



North Dakota Update

September 22, 2022

NDPC Annual



- Statistics
- Bakken Development
- EOR
- IJA “REGROW”
- Other

Oil Production

June	1,096,783 barrels/day (final)	
July	1,069,517 barrels/day (all-time high 1,519,037 BOPD Nov 2019)	NM = 1,491,047
	1,027,456 barrels/day or 96% from Bakken and Three Forks	
	42,061 barrels/day or 4% from legacy pools	

Gas Production and Capture

June Production	3,062,778 MCF/day	
94% Capture	2,791,425 MCF/day	
July Production	3,102,327 MCF/day	(all-time high 3,145,172 MCFD Nov 2019)
94% Capture	3,008,468 MCF/day	(NEW all-time high)

July Gas Capture

Statewide	94%
Statewide Bakken	94%
Non-FBIR Bakken	94%
FBIR Bakken	94%
Trust FBIR Bakken	95%
Fee FBIR	87%

Permits 2022

June 77 drilling and 0 seismic
July 53 drilling and 0 seismic
August 102 drilling and 0 seismic (all-time high 370 in 10/2012)

Rig Count 2022

July 45
August 46 (all-time high 218 on 5/29/12)
Federal surface 0
NM 109

Permits 2021

June 75 drilling and 0 seismic
July 40 drilling and 0 seismic
August 79 drilling and 0 seismic (all-time high 370 in 10/2012)

Rig Count 2021

July 23
August 28 (all-time high 218 on 5/29/12)
Federal surface 0
NM 82

Permits 2020

June 72 drilling and 0 seismic
July 92 drilling and 0 seismic
August 47 drilling and 0 seismic (all-time high 370 in 10/2012)

Rig Count 2020

July 11
August 12 (all-time high 218 on 5/29/12)
Federal surface 0
NM 82

Wells Waiting on Completion

June 680 > 483

July 521 > 465

Inactive Wells

June 1,839 > 1,750

July 2,082 > 1,655

Completions

June 41 > 27

July 47 > 74

August 53 > 66

Producing Wells

June 17,298

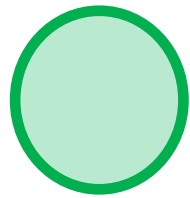
July 17,369 (preliminary)(NEW all-time high)

15,108 wells or 87% are now unconventional Bakken – Three Forks wells

2,261 wells or 13% produce from legacy conventional pools



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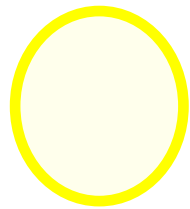
Core=Tier 1

