

Bureau of Land Management

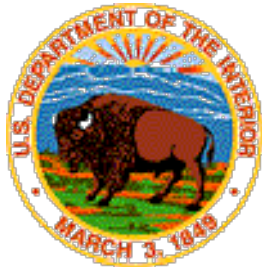
Amarillo Field Office

Helium Operations

Statistical Report

for

August - 2020



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)
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-Federal Leased Lands
-Resources Evaluation & Gas Analysis
-Division Of Helium Operations, -
Engineering and Technical Support

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Compiled by: David Reeves
Amarillo, Texas
Issued: October 22, 2021

**"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:

October 20, 2021

Table 1 - Summary of Helium Operations

August - 2020

Helium Enrichment Unit Operations

Gas Processed	Month	Month	Average Percent	Gross FYTD	Net FYTD
	Gross Volume	Net Helium			
Measured Plant Feed (Mcf*)	278,699	34,156	12.26%	4,100,332	574,463
Helium Product (Mcf*)	46,949	32,942	70.16%	807,357	574,592
Residue Natural Gas (Mcf*)	121,257	0	00.00%	1,796,504	86

* Volumes in Mcf at 14.65 psia & 60°F

Natural Gas & Liquids Produced

Gas Processed	Month	FYTD
Natural Gas Sales (Mcf****)	119,373	1,774,177
NGL Sales (gallons)	45,781	709,326

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

Bush Dome Reservoir Operations

Conservation gases from all sources	Month	Month	Average Percent	Gross FYTD	Net FYTD
	Gross Volume	Net Helium			
Total Withdrawn (Mcf*)	275,066	33,034	12.01%	4,115,065	575,177
Crude Injection (Mcf*)	2,139	1,485	69.46%	183,811	129,261
Crude Production (Mcf*)	652	384	58.81%	1,680	1,108

* Volumes in Mcf at 14.65 psia & 60°F

Storage Operations

In Kind Helium	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	43,422	211,258	159,789	4,061,002
Sale Volumes Outstanding (Mcf*)	(12,780)			

* Volumes in Mcf at 14.65 psia & 60°F

Private Company Helium Storage Contracts

Contact Activity	Month	Month	Average Percent	Annual Helium FYTD
	Gross Volume	Net Helium		
Crude Acquired (Mcf*)	18,106	13,223	73.03%	134,905
Crude Disposed (Mcf*)	49,756	35,366	71.08%	500,549
Net Balance (Mcf*)	(31,650)	(22,143)		(365,644)
Balance of Stored Helium End Of Month (Mcf*)		2,275,501		

* Volumes in Mcf at 14.65 psia & 60°F

Revenue / Charges

Helium Storage Contracts (Charges Billed (\$))	Month	FYTD
Storage Fees Billed (\$)	\$849,694	\$9,337,318
Resource Management Fees Billed (\$)	\$274,090	\$2,740,913
Total Storage and RMF Collected	\$1,123,784	\$12,078,231

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

	Month	FYTD
In Kind Sales	\$0	\$13,742,753
Natural Gas & Liquid Sales	\$238,932	\$2,403,943

Helium Resources Evaluation

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$1,938,027	\$20,959,536
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 7

