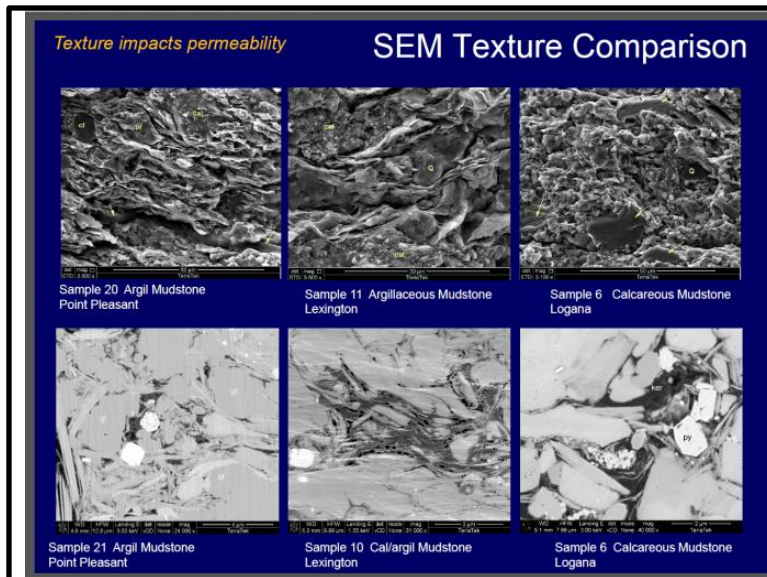
# Type Log Washington County, PA – Point Pleasant Target



# Microseismic & Completions Analysis



# Understanding the Reservoir at Multiple Scales

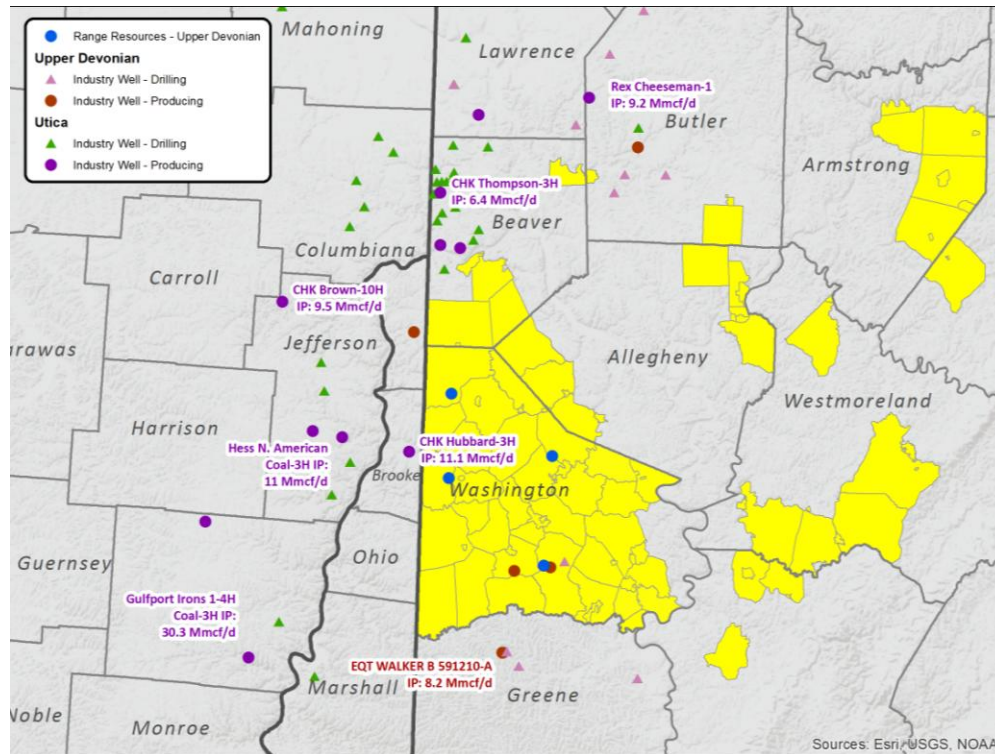


Range has considerable research completed and is in progress to further delineate and understand the Utica Point Pleasant play system and its key drivers. Significant log, core, and advanced SEM imaging data is being analyzed and utilized from various proprietary RRC data as well as participation in various research consortiums with Ingrain, Core Lab, WVU and others. All are integrated into comprehensive models for reservoir characterization.



