Platts Rockies Oil & Gas
North Dakota Pipeline Authority
Justin J. Kringstad
April 14, 2014 – Denver, CO
North Dakota Pipeline Miles

2,470 miles of new pipe in 2012
Roughly Distance from Los Angeles to New York City
Crude Oil

Understanding production potential

Understanding current transportation dynamics and potential transportation constraints

Understanding current and future market conditions
Understanding production potential

Understanding current transportation dynamics and potential transportation constraints

Understanding current and future market conditions
April 10, 2014 – 189 Drilling Rigs
Forecasted Drilling Rigs

Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.
Forecasted New Wells

Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.
Forecasting Williston Basin Oil Production, BOPD

Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.
Forecasting Challenges

Current Model
- Approx. 30,000 New Wells Out to Dec 2029
- Average EUR Roughly 400,000 BBLS
- Average First Month Production of 347 BOPD

Ongoing Considerations
- Increased Density Drilling
- Drilling Efficiencies
- Improving Completion Techniques
- Productivity of the Lower Three Forks
- Eastern Montana Success

Long Term Considerations
- EOR Opportunities
- Pricing
- Competition
- Additional Williston Basin Plays
Crude Oil

Understanding production potential

Understanding current transportation dynamics and potential transportation constraints

Understanding current and future market conditions
North Dakota Crude Oil Pipelines

Challenges*
1) Moving oil out of the Williston Basin
2) Moving oil within the Williston Basin

*Modified from Bridger and Belle Fourche Pipelines
North Dakota Crude Oil Pipelines

145,000 BOPD

68,000 BOPD

210,000 BOPD

160,000 BOPD
Oil Loading Rail Facilities
Estimated Williston Basin Oil Transportation

- Estimated Pipeline Export: 25%
- Truck to Canadian Pipelines: 7%
- Tesoro Refinery: 1%
- Estimated Rail: 67%

February 2014
Estimated Williston Basin Oil Transportation

Estimated Rail
Estimated Pipeline Export
Tesoro Refinery
Truck to Canadian Pipelines
Brent - WTI Spread (EIA)
Estimated Williston Basin Oil Transportation

- Rail
- Pipelines (US & CAN)
- Tesoro Refinery
Williston Basin Oil Production & Export Capacity, BOPD

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JJ Kringstad - North Dakota Pipeline Authority
Confirmed Pipeline Projects

Butte Loop
• In-service Date: Q3 2014
• 110,000 BOPD
• Service to Guernsey, WY

Hiland Double H
• In-service Date: Q4 2014
• 50,000 BOPD (Expandable up to 100,000 BOPD)
• Extended Open Season to April 16, 2014
• Service to Guernsey, WY

Plains Bakken North
• In-service Date: 2014
• 40,000 BOPD (Expandable up to 70,000 BOPD)
• Movement North to Canadian Interconnect
Pipeline Projects In Business Development or Regulatory

North Dakota Pipeline Company Sandpiper
- Open Season Successful: 155,000 BOPD Committed
- 225,000 BOPD ND Capacity to Clearbrook, MN (24”)
- 375,000 BOPD Clearbrook, MN to Superior, WI (30”)
- In-service Date: Q1 2016

TransCanada Keystone XL
- Up to 100,000 BOPD
- Timeline Uncertain

Energy Transfer Partners
- Binding Open Season Launched March 12, 2014
- Project Details Unavailable
Crude Oil Gathering
North Dakota Crude Oil Pipelines

Challenges*
1) Moving oil out of the Williston Basin
2) Moving oil within the Williston Basin

*Modified from Bridger and Belle Fourche Pipelines
ND Crude Oil Gathering

Red – Trucked
Blue – Pipeline

All ND Production

Sep 2012 Estimates – Some data incomplete or unavailable
ND Oil Gathering

**Red** – Trucked
**Blue** – Pipeline

All ND Production

Sep 2013 Estimates
Some data incomplete or unavailable

Oil Gathering

- %Piped (Sum)
- %Trucked (Sum)

Oil Production

Produced (Sum)

3,738.00

8,350,326.00

JJ Kringstad - North Dakota Pipeline Authority
Year-Over-Year Oil Gathering Changes*

*Best available estimate. Some data incomplete or missing

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Estimated YOY Oil Gathering Change

Sep 2012 to Sep 2013
Estimated YOY Daily Truckload Change

Sep 2012 to Sep 2013
Assumes - 225 bbls/truck
Closer Look at Gathering Type

Gathering (After CTB)
Green = Pipeline
Red = Truck
Yellow = Both
Blue = Confidential
Sep 2013 Data
Crude Oil

Understanding production potential

Understanding current transportation dynamics and potential transportation constraints

Understanding current and future market conditions
US Refining Infrastructure

EIA Dec 2013 Refinery Acquisition Cost

- PADD I: $106.38
- PADD II: $84.53
- PADD III: $95.99
- PADD IV: $78.98
- PADD V: $100.76
Solving the Flaring Challenge

- **GREEN** – % of gas captured and sold
- **Blue** – % flared from zero sales wells
- **Orange** – % flared from wells with at least one mcf sold.

**Simple Terms**
- **Blue** – Lack of pipelines
- **Orange** – Challenges on existing infrastructure

Statewide

- **GREEN**: 64%
- **Blue**: 19%
- **Orange**: 17%

February 2014 Data – Non-Confidential Wells

*Hess Tioga Gas Plant shut-in for 140 MMCFD expansion starting in November*
NORTH DAKOTA NATURAL GAS
A DETAILED LOOK AT NATURAL GAS GATHERING

Published: October 22, 2013
Justin J. Kringstad, Director
North Dakota Pipeline Authority
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www.northdakotapipelines.com

NORTH DAKOTA NATURAL GAS
FLARING REGULATION

In an effort to conserve this resource and protect against waste, the Industrial Commission Oil and Gas Division, under the authority granted in section 38:08-04 of the North Dakota Century Code, implements and enforces rules and regulations to limit the production of oil produced from wells that are not yet connected to a gas-gathering system.

The Bakken – Three Forks Formations

The Bakken/Three Forks (Bakken) is the largest oil field (in square miles) in North America. It underlies approximately 15,000+ square miles of North Dakota. The formation has been known about by geologists for decades, but it wasn’t until 2008 when the use of horizontal drilling combined with hydraulic fracturing that the Bakken was considered to be an economic play.

The Bakken formation produces both crude oil and associated natural gas. Oil is the primary energy resource contained in Bakken wells and is the principal economic driver for energy producing companies.

Primary Challenges

- Size of resource
- Young age of development
- Harsh winter conditions
- Resource potential still being explored

Natural Gas Flaring

Flaring occurs when natural gas is burned on location due to a lack of gathering pipeline infrastructure or economic alternatives. Flaring of natural gas is a much safer and more environmentally friendly method of handling the natural gas than simply venting into the atmosphere. By flaring the gas, it converts the methane to carbon dioxide (CO2) which has 20-23 times less impact on greenhouse gas emissions.

A gas gathering pipeline and processing plant are the conventional means to condition the natural gas for resale use. An economic analysis must be done to determine if it is ever feasible to connect a well to an existing gathering system.
Strengthening Landowner Relations
Visit: www.northdakotapipelines.com
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