VICTOR G. CARRILLO Chairman ELIZABETH A. JONES Commissioner MICHAEL L. WILLIAMS Commissioner





# PETROFACTS

A Monthly Data Review from the Railroad Commission of Texas ■ February 2009

# Highlights

# **Natural Gas Production**

In November 2008 preliminary and adjusted Texas natural gas production was 666.67 billion cubic feet (bcf), up from 587.73 bcf produced during the same month in 2007. *Note: Recent oil and gas production data are considered preliminary, incomplete, and subject to revision.* See pages 3 and 6 for the most recent production adjustment factors or see the Commission's website at http://www.rrc.state.tx.us

# **Crude Oil Production**

In November 2008 preliminary and adjusted Texas crude oil production averaged 0.979 million barrels per day (mmb/d), up from 0.942 mmb/d reported during the same month in 2007. (See Note above.)

# Rotary Rigs Operating in Texas

In January 2009 the average Texas rotary rig count was 701, down from 858 rigs running during the same month last year. The January rig count was down from the December rig count of 826. *Source: Baker Hughes Co.* 

# Permits to Drill

In January 2009 the Railroad Commission issued 1,264 original permits to drill, down from 1,609 permits issued during the same month last year and up from 1,226 permits issued in December.

# **Oil and Gas Well Completions**

In January 2009 operators reported 556 oil completions, up from 536 oil completions during the same month last year. There were 881 gas completions in January, up from 876 gas completions reported during the same month last year. There were 1,443 wells drilled in Texas in January, up from 1,417 wells drilled during the same month last year.

# Trends

# EIA Short-Term Outlook for Crude Oil and Natural Gas:

The average price of imported crude for U.S. refiners (an indicator of world oil prices) is expected to fall from the average 2008 level of \$92.57 per barrel to \$39.40 per barrel during the 1<sup>st</sup> quarter of 2009 and average \$40.80 for the year, according to the U.S. Energy Information Administration's (EIA) "Short-Term Energy Outlook" for February, 2009. The price is expected to average \$40.67 per barrel for the 2<sup>nd</sup> quarter of 2009.

The West Texas Intermediate spot average is expected to fall from the average 2008 level of 99.57 per barrel to 1.89 per barrel during the  $1^{st}$  quarter of 2009 and average 3.14 for the year. The price is expected to average 42.67 per barrel for the  $2^{nd}$  quarter of 2009.

U.S. petroleum demand is expected to decrease 02.36 percent from 2008 to 2009 at 19.02 million barrels per day, and increase by 1.16 percent from 2009 to 2010 to 19.24 million barrels per day.

U.S. natural gas demand is expected to decrease by 1.34 percent from 2008 to 2009 to 22.88 trillion cubic feet, and increase by 0.61 percent from 2009 to 2010 to 23.02 trillion cubic feet.

EIA projects that natural gas wellhead prices will average \$4.80 per mcf for the 1<sup>st</sup> quarter of 2009 and average \$4.42 per mcf for the year. This is a 45.30 percent decrease from EIA's 2008 average wellhead price of \$8.08 per mcf.

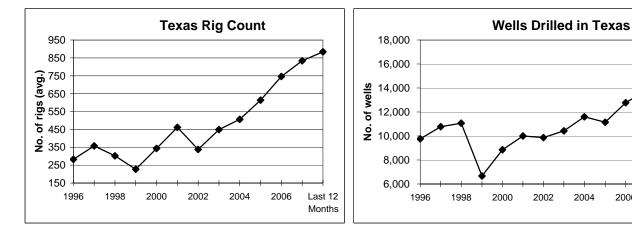
EIA projects an average annual wellhead price of \$5.07 per mcf for 2010, a 14.71 percent increase from the \$4.42 projected average price for 2009.

