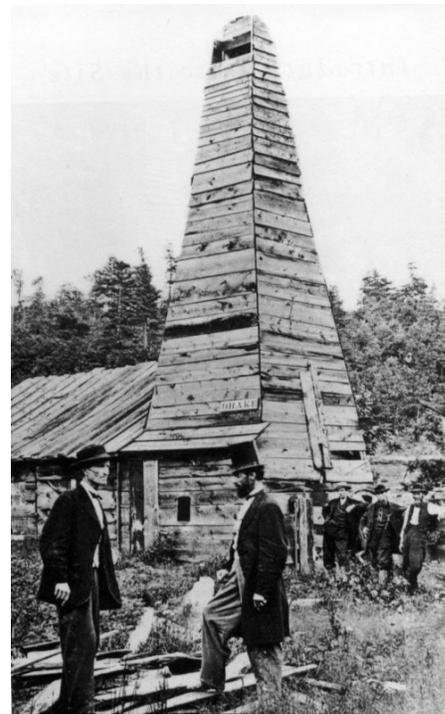


### Executive Summary

- Pennsylvania (“PA”) is a major gas producing state, with a storied hydrocarbon history and home to the world’s first commercial oil well
  - PA is the 3<sup>rd</sup> largest producing state of natural gas, producing around 10% of US natural gas
  - PA has a pooling law, but has never been tested in Utica or Marcellus shale
  - Act 13 of 2012, comprehensive overhaul of PA oil & gas law, was passed in February 2012
  - In December 2013, PA Supreme Court declared parts of Act 13 unconstitutional, leading to uncertainty in key area of regulations such as zoning and setbacks
- ペンシルバニア州(PA)は米国の主要なガス生産州の一つであり、世界で最初に原油の商業生産を開始したことで知られる
  - 全米第3位のガス生産州であり、米国天然ガス生産の約10%を担っている
  - Poolingに関する法規はあるが、Utica、Marcellus共に適用実績なし
  - 2012年2月、現行法規の抜本的改正としてPA州法 Act 13が成立
  - 2013年12月、州最高裁はAct 13の一部を違憲とした為、ゾーニングやセットバック等重要な分野の規制が不明確になっている

### Pennsylvania as an Oil & Gas State

- The world’s first commercial oil well (*Figure 1*) was drilled in 1859 in Titusville, Pennsylvania. Natural gas production in Pennsylvania dates back to 1881
- In 2012, operators drilled 2,383 oil and gas wells. Of that total, 1,359 were in “unconventional” shale formations such as the Marcellus, while 1,024 were drilled in shallower “conventional” formations
- Over 350,000 conventional oil and gas wells have been drilled in Pennsylvania; of which 70,000 are still in production
- Around 2,330 wells have been drilled in the Marcellus Shale since 2008
- It is estimated the Marcellus Shale is under 60% of Pennsylvania
- Pennsylvania law defines an unconventional gas well as a well drilled into a shale formation below the base of the Elk Sandstone or its geologic equivalent where natural gas cannot be produced by horizontal or vertical well bores except when stimulated by hydraulic fracturing.



*Figure 1: First oil well drilled 1859*<sup>i</sup>

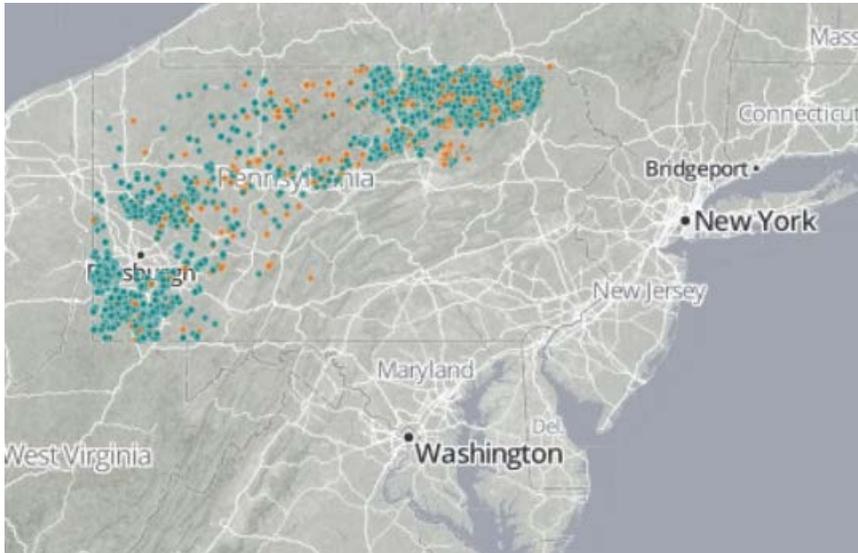


Figure 2: Active wells in Pennsylvania

Daily production from Marcellus Shale (February 2014)<sup>ii</sup>:

