

# NDPC Executive Speaker Series

**Justin J Kringstad**

*Geological Engineer*

*Director*

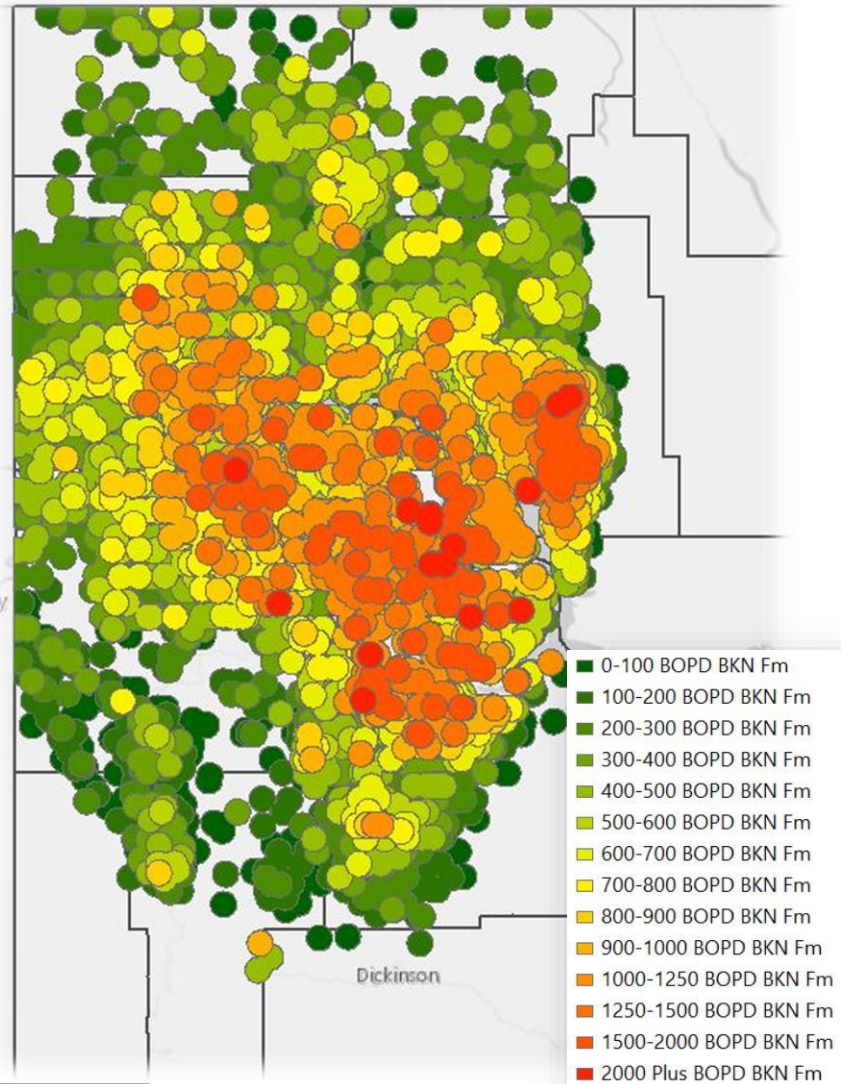
*North Dakota Pipeline Authority*



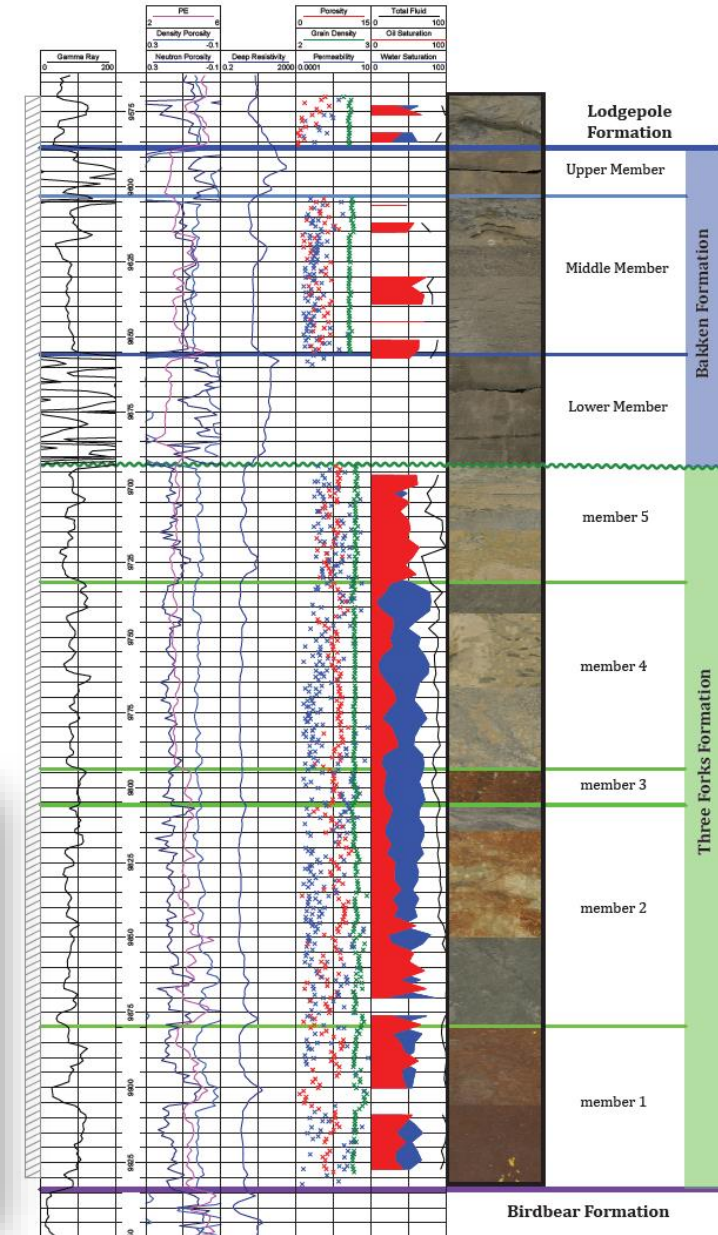
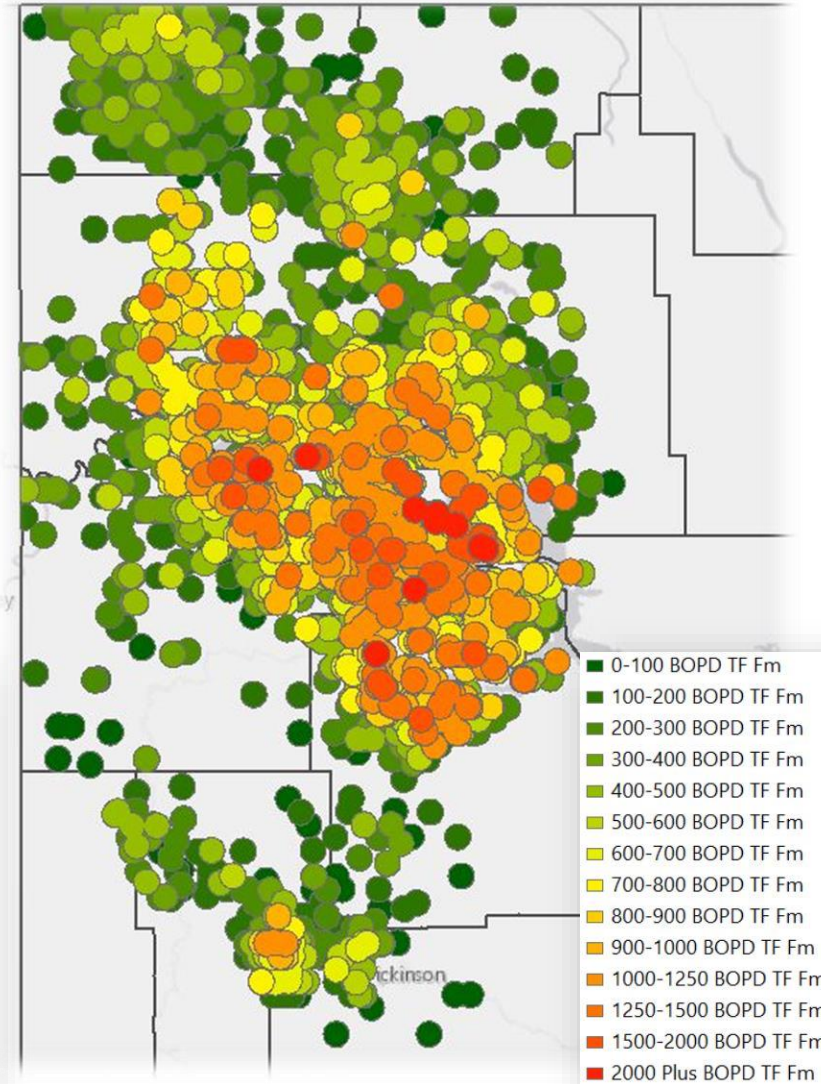
**August 13, 2020**