#### INSIDE

Rotary Rig Count	2
Drilling Permits	2
Well Completions	2
Texas Natural Gas	3
Texas Gas Storage	4-5
Texas Crude Oil	6
U.S. Petroleum	7

	R	otary Rig	s Active *		Wells Con	npleted	Wells
Period		Texas	U. S.	Permits #	Oil	Gas	Drilled **
1989		264	871	12,756	4,914	2,760	10,054
1990		348	1,009	14,033	5,593	2,894	11,231
1991		315	860	12,494	6,025	2,755	11,295
1992		251	721	12,089	5,031	2,537	9,498
1993		264	754	11,612	4,646	3,295	9,969
1994		274	775	11,030	3,962	3,553	9,299
1995		251	723	11,244	4,334	3,778	9,785
1996		283	779	12,669	4,061	4,060	9,747
1997		358	945	13,933	4,482	4,594	10,778
1998		303	827	9,385	4,509	4,907	11,057
1999		226	622	8,430	2,049	3,566	6,658
2000		343	918	12,021	3,111	4,580	8,854
2001		462	1,156	12,227	3,082	5,787	10,005
2002		338	830	9,716	3,268	5,474	9,877
2003		449	1,032	12,664	3,111	6,336	10,420
2004		506	1,192	14,700	3,446	7,118	11,587
2005		614	1,383	16,914	3,454	7,197	11,154
2006		746	1,648	18,952	4,761	8,412	12,764
2007		834	1,769	19,994	5,084	8,643	13,778
Last 1	2 Months	883	1,861	23,583	6,228	10,366	16,641
2008	Jan	858	1,749	1,609	536	876	1,417
	Feb	866	1,765	1,760	400	785	1,191
	Mar	881	1,797	1,926	456	800	1,259
	Apr	887	1,829	2,207	403	827	1,235
	May	906	1,863	1,899	334	857	1,195
	Jun	923	1,902	2,444	432	813	1,248
	Jul	920	1,932	2,183	453	1,065	1,522
	Aug	934	1,987	2,129	357	696	1,057
	Sep	946	2,014	2,335	384	704	1,090
	Oct	911	1,971	2,693	988	1,277	2,269
	Nov	899	1,935	1,517	824	842	1,670
	Dec	826	1,782	1,226	641	819	1,462
2009	Jan	701	1,553	1,264	556	881	1,443

Table 1. Texas Drilling and Completion Summary



\* Source: Baker Hughes Inc.

# Totals shown for 1988 and after are number of drilling permits issued; data for previous years was total drilling applications received.

\*\* Wells drilled are oil and gas well completions and dry holes drilled/plugged.

2004

2006

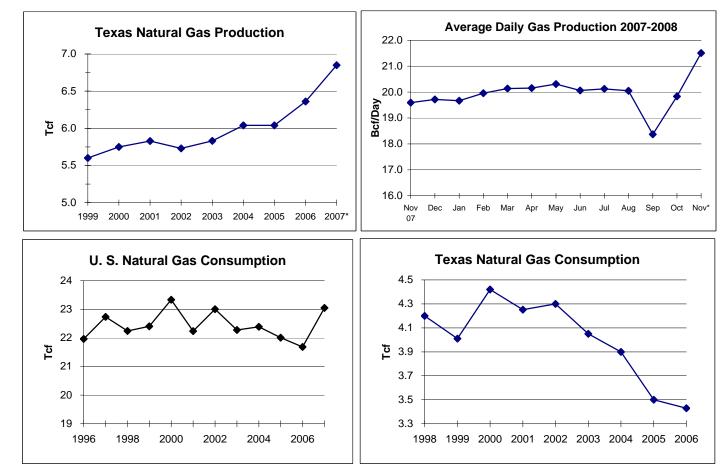
Last 12

Months

	Total	Proved	Consump-	Producing	Wellhead	
Period	Production	Reserves #	tion #	Wells	Price **	
1989	5.60	41.5	3.62	50,017	\$1.50	
1990	5.54	41.4	3.60	49,989	\$1.43	
1991	5.52	39.3	3.56	49,825	\$1.39	
1992	5.45	38.1	3.48	49,839	\$1.45	
1993	5.61	37.8	3.74	50,794	\$1.80	
1994	5.69	39.0	3.67	52,614	\$1.68	
1995	5.69	39.7	3.80	53,612	\$1.36	
1996	5.85	41.6	3.99	55,052	\$1.76	
1997	5.85	41.1	3.95	56,736	\$2.14	
1998	5.82	40.8	4.20	58,436	\$1.96	
1999	5.60	43.4	4.01	59,088	\$1.86	
2000	5.75	45.4	4.42	60,486	\$3.51	
2001	5.83	43.5	4.25	59,744	\$4.01	
2002	5.73	44.3	4.30	56,718	\$2.95	
2003	5.83	45.7	4.05	63,534	\$4.88	
2004	6.04	49.9	3.90	66,959	\$5.46	
2005	6.04	56.5	3.50	70,384	\$7.33	
2006	6.36	61.8	3.43	76,821	\$6.40	
2007*	6.85	72.0	3.51	81,371	\$6.39	

