

Bureau of Land Management

Amarillo Field Office

Helium Operations

Statistical Report

for



December - 2017

Distribution:

Fluid Minerals Group Manager, Washington Office
NMSO, New Mexico State Director
NMSO, Associate State Director
NMSO, Petroleum Engineer
Field Manager, Amarillo Field Office
Assistant Field Managers (3)
Team Leaders
-Federal Leased Lands
-Resources Evaluation & Gas Analysis
-Division Of Helium Operations, -
Engineering and Technical Support

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Compi Amarillo, Texas

Issued: August 20, 2018

"Please Note: Data in this report is accurate as of print date; however all data is subject to change."

Approved for Distribution: Samuel R.M. Burton

Date: August 20, 2017

Table 1 - Summary of Helium Operations

December - 2017

Helium Enrichment Unit Operations

Gas Processed

| | Month Gross Volume | Month Net Helium | Average Percent | Gross FYTD | Net FYTD |
|----------------------------|-----------------------|---------------------|-----------------|------------|----------|
| Measured Plant Feed (Mcf*) | 460,415 | 73,169 | 15.89% | 1,532,056 | 247,299 |
| Helium Product (Mcf*) | 95,077 | 70,026 | 73.65% | 328,083 | 242,634 |
| Residue Natural Gas (Mcf*) | 231,808 | 2 | 0.00% | 808,079 | 8 |

* Volumes in Mcf at 14.65 psia & 60°F

Natural Gas & Liquids Produced

Gas Processed

| | Month | FYTD |
|----------------------------|---------|---------|
| Natural Gas Sales (Mcf***) | 231,420 | 803,143 |
| NGL Sales (gallons) | 74,066 | 279,438 |

*** Volumes in Mcf at 14.73 psia & 60°F

Bush Dome Reservoir Operations

Conservation gases from all sources

| | Month Gross Volume | Month Net Helium | Average Percent | Gross FYTD | Net FYTD |
|-------------------------|-----------------------|---------------------|-----------------|------------|----------|
| Total Withdrawn (Mcf*) | 461,196 | 73,208 | 15.87% | 1,553,992 | 250,751 |
| Crude Injection (Mcf*) | 0 | 0 | 00.00% | 0 | 0 |
| Crude Production (Mcf*) | 0 | 0 | 00.00% | 0 | 0 |

* Volumes in Mcf at 14.65 psia & 60°F

Storage Operations

Conservation Helium

| | Volume Outstanding | Month | FYTD | CYTD | Cumulative |
|---|--------------------|-----------|--------|---------|------------|
| Conservation Crude Sale Volume Sold/Paid (Mcf*) | | 0 | 15,000 | 15,000 | 22,779,063 |
| Conservation Crude Sale Volume Transferred (Mcf*) | 0 | 0 | 15,000 | 900,002 | 900,002 |
| Conservation Helium in Storage (EOM) (Mcf*) | | 3,427,450 | | | |

* Volumes in Mcf at 14.65 psia & 60°F

In Kind Helium

| | Month | FYTD | CYTD | Cumulative |
|---------------------------------|--------|--------|---------|------------|
| Sale Volumes Transferred (Mcf*) | 1,124 | 31,238 | 131,348 | 3,556,401 |
| Sale Volumes Outstanding (Mcf*) | 37,136 | | | |

* Volumes in Mcf at 14.65 psia & 60°F

Private Company Helium Storage Contracts

Contact Activity

| | Month Gross Volume | Month Net Helium | Average Percent | Annual Helium FYTD |
|--|-----------------------|---------------------|-----------------|-----------------------|
| Crude Acquired (Mcf*) | 22,754 | 9,964 | 43.79% | 36043 |
| Crude Disposed (Mcf*) | 126,054 | 91,580 | 72.65% | 285086 |
| Net Balance (Mcf*) | (103,300) | (81,616) | | (249,043) |
| Balance of Stored Helium End Of Month (Mcf*) | | 3,438,940 | | |

* Volumes in Mcf at 14.65 psia & 60°F

Revenue / Charges

Helium Storage Contracts

(Charges Billed (\$))

| | Month | FYTD |
|---------------------------------------|-----------|-------------|
| Storage Fees Billed (\$) | \$596,990 | \$1,777,935 |
| Reservoir Management Fees Billed (\$) | \$153,117 | \$332,704 |

Enrichment Unit Charges

(Charges Billed (\$))

| | Month | FYTD |
|---|---------------|---------------|
| Reservoir Management Fees (RMF) | \$153,117 | \$332,704 |
| Total operating costs | (\$1,021,380) | (\$2,916,181) |
| Sub Total - Items provided by BLM | \$332,516 | \$1,019,541 |
| Total - Cliffside Refiners, LP, GDA030001 | (\$688,864) | (\$1,896,640) |

