North Dakota
Oil & Gas Research Council

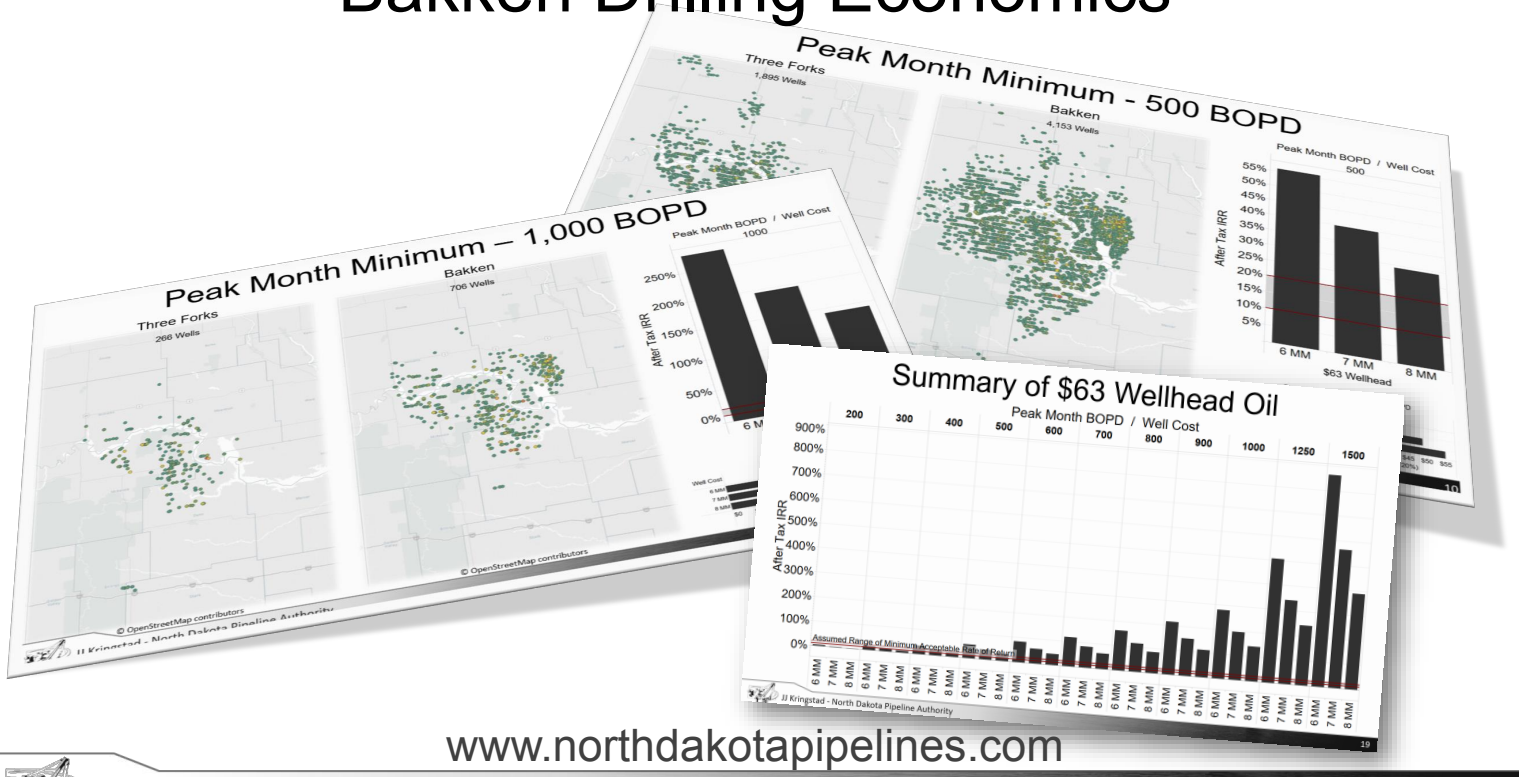
Justin J Kringstad
Geological Engineer
Director
North Dakota Pipeline Authority

August 20, 2018

Presentation Outline

- **Bakken/Three Forks Longevity**
- Pipeline Construction Update
- Gas Processing Update

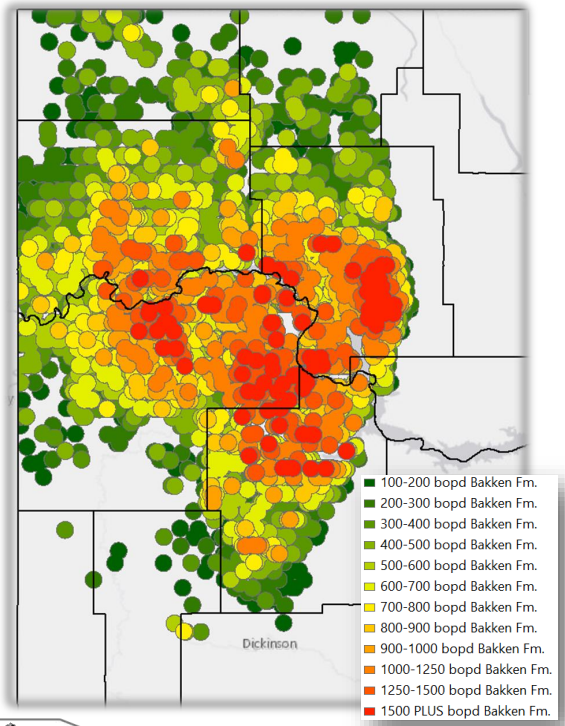
Bakken Drilling Economics

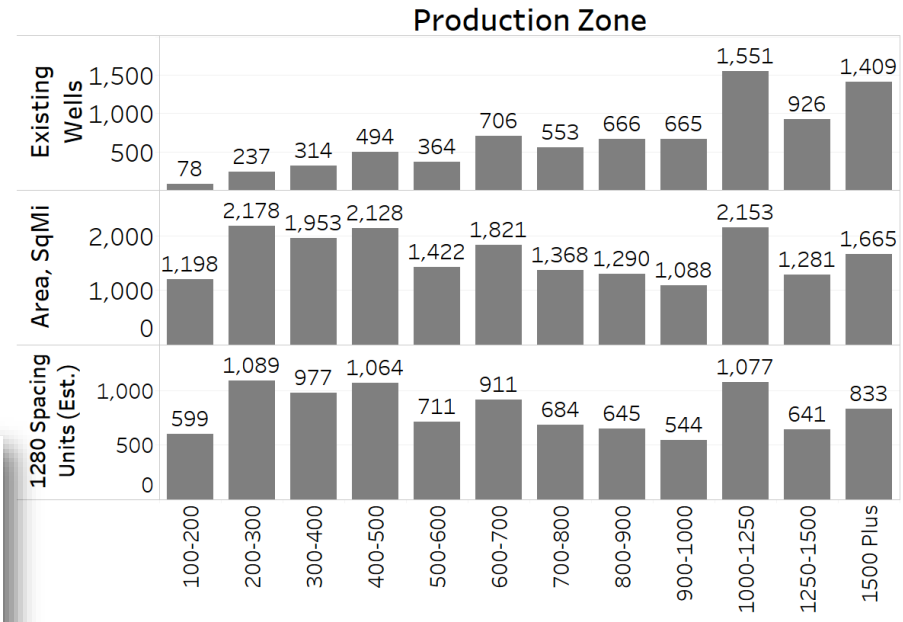


www.northdakotapipelines.com

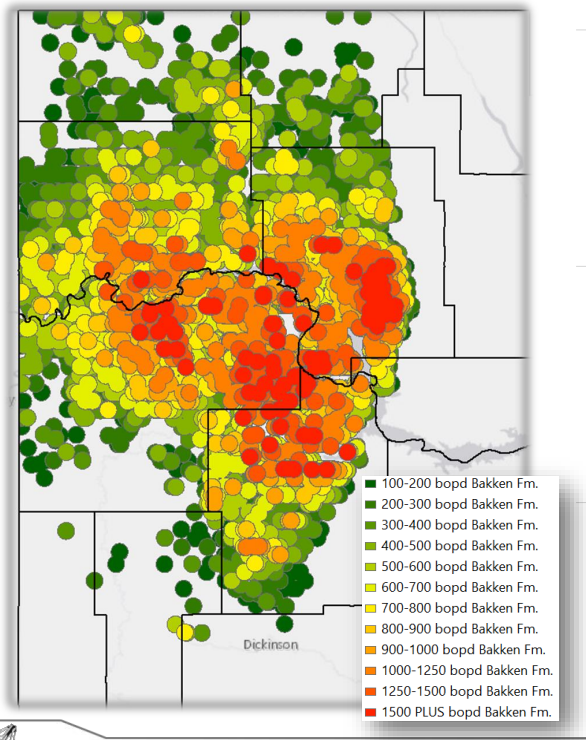
Understanding North Dakota's Bakken/Three Forks Potential

