



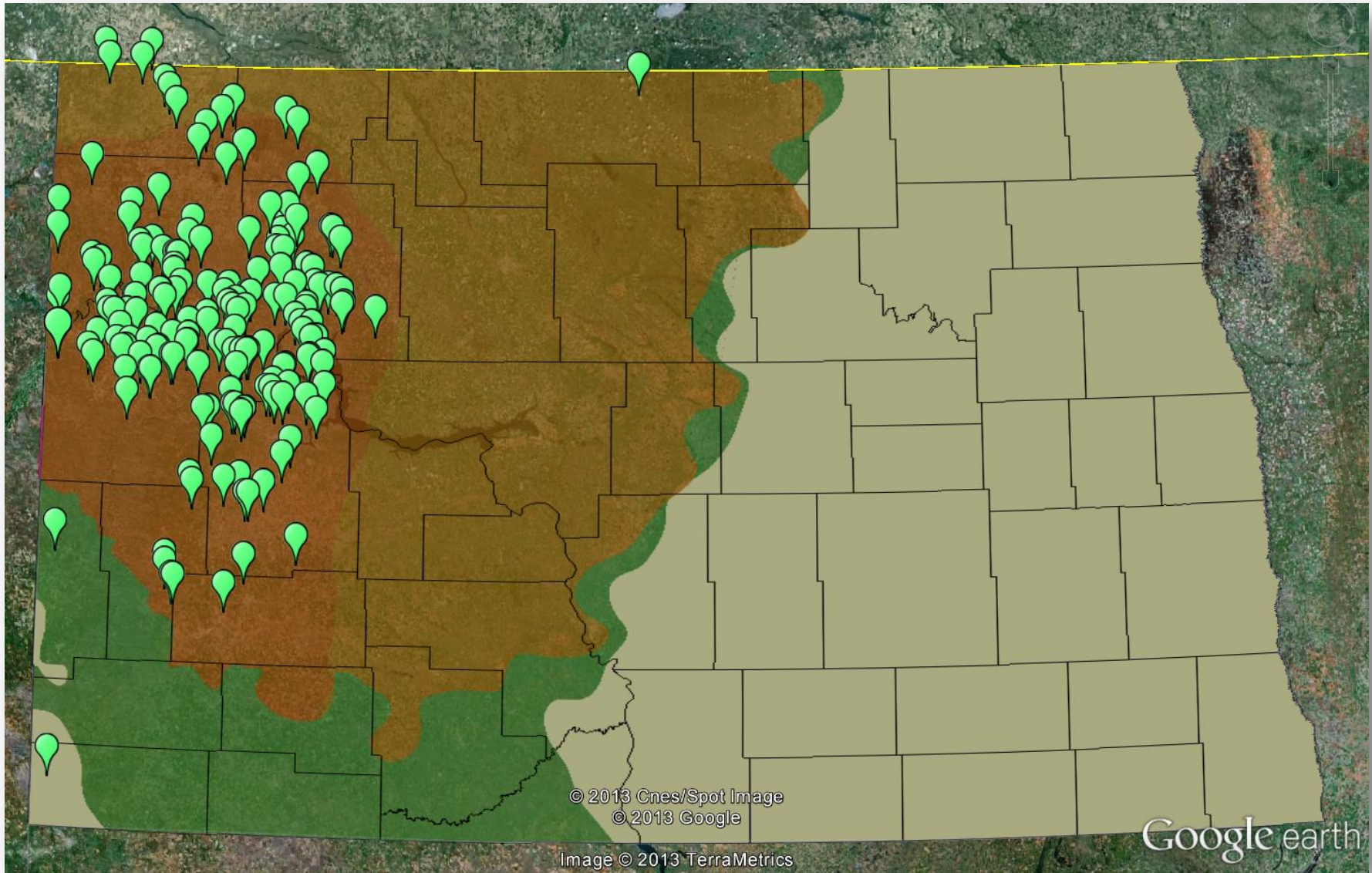
# **Bakken Investor Conference**

**North Dakota Pipeline Authority**

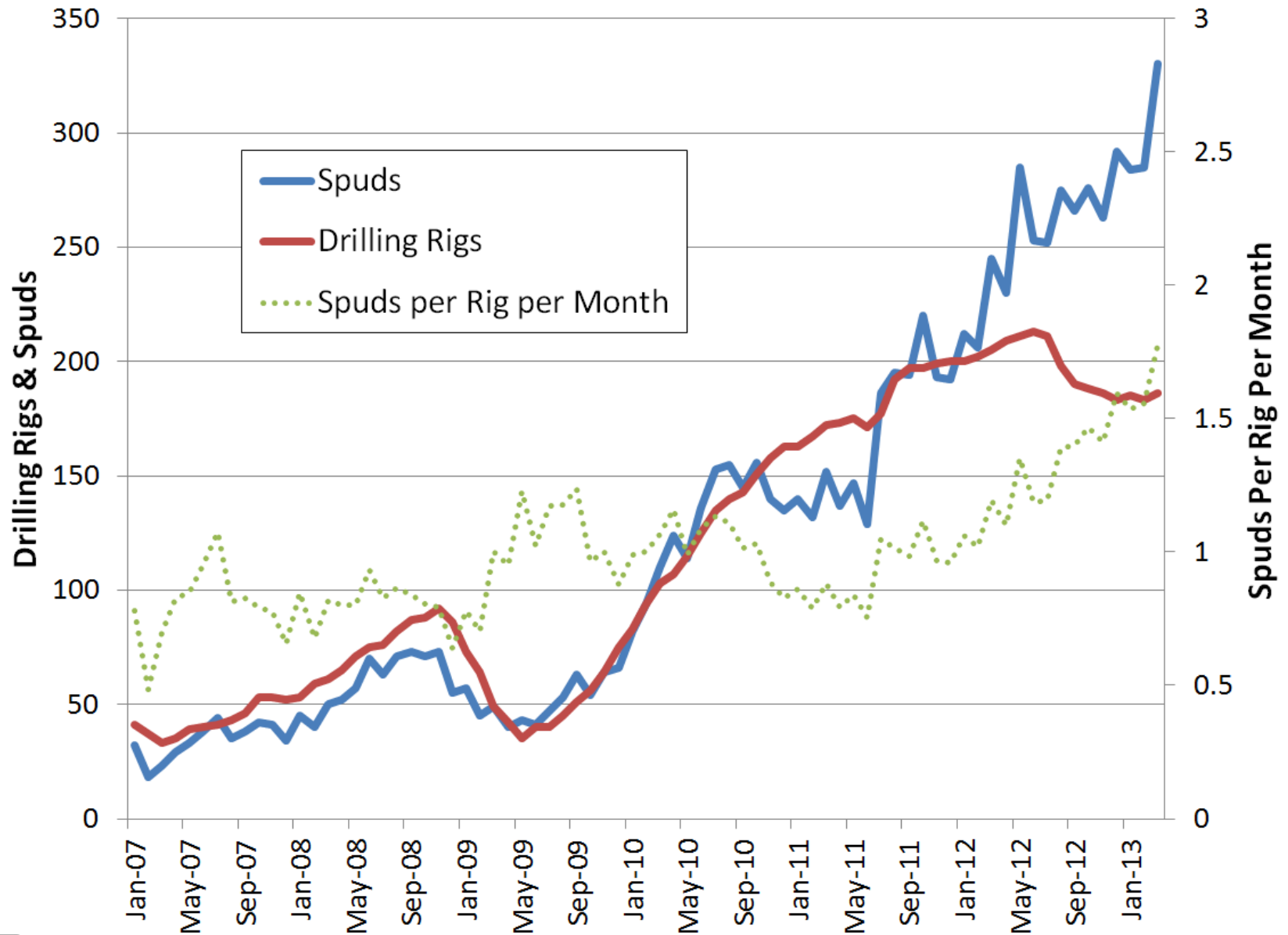
**Justin J. Kringstad**

**April 25, 2013 - Minot, ND**

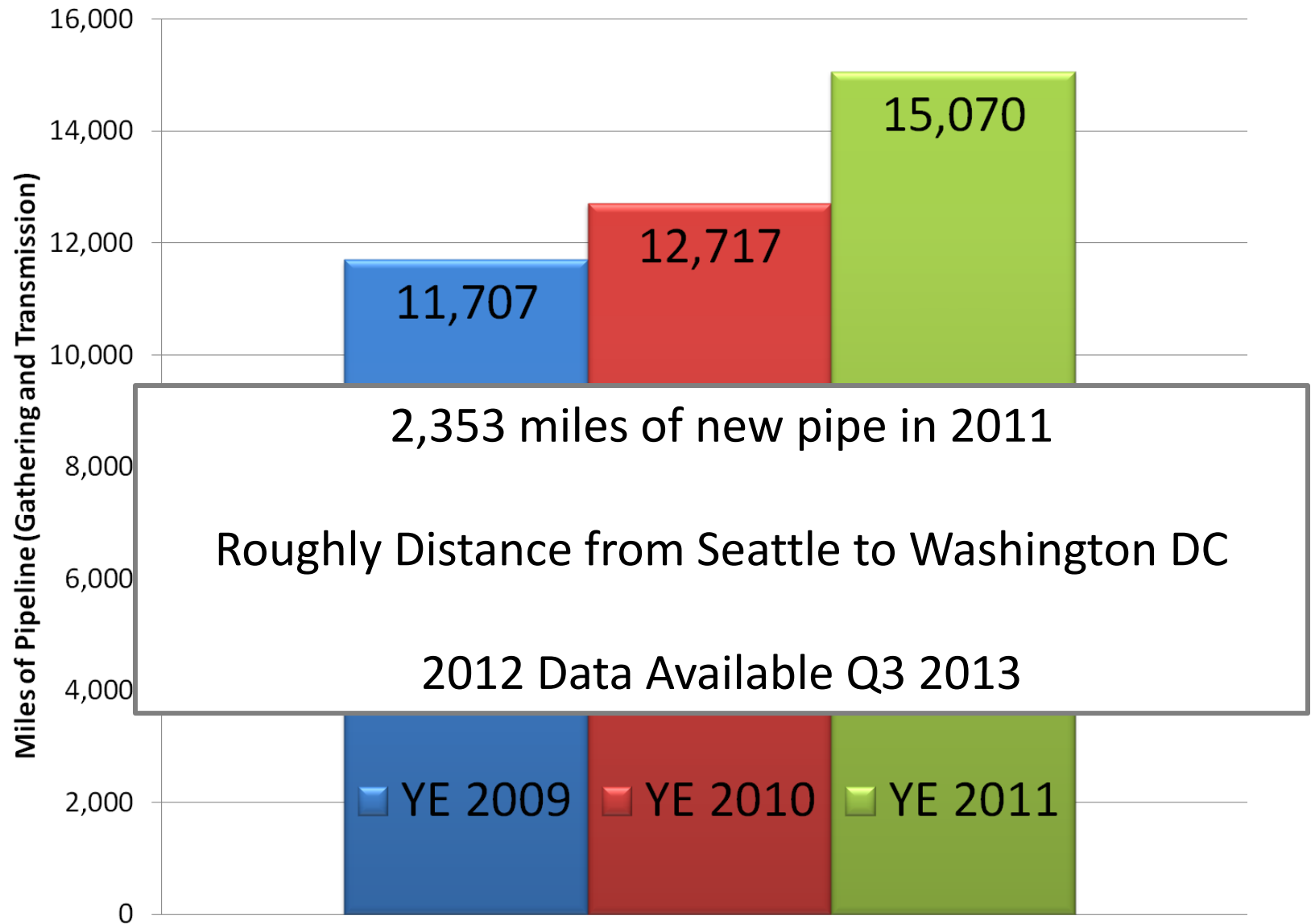
# April 22, 2013 – 187 Drilling Rigs



# ND Drilling Stats



# North Dakota Pipeline Miles



# Crude Oil

*Understanding production potential*

*Understanding current transportation dynamics and potential transportation constraints*

*Understanding current and future market conditions*



# Crude Oil

## ***Understanding production potential***

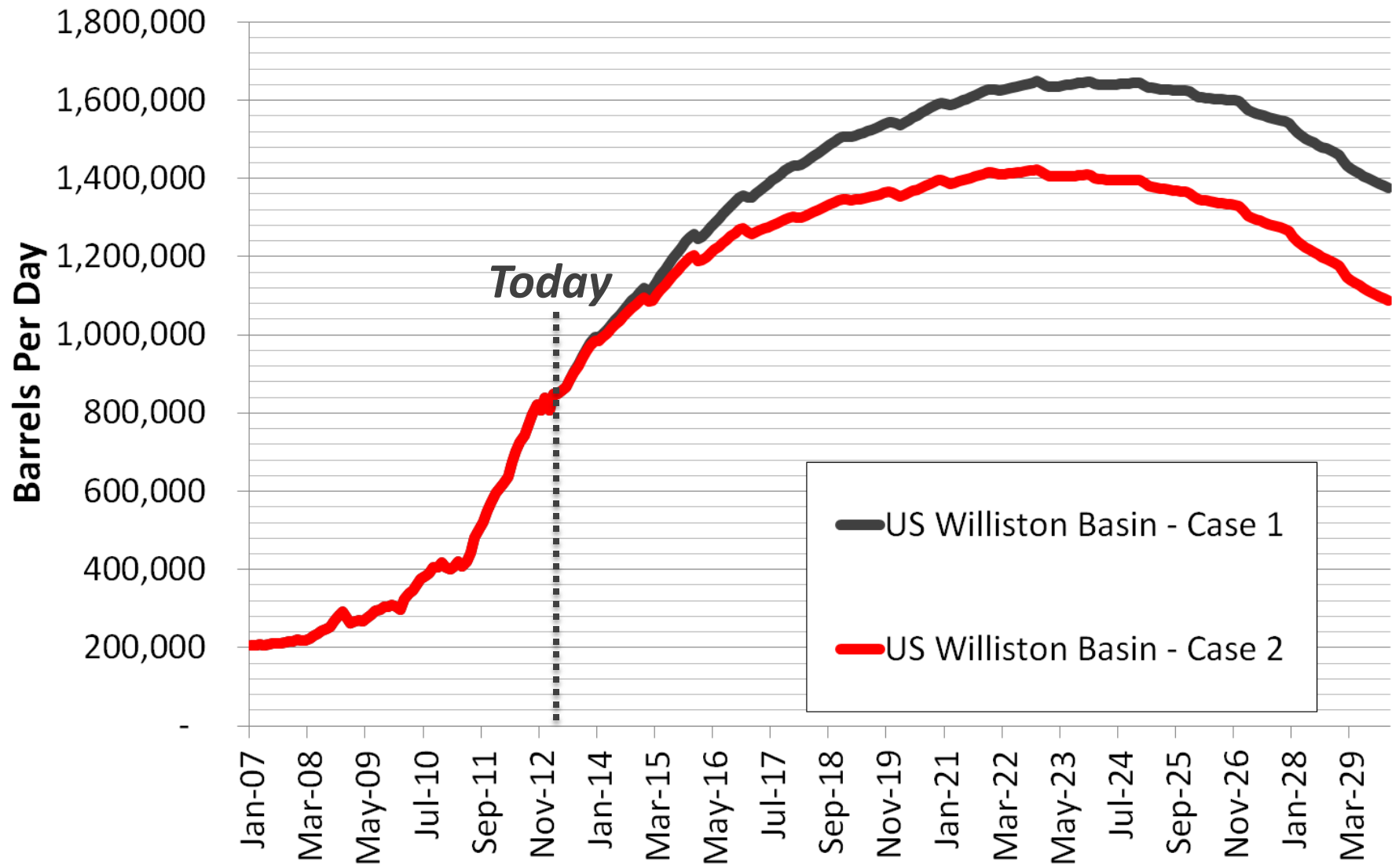
*Understanding current transportation dynamics and potential transportation constraints*