Conservation Helium - Natural Gas - Liquid Sales

(Charges Billed (\$))

| | Month | FYTD |
|---------------------------------|-------------|-------------|
| Conservation Crude Helium Sales | \$0 | \$1,815,000 |
| In Kind Sales | \$2,787,555 | \$2,787,555 |
| Natural Gas & Liquid Sales | \$676,848 | \$2,408,101 |

Helium Resources Evaluation

| | Month | FYTD |
|--|---------------|--------------|
| Revenue Collected from Federal Lease Holds | \$1,771,692 | \$4,935,935 |
| Helium Sample Collection Report for month | Submitted - 0 | Received - 0 |
| | | Analyzed - 7 |

*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

December - 2017

| | | Gross Withdrawal | | Net Helium Withdrawal | | Nitrogen | | Methane | Methane | Ethane plus | | Other (CO2, Ar, H2) | |
|------------------|--------|------------------|--------------------|-----------------------|-------------------|----------------|-------------------|----------------|--------------------|---------------|-------------------|---------------------|------------------|
| | | Month | Cumulative | Month | Cumulative | Month | Cumulative | Month | Cumulative | Month | Cumulative | Month | Cumulative |
| TOTAL | | 461,196 | 233,974,251 | 73,208 | 43,584,332 | 113,869 | 57,675,663 | 243,205 | 118,709,750 | 26,268 | 12,032,015 | 4,647 | 1,972,491 |
| BIVINS A-3 | Dec-17 | 0 | 10,961,112 | 0 | 3,548,629 | 0 | 2,772,147 | 0 | 4,159,384 | 0 | 407,301 | 0 | 73,653 |
| BIVINS A-6 | Dec-17 | 40,967 | 12,254,705 | 17,789 | 7,183,315 | 10,187 | 3,014,167 | 11,466 | 1,816,421 | 1,217 | 181,214 | 308 | 59,587 |
| BIVINS A-13 | Dec-17 | 27,440 | 9,085,390 | 8,953 | 4,660,721 | 6,809 | 2,331,190 | 10,316 | 1,835,829 | 1,158 | 204,144 | 205 | 53,506 |
| BIVINS A-14 | Dec-17 | 33,463 | 10,262,500 | 9,427 | 5,709,654 | 8,194 | 2,596,626 | 14,021 | 1,708,597 | 1,521 | 185,001 | 301 | 62,623 |
| BIVINS A-4 | Dec-17 | 30,257 | 14,175,335 | 3,243 | 2,469,249 | 7,199 | 3,434,112 | 17,457 | 7,398,533 | 1,938 | 745,888 | 420 | 127,553 |
| BUSH A-2 | Dec-17 | 13,092 | 13,910,293 | 903 | 2,014,713 | 3,273 | 3,415,719 | 8,007 | 7,583,295 | 830 | 781,493 | 79 | 115,073 |
| Injection | Dec-17 | 0 | 66,474,735 | 0 | 48,019,788 | 0 | 17,121,580 | 0 | 780,676 | 0 | 37 | 0 | 552,655 |
| inj Bivins A-3 | Dec-17 | 0 | (25,652,315) | 0 | (18,384,452) | 0 | (6,554,549) | 0 | (332,777) | 0 | 0 | 0 | (380,537) |
| inj Bivins A-6 | Dec-17 | 0 | (24,412,686) | 0 | (17,669,978) | 0 | (6,486,588) | 0 | (143,192) | 0 | (72) | 0 | (112,856) |
| inj Bivins A-13 | Dec-17 | 0 | (6,490,417) | 0 | (4,706,191) | 0 | (1,656,853) | 0 | (122,391) | 0 | (2) | 0 | (4,980) |
| inj Bivins A-14 | Dec-17 | 0 | (6,501,333) | 0 | (4,767,421) | 0 | (1,602,106) | 0 | (126,303) | 0 | (7) | 0 | (5,497) |
| inj Bivins A-4 | Dec-17 | 0 | (2,527,801) | 0 | (1,848,815) | 0 | (601,353) | 0 | (42,016) | 0 | 0 | 0 | (35,617) |
