



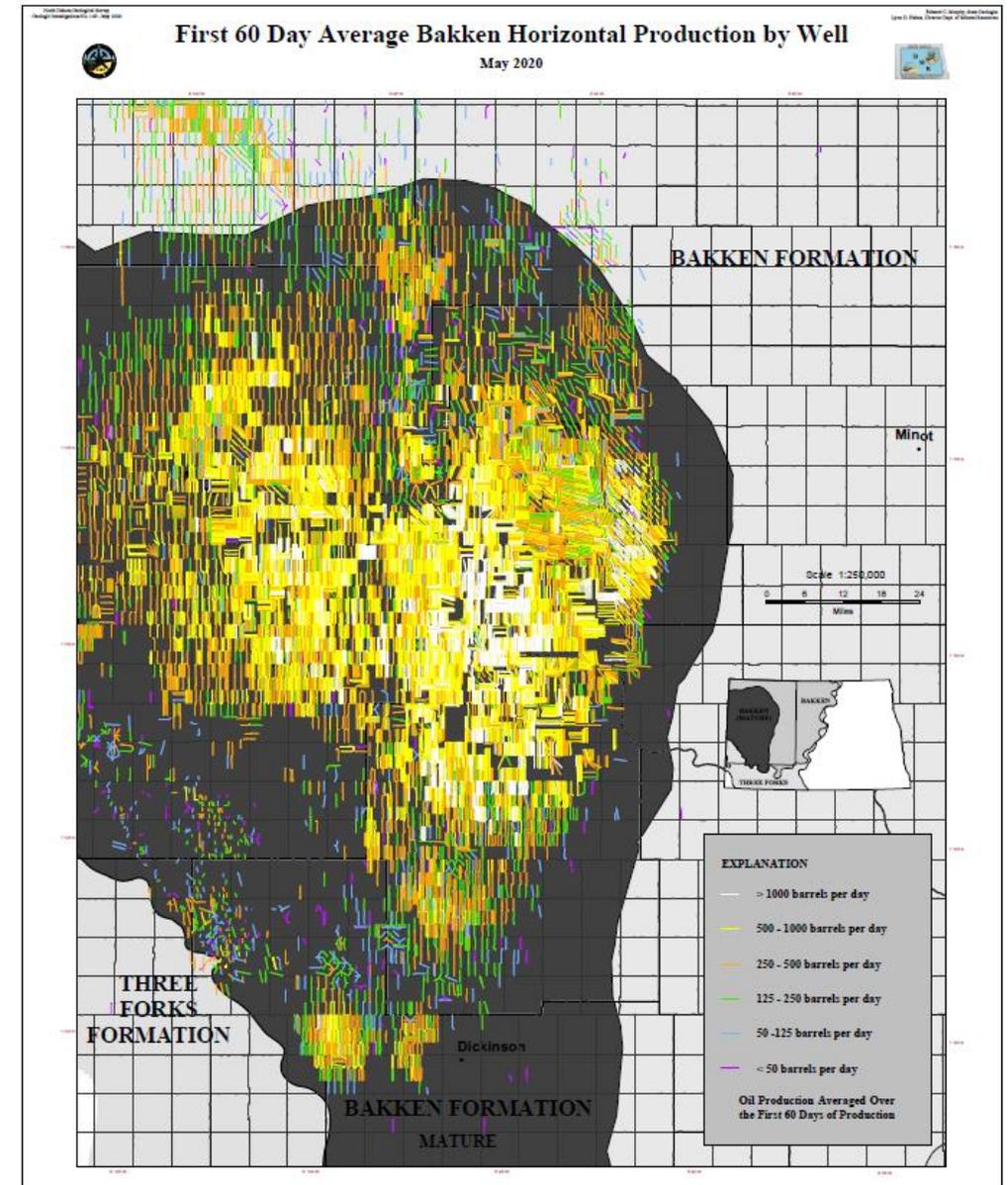
Bakken

The Next 10 Years

2021 Williston Basin Petroleum Conference

Wells

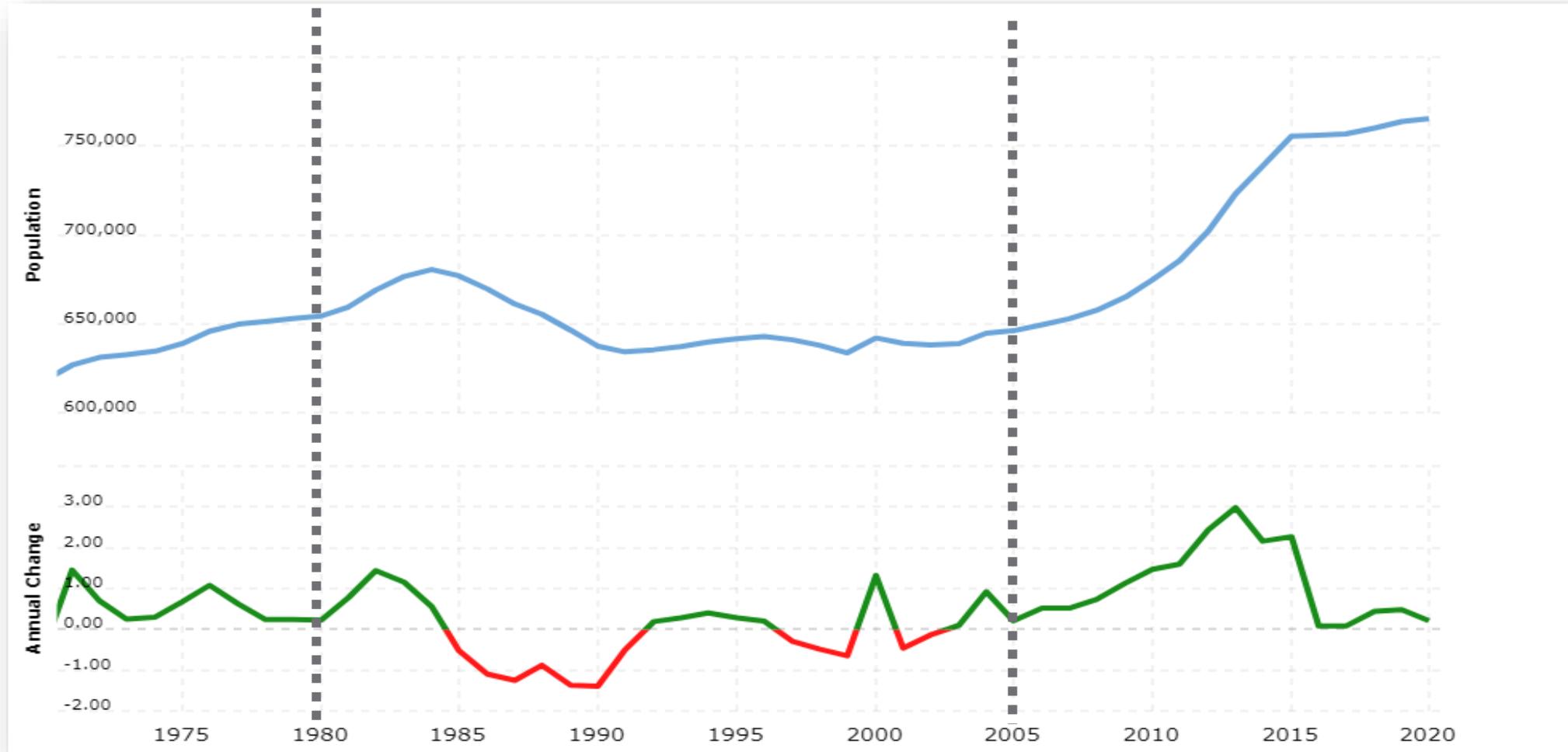
<p>Active March 2021 Conventional Bakken/Three Forks</p>		<p>16,205 2,149 14,056</p>
<p>Inactive March 2021 WTI \$35-\$45 > 90 days = EIA 1/30/2021</p>		<p>2,351</p>
<p>Waiting on Completion March 2021 WTI \$45-\$50 > 90 DAYS = EIA 3/4/2021</p>		<p>628</p>
<p>Permitted March 2021 WTI \$55-\$60 > 90 days NYMEX 2022 EIA 5/3/2021</p>		<p>1,725</p>
<p>Increased Density March 2021 ICO 31232</p>		
<p>Total</p>		<p>33,004</p>

