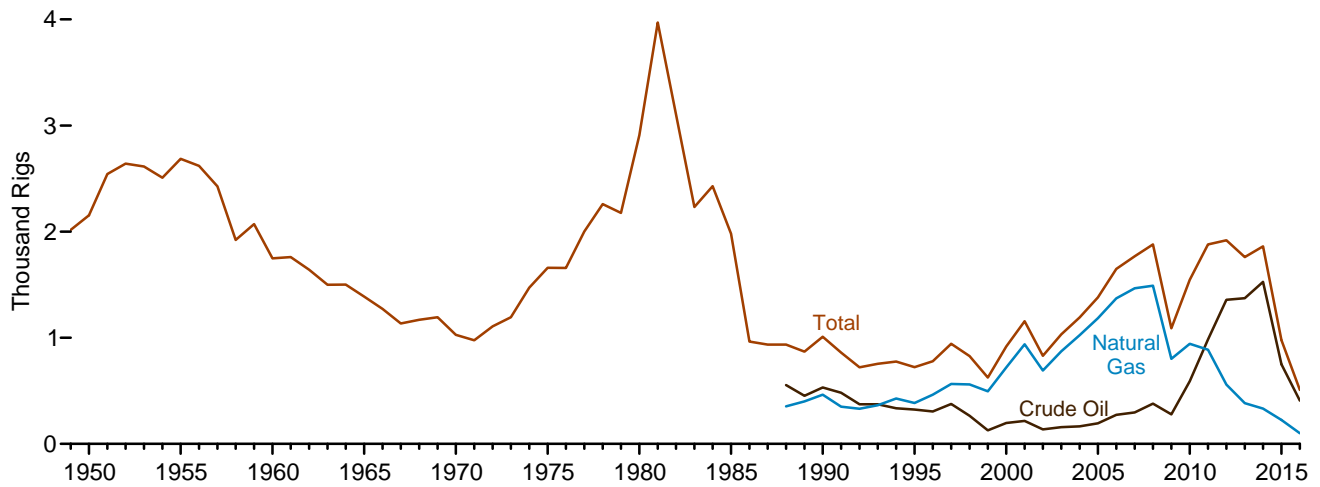


# **5. Crude Oil and Natural Gas Resource Development**

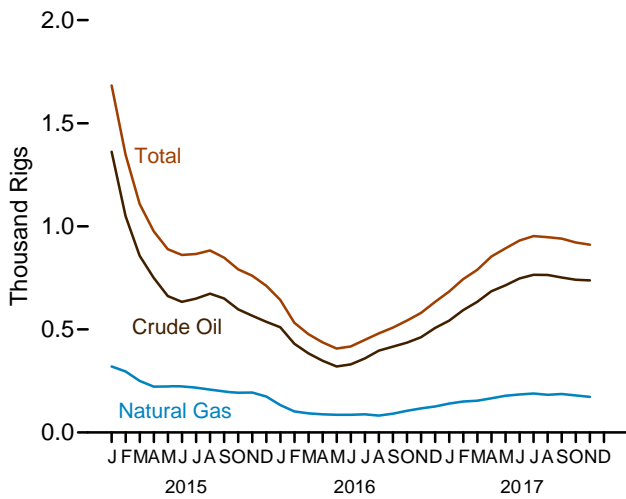
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**Figure 5.1 Crude Oil and Natural Gas Resource Development Indicators**

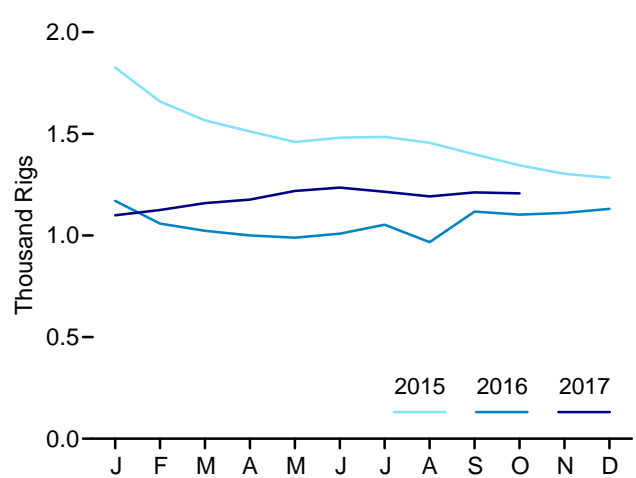
Rotary Rigs in Operation by Type, 1949–2016



