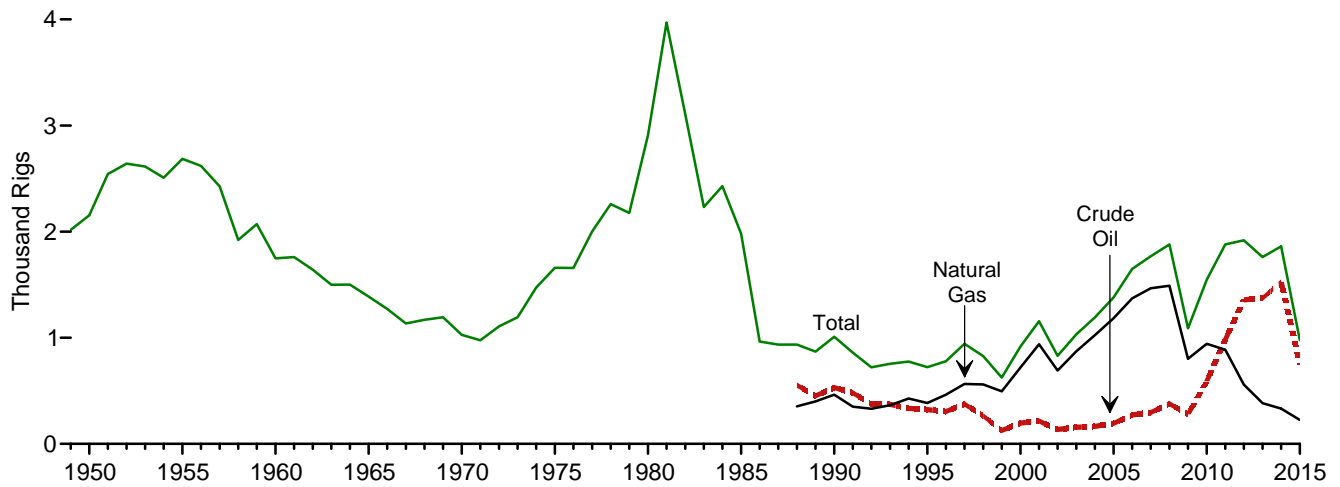


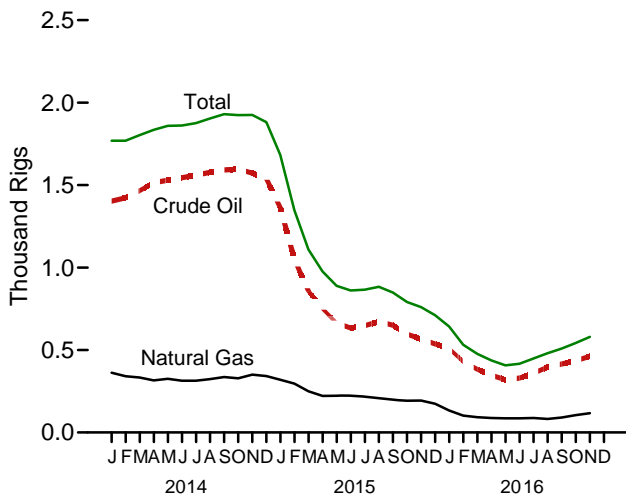
5. Crude Oil and Natural Gas Resource Development

Figure 5.1 Crude Oil and Natural Gas Resource Development Indicators

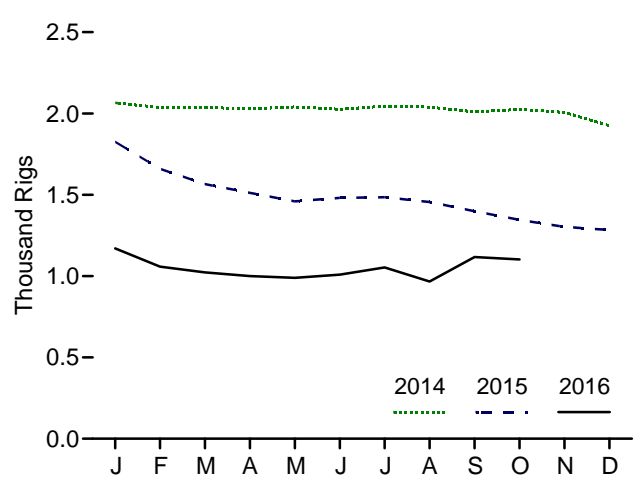
Rotary Rigs in Operation by Type, 1949–2015