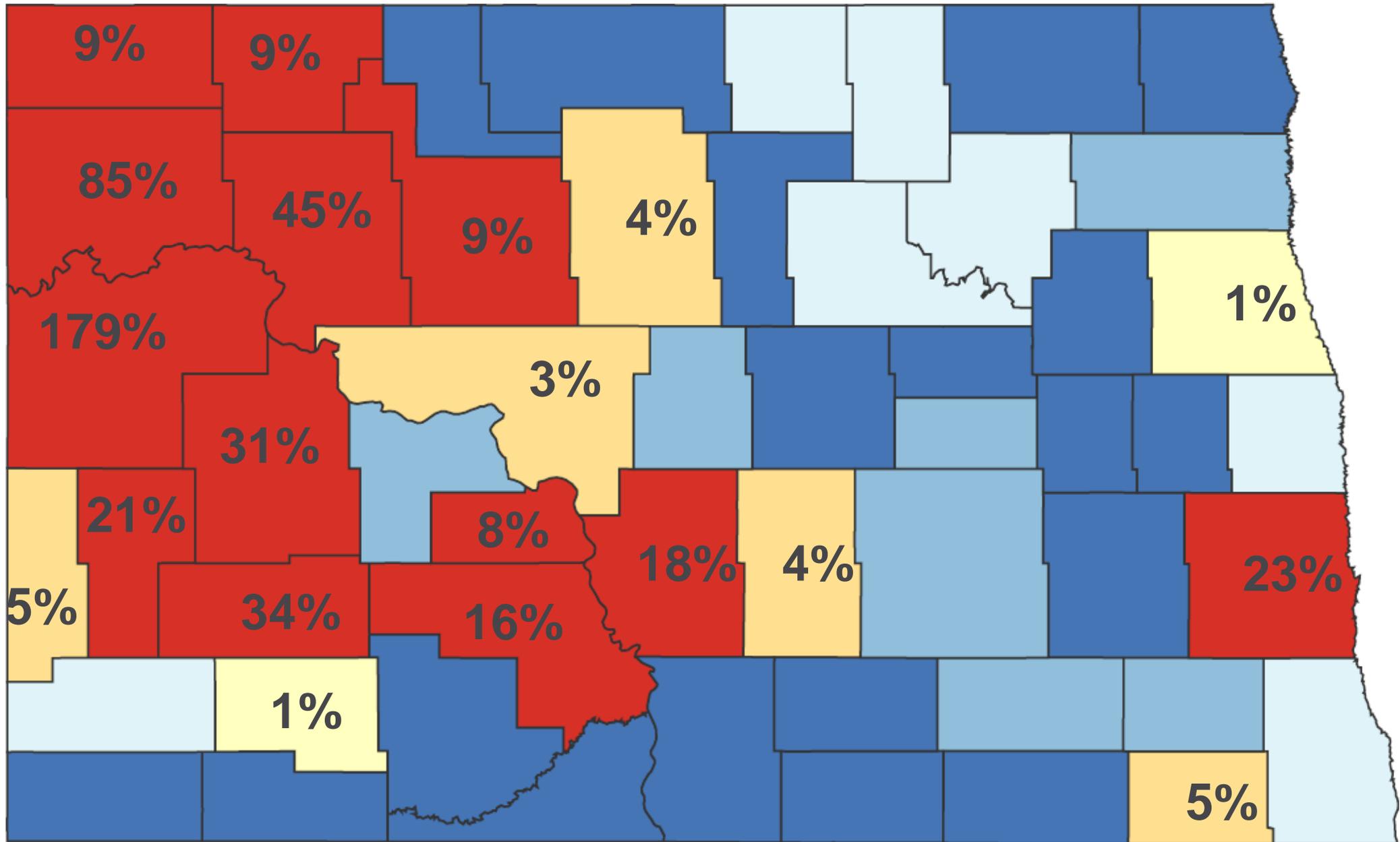


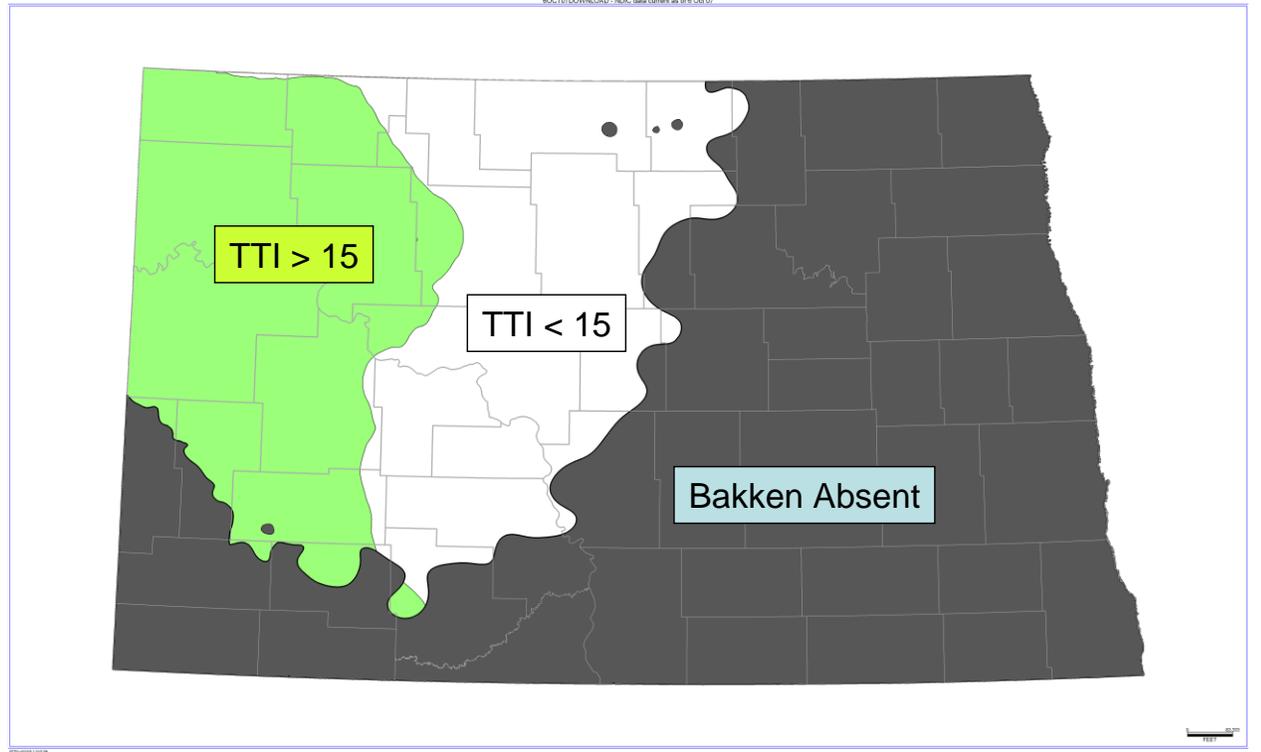
