

Bureau of Land Management

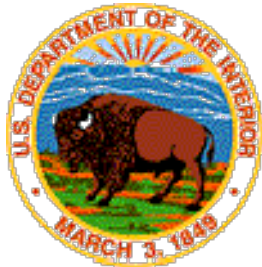
Amarillo Field Office

Helium Operations

Statistical Report

for

September - 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)

Team Leaders

-Federal Leased Lands

-Resources Evaluation & Gas Analysis

-Division Of Helium Operations, -

Engineering and Technical Support

List of Tables

Table 1 - Summary of Helium Operations

Table 2 - Bush Dome Reservoir Operations

Table 3 - Gas Volumes & Inventory

Table 4 - In Kind Helium Sales

Table 4 - Natural Gas / Natural Gas Liquid Sales

Table 5 - Conservation Crude Sales/Reserve Sell-down

Table 6 - Helium Resources Evaluation

Table 7 - Helium Storage Contract Activity

Table 8 - Compression & CHEU (Operations)

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Amarillo, Texas

Issued: October 25, 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

September - 2020

Helium Enrichment Unit Operations

Gas Processed	Month	Month	Average Percent	Gross FYTD	Net FYTD
	Gross Volume	Net Helium			
Measured Plant Feed (Mcf*)	354,995	42,692	12.03%	4,455,327	617,155
Helium Product (Mcf*)	60,133	42,445	70.59%	867,490	617,037
Residue Natural Gas (Mcf*)	175,296	0	00.00%	1,971,800	86

* Volumes in Mcf at 14.65 psia & 60°F

Natural Gas & Liquids Produced

Gas Processed	Month	FYTD
Natural Gas Sales (Mcf****)	172,944	1,947,121
NGL Sales (gallons)	52,487	761,813

*** 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Total Withdrawn (Mcf*)	350,543	41,938	11.96%	4,465,608	617,115
Crude Injection (Mcf*)	6,960	4,852	69.71%	190,771	134,113
Crude Production (Mcf*)	0	0	00.00%	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*)	6,056	217,314	165,845	4,067,058
Sale Volumes Outstanding (Mcf*)	23,200			

* Volumes in Mcf at 14.65 psia & 60°F

Private Company Helium Storage Contracts

Contact Activity	Month	Month	Average Percent	Annual
	Gross Volume	Net Helium		Helium FYTD
Crude Acquired (Mcf*)	29,424	21,382	72.67%	156,287
Crude Disposed (Mcf*)	75,785	54,126	71.42%	554,675
Net Balance (Mcf*)	(46,361)	(32,744)		(398,388)
Balance of Stored Helium End Of Month (Mcf*)		2,248,813		

* Volumes in Mcf at 14.65 psia & 60°F

Revenue / Charges

Helium Storage Contracts (Charges Billed (\$))	Month	FYTD
Storage Fees Billed (\$)	\$77,084	\$9,414,402
Resource Management Fees Billed (\$)	\$0	\$2,740,913
Total Storage and RMF Collected	\$77,084	\$12,155,315

Conservation Helium - Natural Gas - Liquid Sales

(Charges Billed (\$))	Month	FYTD
In Kind Sales	\$4,077,492	\$17,820,245
Natural Gas & Liquid Sales	\$285,997	\$2,689,940

Helium Resources Evaluation

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$2,040,192	\$22,999,728
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 9