# Bakken & Three Forks Formations

Bakken Formation

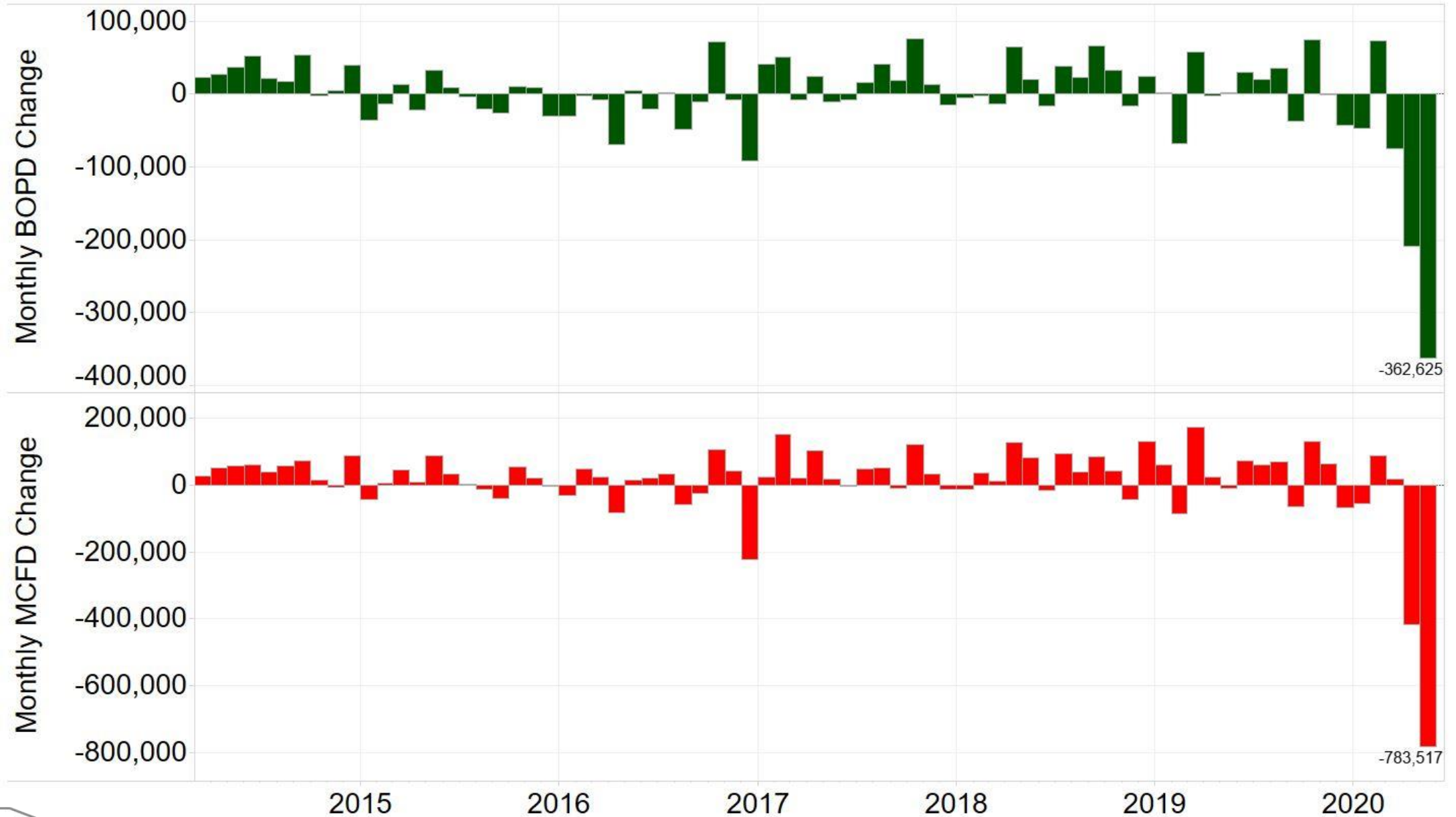


Three Forks Formation

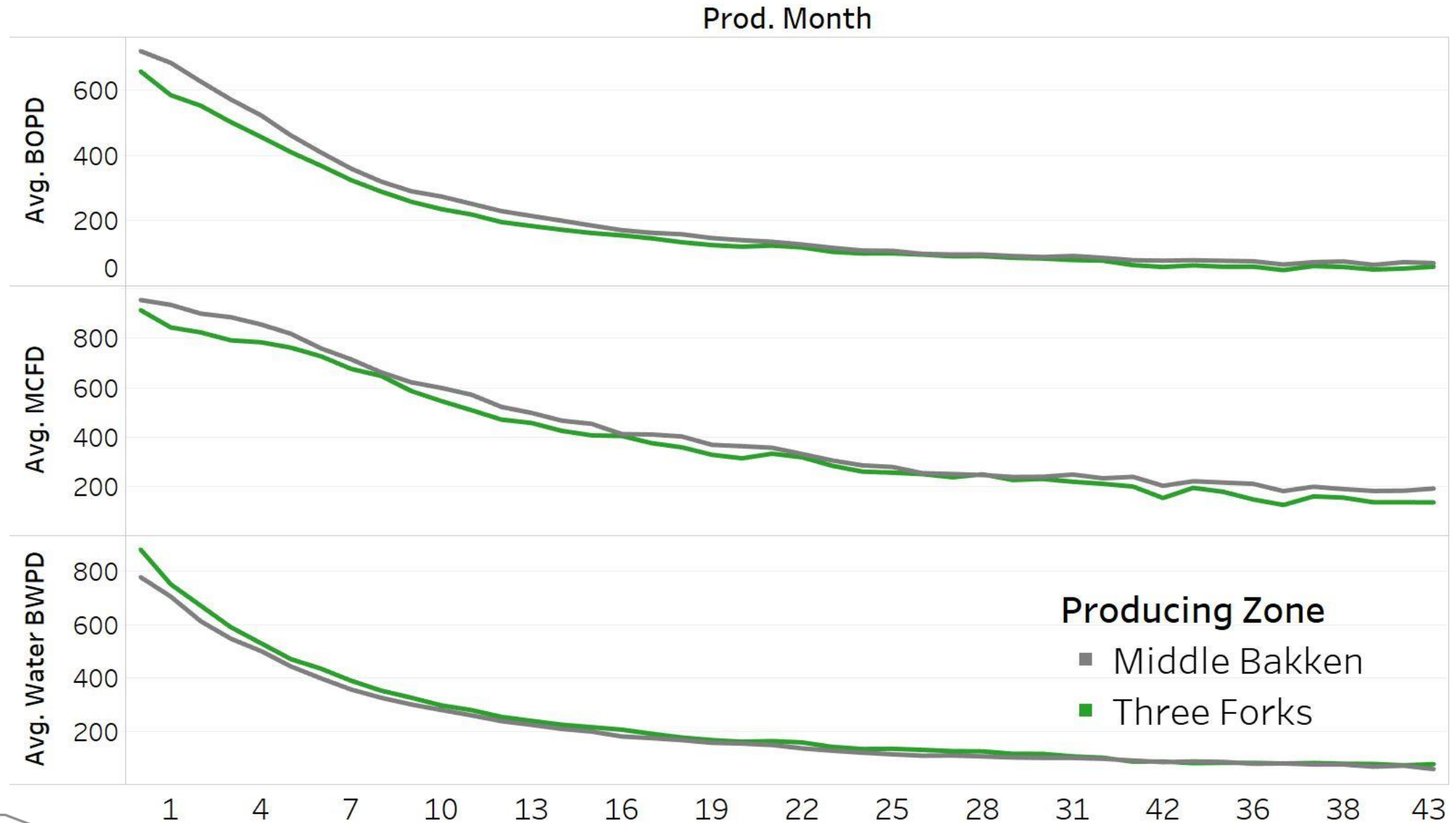




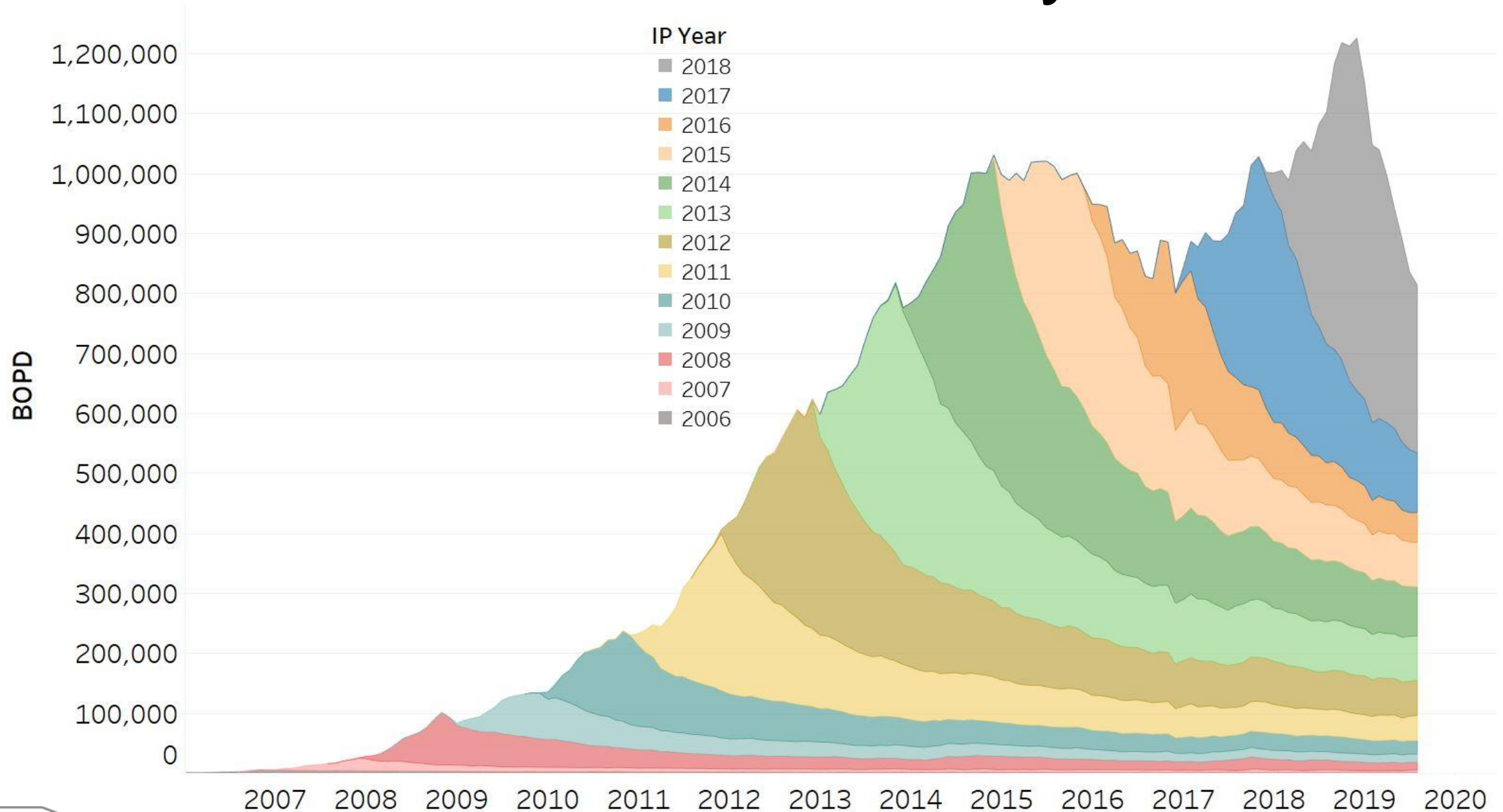
# Monthly Oil & Gas Production Change



# Statewide Well Performance

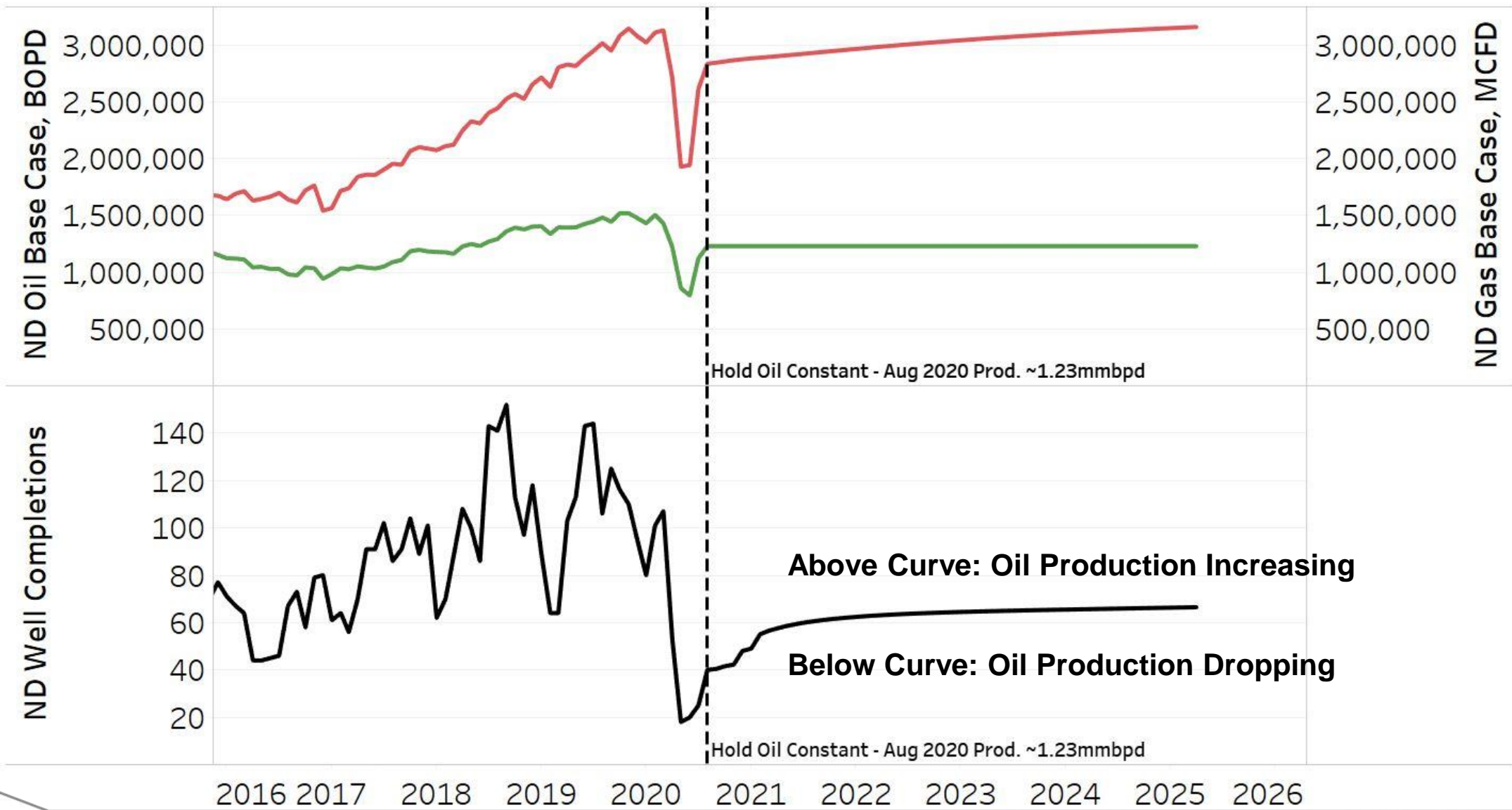


