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

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

*Modified from Bridger and Belle Fourche Pipelines
Williston Basin Oil Transportation

- Pipeline Export: 61%
- Tesoro Refinery: 10%
- Truck to Canadian Pipelines: 6%
- Estimated Rail: 23%

December 2011 Estimates
Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.

*Projects still in the proposed or internal review process*
Existing & Planned Rail Locations

**Existing**

1. Stampede
2. Donnybrook
3. Ross – Plains
4. Stanley – EOG
5. Minot – ND Port Services
6. Dore
7. New Town – Dakota Transport Solutions
8. Zap – Basin Transload
9. Dickinson – BOE
10. Trenton – Savage
12. Tioga – Hess

**Planned**

1. Epping – Rangeland
2. Berthold – Enbridge
3. Fryburg – Great Northern
Challenges*
1) Moving oil out of the Williston Basin
2) Moving oil within the Williston Basin

*Modified from Bridger and Belle Fourche Pipelines
Reducing Truck Traffic

Four Bears Pipeline
77 miles – 12”
105,000 BOPD Capacity
Impact: 50,000-75,000 Truck Miles Per Day
Reducing Truck Traffic

Enbridge Station Upgrades

Four Stations - New Truck Lots and Tankage

Impact: 50,000-143,000 Truck Miles Per Day
Reducing Truck Traffic

Enbridge Sanish Pipeline

36 miles - 12”
6 miles – 10”
60,000 BOPD Capacity

300 Truck Loads Per Day
Complete: Q4 2013
Brent-WTI Crude Pricing

WTI – Cushing, OK

Brent – “World” Oil Price
Brent-WTI Crude Pricing
Interactive Chart for Bloomberg Bakken (Clearbrook MN) Crude Oil Differential (USCSUHC1)

$14.50 Today

-$14.50 Today

Bloomberg

## Domestic Crude Oil First Purchase Prices by API Gravity

### (Dollars per Barrel)

**Period:** Monthly

<table>
<thead>
<tr>
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<tr>
<td>20.0° or Less</td>
<td>101.82</td>
<td>93.51</td>
<td>104.07</td>
<td>105.47</td>
<td>111.13</td>
<td>101.87</td>
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<td>20.1° to 25.0°</td>
<td>103.92</td>
<td>95.26</td>
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## Domestic Crude Oil First Purchase Prices by API Gravity

### (Dollars per Barrel)

**Period:** Annual

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<th>API Gravity</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
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<td>91.01</td>
<td>55.66</td>
<td>75.04</td>
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<td>25.1° to 30.0°</td>
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<td>76.22</td>
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<td>40.0° or Greater</td>
<td>61.86</td>
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<td>94.95</td>
<td>56.66</td>
<td>74.47</td>
<td>91.87</td>
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Brent–WTI Crude Pricing

### Brent–WTI Crude Pricing

**Graph:**
- **Brent** (red line)
- **WTI** (blue line)

**WTI–Brent Spread Forecast**

**Axes:**
- **Y-axis:** Dollars Per Barrel
- **X-axis:** Time periods (Jan-2009 to Jan-2012)

**Legend:**
- Brent
- WTI

**Forecast:**
- **$10.00**
- **$5.00**
- **$0.00**
- **($5.00)**
- **($10.00)**
- **($15.00)**
- **($20.00)**
- **($25.00)**
- **($30.00)**

**Timeline:**
- 1/1/07 to 1/1/16
East Coast Getting a Taste
ND Gas Production

MCF/Day

Produced

Sold
First Time Gas Sales Per Month
Natural Gas Study
Elm Coulee Montana

API Number: 25083218940000
Well Name: Burning Tree Vaira 5-2H

Well Production

Oil, BBL | Gas, MCF | Water, BBL

Date


Oil | Gas | Water
Montana Bakken Production

Source: EPRINC – Left Axis Oil, BOPD – Right Axis Gas, MCFD
Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.
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