*Understanding current and future market conditions*





# 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.*



# Crude Oil

*Understanding production potential*

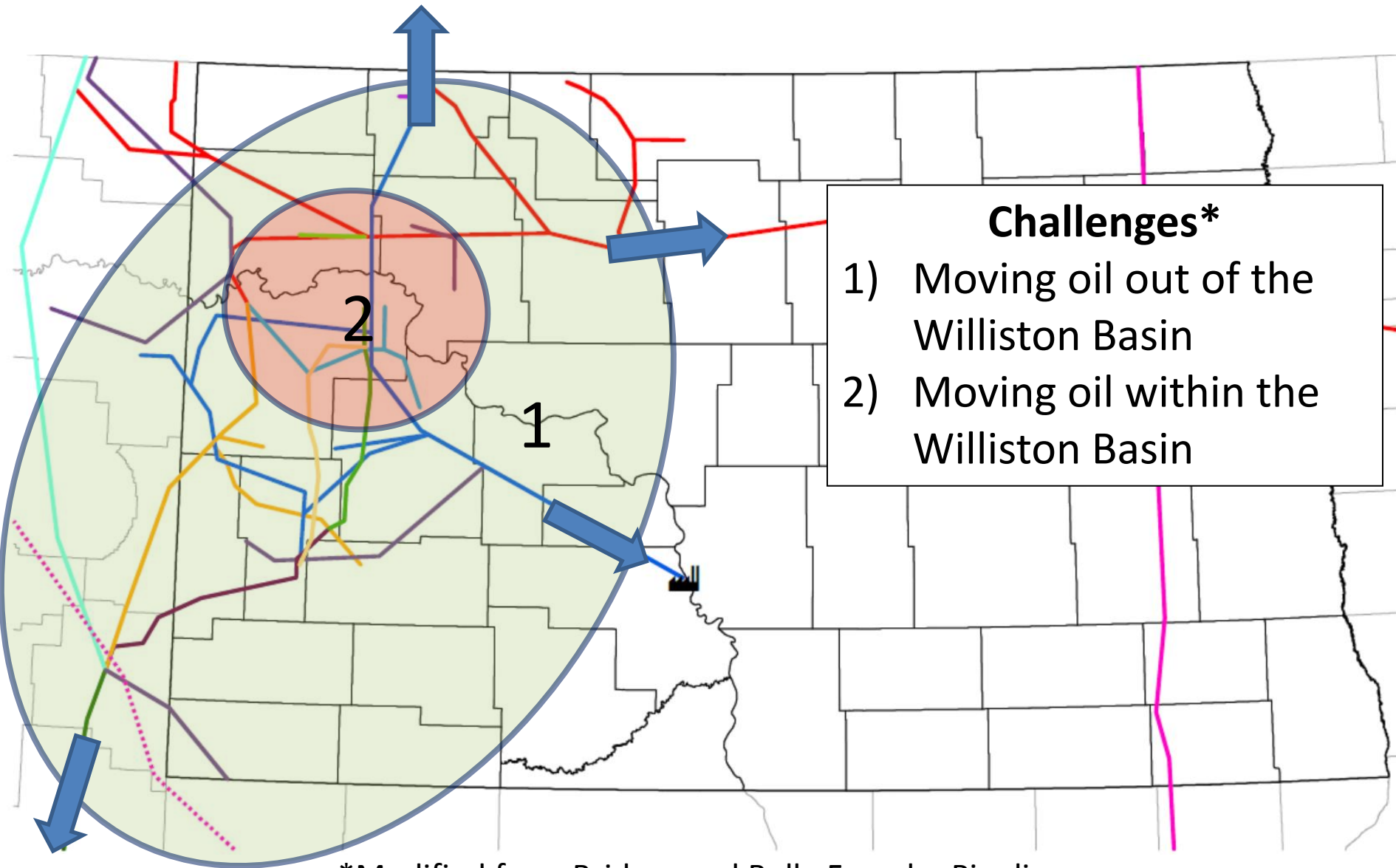
***Understanding current transportation dynamics and potential transportation constraints***