# Bakken Oil Production by IP Year



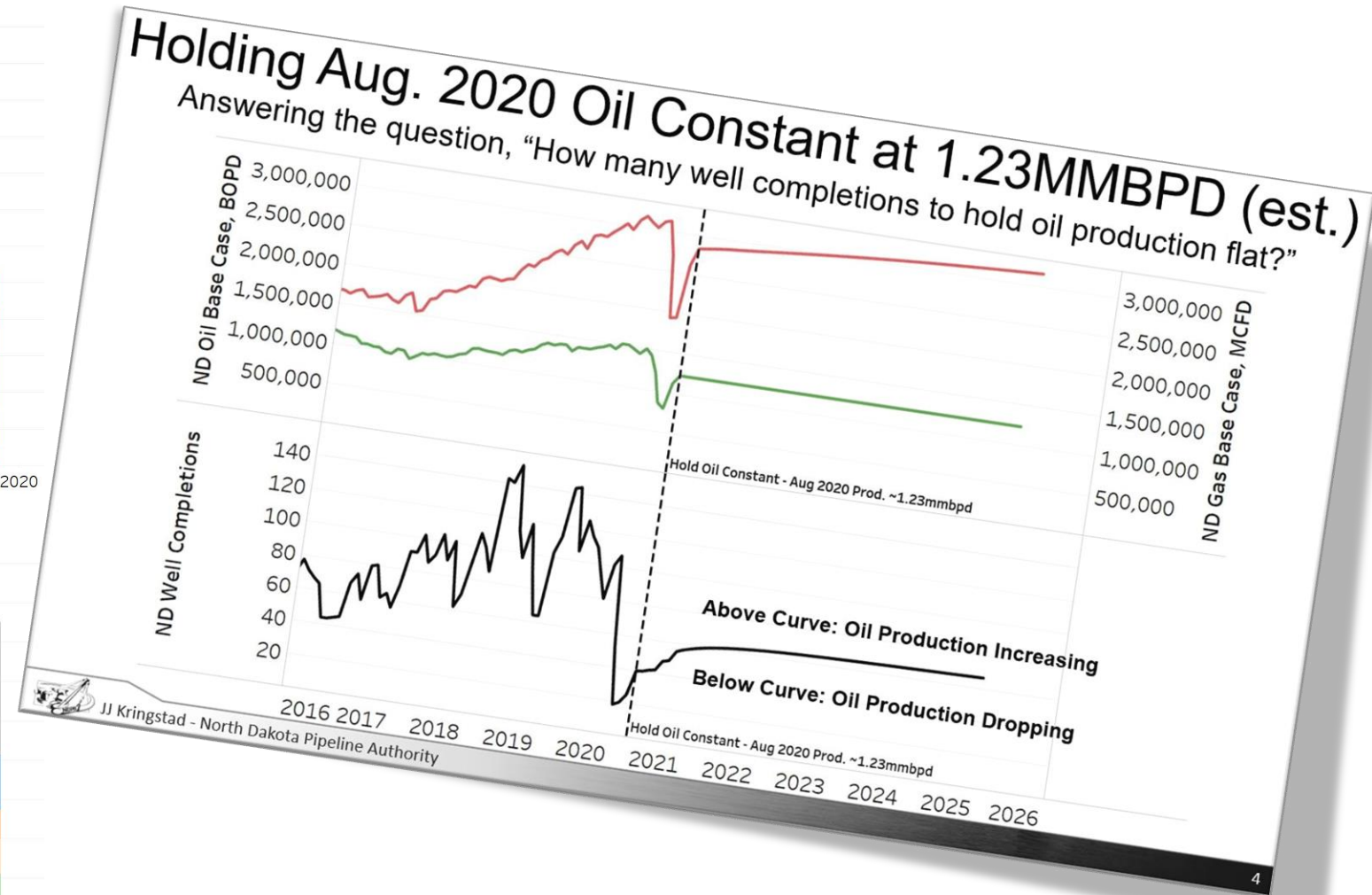
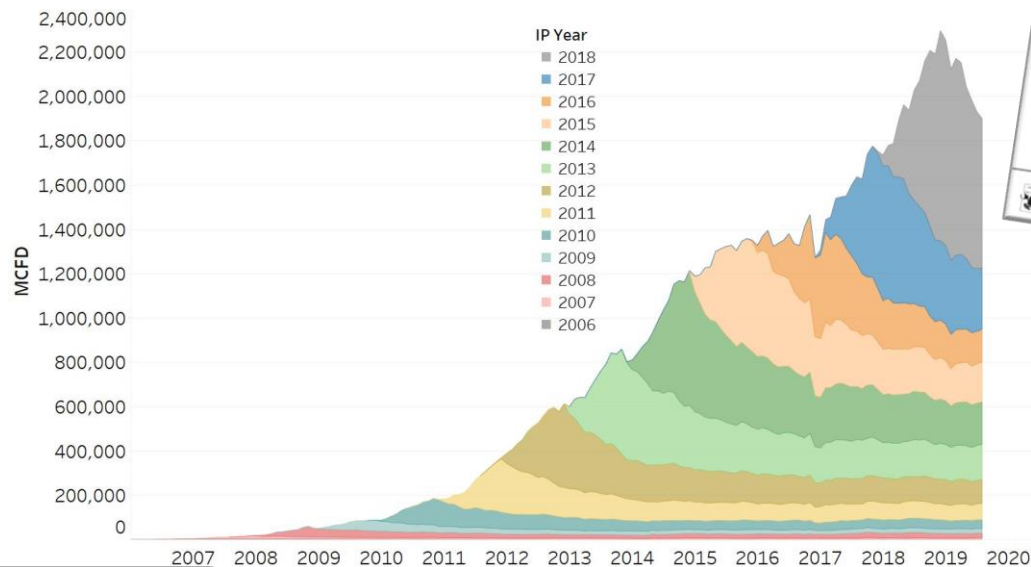
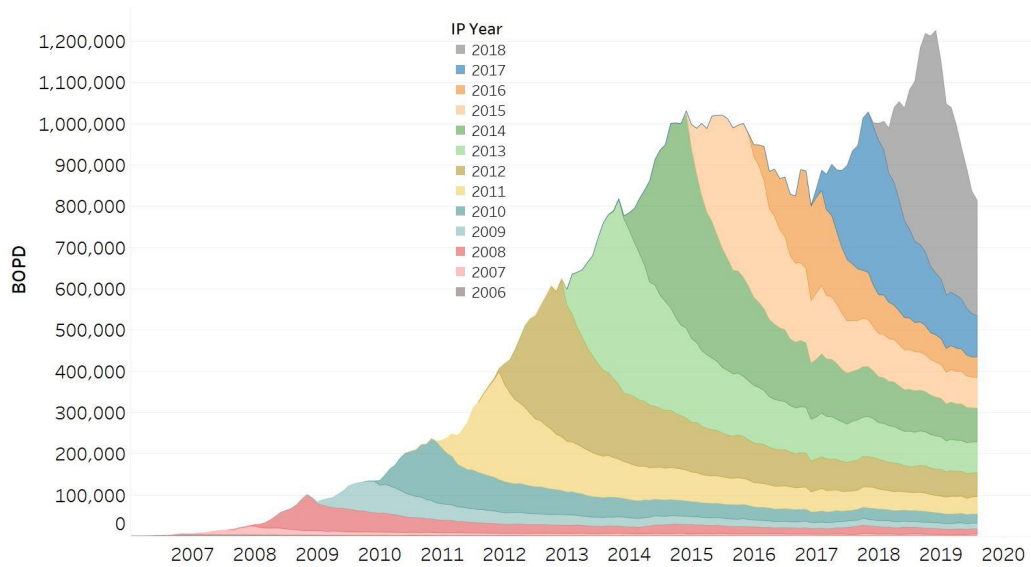
# Holding Aug. 2020 Oil Constant at 1.23MMBPD (est.)

Answering the question, “How many well completions to hold oil production flat?”

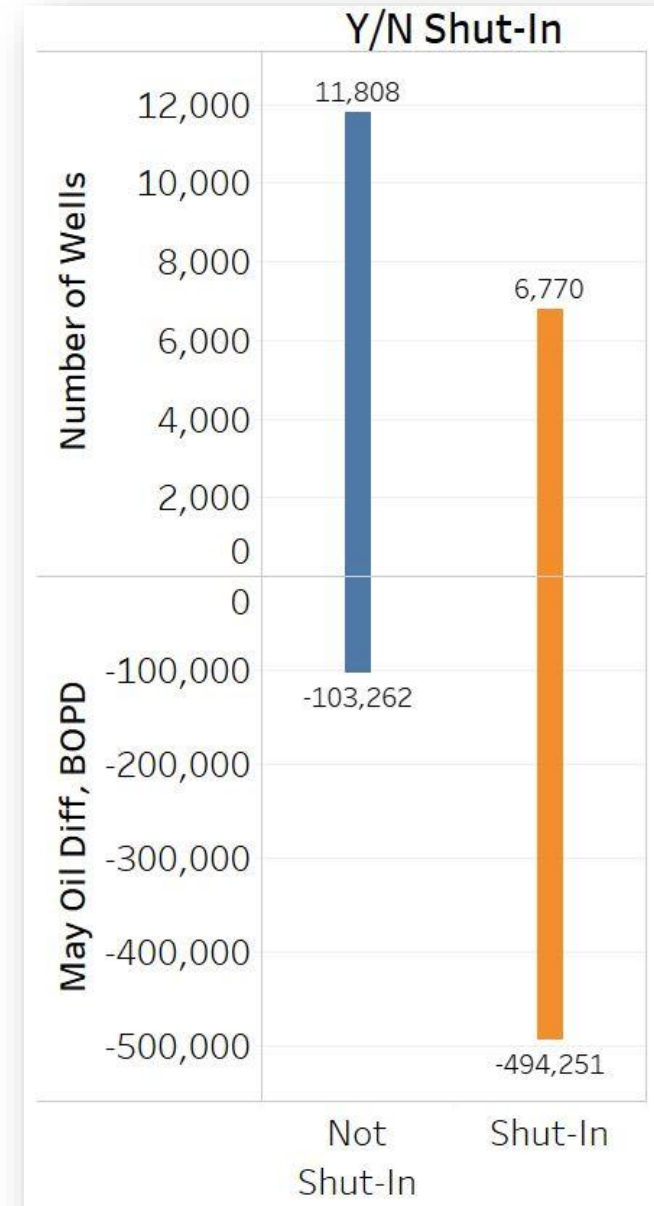
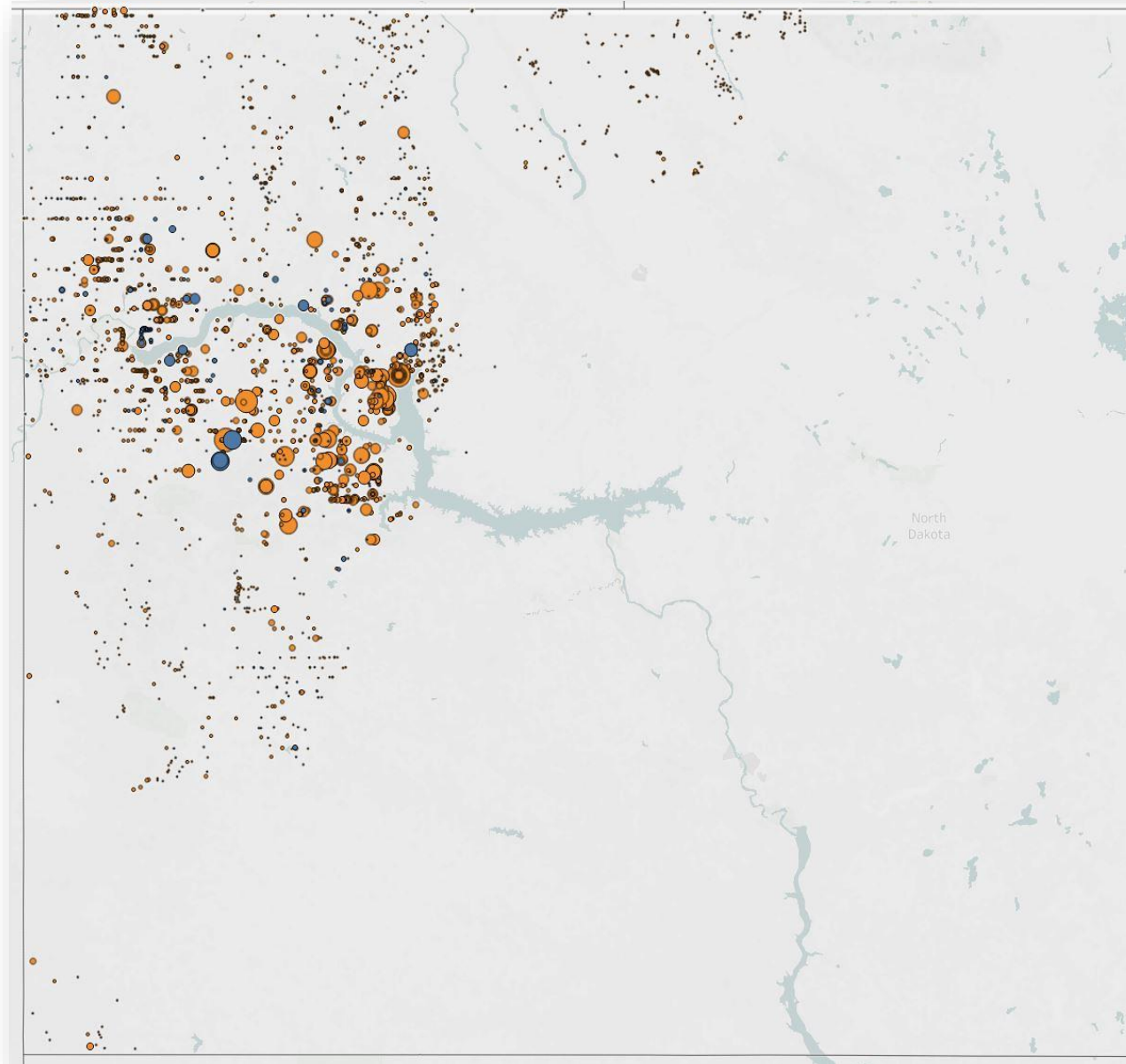