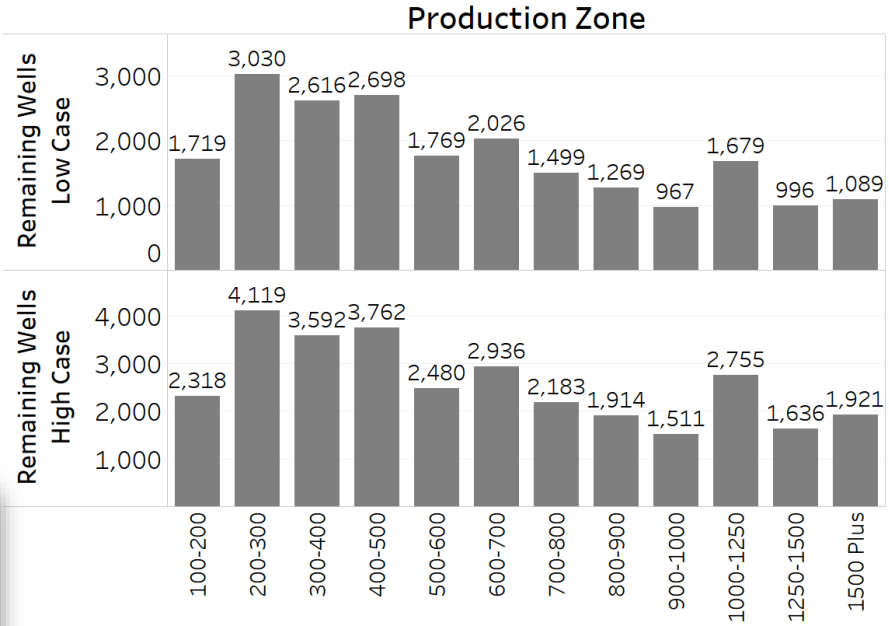
Past Well Performance – Bakken Formation





Remaining Wells* – Bakken Formation



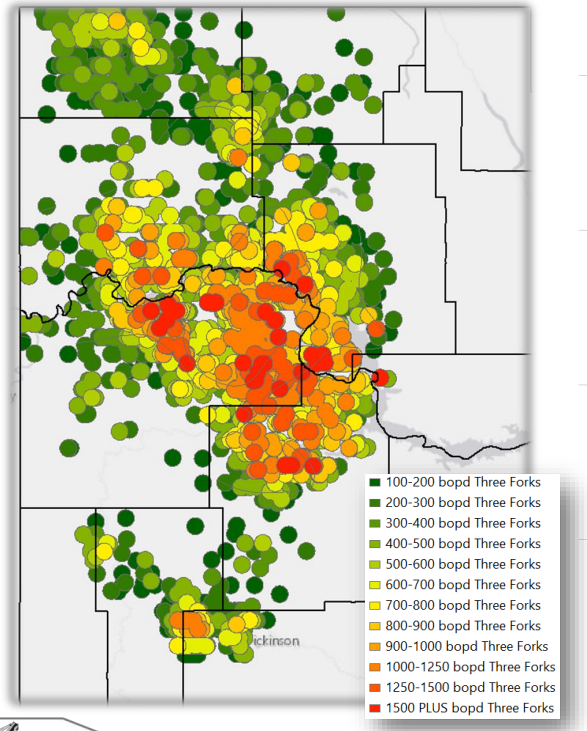


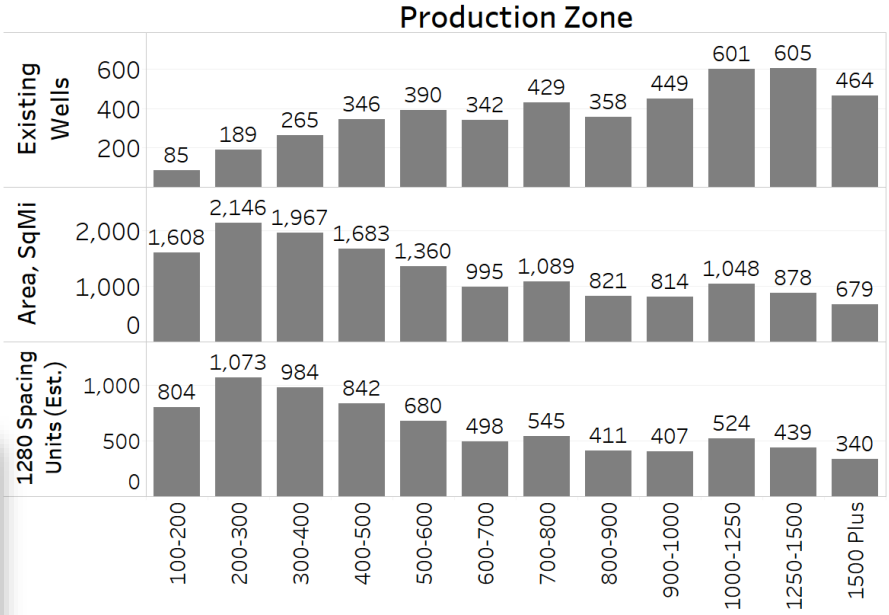
***Well Density Assumptions**

Low Case = 3 Wells In Bakken Formation

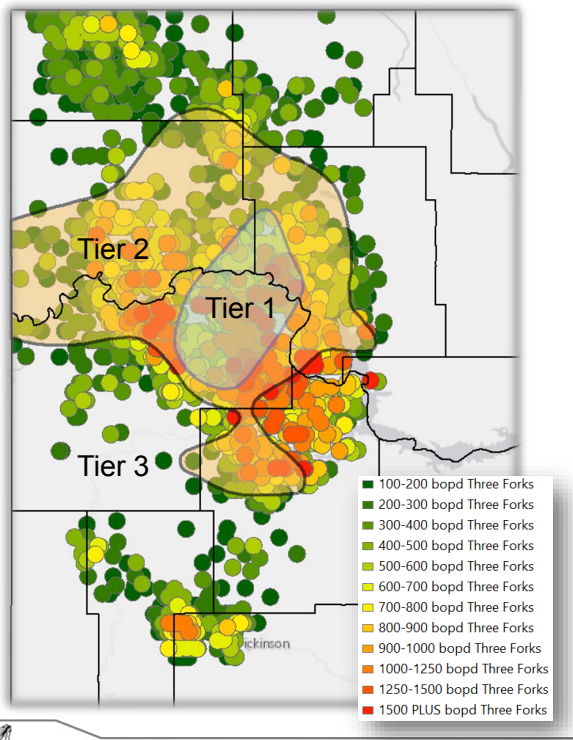
High Case = 4 Wells In Bakken Formation

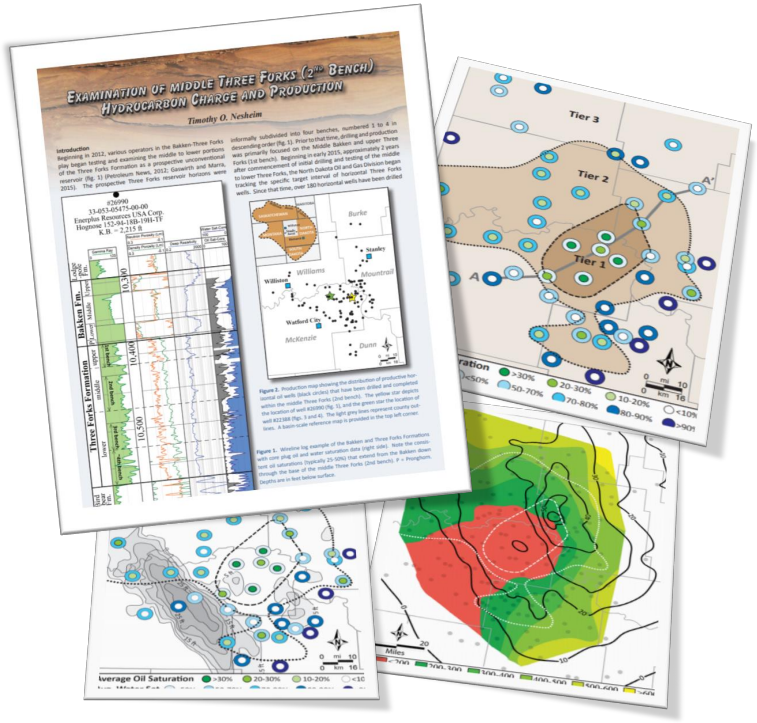
Past Well Performance – Three Forks Formation



