Objective
Define where the Bakken/Three Forks system may be economic in the current oil price environment.

Method
Analyze past well performance across the region and estimate well economics for various production levels.

Disclaimer
The goal of this work is not to imply individual company actions or intentions. All view expressed are strictly that of Justin J. Kringstad.

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North Dakota Oil Differential

Based on EIA Data

North Dakota-WTI Differential
North Dakota-Brent Differential

Based on EIA Data
Key Economic Assumptions

- $6-$8 Million Well Costs
- $40/BBL & $2.00/MCF Wellhead Pricing
- 1/6 Royalty
- Zero Flaring
- Assumed 10-20% IRR to drill (calculated after production taxes and royalties)
- No Tax Incentives Included
- Production rate is 30-day average
- All Bakken/Three Forks wells drilled in 2008+
Peak Month Minimum
400 BOPD

Peak Month Well Production, BOPD

Well Cost
6 MM
7 MM
8 MM

$0 $10 $20 $30 $40 $50 $60 $70

Breakeven Wellhead Price (AT IRR of 20%)

Peak Month BOPD / Well Cost
400

After Tax IRR

-2% -2% -2% -2%

6 MM 7 MM 8 MM

$40 Wellhead
Peak Month Minimum
500 BOPD

Peak Month BOPD / Well Cost

After Tax IRR

Breakeven Wellhead Price (AT IRR of 20%)
Peak Month Minimum
600 BOPD

Peak Month BOPD / Well Cost

After Tax IRR

$40 Wellhead

Peak Month Well Production, BOPD

Well Cost

6 MM
7 MM
8 MM

Breakeven Wellhead Price (AT IRR of 20%)

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Peak Month Minimum 700 BOPD

- Peak Month Well Production, BOPD
  - 700 BOPD

- Minimum Wells: 2,452

- $40 Wellhead

- After Tax IRR:
  - 6 MM: 22%
  - 7 MM: 18%
  - 8 MM: 14%

Breakeven Wellhead Price (AT IRR of 20%)

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Peak Month Minimum 800 BOPD

- 1,613 Wells

- Minimum:
  - 800 BOPD
  - 1,613 Wells
  - $40 Wellhead

- Breakeven Wellhead Price (AT IRR of 20%)
  - 6 MM
  - 7 MM
  - 8 MM
  - $0, $5, $10, $15, $20, $25, $30, $35, $40, $45

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Peak Month Minimum 900 BOPD

Peak Month Well Production, BOPD

Well Cost | 6 MM | 7 MM | 8 MM
---|---|---|---
$0 | $10 | $20 | $30
$5 | $15 | $25 | $35
$10 | $20 | $30 | $40
$20 | $30 | $40

Breakeven Wellhead Price (AT IRR of 20%)

Peak Month BOPD / Well Cost

After Tax IRR

6 MM

7 MM

8 MM

$40 Wellhead

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Peak Month Minimum 1,000 BOPD

- 645 Wells
- 1,000 BOPD
- 645 Wells
- $40 Wellhead

Peak Month Well Production, BOPD

Well Cost
- 6 MM
- 7 MM
- 8 MM

Breakeven Wellhead Price (AT IRR of 20%)
Peak Month Minimum
1,250 BOPD

Peak Month Well Production, BOPD

Well Cost
- 6 MM
- 7 MM
- 8 MM

Breakeven Wellhead Price (AT IRR of 20%)

$40 Wellhead

After Tax IRR

6 MM
7 MM
8 MM
Peak Month Minimum 1,500 BOPD

Peak Month Well Production, BOPD

Well Cost
6 MM
7 MM
8 MM

$0 $2 $4 $6 $8 $10 $12 $14 $16 $18 $20 $22 $24 $26 $28 $30
Breakeven Wellhead Price (AT IRR of 20%)

After Tax IRR

6 MM
7 MM
8 MM

$40 Wellhead
Summary of $40 Wellhead Oil
Breakeven Summary

Peak Month Well Production, BOPD / Well Cost

Breakeven Wellhead Price (AT IRR of 20%)
Understanding “The Core” Footprint

Peak Month Minimum: 800 BOPD
Understanding “The Core” Footprint

Peak Month Minimum: 1,250 BOPD

Spud 2008-2011

Spud 2012-2017
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