

Bureau of Land Management

Amarillo Field Office

Helium Operations

Statistical Report

for

September - 2016



Distribution:

Fluid Minerals Group Manager, Washington Office
NMSO, New Mexico State Director
NMSO, Associate State Director
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-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: January 13, 2017

"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:

Januray 19, 2017

Table 1 - Summary of Helium Operations

September - 2016

Helium Enrichment Unit Operations

Gas Processed	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Measured Plant Feed (Mcf*)	545,112	92,920	17.05%	4,524,157	787,665
Helium Product (Mcf*)	119,188	90,209	75.69%	994,616	744,400
Residue Natural Gas (Mcf*)	283,012	0	0.00%	2,115,620	256

* Volumes in Mcf at 14.65 psia & 60°F

Natural Gas & Liquids Produced

Gas Processed	Month	FYTD
Natural Gas Sales (Mcf***)	308,665	2,124,564
NGL Sales (gallons)	87,276	616,095

*** 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Total Withdrawn (Mcf*)	557,461	95,004	17.04%	4,594,115	801,980
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*)		175,000	1,061,000	175,000	21,127,729
Conservation Crude Sale Volume Transferred (Mcf*)	15,000	0	1,061,000	175,000	21,112,729
Conservation Helium in Storage (EOM) (Mcf*)		5,360,727			

* Volumes in Mcf at 14.65 psia & 60°F

In Kind Helium

	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	0	121,936	97,171	3,385,478
Sale Volumes Outstanding (Mcf*)	41,841			

* 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*)	50,920	33,936	66.65%	456,543
Crude Disposed (Mcf*)	163,524	119,365	73.00%	1,143,195
Net Balance (Mcf*)	(112,604)	(85,429)		(686,652)
Balance of Stored Helium End Of Month (Mcf*)		2,745,597		

* Volumes in Mcf at 14.65 psia & 60°F

Revenue / Charges

Helium Storage Contracts (Charges Billed (\$))	Month	FYTD
Storage Fees Billed (\$)	\$47,072	\$4,755,921
Reservoir Management Fees Billed (\$)	\$0	\$2,325,921

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)	\$0	\$2,325,921
Total operating costs	(\$700,698)	(\$9,605,652)
Sub Total - Items provided by BLM	\$201,618	\$3,616,684
Total - Cliffside Refiners, LP, GDA030001	(\$499,081)	(\$5,988,968)

Conservation Helium - Natural Gas - Liquid Sales (Charges Billed (\$))	Month	FYTD
Conservation Crude Helium Sales	\$0	\$0
In Kind Sales	\$3,340,046	\$11,233,428
Natural Gas & Liquid Sales	\$842,730	\$4,890,460

Helium Resources Evaluation	Month	FYTD
Revenue Collected from Federal Lease Holds	\$332,800	\$17,221,111
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 13