# Additional Upside – Appalachia Stacked Pays

**As Marcellus drilling holds all depths, industry activity is proving up our SW PA Utica/Point Pleasant and Upper Devonian acreage**



Note: Townships where Range holds ~3,000 or more acres are shown in yellow (As of 12/31/2012)

## Stacked Pay Enhances Project Economics

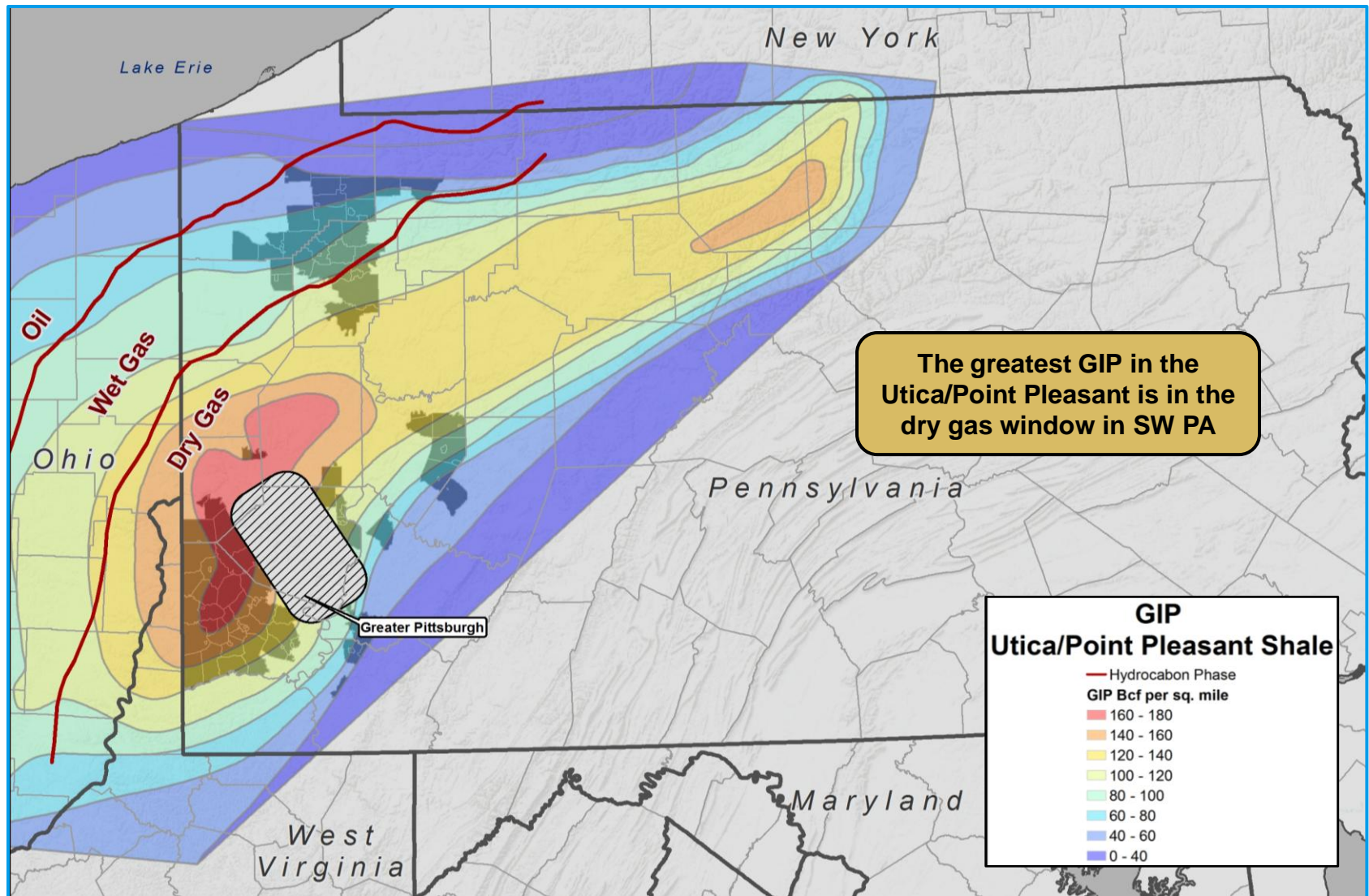
### Utica/Point Pleasant Shale

- Significant acreage positions in two areas  
SW PA – dry gas (400,000 net acres)  
NW PA – wet gas (180,000 net acres)
- CHK Hubbard-3H, ~1 mile west of Range's acreage, tested at 11.1 Mmcf/d with a lateral length of 2,900 feet and 8 frac stages

