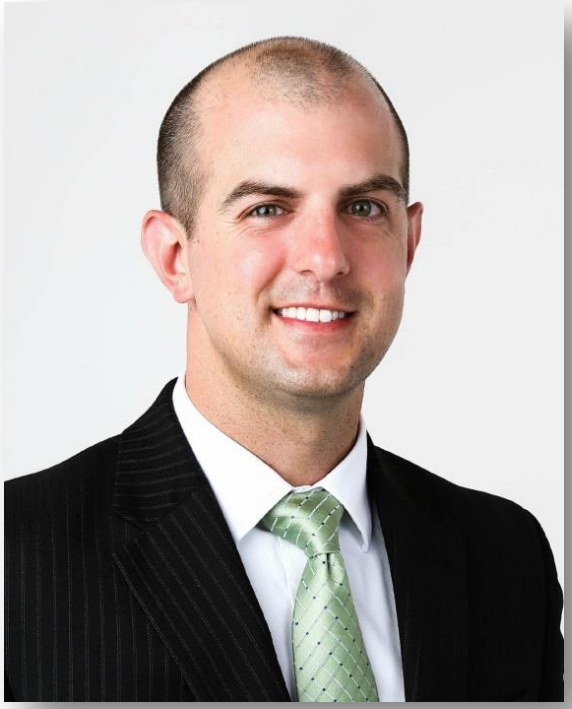
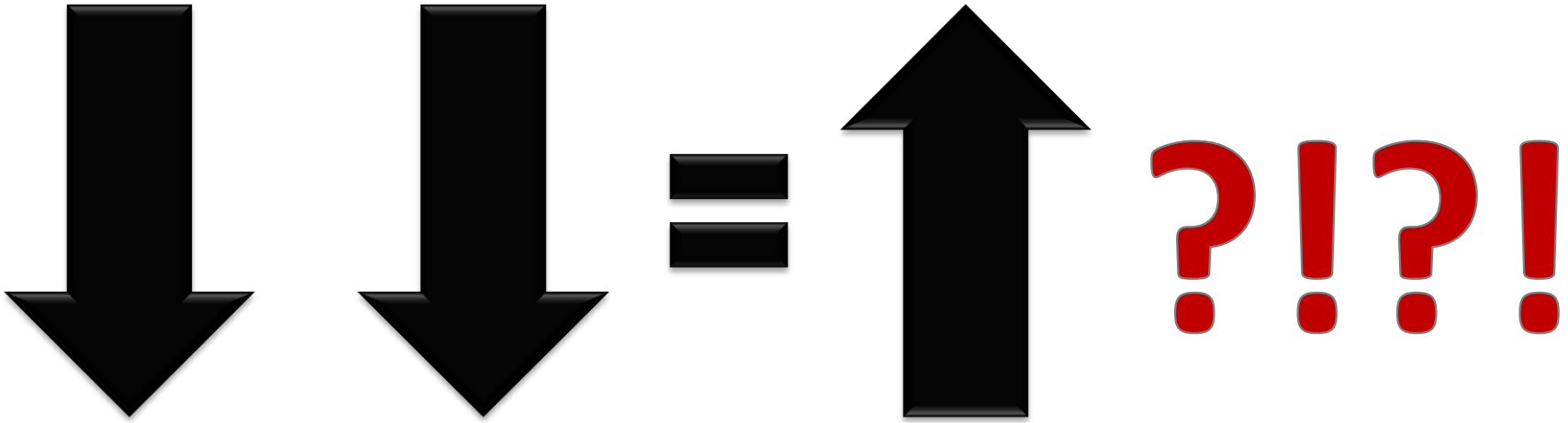
Understanding Current Production Dynamics