80-85% developed

+8,000 wells

5% growth = 55 rigs = 5 years

1-2% growth = 35 rigs = 8 years
EOR



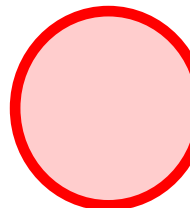
Tier 2

50% developed

+8,000 wells

5% growth = 100 rigs = 3 years

1-2% growth = 50 rigs = 6 years



Tier 3

25% developed

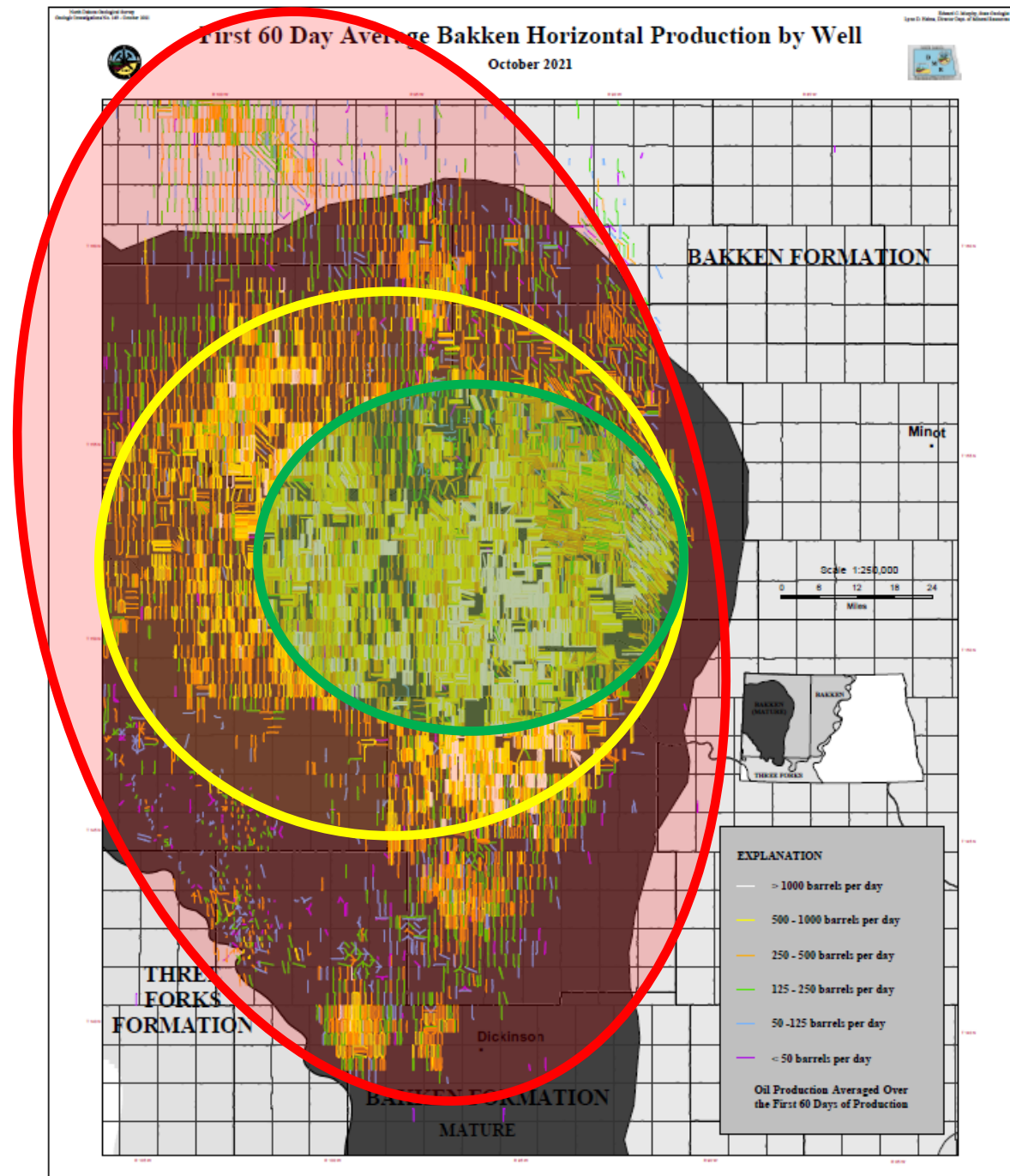
+7,000 wells

5% growth = 150 rigs = 2 years

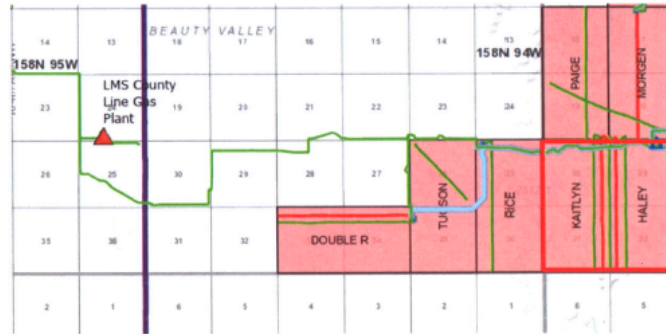
1-2% growth = 75 rigs = 4 years

Total = 23,000 wells & 18 years

Current 17,000 wells & 16 years



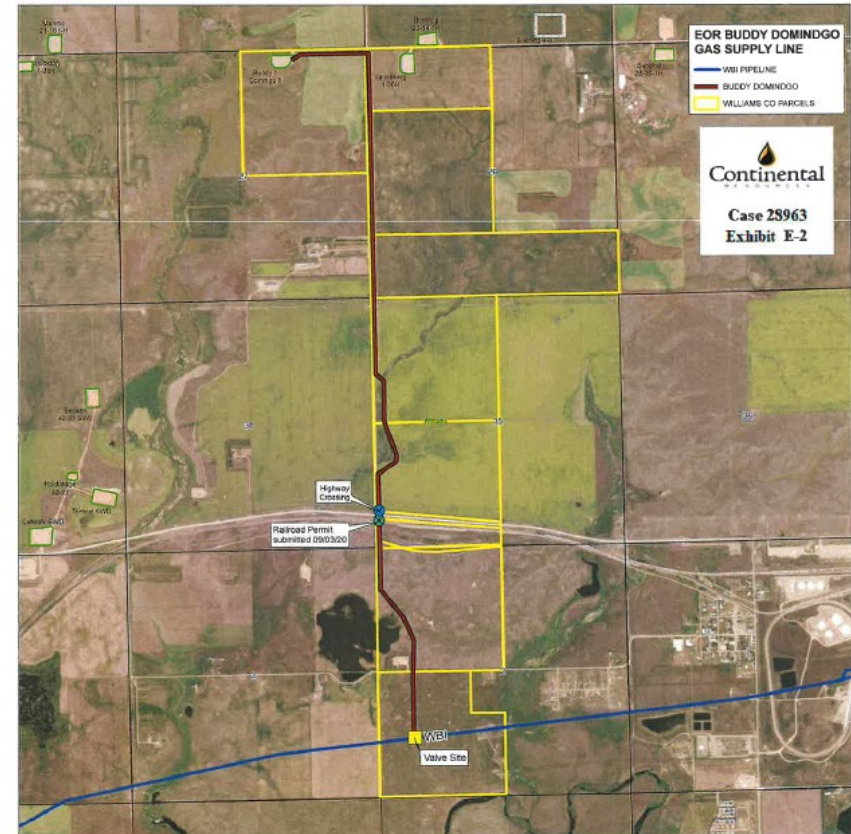
Features of Project Location



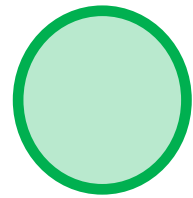
- 2560-acre Spacing Unit of Interest
- Existing Middle Bakken Horizontal
- Existing Three Forks Horizontal
- Existing Gas Pipeline (LMS)
- Existing Water Pipeline (LMS)

- Location selected based on results and learnings from prior Bakken EOR pilots, specifically the "Stomping Horse" pilot documented in NDIC Case No. 27926.
- Utilizes more recently completed infill wells (August '19); limited depletion.
- Accesses rich gas via connection to the gas plant gathering line.