*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

September - 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
TOTAL		557,461	226,232,645	95,004	42,311,277	139,349	55,750,581	288,917	114,679,936	29,275	11,593,232	4,915	1,897,618
BIVINS A-3	Sep-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	Sep-16	49,291	11,604,262	23,561	6,883,733	12,305	2,852,306	11,828	1,649,814	1,233	163,643	364	54,767
BIVINS A-13	Sep-16	33,525	8,607,348	11,326	4,501,893	8,328	2,212,510	12,269	1,658,651	1,351	184,352	251	49,941
BIVINS A-14	Sep-16	39,867	9,688,404	12,257	5,540,338	9,810	2,455,743	15,774	1,474,969	1,674	159,838	351	57,515
BIVINS A-4	Sep-16	39,464	13,607,199	4,554	2,404,481	9,523	3,296,939	22,617	7,073,417	2,356	711,082	414	121,280
BUSH A-2	Sep-16	44,549	13,296,511	4,107	1,964,894	11,191	3,261,236	26,128	7,218,866	2,824	740,660	298	110,856
Injection	Sep-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	Sep-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	Sep-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	Sep-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	Sep-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	Sep-16	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Sep-16	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Sep-16	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
BIVINS A-1	Sep-16	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Sep-16	18,870	14,051,094	632	1,882,308	4,414	3,440,781	12,371	7,829,797	1,268	780,869	185	117,339
BIVINS A-5	Sep-16	26,928	16,112,223	5,060	2,058,171	6,883	3,950,931	13,359	9,052,170	1,422	911,564	205	139,387
BIVINS A-7	Sep-16	21,053	11,867,198	6,194	2,802,538	5,497	2,988,897	8,326	5,434,612	899	554,527	137	86,624
BIVINS A-9	Sep-16	32,727	10,512,000	755	200,838	8,390	2,587,435	21,041	6,927,222	2,266	700,676	275	95,828
BIVINS A-11	Sep-16	23,578	6,504,717	692	140,830	6,000	1,618,640	15,035	4,247,398	1,623	436,572	228	61,276
BIVINS A-15	Sep-16	34,725	9,935,647	607	432,630	8,136	2,366,518	23,165	6,392,996	2,394	640,461	423	103,041
BIVINS B-1	Sep-16	36,618	8,152,271	842	302,711	9,279	1,976,803	24,714	5,253,468	1,604	536,168	179	83,120
BIVINS B-2	Sep-16	28,436	6,764,748	540	127,486	7,226	1,695,502	18,229	4,393,808	1,937	452,496	503	95,456
BUSH A-1	Sep-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	Sep-16	30,977	12,214,596	10,635	2,895,927	7,881	3,021,109	10,994	5,621,282	1,211	569,596	257	106,682
BUSH A-4	Sep-16	21,660	8,704,355	2,008	1,585,645	5,556	2,177,567	12,648	4,426,691	1,326	451,958	123	62,494
BUSH A-5	Sep-16	42,546	16,739,834	10,620	3,854,268	10,939	4,202,778	19,108	7,775,768	1,650	790,971	230	116,049
BUSH A-8	Sep-16	21,121	4,313,460	391	79,066	5,242	1,045,178	13,701	2,847,657	1,438	287,353	349	54,205
BUSH A-9	Sep-16	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Sep-16	7,127	4,570,802	145	133,147	1,713	1,093,285	4,686	2,988,369	482	303,483	100	52,517
BUSH B-1	Sep-16	4,398	3,342,727	79	62,738	1,038	793,152	2,924	2,233,704	316	220,413	43	32,720
FUQUA A-1	Sep-16	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Sep-16	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Sep-16	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Sep-16	230	0	0	0	10	0	188	0	32	0	0	0
field-wide pct				17.04%	18.70%	25.00%	24.64%	51.83%	50.69%	5.25%	5.12%	0.88%	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 Sep-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	3.705	0.656
Injected to Date 2016	(0.019)	(0.014)
Amount of Raw Gas Available to CHEU	88.126	=====> 10.442 total helium in reservoir
Estimated Bottom Hole Pressure	324.552	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

