

# Bureau of Land Management

Amarillo Field Office

Helium Operations

Statistical Report

for

July - 2016



#### *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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Amarillo, Texas

*Compiled by: Joan Grochowina*

Issued: September 27, 2016

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

Approved for Distribution: Samual R.M. Burton

Date: September 27, 2016

Table 1 - Summary of Helium Operations

July - 2016

**Helium Enrichment Unit Operations**

Gas Processed	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Measured Plant Feed (Mcf*)	451,058	71,540	15.86%	3,360,115	586,484
Helium Product (Mcf*)	84,417	63,197	74.86%	736,148	548,470
Residue Natural Gas (Mcf*)	195,411	55	0.03%	1,508,475	256

\* Volumes in Mcf at 14.65 psia & 60°F

**Natural Gas & Liquids Produced**

Gas Processed	Month	FYTD
Natural Gas Sales (Mcf***)	192,939	1,495,922
NGL Sales (gallons)	59,036	441,446

\*\*\* 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Total Withdrawn (Mcf*)	443,510	69,091	15.58%	3,414,863	598,230
Crude Injection (Mcf*)	0	0	00.00%	71,898	53,251
Crude Production (Mcf*)	0	0	00.00%	37,008	27,164

\* 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	886,000	0	20,952,729
Conservation Crude Sale Volume Transferred (Mcf*)	15,000	0	886,000	0	20,937,729
Conservation Helium in Storage (EOM) (Mcf*)		5,537,540			

\* Volumes in Mcf at 14.65 psia & 60°F

**In Kind Helium**

	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	34,330	118,020	93,255	3,381,562
Sale Volumes Outstanding (Mcf*)	6,183			

\* 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*)	46,738	30,625	65.52%	388,960
Crude Disposed (Mcf*)	131,838	95,242	72.24%	881,572
Net Balance (Mcf*)	(85,100)	(64,617)		(492,612)
Balance of Stored Helium End Of Month (Mcf*)		2,760,721		

\* Volumes in Mcf at 14.65 psia & 60°F

**Revenue / Charges**

Helium Storage Contracts (Charges Billed (\$))	Month	FYTD
Storage Fees Billed (\$)	\$564,825	\$4,246,745
Reservoir Management Fees Billed (\$)	\$56,843	\$2,093,328

**Field Compressor Charges (Charges Billed (\$))**

	Month	FYTD
Funded by the Refiners (provides for booster compression services)	\$0	(\$217,296)
Cliffside Refiners, LP, by Agreement #GDA010003 (reimburses BLM for fuel, labor, supplies, etc.)	\$0	\$88,817
Net-Total (Funded by the Refiners for compression costs.)	\$0	(\$128,479)

**Enrichment Unit Charges (Charges Billed (\$))**

	Month	FYTD
Reservoir Management Fees (RMF)	\$56,843	\$2,093,328
Total operating costs	(\$836,452)	(\$8,204,255)
Sub Total - Items provided by BLM	\$337,371	\$3,213,448
Total - Cliffside Refiners, LP, GDA030001	(\$499,081)	(\$4,990,806)

**Conservation Helium - Natural Gas - Liquid Sales (Charges Billed (\$))**

	Month	FYTD
Conservation Crude Helium Sales	\$0	\$0
In Kind Sales	\$0	\$7,893,382
Natural Gas & Liquid Sales	\$531,469	\$3,127,135

**Helium Resources Evaluation**

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$1,569,223	\$15,412,259
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 12