# Base Decline Challenges

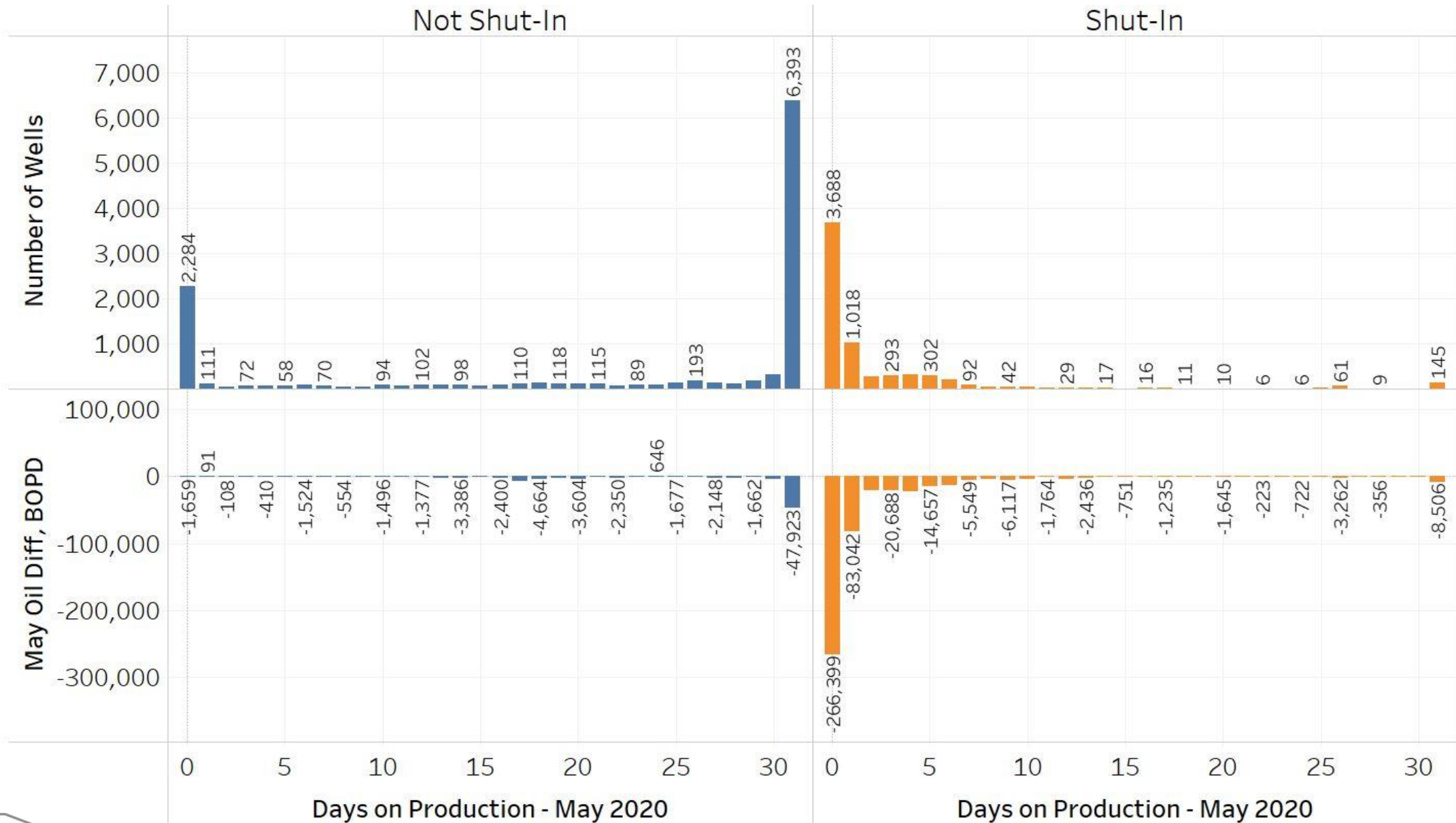


# March to May 75+% M-O-M Oil Drop

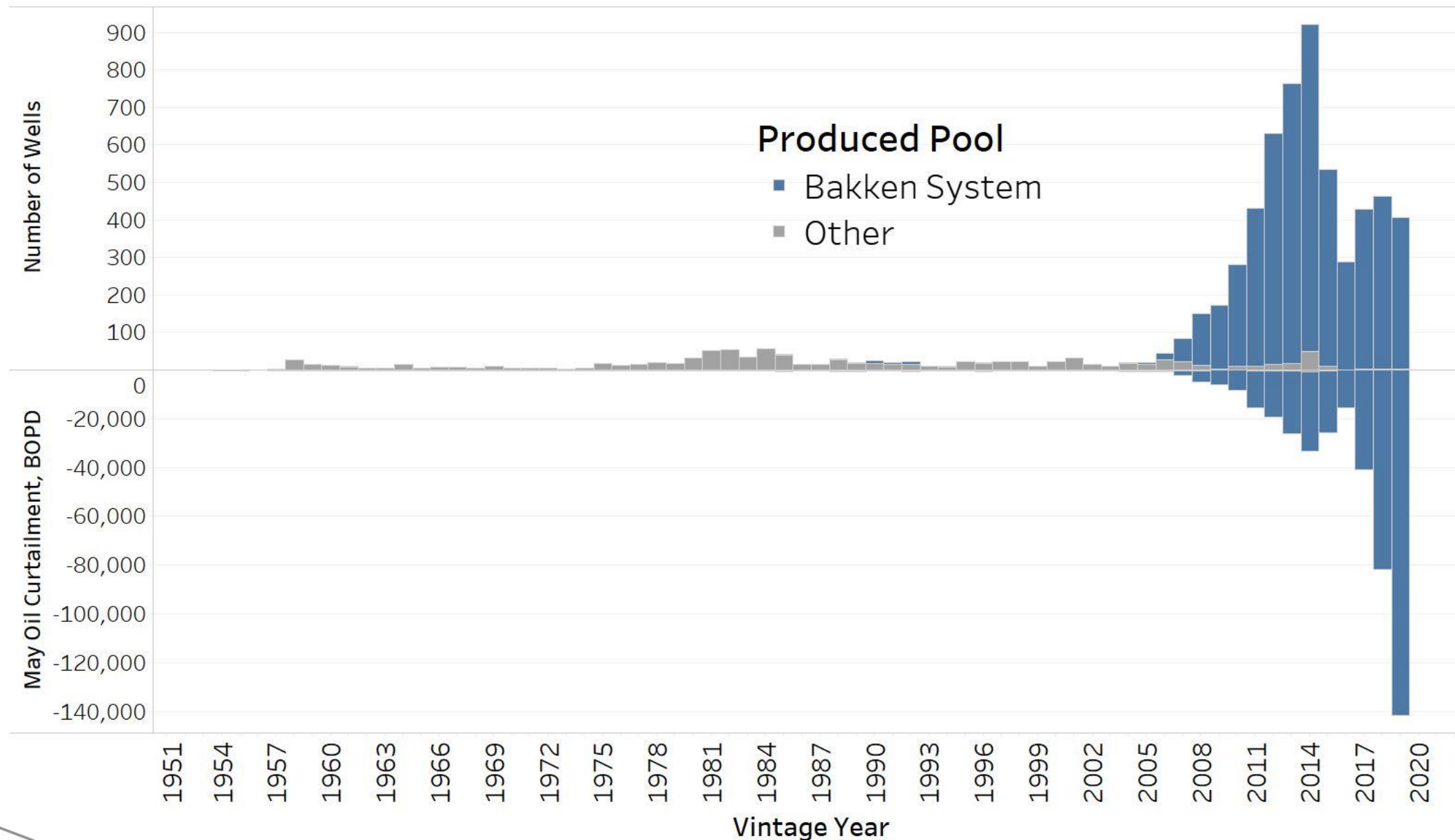




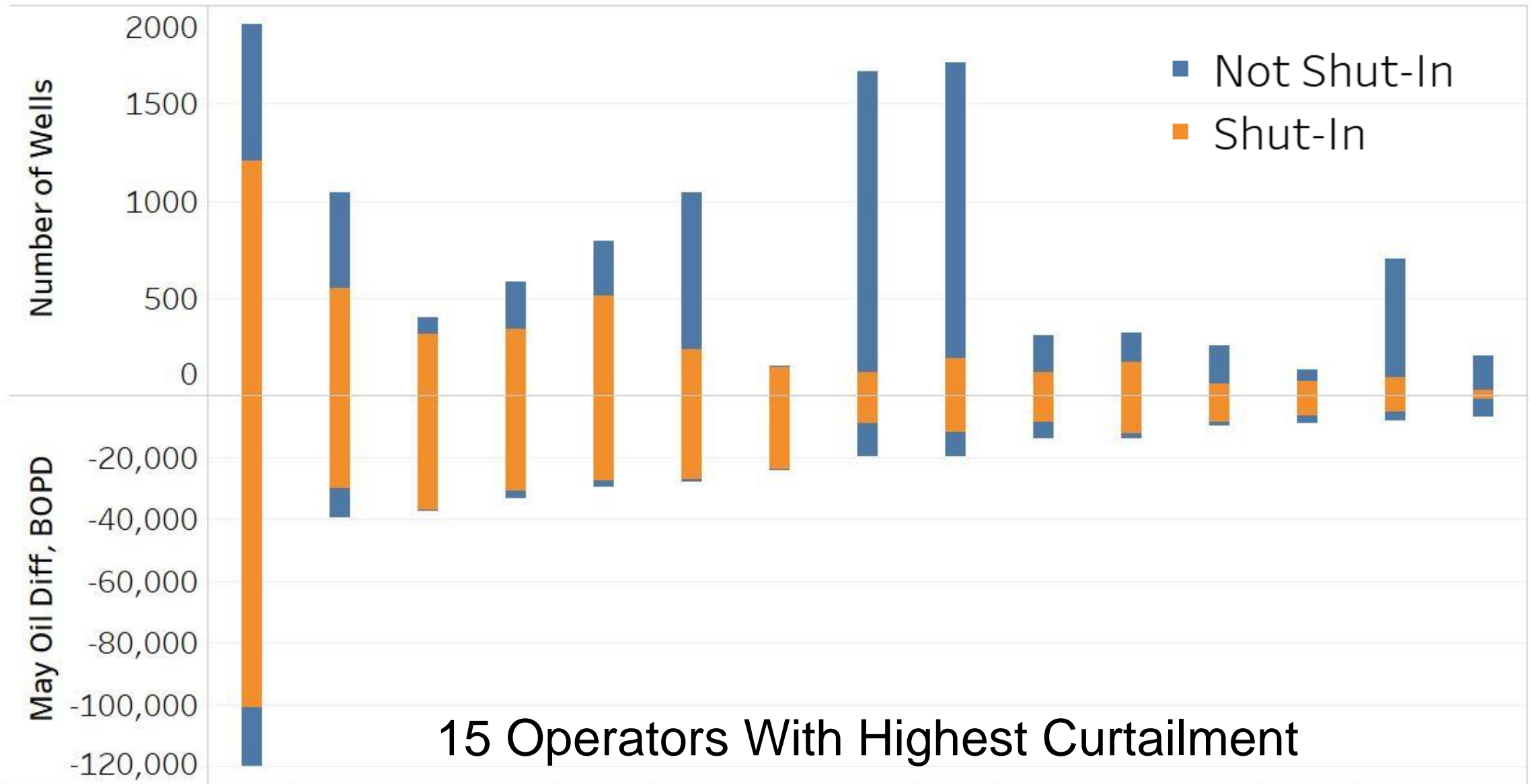
# March to May 75+% Oil Drop



# Vintage Year of Shut-In Wells – May 2020

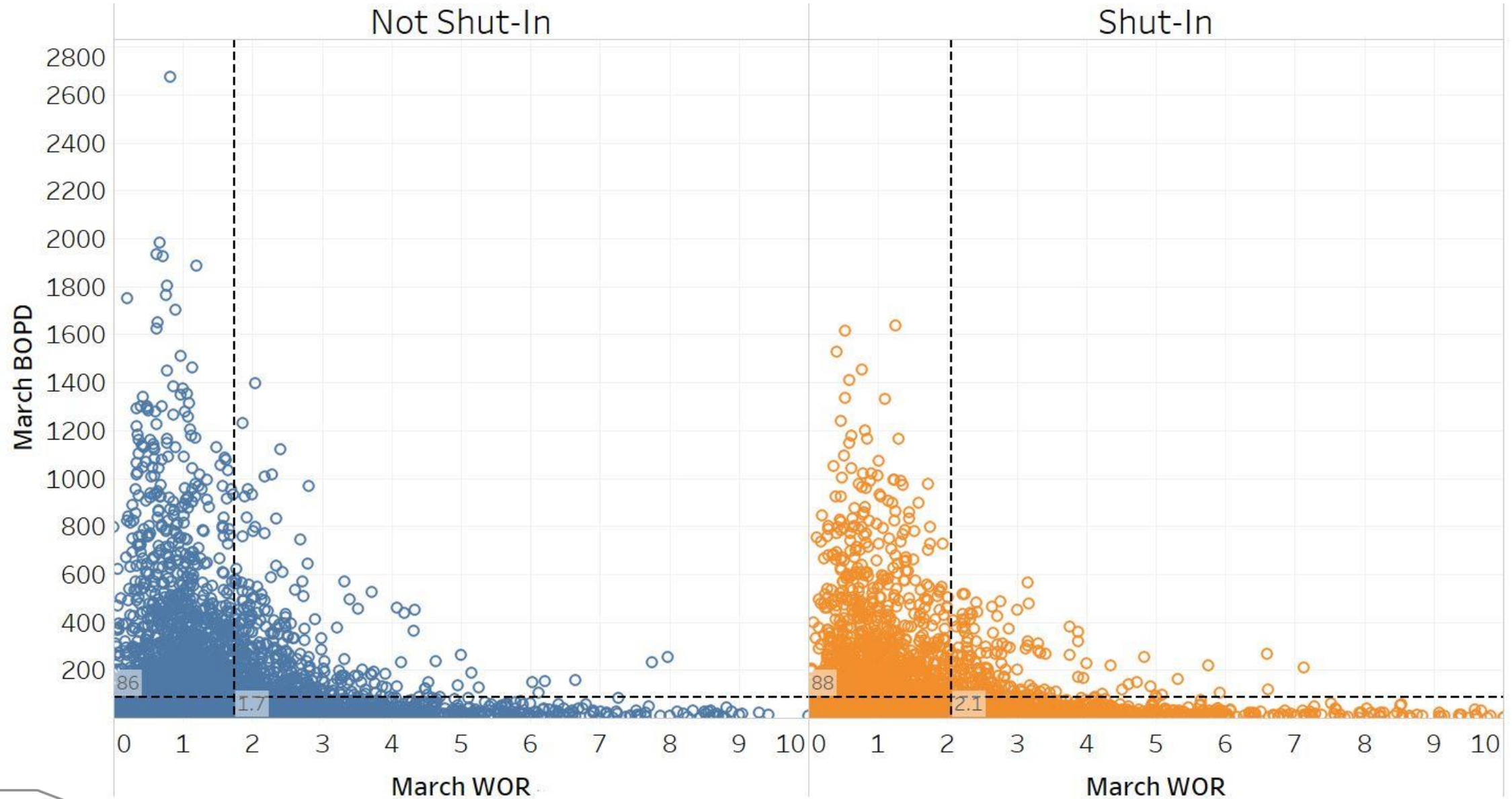


# March to May 75+% Oil Drop

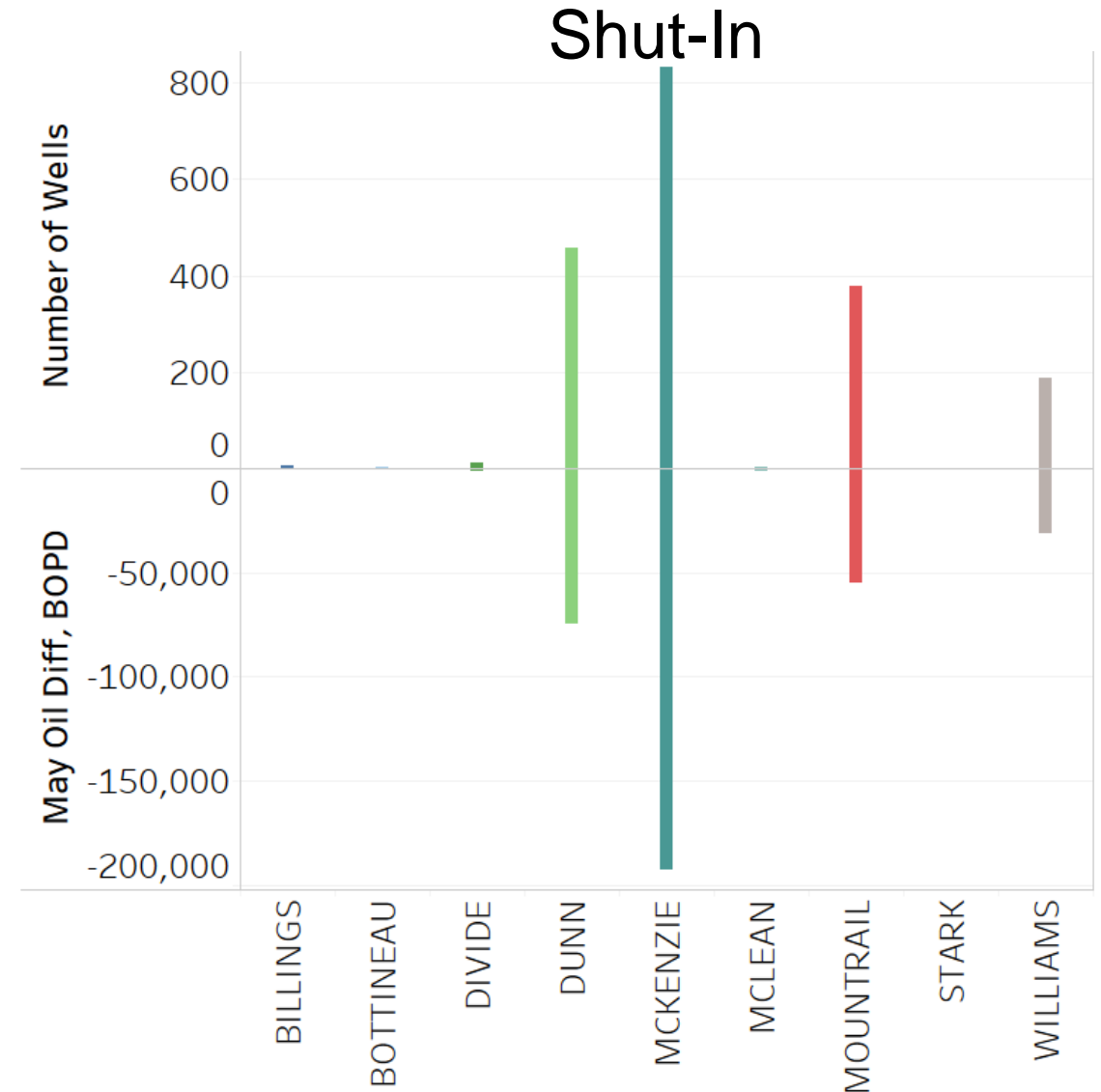