September - 2016

Crude Helium Enrichment Unit Operations

		Gross Withdrawal		Net Helium Withdrawal		Nitrogen		Methane		Ethane plus		Other (CO ₂ , Ar, H ₂)	
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative
Measured Feed	Sep-16	545,112	91,262,551	92,920	22,309,398	136,218	22,884,831	282,481	40,919,701	28,677	4,362,150	4,816	786,471
Calculated Feed	Sep-16	557,231	91,009,553	95,004	22,283,482	139,340	22,817,367	288,729	40,751,299	29,243	4,371,501	4,915	785,904
Feed to Box	Sep-16	553,178	90,439,468	95,004	22,283,661	139,340	22,817,449	288,729	40,751,345	29,243	4,371,502	862	215,511
Cheu Product	Sep-16	119,188	28,083,404	90,209	21,933,039	25,758	5,403,214	2,397	551,506	27	736	797	194,909
Residue	Sep-16	283,012	40,690,752	0	2,038	6,882	1,006,098	251,128	36,102,382	25,002	3,578,977	0	1,256
Cold Box Vent	Sep-16	84,772	15,339,655	71	89,207	77,897	13,584,869	6,786	1,604,329	0	118	18	61,132
Flare/Boot Strap	Sep-16	84,772	5,855,904	71	49,986	77,897	4,839,871	6,786	866,498	0	93,583	18	5,966
Fuel From Cheu	Sep-16	6,537	1,240,284	3	375	169	36,455	5,272	1,005,918	1,092	197,536	0	0
Shrinkage/Loss	Sep-16	2,125	444,857	0	0	0	0	0	0	2,125	444,857	0	0
Unaccounted*	Sep-16	39,673	2,996,855	3,747	163,073	22,792	2,214,597	13,092	614,253	(0)	1,371	42	3,560

*Before October 2004, the values are estimated

Storage Operations

Inventory (contained helium)

	Government	Private
Beginning inventory	5,359,646	2,831,026
net acceptances +	0	0
redeliveries	0	(85,429)
In Kind Transfers	0	0
Conservation Crude Sales	0	0
Gain/loss	1,082	
Ending Inventory	5,360,727	2,745,597
Total Helium in Reservoir	10,441,872	
Total Helium in Storage	8,106,324	
Helium in native gas	2,335,547	

Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	25,668	18,797	73.23%
Measured to Pipeline (Private Plants)	50,920	33,960	66.69%
Measured from Pipeline (Private Plant)	163,164	119,365	73.16%
HEU Production	119,188	90,209	75.69%
Injection	0	0	00.00%
Production	0	0	
Ending Inventory	33,777	24,682	73.07%
Gain/Loss	1,165	1,082	

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

September - 2016

	NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind+	Charges Billed (\$)**	
In Kind Helium										
AirGas South West, Contract no. INC98-0101									(billed quarterly)	
Month										
FYTD										
AirGas North Central, Contract no. INC98-0102										
Month										
FYTD										
AirGas Intermountain, Contract no. INC98-0103										
Month										
FYTD										
Air Liquide Helium America, Inc., Contract no. INC98-0104										
Month										
FYTD										
Air Products, L.P., Contract no. INC98-0105										
Month										
FYTD										
Linde Gas North America, LLC, Contract no. INC98-0106										
Month										
FYTD										
Corp Brothers, Inc., Contract no. INC98-0107										
Month										
FYTD										
FIBA Technologies, Inc., Contract no. INC98-0108										
Month										
FYTD										
General Air Service & Supply Co., Contract no. INC98-0109										
Month										
FYTD										
Praxair, Inc., Contract no. INC98-0112										
Month										
FYTD										
United States Welding, Inc., Contract no. INC98-0113										
Month										
FYTD										
Matheson Tri-Gas, Inc., Contract no. INC98-0114										
Month										
FYTD										
GT & S, Contract no. INC00-0115										
Month										
FYTD										
Global Gases America, Contract no. INC13-0116										
Month										
FYTD										
Total month	25,665	3	0	0	0	14,527	40,195	39,574	\$3,340,046	
Total FYTD	70,935	4	0	0	0	67,290	138,229	136,097	\$11,233,428	
Total CYTD	58,863	4	0	0	0	48,752	107,619	105,959	\$8,942,940	
Cumulative	1,886,021	108,677	450	271,584	421,753	792,666	3,481,151	3,427,244	\$198,871,411	
In Kind Transfers							Month	FYTD	CYTD	Cumulative
Transferred							0	121,936	97,171	3,385,478
Volume outstanding							41,841			