| inj Bush A-2 | Dec-17 | 0 | (867,658) | 0 | (625,258) | 0 | (215,406) | 0 | (13,980) | 0 | 0 | 0 | (13,015) |
| Production | Dec-17 | 0 | 1,254,876 | 0 | 924,742 | 0 | 270,231 | 0 | 48,129 | 0 | 3,199 | 0 | 8,575 |
| BIVINS A-1 | Dec-17 | 0 | 2,686,608 | 0 | 48,896 | 0 | 636,995 | 0 | 1,798,415 | 0 | 175,704 | 0 | 26,597 |
| BIVINS A-2 | Dec-17 | 17,835 | 14,355,259 | 605 | 1,892,893 | 4,142 | 3,512,086 | 11,689 | 8,028,196 | 1,222 | 801,764 | 176 | 120,321 |
| BIVINS A-5 | Dec-17 | 24,446 | 16,519,127 | 4,447 | 2,134,515 | 6,200 | 4,054,823 | 12,292 | 9,253,538 | 1,316 | 933,652 | 191 | 142,599 |
| BIVINS A-7 | Dec-17 | 12,448 | 12,022,043 | 3,527 | 2,849,545 | 3,215 | 3,029,196 | 5,052 | 5,494,422 | 565 | 561,221 | 89 | 87,660 |
| BIVINS A-9 | Dec-17 | 29,320 | 10,988,157 | 751 | 212,459 | 7,428 | 2,709,206 | 18,798 | 7,232,695 | 2,085 | 733,926 | 258 | 99,871 |
| BIVINS A-11 | Dec-17 | 19,748 | 6,756,948 | 573 | 148,251 | 4,963 | 1,682,638 | 12,622 | 4,408,290 | 1,390 | 454,025 | 200 | 63,744 |
| BIVINS A-15 | Dec-17 | 31,101 | 10,438,026 | 529 | 441,381 | 7,195 | 2,483,976 | 20,795 | 6,728,239 | 2,187 | 675,213 | 395 | 109,217 |
| BIVINS B-1 | Dec-17 | 29,060 | 8,638,129 | 670 | 314,039 | 7,090 | 2,095,936 | 18,946 | 5,565,962 | 1,994 | 572,253 | 360 | 89,939 |
| BIVINS B-2 | Dec-17 | 27,294 | 7,173,531 | 507 | 135,221 | 6,858 | 1,799,213 | 17,532 | 4,655,906 | 1,893 | 480,440 | 504 | 102,750 |
| BUSH A-1 | Dec-17 | 0 | 5,721,962 | 0 | 104,140 | 0 | 1,356,677 | 0 | 3,830,281 | 0 | 374,216 | 0 | 56,647 |
| BUSH A-3 | Dec-17 | 28,180 | 12,648,839 | 9,164 | 3,041,294 | 7,087 | 3,131,107 | 10,550 | 5,779,116 | 1,143 | 587,008 | 236 | 110,315 |
| BUSH A-4 | Dec-17 | 20,569 | 8,993,387 | 1,794 | 1,611,803 | 5,249 | 2,251,780 | 12,125 | 4,595,406 | 1,285 | 470,258 | 116 | 64,139 |
| BUSH A-5 | Dec-17 | 37,306 | 17,376,308 | 9,576 | 4,022,978 | 9,472 | 4,365,304 | 16,267 | 8,046,327 | 1,769 | 821,855 | 222 | 119,844 |
| BUSH A-8 | Dec-17 | 16,558 | 4,614,164 | 301 | 84,623 | 4,070 | 1,119,773 | 10,749 | 3,042,617 | 1,146 | 307,872 | 291 | 59,280 |
| BUSH A-9 | Dec-17 | 0 | 3,860,915 | 0 | 105,037 | 0 | 930,915 | 0 | 2,537,187 | 0 | 253,463 | 0 | 34,312 |
| BUSH A-11 | Dec-17 | 17,105 | 4,720,929 | 361 | 136,324 | 4,072 | 1,129,407 | 11,185 | 3,086,667 | 1,242 | 313,843 | 244 | 54,688 |
| BUSH B-1 | Dec-17 | 5,008 | 3,397,929 | 87 | 63,716 | 1,167 | 806,137 | 3,336 | 2,270,419 | 367 | 224,395 | 51 | 33,262 |
| FUQUA A-1 | Dec-17 | 0 | 2,954,098 | 0 | 53,854 | 0 | 702,798 | 0 | 1,975,175 | 0 | 193,573 | 0 | 28,699 |
| FUQUA A-2 | Dec-17 | 0 | 132,119 | 0 | 2,404 | 0 | 31,322 | 0 | 88,458 | 0 | 8,637 | 0 | 1,297 |
| FUQUA A-3 | Dec-17 | 0 | 9,303,912 | 0 | 577,005 | 0 | 2,277,687 | 0 | 5,790,357 | 0 | 583,701 | 0 | 75,162 |
| TT Fuel | Dec-17 | 782 | 0 | 0 | 0 | 33 | 0 | 639 | 0 | 110 | 0 | 1 | 0 |
| field-wide pct's | | | | 15.87% | 18.63% | 24.69% | 24.65% | 52.73% | 50.74% | 5.70% | 5.14% | 1.01% | 0.84% |