	Total Gas Pro	duction (Bcf)		
	Monthly	Daily	Gas Well	Casinghead
Nov 07	587.73	19.59	529.39	58.34
Dec	611.20	19.72	551.93	59.27
Jan	609.68	19.67	550.29	59.39
Feb	578.83	19.96	521.42	57.41
Mar	624.13	20.13	561.97	62.16
Apr	604.56	20.15	543.70	60.86
Мау	629.48	20.31	565.51	63.97
Jun	601.93	20.06	540.91	61.02
Jul	623.87	20.12	557.15	66.72
Aug	621.44	20.05	555.29	66.15
Sep	551.11	18.37	495.70	55.41
Oct	594.99	19.83	531.39	63.60
Nov*	666.67	21.51	605.38	61.29

\*Note: The most recent 12 months of production data is preliminary and subject to revision. The most recent month of data is incomplete and may underestimate the final and complete total; a production adjustment factor of 1.2433 has been applied to reported November gas well production to obtain an estimate of final gas well production.



\*\*Source: Texas Comptroller of Public Accounts. Wellhead price is average net taxable price (\$/Mcf) and excludes federal offshore production. Source for 2001 and after is U.S. Energy Information Administration (EIA) and wellhead price is national average.

# Source: EIA's reserve estimates for 1986 and after exclude federal offshore and are wet after lease separation.

# Table 2. Texas Natural Gas (Trillion CF)

#### Table 3. Texas Gas Storage Operations

			Reported M	/lax				Preliminary
Productive or Depleted	d Reservoirs	7	Withdrawa	al	Working Gas*	Working Gas*	Change From	Working Gas*
			Rate		Inventory 12/31/08	Inventory 12/31/07	One Year Ago	Inventory 01/15/09
Operator	Field	County Loca	tion (MMCF/DA	AY)	(MMCF)	(MMCF)	(MMCF)	(MMCF)
Oneok TX Gas Storage LP	Felmac (Yates)	Gaines		45	2,417	1,770	647	2,375
Oneok TX Gas Storage LP	Loop (Yates)	Gaines		75	800	800	-	800
Houston Pipeline Co.	Bammell	Harris	1,	,300	44,597	57,350	(12,753)	38,702
Enbridge Pipeline LLC	Pickton (Bacon Lime)	Hopkins		15	-	-	-	-
Cago, Inc.	Ambassador	Clay		40	80	80	-	80
Hill Lake Gas Storage LP	Hill-Lake Sand	Eastland		450	6,225	8,679	(2,454)	6,349
ATMOS Pipeline - Texas	La-Pan-Miss	Clay		120	2,525	2,422	103	2,200
ATMOS Pipeline - Texas	Lake Dallas	Denton		120	3,511	3,978	(467)	3,354
ATMOS Pipeline - Texas	New York City	Clay		120	4,602	4,936	(334)	4,419
ELCO Oil and Gas, Inc.	Pecan Station	Tom Green		28	395	396	(1)	394
ATMOS Pipeline - Texas	Tri-Cities Bacon	Henderson		275	19,932	19,874	58	19,145
ATMOS Pipeline - Texas	Tri-Cities Rodessa	Henderson		50	102	324	(222)	100
Lower Colorado River Authority	Hilbig	Bastrop		100	3,282	3,180	102	3,210
Natural Gas Pipeline Co.	North Lansing	Harrison	1,	100	84,433	91,608	(7,175)	86,622
Devon Gas Services LP	Lone Camp	Palo Pinto		28	445	388	57	371
Pelican Transmission LLC	Clear Lake	Harris		900	32,521	66,407	(33,886)	32,718
Energy Transfer Fuel LP	Bryson	Jack		100	5,327	5,852	(525)	4,955
Worsham-Steed Gas Storage, Inc.	Worsham Steed	Jack		25	22,004	14,589	7,415	20,837
Cumming Company, Inc.	Leeray Strawn	Stephens		20	-	· -	-	-
Katy Storage and Transportation LP	Pottsville	Hamilton		200	-	-	-	-
Katy Storage and Transportation LP	Katy Hub & Storage	Fort Bend		700	21,301	21,719	(418)	22,281
		Subtotals		,811	254,499	304,352	(49,853)	248,912
Salt Cavern	S							
Oneok TX Gas Storage LP	Salado (Loop Yates)	Gaines		500	1,378	707	671	1,303
Centana Intrastate Pipeline LLC	Spindletop	Jefferson		400	2,904	4,315	(1,411)	2,935
Dow Chemical Co.	Stratton Ridge #34	Brazoria		200	-	-	-	-
Dow Chemical Co.	Stratton Ridge #6	Brazoria		180	573	798	(225)	436
Kinder Morgan Texas Pipeline LP	North Dayton	Liberty		750	3,212	2,784	428	2,047
ATMOS Pipeline - Texas	Bethel	Anderson		600	4,693	4,792	(99)	4,397
Moss Bluff Hub Partners LP	Moss Bluff	Liberty		,000	9,816	13,880	(4,064)	8,535
Gulfterra South Texas LP	Wilson	Wharton		800	4,662	2,346	2,316	4,023
Chevron Phillips Chemical Co	Clemens	Brazoria		75	949	1,573	(624)	1,105
PB Energy Storage Services, Inc.	Spindletop	Jefferson		480	7,123	7,220	(97)	6,934
Kinder Morgan Tejas Pipeline LP	Stratton Ridge	Brazoria		250	905	879	26	856
Texas Brine Corp.	Markham	Matagorda		500	24,684	15,546	9,138	24,167
Energy Transfer Fuel LP	Bethel Salt Dome	Anderson		600	3,814	2,689	1,125	4,078
Union Oil Co. of California	Keystone Gas Storage	Winkler		350	3,952	3,594	358	4,450
Underground Storage, LLC	Pierce Junction	Harris		350	2,086	1,347	739	1,649
Tres Palacios Storage LLC	Markham	Matagorda		,500	4,224	-	4,224	5,460
		Subtotals	,	,535	74,975	62,470	12,505	72,375
Source: RRC Form G-3			TOTALS 15,	,346	329,474	366,822	(37,348)	321,287