- 13.9 bcf/d
- 41 mboe/d

Activity (Figure 2):

- 6,391 active wells
- 59 operators

Top Operators<sup>iii</sup>:

- Chesapeake (752 wells)
- Range Resources (732 wells)
- Shell (599 wells)
- Talisman (561 wells)
- Anadarko (320 wells)

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## Regulatory Framework

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### *Main Regulator*

Pennsylvania (“**PA**”) Department of Environmental Protection

[http://www.portal.state.pa.us/portal/server.pt/community/dep\\_home/5968](http://www.portal.state.pa.us/portal/server.pt/community/dep_home/5968)

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### *Area of Responsibility*

Pennsylvania Department of Environmental Protection (“**DEP**”)

- develops policy and programs pursuant to oil and gas legislation
  - oversees the permitting and inspections
  - develops statewide regulation and standards
- 

### *Key Legislation*

- PA Act 359 Oil and Gas Conservation Law of 1961 (“**1961 Law**”); July 25, 1961
  - PA Act 223 Title 58 of 1984: (“**Oil and Gas Act**”)
  - PA Act 13 of 2012 (“**Act 13**”); February 14, 2012
  - Chapter 78 (“**CH78**”) Oil and Gas Wells
  - Chapter 79 (“**CH79**”) Oil and Gas Conservation
  - Senate Bill 259 (“**SB 259**”); July 9, 2013
- 

### *Other Important Legislation*

- PA Act 214: Coal and Gas Resource Coordination Law
  - PA Act 394: Clean Stream Law
  - Chapter 95: Waste Water Treatment Requirements
  - Chapter 102: Erosion and Sediment Control
  - Chapter 105: Dam Safety and Waterway Management
  - DEP Air Quality Permit Exemptions (doc 275-2101-003)
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## Recent Developments

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### *Pennsylvania enacts Marcellus Shale Act / Act 13 on February 14, 2012*

On February 8, 2012, the Pennsylvania legislature passed Act 13, also known as the Marcellus Shale Act, and Governor Corbett signed it into law on February 14. The goal of Act 13 was to outline a comprehensive plan for the safe and responsible development of unconventional natural gas resources within Pennsylvania. It was the first major update of the Oil & Gas Act in nearly 30 years.

New rules on permitting and notification, bonding, well setback restrictions, containment practices, water restrictions, chemical disclosure, inspection, enforcement and penalties were part of Act 13.

It consolidated the Oil and Gas Act (Act 223 of 1984) into 58 Pa.C.S. (Oil and Gas)

- Creates six chapters within 58 Pa.C.S.
  - Ch 23 – Unconventional Gas Well Fee
  - Ch 25 – Oil and Gas Lease Fund
  - Ch 27 – Natural Gas Energy Development Program
  - Ch 32 – Development
  - Ch 33 – Local Ordinances Relating to Oil and Gas Operation
  - Ch 35 – Responsibility for Fee
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*State Supreme Court declares parts of Act 13 unconstitutional on December 19, 2013*

On December 19, 2013, as part of a ruling in *Robinson Township v. Commonwealth*, 4 of 6 justices of the Supreme Court of Pennsylvania declared parts of Act 13 unconstitutional, stating it violates citizen's rights under the Environmental Rights Amendment in the State Constitution.<sup>iv</sup> Governor Tom Corbett asked the court to reconsider the decision, but the court rejected the request on February 21, 2014.<sup>v</sup>

The Supreme Court struck the following parts of the Act 13:

- State's right to waive restrictions on well location (setbacks) if operator presents adequate reasoning (3215 (b)(4))
- Prohibition of local authority to appeal State's decision on drilling permit (3215 (d))
- Prohibition of local authority to establish zoning and other restrictions (3303-3304)
- Any other part deemed not severable from above, including the entire restriction on well location (3215 (b) – (e), 3305 – 3309)

The Supreme Court also remanded a lower court to address whether the rest of the Act 13 can remain valid once severed from struck sections. If the lower court decides the rest of Act 13 is not severable, then all of Act 13 may become void, creating legal uncertainty on future regulations.

