The Wyoming Enhanced Oil Recovery Institute
7th Annual Wyoming CO₂ Conference
LaBarge/Shute Creek Facility Update

Tim Khayyal, CO₂/Helium Account Manager
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This presentation includes forward-looking statements. Actual future conditions (including economic conditions, energy demand, and energy supply) could differ materially due to changes in technology, the development of new supply sources, political events, demographic changes, and other factors discussed herein (and in Item 1 of ExxonMobil’s latest report on Form 10-K). This material is not to be reproduced without the permission of Exxon Mobil Corporation.
Agenda

• LaBarge/Shute Creek Facility Update
  
  • Gas Processing Facilities
  
  • Reliable Source of CO2 in Wyoming
  
  • ExxonMobil / Denbury Agreement
  
  • Contributing to the Next Generation of Energy Development
LaBarge

- **History**
  - 1981: Exxon drilled exploration wells
  - 1984: Shute Creek construction
  - 1986: First production

- **Raw gas stream**
  - Produced from the LaBarge Madison reservoir
  - Average well produces 45 MMCFD
  - Gathered to the Black Canyon Processing Facility
  - Transported 40 miles to the Shute Creek Treating Facility

Source: Based on Public Sources
Accessibility Issues in Winter

Source: Based on Public Sources
Shute Creek Treating Facility

Wellfield → Black Canyon Processing Facility → Shute Creek Gas-Treating Facility

- LNG 3 MMCFD
- Methane 115 MMCFD
- Helium 4 MMCFD
- CO₂ Up to 340 MMCFD
- Cogen Up to 112 MW

Source: ExxonMobil Analysis
Carbon Dioxide Sales

Source: Based on Public Sources
Reliable Source of CO2 in Wyoming

Shute Creek CO2 Sales Expansion Investment of $86.4M
- Installed 23,000 hp of CO\textsubscript{2} compression to increase sales capacity by 110 Mcfd for a total CO2 sales capacity of ~ 340 MMCFD
  - Control system upgrade for LP and MP/HP compression

LaBarge Operations Turnaround during Sept. – Oct.

Source: Based on Public Sources
ExxonMobil/Denbury Agreement

- Asset exchange announced in December, 2012
- 1/3 ORRI in CO2 reserves in LaBarge Field
  - No ownership in any facilities
- Take in Kind CO2

Source: Based on Public Sources
Contributing to the Next Generation of Energy Development

Controlled Freeze Zone™ process

CFZ™ Uses a Different Approach -- Rather than avoiding solidification of CO₂, control it and confine it to specially designed section in distillation column

Source: ExxonMobil Analysis
• CFZ™ technology was developed to provide an economic route for developing sour lean gas reserves
  ➢ Targeted at fields with more than 10 mol% $\text{CO}_2$
  ➢ Less than 1 mol% NGLs present ($\text{C}_2$ – $\text{C}_4$ range)
• These ranges can be extended for a wider range of gases where either:
  ➢ NGL recovery of C3+ prior to using the CFZ™ process is attractive due to only a small concentration of sulfur species being present in the recovered NGL stream
  ➢ Liquefied acid gas containing NGLs will be used for enhanced oil recovery and the revenue loss from not recovering the NGLs is offset by the incremental oil production
  ➢ Acid gas sequestration is required to reduce the greenhouse gas emissions associated with a specific project
Contributing to the Next Generation of Energy Development

- CDP has a capacity to handle up to 13.5 MMSCFD gas with significant variations in inlet composition:
  - Up to 71 mol% CO$_2$ and up to 35 mol% H$_2$S
- CFZ™ Commercial Demonstration Plant (CDP) has been operating since late 2011 and the testing program is almost complete
- Found CFZ™ technology can achieve effective separation and high product purities over a wide range of inlet conditions
- Investigated CFZ™ process robustness, startup methods, and gas dehydration requirements

Source: Based on Public Sources
Contribution to the Next Generation of Energy Development

- The CFZ™ technology demonstrates ExxonMobil’s high commitment to:
  - advancing the most advantageous sour gas technologies,
  - developing integrated solutions to meet the challenges of sour natural gas, and
  - facilitating management of CO₂ and acid gases, including geosequestration and EOR

- $2.5 million grant to enhance science and technology education at the University of Wyoming
  - ExxonMobil’s grant will provide laboratory equipment for the university’s Improved Recovery Program, which falls under the newly created Center for Advanced Oil and Gas Technologies
# Carbon Dioxide Sales Organization

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Greenwood</td>
<td>Manager Americas Gas Marketing</td>
<td>713-656-8303, <a href="mailto:paul.greenwood@exxonmobil.com">paul.greenwood@exxonmobil.com</a></td>
</tr>
<tr>
<td>Matt Tucker</td>
<td>Manager Natural Gas, LNG, and CO₂/Helium Business</td>
<td>713-656-9374, <a href="mailto:matt.tucker@exxonmobil.com">matt.tucker@exxonmobil.com</a></td>
</tr>
<tr>
<td>Betty Becker</td>
<td>Logistics</td>
<td>713-656-9338, <a href="mailto:betty.j.becker@exxonmobil.com">betty.j.becker@exxonmobil.com</a></td>
</tr>
<tr>
<td>Chris Gillette</td>
<td>Sales</td>
<td>713-656-3583, <a href="mailto:chris.w.gillette@exxonmobil.com">chris.w.gillette@exxonmobil.com</a></td>
</tr>
<tr>
<td>Tim Khayyal</td>
<td>Sales</td>
<td>713-656-8840, <a href="mailto:tim.khayyal@exxonmobil.com">tim.khayyal@exxonmobil.com</a></td>
</tr>
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