Bakken/Three Forks
Drilling Economics

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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.

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Key Economic Assumptions

• $6-$8 Million Well Costs
• $63/BBL & $6.00/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 - 200 BOPD

Three Forks
3,755 Wells

Bakken
7,062 Wells

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$63 Wellhead

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Peak Month Minimum - 300 BOPD

Three Forks
3,149 Wells

Bakken
6,222 Wells

$63 Wellhead

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Peak Month Minimum - 400 BOPD

Three Forks
2,508 Wells

Bakken
5,247 Wells

$63 Wellhead

Peak Month BOPD / Well Cost

After Tax IRR

6 MM
7 MM
8 MM

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Peak Month Minimum - 500 BOPD

Three Forks
1,895 Wells

Bakken
4,153 Wells
Peak Month Minimum - 600 BOPD

Three Forks
1,371 Wells

Bakken
3,097 Wells

After Tax IRR

Peak Month BOPD / Well Cost

600

$63 Wellhead

6 MM
7 MM
8 MM

Peak Month Well Production, BOPD

Well Cost
6 MM
7 MM
8 MM

Breakeven Wellhead Price (AT IRR of 20%)
Peak Month Minimum - 700 BOPD

Three Forks
960 Wells

Bakken
2,171 Wells

Peak Month BOPD / Well Cost

After Tax IRR

$63 Wellhead

Peak Month Well Production, BOPD

Well Cost

8 MM
7 MM
6 MM

Breakeven Wellhead Price (AT IRR of 20%)
Peak Month Minimum - 800 BOPD

Three Forks
666 Wells

Bakken
1,505 Wells

Peak Month BOPD / Well Cost

After Tax IRR

$63 Wellhead

Peake Month Well Production, BOPD

Well Cost

Bakken

6 MM
7 MM
8 MM

Breakeven Wellhead Price (AT IRR of 20%)
Peak Month Minimum - 900 BOPD

Three Forks
424 Wells

Bakken
1,015 Wells

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Peak Month Minimum – 1,000 BOPD

Three Forks
266 Wells

Bakken
706 Wells

$63 Wellhead

Peek Month BOPD / Well Cost

After Tax IRR

6 MM
7 MM
8 MM

Peek Month Well Production, BOPD

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

Three Forks
107 Wells

Bakken
266 Wells

Peak Month BOPD / Well Cost

After Tax IRR

$63 Wellhead

Peak Month Well Production, BOPD

Well Cost

Break-even Wellhead Price (AT IRR of 20%)
Peak Month Minimum – 1,500 BOPD

Three Forks
36 Wells

Bakken
98 Wells

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Peak Month BOPD / Well Cost

$63 Wellhead

After Tax IRR

6 MM
7 MM
8 MM

Peak Month Well Production, BOPD

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Breakeven Summary

Peak Month Well Production, BOPD / Well Cost

Breakeven Wellhead Price (AT IRR of 20%)
Summary of $63 Wellhead Oil

Peak Month BOPD / Well Cost

200 300 400 500 600 700 800 900 1000 1250 1500

After Tax IRR

Assumed Range of Minimum Acceptable Rate of Return
Bakken Breakeven Analysis

Important Considerations

• Breakeven areas were determined by neighboring well performance and are expected to expand as new completion technology is applied in areas outside “the core.”

• Just because an area is considered “economic” does not mean that it is the most economic option for the industry participant(s). Competition for capital continues to exist inside and outside the region.
Bakken Breakeven Price Range (20% IRR)

Bakken Breakeven Prices
$6 - $8 Million
Completed Wells Cost
- $58-$73
- $49-$61
- $43-$52
- $39-$48
- $36-$43
- $34-$40
- $32-$38
- $28-$33
- $26-$30
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