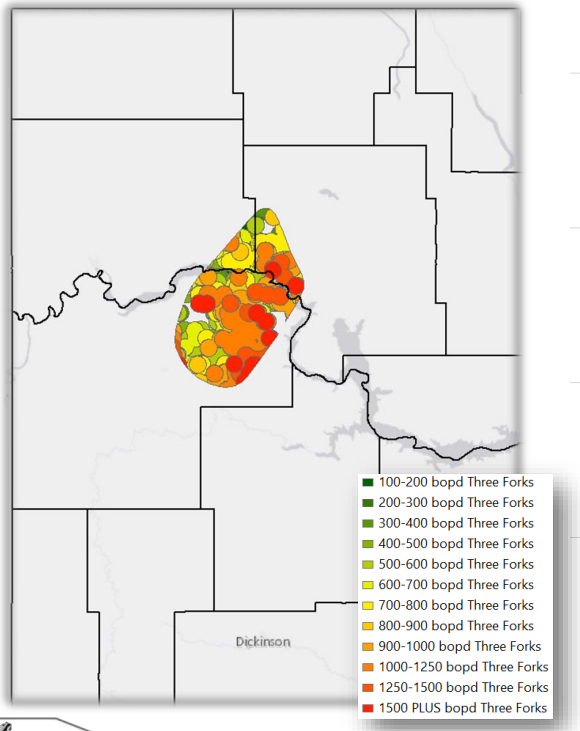


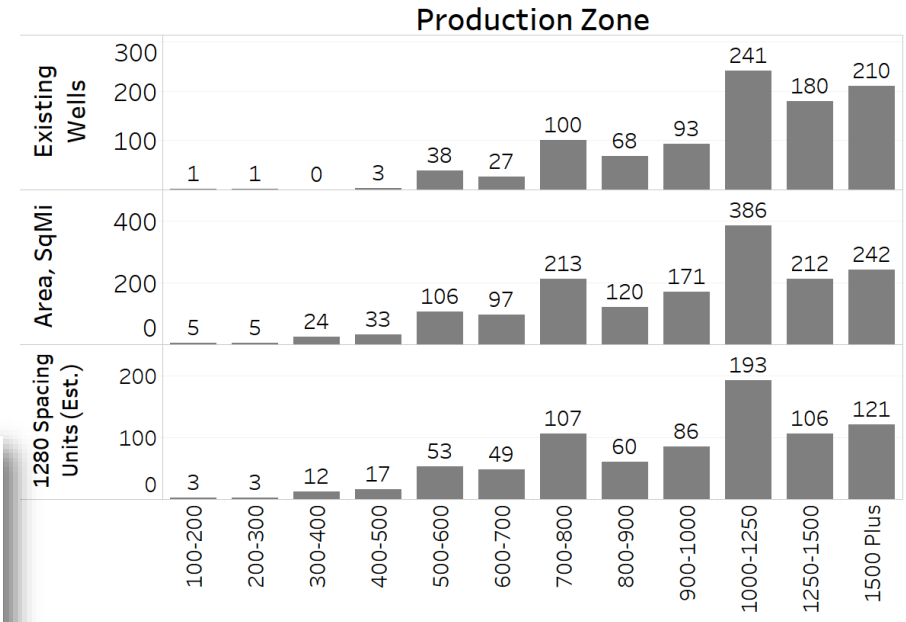
Tim Nesheim (NDGS) Three Forks Work



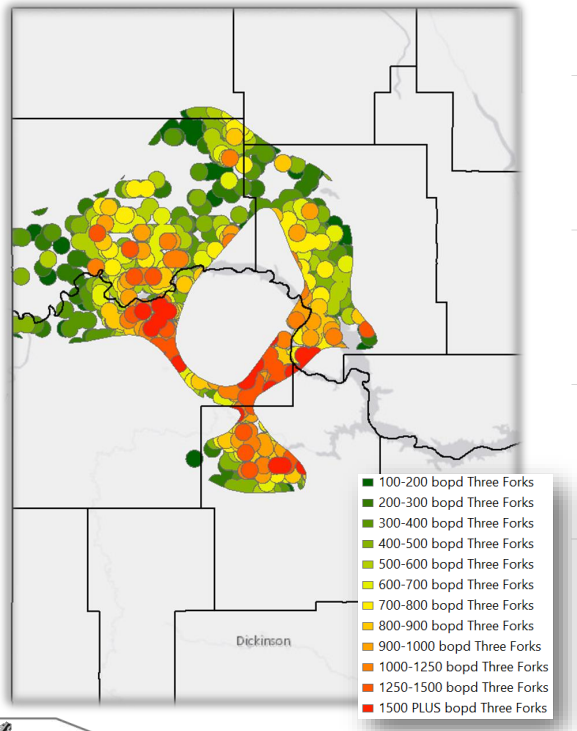


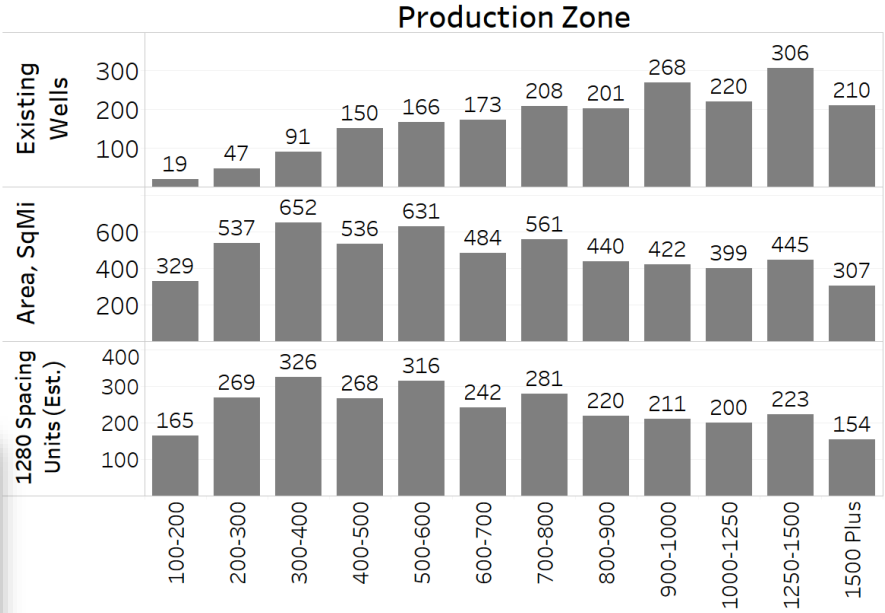
Past Well Performance – Three Forks Tier 1



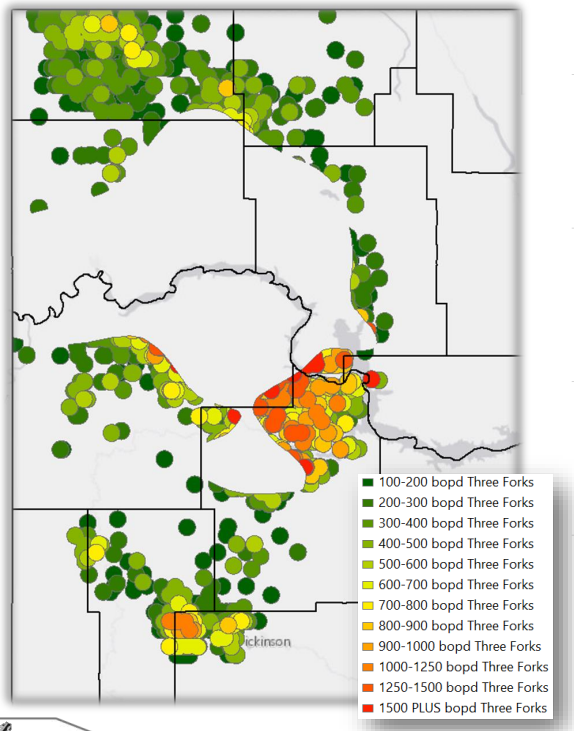


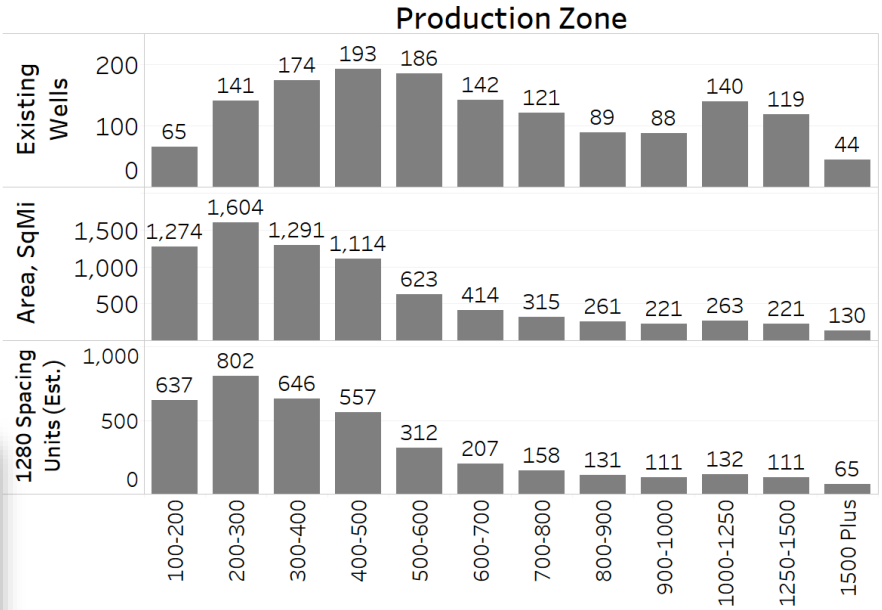
Past Well Performance – Three Forks Tier 2