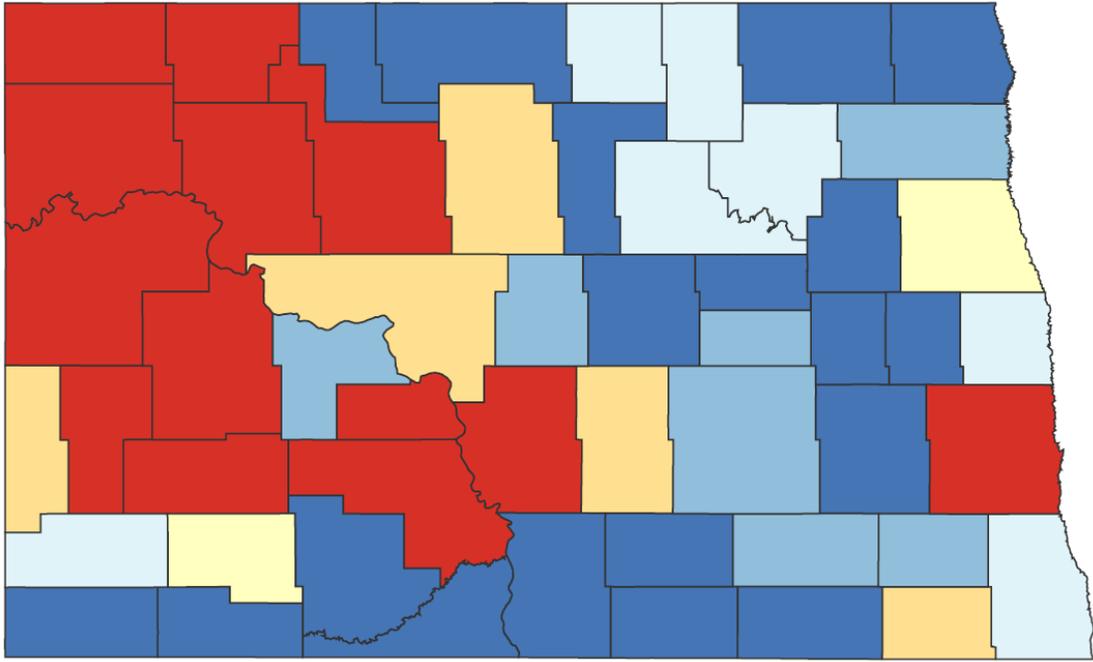
2021 Census