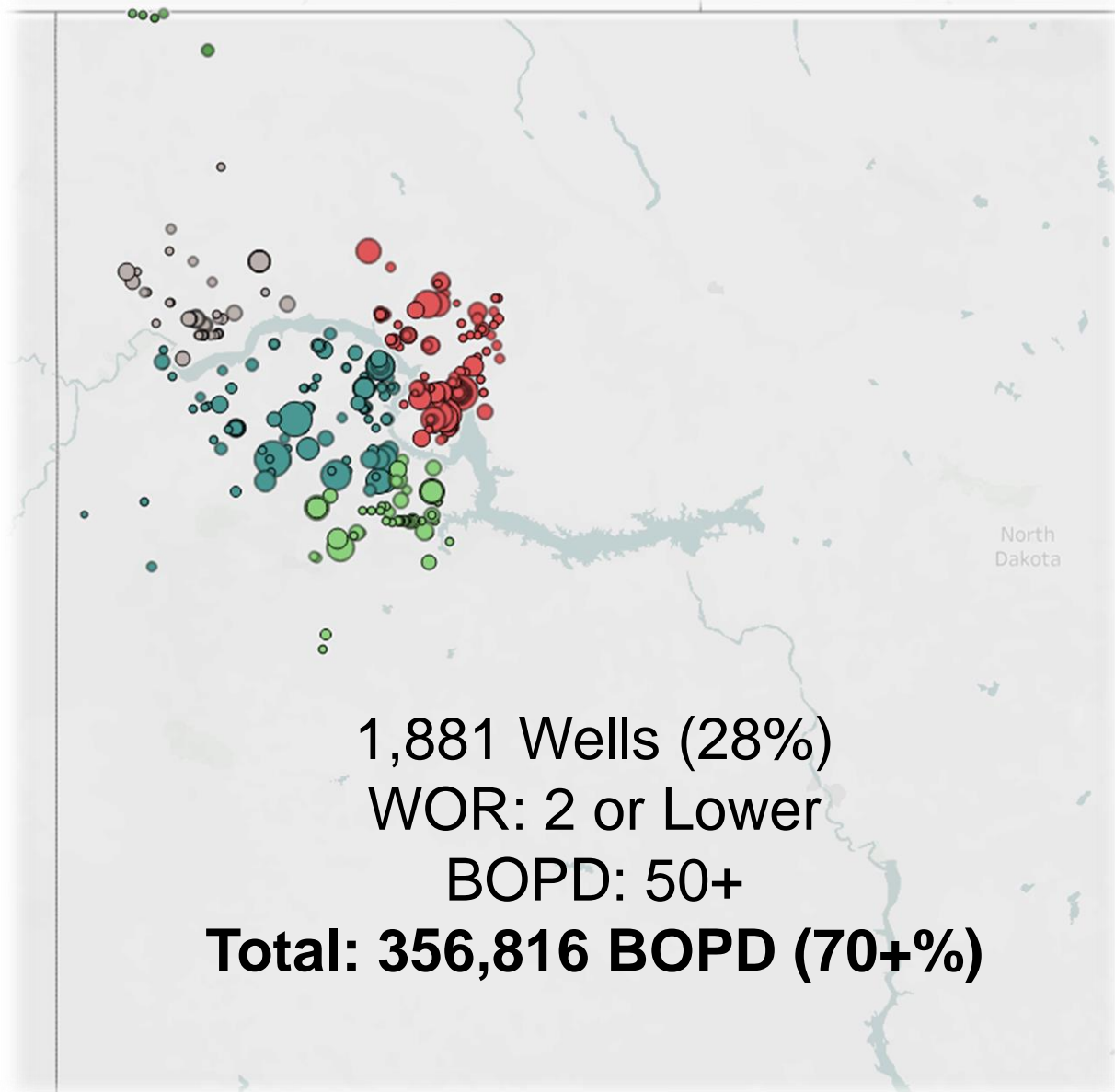




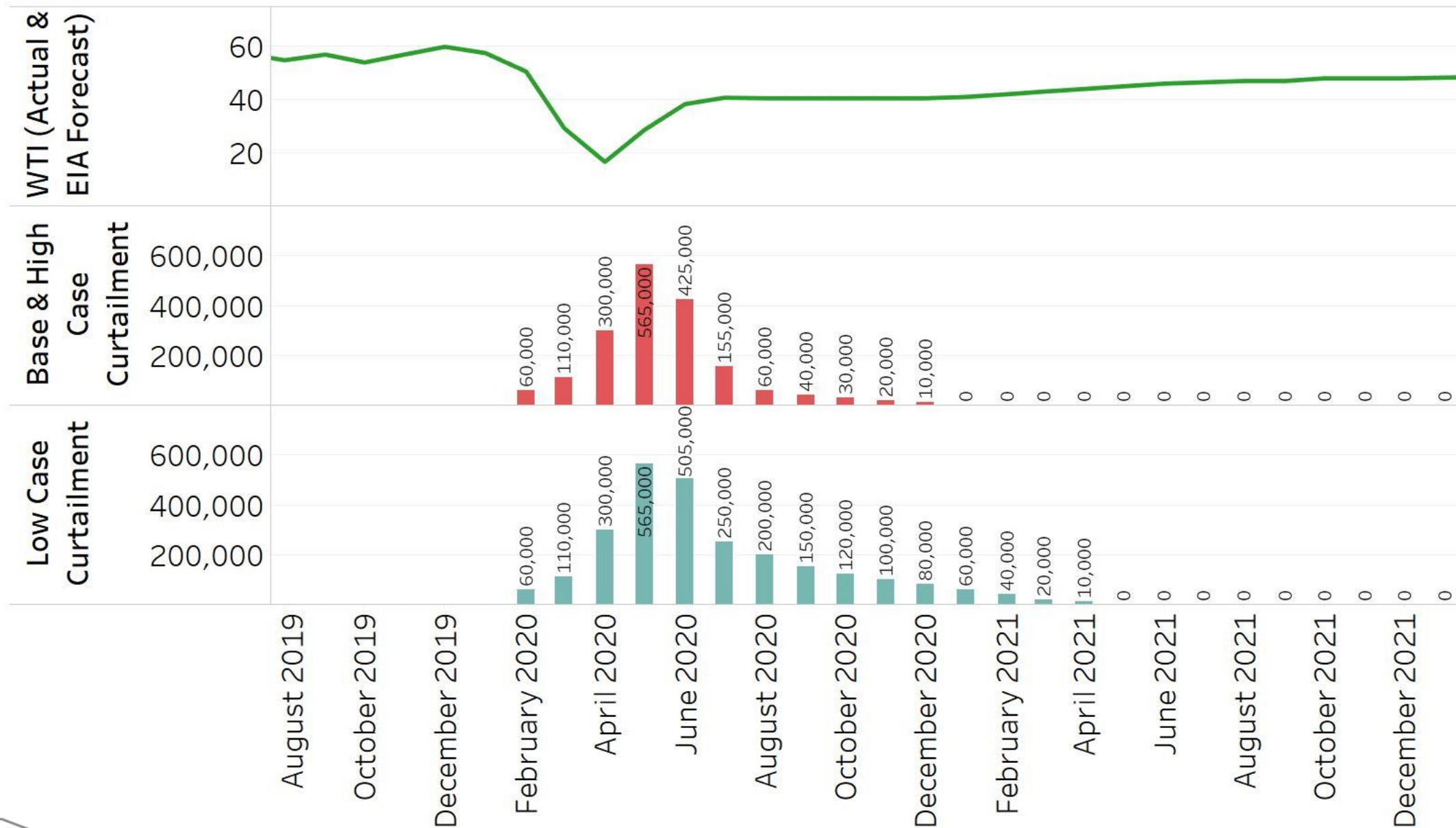
# Shut-In Well Selection: Bakken/Three Forks



# Wells Most Likely to Return Quickly?

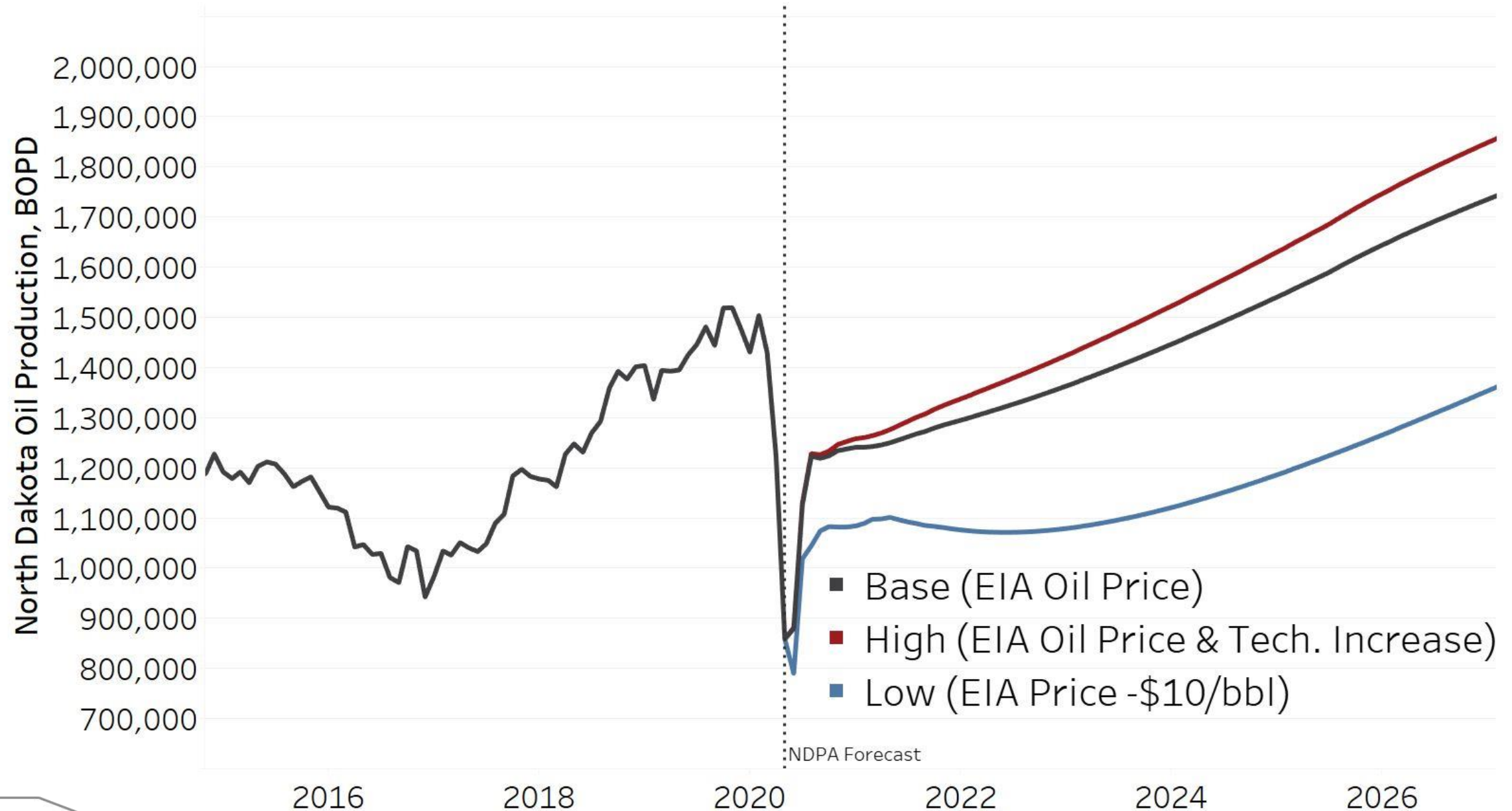


# Shut-In Assumptions: EIA Price Deck

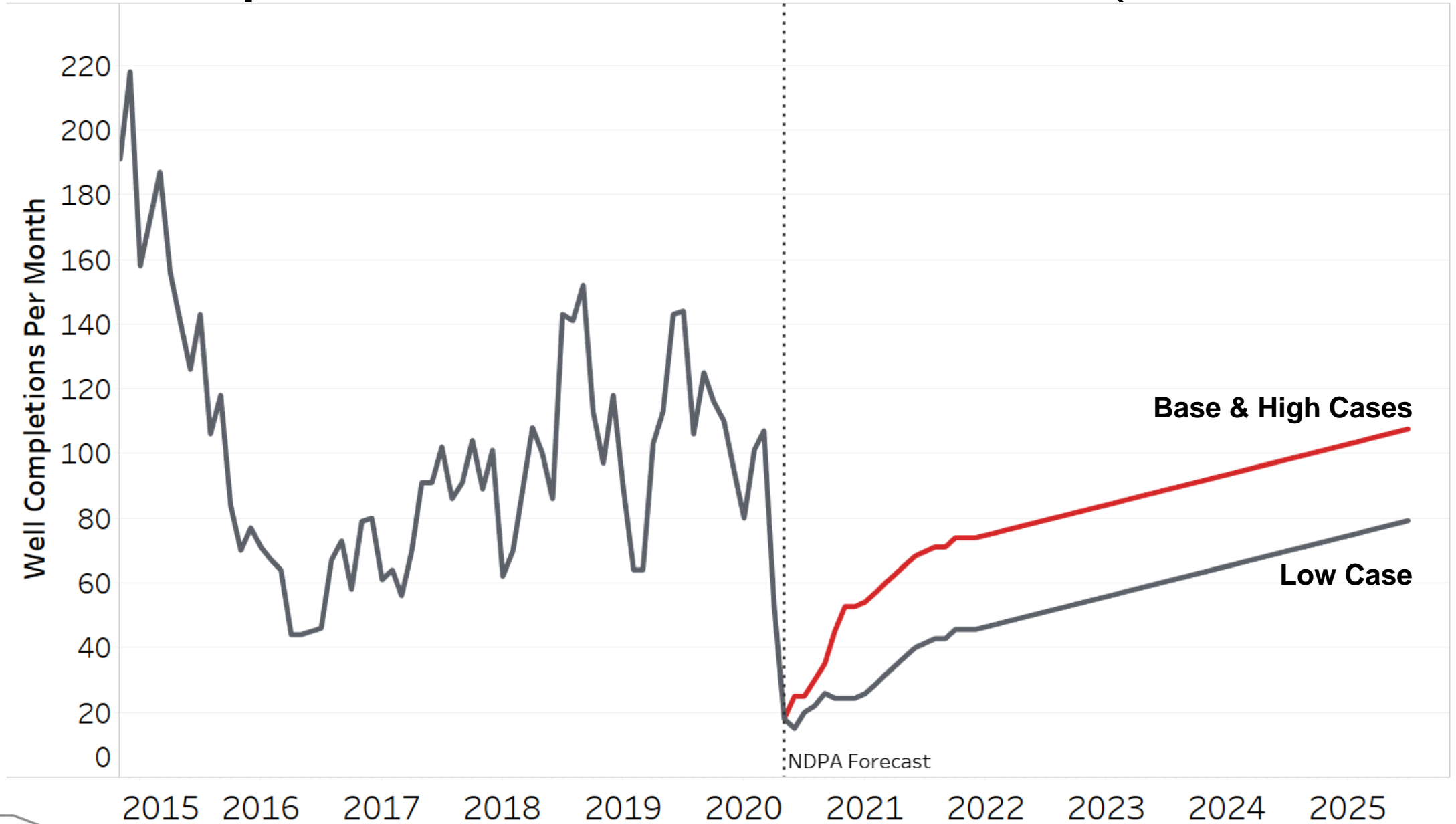




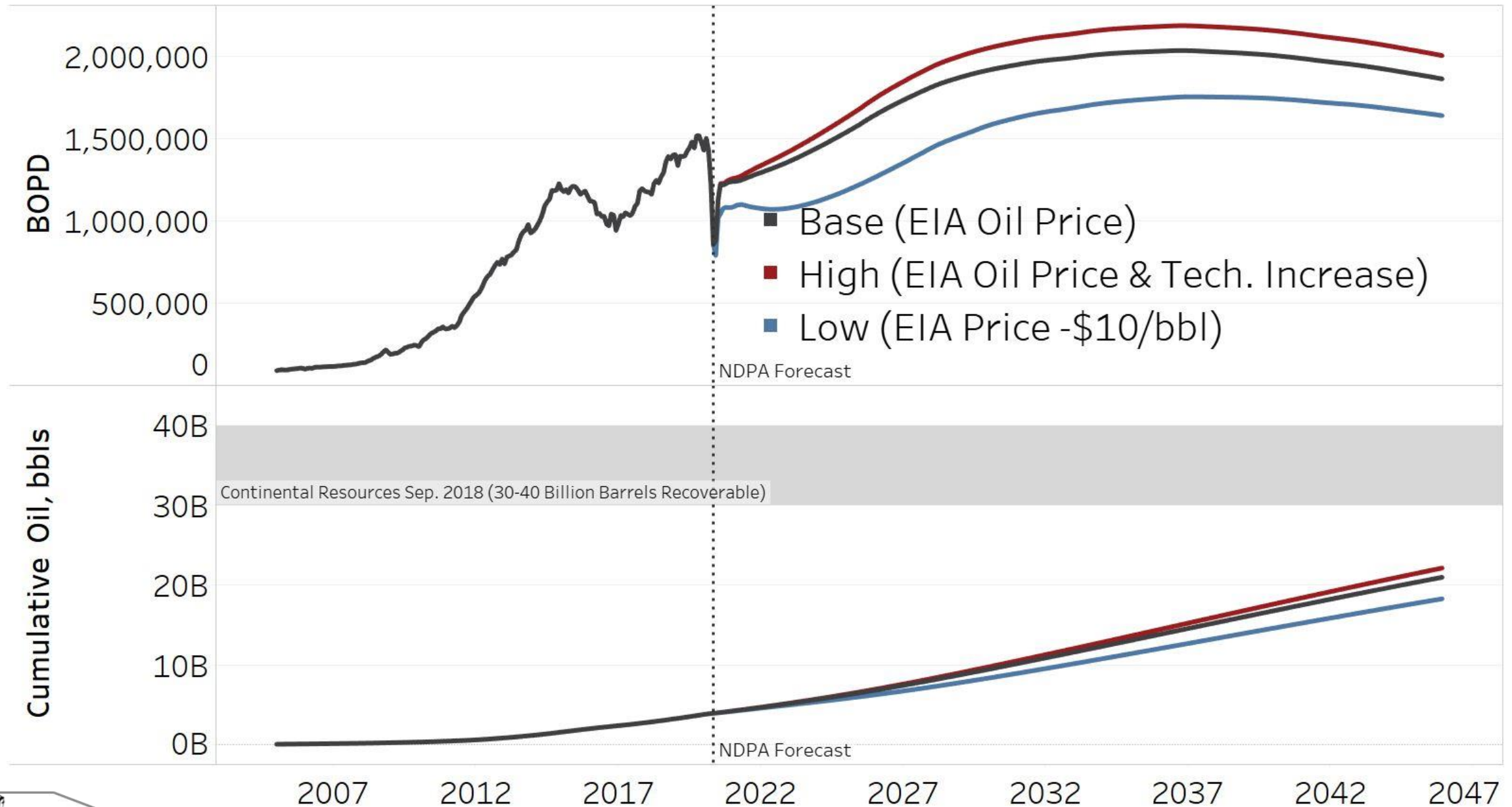
# ND Oil Production: EIA Price Deck (Near Term)