\*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

July - 2016

		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
<b>TOTAL</b>		<b>443,510</b>	<b>225,053,393</b>	<b>69,091</b>	<b>42,107,526</b>	<b>111,027</b>	<b>55,455,312</b>	<b>235,140</b>	<b>114,071,929</b>	<b>24,276</b>	<b>11,531,393</b>	<b>3,975</b>	<b>1,887,233</b>
BIVINS A-3	Jul-16	0	10,961,112	0	3,548,629	0	2,772,147	0	4,159,383	0	407,301	0	73,653
BIVINS A-6	Jul-16	30,509	11,498,055	14,696	6,832,887	7,713	2,825,603	7,108	1,624,616	766	160,967	227	53,982
BIVINS A-13	Jul-16	23,133	8,534,846	8,070	4,477,511	5,830	2,194,365	8,115	1,632,215	943	181,362	176	49,393
BIVINS A-14	Jul-16	27,276	9,602,015	8,526	5,513,873	6,812	2,434,317	10,522	1,440,944	1,171	156,136	245	56,745
BIVINS A-4	Jul-16	34,125	13,523,592	3,930	2,394,832	8,257	3,276,764	19,547	7,025,502	2,039	706,091	350	120,402
BUSH A-2	Jul-16	39,551	13,203,395	3,666	1,956,308	9,930	3,237,845	23,158	7,164,253	2,530	734,757	266	110,233
Injection	Jul-16	0	66,464,971	0	48,012,584	0	17,119,298	0	780,461	0	36	0	552,592
inj Bivins A-3	Jul-16	0	(25,652,315)	0	(18,384,452)	0	(6,554,549)	0	(332,777)	0	0	0	(380,537)
inj Bivins A-6	Jul-16	0	(24,402,922)	0	(17,662,775)	0	(6,484,304)	0	(142,978)	0	(71)	0	(112,794)
inj Bivins A-13	Jul-16	0	(6,490,417)	0	(4,706,191)	0	(1,656,853)	0	(122,391)	0	(2)	0	(4,980)
inj Bivins A-14	Jul-16	0	(6,501,333)	0	(4,767,421)	0	(1,602,106)	0	(126,303)	0	(7)	0	(5,497)
inj Bivins A-4	Jul-16	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Jul-16	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Jul-16	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
BIVINS A-1	Jul-16	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Jul-16	17,709	14,010,034	591	1,880,932	4,139	3,431,177	11,605	7,802,879	1,200	778,110	175	116,936
BIVINS A-5	Jul-16	18,706	16,055,241	3,529	2,047,464	4,779	3,936,366	9,259	9,023,901	996	908,556	143	138,954
BIVINS A-7	Jul-16	15,822	11,822,047	4,680	2,789,254	4,129	2,977,108	6,229	5,416,755	681	552,599	103	86,331
BIVINS A-9	Jul-16	28,413	10,447,566	681	199,313	7,288	2,570,916	18,236	6,885,839	1,970	696,211	237	95,287
BIVINS A-11	Jul-16	20,371	6,454,224	600	139,347	5,187	1,605,790	12,989	4,215,200	1,400	433,097	195	60,790
BIVINS A-15	Jul-16	30,790	9,863,174	538	431,362	7,216	2,349,539	20,539	6,344,649	2,123	635,463	374	102,160
BIVINS B-1	Jul-16	32,046	8,075,035	737	300,935	8,120	1,957,232	21,628	5,201,342	1,404	532,785	157	82,741
BIVINS B-2	Jul-16	24,386	6,704,613	463	126,344	6,199	1,680,221	15,631	4,355,257	1,660	448,399	434	94,392
BUSH A-1	Jul-16	0	5,721,962	0	104,140	0	1,356,677	0	3,830,281	0	374,216	0	56,647
BUSH A-3	Jul-16	22,132	12,147,989	7,602	2,873,061	5,631	3,004,165	7,854	5,597,643	863	566,991	183	106,129
BUSH A-4	Jul-16	18,690	8,659,044	1,724	1,581,444	4,791	2,165,944	10,911	4,400,234	1,158	449,185	106	62,236
BUSH A-5	Jul-16	31,560	16,648,116	8,525	3,831,309	8,085	4,179,199	13,331	7,734,661	1,437	787,395	182	115,552
BUSH A-8	Jul-16	17,794	4,269,896	330	78,260	4,415	1,034,368	11,545	2,819,396	1,212	284,386	293	53,486
BUSH A-9	Jul-16	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Jul-16	6,294	4,557,293	128	132,872	1,513	1,090,038	4,140	2,979,487	425	302,568	88	52,328
BUSH B-1	Jul-16	4,203	3,333,967	75	62,581	993	791,085	2,793	2,227,881	301	219,785	41	32,635
FUQUA A-1	Jul-16	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Jul-16	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Jul-16	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Jul-16	900	0	1	0	38	0	734	0	126	0	1	0
field-wide pcts				15.58%	18.71%	25.03%	24.64%	53.02%	50.69%	5.47%	5.12%	0.90%	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 Jul-16 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 - 15	90.147	23.308
Injection 2003 - 15	(1.394)	(1.137)
Produced to Date 2016	2.525	0.452
Injected to Date 2016	(0.019)	(0.014)
Amount of Raw Gas Available to CHEU	89.305	=====> 10.646 total helium in reservoir
Estimated Bottom Hole Pressure	328.890	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

