USAEE Meeting

Houston, TX
April 14, 2011

Presented by: George Lippman
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How Shales have changed U.S. Gas Supply
But at what cost?

- Lower 48 States Production
- Major Shale Production Review
- Break-Even Economic Model

Lippman Consulting, Inc.
Lower 48 States Production

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United States Wellhead Production for March 2011
Volumes in Bcf/d

Total Lower 48 States = 65.9
Wellhead Production for the Gulf Coast Region

Volumes in Bcf per day

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Wellhead Production for the Rocky Mountain Region

Volumes in Bcf per day

Lippman Consulting, Inc.
Wellhead Production for the Eastern U.S. Region

Volumes in Bcf per day

Lippman Consulting, Inc.
Wellhead Production for the West Coast Region
Volumes in Bcf per day

Lippman Consulting, Inc.
Wellhead Production for the Lower 48 States
Volumes in Bcf per day

06-10 Volume up 8.8 Bcf

15% Increase in 4 years

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Major Shale Production

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Lower 48 States Shale Production By Production Area
3rd Qtr. 2010 Average MMcf/d

Total Lower 48 Shale: 15,718 MMcf/d

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Major Shale Production

1 Year up 5.5 Bcf/d

4 Years up 14.4 Bcf/d

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Total Horizontal Rigs
in Haynesville, Barnett, Woodford, Eagleford, Fayetteville and Marcellus Shales

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Shale Permits

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Next 5 years, production up 8.6 Bcf/d
Break-Even
Economic Model

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<table>
<thead>
<tr>
<th>Year</th>
<th>Condensate Production - Bbls/MMcf</th>
<th>Condensate Price - $/Bbl</th>
<th>NGL Production - Bbls/MMcf</th>
<th>NGL Price - $/Bbl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>1.19</td>
<td>1</td>
<td>80</td>
<td>7</td>
</tr>
<tr>
<td>Year 2</td>
<td>0.63</td>
<td></td>
<td>40</td>
<td></td>
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<tr>
<td>Year 3</td>
<td>0.45</td>
<td>Drilling &amp; Completion Cost - M$</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Year 4</td>
<td>0.36</td>
<td>Land Cost - $/Acre</td>
<td>2000</td>
<td></td>
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<tr>
<td>Year 5</td>
<td>0.31</td>
<td>Drillsite Acres</td>
<td>40</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Decline Rate %: 15
Top 30% Growth Factor: 1.63

To change any of the LCI factors simply type over the value in the respective field. When finished with your changes, click the 'Update' button. Any values displayed in yellow show a change from the LCI factors. To reset the Model back to the LCI factors, click the 'Load LCI' button.
La North Haynv Shale Core Wells
First Delivered in 2009

Distribution by Decile
(94 Wells in Sample)

Avg. First Month Rate-MMcf/day/well
Break Even Gas Price
Top 30% Well with Land Cost

- Eagle Ford
- Barnett - North
- Marcellus
- Fayetteville
- Barnett - Core
- Woodford - Anadarko
- Barnett - South
- Hay - Louis - Core
- Hay - Louis - N-CORE
- Woodford - Arkoma
- Haynesville - Texas