*Understanding current and future market conditions*





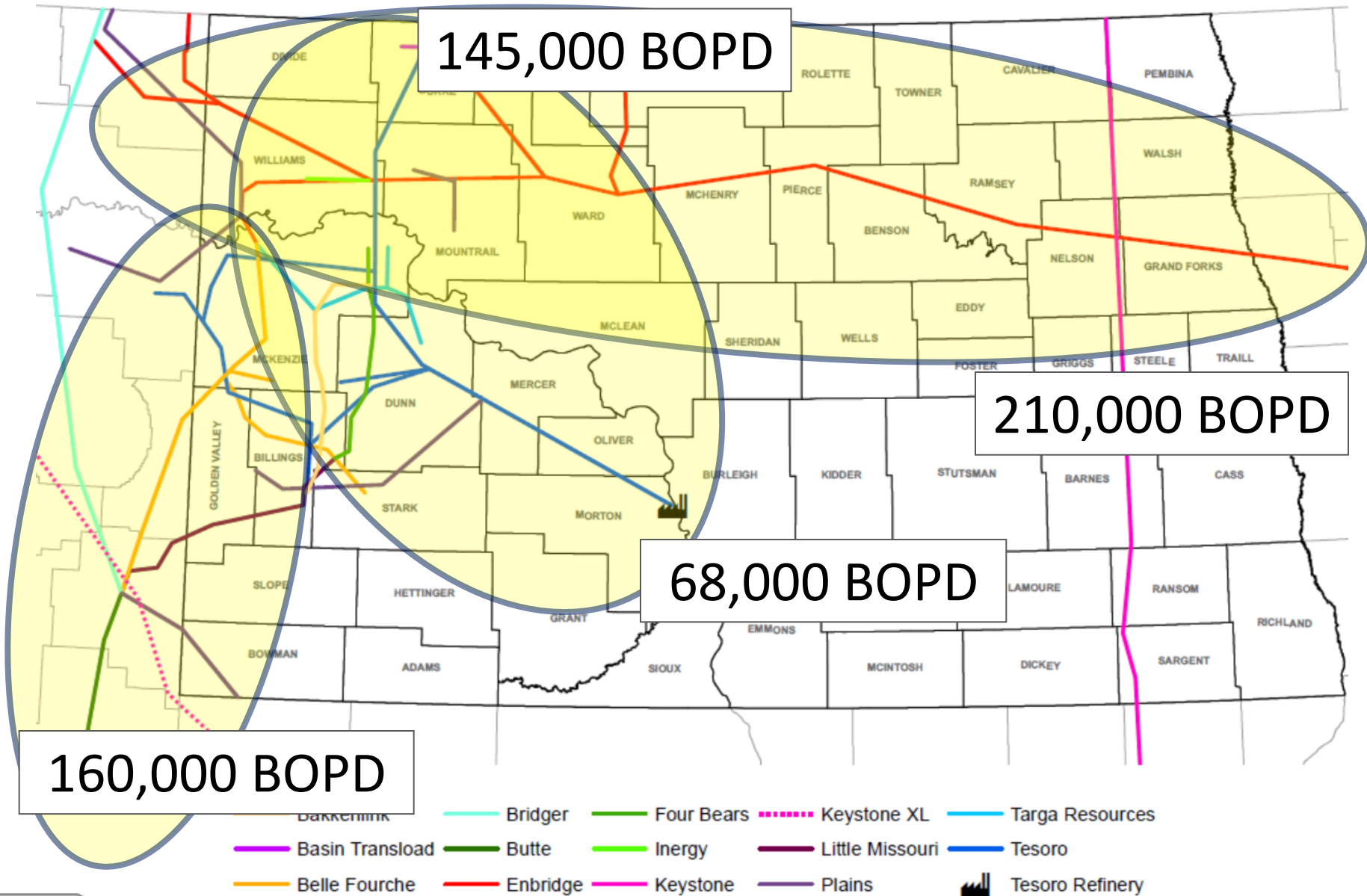
# North Dakota Crude Oil Pipelines



\*Modified from Bridger and Belle Fourche Pipelines

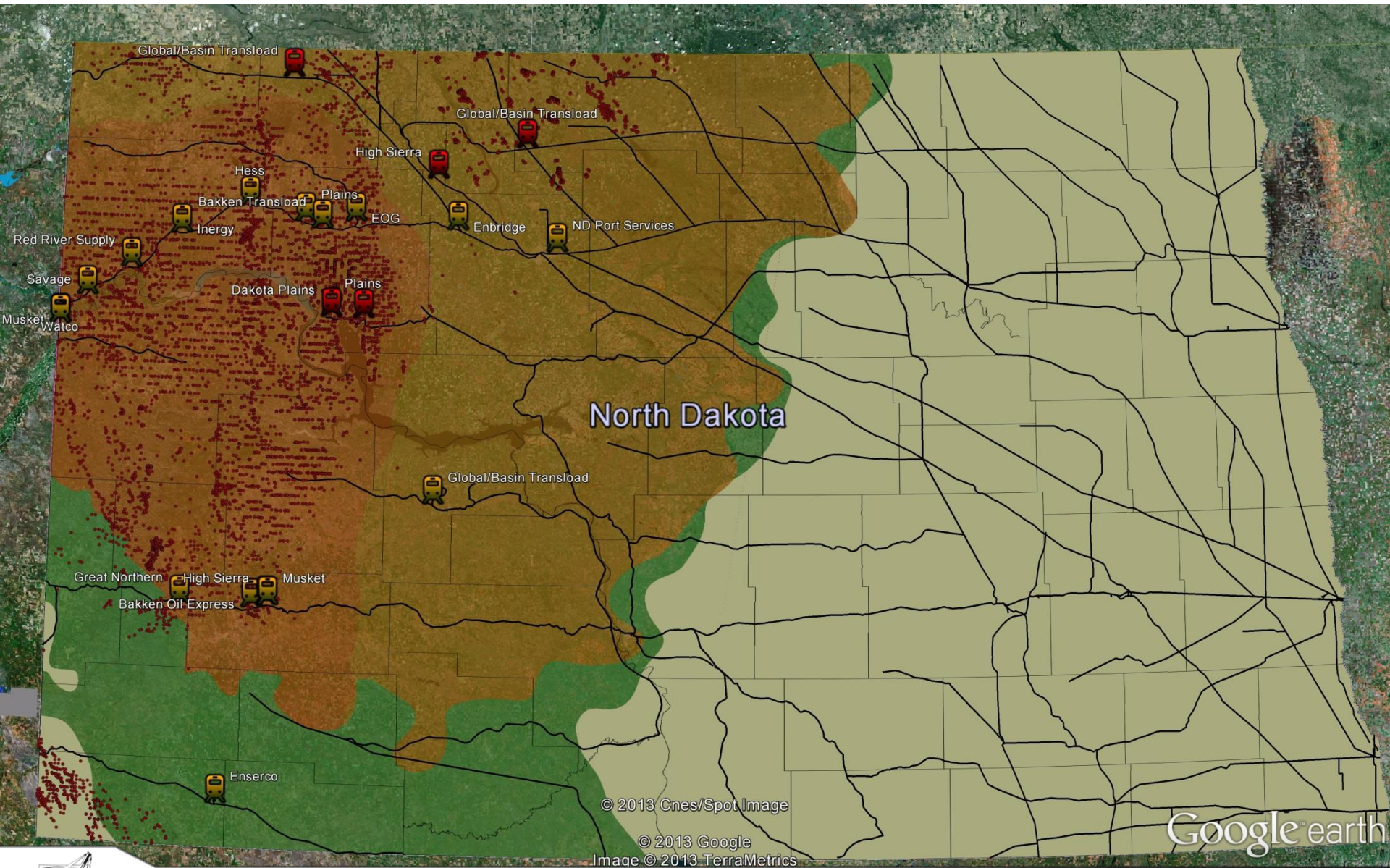


# North Dakota Crude Oil Pipelines

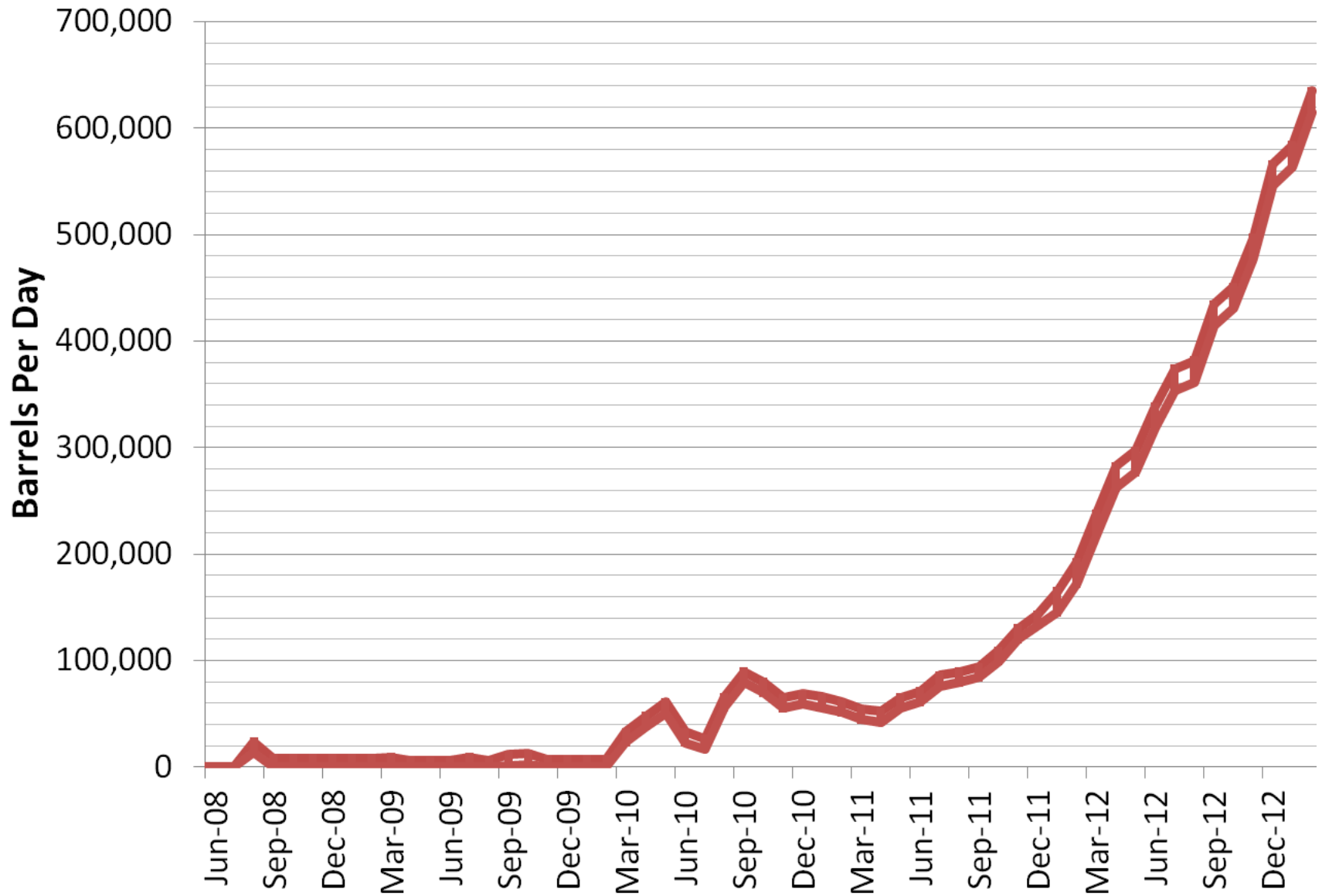




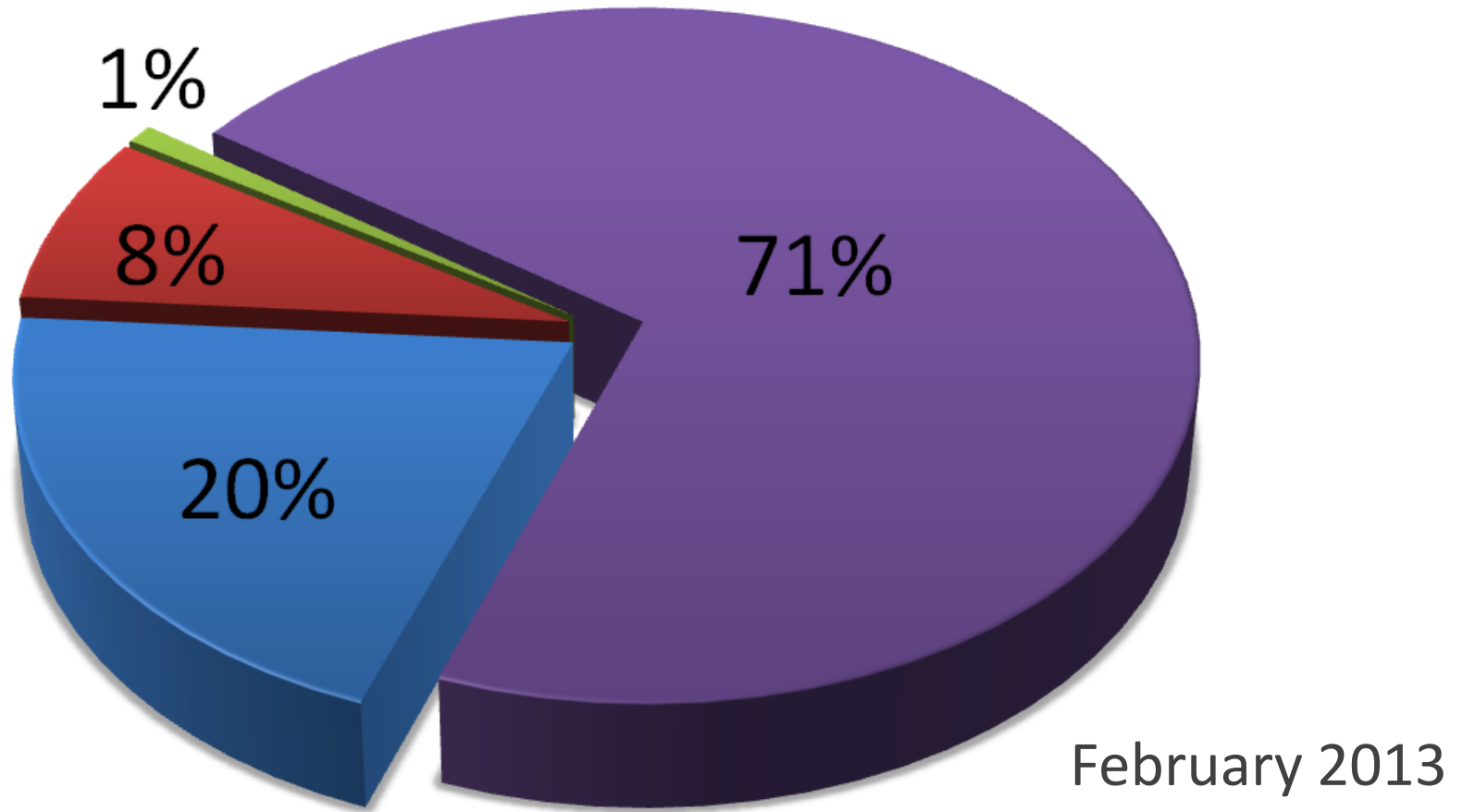
# Oil Loading Rail Facilities



# Estimated ND Rail Export Volumes



# Estimated Williston Basin Oil Transportation



■ Pipeline Export

■ Tesoro Refinery

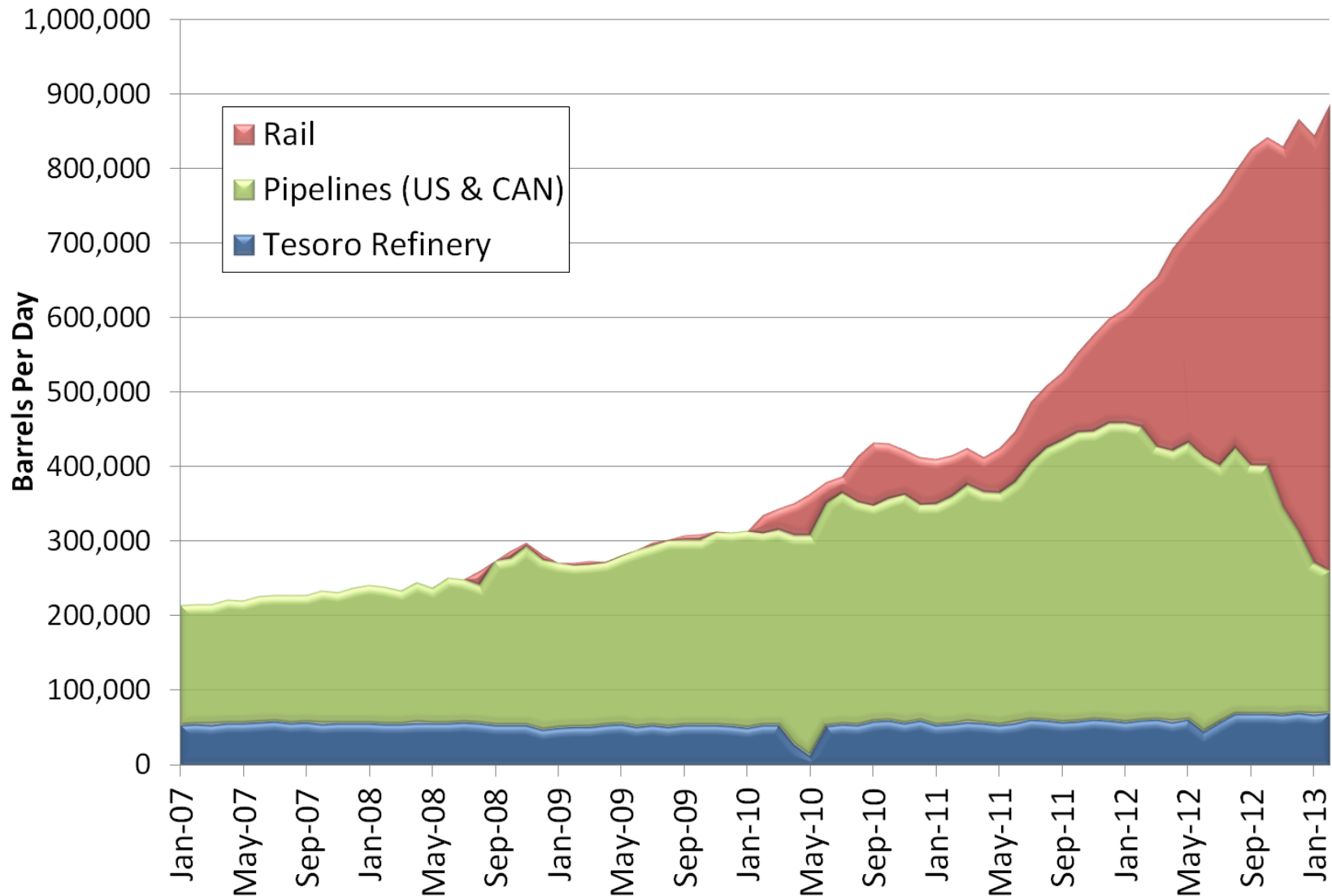
■ Truck to Canadian Pipelines

■ Estimated Rail





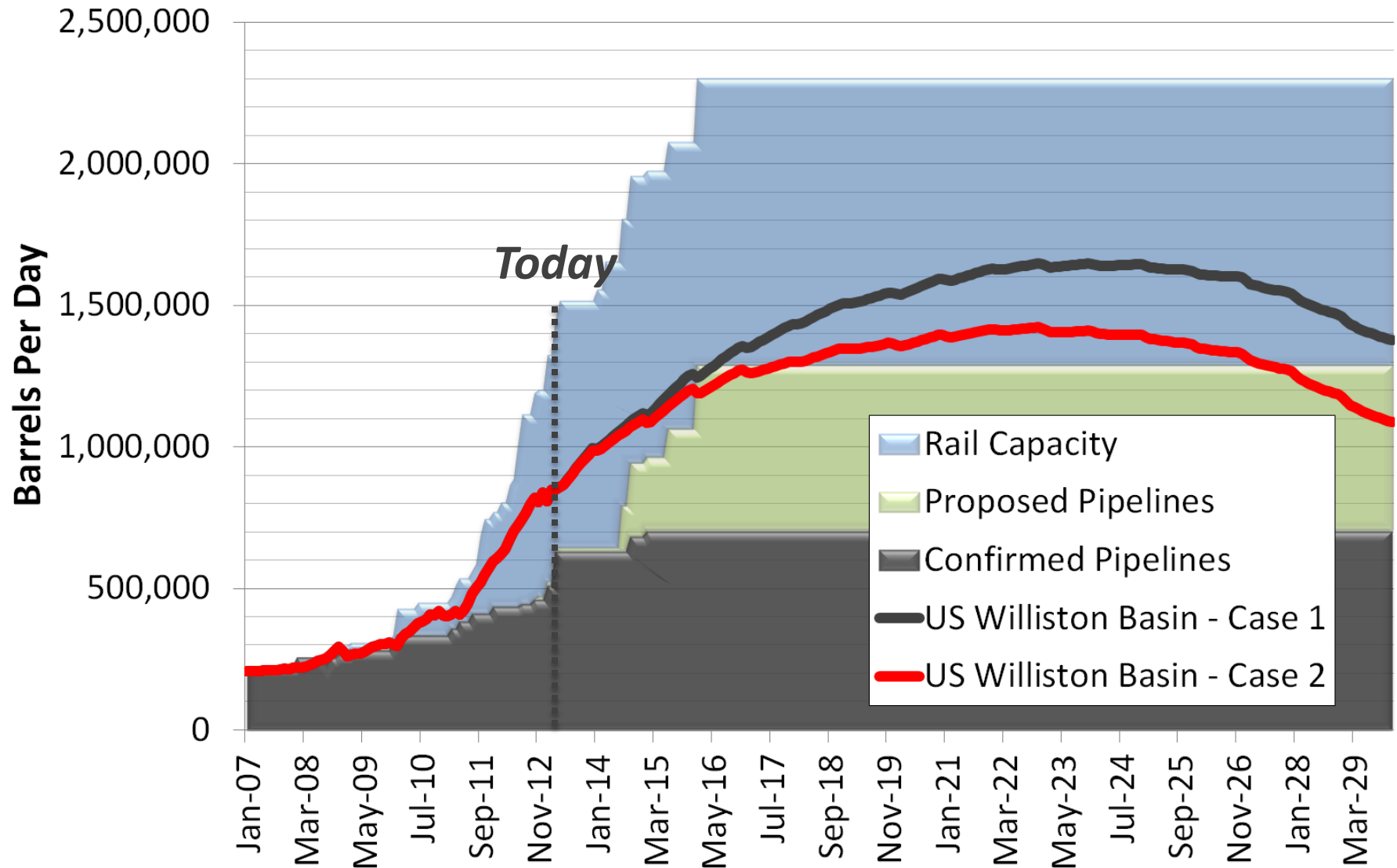