July - 2016

#### Crude Helium Enrichment Unit Operations

		Gross Withdrawal		Net Helium Withdrawal		Nitrogen		Methane		Ethane plus		Other (CO <sub>2</sub> , Ar, H <sub>2</sub> )	
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative
Measured Feed	Jul-16	451,058	90,098,509	71,540	22,108,216	112,792	22,593,396	237,939	40,319,623	24,755	4,301,064	4,032	776,210
Calculated Feed	Jul-16	442,610	89,830,598	69,091	22,079,732	110,989	22,522,110	234,406	40,143,535	24,150	4,309,703	3,974	775,518
Feed to Box	Jul-16	439,250	89,269,044	69,091	22,079,911	110,989	22,522,192	234,406	40,143,581	24,150	4,309,704	614	213,657
Cheu Product	Jul-16	84,417	27,824,935	63,197	21,737,109	18,822	5,347,644	1,788	546,375	51	639	558	193,169
Residue	Jul-16	195,411	40,083,607	55	2,038	5,218	991,286	172,833	35,563,722	17,303	3,525,305	2	1,256
Cold Box Vent	Jul-16	57,339	15,155,870	82	89,057	52,191	13,415,865	5,053	1,589,742	0	118	13	61,089
Flare/Boot Strap	Jul-16	57,339	5,672,118	82	49,836	52,191	4,670,867	5,053	851,911	0	93,583	13	5,923
Fuel From Cheu	Jul-16	3,752	1,226,905	2	368	97	36,109	3,026	995,127	627	195,301	0	0
Shrinkage/Loss	Jul-16	1,753	440,306	0	0	0	0	0	0	1,753	440,306	0	0
Unaccounted*	Jul-16	21,836	2,917,538	1,911	156,832	11,954	2,167,779	7,957	588,058	(0)	1,371	14	3,499

\*Before October 2004, the values are estimated

#### Storage Operations

##### Inventory (contained helium)

	Government	Private
Beginning inventory	5,571,832	2,791,008
net acceptances +	0	0
redeliveries	0	(64,617)
In Kind Transfers	(34,330)	34,330
Conservation Crude Sales	0	0
Gain/loss	38	
Ending Inventory	5,537,540	2,760,721
Total Helium in Reservoir	10,645,622	
Total Helium in Storage	8,298,261	
Helium in native gas	2,347,361	

##### Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	29,432	21,665	73.61%
Measured to Pipeline (Private Plants)	46,738	30,901	66.12%
Measured from Pipeline (Private Plant)	131,838	95,242	72.24%
HEU Production	84,417	63,197	74.86%
Injection	0	0	00.00%
Production	0	0	
Ending Inventory	28,557	20,559	71.99%
Gain/Loss	(192)	38	