Justin J Kringstad
Geological Engineer
Director
North Dakota Pipeline Authority

August 20, 2015

Understanding Current Production Dynamics
First Half of 2015

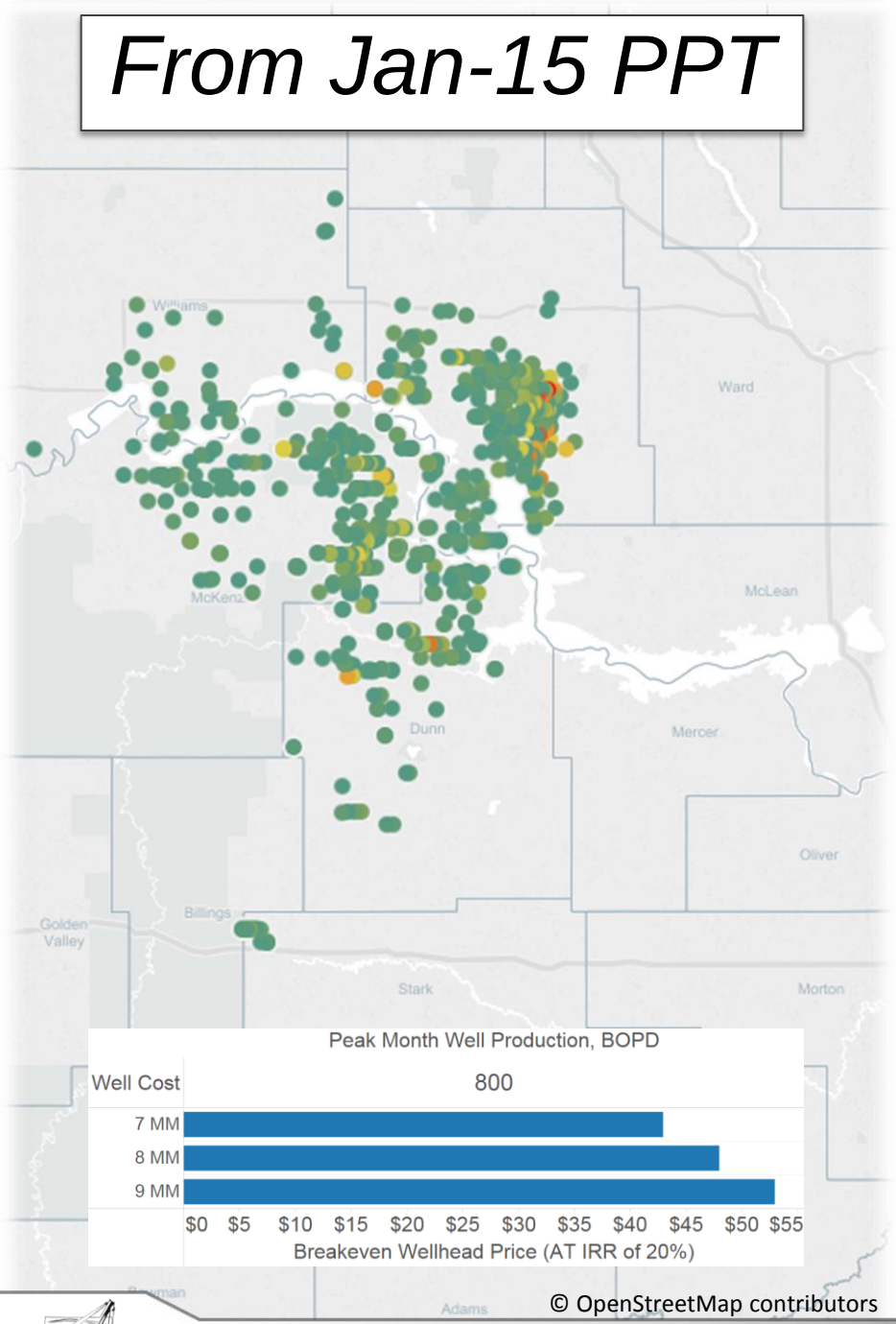


Oil Prices

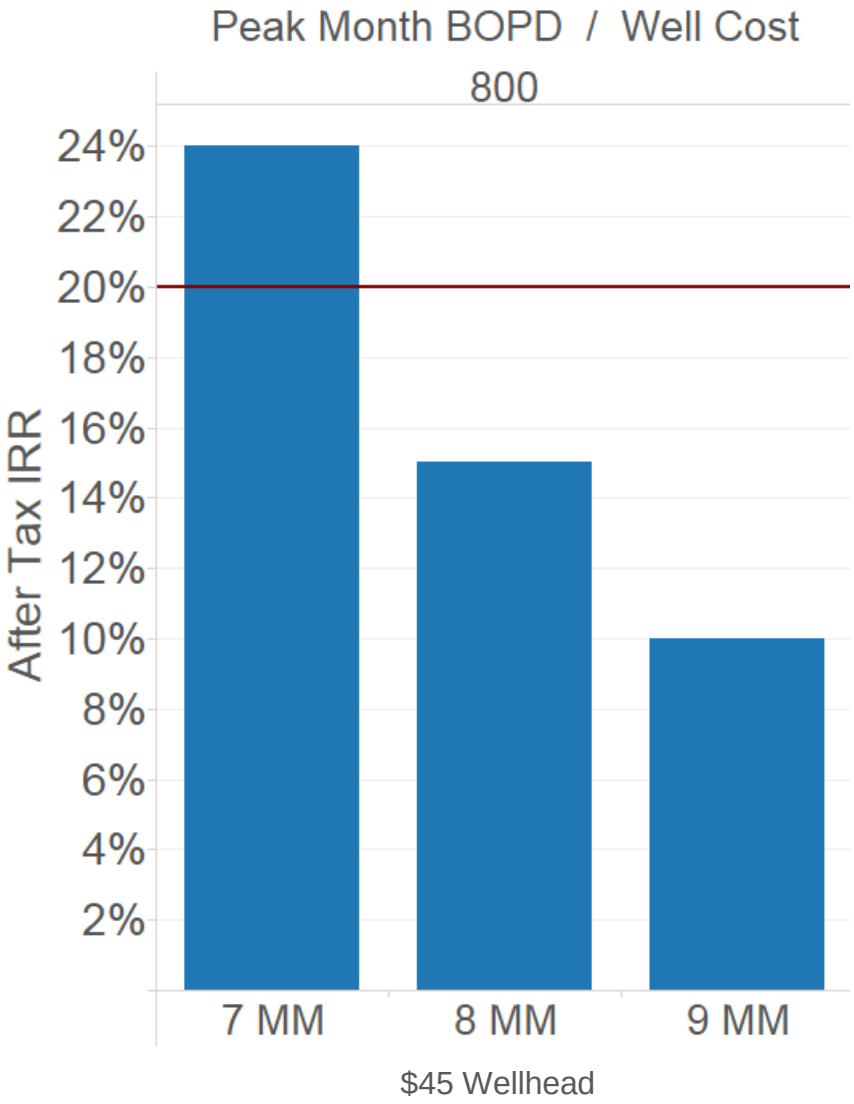
Rig Count

Production

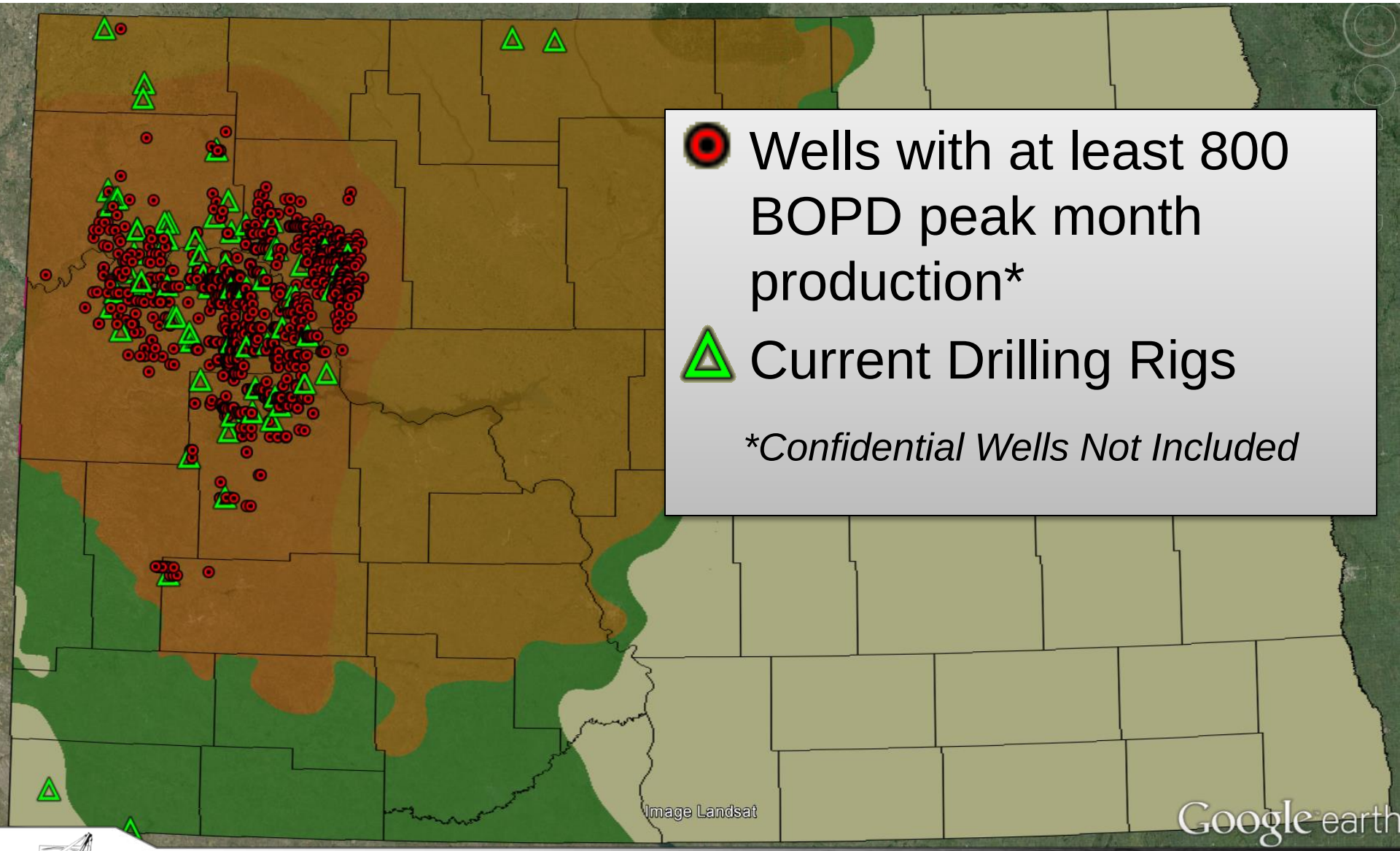
From Jan-15 PPT



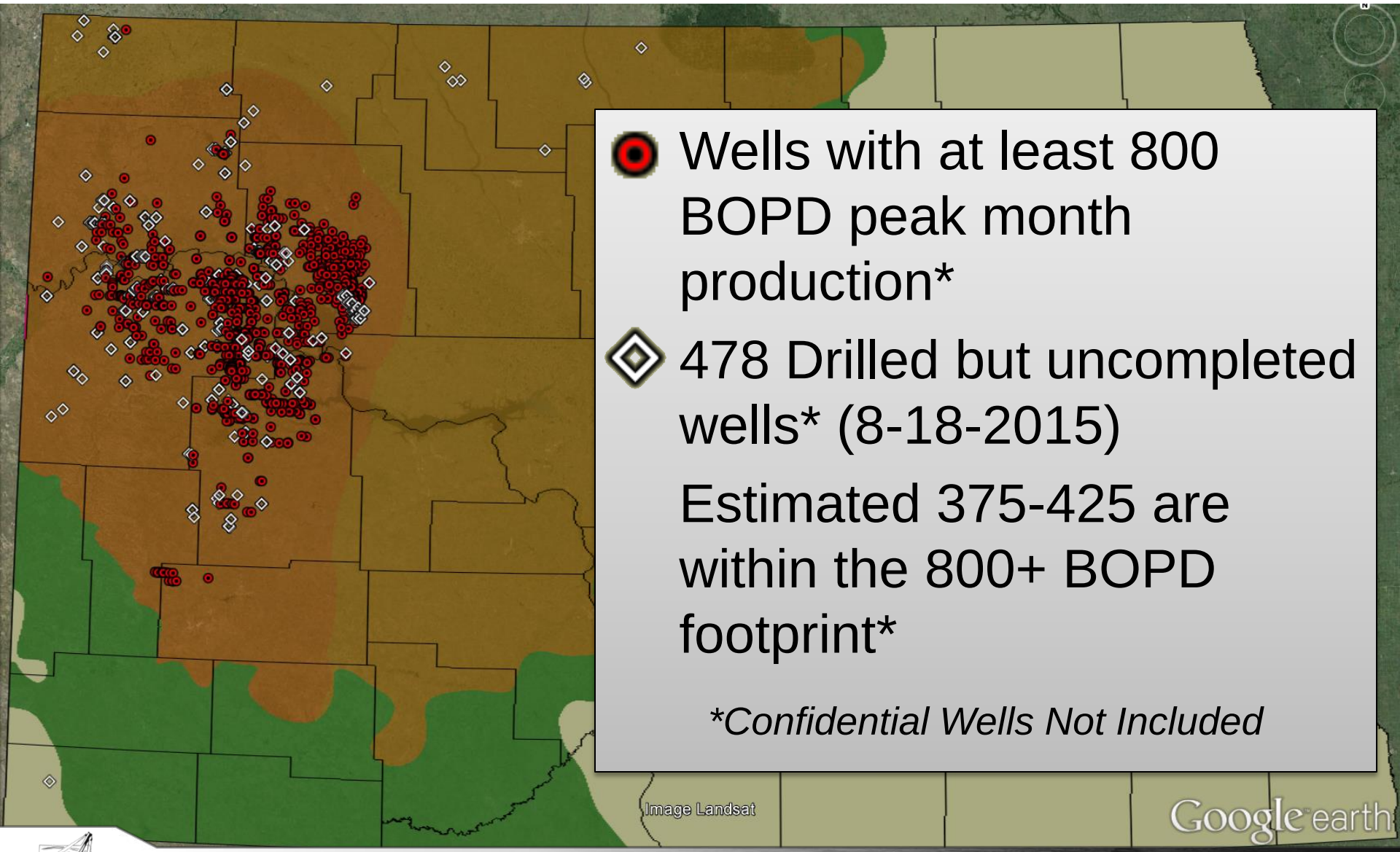
Peak Month Minimum 800 BOPD



Watching: Rigs Locations



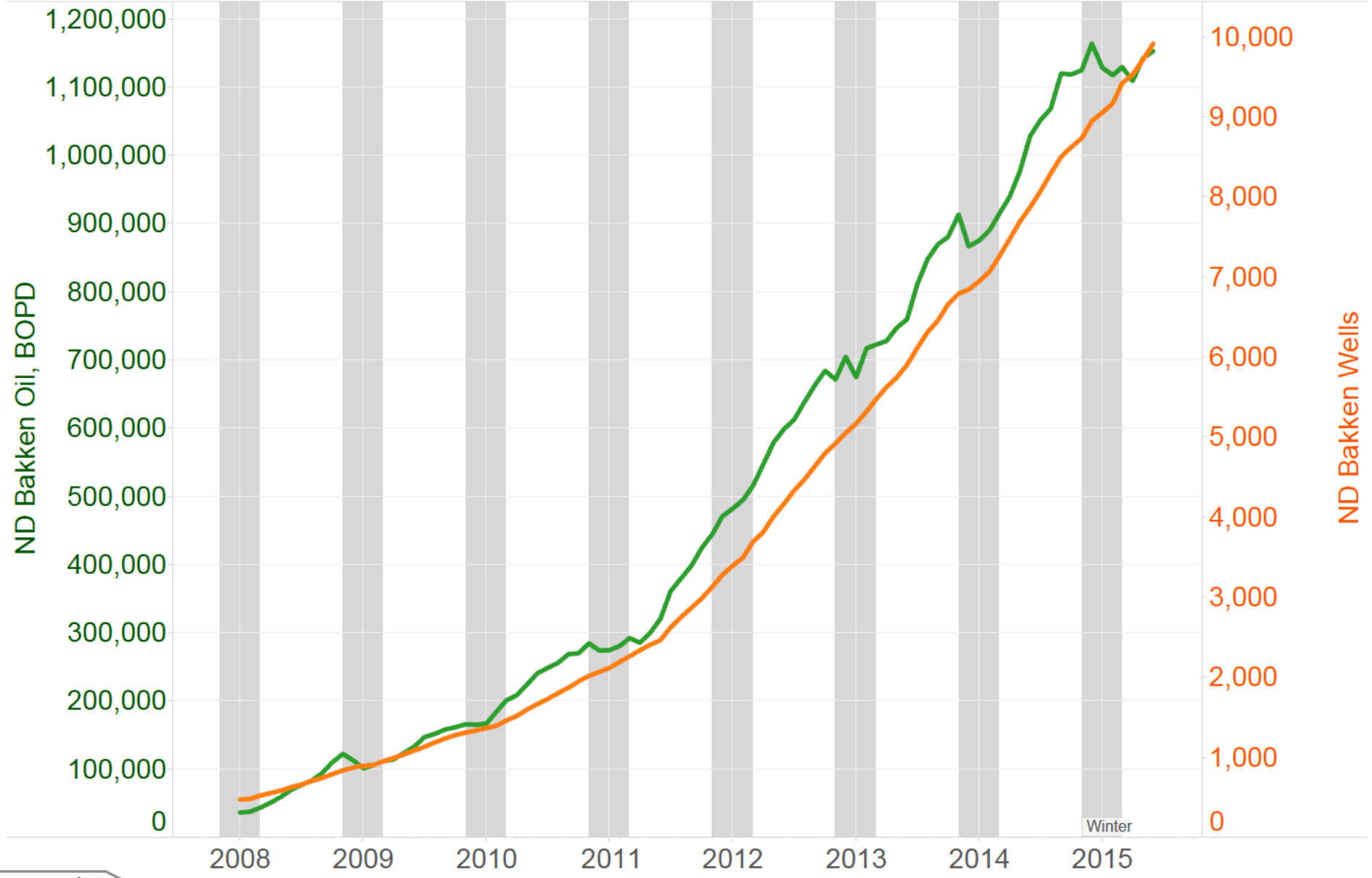
Watching: Location of Uncompleted Wells



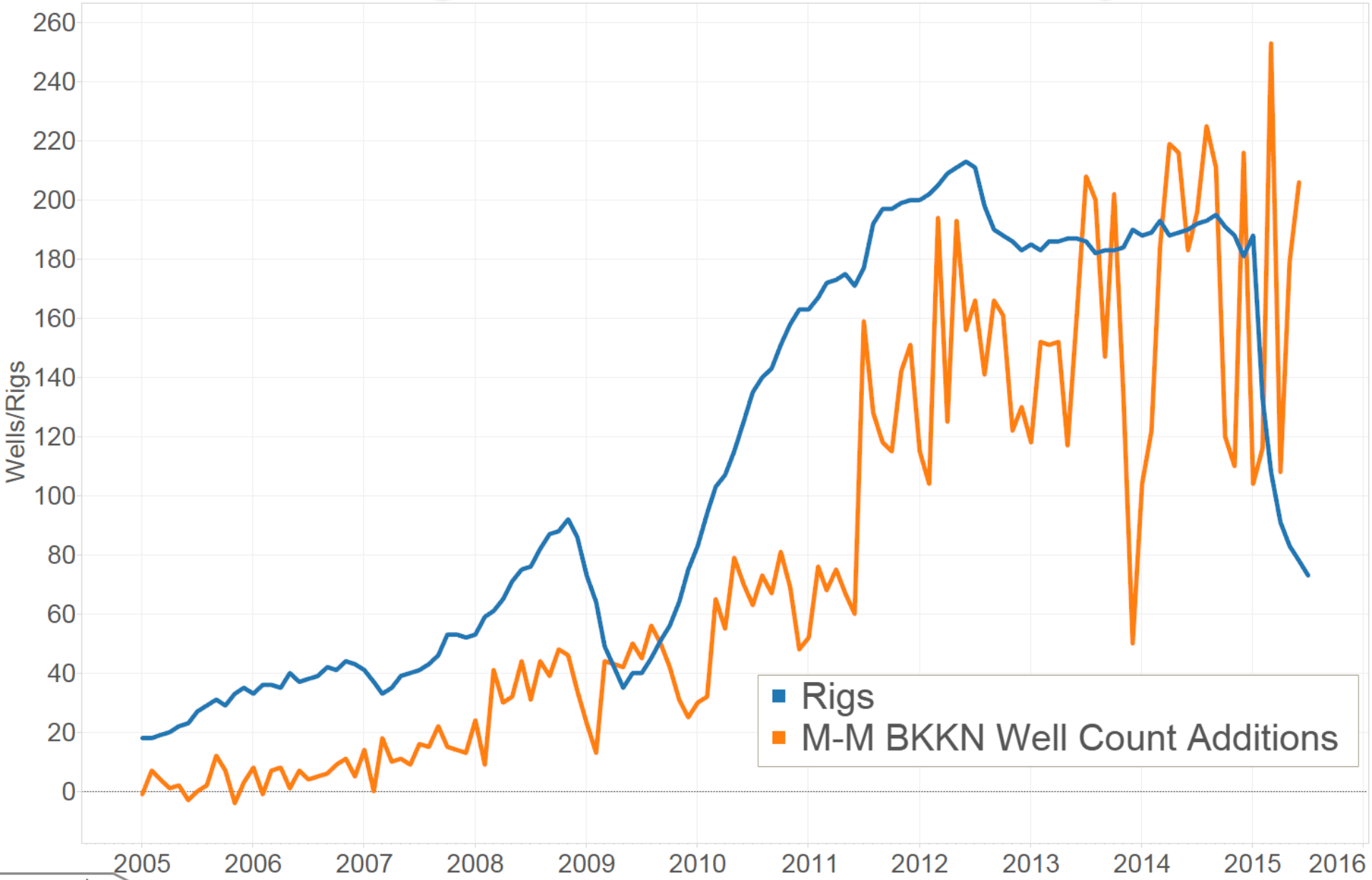
- Wells with at least 800 BOPD peak month production*
- 478 Drilled but uncompleted wells* (8-18-2015)
- Estimated 375-425 are within the 800+ BOPD footprint*

**Confidential Wells Not Included*

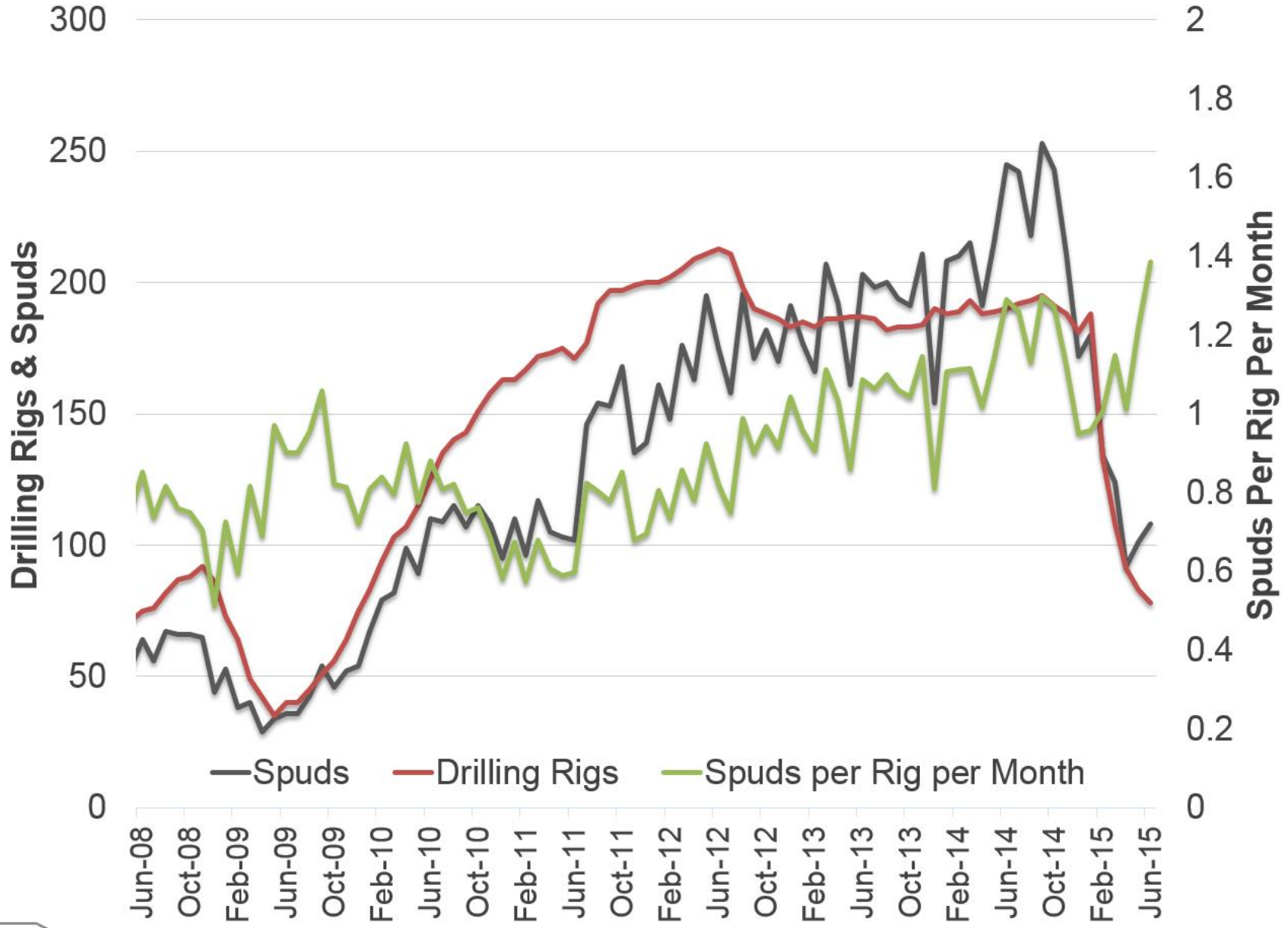
Understanding Current Production Dynamics



