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ANNUAL

2019



DEPARTMENT OF NATURAL RESOURCES
Technology Assessment Division
February 29, 2020



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LOUISIANA ENERGY FACTS

ANNUAL 2019

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General Questions and Comments

The **Louisiana Energy Facts Annual - 2019 (Annual)** was published by the Technology Assessment Division of the Louisiana Department of Natural Resources under the direction of Edward O'Brien. The division director is Jason Lanclos.

General questions and comments regarding the **Annual** may be referred to Technology Assessment Division staff at (225) 342-1270. Questions concerning specific areas of the **Annual** may be directed to the Technology Assessment Division staff members listed below.

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Louisiana Energy Facts Annual 2019

INTRODUCTION

ABOUT THIS PUBLICATION

The **Louisiana Energy Facts Annual (Annual)** is published to provide a comprehensive compendium of Louisiana related energy production and use statistics on a yearly basis. The data tables are supplemented with numerous graphs and charts to aid in the interpretation of the data and the discernment of trends. The **Annual** is published as soon as sufficient data for the previous calendar year is available. Due to time lags in the availability of some of the data, there is approximately a six month lag before the current **Annual** can be published. Some changes have been introduced in order to incorporate the latest available data.

If you read our monthly **Louisiana Energy Facts** newsletter, you may find that some of the previously published data has been revised in the **Annual**. This data, by its nature, continues to be revised, sometimes years after its initial publication. We try to bring attention to these changes by marking them as revisions.

The most recent **Louisiana Energy Facts** monthly newsletter may contain even more updates. Please refer to the recent monthlies for the very latest data. The **Louisiana Energy Facts** monthly newsletter is available online at our website:

<http://www.dnr.louisiana.gov/tad>

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Facts & Figures

Note: the data in these tables will be updated throughout the year. The data files are not audited and will change as more reliable data becomes available.

The Technology Assessment Division is not the source of the data, but merely reports data provided to us by the responsible agency. We understand that users of our time series data need consistency and, for that reason, our time series have been adjusted backward to reflect these new modifications.

Additional comments or suggestions about this publication can be directed to the Technology Assessment Division staff members listed on the General Questions and Comments page.

We hope you find this document useful, and we appreciate your feedback. Please fill in, detach and return the survey form at the back of this report.

2019 HIGHLIGHTS

The data in the 2019 **Louisiana Energy Facts Annual** contains some recent trends.

Crude Oil and Natural Gas Prices

Gas spot price average was \$3.21 per MCF in 2018, and it was \$2.73 per MCF in 2019; which is 14.8% lower than in 2018. The Louisiana natural gas spot market average in January 2019 was \$3.79 per MCF and decreased to \$2.57 per MCF in December 2019. The January price was attributed to a colder than normal winter and the price decrease at the end of 2019 was caused by excess surplus compared to past years. The average price for gas for 2020 is expected to be around \$2.30 per MCF.

Light Louisiana Sweet (LLS) average spot crude oil price was \$69.69 per barrel in 2018 and it was \$62.49 per barrel in 2019, a 10.3% decrease. The LLS crude oil spot price average was \$56.85 per barrel in January 2019 and rose to \$63.12 per barrel in December 2019. The oil price increase was caused by more robust export market for US crude. The 2020 LLS average spot price is expected to be around \$59 per barrel.

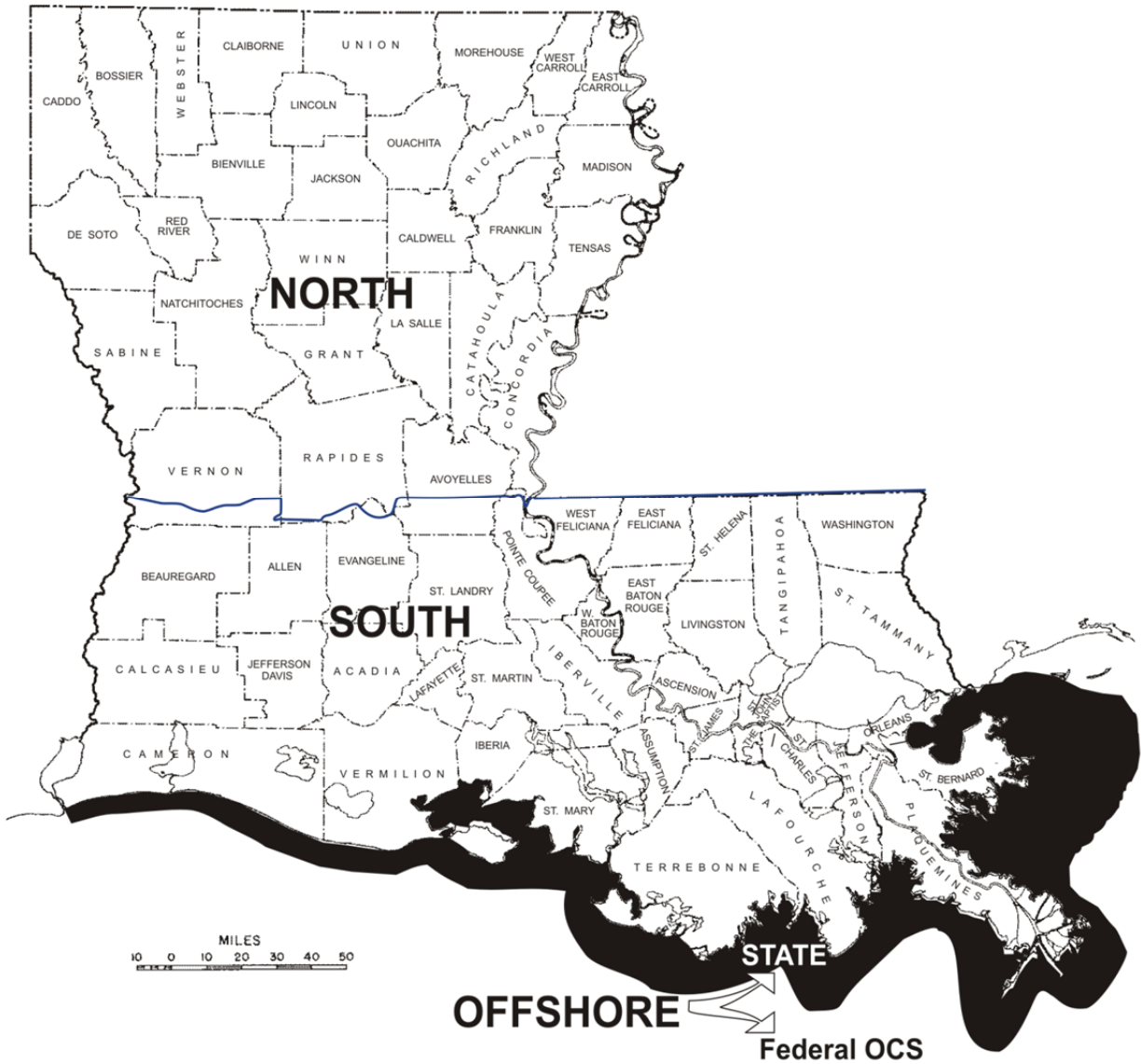
Oil and Gas Production

Louisiana state oil production was lower in 2020 than in 2019, while the federal Outer Continental Shelf (OCS) in the Gulf of Mexico (GOM) increased production. The Louisiana state crude oil and condensate production, excluding the federal OCS, was 49.7 million barrels (MMB) in 2018 and it was 48.7 MMB in 2019. The 2019 oil production was 1.0 MMB or 1.9% lower than 2018. The preliminary Central GOM oil production in 2019 is 654.6 MMB and it was 43.5 MMB or 7.1% higher than 2018 oil production. The increase in Central GOM oil was higher based increases in production based on technological advancements.

Louisiana gas production was higher in 2019 than in 2018. The Louisiana state natural gas and casinghead, excluding OCS production, was 3.2 TCF in 2019, 16.2% higher than 2018. The increase in gas was driven by an increase in drilling in the Haynesville shale area, and higher production from other shale plays that are capable of producing hydrocarbons liquids.

The Haynesville shale is producing around 70% of the state total gas production. The preliminary Central GOM gas production in 2019 is 1.0 TCF, and maintaining production in 2020. The Central GOM gas production has decreased over the years due to shifting priorities from gas fields to oil fields offshore.

SUBDIVISIONS OF LOUISIANA



Drilling

Louisiana rig count, including the OCS area, averaged 62 active rigs in 2019, 1.6% higher than in 2018. In state areas, state offshore region drilling rigs was almost non-existent in 2019, South LA Inland water maintained the same in 2019 as it did in 2018, South LA inland land showed a 1 rig decrease in 2019, North LA region showed stayed the same in 2019, and LA Federal OCS average showed a 4 rig increase in 2019 from 2018.

Other significant items

Louisiana refineries 2019 daily crude oil average runs to stills were 3.06 million barrels per day, marginally increasing from the 2018 daily production.

Average employment in the oil and gas extraction industries was 34,205 in 2018; a 7.5% increase from 2017, due to increases in exploration and production and refining activities.

Louisiana proved oil reserves were higher in 2018 than in 2017, due to increases in the Fed OCS and State Offshore regions. The increase in oil reserve was due to reservoir adjustments in accordance as a reflection on recoverable resources. Louisiana proved gas reserves were lower in 2018 than in 2017 in all Louisiana regions with the exception of the State Offshore region. The decrease in gas reserves were the result of steady gas drilling activities in Louisiana regions and utilizing the proven reserves in current production.

Table 1

LOUISIANA STATE CRUDE OIL PRODUCTION
Excluding OCS
(Barrels)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1999	13,024,727	56,492,360	11,507,149	81,024,236
2000	11,890,407	53,957,823	10,120,547	75,968,777
2001	10,835,037	50,906,438	9,293,584	71,035,059
2002	9,734,754	43,151,661	7,630,661	60,517,076
2003	9,179,787	41,803,886	8,453,966	59,437,639
2004	8,697,903	41,289,067	7,015,580	57,002,550
2005	8,585,924	36,628,208	5,587,547	50,801,679
2006	8,327,465	36,416,376	4,639,216	49,383,057
2007	8,091,774	39,053,879	5,480,658	52,626,311
2008	8,010,562	36,313,404	4,124,198	48,448,164
2009	7,955,097	35,621,149	3,858,277	47,434,523
2010	7,915,495	36,270,826	4,671,151	48,857,472
2011	9,136,216	37,563,060	5,064,106	51,763,382
2012	9,961,475	39,816,038	5,036,472	54,813,985
2013	10,478,346	40,421,255	5,584,262	56,483,863
2014	10,093,552	39,265,997	5,551,263	54,910,812
2015	9,722,891	35,478,795	5,246,298	50,447,984
2016	9,153,106	31,529,224	4,952,102	45,634,432
2017	9,158,814	27,397,686	3,856,590	40,413,090
January	784,813 r	2,408,232 r	375,257 r	3,568,302 r
February	736,406 r	2,199,509 r	322,332 r	3,258,247 r
March	797,062 r	2,431,677 r	325,804 r	3,554,543 r
April	767,916 r	2,394,048 r	344,523 r	3,506,487 r
May	790,312 r	2,404,439 r	342,298 r	3,537,049 r
June	752,849 r	2,254,676 r	325,232 r	3,332,757 r
July	771,644 r	2,368,941 r	330,987 r	3,471,572 r
August	749,903 r	2,313,653 r	317,556 r	3,381,112 r
September	736,268 r	2,202,998 r	304,495 r	3,243,761 r
October	762,558 r	2,111,133 r	260,485 r	3,134,176 r
November	750,753 r	2,160,670 r	302,308 r	3,213,731 r
December	758,330 r	2,147,710 r	305,313 r	3,211,353 r
2018 Total	9,158,814 r	27,397,686 r	3,856,590 r	40,413,090 r
January	666,431	2,013,602	289,709	2,969,742
February	679,400	1,953,305	285,707	2,918,412
March	712,365	2,202,561	310,658	3,225,584
April	686,762	2,124,484	275,051	3,086,297
May	728,217	2,239,962	311,842	3,280,021
June	703,163	2,166,907	309,435	3,179,505
July	727,698	2,175,351	328,503	3,378,422
August	739,094	2,159,552	329,910	3,412,206
September	706,066	1,977,573	322,291	3,433,865
October	717,855	2,137,015	329,036	3,183,906
November	734,309 p	2,056,676 p	347,663 p	3,138,648 p
December	725,034 p	2,158,385 p	350,589 p	3,234,008 p
2019 Total	8,526,393 p	25,365,373 p	3,790,394 p	38,440,615 p

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 2

LOUISIANA STATE CONDENSATE PRODUCTION
Excluding OCS
(Barrels)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1999	3,555,355	24,032,940	2,233,271	29,798,463
2000	3,417,173	26,347,208	1,429,439	31,193,588
2001	3,352,988	28,003,761	1,933,594	33,831,960
2002	2,926,737	27,980,334	1,761,536	33,173,039
2003	2,789,398	25,616,633	1,850,882	30,936,684
2004	2,926,460	21,468,353	1,684,363	26,689,554
2005	3,323,446	20,365,449	1,195,413	24,884,308
2006	3,773,415	18,735,542	2,078,103	24,587,060
2007	4,335,873	18,299,586	2,114,728	24,750,187
2008	5,107,407	16,897,961	2,157,717	24,163,085
2009	4,254,544	15,004,194	2,131,896	21,390,634
2010	3,269,391	13,240,103	1,911,052	18,420,546
2011	3,148,207	12,601,089	1,452,156	17,201,452
2012	2,797,876	11,878,591	1,559,822	16,236,289
2013	3,203,023	11,356,408	1,186,810	15,746,241
2014	3,377,301	9,989,651	787,171	14,154,123
2015	3,065,275	9,016,891	586,438	12,668,604
2016	3,087,657	7,533,945	376,512	10,998,114
2017	4,351,523	6,859,543	309,934	10,524,674
January	433,437 r	553,081 r	19,137	1,005,655 r
February	278,229 r	553,062 r	19,796 r	851,087 r
March	481,001 r	605,230 r	20,109	1,106,340 r
April	357,362 r	600,208 r	19,854	977,424 r
May	446,516 r	601,908 r	21,293	1,069,717 r
June	408,630 r	565,197 r	19,834	993,661 r
July	301,913 r	588,030 r	21,817 r	911,760 r
August	277,295 r	590,768 r	20,797 r	888,860 r
September	355,705 r	582,630 r	18,424 r	956,759 r
October	268,670 r	611,902 r	18,352	898,924 r
November	268,900 r	598,617 r	19,297 r	886,814 r
December	290,526 r	637,336 r	17,428	945,290 r
2018 Total	4,168,184 r	7,087,969 r	236,138 r	11,492,291 r
January	310,373	621,739	17,325	949,437
February	261,556	555,428	15,960	832,944
March	286,625	658,017	17,477	962,119
April	268,014	576,340	15,393	859,747
May	266,582	606,281	18,613	891,476
June	250,086	578,350	16,640	845,076
July	255,148	536,947	13,719	805,814
August	238,820	616,127	12,555	867,502
September	243,282	598,182	14,400	855,864
October	234,197 p	549,302 p	14,930 p	798,429 p
November	241,658 p	564,218 p	14,823 p	820,699 p
December	264,851 p	566,759 p	13,227 p	844,837 p
2019 Total	3,121,192 p	7,027,690 p	185,062 p	10,333,944 p

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 3

LOUISIANA STATE CRUDE OIL and CONDENSATE PRODUCTION
Excluding OCS
(Barrels)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1999	15,307,580	80,305,031	11,549,986	107,162,597
2000	14,188,025	78,910,199	11,227,178	104,325,402
2001	12,661,491	71,131,995	9,392,197	93,185,683
2002	11,969,185	67,420,519	10,304,848	89,694,551
2003	11,624,363	62,757,420	8,699,943	83,081,726
2004	11,909,370	56,993,657	6,782,960	75,685,987
2005	12,100,880	55,151,918	6,717,319	73,970,117
2006	12,427,647	57,353,465	7,595,386	77,376,498
2007	13,117,969	53,211,365	6,281,915	72,611,249
2008	12,209,641	50,625,343	5,990,173	68,825,157
2009	11,184,886	49,510,929	6,582,203	67,278,018
2010	12,284,423	50,164,149	6,516,262	68,964,834
2011	12,759,351	51,694,629	6,596,294	71,050,274
2012	13,681,369	51,777,663	6,771,072	72,230,104
2013	13,470,853	49,255,648	6,338,434	69,064,935
2014	12,788,166	44,495,686	5,832,736	63,116,588
2015	12,240,763	39,063,169	5,328,614	56,632,546
2016	13,510,337	34,257,229	4,166,524	51,934,090
2017	13,326,998	34,485,655	4,092,728	51,905,381
January	1,100,301	2,565,256	308,846	3,974,403
February	958,373	2,506,463	305,503	3,829,015
March	1,193,727	2,806,908	330,767	4,341,500
April	1,044,903	2,724,760	294,905	4,063,003
May	1,175,303	2,840,333	334,612	4,344,489
June	1,112,890	2,729,617	329,269	4,184,543
July	1,029,967	2,761,995	350,320	4,328,682
August	1,018,063	2,746,912	350,707	4,298,830
September	1,062,952	2,558,915	340,714	4,272,153
October	992,917	2,748,005	347,484	4,032,364
November	1,005,794	2,570,025	349,608	3,951,786
December	1,007,519	2,630,479	361,366	4,057,012
2018 Total	12,431,989	32,466,597	4,039,028	49,696,069
January	1,003,875	2,549,868	378,150	3,919,179
February	914,156	2,342,339	319,583	3,751,356
March	995,670	2,643,026	353,504	4,187,703
April	946,662	2,524,943	335,850	3,946,044
May	952,896	2,608,761	347,847	4,171,497
June	884,104	2,526,799	374,311	4,024,581
July	955,341	2,315,036	316,411	4,184,236
August	935,192	2,650,564	360,054	4,279,708
September	918,174	2,596,235	347,110	4,289,729
October	910,428 *	2,516,483 *	321,755 *	3,982,335 *
November	922,785 *	2,566,583 *	326,366 *	3,959,347 *
December	959,363 *	2,566,280 *	338,123 *	4,078,845 *
2019 Total	11,298,646 *	30,406,917 *	4,119,064 *	48,774,559 *

e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 1

LOUISIANA STATE OIL PRODUCTION Actual and Forecasted Through Year 2030

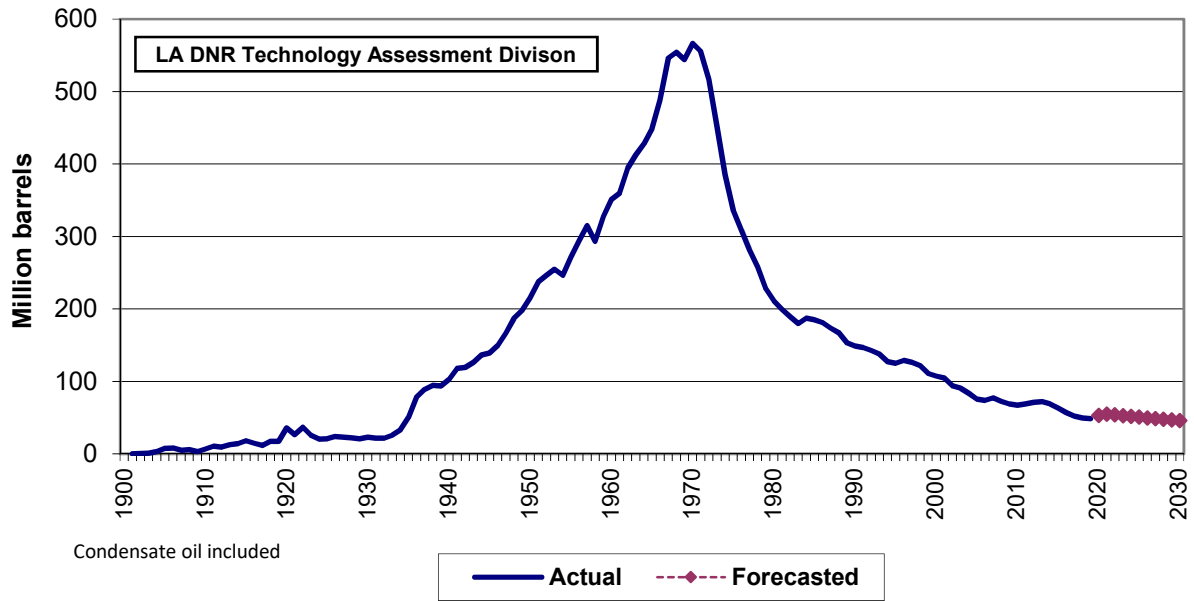
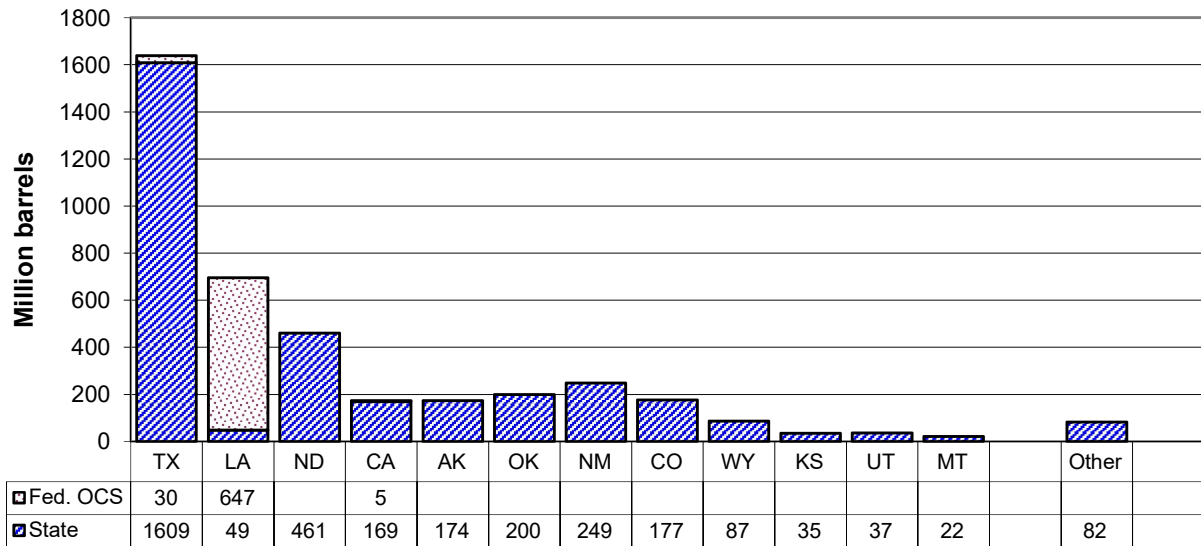


Figure 2

2018 UNITED STATES OIL PRODUCTION BY STATE



Federal OCS production estimated

LA DNR Technology Assessment Division

Table 4

**LOUISIANA and GOM CENTRAL CRUDE OIL and CONDENSATE PRODUCTION
(Barrels)**

DATE	ONSHORE	OFFSHORE		TOTAL
		State	GOM Central	
1999	97,972,111	12,850,588	474,461,887	585,284,586
2000	95,612,390	11,549,975	500,407,261	607,569,626
2001	93,602,961	11,264,058	524,563,398	629,430,417
2002	84,250,026	9,440,089	521,432,474	615,122,589
2003	80,024,835	10,349,488	509,552,915	599,927,238
2004	74,967,054	8,725,050	482,598,762	566,290,866
2005	68,903,027	6,782,960	418,763,978	494,449,965
2006	67,252,798	6,717,319	431,633,489	505,603,606
2007	69,781,112	7,595,386	435,264,843	512,641,341
2008	66,329,334	6,281,915	396,112,395	468,723,644
2009	62,834,984	5,990,173	544,854,279	613,679,436
2010	60,695,815	6,582,203	541,600,736	608,878,754
2011	62,448,572	6,516,262	451,838,190	520,803,024
2012	64,453,980	6,596,294	422,692,750	493,743,024
2013	65,459,032	6,771,072	415,760,908	487,991,012
2014	62,726,501	6,338,434	470,176,016	539,240,951
2015	57,283,852	5,832,736	514,348,509	577,465,097
2016	51,303,932	5,328,614	551,715,708	608,348,254
2017	46,771,240	4,166,524	584,219,540	636,153,630
January	3,683,845	308,846	47,668,169	51,660,860
February	3,523,511	305,504	45,089,527	48,918,542
March	4,010,733	330,767	50,497,668	54,839,168
April	3,768,098	294,905	46,400,913	50,463,916
May	4,011,354	333,135	45,112,164	49,456,653
June	3,855,274	329,269	47,032,741	51,217,284
July	3,831,378	350,435	55,084,894	59,266,707
August	3,763,119	352,061	58,168,463	62,283,643
September	3,621,867	340,714	51,322,071	55,284,652
October	3,740,922	347,484	52,101,250	56,189,656
November	3,575,819	349,608	55,828,694	59,754,121
December	3,637,998	361,366	56,856,108	60,855,472
2018 Total	45,023,918	4,004,094	611,162,662	660,190,674
January	3,553,743	378,150	56,763,670	60,695,563
February	3,256,495	319,583	46,166,793	49,742,871
March	3,638,696	353,504	56,642,337	60,634,537
April	3,471,605	335,850	56,737,995	60,545,450
May	3,561,657	347,847	56,427,899	60,337,403
June	3,410,903	374,311	55,161,362	58,946,576
July	3,270,377	316,411	45,196,044	48,782,832
August	3,585,756	360,054	59,213,169	63,158,979
September	3,514,409	347,110	52,975,173	56,836,692
October	3,426,911	321,755	52,820,434	56,569,100 *
November	3,489,368 *	326,366 *	57,726,870 *	61,542,604 *
December	3,525,643 *	338,123 *	58,789,216 *	62,652,982 *
2019 Total	41,705,563 *	4,119,064 *	654,620,961 *	700,445,588 *

e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 3

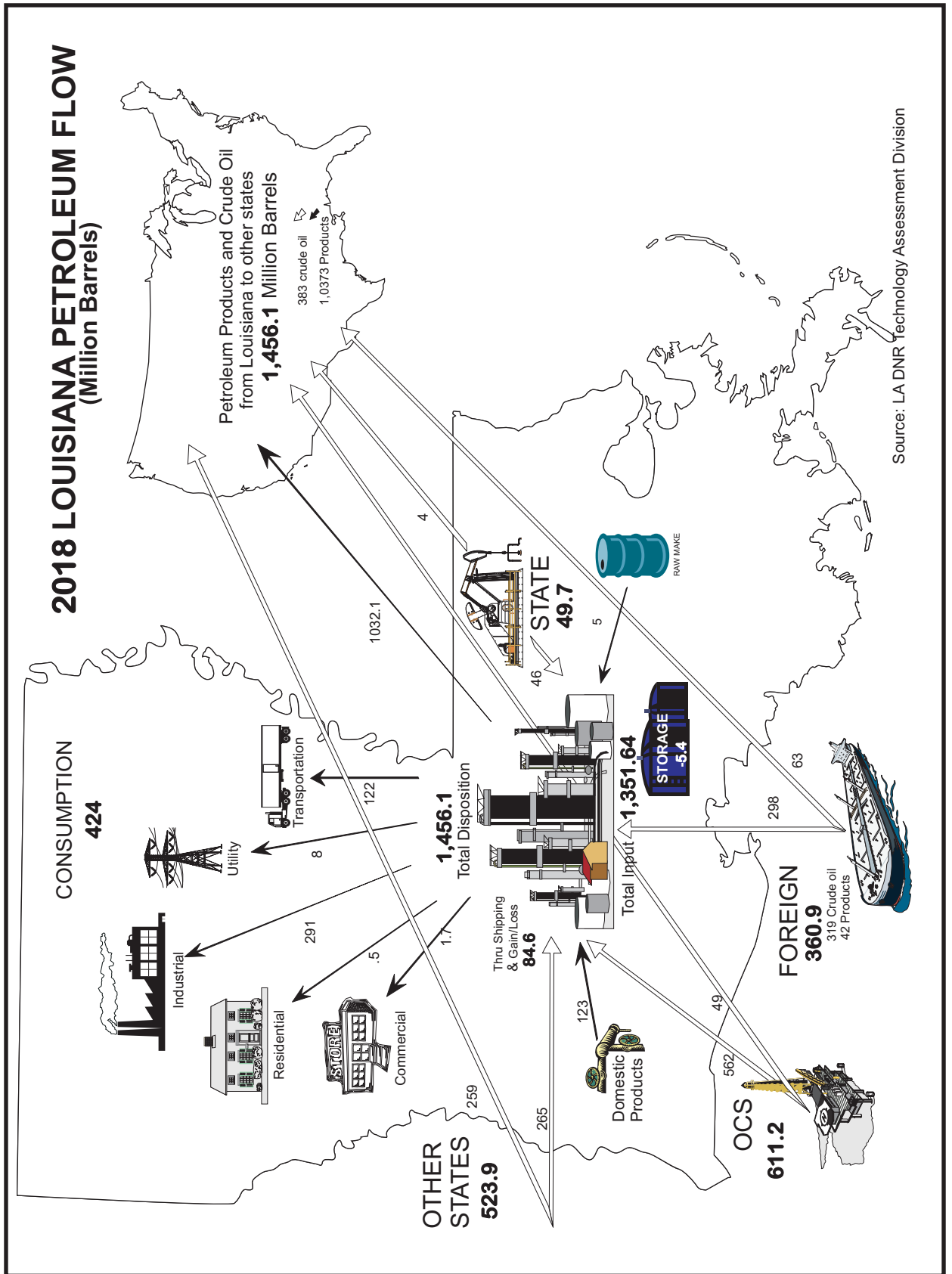


Table 5

**LOUISIANA STATE OIL PRODUCTION* BY TAX RATES
AS PUBLISHED IN SEVERANCE TAX REPORTS⁸
(Barrels)**

DATE	FULL RATE	INCAPABLE WELLS RATE	STRIPPER WELLS RATE	TAXED VOLUME
1999	85,207,438	2,786,515	5,690,984	93,684,937
2000	88,411,207	2,783,268	5,322,515	96,516,990
2001	83,994,058	2,576,683	5,175,142	91,745,883
2002	79,038,703	2,571,901	4,681,607	86,292,211
2003	75,070,785	2,565,017	4,912,890	82,548,691
2004	73,133,821	2,852,851	4,838,681	80,825,353
2005	61,356,971	2,754,911	4,784,530	68,896,412
2006	61,520,365	2,621,592	4,786,820	68,928,778
2007	64,036,607	2,612,497	4,531,456	71,180,560
2008	61,520,109	2,564,615	4,974,961	69,059,684
2009	55,212,475	1,927,478	4,364,995	61,504,949
2010	52,998,554	2,144,740	4,315,681	59,458,975
2011	51,052,360	2,360,106	4,764,525	58,176,991
2012	52,052,999	2,319,256	5,117,590	59,489,845
2013	54,720,459	2,110,666	5,117,677	61,948,801
2014	50,583,025	2,021,531	4,565,344	57,169,900
2015	48,969,890	2,049,703	5,042,452	56,062,045
2016	52,512,796	2,074,407	4,039,203	58,626,405
2017	42,717,133	1,546,846	4,284,183	48,548,162
January	3,212,490	126,933	315,638	3,655,061
February	3,350,276	120,347	392,404	3,863,028
March	3,170,707	101,579	314,453	3,586,739
April	3,019,818	65,687	307,602	3,393,106
May	3,297,422	106,606	382,010	3,786,037
June	2,879,149	82,895	326,493	3,288,537
July	3,537,758	111,576	388,829	4,038,163
August	3,131,380	108,809	308,692	3,548,881
September	3,211,604	119,687	285,781	3,617,073
October	3,530,071	146,039	442,747	4,118,857
November	3,120,175	121,391	309,270	3,550,836
December	3,559,319	129,445	381,302	4,085,791
2018 Total	39,020,169	1,340,994	4,155,220	44,532,108
January	3,784,270 e	101,870	349,576	4,235,716 e
February	3,479,989	119,036	330,255	3,929,280
March	3,558,941 e	107,291	339,106	4,005,338 e
April	3,514,672 e	102,777	308,781	3,926,230 e
May	3,685,492 e	111,364 e	317,659 e	4,114,515 e
June	3,519,873 e	116,254 e	325,998 e	3,962,125 e
July	3,260,000	134,954	391,351	3,786,305
August	3,667,065 e	110,807 e	316,071 e	4,093,942 e
September	3,502,274 e	115,673 e	324,368 e	3,942,314 e
October	3,352,751 e	100,912 e	346,287 e	3,799,950 e
November	3,412,736 e	102,717 e	352,482 e	3,867,935 e
December	3,455,695 e	104,010 e	356,919 e	3,916,624 e
2019 Total	42,193,757 e	1,327,665 e	4,058,852 e	47,580,275 e

e Estimated r Revised p Preliminary See footnote in Appendix B

* Due to reporting time lag and well exemptions the above figures are different from actual production.