# ND Completions: EIA Price Deck (Near Term)

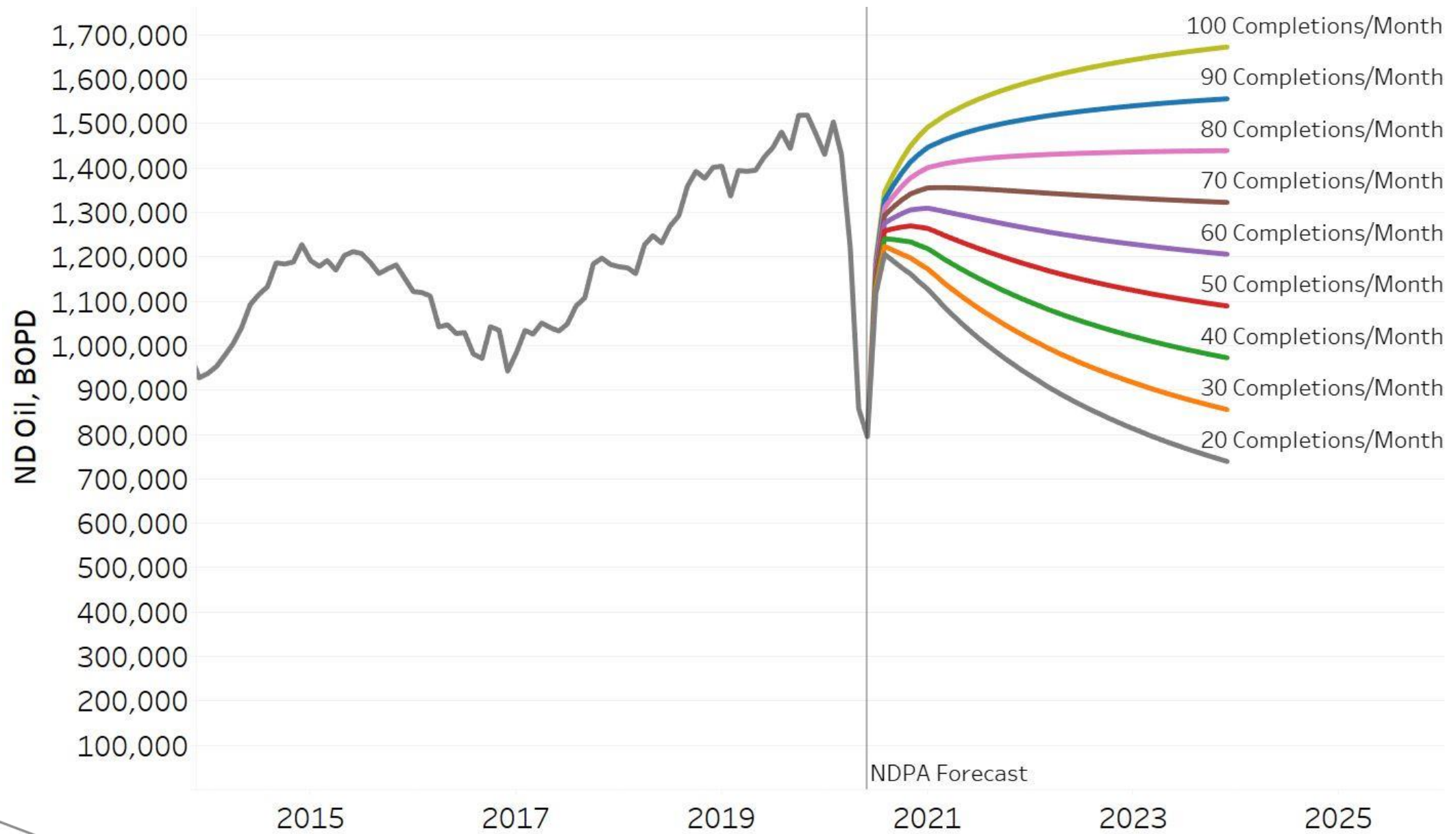


# ND Oil Production: EIA Price Deck





# Reference Example: Monthly Completion Scenarios



# Removing Shut-Ins From the Equation...

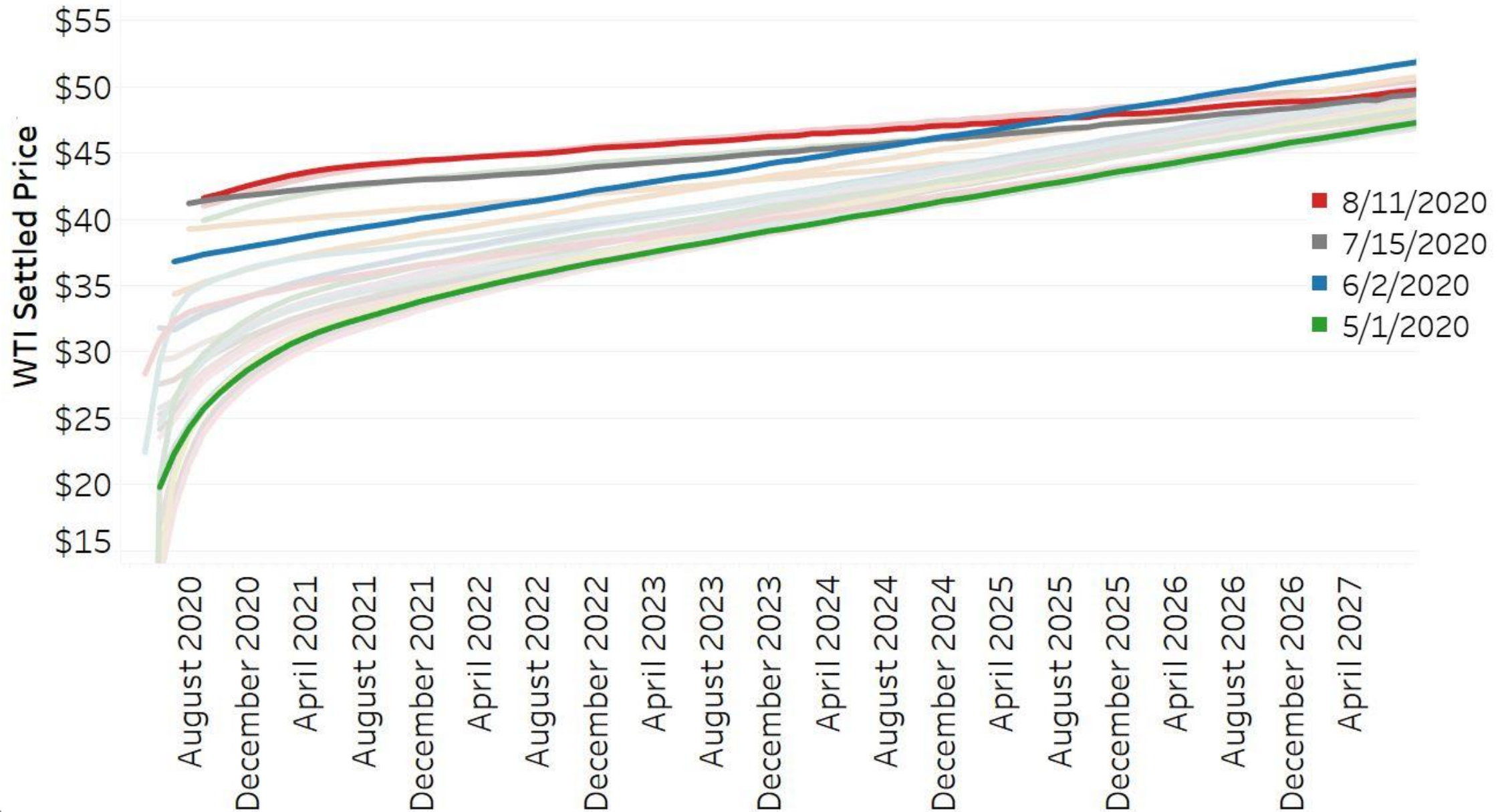


# NYMEX Pricing North Dakota Oil Forecast

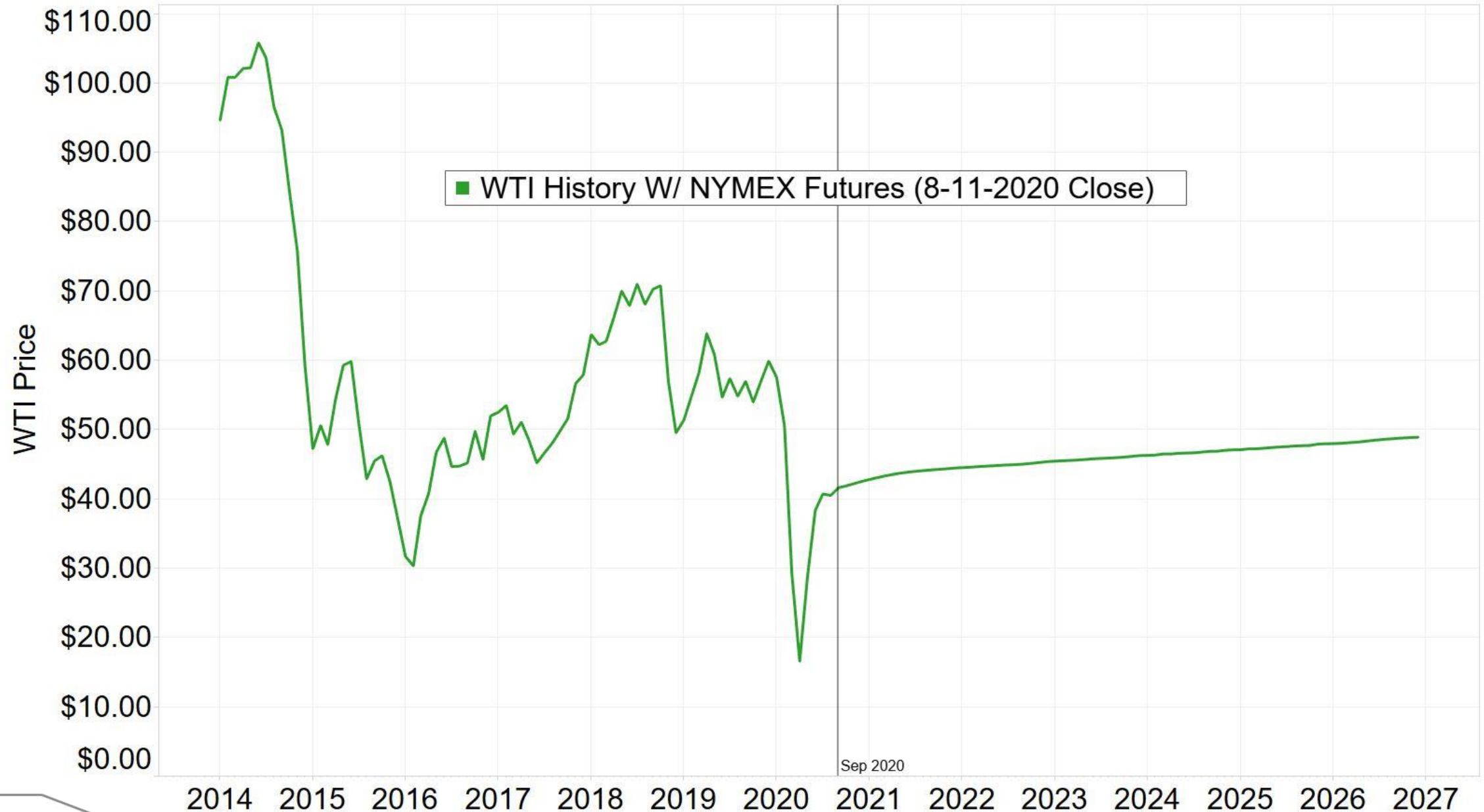
August 11, 2020 NYMEX WTI Strip Pricing



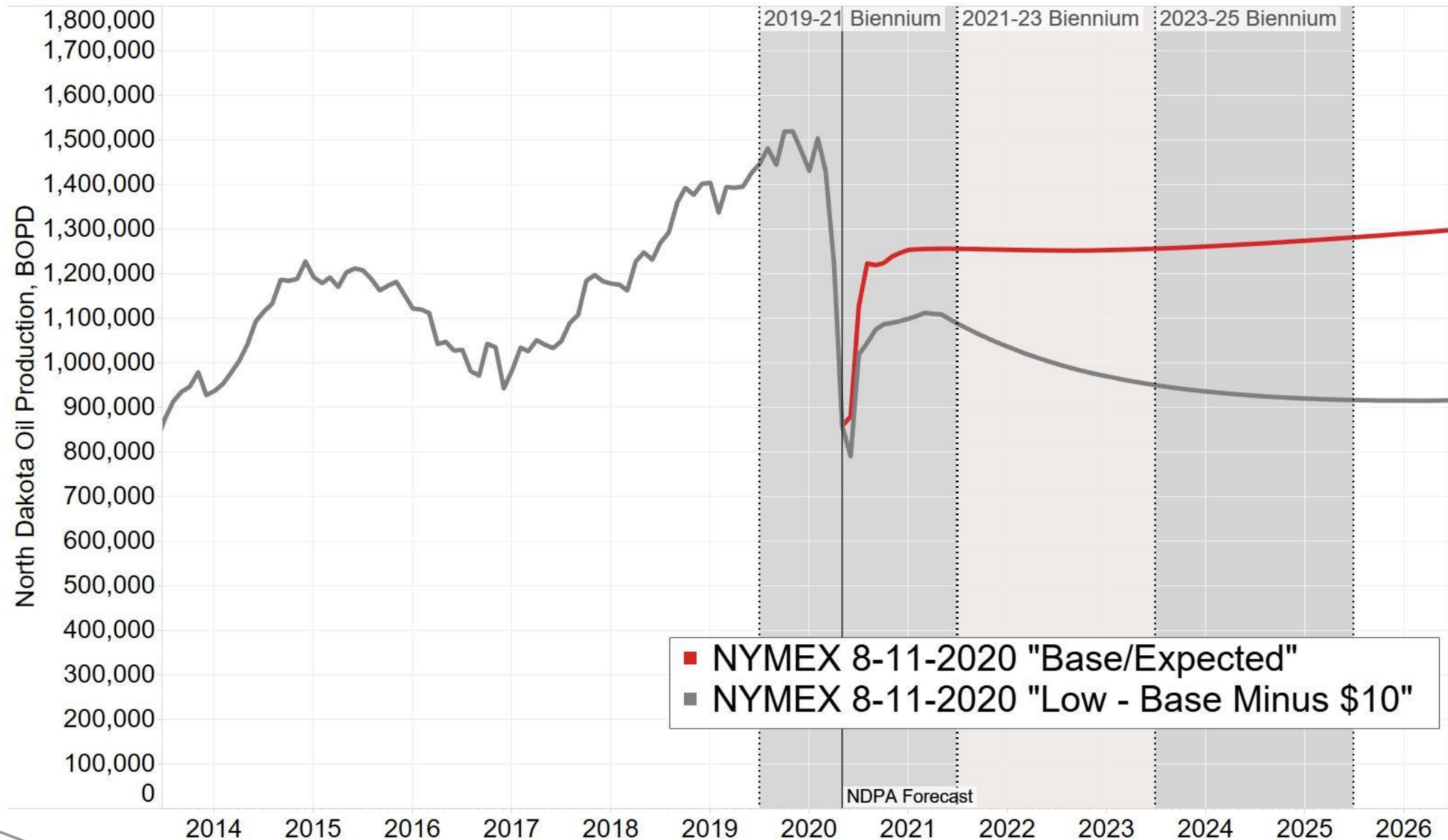
# NYMEX Futures Curves



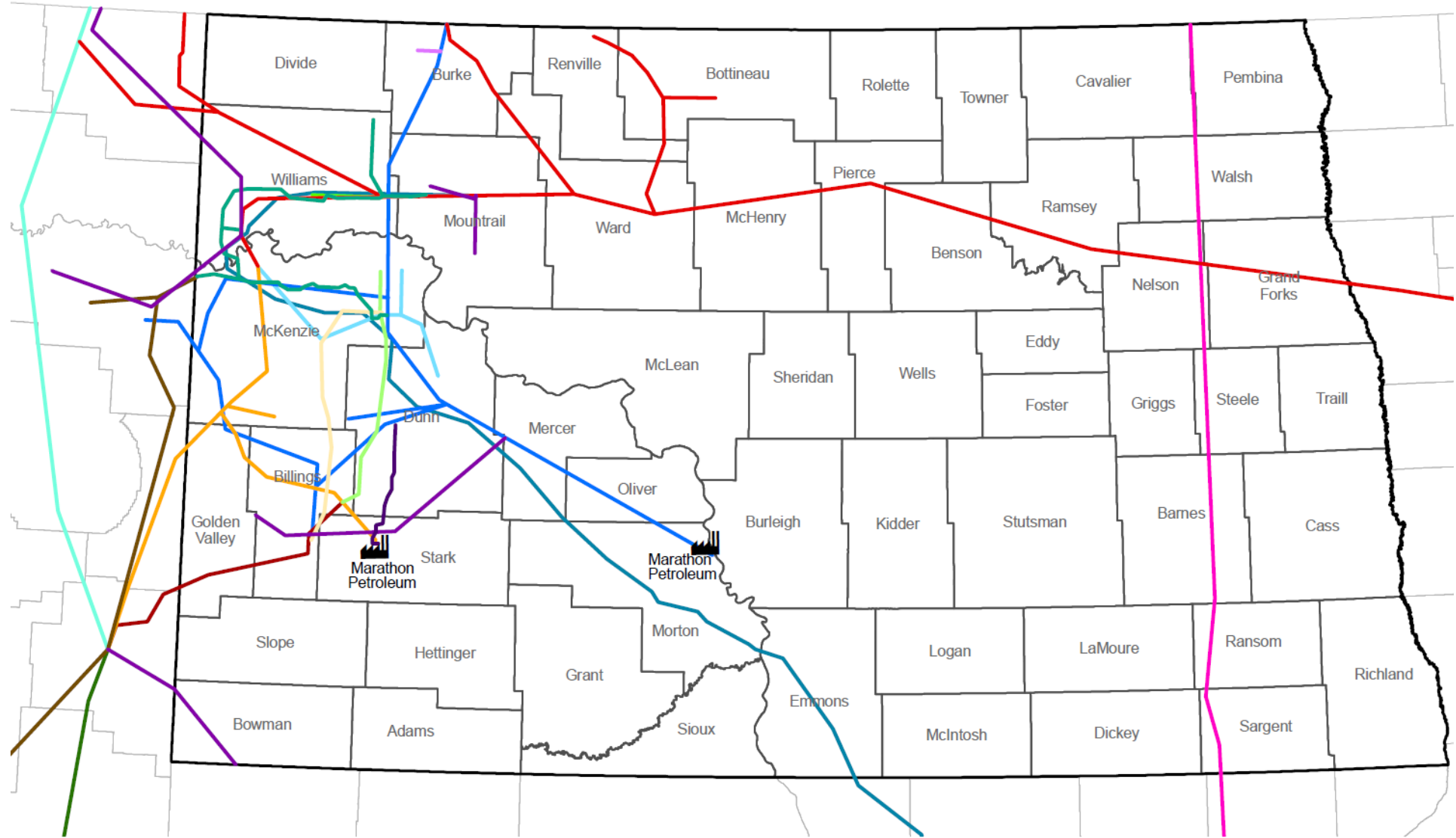
# NYMEX Futures Curve: August 11, 2020



# NYMEX Futures Curve Forecast Scenarios

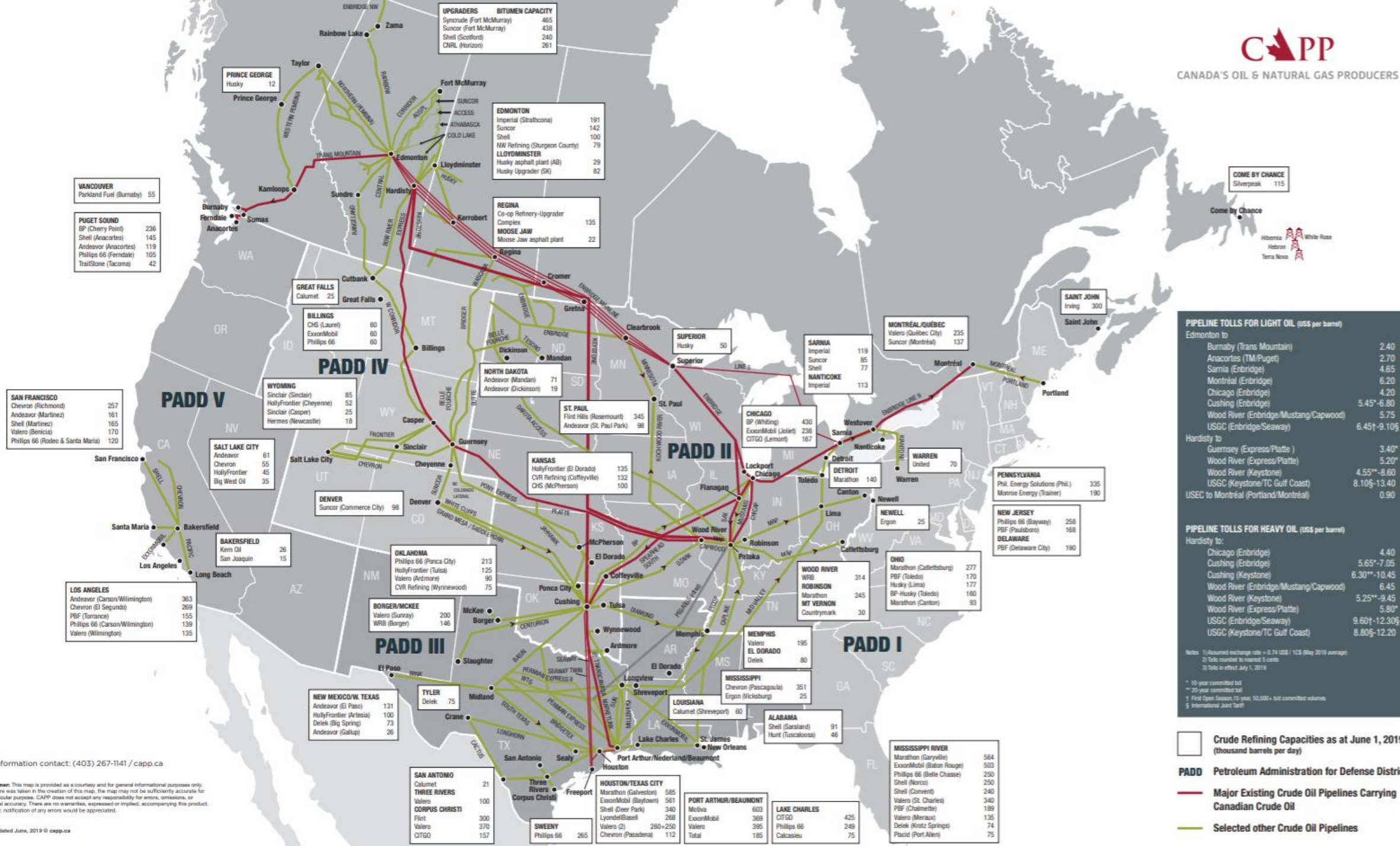


# North Dakota Crude Oil Pipelines



- |                    |                 |               |            |                   |          |
|--------------------|-----------------|---------------|------------|-------------------|----------|
| Refinery           | Basin Transload | Butte         | Double H   | Hiland            | Bridger  |
| Bakken Oil Express | Belle Fourche   | Crestwood     | Enbridge   | Keystone Pipeline | Targa    |
| BakkenLink         | Bridger         | Dakota Access | Four Bears | Little Missouri   | Marathon |



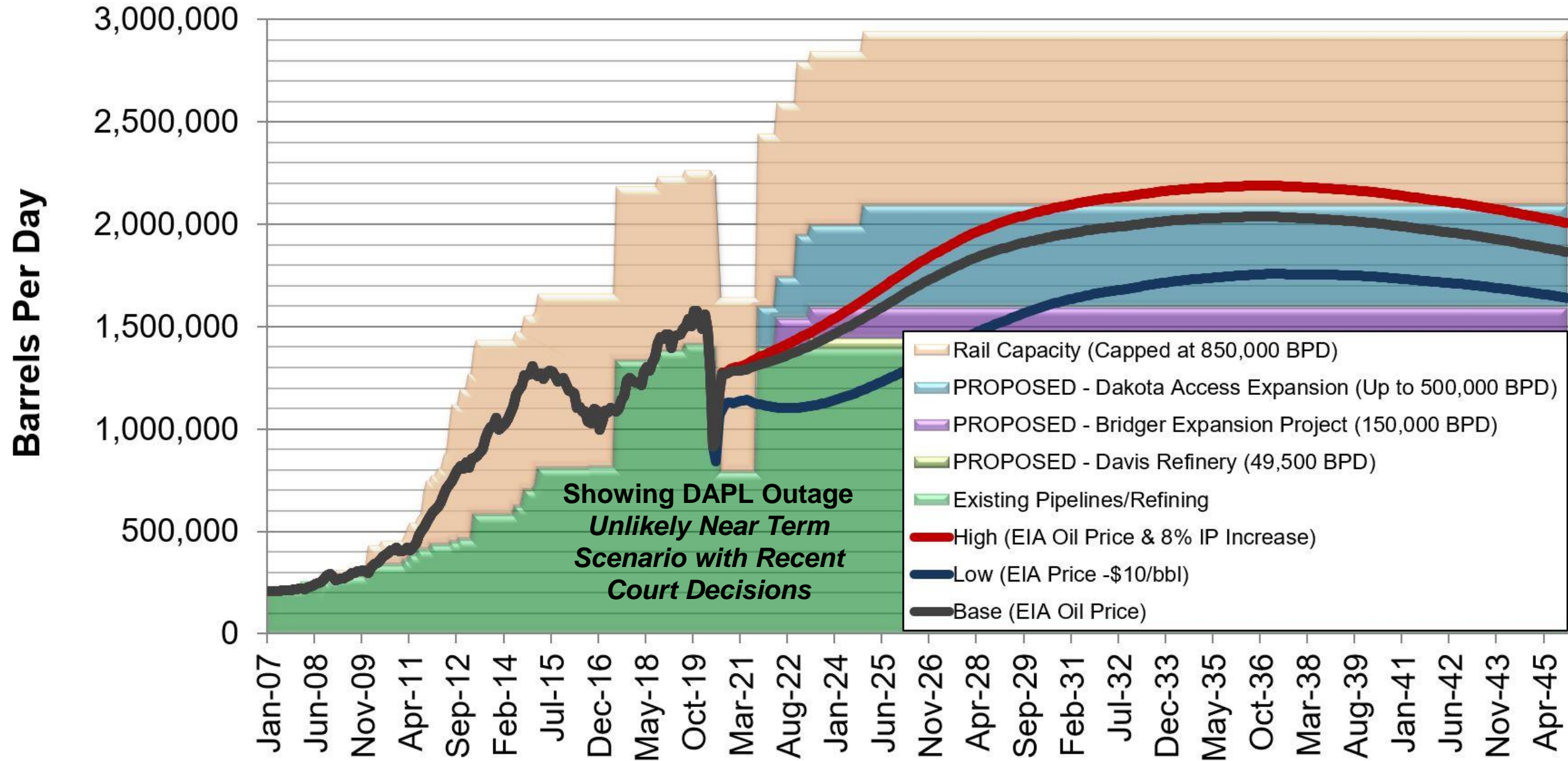


For information contact: (403) 267-1141 / capp.ca

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# Williston Basin Oil Production & Export Capacity, BOPD