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*Impact of the Supreme Court ruling*

- Considered a victory for local authorities (county and township) over the State because they can control well locations.
  - Setback rules (unconventional well must be 300 feet away from water source) do not apply.
  - W Advisory understands operators in Pennsylvania are voluntarily honoring the setback rules under Act 13. However, we recommend non-operators verify the position with its operators.
  - This enables local authorities to establish zoning and other regulations which could limit drilling activity. Although no such initiative has been apparent since the court ruling, regulations of each local authority of planned operation should be examined carefully.
  - It is still possible that the lower court ruling on the severability will invalidate all of Act 13.
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## Pooling/Unitization

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### *Overview*

- Under the 1961 Law, pooling has been available for the Utica shale, but excludes Marcellus shale
- On July 9, 2013 Pennsylvania passed SB 259, which, in theory, would allow for pooling of Marcellus shale development

The purpose of SB 259 was to improve transparency of royalty calculation by operators. It was not intended to cover pooling. At the last minute, a single sentence was added allowing pooling. It only states that an operator can drill into adjacent tract, but did not outline context, description or any procedures.

Opponents are upset that it opens a way to forced pooling by hiding the idea in an unrelated bill without the proper discussion.

Proponents claim SB 259 opens the way for forced pooling.

SB 259 requires operator to have the lease in a contiguous tract. SB 259 does not allow an operator to drill into the tracts that is not under its lease; 1961 Law allows it, but the Law is only applicable to the horizons deeper than the Marcellus. One consequence of SB 259 is that land owners and royalty interest holders with old lease agreement may lose the opportunity to re-negotiate royalties for shale development.

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### *Marcellus Pooling*

- Traditionally, pooling was not available in Pennsylvania for the Marcellus shale
  - SB 259 allows for pooling for Marcellus shale development if the operator has lease agreement in all applicable tracts.
  - SB 259 has not been used for pooling since it was passed in 2013
- 

### *Utica Pooling*

- Under the 1961 Law, pooling has been available for wells that penetrate the “Onodaga horizon”, which is 3,800 feet and deeper
  - The Utica shale, which is deeper than the Marcellus shale, and deeper than 3,800 feet, has always been subject to pooling laws
  - If agreement for voluntary pooling has not been reached, operator can apply for forced pooling, and DEP may grant such order after public hearing
  - However, forced pooling has not been successfully applied to any Utica shale wells
-

*First application for forced pooling (Utica shale) proceeding to public hearing*

Hilcorp Energy Company is the first to attempt forced pooling for Utica shale under 1961 Law.

- In July 2013, Hilcorp requested DEP to approve 4 drilling units by pooling 35 acre into its 3,267 acres for planned drilling in Lawrence and Mercer counties.
- DEP stated it is Environmental Hearing Board (EHB) jurisdiction to decide.
- On November 20, 2013, EHB declared it is DEP to decide.
- DEP scheduled the first hearing on May 7-8, 2014 with approximately 200 property owners identified.

This is the first attempt for forced pooling in Pennsylvania under 1961 Law. Development since July 2013 implies neither DEP nor EHB were ready to immediately proceed with the application, resulting DEP in postponing the first hearing from March to May 2014. Governor Corbett has not made any comments specific to the Hilcorp case. However, in 2011 he expressed clear opposition against forced pooling, calling it an act of “private eminent domain”.<sup>vi</sup>

*Unitization Laws*

Pennsylvania does not have any unitization laws.

**Taxes**

*Severance*

Pennsylvania does not have a severance tax.

It is one of the few states that does not. Pennsylvania does have an “Impact Fee”, which generated over \$200 million during 2012. Recently there are several proposals to begin a severance tax, ranging 4.0-5.9%. However, there are concerns raised by industry groups that a severance tax in addition to the Impact Fee would have an adverse effect on future investment.

*Ad Valorem*

Pennsylvania does not have an ad valorem tax.

**Drilling Permit Requirements**

*Leases*

Pennsylvania state does not regulate leasing as it is deemed as contractual arrangement between private parties.

*Drilling permits*

No well can be drilled without a permit from DEP.