* 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

September - 2016

Helium & Natural Gas Sales

	Award Volume*	Outstanding*	Sales*	Charges Billed (\$)**	
Conservation Helium					
(billed quarterly)					
<u>Air Liquide Helium America, Inc.</u>					
Month	0	0	0	\$0	
FYTD	20,000	0	50,000	\$5,230,000	
Cumulative	335,217		335,217	\$25,454,815	
<u>Air Products, L.P.</u>					
Month	0	0	0	\$0	
FYTD	613,184	419,309	318,875	\$33,038,000	
Cumulative	8,448,745		8,029,436	\$565,835,027	
<u>Linde Gas North America, LLC</u>					
Month	0	0	0	\$0	
FYTD	280,355	140,334	140,021	\$14,562,184	
Cumulative	6,170,987		6,030,653	\$404,691,853	
<u>Keyes Helium Co., LLC</u>					
Month	0	0	0	\$0	
FYTD	42,844	21,844	21,000	\$2,184,000	
Cumulative	998,957		977,113	\$66,015,798	
<u>Matheson Tri-Gas, Inc.</u>					
Month	0	(175,000)	175,000	\$18,750,000	
FYTD	289,700	46,700	243,000	\$25,822,000	
Cumulative	328,700		282,000	\$29,319,500	
<u>Praxair, Inc.</u>					
Month	0	0	0	\$0	
FYTD	366,617	183,513	273,104	\$28,407,816	
Cumulative	5,403,189		5,219,676	\$384,489,780	
<u>Linde Gas, LLC discontinued 10 2008</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	200,000		200,000	\$11,035,000	
<u>Global Gases America</u>					
Month	0	0	0	\$0	
FYTD	13,300	13,300	0	\$0	
Cumulative	36,267		22,967	\$2,112,565	
<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	15,000	\$1,575,000	
Cumulative	15,000		15,000	\$1,575,000	
Total month	0	(175,000)	175,000		0
Total FYTD	1,626,000	825,000	1,061,000		\$0
Total CYTD	1,000,000		175,000		\$0
Cumulative	21,952,729		21,127,729		\$1,492,017,703
Conservation Crude Transfers					
		Month	FYTD	CYTD	Cumulative
Transferred		0	1,061,000	175,000	21,112,729
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 (\$)**	
<u>El Paso Natural Gas</u>						
		Provides Measured Firm/Interruptible Transportation Services			(billed monthly)	
Month	308,665	---	311,310	1,009	(\$27,997)	
FYTD	2,124,564	---	2,311,681	1,088	(\$335,964)	
Cumulative	40,082,548	---	43,954,540	1,097	(\$4,584,379)	
<u>Minerals Management Service</u>						
		No Longer Provides Natural Gas Marketing Services				
Cumulative	---	---	---	---	(\$179,913)	
<u>Tenaska</u>						
		Purchaser - Natural Gas			\$/Unit	
Month	---	---	309,000	\$2.677620	\$827,384	
FYTD	---	---	2,307,892	\$2.138108	\$4,934,522	
Cumulative	---	---	43,625,105	\$4.579031	\$198,934,176	
<u>Sandstone</u>						
		Purchaser - Natural Gas Liquids				
Month	---	87,276	9,475	\$4.574457	\$43,343	
FYTD	---	616,095	66,314	\$4.401813	\$291,902	
Cumulative	---	12,080,394	1,285,989	\$11.616813	\$14,939,094	
	Natural Gas (Mcf)***	NGLs (gal)	Purchased (Dth's)	\$\$ Per Unit (\$\$/Dth)	Total (\$\$)	
Total month	308,665	87,276	318,475	\$2.646143	\$842,730	
Total FYTD	2,124,564	616,095	2,374,206	\$2.059829	\$4,890,460	
Total CYTD	1,741,136	483,349	1,914,639	\$2.122196	\$4,063,239	
Cumulative	40,082,548	12,080,394	44,911,094	\$4.674469	\$209,108,978	