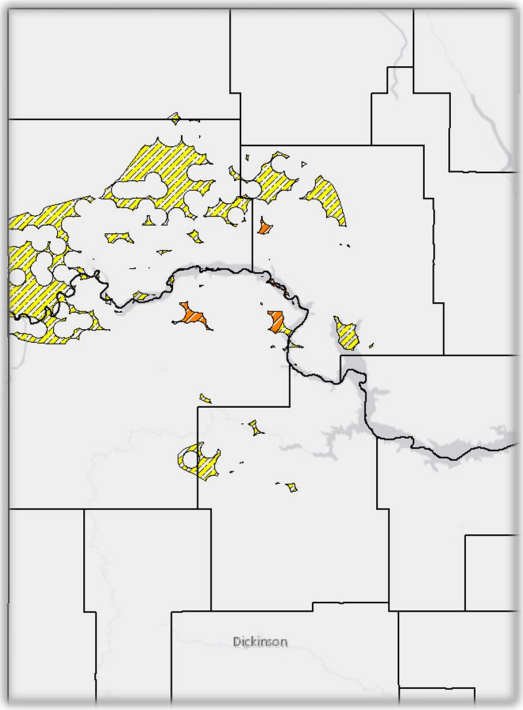


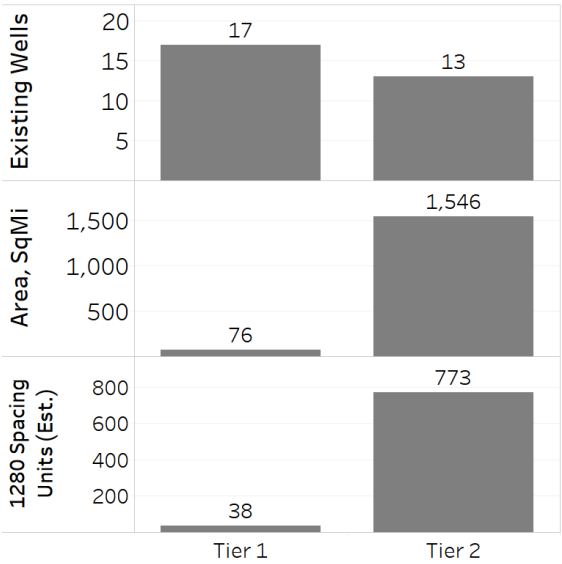
Past Well Performance – Three Forks Tier 3