# US Williston Basin Oil Transport\*



*\*Some data based on estimates or assumptions*



# Williston Basin Oil Production & Export Capacity, BOPD

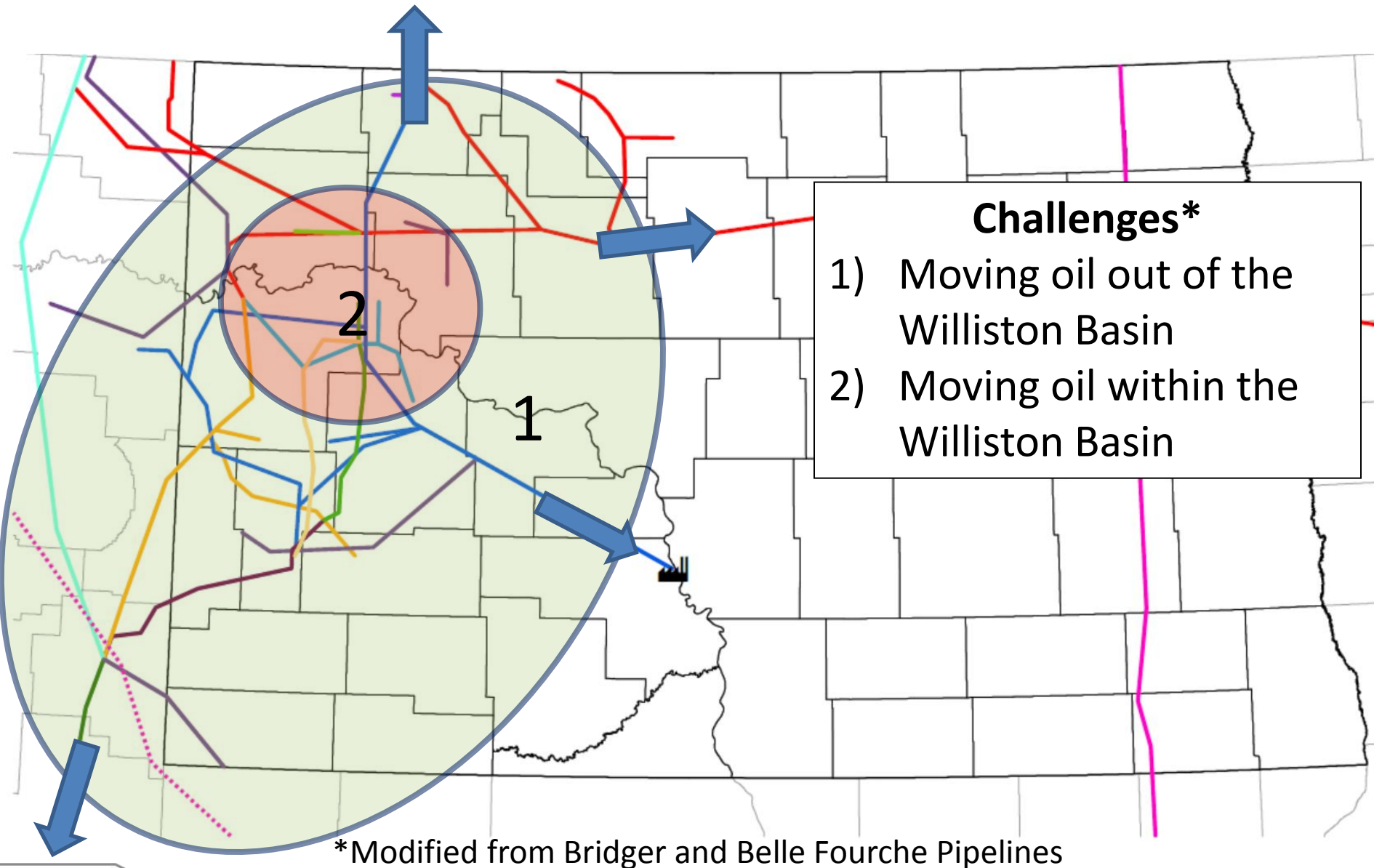


Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.



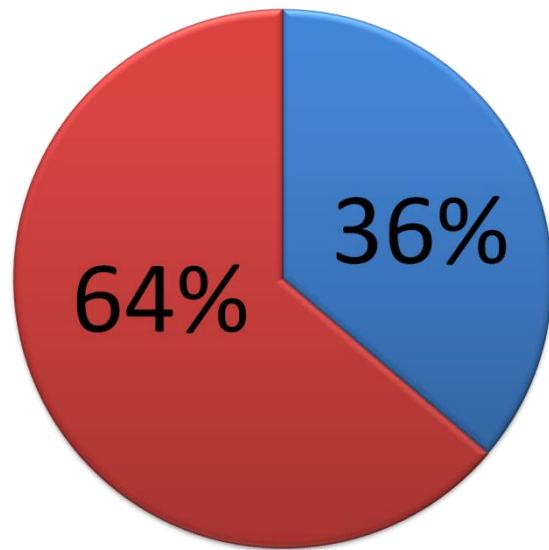


# North Dakota Crude Oil Pipelines



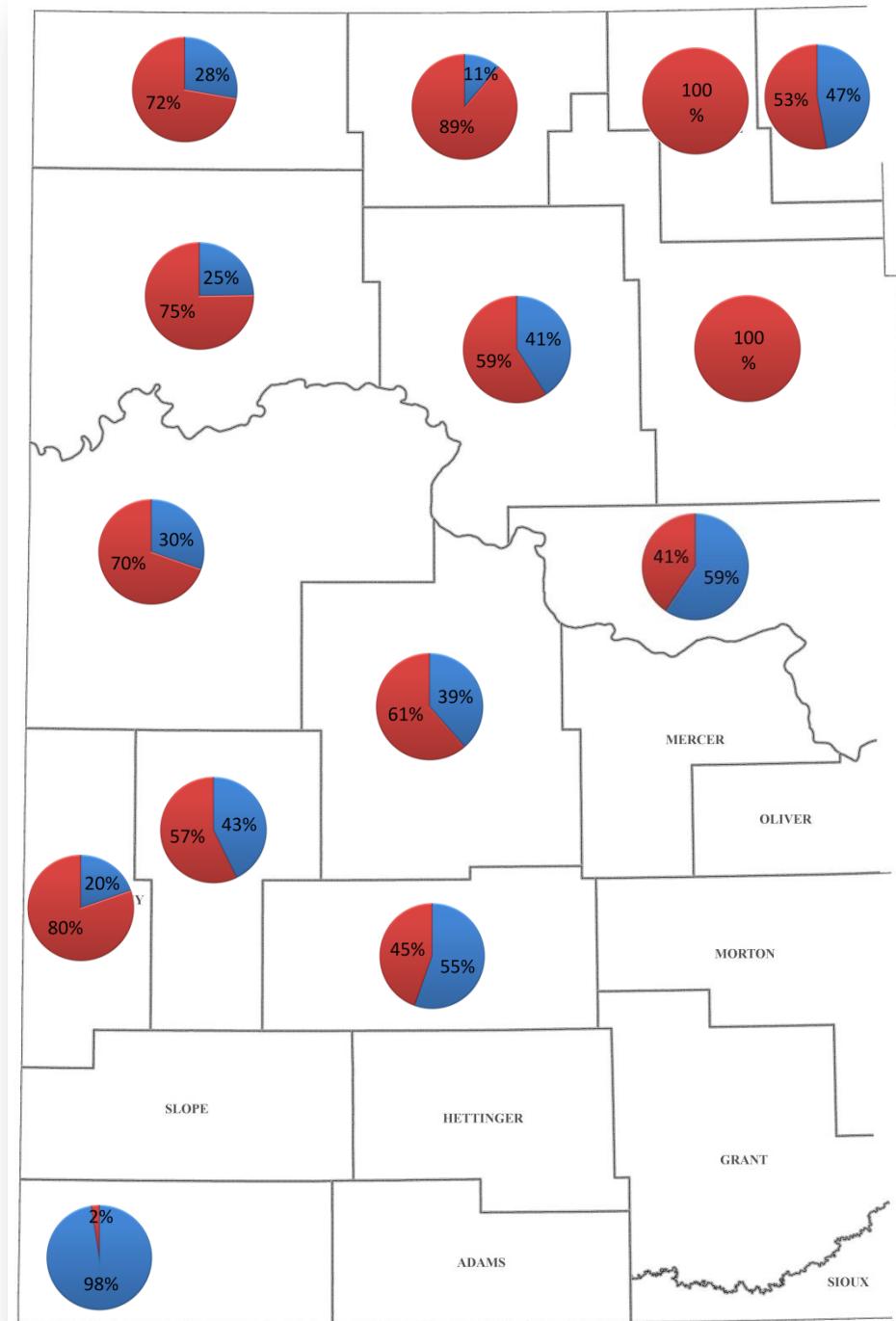
# ND Crude Oil Gathering

**Red** – Trucked  
**Blue** – Pipeline



All ND Production

Sep 2012 Estimates – Some data incomplete or unavailable



# Crude Oil

*Understanding production potential*

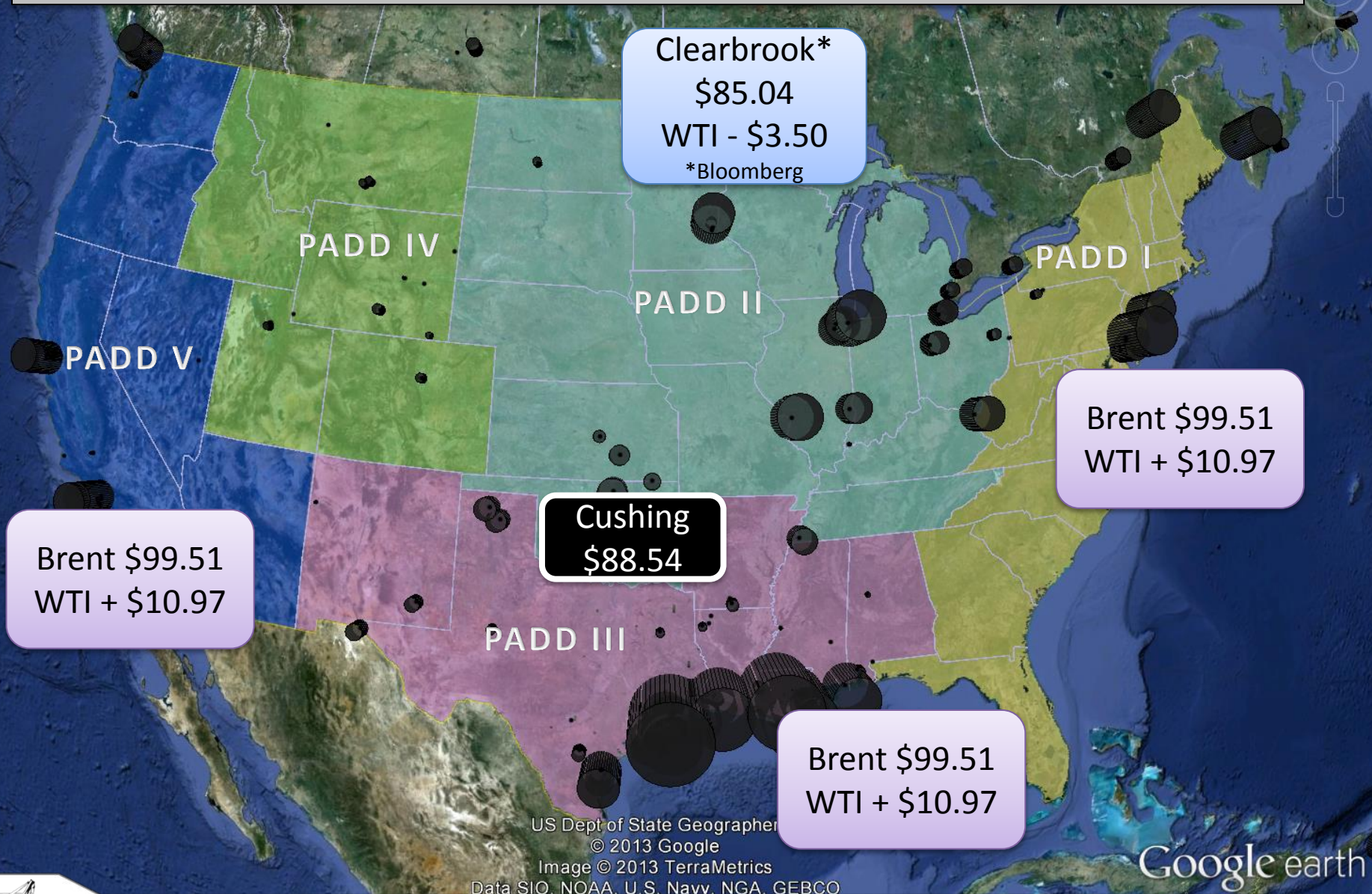
*Understanding current transportation dynamics and potential transportation constraints*