Understanding Current Production Dynamics



North Dakota Drilling Efficiency

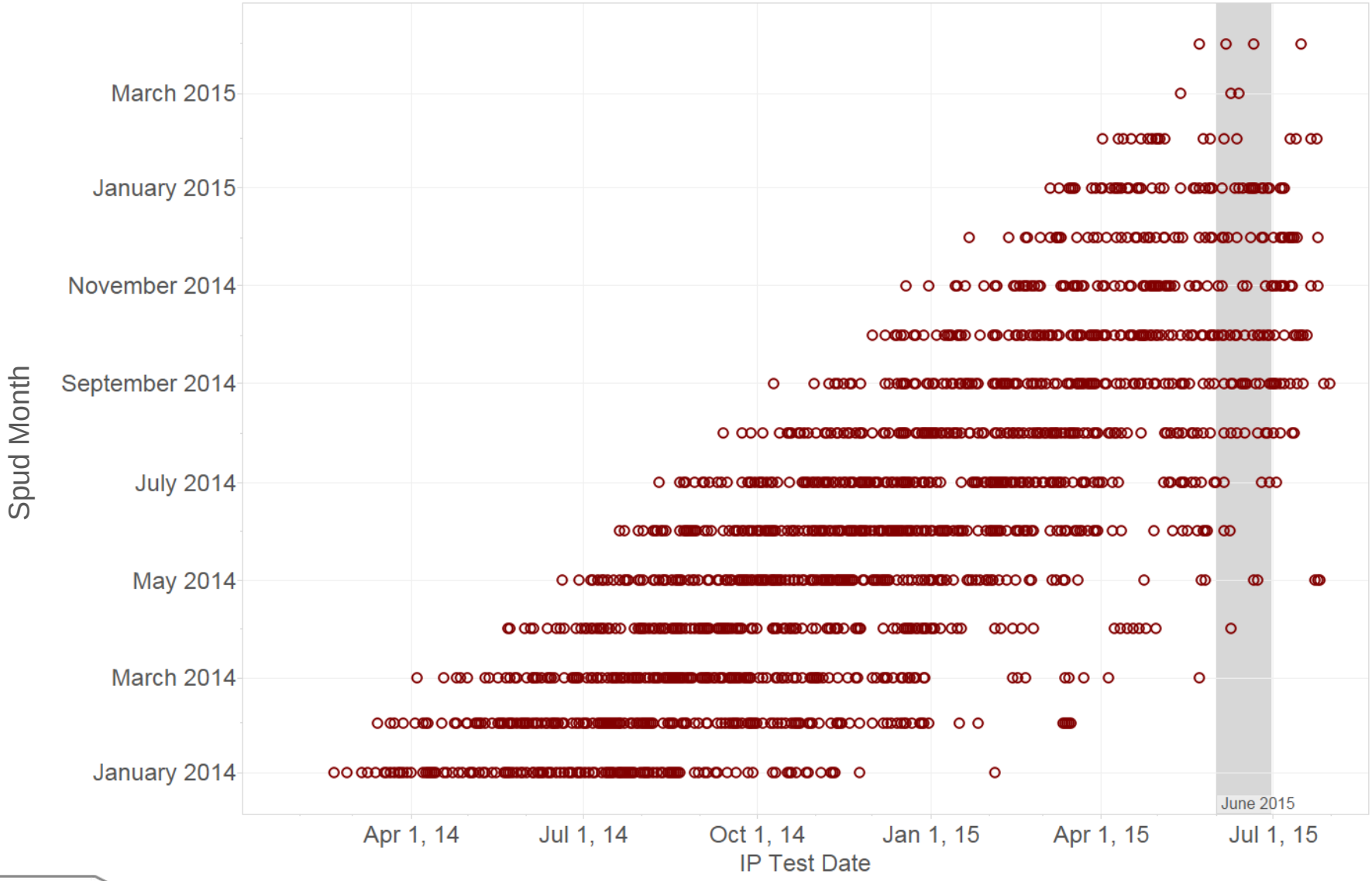


Understanding Current Production Dynamics

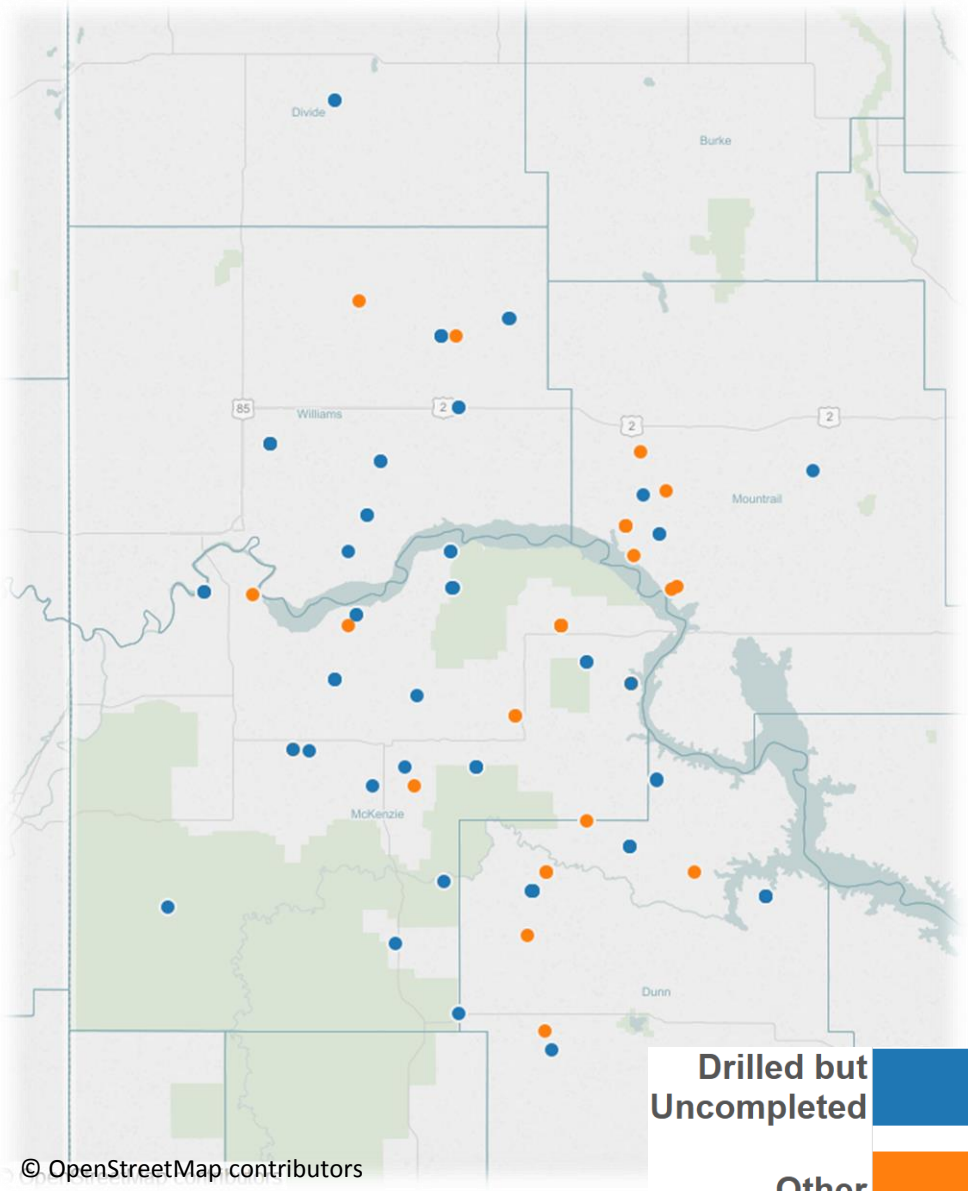
Diving Deep Into June 2015 Production

Understanding Current Production Dynamics

Non-Confidential Spud to Initial Production Timeline



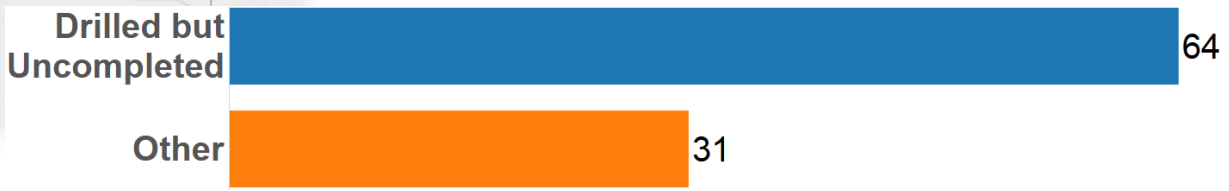
Understanding Current Production Dynamics



95 Non-confidential locations reported initial production in June 2015

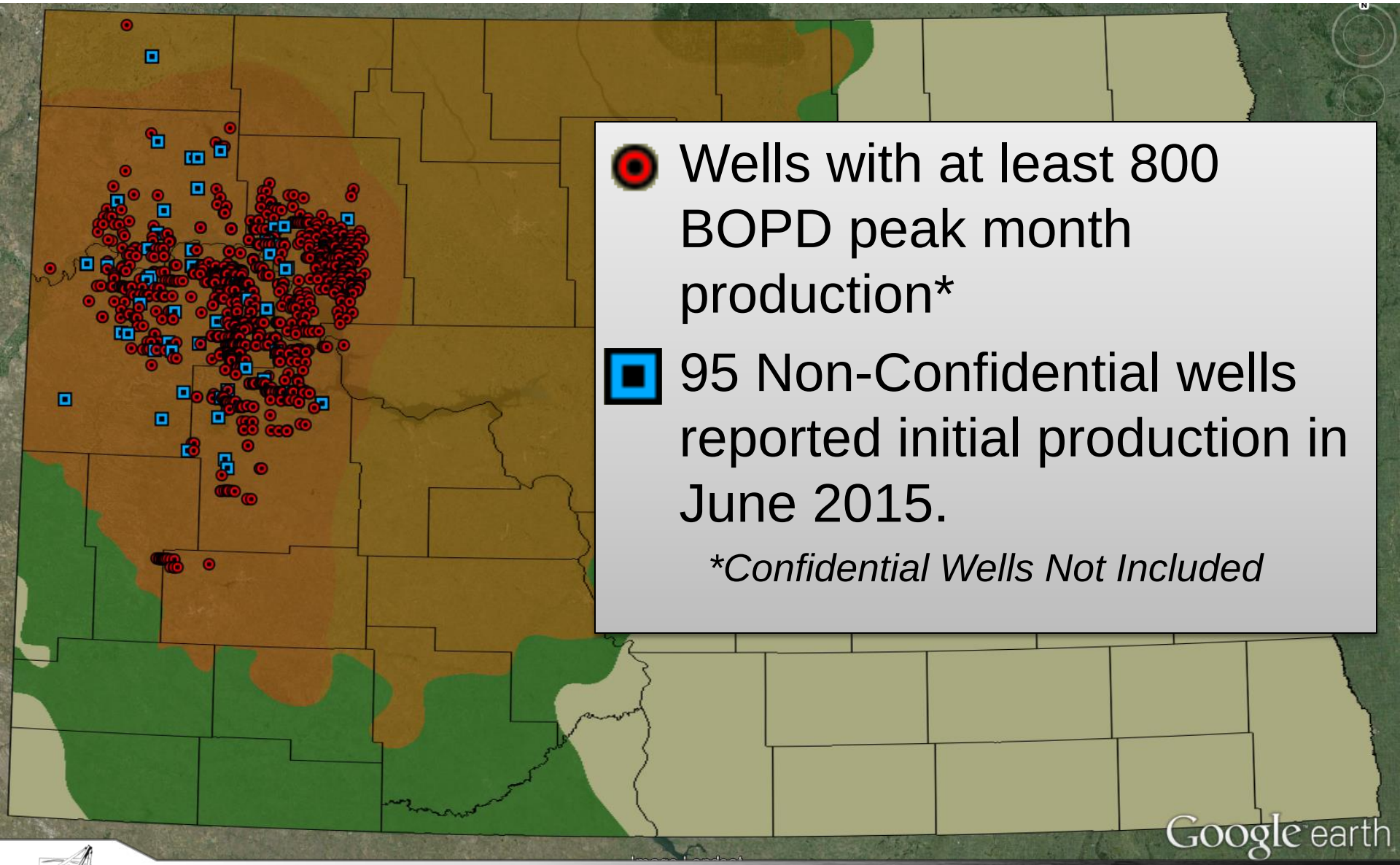
These wells were drilled between April 2014 and April 2015.

Well status at the end of May 2015 shows that majority were flagged by the NDIC as drilled but uncompleted