*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

August - 2020

		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		275,066	248,529,580	33,034	45,792,348	67,773	61,275,769	155,400	126,478,186	16,111	12,863,807	2,748	2,119,471
BIVINS A-3	Aug-20	0	10,961,114	0	3,548,629	0	2,772,147	0	4,159,384	0	407,301	0	73,653
BIVINS A-6	Aug-20	2,505	13,481,842	1,732	7,660,317	694	3,320,422	65	2,207,807	0	224,102	14	69,194
BIVINS A-13	Aug-20	20,610	10,083,935	6,008	4,969,673	5,159	2,581,190	8,331	2,223,398	958	248,554	155	61,120
BIVINS A-14	Aug-20	23,848	11,411,877	4,392	5,991,283	5,726	2,878,791	12,136	2,226,057	1,356	242,349	237	73,398
BIVINS A-4	Aug-20	18,642	15,131,957	1,557	2,563,424	4,424	3,663,322	11,224	7,963,042	1,216	803,722	221	138,447
BUSH A-2	Aug-20	6,160	14,135,846	258	2,025,242	1,536	3,472,166	3,876	7,724,926	451	796,958	39	116,555
Injection	Aug-20	2,139	66,658,546	1,485	48,149,049	588	17,170,957	53	784,374	0	42	13	554,124
inj Bivins A-3	Aug-20	0	(25,652,315)	0	(18,384,452)	0	(6,554,549)	0	(332,777)	0	0	0	(380,537)
inj Bivins A-6	Aug-20	(2,139)	(24,594,575)	(1,459)	(17,797,621)	(615)	(6,535,735)	(52)	(147,167)	(0)	(80)	(13)	(113,973)
inj Bivins A-13	Aug-20	0	(6,492,339)	0	(4,707,153)	0	(1,657,381)	0	(122,769)	0	(44)	0	(4,992)
inj Bivins A-14	Aug-20	0	(6,501,333)	0	(4,767,421)	0	(1,602,106)	0	(126,303)	0	(7)	0	(5,497)
inj Bivins A-4	Aug-20	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Aug-20	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Aug-20	652	1,256,556	384	925,850	179	270,686	80	48,231	6	3,205	3	8,584
BIVINS A-1	Aug-20	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Aug-20	13,724	14,946,707	430	1,911,850	3,400	3,650,556	9,554	8,416,926	327	841,358	15	126,018
BIVINS A-5	Aug-20	14,812	17,289,844	2,498	2,271,662	3,633	4,250,606	7,693	9,644,092	861	974,596	127	148,887
BIVINS A-7	Aug-20	9,253	12,478,485	2,797	2,984,663	2,389	3,147,216	3,642	5,675,060	366	580,781	58	90,764
BIVINS A-9	Aug-20	17,890	11,857,129	546	237,017	4,533	2,929,033	11,380	7,787,395	1,270	796,005	161	107,680
BIVINS A-11	Aug-20	11,353	7,341,684	336	165,583	2,825	1,829,191	7,269	4,781,750	805	495,360	118	69,800
BIVINS A-15	Aug-20	18,108	11,403,335	297	457,626	4,132	2,706,750	12,174	7,374,289	1,268	743,056	237	121,614
BIVINS B-1	Aug-20	19,726	9,592,832	446	336,157	4,797	2,329,287	12,822	6,188,244	1,355	636,467	306	102,677
BIVINS B-2	Aug-20	18,540	8,021,863	338	150,979	4,634	2,010,928	11,918	5,202,076	1,281	539,973	369	117,906
BUSH A-1	Aug-20	0	5,721,962	0	104,140	0	1,356,677	0	3,830,281	0	374,216	0	56,647
BUSH A-3	Aug-20	13,272	13,507,599	4,271	3,312,438	3,379	3,347,287	5,179	6,109,120	397	621,262	46	117,492
BUSH A-4	Aug-20	15,392	9,683,603	963	1,666,331	3,918	2,428,232	9,364	5,006,932	1,055	513,987	92	68,122
BUSH A-5	Aug-20	24,521	18,617,260	5,622	4,322,148	6,195	4,680,416	11,261	8,604,181	1,289	882,698	153	127,817
BUSH A-8	Aug-20	10,740	5,113,280	193	93,657	2,639	1,242,587	6,970	3,366,359	739	342,465	200	68,211
BUSH A-9	Aug-20	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Aug-20	11,551	5,240,759	251	147,729	2,768	1,254,169	7,592	3,428,427	790	348,333	151	62,102
BUSH B-1	Aug-20	4,418	3,546,492	75	66,276	1,021	840,649	2,951	2,369,483	325	235,277	46	34,807
FUQUA A-1	Aug-20	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Aug-20	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Aug-20	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Aug-20	744	0	13	0	172	0	497	0	55	0	8	0
field-wide pcts				12.01%	18.43%	24.64%	24.66%	56.50%	50.89%	5.86%	5.18%	1.00%	0.85%

Latest estimates of reserves and feed to HEU

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

As of EOM Aug-20 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 - 19	113.305	27.048
Injection 2003 - 19	(1.423)	(1.159)
Produced to Date 2020	2.888	0.396
Injected to Date 2020	(0.184)	(0.129)
Amount of Raw Gas Available to CHEU	65.977	=====> 7.097 total helium in reservoir
Estimated Bottom Hole Pressure	243.068	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

