U.S. Federal Helium Program

Global Helium Summit 2.0
September 13, 2016
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Bureau of Land Management
New Mexico State Office
Amarillo Field Office
In This Presentation:

- Federal Helium Program History
- BLM Organization
- Partnerships and Contract Holders
- Current Operations
- Look Ahead
Federal Helium Program History

1923 – First helium extraction plant built by Fort Worth Helium at Hicks Field to support Navy Department
1925 – Helium Act of 1925 authorized the Bureau of Mines to construct and operate 6 helium plants
   1929 – Amarillo Helium Plant built (sold in 2007)
   1943 – Exell Helium Plant built (sold in 2011)
   Thatcher Helium Plant built (closed in 1944)
   Navaho Helium Plant built in (returned to tribe in 1960)
   Otis Helium Plant built (closed in 1944)
   1957 – Keyes Helium Plant built (closed in 1991)
1960 – Major Helium Legislation – Helium Act Amendments of 1960
1996 – Helium Privatization Act
2013 – Helium Stewardship Act
2014 – First Helium Auction
2021 – Scheduled Disposal of the Federal Helium System, per HSA
Interior Organizational Chart
The BLM, a sub unit of the U.S. Department of the Interior manages over 245 million surface acres and over 700 million sub-surface acres
Amarillo Field Office Organization

51 Field Office Employees
(Helium Operations)
- Downtown Amarillo Office – 801 S Fillmore
- Cliffside Helium Plant – 12 miles NW of Amarillo, TX
- Satanta Field Station – Satanta, KS

15 New Mexico State Office Employees
(Helium Resources)
- Manages helium royalties associated with natural gas extraction on Federal lands
- Co-located in the Fillmore Office

Approved Employees 66
Current Employees 58
Vacancies 8
BLM – Amarillo Field Office

4 Main Helium Functions

- Storage & Transmission
- Crude Helium Sales
- Resource Evaluation & Gas Analysis
- Helium Royalties from Federal Lands
Cliffside Refiners Limited Partnership (CRLP)

- The refiners comprising the CRLP are Air Products, Praxair, and Linde.
- Partnership between the BLM and CRLP began in 2003 under a 15-year agreement.
- CRLP provided construction capital to construct HEU administered through Cooperative Agreements.
- CRLP also provides major maintenance activities during annual plant shutdowns.
- BLM – Manages Gas Field Production, Leases and Operates HEU.
## Current Storage Contract Holders

<table>
<thead>
<tr>
<th>Company</th>
<th>Contract Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linde Gas North America, LLC</td>
<td>2016-3249</td>
</tr>
<tr>
<td>Praxair, Inc.</td>
<td>2016-3251</td>
</tr>
<tr>
<td>Air Products, L.P.</td>
<td>2016-3256</td>
</tr>
<tr>
<td>Air Liquide Helium America, Inc.</td>
<td>2016-3284</td>
</tr>
<tr>
<td>Pioneer Natural Resources USA, Inc</td>
<td>2016-3286</td>
</tr>
<tr>
<td>Keyes Helium Co., LLC</td>
<td>2016-3287</td>
</tr>
<tr>
<td>Matheson Tri-Gas, Inc.</td>
<td>2016-3288</td>
</tr>
<tr>
<td>Airgas Merchant Gases</td>
<td>2016-3290</td>
</tr>
<tr>
<td>Global Gases America</td>
<td>2016-3293</td>
</tr>
<tr>
<td>Linn Energy</td>
<td>2016-3296</td>
</tr>
<tr>
<td>IACX</td>
<td>2016-3297</td>
</tr>
</tbody>
</table>
Cliffside Helium Plant
Helium Storage Reservoir – Bush Dome
U.S. Helium Recovery
Helium Enrichment Unit Cliffside Field
New Crude Helium Compressor
Daily Pipeline Activity Report

Bureau of Land Management (BLM) - Crude Helium Pipeline Activity
This is a snapshot of the crude helium pipeline and it does not reflect daily activities.

Date: 4/18/2011

Legend: Gross / Net / He%
Production Capacity

FY2016 and beyond production capacity is dependent on field pressure.

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Helium Production (MMcf), with centralized compression</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>1,325</td>
</tr>
<tr>
<td>2017</td>
<td>1,092</td>
</tr>
<tr>
<td>2018</td>
<td>876</td>
</tr>
<tr>
<td>2019</td>
<td>716</td>
</tr>
<tr>
<td>2020</td>
<td>586</td>
</tr>
</tbody>
</table>

Total Crude Helium Delivery Capability through 2021 with centralized compression: 4,595 MMcf
## Key Figures and Dates

<table>
<thead>
<tr>
<th>Description</th>
<th>Revenue/Public/Private</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Program Revenue</td>
<td>$1,876,203,782</td>
<td></td>
</tr>
<tr>
<td>*Projected Balance =</td>
<td>8,357,539,000</td>
<td>(8.4)</td>
</tr>
<tr>
<td>Public</td>
<td>4,537,539,000</td>
<td>(4.5)</td>
</tr>
<tr>
<td>Private</td>
<td>3,820,000,000</td>
<td>(3.8)</td>
</tr>
<tr>
<td>Remaining Helium Available for Private Sale</td>
<td>1,537,539,000</td>
<td>(1.5)</td>
</tr>
<tr>
<td>Remaining Production</td>
<td>4,595,000,000</td>
<td>(4.6)</td>
</tr>
<tr>
<td>Disposal of Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cliffside Gas Field</td>
<td></td>
<td></td>
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<tr>
<td>Federal Helium Pipeline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal Helium Reserve</td>
<td></td>
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</tr>
</tbody>
</table>

Projected balance on October 1, 2016 – **Numbers above are subject to change**
Look Ahead

- **Short-Term**
  - October 1 - Leadership Transition
  - October 15 – 10-Day Planned Outage
  - March 2017 - Central compressor tie-in
  - April 2017 – Federal End Users Forum in Amarillo, TX
  - June 2017 – 4th Auction and Sale of Crude Helium in Amarillo

- **Mid-Term**
  - FY2018 - Final Crude Helium Auction and Sale
  - April 2018 – Expiration of the 15-year agreement with the CRLP
  - Continued support to Federal end-users and delivery of privately held crude helium

- **Long-Term**
  - Drafting of new In Kind regulations (43 CFR 3195)
  - September 30, 2021 – Disposal of the Federal Helium System
    - the Federal Helium Reserve;
    - the Cliffside Field;
    - the Federal Helium Pipeline; and
    - all other infrastructure owned, leased, or managed under contract by the Secretary…
Questions

Point of Contact for detailed questions pertaining to the Federal Helium Program:

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