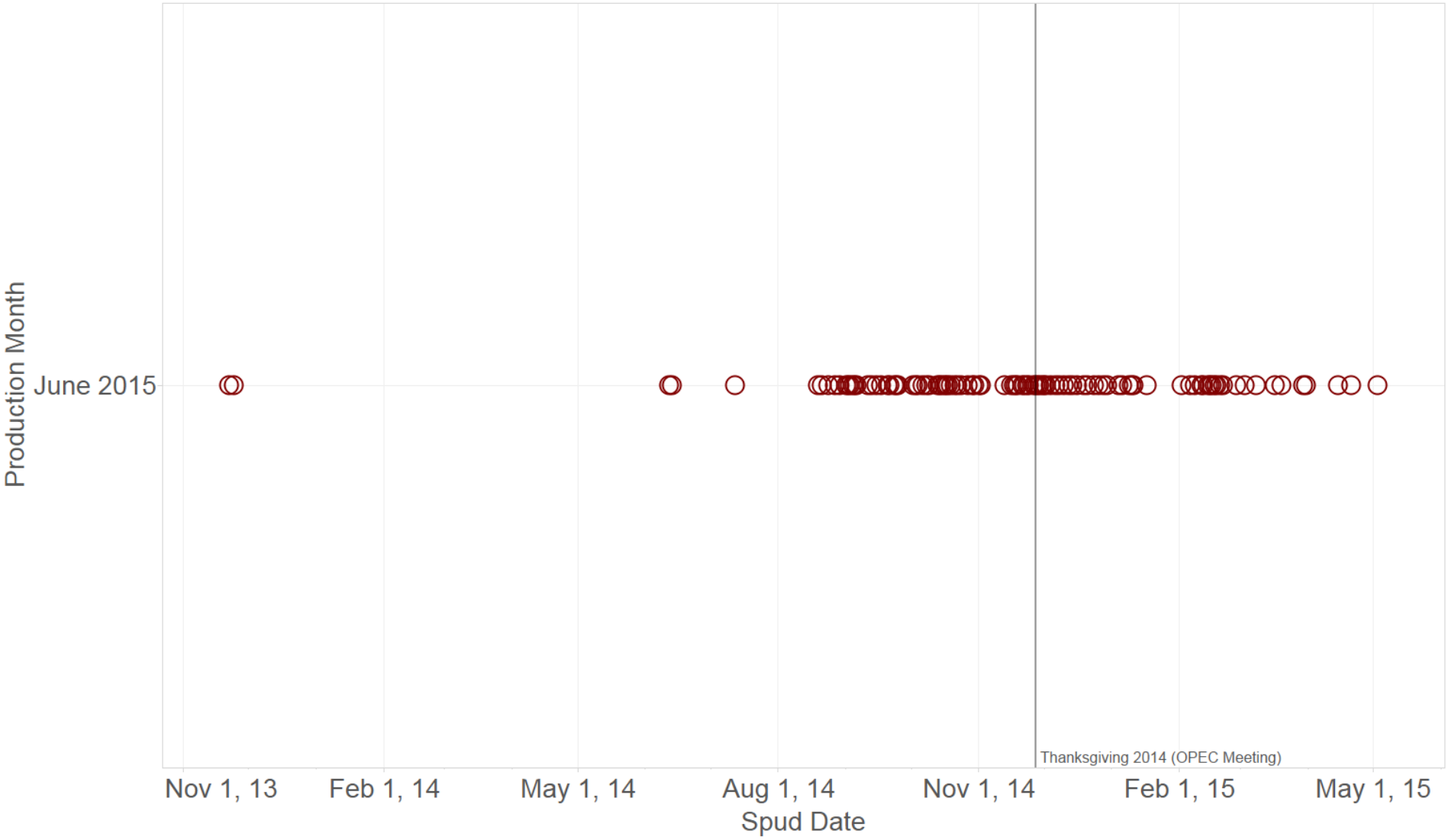


Understanding Current Production Dynamics

June 2015 Non-Confidential IP Locations

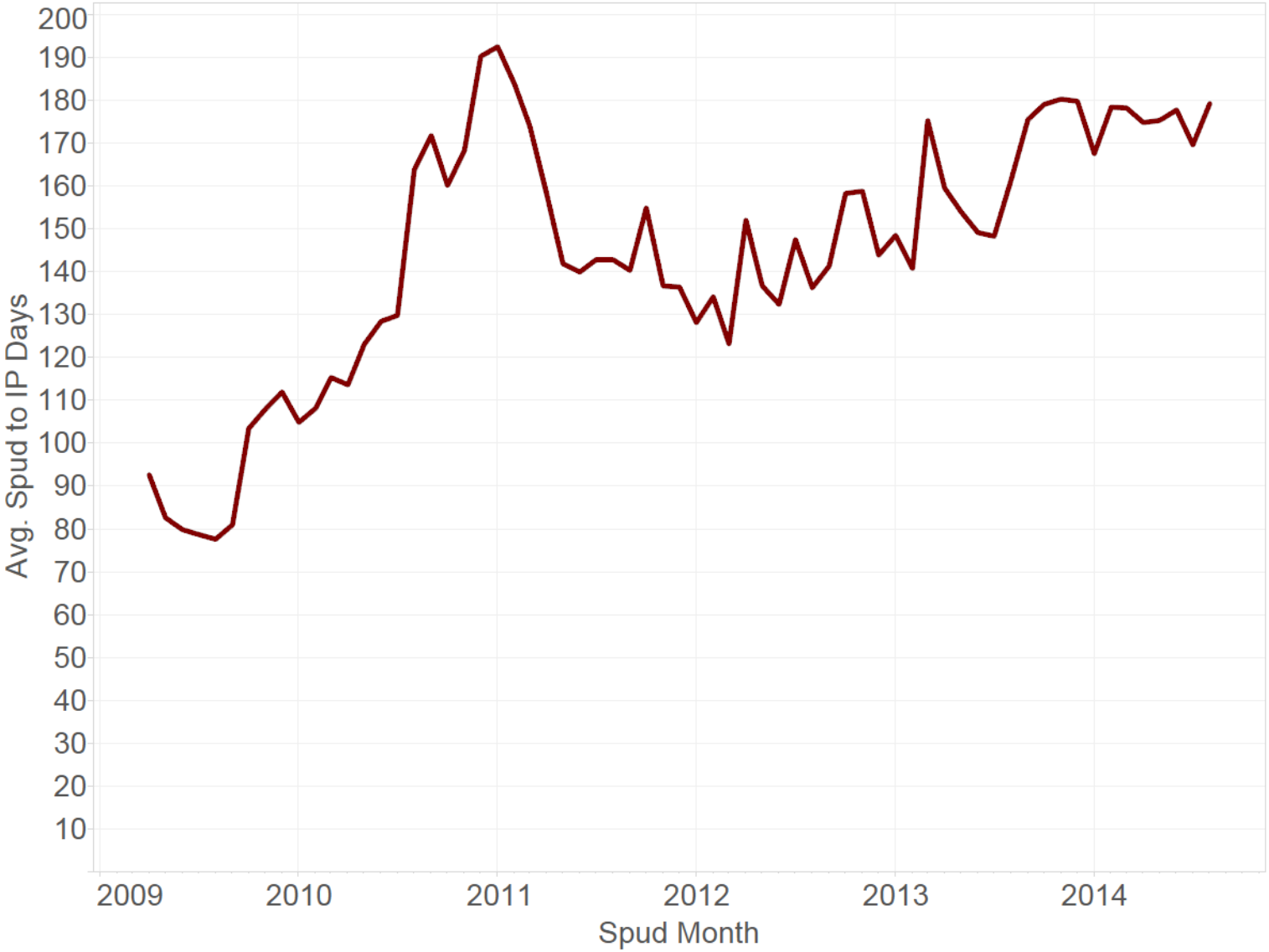


Spud Dates of Confidential Wells Producing in June 2015



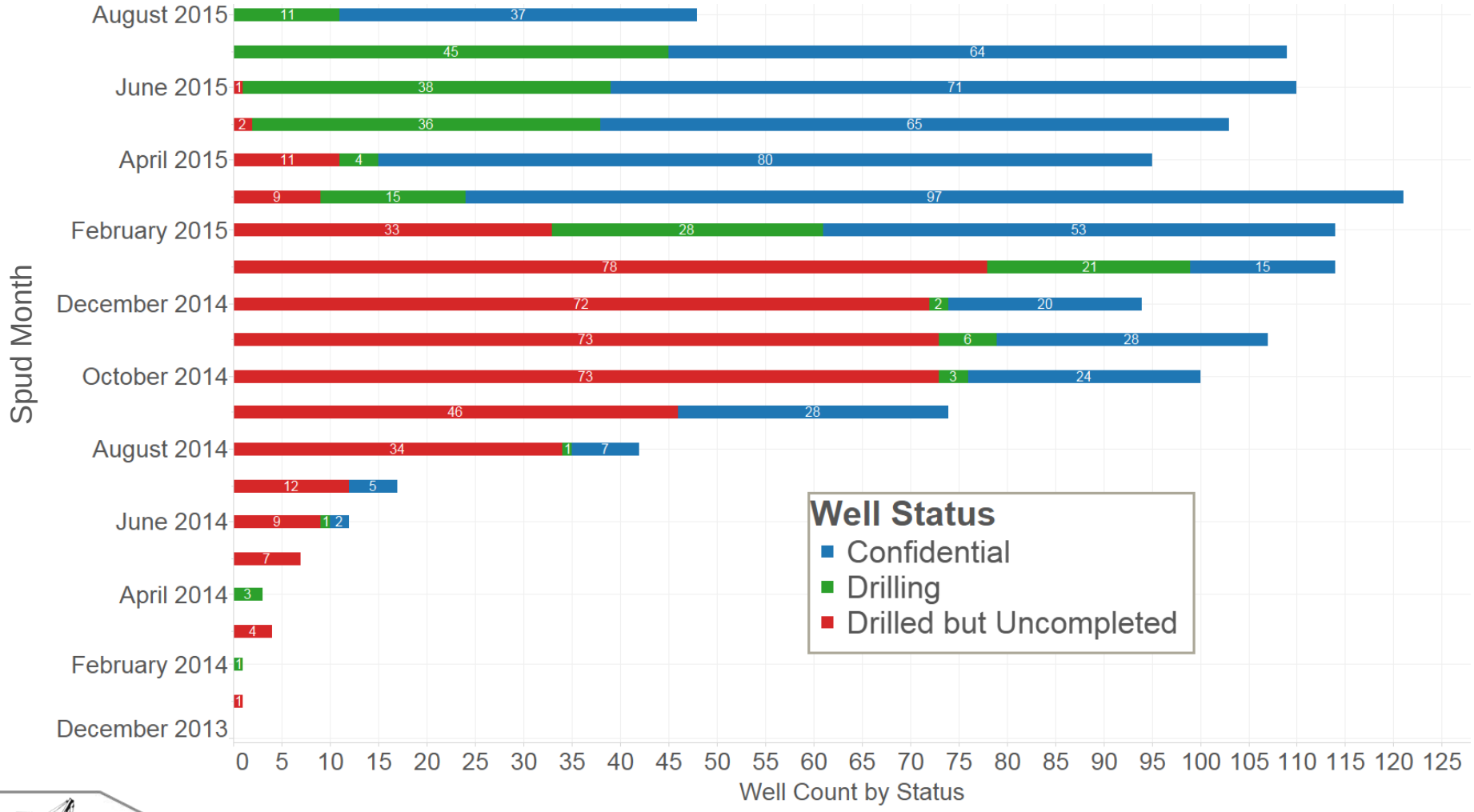
Understanding Current Production Dynamics

Non-Confidential Spud to Initial Production Timeline



Why Cut Off Spud to IP Days Comparison in Aug 2014?

Too Many Wells Drilling, Drilled but Uncompleted, or Confidential to Make a Determination if Times are Changing



Understanding Current Production Dynamics

Conclusions:

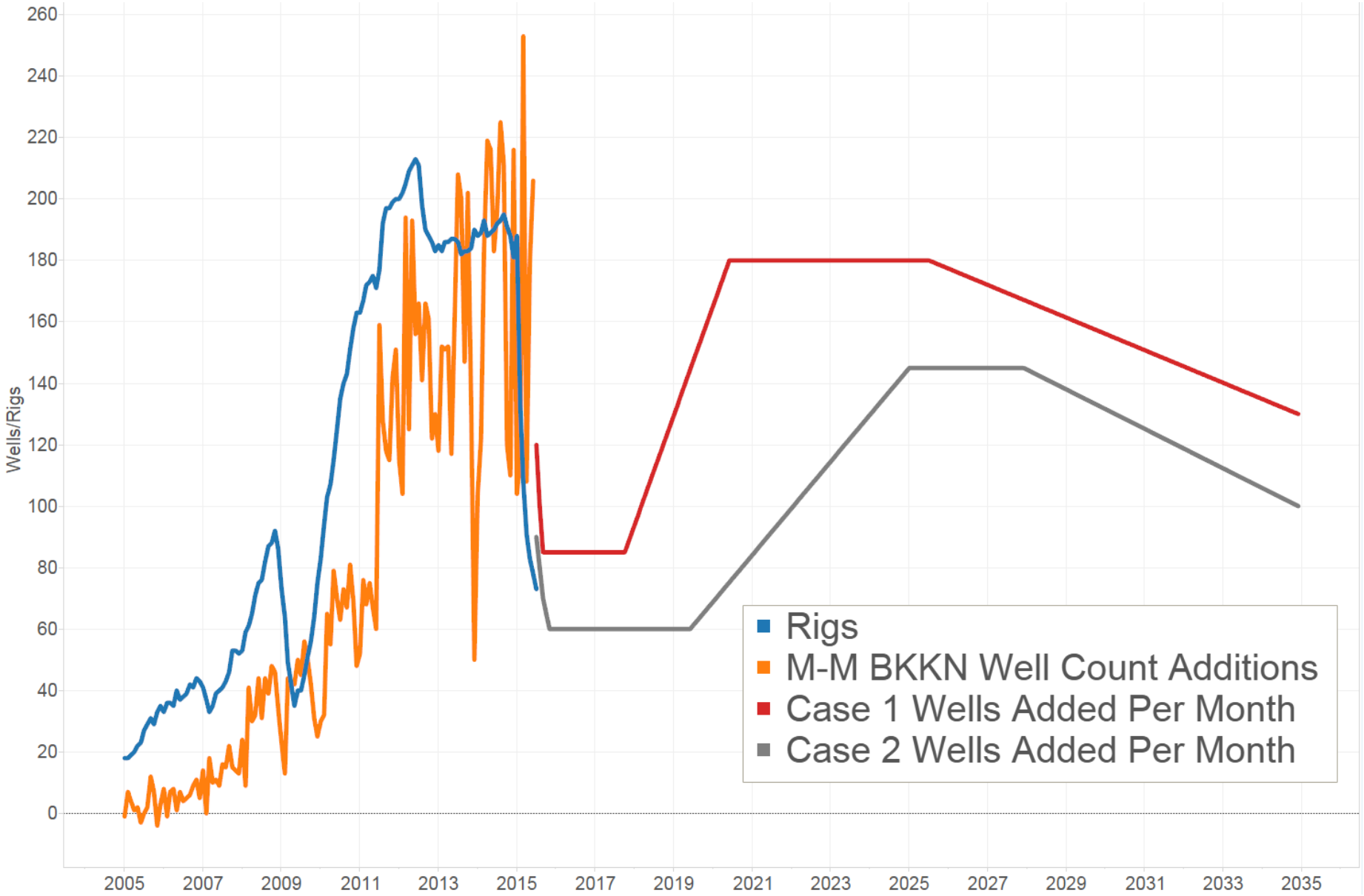
-First half 2015 production was largely impacted by ND winter/spring conditions and drilling decisions made in 2014 (due to lag between well spud and IP).

-The second half of 2015 is when the production impact of the rig reduction will be felt/seen most.

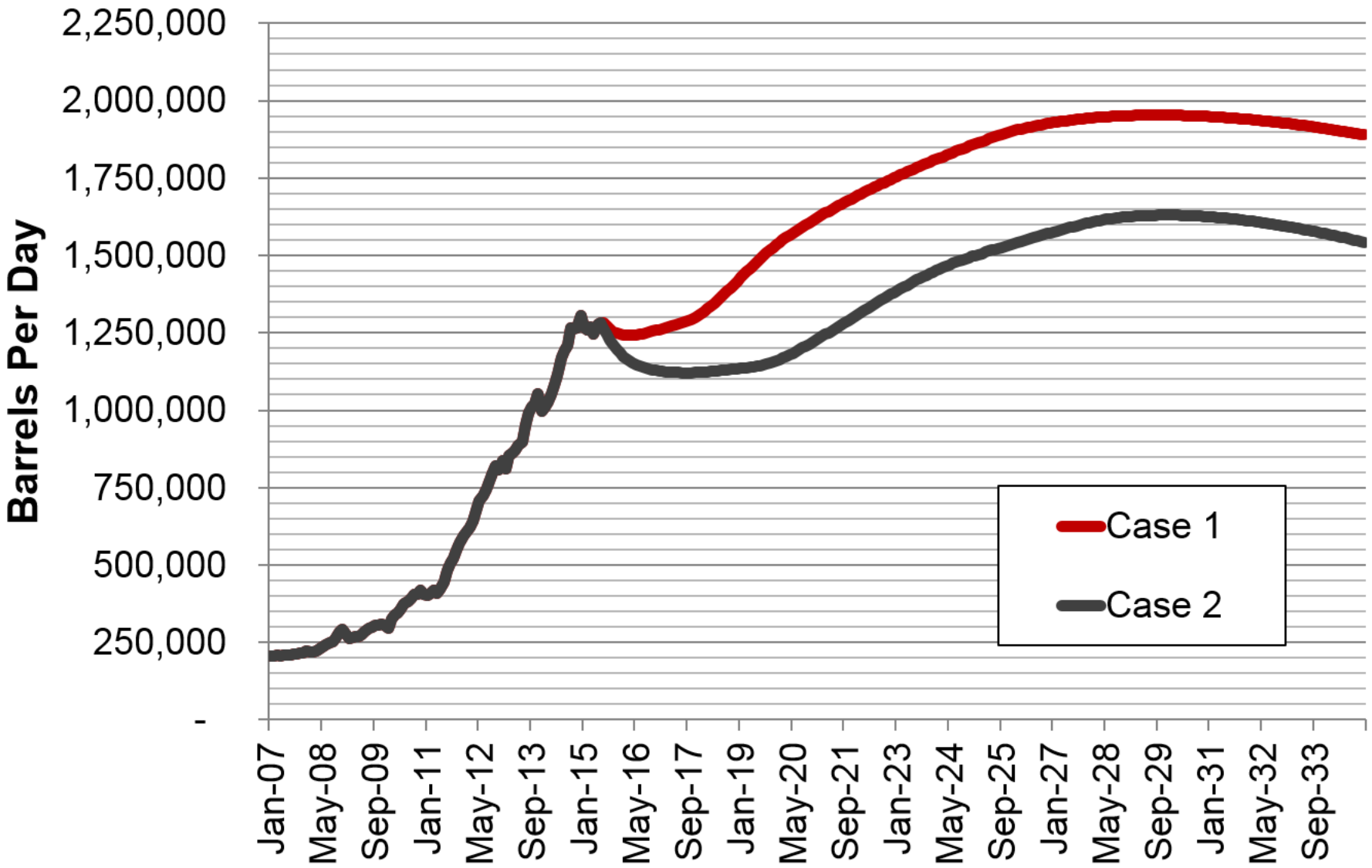
-Producers will offset rig reduction with higher producing wells, but it is unclear if it will be enough to prevent a statewide oil production drop.

