

Bureau of Land Management

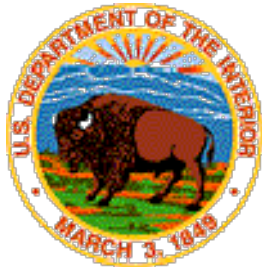
Amarillo Field Office

Helium Operations

Statistical Report

for

April - 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

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Compiled by: David Reeves
Amarillo, Texas
Issued: May 10, 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:

May 7, 2021

Table 1 - Summary of Helium Operations

April - 2020

Helium Enrichment Unit Operations

Gas Processed	Month	Month	Average Percent	Gross FYTD	Net FYTD
	Gross Volume	Net Helium			
Measured Plant Feed (Mcf*)	415,597	51,842	12.47%	3,018,960	439,535
Helium Product (Mcf*)	73,688	51,496	69.88%	616,175	440,142
Residue Natural Gas (Mcf*)	206,009	18	0.01%	1,345,999	82

* Volumes in Mcf at 14.65 psia & 60°F

Natural Gas & Liquids Produced

Gas Processed	Month	FYTD
Natural Gas Sales (Mcf****)	203,863	1,331,000
NGL Sales (gallons)	74,250	504,122

*** 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Total Withdrawn (Mcf*)	409,239	51,250	12.52%	3,038,168	441,237
Crude Injection (Mcf*)	62,333	43,637	70.01%	64,292	44,982
Crude Production (Mcf*)	0	0	00.00%	0	0

* Volumes in Mcf at 14.65 psia & 60°F

Storage Operations

In Kind Helium	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	7,794	120,055	68,586	3,969,799
Sale Volumes Outstanding (Mcf*)	29,226			

* 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*)	27,080	20,733	76.56%	76,706
Crude Disposed (Mcf*)	18,462	13,941	75.51%	426,688
Net Balance (Mcf*)	8,618	6,792		(349,982)
Balance of Stored Helium End Of Month (Mcf*)		2,199,960		

* Volumes in Mcf at 14.65 psia & 60°F

Revenue / Charges

Helium Storage Contracts (Charges Billed (\$))	Month	FYTD
Storage Fees Billed (\$)	\$808,509	\$6,123,173
Resource Management Fees Billed (\$)	\$274,090	\$1,644,552
Total Storage and RMF Collected	\$1,082,599	\$7,767,725

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

	Month	FYTD
In Kind Sales	\$0	\$8,970,741
Natural Gas & Liquid Sales	\$71,652	\$1,516,733

Helium Resources Evaluation

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$2,112,710	\$12,794,686
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 22

*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

April - 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		409,239	247,452,684	51,250	45,658,408	100,960	61,010,272	227,532	125,875,538	25,154	12,800,122	4,343	2,108,344
BIVINS A-3	Apr-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	Apr-20	0	13,478,503	0	7,657,998	0	3,319,504	0	2,207,724	0	224,102	0	69,175
BIVINS A-13	Apr-20	23,983	9,998,282	8,240	4,945,165	6,159	2,559,752	8,435	2,188,403	970	244,498	179	60,465
BIVINS A-14	Apr-20	36,514	11,314,922	7,767	5,971,912	8,921	2,855,263	17,495	2,178,319	1,979	236,978	352	72,450
BIVINS A-4	Apr-20	29,463	15,057,099	2,631	2,556,885	7,010	3,645,536	17,570	7,918,276	1,908	798,841	344	137,561
BUSH A-2	Apr-20	6,796	14,120,975	286	2,024,620	1,695	3,468,459	4,277	7,715,569	494	795,867	43	116,460
Injection	Apr-20	62,333	66,539,027	43,637	48,064,770	16,923	17,139,053	1,358	782,086	2	39	414	553,079
inj Bivins A-3	Apr-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	Apr-20	(60,411)	(24,475,056)	(42,263)	(17,713,561)	(16,408)	(6,503,559)	(1,369)	(144,624)	(4)	(77)	(367)	(113,235)
inj Bivins A-13	Apr-20	(1,922)	(6,492,339)	(962)	(4,707,153)	(528)	(1,657,381)	(378)	(122,769)	(41)	(44)	(13)	(4,992)
inj Bivins A-14	Apr-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	Apr-20	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Apr-20	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Apr-20	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
BIVINS A-1	Apr-20	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Apr-20	17,490	14,897,551	517	1,910,331	4,077	3,638,538	11,450	8,383,156	1,268	839,663	177	125,864
BIVINS A-5	Apr-20	23,722	17,229,458	4,157	2,261,216	5,987	4,235,482	12,017	9,613,294	1,363	971,091	198	148,375
BIVINS A-7	Apr-20	14,737	12,440,598	4,432	2,973,226	3,780	3,137,450	5,751	5,660,174	670	579,230	103	90,519
BIVINS A-9	Apr-20	26,684	11,788,680	811	234,929	6,749	2,911,688	16,989	7,743,854	1,896	791,145	240	107,064
BIVINS A-11	Apr-20	17,510	7,295,503	520	164,216	4,375	1,817,692	11,192	4,752,198	1,240	492,082	184	69,315
BIVINS A-15	Apr-20	26,677	11,334,725	439	456,501	6,135	2,691,046	17,891	7,328,205	1,867	738,252	345	120,721
BIVINS B-1	Apr-20	30,358	9,515,499	690	334,406	7,391	2,310,468	19,745	6,137,949	2,124	631,153	408	101,522
BIVINS B-2	Apr-20	27,012	7,951,928	494	149,704	6,775	1,993,443	17,348	5,157,116	1,871	535,126	524	116,538
BUSH A-1	Apr-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	Apr-20	26,171	13,443,213	8,203	3,291,840	6,534	3,330,978	10,054	6,084,113	1,150	619,105	230	117,177
BUSH A-4	Apr-20	23,267	9,624,229	1,606	1,662,393	5,925	2,413,126	14,021	4,971,028	1,577	509,916	137	67,766
BUSH A-5	Apr-20	40,709	18,516,500	9,308	4,299,245	10,290	4,654,961	18,720	8,557,750	2,137	877,356	254	127,188
BUSH A-8	Apr-20	15,359	5,072,777	276	92,932	3,781	1,232,642	9,962	3,340,067	1,057	339,674	283	67,462
BUSH A-9	Apr-20	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Apr-20	15,807	5,198,011	343	146,801	3,771	1,243,932	10,344	3,400,351	1,113	345,401	236	61,526
BUSH B-1	Apr-20	6,981	3,530,979	119	66,013	1,618	837,069	4,656	2,359,117	515	234,135	74	34,644
FUQUA A-1	Apr-20	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Apr-20	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Apr-20	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Apr-20	109	0	2	0	25	0	73	0	8	0	1	0
field-wide pcts				12.52%	18.45%	24.67%	24.66%	55.60%	50.87%	6.15%	5.17%	1.06%	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 Apr-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	1.811	0.259
Injected to Date 2020	(0.064)	(0.042)
Amount of Raw Gas Available to CHEU	66.934	=====> 7.147 total helium in reservoir
Estimated Bottom Hole Pressure	246.591	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