Table 6

UNITED STATES OCS CRUDE OIL AND CONDENSATE PRODUCTION¹²
(Barrels)

YEAR	LOUISIANA	TEXAS	CALIFORNIA	TOTAL
1974	342,435,496	1,381,825	16,776,744	360,594,065
1975	313,592,559	1,340,136	15,304,757	330,237,452
1976	301,887,002	1,054,554	13,978,553	316,920,109
1977	290,771,605	909,037	12,267,598	303,948,240
1978	278,071,535	2,107,599	12,085,908	292,265,042
1979	271,008,916	3,595,546	10,961,076	285,565,538
1980	256,688,082	10,502,007	10,198,886	277,388,975
1981	255,875,717	14,284,661	19,605,027	289,765,405
1982	275,513,489	17,263,766	28,434,202	321,211,457
1983	298,093,559	19,710,197	30,527,487	348,331,243
1984	318,024,622	21,960,086	30,254,306	370,239,014
1985	338,901,863	20,640,957	29,781,465	389,324,285
1986	340,152,276	19,835,882	29,227,846	389,216,004
1987	307,950,881	24,634,142	33,556,686	366,141,709
1988	261,936,530	26,115,776	32,615,118	320,667,424
1989	246,207,653	25,887,841	33,072,161	305,167,655
1990	264,670,535	24,970,114	33,312,719	324,423,181
1991	262,647,733	24,380,908	29,146,090	323,831,064
1992	288,918,208	23,639,788	41,222,801	346,053,626
1993	293,443,881	20,376,996	50,078,144	358,655,540
1994	293,077,191	26,819,958	57,229,464	371,300,873
1995	320,255,087	20,419,104	71,254,440	416,293,300
1996	349,101,048	25,841,553	67,804,200	436,634,538
1997	399,536,004	28,718,405	58,279,489	469,873,968
1998	425,865,901	27,837,631	40,636,231	484,861,417
1999	451,391,454	31,758,296	42,071,101	537,198,889
2000	477,645,662	35,044,216	34,373,524	557,370,524
2001	502,115,031	42,991,844	34,763,192	592,514,727
	GULF OF MEXICO		PACIFIC	TOTAL
	CENTRAL	WESTERN		
2002	521,432,474	46,423,253	29,783,000	597,638,727
2003	509,552,915	51,825,370	30,001,000	591,379,285
2004	482,598,762	52,683,149	27,510,000	562,791,911
2005	418,763,978	48,155,514	26,498,079	493,417,571
2006	431,633,489	40,379,554	25,992,128	498,005,171
2007	435,264,843	32,704,378	24,623,593	492,592,814
2008	396,112,395	27,297,077	24,029,346	447,438,818
2009	544,854,279	25,399,965	22,306,167	592,560,411
2010	541,600,736	20,900,548	21,708,034	584,209,318
2011	451,838,190	29,695,690	19,816,847	501,350,727
2012	422,692,750	42,005,409	17,678,497	482,376,656
2013	415,760,908 r	43,125,370 r	18,558,778	477,445,056
2014	470,176,016 r	40,308,758 r	18,481,821	528,966,595
2015	514,371,765 r	38,570,735 r	11,444,000 r	564,386,500 r
2016	537,064,665	32,517,117	6,139,000	575,720,782 r
2017	581,309,679	30,545,966	5,722,000	617,57,7645
2018	608,885,466	30,427,636	5,002,000	644,315,102

e Estimated r Revised p Preliminary See footnote in Appendix B

NOTE: Starting in 2002 BOEM has not formally published production by state adjacent areas

Table 7

UNITED STATES CRUDE OIL AND CONDENSATE PRODUCTION AND IMPORTS
(Thousand barrels)

DATE	ALL OCS ⁷	DOMESTIC PRODUCTION ⁷	IMPORTS TOTAL ⁷	IMPORTS SPR ⁷
1999	513,318	2,162,752	3,132,376	2,065
2000	558,242	2,135,062	3,271,257	3,006
2001	591,588	2,136,179	3,334,438	3,914
2002	597,594	2,097,124	3,336,175	5,767
2003	599,132	2,073,454	3,527,696	747
2004	558,952	1,983,300	3,692,063	30,646
2005	494,332	1,890,107	3,663,887	14,746
2006	498,003	1,856,608	3,693,081	3,086
2007	492,593	1,853,243	3,661,404	2,703
2008	447,352	1,830,415	3,580,694	7,113
2009	592,609	1,954,241	3,289,675	20,368
2010	588,334	1,998,452	3,362,856	0
2011	500,519	2,060,744	3,261,422	0
2012	480,944	2,374,135	3,120,755	0
2013	476,598	2,725,665	2,821,480	0
2014	528,463	3,198,695	2,680,626	0
2015	564,342	3,434,019	2,687,409	0
2016	590,884	3,241,592	2,873,208	0
2017	612,781	3,413,376	2,908,670	0
January	50,557	309,831	248,384	0
February	47,717	286,951	209,799	0
March	52,112	324,302	236,086	0
April	47,498	314,250	247,330	0
May	46,679	324,381	242,560	0
June	49,806	320,856	254,407	0
July	57,326	339,895	245,626	0
August	59,512	351,075	248,002	0
September	53,121	344,114	227,663	0
October	53,996	358,328	226,679	0
November	58,013	357,782	224,694	0
December	59,101	370,853	220,059	0
2018 Total	635,438	4,002,618	2,831,289	0
January	59,170	367,548	233,126	0
February	48,079	326,734	186,243	0
March	59,052	368,644	209,541	0
April	59,456	363,682	210,741	0
May	59,336	375,507	221,900	0
June	56,735	361,805	214,233	0
July	47,715	366,514	214,988	0
August	62,362	383,936	215,273	0
September	56,362	374,517	194,340	0
October	59,015	392,305	193,544	0
November	60,357 e	386,954 e	191,764 e	0
December	63,216 e	383,249 e	190,186 e	0
2019 Total	690,855 e	4,451,395 e	2,475,879 e	0

e Estimated r Revised p Preliminary See footnote in Appendix B

* Due to reporting time lag and well exemptions the above figures are different from actual production

Table 8

**LOUISIANA STATE ROYALTY OIL, GAS AND PLANT PRODUCTS
CALCULATED VOLUMES, Excluding OCS**

DATE	OIL (Barrels)	GAS (MCF)	PLANT LIQUIDS (Barrels)
1999	6,030,138	51,051,870	204,124
2000	6,366,604	53,780,835	355,112
2001	7,059,789	65,034,347	983,641
2002	4,707,772	53,434,290	800,697
2003	4,910,469	53,135,969	1,459,006
2004	4,222,899	45,261,610	2,185,235
2005	3,340,640	34,454,802	1,101,153
2006	3,611,971	40,978,902	1,399,577
2007	4,554,260	43,242,493	1,416,364
2008	4,301,480	44,210,090	1,482,867
2009	4,094,544	41,624,043	721,985
2010	3,912,951	37,204,336	4,784,684
2011	3,901,117	42,335,904	5,506,453
2012	3,898,453	43,827,524	5,796,373
2013	4,010,856	44,018,931	10,239,741
2014	3,789,924	39,516,318	9,251,536
2015	3,405,308	35,475,013	8,141,362
2016	2,972,638	27,950,764	6,410,410
2017	2,527,683	22,092,507	5,375,694
January	192,363	1,715,502	407,787
February	183,717	1,554,884	387,986
March	209,473	1,635,311	411,788
April	197,219	1,520,156	522,887
May	212,712	1,497,067	326,406
June	203,307	1,499,205	346,628
July	210,768	1,633,560	279,794
August	213,628	1,611,236	319,665
September	201,471	1,580,186	381,903
October	217,585	1,708,246	544,973
November	204,638	1,673,963	480,737
December	224,039	1,759,495	507,726
2018 Total	2,470,920	19,388,812	4,918,281
January	206,895	1,868,540	481,896
February	185,359	1,738,660	424,162
March	215,467	1,861,623	408,517
April	202,079	1,658,130	339,892
May	209,646	1,657,924	382,406
June	203,640	1,621,993	404,195
July	172,175	1,454,877	456,209
August	203,777	1,700,797	463,322
September	185,946	1,617,026	375,565
October	186,687 e	1,728,185 e	429,857 e
November	183,500 e	1,698,542 e	407,187 e
December	187,574 e	1,736,588 e	421,238 e
2019 Total	2,342,746 e	20,342,884 e	4,994,446 e

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 9
LOUISIANA STATE NATURAL GAS PRODUCTION
WET AFTER LEASE SEPARATION
Excluding OCS and Casinghead Gas
(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1999	355,536,417	858,338,237	100,525,024	1,314,399,678
2000	358,193,670	880,522,742	94,251,610	1,332,968,022
2001	370,998,160	903,068,572	97,208,445	1,371,275,177
2002	370,358,148	803,816,704	87,069,617	1,261,244,469
2003	401,217,674	779,381,241	72,327,053	1,252,925,968
2004	462,100,053	741,913,556	59,881,419	1,263,895,028
2005	526,863,613	645,073,330	46,609,741	1,218,546,684
2006	562,637,880	659,271,052	62,090,012	1,283,998,944
2007	603,078,425	611,264,372	65,638,857	1,279,981,654
2008	676,367,962	542,416,864	79,984,290	1,298,769,116
2009	903,727,141	444,014,121	70,811,813	1,418,553,075
2010	1,603,226,702	359,800,310	62,296,972	2,025,323,984
2011	2,449,125,453	339,286,937	63,099,986	2,851,512,376
2012	2,504,650,215	322,427,305	71,866,441	2,898,943,961
2013	1,858,426,760	338,932,998	58,666,623	2,256,026,381
2014	1,526,458,894	308,016,621	42,805,939	1,877,281,454
2015	1,404,690,805	283,206,496	32,625,158	1,720,522,459
2016	1,404,690,805	283,206,496	32,625,158	1,720,522,459
2017	1,830,755,652	199,893,922	19,167,747	2,049,817,321
January	197,189,725	15,288,666	1,401,610	213,880,001
February	180,218,615	14,643,092	1,244,600	196,106,307
March	213,305,223	16,159,508	1,277,726	230,742,457
April	197,104,238	15,379,185	1,138,591	213,622,014
May	216,107,717	16,051,164	980,431	233,139,312
June	214,553,221	15,295,715	1,006,357	230,855,293
July	211,841,277	15,751,261	1,198,066	228,790,604
August	204,962,607	15,376,491	1,178,687	221,517,785
September	209,901,334	14,415,887	1,149,535	225,466,756
October	223,606,425	15,504,498	1,061,466	240,172,389
November	211,006,694	15,188,455	1,109,965	227,305,114
December	202,740,401	15,897,203	1,042,042	219,679,646
2018 Total	2,482,537,477	184,951,125	13,789,076	2,681,277,678
January	234,250,323	15,620,167	1,102,994	250,973,484
February	219,350,397	14,109,369	960,568	234,420,334
March	242,741,387	15,195,262	1,024,559	258,961,208
April	242,521,186	14,355,067	960,087	257,836,340
May	245,365,669	14,255,321	1,141,802	260,762,792
June	251,931,085	13,421,847	978,434	266,331,366
July	229,809,897	12,116,047	915,662	242,841,606
August	245,838,718	13,622,291	934,882	260,395,891
September	257,392,130	13,096,983	877,146	271,366,259
October	258,430,904	12,300,303	839,324	271,570,531
November	260,853,694	13,587,262	878,683	275,319,639
December	262,358,497	13,568,421	945,368	276,872,286
2019 Total	2,950,843,887 *	165,248,340 *	11,559,509 *	3,127,651,736 *

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 10

**LOUISIANA STATE CASINGHEAD GAS PRODUCTION,
WET AFTER LEASE SEPARATION, Excluding OCS
(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)**

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1999	29,943,303	99,043,293	15,304,875	144,291,471
2000	23,214,008	98,062,634	13,295,103	134,571,745
2001	19,843,912	90,200,751	14,001,877	124,046,540
2002	16,711,388	72,739,365	11,166,555	100,617,308
2003	15,270,654	65,328,195	11,086,256	91,685,105
2004	13,325,138	64,252,316	8,252,738	85,830,192
2005	11,006,284	48,525,678	6,876,708	66,408,670
2006	9,217,910	51,568,797	5,183,113	65,969,820
2007	8,385,917	61,102,107	5,842,664	75,330,688
2008	7,686,180	49,011,952	3,951,968	60,650,100
2009	7,405,876	45,822,387	4,050,916	57,279,179
2010	7,042,385	48,420,430	6,175,270	61,638,085
2011	7,251,475	53,008,327	6,788,281	67,048,083
2012	7,483,821	53,411,350	4,972,599	65,867,770
2013	7,063,257	54,872,105	4,693,333	66,628,695
2014	6,284,596	54,977,775	5,132,659	66,395,030
2015	5,475,930 r	51,871,669 r	4,268,416	61,616,015
2016	4,617,700 r	41,914,675 r	3,296,296	49,828,671
2017	5,025,370	37,852,898	2,598,868	45,477,136
January	335,786	2,665,212	136,926	3,137,924
February	411,894	2,542,324	143,007	3,097,225
March	427,287	2,865,743	172,812	3,465,842
April	435,645	2,666,295	205,618	3,307,558
May	445,583	2,671,712	276,371	3,393,666
June	416,401	2,717,194	280,538	3,414,133
July	437,990	2,756,301	309,251	3,503,542
August	442,998	2,738,498	302,613	3,484,109
September	430,976	2,696,708	265,297	3,392,981
October	431,587	2,683,596	253,781	3,331,064
November	423,273	2,477,883	270,743	3,171,899
December	414,693	2,511,003	256,169	3,181,865
2018 Total	5,054,113	31,992,469	2,873,126	39,881,808
January	419,799	2,345,842	268,504	3,034,145
February	395,865	2,121,251	361,347	2,878,463
March	402,991	2,309,970	501,549	3,214,510
April	378,415	2,359,123	458,501	3,196,039
May	414,279	2,334,655	274,884	3,023,818
June	408,457	2,396,143	232,351	3,036,951
July	412,686	2,208,183	191,884	2,812,753
August	417,346	2,415,622	238,113	3,071,081
September	416,553	2,431,129	278,157	3,125,839
October	395,250	2,189,713	285,030	2,869,993
November	406,872	2,232,659	289,658	2,929,189
December	432,685	2,356,954	295,467	3,085,106
2019 Total	4,901,198 *	27,701,244 *	3,675,445 *	36,277,887 *

e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 4

LOUISIANA STATE GAS PRODUCTION Actual and Forecasted Through Year 2030

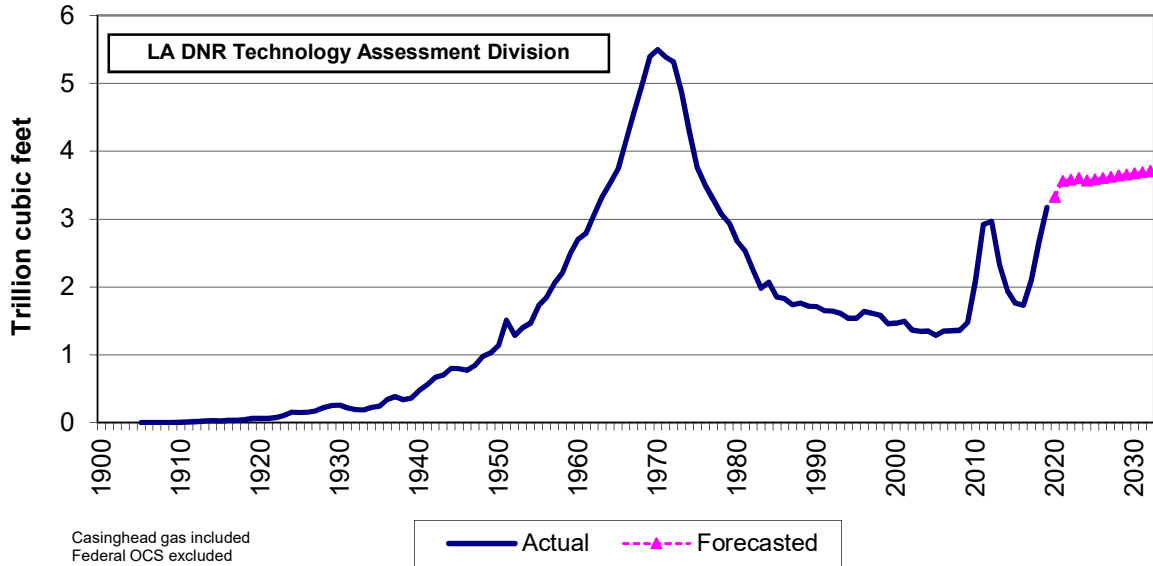
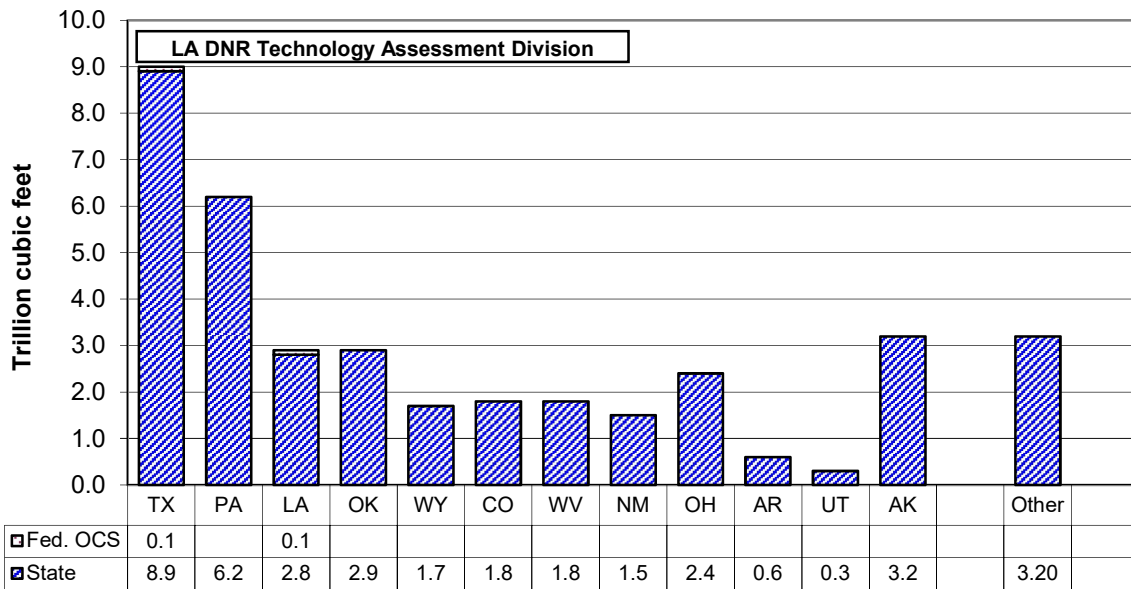


Figure 5

2018 UNITED STATES MARKETED GAS PRODUCTION BY STATE



Federal OCS Production estimated

Table 11

LOUISIANA STATE GAS PRODUCTION, WET AFTER LEASE SEPARATION
Natural Gas and Casinghead Gas, Excluding OCS
(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)*

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1999	385,479,720	957,381,530	115,829,899	1,458,691,149
2000	381,407,678	978,585,376	107,546,713	1,467,539,767
2001	390,842,072	993,269,323	111,210,322	1,495,321,717
2002	387,069,536	876,556,069	98,236,172	1,361,861,777
2003	416,488,328	844,709,436	83,413,309	1,344,611,073
2004	475,425,191	806,165,872	68,134,157	1,349,725,220
2005	537,869,897	693,599,008	53,486,449	1,284,955,354
2006	571,855,790	710,839,849	67,273,125	1,349,968,764
2007	611,464,342	672,366,479	71,481,521	1,355,312,342
2008	684,054,142	591,428,816	83,936,258	1,359,419,216
2009	911,133,017	489,836,508	74,862,729	1,475,832,254
2010	1,610,269,087	408,220,740	68,472,242	2,086,962,069
2011	2,456,376,928	392,295,264	69,888,267	2,918,560,459
2012	2,512,134,036	375,838,655	76,839,040	2,964,811,731
2013	1,865,490,017	393,805,103	63,359,956	2,322,655,076
2014	1,532,743,490	362,994,396	47,938,598	1,943,676,484
2015	1,410,166,735	335,078,165	36,893,574	1,782,138,474
2016	1,433,821,666	264,908,454	27,915,604	1,726,645,724
2017	1,835,781,022	237,746,820	21,766,615	2,095,294,457
January	197,525,511	17,953,878	1,538,536	217,017,925
February	180,630,509	17,185,416	1,387,607	199,203,532
March	213,732,510	19,025,251	1,450,538	234,208,299
April	197,539,883	18,045,480	1,344,209	216,929,572
May	216,553,300	18,722,876	1,256,802	236,532,978
June	214,969,622	18,012,909	1,286,895	234,269,426
July	212,279,267	18,507,562	1,507,317	232,294,146
August	205,405,605	18,114,989	1,481,300	225,001,894
September	210,332,310	17,112,595	1,414,832	228,859,737
October	224,038,012	18,188,094	1,315,247	243,503,453
November	211,429,967	17,666,338	1,380,708	230,477,013
December	203,155,094	18,408,206	1,298,211	222,861,511
2018 Total	2,487,591,590	216,943,594	16,662,202	2,721,159,486
January	234,670,122	17,963,513	1,371,498	254,005,133
February	219,746,262	16,267,607	1,321,915	237,335,784
March	243,144,378	17,569,587	1,526,102	262,240,067
April	242,899,601	16,718,406	1,418,513	261,036,520
May	245,779,948	16,589,976	1,416,686	263,786,610
June	252,339,542	15,817,990	1,210,785	269,368,317
July	230,222,583	14,324,230	1,107,546	245,654,359
August	246,256,064	16,037,913	1,172,995	263,466,972
September	257,808,683	15,528,112	1,155,303	274,492,098
October	258,826,154	14,490,016	1,124,354	274,440,524
November	261,260,566 *	15,819,921 *	1,168,341 *	278,248,828 *
December	262,791,182 *	15,925,375 *	1,240,835 *	279,957,392 *
2019 Total	2,955,745,085 *	193,052,646 *	15,234,873 *	3,164,032,604 *

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 12

LOUISIANA and GOM CENTRAL NATURAL GAS and CASINGHEAD PRODUCTION

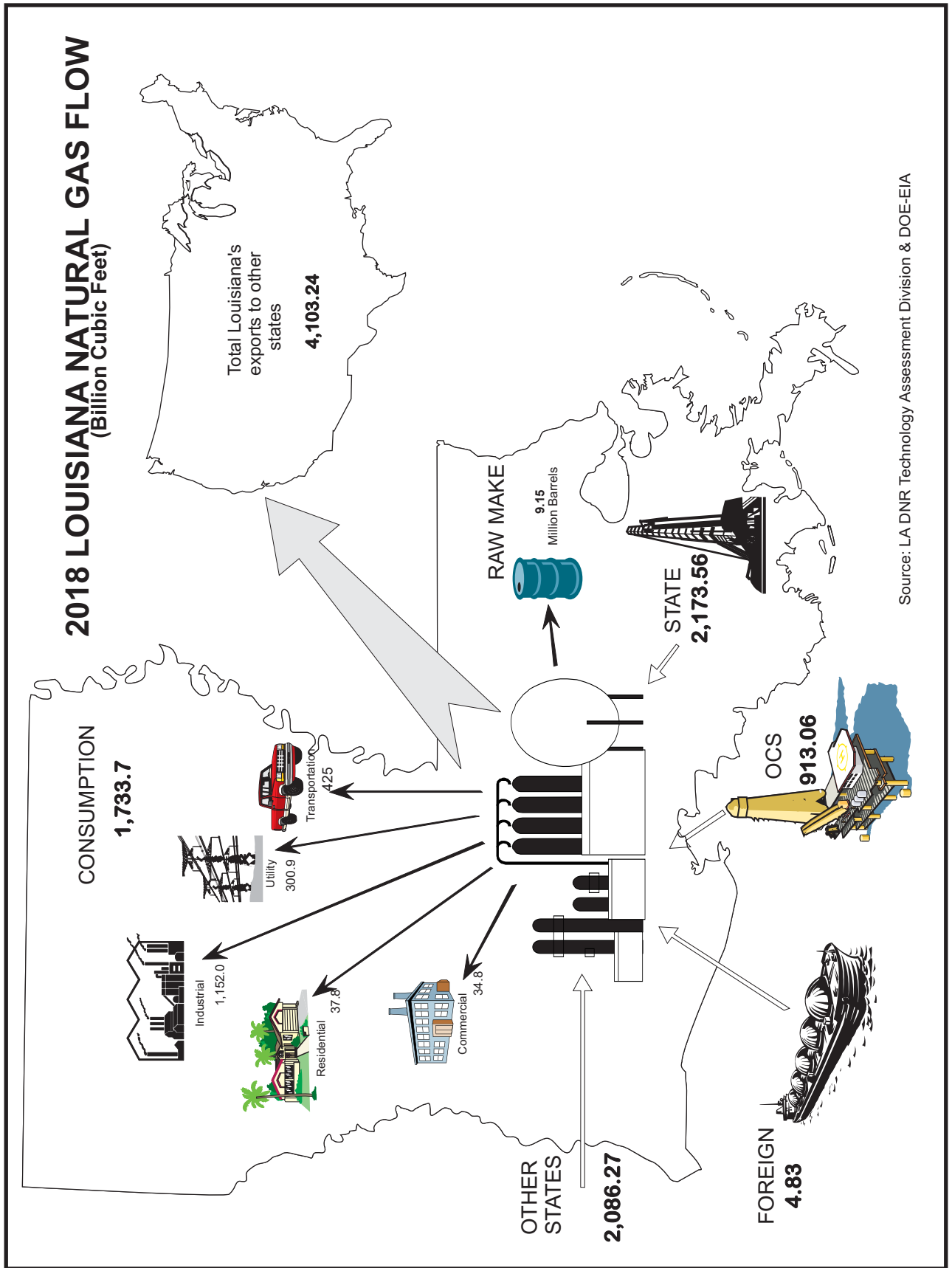
Natural Gas and Casinghead Gas

(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)*

DATE	ONSHORE	OFFSHORE		TOTAL
		State	GOM Central	
1999	1,342,861,250	115,829,899	4,114,592,335	5,573,283,484
2000	1,359,993,054	107,546,713	4,039,065,859	5,506,605,626
2001	1,384,111,395	111,210,322	4,118,472,221	5,613,793,938
2002	1,263,625,605	98,236,172	3,711,664,200	5,073,525,977
2003	1,261,197,764	83,413,309	3,498,876,681	4,843,487,754
2004	1,281,591,063	68,134,157	3,048,397,242	4,398,122,462
2005	1,231,468,905	53,486,449	2,393,359,338	3,678,314,692
2006	1,282,636,419	67,273,962	2,272,400,259	3,622,369,023
2007	1,283,766,986	71,412,494	2,292,135,779	3,647,448,121
2008	1,275,482,958	83,936,258	1,930,267,479	3,289,686,695
2009	1,400,969,525	74,862,729	2,084,867,099	3,560,699,353
2010	2,018,489,827	68,472,242	1,943,658,414	4,030,620,483
2011	2,848,672,192	69,888,267	1,574,039,140	4,492,599,599
2012	2,887,972,691	76,839,040	1,317,720,101	4,282,531,832
2013	2,259,295,120	63,359,956	1,153,096,210	3,475,751,286
2014	1,895,737,886	47,938,598	1,137,409,420	3,081,085,904
2015	1,745,244,900 r	36,893,574 r	1,170,127,267 r	2,952,265,741 r
2016	1,698,730,120	27,915,604	1,101,230,291	2,827,876,015 r
2017	2,704,535,184	21,766,615	985,555,167	3,080,849,624 r
January	215,479,389	1,538,536	68,465,065	285,482,990
February	197,815,925	1,387,607	65,699,353	264,902,885
March	232,757,761	1,450,538	74,604,342	308,812,641
April	215,585,363	1,344,209	69,180,549	286,110,121
May	235,276,176	1,256,802	70,055,561	306,588,539
June	232,982,531	1,286,895	70,791,820	305,061,246
July	230,786,829	1,507,317	83,133,473	315,427,619
August	223,520,594	1,481,300	88,539,913	313,541,807
September	227,444,905	1,414,832	79,936,598	315,628,852
October	217,375,628	1,375,247	78,271,674	309,946,985
November	220,699,750	1,379,019	81,739,023	311,450,958
December	210,931,291	1,340,334	82,613,574	306,203,619
2018 Total	2,660,656,142	16,762,637	913,030,945	3,629,158,261
January	252,633,635	1,371,498	84,861,515	338,866,648
February	236,013,869	1,321,915	72,055,653	309,391,437
March	260,713,965	1,526,102	86,348,771	348,588,838
April	259,618,007	1,418,513	83,578,646	344,615,166
May	262,369,924	1,416,686	82,372,054	346,158,664
June	268,157,532	1,210,785	77,555,508	346,923,825
July	244,546,813	1,107,546	63,355,051	309,009,410
August	262,293,977	1,172,995	86,089,293	349,556,265
September	273,336,795	1,155,303	77,312,237	351,804,335
October	273,316,170	1,124,354	78,518,231	352,958,755
November	277,080,487 *	1,168,341 *	82,465,694 *	360,714,522 *
December	278,716,557 *	1,240,835 *	84,025,789 *	363,983,181 *
2019 Total	3,148,797,731 *	15,234,873 *	958,538,442 *	4,122,571,046 *

e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 6



Source: LA DNR Technology Assessment Division & DOE-EIA

Table 13

GULF OF MEXICO MARKETED GAS PRODUCTION³
(Billion Cubic Feet (BCF) at 15.025 psia and 60 degrees Fahrenheit)

DATE	Alabama	Florida	Louisiana	Federal		Mississippi	Texas
				OCS GOM			
1975	37.1	43.5	6,951.4	N/A	**	72.9	7,338.8
1976	40.6	42.3	6,869.0	N/A	**	69.4	7,050.7
1977	56.1	47.2	7,073.3	N/A	**	81.4	6,912.6
1978	83.9	50.6	7,329.7	N/A	**	104.5	6,419.6
1979	84.1	49.2	7,123.6	N/A	**	141.2	7,033.8
1980	64.0	39.8	6,803.7	N/A	**	171.6	6,976.2
1981	77.7	31.8	6,647.1	N/A	**	177.7	6,774.4
1982	73.5	22.1	6,050.5	N/A	**	163.9	6,341.8
1983	89.0	20.6	5,227.4	N/A	**	148.2	5,822.0
1984	99.8	12.3	5,710.7	N/A	**	154.8	6,063.6
1985	105.2	10.3	4,915.3	N/A	**	141.3	5,933.8
1986	105.1	8.7	4,799.3	N/A	**	138.1	6,031.0
1987	114.9	8.1	5,021.9	N/A	**	137.0	6,006.0
1988	127.0	7.3	5,078.6	N/A	**	121.6	6,162.6
1989	125.9	7.4	4,978.4	N/A	**	100.6	6,118.9
1990	132.6	6.4	5,139.1	N/A	**	92.8	6,218.6
1991	167.5	4.8	4,935.5	N/A	**	105.9	6,157.3
1992	348.1	6.5	4,817.8	N/A	**	89.9	6,025.2
1993	380.4	6.9	4,893.1	N/A	**	79.1	6,126.9
1994	505.2	7.3	5,068.2	N/A	**	62.2	6,229.1
1995	509.5	6.3	5,008.1	N/A	**	93.7	6,205.8
1996	520.4	5.9	5,185.9	N/A	**	101.2	6,343.6
1997	381.0	6.0	1,475.5	5,103.8		105.2	5,065.9
1998	384.7	5.7	1,521.5	4,976.8		105.9	5,124.8
1999	374.2	5.8	1,536.2	4,931.0		108.8	4,955.2
2000	356.3	6.4	1,426.4	4,837.5		86.8	5,178.4
2001	349.8	5.6	1,472.6	4,928.9		105.4	5,179.0
2002	349.1	3.3	1,335.0	4,423.4		110.8	5,040.1
2003	339.3	3.0	1,323.9	4,319.9		131.3	5,140.6
2004	309.8	3.1	1,326.7	3,891.5		62.1	4,967.8
2005	290.7	2.6	1,270.6	3,070.6		51.9	5,172.8
2006	280.6	2.5	1,334.4	2,845.0		59.3	5,439.1
2007	265.1	1.7	1,338.5	2,743.8		72.0	6,003.0
2008	252.8	2.4	1,350.9	2,268.9		94.7	6,824.0
2009	231.4	0.3	1,518.2	2,381.2		86.4	6,685.1
2010	218.6	12.2	2,166.7	2,201.0		72.3	6,583.4
2011	191.7	14.8	2,969.7	1,776.7		79.9	6,973.2
2012	211.5	0.8	2,897.4	1,507.6		63.8	7,475.5
2013	196.3	0.3	2,360.2	1,309.2		59.3	7,633.6
2014	181.1	0.5	1,960.8	1,253.7		54.4	7,985.0
2015	168.2	0.8	1,805.2	1,291.9		58.2	7,890.5
2016	164.8	0.7	1,784.4	1,200.7		48.5	7,225.5
2017	150.0	0.7	2,138.9	1,060.3		38.4	7,135.5
2018	139.5	0.8	2,810.6	975.3		35.6	7,847.1

e Estimated r Revised p Preliminary See footnote in Appendix B

** Prior to 1997 Federal OCS GOM production was included in state productions

Table 14

LOUISIANA STATE GAS PRODUCTION BY TAX RATES

AS PUBLISHED IN SEVERANCE TAX REPORTS⁸

(MCF at 15.025psia and 60 degrees Fahrenheit)