-Drilled but uncompleted wells are well positioned in the Bakken and act as a wild card that allows some flexibility to "cherry pick" the most attractive producing locations for completion.

Revised Forecast Assumptions

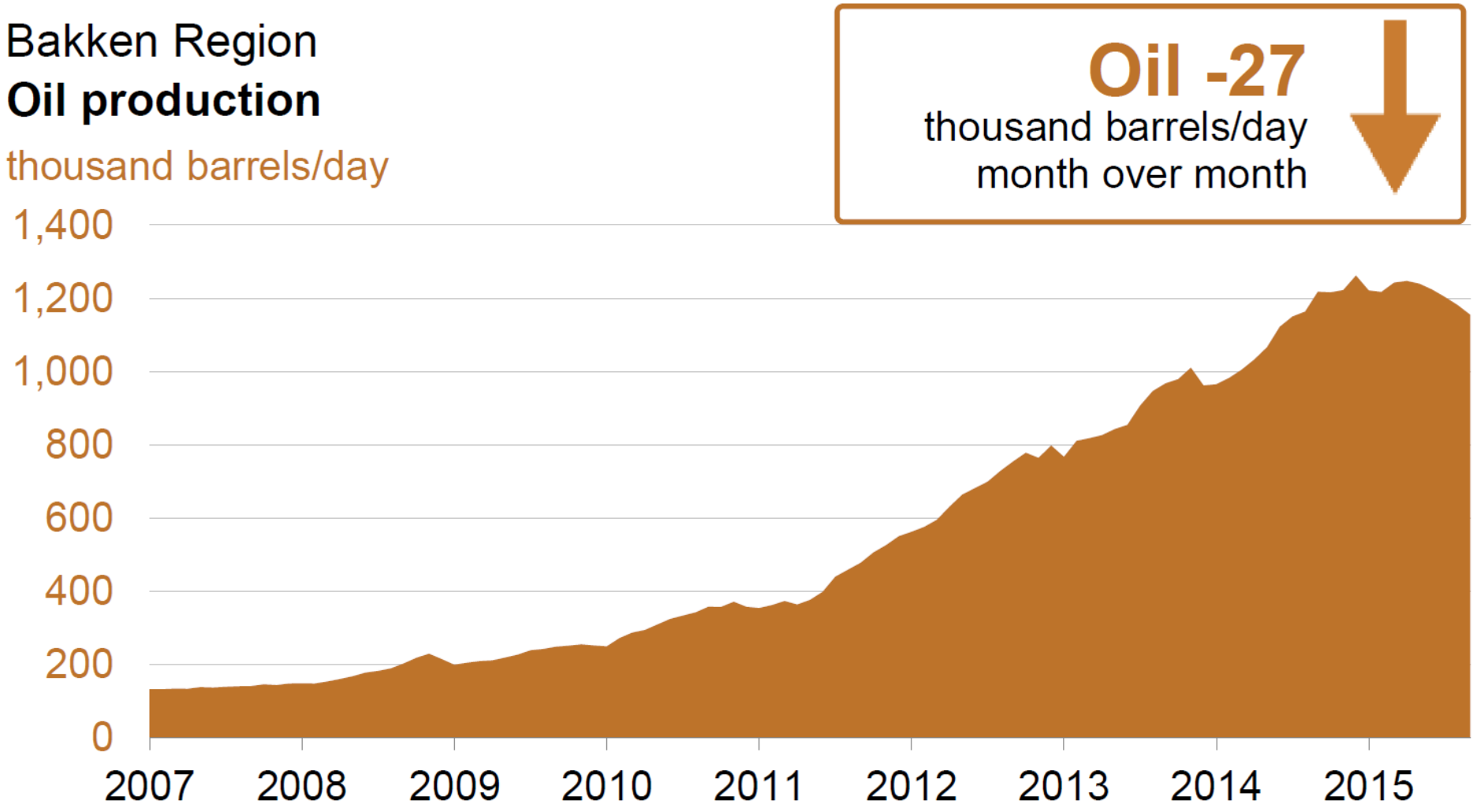


Forecasting Williston Basin Oil Production, BOPD

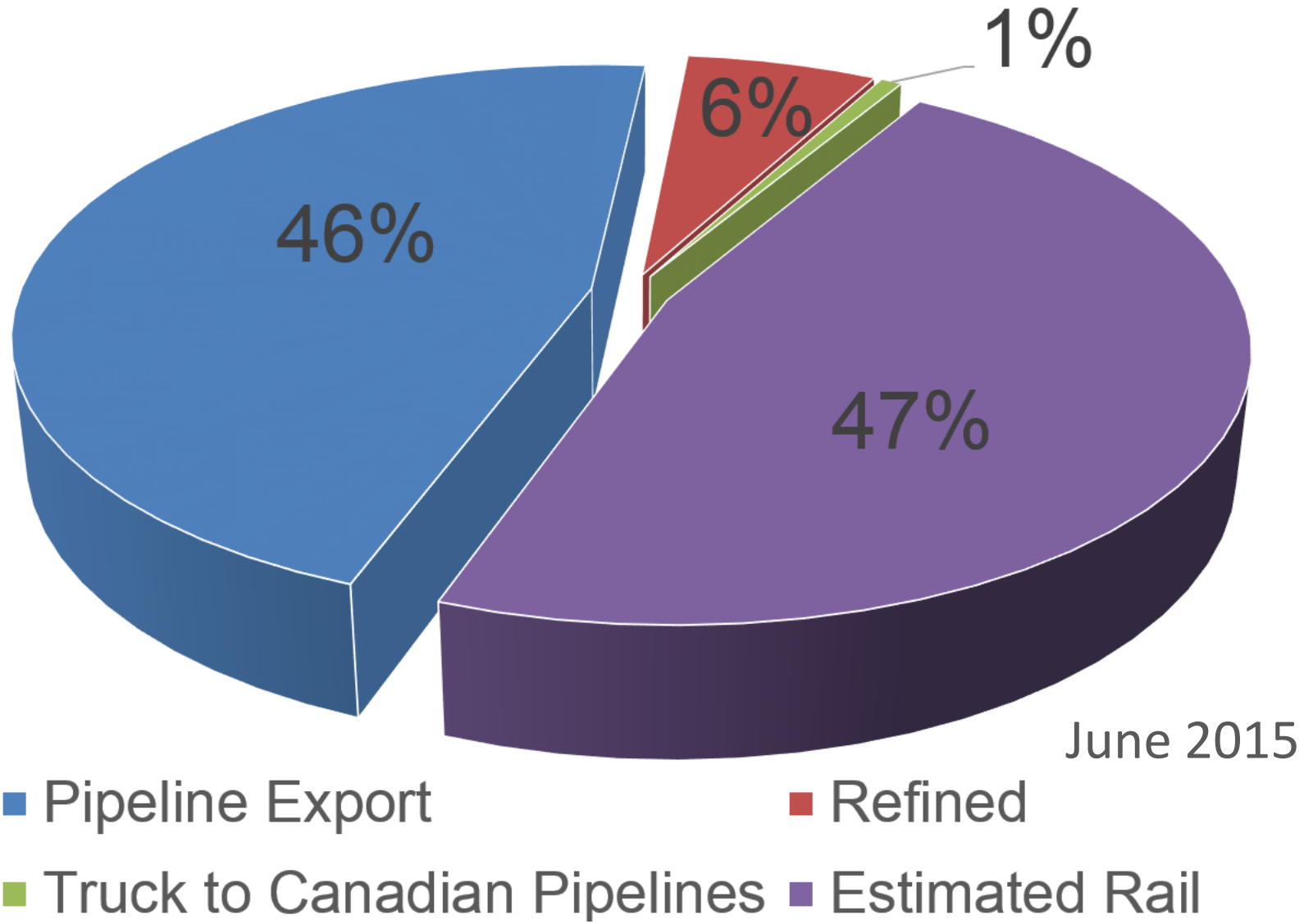


Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.

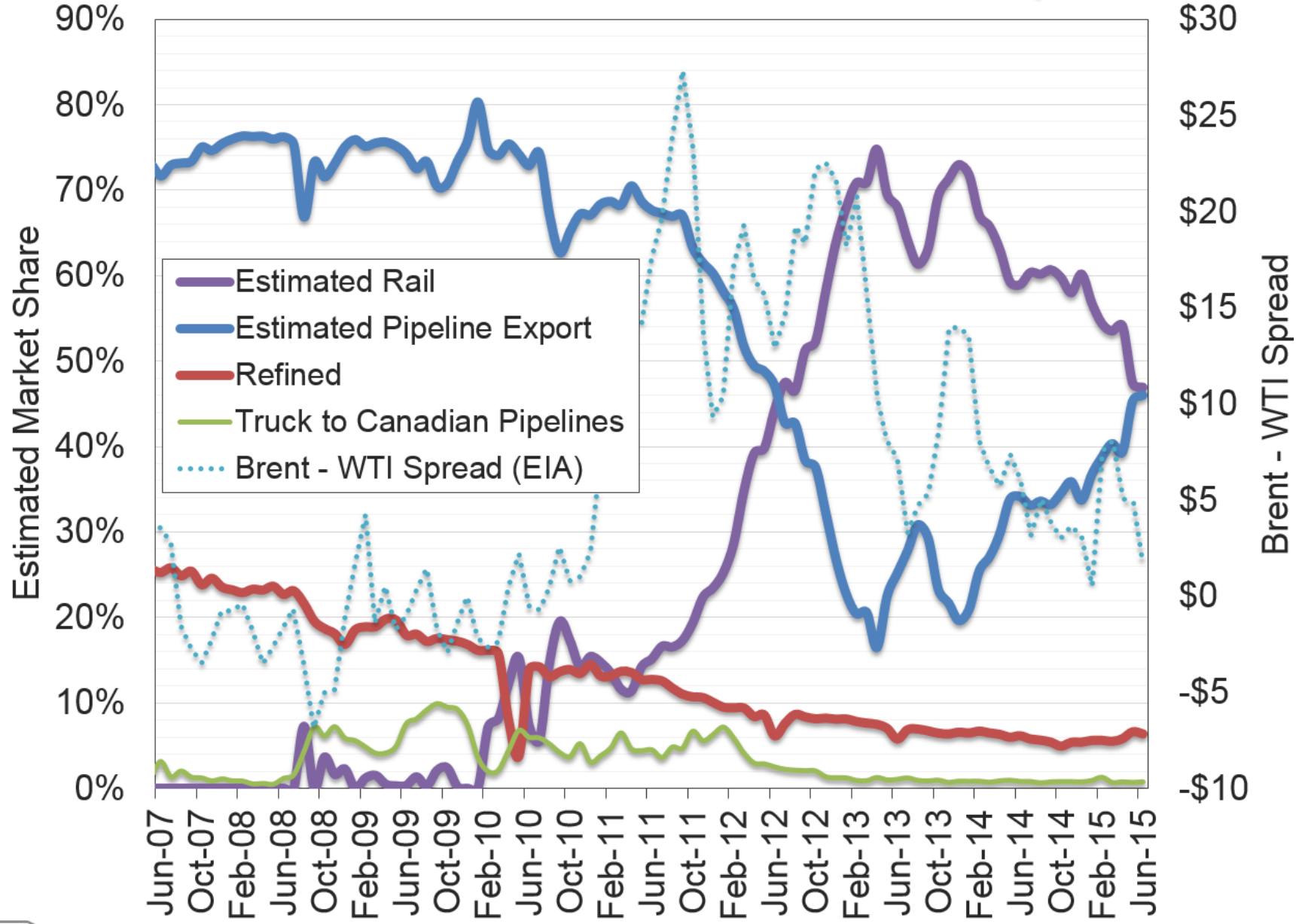
EIA Short Term Production Forecast Through September 2015 (August 2015 Report)



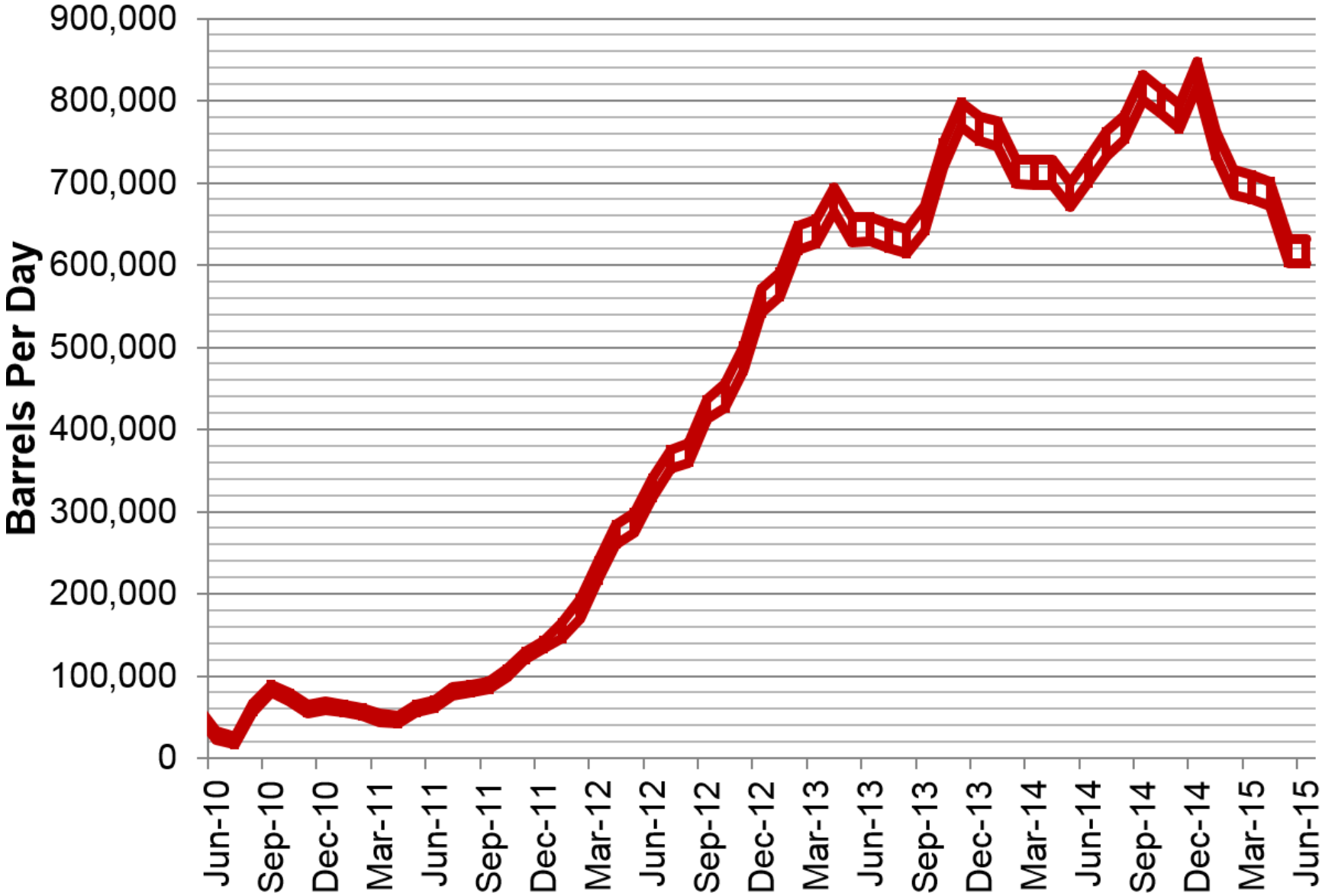
Estimated Williston Basin Oil Transportation