\* Note: Native Gas volumes are included in Working Gas volumes with the exception of Houston Pipe Line's Bammel facility and Natural Gas Pipeline Co.

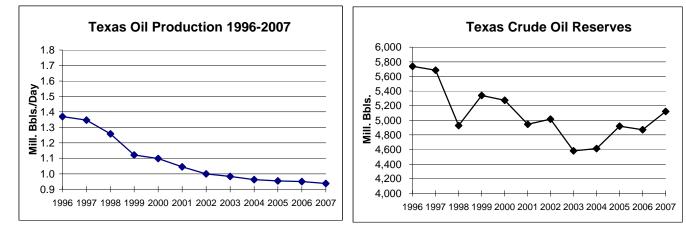
of America's North Lansing facility. (The Native Gas in the Bammel and North Lansing facilities is part of the non-working pad gas.)

Table 4.	Texas Gas	Storage	<b>Operations</b> ,	2007	2008
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	Deple	eted Reserv	voirs	S	alt Caverns	5		Total	
	Beginning Balance (Mmcf)	Injections/ (Withdrawals) (Mmcf)	Ending Balance (Mmcf)	Beginning Balance ( (Mmcf)	Injections/ Withdrawals) (Mmcf)	Ending Balance (Mmcf)	Beginning Balance ( (Mmcf)	Injections/ Withdrawals) (Mmcf)	Ending Balance (Mmcf)
Dec-07	324,254	(19,898)	304,356	71,186	(6,164)	65,022	395,440	(26,062)	369,378
Jan-08	304,356	(61,288)	243,068	65,022	(12,399)	52,623	369,378	(73,687)	295,691
Feb-08	243,068	(49,237)	193,831	52,623	(8,244)	44,379	295,691	(57,481)	238,210
Mar-08	193,831	(20,301)	173,530	44,379	5,342	49,721	238,210	(14,959)	223,251
Apr-08	173,530	20,005	193,535	49,721	5,340	55,061	223,251	25,345	340,663
May-08	193,535	25,219	218,754	55,061	7,810	62,871	248,596	33,029	281,625
Jun-08	218,754	(6,162)	212,592	62,871	1,148	64,019	281,625	(5,014)	276,611
Jul-08	212,592	(11,664)	200,928	64,019	3,728	67,747	276,611	(7,936)	268,675
Aug-08	200,928	1,418	202,346	67,747	(3,587)	64,160	268,675	(2,169)	266,506
Sep-08	202,346	23,365	225,711	64,160	1,305	65,465	266,506	24,670	291,176
Oct-08	225,711	22,650	248,361	65,465	1,185	66,650	291,176	23,835	315,011
Nov-08	248,361	22,416	270,777	66,650	10,868	77,518	315,011	33,284	348,295
Dec-08	270,777	(16,278)	254,499	77,518	(2,543)	74,975	348,295	(18,821)	329,474