#### 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

July - 2016

	NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind+	Charges Billed (\$)**	
<b>In Kind Helium</b>										
<b>AirGas South West, Contract no. INC98-0101</b>									(billed quarterly)	
Month										
FYTD										
<b>AirGas North Central, Contract no. INC98-0102</b>										
Month										
FYTD										
<b>AirGas Intermountain, Contract no. INC98-0103</b>										
Month										
FYTD										
<b>Air Liquide Helium America, Inc., Contract no. INC98-0104</b>										
Month										
FYTD										
<b>Air Products, L.P., Contract no. INC98-0105</b>										
Month										
FYTD										
<b>Linde Gas North America, LLC, Contract no. INC98-0106</b>										
Month										
FYTD										
<b>Corp Brothers, Inc., Contract no. INC98-0107</b>										
Month										
FYTD										
<b>FIBA Technologies, Inc., Contract no. INC98-0108</b>										
Month										
FYTD										
<b>General Air Service &amp; Supply Co., Contract no. INC98-0109</b>										
Month										
FYTD										
<b>Praxair, Inc., Contract no. INC98-0112</b>										
Month										
FYTD										
<b>United States Welding, Inc., Contract no. INC98-0113</b>										
Month										
FYTD										
<b>Matheson Tri-Gas, Inc., Contract no. INC98-0114</b>										
Month										
FYTD										
<b>GT &amp; S, Contract no. INC00-0115</b>										
Month										
FYTD										
<b>Global Gases America, Contract no. INC13-0116</b>										
Month										
FYTD										
<b>Total month</b>	0	0	0	0	0	0	0	0	\$0	
<b>Total FYTD</b>	45,271	1	0	0	0	52,763	98,034	96,523	\$7,893,382	
<b>Total CYTD</b>	33,199	1	0	0	0	34,224	67,424	66,385	\$5,602,894	
<b>Cumulative</b>	1,860,357	108,675	450	271,584	421,753	778,139	3,440,957	3,387,670	\$195,531,366	
<b>In Kind Transfers</b>							Month	FYTD	CYTD	Cumulative
Transferred							34,330	118,020	93,255	3,381,562
Volume outstanding							6,183			

\* Volumes in Mcf at 14.7 psia & 70°F  
 + Volumes in Mcf at 14.65 psia & 60°F

\*\*Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

July - 2016

**Helium & Natural Gas Sales**

	Award Volume*	Outstanding*	Sales*	Charges Billed (\$)** (billed quarterly)	
<b>Conservation Helium</b>					
<b>Air Liquide Helium America, Inc.</b>					
Month	0	0	0	\$0	
FYTD	20,000	0	50,000	\$5,230,000	
Cumulative	335,217		335,217	\$25,454,815	
<b>Air Products, L.P.</b>					
Month	0	0	0	\$0	
FYTD	193,875	0	318,875	\$33,038,000	
Cumulative	8,029,436		8,029,436	\$565,835,027	
<b>Linde Gas North America, LLC</b>					
Month	0	0	0	\$0	
FYTD	140,021	0	140,021	\$14,562,184	
Cumulative	6,030,653		6,030,653	\$404,691,853	
<b>Keyes Helium Co., LLC</b>					
Month	0	0	0	\$0	
FYTD	21,000	0	21,000	\$2,184,000	
Cumulative	977,113		977,113	\$66,015,798	
<b>Matheson Tri-Gas, Inc.</b>					
Month	0	0	0	\$0	
FYTD	68,000	0	68,000	\$7,072,000	
Cumulative	107,000		107,000	\$10,569,500	
<b>Praxair, Inc.</b>					
Month	0	0	0	\$0	
FYTD	183,104	0	273,104	\$28,407,816	
Cumulative	5,219,676		5,219,676	\$384,489,780	
<b>Linde Gas, LLC discontinued 10 2008</b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	200,000		200,000	\$11,035,000	
<b>Global Gases America</b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	22,967		22,967	\$2,112,565	
<b>Airgas Merchant Gases</b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	15,667		15,667	\$1,488,365	
<b>IACX Energy</b>					
Month	0	0	0	\$0	
FYTD	0	0	15,000	\$1,575,000	
Cumulative	15,000		15,000	\$1,575,000	
<b>Total month</b>	0	0	0		0
<b>Total FYTD</b>	626,000	0	886,000		\$0
<b>Total CYTD</b>	0		0		\$0
<b>Cumulative</b>	20,952,729		20,952,729		\$1,473,267,703
<b>Conservation Crude Transfers</b>		Month	FYTD	CYTD	Cumulative
Transferred		0	886,000	0	20,937,729
Volume outstanding		15,000			