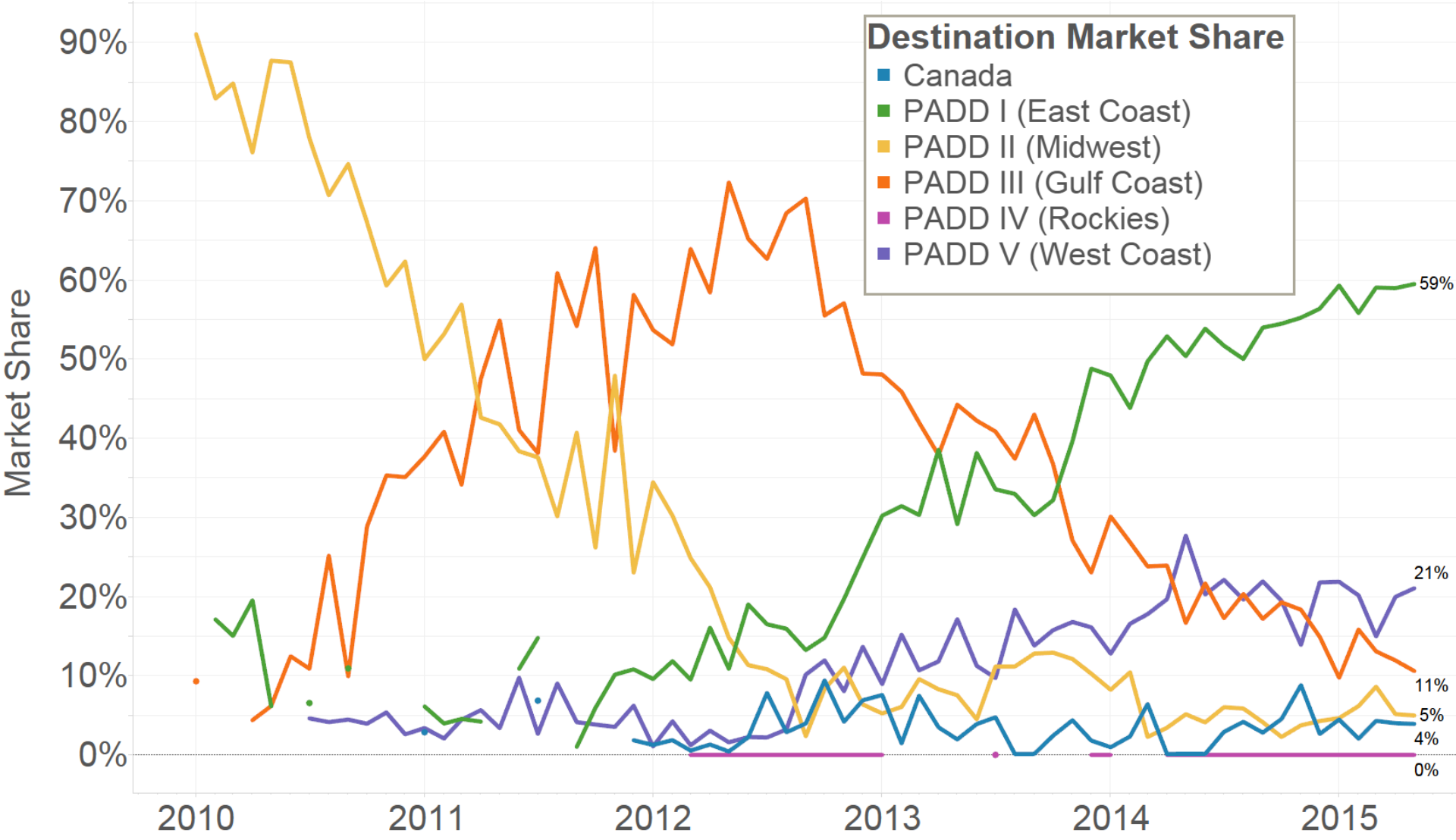
Estimated Williston Basin Oil Transportation



Estimated ND Rail Export Volumes

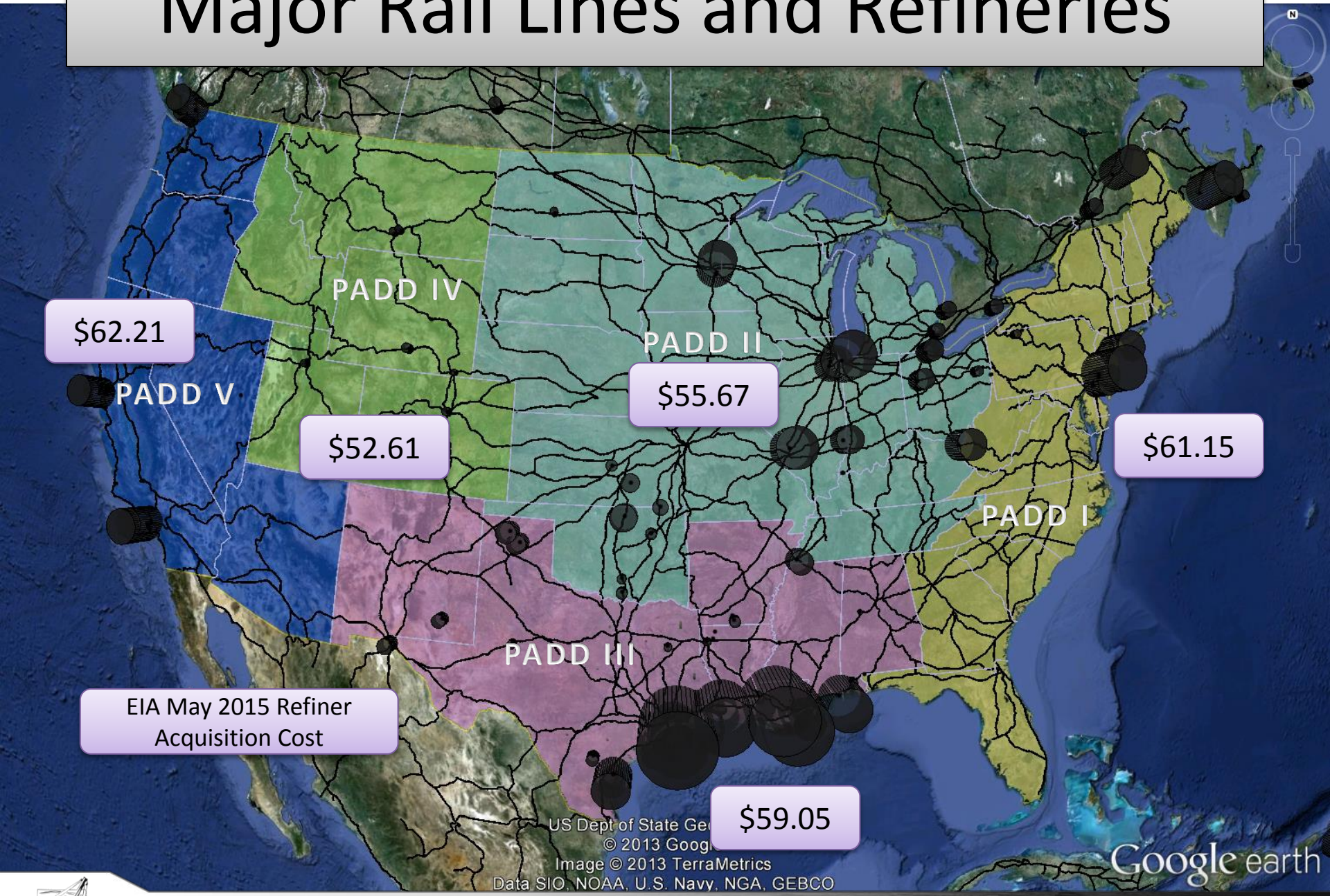


Rail Destinations Market Share (May 2015)

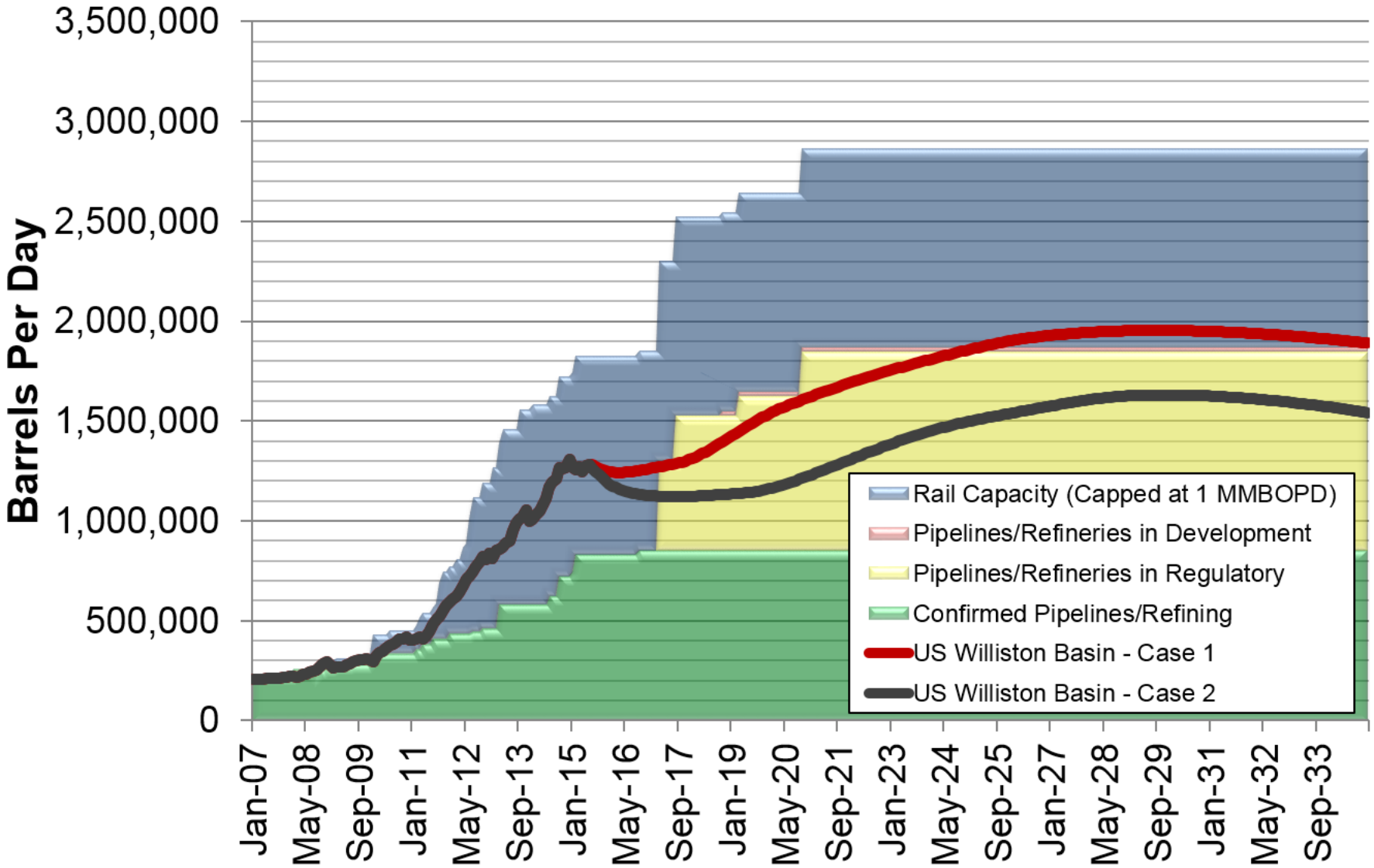


Data for Rail Destination Market Share Provided by the US Energy Information Administration