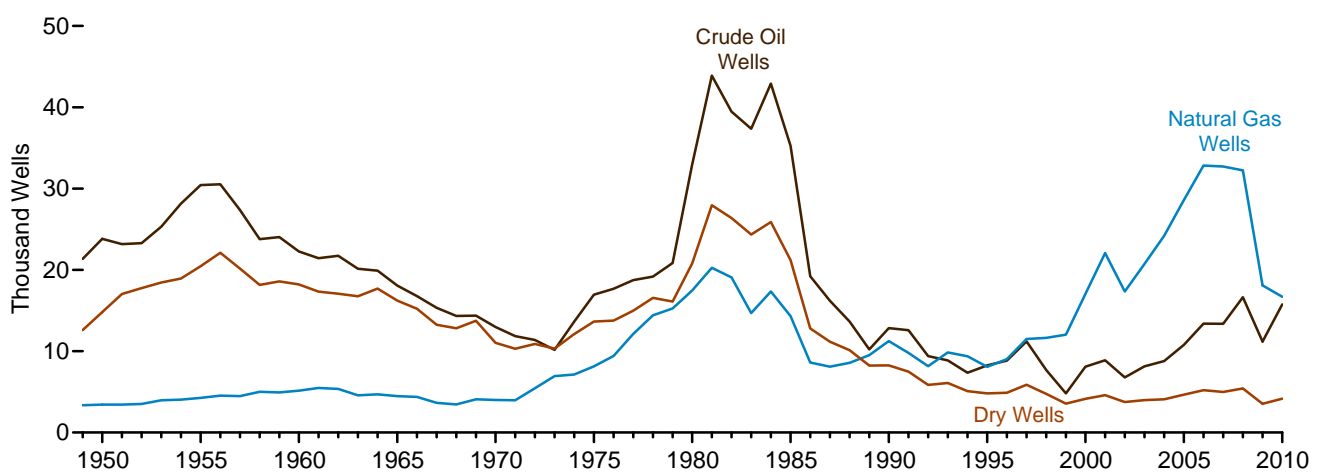
Rotary Rigs in Operation by Type, Monthly



Active Well Service Rig Count, Monthly



Total Wells Drilled by Type, 1949–2010



Web Page: <http://www.eia.gov/totalenergy/data/monthly/#crude>.  
Sources: Tables 5.1 and 5.2.