DATE	FULL RATE	INCAPABLE GAS WELLS RATE	OTHER RATES	TAXED VOLUME
1999	1,151,493,116	57,308,865	10,617,631	1,219,419,612
2000	1,217,171,149	53,797,867	8,195,799	1,279,164,815
2001	1,264,513,132	74,687,708	7,806,688	1,347,007,528
2002	1,068,512,639	75,724,074	7,748,258	1,151,984,971
2003	1,091,483,424	80,659,914	7,963,553	1,180,106,891
2004	1,139,626,885	83,441,736	5,507,456	1,235,308,986
2005	1,130,014,025	91,951,579	5,120,095	1,227,085,699
2006	1,134,544,485	113,490,843	5,835,027	1,253,870,355
2007	1,070,511,169	122,399,829	7,550,345	1,200,461,343
2008	1,044,876,723	137,853,642	6,398,792	1,189,129,157
2009	994,356,639	168,793,831	4,489,808	1,167,640,278
2010	874,590,391	177,946,449	7,737,200	1,060,274,040
2011	729,242,365	179,471,125	9,251,347	917,964,837
2012	854,908,764	176,578,354	6,655,754	1,038,142,872
2013	758,214,527	174,056,487	8,764,522	941,035,536
2014	1,122,007,861	164,803,849	7,760,331	1,294,572,041
2015	1,160,262,405	146,406,047	7,692,660	1,314,361,112
2016	901,247,546	141,379,847	6,574,263	1,049,201,656
2017	1,101,463,917	62,993,814	4,671,346	1,169,129,077
January	110,888,254	10,694,918	378,731	121,961,903
February	98,487,451	8,715,472	485,191	107,688,114
March	127,347,501	11,425,694	468,241	139,241,436
April	93,555,038	8,511,175	388,179	102,454,392
May	147,703,130	11,664,008	319,164	159,686,302
June	89,822,320	14,144,477	378,131	104,344,928
July	99,070,526	9,570,630	401,553	109,042,709
August	123,144,066	11,620,474	424,442	135,188,982
September	120,459,478	10,176,189	505,145	131,140,812
October	118,062,186	9,505,677	423,722	127,991,585
November	129,062,245	9,386,628	420,091	138,868,964
December	129,868,405 *	10,456,245 *	466,094 *	140,790,744 *
2018 Total	1,387,470,600 *	125,871,587 *	5,058,684 *	1,518,400,871 *
January	128,365,344	10,642,998	142,886	139,151,228
February	118,134,908	10,414,023	257,545	128,806,476
March	132,203,141 *	9,735,497	320,218	142,258,856 *
April	140,256,132	9,826,817	361,784	150,444,733
May	151,365,981 *	9,754,359 *	349,657 *	161,469,997 *
June	177,542,093	10,659,321 *	118,427	188,319,841
July	143,719,583	10,533,575	122,964	154,376,122
August	114,815,766	10,118,131	111,050	125,044,947
September	126,482,452 *	10,684,998 *	530,402 *	137,697,853 *
October	123,965,295 *	9,980,961 *	444,908 *	134,391,164 *
November	135,515,357 *	9,855,959 *	441,096 *	145,812,412 *
December	136,361,825 *	10,979,057 *	489,399 *	147,830,281 *
2019 Total	1,628,727,877 *	123,185,697 *	3,690,336 *	1,755,603,910 *

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 15

UNITED STATES OCS GAS PRODUCTION¹²

**Natural Gas and Casinghead Gas
(MCF at 15.025 psia and 60 degrees Fahrenheit)***

YEAR	LOUISIANA	TEXAS	CALIFORNIA	TOTAL
1976	3,431,149,749	90,764,667	3,406,969	3,525,321,386
1977	3,575,898,616	85,236,246	5,417,963	3,666,552,825
1978	4,068,255,571	227,305,175	5,166,292	4,300,727,039
1979	4,076,873,552	501,546,069	5,431,822	4,583,851,442
1980	3,934,902,550	612,378,333	5,900,023	4,553,180,906
1981	4,025,867,929	715,937,640	12,763,307	4,754,568,877
1982	3,729,057,653	841,173,981	17,751,924	4,587,983,558
1983	3,111,576,348	834,112,318	24,168,292	3,969,856,958
1984	3,508,475,799	913,008,621	46,363,899	4,467,848,319
1985	3,055,687,773	818,533,627	64,558,213	3,938,779,613
1986	2,870,347,386	959,161,285	59,078,021	3,888,586,692
1987	3,117,669,167	1,180,839,487	54,805,158	4,353,313,812
1988	3,036,077,646	1,155,285,485	49,167,638	4,240,530,769
1989	2,947,545,132	1,142,237,197	50,791,912	4,140,574,242
1990	3,633,554,307	1,321,607,333	49,972,764	5,005,134,404
1991	3,225,373,562	1,161,671,524	51,855,577	4,438,900,663
1992	3,272,561,370	1,215,055,449	55,231,660	4,608,807,577
1993	3,320,312,261	1,007,755,289	52,150,277	4,455,275,861
1994	3,423,837,064	994,291,314	53,560,686	4,578,282,175
1995	3,564,677,663	890,682,224	54,790,061	4,619,222,806
1996	3,709,198,609	953,772,416	66,783,677	4,955,474,989
1997	3,825,354,038	946,381,458	73,344,546	5,010,736,875
1998	3,814,583,541	850,572,237	74,984,850	4,789,522,576
1999	3,836,619,562	798,140,396	77,809,430	4,935,623,726
2000	3,761,812,062	869,068,079	76,074,550	4,919,901,921
2001	3,818,657,416	898,035,393	70,946,682	5,145,905,423
2000	3,761,812,062	869,068,079	76,074,550	4,919,901,921
2001	3,818,657,416	898,035,393	70,946,682	5,145,905,423
	GULF OF MEXICO¹²		PACIFIC⁷	TOTAL
	CENTRAL	WESTERN		
2002	3,711,664,200	812,271,646	67,816,000	4,534,984,410
2003	3,498,876,681	930,004,249	58,095,000	4,439,929,494
2004	3,048,397,242	957,120,117	54,655,000	4,016,565,923
2005	2,393,359,338	762,118,570	54,134,794	3,166,526,472
2006	2,272,400,259	649,372,254	47,153,866	2,932,821,077
2007	2,292,135,779	520,160,276	45,589,671	2,823,344,619
2008	1,930,267,479	399,312,145	46,911,954	2,340,628,188
2009	2,084,867,099	365,965,839	41,233,149	2,461,881,502
2010	1,943,658,414	304,429,714	41,238,185	2,259,136,692
2011	1,574,039,140	252,180,858	36,579,269	1,837,268,562
2012	1,317,720,101	217,944,400	27,262,401	1,546,713,065
2013	1,153,096,210	175,037,012	27,453,674	1,355,586,896
2014	1,137,409,420	139,067,562	28,244,946	1,304,721,928
2015	1,170,192,451	137,551,631	14,734,938	1,322,479,020
2016	1,087,954,512	117,609,632	4499110	1,210,063,254
2017	985,018,095	92,653,569	3,953,694	1,077,671,664
2018	916,369,170	76,133,636	3,427,581	995,930,387

NOTE: Starting in 2002 MMS has not formally published production by state adjacent areas
e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 7

LOUISIANA OIL PRODUCTION AND PRICE

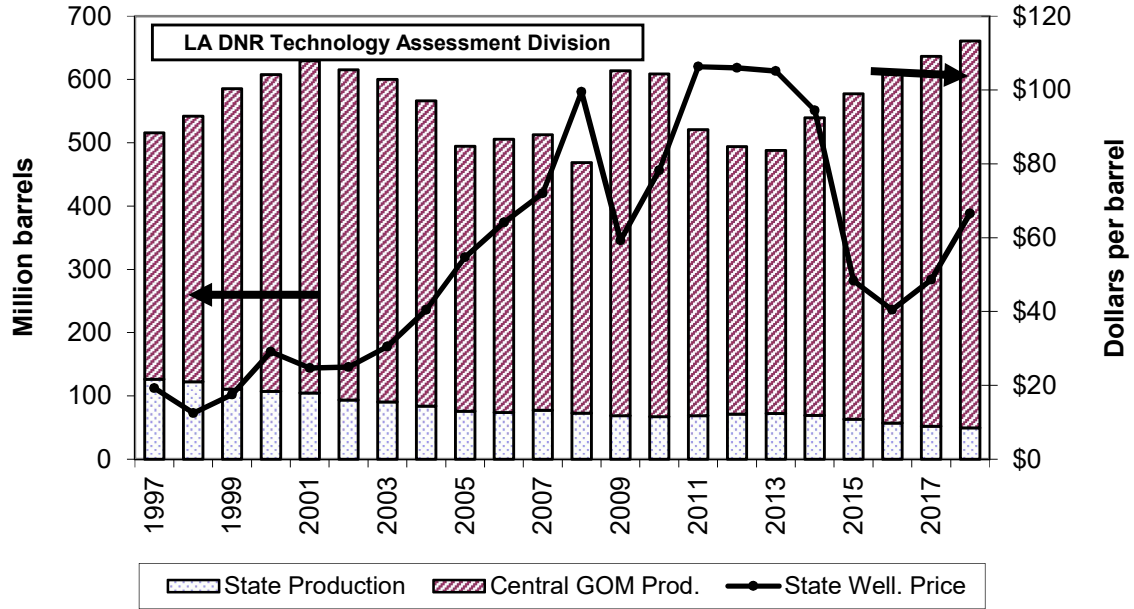


Figure 8

LOUISIANA GAS PRODUCTION AND PRICE

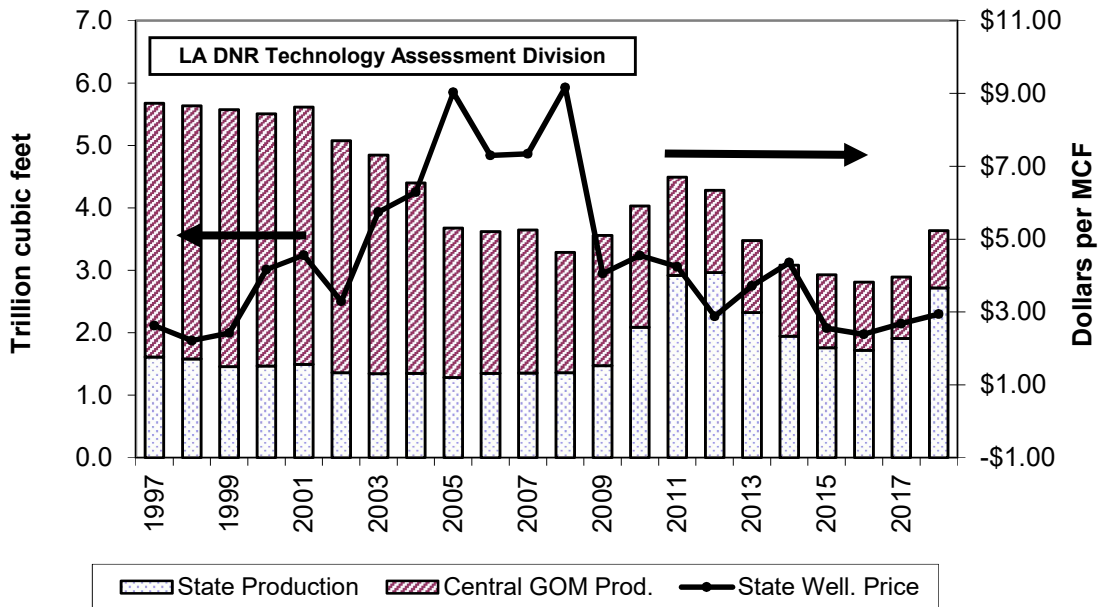


Table 16

UNITED STATES NATURAL GAS AND CASINGHEAD GAS PRODUCTION ³
 (Billion Cubic Feet (BCF) at 15.025 psia and 60 degrees Fahrenheit)*

DATE	GROSS	WET AFTER LEASE SEPARATION	MARKETED	DRY	GROSS IMPORTS
1999	23,355	19,524	19,416	18,462	3,090
2000	23,699	19,890	19,801	18,805	3,515
2001	24,020	20,261	20,166	19,231	3,707
2002	23,471	19,592	19,530	18,591	3,899
2003	23,645	19,678	19,582	18,724	3,937
2004	23,499	19,230	19,134	18,226	3,866
2005	22,996	18,672	18,555	17,696	4,175
2006	23,046	19,156	19,001	18,113	4,256
2007	24,108	19,940	19,626	18,714	4,104
2008	25,133	20,861	20,698	19,763	4,517
2009	25,545	21,385	21,223	20,219	3,906
2010	26,290	22,105	21,942	20,897	3,678
2011	27,920	24,621	23,564	22,452	3,667
2012	28,962	26,097	25,283	24,033	3,401
2013	28,943	26,467	25,562	24,206	3,076
2014	30,789	28,094	27,498	25,890	2,642
2015	32,915	29,323	28,772	27,065	2,642
2016	32,592	27,920	28,400	26,592	2,947
2017	33,357	28,493	29,197	27,291	3,006
January	2,986 r	2,586 r	2,612 r	2,435 r	304 r
February	2,746 r	2,385 r	2,410 r	2,246 r	241 r
March	3,085 r	2,673 r	2,721 r	2,535 r	274 r
April	2,979 r	2,598 r	2,617 r	2,439 r	244 r
May	3,097 r	2,713 r	2,730 r	2,544 r	229 r
June	2,961 r	2,641 r	2,645 r	2,465 r	230 r
July	3,097 r	2,784 r	2,759 r	2,571 r	249 r
August	3,165 r	2,845 r	2,815 r	2,623 r	239 r
September	3,142 r	2,790 r	2,797 r	2,607 r	216 r
October	3,270 r	2,909 r	2,895 r	2,698 r	217 r
November	3,235 r	2,855 r	2,870 r	2,675 r	213 r
December	3,365 r	2,957 r	2,952 r	2,751 r	257 r
2018 Total	37,129 r	32,735 r	32,823 r	30,589 r	2,913 r
January	3,357	2,948	2,952	2,747	291
February	3,051	2,688	2,694	2,504	233
March	3,387	3,021	3,001	2,788	253
April	3,307	2,910	2,920	2,712	207
May	3,392	2,985	3,004	2,788	208
June	3,299	2,903	2,943	2,736	201
July	3,384	2,978	3,040	2,830	230
August	3,445	3,031	3,105	2,893	220
September	3,395	2,988	3,041	2,826	208
October	3,558	3,131	3,176	2,952	211
November	3,488	3,069	3,101	2,872	201 e
December	3,629	3,194	3,252	3,005	205 e
2019 Total	40,692	35,846.19	36,230	33,652	2,668 e

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 17

LOUISIANA AVERAGE CRUDE OIL PRICES

(Dollars per Barrel)

DATE	LIGHT LOUISIANA SWEET		ALL GRADES AT WELLHEAD			
	Spot Market ¹⁰	Refinery Posted	State ⁶	OCS Gulf ⁶	Severance Tax ⁸	State Royalty
1999	19.00	16.73	17.55	16.46	16.09	17.22
2000	30.29	27.88	29.14	27.57	28.10	25.96
2001	25.84	23.23	24.70	23.36	26.23	19.81
2002	26.18	23.14	24.93	23.49	25.17	24.39
2003	31.20	27.88	30.51	28.68	30.28	29.77
2004	41.47	37.85	40.43	37.54	38.34	39.06
2005	56.86	52.75	54.68	50.97	54.62	52.20
2006	67.44	62.41	64.17	60.62	63.55	63.08
2007	74.60	68.96	71.98	67.62	64.14	71.87
2008	102.29	96.57	99.53	100.00	104.86	97.60
2009	64.28	59.04	59.27	57.57	52.78	57.54
2010	82.72	75.90	78.23	77.13	75.24	77.71
2011	112.24	93.61	106.30	106.19	101.40	108.89
2012	111.79	93.71	105.98	105.85	107.46	110.88
2013	107.35	93.99	105.16	103.50	106.75	107.09
2014	96.83	88.29	94.44	93.61	96.84	95.14
2015	52.36	43.99	48.38	47.96	55.93	48.60
2016	44.86	38.40	41.25	38.46	38.44	40.23
2017	54.10	51.35	50.44	48.50	49.59	50.33
January	67.23	64.79	65.57	61.88	61.29	66.17
February	65.07	62.96	63.51	62.60	56.34	63.67
March	64.66	61.42	62.69	60.85	69.52	62.51
April	68.79	64.53	65.82	62.81	64.06	66.00
May	74.80	68.53	69.99	67.34	63.22	70.07
June	74.45	67.74	68.65	68.51	69.31	68.91
July	72.37	74.25	74.52	71.30	71.05	74.88
August	72.20	67.92	68.81	67.61	70.98	68.26
September	77.19	71.04	71.80	69.46	77.07	71.88
October	78.80	74.59	74.03	71.93	66.68	74.70
November	64.76	61.60	60.82	67.76	57.26	61.55
December	56.01	53.38	52.47	58.94	51.58	51.83
2018 Average	69.69	66.06	66.56	65.92	64.86	66.70
January	56.85	53.96	53.89	54.13	61.83 *	54.97
February	62.23	57.25	57.44	56.33	62.39 *	58.51
March	65.56	61.69	61.24	61.22	61.25	62.47
April	69.60	67.22	67.13	66.35	58.01	68.20
May	69.99	63.60	63.60	65.08	61.39	64.66
June	61.65	59.18	58.67	62.54	58.62 *	60.07
July	63.14	60.72	60.47	60.27	61.27	62.05
August	59.24	56.31	56.63	58.92	62.73	57.49
September	60.23	57.00	57.62	58.02	62.17	58.24
October	57.22	56.31	57.98	56.31	N/A	55.37
November	61.00	N/A	N/A	N/A	N/A	58.41
December	63.12	N/A	N/A	N/A	N/A	N/A
2019 Average	62.49	59.32	59.47	59.92	61.07	60.04

e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 9

CRUDE OIL AVERAGE PRICES

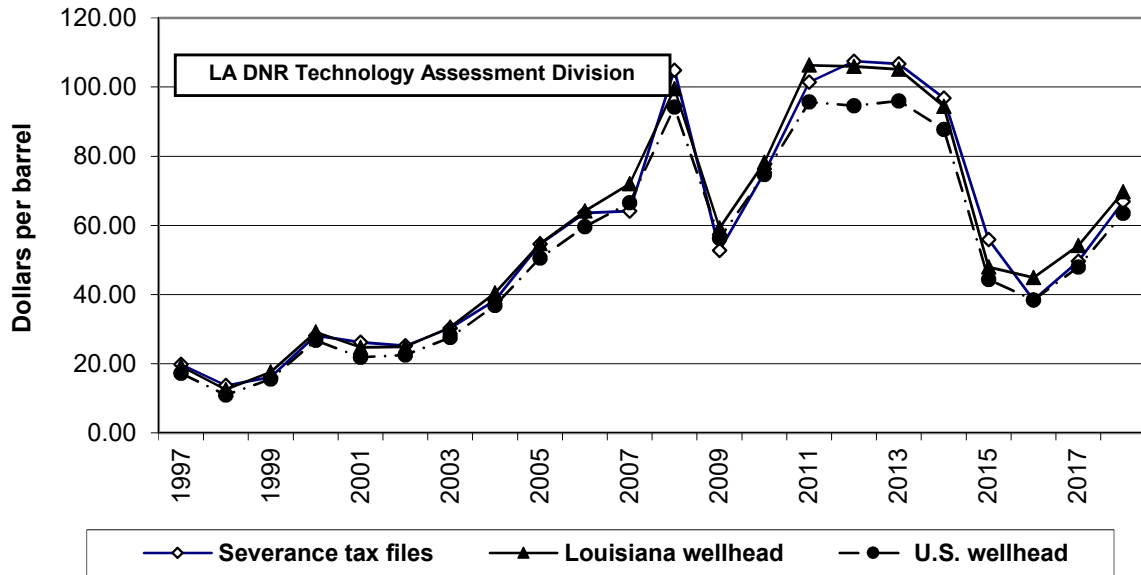


Figure 10

NATURAL GAS AVERAGE PRICES

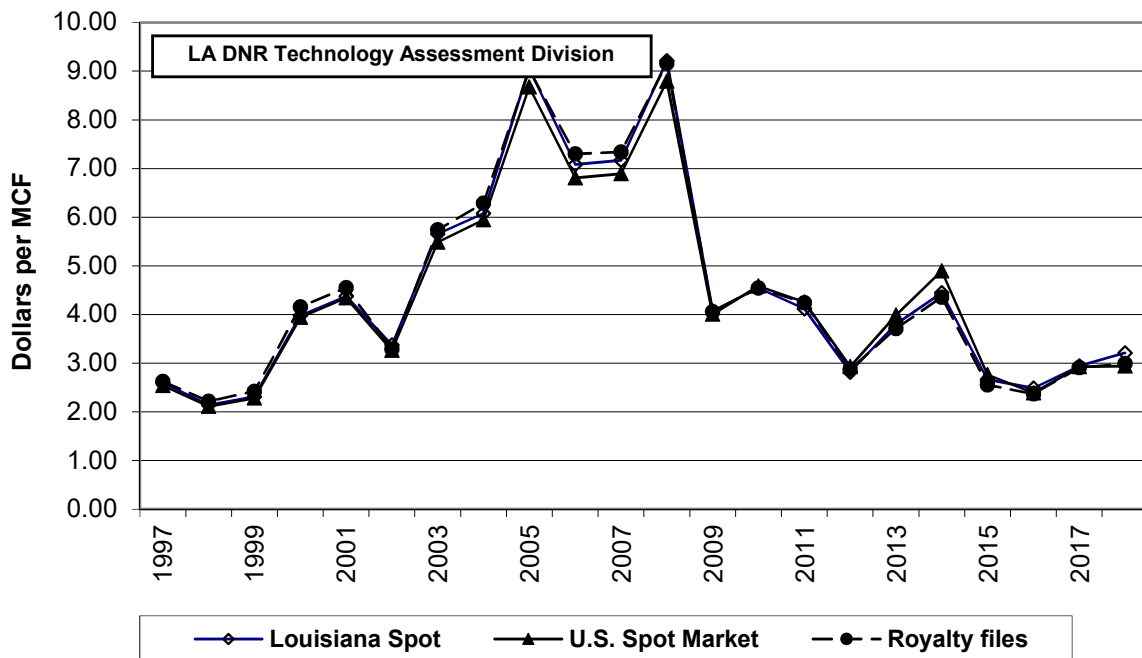


Table 18

UNITED STATES AVERAGE CRUDE OIL PRICES ²
(Dollars per Barrel)

DATE	REFINERY ACQUISITION		DOMESTIC WELLHEAD	IMPORTS LANDED	IMPORTS FOB	IMPORTS OPEC FOB
	Domestic Costs	Imports Costs				
1999	29.42	28.13	27.15	28.01	26.76	26.03
2000	24.34	21.99	21.89	21.77	20.45	19.56
2001	24.56	23.63	22.50	23.82	22.57	22.19
2002	29.81	27.85	27.55	27.83	26.06	25.61
2003	38.97	35.79	36.86	36.05	33.73	33.99
2004	53.05	48.93	50.53	49.41	47.74	49.75
2005	62.50	58.89	59.65	59.03	57.03	59.17
2006	69.56	67.13	66.56	67.86	66.12	68.98
2007	98.09	92.30	94.22	92.14	89.45	91.23
2008	58.95	59.37	56.31	60.30	58.12	58.92
2009	77.94	75.92	74.64	76.53	74.21	75.31
2010	100.62	102.50	95.69	102.92	101.65	105.30
2011	100.91	101.07	94.63	100.86	99.54	104.08
2012	102.93	98.03	96.00	96.90	96.51	100.54
2013	94.45	89.57	87.71	88.09	85.60	89.14
2014	49.86	46.51	44.31	45.43	41.92	43.53
2015	49.86	46.51	44.31	45.43	41.92	43.53
2016	42.34	38.68	38.37	38.48	36.11	38.02
2017	51.95	49.26	47.95	48.56	45.75	49.99
January	66.08	59.39	62.25	58.19	55.73	64.12
February	64.68	57.94	61.20	56.73	53.42	61.07 r
March	64.03	56.75	60.68	56.32	53.35	60.90 r
April	67.14	61.25	63.50	60.61	58.53	66.09 r
May	71.31	66.08	66.16	65.15	62.95	70.07 r
June	69.55	66.85	62.80	65.48	63.09	69.44 r
July	73.31	66.77	67.00	65.43	62.35	67.64 r
August	69.45	65.48	62.64	64.11	61.35	68.31
September	71.04	66.42	63.55	63.69	61.56	71.80
October	73.08	67.74	65.18	61.84	60.19	73.26
November	62.47	54.40	55.65	47.16	44.66	60.58 r
December	53.25	42.80	47.63	39.14	36.91	53.04 r
2018 Average	67.12	60.99	61.52	58.65	56.17	65.53 r
January	53.86	49.57	47.85	49.25	48.72	55.22
February	57.89	56.50	52.51	56.12	54.14	63.09
March	61.97	61.14	57.47	59.48	57.54	65.95
April	67.24	65.42	63.01	63.62	61.31	70.54
May	65.17	65.03	59.68	63.69	60.70	67.97
June	59.81	58.16	54.22	57.40	54.50	63.47
July	61.47	59.18	56.47	56.97	54.41	63.82
August	57.88	55.41	53.63	54.91	51.98	59.51
September	59.41	57.31	55.07	54.93	52.47	59.46
October	56.69	54.31	53.14	52.86	49.77	56.00
November	58.41	55.13	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A	N/A	N/A
2019 Average	59.98	57.92	55.31	56.92	54.55	62.50

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 19

LOUISIANA NATURAL GAS WELLHEAD PRICES (MCF)

(Dollars/Thousand Cubic Feet)

DATE	GOM	DNR	HENRY HUB		SPOT MARKET ⁵		
	Federal	State	Settled	Cash	Low	High	Average
	OCS ¹²	Royalty	NYMEX	Spot			
1999	2.18	2.42	2.36	2.36	2.25	2.36	2.31
2000	3.59	4.16	4.04	4.39	3.92	4.03	3.98
2001	4.05	4.55	4.44	4.11	4.27	4.47	4.38
2002	2.98	3.29	3.39	3.48	3.29	3.43	3.37
2003	5.12	5.74	5.61	5.71	5.32	5.92	5.66
2004	6.04	6.29	6.39	6.14	5.98	6.18	6.08
2005	6.84	9.03	8.96	9.19	8.84	9.26	9.05
2006	8.24	7.35	7.54	7.00	6.91	7.24	7.08
2007	6.86	7.39	7.13	7.26	7.08	7.29	7.17
2008	9.04	9.17	9.40	9.23	9.12	9.34	9.21
2009	5.03	4.05	4.15	4.11	3.98	4.16	4.07
2010	4.10	4.54	4.57	4.56	4.47	4.61	4.55
2011	4.48	4.24	4.20	4.16	4.04	4.17	4.11
2012	3.07	2.88	2.90	2.86	2.75	2.87	2.82
2013	3.58	3.71	3.80	3.87	3.68	3.92	3.80
2014	4.28	4.35	4.59	4.54	3.98	5.14	4.44
2015	3.33	2.55	2.77	2.71	2.44	2.87	2.67
2016	2.26	2.37	2.56	2.59	2.21	2.74	2.49
2017	2.96	2.91	3.18	3.18	2.76	3.28	2.94
January	N/A	3.38	2.85	3.95	2.67	3.93	2.85
February	N/A	2.95	3.78	2.76	2.86	3.81	3.78
March	N/A	2.59	2.74	2.78	2.63	3.39	2.74
April	N/A	2.67	2.80	2.86	2.67	3.10	2.80
May	N/A	2.76	2.93	2.89	2.71	3.07	2.93
June	N/A	2.92	2.99	3.05	2.74	3.09	2.99
July	N/A	2.88	3.12	2.90	2.79	3.18	3.12
August	N/A	2.93	2.93	3.06	2.80	3.16	2.93
September	N/A	2.95	3.01	3.09	2.78	3.14	3.01
October	N/A	3.06	3.14	3.38	2.80	3.21	3.14
November	N/A	3.59	3.31	4.26	2.85	3.50	3.31
December	N/A	4.06	4.90	4.13	2.95	5.13	4.90
2018 Average	3.08	3.06	3.21	3.26	2.77	3.48	3.21
January	N/A	3.20	3.79	3.18	3.05	5.16	3.79
February	N/A	2.71	3.07	2.80	2.90	3.87	3.07
March	N/A	2.75	2.97	3.02	2.64	3.54	2.97
April	N/A	2.53	2.82	2.71	2.67	3.05	2.82
May	N/A	2.44	2.67	2.69	2.54	3.01	2.67
June	N/A	2.26	2.74	2.43	2.62	2.78	2.74
July	N/A	2.11	2.38	2.40	2.36	2.42	2.38
August	N/A	1.97	2.23	2.27	2.20	2.27	2.23
September	N/A	2.25	2.34	2.64	2.28	2.37	2.34
October	N/A	2.04	2.53	2.35	2.49	2.64	2.53
November	N/A	2.35	2.70	2.71	2.55	2.75	2.70
December	N/A	N/A	2.57	2.29	2.52	2.63	2.57
2019 Average	N/A	2.42	2.73	2.63	2.57	3.04	2.73

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 19A

LOUISIANA NATURAL GAS WELLHEAD PRICES (MMBTU)

DATE	(Dollars/MMBTU)						
	GOM	DNR	HENRY HUB		SPOT MARKET ⁵		
	Federal OCS ¹²	State Royalty	Settled NYMEX	Cash Spot	Low	High	Average
1999	2.10	2.33	2.27	2.27	2.17	2.27	2.22
2000	3.45	4.00	3.88	4.23	3.77	3.88	3.83
2001	3.89	4.38	4.27	3.95	4.11	4.30	4.21
2002	2.87	3.16	3.26	3.35	3.16	3.30	3.24
2003	4.92	5.52	5.40	5.49	5.11	5.69	5.44
2004	5.81	6.04	6.15	5.90	5.75	5.95	5.85
2005	6.58	8.68	8.62	8.83	8.50	8.90	8.70
2006	7.92	7.07	7.25	6.73	6.64	6.96	6.81
2007	6.60	7.11	6.86	6.98	6.80	7.01	6.89
2008	8.69	8.81	9.03	8.88	8.77	8.99	8.86
2009	4.84	3.90	3.99	3.95	3.82	4.00	3.92
2010	3.94	4.37	4.39	4.39 r	4.30	4.44	4.37
2011	4.31	4.08	4.04	4.00 r	3.88	4.01	3.96
2012	2.95	2.77	2.79	2.75 r	2.64	2.76	2.71
2013	3.44	3.57	3.65	3.72 r	3.54	3.77	3.65
2014	4.12	4.18	4.41	4.37 r	3.82	4.95	4.27
2015	3.20 r	2.45 r	2.66	2.61 r	2.34	2.76	2.56
2016	2.26	2.28 r	2.46	2.49 r	2.13	2.63	2.39
2017	2.85	2.80	3.06	2.99	2.66	3.16	2.91
January	N/A	3.25	2.74	3.87	2.57	3.78	2.74
February	N/A	2.84	3.63	2.67	2.75	3.66	3.63
March	N/A	2.49	2.64	2.69	2.53	3.26	2.64
April	N/A	2.57	2.69	2.80	2.57	2.98	2.69
May	N/A	2.65	2.82	2.80	2.61	2.95	2.82
June	N/A	2.81	2.88	2.97	2.64	2.98	2.88
July	N/A	2.77	3.00	2.83	2.68	3.05	3.00
August	N/A	2.82	2.82	2.96	2.69	3.04	2.82
September	N/A	2.84	2.90	3.00	2.67	3.02	2.90
October	N/A	2.94	3.02	3.28	2.69	3.09	3.02
November	N/A	3.45	3.19	4.09	2.74	3.37	3.19
December	N/A	3.90	4.72	3.97	2.84	4.93	4.72
2018 Average	2.96	2.94	3.09	3.16	2.66	3.34	3.09
January	N/A	3.08	3.64	3.06	2.93	4.96	3.64
February	N/A	2.61	2.95	2.69	2.79	3.72	2.95
March	N/A	2.64	2.86	2.90	2.54	3.41	2.86
April	N/A	2.43	2.71	2.61	2.57	2.93	2.71
May	N/A	2.35	2.57	2.59	2.44	2.90	2.57
June	N/A	2.17	2.63	2.34	2.52	2.67	2.63
July	N/A	2.03	2.29	2.31	2.27	2.32	2.29
August	N/A	1.89	2.14	2.18	2.12	2.18	2.14
September	N/A	2.16	2.25	2.54	2.20	2.28	2.25
October	N/A	1.96	2.43	2.26	2.39	2.54	2.43
November	N/A	2.26	2.60	2.61	2.45	2.64	2.60
December	N/A	N/A	2.47	2.20	2.42	2.53	2.47
2019 Average	N/A	2.33	2.63	2.52	2.47	2.92	2.63