Latest estimates of reserves and feed to HEU

Based on NITEC's 2003 reserves study from NITEC's interim report

As of EOM Dec-17 Volumes in BCF

| | | |
|-------------------------------------|---------|---------------------------------------|
| Initial Gas In Place | 330.040 | |
| Produced 1924 to 1961 | 48.830 | |
| Injected 1924 to 1961 | 0.450 | |
| Remaining Gas In Place 1961 | 281.660 | |
| Left Behind Pipe, 1961 | 82.060 | ====> 1.500 BCF of contained helium |
| Remaining in Place, 1961 | 199.600 | |
| Gas In Place 1961 | 199.600 | |
| Produced 1961 to July 2002 | 82.450 | |
| Injected 1961 to July 2002 | 64.510 | Net Helium |
| Remaining Gas In Place July 2002 | 181.660 | 33.997 |
| Produced July 2002 through Dec 2002 | 1.096 | 0.743 |
| Production 2003 - 16 | 95.429 | 24.219 |
| Injection 2003 - 16 | (1.423) | (1.159) |
| Produced to Date 2017 | 6.209 | 1.018 |
| Injected to Date 2017 | 0.000 | 0.000 |
| Amount of Raw Gas Available to CHEU | 80.348 | ====> 9.176 total helium in reservoir |
| Estimated Bottom Hole Pressure | 295.940 | est z-factor 0.980 |

* All volumes on Table 2 are reported in Mcf at 14.65 psia & 60°F

Table 3 - Gas Volumes & Inventory

December - 2017

Crude Helium Enrichment Unit Operations

| | | Gross Withdrawal | | Net Helium Withdrawal | | Nitrogen | | Methane | | Ethane plus | | Other (CO2, Ar, H2) | |
|------------------|--------|------------------|------------|-----------------------|------------|----------|------------|---------|------------|-------------|------------|---------------------|------------|
| | | Month | Cumulative | Month | Cumulative | Month | Cumulative | Month | Cumulative | Month | Cumulative | Month | Cumulative |
| Measured Feed | Dec-17 | 460,415 | 98,878,360 | 73,169 | 23,548,057 | 113,778 | 24,775,366 | 242,640 | 44,886,283 | 26,185 | 4,810,259 | 4,643 | 858,395 |
| Calculated Feed | Dec-17 | 460,522 | 98,756,067 | 73,187 | 23,544,217 | 113,831 | 24,738,918 | 242,680 | 44,784,895 | 26,178 | 4,827,374 | 4,646 | 860,662 |
| Feed to Box | Dec-17 | 456,542 | 98,122,662 | 73,187 | 23,544,396 | 113,831 | 24,739,001 | 242,680 | 44,784,941 | 26,178 | 4,827,372 | 666 | 226,952 |
| Cheu Product | Dec-17 | 95,077 | 29,753,990 | 70,026 | 23,174,065 | 22,126 | 5,786,264 | 2,282 | 587,063 | 25 | 859 | 618 | 205,739 |
| Residue | Dec-17 | 231,808 | 44,711,313 | 2 | 2,139 | 5,231 | 1,098,900 | 205,802 | 39,673,088 | 20,773 | 3,935,923 | 0 | 1,262 |
| Cold Box Vent | Dec-17 | 61,306 | 16,297,705 | 91 | 89,600 | 54,035 | 14,453,132 | 7,167 | 1,693,546 | 0 | 118 | 13 | 61,309 |
| Flare/Boot Strap | Dec-17 | 61,306 | 6,813,954 | 91 | 50,380 | 54,035 | 5,708,134 | 7,167 | 955,715 | 0 | 93,583 | 13 | 6,142 |
| Fuel From Cheu | Dec-17 | 5,602 | 1,347,430 | 3 | 428 | 145 | 39,230 | 4,518 | 1,092,331 | 936 | 215,440 | 0 | 0 |
| Shrinkage/Loss | Dec-17 | 2,226 | 492,212 | 0 | 0 | 0 | 0 | 0 | 0 | 2,226 | 492,212 | 0 | 0 |
| Unaccounted* | Dec-17 | 25,252 | 3,474,967 | 654 | 181,113 | 20,156 | 2,563,476 | 4,423 | 725,423 | (0) | 1,102 | 19 | 3,853 |