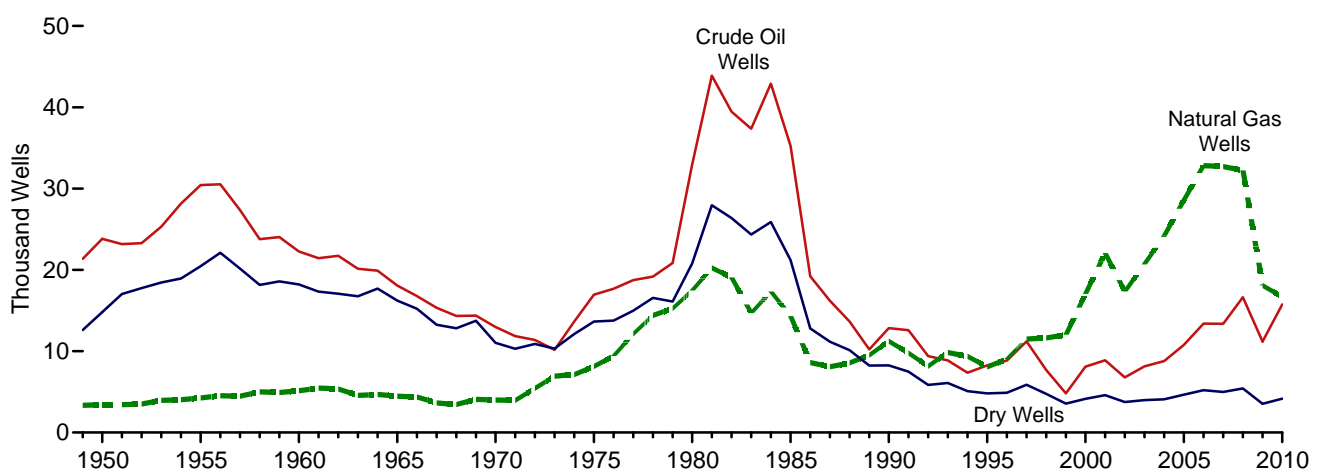
Rotary Rigs in Operation by Type, Monthly



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 ^a | | | | | Active Well Service Rig Count ^c |
|------------------------------------|---------------------------------------|-----------|--------------|-------------|--------------------|--------------------------------------------|
| | By Site | | By Type | | Total ^b | |
| | 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 | 70 | 274 | 1,372 | 1,649 | 2,364 |
| 2007 Average | 1,695 | 92 | 297 | 1,466 | 1,768 | 2,368 |
| 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 January | 1,711 | 58 | 1,403 | 362 | 1,769 | 2,066 |
| February | 1,714 | 55 | 1,424 | 341 | 1,769 | 2,036 |
| March | 1,750 | 54 | 1,466 | 333 | 1,803 | 2,037 |
| April | 1,784 | 52 | 1,515 | 316 | 1,835 | 2,028 |
| May | 1,801 | 58 | 1,530 | 325 | 1,859 | 2,040 |
| June | 1,804 | 58 | 1,545 | 314 | 1,861 | 2,026 |
| July | 1,819 | 57 | 1,560 | 314 | 1,876 | 2,044 |
| August | 1,842 | 62 | 1,578 | 324 | 1,904 | 2,039 |
| September | 1,866 | 64 | 1,592 | 336 | 1,930 | 2,010 |
| October | 1,867 | 58 | 1,596 | 328 | 1,924 | 2,024 |
| November | 1,872 | 53 | 1,573 | 351 | 1,925 | 2,007 |
| December | 1,824 | 59 | 1,539 | 342 | 1,882 | 1,925 |
| Average | 1,804 | 57 | 1,527 | 333 | 1,862 | 2,024 |
| 2015 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 | 858 | 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 |
| Average | 943 | 35 | 750 | 226 | 978 | 1,481 |
| 2016 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 | NA |
| 11-Month Average | 473 | 23 | 398 | 97 | 496 | NA |
| 2015 11-Month Average | 969 | 37 | 772 | 232 | 1,006 | 1,499 |
| 2014 11-Month Average | 1,803 | 57 | 1,525 | 332 | 1,860 | 2,032 |