**Table 5.1 Crude Oil and Natural Gas Drilling Activity Measurements**  
(Number of Rigs)

	Rotary Rigs in Operation <sup>a</sup>					Active Well Service Rig Count <sup>c</sup>
	By Site		By Type		Total <sup>b</sup>	
	Onshore	Offshore	Crude Oil	Natural Gas		
1950 Average .....	NA	NA	NA	NA	2,154	NA
1955 Average .....	NA	NA	NA	NA	2,686	NA
1960 Average .....	NA	NA	NA	NA	1,748	NA
1965 Average .....	NA	NA	NA	NA	1,388	NA
1970 Average .....	NA	NA	NA	NA	1,028	NA
1975 Average .....	1,554	106	NA	NA	1,660	2,486
1980 Average .....	2,678	231	NA	NA	2,909	4,089
1985 Average .....	1,774	206	NA	NA	1,980	4,716
1990 Average .....	902	108	532	464	1,010	3,658
1995 Average .....	622	101	323	385	723	3,041
2000 Average .....	778	140	197	720	918	2,692
2001 Average .....	1,003	153	217	939	1,156	2,267
2002 Average .....	717	113	137	691	830	1,830
2003 Average .....	924	108	157	872	1,032	1,967
2004 Average .....	1,095	97	165	1,025	1,192	2,064
2005 Average .....	1,287	94	194	1,184	1,381	2,222
2006 Average .....	1,559	90	274	1,372	1,649	2,364
2007 Average .....	1,695	72	297	1,466	1,768	2,388
2008 Average .....	1,814	65	379	1,491	1,879	2,515
2009 Average .....	1,046	44	278	801	1,089	1,722
2010 Average .....	1,514	31	591	943	1,546	1,854
2011 Average .....	1,846	32	984	887	1,879	2,075
2012 Average .....	1,871	48	1,357	558	1,919	2,113
2013 Average .....	1,705	56	1,373	383	1,761	2,064
2014 Average .....	1,804	57	1,527	333	1,862	2,024
<b>2015</b> January .....	1,629	53	1,362	320	1,683	1,826
February .....	1,296	52	1,050	296	1,348	1,659
March .....	1,066	43	857	250	1,109	1,566
April .....	943	33	750	222	976	1,512
May .....	857	32	662	223	889	1,460
June .....	833	28	634	224	861	1,481
July .....	835	31	649	216	866	1,485
August .....	849	34	673	209	883	1,456
September .....	816	32	650	198	848	1,399
October .....	758	33	597	193	791	1,345
November .....	729	31	566	194	760	1,303
December .....	686	24	537	174	711	1,283
<b>Average</b> .....	<b>943</b>	<b>35</b>	<b>750</b>	<b>226</b>	<b>978</b>	<b>1,481</b>
<b>2016</b> January .....	615	28	510	133	643	1,170
February .....	506	26	430	102	532	1,058
March .....	451	27	384	93	477	1,023
April .....	411	26	348	88	437	1,000
May .....	384	24	320	86	407	989
June .....	396	21	330	86	417	1,009
July .....	429	20	359	88	449	1,053
August .....	464	17	397	82	481	967
September .....	491	18	416	91	509	1,117
October .....	521	23	436	105	543	1,102
November .....	558	22	462	117	580	1,111
December .....	611	23	507	126	634	1,131
<b>Average</b> .....	<b>486</b>	<b>23</b>	<b>408</b>	<b>100</b>	<b>509</b>	<b>1,061</b>
<b>2017</b> January .....	659	24	542	140	683	1,099
February .....	724	20	593	150	744	1,125
March .....	770	19	634	154	789	1,159
April .....	833	20	685	166	853	1,176
May .....	871	22	714	178	893	1,219
June .....	909	22	747	184	931	1,235
July .....	931	22	765	189	953	1,215
August .....	930	17	764	183	947	1,192
September .....	922	18	752	187	940	1,212
October .....	901	21	741	180	922	R 1,207
November .....	891	20	738	173	911	NA
<b>11-Month Average</b> .....	<b>850</b>	<b>20</b>	<b>699</b>	<b>171</b>	<b>871</b>	<b>NA</b>
<b>2016 11-Month Average</b> .....	<b>473</b>	<b>23</b>	<b>398</b>	<b>97</b>	<b>496</b>	<b>1,054</b>
<b>2015 11-Month Average</b> .....	<b>969</b>	<b>37</b>	<b>772</b>	<b>232</b>	<b>1,006</b>	<b>1,499</b>

<sup>a</sup> Rotary rigs in operation are reported weekly on Fridays. Monthly data are averages of 4- or 5-week reporting periods. Multi-month data are averages of the reported weekly data over the covered months. Annual data are averages of 52- or 53-week reporting periods. Published data are rounded to the nearest whole number.

<sup>b</sup> Sum of rigs drilling for crude oil, rigs drilling for natural gas, and other rigs (not shown) drilling for miscellaneous purposes, such as service wells, injection wells, and stratigraphic tests. Therefore, "Total" values may not equal the sum of "Crude Oil" and "Natural Gas." "Total" values may not equal the sum of "Onshore" and "Offshore" due to independent rounding.