*Before October 2004, the values are estimated

Storage Operations

Inventory (contained helium)

| | Government | Private |
|---------------------------|------------|-----------|
| Beginning inventory | 3,429,097 | 3,519,432 |
| net acceptances + | 0 | 0 |
| redeliveries | 0 | (81,616) |
| In Kind Transfers | (1,124) | 1,124 |
| Conservation Crude Sales | 0 | 0 |
| Gain/loss | (524) | |
| Ending Inventory | 3,427,450 | 3,438,940 |
| Total Helium in Reservoir | 9,176,020 | |
| Total Helium in Storage | 6,866,390 | |
| Helium in native gas | 2,309,631 | |

Crude Helium Pipeline

| | Gross | Net Helium | Percent |
|--|---------|------------|---------|
| Beginning inventory | 45,114 | 32,715 | 72.52% |
| Measured to Pipeline (Private Plants) | 22,754 | 9,970 | 43.82% |
| Measured from Pipeline (Private Plant) | 126,054 | 91,580 | 72.65% |
| HEU Production | 95,077 | 70,026 | 73.65% |
| Injection | 0 | 0 | 00.00% |
| Production | 0 | 0 | |
| Ending Inventory | 29,293 | 20,608 | 70.35% |
| Gain/Loss | (7,599) | (524) | |

Tuck Trigg Reservoir Operations

| Native Gas (Gross) | Since Field | | |
|--------------------------------------|-------------|-------------|-----------|
| | Month | Fiscal Year | Discovery |
| Total in place, beg. of period | 5,198,688 | 5,198,688 | 5,890,000 |
| Recoverable in place, beg. of period | 4,528,688 | 4,528,688 | 5,220,000 |
| Production during period to date | 0 | 0 | 691,312 |
| Total in place, end of month | 5,198,688 | 5,198,688 | 5,198,688 |
| Recoverable in place, end of month | 4,528,688 | 4,528,688 | 4,528,688 |

* All volumes on Table 3 are reported in Mcf at 14.65 psia & 60°F

Table 4 - In Kind Helium Sales

December - 2017

| | NASA* | Navy* | Army* | Air Force* | DOE* | Other Fed* | Subtotal* | In Kind+ | Charges Billed (\$)** | |
|--|-----------|---------|-------|------------|---------|------------|-----------|-----------|-----------------------|------------|
| In Kind Helium | | | | | | | | | | |
| Airgas Merchant Gases, Contract no. INC18-0102 | | | | | | | | | | |
| Month | | | | | | | | | | |
| FYTD | | | | | | | | | | |
| Air Liquide Helium America, Inc., Contract no. INC18-0104 | | | | | | | | | | |
| Month | | | | | | | | | | |
| FYTD | | | | | | | | | | |
| Air Products, L.P., Contract no. INC18-0105 | | | | | | | | | | |
| Month | | | | | | | | | | |
| FYTD | | | | | | | | | | |
| Linde Gas North America, LLC, Contract no. INC18-0106 | | | | | | | | | | |
| Month | | | | | | | | | | |
| FYTD | | | | | | | | | | |
| Praxair, Inc., Contract no. INC18-0112 | | | | | | | | | | |
| Month | | | | | | | | | | |
| FYTD | | | | | | | | | | |
| Matheson Tri-Gas, Inc., Contract no. INC18-0114 | | | | | | | | | | |
| Month | | | | | | | | | | |
| FYTD | | | | | | | | | | |
| Global Gases America, Contract no. INC18-0116 | | | | | | | | | | |
| Month | | | | | | | | | | |
| FYTD | | | | | | | | | | |
| Total month | 15,371 | 1 | 0 | 0 | 0 | 18,741 | 34,113 | 33,585 | \$2,787,555 | |
| Total FYTD | 15,371 | 1 | 0 | 0 | 0 | 18,741 | 34,113 | 33,585 | \$2,787,555 | |
| Total CYTD | 61,654 | 7 | 0 | 8 | 292 | 69,674 | 131,636 | 129,601 | \$10,756,883 | |
| Cumulative | 1,966,163 | 108,685 | 450 | 271,593 | 422,045 | 881,043 | 3,649,978 | 3,593,462 | \$212,718,769 | |
| In Kind Transfers | | | | | | | Month | FYTD | CYTD | Cumulative |
| Transferred | | | | | | | 1,124 | 31,238 | 131,348 | 3,556,401 |
| Volume outstanding | | | | | | | 37,136 | | | |

* Volumes in Mcf at 14.7 psia & 70°F

**Rounded to nearest dollar

+ Volumes in Mcf at 14.65 psia & 60°F

May numbers are from April, an update will be posted for May at the end of June.