^a Rotary rigs in operation are reported weekly. Monthly data are averages of 4- or 5-week reporting periods, not calendar months. Multi-month data are averages of the reported data over the covered months, not averages of the weekly data. Annual data are averages over 52 or 53 weeks, not calendar years. Published data are rounded to the nearest whole number.

^b 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. "Total" values may not equal the sum of "Onshore" and "Offshore" due to independent rounding.

^c 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-reports&hkey=0f7d9987-7819-421e-9c4c-7e7d9323ab3c>. • **Active Well Service Rig Count:** Cameron International Corporation, Houston, 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.

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 | | | | | | | | | | | | |
| 1950 Total | 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 |
| 1955 Total | 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 |
| 1960 Total | 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 |
| 1965 Total | 946 | 515 | 8,005 | 9,466 | 17,119 | 3,967 | 8,221 | 29,307 | 18,065 | 4,482 | 16,226 | 38,773 | 174,882 |
| 1970 Total | 757 | 477 | 6,162 | 7,396 | 12,211 | 3,534 | 4,869 | 20,614 | 12,968 | 4,011 | 11,031 | 28,010 | 138,556 |
| 1975 Total | 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 |
| 1980 Total | 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 |
| 1985 Total | 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 |
| 1990 Total | 778 | 811 | 3,652 | 5,241 | 12,061 | 10,435 | 4,593 | 27,089 | 12,839 | 11,246 | 8,245 | 32,330 | 156,044 |
| 1995 Total | 570 | 558 | 2,024 | 3,152 | 7,678 | 7,524 | 2,790 | 17,992 | 8,248 | 8,082 | 4,814 | 21,144 | 117,156 |
| 2000 Total | 288 | 657 | 1,341 | 2,286 | 7,802 | 16,394 | 2,805 | 27,001 | 8,090 | 17,051 | 4,146 | 29,287 | 144,425 |
| 2001 Total | 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 |
| 2002 Total | 258 | 844 | 1,282 | 2,384 | 6,517 | 16,498 | 2,472 | 25,487 | 6,775 | 17,342 | 3,754 | 27,871 | 145,159 |
| 2003 Total | 350 | 997 | 1,297 | 2,644 | 7,779 | 19,725 | 2,685 | 30,189 | 8,129 | 20,722 | 3,982 | 32,833 | 177,239 |
| 2004 Total | 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 |
| 2005 Total | 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 |
| 2006 Total | 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 |
| 2007 Total | 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 |
| 2008 January | 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 |
| Total | 897 | 2,345 | 1,715 | 4,957 | 15,736 | 29,901 | 3,708 | 49,345 | 16,633 | 32,246 | 5,423 | 54,302 | 334,141 |
| 2009 January | 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 |
| Total | 605 | 1,206 | 1,055 | 2,866 | 10,585 | 16,882 | 2,470 | 29,937 | 11,190 | 18,088 | 3,525 | 32,803 | 231,562 |
| 2010 January | 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 |
| Total | 669 | 1,105 | 1,066 | 2,840 | 15,084 | 15,591 | 3,096 | 33,771 | 15,753 | 16,696 | 4,162 | 36,611 | 239,247 |

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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