80s
Boom & Bust

Bakken Formation
Development

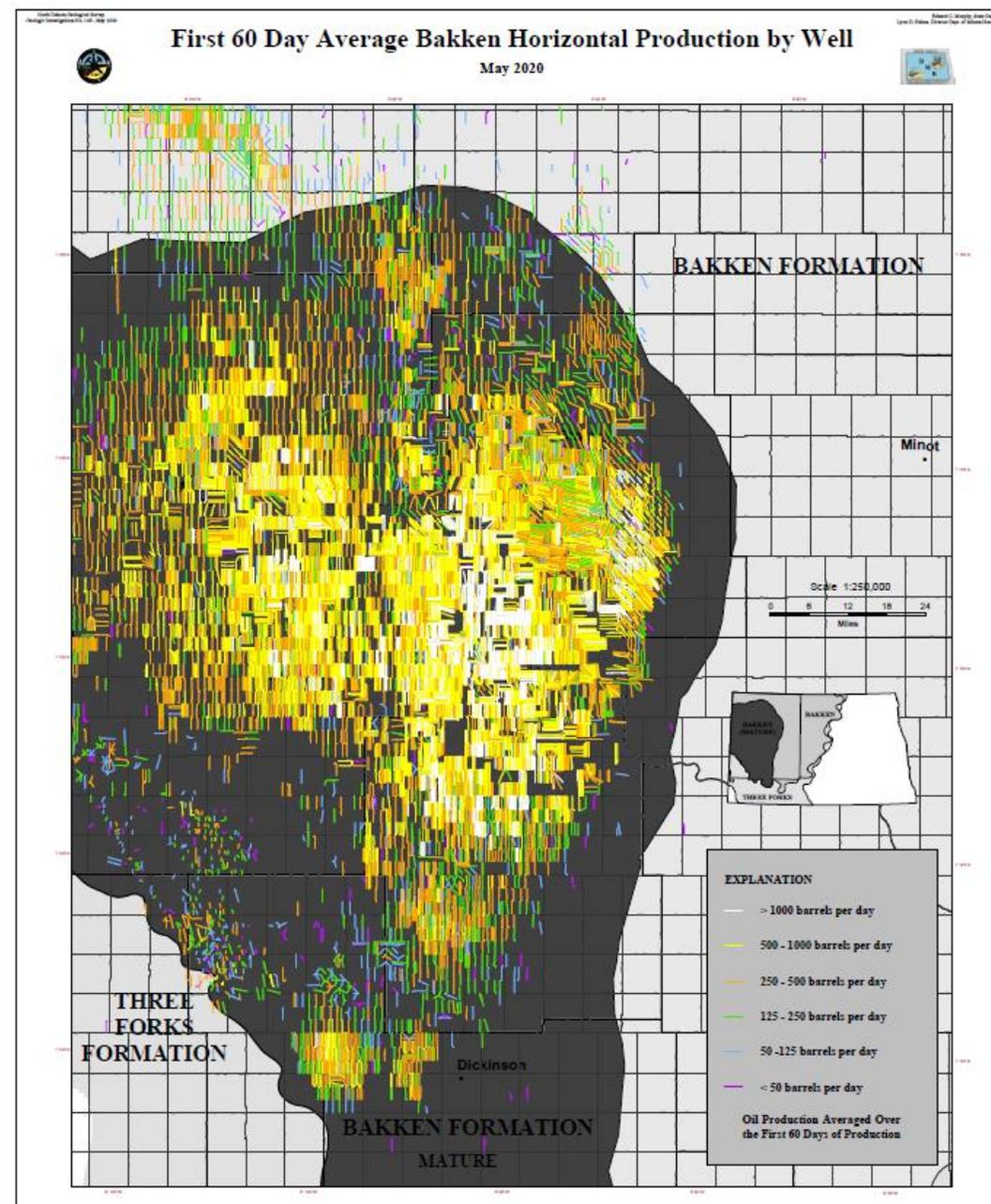






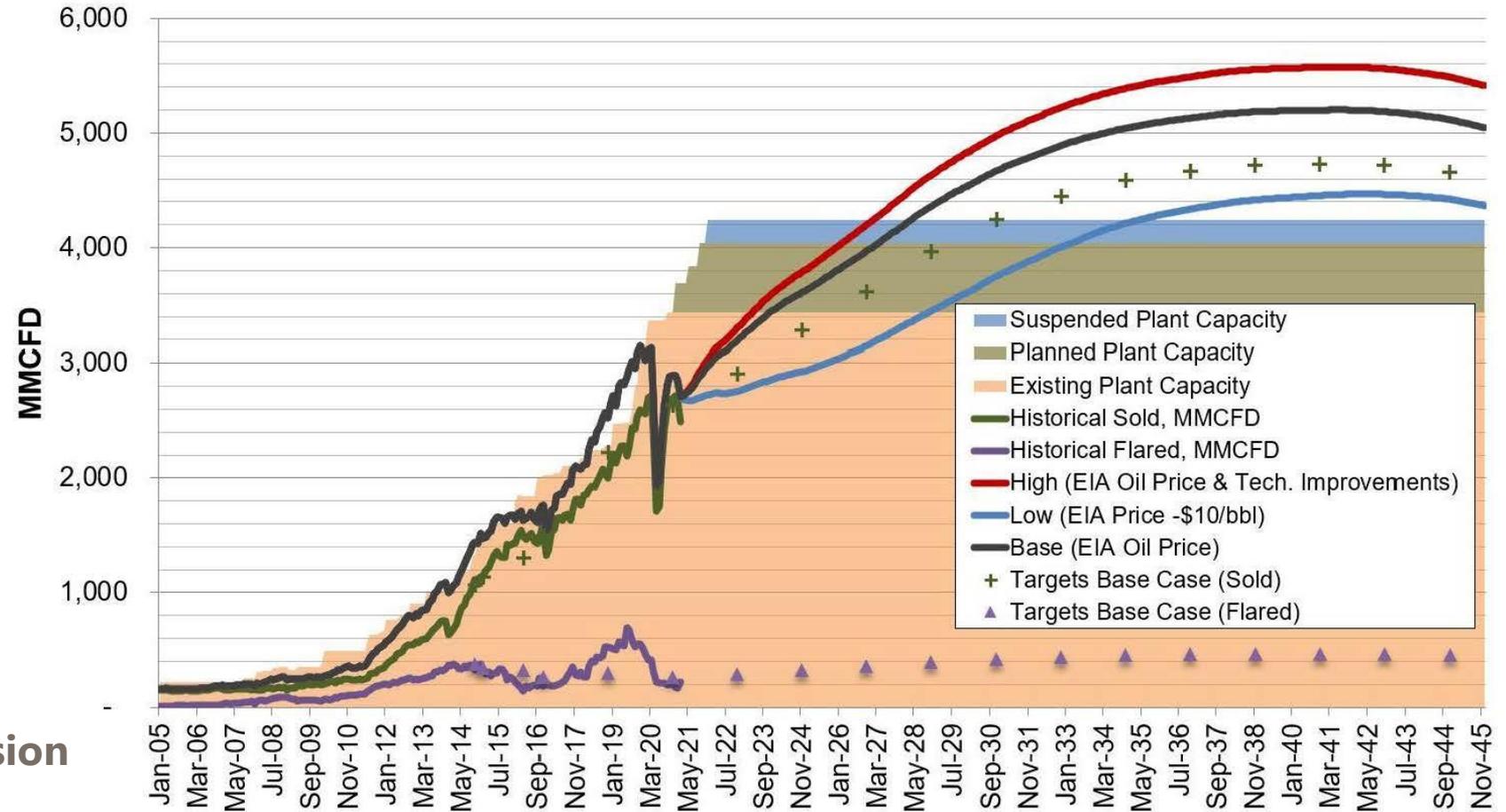
Wells

<p>Active March 2021 Conventional Bakken/Three Forks</p>		<p>16,205 2,149 14,056</p>
<p>Inactive March 2021 WTI \$35-\$45 > 90 days = EIA 1/30/2021</p>		<p>2,351</p>
<p>Waiting on Completion March 2021 WTI \$45-\$50 > 90 DAYS = EIA 3/4/2021</p>		<p>668</p>
<p>Permitted March 2021 WTI \$55-\$60 > 90 days NYMEX 2022 EIA 5/3/2021</p>		<p>1,725</p>
<p>Increased Density March 2021 ICO 31232 WTI >\$65 NYMEX ??? EIA 2024</p>		<p>12,095</p>
<p>Total</p>		<p>33,004</p>
<p>There is a lot of drilling and completion work left to do!</p>		



NORTH DAKOTA VALUE ADDED NATURAL GAS

Enhanced Oil Recovery
 Gathering and Processing Expansion
 Electricity Generation
 Storage
 Petro Chemical