April - 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	Apr-20	415,597	112,337,347	51,842	25,620,632	102,458	28,106,064	231,237	52,039,558	25,677	5,577,135	4,383	993,958
Calculated Feed	Apr-20	433,804	112,255,180	68,204	25,635,535	107,558	28,079,259	228,379	51,948,595	25,191	5,595,194	4,471	996,596
Feed to Box	Apr-20	429,952	111,504,999	68,204	25,635,714	107,558	28,079,341	228,379	51,948,641	25,191	5,595,188	619	246,114
Cheu Product	Apr-20	73,688	32,596,902	51,496	25,252,767	20,080	6,471,100	1,660	647,945	4	939	448	224,152
Residue	Apr-20	206,009	51,520,106	18	2,253	5,156	1,257,436	181,930	45,708,076	18,905	4,551,076	0	1,265
Cold Box Vent	Apr-20	61,270	18,312,707	232	92,356	52,232	16,226,517	8,792	1,931,835	0	246	13	61,754
Flare/Boot Strap	Apr-20	29,134	8,617,713	2,104	55,955	14,644	7,277,968	11,095	1,180,615	1,267	96,608	24	6,567
Fuel From Cheu	Apr-20	7,490	1,534,292	4	522	194	44,070	6,041	1,243,035	1,252	246,665	0	0
Shrinkage/Loss	Apr-20	3,763	596,584	0	0	0	0	0	0	3,763	596,584	0	0
Unaccounted*	Apr-20	48,597	4,636,507	14,350	177,337	15,253	3,204,238	18,861	1,249,913	(0)	974	134	4,045

*Before October 2004, the values are estimated

Storage Operations

Inventory (contained helium)

	Government	Private
Beginning inventory	2,678,606	2,185,374
net acceptances +	0	0
redeliveries	0	6,792
In Kind Transfers	(7,794)	7,794
Conservation Crude Sales	0	0
Gain/loss	(16,985)	0
Ending Inventory	2,653,827	2,199,960
Total Helium in Reservoir	7,146,927	
Total Helium in Storage	4,853,787	
Helium in native gas	2,293,139	

Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	45,903	32,651	71.13%
Measured to Pipeline (Private Plants)	27,080	20,733	76.56%
Measured from Pipeline (Private Plant:	18,462	13,941	75.51%
HEU Production	73,688	51,496	69.88%
Injection	62,333	43,637	70.01%
Production	0	0	
Ending Inventory	41,950	30,318	72.27%
Gain/Loss	(23,927)	(16,985)	70.99%

Tuck Triqq Reservoir Operations

Native Gas (Gross)	Month	Since Field	
		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