# Natural Gas Update



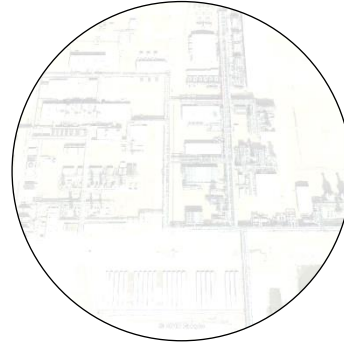
## Production

- Technology
- Markets



## Gathering

- Capacity
- Connections



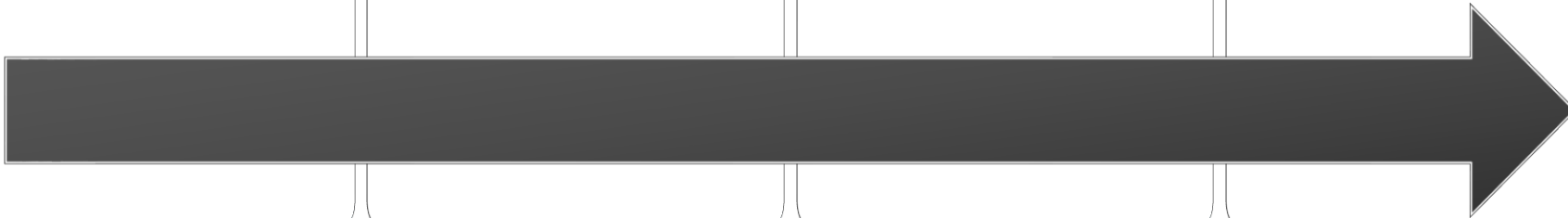
## Processing

- Capacity
- Location

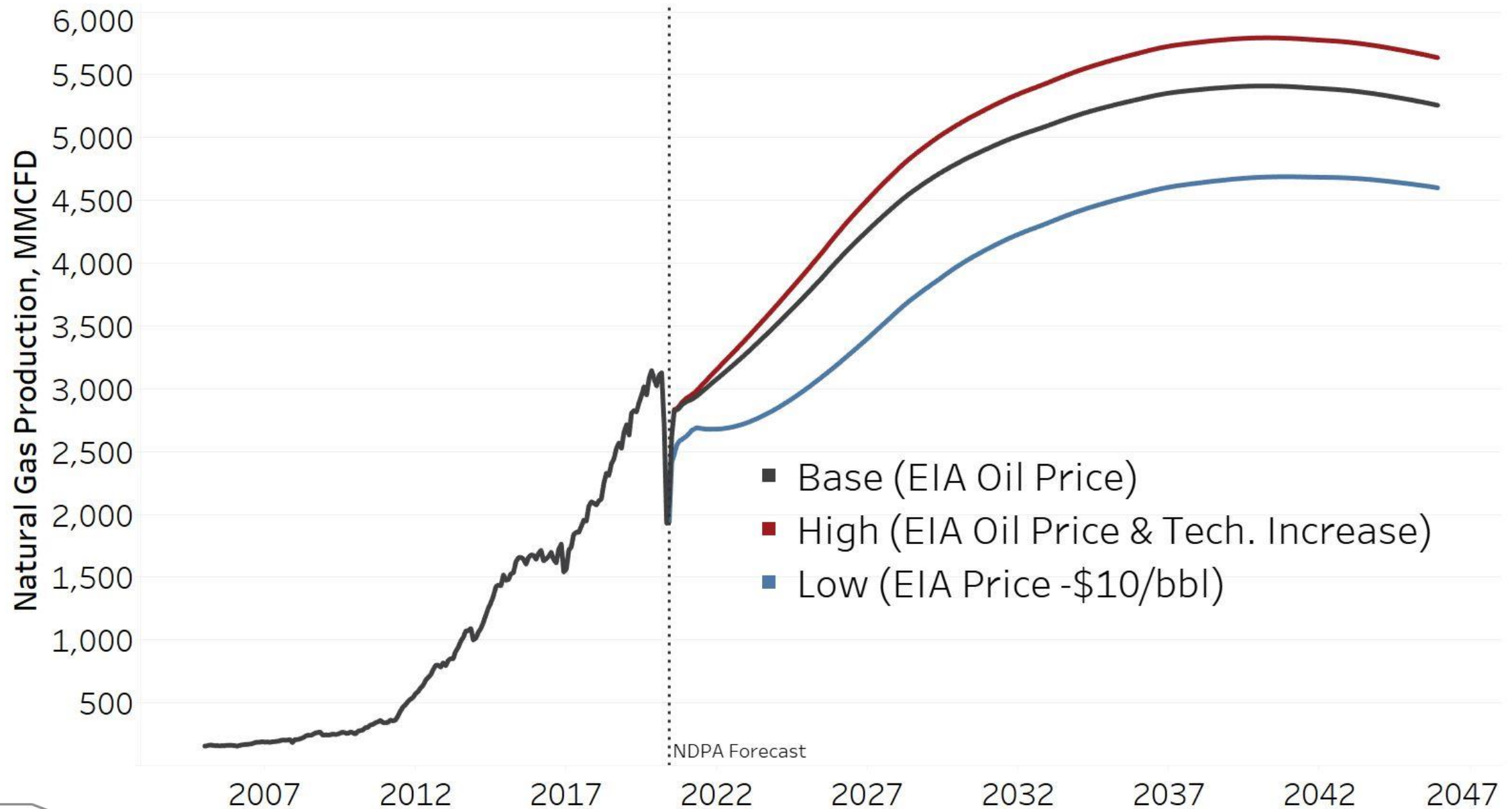


## Transmission

- Dry Gas
- Natural Gas Liquids

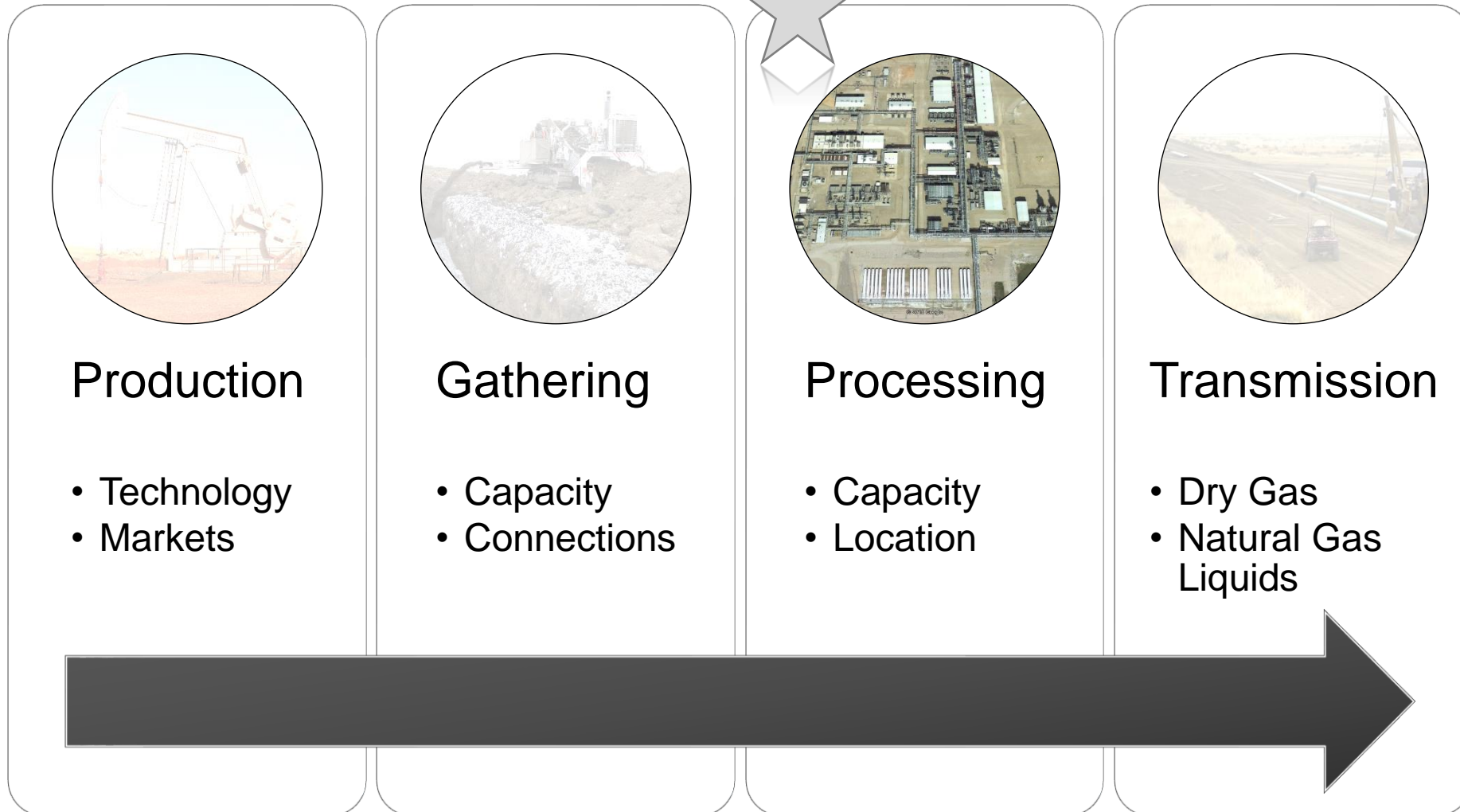


# ND Gas Production: EIA Price Deck



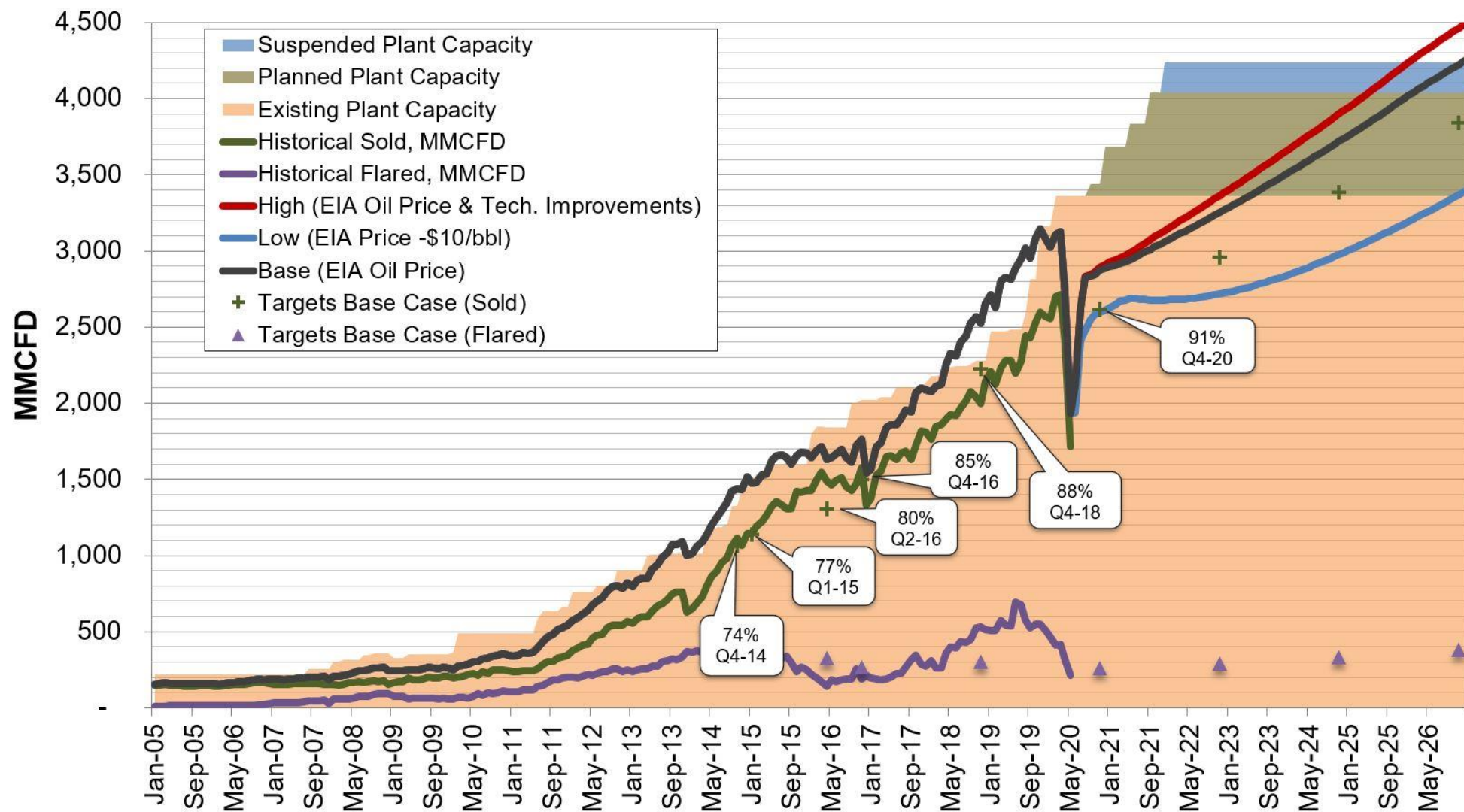


# Natural Gas Update



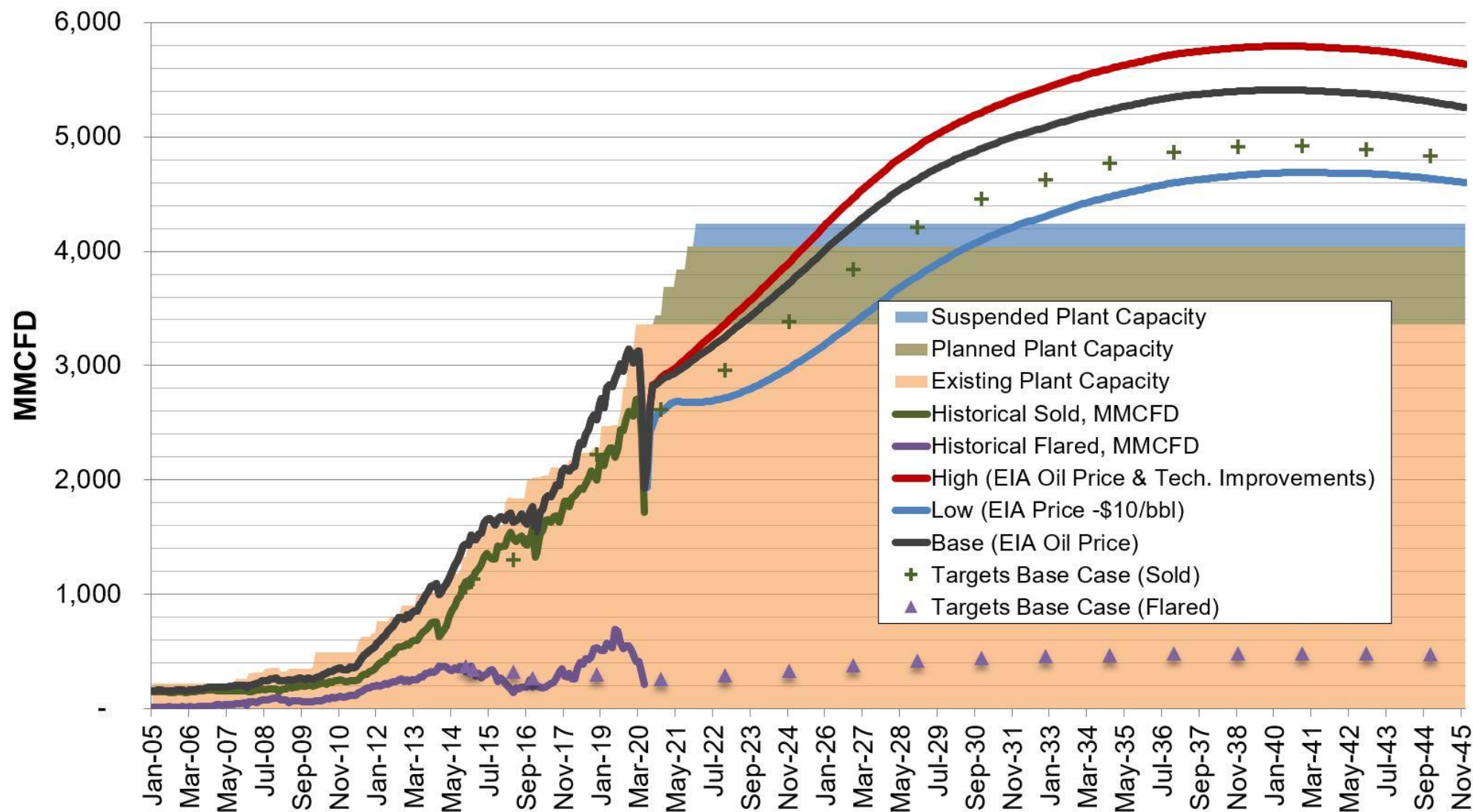
# Solving the Flaring Challenge

*Assumes Current Technology – Enhanced Oil Recovery Not Included*

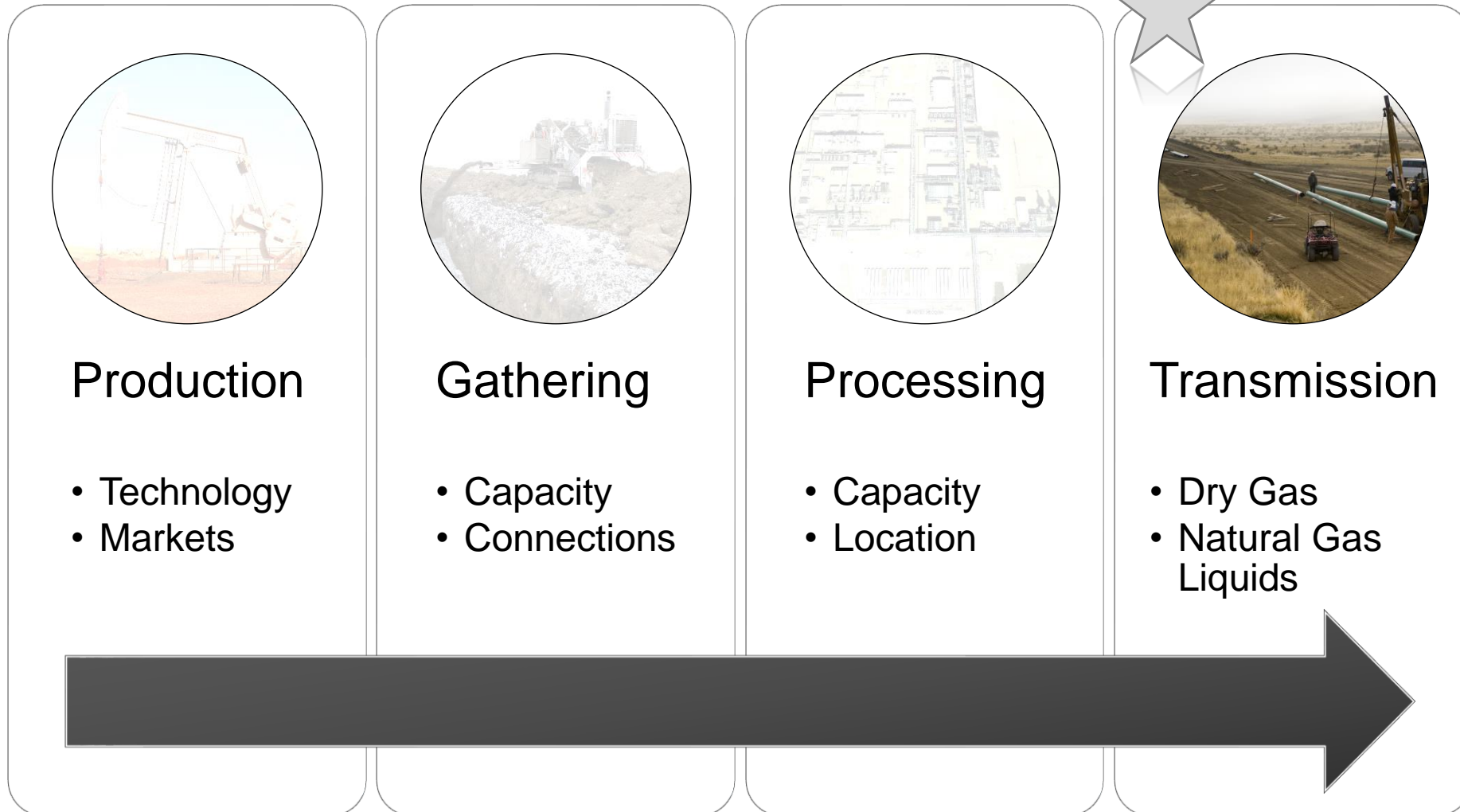


# Solving the Flaring Challenge

*Assumes Current Technology – Enhanced Oil Recovery Not Included*

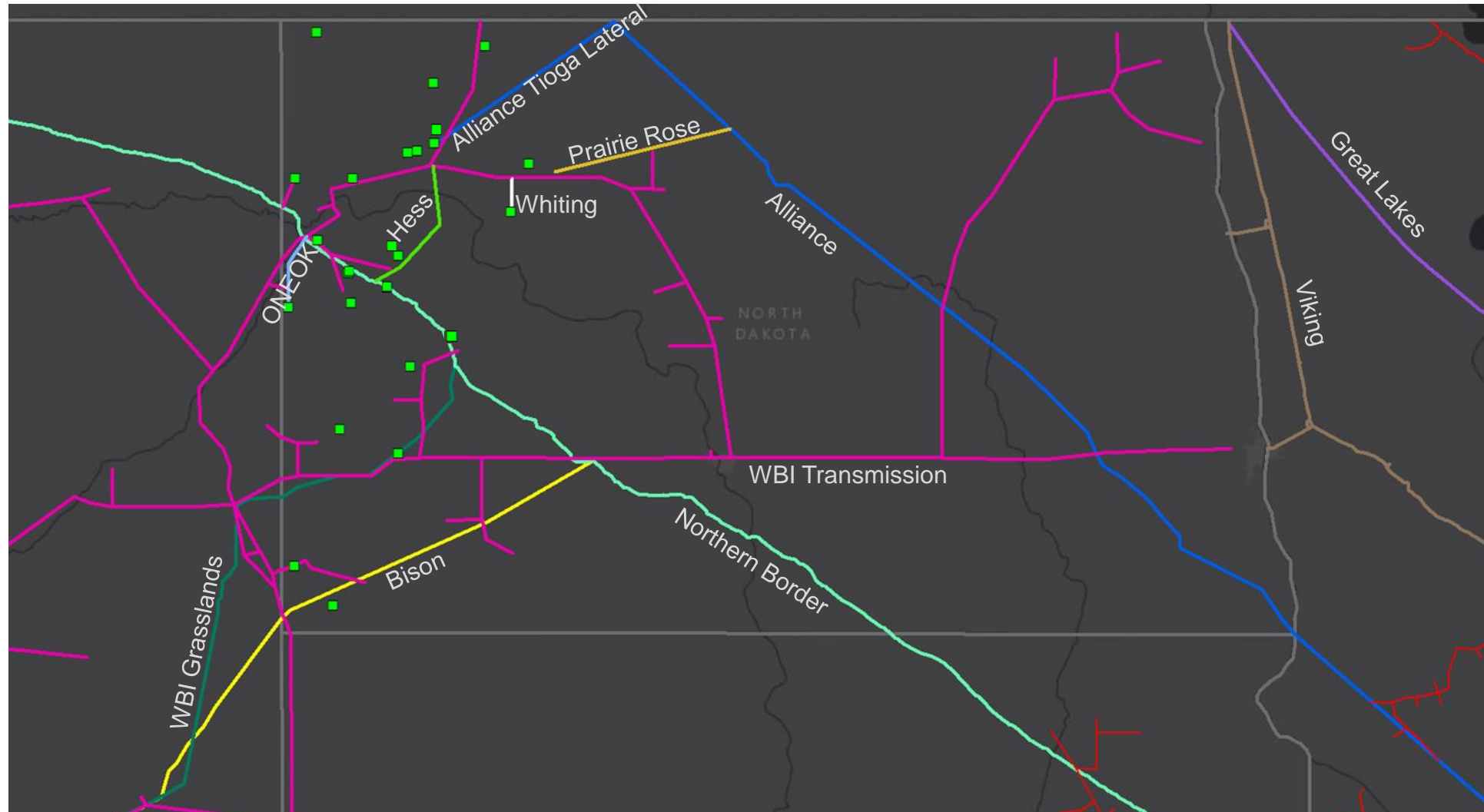


# Natural Gas Update

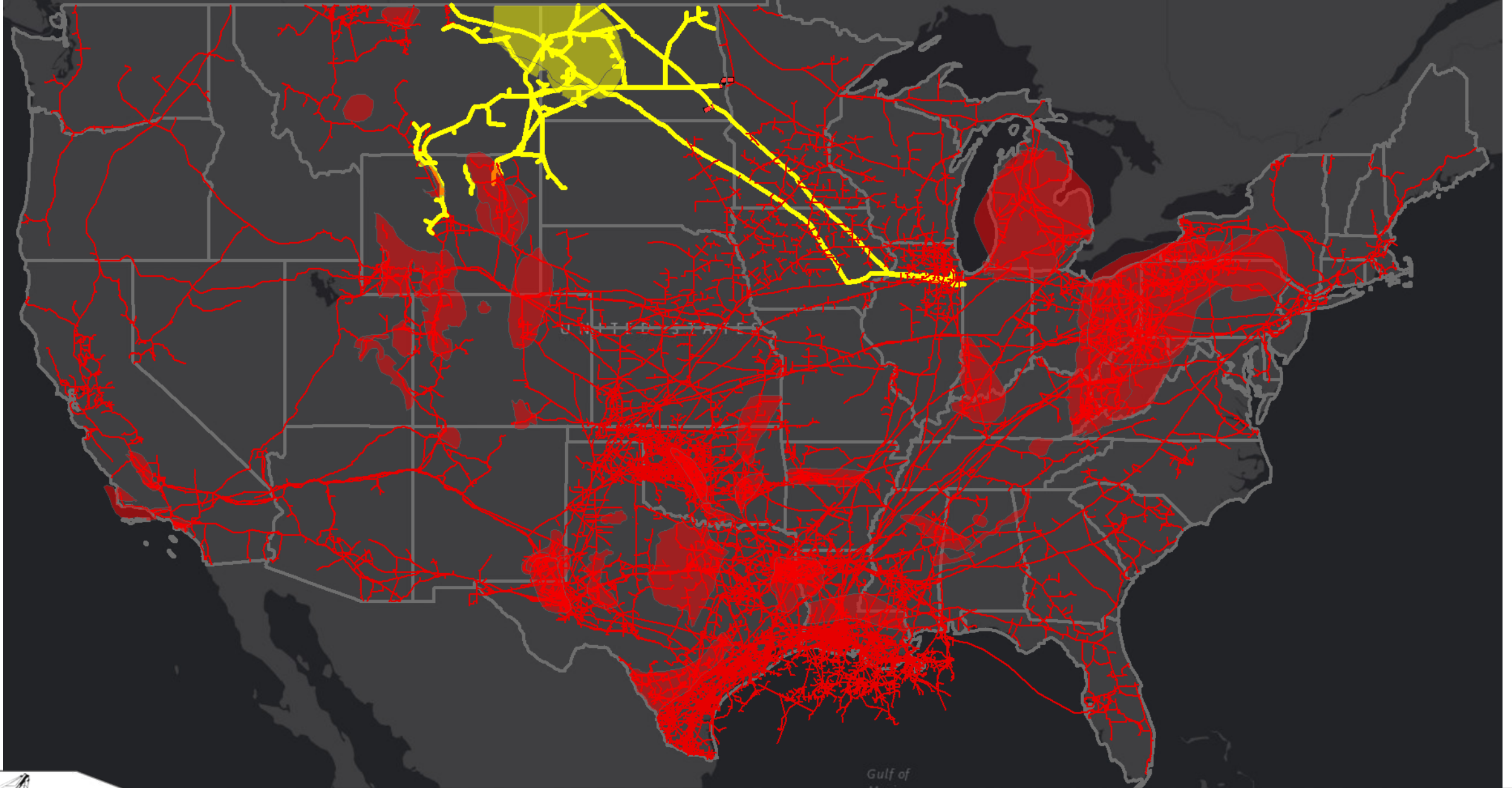