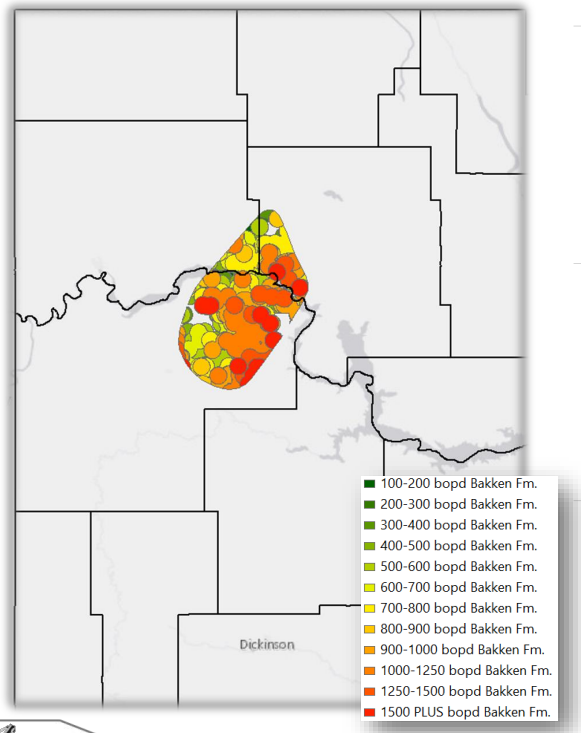
“Empty” Three Forks Tier 1 & 2

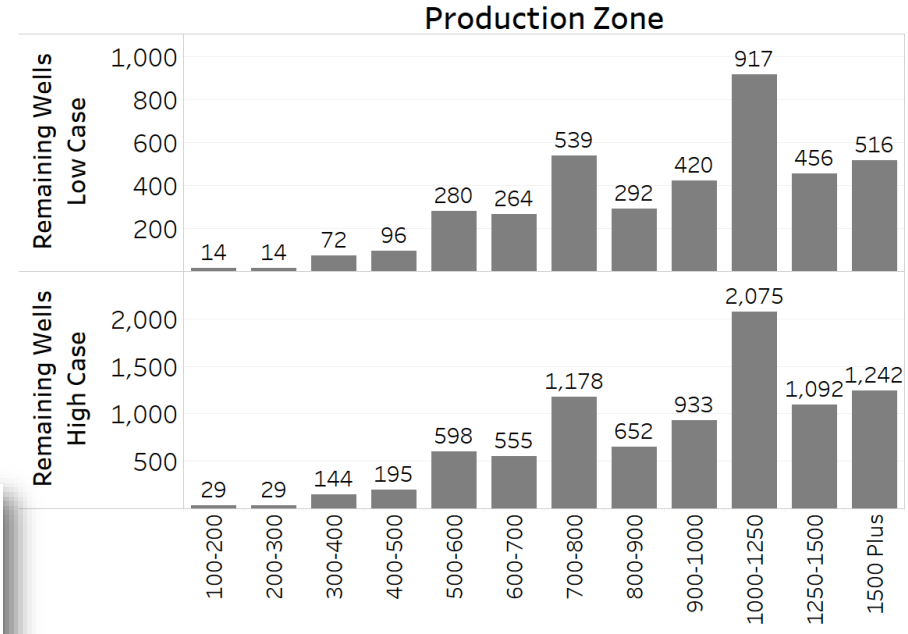




All Empty Regions Were Removed From Estimates/Calculations

Remaining Wells* – Three Forks Tier 1



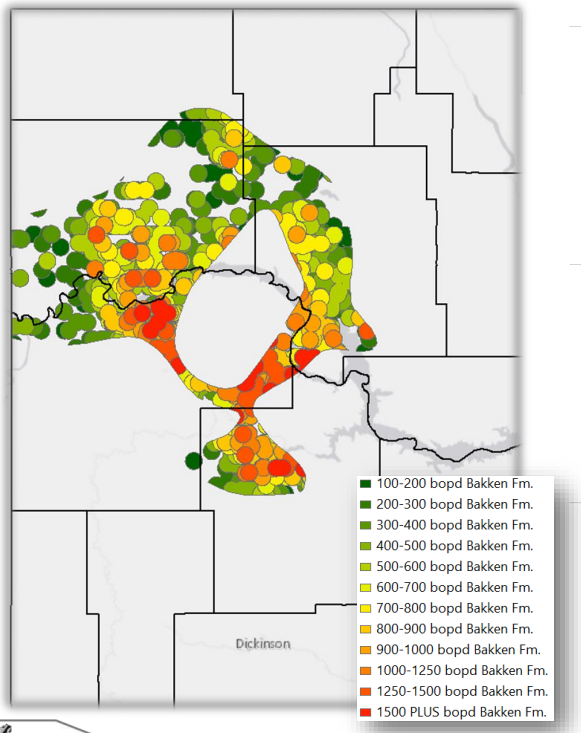


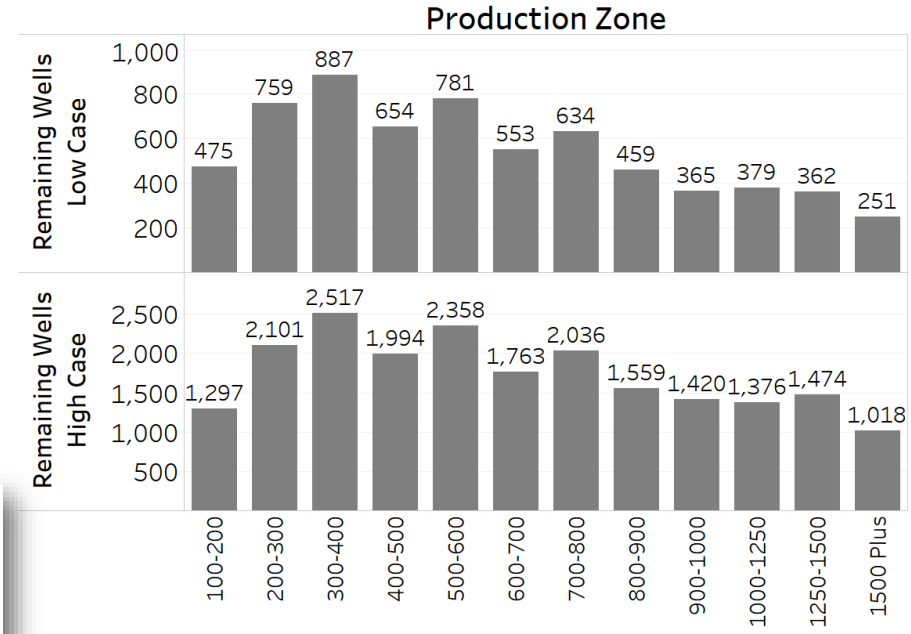
***Well Density Assumptions**

Low Case = 6 Three Forks Wells Per DSU

High Case = 12 Three Forks Wells Per DSU

Remaining Wells* – Three Forks Tier 2



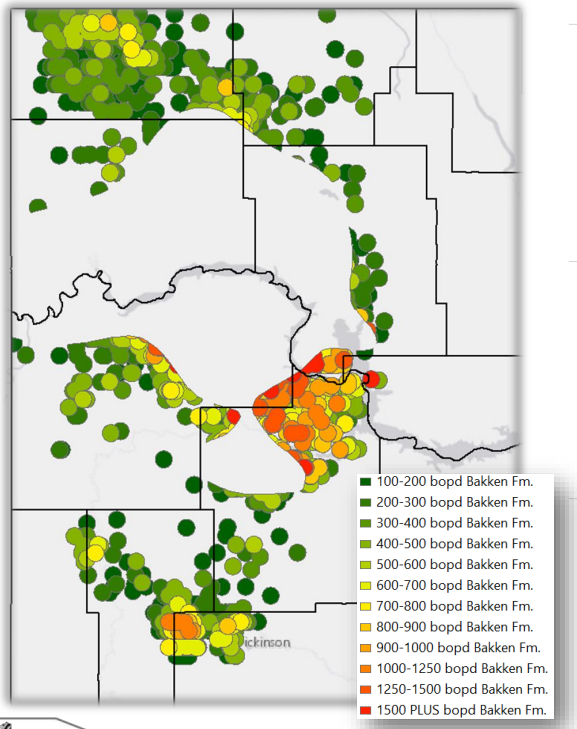


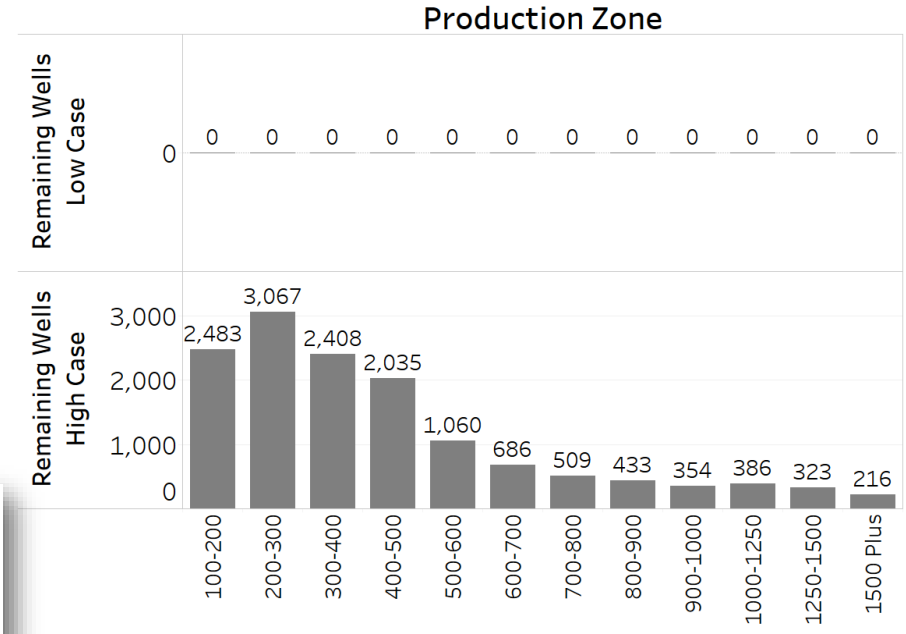