*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

September - 2020

		Gross Withdrawal		Net Helium Withdrawal		Nitrogen		Methane	Methane	Ethane plus		Other (CO2, Ar, H2)	Cumulative
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	
TOTAL		350,543	248,880,123	41,938	45,834,286	86,512	61,362,280	197,914	126,676,099	20,665	12,884,472	3,514	2,122,985
BIVINS A-3	Sep-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	Sep-20	4,180	13,486,022	2,937	7,663,254	1,129	3,321,551	89	2,207,896	0	224,102	25	69,219
BIVINS A-13	Sep-20	28,014	10,111,949	7,747	4,977,420	7,007	2,588,197	11,695	2,235,093	1,351	249,904	214	61,335
BIVINS A-14	Sep-20	32,044	11,443,921	6,022	5,997,305	7,773	2,886,565	16,125	2,242,181	1,810	244,159	314	73,712
BIVINS A-4	Sep-20	24,841	15,156,798	2,103	2,565,527	5,899	3,669,221	14,926	7,977,969	1,620	805,342	294	138,740
BUSH A-2	Sep-20	7,057	14,142,903	293	2,025,535	1,758	3,473,924	4,444	7,729,370	516	797,475	45	116,600
Injection	Sep-20	6,960	66,665,506	4,852	48,153,901	1,903	17,172,860	163	784,536	0	42	42	554,166
inj Bivins A-3	Sep-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	Sep-20	(6,960)	(24,601,535)	(4,871)	(17,802,492)	(1,900)	(6,537,635)	(146)	(147,313)	(0)	(80)	(42)	(114,015)
inj Bivins A-13	Sep-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	Sep-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	Sep-20	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Sep-20	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Sep-20	0	1,256,556	0	925,850	0	270,686	0	48,231	0	3,205	0	8,584
BIVINS A-1	Sep-20	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Sep-20	16,913	14,963,620	529	1,912,379	4,189	3,654,745	11,773	8,428,699	403	841,760	19	126,037
BIVINS A-5	Sep-20	19,634	17,309,478	3,405	2,275,067	4,888	4,255,494	10,041	9,654,133	1,134	975,730	167	149,054
BIVINS A-7	Sep-20	11,758	12,490,243	3,554	2,988,217	3,036	3,150,252	4,628	5,679,688	466	581,247	74	90,838
BIVINS A-9	Sep-20	23,138	11,880,267	706	237,722	5,863	2,934,896	14,718	7,802,113	1,643	797,648	208	107,888
BIVINS A-11	Sep-20	14,925	7,356,609	442	166,025	3,716	1,832,907	9,550	4,791,300	1,060	496,421	157	69,957
BIVINS A-15	Sep-20	24,398	11,427,733	397	458,023	5,580	2,712,331	16,394	7,390,682	1,709	744,765	318	121,933
BIVINS B-1	Sep-20	24,917	9,617,749	563	336,720	6,060	2,335,347	16,196	6,204,440	1,712	638,179	386	103,063
BIVINS B-2	Sep-20	22,841	8,044,704	415	151,394	5,713	2,016,641	14,677	5,216,753	1,583	541,555	454	118,360
BUSH A-1	Sep-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	Sep-20	11,502	13,519,100	3,701	3,316,139	2,928	3,350,216	4,488	6,113,608	344	621,606	40	117,532
BUSH A-4	Sep-20	19,567	9,703,170	1,210	1,667,541	4,981	2,433,212	11,914	5,018,846	1,345	515,332	117	68,240
BUSH A-5	Sep-20	32,634	18,649,894	7,310	4,329,459	8,248	4,688,664	15,142	8,619,322	1,732	884,430	203	128,020
BUSH A-8	Sep-20	12,900	5,126,180	230	93,887	3,169	1,245,755	8,372	3,374,731	891	343,356	240	68,451
BUSH A-9	Sep-20	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Sep-20	14,010	5,254,770	304	148,033	3,357	1,257,525	9,208	3,437,635	958	349,291	184	62,286
BUSH B-1	Sep-20	5,268	3,551,760	89	66,365	1,216	841,865	3,519	2,373,002	389	235,667	55	34,862
FUQUA A-1	Sep-20	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Sep-20	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Sep-20	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Sep-20	70	0	0	0	69	0	0	0	0	0	0	0
field-wide pct's				11.96%	18.42%	24.68%	24.66%	56.46%	50.90%	5.90%	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 Sep-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	3.239	0.438
Injected to Date 2020	(0.191)	(0.134)
Amount of Raw Gas Available to CHEU	65.633	=====> 7.060 total helium in reservoir
Estimated Bottom Hole Pressure	241.804	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 - 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	Sep-20	354,995	113,773,714	42,692	25,798,252	87,359	28,459,737	199,749	52,841,797	21,527	5,664,982	3,667	1,008,946
Calculated Feed	Sep-20	352,709	113,718,831	43,509	25,838,726	87,053	28,441,302	197,955	52,748,233	20,665	5,679,332	3,528	1,011,238
Feed to Box	Sep-20	349,561	112,955,898	43,509	25,838,905	87,053	28,441,384	197,955	52,748,279	20,665	5,679,326	380	248,005
Cheu Product	Sep-20	60,133	32,848,217	42,445	25,429,662	16,017	6,538,520	1,307	653,403	0	943	363	225,689
Residue	Sep-20	175,296	52,145,907	0	2,258	4,621	1,274,043	154,471	46,259,753	16,204	4,608,588	0	1,265
Cold Box Vent	Sep-20	52,008	18,521,913	314	93,054	43,807	16,404,589	7,868	1,962,151	5	318	13	61,801
Flare/Boot Strap	Sep-20	20,338	8,697,932	1,538	60,543	5,017	7,300,152	12,494	1,229,097	1,277	101,532	12	6,607
Fuel From Cheu	Sep-20	5,611	1,556,315	3	533	145	44,640	4,525	1,260,797	938	250,345	0	0
Shrinkage/Loss	Sep-20	2,246	614,601	0	0	0	0	0	0	2,246	614,601	0	0
Unaccounted*	Sep-20	33,930	4,880,825	(791)	198,331	17,445	3,281,426	17,289	1,395,856	(5)	901	(9)	4,310

