

# Bureau of Land Management

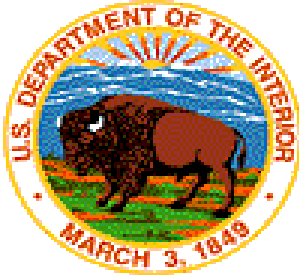
Amarillo Field Office

Helium Operations

Statistical Report

for

May - 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 13, 2016

**"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 26, 2016*

Table 1 - Summary of Helium Operations

May - 2016

**Helium Enrichment Unit Operations**

Gas Processed	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Measured Plant Feed (Mcf*)	388,236	73,865	19.03%	2,455,653	436,233
Helium Product (Mcf*)	89,620	67,053	74.82%	552,774	410,862
Residue Natural Gas (Mcf*)	180,245	4	0.00%	1,104,388	132

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

**Natural Gas & Liquids Produced**

Gas Processed	Month	FYTD
Natural Gas Sales (Mcf***)	178,140	1,096,705
NGL Sales (gallons)	50,819	301,174

\*\*\* 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Total Withdrawn (Mcf*)	377,543	68,143	18.05%	2,524,261	451,473
Crude Injection (Mcf*)	2,010	1,514	75.31%	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*)		5,572,386			

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

**In Kind Helium**

	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	1,819	83,690	58,925	3,347,232
Sale Volumes Outstanding (Mcf*)	2,267			

\* 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*)	55,026	38,337	69.67%	319,300
Crude Disposed (Mcf*)	143,576	105,126	73.22%	669,703
Net Balance (Mcf*)	(88,550)	(66,789)		(350,403)
Balance of Stored Helium End Of Month (Mcf*)		2,868,600		

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

**Revenue / Charges**

Helium Storage Contracts (Charges Billed (\$))	Month	FYTD
Storage Fees Billed (\$)	\$412,100	\$3,258,982
Reservoir Management Fees Billed (\$)	\$254,561	\$1,781,925

**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)	\$254,561	\$1,781,925
Total operating costs	(\$837,362)	(\$6,536,747)
Sub Total - Items provided by BLM	\$338,281	\$2,544,102
Total - Cliffside Refiners, LP, GDA030001	(\$499,081)	(\$3,992,645)

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

	Month	FYTD
Conservation Crude Helium Sales	\$0	\$0
In Kind Sales	\$0	\$4,665,420
Natural Gas & Liquid Sales	\$328,869	\$2,063,961

**Helium Resources Evaluation**

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$1,635,753	\$12,363,791
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 10