***Understanding current and future market conditions***

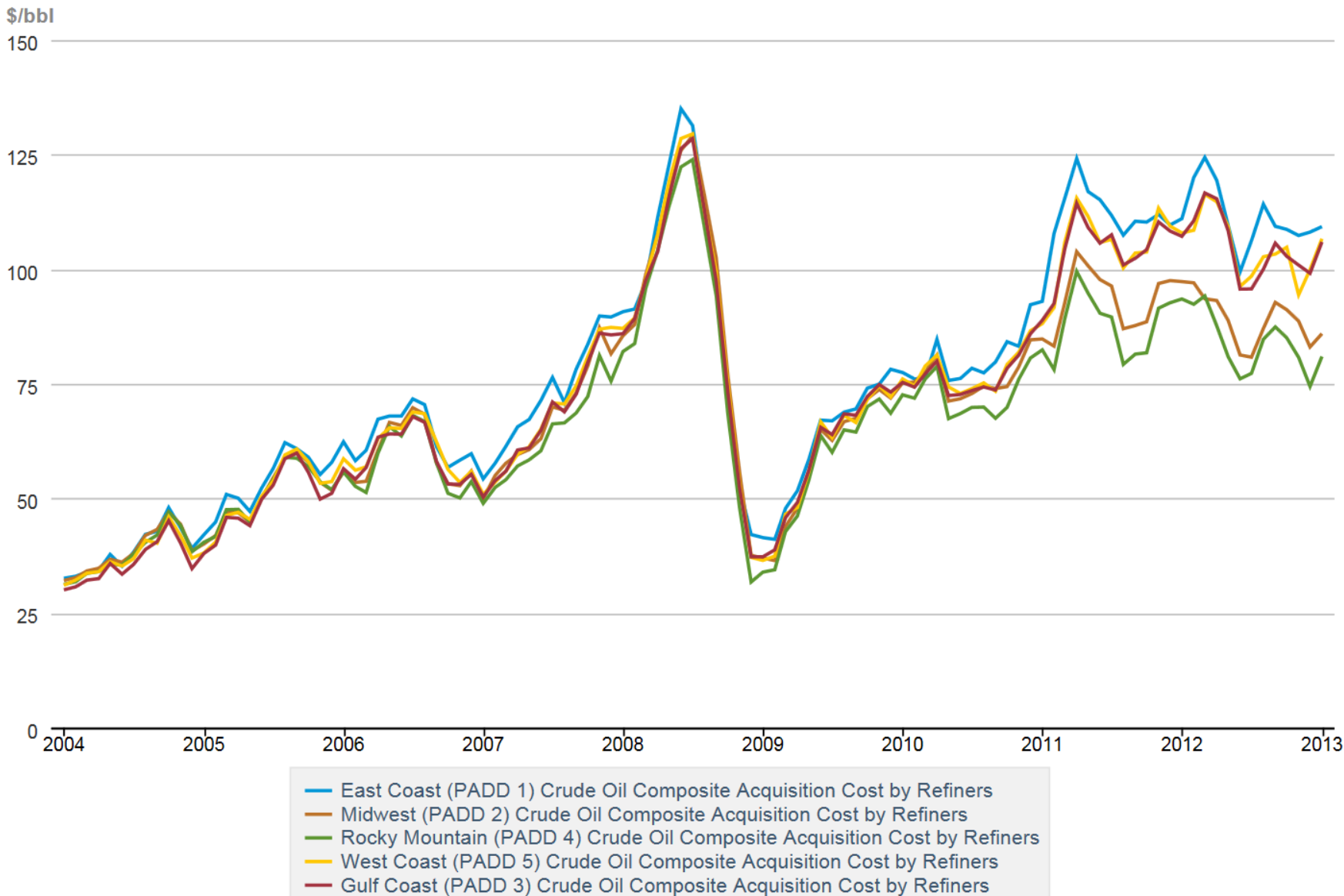




# Crude Oil Prices – April 23, 2013



## Refiner Acquisition Cost of Crude Oil

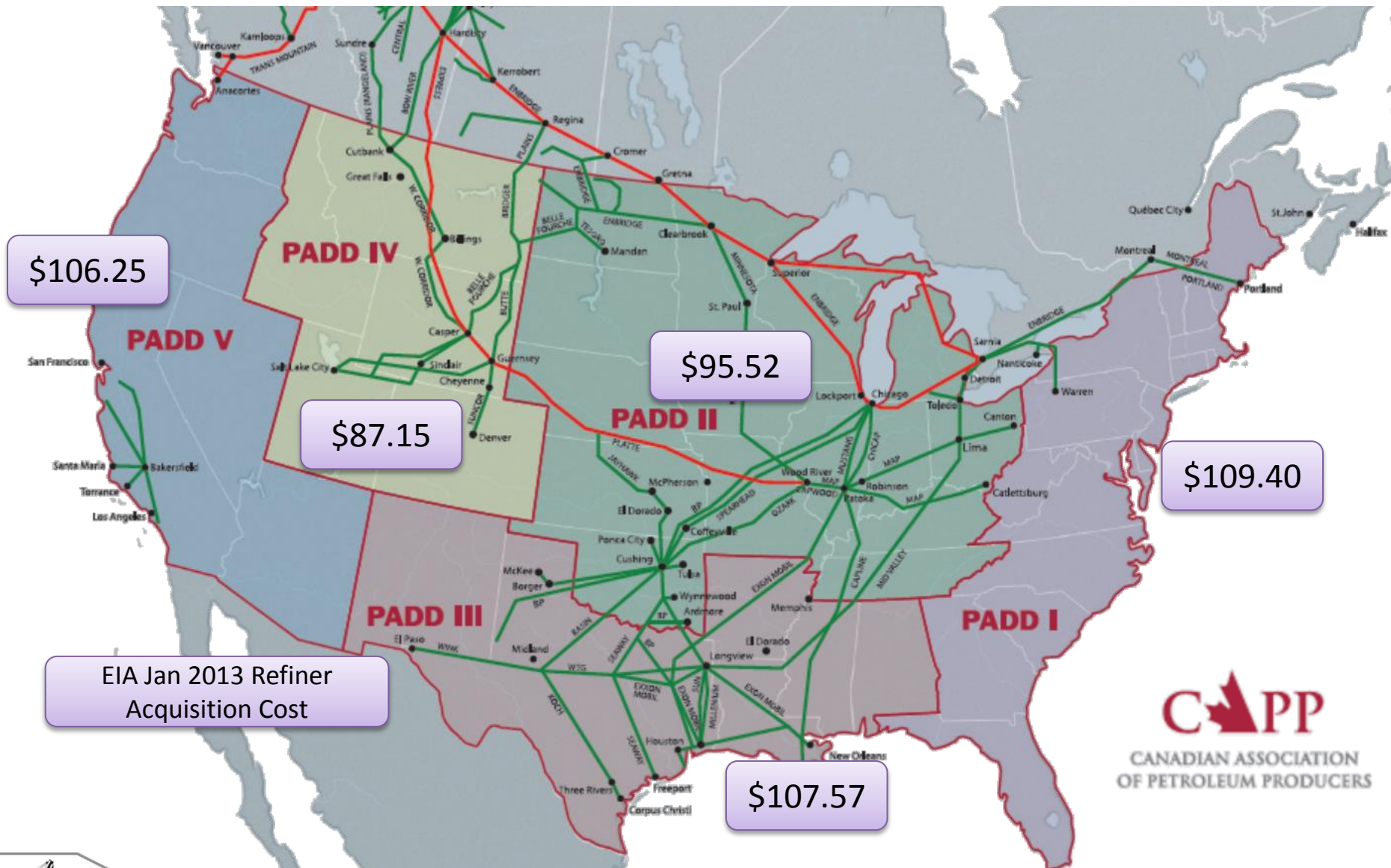


Source: U.S. Energy Information Administration



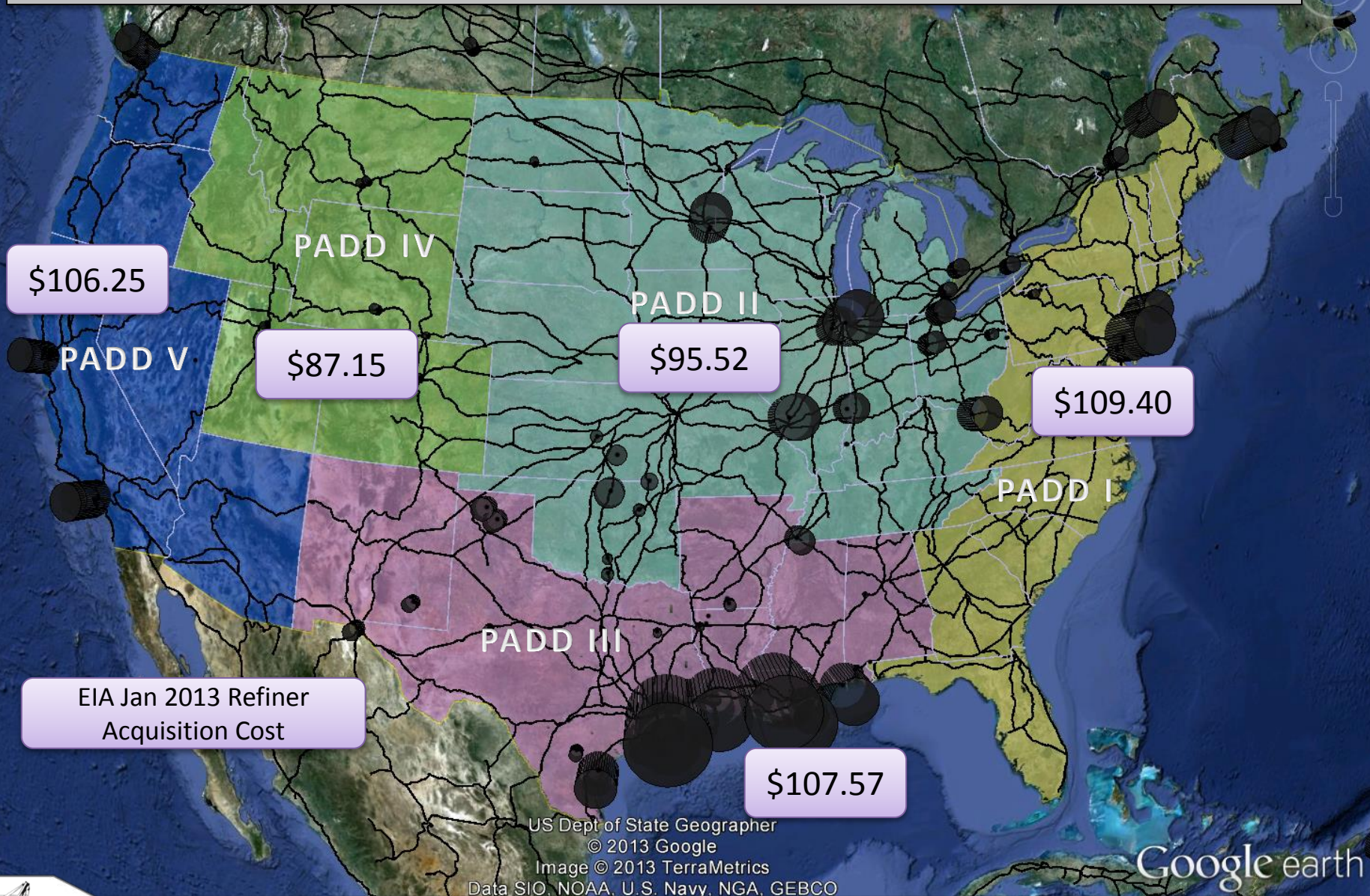


# Major Pipelines and Refining Centers



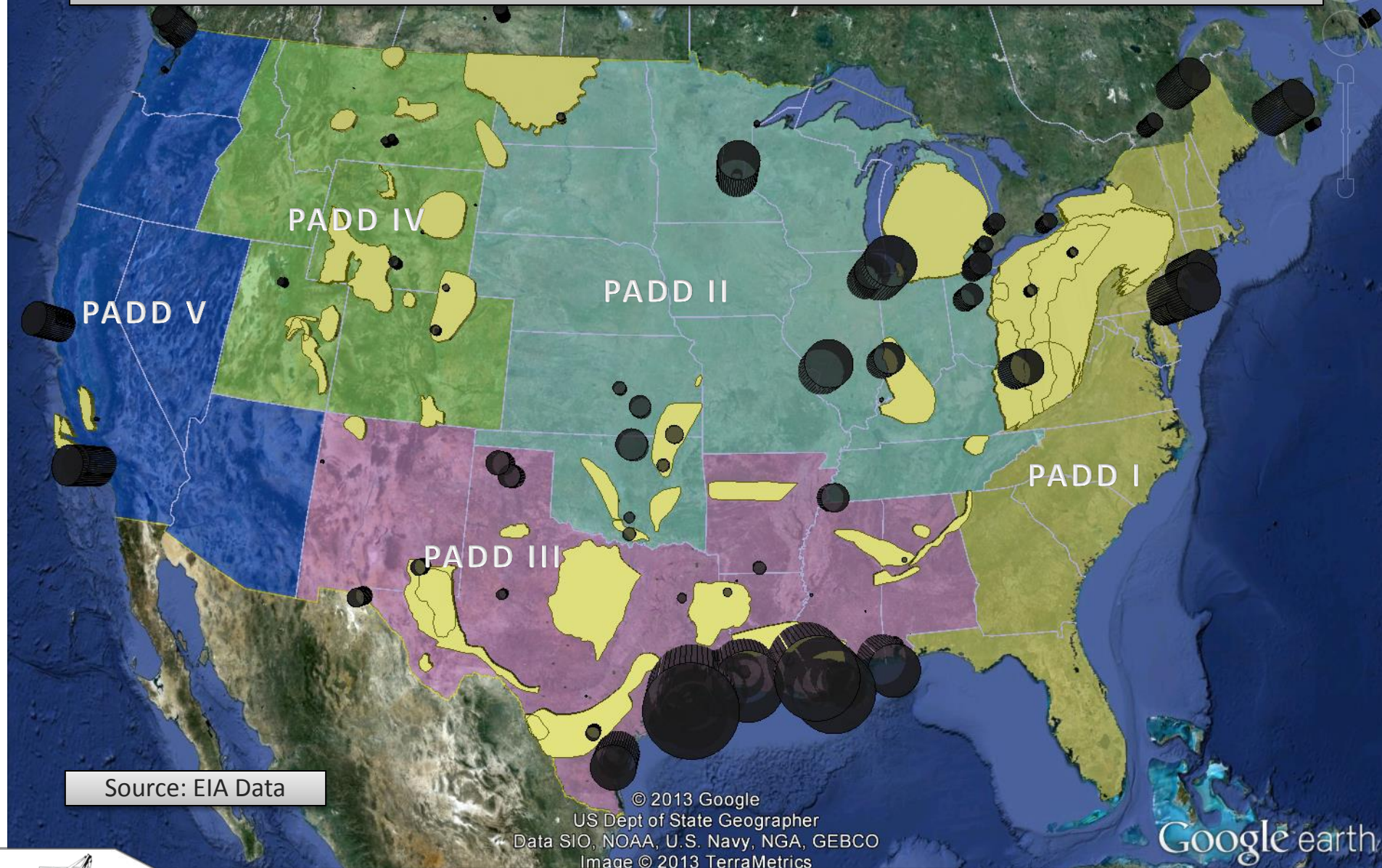


# Major Rail Lines and Refineries





# US Shale Plays and Refineries





# Natural Gas



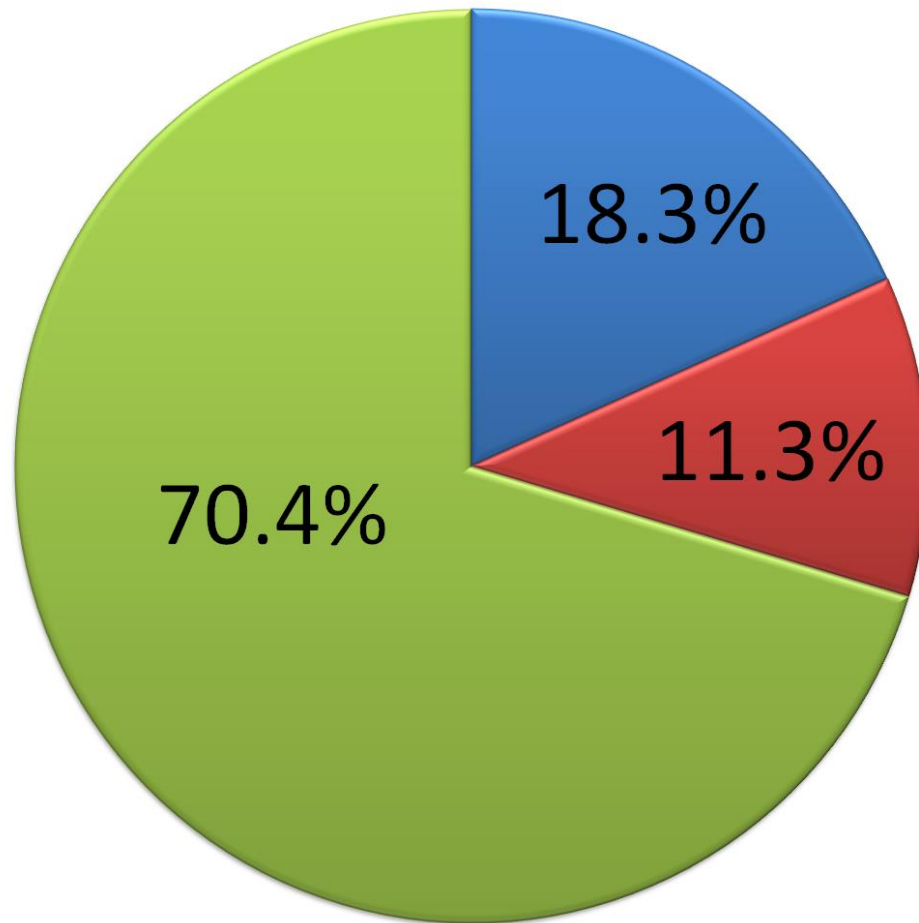
# Keys to Reducing Flaring

1. *Economics Must Work*
2. *Understanding Production Potential*
3. *New Gas Gathering Pipelines*
4. *Enhancing Existing Gathering Pipelines*
5. *Adequate Gas Processing Capacity*
6. *Adequate Interstate Pipeline Capacity*
7. *Flaring Alternatives (Short & Long Term)*