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 20

**LOUISIANA AVERAGE NATURAL GAS PRICES
DELIVERED TO CONSUMER ³ (MCF)
(Dollars/Thousand Cubic Feet)**

DATE	CITY GATES	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	UTILITY
1999	2.70	6.83	5.73	2.54	2.59
2000	4.61	8.34	7.41	4.03	4.55
2001	5.55	10.47	8.58	5.04	4.30
2002	4.07	8.06	6.74	3.69	3.63
2003	5.78	10.29	8.81	5.53	5.94
2004	6.56	11.20	9.56	6.58	6.50
2005	8.56	13.26	11.41	9.11	9.14
2006	7.67	14.66	11.84	7.42	7.66
2007	7.22	14.20	11.83	7.08	7.53
2008	9.58	15.49	13.52	9.32	10.01
2009	5.96	13.15	10.46	4.31	4.35
2010	5.43	11.73	9.88	4.68	4.79
2011	5.67	11.37	9.36	4.25	4.45
2012	3.48	11.54	8.44	2.96	2.99
2013	4.12	10.80	8.59	3.86	3.93
2014	4.90	10.89	9.01	5.05	4.67
2015	3.32	10.77	8.01	3.33	3.17
2016	3.65	13.06	7.94	3.12	2.76
2017	3.99	14.31	8.82	3.75	w
January	4.20	8.71	8.48	3.85	w
February	4.30	9.92	8.90	3.57	w
March	3.94	NA	NA	3.64	w
April	3.72	12.33	8.56	2.99	w
May	3.70	13.37	8.37	3.44	w
June	3.64	15.97	8.50	3.29	w
July	3.70	16.97	8.39	3.14	w
August	3.50	17.41	8.15	3.43	w
September	3.69	16.62	8.05	3.16	w
October	3.93	16.90	8.68	3.35	w
November	4.33	11.76	8.50	3.57	w
December	4.47	9.85	8.76	3.96	w
2018 Average	3.93	13.62	8.49	3.45	w
January	4.58	10.18	9.16	5.07	w
February	4.16	8.74	8.02	4.30	w
March	4.02	9.94	8.24	3.59	w
April	3.48	10.91	8.20	3.41	w
May	N/A	14.15	8.60	3.28	w
June	3.45	16.13	8.30	3.20	w
July	3.23	16.82	7.96	3.17	w
August	3.11	16.51	7.43	2.84	w
September	3.10	17.20	8.14	2.70	w
October	3.16	17.23	8.28	2.91	w
November					
December					
2019 Average	3.59	13.78	8.23	3.45	w

w = Withheld to avoid disclosure of individual company data

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 20A

**LOUISIANA AVERAGE NATURAL GAS PRICES
DELIVERED TO CONSUMER ³ (MMBTU)
(Dollars/MMBTU)**

DATE	CITY GATES	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	UTILITY
1999	2.59	6.56	5.50	2.44	2.49
2000	4.43	8.01	7.11	3.87	4.37
2001	5.33	10.05	8.24	4.84	4.13
2002	3.91	7.74	6.47	3.54	3.48
2003	5.55	9.88	8.46	5.31	5.70
2004	6.30	10.75	9.18	6.32	6.24
2005	8.22	12.73	10.95	8.75	8.77
2006	7.36	14.07	11.37	7.12	7.35
2007	6.93	13.63	11.36	6.80	7.23
2008	9.20	14.87	12.98	8.95	9.61
2009	5.72	12.62	10.04	4.14	4.18
2010	5.21	11.26	9.48	4.49	4.60
2011	5.44	10.92	8.99	4.08	4.27
2012	3.34	11.08	8.10	2.84	2.87
2013	3.96	10.37	8.25	3.71	3.77
2014	4.70	10.45	8.65	4.85	4.49
2015	3.19	10.34	7.69	3.20	3.04
2016	3.51	12.56	7.63	3.00	2.75
2017	3.83	13.76	8.48	3.60	w
January	4.04	8.38	8.15	3.70	w
February	4.13	9.54	8.56	3.43	w
March	3.79	NA	NA	3.50	w
April	3.58	11.86	8.23	2.88	w
May	3.56	12.86	8.05	3.31	w
June	3.50	15.36	8.17	3.16	w
July	3.56	16.32	8.07	3.02	w
August	3.37	16.74	7.84	3.30	w
September	3.55	15.98	7.74	3.04	w
October	3.78	16.25	8.35	3.22	w
November	4.16	11.31	8.17	3.43	w
December	4.30	9.47	8.42	3.81	w
2018 Average	3.78	13.10	8.16	3.32	w
January	4.40	9.79	8.81	4.88	w
February	4.00	8.40	7.71	4.13	w
March	3.87	9.56	7.92	3.45	w
April	3.35	10.49	7.88	3.28	w
May	N/A	13.61	8.27	3.15	w
June	3.32	15.51	7.98	3.08	w
July	3.11	16.17	7.65	3.05	w
August	2.99	15.88	7.14	2.73	w
September	2.98	16.54	7.83	2.60	w
October	3.04	16.57	7.96	2.80	w
November					
December					
2019 Average	3.45	13.25	7.92	3.31	w

w = Withheld to avoid disclosure of individual company data

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 21

UNITED STATES AVERAGE NATURAL GAS PRICES (MCF)
(Dollars/Thousand Cubic Feet)

DATE	SPOT MARKET ⁵	FOREIGN IMPORTS ³	CITY GATES ³	DELIVERED TO	
				RESIDENTIAL ³	INDUSTRIAL ³
1999	2.28	2.23	3.17	7.34	3.08
2000	3.94	3.88	4.66	8.51	4.45
2001	4.34	4.36	5.24	9.91	5.08
2002	3.26	3.14	4.10	8.58	4.02
2003	5.48	5.18	5.84	10.62	5.91
2004	5.94	5.78	6.61	11.64	6.51
2005	8.67	8.09	8.72	13.72	8.67
2006	6.81	6.87	8.28	14.16	7.82
2007	6.89	6.87	8.06	14.23	7.65
2008	8.80	8.77	9.59	15.76	9.66
2009	4.00	4.14	6.14	12.91	5.23
2010	4.58	4.46	6.07	12.91	5.44
2011	4.26	4.22	5.73	12.57	5.12
2012	2.93	2.88	4.71	12.03	3.85
2013	3.98	3.82	5.07	12.15	4.64
2014	4.89	5.38	5.70	12.95	5.58
2015	2.76	3.15	4.27	12.30	3.91
2016	2.39	2.34	3.86	12.17	3.51
2017	2.93	2.69	4.29	12.97	4.08
January	4.74	4.40	4.31	8.92	4.49
February	3.05	3.01	3.97	9.64	4.86
March	2.52	2.45	3.71	9.78	4.02
April	2.60	2.20	3.64	10.08	3.91
May	2.60	1.73	4.13	13.67	3.81
June	2.57	1.86	4.46	16.51	3.78
July	2.78	2.15	4.69	17.91	3.76
August	2.87	2.22	4.84	18.63	3.67
September	2.63	2.09	4.70	17.32	3.75
October	3.06	2.59	4.07	12.26	4.04
November	3.87	4.10	4.29	9.43	4.51
December	4.07	4.89	4.74	9.63	5.46
2018 Average	3.11	2.81	4.30	12.82	4.17
January	3.46	4.30	4.09	9.43	5.04
February	3.40	4.06	3.84	9.47	4.65
March	3.29	3.79	4.01	9.48	4.33
April	2.27	2.14	3.69	10.92	4.02
May	2.14	1.81	3.65	12.88	3.64
June	1.97	1.54	4.05	15.72	3.55
July	1.85	1.86	4.16	17.94	3.34
August	1.94	1.73	4.20	18.58	3.20
September	2.15	1.65	4.13	17.81	3.35
October	1.90	2.15	3.40	12.62	3.43
November	2.52				
December	2.40				
2019 Average	2.44	2.50	3.92	13.49	3.86

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 21A

UNITED STATES AVERAGE NATURAL GAS PRICES (MMBTU)
(Dollars/MMBTU)

DATE	SPOT	FOREIGN	CITY	DELIVERED TO	
	MARKET ⁵	IMPORTS	GATES	RESIDENTIAL	INDUSTRIAL
1999	2.37	2.32	3.29	7.64	3.20
2000	4.09	4.03	4.84	8.85	4.63
2001	4.51	4.53	5.45	10.31	5.28
2002	3.39	3.26	4.26	8.92	4.18
2003	5.70	5.39	6.07	11.04	6.15
2004	6.18	6.01	6.87	12.10	6.77
2005	9.02	8.41	9.07	14.27	9.02
2006	7.08	7.14	8.61	14.73	8.14
2007	7.17	7.15	8.39	14.80	7.96
2008	9.15	9.13	9.97	16.39	10.05
2009	4.17	4.30	6.39	13.42	5.44
2010	4.76	4.64	6.31	13.43	5.65
2011	4.43	4.39	5.96	13.07	5.32
2012	3.04	3.00	4.90	12.51	4.00
2013	4.14	3.97	5.27	12.63	4.82
2014	5.09	5.60	5.92	13.47	5.80
2015	2.87	3.28	4.44	12.79	4.06
2016	2.39	2.34	3.86	12.17	3.51
2017	2.78	2.61	4.20	13.11	4.01
January	4.56	4.23	4.14	8.58	4.32
February	2.93	2.89	3.82	9.27	4.67
March	2.42	2.36	3.57	9.40	3.87
April	2.50	2.12	3.50	9.69	3.76
May	2.50	1.66	3.97	13.14	3.66
June	2.47	1.79	4.29	15.88	3.63
July	2.67	2.07	4.51	17.22	3.62
August	2.76	2.13	4.65	17.91	3.53
September	2.53	2.01	4.52	16.65	3.61
October	2.94	2.49	3.91	11.79	3.88
November	3.72	3.94	4.13	9.07	4.34
December	3.91	4.70	4.56	9.26	5.25
2018 Average	2.99	2.70	4.13	12.32	4.01
January	3.33	4.13	3.93	9.07	4.85
February	3.27	3.90	3.69	9.11	4.47
March	3.16	3.64	3.86	9.12	4.16
April	2.18	2.06	3.55	10.50	3.87
May	2.06	1.74	3.51	12.38	3.50
June	1.89	1.48	3.89	15.12	3.41
July	1.78	1.79	4.00	17.25	3.21
August	1.87	1.66	4.04	17.87	3.08
September	2.06	1.59	3.97	17.13	3.22
October	1.83	2.07	3.27	12.13	3.30
November	2.42				
December	2.31				
2019 Average	2.35	2.41	3.77	12.97	3.71

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 22

LOUISIANA STATE OIL AND GAS DRILLING PERMITS ISSUED BY TYPE
Excluding OCS

DATE	DEVELOPMENTAL + WILDCATS	= TOTAL =	OFFSHORE + ONSHORE
1998	1,171	1,286	1,190
1999	908	1,017	938
2000	1,363	1,453	1,302
2001	1,277	1,365	1,269
2002	902	1,025	935
2003	1,152	1,264	1,181
2004	1,535	1,633	1,576
2005	1,882	1,996	1,922
2006	2,040	2,137	2,076
2007	2,082	2,150	2,116
2008	2,296	2,374	2,334
2009	1,335	1,365	1,353
2010	1,914	1,956	1,924
2011	1,638	1,676	1,640
2012	1,537	1,574	1,544
2013	1,549	1,578	1,541
2014	1,379	1,408	1,400
2015	621	643	639
2016	459	475	475
2017	755	762	761
January	59	59	59
February	64	64	64
March	74	76	76
April	60	61	61
May	81	81	81
June	72	72	72
July	68	70	70
August	64	66	66
September	63	63	62
October	88	88	88
November	42	42	42
December	48	49	49
2018 Total	783	791	790
January	43	44	44
February	58	58	57
March	40	42	42
April	40	42	42
May	63	64	64
June	60	60	60
July	47	48	45
August	47	48	45
September	45	45	45
October	104	104	103
November	52	52	52
December	45	45	45
2019 Total	644	652	644

e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 11

LOUISIANA STATE DRILLING PERMITS ISSUED
Federal OCS Excluded

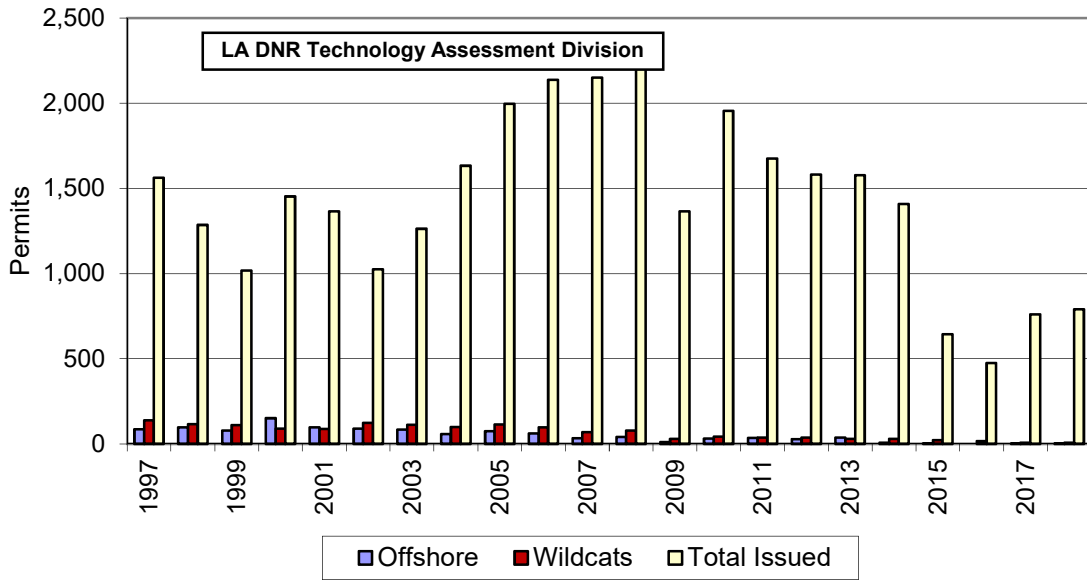


Figure 12

LOUISIANA AVERAGE ACTIVE RIGS

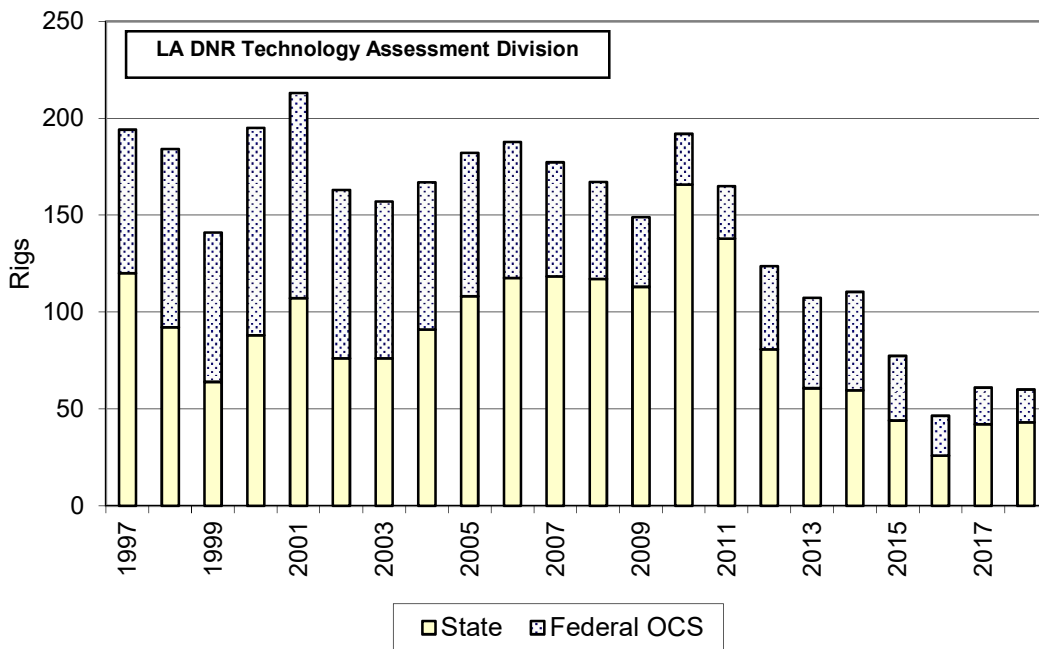


Table 23

LOUISIANA AVERAGE RIGS RUNNING

DATE	State North ⁴	State South Inland		State Offshore	Total State	Federal Offshore	Total Offshore ⁴ (State+OCS)	LA ⁴ TOTAL
		Water ⁴	Land ⁴					
1999	16	16	21	12	65	76	89	141
2000	24	16	37	10	86	108	118	195
2001	30	20	44	10	105	109	119	214
2002	23	16	32	5	77	87	92	163
2003	29	14	29	4	76	81	85	157
2004	39	18	30	3	91	76	79	167
2005	48	23	32	4	108	74	79	182
2006	57	19	38	3	118	70	73	188
2007	58	24	34	2	118	59	61	177
2008	68	20	26	3	117	50	53	167
2009	89	8	15	1	113	36	38	150
2010	134	13	16	2	166	26	28	192
2011	97	17	22	2	138	28	29	165
2012	36	18	26	1	81	43	44	124
2013	24	20	15	2	61	47	49	108
2014	28	15	16	1	60	51	51	110
2015	28	5	11	0	44	33	33	77
2016	18	3	5	0	26	21	21	47
2017	37	3	3	0	42	19	19	61
January	39	1	3	0	43	17	17	60
February	37	2	6	0	45	16	16	61
March	35	4	7	0	46	12	12	58
April	34	4	4	0	42	16	16	58
May	37	3	3	0	43	18	18	61
June	37	3	2	0	42	17	17	59
July	33	5	4	0	42	16	16	58
August	34	2	6	0	42	15	15	57
September	32	5	7	0	44	19	19	63
October	34	3	7	0	44	17	17	61
November	34	4	7	1	46	20	21	66
December	33	3	8	0	44	22	22	66
2018 Average	35	3	5	0	44	17	17	61
January	35	2	6	0	43	20	20	63
February	38	2	5	0	45	19	19	64
March	41	2	3	0	46	19	19	65
April	38	3	3	1	45	19	20	64
May	35	4	4	1	44	19	20	63
June	36	4	7	1	48	22	23	70
July	33	2	7	1	43	23	24	67
August	32	1	4	0	37	24	24	61
September	31	1	2	1	35	24	25	60
October	31	2	2	2	34	22	24	58
November	32	1	2	0	34	22	22	56
December	33	1	2	0	35	22	22	57
2019 Average	35	2	4	1	41	21	22	62

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 24

LOUISIANA STATE PRODUCING CRUDE OIL WELLS
Excluding OCS

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1974	11,984	8,262	985	21,230
1975	12,259	8,094	936	21,288
1976	12,393	7,730	1,073	21,196
1977	12,915	7,444	1,067	21,425
1978	13,019	7,219	1,086	21,324
1979	12,961	6,859	1,078	20,898
1980	13,981	6,832	1,073	21,885
1981	15,084	6,777	1,105	22,966
1982	15,540	6,608	1,112	23,259
1983	16,299	6,374	1,037	23,710
1984	17,544	6,300	1,038	24,882
1985	18,794	6,223	1,014	26,031
1986	19,346	6,061	1,001	26,408
1987	18,630	5,768	945	25,343
1988	17,953	5,698	964	24,615
1989	16,849	5,474	927	23,250
1990	17,369	5,215	906	23,490
1991	17,731	5,143	868	23,742
1992	17,449	5,155	842	23,446
1993	16,810	5,015	814	22,640
1994	15,904	4,682	805	21,392
1995	15,260	4,451	769	20,479
1996	15,148	4,295	719	20,163
1997	14,573	4,165	619	20,358
1998	13,975	3,962	546	18,484
1999	13,747	3,971	546	18,264
2000	16,795	3,914	408	21,117
2001	16,494	4,257	393	21,144
2002	16,531	4,071	423	21,026
2003	16,516	3,583	467	20,566
2004	16,148	3,485	462	20,095
2005	17,153	3,648	317	21,117
2006	17,072	3,615	241	20,928
2007	16,994	3,711	262	20,966
2008	N/A	N/A	N/A	21,146
2009	N/A	N/A	N/A	20,852
2010	N/A	N/A	N/A	20,007
2011	14,333	4,045	411	18,789
2012	14,217	4,275	436	18,928
2013	16,691	3,646	240	20,577
2014	12,557	3,156	228	16,941
2015	13,007	4,151	447	17,605
2016	12,908	3,743	477	17,128
2017	12,433	3,490	407	16,330
2018	12,649	3,263	203	16,115
2019	14,548	2,516	183	17,247

e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 13

2019 Percentage of Louisiana Oil Wells by Production Rates

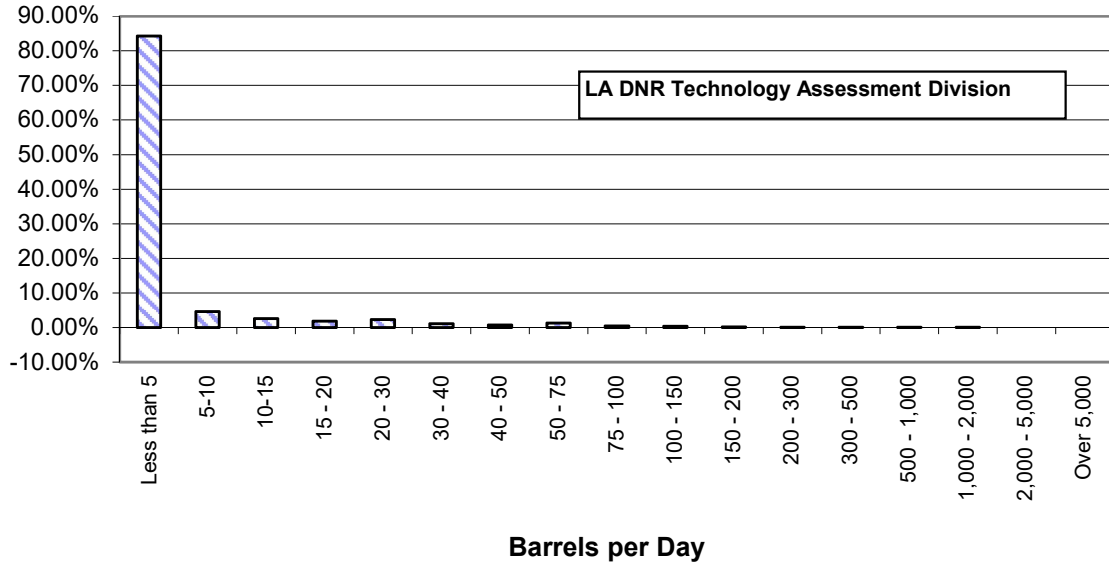


Figure 14

2019 Percentage of Louisiana Gas Wells by Production Rates

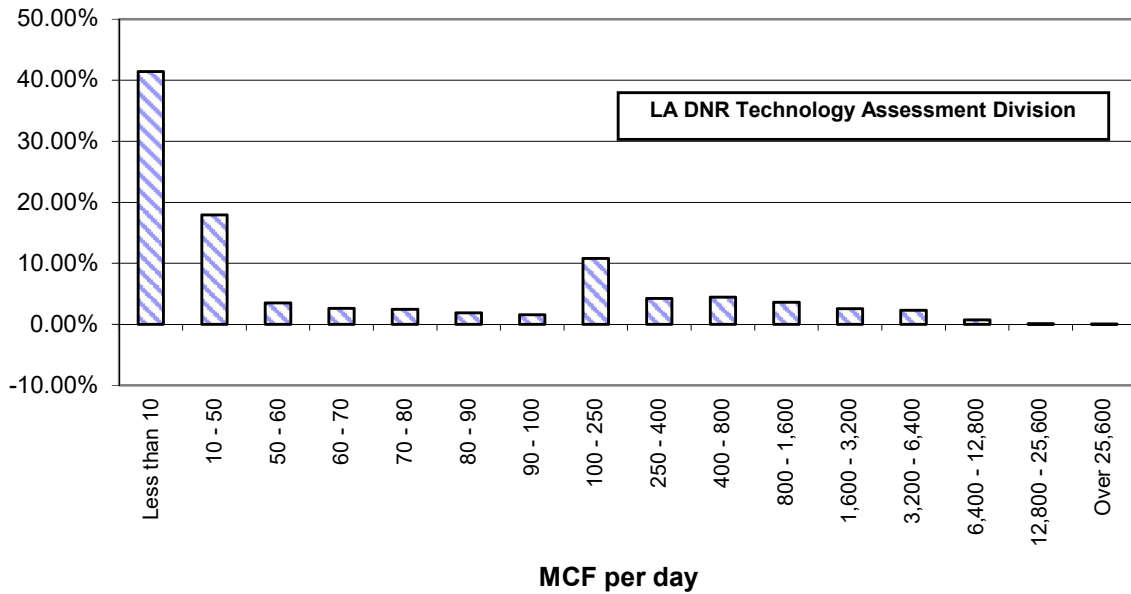


Table 25

LOUISIANA STATE PRODUCING NATURAL GAS WELLS
Excluding OCS

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1974	5,159	3,458	313	8,929
1975	5,373	3,331	308	9,012
1976	5,851	3,289	362	9,502
1977	6,343	3,331	449	10,123
1978	6,915	3,253	472	10,640
1979	7,372	3,214	514	11,100
1980	8,360	3,277	551	12,188
1981	9,479	3,226	557	13,262
1982	10,154	3,136	564	13,855
1983	10,502	3,065	549	14,115
1984	10,812	2,955	532	14,299
1985	11,026	2,887	511	14,424
1986	11,049	2,730	436	14,216
1987	10,726	2,635	413	13,774
1988	10,813	2,539	445	13,796
1989	10,861	2,474	501	13,836
1990	10,802	2,407	512	13,721
1991	10,702	2,261	496	13,459
1992	10,498	2,149	496	13,143
1993	10,506	2,192	490	13,189
1994	10,596	2,260	473	13,329
1995	10,452	2,200	335	12,987
1996	10,376	2,148	274	12,799
1997	10,446	2,149	296	12,891
1998	10,579	1,995	259	12,833
1999	10,581	2,010	262	12,853
2000	13,704	3,194	332	17,231
2001	13,054	3,369	311	16,734
2002	13,438	3,309	344	17,092
2003	13,607	2,952	384	16,944
2004	13,924	3,005	398	17,327
2005	13,996	2,977	258	17,231
2006	14,478	3,066	204	17,748
2007	14,707	3,211	227	18,145
2008	N/A	N/A	N/A	18,984
2009	N/A	N/A	N/A	19,009
2010	N/A	N/A	N/A	19,384
2011	18,542	1,851	159	20,552
2012	19,125	1,734	144	21,003
2013	18,184	1,295	104	19,583
2014	16,114	1,003	72	17,189
2015	19,273	1,424	87	20,784
2016	18,929	1,116	54	20,099
2017	19,054	989	53	20,096
2018	19,599	1,006	19	20,624
2019	15,808	627	32	16,467

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 26

LOUISIANA STATE WELL COMPLETION BY TYPE AND BY REGION
Excluding OCS

	YEAR	OFFSHORE	SOUTH	NORTH	TOTAL
C R O U I D L E	2005	1	86	113	200
	2006	4	137	164	305
	2007	3	125	149	277
	2008	5	101	228	334
	2009	1	63	90	154
	2010	9	114	167	290
	2011	4	122	144	270
	2012	3	258	422	683
	2013	3	123	267	393
	2014	9	126	225	360
	2015	19	194	39	252
	2016	0	36	17	53
	2017	2	30	22	54
	2018	0	66	80	146
	2019	2	23	52	77
N A T G U A R S A L	2005	9	197	769	975
	2006	6	190	826	1,022
	2007	5	104	923	1,032
	2008	9	97	984	1,090
	2009	3	39	707	749
	2010	9	73	958	1,040
	2011	4	37	198	239
	2012	1	54	203	258
	2013	2	28	55	85
	2014	6	66	303	375
	2015	9	172	307	488
	2016	0	31	213	244
	2017	0	20	268	288
	2018	0	33	267	300
	2019	0	7	106	113
D H R O Y L E	2005	12	166	142	320
	2006	5	197	165	367
	2007	3	164	116	283
	2008	4	94	121	219
	2009	1	63	75	139
	2010	2	61	76	139
	2011	0	36	52	88
	2012	1	57	92	150
	2013	0	33	71	104
	2014	0	11	3	14
	2015	0	2	1	3
	2016	0	2	0	2
	2017	0	0	1	1
	2018	1	20	31	52
	2019	0	22	27	49

Table 27

**LOUISIANA STATE MINERAL BONUS, RENTAL AND
ROYALTY OVERRIDE REVENUES, Excluding OCS
(Million Dollars)**

DATE	BONUSES	OVERRIDE ROYALTY	RENTALS	TOTAL
1999	14.17	0.45	20.27	34.89
2000	21.12	1.13	14.16	36.41
2001	29.70	1.89	13.75	45.34
2002	24.74	2.29	14.26	41.28
2003	19.54	3.36	12.93	35.83
2004	29.79	5.05	9.47	44.31
2005	35.78	2.03	13.75	51.56
2006	33.49	2.05	21.64	57.18
2007	45.91	3.35	22.59	71.85
2008	171.28	5.89	23.09	200.26
2009	17.70	4.26	25.13	47.09
2010	32.01	4.60	19.35	55.96
2011	19.48	8.42	16.36	44.27
2012	17.48	9.80	11.72	39.00
2013	18.92	11.31	11.14	41.38
2014	8.98	7.72	11.11	27.80
2015	4.25	-13.71	5.10	-4.36
2016	1.62	5.73	2.98	10.33
2017	2.99	1.16	1.41	5.57
January	0.33	0.23	0.15	0.71
February	0.18	0.50	0.23	0.90
March	0.18	0.07	0.23	0.49
April	0.03	0.26	0.08	0.38
May	0.17	0.17	0.02	0.37
June	0.89	0.21	0.04	1.14
July	0.70	0.17	0.15	1.03
August	3.92	0.20	0.09	4.21
September	0.32	0.18	0.06	0.56
October	0.06	-0.20	0.00	-0.14
November	1.59	0.12	0.09	1.80
December	0.76	0.19	0.14	1.09
2018 Total	9.14	2.10	1.28	12.52
January	1.70	-0.22	0.20	1.68
February	2.93	0.17	0.06	3.16
March	1.30	0.08	0.16	1.54
April	0.43	0.16	0.10	0.69
May	0.33	-0.87	0.03	-0.51
June	0.20	0.15	0.23	0.58
July	0.07	0.16	2.15	2.38
August	0.02	0.22	0.16	0.40
September	0.13	-1.02	0.05	-0.84
October	0.03	0.18	0.01	0.22
November	0.00	0.21	0.76	0.97
December	0.34	0.20	0.41	0.95
2019 Total	7.47	-0.58	4.32	11.21