\*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

May - 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>377,543</b>	<b>224,162,791</b>	<b>68,143</b>	<b>41,960,770</b>	<b>93,825</b>	<b>55,232,490</b>	<b>190,595</b>	<b>113,607,182</b>	<b>21,208</b>	<b>11,483,117</b>	<b>3,772</b>	<b>1,879,232</b>
BIVINS A-3	May-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	May-16	27,738	11,427,051	15,092	6,798,303	6,819	2,807,684	5,091	1,608,390	536	159,218	200	53,456
BIVINS A-13	May-16	26,886	8,484,267	9,178	4,460,148	6,772	2,181,623	9,608	1,614,223	1,123	179,263	204	49,010
BIVINS A-14	May-16	32,798	9,541,506	10,199	5,495,026	8,195	2,419,203	12,689	1,417,555	1,422	153,518	293	56,204
BIVINS A-4	May-16	31,728	13,455,515	3,626	2,387,002	7,653	3,260,318	18,216	6,986,481	1,901	702,019	333	119,695
BUSH A-2	May-16	36,597	13,124,848	3,419	1,949,000	9,159	3,218,130	21,312	7,118,304	2,425	729,712	281	109,701
Injection	May-16	2,010	66,464,971	1,514	48,012,584	440	17,119,298	43	780,461	0	36	13	552,592
inj Bivins A-3	May-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	May-16	(2,010)	(24,402,922)	(1,514)	(17,662,775)	(440)	(6,484,304)	(43)	(142,978)	(0)	(71)	(13)	(112,794)
inj Bivins A-13	May-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	May-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	May-16	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	May-16	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	May-16	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
BIVINS A-1	May-16	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	May-16	9,171	13,977,849	297	1,879,865	2,097	3,423,665	5,908	7,781,786	718	775,916	152	116,617
BIVINS A-5	May-16	18,419	16,015,457	3,477	2,039,959	4,707	3,926,207	9,112	9,004,219	982	906,424	141	138,649
BIVINS A-7	May-16	8,410	11,796,079	2,636	2,781,469	2,196	2,970,334	3,174	5,406,627	349	551,486	55	86,161
BIVINS A-9	May-16	20,172	10,399,588	452	198,191	5,184	2,558,605	12,976	6,855,016	1,394	692,889	167	94,888
BIVINS A-11	May-16	5,297	6,411,906	151	138,108	1,352	1,595,016	3,383	4,188,208	360	430,190	51	60,384
BIVINS A-15	May-16	27,680	9,801,766	483	430,291	6,493	2,335,150	18,460	6,303,682	1,907	631,229	337	101,413
BIVINS B-1	May-16	26,206	8,010,946	568	299,465	6,251	1,941,043	16,639	5,158,225	2,296	529,832	453	82,381
BIVINS B-2	May-16	21,904	6,655,544	416	125,413	5,572	1,667,750	14,035	4,323,804	1,490	445,059	391	93,518
BUSH A-1	May-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	May-16	23,149	12,100,531	7,956	2,856,760	5,891	2,992,090	8,210	5,580,803	900	565,140	191	105,737
BUSH A-4	May-16	8,318	8,627,283	747	1,578,556	2,132	2,157,808	4,872	4,381,661	521	447,202	47	62,056
BUSH A-5	May-16	33,807	16,579,487	9,079	3,812,832	8,654	4,161,626	14,309	7,705,635	1,566	784,242	199	115,152
BUSH A-8	May-16	10,036	4,239,014	186	77,687	2,493	1,026,705	6,508	2,799,361	683	282,283	165	52,979
BUSH A-9	May-16	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	May-16	5,901	4,545,043	121	132,622	1,419	1,087,093	3,882	2,971,430	398	301,741	82	52,157
BUSH B-1	May-16	3,326	3,325,864	60	62,436	786	789,171	2,210	2,222,496	238	219,204	32	32,557
FUQUA A-1	May-16	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	May-16	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	May-16	0	9,303,909	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,160
TT Fuel	May-16	57	0	1	0	14	0	38	0	4	0	1	0
field-wide pcts				18.05%	18.72%	24.85%	24.64%	50.48%	50.68%	5.62%	5.12%	1.00%	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 May-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	1.635	0.305
Injected to Date 2016	(0.019)	(0.014)
Amount of Raw Gas Available to CHEU	90.195	=====> 10.792 total helium in reservoir
Estimated Bottom Hole Pressure	332.167	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

May - 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	May-16	388,236	89,194,047	73,865	21,957,966	96,213	22,367,316	192,888	39,848,804	21,413	4,251,796	3,856	768,165
Calculated Feed	May-16	383,809	88,941,580	72,905	21,932,988	95,194	22,299,486	190,693	39,679,976	21,204	4,261,603	3,813	767,527
Feed to Box	May-16	380,653	88,386,705	72,905	21,933,166	95,194	22,299,568	190,693	39,680,022	21,204	4,261,604	657	212,345
Cheu Product	May-16	89,620	27,641,561	67,053	21,599,501	20,039	5,306,922	1,933	542,606	1	583	593	191,949
Residue	May-16	180,245	39,679,519	4	1,915	4,308	980,197	159,707	35,206,569	16,226	3,489,586	0	1,253
Cold Box Vent	May-16	61,302	15,030,393	43	88,868	51,656	13,303,132	9,591	1,577,212	0	118	12	61,063
Flare/Boot Strap	May-16	61,302	5,546,642	43	49,648	51,656	4,558,134	9,591	839,381	0	93,583	12	5,896
Fuel From Cheu	May-16	6,862	1,217,454	3	363	178	35,864	5,534	987,505	1,147	193,721	0	0
Shrinkage/Loss	May-16	2,989	436,094	0	0	0	0	0	0	2,989	436,094	0	0
Unaccounted*	May-16	21,666	2,870,800	2,297	153,491	12,104	2,141,913	7,244	570,554	(0)	1,371	20	3,471