Natural Gas / Natural Gas Liquid Sales

| | Natural Gas (Mcf)*** | NGLs (gal) | Decatherms | Avg Btu Value | Charges Billed (\$)** |
|---|----------------------|------------|------------|---------------|-----------------------|
| El Paso Natural Gas | | | | | |
| Provides Measured Firm/Interruptible Transportation Services (billed monthly) | | | | | |
| Month | 231,420 | --- | 254,708 | 1,101 | (\$27,997) |
| FYTD | 803,143 | --- | 883,912 | 1,101 | (\$83,991) |
| Cumulative | 44,254,019 | --- | 48,181,528 | 1,089 | (\$5,004,334) |
| Minerals Management Service | | | | | |
| No Longer Provides Natural Gas Marketing Services | | | | | |
| Cumulative | --- | --- | --- | --- | (\$179,913) |
| ETC Marketing Ltd | | | | | |
| Purchaser - Natural Gas | | | | | |
| Month | --- | --- | 254,100 | \$2.531226 | \$643,185 |
| FYTD | --- | --- | 884,400 | \$2.561730 | \$2,265,594 |
| Cumulative | --- | --- | 47,999,287 | \$4.404501 | \$210,586,349 |
| Sandstone | | | | | |
| Purchaser - Natural Gas Liquids | | | | | |
| Month | --- | 74,066 | 8,054 | \$7.655927 | \$61,661 |
| FYTD | --- | 279,438 | 30,418 | \$7.446192 | \$226,498 |
| Cumulative | --- | 13,507,675 | 1,437,517 | \$11.034651 | \$15,862,498 |
| Total | | | | | |
| Total month | 231,420 | 74,066 | 262,154 | \$2.581873 | \$676,848 |
| Total FYTD | 803,143 | 279,438 | 914,818 | \$2.632328 | \$2,408,101 |
| Total CYTD | 3,329,077 | 1,150,807 | 3,654,541 | \$2.679158 | \$9,791,094 |
| Cumulative | 44,254,019 | 13,507,675 | 49,436,804 | \$4.492425 | \$221,264,600 |

*** Volumes in Mcf at 14.73 psia & 60°F

**Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

December - 2017

Helium & Natural Gas Sales

| | Award Volume* | Outstanding* | Sales* | Charges Billed (\$) ** (billed quarterly) | |
|---|---------------|--------------|------------|--|------------------------|
| Conservation Helium | | | | | |
| <u>Air Liquide Helium America, Inc.</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 0 | \$0 | |
| Cumulative | 335,217 | | 335,217 | \$25,454,815 | |
| <u>Air Products, L.P.</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 0 | \$0 | |
| Cumulative | 8,962,845 | | 8,962,845 | \$671,868,990 | |
| <u>Linde Gas North America, LLC</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 0 | \$0 | |
| Cumulative | 6,289,226 | | 6,289,226 | \$433,603,032 | |
| <u>Keyes Helium Co., LLC</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 0 | \$0 | |
| Cumulative | 1,013,471 | | 1,013,471 | \$70,080,272 | |
| <u>Matheson Tri-Gas, Inc.</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 0 | \$0 | |
| Cumulative | 360,034 | | 360,034 | \$38,155,146 | |
| <u>Praxair, Inc.</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 0 | \$0 | |
| Cumulative | 5,550,116 | | 5,550,116 | \$421,704,984 | |
| <u>Global Gases America</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 0 | \$0 | |
| Cumulative | 36,267 | | 36,267 | \$3,535,665 | |
| <u>Airgas Merchant Gases</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 0 | \$0 | |
| Cumulative | 15,667 | | 15,667 | \$1,488,365 | |
| <u>IACX Energy</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 0 | \$0 | |
| Cumulative | 16,220 | | 16,220 | \$1,720,180 | |
| <u>Uniper Global Commodities North America LLC</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 0 | \$0 | |
| Cumulative | 41,334 | | 41,334 | \$5,038,746 | |
| <u>Weil Group Resources LLC</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 15,000 | \$1,815,000 | |
| Cumulative | 21,000 | | 21,000 | \$2,529,000 | |
| <u>NAH USA Helium Marketing, Inc</u> | | | | | |
| Month | 0 | 0 | 0 | \$0 | |
| FYTD | 0 | 0 | 0 | \$0 | |
| Cumulative | 11,334 | | 11,334 | \$1,348,746 | |
| Total month | 0 | 0 | 0 | | 0 |
| Total FYTD | 0 | 0 | 15,000 | | \$1,815,000 |
| Total CYTD | 0 | | 15,000 | | \$1,815,000 |
| Cumulative | 22,779,063 | | 22,779,063 | | \$1,678,646,449 |
| Conservation Crude Transfers | | Month | FYTD | CYTD | Cumulative |
| Transferred | | 0 | 15,000 | 900,002 | 900,002 |
| Volume outstanding | | 0 | | | |