*Before October 2004, the values are estimated

Storage Operations

Inventory (contained helium)

	Government	Private
Beginning inventory	2,525,594	2,275,501
net acceptances + redeliveries	0	0
In Kind Transfers	(6,056)	6,056
Conservation Crude Sales	0	0
Gain/loss	(4,888)	0
Ending Inventory	2,514,650	2,248,813
Total Helium in Reservoir	7,060,180	
Total Helium in Storage	4,763,463	
Helium in native gas	2,296,717	

Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	40,735	28,901	70.95%
Measured to Pipeline (Private Plants)	29,424	21,382	72.67%
Measured from Pipeline (Private Plant)	75,785	54,126	71.42%
HEU Production	60,133	42,445	70.59%
Injection	6,960	4,852	69.71%
Production	0	0	
Ending Inventory	40,458	28,862	71.34%
Gain/Loss	(7,089)	(4,888)	68.95%

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

September - 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	20,028	10	5	2	0	22,652	42,698	42,036	\$4,077,492	
Total FYTD	91,843	106	5	2	0	95,583	187,539	184,635	\$17,820,245	
Total CYTD	71,548	54	5	2	0	70,650	142,260	140,057	\$13,585,335	
Cumulative	2,224,908	108,924	455	271,594	422,045	1,126,588	4,154,514	4,090,183	\$258,539,672	
In Kind Transfers							Month	FYTD	CYTD	Cumulative
Transferred							6,056	217,314	165,845	4,067,058
Volume outstanding							23,200			