***Well Density Assumptions**

Low Case = 3 Three Forks Wells Per DSU

High Case = 8 Three Forks Wells Per DSU

Remaining Wells* – Three Forks Tier 3



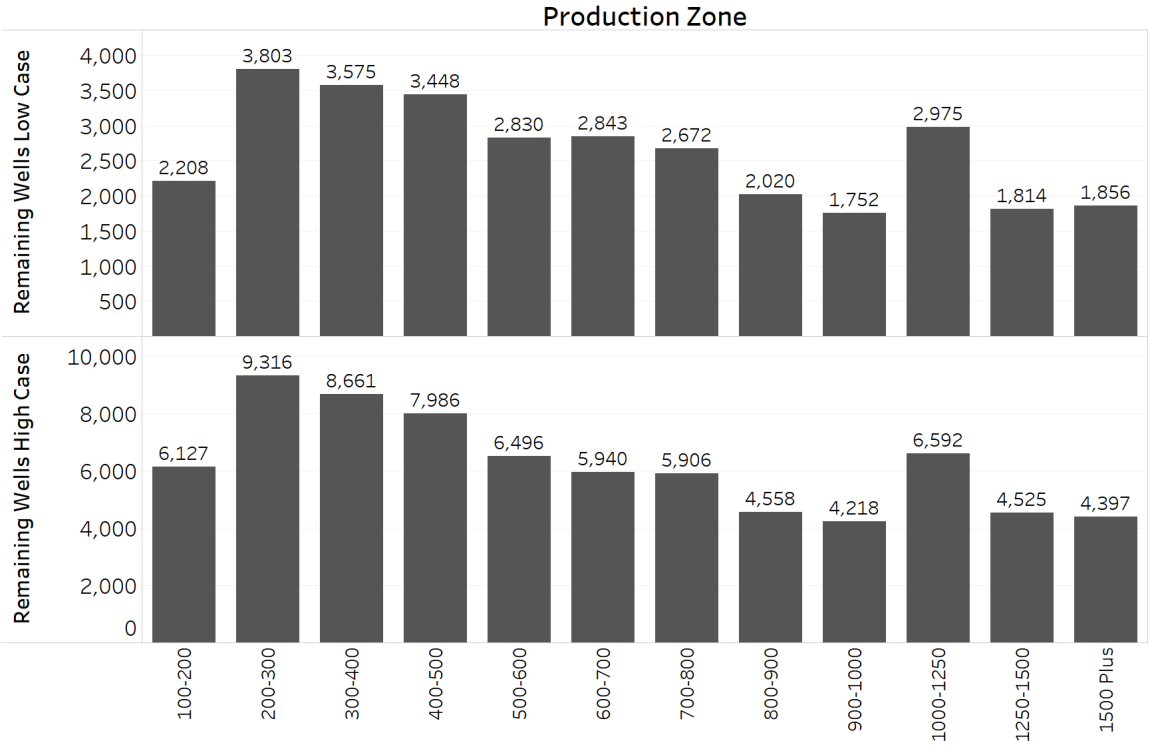


***Well Density Assumptions**

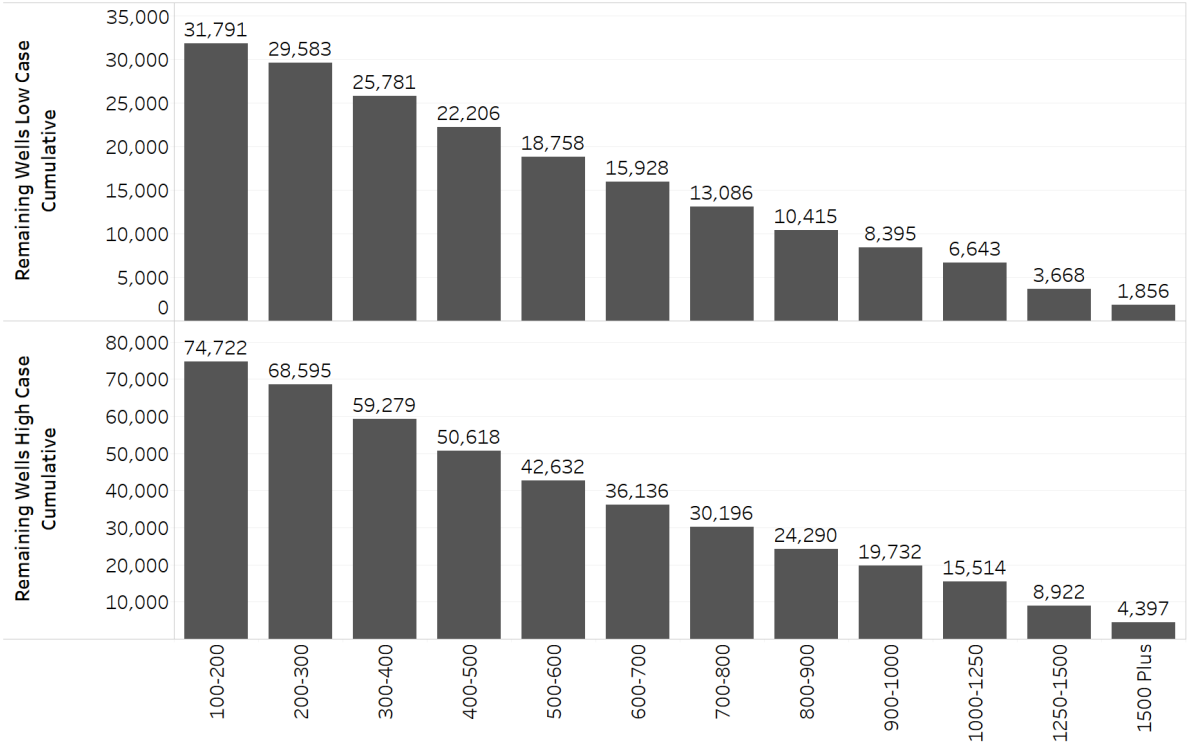
Low Case = 0 Three Forks Wells Per DSU

High Case = 4 Three Forks Wells Per DSU

Remaining Wells – All Bakken and Three Forks Tiers

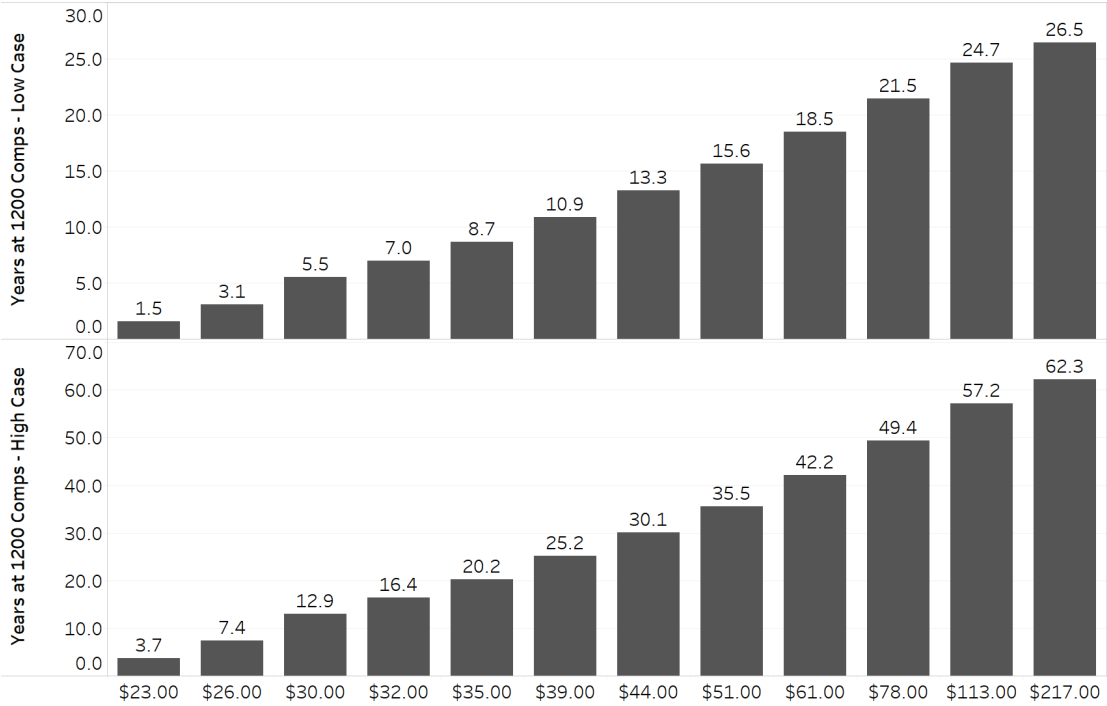


Cumulative Remaining Wells – Peak Month Minimum BOPD



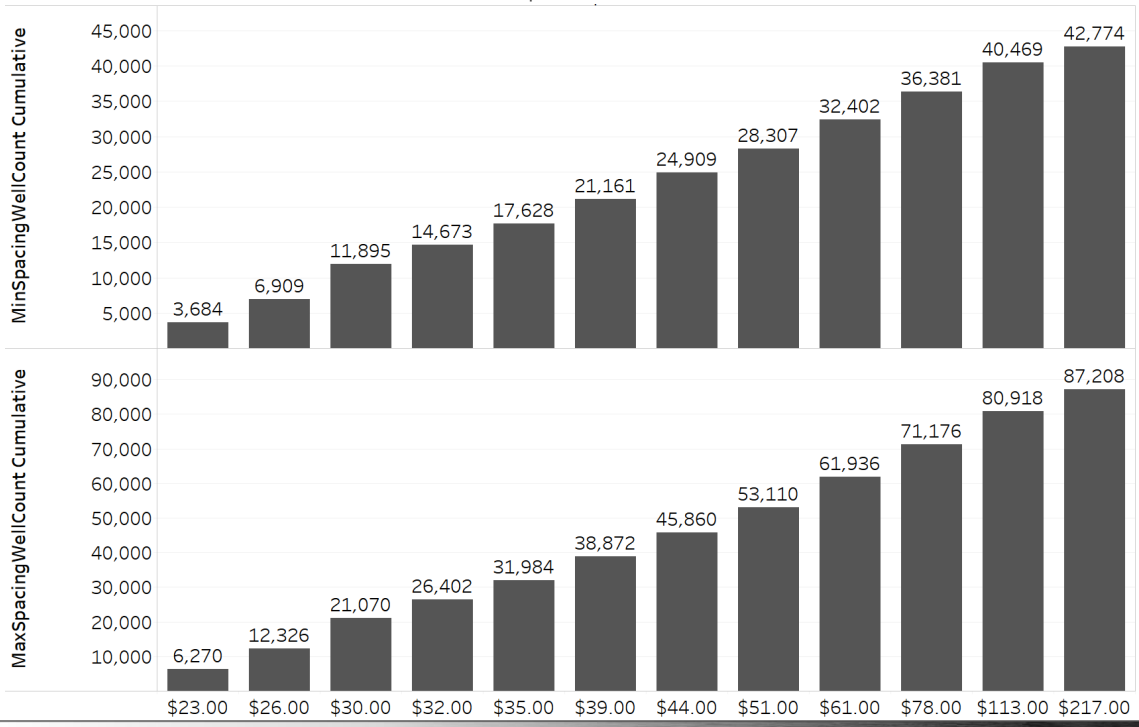
Years Remaining* / Minimum Wellhead Oil Price