Average application fee is \$3,220/well and takes 45 days for approval.<sup>vii</sup>

*Bonding*

After submitting permit application, operator must place a bond for the well

- wellbore length <6000ft : \$4000/well with cap by sliding scale
- wellbore length >6000ft : \$1000/well with cap by sliding scale<sup>viii</sup>

<i>Impact fee</i>	<p>Local authorities are entitled to impose an “Impact Fee” on each unconventional gas well if the county passes the ordinance within 60 days from the effective date of Act 13. The fee changes every year based on several elements: gas price, consumer price index, years in production, and whether the well is horizontal or conventional.</p> <p>During 2012, \$202 million was collected from more than 5,600 wells (approximately \$36,000 per well).<sup>ix</sup></p>
<i>Well spacing</i>	<p>DEP does not specify standard distance for well spacing. Applicant is to propose the well spacing with relevant information (topography, property line, reservoir characteristics, etc.), then DEP shall decide after public hearing. Single application cannot exceed area of 10 square miles.<sup>x</sup></p>
<i>Zoning</i>	<p>Under Act 13, the State of Pennsylvania would establish uniform statewide land use rules, overriding any local zoning laws. Local authorities would not be able to regulate zoning. However, this was overturned in the Supreme Court decision of December 19, 2013.<sup>xi</sup></p>
<b>Environmental Requirements</b>	
<i>Setbacks</i>	<p>An unconventional well must be placed 300 feet away from water sources (stream, spring, wetland) and 100 feet away from the edge of well pad. However, DEP can waive this restriction if the operator presents adequate measures.<sup>xii</sup></p> <p>Although this has been struck by the Pennsylvania Supreme Court it has been still respected voluntarily by most operators, as requested by governor Corbett to industry organization such as Marcellus Shale Coalition and Pennsylvania Independent Oil &amp; Gas Association.</p>
<i>Hydraulic Fracturing</i>	<p>Online public disclosure and recording of chemical components of hydraulic fracturing fluids required.<sup>xiii</sup> However, the disclosure can be limited if the composition of the chemical is a trade secret of operator or service provider.</p>
<i>Water Management</i>	<p>A water management plan needs to be approved to use any water for drilling.</p> <p>Responsibility presumed for any pollution within 2,500 feet from the well for 12 months.<sup>xiv</sup></p>
<i>Waste Containment</i>	<p>Containment plan for spilled material and waste needs to be approved.</p> <p>Operator required to keep waste water transport records for 5 years.<sup>xv</sup></p>
<i>Air Quality</i>	<p>New DEP regulations from August 2013 set stricter criteria than federal air quality rules.<sup>xvi</sup></p> <p>Under the new rule operator must submit air quality plan for DEP’s approval before drilling a new well.</p> <p>Flaring is allowed for short periods or emergencies only.</p>
<i>Well Site Restoration</i>	<p>Within 9 month from drilling completion, operator must restore the well site including filling of pits for produced fluids.<sup>xvii</sup></p>

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<sup>i</sup> <http://www.pioga.org/education/pa-oil-and-gas/>

<sup>ii</sup> EIA Drilling Productivity Report

<sup>iii</sup> <http://stateimpact.npr.org/pennsylvania/drilling/>

<sup>iv</sup> <http://jurist.org/paperchase/2013/12/pennsylvania-supreme-court-rules-portion-of-shale-drilling-law-unconstitutional.php>

<sup>v</sup> <http://stateimpact.npr.org/pennsylvania/2014/02/21/pa-supreme-court-will-not-reconsider-act-13-decision/>

<sup>vi</sup> <http://www.naturalgasintel.com/articles/22562-pennsylvania-governor-opposes-forced-pooling>

<sup>vii</sup> Act 13, Sec 3211

<sup>viii</sup> ACT 13, Sec 3225

<sup>ix</sup> Act 13, Sec 2302

<sup>x</sup> CH 79 21-27

<sup>xi</sup> Act 13, Sec 3304

<sup>xii</sup> Act 13, Sec 3215

<sup>xiii</sup> Act 13, Sec 3222.1

<sup>xiv</sup> Act 13, Sec 3211(m), Sec 3218(c)

<sup>xv</sup> Act 13, Sec 3218.2, Sec 3218.3

<sup>xvi</sup> DEP Bureau of Air Quality, “Air Quality Permit Exemptions” doc ref. 275-2101-003

<sup>xvii</sup> Act 13, Sec 3216