* Volumes in Mcf at 14.65 psia & 60°F

Table 6 - Helium Resources Evaluation

December - 2017

All Volumes in Mcf at 14.7 psia & 70°F

| Revenue Collected From Federal Leaseholds | Month* | FYTD* |
|---|--------------------|--------------------|
| Fee Sales & Royalties | \$1,775,429 | \$4,900,442 |
| Natural Gas Royalties (1) | \$0 | \$0 |
| Natural Gas Rentals | \$0 | \$0 |
| Other | \$35,494 | \$111,475 |
| Revenue Collected from Federal Lease Holds | \$1,771,692 | \$4,935,935 |

*Totals do not sum

| Helium Analysis and Evaluation | Month | FYTD |
|---|-------|------|
| Number of Sample Request Letters Sent | 0 | 0 |
| Number of Samples Received | 0 | 0 |
| Number of Samples Analyzed | 0 | 0 |
| Total Number of Samples Analyzed For Resources Division | 0 | 0 |
| Total Number of Other Samples Analyzed (2) | 7 | 33 |

U. S. Helium Production

| <i>Domestic</i> | FY Volume | CY Volume |
|---|-----------|-------------|
| 2013 Helium Sold | 4,725,187 | 4,623,130 |
| 2014 Helium Sold | 4,279,765 | 4,166,708 |
| 2015 Helium Sold | 3,815,746 | 3,463,698 |
| 2016 Helium Sold | 3,282,185 | 3,466,014 |
| 2017 Helium Sold | 4,559,100 | 4,644,278 |
| Estimated Helium Resources as of 12/31/2016 (Mcf) | | 723,000,000 |

| | FY-2017 | CY-2017 |
|--------------------------------|-----------|-----------|
| U.S. Helium Exports (3) | 2,520,645 | 2,451,207 |
| US Helium Imports | 731,407 | 666,908 |

(1) Includes drip gas sales & other miscellaneous gas sales.

(2) Includes pipeline, field survey, and other requested analyses.

(3) Data from Department of Commerce - Bureau of the Census.

Table 7 - Helium Storage Contract Activity

December - 2017

All Volumes in Mcf at 14.65 psia & 60°F

| | Metered Gas | | | | | Transferred Gas Helium | | Stored Helium EOM | Charges Billed (\$)** | | |
|---|-------------|----------|----------|-----------|-----------|------------------------|--------|-------------------|-----------------------|--------------|-------------|
| | Gross Gas | Helium % | Helium | Helium | | | Month | | Cumulative | Month | FYTD |
| | | | | FYTD | CYTD | Cumulative | | | | | |
| Total All Contracts* | | | | | | | | | | | |
| Crude Acquired | 22,754 | 43.8% | 9,964 | 36,043 | 160,870 | 32,153,409 | 21,917 | 59,925,376 | | | |
| Crude Disposed | 126,054 | 72.7% | 91,580 | 285,086 | 1,159,428 | 53,002,470 | 22,793 | 26,432,722 | \$596,990 | Storage Fees | |
| Grade-A Rdlvrd | 0 | | 0 | 0 | 0 | 1,478,718 | | | <u>\$153,116.72</u> | RMF Fees | |
| Net/Balance | (103,300) | | (81,616) | (249,043) | (998,558) | (22,327,779) | (876) | 33,492,654 | 3,438,940 | \$750,106 | \$2,110,638 |
| Total Prior Contracts (TERMINATED) | | | | | | | | | | | |
| Crude Acquired | | | | 0 | 0 | 17,406,129 | 0 | 18,196,898 | | | |
| Crude Disposed | | | | 0 | 0 | 11,830,863 | 0 | 19,148,768 | | | |
| Grade-A Rdlvrd | | | | 0 | 0 | 1,478,718 | | | | | |
| Number of trailers | | | | 0 | 0 | 9,834 | | | 0 | | |
| Linde Gas North America, LLC, Contract no. 3249 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| Praxair, Inc., Contract no. 3251 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| Air Products, L.P., Contract no. 3256 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| Air Liquide Helium America, Inc., Contract no. 3284 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| Pioneer Natural Resources USA, Inc, Contract no. 3286 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| Keyes Helium Co., LLC, Contract no. 3287 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| Matheson Tri-Gas, Inc., Contract no. 3288 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| Airgas Merchant Gases, Contract no. 3290 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| Global Gases America, Contract no. 3293 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| Linn Operating, Inc., Contract no. 3296 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| IACX Energy, Contract no. 3297 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| Uniper Global Commodities North America LLC, Contract no. 3298 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| Weil Group Resources LLC, Contract no. 3299 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |
| NAH USA Helium Marketing, Inc, Contract no. 3300 | | | | | | | | | | | |
| Crude Acquired | | | | | | | | | | | |
| Crude Disposed | | | | | | | | | | | |
| Net/Balance | | | | | | | | | | | |