- Liberty operates most of the offsetting DSUs.
- Well & completion design provides for favorable conformance along the horizontal interval using cemented liners with "Plug & Perf" completions.
- Jet pump operations ease well conversion to injection.
- Offset well configuration allows for surveillance and boundaries.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA
DATE 6-17-21 CASE NO. 28830
Introduced By Liberty
Caption E-2
Identified By Pospisil



INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA
DATE 9-30-21 CASE NO. 28963
Introduced By Continental
Caption E2
Identified By Bennett



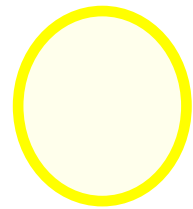
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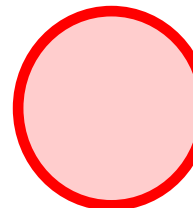
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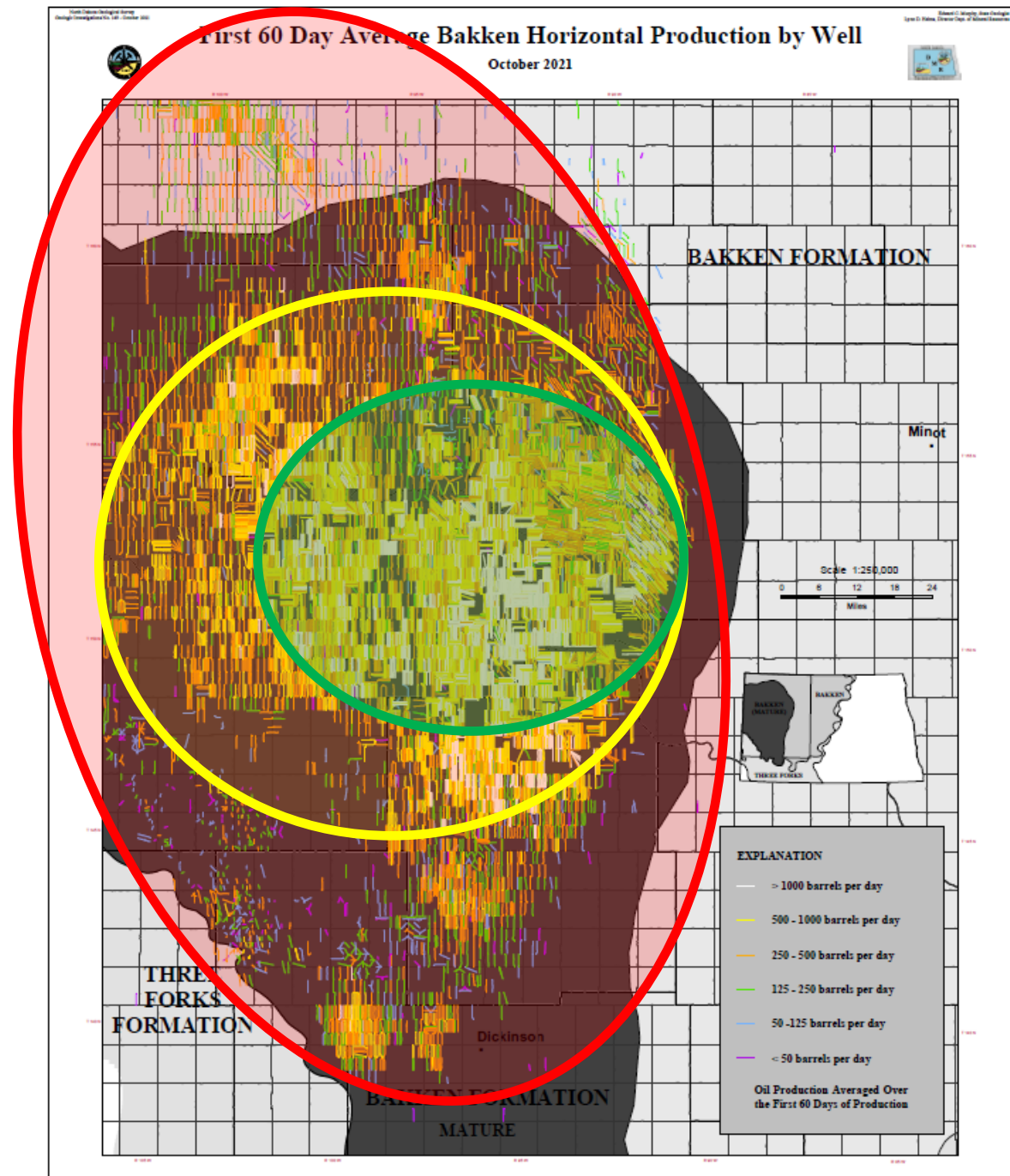
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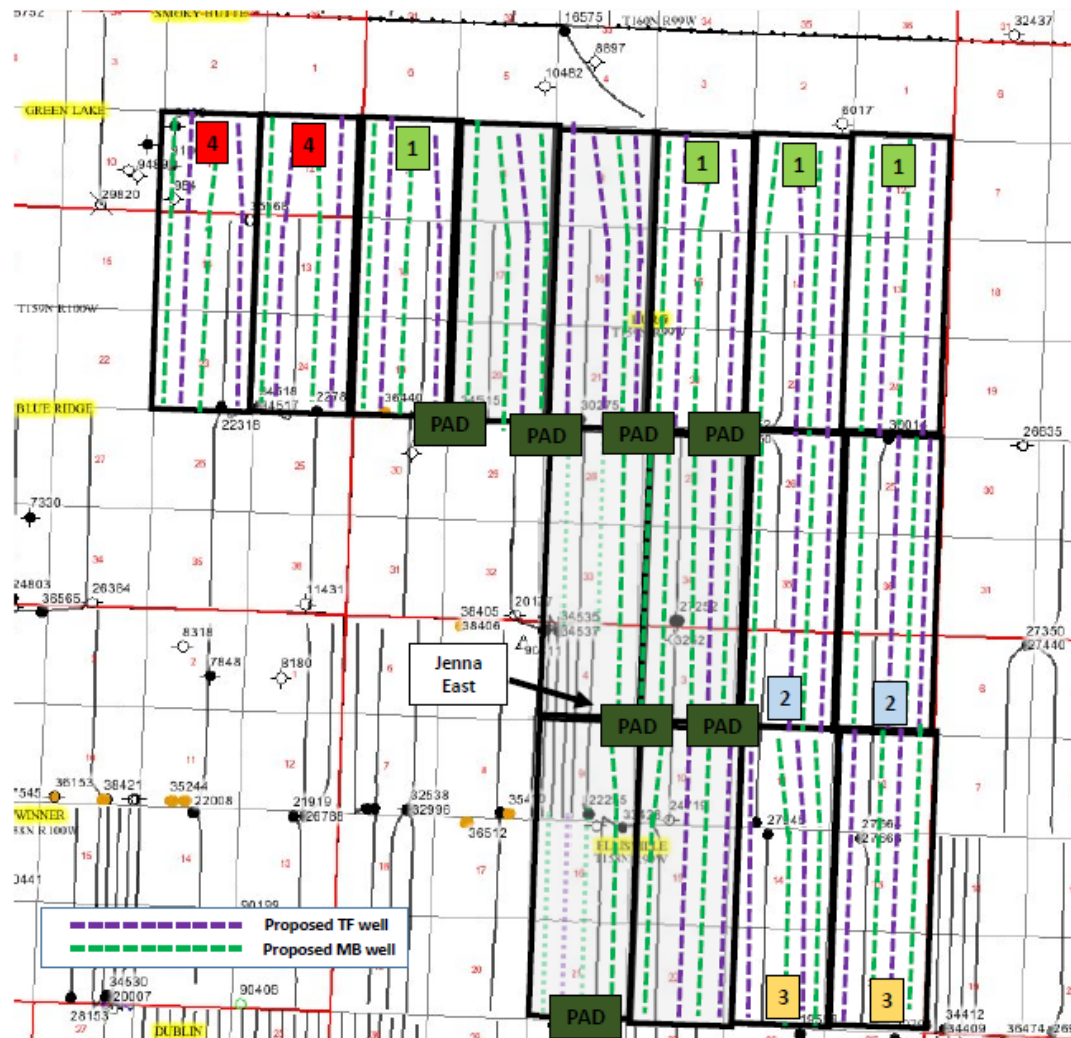
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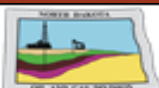
Current 17,000 wells & 16 years