### Upper Devonian Shale

- Upper Devonian acreage significantly derisked
- Latest Super-Rich well – 24 hour test rate  
10.0 Mmcf/d (4.0 Mmcf/d gas, 172 bbls condensate, 826 bbls NGLs)
- Co-development of Upper Devonian & Marcellus may result in enhanced Marcellus wells

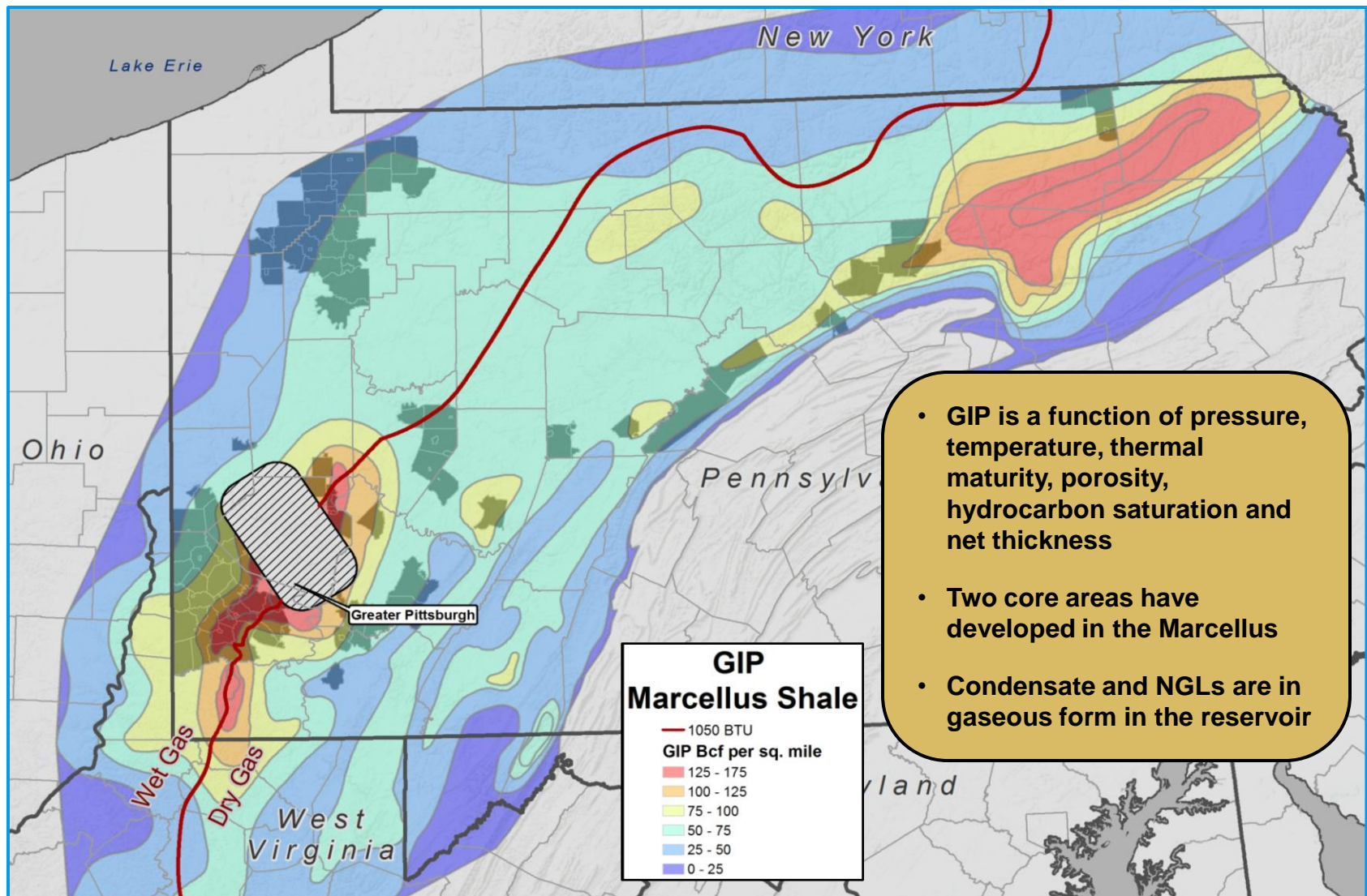
# Gas In Place (GIP) – Utica/Point Pleasant Shale



Note: Townships where Range holds ~3,000 or more acres (as of 12/31/2012), and estimated as prospective, are highlighted. GIP – Range estimates.