| Government Helium | |
|--|-----------|
| Remaining Crude Acquired beginning of the month | 3,429,097 |
| Crude Disposed: In Kind Sales transferred for the month | (1,124) |
| Conservation Crude Sales/Reserve Sell Down transferred (m) | 0 |
| Gains and Losses for the month | (524) |
| Net/Balance of Purchased Helium Remaining for Sale | 3,427,450 |

*Includes In Kind and Conservation Crude transfers from Government storage

**Rounded to nearest dollar

** New Contracts

Table 8 - Compression & CHEU (Charges & Operations) December - 2017

| Field/CHEU Compressor Operations | | Month | FYTD | Cumulative |
|--|--------------|---------|----------|-------------|
| | | | | |
| Spot gas fuel price * | \$ per/MMBTU | \$2.53 | \$2.56 | \$4.73 |
| Fuel used * (now includes field compression well head) | total MMBTU | 7,129 | 25,632 | 1,836,333 |
| Field Compression Fuel Cost * | \$dollars | \$0 | \$0 | \$658,447 |
| CHEU Compression Fuel Cost * | \$dollars | \$9,515 | \$38,729 | \$4,502,179 |
| CHEU Process Fuel Cost * | \$dollars | \$8,357 | \$26,782 | \$3,007,814 |
| Rental compressor(s) fuel consumed (well head) | \$dollars | \$0 | \$0 | \$207,234 |
| Rental Compressor(s) helium in fuel (Mcf x \$\$) | \$dollars | \$0 | \$0 | \$315,893 |
| Rental compressor(s) helium in fuel (Mcf) | Mcf | 0 | 0 | 3645 |
| #1 Compressor run time * | hours | 533 | 1,984 | 111,543 |
| #2 Compressor run time * | hours | 538 | 1,940 | 74,063 |
| #3 Compressor run time * | hours | 35 | 85 | 62,093 |

* Field/CHEU Compressor Operations based on Dec 17 activity

| Crude Helium Enrichment Unit (CHEU) CHEU Runtime | Month | | FYTD | | Cumulative |
|---|-------------|---------|-------------|---------|-------------|
| | Runtime Hrs | Percent | Runtime Hrs | Percent | Runtime Hrs |
| Processing feed gas | 627 | 84.3% | 2,090 | 94.7% | 123,215 |
| Producing residue gas | 576 | 77.4% | 2,035 | 92.2% | 120,319 |
| Producing helium product | 550 | 74.0% | 2,003 | 90.7% | 116,658 |
| Producing natural gas liquids | 562 | 75.6% | 2,020 | 91.5% | 115,720 |

| CHEU Charges | Charges Billed (\$)* | | |
|---|----------------------|---------------|-----------------|
| | Month | FYTD | Cumulative |
| Reservior Management Fees (RMF) | \$153,117 | \$332,704 | \$33,923,036 |
| Total operating costs | (\$1,021,380) | (\$2,916,181) | (\$148,808,119) |
| Labor | \$118,650 | \$356,006 | \$16,629,461 |
| Compressor fuel cost Nov 17 | \$9,217 | \$36,600 | \$4,509,227 |
| HEU fuel cost Nov 17 | \$14,516.00 | \$32,637 | \$3,019,803 |
| Electrical power cost Nov 17 | \$147,830.05 | \$480,378 | \$22,507,329 |
| Other | \$42,302 | \$113,920 | \$14,106,369 |
| Sub Total - Items provided by BLM | \$332,516 | \$1,019,541 | \$63,981,544 |
| Total - Cliffside Refiners, LP, GDA030001 | (\$688,864) | (\$1,896,640) | (\$84,826,575) |

*Rounded to nearest dollar

| CHEU Utility Usage | Month | FYTD | Cumulative |
|---|-----------|-----------|-------------|
| Cheu Fuel Gas (Mcf) usage Dec 17 | 3,027 | 9,228 | 583,469 |
| Cheu Pure Water Usage (gallons) Dec 17 | 794 | 1,569 | 310,808 |
| Electricity Metered (Kwh) consumed Nov 17 | 2,732,405 | 5,299,892 | 152,578,518 |