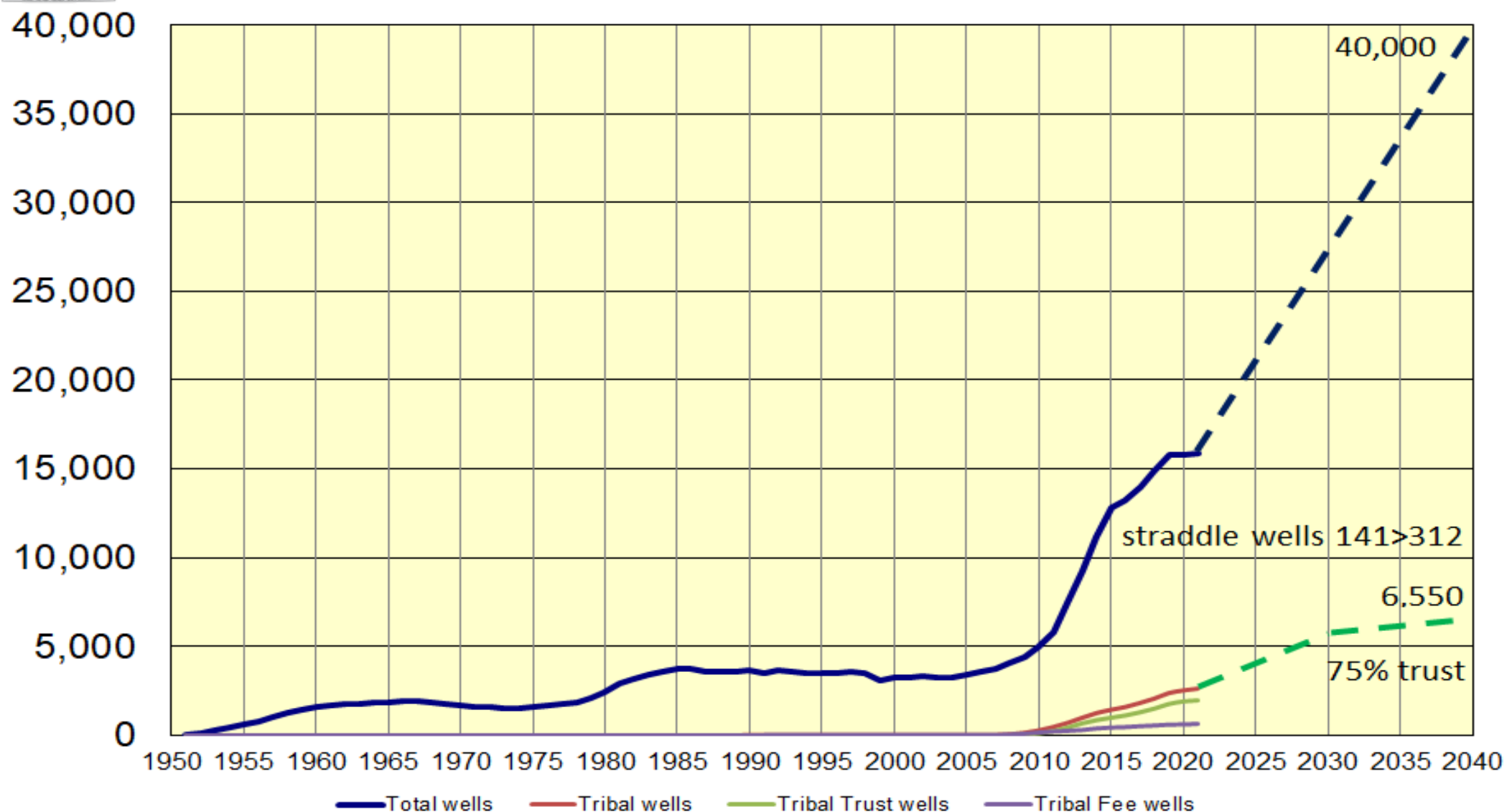


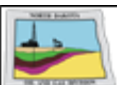
Legend	Case Status
	Heard in May/June 2021
1	28855
2	28856
3	28857
4	28858

Kraken Operating, LLC
Case Nos. 28855, 28856,
28857, 28858
July 28, 2021
Supp. Exhibit A