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

**Rounded to nearest dollar

Table 6 - Helium Resources Evaluation

September - 2016

All Volumes in Mcf at 14.7 psia & 70°F

Revenue Collected From Federal Leaseholds	Month*	FYTD*
Fee Sales & Royalties	\$362,490	\$17,219,583
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$28,342	\$472,337
Revenue Collected from Federal Lease Holds	\$332,800	\$17,221,111

*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	2	48
Total Number of Samples Analyzed For Resources Division	2	51
Total Number of Other Samples Analyzed (2)	13	138

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
U.S. Helium Exports (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

September - 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							
Total All Contracts*											
Crude Acquired	50,920	66.6%	33,936	456,543	356,560	31,900,771	30,280	55,229,929			
Crude Disposed	163,524	73.0%	119,365	1,143,195	953,373	51,532,250	30,280	30,264,110	\$47,072	Storage Fees	
Grade-A Rdlvrd	0		0	0	0	1,478,718			\$0	RMF Fees	
Net/Balance	(112,604)		(85,429)	(686,652)	(596,813)	(21,110,197)	0	24,965,819	2,745,597	\$47,072.40	\$7,081,842
Total Prior Contracts (TERMINATED)											
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		
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											
IACX Energy, Contract no. 3297											
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											
Air Liquide Helium America, Inc., Contract no. 3284											
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											

Government Helium	
Remaining Crude Acquired beginning of the month	5,359,646
Crude Disposed: In Kind Sales transferred for the month	0
Conservation Crude Sales/Reserve Sell Down transferred (month)	0
Gains and Losses for the month	1,082
Net/Balance of Purchased Helium Remaining for Sale	5,360,727

*Includes In Kind and Conservation Crude transfers from Government storage

**Rounded to nearest dollar

Table 8 - Compression & CHEU (Charges & Operations) September - 2016

Field/CHEU Compressor Operations		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$2.68	\$1.99	\$4.88
Fuel used * (now includes field compression well head)	total MMBTU	7,748	81,634	1,710,923
Field Compression Fuel Cost *	\$dollars	\$0	\$4,049	\$658,447
CHEU Compression Fuel Cost *	\$dollars	\$8,734	\$91,845	\$4,296,004
CHEU Process Fuel Cost *	\$dollars	\$8,876	\$66,249	\$2,873,674
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	500	6,947	102,266
#2 Compressor run time *	hours	253	5,699	65,463
#3 Compressor run time *	hours	201	1,344	59,324

* Field/CHEU Compressor Operations based on Sep 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
Net Total - Cliffside Refiners, LP	\$0	(\$128,479)	(\$8,541,856)

* BLM provided fuel cost is based on Aug 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	720	100.0%	8,204	93.4%	112,568
Producing residue gas	643	89.3%	7,089	80.7%	109,807
Producing helium product	635	88.2%	6,780	77.2%	106,345
Producing natural gas liquids	643	89.3%	6,951	79.1%	105,309

CHEU Charges	Charges Billed (\$)*		
	Month	FYTD	Cumulative
Reservoir Management Fees (RMF)	\$0	\$2,325,921	\$31,831,123
Total operating costs	(\$700,698)	(\$9,605,652)	(\$136,830,158)
Labor	\$130,284	\$1,563,413	\$14,338,616
Compressor fuel cost Aug 16	\$0	\$72,011	\$4,307,195
HEU fuel cost Aug 16	\$0	\$39,380	\$2,879,467
Electrical power cost Aug 16	\$0	\$1,099,876	\$20,450,980
Other	\$71,333	\$842,004	\$13,059,260
Sub Total - Items provided by BLM	\$201,618	\$3,616,684	\$58,244,873
Total - Cliffside Refiners, LP, GDA030001	(\$499,081)	(\$5,988,968)	(\$78,585,285)

*Rounded to nearest dollar

CHEU Utility Usage	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage Sep 16	2,919	28,905	539,639
Cheu Pure Water Usage (gallons) Sep 16	46	9,526	294,448
Electricity Metered (Kwh) consumed Aug 16	4,600	23,419,347	120,117,218