\* Volumes in Mcf at 14.65 psia & 60°F

**Natural Gas/Liquid Sales**

	Natural Gas (Mcf)***	NGLs (gal)	Decatherms	Avg Btu Value	Charges Billed (\$)** (billed monthly)	
<b>El Paso Natural Gas</b>		Provides Measured Firm/Interruptible Transportation Services				
Month	192,939	---	212,122	1,099	(\$27,997)	
FYTD	1,495,922	---	1,648,381	1,102	(\$279,970)	
Cumulative	39,453,906	---	43,291,240	1,097	(\$4,528,385)	
<b>Minerals Management Service</b>		No Longer Provides Natural Gas Marketing Services				
Cumulative	---	---	---	---	(\$179,913)	
<b>Tenaska</b>		Purchaser - Natural Gas			\$/Unit	
Month	---	---	206,971	\$2.567025	\$531,300	
FYTD	---	---	1,644,192	\$1.946855	\$3,201,003	
Cumulative	---	---	42,961,405	\$4.609421	\$197,200,658	
<b>Sandstone</b>		Purchaser - Natural Gas Liquids				
Month	---	59,036	6,363	\$4.426645	\$28,167	
FYTD	---	441,446	47,359	\$4.351902	\$206,102	
Cumulative	---	11,905,745	1,267,034	\$11.722885	\$14,853,294	
	Natural Gas (Mcf)***	NGLs (gal)	Purchased (Dth's)	\$\$ Per Unit (\$\$/Dth)	Total (\$\$)	
<b>Total month</b>	192,939	59,036	213,334	\$2.491255	\$531,469	
<b>Total FYTD</b>	1,495,922	441,446	1,691,551	\$1.848679	\$3,127,135	
<b>Total CYTD</b>	1,112,494	308,700	1,231,984	\$1.866838	\$2,299,914	
<b>Cumulative</b>	39,453,906	11,905,745	44,228,439	\$4.706750	\$207,345,653	

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

\*\*Rounded to nearest dollar

## Table 6 - Helium Resources Evaluation

July - 2016

All Volumes in Mcf at 14.7 psia & 70°F

<b>Revenue Collected From Federal Leaseholds</b>	Month*	FYTD*
Fee Sales & Royalties	\$1,569,942	\$15,360,572
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$50,161	\$414,304
<b>Revenue Collected from Federal Lease Holds</b>	<b>\$1,569,223</b>	<b>\$15,412,259</b>

\*Totals do not sum

<b>Helium Analysis and Evaluation</b>	Month	FYTD
Number of Sample Request Letters Sent	0	0
Number of Samples Received	0	0
Number of Samples Analyzed	0	2
Total Number of Samples Analyzed For Resources Division	0	3
Total Number of Other Samples Analyzed (2)	12	98

### U. S. Helium Production

<i>Domestic</i>	FY Volume	CY Volume
2011 Helium Sold	4,531,140	4,645,930
2012 Helium Sold	4,725,187	4,623,130
2013 Helium Sold	4,279,765	4,166,708
2014 Helium Sold	3,815,746	3,466,014
2015 Helium Sold	4,559,100	4,644,278
Estimated Helium Resources as of 12/31/2006(Mcf)		732,000,000

	FY-2015	CY-2015
<b>U.S. Helium Exports</b> (3)	2,423,915	2,334,648

(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

July - 2016

All Volumes in Mcf at 14.65 psia & 60°F

	Metered Gas						Transferred Gas Helium		Stored Helium EOM	Charges Month	Billed (\$)** FYTD
	Gross Gas	Helium %	Helium	Helium			Month	Cumulative			
	Month	FYTD	CYTD	Cumulative							
<b>Total All Contracts*</b>											
Crude Acquired	46,738	65.5%	30,625	388,960	288,977	31,833,188	76,047	54,994,859			
Crude Disposed	131,838	72.2%	95,242	881,572	691,750	51,270,627	41,717	30,207,956	\$564,825	Storage Fees	
Grade-A Rdlvrd	0		0	0	0	1,478,718			<u>\$56,843</u>	RMF Fees	
Net/Balance	(85,100)		(64,617)	(492,612)	(402,773)	(20,916,157)	34,330	24,786,903	2,760,721	621667.54	\$6,340,073
<b>Total Prior Contracts (TERMINATED)</b>											
Crude Acquired			0	0	0	17,406,129	0	18,196,898			
Crude Disposed			0	0	0	11,830,863	0	19,148,768			
Grade-A Rdlvrd			0	0	0	1,478,718					
Number of trailers			0	0	0	9,834			0		
<b>Linde Gas North America, LLC, Contract no. 3249</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Praxair, Inc., Contract no. 3251</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Air Products, L.P., Contract no. 3256</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>IACX Energy, Contract no. 3297</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Pioneer Natural Resources USA, Inc, Contract no. 3286</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Keyes Helium Co., LLC, Contract no. 3287</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Air Liquide Helium America, Inc., Contract no. 3284</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Matheson Tri-Gas, Inc., Contract no. 3288</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Airgas Merchant Gases, Contract no. 3290</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Global Gases America, Contract no. 3293</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Linn Operating, Inc., Contract no. 3296</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											