# Solving the Flaring Challenge



**GREEN** – % of gas captured and sold

**Red** – % flared from wells with at least 1 mcf sold.

**Blue** – % flared from “0” sales wells

## Simple Terms

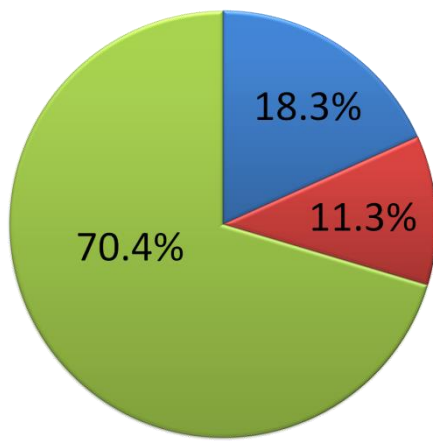
**Red** – Challenges on existing infrastructure

**Blue** – Lack of pipelines

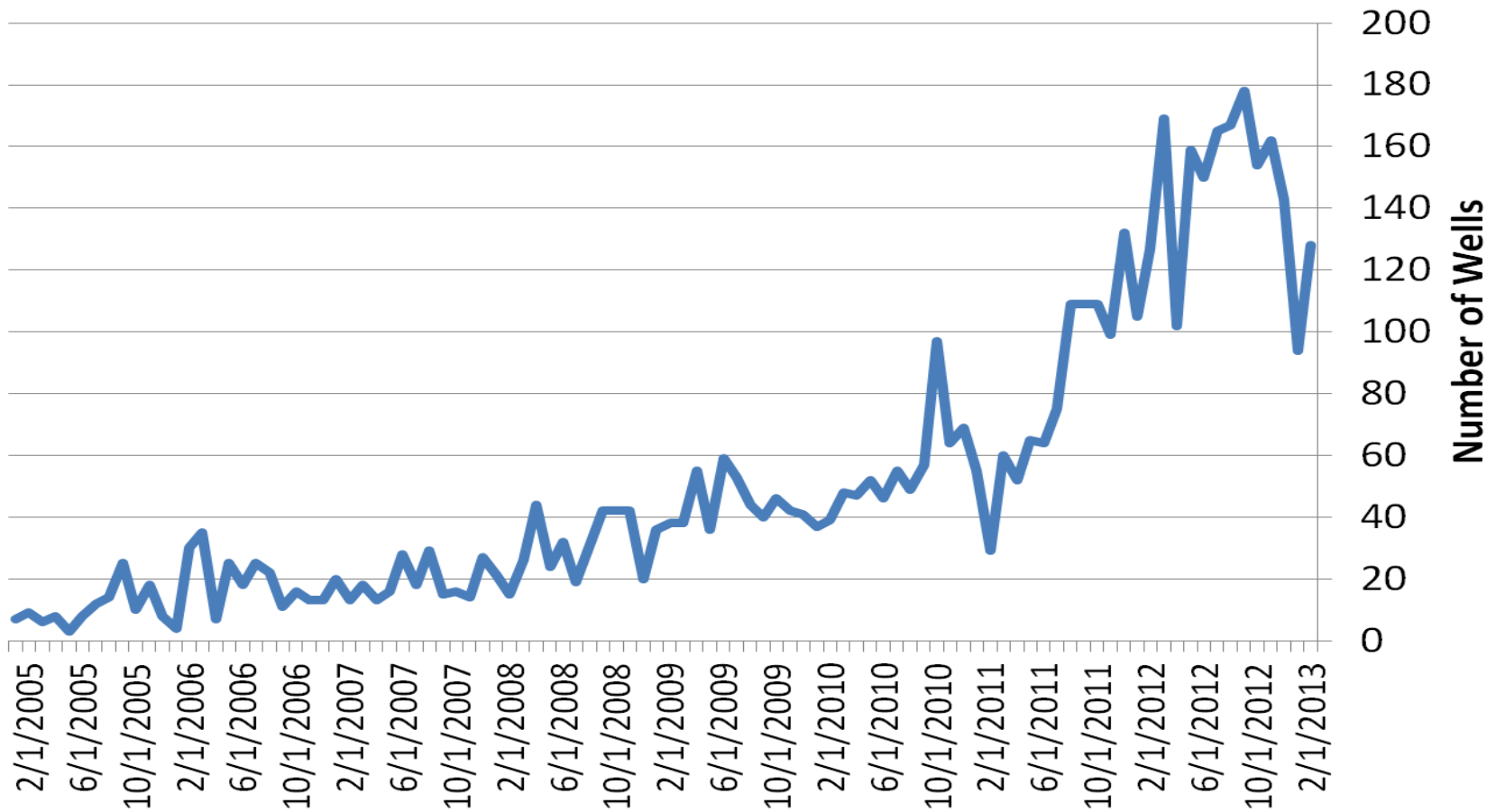
Statewide

Feb 2013 Data – Non-Confidential Wells

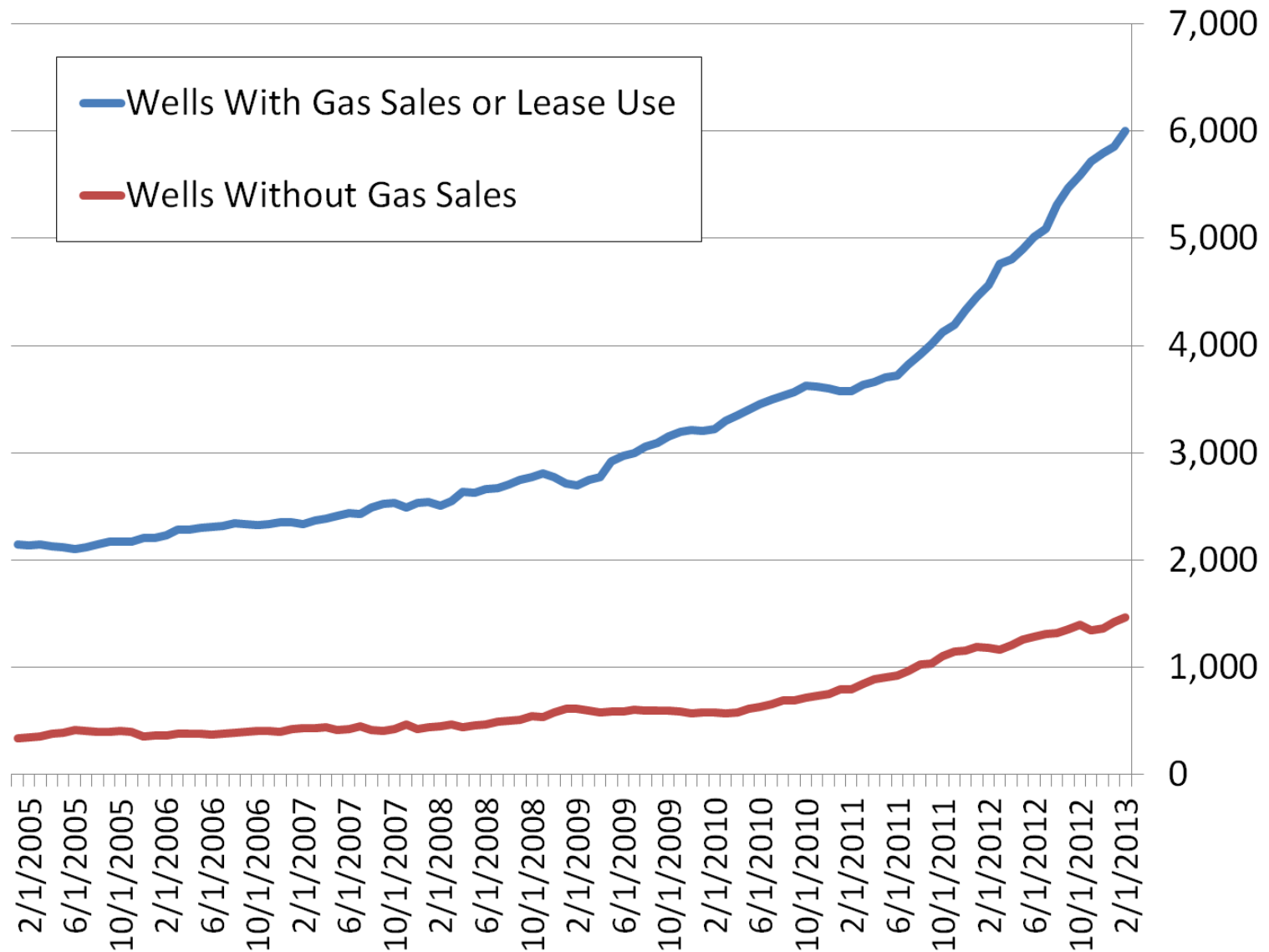


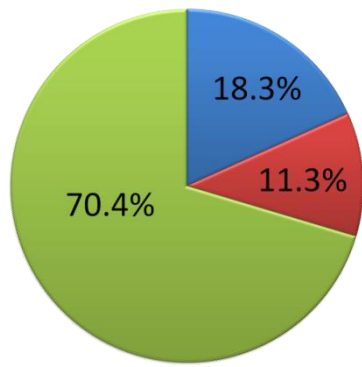


# Capturing the 18% Faster Well Connections

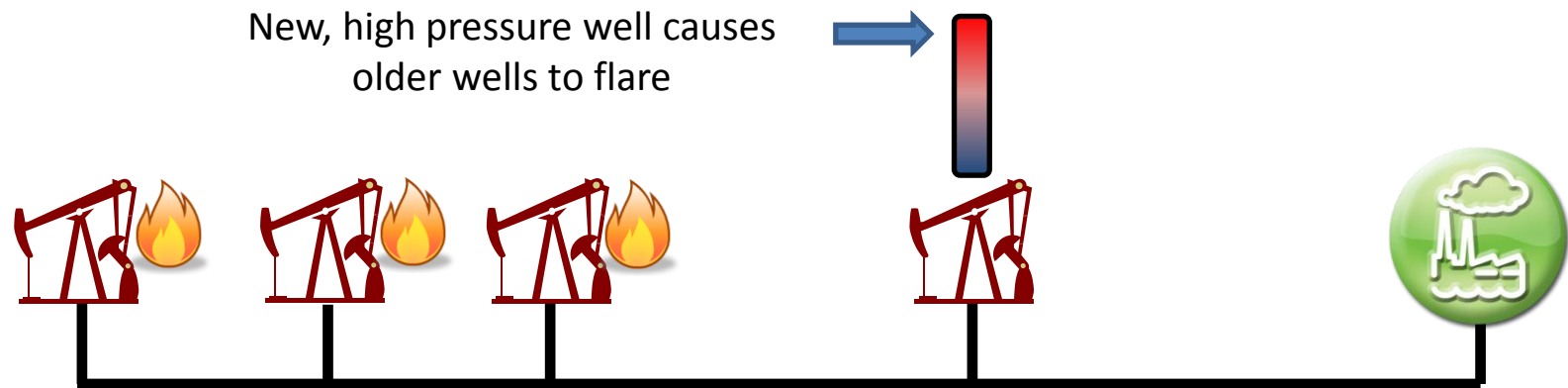
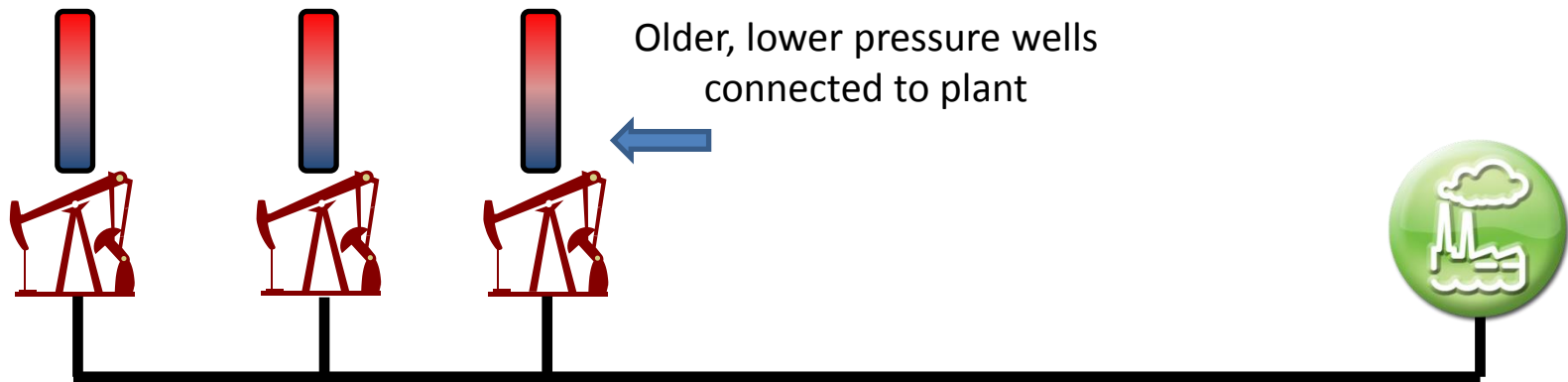


