The Wyoming Enhanced Oil Recovery Institute
2nd Annual Wyoming CO2 Conference

LaBarge Field & Shute Creek Facility

Kelly Geohegan
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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 Dehydration Facility
- Transported 40 miles to the Shute Creek Treating Facility
Shute Creek Treating Facility

**Inlet Gas**
- Capacity: 700 MMCFD
- Composition: 66% CO₂
  - 21% Methane
  - 7% Nitrogen
  - 5% Hydrogen Sulfide
  - 0.6% Helium

**Acid Gas Injection**
- 2005 startup
- Re-injects naturally occurring hydrogen sulfide (65 MMCFD) and CO₂ (25 MMCFD)
- Reduces annual sulfur dioxide emissions by 50% (1,000 tons/yr)

**Co-Generation**
- 2004 startup
- 108 MW

**Helium Sales**
- 4 MMCFD liquid & gaseous truck sales
Black Canyon and Shute Creek

Black Canyon Dehydration Facility

Shute Creek Treating Facility

ExxonMobil
Gas & Power Marketing
Carbon Dioxide Sales

- Current Capacity: 230 MMCFD
- Pipeline System
  - 48 miles of 24”
  - 112 miles of 20”
  - 44,000 hp of compression
- Delivery Pressure: 1750 psi
- Quality: > 95% CO2 by volume
- Metering: Remotely operated meter stations
- Supplies enhanced oil recovery and industrial users

ExxonMobil CO2 Pipeline

ExxonMobil Custody Transfer Meter

LaBarge
Shute Creek
Sublette
Lincoln
Unita
Rock Springs
Sweetwater
Colorado
Wyoming
Fremont
Shute Creek Sales Compressors
Shute Creek CO2 Handling
Shute Creek CO2 Sales Gas Expansion Project

Project Purpose
• Install 23,000 hp of CO2 compression to increase CO2 sales capacity by 110 MMCFD

Design Team
• ExxonMobil Operations, Engineering, and Project Management team of 25 full and part time staff
• Contract detail design engineering team (Washington Group Intl.) averaging 15 full-time members

Status
• Project fully funded at $72M November 2007
• Detail design effort initiated November 2007
• 20,000 hp MP/HP and 3,000 hp LP Compressor units ordered from Dresser Rand January 2008
  – Largest compressor unit in ExxonMobil U.S. Production Operations
• Remaining long lead equipment to purchase by May 2008
Shute Creek CO2 Sales Gas Expansion Project

Cost to Date
• 15,000 contract engineering man-hours and approximately 8,000 ExxonMobil staff man-hours
• Approximately $20 Million committed as of February 2008

Path Forward
• Complete detailed design effort 1st Quarter 2009
• Initiate construction late 2008
• Receive compressor units Summer 2009
• Start-up scheduled 2nd Quarter 2010
Carbon Dioxide Sales Organization

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