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 28

LOUISIANA STATE MINERAL ROYALTY REVENUE

Excluding OCS
(Million Dollars)

DATE	OIL	GAS	PLANT LIQUIDS	OTHER	TOTAL
1999	91.52	115.10	2.05	0.00	208.66
2000	145.80	212.71	3.46	0.00	361.97
2001	122.16	252.68	6.33	0.00	381.17
2002	100.10	165.24	8.03	0.00	273.37
2003	127.61	288.91	9.31	0.00	425.83
2004	143.84	274.64	14.82	0.00	433.30
2005	149.97	279.03	10.51	0.00	439.50
2006	201.71	287.24	14.23	0.00	503.19
2007	288.57	305.62	18.98	0.00	613.18
2008	372.30	419.94	32.16	0.00	824.41
2009	210.54	153.86	14.91	0.00	379.31
2010	272.57	162.50	22.52	0.00	457.59
2011	381.35	173.52	32.48	0.00	587.34
2012	376.98	121.89	24.78	0.00	523.64
2013	382.37	158.56	27.85	0.00	568.79
2014	320.26	166.82	23.74	0.00	510.83
2015	147.13	86.73	8.03	0.00	241.89
2016	104.70	62.67	6.80	0.00	174.17
2017	110.12	61.86	7.74	0.00	179.72 r
January	11.17	5.63	0.70	0.00	17.50
February	10.26	4.42	0.62	0.00	15.29
March	11.48	4.07	0.65	0.00	16.21
April	11.41	3.90	0.71	0.00	16.02
May	13.03	3.98	0.61	0.00	17.62
June	12.18	4.11	0.75	0.00	17.03
July	13.74	4.48	0.78	0.00	19.00
August	12.64	4.48	0.84	0.00	17.97
September	12.61	4.44	0.98	0.00	18.03
October	14.17	5.00	1.02	0.00	20.18
November	11.08	5.81	0.82	0.00	17.71
December	10.48	6.93	0.68	0.00	18.09
2018 Total	144.25	57.25	9.16	0.00	210.67
January	10.00	5.75	0.59	0.00	16.34
February	9.53	4.52	0.61	0.00	14.66
March	44.84	4.92	0.74	0.00	50.50
April	12.11	4.00	0.57	0.00	16.68
May	11.89	3.86	0.47	0.00	16.23
June	10.74	3.50	0.25	0.00	14.49
July	9.37	2.92	0.28	0.00	12.57
August	10.31	3.19	0.29	0.00	13.79
September	9.54	3.50	0.42	0.00	13.45
October	9.03 e	3.24 e	0.38 e	0.00 e	9.03 e
November	8.89 e	3.18 e	0.37 e	0.00 e	12.44 e
December	9.34 e	3.28 e	0.42 e	0.00 e	13.04 e
2019 Total	155.57 e	45.86 e	5.39 e	0.00 e	203.20 e

Table 29

LOUISIANA STATE MINERAL SEVERANCE TAX REVENUE ⁸Excluding OCS
(Million Dollars)

DATE	OIL	GAS	OTHER MINERALS	SEVERANCE TOTAL
1999	171.29	102.48	1.82	275.60
2000	337.51	104.32	1.50	443.33
2001	281.95	165.77	1.65	449.38
2002	235.84	173.51	1.33	410.67
2003	316.70	152.13	1.70	470.53
2004	359.77	216.73	1.73	578.23
2005	439.00	243.62	1.61	681.50
2006	506.31	331.40	1.69	839.41
2007	529.75	354.11	1.67	885.52
2008	842.94	293.66	1.65	1138.25
2009	377.51	292.18	1.63	671.32
2010	516.90	224.18	1.58	742.67
2011	677.56	97.61	1.34	776.51
2012	736.78	135.23	1.31	873.32
2013	761.75	99.45	1.38	862.58
2014	685.68	147.70	1.24	834.61
2015	358.96	190.30	1.46	550.72
2016	238.26	125.61	1.45	365.31
2017	266.41	109.52	1.09	377.02
January	25.61	12.62	0.10	38.33
February	24.75	10.82	0.07	35.64
March	28.52	13.32	0.08	41.92
April	24.78	10.00	0.07	34.85
May	27.28	15.02	0.12	42.42
June	25.89	10.86	0.11	36.86
July	32.95	9.83	0.09	42.87
August	28.62	12.86	0.11	41.59
September	32.18	13.83	0.07	46.08
October	31.50	15.14	0.10	46.73
November	23.04	15.43	1.82	40.29
December	23.19	13.55	0.81	37.55
2018 Total	328.30	153.28	3.55	485.12
January	34.05	12.78	1.27	48.10
February	23.76	20.22	0.95	44.93
March	17.82	2.68	0.99	21.49
April	19.16	16.91	1.13	37.20
May	23.11	9.05	1.68	33.84
June	26.83	20.23	0.96	48.02
July	26.43	14.69	1.30	42.42
August	22.92	16.46	1.32	40.70
September	17.83	9.42	2.02	29.27
October	29.26	15.77	1.43	46.46
November	21.93	18.85	0.91	41.69
December	22.04	20.65	1.49	44.18
2019 Total	285.14	177.71	15.45	478.30

e Estimated r Revised p Preliminary See footnote in Appendix B

Table 30

STATE REVENUE FROM LOUISIANA'S OUTER CONTINENTAL SHELF ¹³
(Dollars)

YEAR	RENTALS	BONUSES	ROYALTIES	OTHERS REVENUE	GOMESA	TOTAL
1988	153,561	5,528,006	8,708,079	2,520,000		16,909,646
1989	175,817	2,890,298	7,163,105	2,520,000		12,749,220
1990	430,198	5,570,375	6,239,368	2,520,000		14,759,941
1991	303,824	2,220,094	8,461,261	2,520,000		13,505,179
1992	258,787	1,189,989	6,405,279	5,880,000		13,734,055
1993	235,250	965,504	7,373,550	5,880,000		14,454,304
1994	1,016,932	1,913,682	11,780,932	5,880,000		20,591,546
1995	255,213	890,002	8,012,718	5,880,000		15,037,933
1996	292,445	4,666,400	12,283,395	5,880,000		23,122,240
1997	686,051	5,689,689	11,855,454	8,400,000		26,631,194
1998	412,229	1,744,928	9,621,860	8,400,000		20,179,017
1999	357,379	241,659	6,284,879	8,400,000		15,283,917
2000	321,695	1,268,244	12,690,937	15,254,978		22,680,876
2001	303,675	2,148,111	30,454,058	7,735,941		40,641,785
2002	94,841	0	11,768,383	28,363		11,891,587
2003	284,563	2,842,662	26,447,045	21,775		29,596,045
2004	490,745	7,620,500	30,145,237	6,613		38,256,482
2005	374,717	2,521,931	27,995,948	7,849		30,900,445
2006	494,362	5,947,411	24,325,787	1,304,257		32,071,817
2007	196,129	-2,695,489	25,498,932	89,134		23,088,706
2008	412,813	6,196,386	36,547,175	2,607,022		45,763,396
2009	339,802	463,332	21,433,896	80,201	6,347,321	28,664,552
2010	355,697	2,892,749	19,321,141	35,844	699,757	23,305,188
2011	268,106	0	20,325,825	93,441	222,725	20,910,097
2012	N/A	N/A	N/A		80,770	19,845,947
2013	N/A	N/A	N/A	N/A	75,621	24,533,076
2014	N/A	N/A	N/A	N/A	1,119,942	20,586,591
2015	N/A	N/A	N/A	N/A	653,383	12,579,284
2016	N/A	N/A	N/A	N/A	82,196	6,395,879
2017	N/A	N/A	N/A	N/A	66,271,725	68,886,801
2018	N/A	N/A	N/A	6,052,631	82,839,656	91,045,524

e Estimated r Revised p Preliminary See footnote in Appendix B

2019 Information not available at the time of writing

Table 31

**LOUISIANA STATE TOTAL MINERAL REVENUE
(Dollars)**

YEAR	FEDERAL OCS¹³	FEDERAL ONSHORE¹³	STATE BOUNDARIES	TOTAL
1988	16,909,646	545,000	660,959,699	678,414,345
1989	12,749,220	452,000	678,301,987	691,503,207
1990	14,759,941	542,000	779,963,703	795,265,644
1991	13,505,179	328,000	751,117,246	764,950,425
1992	13,734,055	376,000	680,527,788	694,637,843
1993	14,454,304	782,000	639,182,812	654,412,032
1994	20,591,546	532,000	560,371,998	581,495,544
1995	15,037,933	728,000	638,942,698	654,708,631
1996	23,122,240	943,209	770,137,601	794,203,050
1997	26,631,194	817,329	714,672,685	742,121,208
1998	20,179,017	996,000	532,755,940	553,930,957
1999	15,283,917	1,276,465	519,144,200	535,704,582
2000	22,680,876	1,024,730	839,883,694	863,589,300
2001	40,641,785	1,481,176	875,887,102	918,010,063
2002	11,891,587	730,156	725,323,377	737,945,120
2003	29,596,045	1,182,451	932,191,569	962,970,065
2004	38,256,482	1,364,965	1,055,838,962	1,095,460,408
2005	30,900,445	1,569,882	1,166,491,860	1,198,962,188
2006	32,071,817	1,170,670	1,395,971,977	1,429,214,465
2007	23,088,706	940,888	1,545,321,941	1,569,351,535
2008	45,763,396	3,703,240	2,162,918,035	2,212,384,671
2009	28,664,552	914,421	1,097,717,147	1,127,296,119
2010	23,305,188	3,123,211	1,256,220,286	1,282,648,686
2011	20,910,097	17,982,455	1,408,117,556	1,447,010,108
2012	19,845,947	6,914,439	1,436,769,322	1,463,529,708
2013	24,533,076	2,607,490	1,472,614,331	1,499,754,898
2014	20,586,591	3,417,220	1,371,527,259	1,395,531,070
2015	12,579,284	1,734,869	786,918,399	801,232,552
2016	6,395,879	904,498	427,201,887	434,502,264
2017	7,276,062	1,010,739	545,643,858	553,930,659
2018	88,892,287	2,153,238	673,588,850	764,634,374

e Estimated r Revised p Preliminary See footnote in Appendix B

Federal OCS: See footnotes on Appendix B "OCSLA" & "GOMESA"

Federal Onshore: Revenue distributed to the state under section 35 of the Mineral Leasing Act (MLA). MLA provides to the state 50% of mineral revenue from federal lands located within the state boundaries. Revenues came from royalties, rents and bonuses. It is fiscal year data. Oil and gas produced on federal onshore pay severance tax to the state by the producer on the non-royalty share of the production, and the royalty share of the production is exempted.

State Boundaries: Revenue from mineral production such as bonuses, override royalties, rents, royalties and severance taxes within state boundaries.

Table 32

**REVENUE TO FEDERAL GOVERNMENT COLLECTED FROM OIL AND GAS
LEASES IN THE LOUISIANA OUTER CONTINENTAL SHELF ¹²**
(Area beyond the state's 3-mile offshore boundary)
(Dollars)

YEAR	BONUS PAYMENTS	RENTAL PAYMENTS	OTHER REVENUES	PRODUCTION ROYALTIES	TOTAL^a COLLECTION
1983	3,796,644,766	13,620,158	2,540,294	2,764,348,600	6,577,153,818
1984	1,154,495,009	16,323,567	2,010,462	3,195,995,282	4,368,824,320
1985	830,710,260	33,756,447	2,139,530	2,940,519,737	3,807,125,974
1986	113,731,609	34,110,029	3,199,547	2,006,205,199	2,157,246,384
1987	247,344,486	52,115,828	19,239,027	1,803,208,740	2,121,908,081
1988	388,730,457	35,752,757	8,727,373	1,571,981,500	2,005,192,087
1989	386,710,637	48,498,402	26,261,190	1,618,163,065	2,079,633,294
1990	421,375,632	55,568,777	16,028,740	2,068,487,831	2,561,460,980
1991	276,234,849	59,126,732	15,444,167	1,857,392,914	2,208,198,662
1992	53,716,797	49,087,621	33,533,897	1,848,599,157	1,984,937,472
1993	61,454,861	29,268,366	119,445,091	2,009,644,653	2,219,812,971
1994	256,271,643	30,003,884	141,190,812	1,888,953,102	2,316,419,441
1995	296,254,733	62,526,069	19,803,444	1,764,875,791	2,143,460,037
1996	24,330,068	53,231,380	40,394,227	2,549,759,516	3,154,940,691
1997	1,169,790	55,761,920	65,651,370	2,857,126,443	3,789,383,151
1998	9,207,972	51,518,286	-14,452,431	2,267,502,514	2,313,776,341
1999	1,169,790	40,463,226	49,219,184	2,228,250,265	2,319,102,465
2000	83,630,219	32,710,256	167,647,231	3,045,847,943	3,329,835,649
2001	160,037,859	30,078,009	177,773,259	5,126,344,201	5,494,233,328

GULF OF MEXICO TOTAL

2001	632,482,979	188,455,045	3,126,962	6,674,371,634	7,498,436,619
2002	138,423,162	153,303,576	3,252,702	3,841,164,517	4,136,143,958
2003	1,147,014,322	245,963,859	4,983,819	4,535,938,009	5,933,900,009
2004	523,416,154	214,303,045	2,570,343	4,607,776,092	5,348,065,634
2005	518,426,651	221,784,370	1,897,501	5,313,350,455	6,055,458,976
2006	865,262,735	224,006,816	2,839,550	6,514,658,836	7,606,767,938
2007	373,930,998	200,993,255	3,166,689	6,441,214,179	7,019,305,120
2008	6,818,747,137	231,026,391	3,105,849	7,850,622,155	14,903,501,532
2009	1,181,075,491	226,229,847	3,013,594	4,161,415,445	5,571,734,377
2010	979,569,294	236,631,251	-3,531,170	3,743,286,144	4,955,955,519
2011	36,751,111	219,119,868	2,153,134	5,960,501,525	6,218,525,638
2012	663,714,729	217,669,757	31,841,893	5,626,212,490	6,539,438,869
2013	2,675,653,773	244,699,154	34,646,396	5,778,759,396	8,733,758,719
2014	967,365,328	229,741,396	46,262,768	5,846,709,902	7,090,079,394
2015	642,044,899	215,683,828	-36,545,638	4,109,252,603	4,930,435,692
2016	155,161,660	159,864,463	-4,001,659	2,435,585,537	2,746,610,002
2017	373,691,032	111,130,182	32,669,500	3,261,902,720	3,779,393,434
2018	290,952,737	103,187,082	54,122,763	4,715,262,300	5,163,524,882

^a Total collection, including state 8G shares.

e Estimated r Revised p Preliminary See footnote in Appendix B

2019 Information not available at the time of writing

Table 33

**LOUISIANA ESTIMATED CRUDE OIL PROVED RESERVES ⁹
EXCLUDING LEASE CONDENSATE
As of December 31st of Each Year
(Million Barrels)**

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1997	136	427	151	2,587	3,301	22,546
1998	101	357	97	2,483	3,038	21,034
1999	108	384	108	2,442	3,042	21,765
2000	97	310	122	2,751	3,280	22,045
2001	87	341	136	3,877	4,441	22,446
2002	75	335	91	4,088	4,589	22,677
2003	66	314	72	4,251	4,703	21,891
2004	58	304	65	3,919	4,346	21,371
2005	68	299	65	3,852	4,284	21,757
2006	68	312	48	3,500	3,928	20,972
2007	76	326	56	3,320	3,778	21,317
2008	60	277	51	3,388	3,776	19,121
2009	55	269	46	3,570	3,940	20,682
2010	104	274	46	3,914	4,338	23,267
2011	103	264	50	4,438	4,855	26,544
2012	100	300	63	4,504	4,967	30,529
2013	120	328	55	4,503	5,006	33,371
2014	118	349	67	4,244	4,778	36,385
2015	89	276	59	3,825	4,249	32,318
2016	71	283	54	3,678	4,086	32,773
2017	85	275	58	4,464	4,882	39,160
2018	84	260	68	4,765	5,177	43,824

e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 15

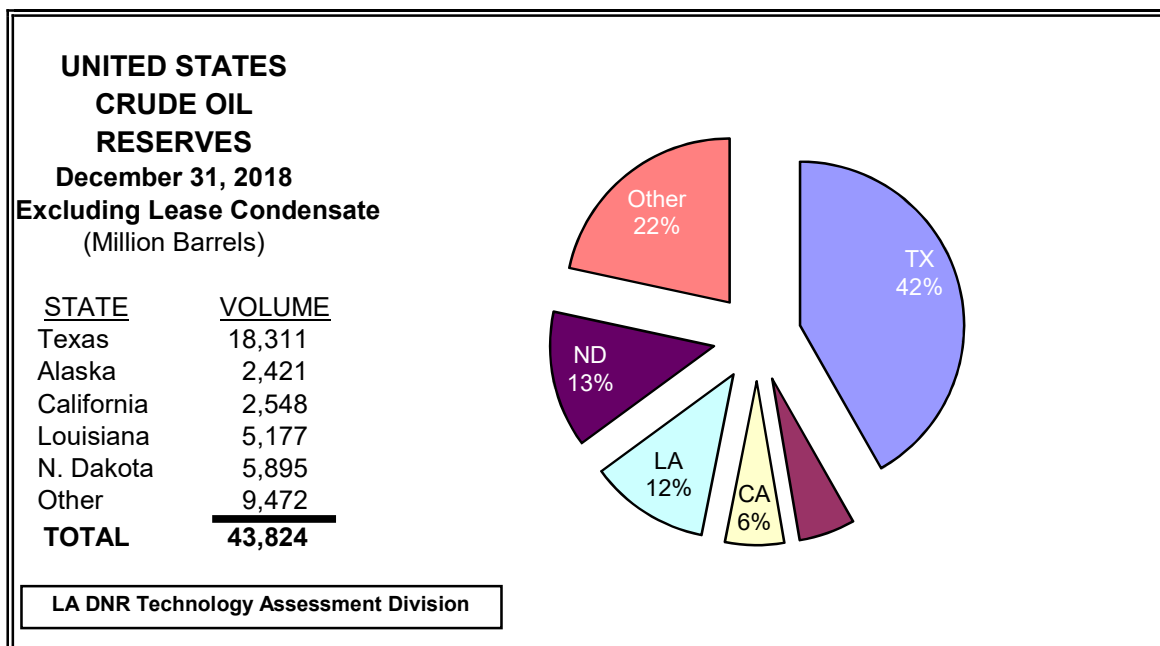


Table 34

LOUISIANA ESTIMATED LEASE CONDENSATE PROVED RESERVES⁹
As of December 31st of Each Year
(Million Barrels)

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1997	30	134	12	433	609	1,341
1998	23	138	16	435	612	1,336
1999	25	134	15	435	609	1,295
2000	22	130	17	437	606	1,333
2001	27	141	19	325	512	1,398
2002	19	107	11	300	437	1,346
2003	19	82	11	251	363	1,215
2004	21	66	9	205	301	1,221
2005	23	72	9	228	332	1,218
2006	29	65	10	185	289	1,339
2007	31	69	11	180	291	1,415
2008	27	64	8	151	250	1,433
2009	26	74	10	134	244	1,633
2010	27	68	11	129	235	1,914
2011	33	64	11	129	237	2,406
2012	38	70	13	98	219	2,874
2013	39	68	12	88	207	3,149
2014	48	56	11	108	223	3,548
2015	46	59	5	122	232	2,912
2016	33	50	4	149	236	2,440
2017	45	48	5	155	253	2,830
2018	29	39	4	149	221	3,229

e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 16

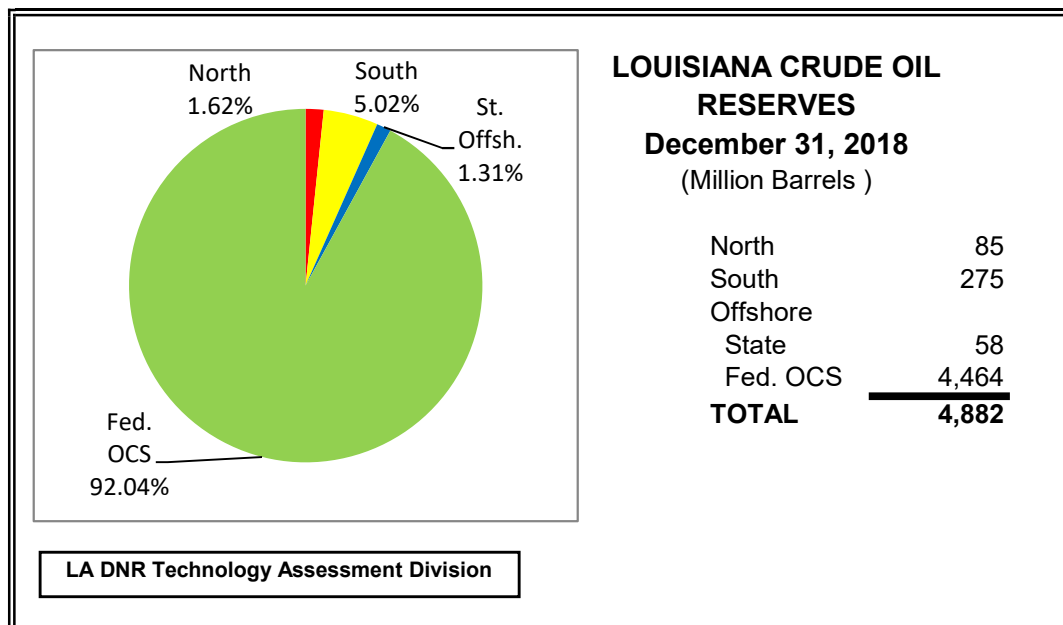


Table 35

LOUISIANA ESTIMATED DRY NATURAL GAS PROVED RESERVES⁹
As of December 31st of Each Year
(Billion Cubic Feet, at 14.73 psia and 60 degrees Fahrenheit)

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1997	3,093	5,855	725	21,934 c	31,607 c	167,223
1998	2,898	5,698	551	20,774 c	29,921 c	164,041
1999	3,079	5,535	628	19,598 c	28,840 c	167,406
2000	3,298	5,245	696	19,788 c	29,027 c	177,427
2001	3,881	5,185	745	19,721 c	29,532 c	183,460
2002	4,245	4,224	491	18,500 c	27,460 c	186,946
2003	5,074	3,746	506	16,728 c	26,054 c	189,044
2004	5,770	3,436	382	14,685 c	24,273 c	192,513
2005	6,695	3,334	418	13,665 c	24,112 c	204,385
2006	6,715	3,335	424	11,824 c	22,298 c	211,085
2007	6,344	3,323	378	11,090 c	21,135 c	237,726
2008	7,876	2,799	898	10,450 c	22,023 c	244,656
2009	17,146	2,844	701	9,362 c	30,053 c	272,509
2010	26,030	2,876	371	8,896 c	38,173 c	304,625
2011	27,337	2,519	502	8,156 c	38,514 c	334,067
2012	18,418	3,029	502	7,291 c	29,240 c	308,036
2013	17,044	2,718	402	6,482 c	26,646 c	328,264
2014	19,722	2,926	327	6,890 c	29,865 c	368,704
2015	13,593	2,279	225	5,909 c	22,006 c	307,730
2016	15,762	1,958	352	5,722 c	23,794 c	341,133
2017	33,805	2,092	222	5,372 c	41,491 c	464,292
2018	32,251	1,618	258	5,442 c	39,569 c	474,281

^c Includes Federal Offshore Alabama

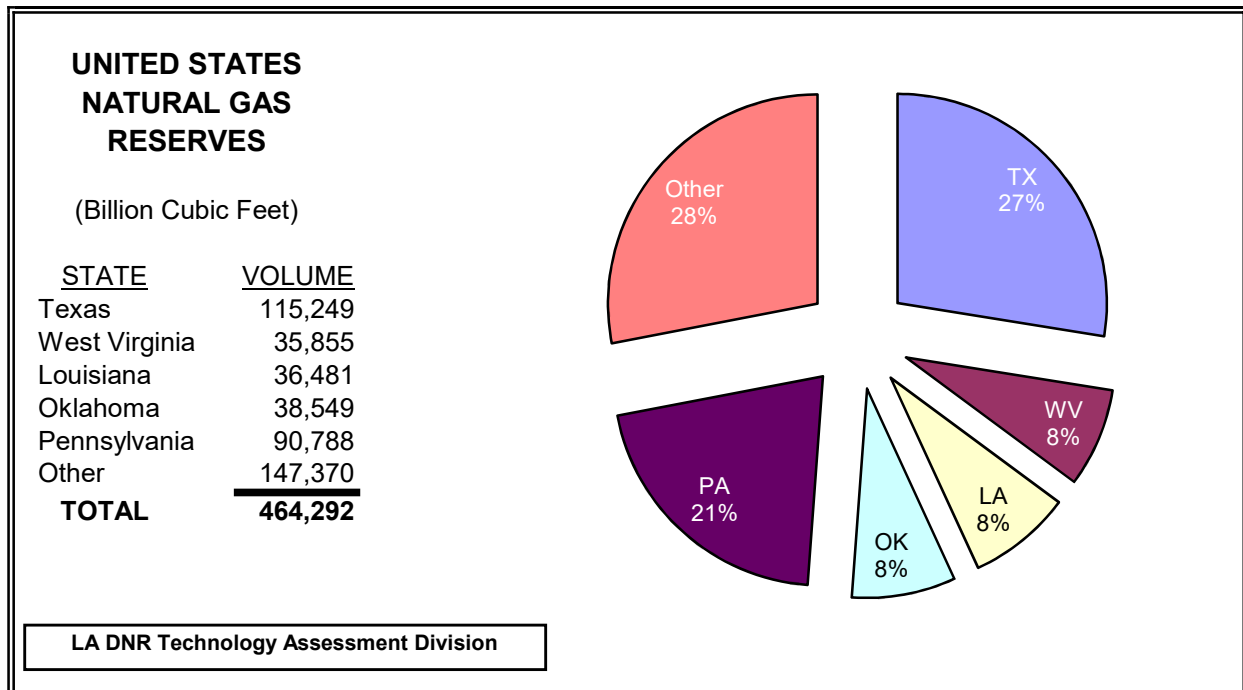


Table 36

**LOUISIANA ESTIMATED NATURAL GAS PLANT LIQUIDS
IN TOTAL NATURAL GAS PROVED RESERVES⁹
As of December 31st of Each Year
(Million Barrels)**

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1998	34	187	13	341 c	575 c	6,188
1999	36	222	23	403 c	684 c	6,503
2000	35	178	28	487 c	728 c	6,873
2001	35	128	41	460 c	664 c	6,595
2002	30	119	37	483 c	669 c	6,648
2003	48	100	35	347 c	530 c	6,244
2004	53	87	27	410 c	577 c	6,707
2005	57	103	31	407 c	598 c	6,903
2006	60	94	22	390 c	566 c	7,133
2007	69	97	25	365 c	556 c	7,648
2008	68	78	55	313 c	514 c	7,842
2009	98	90	43	301 c	532 c	8,557
2010	79	113	24	340 c	556 c	9,809
2011	54	94	44	354 c	546 c	10,825
2012	35	134	20	369 c	558 c	10,777
2013	52	144	16	292 c	504 c	11,943
2014	83	145	15	367 c	610 c	15,029
2015	75	127	16	292 c	510 c	12,757
2016	102	152	11	268 c	533 c	14,753
2017	176	90	15	355 c	636 c	19,243
2018	118	71	18	376 c	583 c	21,841

e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 18

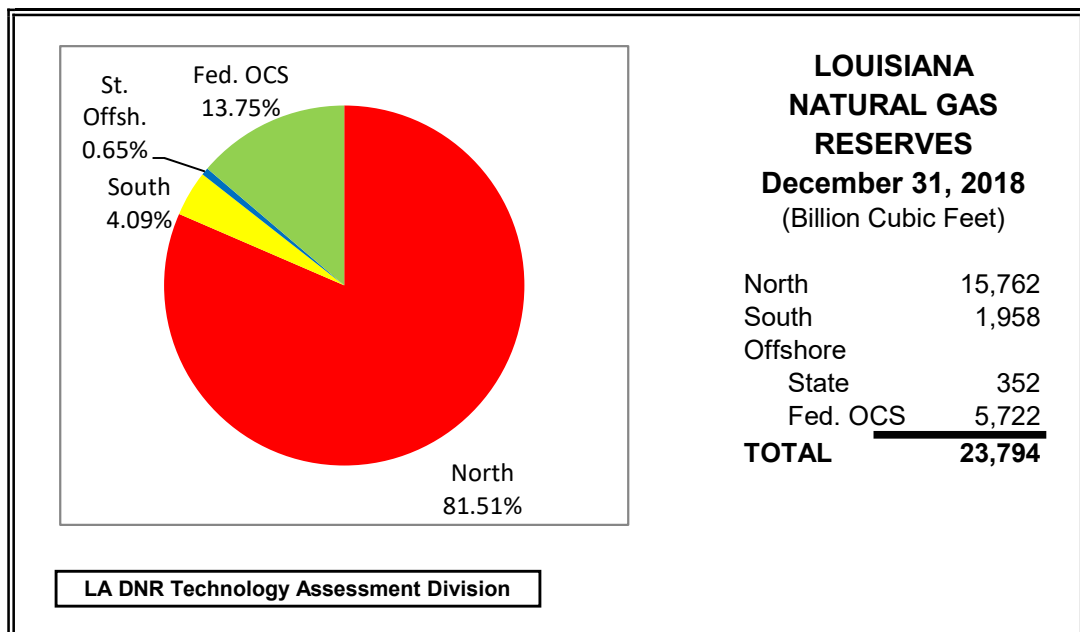


Table 37

LOUISIANA NONAGRICULTURAL EMPLOYMENT ¹

DATE	OIL & GAS PRODUCTION	CHEMICAL INDUSTRY	PETROLEUM MANUFACTURING	ALL PIPELINE*	TOTAL EMPLOYMENT
1999	44,645	28,898	11,046	693	1,846,026
2000	45,714	28,335	10,345	724	1,872,494
2001	47,009	27,337	10,643	2,417	1,868,902
2002	43,839	25,694	10,566	2,306	1,848,656
2003	42,339	24,558	10,395	2,334	1,851,570
2004	40,249	23,516	9,958	2,122	1,866,870
2005	41,179	23,269	10,240	2,179	1,843,237
2006	44,394	22,188	10,310	2,347	1,810,667
2007	46,764	22,612	10,764	2,454	1,869,965
2008	49,990	22,772	11,225	2,543	1,889,138
2009	47,500	22,529	11,356	2,463	1,856,385
2010	47,916	22,533	11,423	2,667	1,833,888
2011	49,239	23,168	11,163	2,778	1,846,761
2012	50,963	23,029	11,276	2,862	1,868,317
2013	50,242	23,345	11,575	2,857	1,891,851
2014	50,032	24,086	11,982	2,976	1,922,947
2015	43,492	25,025	12,048	3,122	1,929,817
2016	34,329	25,528	11,785	2,707	1,908,803
January	30,733	25,388	11,830	2,602	1,881,762
February	30,767	25,459	11,873	2,612	1,896,689
March	30,929	25,428	11,845	2,647	1,900,413
April	30,411	25,266	11,710	2,604	1,908,112
May	30,666	25,325	11,723	2,595	1,917,278
June	31,113	25,452	11,838	2,577	1,906,983
July	33,143	25,540	11,853	2,578	1,881,330
August	32,912	25,616	11,868	2,572	1,899,296
September	32,715	25,518	11,797	2,559	1,904,182
October	32,776	25,588	11,813	2,525	1,916,832
November	32,863	25,713	11,820	2,519	1,923,638
December	32,910	25,829	11,914	2,509	1,918,790
2017 Average	31,828	25,510	11,824	2,575	1,904,609
January	33,248	25,773	11,907	2,352	1,888,021
February	33,423	25,800	11,951	2,370	1,897,680
March	33,620	25,957	11,959	2,377	1,914,937
April	33,804	25,975	11,943	2,468	1,920,624
May	33,986	26,081	12,011	2,478	1,927,398
June	34,103	26,308	12,083	2,469	1,917,997
July	34,675	26,439	12,093	2,485	1,897,533
August	34,870	26,516	12,150	2,495	1,916,456
September	34,715	26,460	12,062	2,472	1,915,224
October	34,930	26,473	12,050	2,522	1,939,032
November	34,732	26,524	12,078	2,521	1,945,080
December	34,348	26,650	12,068	2,505	1,935,028
2018 Average	34,205	26,246	12,030	2,460	1,917,918

* Natural Gas Pipeline employment is included in 2001 forward but excluded in prior years.