# ND Gas Gathering Statistics

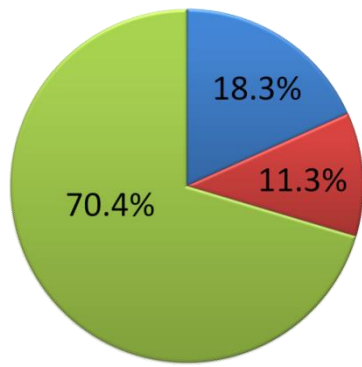




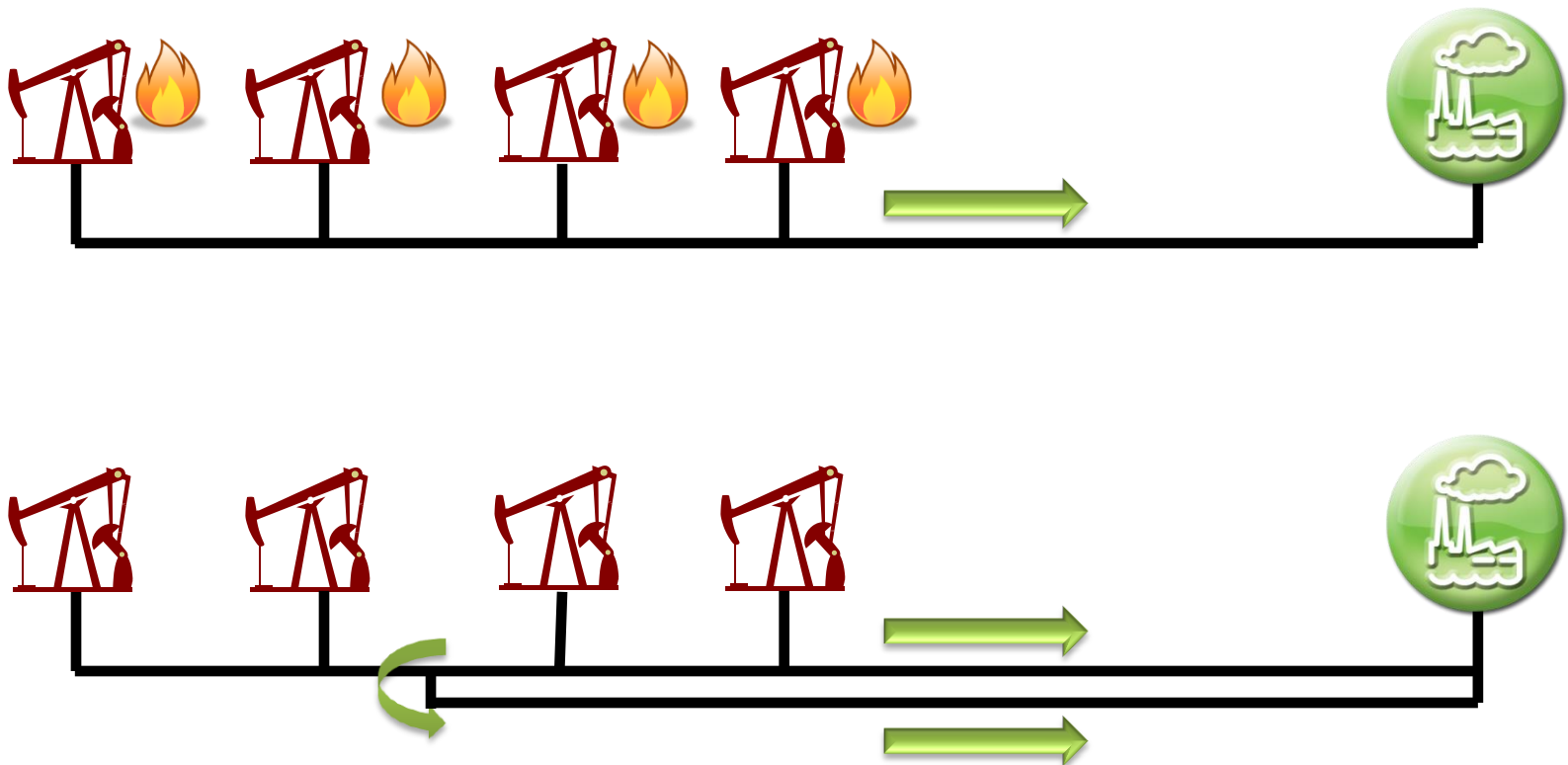
# Capturing the 11% Additional Compression

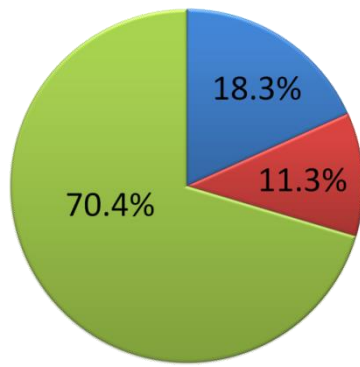






# Capturing the 11% Looping Existing Pipelines





# Capturing the 11% Frequent Pigging

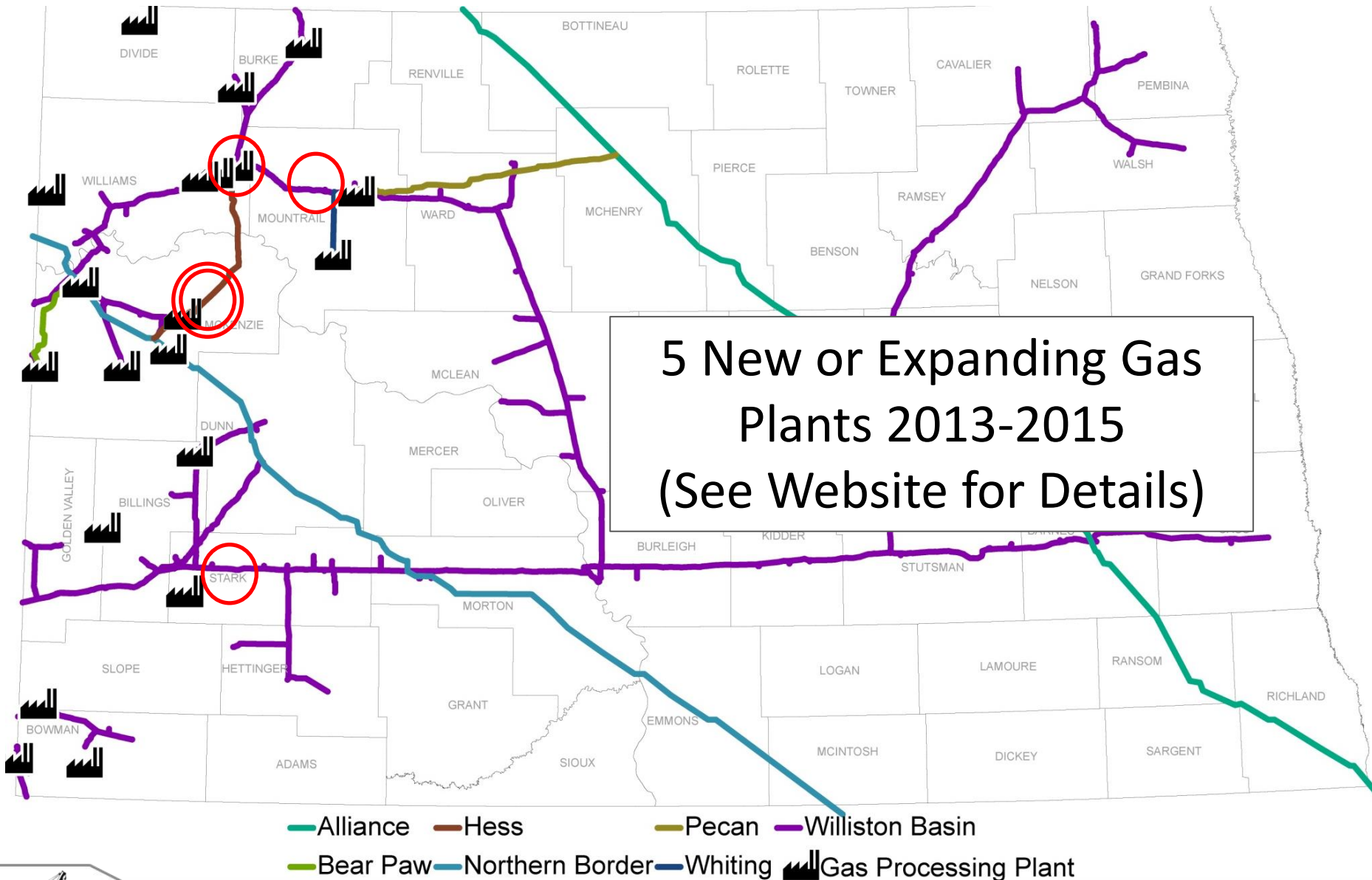
NGL buildup in gathering pipelines  
reduces area for gas to flow



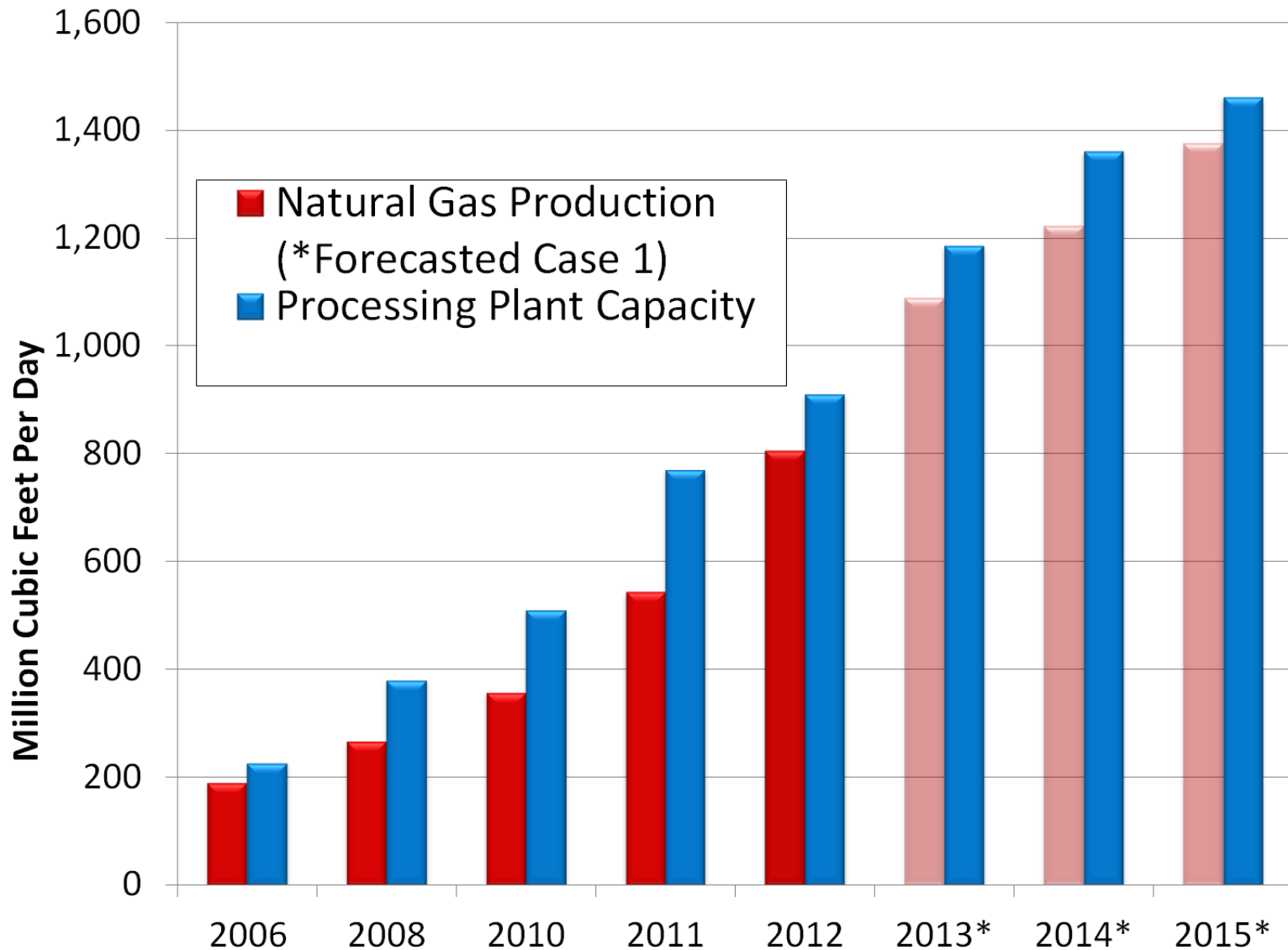
*More of an issue in winter months due  
to lower ground temperature causing  
more liquids to drop out*