*Assumes 1,200 Completions Per Year and $7MM Well Costs



Cumulative Statewide Wells / Minimum Wellhead Oil Price

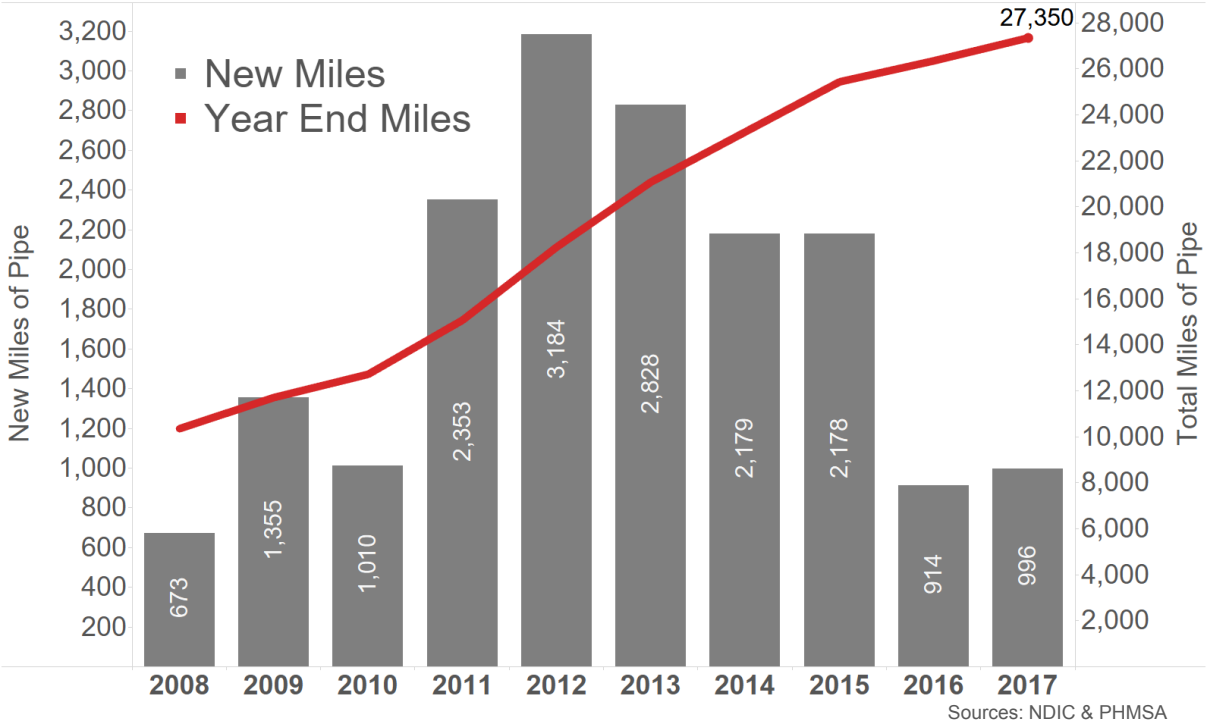
*Assumes $7MM Well Costs



Presentation Outline

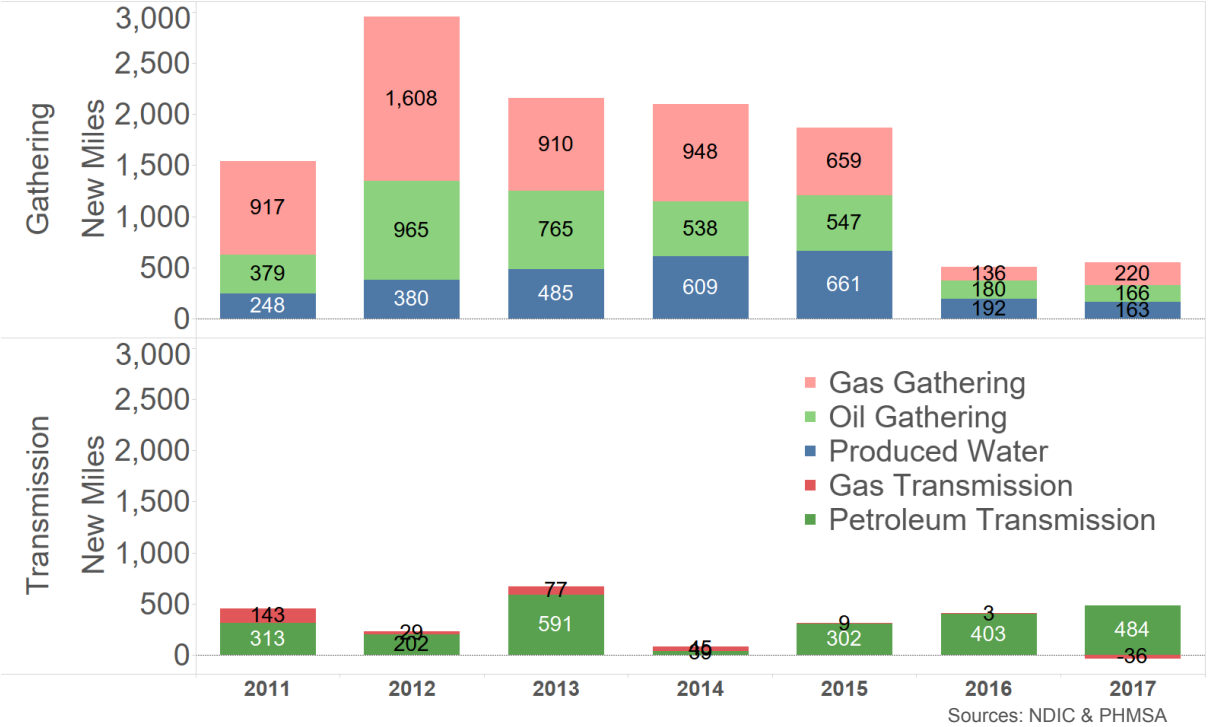
- Bakken/Three Forks Longevity
- **Pipeline Construction Update**
- Gas Processing Update