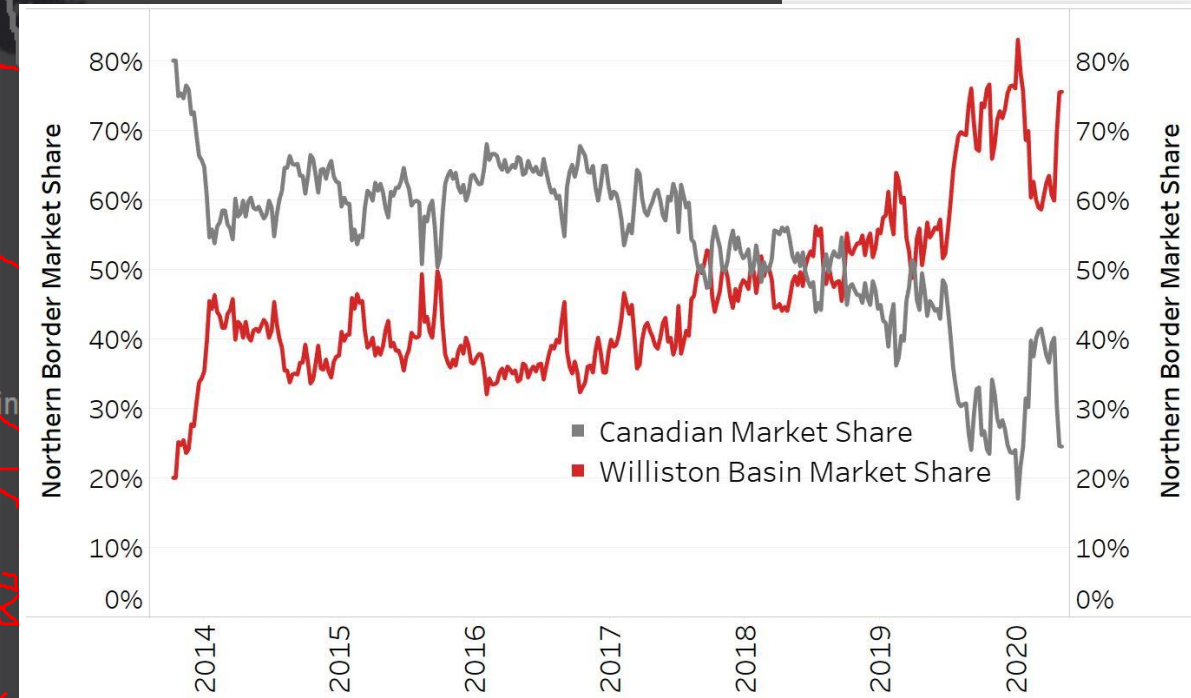
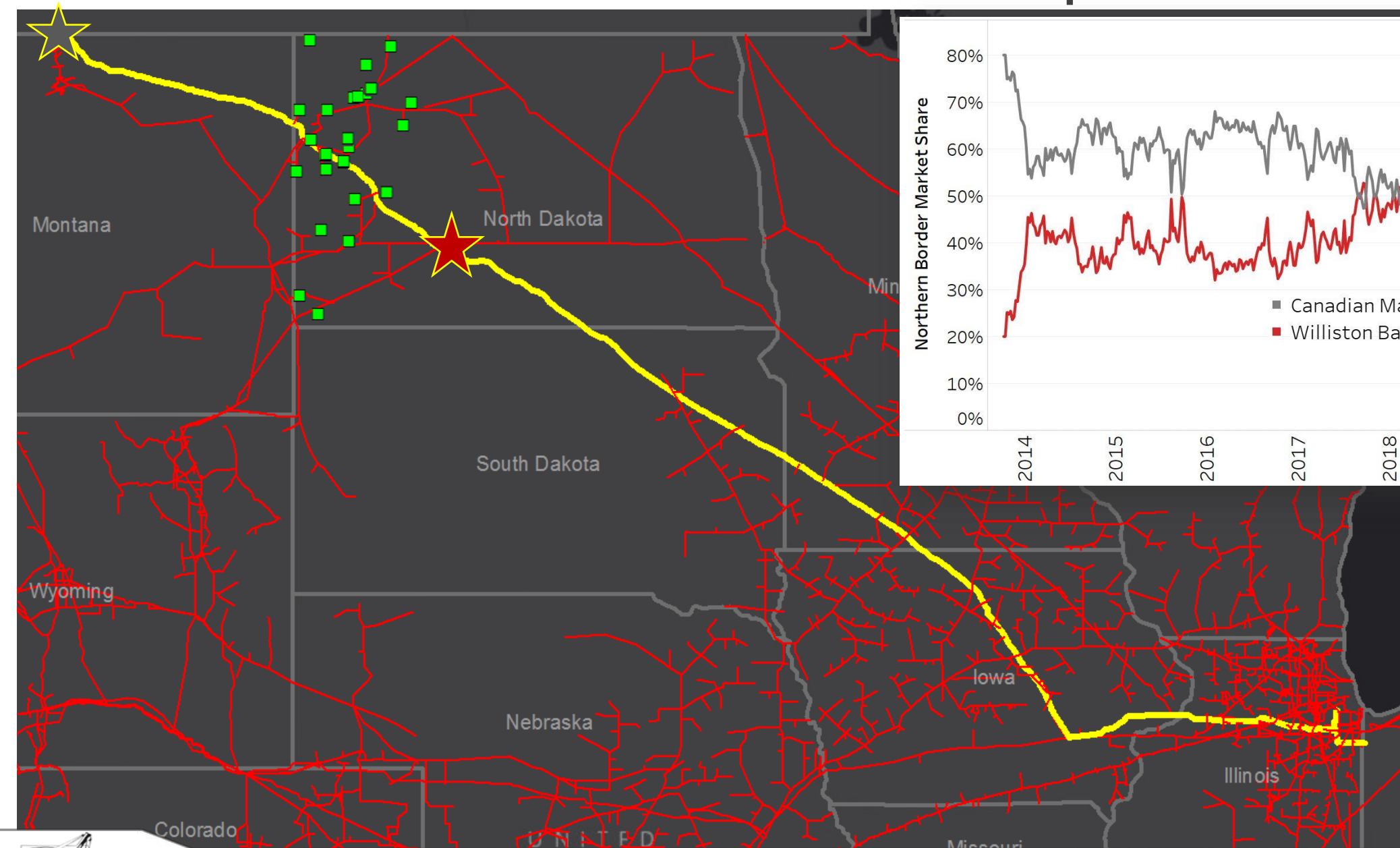
# Major Gas Pipeline and Processing Infrastructure



# Bakken Natural Gas Infrastructure

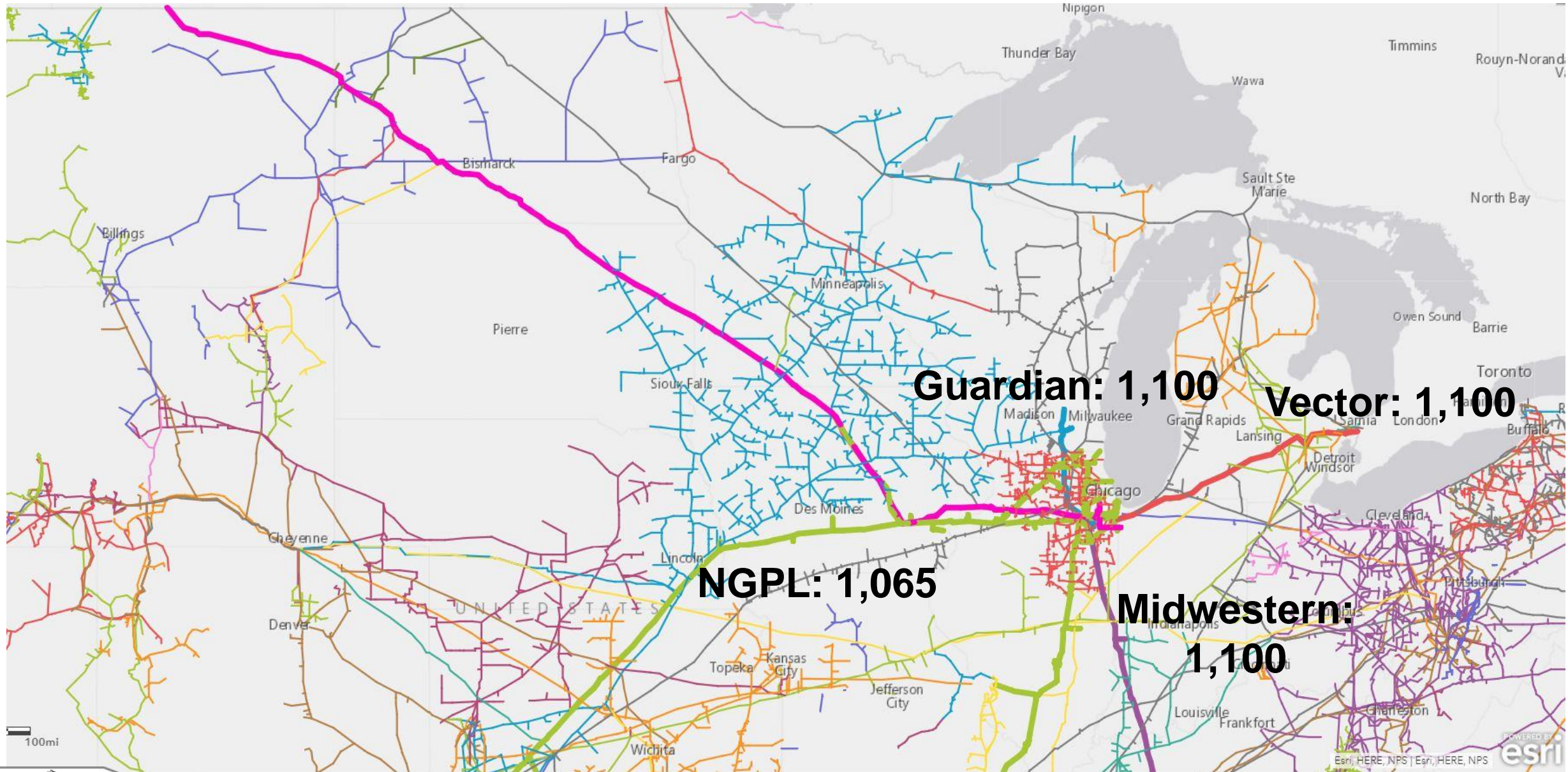


# Northern Border Pipeline



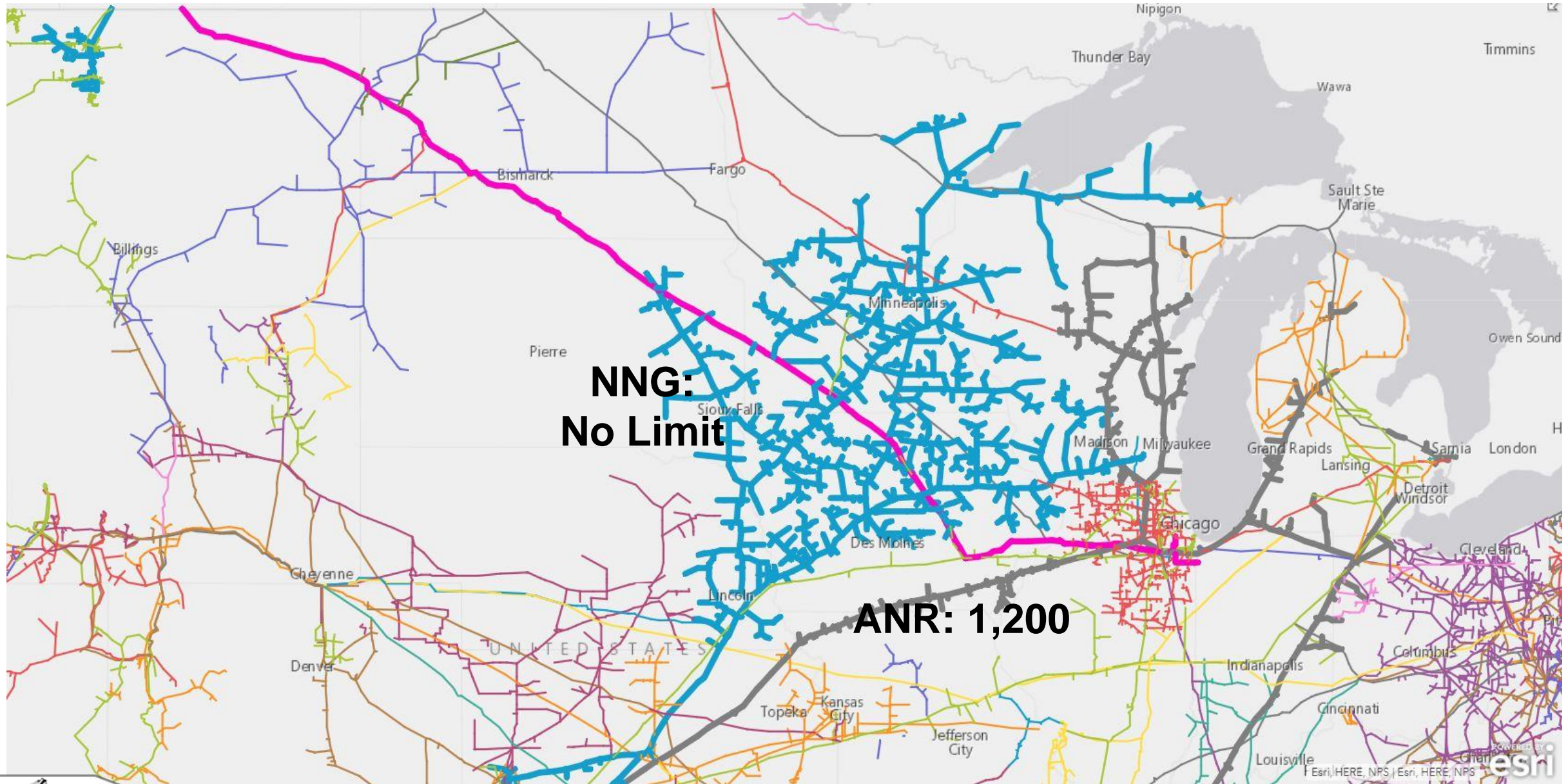


# NB Pipeline Interconnects With Known BTU Limits



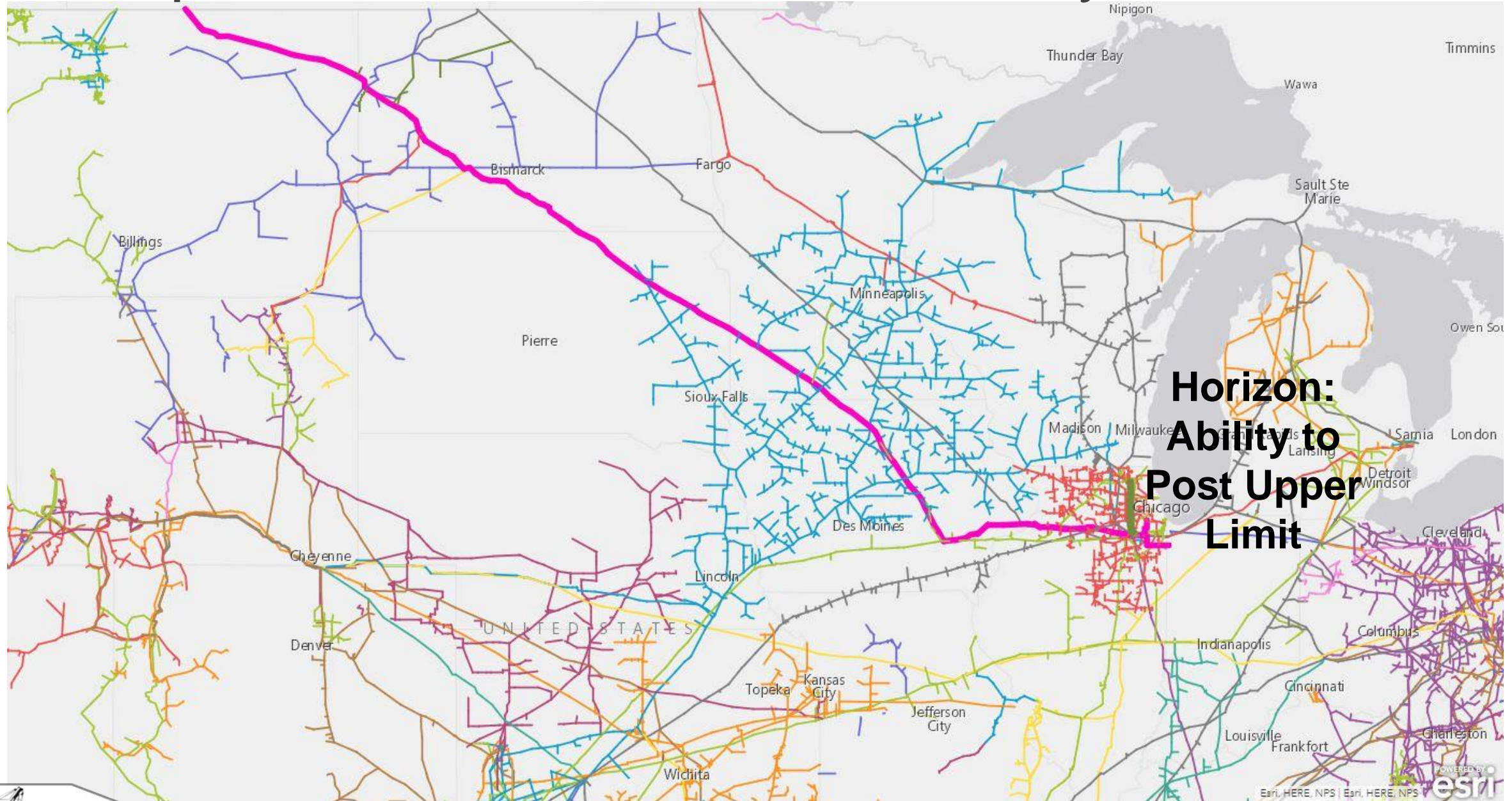


# NB Pipeline Interconnects With BTU Limits $> 1,100$





# NB Pipeline Interconnects With Ability to Add Limits



# Contact Information

Justin J. Kringstad, Director  
North Dakota Pipeline Authority

600 E. Boulevard Ave. Dept. 405  
Bismarck, ND 58505-0840

Phone: (701)220-6227  
Fax: (701)328-2820  
E-mail: [jjkringstad@ndpipelines.com](mailto:jjkringstad@ndpipelines.com)

Websites:

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



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