August - 2020

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	Aug-20	278,699	113,418,719	34,156	25,755,560	68,671	28,372,377	156,267	52,642,047	16,758	5,643,455	2,847	1,005,279
Calculated Feed	Aug-20	275,422	113,366,121	33,767	25,795,217	67,960	28,354,249	154,898	52,550,278	16,051	5,658,667	2,746	1,007,710
Feed to Box	Aug-20	272,968	112,606,337	33,767	25,795,396	67,960	28,354,331	154,898	52,550,324	16,051	5,658,661	293	247,625
Cheu Product	Aug-20	46,949	32,788,084	32,942	25,387,217	12,635	6,522,503	1,090	652,095	1	943	282	225,326
Residue	Aug-20	121,257	51,970,611	0	2,258	3,348	1,269,422	106,734	46,105,282	11,176	4,592,384	0	1,265
Cold Box Vent	Aug-20	38,421	18,469,906	235	92,740	32,278	16,360,782	5,886	1,954,283	12	313	10	61,788
Flare/Boot Strap	Aug-20	35,106	8,677,594	1,662	59,005	10,853	7,295,135	20,504	1,216,603	2,074	100,256	14	6,595
Fuel From Cheu	Aug-20	3,758	1,550,704	2	530	97	44,495	3,031	1,256,272	628	249,408	0	0
Shrinkage/Loss	Aug-20	2,173	612,356	0	0	0	0	0	0	2,173	612,356	0	0
Unaccounted*	Aug-20	25,304	4,846,895	(1,074)	199,122	8,750	3,263,981	17,653	1,378,567	(12)	906	(13)	4,319

*Before October 2004, the values are estimated

Storage Operations

Inventory (contained helium)

	Government	Private
Beginning inventory	2,571,852	2,254,222
net acceptances +	0	0
redeliveries	0	(22,143)
In Kind Transfers	(43,422)	43,422
Conservation Crude Sales	0	0
Gain/loss	(2,836)	0
Ending Inventory	2,525,594	2,275,501
Total Helium in Reservoir	7,097,266	
Total Helium in Storage	4,801,095	
Helium in native gas	2,296,171	

Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	30,683	22,048	71.86%
Measured to Pipeline (Private Plants)	18,106	13,223	73.03%
Measured from Pipeline (Private Plant)	49,758	35,373	71.09%
HEU Production	46,949	32,942	70.16%
Injection	2,139	1,485	69.46%
Production	652	384	58.81%
Ending Inventory	40,735	28,901	70.95%
Gain/Loss	(3,758)	(2,836)	75.47%

Tuck Triqq Reservoir Operations

Native Gas (Gross)	Month	Fiscal Year	Since Field
			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

August - 2020

NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind+	Charges Billed (\$)**		
In Kind Helium (billed quarterly)										
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										
Messer, 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	0	0	0	0	0	0	0	\$0		
Total FYTD	71,815	96	0	0	0	72,931	144,841	\$13,742,753		
Total CYTD	51,520	43	0	0	0	47,998	99,562	\$9,507,843		
Cumulative	2,204,880	108,913	450	271,593	422,045	1,103,935	4,111,816	\$254,462,180		
In Kind Transfers							Month	FYTD	CYTD	Cumulative
Transferred							43,422	211,258	159,789	4,061,002
Volume outstanding							(12,780)			

Natural Gas / Natural Gas Liquid Sales

	Natural Gas (Mcf)***	NGLs (gal)	Decatherms	Avg Btu Value	Charges Billed (\$)**
EI Paso Natural Gas	<Chk Data>	Provides Measured Firm/Interruptible Transportation Services			(billed monthly)
Month	119,373	---	131,474	1,101	\$0
FYTD	1,774,177	---	1,953,438	1,101	\$0
Cumulative	51,290,215	---	55,868,207	1,089	(\$5,088,325)
Minerals Management Service	No Longer Provides Natural Gas Marketing Services				
Cumulative	---	---	---	---	(\$179,913)
ETC Marketing Ltd		Purchaser - Natural Gas		\$\$/Unit	
Month	---	---	151,600	\$1.456880	\$220,863
FYTD	---	---	2,027,500	\$1.063641	\$2,156,533
Cumulative	---	---	55,832,859	\$3.992330	\$222,076,652
Sandstone		Purchaser - Natural Gas Liquids			
Month	---	45,781	5,002	\$3.612321	\$18,069
FYTD	---	709,326	76,811	\$3.221026	\$247,410
Cumulative	---	16,157,147	1,723,453	\$10.087307	\$17,385,000
	Natural Gas (Mcf)***	NGLs (gal)	Purchased (Dth's)	\$\$ Per Unit (\$\$/Dth)	Total (\$\$)
Total month	119,373	45,781	156,602	\$1.525727	\$238,932
Total FYTD	1,774,177	709,326	2,104,311	\$1.142390	\$2,403,943
Total CYTD	1,321,807	508,043	1,575,417	\$1.021867	\$1,609,866
Cumulative	51,290,215	16,157,147	57,556,312	\$4.083305	\$234,193,414