<b>Government Helium</b>	
Remaining Crude Acquired beginning of the month	5,571,832
Crude Disposed: In Kind Sales transferred for the month	(34,330)
Conservation Crude Sales/Reserve Sell Down transferred (month)	0
Gains and Losses for the month	38
Net/Balance of Purchased Helium Remaining for Sale	5,537,540

\*Includes In Kind and Conservation Crude transfers from Government storage

\*\*Rounded to nearest dollar



## Table 8 - Compression & CHEU (Charges & Operations)

July - 2016

Field/CHEU Compressor Operations		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$2.57	\$1.88	\$4.90
Fuel used * (now includes field compression well head)	total MMBTU	5,087	65,919	1,695,208
Field Compression Fuel Cost *	\$dollars	\$0	\$4,049	\$658,447
CHEU Compression Fuel Cost *	\$dollars	\$5,651	\$71,922	\$4,276,081
CHEU Process Fuel Cost *	\$dollars	\$7,422	\$48,246	\$2,855,671
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	263	5,715	101,034
#2 Compressor run time *	hours	434	4,760	64,524
#3 Compressor run time *	hours	36	1,101	59,081

\* Field/CHEU Compressor Operations based on Jul 16 activity

Field Compressor Charges	Charges Billed (\$)*		
Linde Gas North America, LLC, Contract no. 3249			
Praxair, Inc., Contract no. 3251			
Air Products, L.P., Contract no. 3256			
Keyes Helium Co., LLC, Contract no. 3287			
SubTotal - Cliffside Refiners, LP (provides booster compression services)	\$0	(\$217,296)	(\$11,422,651)
Cliffside Refiners, LP, GDA010003 (BLM provided fuel *, labor, supplies, etc.)	\$0	\$88,817	\$2,880,795
<b>Net Total - Cliffside Refiners, LP</b>	<b>\$0</b>	<b>(\$128,479)</b>	<b>(\$8,541,856)</b>

\* BLM provided fuel cost is based on Jun 16 fuel consumed

**\*Rounded to nearest dollar**

Crude Helium Enrichment Unit (CHEU) CHEU Runtime	Month		FYTD		Cumulative
	Runtime Hrs	Percent	Runtime Hrs	Percent	Runtime Hrs
Processing feed gas	675	90.7%	6,744	92.1%	111,108
Producing residue gas	514	69.0%	5,708	78.0%	108,426
Producing helium product	459	61.7%	5,412	73.9%	104,977
Producing natural gas liquids	510	68.5%	5,575	76.2%	103,933

CHEU Charges	Charges Billed (\$)*		
	Month	FYTD	Cumulative
Reservoir Management Fees (RMF)	\$56,843	\$2,093,328	\$31,598,530
Total operating costs	(\$836,452)	(\$8,204,255)	(\$135,428,761)
Labor	\$130,284	\$1,302,844	\$14,078,047
Compressor fuel cost Jun 16	\$0	\$72,011	\$4,307,195
HEU fuel cost Jun 16	\$0	\$39,380	\$2,879,467
Electrical power cost Jun 16	\$135,753	\$1,099,876	\$20,450,980
Other	\$71,333	\$699,337	\$12,916,593
Sub Total - Items provided by BLM	\$337,371	\$3,213,448	\$57,841,637
Total - Cliffside Refiners, LP, GDA030001	(\$499,081)	(\$4,990,806)	(\$77,587,124)

**\*Rounded to nearest dollar**

CHEU Utility Usage	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage Jul 16	2,720	22,878	533,612
Cheu Pure Water Usage (gallons) Jul 16	324	9,434	294,357
Electricity Metered (Kwh) consumed Jun 16	2,507,492	23,410,147	120,108,018