e Estimated r Revised p Preliminary See footnote in Appendix B

Figure 19

LOUISIANA ENERGY CONSUMPTION BY SOURCE

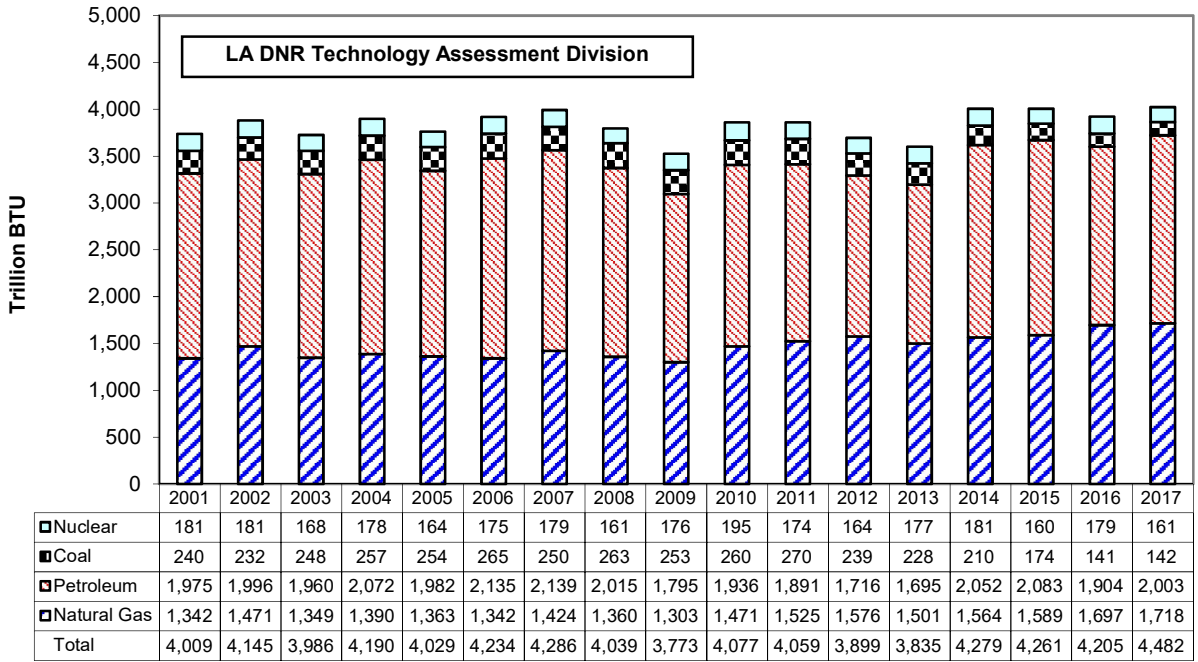


Figure 20

LOUISIANA REFINERY CRUDE OIL INPUT BY SOURCE

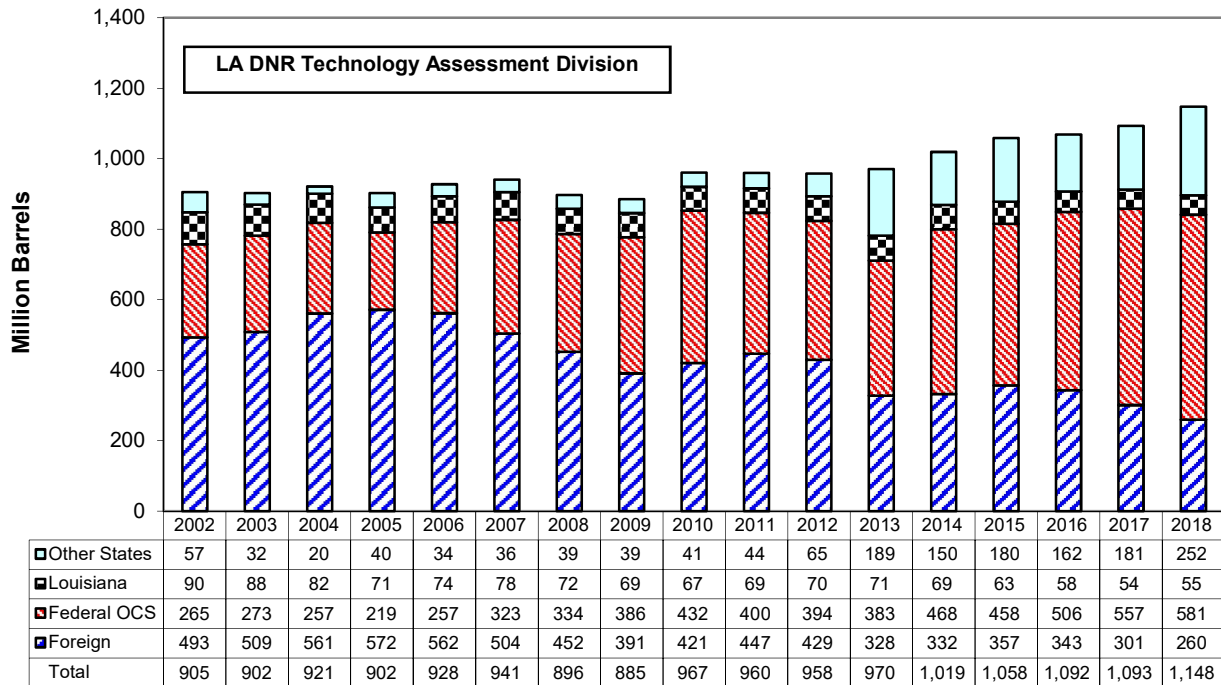


Table 38

LOUISIANA ENERGY CONSUMPTION ESTIMATES BY SOURCE ¹¹

Year	Total Energy (TBTU)	Total Natural Gas (BCF)	Total Petroleum (MBBLS)	Total Coal (MST)	Total Nuclear (Million KWH)	Hydroelectric Power (Million KWH)
1978	4,102	2,249	312,231	172	0	0
1979	4,051	1,978	351,467	118	0	0
1980	3,914	1,794	345,640	111	0	0
1981	3,970	1,782	351,404	1,363	0	0
1982	3,648	1,556	329,383	3,724	0	0
1983	3,443	1,413	307,978	6,154	0	0
1984	3,584	1,594	283,675	6,855	0	0
1985	3,349	1,386	280,304	9,217	2,457	0
1986	3,507	1,439	292,730	10,459	10,637	0
1987	3,569	1,501	286,809	10,391	12,324	0
1988	3,607	1,446	300,896	12,848	13,785	0
1989	3,764	1,556	297,765	12,471	12,391	0
1990	3,858	1,588	304,516	12,547	14,197	656
1991	3,847	1,525	312,517	12,965	13,956	656
1992	3,966	1,551	329,450	13,674	10,356	656
1993	4,034	1,579	334,556	13,676	14,398	1232
1994	4,170	1,586	358,274	14,100	12,779	972
1995	4,210	1,679	350,162	13,357	15,686	952
1996	4,389	1,616	374,722	12,534	15,765	964
1997	4,496	1,661	361,782	13,874	13,511	1,036
1998	4,227	1,569	348,208	13,891	16,428	1,063
1999	4,227	1,495	381,195	13,953	13,112	802
2000	4,551	1,537	428,363	15,737	15,796	532
2001	4,009	1,307	377,607	14,934	17,336	732
2002	4,145	1,426	383,119	14,676	17,305	891
2003	3,986	1,308	363,307	15,592	16,126	892
2004	4,190	1,346	384,677	16,059	17,080	1,099
2005	4,029	1,214	366,578	15,856	15,676	811
2006	4,234	1,297	396,178	16,410	16,735	713
2007	4,286	1,384	396,182	15,524	17,078	827
2008	4,039	1,324	430,005	16,409	15,371	1,064
2009	3,773	1,278	416,905	15,736	16,782	1,236
2010	4,077	1,448	449,440	16,240	18,639	1,109
2011	4,059	1,508	449,334	16,792	16,615	1,044
2012	3,899	1,563	428,594	14,893	15,659	680
2013	3,835	1,479	434,052	13,933	16,954	1,045
2014	4,279	1,507	432,067	12,821	17,311	1,090
2015	4,242	1,551	441,102	11,016	15,301	999
2016	4,205	1,658	399,402	8,834	17,152	1,103
2017	4,482	1,681	424,482	8,638	15,410	906

e Estimated r Revised p Preliminary See footnote in Appendix B

TBTU = Trillion BTU

BCF = Billion Cubic Feet

KWH = Kilowatt-hours

MBBLS = Thousand Barrels

MST = Thousand Short Tons

Table 39

LOUISIANA REFINERY CRUDE OIL STATISTICS

DATE	AVERAGE STOCK ON HAND (Barrels)	DAILY AVERAGE RUNS TO STILL (Barrels)	LICENSED REFINERIES
2000	14,818,774	2,334,842	16
2001	15,425,670	2,480,357	17
2002	16,335,210	2,470,556	18
2003	15,246,004	2,469,756	17
2004	15,938,390	2,543,087	18
2005	16,217,856	2,458,189	18
2006	16,741,544	2,528,319	17
2007	16,108,022	2,687,658	17
2008	16,248,826	2,440,984	18
2009	13,019,604	2,412,848	19
2010	14,183,752	2,632,282	19
2011	13,473,779	2,743,681	19
2012	13,596,335	2,754,173	18
2013	14,611,002	2,750,860	18
2014	14,160,947	2,831,181	17
2015	14,611,002	2,750,860	18
2016	14,160,947	2,831,181	17
2017	14,414,543	3,025,117	18
January	14,140,321	2,927,897	17
February	14,581,359	2,842,601	17
March	14,140,983	2,933,780	17
April	14,176,147	3,068,983	17
May	14,553,833	3,074,834	17
June	14,272,800	3,043,901	17
July	14,955,680	2,831,364	17
August	15,502,414	3,060,631	17
September	14,604,750	3,095,313	17
October	14,412,127	3,134,489	17
November	15,470,349	3,129,470	17
December	14,796,618	3,252,404	17
2018 Average	14,633,948	3,032,972	17
January	13,950,884	3,062,448	17
February	14,110,467	2,997,415	17
March	14,082,402	2,953,949	17
April	15,104,876	3,057,297	17
May	16,163,285	3,159,558	17
June	15,501,217	3,127,885	17
July	15,014,606	2,998,893	17
August	15,347,931	3,103,570	17
September	15,245,959	3,102,454	17
October	14,897,568 *	3,113,587	17
November	15,381,354 *	3,138,493	17
December	14,958,674 *	3,152,136	17
2019 Average	14,979,935 *	3,080,640	17

e Estimated r Revised p Preliminary See footnote in Appendix B



Exxon-Mobil Refinery - Baton Rouge

Figure 21

LOUISIANA LIGNITE PRODUCTION BY MINE SOURCE
(Thousand Tons Shipped)

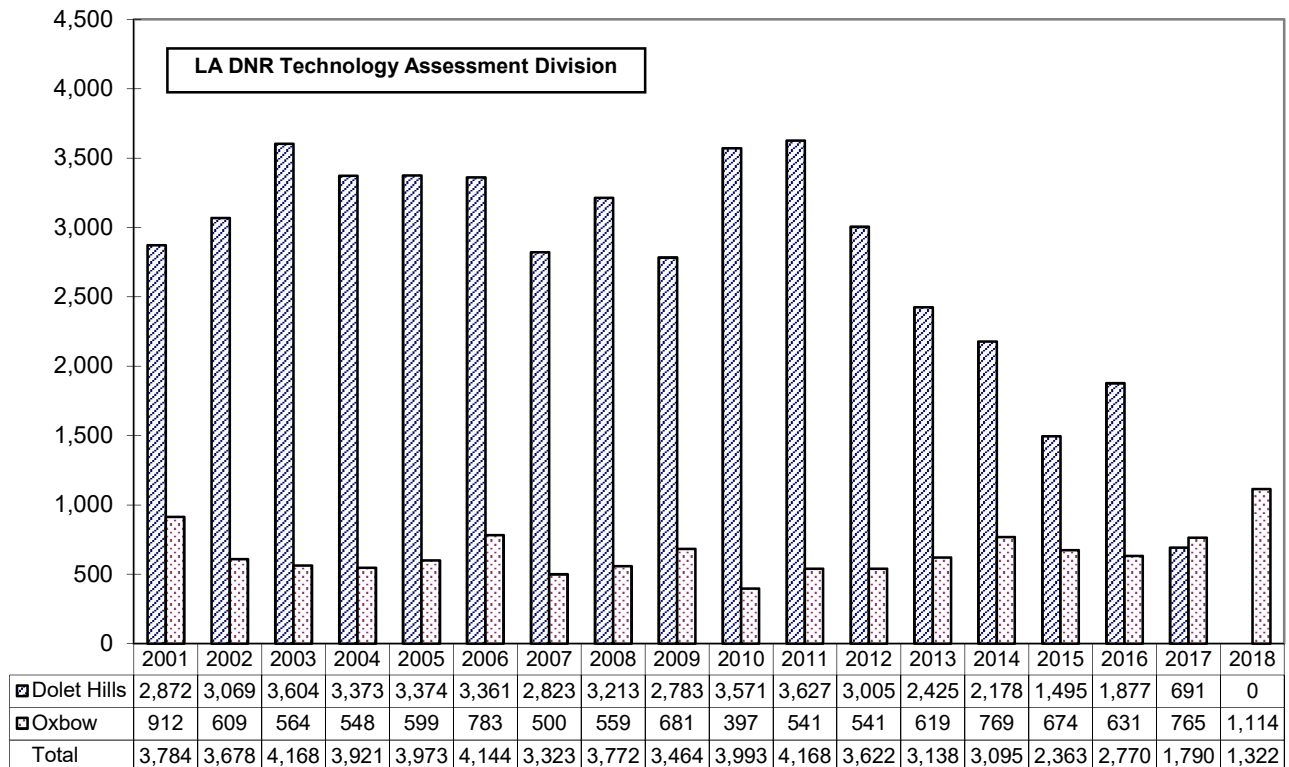


Table 40

**LOUISIANA ELECTRIC UTILITIES NET ELECTRICITY GENERATION ¹⁴
BY FUEL TYPE
(Million KWH)**

YEAR	COAL	OIL	GAS	NUCLEAR	TOTAL
1978	0	0	14,568	36,935	0
1979	0	0	8,259	38,396	0
1980	0	0	4,787	40,952	0
1981	1,529	0	2,634	39,947	0
1982	4,998	0	940	35,594	0
1983	8,377	0	356	28,311	0
1984	9,830	0	140	29,360	0
1985	13,968	0	100	27,736	2,457
1986	12,642	2,884	419	26,202	10,637
1987	12,176	2,926	60	23,823	12,324
1988	14,372	4,059	272	24,286	13,785
1989	14,227	3,854	298	21,900	12,391
1990	13,890	3,910	130	26,061	14,197
1991	14,786	4,126	45	24,245	13,956
1992	15,613	4,183	483	24,554	10,356
1993	15,794	3,572	1,838	23,751	14,398
1994	15,761	4,364	680	26,586	12,779
1995	14,632	4,321	49	30,867	15,686
1996	14,630	4,002	273	23,972	15,765
1997	16,453	4,499	645	26,580	13,511
1998	16,131	4,631	600	28,318	16,428
1999	16,386	4,780	397	30,162	13,112
2000	6,676 *	5,145	840	26,669	15,796
2001	6,136 *	4,731	1,775	20,284	17,366
2002	12,259 *	68	25,086	17,305	54,922
2003	11,020 *	1,008	15,094	16,126	43,485
2004	11,324 *	3,694	15,139	17,080	47,604
2005	11,416 *	3,378	13,688	15,676	44,158
2006	11,545 *	1,757	10,854	16,735	40,891
2007	10,736 *	1,977	13,872	17,078	43,523
2008	11,213 *	1,901	14,680	15,371	43,164
2009	11,025 *	1,460	14,325	16,782	43,592
2010	11,226 *	2,891	18,924	18,639	51,681
2011	11,860 *	4,378	22,071	16,615	54,924
2012	11,163 *	2,701	22,525	15,659	52,048
2013	9,843 *	4,476	24,227	16,954	56,226
2014	8,538 *	4,791	27,878	17,311	58,518
2015	9,125 *	4,021	37,283	15,301	65,730
2016	8,062 *	4,582	34,690	17,152	64,486
2017	12,315 *	4,570	33,664	15,410	65,959
2018	11,786 *	4,248	33,807	17,152	66,993 *

* Cajun Electric Power Cooperative's purchase by Louisiana Generating LLC changed their classification from electric utility to independent power producer.

e Estimated r Revised p Preliminary See footnote in Appendix B

Notes

Appendix A

Abbreviations

BCF	Billion Cubic Feet
BTU	British Thermal Unit
DNR	Louisiana Department of Natural Resources
DOE	United States Department of Energy
DOI	United States Department of the Interior
EIA	Energy Information Administration, DOE
FOB	Free on Board
GOM	Gulf of Mexico
KWH	Kilowatt-hours
MBBLS	Thousand Barrels
MCF	Thousand Cubic Feet
MMB	Million Barrels
MMS	Minerals Management Service, DOI
MST	Thousand Short Tons
NGC	Natural Gas Clearinghouse
OCS	Outer Continental Shelf
OPEC	Organization of Petroleum Exporting Countries
RAC	Refinery Acquisition Costs
SLS	South Louisiana Sweet Crude Oil
SPR	Strategic Petroleum Reserve
TBTU	Trillion BTU
TCF	Trillion Cubic Feet

State Abbreviations Used in the Louisiana Energy Facts Annual

AL	Alabama	MS	Mississippi
AK	Alaska	MT	Montana
AR	Arkansas	ND	North Dakota
CA	California	NM	New Mexico
CO	Colorado	OK	Oklahoma
IL	Illinois	PA	Pennsylvania
KS	Kansas	TX	Texas
LA	Louisiana	UT	Utah
MI	Michigan	WY	Wyoming

Appendix B

Data Sources*

1. EMPLOYMENT AND TOTAL WAGES PAID BY EMPLOYERS SUBJECT TO LOUISIANA EMPLOYMENT SECURITY LAW, Baton Rouge, LA: Louisiana Department of Labor, Office of Employment Security, Research and Statistics Unit.
2. MONTHLY ENERGY REVIEW and ANNUAL ENERGY REVIEW, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.
3. NATURAL GAS MONTHLY and NATURAL GAS ANNUAL, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.
4. BAKER HUGHES ROTARY RIGS COUNT, Houston, TX: Baker Hughes Inc.
5. October 2002 to Present, NATURAL GAS WEEK, Washington, D.C.: Energy Intelligence Group. Prior, SURVEY OF DOMESTIC SPOT MARKET PRICES, Houston, TX: Dynegy Inc. (formerly Natural Gas Clearinghouse).
6. PETROLEUM MARKETING MONTHLY and PETROLEUM MARKETING ANNUAL, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.
7. PETROLEUM SUPPLY MONTHLY and PETROLEUM SUPPLY ANNUAL, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.
8. SEVERANCE TAX, Baton Rouge, LA: Louisiana Department of Revenue, Severance Tax Section. The severance tax reported production volumes are different from actual production due to reporting time lag and well tax exemptions.
9. U.S. CRUDE OIL, NATURAL GAS and NATURAL GAS LIQUIDS RESERVES, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.
10. THE WALL STREET JOURNAL, Gulf Coast Edition, Beaumont, TX: Dow Jones and Company.
11. STATE ENERGY DATA REPORT, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.
12. FEDERAL OFFSHORE STATISTICS, Washington, D.C.: U.S. Department of the Interior, Bureau of Ocean Energy Management.
13. NATURAL RESOURCES REVENUE, Denver, CO: U.S. Department of the Interior, Office of Natural Resources Revenue.
14. ELECTRIC POWER MONTHLY, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

- Unless otherwise specified, data is from the Louisiana Department of Natural Resources.

An Explanation of Changes in Oil and Gas Statistics

Note # 1

Current production data and all future reports will reflect changes due to modifications in the reporting system by the Department of Natural Resources Office of Conservation, Production Audit Section. Only the oil and gas production data in state jurisdiction is affected.

The new data for oil will not include crude oil, condensate or raw make recovered from natural gas processing plants. In the past, these products were added to the state production as crude oil or condensate.

A separate report on gas plants liquids production is not available at the present.

In addition, the gas data system has been adjusted to reflect reporting production on the date produced. Previously, it had been reported on the date first purchased.

The new reporting system should produce more accurate and timely data.

The Technology Assessment Division is not the source of these data sets, but merely reports data provided to us by the Office of Conservation. However, we understand that users of our time series data need consistency over time. For that reason, our time series has been adjusted backwards to 1980 using these new definitions.

Note # 2

Producing oil and gas well data since 2000 reflect changes due to modifications in the reporting system by the Department of Natural Resources Office of Conservation.

The new data for oil and natural gas producing wells count them as productive if they had any production in the month, previous system counted only the producing wells at the end of the month. The new reporting system should produce more accurate and timely data.

The Technology Assessment Division is not the source of these data sets, but merely reports data provided to us by the Office of Conservation. However, we understand that users of our time series data need consistency over time, but due to lack of accurate information the time series has been adjusted backwards to 2000 using the new system.

Other factors that affected the big increase on wells numbers are the big jump on energy prices around 2000, and the inactive wells

Outer Continental Shelf Lands Act (OCSLA)

The OCSLA of 1953 (67 Stat. 462), as amended (43 U.S.C. 1331 et seq. (1988)) established Federal jurisdiction over submerged lands on the Outer Continental Shelf (OCS) seaward of State boundaries. Under the OCSLA, the Secretary of the Interior is responsible for the administration of mineral exploration and development of the OCS. The Act empowers the Secretary to grant leases to the highest qualified responsible bidder(s) on the basis of sealed competitive bids and to formulate such regulations as necessary to carry out the provisions of the Act. The Act, as amended, provides guidelines for implementing an OCS oil and gas exploration and development program. The basic goals of the Act include the following:

1. To establish policies and procedures for managing the oil and natural gas resources of the OCS that are intended to result in expedited exploration and development of the OCS in order to achieve national economic and energy policy goals, assure national security, reduce dependence on foreign sources, and maintain a favorable balance of payments in world trade.
2. To preserve, protect, and develop oil and natural gas resources of the OCS in a manner that is consistent with the need
 - (a) to make such resources available to meet the nation's energy needs as rapidly as possible;
 - (b) to balance orderly resource development with protection of the human, marine, and coastal environments;
 - (c) to ensure the public a fair and equitable return on the resources of the OCS;
 - (d) to preserve and maintain free enterprise competition.
3. To encourage development of new and improved technology for energy resource production, this will eliminate or minimize risk of damage to the human, marine, and coastal environments.

Royalty revenues from Federal offshore leases on the OCS are distributed to the Land and Water Conservation Fund, the Historic Preservation Fund, and the General Fund of the U.S. Treasury. Transfers are made in each fiscal year from OCS royalties, rentals and bonuses in order to maintain the Land and Water Conservation Fund's annual authorization of \$900 million. Annually, \$150 million is put into the Historic Preservation Fund. The balance of offshore revenue receipts is directed to the General Fund of the U.S. Treasury.

Section 8(g) of the OCSLA Amendments of 1978 provided that the states were to receive a "fair and equitable" division of revenues generated from the leasing of lands within 3 miles of the seaward boundary of a coastal state that contains one or more oil and gas pools or fields underlying both the OCS and lands subject to the jurisdiction of the state. The states and the federal government, however, were unable to reach agreement concerning the meaning of the term "fair and equitable." Revenues

generated in the 3-mile boundary zone were subsequently placed into an escrow fund in August 1979.

Congress resolved the dispute over the meaning of "fair and equitable" in the Outer Continental Shelf Lands Act Amendments of 1985, Public Law 99-272. The amendments required that the affected coastal state will receive 27 percent of the revenues generated from the leasing and development of oil and natural gas resources located in the Federal 8(g) zone. The law provided for the following distribution of revenues to Louisiana under section 8(g):

Before 1986: Louisiana did not receive any shared revenue from OCS production prior to 1986.

1986: Louisiana received a payment of \$68.7 million from royalties, rentals and bonuses collected in 1986 and prior years.

1998-2000: In 1987 Louisiana received an initial settlement payment of \$572 million from the escrow funds. A series of annual settlement payments have been disbursed to the states over a 15-year period along with an annual disbursement of 27 percent of royalty, rental, and bonus revenues received within each affected state's 8(g) zone. The annual settlement payments are: From 1987 through 1991, Louisiana received an annual settlement payment of \$2.52 million per year. From 1992 through 1996, the state received an annual settlement payment of \$5.88 million per year. Beginning in 1997 until the last payment in 2001, Louisiana will receive an annual settlement payment of approximately \$8.40 million per year.

2002 and After: No further settlement payments; states receive only a recurring annual disbursement of 27 percent of royalty, rental, and bonus revenues received within each affected state's 8(g) zone. Louisiana will receive an annual disbursement of 27 percent of royalty, rental, and bonus revenues received within Louisiana's affected 8(g) zone.

Gulf of Mexico Energy Security Act (GOMESA)

On December 20, 2006, the President signed into law the GOMESA of 2006 (Pub. Law 109-432). The Act significantly enhances OCS oil and gas leasing activities and revenue sharing in the Gulf of Mexico (GOM). The Act:

- A. Stipulated that 8.3 million acres be offered for oil and gas leases. This acreage is included in both the Central Gulf Planning Area and the Eastern Gulf Planning Area. The 8.3 million acres consist of approximately 2 million acres in the Central Gulf, it was the first that was offered for lease after enactment of the law and was included in Lease Sale 205 in October 2007; additional .5 million acres in the Eastern Gulf received additional environmental review and was offered in

Lease Sale 224 in March 2008; and the remaining 5.8 million acres in the Central Gulf was offered for leasing at Lease Sale 208 in March 2009.

- B. Updated moratoria (bans) areas in the Gulf. Those tracts in the Eastern Gulf of Mexico that are within 125 miles of Florida, all tracts east of the Military Mission Line, and tracts in the Central Gulf of Mexico within 100 miles of Florida that are included in the moratorium area which extends until 2022.
- C. Created revenue sharing provisions for four Gulf oil and gas producing States – Alabama, Louisiana, Mississippi and Texas, and their coastal political subdivisions. There are two phases in the GOMESA revenue sharing.
 - a. Phase 1: Beginning in Fiscal Year 2007, 37.5 percent of all qualified OCS revenues, including bonus bids, rentals and production royalty, will be shared among the four States and their coastal political subdivisions from those new leases issued in the 181 Area in the Eastern planning area (also known as the 224 Sale Area) and the 181 South Area. Additionally, 12.5 percent of revenues are allocated to the Land and Water Conservation Fund (LWCF). The final regulations for Phase I revenue sharing were issued on December 23, 2008 and specify that the Bureau intends to disburse funds on or before March 31st of the fiscal year following the fiscal year to which the qualified OCS revenues were attributed..
 - b. Phase 2: The second phase of GOMESA revenue sharing begins in Fiscal Year 2017. It expands the definition of qualified OCS revenues to include receipts from GOM leases issued either after December 20, 2006, in the 181 Call Area, or, in 2002–2007 GOM Planning Areas subject to withdrawal or moratoria restrictions. A revenue sharing cap of \$500 million per year for the four Gulf producing States, their CPS's and the LWCF applies from fiscal years 2016 through 2055. The \$500 million cap does not apply to qualified revenues generated in those areas associated with Phase I of the GOMESA program. The Bureau will address the second phase of GOMESA revenue sharing in a subsequent rulemaking.
- D. Allowed for the exchange of existing leases in the moratorium areas for bonus or royalty credit to be used in the Gulf of Mexico. A credit will be provided to lessees who relinquish certain eligible leases in the Gulf of Mexico. Leases are considered eligible if they lie within 125 miles of the Florida Coast in the Eastern Planning Area or within 100 miles of the Florida Coast in the Central Planning Area. The lessees will be allowed to use the credits in lieu of monetary payment for either a lease bonus bid or royalty due on oil and gas production from most other leases in the Gulf of Mexico or transfer the credits to other Gulf of Mexico lessees for their use.

Appendix C

Glossary

Bonus. A cash payment by the lessee for the execution of a lease. A lease is a contract that gives a lessee the right: (a) To search for minerals, (b) to develop the surface for extraction, and (c) to produce minerals within the area covered by the contract.

Casinghead Gas. All natural gas released from oil during the production of oil from underground reservoirs.

City-Gate. A point or measuring station at which a gas distribution company receives gas from a pipeline company or transmission system.

Commercial Consumption. Gas used by non-manufacturing organizations such as hotels, restaurants, retail stores, laundries, and other service enterprises. This also includes gas used by local, state, and federal agencies engaged in non-manufacturing activities.

Condensate. (See Lease Condensate)

Crude Oil. A mixture of hydrocarbons that existed in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities.

CRUDE OIL PRICES

Domestic Wellhead. The average price at which all domestic crude oil is first purchased.

Imports FOB. The price actually charged at the producing country's port of loading. It is the responsibility of the buyer to arrange for transportation and insurance.

Imports Landed. The dollar per barrel price of crude oil at the port of discharge. It includes crude oil landed in the U.S. and U.S. company-owned refineries in the Caribbean, but excludes crude oil from countries that export only small amounts to the United States. The landed price does not include charges incurred at the port of discharge.

Imports OPEC FOB. The average price actually charged by OPEC at their country's port of loading. This price does not include transportation or insurance.

OCS Gulf. The average price at which all offshore, Outer Continental Shelf, Central Gulf region crude oil is first purchased as reported by the U.S. Department of Energy, Energy Information Administration.

Refinery Acquisition Costs (RAC). The average price paid by refiners in the U.S. for crude oil booked into their refineries in accordance with accounting procedures generally accepted and consistently and historically applied by the refiners.

a) **Domestic.** The average price of crude oil produced in the United States or from the Outer Continental Shelf of the U.S.

b) **Imports.** The average price of any crude oil not reported as domestic.

Refinery Posted. The average price from a survey of selected refiners' postings for Light Louisiana Sweet (LLS) crude, which is effective at the middle and at the end of the month.

Severance Tax. The average wellhead price calculated from oil severance taxes paid to the Louisiana Department of Revenue and Taxation.

Spot Market. The spot market crude oil price is the average of daily Light Louisiana Sweet (LLS) crude price futures traded in the month and usually includes transportation from the producing field to the St. James, Louisiana terminal.

State. The average price at which all Louisiana crude oil, excluding Louisiana OCS, is first purchased as reported in a survey by the U.S. Department of Energy, Energy Information Administration.

State Royalty. The average wellhead price from its royalty share of oil produced in state lands or water bottoms. The price is calculated by the ratio of received oil royalty gross revenue divided by royalty volume share reported to the Louisiana Department of Natural Resources.

Developmental Well. Wells drilled within the proved area of an oil or gas reservoir to the depth of a stratigraphic horizon known to be productive.

Dry Gas. (See Natural Gas, "Dry")

Dry Hole. An exploratory or developmental well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as an oil or gas well.

Electric Utility Consumption. Gas used as fuel in electric utility plants.

Exploratory Well. A well drilled to find and produce oil or gas in an unproved area, to find a new reservoir in an old field, or to extend the limits of a known oil or gas reservoir.

Exports. Crude oil or natural gas delivered out of the Continental United States and Alaska to foreign countries.

Extraction Loss. The reduction in volume of natural gas resulting from the removal of natural gas liquid constituents at natural gas processing plants.

Federal Offshore or Federal OCS. (See Louisiana OCS)

Federal Onshore. They are lands in the United States for which ownership is claimed by the U.S. federal government, pursuant to Article Four, section 3, clause 2 of the United States Constitution.

FOB Price (Free on board). The price actually charged at the producing country's port of loading. The reported price includes deductions for any rebates and discounts or additions of premiums where applicable and should be the actual price paid with no adjustment for credit terms.

Gate. (See City-Gate)

Gross Revenue. Amount of money received from a purchaser, including charges for field gathering, transportation from wellhead to purchaser receiving terminal, and state production severance tax.

Gross Withdrawals. (See Natural Gas, Gross Withdrawals)

Imports. Crude oil or natural gas received in the Continental United States, Alaska, and Hawaii from foreign countries.

Industrial Consumption. Natural gas used by manufacturing and mining establishments for heat, power, and chemical feedstock.

Lease Condensate. A mixture consisting primarily of pentane and heavier hydrocarbons that is recovered as a liquid from natural gas in lease or field separation facilities, exclusive of products recovered at natural gas processing plants or facilities.

Lease Separator. A facility installed at the surface for the purpose of: (a) Separating gases from produced crude oil and water at the temperature and pressure conditions of the separator, and/or (b) separating gases from that portion of the produced natural gas stream which liquefies at the temperature and pressure conditions of the separator.