April - 2020

	NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind+	Charges Billed (\$)***
In Kind Helium									
Month									
FYTD									
Month									
FYTD									
Month									
FYTD									
Total month	0	0	0	0	0	0	0	1	\$0
Total FYTD	41,623	96	0	0	0	53,152	94,870	93,402	\$8,970,741
Total CYTD	21,328	43	0	0	0	28,219	49,591	48,824	\$4,735,831
Cumulative	2,174,688	108,913	450	271,593	422,045	1,084,156	4,061,845	3,998,950	\$249,690,168

Natural Gas / Natural Gas Liquid Sales

	Natural Gas (Mcf)***	NGLs (gal)	Decatherms	Avg Btu Value	Charges Billed (\$)***
El Paso Natural Gas	Provides Measured Firm/Interruptible Transportation Services				(billed monthly)
Month	203,863	---	224,703	1,102	\$0
FYTD	1,331,000	---	1,465,424	1,101	\$0
Cumulative	50,847,038	---	55,380,193	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	---	---	223,400	\$0.351170	\$78,451
FYTD	---	---	1,497,400	\$0.876530	\$1,312,516
Cumulative	---	---	55,302,759	\$4.015336	\$221,232,635
Sandstone		Purchaser - Natural Gas Liquids			
Month	---	74,250	8,039	(\$0.845778)	(\$6,799)
FYTD	---	504,122	54,491	\$3.747720	\$204,217
Cumulative	---	15,951,943	1,701,133	\$10.194269	\$17,341,807
	Natural Gas (Mcf)***	NGLs (gal)	Purchased (Dth's)	\$/Per Unit (\$/Dth)	Total (\$)
Total month	203,863	74,250	231,439	\$0.309594	\$71,652
Total FYTD	1,331,000	504,122	1,551,891	\$0.977345	\$1,516,733
Total CYTD	878,630	302,839	1,022,997	\$0.706411	\$722,656
Cumulative	50,847,038	15,951,943	57,003,892	\$4.107312	\$233,306,204

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

**Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

April - 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

April - 2020

All Volumes in Mcf at 14.7 psia & 70°F

Revenue Collected From Federal Leaseholds	Month*	FYTD*
Fee Sales & Royalties	\$2,025,741	\$12,639,275
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$152,743	\$520,517
Revenue Collected from Federal Lease Holds	\$2,112,710	\$12,794,686

*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)	22	102

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

April - 2020

All Volumes in Mcf at 14.65 psia & 60°F

	Metered Gas						Transferred Gas		Stored Helium EOM	Charges Billed (\$)**	
	Gross Gas	Helium % Month	Helium	FYTD	Helium CYTD	Cumulative	Helium Month	Cumulative		Month	FYTD
Total All Contracts*											
Crude Acquired	27,080	76.6%	20,733	76,706	53,518	27,534,459	13,197	61,450,434			
Crude Disposed	18,462	75.5%	13,941	426,688	237,940	55,235,098	5,403	26,983,582		\$808,509.26	Storage Fees
Grade-A Rdlvrd	0		0	0	0	1,478,718				<u>\$274,090.06</u>	RMF Fees
Net/Balance	8,618		6,792	(349,982)	(184,422)	(29,179,357)	7,794	34,466,852	2,199,960	\$1,082,599.32	\$7,767,725
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	2,678,606
Crude Disposed: In Kind Sales transferred for the month	(7,794)
Conservation Crude Sales/Reserve Sell Down transferred (month)	0
Gains and Losses for the month	(16,985)
Net/Balance of Purchased Helium Remaining for Sale	2,653,827

*Includes In Kind and Conservation Crude transfers from Government storage

**Rounded to nearest dollar

** New Contracts

Table 8 - Compression & CHEU (Operations)

April - 2020

Field/CHEU Compressor Operations

		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$0.35		
Fuel used * (now includes field compression well head)	total MMBTU	8,784	58,332	2,054,347
#1 Compressor run time *	hours	118	1,276	124,820
#2 Compressor run time *	hours	680	4,423	88,169
#3 Compressor run time *	hours	617	3,915	72,770

* Field/CHEU Compressor Operations based on Apr 20 activity

Crude Helium Enrichment Unit (CHEU)

CHEU Runtime

	Month		FYTD		Cumulative
	Runtime Hrs	Percent	Runtime Hrs	Percent	Runtime Hrs
Processing feed gas	720	100.0%	4,863	95.1%	142,966
Producing residue gas	718	99.7%	4,790	93.7%	139,739
Producing helium product	713	99.0%	4,665	91.2%	135,778
Producing natural gas liquids	717	99.6%	4,765	93.2%	135,075

CHEU Utility Usage

	Month	FYTD	Cumulative
CheU Fuel Gas (Mcf) usage Apr 20	2,938	42,308	688,415
CheU Pure Water Usage (gallons) Apr 20	177	2,501	328,294
Electricity Metered (Kwh) CHEU consumed Mar 20	2,600,388	17,567,785	230,763,412

Booster Compressor Operations and Usage

	Month	FYTD	Cumulative
Electricity Metered (Kwh) Booster Compressor consumed Mar 20	780,824	2,801,155	2,801,155