Period	Total Production	Daily Average	% of U.S. Production	Proved Reserves #	% of U.S. Reserves	Active Wells *	WTI Spot Price **
1989	651	1.78	23.3	6,996	26.3	190,821	\$16.47
1990	646	1.77	24.2	7,106	27.1	194,962	\$19.74
1991	644	1.77	24.0	6,797	27.5	196,292	\$21.48
1992	614	1.68	23.5	6,441	27.1	193,310	\$18.61
1993	576	1.58	22.9	6,171	26.9	186,342	\$17.30
1994	542	1.49	22.3	5,847	26.0	179,955	\$14.73
1995	513	1.40	21.5	5,743	25.7	177,397	\$16.31
1996	500	1.37	21.0	5,736	26.0	175,277	\$18.77
1997	491	1.35	21.0	5,687	25.2	175,475	\$20.01
1998	460	1.26	20.1	4,927	23.4	170,288	\$14.06
1999	409	1.12	19.1	5,339	24.5	162,620	\$14.31
2000	401	1.10	18.8	5,273	23.9	161,097	\$28.71
2001	381	1.04	18.0	4,944	22.0	159,357	\$24.62
2002	365	1.00	17.4	5,015	22.1	146,640	\$24.33
2003	359	0.98	17.4	4,583	20.9	143,561	\$31.08
2004	351	0.96	17.7	4,613	21.5	142,095	\$41.51
2005	348	0.95	18.4	4,919	19.0	141,924	\$56.64
2006	347	0.95	18.6	4,871	23.4	139,292	\$66.05
2007	342	0.94	18.5	5,122	24.0	144,535	\$72.34
Nov-07	28.26	0.0.2	*Note: The most recent				~~~
Dec	29.27		12 months of production		Texas OII F	Production 2007-20	800
Jan	29.31	0 0/5 1	data is preliminary and subject to revision. The	1.00			
Feb	27.69		most recent month of	0.95			
Mar	29.60		data is incomplete and	<b>&gt;</b> 0.90		•	
Apr	28.66	0.955	nay underestimate the				
May	29.54		final and complete total;	0.90 <b>Q</b> <b>0.85</b> <b>W</b> <b>0.80</b>			
Jun	28.24	0 0 4 4 1	a production adjustment	<b>Ē</b> 0.80			

### Table 5. Texas Crude Oil (million barrels)



0.75

0.70

Nov- Dec

07

Jan Feb Mar Apr May Jun Aug Sep

Oct Nov\*

Jul

# Source: U.S. Energy Information Administration (EIA). Reserve estimates for 1985 and after exclude federal offshore.

\* Source: Railroad Commission of Texas, December Active Oil Well Counts

been applied to reported

production to obtain an

estimate of final crude oil

factor of 1.0588 has

0.945 November crude oil

production.

29.41

29.29

27.24

29.33

29.36

Jul

Aug

Sep

Oct

Nov\*

0.949

0.908

0.946

0.979

\*\* Source: Texas Comptroller of Public Accounts. Wellhead price is average net taxable price (\$/bbl.) and excludes federal offshore production. Source for 2001 and after is (EIA) and wellhead price is West Texas Intermediate spot average.