Natural Gas / Natural Gas Liquid Sales

	Natural Gas (Mcf)***	NGLs (gal)	Decatherms	Avg Btu Value	Charges Billed (\$)**
El Paso Natural Gas	<Chk Data>	Provides Measured Firm/Interruptible Transportation Services			(billed monthly)
Month	172,944	---	190,583	1,102	\$0
FYTD	1,947,121	---	2,144,021	1,101	\$0
Cumulative	51,463,159	---	56,058,790	1,089	(\$5,088,325)
Minerals Management Service No Longer Provides Natural Gas Marketing Services					
Cumulative	---	---	---	---	(\$179,913)
ETC Marketing Ltd Purchaser - Natural Gas					
Month	---	---	189,000	\$1.414444	\$267,330
FYTD	---	---	2,216,500	\$1.093554	\$2,423,863
Cumulative	---	---	56,021,859	\$3.983633	\$222,343,982
Sandstone Purchaser - Natural Gas Liquids					
Month	---	52,487	5,712	\$3.267992	\$18,667
FYTD	---	761,813	82,523	\$3.224277	\$266,077
Cumulative	---	16,209,634	1,729,165	\$10.064781	\$17,403,667
	Natural Gas (Mcf)***	NGLs (gal)	Purchased (Dth's)	\$ Per Unit (\$\$/Dth)	Total (\$)
Total month	172,944	52,487	194,712	\$1.468819	\$285,997
Total FYTD	1,947,121	761,813	2,299,023	\$1.170036	\$2,689,940
Total CYTD	1,494,751	560,530	1,770,129	\$1.071031	\$1,895,863
Cumulative	51,463,159	16,209,634	57,751,024	\$4.074490	\$234,479,411

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

**Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down
Helium & Natural Gas Sales

September - 2020

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

September - 2020

All Volumes in Mcf at 14.7 psia & 70°F

Revenue Collected From Federal Leaseholds	Month*	FYTD*
Fee Sales & Royalties	\$2,105,350	\$22,997,060
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$76,610	\$922,548
Revenue Collected from Federal Lease Holds	\$2,040,192	\$22,999,728

*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)	9	154

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

September - 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	29,424	72.7%	21,382	156,287	133,099	27,614,040	83,159	61,644,198			
Crude Disposed	75,785	71.4%	54,126	554,675	365,927	55,363,085	77,103	27,078,723		\$77,083.99	Storage Fees
Grade-A Rdlvrd	0		0	0	0	1,478,718				\$0.00	RMF Fees
Net/Balance	(46,361)		(32,744)	(398,388)	(232,828)	(29,227,763)	6,056	34,565,475	2,248,813	\$77,083.99	\$12,155,315
Total Prior Contracts (TERMINATED)											
Crude Acquired			0	0	0	17,406,129	0	18,235,232			
Crude Disposed			0	0	0	11,830,863	0	19,187,102			
Grade-A Rdlvrd			0	0	0	1,478,718					
Number of trailers			0	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	2,525,594
Crude Disposed: In Kind Sales transferred for the month	(6,056)
Conservation Crude Sales/Reserve Sell Down transferred (month)	0
Gains and Losses for the month	(4,888)
Net/Balance of Purchased Helium Remaining for Sale	2,514,650

*Includes In Kind and Conservation Crude transfers from Government storage

**Rounded to nearest dollar

** New Contracts

Table 8 - Compression & CHEU (Operations)

September - 2020

Field/CHEU Compressor Operations		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$1.41		
Fuel used * (now includes field compression well head)	total MMBTU	6,568	86,383	2,082,398
#1 Compressor run time *	hours	85	1,769	125,313
#2 Compressor run time *	hours	465	6,402	90,148
#3 Compressor run time *	hours	543	6,073	74,928

* Field/CHEU Compressor Operations based on Sep 20 activity

Crude Helium Enrichment Unit (CHEU) CHEU Runtime	Month		FYTD		Cumulative
	Runtime Hrs	Percent	Runtime Hrs	Percent	Runtime Hrs
Processing feed gas	601	83.5%	7,321	83.3%	145,424
Producing residue gas	597	83.0%	7,216	82.2%	142,166
Producing helium product	552	76.7%	6,933	78.9%	138,047
Producing natural gas liquids	596	82.7%	7,159	81.5%	137,469

CHEU Utility Usage	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage Sep 20	2,531	57,120	703,227
Cheu Pure Water Usage (gallons) Sep 20	4	4,396	330,189
Electricity Metered (Kwh) CHEU consumed Aug 20	1,965,476	27,832,182	241,027,809

Booster Compressor Operations and Usage	Month	FYTD	Cumulative
Electricity Metered (Kwh) Booster Compressor consumed Aug 20	475,919	5,140,080	5,140,080