\*Before October 2004, the values are estimated

#### Storage Operations

##### Inventory (contained helium)

	Government	Private
Beginning inventory	5,579,204	2,933,570
net acceptances +	0	0
redeliveries	0	(66,789)
In Kind Transfers	(1,819)	1,819
Conservation Crude Sales	0	0
Gain/loss	(4,999)	
Ending Inventory	5,572,386	2,868,600
Total Helium in Reservoir	10,792,379	
Total Helium in Storage	8,440,986	
Helium in native gas	2,351,392	

##### Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	43,468	31,488	72.44%
Measured to Pipeline (Private Plants)	55,026	38,429	69.84%
Measured from Pipeline (Private Plant)	143,576	105,126	73.22%
HEU Production	89,620	67,053	74.82%
Injection	2,010	1,514	75.31%
Production	0	0	
Ending Inventory	34,667	25,331	73.07%
Gain/Loss	(7,861)	(4,999)	

#### 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

May - 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>	25,533	0	0	0	0	33,656	59,189	58,277	\$4,665,420	
<b>Total CYTD</b>	13,461	0	0	0	0	15,118	28,579	28,139	\$2,374,932	
<b>Cumulative</b>	1,840,619	108,674	450	271,584	421,753	759,032	3,402,112	3,349,424	\$192,303,403	
<b>In Kind Transfers</b>							Month	FYTD	CYTD	Cumulative
Transferred							1,819	83,690	58,925	3,347,232
Volume outstanding							2,267			

\* 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

May - 2016

**Helium & Natural Gas Sales**

	Award Volume*	Outstanding*	Sales*	Charges Billed (\$)***	
<b>Conservation Helium</b>					
<b>(billed quarterly)</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>					
Transferred		Month	FYTD	CYTD	Cumulative
Volume outstanding		0	886,000	0	20,937,729
		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 (\$)***	
<b>El Paso Natural Gas</b>						
		Provides Measured Firm/Interruptible Transportation Services			(billed monthly)	
Month	178,140	---	196,405	1,103	(\$27,997)	
FYTD	1,096,705	---	1,209,568	1,103	(\$223,976)	
Cumulative	39,054,689	---	42,852,427	1,097	(\$4,472,391)	
<b>Minerals Management Service</b>						
		No Longer Provides Natural Gas Marketing Services				
Cumulative	---	---	---	---	(\$179,913)	
<b>Tenaska</b>						
		Purchaser - Natural Gas			\$/Unit	
Month	---	---	188,400	\$1.749050	\$329,521	
FYTD	---	---	1,211,291	\$1.778485	\$2,154,263	
Cumulative	---	---	42,528,504	\$4.631728	\$196,153,918	
<b>Sandstone</b>						
		Purchaser - Natural Gas Liquids				
Month	---	50,819	5,466	\$5.002667	\$27,345	
FYTD	---	301,174	32,256	\$4.144157	\$133,674	
Cumulative	---	11,765,473	1,251,931	\$11.806454	\$14,780,866	
	Natural Gas (Mcf)***	NGLs (gal)	Purchased (Dth's)	\$\$ Per Unit (\$\$/Dth)	Total (\$\$)	
<b>Total month</b>	178,140	50,819	193,866	\$1.696371	\$328,869	
<b>Total FYTD</b>	1,096,705	301,174	1,243,547	\$1.659737	\$2,063,961	
<b>Total CYTD</b>	713,277	168,428	783,980	\$1.577515	\$1,236,740	
<b>Cumulative</b>	39,054,689	11,765,473	43,780,435	\$4.730630	\$206,282,480	