Louisiana OCS. Submerged lands under federal regulatory jurisdiction that comprise the Continental Margin or Outer Continental Shelf adjacent to Louisiana and seaward of the Louisiana Offshore region.

Louisiana Offshore. A 3-mile strip of submerged lands under state regulatory jurisdiction located between the State coast line and the OCS region.

Louisiana Onshore. Region defined by the State boundary and the coast line.

Major Pipeline Company. A company whose combined sales for resale, and gas transported interstate or stored for a fee, exceeded 50 million thousand cubic feet in the previous year.

Marketed Production. (See Natural Gas, Marketed Production)

Natural Gas. A mixture of hydrocarbon compounds and small quantities of various non-hydrocarbons existing in the gaseous phase or in solution with crude oil in natural underground reservoirs at reservoir conditions. The principal hydrocarbons usually contained in the mixture are methane, ethane, propane, butanes and pentanes. Typical non-hydrocarbon gases that may be present in reservoir natural gas are carbon dioxide, helium, hydrogen sulfide and nitrogen. Under reservoir conditions, natural gas and the liquefiable portions occur either in a single gaseous phase in the reservoir or in solution with crude oil, and are not distinguishable at the time as separated substances.

Natural Gas, "Dry". The actual or calculated volume of natural gas which remains after: (a) The liquefiable hydrocarbon portion has been removed from the gas stream, and (b) any volumes of non-hydrocarbon gases have been removed where they occur in sufficient quantity to render the gas unmarketable.

Natural Gas, Gross Withdrawals. It is the full well-stream volume, including all natural gas plant liquids and all non-hydrocarbon gases, but excluding lease condensate.

Natural Gas Liquids. Lease condensate plus natural gas plant liquids.

Natural Gas, Marketed Production. Gross withdrawals less gas used for pressurizing, quantities vented and flared, and non-hydrocarbon gases removed in treating or processing operations. It includes all quantities of gas used in field and processing operations.

Natural Gas, OCS Gas. OCS gas volume is as reported. Most are "dry" gas, though some are "wet" gas.

Natural Gas Plant Liquids. Those hydrocarbons remaining in a natural gas stream after field separation and later separated and recovered at a natural gas processing plant or cycling plant through the processes of absorption, adsorption, condensation, fractionation or other methods. Generally such liquids consist of propane and heavier hydrocarbons and are commonly referred to as condensate, natural gasoline, or liquefied petroleum gases. Where hydrocarbon components lighter than propane (e.g., ethane) are recovered as liquids, these components are included with natural gas liquids.

NATURAL GAS PRICES

Henry Hub Settled NYMEX. The last trading day price for the month before delivery posted in the New York Mercantile Exchange for natural gas at Henry Hub.

Spot Market. The average price of natural gas paid at the regional spot market receipt points or zones as reported by the Energy Intelligence Group's NATURAL GAS WEEK. The data are a volume weighted average and reflect market activity information gathered during the entire month before the publication date, regardless of delivery date. The data are not an arbitrary weighting by production zone, but a true deal-by-deal volume weighting of prices gathered. Data prior to October 2002 were from Dynegey's survey of the domestic natural gas spot market receipt points or zones located in Louisiana. The new and old points or zones are as follows:

NATURAL GAS PIPELINES AND SALES POINTS FOR PRICES

<u>Dynegey</u>	<u>Natural Gas Week</u>
ANR Eunice, LA	ANR Patterson, LA
COLUMBIA GULF Average Louisiana onshore laterals	COLUMBIA GULF TRANSMISSION CO. Average of Erath, Rayne, and Texaco Henry Plant in Louisiana
LOUISIANA INTRASTATES Average of Faustina, Bridgeline, LIG, and Monterrey pipelines	LOUISIANA INTRASTATES Average of LIG, Bridgeline, LRC, and Acadian pipelines
SOUTHERN NATURAL South Louisiana	SONAT Saint Mary Parish, LA
TENNESSEE GAS Vinton, LA	TENNESSEE GAS Average Zone 1 of 500 & 800
TEXAS GAS TRANSMISSION Zone 1 (North Louisiana)	TEXAS GAS TRANSMISSION Zone 1 (North Louisiana)
GULF SOUTH PIPELINE	TRUNKLINE GAS CO. HENRY HUB

OCS. The average wellhead price calculated from sales and volumes from Louisiana OCS natural gas as reported by the U.S. Department of Interior, Office of Natural Resources Revenue.

State Royalty. The average wellhead price calculated from revenue received and volumes reported to the Louisiana Department of Natural Resources.

State Wells. The average price of gas sold at Louisiana wellhead. This price includes: (a) Value of natural gas plant liquids subsequently removed from the gas, (b) gathering and compression charges, and (c) state production, severance, and/or similar charges.

MAJOR PIPELINES PURCHASES.

a) **Domestic Producers.** The average price of natural gas produced in the United States or from the Outer Continental Shelf of the U.S.

b) **Foreign Imports.** The average price of any natural gas not reported as domestic.

Wellhead. The wellhead sales price including: (a) Value of natural gas plant liquids subsequently removed from the gas, (b) gathering and compression charges, and (c) state production, severance, and/or similar charges.

Natural Gas Plant Liquids (NGPL). NGPL are those hydrocarbons in natural gas that are separated as liquids at natural gas processing, fractionating, and cycling plants. Products obtained include ethane, liquefied petroleum gases (propane, normal butane, and isobutene), and natural gasoline. Component products may be fractionated or mixed. Lease condensate and plant condensate are excluded. Cycling plants are classified as gas processing plants or facilities designed to recover natural gas liquids from a stream of natural gas that may or may not have passed through lease separators and/or field separation facilities. These facilities control the quality of the natural gas to be marketed. Note: Some EIA publications categorize NGPL production as field production, in accordance with definitions used prior to January 2014.

Natural Gas, Wet After Lease Separation. The volume of natural gas, if any, remaining after: (a) Removal of lease condensate in lease and/or field separation facilities, and (b) exclusion of non-hydrocarbon gases where they occur in sufficient quantities to render the gas unmarketable. Also excludes gas returned to formation in pressure maintenance and secondary recovery projects and gas returned to earth from cycling and/or gasoline plants. Natural gas liquids may be recovered from volumes of natural gas, wet after lease separation, at natural gas processing plants.

Organization of Petroleum Exporting Countries (OPEC). Countries that have organized for the purpose of negotiating with oil companies on matters of oil production, prices, and future concession rights. Current members are Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Outer Continental Shelf (OCS). All submerged lands that comprise the Continental Margin adjacent to the U.S. and seaward of the state offshore lands. Production in the OCS is under federal regulatory jurisdiction and ownership.

Processing Plant. A facility designed to recover natural gas liquids from a stream of natural gas which may or may not have passed through lease separators and/or field separation facilities. Another function of natural gas processing plants is to control the quality of the processed natural gas stream.

Proved Reserves of Crude Oil. As of December 31 of the report year, the estimated quantities of all liquids defined as crude oil which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions. Volumes of crude oil in underground storage are not considered proved reserves.

Proved Reserves of Lease Condensate. The volumes of lease condensate as of December 31 of the report year expected to be recovered in future years in conjunction with the production of proved reserves of natural gas as of December 31 of the report year.

Proved Reserves of Natural Gas. The estimated quantities of natural gas as of December 31 of the report year which analysis of geologic and engineering data demonstrates with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions. Volumes of natural gas in underground storage are not considered proved reserves.

Proved Reserves of Natural Gas Liquids. The volumes of natural gas liquids (including lease condensate) as of December 31 of the report year, which analysis of geologic and engineering data demonstrates with reasonable certainty to be separable in the future from proved natural gas reserves under existing economic and operating conditions.

Rental. Money paid by the lessee to maintain the lease after the first year if it is not producing. A lease is considered expired when rental is not paid on time on an unproductive lease.

Reservoir. A porous and permeable underground formation containing an individual and separate natural accumulation of producible hydrocarbons (oil and/or gas) which is confined by impermeable rock or water barriers and is characterized by a single natural pressure system. Reservoirs are considered proved if economic producibility is supported by actual production or conclusive formation tests (drill stem or wire line), or if economic producibility is supported by core analysis and/or electric or other log interpretations. The area of a gas or oil reservoir considered proved includes: (a) That portion delineated by drilling and defined by gas-oil and/or gas-water contacts, if any; and (b) the immediately adjoining portions not yet drilled, but which can be reasonably judged as economically productive on the basis of available geological and engineering data.

Residential Consumption. Gas used in private dwellings, including apartments, for heating, cooking, water heating, and other household uses.

Royalty Interest. Those interests which entitle their owner(s) to a share of the mineral production from a property or to a share of the proceeds from there. These interests do

not contain the rights and obligations of operating the property and normally do not bear any of the costs of exploration, development, or operation of the property.

Royalty Override (Or Overriding Royalty). An overriding royalty interest is a percentage of oil and gas revenue from a producing well free of all drilling and producing costs. It is carved out of the lessee's or working interest owner and paid by the lessee or working interest owner. It is limited in duration to the terms of an existing lease, not subject to any of the expenses of development, operation or maintenance, and not connected to an ownership of minerals under the ground, and it is royalty in addition to the usual landowner's royalty reserved to the lessor.

Severance Tax. It is levied on production of natural resources taken from land or water bottoms within the territorial boundaries of the state. The state collects no severance from production in federal waters in the Gulf which start three miles from the Louisiana coastline. Natural resources are all forms of timber, including pulp woods, and turpentine and other forest products; minerals such as oil, gas, natural gasoline, distillate, condensate, casinghead gasoline, sulphur, salt, coal, lignite, and ores; also marble, stone, gravel, sand, shells, and other natural deposits; and the salt content in brine.

State Offshore. (See Louisiana Offshore)

Wet After Lease Separation. (See Natural Gas, Wet After Lease Separation)

Wildcat Well. (See Developmental Well)

Appendix D

Louisiana Energy Topics

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2019 STATE OIL AND GAS: PRODUCTION AND PRICE PROJECTIONS

by
Edward O'Brien, III, MBA, M.Ec.

Louisiana has produced oil and gas for more than a century. Oil and gas production are intimately linked with the economy of our state. Presently, Louisiana is the ninth largest producer of crude oil and the fourth largest producer of natural gas in the U.S., excluding the federal Outer Continental Shelf (OCS) production. Louisiana is second in per capita energy consumption and it is second in industrial energy consumption. The petrochemical and petroleum refining industries located in the state are the main reason for Louisiana's high-energy use. They are extremely energy intensive and rely on Louisiana's abundance of natural resources and historically low energy prices. Despite the location of these industries, the bulk of the final consumption of their products is in other states as well as overseas.

Following are other interesting benchmarks in the Louisiana oil and gas production history. In 1910, the first freestanding, above-water platform was used in Caddo Lake, near Shreveport. In 1938, the first well over water was completed in the Gulf of Mexico near Creole, offshore Cameron Parish. In 1947, the first offshore oil well was completed out of sight from land in Ship Shoal Block 32 (south of Morgan City, Saint Mary Parish). In 1951, the first concrete-coated pipeline was laid in the Gulf of Mexico. In 1954, the state started to produce more natural gas (in terms of barrels of oil equivalents) than crude oil. In 2006, the Haynesville Shale started producing natural gas, making gas a predominate factor in new production. In 2010, Louisiana oil production slowly reversed its declining trend due to production from oil shale formations and enhanced recovery in mature fields. Since 2014, Louisiana oil and gas productions are declining due to lower oil and gas prices, cheaper production costs in other U.S. oil and gas shale fields, gas plays containing higher gas liquids, and being closer to the consumer market.

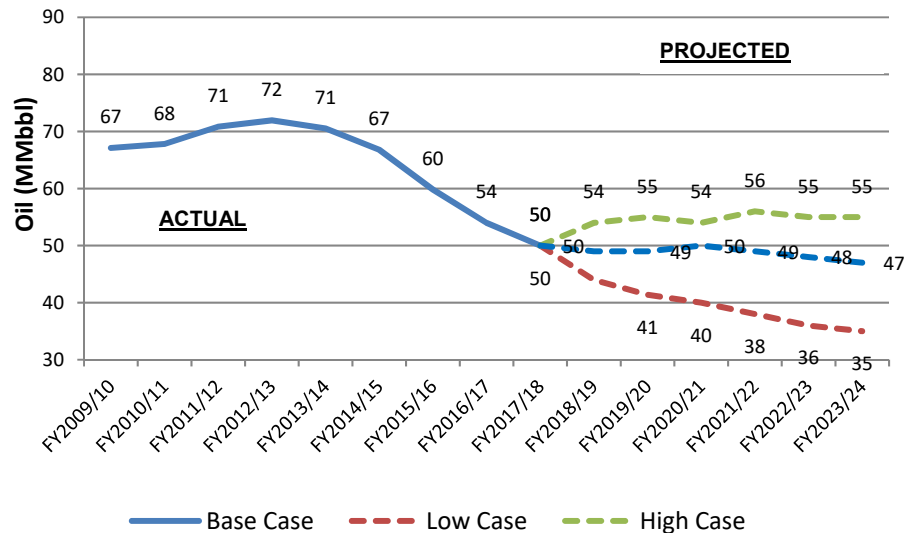
Production Projections

Crude Oil

The Louisiana state oil production, excluding federal OCS, showed an average decline of 2.3% per year over the past five years, but actual year-to-year change varies widely. The recovery from the Hurricanes Katrina and Rita disaster, and rising oil prices, caused increases in FY2007/2008 production volumes. Hurricanes Gustav and Ike caused a 10.91% decline in FY2008/2009. A plunge in oil prices in FY2009/2010 kept the production declining. The delayed recovery from weather disasters and new production from enhanced oil recovery in old oil fields increased FY2010/2011 production. Production from enhanced oil recovery fields, initial production from oil shale formations, and high oil prices increased production in FY2011/2012. In FY2012/2013, the falling oil prices slowed the production increase. In FY2013/2014, the continuously falling oil prices and production difficulties in the oil shale formations reversed the increase in oil production trends. In FY2014/2015, the decline continued due to low oil prices, lower demand, and high oil inventory in stock. In FY2015/2016, the decline continued due to low oil prices and shifting oil exploration from Louisiana to oil shale plays in Texas, which tend to have a higher rate of return on investment. The Trend continued through FY2017/2018, with production declining by 7.0%. The Department of Natural Resources (DNR) Technology Assessment Division short-term model projects oil production flat over the next five years. Assuming crude oil prices would stay above \$55 per barrel and no major weather disruptions occur. Figure 1 shows the projections for the next

five years. If prices go over \$70 per barrel for an extended period, the projections will be closer to the high case trend, inverting the slope of the decline.

Figure 1: Louisiana Historical and Projected Crude Oil Productions



Natural Gas

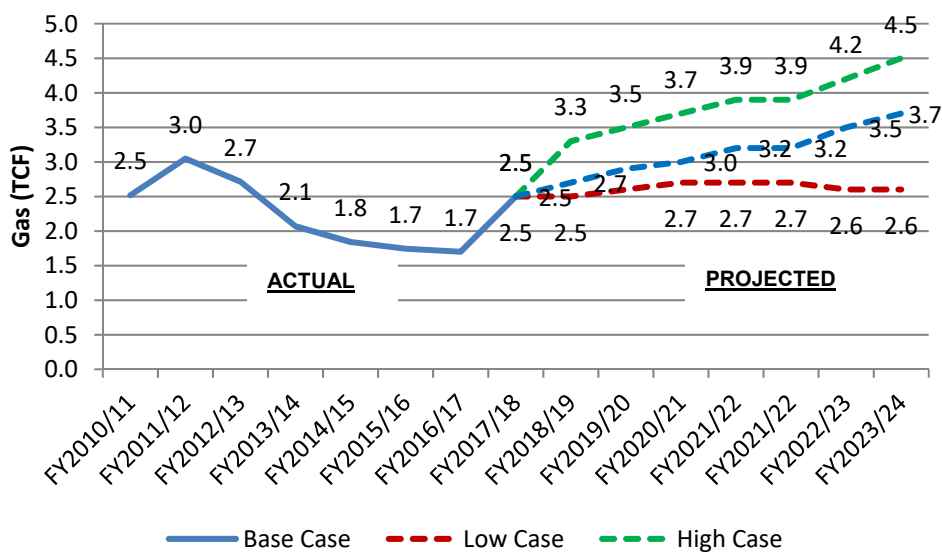
Similar to oil, gas production varies from year-to-year, reflecting the severity of weather patterns and prices. In FY2006/2007, the Haynesville Shale dry gas field appeared and changed the pattern. For example, the high decline in oil production in FY2008/2009 was due to Hurricanes Gustav and Ike, while gas production showed a slight increase. If there had been no hurricanes that year, the percentage of increase in production would have been higher. From FY2008/2009 through FY2011/2012, Louisiana state gas production more than doubled to around 3.0 TCF. In FY2012/2013, gas production dropped to 2.7 TCF, caused by a drop in drilling activities. In FY2013/2014, production dropped to 2.1 TCF due to low prices and competition from other gas shale plays. In FY2014/2015, gas production declined to 1.8 TCF, and in FY2015/2016, gas production declined to 1.7 TCF due to continuous low gas prices and low consumption. FY2016/2017 realized a slight increase in production, as renewed interest in the Haynesville spurred increased production. If FY2016/2017 showed a renewed interest, FY2017/2018 could be considered a renaissance, with production numbers not seen since the heyday of the Haynesville, with 2.5 TCF of production, a 47% increase in just one year. Figure 2 shows the DNR Technology Assessment Division short-term model projections for the next five years. The projections assume that the weather will be mild without major disruptions and the average gas prices are above \$2.50 per MCF.

In 2012, the gas price fell below \$3 per MCF, initially causing a slowdown in drilling activities in the Haynesville Shale areas. There were 93 active rigs in Haynesville areas in January 2012, dropping to 16 active rigs by January 2013, an 82.8% decline. The drop in drilling activities, cutback in production due to low prices, competition from wet shale plays, and overstock of gas in storage curtailed the gas production in Louisiana. In January 2014, drilling active gas rigs recovered to 37 rigs, caused by rising gas prices, an expected demand increase, and exports. In January 2015, drilling gas rigs dropped to 25 rigs due to declining prices and improvements in drilling techniques. In January 2016, drilling rigs increased to 35 despite low gas prices, the increase can be attributed to the expectation of starting LNG

export from Louisiana's LNG exporting terminals. In January 2017, drilling gas rigs dropped to 30 rigs, even with rising oil and gas price, due to competition from other states shale plays that have lower gas wells drilling cost than in Haynesville shale plays or has oil shale wells producing high volume of gas. In January of 2018, rigs drilling for natural gas had increased to 45. January 2019 saw rigs around the same level in Haynesville. Factors that contribute to the year-to-year deviations in oil and gas production are:

- Changes in wildcat drilling and development of marginal fields within the state,
- adding new producing areas,
- unstable crude oil and natural gas prices,
- changes in environmental laws, especially those concerning saltwater discharge and the Clean Air Act Amendments of 1990,
- world supply and demand causing a glut or shortage, depending on its growth rate,
- the number of active drilling rigs in the region,
- application of advanced technology, such as 3-D, 4-D, or carbon dioxide injection,
- state and local tax incentives,
- weather patterns, and
- imports/exports.

Figure 2: Louisiana Historical and Projected Natural Gas Productions



Price Projections

Oil Prices

Oil prices are determined in the international markets and are difficult to project. Just as the historical data shows great swings in the price of oil, there is also considerable uncertainty about future prices. The future price of oil is linked to the unpredictability of world oil supplies and world economics.

Major factors affecting oil prices are a) political stability of producing countries, b) world environmental issues, c) industrialized countries conservation practices, d) weather-related demand for petroleum products, e) production curtailment by producing countries, f) economic changes in consumer nations, g) stability in the labor force, and h) new producing fields. If crude oil supply and demand for petroleum products is well balanced and refiners have sufficient downstream capacity to process difficult crudes, the price of crude oil will seek a stable market condition.

Oil prices started its most recent slide in the second half of 2014 as oil inventory built up. The buildup was caused by high production from oil shale plays; an increase from old fields using enhanced techniques; increased production in other producing countries; the slow recovery pace of the U.S. economy; and the recession of the Chinese economy. It appears that oil prices have bottomed out; the lowest point occurred on January 20, 2016 at \$27.49 per barrel, and prices are recovering, the WTI oil price on February 27, 2019 was \$56.94 per barrel. West Texas has seen a significant rise in production and rig count over the last 3 years, employing over 40% of all rigs in use. Inventory has been decreasing in the United States over the last 6 months, dropping the excess supply by over 100 million barrels. While inventory has been decreasing, United States production has been increasing, constantly surpassing the 10 million barrel per day mark for the first time since the 1970s.

Louisiana crude oil average price was \$106.36 per barrel in the spot market in February 2014, the price dropped to \$55.28 per barrel in February 2015, it dropped to \$32.48 in February 2016, and it recovered to \$63.18 per barrel in February 2019. Table 1 shows the historical Louisiana Crude Oil prices and the projection for the next five years.

Table 1: Louisiana Crude Oil Historical and Projected Prices

	Base Case		Low Case	High Case
FY2013/14	\$103.40	-1.57%	N/A	N/A
FY2014/15	\$76.22	-26.28%	N/A	N/A
FY2015/16	\$44.35	-41.82%	N/A	N/A
FY2016/17	\$46.94	5.84%	N/A	N/A
FY2017/18	\$59.66	27.10%	N/A	N/A
FY2018/19	\$60.72	1.74%	\$52.72	\$68.74
FY2019/20	\$61.52	1.30%	\$54.15	\$72.17
FY2020/21	\$62.56	1.66%	\$55.26	\$68.28
FY2021/22	\$65.87	5.03%	\$55.82	\$72.64
FY2022/23	\$69.31	4.96%	\$58.76	\$77.59
FY2023/24	\$72.81	4.81%	\$61.29	\$81.07

GAS PRICES

Louisiana natural gas average spot price was \$5.96 per MCF in February 2014, the price dropped to \$2.85 per MCF in February 2015, it dropped to \$2.18 per MCF in February 2016, and it recovered to \$3.16 per MCF in February 2019. Table 2 shows the historical Louisiana Natural Gas prices and the projection over the next five years.

The physical relationship between the crude oil price and the natural gas price is the so-called “6-to-1” rule, where the price of one barrel of crude oil should be approximately six times the price of natural gas per million BTUs (MMBTUs). This is because the BTU content in a barrel of oil is about six times that of a million BTUs of natural gas. Natural gas prices recently started to diverge from this relationship, with the current ratio being 17:1. Oil prices are higher because Asian countries are consuming more oil than gas and the political unrest in Venezuela, African and Islamic countries are disrupting oil supplies more heavily than gas supplies. Gas has less mobility than oil in international trade because it requires special vessels and infrastructure (pipelines, compression stations, LNG terminals, etc.). Gas prices are cyclical, regional, controlled by supply and demand, and lack infrastructure for international trade. They are driven by factors such as weather, demand for gas not satisfied by pipeline systems, availability of spot supplies, and competing fuel prices. Others factors that could affect prices are storage levels, curtailments, market changes, new consumption, and NAFTA (North American Free Trade Agreement). Gas prices are also affected by psychological factors, often the expectation of soft prices is enough to bring them about, and a good dose of long, cold, winter weather will usually erase much of the psychological element of low gas prices and price increases.

The lack of mobility of natural gas between producing areas and consuming areas, caused by insufficient infrastructure as shown by the Federal Energy Regulatory Commission’s December 2018 world LNG estimated landed prices. Gas prices are \$9.15 per MMBTU in China and Korea, \$9.08 per MMBTU in India, \$8.55 per MMBTU in Belgium, \$8.08 per MMBTU in Spain, \$9.00 per MMBTU in Brazil, and in the U.S., it is \$3.51 per MMBTU in Lake Charles and \$7.47 per MMBTU in Cove Point. The low price in the U.S. is caused by the oversupply of gas for low demand due high production from shale plays. The price difference between Lake Charles and Cove Point is attributed to the level of access to pipeline networks.

Table 2: Louisiana Natural Gas

	Base Case		Low Case	High Case
FY2013/14	\$4.24	21.76%	N/A	N/A
FY2014/15	\$3.33	21.49%	N/A	N/A
FY2015/16	\$2.15	35.45%	N/A	N/A
FY2016/17	\$3.02	31.02%	N/A	N/A
FY2017/18	\$2.82	-6.62%	N/A	N/A
FY2018/19	\$3.07	8.87%	\$2.89	\$3.22
FY2019/20	\$3.21	4.56%	\$2.98	\$4.01
FY2020/21	\$3.39	5.61%	\$3.01	\$4.35
FY2021/22	\$3.51	3.54%	\$3.08	\$4.56
FY2022/23	\$3.67	4.56%	\$3.22	\$4.94
FY2023/24	\$4.23	15.26%	\$3.57	\$6.19

Historical and Projected Prices

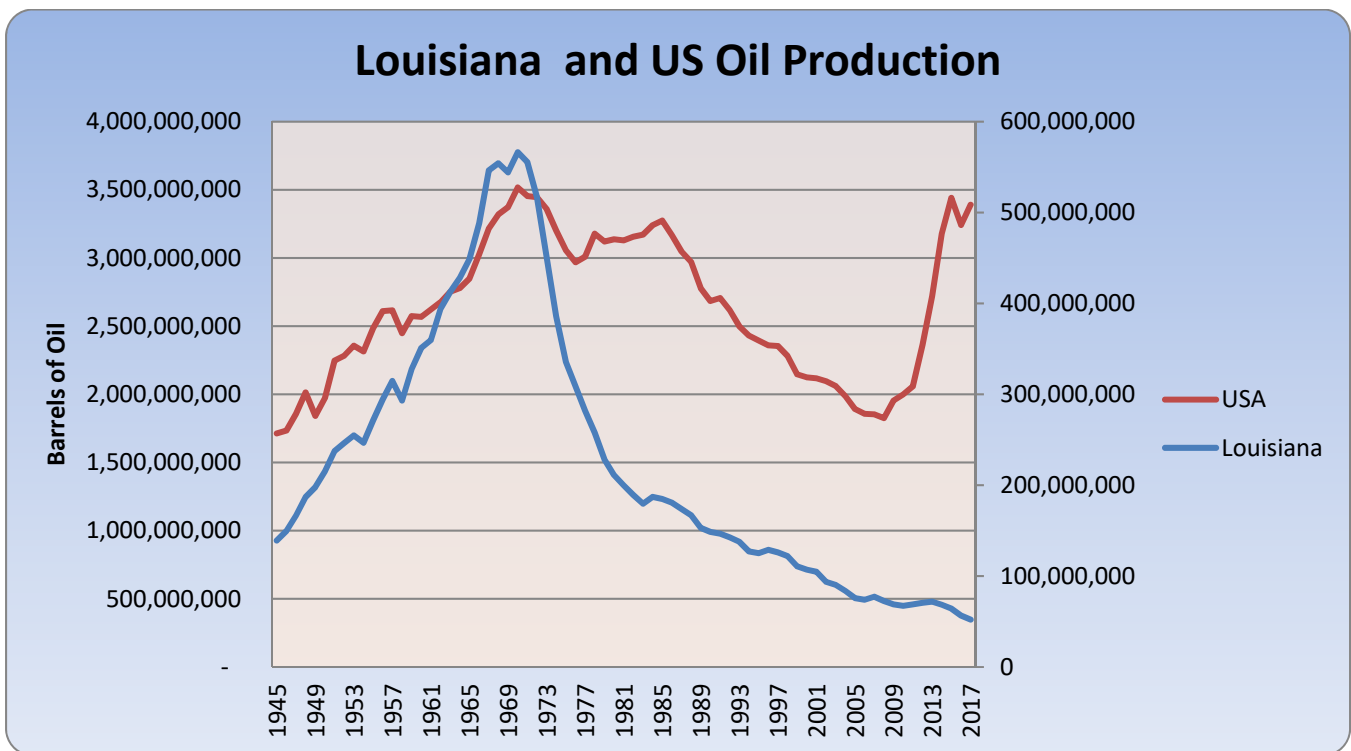
Louisiana annual average gas price is expected to be around \$3 per MMBTU in the near future, and to increase to above \$3.50 per MMBTU when demand increases from newly built plants in the state and when more LNG export terminals become fully operational.

LOUISIANA'S DECLINING OIL PRODUCTION: A 2019 UPDATE

by
Edward L. O'Brien, III, MBA, M.Ec.

Since the 1970s, Louisiana has been going through a decline in oil production. Peaking at 566 million barrels produced, 1970 was the apex of oil production within Louisiana and has been in decline since then, 2018 produced 51 million barrels and 2018 is set to decline even further. While the increase in oil prices from 2009 to 2014 helped increase production during those years, production has seen a decline with lower oil prices. In fact, Louisiana oil production, as a percentage of United States (US) oil production, peaked in 1967 at 16.99% of all US production at 546 million barrels produced that year, compared to the 3.2 billion barrels produced in the US, whereas, now, Louisiana produces roughly 50 million barrels a year and the US production is 3.7 billion barrels.

Figure 1. Louisiana and US Oil Production



SOURCES: Louisiana Department of Natural Resources/Office of Conservation
Energy Information Administration: <http://tonto.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS2&f=A>

Sharp Decline from the Top

Since the days of the first US oil crisis in the 1970s, Louisiana's production has waned. In fact, in 1970, Louisiana produced the second most oil in the US, only trailing Texas, which produced 32.7% of US oil.¹ Since peak production for Louisiana, the annual rate of decline for oil production has been 5%, with the greatest decline happening from 1970 to 1980, where oil production fell by 355.2 million barrels, or 62.7%

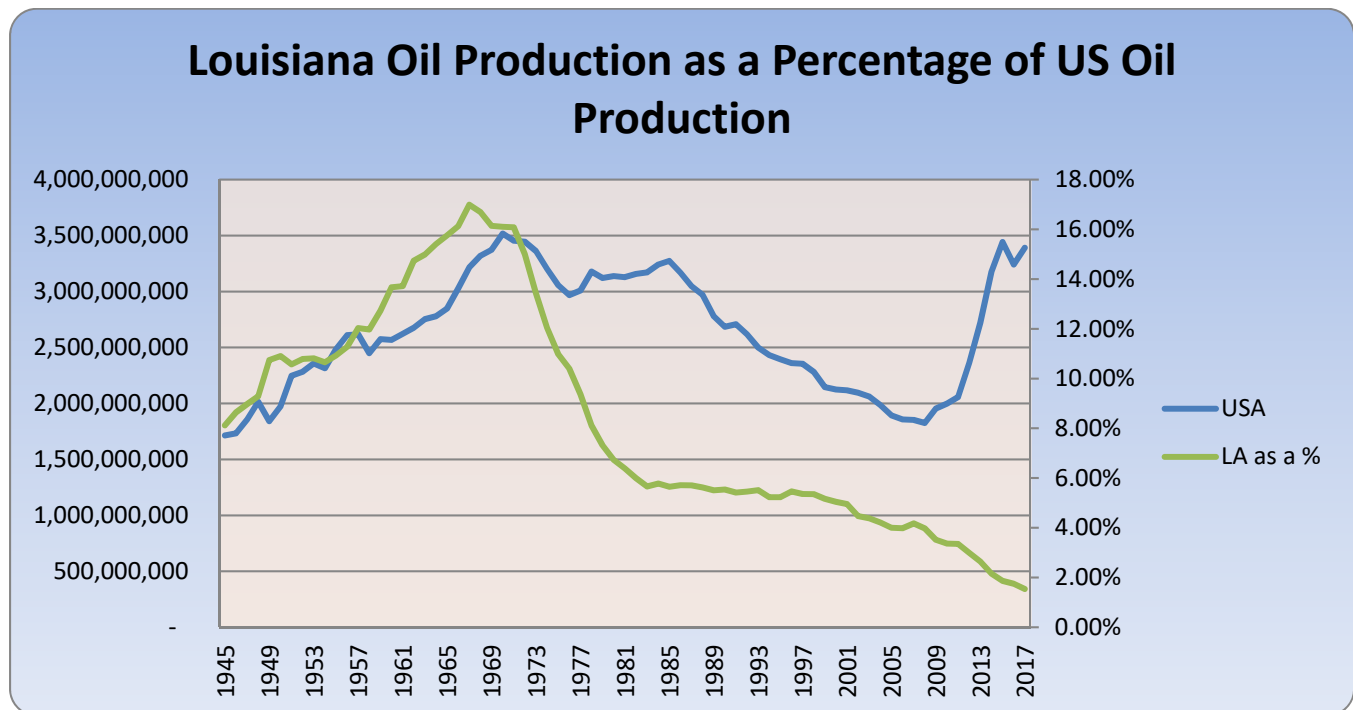
¹ Basic Petroleum Data Book, Volume V, Number 3, September 1985, Section IV, Table 4a

of the peak, and the last 10 years at 2.8 %² annually (Note: Figures include Louisiana onshore and inland water totals only, and OCS is not included in the overall total). While Louisiana has been in decline recently, other areas, such as the Permian Basin in West Texas and the Bakken in North Dakota, have seen sharp increases in production, reinvigorating oil production in the US. Hydraulic fracturing (fracking) technology, where a pressure injection of fluid into the well cracks the shale holding the oil or natural gas, has existed since 1947, but it was not until the 1990s, coupled with horizontal drilling, when the combination was proven to be commercially viable.