<sup>c</sup> The number of rigs doing true workovers (where tubing is pulled from the well), or doing rod string and pump repair operations, and that are, on average, crewed and working every day of the month.

R=Revised. NA=Not available.

Note: Geographic coverage is the 50 states and the District of Columbia. Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#crude> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **Rotary Rigs in Operation:** Baker Hughes, Inc., Houston, TX, "North America Rig Count," used with permission. See <http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother>. • **Active Well Service Rig Count:** Assoc. of Energy Service Companies, Friendswood, TX. See [http://www.aesc.net/AESC/Industry\\_Resources/Rig\\_Counts/AESC/Industry\\_Resources/Well\\_Service\\_Rig\\_Count.aspx?hkey=0f7d9987-7819-421e-9c4c-7e7d9323ab3c](http://www.aesc.net/AESC/Industry_Resources/Rig_Counts/AESC/Industry_Resources/Well_Service_Rig_Count.aspx?hkey=0f7d9987-7819-421e-9c4c-7e7d9323ab3c).

**Table 5.2 Crude Oil and Natural Gas Exploratory and Development Wells**

	Wells Drilled												Total Footage Drilled Thousand Feet
	Exploratory				Development				Total				
	Crude Oil	Natural Gas	Dry	Total	Crude Oil	Natural Gas	Dry	Total	Crude Oil	Natural Gas	Dry	Total	
	Number												
<b>1950 Total</b> .....	1,583	431	8,292	10,306	22,229	3,008	6,507	31,744	23,812	3,439	14,799	42,050	157,358
<b>1955 Total</b> .....	2,236	874	11,832	14,942	28,196	3,392	8,620	40,208	30,432	4,266	20,452	55,150	226,182
<b>1960 Total</b> .....	1,321	868	9,515	11,704	20,937	4,281	8,697	33,915	22,258	5,149	18,212	45,619	192,176
<b>1965 Total</b> .....	946	515	8,005	9,466	17,119	3,967	8,221	29,307	18,065	4,482	16,226	38,773	174,882
<b>1970 Total</b> .....	757	477	6,162	7,396	12,211	3,534	4,869	20,614	12,968	4,011	11,031	28,010	138,556
<b>1975 Total</b> .....	982	1,248	7,129	9,359	15,966	6,879	6,517	29,362	16,948	8,127	13,646	38,721	180,494
<b>1980 Total</b> .....	1,777	2,099	9,081	12,957	31,182	15,362	11,704	58,248	32,959	17,461	20,785	71,205	316,943
<b>1985 Total</b> .....	1,680	1,200	8,954	11,834	33,581	13,124	12,257	58,962	35,261	14,324	21,211	70,796	314,409
<b>1990 Total</b> .....	778	811	3,652	5,241	12,061	10,435	4,593	27,089	12,839	11,246	8,245	32,330	156,044
<b>1995 Total</b> .....	570	558	2,024	3,152	7,678	7,524	2,790	17,992	8,248	8,082	4,814	21,144	117,156
<b>2000 Total</b> .....	288	657	1,341	2,286	7,802	16,394	2,805	27,001	8,090	17,051	4,146	29,287	144,425
<b>2001 Total</b> .....	357	1,052	1,733	3,142	8,531	21,020	2,865	32,416	8,888	22,072	4,598	35,558	180,141
<b>2002 Total</b> .....	258	844	1,282	2,384	6,517	16,498	2,472	25,487	6,775	17,342	3,754	27,871	145,159
<b>2003 Total</b> .....	350	997	1,297	2,644	7,779	19,725	2,685	30,189	8,129	20,722	3,982	32,833	177,239
<b>2004 Total</b> .....	383	1,671	1,350	3,404	8,406	22,515	2,732	33,653	8,789	24,186	4,082	37,057	204,279
<b>2005 Total</b> .....	539	2,141	1,462	4,142	10,240	26,449	3,191	39,880	10,779	28,590	4,653	44,022	240,307
<b>2006 Total</b> .....	646	2,456	1,547	4,649	12,739	30,382	3,659	46,780	13,385	32,838	5,206	51,429	282,675
<b>2007 Total</b> .....	808	2,794	1,582	5,184	12,563	29,925	3,399	45,887	13,371	32,719	4,981	51,071	301,515
<b>2008 January</b> .....	88	208	144	440	1,111	2,321	272	3,704	1,199	2,529	416	4,144	25,306