 NGL Pipeline Expansion
 Gas Export Pipeline Expansion



EOR - cracking the code

Oil and Gas Research Program
 North Dakota
 Industrial Commission

Application

Project Title: Creedence Energy Services EOR
 Biosurfactant Applications

Applicant: Creedence Energy Services /Locus
 Bio-Energy

Principal Investigator:

Date of Application: 10/30/2020

Amount of Request: \$205,750

Total Amount of Proposed Project:

Duration of Project: 18 months

Point of Contact (POC): Kevin Black

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 energy.com

POC Address:

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 PO Box 3480
 Minot, ND 58702



EERC | **UND** UNIVERSITY OF NORTH DAKOTA
 Energy & Environmental Research Center (EERC)

2021 Bakken EOR Topical Report
*Findings and Conclusions Derived from Several
 Bakken Enhanced Oil Recovery Studies*

Bakken Production Optimization Program

John Hamling
 James Sorensen
 Stephen Guillot
 Lu Jin
 Chantsa Dalkhaa

April 30, 2021

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Project Title: Functional Nanoparticle Augmented Surfactant Fluid for Enhanced Oil Recovery in Williston Basin
 Applicant: Department of Petroleum Engineering, Department of Chemistry, Institute of Energy Studies, University of North Dakota
 Principal Investigator: Hui Pu, Julia Zhao

NORTH DAKOTA

- SB 2065 – DMR Bill relating to regulation of permitting and amalgamation of underground storage.
- HB 1452 – Establishes the Clean Sustainable Energy Authority
- SB 2014 – Industrial Commission Budget
 - \$ Salt Cavern Storage Study
 - +\$ Oil and Gas Research Council
 - \$Hydrogen Future Roadmap Study