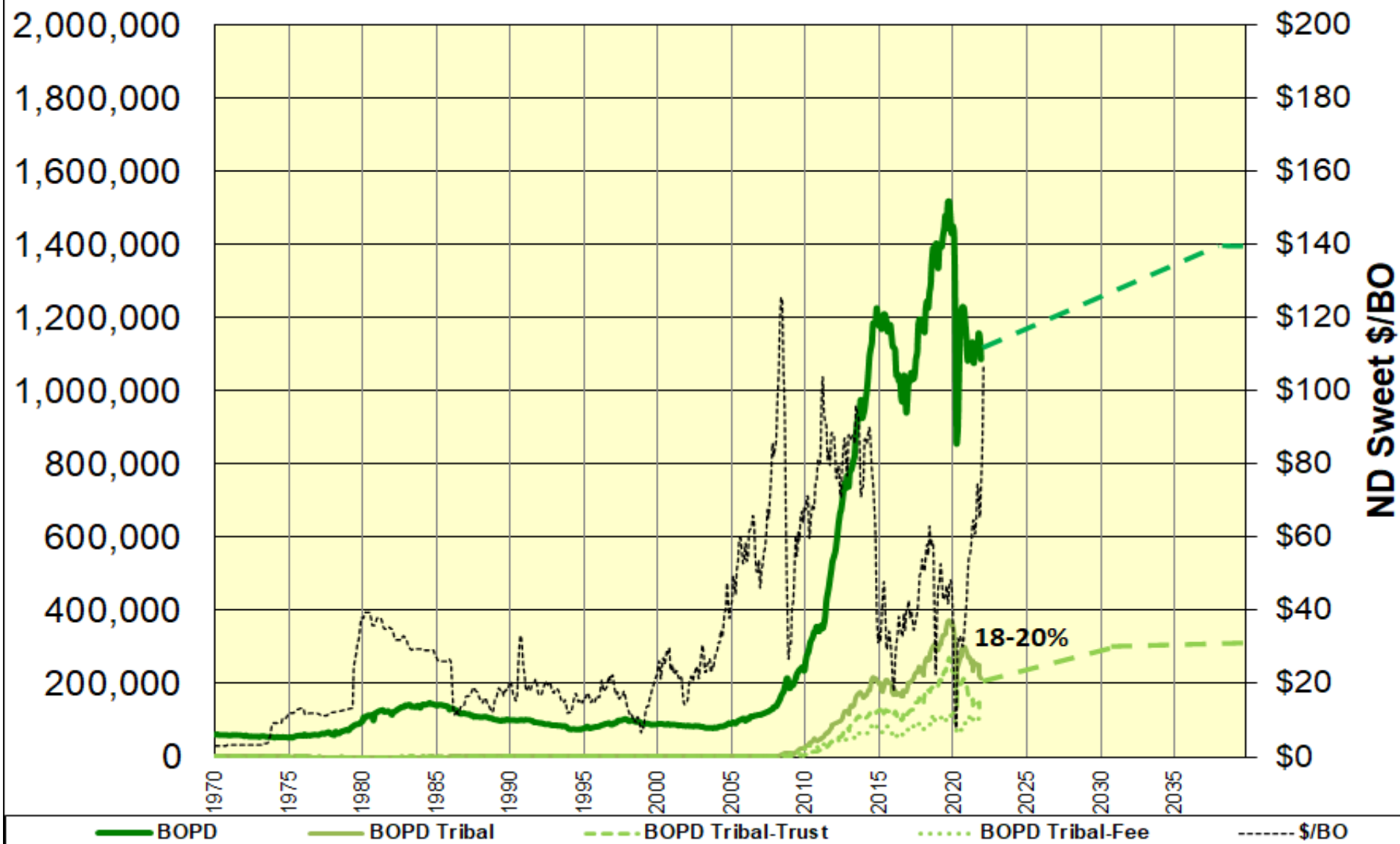


North Dakota Wells Producing

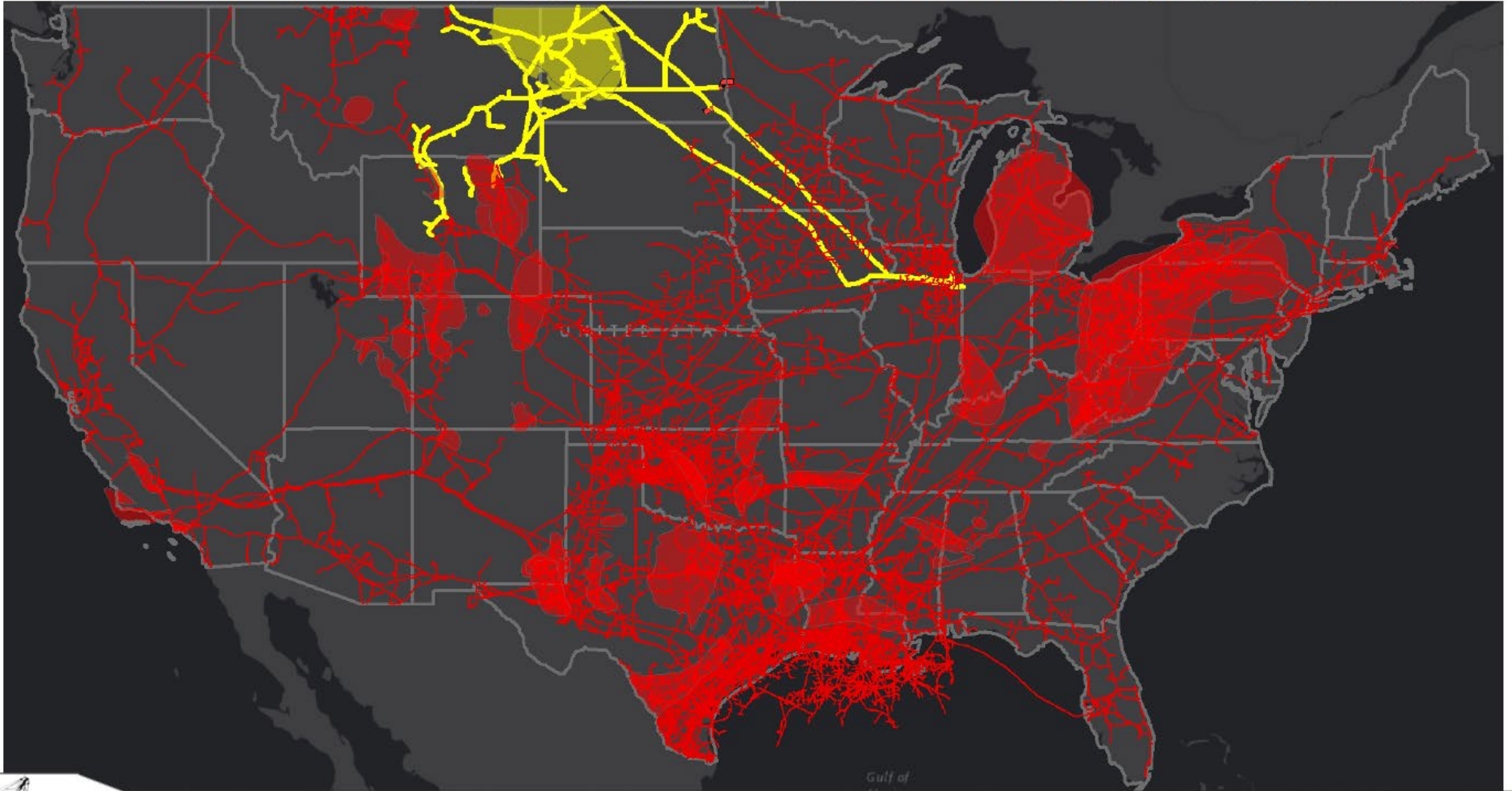




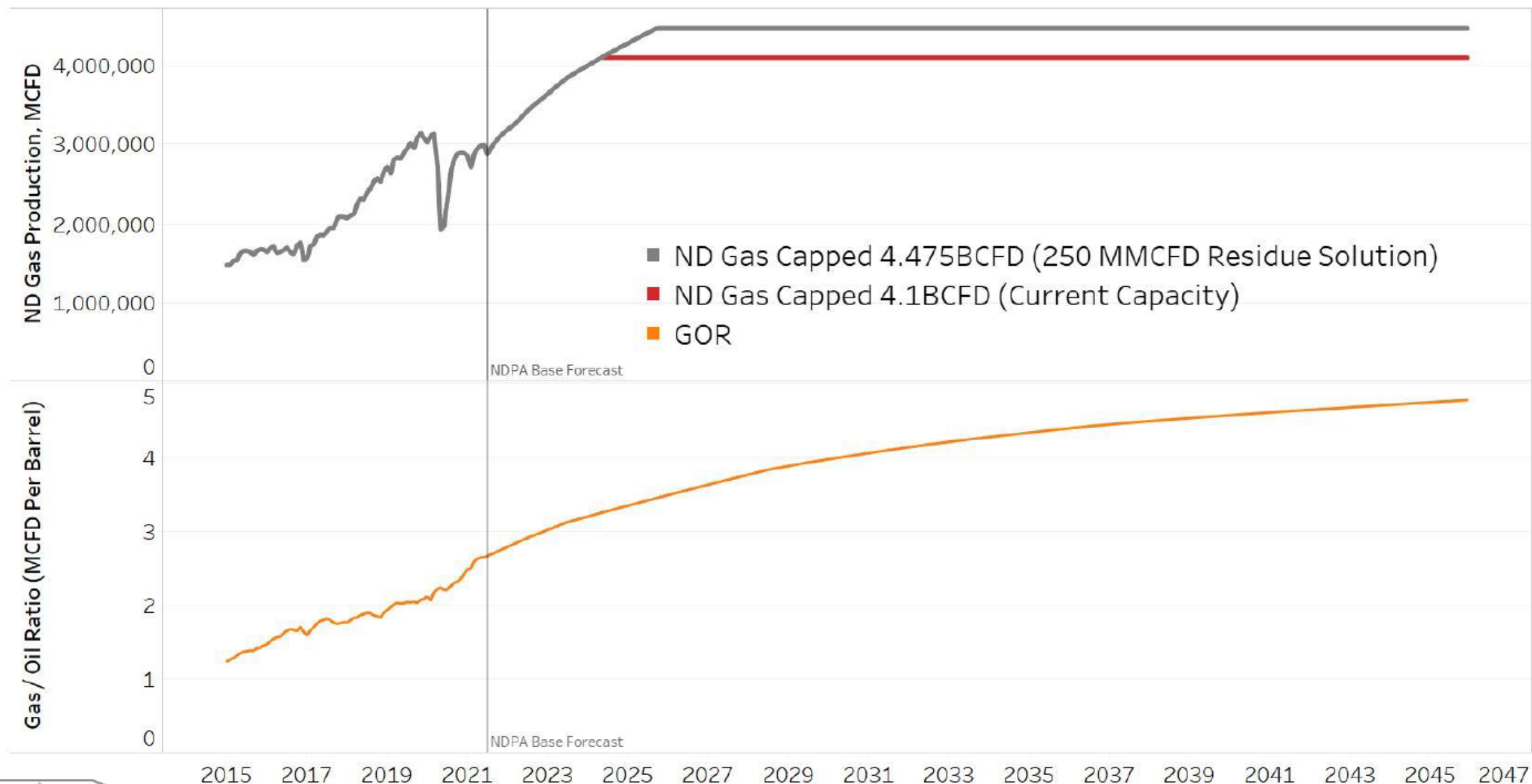
North Dakota Daily Oil Produced and Price