February .....	82	230	107	419	1,080	2,261	247	3,588	1,162	2,491	354	4,007	24,958
March .....	66	216	127	409	1,132	2,363	271	3,766	1,198	2,579	398	4,175	26,226
April .....	68	189	130	387	1,177	2,415	281	3,873	1,245	2,604	411	4,260	26,920
May .....	88	206	124	418	1,317	2,449	240	4,006	1,405	2,655	364	4,424	27,947
June .....	63	195	139	397	1,428	2,540	299	4,267	1,491	2,735	438	4,664	28,739
July .....	79	163	171	413	1,439	2,695	344	4,478	1,518	2,858	515	4,891	29,140
August .....	67	165	144	376	1,448	2,735	379	4,562	1,515	2,900	523	4,938	28,942
September .....	52	166	164	382	1,488	2,667	355	4,510	1,540	2,833	519	4,892	28,960
October .....	80	243	173	496	1,549	2,841	373	4,763	1,629	3,084	546	5,259	31,505
November .....	97	192	160	449	1,361	2,418	334	4,113	1,458	2,610	494	4,562	29,276
December .....	67	172	132	371	1,206	2,196	313	3,715	1,273	2,368	445	4,086	26,222
<b>Total</b> .....	<b>897</b>	<b>2,345</b>	<b>1,715</b>	<b>4,957</b>	<b>15,736</b>	<b>29,901</b>	<b>3,708</b>	<b>49,345</b>	<b>16,633</b>	<b>32,246</b>	<b>5,423</b>	<b>54,302</b>	<b>334,141</b>
<b>2009 January</b> .....	80	171	99	350	1,192	2,253	250	3,695	1,272	2,424	349	4,045	28,077
February .....	62	125	88	275	991	1,925	195	3,111	1,053	2,050	283	3,386	25,440
March .....	59	146	88	293	867	1,771	210	2,848	926	1,917	298	3,141	25,304
April .....	36	68	93	197	755	1,396	205	2,356	791	1,464	298	2,553	21,406
May .....	47	90	80	217	584	1,136	156	1,876	631	1,226	236	2,093	20,055
June .....	44	91	75	210	804	1,297	189	2,290	848	1,388	264	2,500	16,301
July .....	40	100	101	241	789	1,188	217	2,194	829	1,288	318	2,435	13,543
August .....	49	84	88	221	867	1,372	207	2,446	916	1,456	295	2,667	15,970
September .....	61	71	96	228	945	1,170	207	2,322	1,006	1,241	303	2,550	15,547
October .....	55	79	78	212	966	1,167	222	2,355	1,021	1,246	300	2,567	17,261
November .....	38	83	85	206	931	1,133	199	2,263	969	1,216	284	2,469	16,236
December .....	34	98	84	216	894	1,074	213	2,181	928	1,172	297	2,397	16,424
<b>Total</b> .....	<b>605</b>	<b>1,206</b>	<b>1,055</b>	<b>2,866</b>	<b>10,585</b>	<b>16,882</b>	<b>2,470</b>	<b>29,937</b>	<b>11,190</b>	<b>18,088</b>	<b>3,525</b>	<b>32,803</b>	<b>231,562</b>
<b>2010 January</b> .....	55	91	81	227	898	1,264	169	2,331	953	1,355	250	2,558	15,304
February .....	44	71	67	182	871	1,096	144	2,111	915	1,167	211	2,293	16,862
March .....	59	85	88	232	1,062	1,224	216	2,502	1,121	1,309	304	2,734	15,102
April .....	49	78	77	204	1,173	1,152	249	2,574	1,222	1,230	326	2,778	17,904
May .....	48	107	86	241	1,282	1,208	255	2,745	1,330	1,315	341	2,986	17,987
June .....	61	100	90	251	1,385	1,250	302	2,937	1,446	1,350	392	3,188	19,408
July .....	46	103	105	254	1,386	1,443	390	3,219	1,432	1,546	495	3,473	20,847
August .....	56	104	94	254	1,434	1,402	314	3,150	1,490	1,506	408	3,404	22,923
September .....	57	73	88	218	1,374	1,358	268	3,000	1,431	1,431	356	3,218	23,037
October .....	75	87	117	279	1,502	1,463	283	3,248	1,577	1,550	400	3,527	22,123
November .....	62	114	103	279	1,400	1,352	263	3,015	1,462	1,466	366	3,294	24,561
December .....	57	92	70	219	1,317	1,379	243	2,939	1,374	1,471	313	3,158	23,189
<b>Total</b> .....	<b>669</b>	<b>1,105</b>	<b>1,066</b>	<b>2,840</b>	<b>15,084</b>	<b>15,591</b>	<b>3,096</b>	<b>33,771</b>	<b>15,753</b>	<b>16,696</b>	<b>4,162</b>	<b>36,611</b>	<b>239,247</b>