FEDERAL

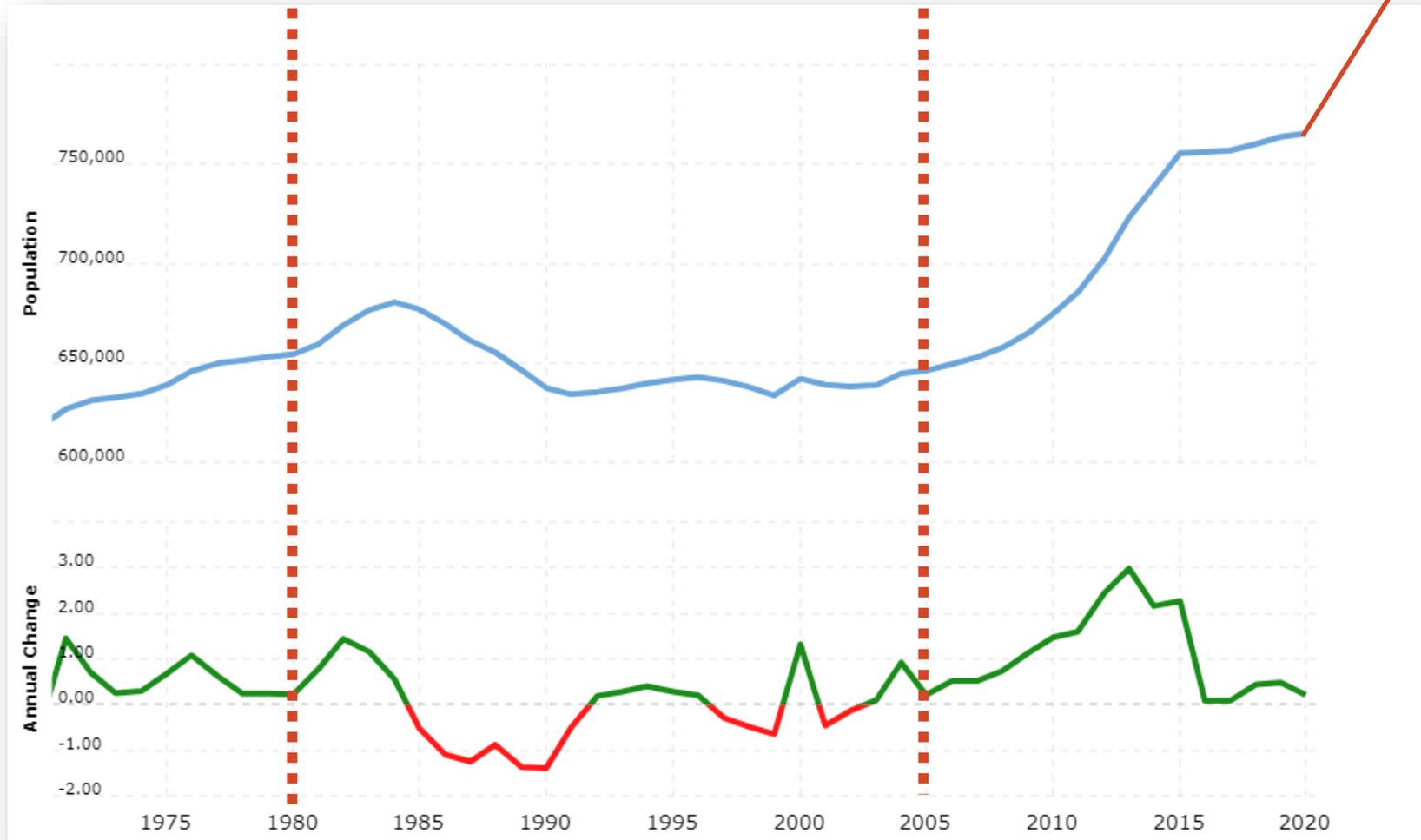
- March 2021 US Department of Interior launched review of federal oil and gas leasing program
 - Kicks off public forum on oil and gas leasing to generate an interim report released early summer 2021 outlining next steps and recommendations.
- Climate Leadership and Environmental Action for our Nation's Future Act - "*CLEAN Future*" Act – filed in Congress on March 2021.
- Revive Economic Growth and Reclaim Orphaned Wells Act – "*REGROW Act*" – *filed in Congress April 2021*
 - Providing states, tribes, and federal agencies resources to properly plug orphaned wells.
- Dakota Access Pipeline
 - Army Corps is conducting an environmental and safety review expected to be complete in early 2022. Current administration has indicated the pipeline can continue to operate while the review is in progress.

Bakken

The Next 10 Years

80s
Boom & Bust

Bakken Formation
Development



“We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the others, too.”

JFK 9/12/1962



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Plugging & Reclamation