		Imports *	*		Products	Proved	Wells	Wellhead
Period	Production *	Total	Crude Oil	Products	Supplied #	Reserves **	Drilled **	Price **
1989	7.61	8.06	5.84	2.22	17.33	26,501	27,931	\$15.86
1990	7.36	8.01	5.89	2.12	16.99	26,254	32,067	\$20.03
1991	7.42	7.62	5.78	1.84	16.71	24,682	28,892	\$16.54
1992	7.17	7.86	6.08	1.81	17.03	23,745	23,084	\$15.99
1993	6.85	8.48	6.79	1.83	17.24	22,957	24,752	\$14.25
1994	6.66	8.92	7.06	1.93	17.72	22,457	21,566	\$13.19
1995	6.56	8.84	7.23	1.61	17.73	22,351	21,600	\$14.62
1996	6.47	9.18	7.51	1.97	18.31	22,017	23,886	\$18.46
1997	6.45	10.16	8.23	1.94	18.62	22,546	27,586	\$17.23
1998	6.25	10.71	8.71	2.00	18.92	21,034	22,911	\$10.87
1999	5.88	10.85	8.73	2.12	19.52	21,765	18,939	\$15.56
2000	5.82	11.46	9.07	2.39	19.70	22,045	27,873	\$26.72
2001	5.80	11.87	9.33	2.54	19.65	22,446	34,021	\$21.84
2002	5.74	11.52	9.13	2.39	19.76	22,677	26,564	\$22.51
2003	5.68	12.24	9.65	2.59	20.03	21,891	30,675	\$27.56
2004	5.41	13.14	10.06	3.08	20.73	21,371	33,096	\$36.77
2005	5.17	13.71	10.09	3.62	20.80	21,757	40,745	\$50.28
2006	5.10	13.17	10.09	3.08	20.68	20,972	49,507	\$59.69
2007	5.06	13.42	10.00	3.42	20.68	21,317	53,558	\$66.52
12 Mos	4.57	12.89	9.76	3.13	19.57	, -	,	•
Nov 07	5.00	13.19	9.97	3.22	20.70		C. Detrole	
Dec		12.85	9.82	3.03	20.86		S. Petroleu	um Cons
Jan		13.49	10.00	3.49	20.11	22 =		
Feb		12.60	9.60	3.00	19.78	21 =		*
Mar		12.55	9.61	2.94	19.73	a 20 ≟		
Apr		13.25	9.81	3.44	19.76	"s" #	***	
May		12.86	9.63	3.23	19.72	19 🗧		
Jun		13.36	9.97	3.39	19.55	20 19 18 18		
Jul		13.06	10.07	2.99	19.41	- +		
Aug		13.06	10.24	2.82	19.26	17 -		
Sep		11.51	8.36	3.15	17.79			
Oct		13.21	10.06	3.15	19.64	1998	2000 2	2002 200
Nov*		12.83	9.89	2.94	19.26			
s./Day	U.S. C	rude Oi	l Producti	on		16 14 12 10 6 4	U.S. Petro	

#### Table 6. U. S. Petroleum Overview (million barrels per day)

\* Source: U.S. Energy Information Administration (EIA). Recent production data is preliminary and subject to revision.

Last 12 Mos

2006

# Source: EIA. Petroleum products supplied is a measure of domestic consumption.

2004

2002

4.5

1998

2000

\*\* Source: EIA. Wells drilled includes crude oil, natural gas, and dry wells drilled. U.S. average wellhead (first purchase) price is dollars per barrel.

0

1998

■Crude oil □Products

2002

2004

2006

Last 12

Mos

2000

Last 12 Mos Railroad Commission of Texas P. O. Box 12967 Austin, Texas 78711-2967 Subscription Inquiries: (512) 463-6747 Internet: http://www.rrc.state.tx.us

Address Correction Requested

*Texas PetroFacts* is available in PDF format for download from the Railroad Commission web site at <u>http://www.rrc.state.tx.us</u>.

Created in 1891 by the Texas Legislature, the Railroad Commission today is known principally as a leader in the regulation and conservation of oil and natural gas in Texas. For more than 85 years, the Commission has been charged with preventing waste and pollution while safeguarding property rights.

We believe the people of Texas continue to have a vital stake in the orderly production and conservation of the state's natural resources. Across the state, crude oil and natural gas are produced in 237 of 254 counties. About 250,000 persons are employed in oil and gas exploration, production, refining, and related industries. In all, businesses involved with the Texas oil and gas industry contribute about \$201 billion annually to the state's more than one trillion-dollar economy.

As an oil and gas producer, the state of Texas ranks among the nations of the world. Texas leads the United States in the production of crude oil and natural gas, and its marketed production of natural gas represents one-third of total U. S. supply. Texas produces an average of nearly one million barrels of oil a day; natural gas production in the state exceeds 6 trillion cubic feet a year.

Michael L. Williams Commissioner Victor G. Carrillo Chairman Elizabeth A. Jones Commissioner