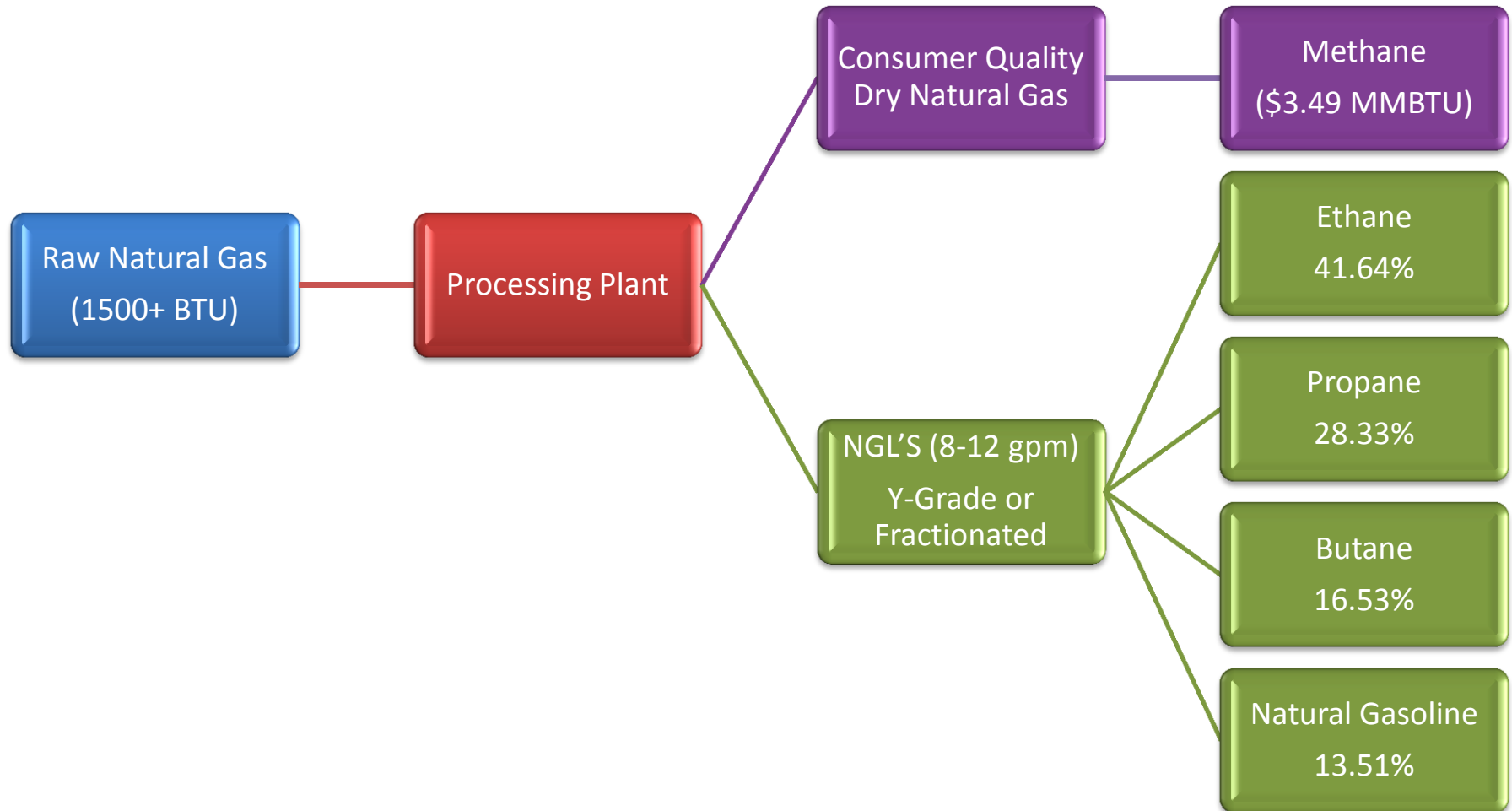
# Natural Gas Processing & Transmission



# ND Gas Plant Capacity



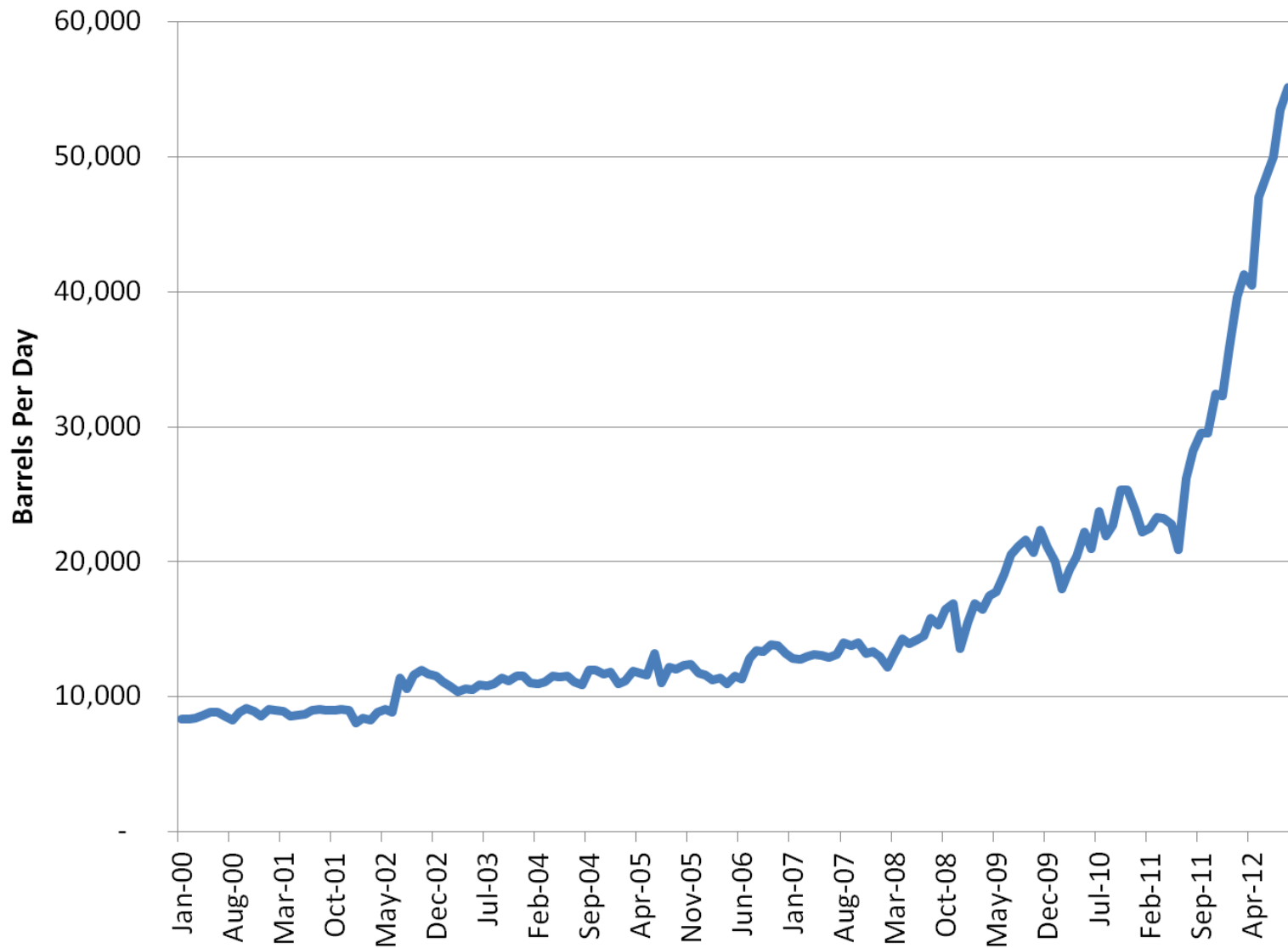
# Rich Natural Gas



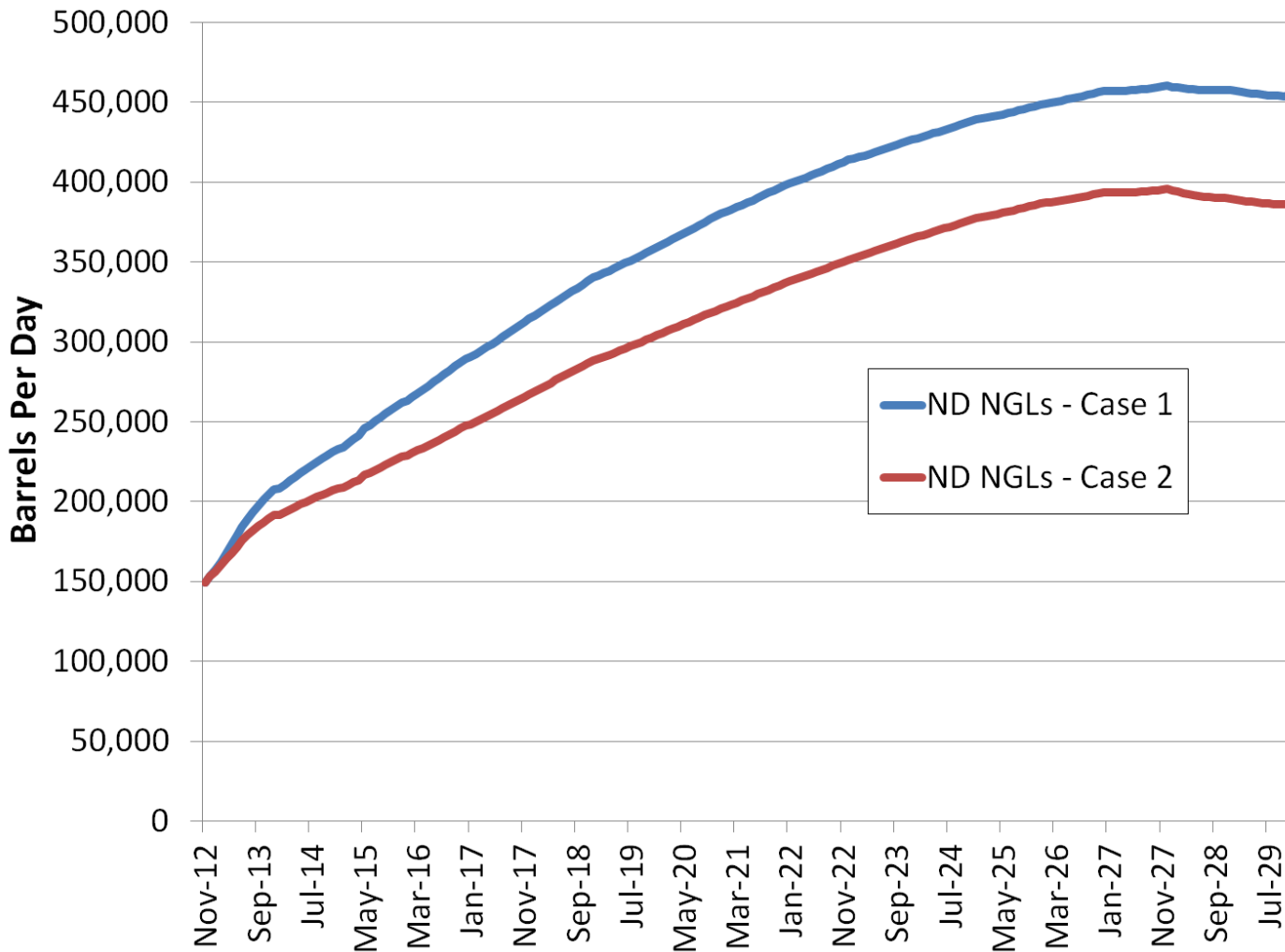
*\*Using NGL breakdown from the July 2012 BENTEK Natural Gas Study*



# ND Gas Plant NGL Production



# ND NGL Production Potential



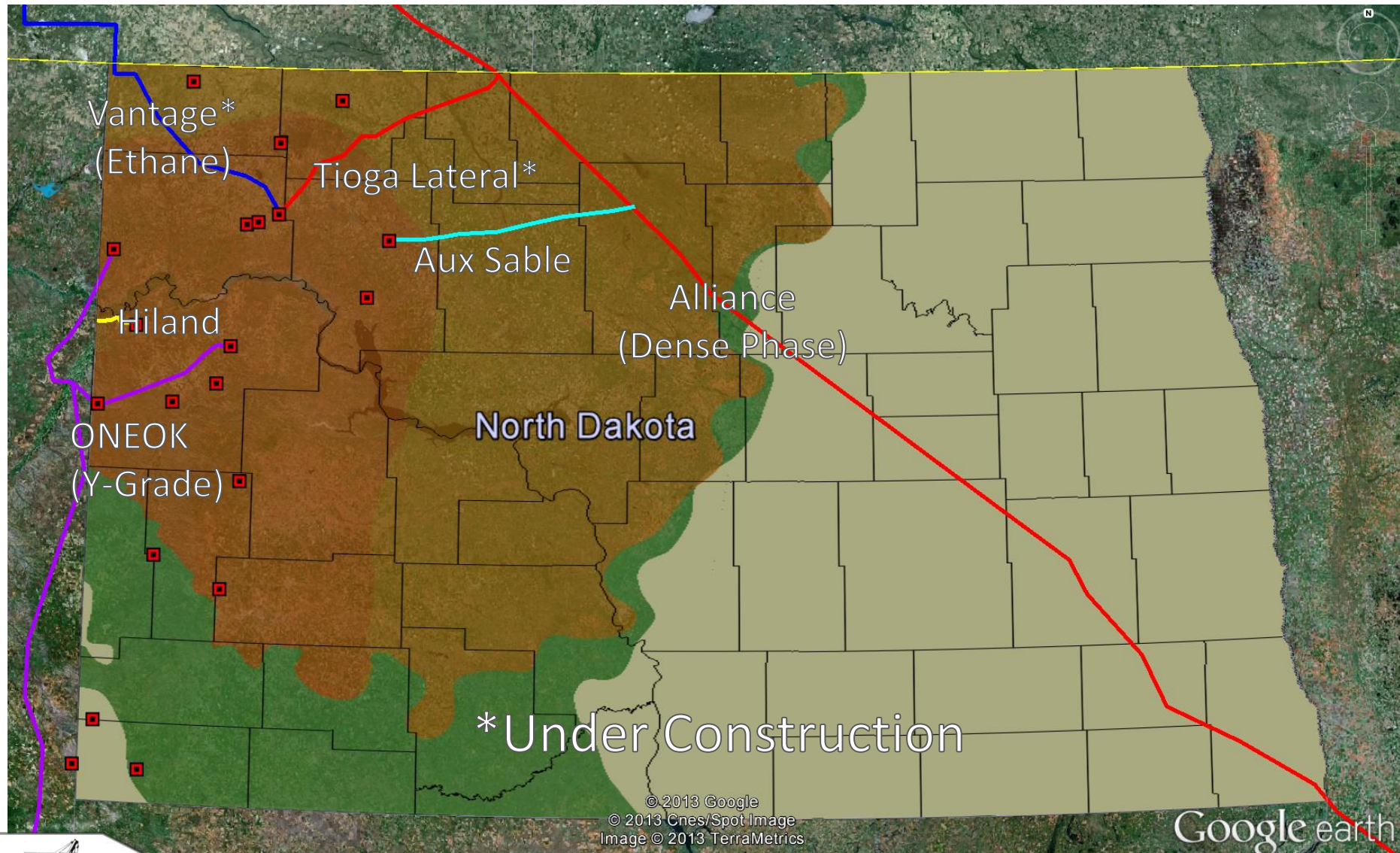
## Assumptions

- No Flaring
- 8 Gal/MCF
- All liquids extracted





# NGL Pipeline Transportation



# Contact Information

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Websites:

[www.pipeline.nd.gov](http://www.pipeline.nd.gov)

[www.northdakotapipelines.com](http://www.northdakotapipelines.com)



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