North Dakota Pipeline Construction



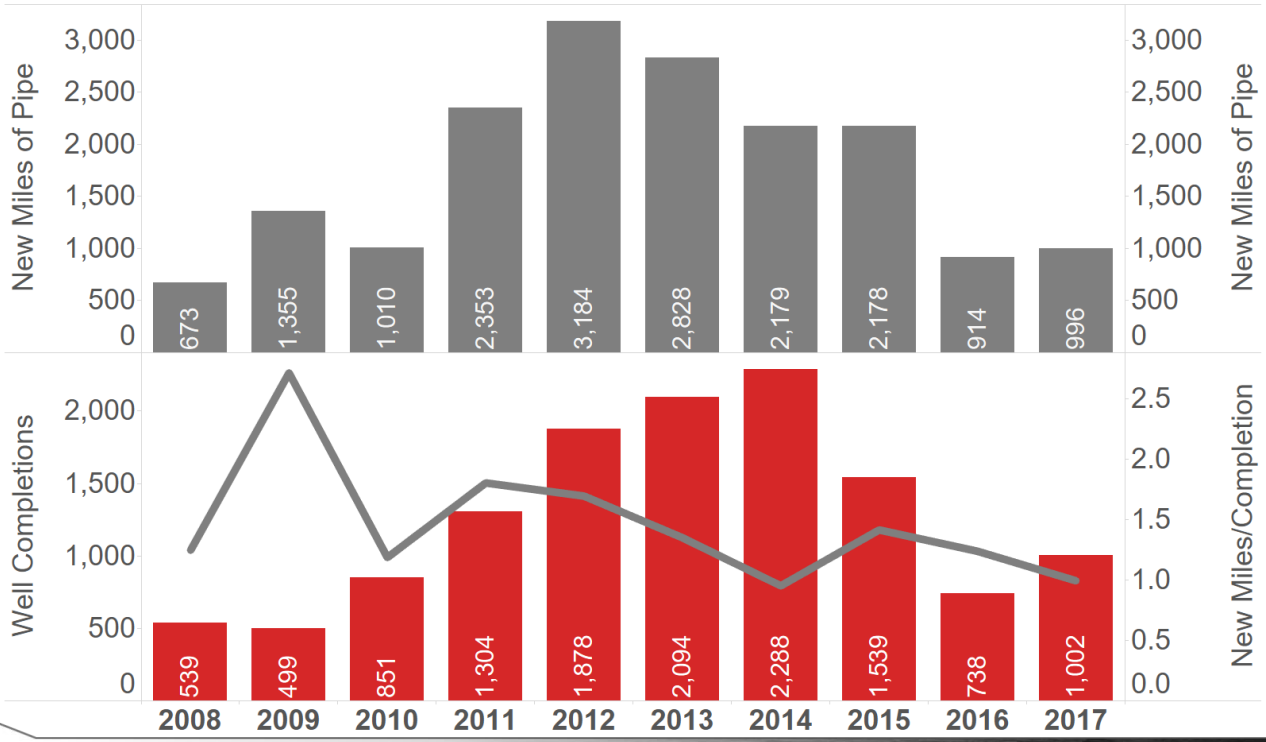
Sources: NDIC & PHMSA

North Dakota Pipeline Construction



Sources: NDIC & PHMSA

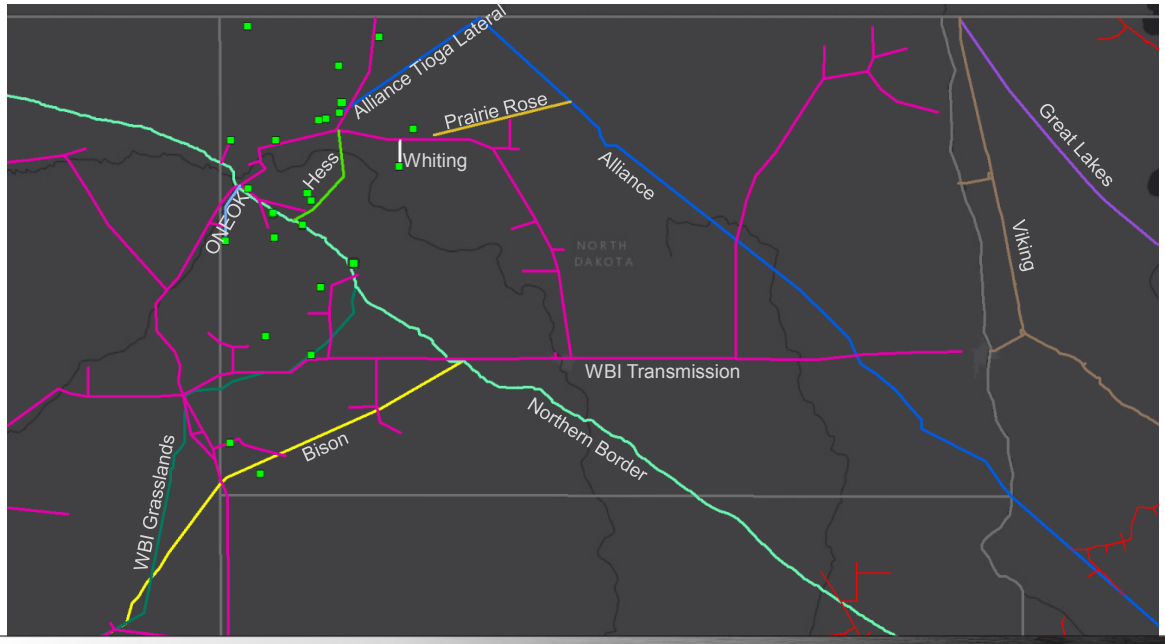
New Miles and Well Completions



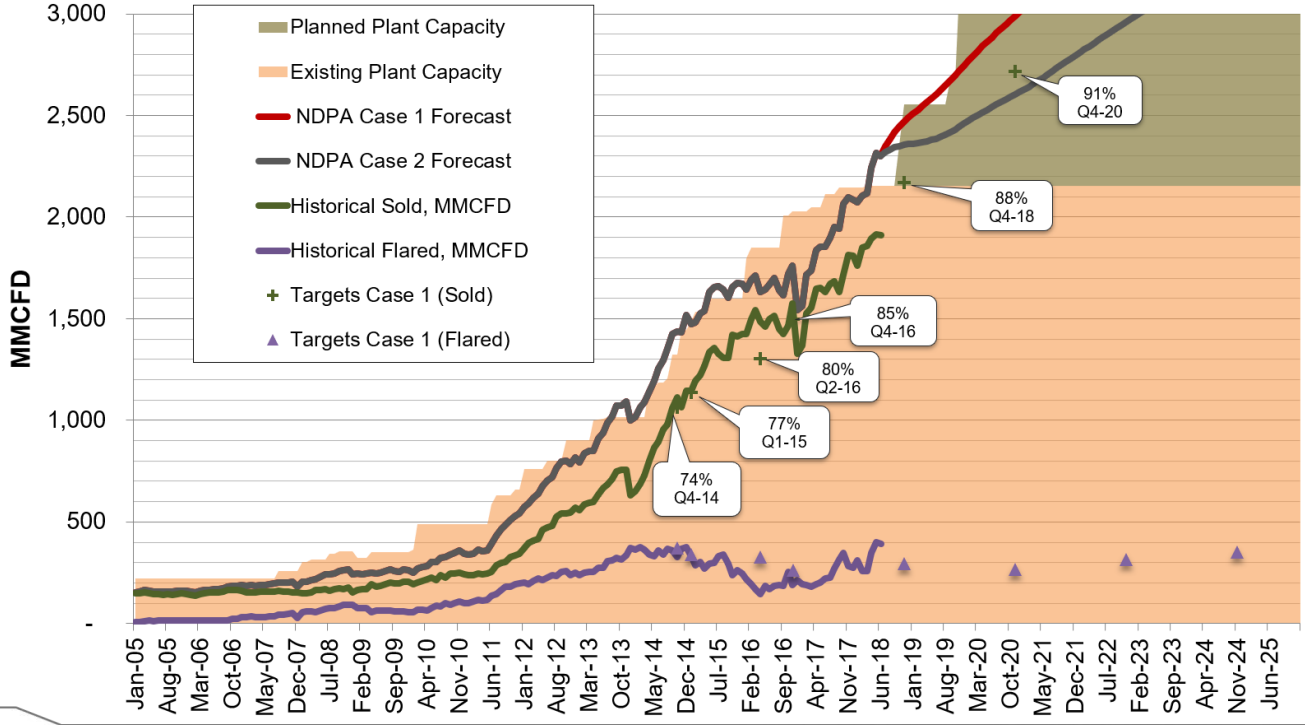
Presentation Outline

- Bakken/Three Forks Longevity
- Pipeline Construction Update
- **Gas Processing Update**

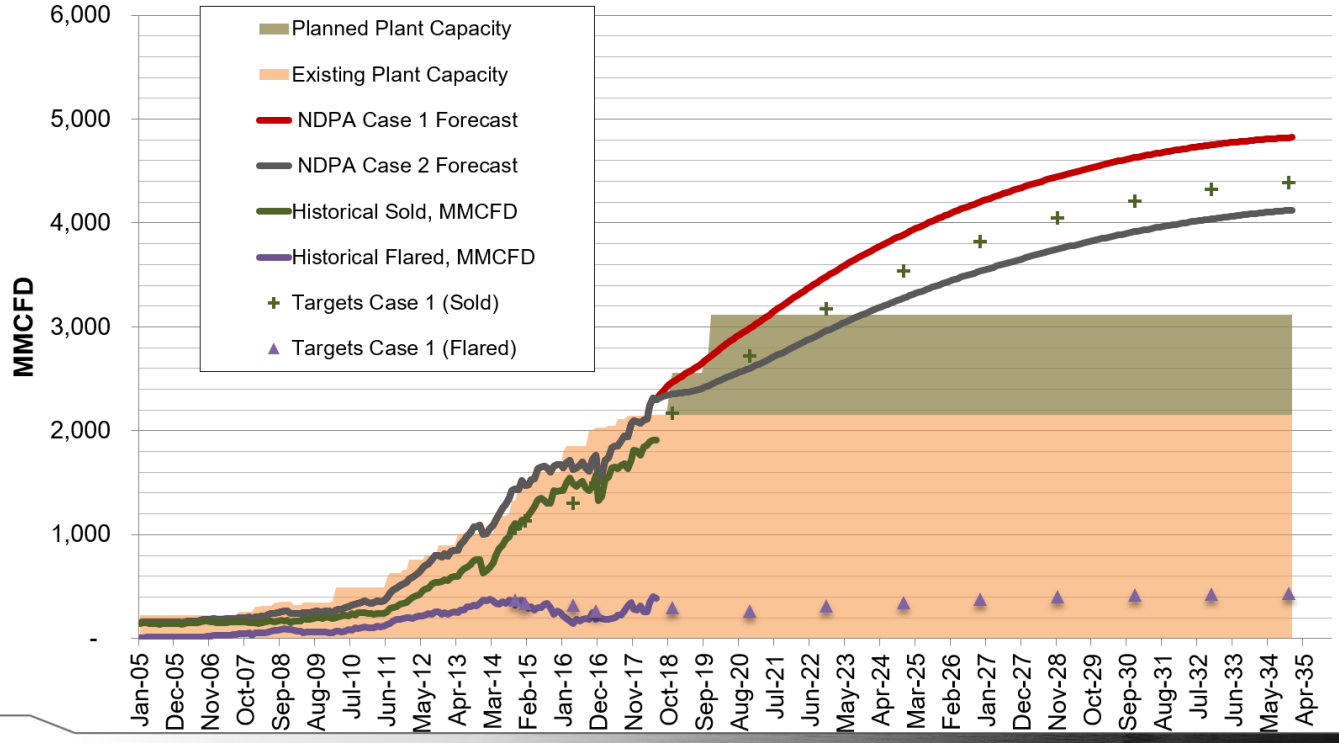
Major Gas Pipeline and Processing Infrastructure



Solving the Flaring Challenge



Solving the Flaring Challenge



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

Websites:
www.pipeline.nd.gov
www.northdakotapipelines.com