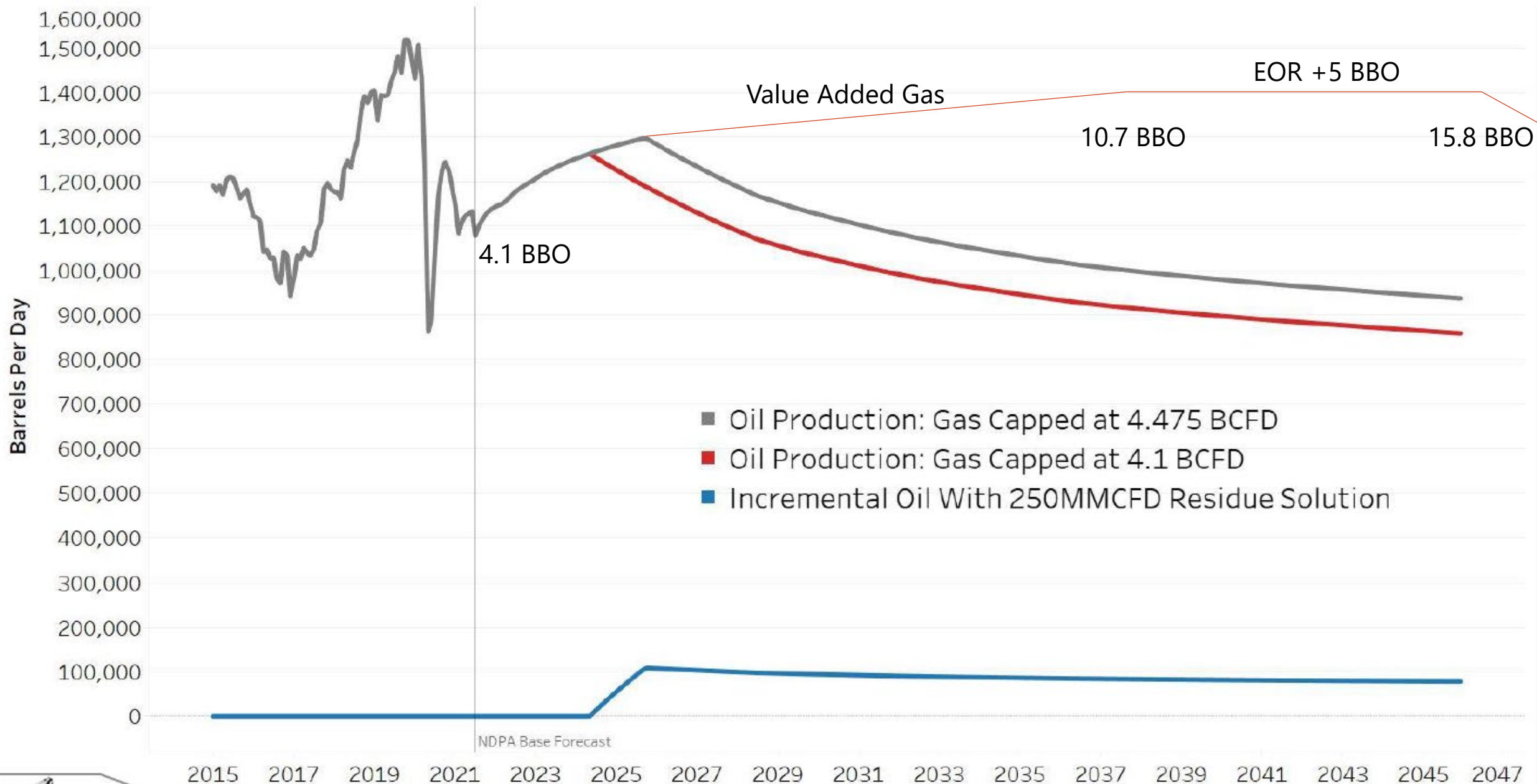
Bakken Natural Gas Infrastructure

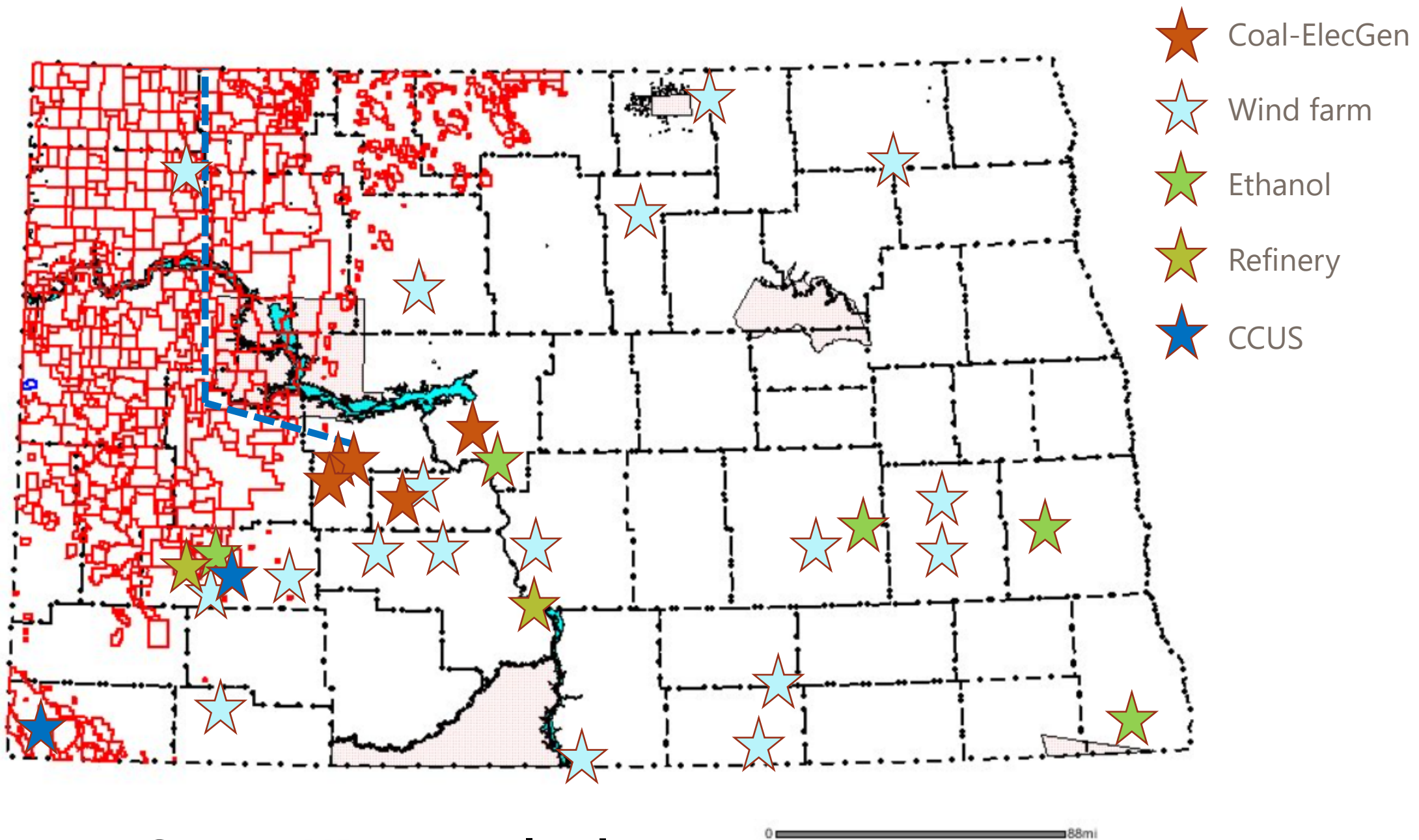


Gas Transmission Expected to Limit Oil Production

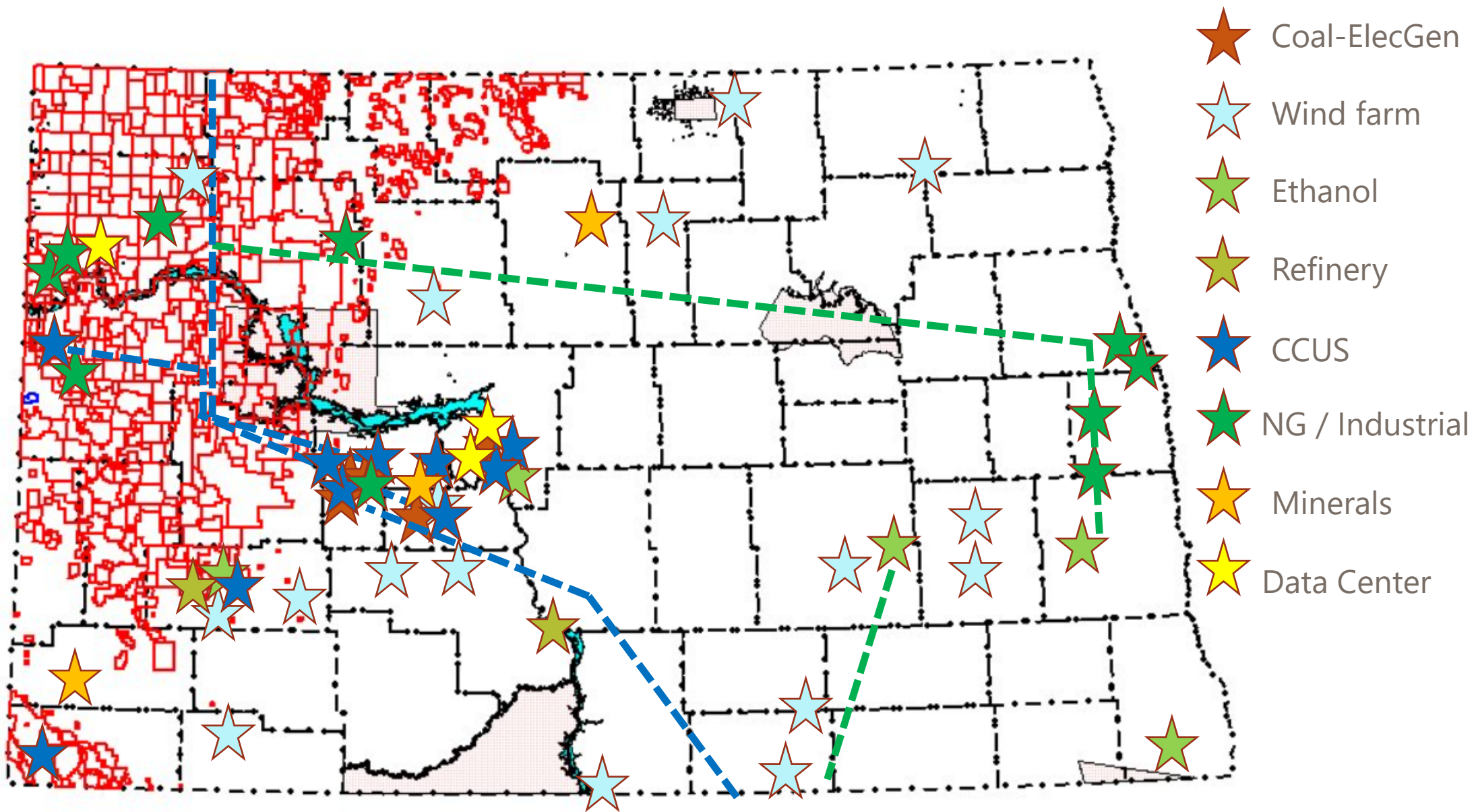


Gas Transmission Expected to Limit Oil Production





Current ND energy landscape



ND Energy Landscape +10 years



- Statistics
- Bakken Development
- EOR
- IJA “REGROW”
- Other

Oil and Gas : ArcIMS Viewer

Legend / Layers

Overview Map

View Entire State

Previous View

Clear Selection

Search

Create PDF

Zoom In

Zoom Out

Pan

Rect Identify

Select Object

Buffer

Distance

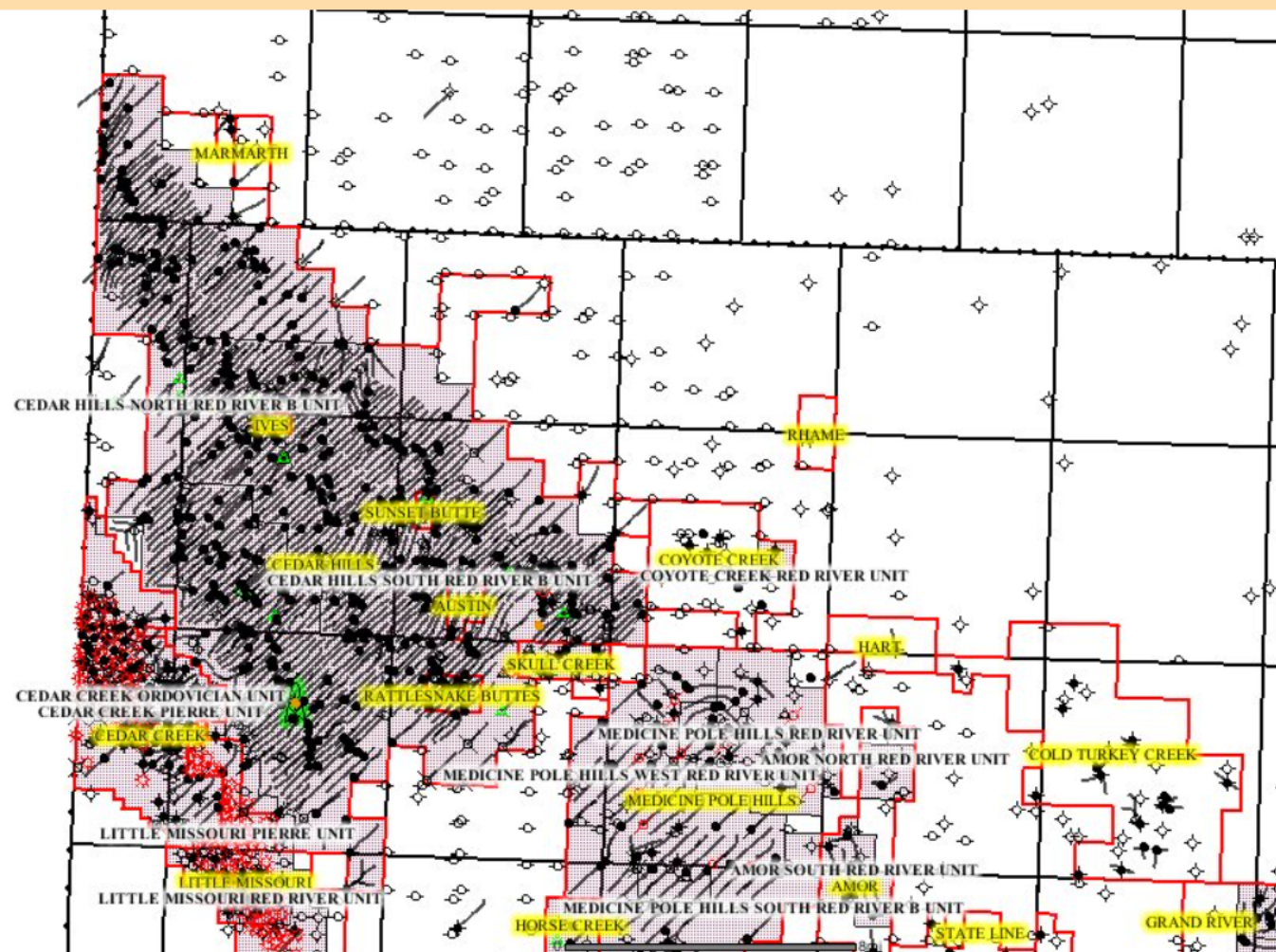
Find Well

Find Field / Unit

Find Section

Browser Settings
Suggestion

<input checked="" type="radio"/>	CEDAR HILLS	oilGas	Print
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<input type="radio"/>	CHAMA	oilGas	Print