The utilization of horizontal fracking in the two formations helped increase production in the US from 5 million barrels a day in 2008 to over 10 million barrels a day in 2018. With the additional production, the gap between Louisiana production and US production has decoupled. Louisiana produced 17% of US oil in 1967; by 1980, it produced only 6.7%; in 2000, 5.0%; and 1.5% today.³

Louisiana still has rich resources, even with the decline. The Tuscaloosa Marine Shale (TMS) has an estimated 7 billion barrels of oil locked under South Louisiana, and there is renewed interest in producing from the Austin Chalk, a formation which lays about the TMS which enjoyed a modest production boom in the late 1990s. With new technology being invented to better utilize this play, the Austin Chalk is estimated to hold 4 billion barrels of recoverable oil, and over 18 Tcf of natural gas.

Figure 2. Louisiana Oil Production as a Percentage of US Oil Production



SOURCES: Louisiana Department of Natural Resources/Technology Assessment Division
Energy Information Administration – <http://tonto.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS2&f=A>

² Louisiana Department of Natural Resources/Technology Assessment Division, Crude and Condensate Projections

³ Ibid

SELECTED LOUISIANA ENERGY STATISTICS

Among the 50 states, Louisiana’s rankings (in 2017, unless otherwise indicated) were:

PRIMARY ENERGY PRODUCTION

(Including GOM Central OCS region)

- 2nd in crude oil
- 1st in OCS crude oil
- 1st in OCS natural gas
- 1st in OCS revenue generated for federal government
- 1st in mineral revenues from any source to the federal government
- 1st in LNG terminal capacity
- 4th in natural gas
- 3rd in crude oil proved reserves
- 4th in natural gas proved reserves
- 9th in total energy from all sources

REFINING AND PETROCHEMICALS

- 2nd in primary petrochemical production
- 2nd in natural gas processing capacity
- 2nd in petroleum refining capacity

PRIMARY ENERGY PRODUCTION

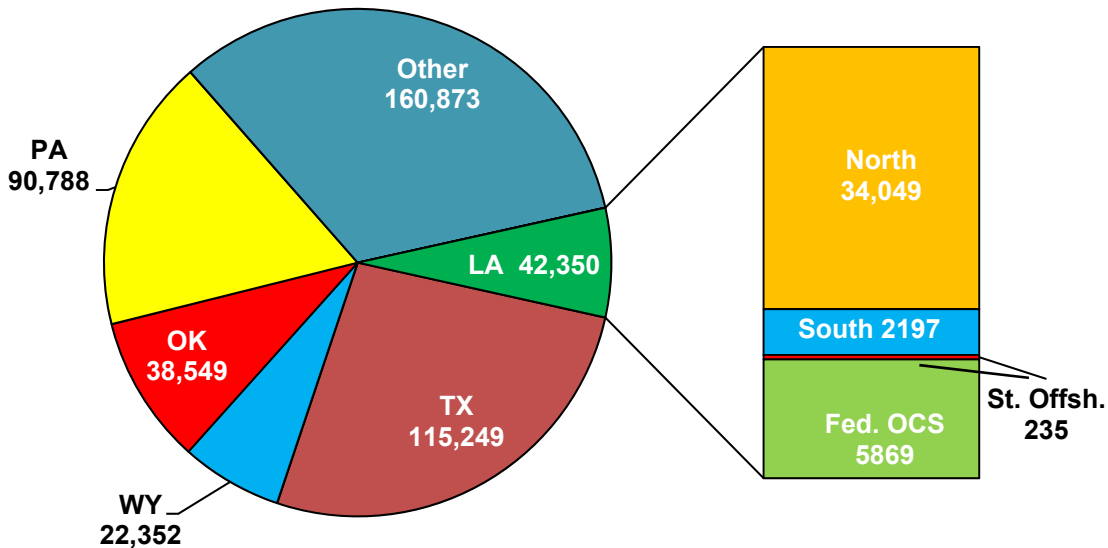
(Excluding GOM Central OCS region)

- 9th in crude oil
- 4th in natural gas
- 7th in natural gas proved reserves
- 9th in crude oil proved reserves
- 18th in coal
- 18th in nuclear electricity

ENERGY CONSUMPTION

- 3rd in industrial energy
- 1st in per capita energy
- 3rd in natural gas
- 3rd in petroleum
- 3rd in total energy
- 24th in residential energy

Figure 1
2017 U.S. Natural Gas Reserves
 (Billion Cubic Feet)

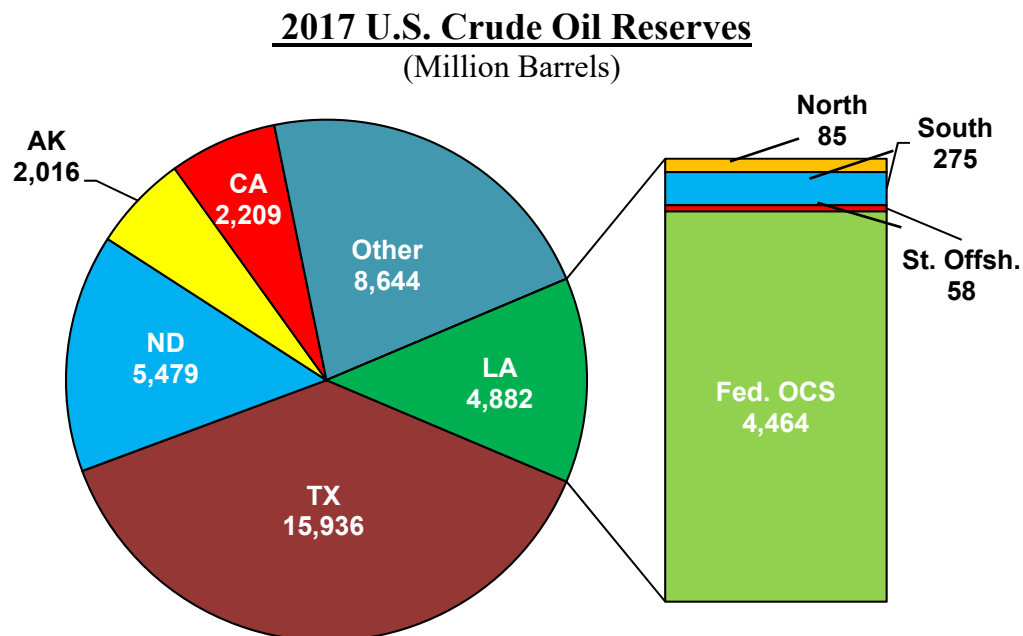


PRODUCTION

State controlled natural gas and casinghead gas production peaked at 5.6 trillion cubic feet (TCF) per year in 1970 and declined to 1.28 TCF in 2005. The trend started to reverse in 2006 when production increased to 1.35 TCF. The rising trend continued until 2011 when it peaked at 2.98 TCF. This production surge was due to production in the Haynesville shale play. Prior to the Haynesville discovery, the long-term decline rate was around 3.2% per year. With the start of production in Haynesville in 2007, the state production has shown an increase of 0.3% in 2008 over the previous year, 12.4% in 2009, 42.3% in 2010, and 37.1% in 2011. In 2012, production fell to 2.96 TCF; in 2013, it fell to 2.31 TCF; in 2014, it fell to 1.94 TCF; in 2015, it fell to 1.78 TCF; and in 2016, it fell to 1.72 TCF or a 3.2% drop from the previous year. In 2017, natural gas production began to see a resurgence, with 2.05 TCF produced, an increase of 19.2%. In 2018, the upturn continued, with 2.78 TCF produced, 1 TCF greater than just two years prior.

State controlled crude oil and condensate production peaked at 566 million barrels (mmbbls) per year in 1970, declined to 211 mmbbls in 1980, declined to 148 mmbbls in 1990, declined to 107 mmbbls in 2000, and declined to 68 mmbbls in 2010. Then in 2011, oil production reversed its trend; 2011 production was 69 mmbbls, in 2012 it increased to 71 mmbbls, in 2013 it increased to 72 mmbbls, in 2014 it decreased to 69 mmbbls, in 2015 it decreased to 63 mmbbls, and in 2016 it decreased to 57 mmbbls. In 2017, production decreased another 10.0%, to 51 mmbbls. The production decrease is caused by low drilling activities. 2018 saw the decline continue, with 45 mmbbls produced in Louisiana.

Figure 2



Gulf of Mexico (GOM) Central OCS region is the most extensively developed and mature OCS territory in the U.S. It has produced approximately 94% of the 22 billion barrels of crude oil and condensate and 82% of the 201 TCF of natural gas extracted from all federal OCS territories, from the beginning of offshore production through the end of 2018.

In 2018, GOM Central OCS region produced 15.2% and the state territory produced 1.1% of the U.S. oil domestic production. The GOM Central OCS region produced 2.6% and the state territory produced 8.6% of the natural gas produced in the U.S.

GOM Central OCS region gas production first peaked at 4.10 TCF per year in 1981, then declined to 3.00 TCF in 1986, started to recover as prices increased, reaching a second peak at 4.11 TCF in 2010. Production then slowly started to decline, caused first by the moratorium on deep water drilling and later by the decline in price and increased gas shale production. In 2014, it produced 1.14 TCF; in 2015, it produced 1.07 TCF; and in 2016, it produced 1.09 TCF. In 2017, it produced 0.99 TCF, a decline of 0.1 TCF, or 9.1%. In 2018, the Central OCS region produced .97 TCF, down .02 TCF.

GOM Central OCS region crude oil and condensate production first peaked at 374 mmbbls per year in 1972 and then declined to 249 mmbbls in 1981. The production rose from 248 mmbbls in 1990 to 524 mmbbls in 2001, due to the development of deep water drilling. In 2008, production dropped to 396 mmbbls due to weather; in 2009, production reached its second peak at 544 mmbbls; in 2011, production began to slow down after the Macondo oil spill and subsequent moratorium, but by 2014, production was on the upswing with discovery of deep oil reservoirs. The Central OCS produced 470 mmbbls in 2014, 514 mmbbls in 2015, and 534 mmbbls in 2016. In 2017, the Central OCS produced 582 mmbbls, an increase of 48 mmbbls. 2018 saw the Central OCS produce 611 mmbbls.

REVENUE

In Fiscal Year (FY) 2007/08, oil and gas revenue (severance tax, royalties, and bonuses) reached an all time high of \$1.94 billion, or 16% of state income (total state taxes, licenses, and fees); the previous peak occurred in FY 1981/82 at \$1.62 billion, but it was 41% of state income. In FY 2012/13, it was \$1.37 billion or 13% of the state income; in FY 2013/14, it was \$1.32 billion or 13% of state income; in FY 2014/15, it was \$1.01 billion or 10% of state income; and, in FY 2015/16, it was \$707 million. In FY 16/17 it was \$550 million. In FY 17/18 it was In FY 18/19, it is expected to be around \$690 million.

DRILLING ACTIVITY

Drilling permits issued on state controlled territory peaked at 7,631 permits in 1984 and declined to a low of 1,017 permits in 1999. Since 2000, the annual number of drilling permits issued has been on a roller coaster ride. In 2008, they increased to 2,374 permits; in 2009, permits decreased to 1365; in 2010, they increased to 1,956 permits; in 2013, they decreased to 1,578 permits; in 2014, they decreased to 1,408 permits; in 2015, they decreased to 643; and, in 2016, they decreased to 475. In 2017, permits numbered 761, an increase of 60.2%. In 2018, they permits showed an uptick to 791 issued.

The average active rotary rig count for Louisiana, excluding OCS, reached a high of 386 active rigs in 1981 and fell to 76 active rigs in 2002. In 2008, there was an average of 117 active rigs. The count fell to 113 rigs in 2009. It increased to 166 active rigs in 2010 because of Haynesville run up; in 2014, it decreased to 60 active rigs due to competitions from shale productions; in 2015, the count decreased to 44 rigs; and, in 2016, it decreased to 26 rigs due to low oil and gas prices. In 2017, there was a bit of a rebound, averaging 42 rigs weekly, increasing by 61.5%. 2018 continued the modest improvement, increasing by 2 rigs on average to 44 rigs weekly over the year.

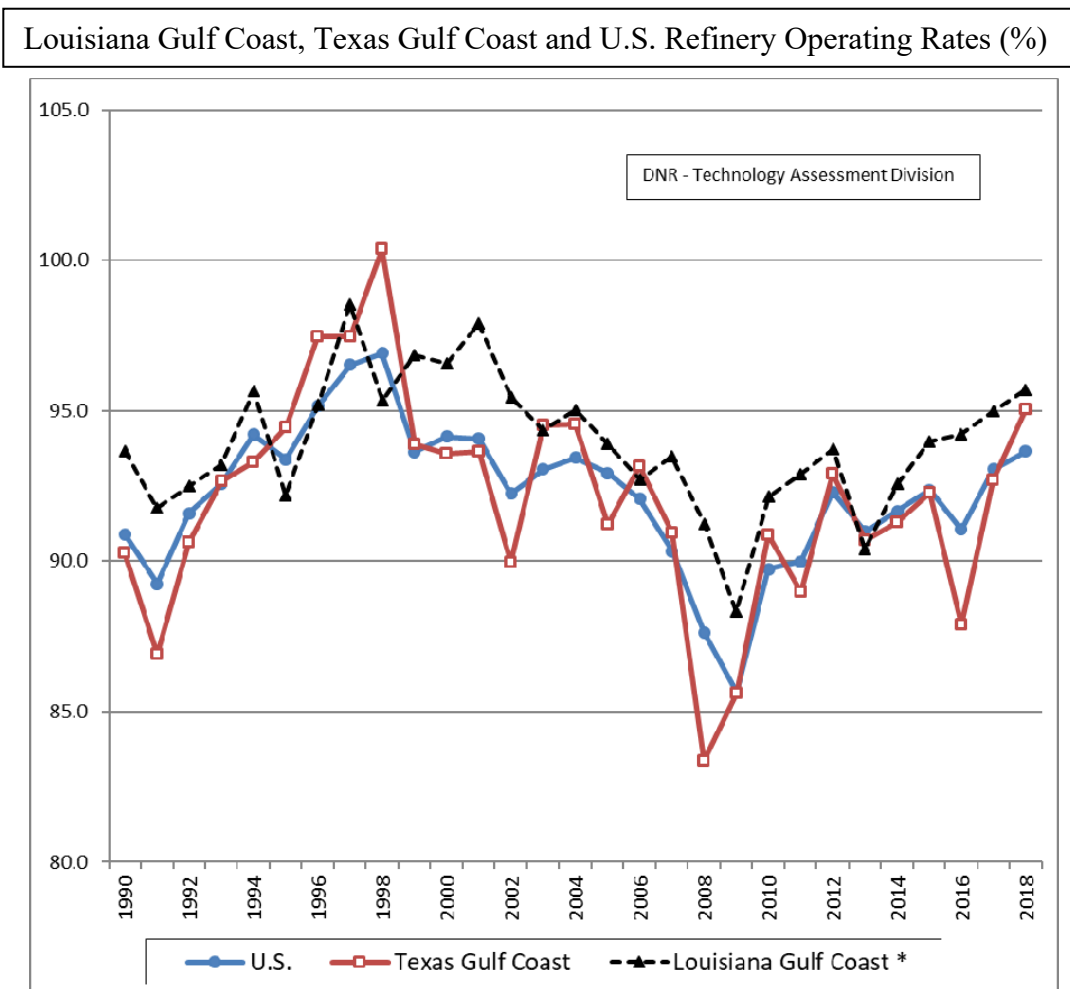
The annual average active rotary rig count for GOM Central OCS region reached a high of 109 rigs in 2001 and it is in a downward trend; it was 70 rigs in 2006, 50 rigs in 2008, and 26 rigs in 2010. After the moratorium, the trend reversed; in 2013, it increased to 47 rigs; in 2014, it increased to 51 rigs; but, in 2015, it reversed to 33 rigs; and, in 2016, it decreased to 21 rigs. 2017, the annual average active rotary rig count decreased to 19, down by 2 from 2016. 2018 continued the downward trend in the OCS to 17 weekly rigs on average.

HIGHLIGHTS OF THE 23rd EDITION OF THE LOUISIANA CRUDE OIL REFINERY SURVEY REPORT

by
Edward O'Brien, III

The 23rd edition of the Department of Natural Resources (DNR) *Louisiana Crude Oil Refinery Survey Report* covers calendar year 2018. The 17 Louisiana refineries have a combined operating capacity of 3.51 million barrels per calendar day (MBCD), and the operating rate for that period was 95.7%. The total U.S. refinery-operating rate was 91.0% for the same period, with a combined operating capacity of 18,568 MBCD.

Louisiana's refinery capacity decreased 0.1 MBCD from our last report. Louisiana refineries combined throughput for the 12-month period was 1.07 billion barrels. Marathon Petroleum Co., LLC at Garyville has the most refining capacity in Louisiana and it is the third largest refinery in the U.S. Table 1 shows the Louisiana operating refinery capacity and throughput information and Table 2 lists the top six refinery products based on percent of total refinery production from DNR's last survey. Motor gasoline remains the largest share of refinery production in Louisiana at about 40% of the total. The figure below shows the Louisiana Gulf Coast, Texas Gulf Coast, and total U.S. refinery operating rates since 1991.



The full report will be available online in PDF format later this year on the Department of Natural Resources Technology Assessment Division website: http://www.dnr.louisiana.gov/assets/TAD/reports/refinery_survey/RefineryReport_2018.pdf

Table 1. Louisiana Operating Refinery Capacity and Throughput

Refinery	Operating capacity as of 12/31/2018 (bcd)	Operating Capacity Change ¹ (%)	Throughput 1/1/2018 - 12/31/2018 (Barrels)	Throughput Change ² (%)
Alon Refining, Krotz Springs	80,000	0.00%	21,341,528	-12.83%
Calcasieu Refining, Lake Charles	125,000	20.19%	30,096,060	-16.17%
Calumet Lubricants, Cotton Valley	13,020	0.00%	2,609,570	3.31%
Calumet Lubricants, Princeton	8,300	0.00%	2,340,686	-3.38%
Calumet Shreveport, Shreveport	57,000	0.00%	14,794,277	-1.24%
Chalmette Refining, Chalmette	190,000	0.00%	59,452,851	5.30%
Citgo Petroleum Corp, Lake Charles	418,000	-1.65%	145,557,024	8.78%
ExxonMobil Refining & Supply Co, Baton Rouge	502,500	0.00%	178,437,180	2.35%
Marathon Petroleum Co LLC, Garyville	556,000	2.39%	198,013,588	0.71%
Equilion Enterprises LLC, Convent	209,787	-7.82%	85,413,491	-1.30%
Equilion Enterprises LLC, Norco	218,200	-3.37%	83,743,498	-0.24%
Phillips 66, Belle Chasse	247,000	0.00%	65,453,007	-26.75%
Phillips 66, West Lake	260,000	0.00%	85,114,898	5.13%
Placid Refining Co, Port Allen	75,000	0.00%	27,152,073	5.73%
Valero Refining Co, Meraux	80,000	-36.00%	31,831,014	-25.67%
Valero Refining Co, Norco	125,000	-41.86%	41,124,448	-8.15%
Totals	3,164,807		1,072,475,193	

1. Change from end date (12/31/2017) of previous DNR report to end date (12/31/2018) of 2018 DNR report.

2. Change from previous DNR report throughput (2017) to DNR report throughput (2018).

Table 2. Top Products from LA Refineries by % of Product Slate

Product	Total Product Slate (%)
Motor gasoline	40.2
Diesel fuel	23.6
Jet fuel	7.0
Residual/Coke	3.2
Gas mixture	2.8
Lubricants	0.7

UTILIZING ENERGY STAR PRODUCTS FOR ENERGY CONSERVATION

by
ROBIN DUFILHO

Since 1991, Energy Awareness Month has been celebrated throughout the month of October by encouraging governmental organizations to promote the importance of energy conservation, sustainability, and awareness. It is imperative that our nation's energy resources are used responsibly. The Department of Energy (DOE) sponsors efforts to promote the understanding of the nation's energy needs and provides information on key ways the public can help reduce their energy footprint by reducing waste.

ENERGY STAR is a national program run by the U.S Environmental Protection Agency (EPA) and DOE. ENERGY STAR products meet strict energy-efficiency requirements set by the EPA. Over the past 25 years, ENERGY STAR and its partners helped American families and businesses save nearly 4 trillion kilowatt-hours of electricity and achieve over 3 billion metric tons of greenhouse gas reductions, equivalent to the annual emissions of over 600 million cars. A typical household can save around \$575 on their energy bills by using ENERGY STAR products.

Among the many products with an ENERGY STAR label, the biggest return on investment can be use of a smart thermostat. Smart thermostats can be set on a schedule to maximize efficiency and reduce energy waste. Some thermostats have the ability to learn your temperature preferences and establish a schedule that adjusts to energy-saving temperatures when you are asleep or away. You can even control your homes heating and cooling remotely by using a smartphone while you are out. Smart thermostats can also provide home energy use data that you can track and manage. If everyone used an ENERGY STAR certified smart thermostat, savings could grow to \$740 million per year and 56 trillion BTUs of energy.

By properly recycling your old refrigerator and replacing it with a new ENERGY STAR certified one, you can save in excess of \$300 over 5 years.¹ ENERGY STAR refrigerators are about 15 percent more efficient than models that meet the federal minimum energy efficiency standard. If all refrigerators sold in the U.S. were ENERGY STAR certified, the energy cost savings would grow to nearly \$700 million each year and 9 billion pounds of greenhouse gas emissions could be prevented, equivalent to the emissions from more than 870,000 vehicles.

ENERGY STAR certified dishwashers have “smart” features that minimize water use and demand on the water heater, and allow for quieter operation and less pre-rinsing. Construction includes more effective washing action, energy-efficient motors, and other advanced technology, such as sensors that determine the length of the wash cycle and the temperature of the water necessary to clean the dishes. When shopping for a new dishwasher, consider how much water the dishwasher uses per cycle—less water means less cost to operate. To save even more energy, avoid using the heated dry cycle. Instead, let your dishes air dry.

AS of 2018, 90% of the nation's top homebuilders build ENERGY STAR certified homes. ENERGY STAR certified homes are at least 10% more energy efficient than homes built to code and achieve a 20% improvement on average, while providing homeowners with better quality, performance, and comfort. Programs such as Home Performance with ENERGY STAR and ENERGY STAR Verified HVAC Installation help homeowners find qualified participating contractors in their area. Using tools such as

¹ *ENERGY STAR facts and statistics originated on the website www.energystar.gov

ENERGY STAR Home Advisor and the Home Energy Yardstick available on the ENERGY STAR website, homeowners can maximize their energy savings.

There are many other useful links and rebate programs found on the ENERGY STAR website such as an Energy Treasure Hunt, conducting energy audits, product finder, tax credits, energy saving tips and more. The ENERGY STAR website has material on saving energy in commercial and industrial buildings, as well. For more information go to www.energystar.gov.

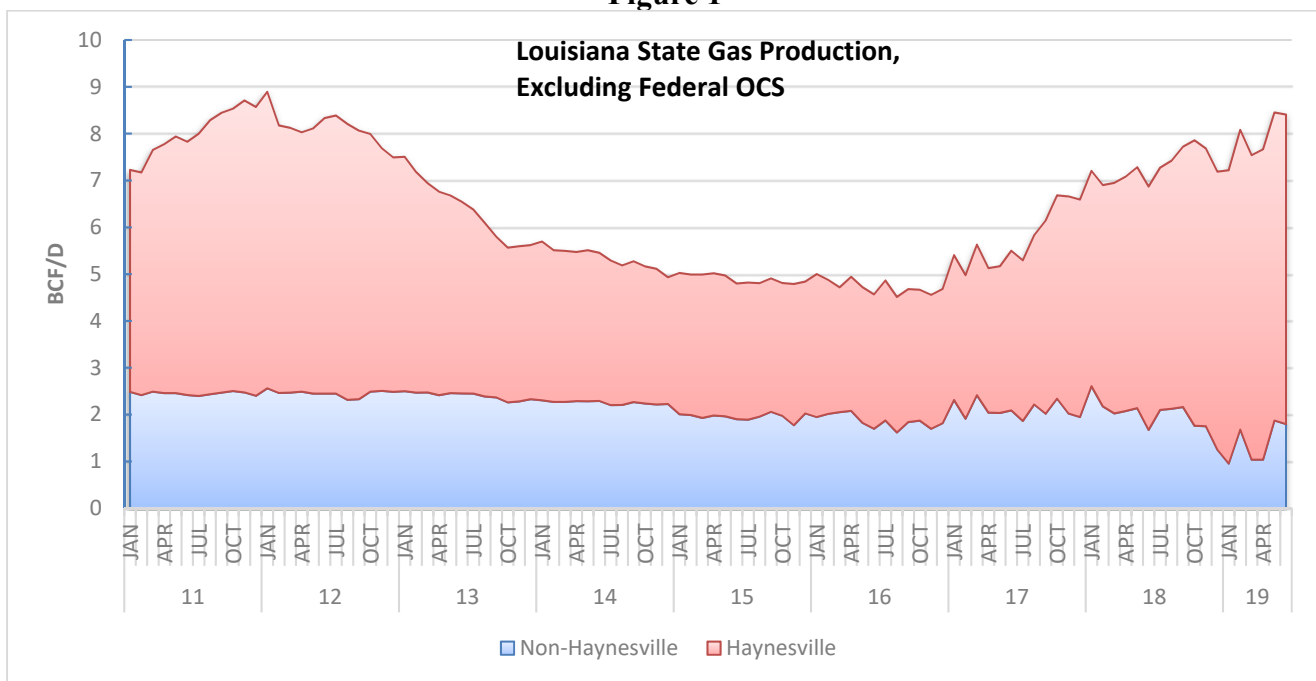
LOUISIANA STATE GAS PRODUCTION

by
Edward L. O'Brien, III, MBA, M.Ec.

Louisiana has been producing natural gas since the early 1900's. State gas production peaked in 1970 at 15.3 Billion Cubic Feet per day (BCF/d) and then declined until 2005, bottoming out at 3.3 BCF/d. This trend then reversed, thanks to production from Haynesville Shale exploration and production, and 2019 has seen the largest production from the Haynesville since 2012.

The Haynesville shale play is a layer of sedimentary rock more than 10,000 feet down in Northwestern Louisiana, Southwestern Arkansas, and Eastern Texas, with some of the play stretching well across the north central portion of Louisiana. Energy producers explored the shale play and drilled for crude oil and natural gas based on their potential for a large supply of oil or gas trapped within some portions of the shale play. Shale plays were once considered too costly due to the large amounts of ground water required to explore, but with the advent of technologically advanced equipment, less expensive technology in horizontal drilling, 3-D seismic, more efficient processes, and the ability to recycle water, moved the economic limit for production in the Haynesville to where it can be profitable.

Figure 1



Louisiana gas production average daily rate from 2010 to the present is shown in Figure 1. The Louisiana Haynesville Shale was producing more gas than the rest of the state by March 2010. In December 2011, Louisiana Haynesville production reached a record high of 6.5 BCF/d. In early 2013, as natural gas prices started to decrease, natural gas production in the Haynesville region was surpassed by production in the new developments in Marcellus and Utica Shale plays. These plays are located 6,000 to 6,500 feet below the surface, thus are cheaper to develop than the Haynesville wells. In late 2016, there was a renewed interest in the Haynesville, even with natural gas prices languishing between \$2 and \$3. Since then, the area has seen even great withdrawals than the boom period of the early 2010, surpassing those levels and propelling Louisiana to its highest natural gas production levels ever.

Figure 2

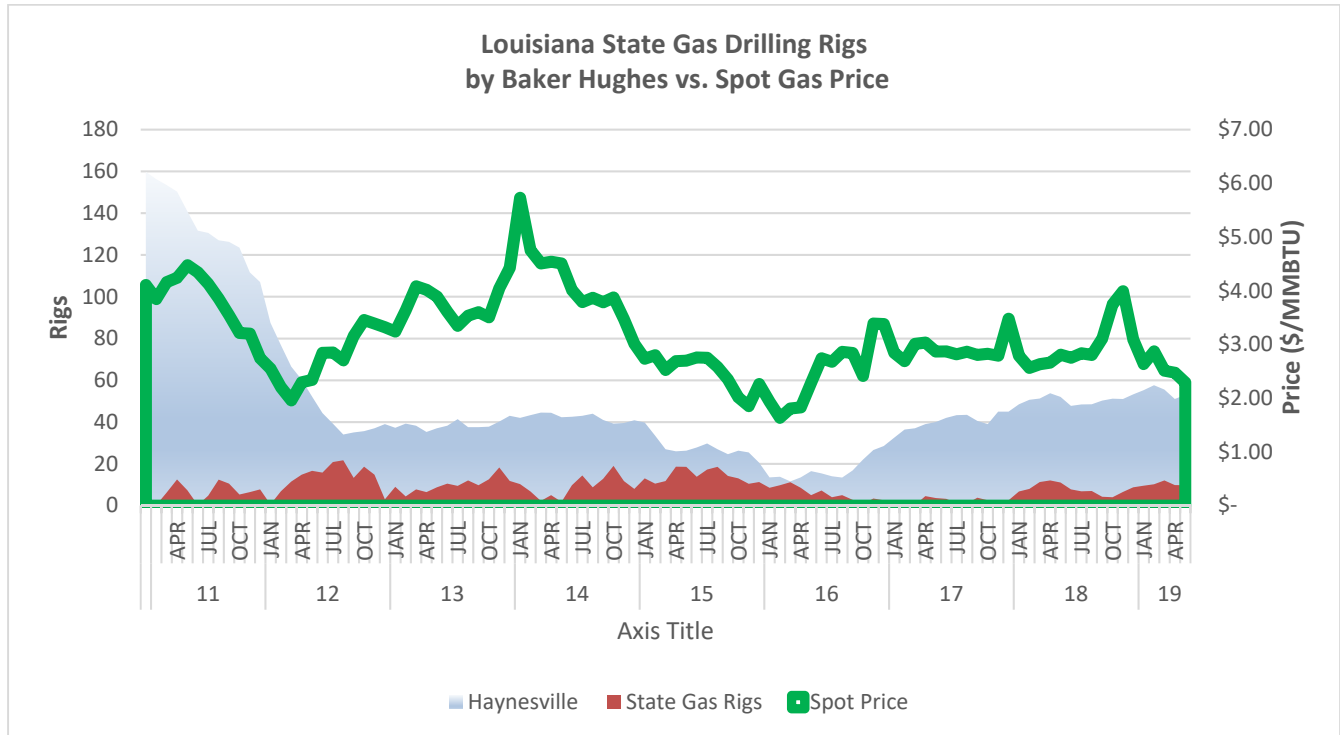


Figure 2 shows the relationship between gas prices and drilling rigs in Louisiana State excluding the federal OCS areas. Historically the data were highly correlated, lagging around 6 months, but from 2013 thru 2016, this relationship was broken. In those years, natural gas production in the Haynesville remained constant despite a declining number of drilling rigs. The increased production was due to the following improvements in drilling technology.

- **Longer laterals:** In the late 80's, small diameter 1,000 meters drilled crossing was a considerable achievement, but with development of bigger and better rigs, improvement in drill bits and better information on drilled rock strengths, laterals are now pushing lengths in excess of 5,000 meters.
- **Directional drilling:** Usage of geo-steering, a new technology in horizontal-directional drilling, keeping the wellbore in a particular section of a reservoir to minimize gas or water breakthrough, and maximize economic return; and the ability reach a larger area from one surface drilling location.
- **Increased drilling rates and drilled pipe diameters:** The new design in rotary steering systems and mud motors maximize rates of penetration and minimize downtime, and the high torque capability of new rigs, let them use larger diameter drill pipes and hole opening equipment.

Since late 2016, the correlation between price and drilling rigs recoupled. The recent increase in drilling activity has increased Louisiana gas production in the Haynesville to its highest output since 2012. This production increase reflects an increase in demand from new industrial activities, expansion of existent gas plants, increasing gas usage in electric generations, and LNG exports, with Louisiana being a leader in each category.