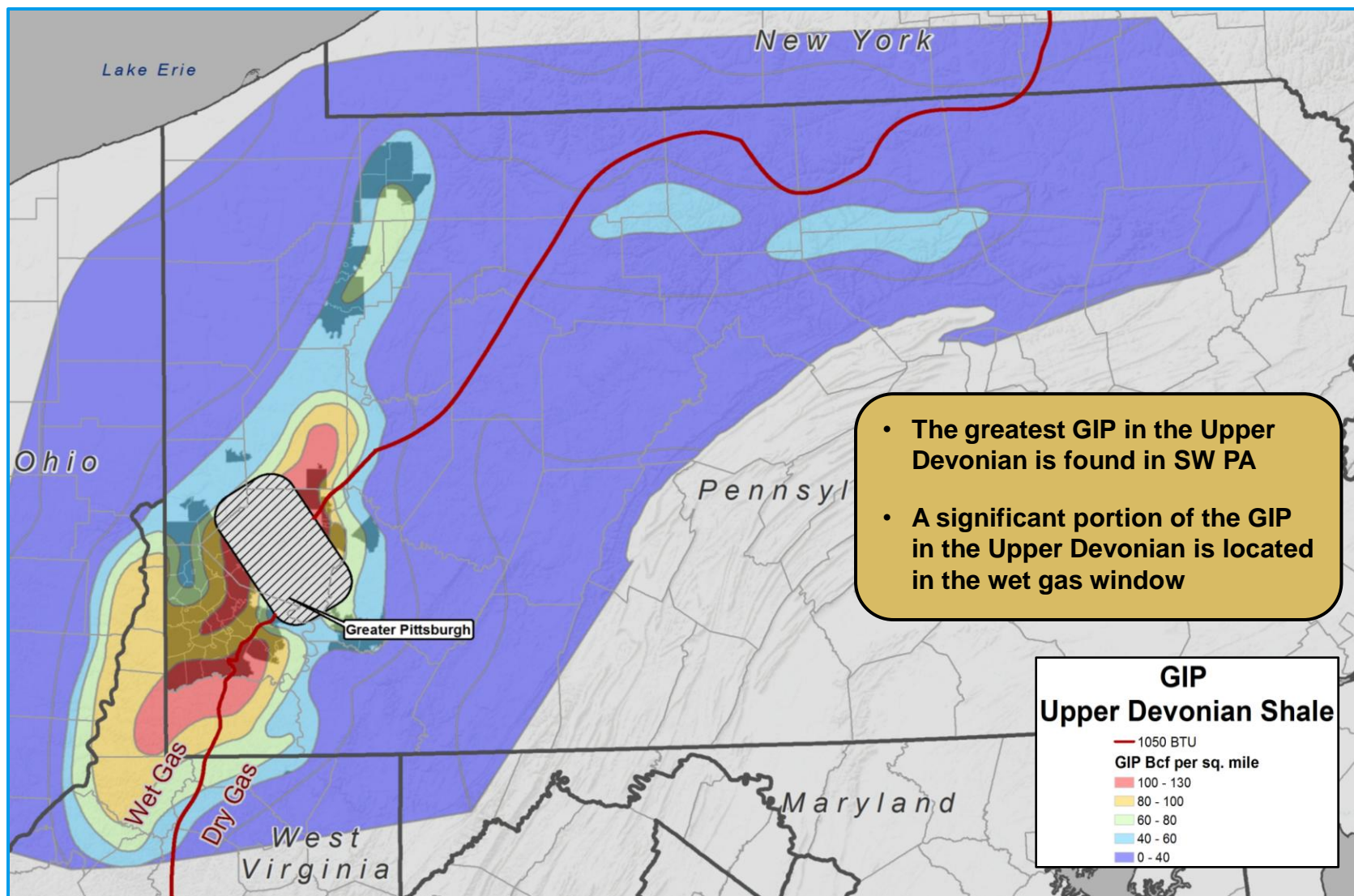
# Gas In Place (GIP) – Marcellus Shale



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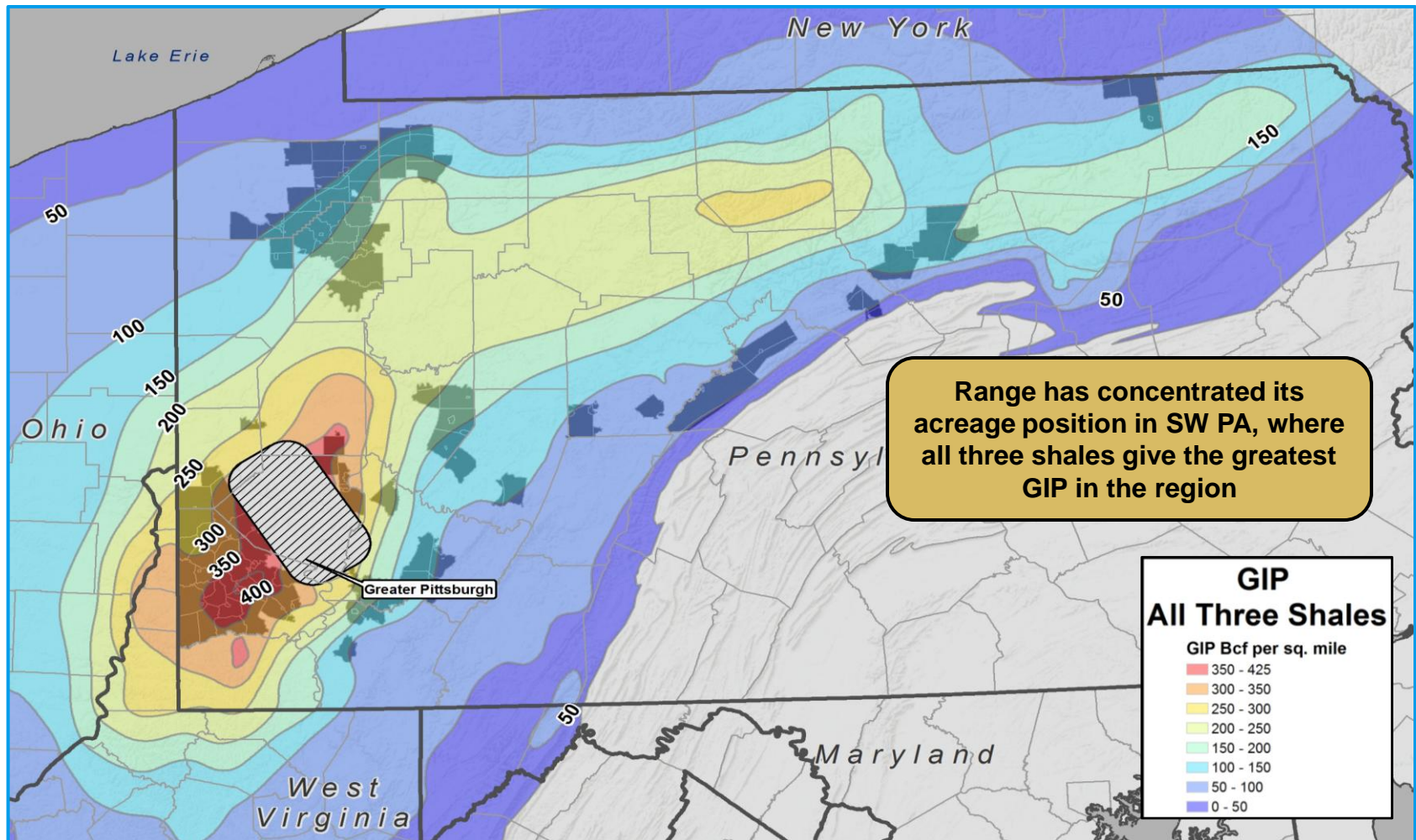


# Gas In Place (GIP) – Upper Devonian Shale



Note: Townships where Range holds ~3,000 or more acres (as of 12/31/2012), and estimated as prospective, are highlighted. GIP – Range estimates.

# Gas In Place (GIP) Analysis Shows Greatest Potential in SW PA



**When GIP analysis from the Marcellus, Upper Devonian and Utica/Point Pleasant are combined, the largest stacked pay resource is located in SW PA**

# Contact Information

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