Major Rail Lines and Refineries



Williston Basin Oil Production & Export Capacity, BOPD



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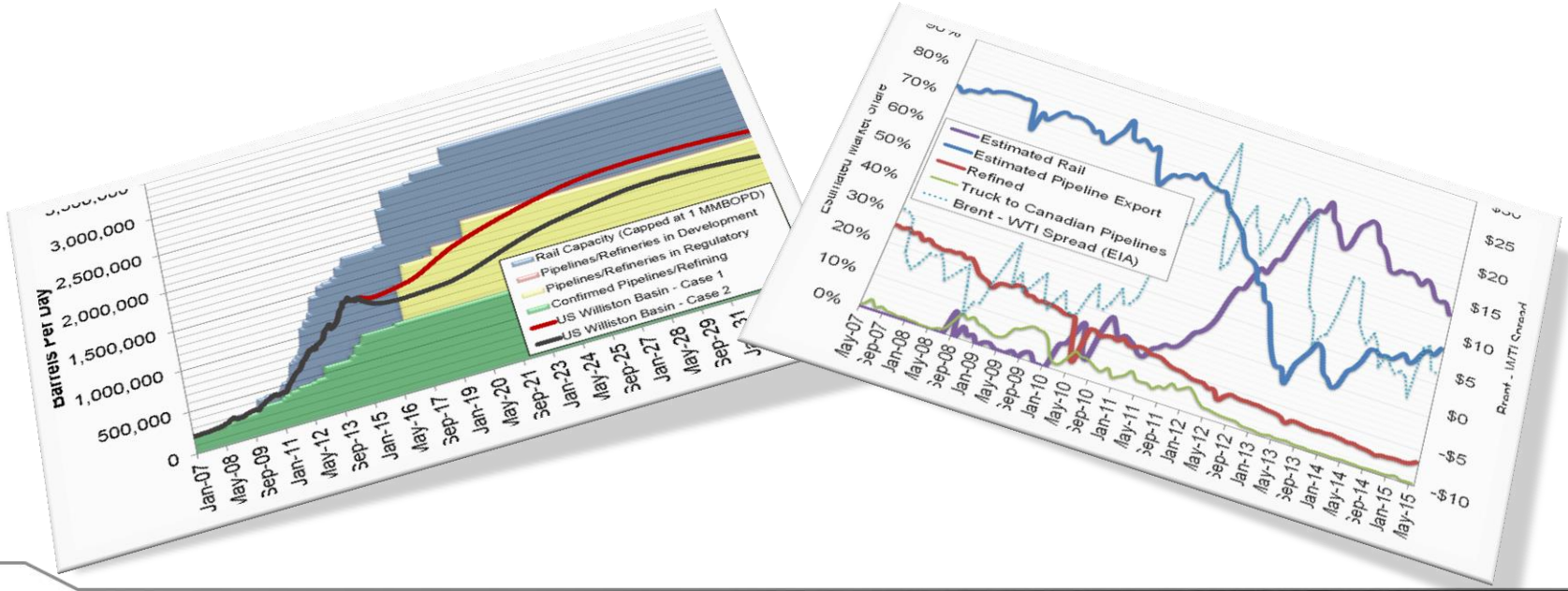
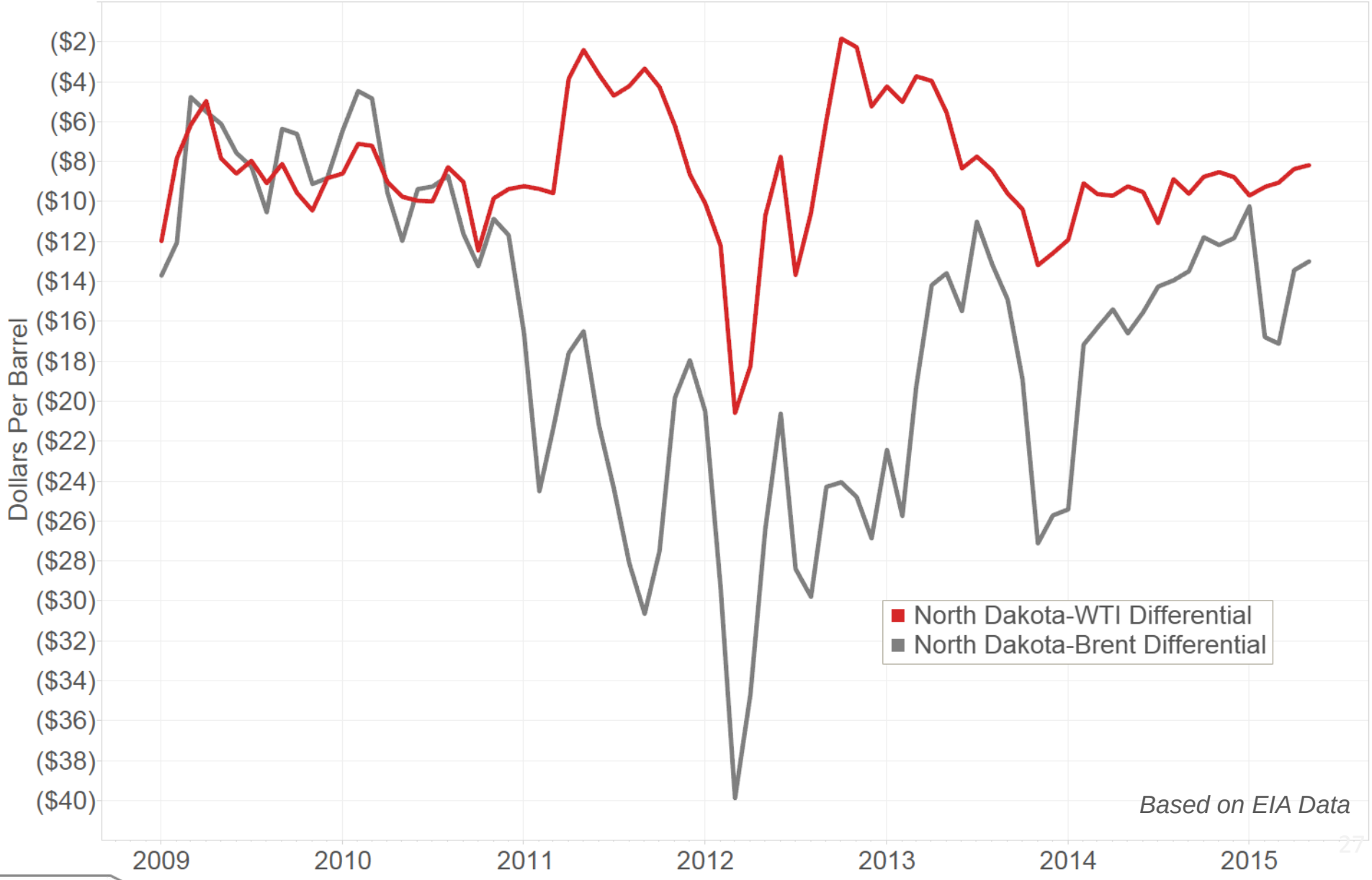
Forecasting Future Market Share is Difficult

Predicting how future oil production will move with any degree of confidence is difficult/impossible due to:

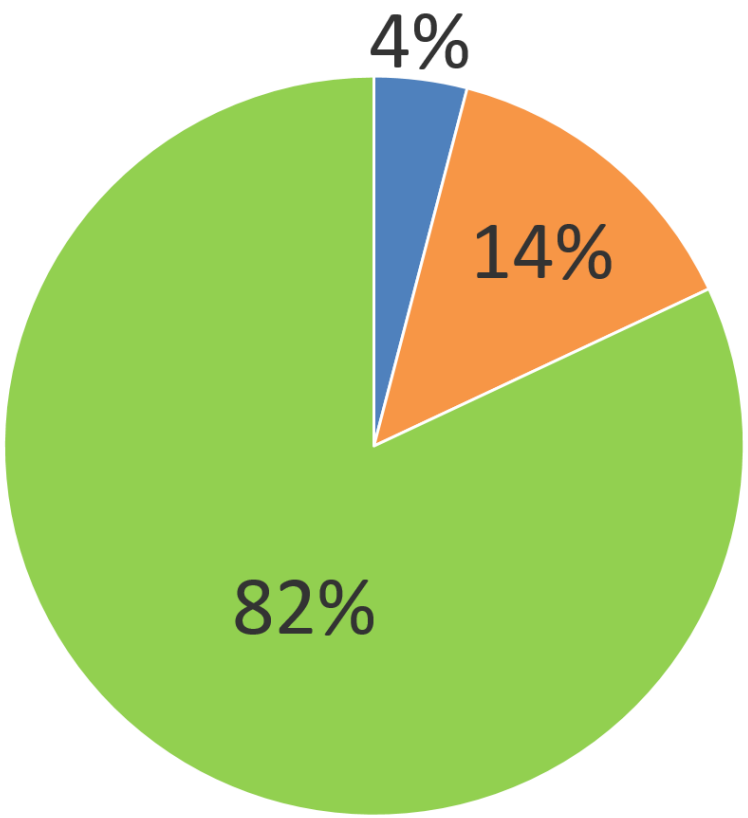
- Future oil production uncertainty
- Shifting market conditions
- Project commitments are unknown (pipe & rail)
- Regulatory uncertainty (pipe, rail, exports, etc)



North Dakota Oil Differential



Solving the Flaring Challenge



Statewide

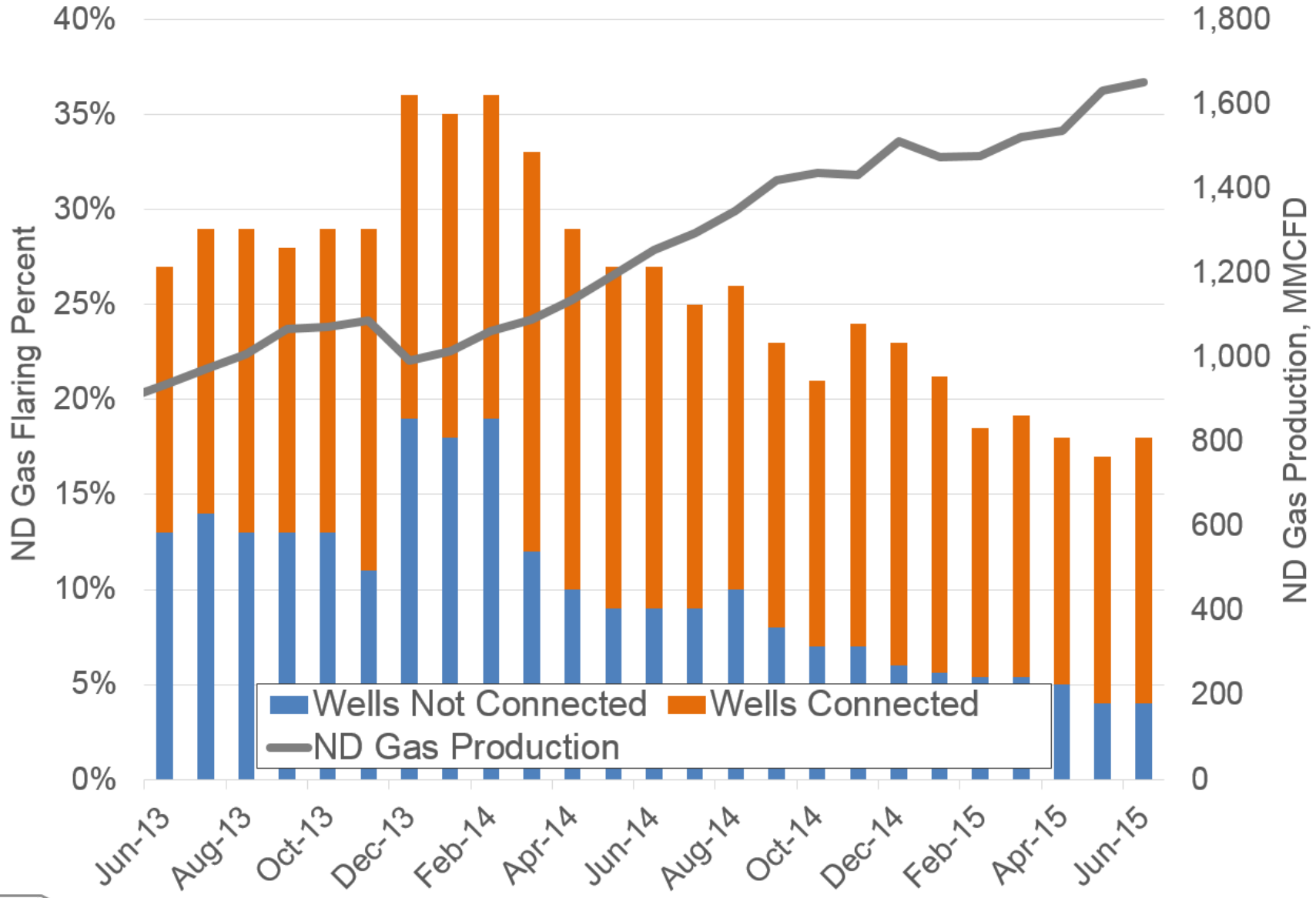
GREEN – % of gas captured and sold
Blue – % flared from zero sales wells
Orange – % flared from wells with at least one mcf sold.

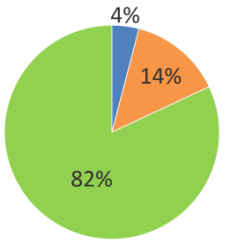
Simple Terms

Blue – Lack of pipelines
Orange – Challenges on existing infrastructure

June 2015 Data – Non-Confidential Wells

Solving the Flaring Challenge





Capturing the 4%

Faster Well Connections

New Wells Selling Gas

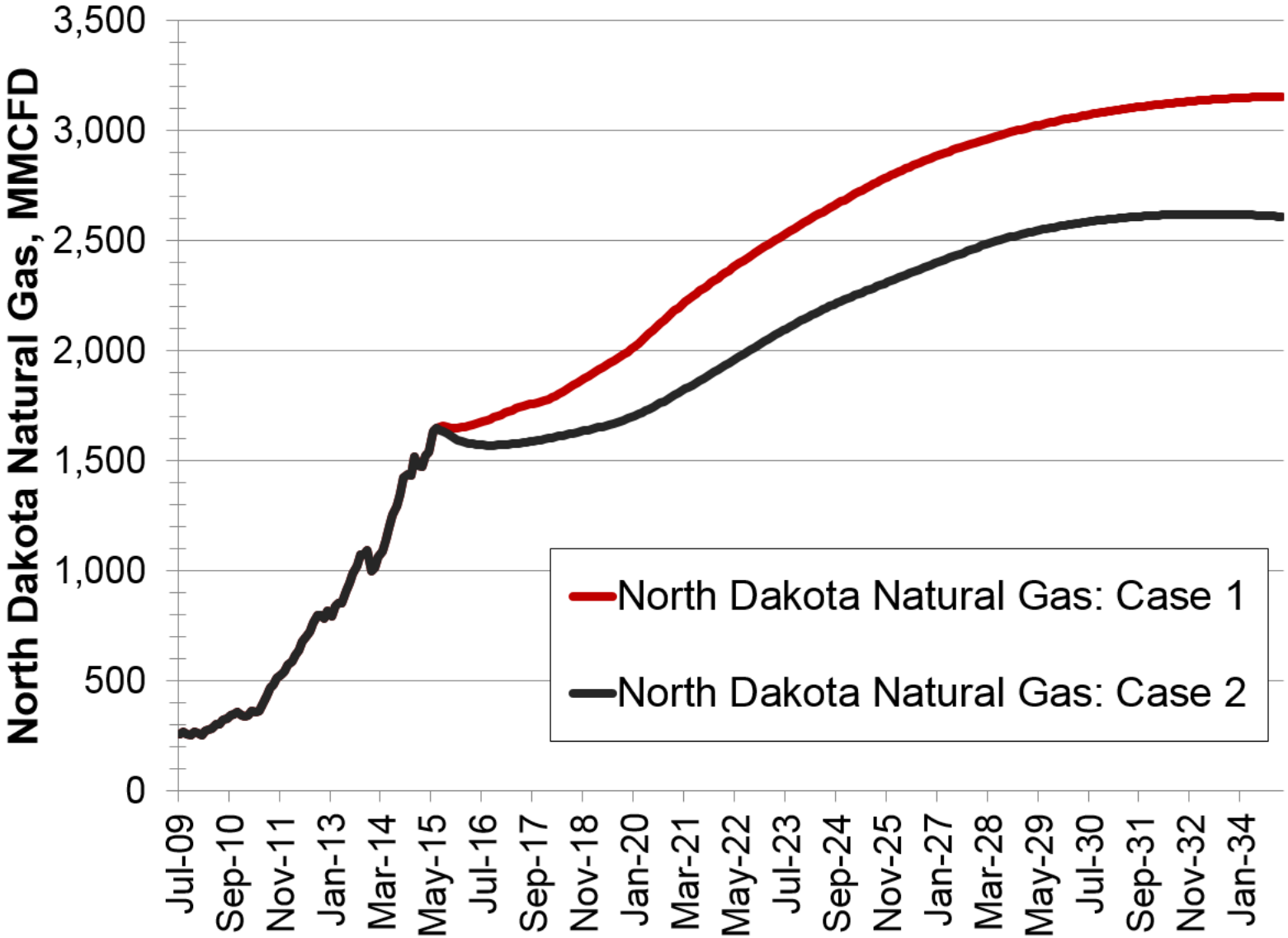
New Producing Wells

Number of Wells Per Month

250
200
150
100
50
0

1/1/2005
6/1/2005
11/1/2005
4/1/2006
9/1/2006
2/1/2007
7/1/2007
12/1/2007
5/1/2008
10/1/2008
3/1/2009
8/1/2009
1/1/2010
6/1/2010
11/1/2010
4/1/2011
9/1/2011
2/1/2012
7/1/2012
12/1/2012
5/1/2013
10/1/2013
3/1/2014
8/1/2014
1/1/2015
6/1/2015