<input type="radio"/>	CHARBONNEAU	oilGas	Print
<input type="radio"/>	CHARLIE BOB	oilGas	Print



Download Shape Files

ND OIL & GAS LAYERS

- ☒ Oil and Gas
- ☒ Wells
- ☒ Permit Status Before Spud
- ☒ Rig Location
- ☒ Directional Surveys
- ☒ Directional Legs
- ☒ Horizontal Surveys
- ☒ Horizontal Legs
- ☒ Cases Docketed
- ☒ Oil Fields
- ☒ Unit Boundaries
- ☒ Inspector Areas
- ☒ Drilling / Spacing
- ☒ Seismic
- ☒ Gas Plants
- ☒ Other

Refresh Map

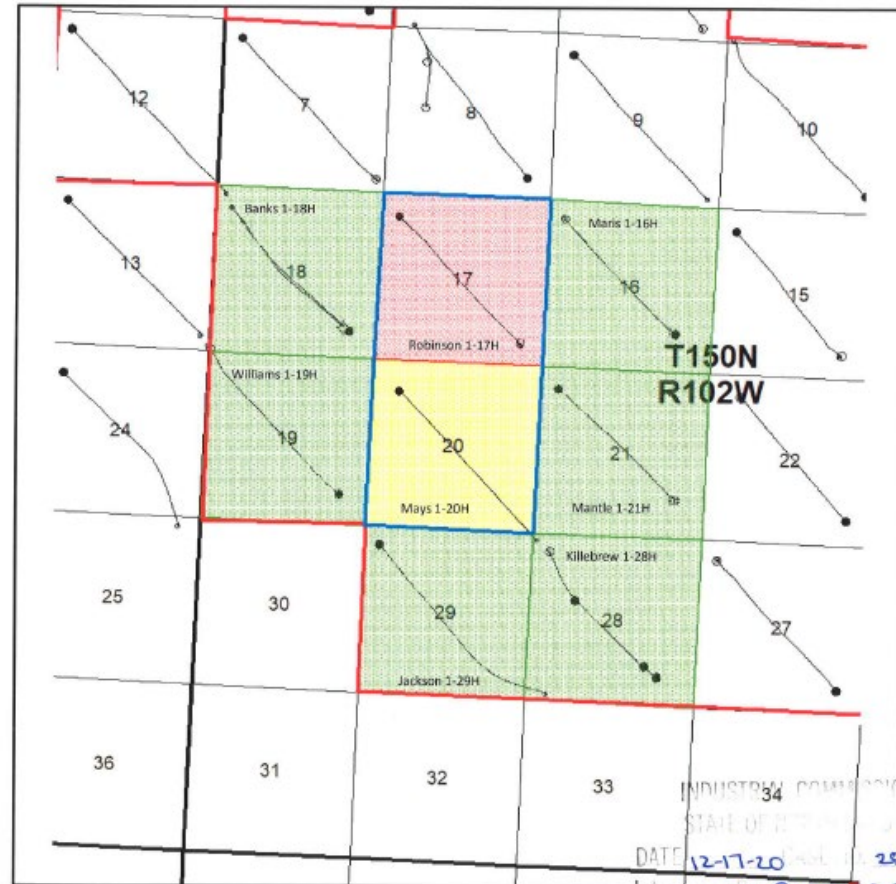
☒ Auto Refresh



Help:

- A closed group, click to open.
- An open group, click to close.
- A map layer.
- A hidden group/layer, click to make visible.
- A visible group/layer, click to hide.
- A visible layer, but not at this scale.
- A partially visible group, click to make visible.
- An inactive layer, click to make active.
- The active layer.