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

\*\*Rounded to nearest dollar

## Table 6 - Helium Resources Evaluation

May - 2016

All Volumes in Mcf at 14.7 psia & 70°F

<b>Revenue Collected From Federal Leaseholds</b>	Month*	FYTD*
Fee Sales & Royalties	\$1,647,463	\$12,335,247
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$27,018	\$313,262
<b>Revenue Collected from Federal Lease Holds</b>	<b>\$1,635,753</b>	<b>\$12,363,791</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)	10	67

### 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

May - 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 Month	Helium %	Helium	FYTD	Helium CYTD	Cumulative	Month			
<b>Total All Contracts*</b>										
Crude Acquired	55,026	69.7%	38,337	319,300	219,317	30,685,257	42,605	54,872,345		
Crude Disposed	143,576	73.2%	105,126	669,703	479,881	51,058,758	40,786	30,119,772	\$412,100	Storage Fees
Grade-A Rdlvrd	0		0	0	0	1,478,718			\$254,561	RMF Fees
Net/Balance	(88,550)		(66,789)	(350,403)	(260,564)	(21,852,219)	1,819	24,752,573	\$666,660	\$5,040,907
<b>Total Prior Contracts (TERMINATED)</b>										#VALUE!
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		
<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	5,579,204
Crude Disposed: In Kind Sales transferred for the month	(1,819)
Conservation Crude Sales/Reserve Sell Down transferred (month)	0
Gains and Losses for the month	(4,999)
Net/Balance of Purchased Helium Remaining for Sale	5,572,386

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

\*\*Rounded to nearest dollar



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

May - 2016

Field/CHEU Compressor Operations		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$1.75	\$1.77	\$4.92
Fuel used * (now includes field compression well head)	total MMBTU	7,998	53,675	1,682,964
Field Compression Fuel Cost *	\$dollars	\$0	\$4,049	\$658,447
CHEU Compression Fuel Cost *	\$dollars	\$9,097	\$56,542	\$4,260,701
CHEU Process Fuel Cost *	\$dollars	\$4,900	\$34,235	\$2,841,660
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	718	4,800	100,119
#2 Compressor run time *	hours	697	3,696	63,460
#3 Compressor run time *	hours	0	1,065	59,045

\* Field/CHEU Compressor Operations based on May 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 Apr 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	741	99.6%	5,372	91.7%	109,736
Producing residue gas	739	99.4%	4,525	77.3%	107,243
Producing helium product	708	95.1%	4,337	74.1%	103,902
Producing natural gas liquids	738	99.2%	4,444	75.9%	102,802

CHEU Charges	Charges Billed (\$)*		
	Month	FYTD	Cumulative
Reservoir Management Fees (RMF)	\$254,561	\$1,781,925	\$31,287,127
Total operating costs	(\$837,362)	(\$6,536,747)	(\$133,761,253)
Labor	\$130,284	\$1,042,275	\$13,817,478
Compressor fuel cost Apr 16	\$9,856	\$62,914	\$4,298,098
HEU fuel cost Apr 16	\$4,551	\$34,480	\$2,874,567
Electrical power cost Apr 16	\$122,257	\$833,765	\$20,184,869
Other	\$71,333	\$570,667	\$12,787,923
Sub Total - Items provided by BLM	\$338,281	\$2,544,102	\$57,172,290
Total - Cliffside Refiners, LP, GDA030001	(\$499,081)	(\$3,992,645)	(\$76,588,963)

**\*Rounded to nearest dollar**

CHEU Utility Usage	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage May 16	2,422	17,543	528,277
Cheu Pure Water Usage (gallons) May 16	1,136	6,016	290,939
Electricity Metered (Kwh) consumed Apr 16	2,596,247	18,121,874	114,819,745