North Dakota Natural Gas Forecast, MMCFD



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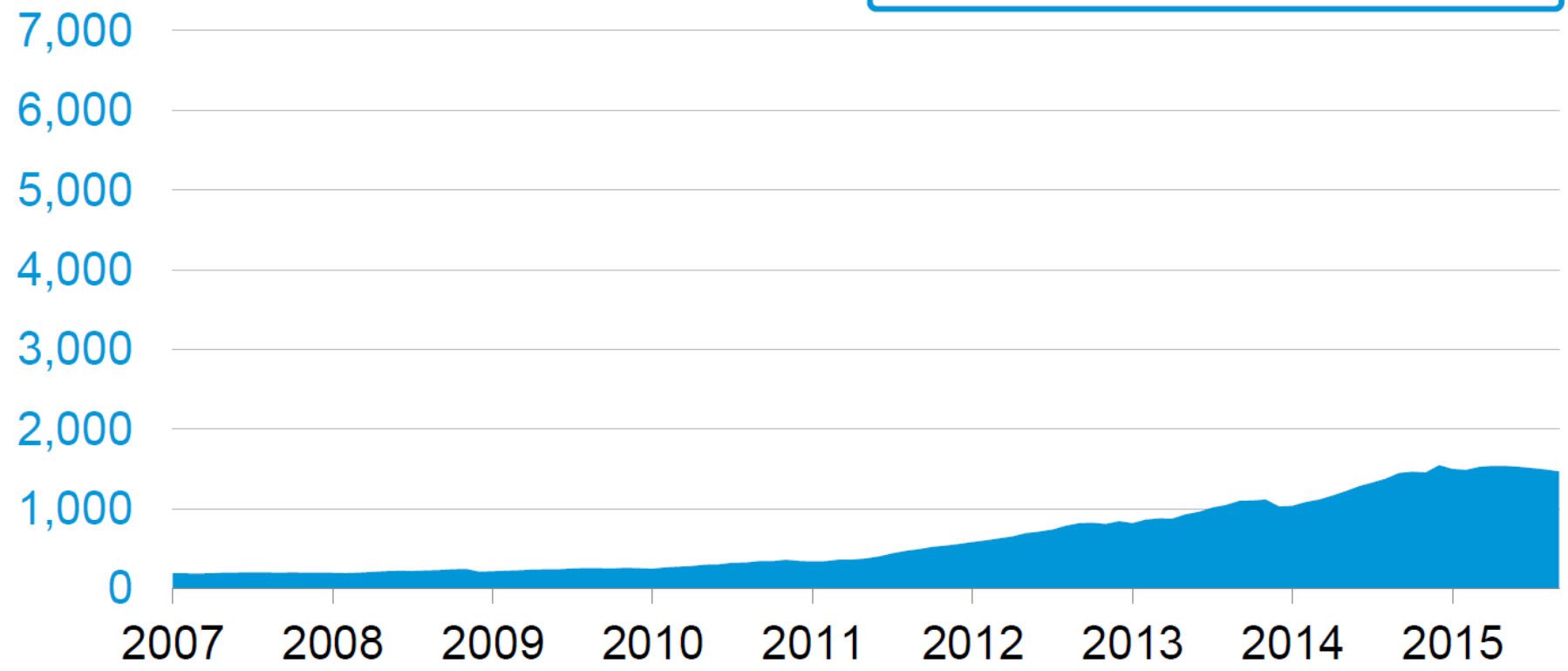
EIA Short Term Production Forecast Through September 2015 (August 2015 Report)

Bakken Region
Natural gas production

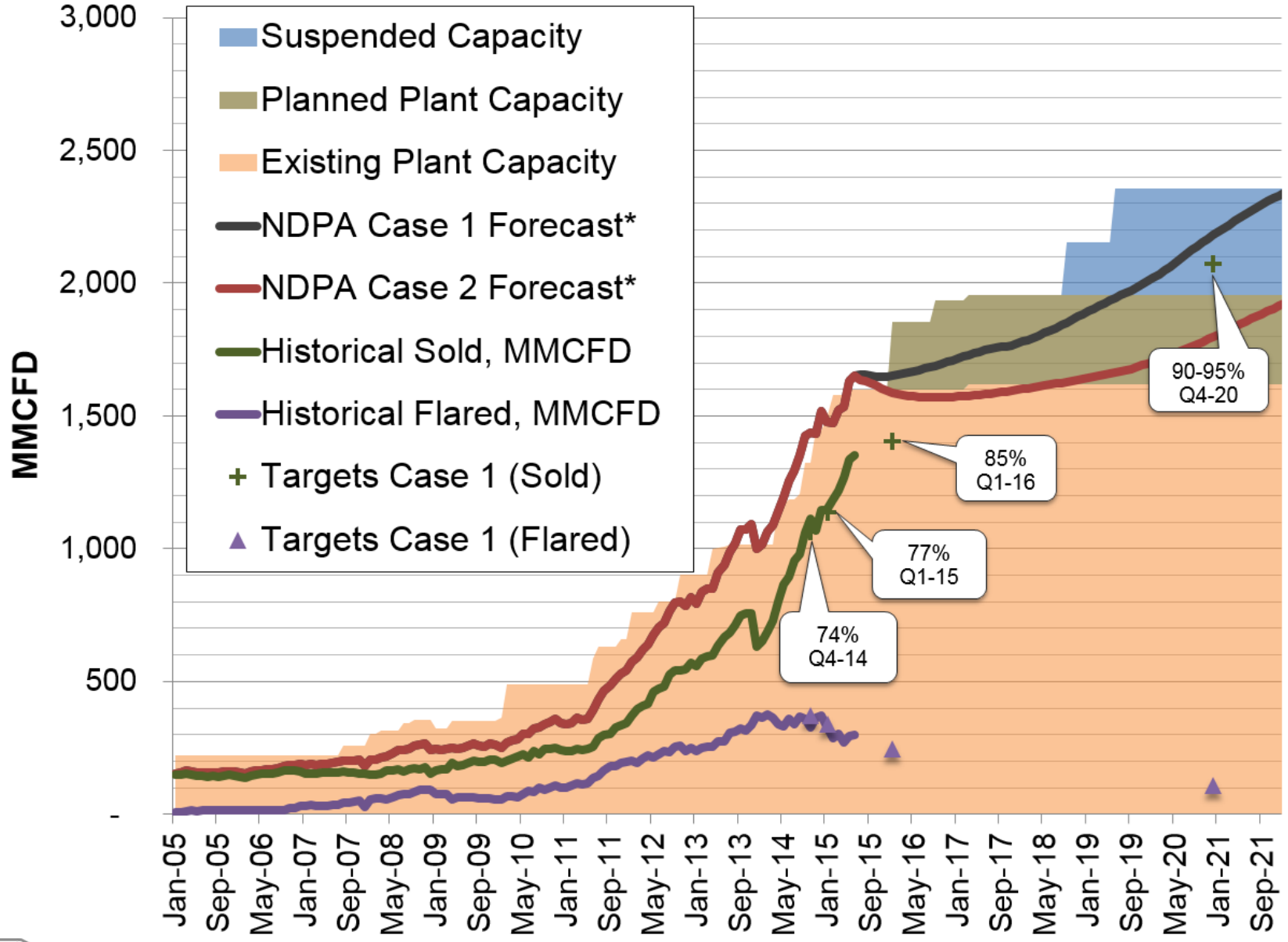
million cubic feet/day

Gas -23
million cubic feet/day
month over month



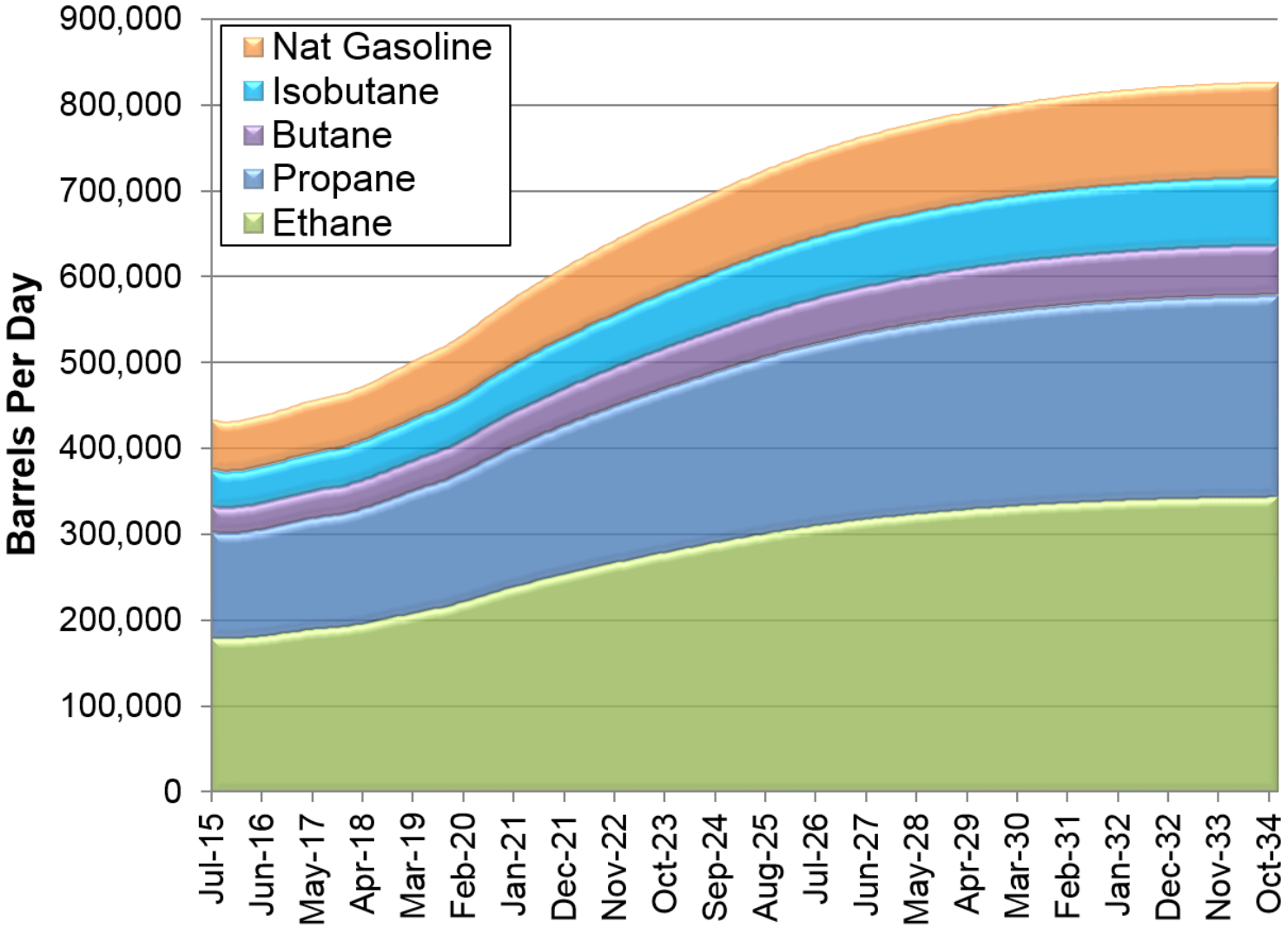
eia Bakken Region
Drilling Productivity Report

Solving the Flaring Challenge



North Dakota NGL Production Forecast, BPD

Assumes 11 gpm and Case 1 Natural Gas Production



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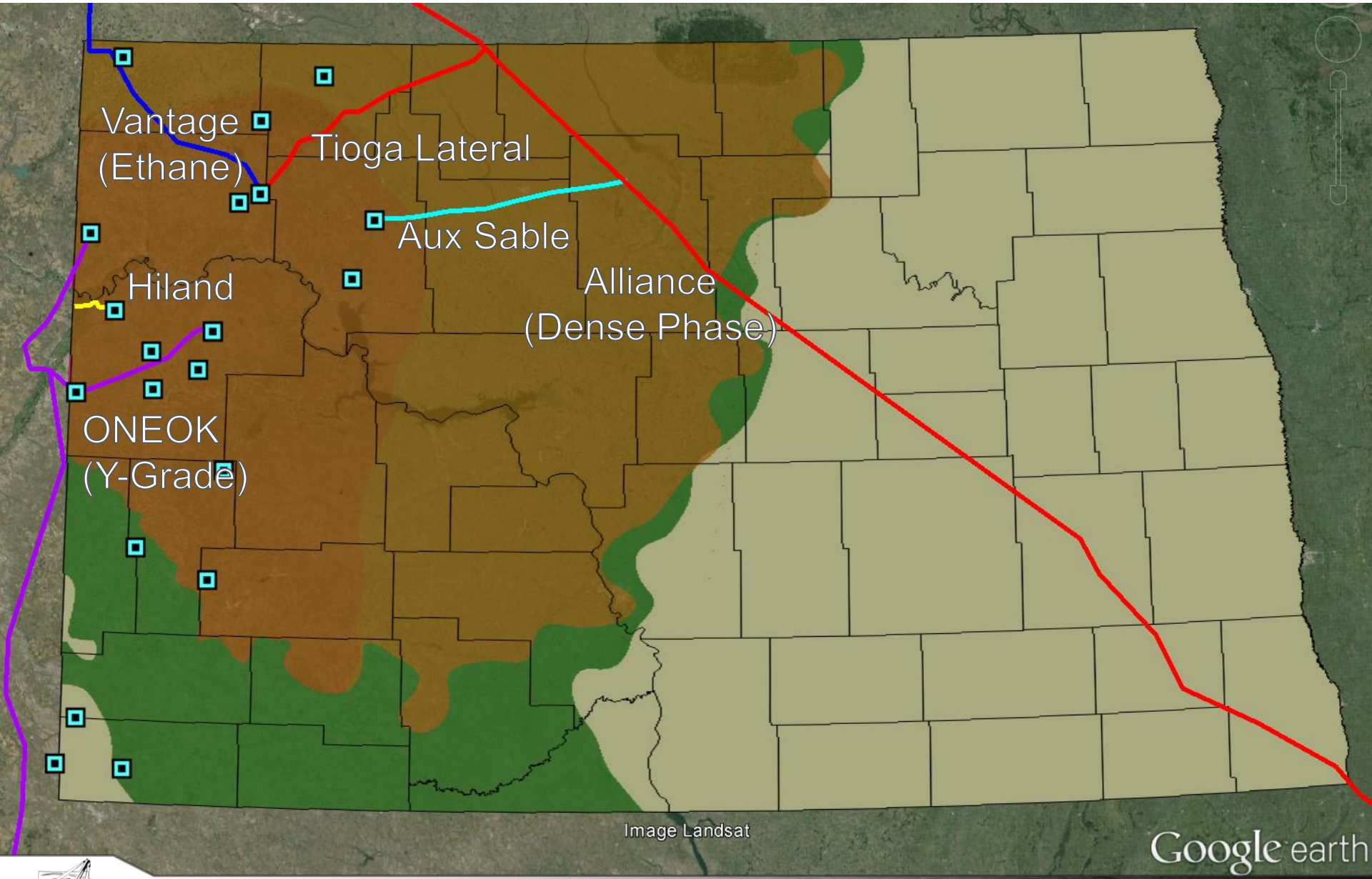
NGL Pipeline Transportation



Contact Information

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www.northdakotapipelines.com

811 Know what's below. Call before you dig.