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

**Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

August - 2020

Helium & Natural Gas Sales

This Table has been suspended as of 9/30/2018, BLM is no longer selling crude helium on the Open Market per Helium Stewardship Act of 2013.

Table 6 - Helium Resources Evaluation

August - 2020

All Volumes in Mcf at 14.7 psia & 70°F

Revenue Collected From Federal Leaseholds	Month*	FYTD*
Fee Sales & Royalties	\$1,963,432	\$20,891,710
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$65,158	\$845,938
Revenue Collected from Federal Lease Holds	\$1,938,027	\$20,959,536

*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	145

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

August - 2020

All Volumes in Mcf at 14.65 psia & 60°F

	Metered Gas						Transferred Gas		Stored Helium EOM	Charges Billed (\$)**	
	Gross Gas	Helium %	Helium	Helium	Helium	Helium	Month	Cumulative		Month	FYTD
	Month	Month	FYTD	CYTD	Cumulative	Month	Cumulative				
Total All Contracts*											
Crude Acquired	18,106	73.0%	13,223	134,905	111,717	27,592,658	48,155	61,560,827			
Crude Disposed	49,756	71.1%	35,366	500,549	311,801	55,308,959	4,733	27,001,620		\$849,694.39	Storage Fees
Grade-A Rdlvrd	0		0	0	0	1,478,718				<u>\$274,090.06</u>	RMF Fees
Net/Balance	(31,650)		(22,143)	(365,644)	(200,084)	(29,195,019)	43,422	34,559,207	2,275,501	\$1,123,784.45	\$12,078,231
Total Prior Contracts (TERMINATED)											
Crude Acquired			0	0	17,406,129		0	18,235,232			
Crude Disposed			0	0	11,830,863		0	19,187,102			
Grade-A Rdlvrd			0	0	1,478,718						
Number of trailers			0	0	9,834				0		
Messer, 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											
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											
Scout Energy Partners, Contract no. 3294											
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											

Government Helium	
Remaining Crude Acquired beginning of the month	2,571,852
Crude Disposed: In Kind Sales transferred for the month	(43,422)
Conservation Crude Sales/Reserve Sell Down transferred (month)	0
Gains and Losses for the month	(2,836)
Net/Balance of Purchased Helium Remaining for Sale	2,525,594

*Includes In Kind and Conservation Crude transfers from Government storage

**Rounded to nearest dollar

** New Contracts

Table 8 - Compression & CHEU (Operations)

August - 2020

Field/CHEU Compressor Operations		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$1.46		
Fuel used * (now includes field compression well head)	total MMBTU	5,309	79,815	2,075,830
#1 Compressor run time *	hours	37	1,684	125,228
#2 Compressor run time *	hours	455	5,937	89,683
#3 Compressor run time *	hours	415	5,530	74,385

* Field/CHEU Compressor Operations based on Aug 20 activity

Crude Helium Enrichment Unit (CHEU) CHEU Runtime	Month		FYTD		Cumulative
	Runtime Hrs	Percent	Runtime Hrs	Percent	Runtime Hrs
Processing feed gas	524	70.4%	6,720	83.3%	144,823
Producing residue gas	498	67.0%	6,619	82.1%	141,568
Producing helium product	417	56.1%	6,381	79.1%	137,495
Producing natural gas liquids	489	65.7%	6,563	81.4%	136,873

CHEU Utility Usage	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage Aug 20	2,213	54,589	700,696
Cheu Pure Water Usage (gallons) Aug 20	1,516	4,392	330,185
Electricity Metered (Kwh) CHEU consumed Jul 20	331,720	25,866,706	239,062,333

Booster Compressor Operations and Usage	Month	FYTD	Cumulative
Electricity Metered (Kwh) Booster Compressor consumed Jul 20	54,126	4,664,161	4,664,161