Mays Waterflood Test Plat

Foreman Butte Field: Madison Pool

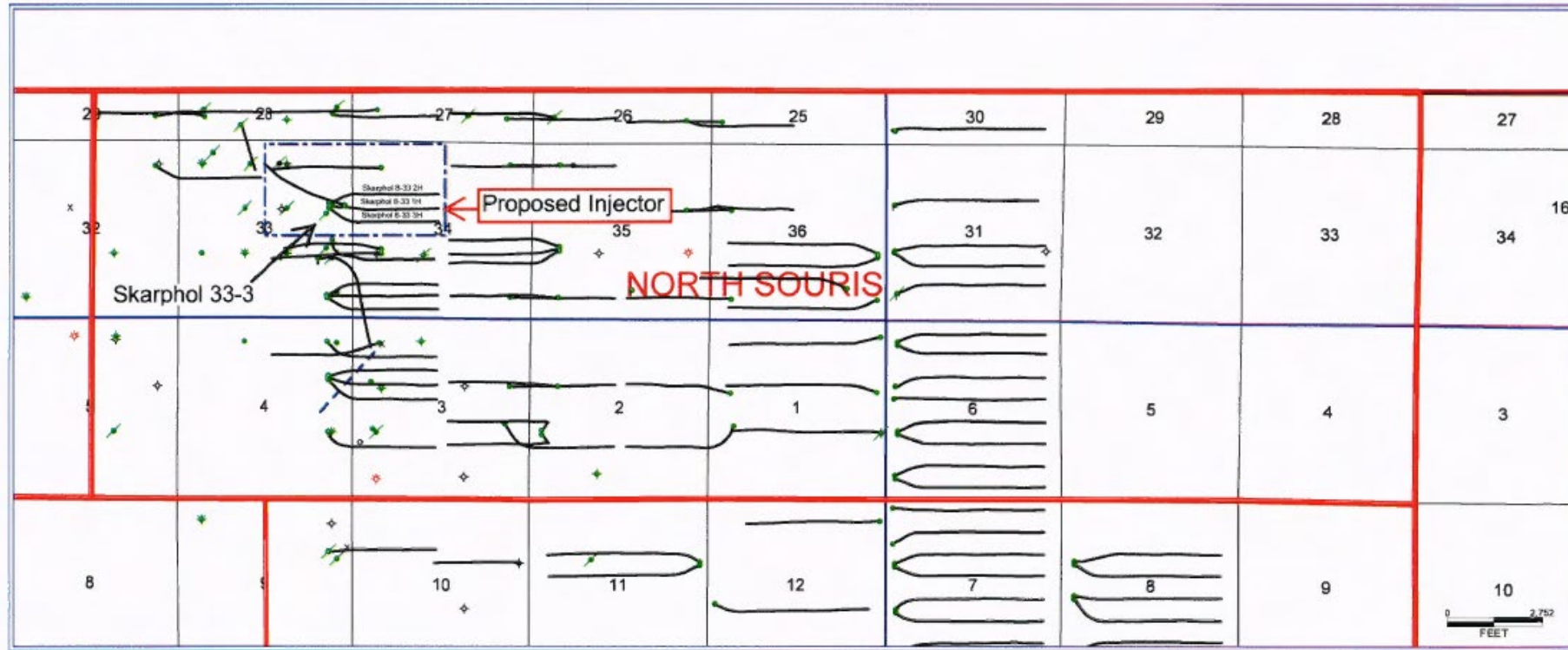


Mays 1-20H – Injector		Mays/Robinson Unit	
Robinson 1-17H – Producer			
6 Monitoring Wells			

DATE 12-17-20 PAGE 1 OF 28572
Index Samson
Exhibit 4
Identified by Hatcher

Exhibit: 4
Docket Case No. 28572

Proposed horizontal water injection well location and offset vertical type well



Spacing Unit - Case 21763, Ballantyne Oil, LLC leasehold



North Souris Field Boundary

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

DATE 8/20/21 CASE NO. 28924
Introduced By Ballantyne
Exhibit 2
Identified By Jennings

Ballantyne Oil, LLC
Case No. 27266
Exhibit 2



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REGROW Current

11/15/2021	Enactment of the Infrastructure Investment and Jobs Act. (Section 40601 -)
11/30/2021	Updated Orphan Well Table and ND Summary submitted to IOGCC
12/30/2021	Notice of Intent for "Formula" Funding Grant submitted. 186 documented wells & sites.
01/29/2022	"Formula" Funding Grant amounts posted online. \$55.3 million.
05/14/2022	Applied for "Initial \$25 million" Funding Grants. 93 wells & sites + 64 sites
10/1/2022	"Initial \$25 million" Grant funds available to state.
12/30/2022	No less than 90% of "Initial-25" Grant funds must be obligated.
10/01/2023	Deadline for 100% of "Initial-25" Grant funds to be obligated. Administration contract signed ??/??/2022 – AG Witt BABA exempt Davis Bacon wage requirements – simplified by IOGCC – info available
01/01/2024	Final Report on "Initial-25 million" Grant due.

REGROW Future

1Q 2023	Anticipated date to apply for "Formula" Grant. \$55.3 million.
2Q 2023	Anticipated date "Formula" Grant funds available to state.
9/30/2028	Anticipated date "Formula" Grant funds must be spent. Above + 5 years.
03/30/2023	Anticipated date to apply for "Matching" Grant. One per year \$30 million maximum per state.
05/30/2023	Anticipated date "Matching" Grant funds available to state.
06/30/2031	Deadline for "Matching" Grants to be spent.
03/30/2023	Anticipated date to apply for "Performance-Regulatory Improvement" Grant. Max \$20 million per state.
05/30/2023	Anticipated date "Performance-Regulatory Improvement" Grant funds available to state.
06/30/2031	Deadline for "Performance-Regulatory Improvement" Grant eligibility.
12/07/2032	Reimbursement for failure to maintain protections under the "Performance-Regulatory Improvement" Grant Due, if applicable.



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SENATE BILL NO. 2345

BLM and USFS processes are holding up converting confiscated wells to livestock wells. Met 9/20/22.

On 7/7/21 North Dakota sued the Department of Interior (DOI), Secretary of Interior Debra Haaland, Bureau of Land Management (BLM), Director of the BLM, and Director of the Montana-Dakotas BLM in US District Court for the District of North Dakota.

HR 5376 contains numerous provisions that will impact North Dakota's mineral industries. Analyzing the potential impact:

- (-)Section 10101. CORPORATE ALTERNATIVE MINIMUM TAX,
- (-)Section 10201 EXCISE TAX ON REPURCHASE OF CORPORATE STOCK,
- (+)Section 13104 CREDIT FOR CARBON OXIDE SEQUESTRATION,
- (+)Section 13502 ADVANCED MANUFACTURING PRODUCTION CREDIT critical minerals,
- (-)Section 60113 METHANE EMISSIONS REDUCTION PROGRAM,
- (-)Section 50262 MINERAL LEASING ACT MODERNIZATION.

On 9/6/22 the BLM and a group of NGOs filed a proposed settlement in the District Court of Montana in which BLM agrees to not issue drilling permits on 2019 and 2020 federal leases in North Dakota, Montana and South Dakota pending the completion of revised NEPA analyses that must take into account factors such as the social cost of carbon. This illustrates the revival of the "sue and settle" litigation strategy whereby the Biden Administration settles litigation brought by NGOs in a manner that furthers the Biden Administration's policy goals. The case was filed on 1/12/2021 by the same group of NGOs involved in North Dakota's leasing cases. The proposed settlement would cover 5 lease sales that authorized the sale of 113 leases encompassing 58,617 acres in North Dakota, Montana, and South Dakota. 55 North Dakota Parcels, 9,564.347 Federal Acres in North Dakota, leases Expire in 2029 and 2030 so if permitting is delayed 7-8 years 130 wells will not be drilled, 58,329,000 barrels of oil will not be produced, GrossProductionTax + OilExtractionTax + SalesTax + PersonalIncomeTax + FedRoyaltyShare + NDTLRoyalties @ \$50/barrel = \$8,006,217 per month = \$960,746,074 in ten years.



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