Notes: • Data are estimates. • For 1960–1969, data are for well completion reports received by the American Petroleum Institute during the reporting year; for all other years, data are for well completions in a given year. • Through 1989, these well counts include only the original drilling of a hole intended to discover or further develop already discovered crude oil or natural gas resources. Other drilling activities, such as drilling an old well deeper, drilling of laterals from the original well, drilling of service and injection wells, and drilling for resources other than crude oil or natural gas are excluded. Beginning in 1990, a new well is defined as the first hole in the ground whether it is lateral or not. Due to the methodology used to estimate ultimate well counts from the available partially reported data, the counts shown on this page are frequently revised. See Note, "Crude Oil and

Natural Gas Exploratory and Development Wells," at end of section. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#crude> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **1949–1965:** Gulf Publishing Company, *World Oil*, "Forecast-Review" issue. • **1966–1969:** American Petroleum Institute (API), *Quarterly Review of Drilling Statistics for the United States*, annual summaries and monthly reports. • **1970–1989:** U.S. Energy Information Administration (EIA) computations based on well reports submitted to the API. • **1990 forward:** EIA computations based on well reports submitted to IHS, Inc., Denver, CO.

Data for 2011 forward in this table have been removed while EIA evaluates the quality of the data and the estimation methodology.

## Crude Oil and Natural Gas Resource Development

**Note. Crude Oil and Natural Gas Exploratory and Development Wells.** Three well types are considered in the *Monthly Energy Review (MER)* drilling statistics: “completed for crude oil,” “completed for natural gas,” and “dry hole.” Wells that productively encounter both crude oil and natural gas are categorized as “completed for crude oil.” Both development wells and exploratory wells (new field wildcats, new pool tests, and extension tests) are included in the statistics. All other classes of wells drilled in connection with the search for producible hydrocarbons are excluded. If a lateral is drilled at the same time as the original hole it is not counted separately, but its footage is included.

Prior to the March 1985 MER, drilling statistics consisted of

completion data for the above types and classes of wells as reported to the American Petroleum Institute (API) during a given month. Due to time lags between the date of well completion and the date of completion reporting to the API, as-reported well completions proved to be an inaccurate indicator of drilling activity. During 1982, for example, as-reported well completions rose, while the number of actual completions fell. Consequently, the drilling statistics published since the March 1985 MER are U.S. Energy Information Administration (EIA) estimates produced by statistically imputing well counts and footage based on the partial data available from the API. These estimates are subject to continuous revision as new data, some of which pertain to earlier months and years, become available. Additional information about the EIA estimation methodology may be found in “Estimating Well Completions,” a feature article published in the March 1985 MER.

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